

# Bingally 400 kV Overhead Line Tie-In

Geotechnical and Geo-environmental Desk Study

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## Quality information

### Prepared by



Oceane Mbaguta  
Graduate Environmental  
Scientist  
Sean Taylor  
Senior Geotechnical  
Engineer

### Checked by



Christine Johnson  
Principal Geologist  
David Raeside  
Associate

### Verified by



Judit Gal  
Associate Director

### Approved by



Ryan Blair  
Senior Planner

## Revision History

Revision	Revision date	Details	Name	Position
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## Prepared for:

Scottish Hydro Electric Transmission known as Scottish & Southern Electricity Networks ('SSEN Transmission')

## Prepared by:

AECOM  
177 Bothwell Street  
GLASGOW  
G2 7ER, United Kingdom  
United Kingdom

T: +44 (0)20 8639 3500  
aecom.com

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The methodology adopted and the sources of information used by AECOM in providing its services are outlined in this Report. The work described in this Report was undertaken between 06 May and 04 September 2024 and is based on the conditions encountered and the information available during the said period of time. The scope of this Report and the services are accordingly factually limited by these circumstances. AECOM disclaim any undertaking or obligation to advise any person of change in any matter affecting the Report, which may come or be brought to AECOM's attention after the date of the Report.

The Site walkover conducted of areas accessible to public on 10 May 2024 consisted of a general inspection of the Study Area aimed at identifying any obvious signs and potential sources of ground contamination affecting the Proposed Development areas. An environmental compliance audit and/ or detailed structural inspection of existing buildings were out with the scope of this report. Similarly, the site visit excluded detailed consideration of the ecological or archaeological aspects of the Site, and if such are believed to be of potential significance then it is recommended that specialist advice is sought.

Any risks identified in this Report are perceived risks, based on the information reviewed during the desk study and therefore partially based on conjecture from available information. The study is limited by the non-intrusive nature of the work and actual risks can only be assessed following a physical investigation of the Site. The opinions expressed in this report and the comments and recommendations given are based on a desk-based assessment of readily available information and an initial site reconnaissance by an AECOM Engineer.

Unless otherwise stated in this Report, as a formalised development plan or finalised development option was not available at the time of writing, the assessments made cover the wider development boundary.

Reference to historical Ordnance Survey (OS) maps and/or data provides invaluable information regarding the land use history of a site. However, it should be noted that historical evidence will be incomplete for the period pre-dating the first edition and between the release of successive maps and/or data.



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# 1 Introduction

## 1.1 Commission

Scottish Hydro Electric Transmission known as Scottish & Southern Electricity Networks (SSEN Transmission) ("the Client") commissioned AECOM Limited ("AECOM") to undertake a Geotechnical and Geo-environmental Desk Study for the construction of the proposed Bingally 400 / 132 kV substation, in proximity to the existing Fasnakyle Substation, and an overhead line (OHL) tie in to the existing Beaully-Denny OHL.

This report is specifically for the OHL (referred to hereafter as "Proposed Development"), as summarised below in **Section 1.2**. The desk study findings for the proposed Bingally substation and access track are discussed in a separate AECOM report titled, Bingally 400 kV Substation. Geotechnical and Geo-environmental Desk Study (AECOM 60701792-R-001 August 2024).

The proposed OHL tie-in forms part of the Ofgem Accelerated Strategic Transmission Investment (ASTI) project for the upgrade of the 2nd Beaully – Denny 275 kV circuit to 400 kV. This project, alongside several other major network upgrades in the north of Scotland, is planned to meet the UK and Scottish Government energy targets.

The Geotechnical and Geo-environmental Desk Study is required to characterise potential land quality constraints / opportunities to provide baseline data to satisfy planning conditions, provide input into the Environmental Appraisal (EA) and support for a Section 37 Application. The Site location and boundary plans are included in **Appendix A**.

## 1.2 Proposed Development and Planning Status

A planning application for the permission for the Proposed Development has not been submitted at the time of writing.

It is understood from the Client that the Proposed Development would comprise the following:

### OHL Development

- Two new permanent towers (Tower 79R and Tower 78R) reaching a maximum height above ground level of 64 m, located along the existing Beaully – Denny OHL to make the connection into and out of the proposed Bingally substation, along the north / northwestern boundary of the proposed Bingally substation (**Figure 1a, Appendix A**). These towers would replace the existing Tower 78 and Tower 79, which would be dismantled as part of these works;
- Tower 78R would be the terminal tower with downleads connecting to two OHL gantries within the proposed Bingally substation;
- Short-term temporary OHL diversion during construction comprising two temporary towers (Tower 79T and Tower 78T) up to a maximum height of approximately 61 m. (**Figure 1b, Appendix A**);
- Temporary works areas – includes an 80 x 80 m tower laydown for tension towers and 60 x 60 m tower laydown for suspension towers at permanent and temporary tower positions;
- Temporary and permanent access track spurs (branching off the proposed Bingally substation access track) to facilitate the construction and maintenance of the OHL; and
- Following connection to the proposed Bingally substation, dismantling and removal of two redundant towers (Tower 79T and Tower 78T), and the two redundant existing towers (Tower 78 and Tower 79) (**Figure 1b, Appendix A**).

### Construction Compounds

Temporary working areas are required to enable the construction of the permanent works. These areas would be installed to provide a safe and secure foundation for items of plant to work from.

Hardstandings for tower erection would need to support items of plant which would require an area of crushed stone laid on geotextile membrane.



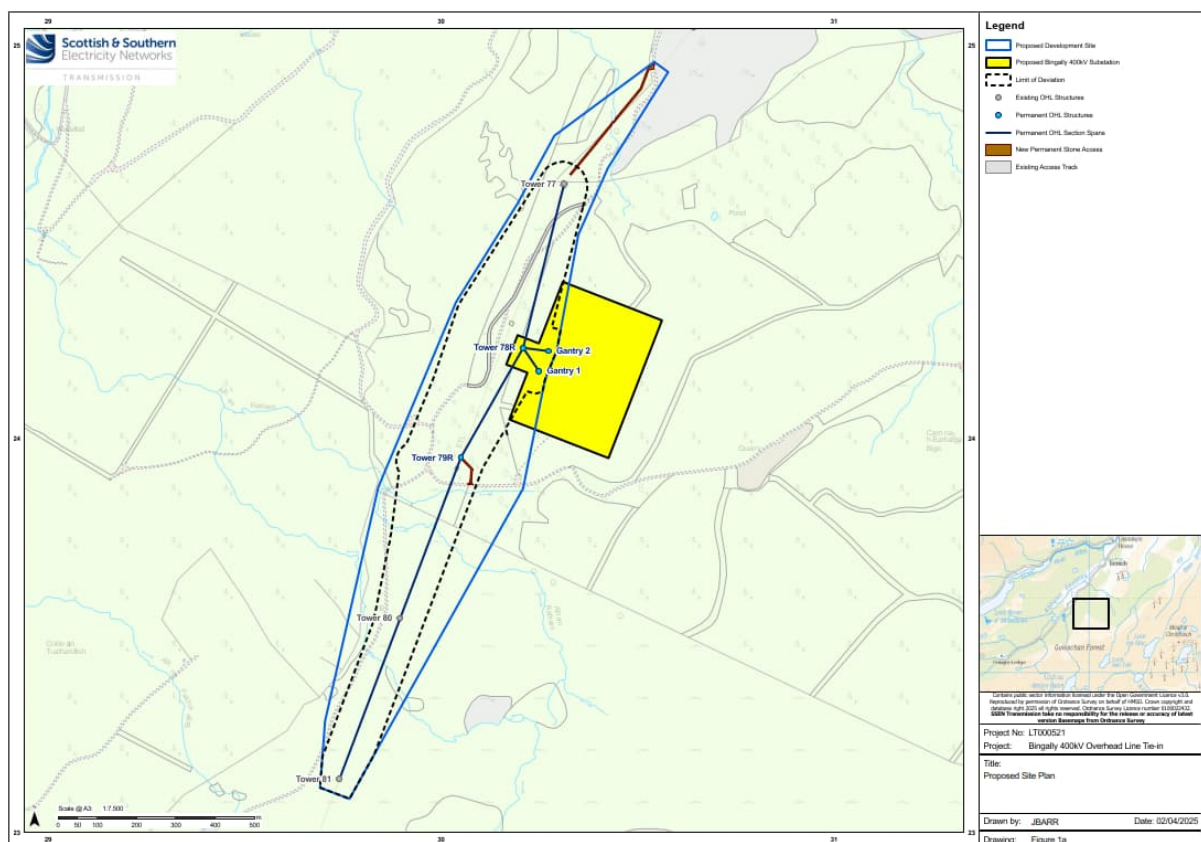
To facilitate construction works, it is currently anticipated that an 80 x 80 m working area is required at permanent and temporary tension (angled) tower sites (Tower 78T, Tower 78R, and Tower 79R / Tower 79 combined) and a 60 x 60 m working area would be required at suspension (non-angled) existing and temporary tower sites (Tower 77, Tower 78, Tower 80, Tower 81) as well as Tower 79T due to space restrictions.

An additional area remote from the OHL for offices, material storage and parking would also be required. It is assumed that an area of 0.4 hectares (ha) would be sufficient.

Equipotential Zones (EPZs) would be implemented during construction. These are work zones required to protect workers from electric shock caused by differences in the electric potential between objects in the work area. These EPZs would be constructed on flat ground created by cutting or filling, overlaid with aluminium access panels electrically bonded to the adjacent tower. The EPZ is generally set back approximately 1.5 times the tower length.

The Site Location Plan and Proposed Development Final Layout are included in **Appendix A**. The Proposed Development Final Layout is provided as **Figure 1a**, below. The proposed OHL route is shown in blue. The temporary layout for the OHL structure is shown as **Figure 1b** in **Appendix A**.

**Figure 1a Proposed Site Plan**



## 1.3 Scope and Objective of Report

The objective of this Desk Study is to characterise the environmental setting and sensitivity across the Site, along with the potential for contamination to exist and the pathways through which contamination may come into contact with sensitive receptors given the final use as an OHL. The Desk Study includes the following key activities:

- Review of aerial imagery for site layout and terrain evaluation to provide a current description of the Site's layout and setting within the local area;
- Review of historical land uses for the Site and surrounds with a particular emphasis on identifying potential on-site and off-site contamination sources, and potential for made ground;



- A review of the Site's geological, hydrological and hydrogeological setting, publicly available non-coal and coal mining records and geo-environmental information to build up an understanding of the Site setting and surrounding environmental sensitivity;
- Request and review relevant records held by the Local Authority Contaminated Land Officer and the Scottish Environment Protection Agency (SEPA) along with public regulatory records provided within Groundsure Reports purchased for the Site;
- Review of available records provided by the Client;
- Review publicly available records from consultees including (but not limited to) Historic Environment Scotland (HES) website, the Zetica bomb risk maps, UK Radon website, flooding information, the National Library of Scotland, and others to further inform the study;
- Develop an initial Conceptual Site Model (CSM) for the Site to identify the potential contamination sources, pathways, and receptors for consideration in the context of the potential development followed by a preliminary qualitative risk assessment for the Site;
- Summarise any identified geo-environmental and land quality risks; and
- Recommendations for further geo-environmental assessments, if required.

## 1.4 Sources of Information

The following sources of information were consulted during this assessment:

- Groundsure Enviro+Geo Insight (ref. GSIP-2024-14714-18280\_A to G), dated 01 May 2024;
- The Coal Authority (<https://mapapps2.bgs.ac.uk/coalauthority/home.html>) (accessed August 2024);
- The British Geological Survey (BGS) (<https://www.bgs.ac.uk/map-viewers/geoindex-onshore/>) (accessed August 2024);
- SEPA (<https://www.sepa.org.uk/data-visualisation/water-environment-hub/>) (accessed August 2024);
- SEPA Flood Risk (<https://map.sepa.org.uk/floodmaps/FloodRisk/Search>) (accessed August 2024);
- NatureScot (<https://sitelink.nature.scot/map>) (accessed August 2024);
- HES (<https://www.historicenvironment.scot/advice-and-support/listing-scheduling-and-designations/listed-buildings/search-for-a-listed-building/>) (accessed August 2024);
- Zetica UXO Map (<https://zeticauxo.com/guidance/risk-maps/>) (accessed August 2024);
- UK Radon Map (<https://www.ukradon.org/information/ukmaps>) (accessed August 2024);
- Topography map (<https://en-gb.topographic-map.com/map-cgt/United-Kingdom/>) (accessed August 2024);
- Scottish Government Energy Infrastructure (<https://www.gov.scot/policies/energy-infrastructure/energy-consents/>) (accessed August 2024); and
- Google Earth satellite imagery (<https://earth.google.com/web/@-3.47981663,150.00030013,-3256.63719952a,18709751.81607485d,35y,165.58670573h,0t,0r>) (accessed August 2024).

Specific information sources are referenced throughout the report.



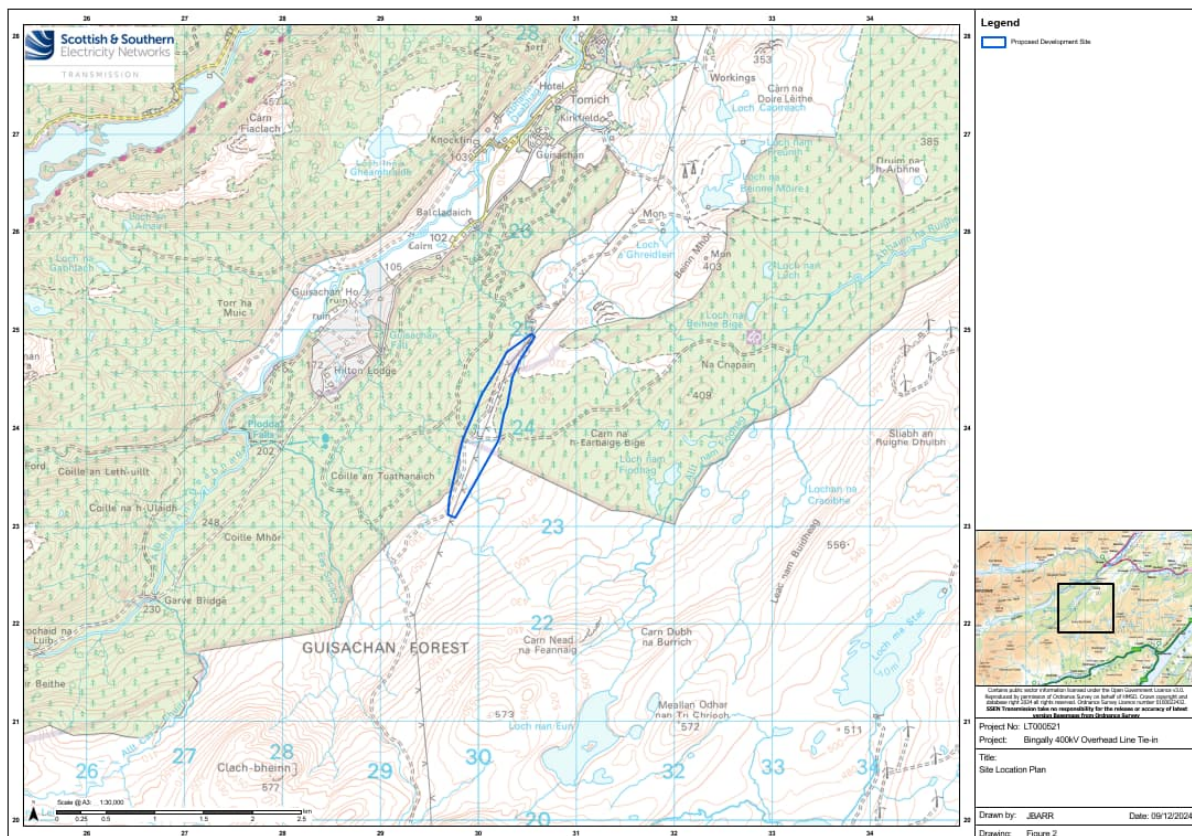
## 2 Site Description

### 2.1 Site Location

The Site is located within the central Highlands area of Scotland, to the southwest of Inverness and northwest of Loch Ness. Specifically, the Site is located approximately 2.2 km south of Tomich and 1.2 km southeast of the village of Knockfin. The National Grid Reference of the centre of the Site is NH 30133 24310 and the nearest postcode is IV4 7LZ.

The Site location is shown in **Figure 2** below and is also presented in **Appendix A**.

**Figure 2 Site Location Plan**



### 2.2 Current Site Use, Topography and Geography

#### 2.2.1 On-Site

The Site comprises coniferous forestry land with both mature and young growth trees present, tree plantations, with forestry access tracks and roads, and open moorland. Three unnamed watercourses sourced from Allt an Rathain and Allt a Bhuachaille are present across the Site. The existing Beauly – Denny OHL passes through the centre of the Site, in a south to north direction. According to the UK topographic map<sup>1</sup>, the Site is situated at approximate elevations varying between 278 m and 324 m above Ordnance datum (AOD). The terrain falls generally south to north across the Site.

#### 2.2.2 Off-Site

The off-site area described below extends to a radius of 1 km;

<sup>1</sup> World Topographic Map, 2024. *United Kingdom topographic Map* [online] Available from: <https://en-gb.topographic-map.com/map-cgt/United-Kingdom/>



- **North** - An area of plantation forestry comprising predominantly coniferous woodland and unoccupied land is present to the north of the Site.
- **East** – Coniferous forest land with both mature and young growth trees, tree plantations, with forestry access tracks and roads, open moorland and unoccupied land are present to the east of the Site.
- **South** – Plantation forestry comprising predominantly coniferous woodland and unoccupied land is present to the south of the Site. The Allt an Rathain and the Allt na Faiche Bige watercourses with two unnamed watercourses are present within 250 m southwest of the Site. A holiday cottage is located approximately 830 m southwest of the Site.
- **West** – Plantation forestry comprising predominantly coniferous woodland is present to the west of the Site.

## 2.3 Site Walkover and Description

A site reconnaissance survey was undertaken by AECOM staff on 10 May 2024. During the walkover, observations were made on the topography, land use, drainage and potential sources of contamination identified on site.

The Site is predominantly located in an area of forestry use and unoccupied land. The Site begins at a section of the existing Beaully – Denny OHL, precisely at 2.2 km south of Tomich and continues for a further 1.5 km (approximately following the route of the OHL) through further open heathland areas. Three existing access tracks pass through the Site. These are shown on **Figure 1a** and **Figure 1b**.

A section of the east of the Site and its immediate east comprises the proposed Bingally substation site which includes open heathland with juvenile trees present sporadically across the Site elevation.

The ground level of the Site slopes gently south to north and east to west whereas the proposed Bingally substation site is generally flat. An existing access track with gravel surfacing passes through the Site, with a drainage channel running alongside the track. An old foot bridge is located at approximately 500 m northwest of the Site.

Evidence of recent ground investigation works including ground disturbance and monitoring well apparatus were noted during the walkover within the proposed Bingally substation site.

No residential dwellings are present within 500 m of the Site.

No sources of potential contamination were observed during the walkover.

Photos from the walkover are included as **Appendix B**.



## 3 Site History

### 3.1 Introduction

The following account of the historical development of the Site and its immediate surroundings are based on a review of historical OS maps and aerial photography both obtained as part of a Groundsure Report (**Appendix C**), and a review of publicly available web-based mapping services.

AECOM also notes that only indicative map scales are provided on the OS mapping. Where dates are stated, these refer to the dates of maps on which the features are present, have changed use or are no longer annotated, and do not necessarily refer to the exact dates of existence of a particular feature. Development that may have occurred between map editions is recorded as occurring on the latter published map, hence there are some limitations to the accuracy to the date of development unless supplementary evidence is available.

### 3.2 Historical Ordnance Survey Mapping and Aerial Photographs

A review of historical land uses within the Site and surrounding areas has been undertaken using the Groundsure maps and aerial photography and is summarised in **Table 3-1** below. It should be noted that the search has been limited to within 250 m of the Site, with only notable land uses beyond this distance included.

Where map dates are not included in the table below, there was no significant information present on those maps, or there were no apparent land use changes shown for these dates.

**Table 3-1 Summary of Historical Mapping and Aerial Photography**

Dates	Features within study area	Features within 250 m of study area
1872 (1:10,560, 1:10,000, 1:2500, 1:1250)	<ul style="list-style-type: none"> <li>The Site was undeveloped with mainly agricultural land and forestry across the Site;</li> <li>Tracks across the Site;</li> <li>A sheepfold to the west of the Site; and</li> <li>The Allt an Rathain watercourse passes through the centre of the Site.</li> </ul>	<ul style="list-style-type: none"> <li>Access tracks within 250 m from the Site; and</li> <li>OHL towers within 250 m north and south from the Site. The immediate surrounding comprises agricultural land and forestry.</li> </ul>
1901 (1:10560)	<ul style="list-style-type: none"> <li>Sheepfold no longer present; and</li> <li>No other significant changes.</li> </ul>	<ul style="list-style-type: none"> <li>More agricultural land and forestry within 250 m from the Site; and</li> <li>No other significant changes.</li> </ul>
1969 (1:10560) 1971 (1:10000, 1:2500)	<ul style="list-style-type: none"> <li>OHL towers passing through the Site, running south – north;</li> <li>Additional agricultural land and forestry across the Site;</li> <li>Access tracks and fords across the Site; and</li> <li>No other significant changes.</li> </ul>	<ul style="list-style-type: none"> <li>Agricultural land and forestry and access tracks.</li> </ul>
1991 (1:10000) 1995 (1:2500)	<ul style="list-style-type: none"> <li>No significant changes.</li> </ul>	<ul style="list-style-type: none"> <li>No significant changes.</li> </ul>
2001 (1:10000)	<ul style="list-style-type: none"> <li>New quarry at west of the Site; and</li> <li>No other significant changes.</li> </ul>	<ul style="list-style-type: none"> <li>No significant changes.</li> </ul>
2003 (1:1250)	<ul style="list-style-type: none"> <li>No significant changes.</li> </ul>	<ul style="list-style-type: none"> <li>Access tracks to the east and west of the Site; and</li> <li>No other significant changes.</li> </ul>
2010 (1:10,000)	<ul style="list-style-type: none"> <li>No significant changes.</li> </ul>	<ul style="list-style-type: none"> <li>No significant changes.</li> </ul>
Google Earth 2024 (2016)	<ul style="list-style-type: none"> <li>Less agricultural and forestry land across the Site; and</li> <li>No other significant changes.</li> </ul>	<ul style="list-style-type: none"> <li>Less agricultural land and forestry within 250 m east and west of the Site; and</li> <li>No other significant changes.</li> </ul>



Dates	Features within study area	Features within 250 m of study area
2024 (1:10000)	<ul style="list-style-type: none"><li>Quarry within the west of the Site no longer shown (possibly infilled); and</li><li>No other significant changes.</li></ul>	<ul style="list-style-type: none"><li>No significant changes.</li></ul>
OS Bing Map (2024)	<ul style="list-style-type: none"><li>The Site remains agricultural land and forestry across the Site.</li></ul>	<ul style="list-style-type: none"><li>No significant changes.</li></ul>

### 3.3 Summary of Potential Historical Contamination Sources

This section summarises potential contamination on site and in the vicinity associated with historical features identified in **Section 3.2**. These include:

- Made ground associated with the construction of the existing OHL towers (on-site and off-site), paths and access tracks (on-site and off-site), surrounding plant and equipment use in the forestry industry (on-site and off-site);
- Additionally made ground may be associated with the potential infilling of the quarry (on-site). This infilling could have the potential for contaminants such as metals and inorganic compounds, pH, Polycyclic aromatic hydrocarbons (PAHs), total petroleum hydrocarbons (TPH) including benzene, toluene, ethylbenzene, xylene (BTEX) and methyl-tert-butyl-ether (MTBE), semi volatile organic compounds (SVOCs), volatile organic compounds (VOCs), sulphates, sulphides, cyanides and phenols;
- Potential ground gas generation from infilled quarry (on-site);
- Sheepfold (on-site) could have to the potential to release contaminants such as arsenic and pesticides;
- No other significant contaminant features were identified within 250 m of the Site.



## 4 Existing Information Review

### 4.1 Introduction

Information provided to AECOM related to the proposed Bingally substation site from previous ground investigation (GI) reports, planning developments, and planning applications (i.e. Highland Council Contaminated Land Officer) have been reviewed as part of this study. Relevant information relating to the Site, geological or land quality status has been subject to a review and summary as part of this report.

### 4.2 Third Party Information Review

#### 4.2.1 Jacobs, ASTI Substation Site-LT521 Fasnakyle Ground Investigation Report (April 2024)

SSEN Transmission designed a ground investigation to assess the ground / groundwater conditions and geotechnical risks, in the areas of the Site and the proposed Bingally substation site, and extreme south of the access track only<sup>2</sup>, and provided information for detailed design. The GI was also undertaken to assist in identifying a preferred location for the proposed Bingally substation and to investigate and quantify the geotechnical and geo-environmental conditions at the Site and proposed Bingally substation site. A further aim of the investigation was to enable soil classification and derivation of geotechnical and geochemical parameters of the encountered materials for the design of the earthworks and structures associated with the proposed Bingally substation.

The GI was undertaken by Igne, formerly known as Raeburn Drilling and Geotechnical Ltd, with the findings summarised in their factual report (ref: Proposed LT521 Fasnakyle<sup>3</sup> 400 kV Substation, Report on Ground Investigation, 12 February 2024) for the works.

Jacobs was appointed in October 2023 by SSEN Transmission to supervise the Igne ground investigation, check the factual report and prepare a Ground Investigation Report (GIR). The ground investigation report was provided to AECOM for review. A copy of this report is available in **Appendix D**.

The GI has been done in the area of the Site and in the area of the proposed Bingally substation site (proposed substation site and extreme south of the access track only) which is to the immediate east of the Site. The western and southern boundaries of the Site were not investigated as part of the GI. This summary of the Jacobs UK Ltd. (Jacobs) report will reference the information relevant to the Proposed Development Site only.

A site walkover was undertaken by Jacobs across several days in November 2023, which presented similar findings to the AECOM walkover survey.

The report also reviewed details on historical mapping and environmental setting. The report identified the following key findings relevant to the Site and within a radius of 250 m:

- No historical buildings were noted within the Site and there is no indication that the area has been used for anything other than forestry in the past. Aerial imagery suggest that the commercial forest was planted prior to 1989 and was deforested in 2016.
- The Beaully – Denny OHL in the centre of the Site first appears on the OS map series 1949-1973 and has remained in the same location to the present day, including when it was upgraded to the current 400 kV / 275 kV circuits in 2015.
- Access tracks are also first shown on the OS map series 1949-1973 and were likely constructed at the same time as the Beaully – Denny OHL.
- Jacobs reviewed the BGS published geological mapping and nearby historical borehole logs (within 1 km from the Site). The description of borehole logs located within 250 m from the Site is as follow:
  - Made ground (on-site) from surface to a maximum of 0.40 m bgl (below ground level) (NH32SW1 on-site);
  - Peat (on-site / off-site) from surface to a maximum of 0.80 m bgl (NH22SE1 on-site);

<sup>2</sup> The full access track was not investigated as part of the recent ground investigation.

<sup>3</sup> The project is now referred as Bingally 400 kV substation.



- Sand and gravel (on-site / off-site) underlying the peat or made ground up to a maximum of 4.00 m bgl (NH22SE1 on-site);
- Weathered psammite / broken rock (on-site / off-site) underlying the superficial deposits between 2.50 m bgl and 3.90 m bgl (top of bedrock) (NH32SW1 on-site, NH22SE2 on-site, NH22SE3 off-site); and
- Psammite bedrock (on-site / off-site) underlying the superficial deposits or weathered psammite between 2.50 m bgl and 4.00 m bgl (top of bedrock) (NH32SW1 on-site, NH22SE1 on-site).

The report highlighted that peat is a key risk at the Site and something that will need to be addressed as part of the detailed design, with a Peat Management Plan (PMP) and a Peat Landslide Hazard Risk Assessment (PLHRA) likely to be required.

The report identified potential sources of contamination as follows:

- Discrete areas of made ground to be encountered during development works associated with the existing power line access tracks / infrastructure and forestry land use.

The report identified potential pathways and receptors as follows:

- **Construction Workers** – During the excavation works, construction workers may be exposed to subsurface soils and shallow groundwater, therefore, if present, any contaminants in both surface and deeper soils and / or groundwater may pose a potential risk through dermal contact with soil, ingestion of contaminants or inhalation of ground gas and soil vapour (primarily during below ground works / excavations);
- **Site End Users** – Future site users may be impacted by soils reused on site-for landscaping purposes which may pose a potential risk through dermal contact / ingestion of contaminants; and
- **Infrastructure on-site and off-site** – Potential to be impacted by migration of contaminants and ground gas / soil vapour through the creation of off-site migration pathways.

The report has excluded the following potential exposure pathways and subsequent receptors:

- **Water Environment** –The Water Environment (surface water and groundwater) has not been considered given the lack of potential land contamination sources and nature of the construction works proposed, as it is assumed any pathways will already be in place.

The report gives a summary of the results presented in the ground investigation factual report: Proposed LT521 Fasnakyle 400 kV Substation, Report on Ground Investigation, Igne, February 2024 (a summary is presented in **Section 4.1.2** below).

A review of the ground information has been undertaken by Jacobs to assess potential contamination risks and constraints associated with the proposed works. The land contamination assessment has been undertaken in accordance with BS 10175:2011(+A2:2017) and relevant technical guidance including Land Contamination Risk Management (LCRM<sup>4</sup>). The following summary is relevant to the Site and 250 m radius:

- **Risks to Construction Workers:**
  - A comparison of available soil chemical results did not note any exceedances of the Acute Generic Assessment Criteria (AGACs) which are considered appropriate for short-term risk to construction workers;
  - Exceedances of residential (without plant uptake) GAC values were recorded in soils (natural deposits) for total chromium with exceedances recorded in three of the four samples analysed on the Proposed Development. A maximum concentration of 22 mg/kg was recorded in BH14 at 0.50 m bgl which was taken from gravelly very silty fine to coarse sand with cobbles;
  - No other test results were recorded above the GAC; and
  - No asbestos containing materials were identified within the samples screened.
- **Risk to Site End Users:**
  - There were no GAC exceedances for the commercial / industrial end use GAC value for total chromium.

<sup>4</sup> UK Government, 2023. *LCRM – Land Contamination Risk Management* [online]. Available at: <https://www.gov.uk/government/publications/land-contamination-risk-management-lcrm>



- **Risks to Construction Workers and End Users from Groundwater:**

- Groundwater analysis was not undertaken during the ground investigation works. However, due to the absence of potential contamination sources, it is considered unlikely that contaminated groundwater will be encountered within the Site area.

- **Risks to Construction Workers from Ground Gas:**

- Ground gas risk was assessed in the Jacobs report based on three rounds of gas monitoring (January to March 2024). It should be noted that additional gas monitoring has been undertaken on site;
- For the Site and surrounding 250 m radius, methane concentrations did not exceed either the Lower Explosive Limit (LEL) of 5% v/v and Upper Explosive Limit (UEL) of 15% v/v. The short-term and long-term exposure limits for carbon dioxide, carbon monoxide and hydrogen sulphide were not exceeded;
- For the Site and surrounding 250 m radius, depleted oxygen concentrations (below 19 % v/v) were recorded in 38 boreholes monitored with a minimum concentration of 15.400% v/v in BH183;
- The Jacobs report stated that the results show that ground conditions at the Site are unlikely to present a potential asphyxiating or explosive risk to construction workers. However, due to the presence of peat deposits, ground gas risks may warrant further consideration during below ground or confined space working should this be undertaken; and
- Jacobs recommended that the management of any excess peat arisings will also require appropriate consideration. Further sampling and full Waste Acceptance Criteria (WAC) testing should be undertaken to determine a provisional classification of the material for disposal in line with BS EN 12457.

- **Risks to Site End Users – Ground Gas:**

- As no buildings are planned within the Site, the risk to end users from ground gas is not considered relevant.

## AECOM Comments

The elevated concentrations of Chromium recorded during the Jacobs risk assessment is likely to be representative of background concentrations within this area of Scotland. With reference to the BGS document ‘*Great Glen: Regional Geochemical Atlas*’ published 1987, natural background concentrations of chromium in Scotland are typically elevated. The notes within the chromium regional background map state the following:

*“The Morar Division has a higher background (average 85 ppm [85 mg/kg] Cr) than the Loch Eil Division (average 65 ppm [65 mg/kg]), despite the presences amphibolites in the latter. This is consistent with the higher proportion of basic Lewisian detritus in the Morar Division and the increased maturity of the Loch Eil Division metasediments”.*

As bedrock is present at shallow depths across the Site area, and overlying sediments are likely to have been derived to a degree from the underlying bedrock geology, the recorded concentrations of Chromium in superficial deposits of up to 22 mg/kg are not unanticipated, and likely represent natural background concentrations from natural materials within this area.

### 4.2.2 Igne, Proposed LT521 Fasnakyle 400 kV Substation, Report on Ground Investigation (May 2024)

SSEN Transmission commissioned Igne (formerly Raeburn Drilling & Geotechnical Limited) to undertake a GI for the LT521 Fasnakyle<sup>3</sup> project, in the area of the Site and the proposed Bingally substation site. The Site works were carried out under the supervision of Jacobs. The objective of the works was to provide information on the ground conditions for design and construction of the Proposed Development.

The Site work was carried out between 6 November and 23 January 2023 and in accordance with BS EN1997-2:2007, BS5930, BS10175 and in-house Igne procedures. Additionally, four rounds of gas monitoring were undertaken between January and April 2024.

The report on GI comprised borehole and trial pits records, testing records, laboratory results, photographs, and a site plan. A copy of the Igne Ground Investigation Report is available in **Appendix D**.



The total GI works included 25 boreholes sunk by a mixture of dynamic sampling, rotary open-hole and rotary core drilling methods. Six boreholes were sunk on the Site area to a maximum depth of 8.75 m bgl (BH17). A total of 38 trial pits were excavated by mechanical means, across the Site and the proposed Bingally substation area, with seven trial pits sunk to a maximum depth of 2.00 m bgl (TP26) on the Site. Additionally, 6,270 peat probes were undertaken across the Site, and alternative areas. Of the probes undertaken a limited number were undertaken within the Site, with all located in the northwestern quarter, surrounding and within the parts of the proposed Bingally substation which are located within the Site. The GI included the majority of the Site, except the western and southern sections of the Site.

Perforated standpipes were installed in three boreholes between 1.00 m bgl (BH26) and 6.750 m bgl (BH04), and in five boreholes located within 250 m surrounding site radius between 1.00 m bgl (BH18) and 7.50 m bgl (BH04). These were installed in superficial deposits and bedrock to monitor ground gas. In addition, groundwater levels were recorded during ground gas monitoring.

Recovery of disturbed samples from all exploratory holes and hand pits for geotechnical, geochemical and geo-environmental laboratory testing.

The following geo-environmental tests were carried out:

- Metals (Toxic 9 Suite);
- Inorganic Suite (pH, total cyanide and sulphate);
- Total Petroleum Hydrocarbon Criteria Working Group / Volatile Petroleum Hydrocarbon Criteria Working Group (TPHCWG / VPHCWG);
- TPHCWG Aliphatic / Aromatic Split;
- Polyaromatic Hydrocarbons (PAH) (USEPA 16);
- VOCs / SVOCs; and
- Asbestos.

The report identified the following key findings:

- Peat deposits were encountered within the Site, from the limited GI information available;
- Chemical contamination testing was carried out on four soil and two leachate samples from peat and superficial deposits, in the Site and 250 m surrounding radius;
- No asbestos containing materials were identified within the soil samples analysed; and
- Groundwater was encountered in four boreholes and five trial pits between 0.20 m (TP26, TP30) and 2.60 m bgl (BH17)].

A summary of the geological strata encountered during the GI on the Site is presented below:

- Topsoil was encountered in TP27 (on-site) only, recorded to a maximum depth of 0.20 m bgl. Topsoil was described as dark brown sandy locally spongy fibrous peaty topsoil;
- Made ground and evidence of contamination was not encountered during the GI;
- Peat was encountered from surface to a maximum depth of 2.50 m (TP17 (on-site)) within four boreholes and in six trial pits on site. Suspected peat was also encountered within peat probes undertaken locally within the Site. The peat depths estimated from the probing were typically less than 2 m in thickness, although localised areas of deeper peat were recorded. Where observed in the relevant exploratory holes within the Site, the Peat was generally described as dark brown slightly sandy plastic amorphous locally spongy fibrous peat. The Von Post scale for the humification and estimation of moisture content for the Peat, was typically recorded in the range of H4 to H5 / B1 to B2, although humification of up to H8 was locally recorded as well as moisture contents of up to B3;
- Superficial deposits of sand and gravel (on-site) were encountered from surface (BH14, BH16, BH23 on-site) to 3.20 m bgl (BH17 on-site). Granular Glacial Deposits were generally encountered beneath the peat or topsoil within five boreholes and five trial pits;
- Gravel was described as brownish grey sandy fine to coarse angular to subangular gravel of psammite (BH14 on-site). Sand was generally described as medium dense grey / brown very gravelly silty fine to coarse with cobbles (BH14 on-site). Gravel of psammite and granite (BH18);



- Weathered bedrock (on-site) was recorded within five boreholes beneath the peat and Granular Glacial Deposits between 0.50 m bgl (BH20 on-site) and 3.40 m bgl (BH17 on-site) (top of bedrock) and described as weak, locally medium strong and strong grey micaceous psammite slightly weathered evident as an orange brown staining on fracture surfaces or strong pinkish orange granite. Moderately weathered evident as an orange, brown staining (BH20);
- Bedrock (on-site) was encountered within four boreholes between surface (BH20 on-site) and 3.20 m bgl (BH17-on-site). Within the trial pits probable bedrock was encountered between 0.20 m (TP27-on-site) and 1.40 mbgl (TP15-on-site) (top of bedrock). Bedrock was not encountered within TP17 (on-site) and TP26 (on-site) and these holes terminated at depths of 2.50 m and 2.00 m bgl respectively. The bedrock mainly comprises psammite, and pelite with occasional igneous intrusions (granite); and
- Four rounds of ground gas monitoring (including groundwater level monitoring) were undertaken within three boreholes, with a range in atmospheric pressure between 957 (BH23) and 997 mbar (BH14) within the Site. Additionally, four ground gas monitoring were undertaken within five boreholes with a range in atmospheric pressure between 950 ppm (BH11) and 992 ppm (BH16, BH21), within 250 m radius from the Site. The following ground gas (peak levels) and groundwater results were recorded on and within a 250 m radius of the Site:
  - Methane (CH<sub>4</sub>) at 0% v/v (by volume);
  - Carbon dioxide (CO<sub>2</sub>) between 0 % v/v and 0.50% v/v (BH23) within the Site, and between 0% v/v and 2.20% v/v (BH11) within 250 m radius;
  - Oxygen (O<sub>2</sub>) between minimum 15.00% v/v (BH14) and 19.60% v/v (BH23) within the Site and between 16.40% v/v (BH11) and 20.10% v/v (BH16) within 250 m radius;

[AECOM comment: the fourth round in BH18 (within 250 m radius), is not included as the gas monitoring appears to be affected by a high water level];

  - Hydrogen sulphide (H<sub>2</sub>S) between 0 ppm and 1 ppm within the Site and within 250 m radius;
  - Carbon monoxide (CO) between 0 ppm and 3 ppm, and between 0 ppm and 2 ppm within 250 m radius; and
  - Groundwater levels were recorded in three boreholes within the Site from surface (BH23 to 0.80 m bgl (BH26) and in five boreholes located within 250 m radius between 0.25 m bgl (BH18) and 4.85 m bgl (BH11) None of the locations were recorded as dry.

## 4.3 Local Authority Consultation

### 4.3.1 Contaminated Land Officer - Consultation

AECOM requested information from the Highland Council (THC) Contaminated Land Officer relating to potentially contaminated land within the Site within a radius of no greater than 500 m from the proposed Bingally substation site and access track. A separate request was not made for the Proposed Development as the area was substantially covered in the proposed Bingally substation request. The following information has been issued to AECOM on 12 April 2024 (ref.24/07), a copy of the correspondence is available in **Appendix E**:

- THC Contaminated Land Team does hold records of two potential sources of contaminated land;
- There are no details of any potentially contaminative sources within the Site or within the 500 m immediate surrounding area;
- THC is not aware of any other recorded current or historical environmental problems within the Site and adjacent areas with regards to ground contamination or solid waste arisings;
- There are no details of any current / former landfills within 250 m of the Site;
- There are no known historical landfills within 500 m of the Site;
- There are no known areas of ecological sensitivity in the vicinity of the Site; and
- THC is not aware of any further environmental information for the Site.



### 4.3.2 SEPA Freedom of Information Request

AECOM requested information from SEPA to assess any information relating to potentially contaminated land within the Site within a radius of no greater than 1 km from the proposed Bingally substation site (and access track). A separate request was not made for the Site as the area was substantially covered in the proposed Bingally substation request. The following information has been issued to AECOM on 26 April 2024 (Ref-Response to F0196906), and attached as **Appendix E**:

- SEPA does not hold any contaminated land information for the Site or surrounding area.



## 5 Environmental Setting

### 5.1 Published Geology

The following summary of the geology beneath the Site is based on a review of geological mapping available from the BGS Geoindex, published BGS 1:50,000 scale map Sheets 73 W Invermoriston (dated 2012 and 1976), and the Groundsure Report (**Appendix C**).

Extracts of the geological maps indicated above are presented below as **Figure 3** and **Figure 4**.

#### 5.1.1 Artificial Ground

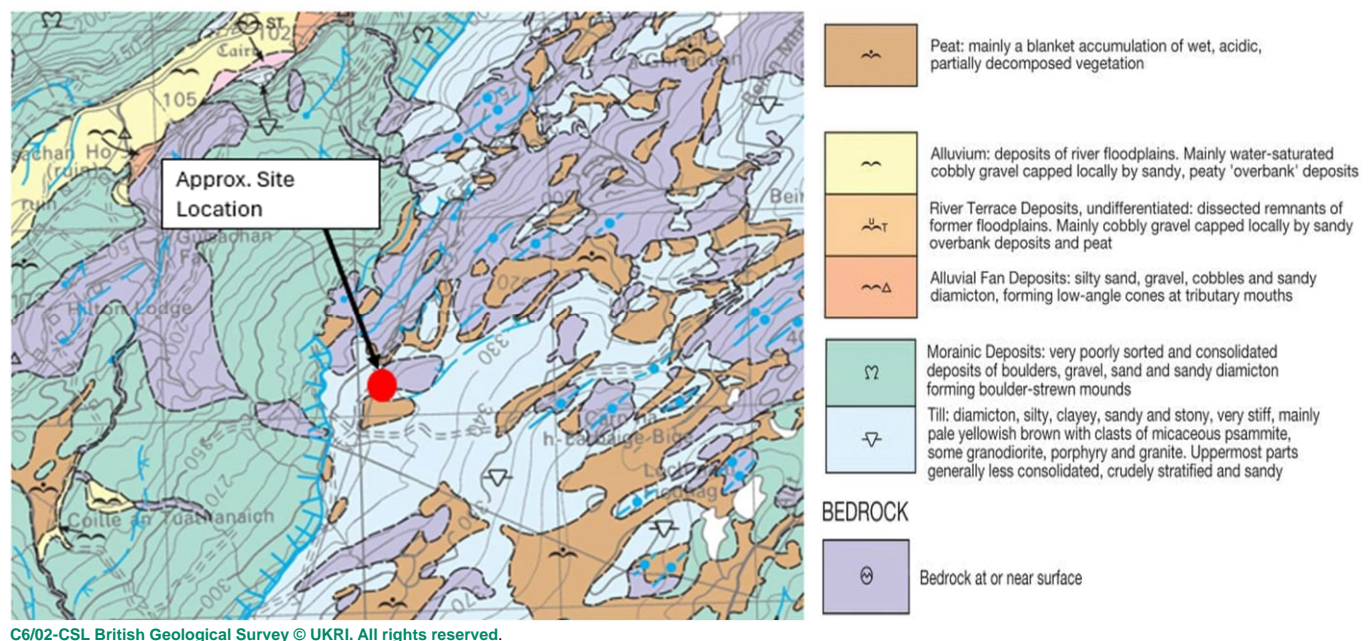
There are no BGS designated areas of made ground or artificial ground recorded on-site or within 250 m of the Site. Although no made ground is shown on published BGS mapping on the Site, localised made ground may be present associated with the construction of the OHL towers, paths and access tracks and forestry land use. Additionally made ground may be associated with the potential infilling of the historical quarry (on-site).

#### 5.1.2 Natural Superficial Deposits

Superficial geology comprises peat and Glacial Till (Devensian-Diamicton), with some areas where superficial deposits are not indicated to be present. The superficial deposits for the Site are shown on **Figure 3** below.

Moranic Deposits (of sand, gravel and boulders)<sup>5</sup> are shown approximately 160 m west of the Site and within the west of the Study Area. Alluvium (of sand, gravel and boulders) are present off-site (1 km west of the Site).

**Figure 3 Superficial Geology**



#### 5.1.3 Solid Geology

The bedrock geology underlying the Site comprises Tarvie Psammite Formation-Psammite (named the Upper Garry Psammite Formation on BGS 1993 map edition) from the Loch Eil Group. The bedrock geology is shown in **Figure 4** below.

A localised areas of unnamed igneous intrusion (pre-caledonian in age) is present 230 m west of the Site. Glen Moriston Vein Complex- Pegmatite and Leucogranite is present off-site approximately 680 m west of the Site.

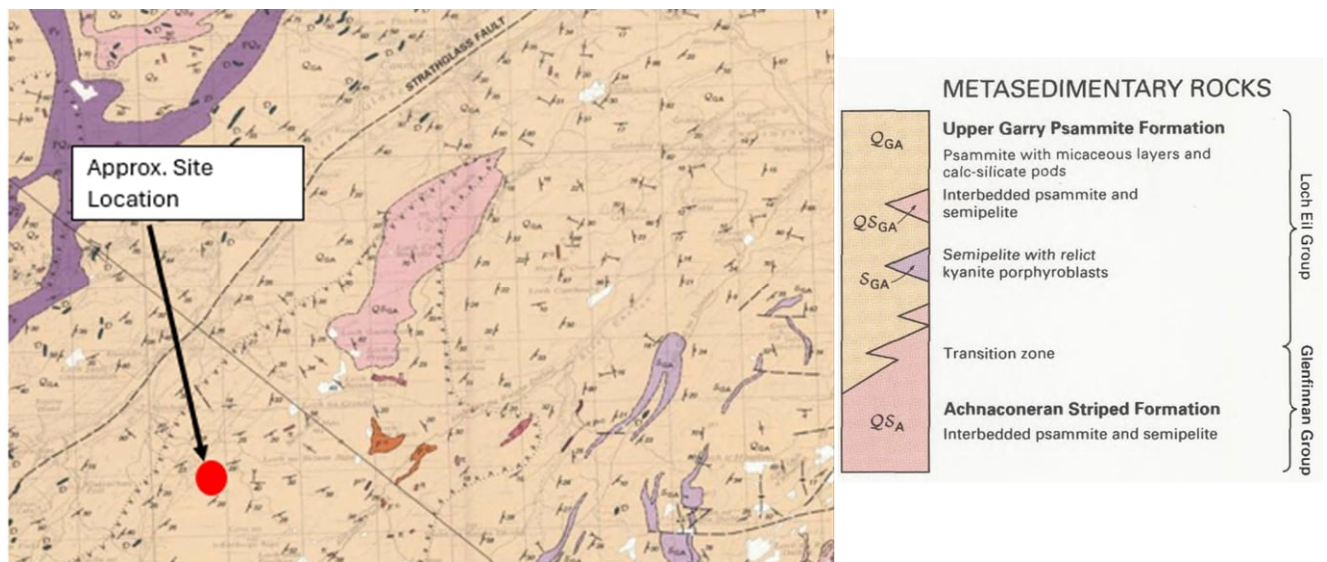
<sup>5</sup> This is named as Hummocky (Moundy) Glacial Deposits Devensian Diamicton on the BGS GeoIndex Onshore Map.



The Tarvie Psammite Formation is defined by BGS as 'predominantly psammite, thin-bedded, siliceous to micaceous. Local, thin semipelite beds are muscovite-rich and locally migmatitic and large quartzite lenses occur, in particular near the base.'

Linear features of 'ice-marginal glacial single-sided meltwater channel' are shown within the north of the Site and approximately 6 m, 190 m, 330 m and 910 m northwest of the Site. The 'axis of large-scale glacial flute' is shown within 1 km east and north from the Site. Pegmatitic rock veins are shown approximately 570 m west of the Site. Glacial meltwater channel centre lines (undifferentiated) are present at approximately 290 m to the west, and at 1 km northeast of the Site.

**Figure 4 Solid Geology**



C6/02-CSL British Geological Survey © UKRI. All rights reserved.

## 5.2 Historical Borehole Records

Historical borehole records available on the BGS Onshore Geoindex<sup>6</sup> have been reviewed. Four boreholes were recorded within the south of the Site. Records of these logs are included in **Appendix F**. The four boreholes are NH32SW1, NH22SE1, NH22SE2 and NH22SE4 and are discussed in **Section 4.2**.

## 5.3 Mining and Quarrying

The Coal Authority website<sup>7</sup> determined that the Site does not lie within a Coal Authority Reporting Area and is also confirmed by the Groundsure Report (**Appendix C**).

The Groundsure Report indicates two pits within and in the vicinity of the Site:

- 'Guisachan Forest Pit' within the west of the Site for commodity of Igneous and Metamorphic Rock, and of 'ceased status'; and
- There is an additional 'Guisachan Forest Pit' located at approximately 520 m<sup>8</sup> east of the Site for the commodity of sand and gravel, and of ceased status.

<sup>6</sup> BGS, 2022. *GeoIndex Onshore* [online]. Available from:

[https://mapapps2.bgs.ac.uk/geoindex/home.html?\\_ga=2.177527078.2074792173.1725376621-1688325900.1725376621](https://mapapps2.bgs.ac.uk/geoindex/home.html?_ga=2.177527078.2074792173.1725376621-1688325900.1725376621)

<sup>7</sup> The Coal Authority, 2023. *The Coal Authority Map Viewer* [online]. Available from: <https://datamine-cauk.hub.arcgis.com/>

<sup>8</sup> Based on measured distance from Google Earth Pro 2024



## 5.4 Hydrology

The SEPA Water Environment Hub<sup>9</sup>, the Groundsure Report (**Appendix C**) and other publicly available sources have been reviewed to identify relevant hydrological features on-site and in the surrounding area. The hydrology of the area is summarised in **Table 5-1** below.

**Table 5-1 Summary of On-site and Surrounding Area Hydrology**

Feature	Distance and Direction*	Flow Direction	Description
Various unnamed drains	On-site, north	South	Various unnamed ditches / drains present (NGR - NH 29843 23437).
River Allt an Rathain	On-site, southwest	Southeast	Sourced at NH 30289 23271, tributary of Allt na Sidhean which it flows into at NH 28875 24490. Flows adjacent to the Glen Affric National Nature Reserve (NNR).
Unnamed water course	On-site, southwest	Southeast	Tributary of Allt an Rathain which it enters at approximately Sourced at NH 30224 23865.
Unnamed water course	On-site, southwest	Southeast	Sourced at NH 30123 22790 from Allt na Faiche Bige and joins Allt an Rathain at approximately NH 29465 24076. Flows adjacent to the Glen Affric NNR.
River Allt nam Fiodhag	410 m, south	South	Sourced from Allt na Sidhean, crosses OHL in between T82 and T81
Allt Bail a' Chladaich	620 m, northeast	Southeast	Sourced from Allt a' Bhuachaille, crosses OHL near T75

\*All distance measured at closest point to site area.

The watercourses noted in **Table 5-1** above are likely to be receptors as they are located within the Site or in the surrounding area. Specifically, the unnamed watercourses are in proximity to the Site. Whilst some of the above features are in close proximity to the Proposed Development area, impacts to surface water features are considered likely to be minimal.

## 5.5 Hydrogeology

Information from the Groundsure Report (**Appendix C**), BGS Onshore Geoindex<sup>6</sup> Aquifer Productivity (Scotland) GIS datasets Version 2 Revised Report<sup>10</sup> and the Scotland's Aquifers and Groundwater bodies<sup>11</sup> have been reviewed in relation to the aquifer classifications for superficial deposits and bedrock underlying the Site. These conclude that:

- Superficial deposits underlying the Site are not classified under a groundwater aquifer according to the BGS Geoindex. Similarly, the Groundsure Report does not classify the superficial deposits as a groundwater aquifer to the south of the Site; and
- According to BGS Geoindex, the bedrock of the Loch Eil Group is characterised as a low productive aquifer. With small amounts of groundwater in near surface weathered zone and secondary fractures. The Groundsure Report describes the flow as virtually all through fractures and other discontinuities.

Groundwater bodies are classified by SEPA under the Water Framework Directive (WFD), whereby water bodies in Scotland are classed as High, Good, Moderate, Poor or Bad. A search of SEPA's online database<sup>7</sup> was conducted regarding the groundwater quality beneath the Site. The Site includes one bedrock water body, Northern Highlands (ID: 150701) which has a 'good' overall status (2022) according to SEPA with minor fracture flow.

Groundwater flow direction within the aquifer units will likely be influenced by the local topography. Mapping indicates that the local topography falls downwards to the northwest. As such, groundwater is anticipated to flow in an approximate north westerly direction towards the River Glass. However, the nature and extent of groundwater bodies within the area is unknown, as such limited certainty can be placed on groundwater flow direction.

<sup>9</sup> SEPA, 2014. *Water Environment Hub* [online]. Available from: <https://www.sepa.org.uk/data-visualisation/water-environment-hub>

<sup>10</sup> BGS, 2015. *User Guide: Aquifer Productivity (Scotland) GIS datasets, Version 2. Revised Report* [online]. Available from: <https://nora.nerc.ac.uk/id/eprint/509619/1/OR15003.pdf>

<sup>11</sup> BGS, 2015. *Scotland's aquifers and groundwater bodies* [online]. Available from: <https://nora.nerc.ac.uk/id/eprint/511413/1/OR15028.pdf>



### 5.5.1 Private Water Supply

According to THC Open Map Data portal, there are no private water supplies within 1 km of the Site.

## 5.6 Flood Risks

The SEPA Flood Maps for planning website<sup>12</sup> was reviewed in order to assess potential flood risks at the Site, which are summarised below:

- **River Flooding** – the Site is not in an area of designated flood risk from river flooding, suggesting that the flood risk is <0.1% chance;
- **Coastal Flooding** - The Site is not at risk of coastal flooding;
- **Surface Water Flooding** – SEPA flood mapping indicates sporadic areas across the Site to be of low to high risk from surface water flooding; and
- **Groundwater Flooding** – SEPA does not provide information on groundwater flooding risk. The Groundsure Report indicates that the Site lies predominantly within an area of low to negligible risk of flooding from groundwater.

The above does not constitute a formal flood risk assessment, which is out with the scope of this study.

## 5.7 Radon

The UK Health Security Agency's UK Radon website<sup>13</sup> was reviewed to determine potential radon risk for the Site.

According to the website, the majority of the Site is located within an area where 1-3% of homes are above the action level for radon gas. The southwest of the Site is located within an area where radon potential is greater than 30%. Additionally, areas with radon potential of 3-5% are located approximately 330 m northwest of the Site.

The above (except for radon potential 3-5%) is also confirmed by the Groundsure Report (**Appendix C**), which propose basic protection on the majority of the Site, and full protection in areas with radon potential of greater than 30%.

It is therefore anticipated that radon protective measures will be necessary for occupied buildings should the construction of buildings within the Site be undertaken. As buildings are not proposed as part of the Proposed Development, radon is not considered further in this report.

## 5.8 Environmental Designated Sites and Listed Buildings

The NatureScot Viewer<sup>14</sup> "Sitelink" was reviewed to identify environmental designated sites.

The database indicated that there are no recorded sensitive sites including Sites of Special Scientific Interest (SSSIs), Conserved Wetland Sites (Ramsar Sites), Special Areas of Conservation (SAC), Special Protection Areas (SPAs), Local Nature Reserves (LNR), or Forest Parks within the Site. A section of the Glen Affric NNR (moorland) is located within the southwest of the Site.

The above was confirmed as part of a review of the Groundsure Report (**Appendix C**). Additionally, approximately five areas of designated ancient woodland were indicated within 1 km west of the Site. However, none are located within the Site.

PASTMAP interactive mapping service<sup>15</sup>, which provides access to the databases of Historic Environment Scotland (HES), and the Groundsure Report was consulted regarding sites of potential historical and / or archaeological significance. No features were recorded within 1 km of the Site.

<sup>12</sup> SEPA, 2024. *SEPA Flood Maps* [online]. Available from: <https://map.sepa.org.uk/floodmaps>

<sup>13</sup> UK Health Security Agency, 2022. *UK maps of radon* [online]. Available from: <https://www.ukradon.org/information/ukmaps>

<sup>14</sup> NatureScot, 2024. *SiteLink Map Search* [online]. Available from: <https://sitelink.nature.scot/map>

<sup>15</sup> Historic Environment Scotland, 2024. *PastMap* [online]. Available from: <https://pastmap.org.uk/map>



## 5.9 Unexploded Ordnance

To assess the potential risks from Unexploded Ordnance (UXO) at the Site, the Zetica Unexploded Bomb Risk Map<sup>16</sup> was reviewed. The Zetica mapping indicated a low risk for the Site and surrounding area, which is defined by Zetica as an 'area indicated as having 15 bombs per 1,000 acres or less'. A Zetica Pre-Desk Study Assessment (PDSA) has not recorded any WWII military activities on or affecting the Site, as presented in **Table 5-2** below. It is concluded that a detailed desk study, whilst always prudent, is not considered essential. The extended assessment is provided in **Appendix G**.

**Table 5-2 Summary of WWII Military Activities On or Affecting the Site**

Date	On or Affecting the Site
<hr/> Pre-WWI Military Activity <hr/>	
WWI Military Activity	None Identified
<hr/> WWI Bombing <hr/>	
	None identified on the Site.
WWII Military Activity on or affecting the Site	Military training is known to have taken place in rural areas of Scotland during WWII, but no readily available records have identified any such training on the Site.
<hr/>	
WWII Bombing	During WWII the Site was located in the Landward Area (LA) of Inverness-shire, which officially recorded 94No. High Explosive (HE) bombs with a bombing density of less than 0.1 bombs per 405 hectares (ha).
	No readily available records have been found to indicate that the Site was bombed.
<hr/>	
Post-WWII Military Activity on or Affecting the Site	None identified.
<hr/>	

## 5.10 Soil Classification

The National Soil Map of Scotland<sup>17</sup> was reviewed to determine the soil type on site and within the surrounding area.

The National Soil Map of Scotland identifies the main soil types across the Site and surrounding area as 'Peaty gleys with dystrophic semi-confined peat' and 'Humus-iron podzols'.

Areas of carbon-rich soil, deep peat and peatland habitats are mapped by the Carbon and Peatland Map 2016<sup>18</sup>. The top two classes, 1 and 2, taken together identify the nationally important resource. The classes identified within the Site are defined as follows:

- **Class 0:** Mineral soil - Peatland habitats are not typically found on such soils;
- **Class 1:** Nationally important carbon-rich soils, deep peat and priority peatland habitat, areas likely to be of high conservation value; and
- **Class 5:** Soil information takes precedence over vegetation data. No peatland habitat recorded. May also include areas of bare soil. Soils are carbon-rich and deep peat.

Class 0 (mineral soils) and Class 5 are the predominant soil classes across the Site and surrounding area. Localised areas of Class 1 nationally important deposits are recorded on the northeastern boundary and within the southern extent of the Site. The Class 1 soils recorded within the southern extent of the Site are recorded to extend to the south and east out of the Site, however, within the Study Area.

The National Scale Land Capability for Agriculture Map identifies the Site in a Class 6.3 - Land capable of use as rough grazings with low quality plants. The south of the Site is within a class 5.3 - Land capable of use as

<sup>16</sup> ZeticaUxo, 2024. *UXB RiskMap* [online]. Available from: <https://zeticauxo.com/guidance/risk-maps/>

<sup>17</sup> ESRI, 2024. *UKSO* [online]. Available from: <https://mapapps2.bgs.ac.uk/ukso/home.html>

<sup>18</sup> Scotland's environment, 2024. *Scotland's soils* [online]. Available from: [https://map.environment.gov.scot/Soil\\_maps/?layer=1](https://map.environment.gov.scot/Soil_maps/?layer=1)



improved grassland. Pasture deteriorates quickly. According to the DMRB LA 109 Scotland National Application these soils are classified as of low sensitivity<sup>19</sup>.

## 5.11 Regulatory Database Review

This section presents a summary of current and historical regulatory database entries included within the Groundsure Report (**Appendix C**) pertaining to the Site and surrounding land within 250 m which could result in soil and groundwater contamination. For the location of the relevant sources identified below, reference should be made to the Groundsure Report.

Generally, sites with regulated processes, registered radioactive substances, licensed waste management facilities and landfills, hazardous substances, fuel station entries and selected contemporary trade directory entries within 250 m of the Site, could, depending upon the nature of their activities, represent potential sources of contamination.

**Table 5-3 Summary of Regulatory Database and Records Review**

Data Type	On-site	Within 250 m
Recent Industrial Land Uses	- Six <sup>20</sup> existing OHL towers associated with the Beaulieu – Denny OHL, passing through the Site.	- OHL tower at 200 m northeast
British Pits	- Guisachan Forest Pit within the west area of the Site, of igneous and metamorphic rock, and with a ceased status.	- None Recorded

<sup>19</sup> Highways England, 2019. *Design Manual for Roads and Bridges – LA 109 Geology and Soils* [online]. Available from: <https://www.standardsforhighways.co.uk/tse/attachments/adca4c7d-4037-4907-b633-76eae30b9c0?inline=true>

<sup>20</sup> Three shown on Groundsure Report and three more shown on Google Earth Map. Original Groundsure Report was for the wider Proposed Development boundary including the access track and proposed substation (see separate AECOM report titled Bingally 400 kV Substation (AECOM 60701792-R-001 August 2024).



# 6 Preliminary Risk Assessment

## 6.1 General

The approach adopted by AECOM in order to assess risk associated with land contamination is in line with the Scottish Government's approach outlined in Planning Advice Note (PAN) 33 Development of Contaminated Land. The Scottish Government considers that the most appropriate approach is a 'suitable for use' one in which risks to human health and the wider environment are assessed within the context of the current or proposed use of the land in question.

The risk assessment described below follows the methodology set out in the Environment Agency's LCRM<sup>21</sup> guidance which was published in October 2020 and updated in 2023. The LCRM guidance has now replaced the earlier Model Procedures for the Management of Land Contamination (CLR11), which has been withdrawn. AECOM understands that at the time of writing, SEPA and the Scottish Government have not yet formally made their position clear on the published LCRM guidance. However, given that the methodology in the LCRM guidance is essentially the same as that in CLR11, the key difference being some of the terminology used, AECOM has adopted the more recent guidance in this assessment.

The basic approach to risk assessment, as followed in this report, involves four steps:

- **Hazard Identification** – establishing contaminant sources, pathways and receptors (the conceptual site model);
- **Hazard Assessment** – analysing the potential for unacceptable risks (what contaminant linkages could be present, what the effects could be);
- **Risk Estimation** – aiming to establish the magnitude and probability of the possible consequences (what degree of harm might result and to what receptors, and how likely is it); and
- **Risk Evaluation** – evaluating whether the predicted risk is unacceptable.

The LCRM guidance provides the following staged approach to aid the management of land contamination:

- **Stage 1:** Risk Assessment;
- **Stage 2:** Options Appraisal; and
- **Stage 3:** Remediation.

This assessment undertakes only the Stage 1 Risk Assessment, which LCRM guidance presents as three tiers:

- Preliminary Risk Assessment (Tier 1);
- Generic Quantitative Risk Assessment (GQRA) (Tier 2); and
- Detailed Quantitative Risk Assessment (DQRA) (Tier 3).

This report has been provided to meet the requirements for a Preliminary Risk Assessment (Tier 1).

The methodology adopted is described in detail in LCRM and relies on the development of a site-specific CSM consisting of contaminant linkages. A contaminant linkage requires three components:

- A source of contamination, for example due to historical site operations;
- A pathway, a route by which receptors can become exposed to contaminants. Examples include vapour inhalation, soil ingestion and groundwater migration; and
- A receptor, a target that may be exposed to contaminants via the identified pathways. Examples include human occupiers / users of the Site, the water environment, property or ecosystems.

For a potential risk to either environmental and / or human receptors to exist, a plausible contaminant linkage involving each of these components must exist. If one of the components is absent then a contaminant linkage, and thereby a potentially unacceptable risk, is also unlikely to exist. Where all three components are present, a

<sup>21</sup> Environment Agency, 2023. *Land contamination risk management* [online]. Available from: <https://www.gov.uk/government/publications/land-contamination-risk-management-lcrm>



potentially complete contaminant linkage can be considered to exist. This does not automatically imply the presence of unacceptable risk, but that further investigation of the potential contaminant linkages is required.

## 6.2 Initial Conceptual Site Model

The initial CSM has been developed to identify potentially complete contaminant linkages that may require further investigation to assess their existence and / or potential significance. The potential sources of contamination on or in the vicinity of the Site, receptors on or near the Site, and pathways on or near the Site are discussed within the following sub-sections.

The initial CSM assesses the potential risks / liabilities and constraints associated with the Site in its current condition, prior to any proposed redevelopment. Risks associated with the proposed redevelopment have also been assessed based on expected environmental and ecological sensitivity in line with the planning application and development description.

### 6.2.1 Potential Sources of Contamination

This section uses the information described in earlier sections of this report to identify potential sources of contamination on and within 250 m of the Site. Potential sources of contamination are listed in the tables below.

It should be noted that the historical use of the Site and surrounding area has presented limited potential for significant contamination to be present. Soil and groundwater contamination within the Site boundary or close proximity is considered unlikely, and should any minor contamination exist it is unlikely to represent an impact due to the absence of receptors.

**Table 6-1 Potential Sources of On-site Contamination**

Potential On-site Source	Potential Contaminants	Area On-Site Affected	Current / Historical
Potential made ground associated with construction of the of the existing OHL towers, and potential quarry infilling.	Metals, pH, PAHs, TPH including BTEX and methyl-tert-butyl-ether MTBE, SVOCs, VOCs, sulphates and sulphides.	OHL towers and existing OHL passing through the Site. Access tracks passing through the Site. Disused quarry within the west.	Current and Historical
Peat, made ground	Ground gas	Disused quarry within the west. Peat areas.	Current and Historical
Road and access tracks	PAH, TPH	Access tracks passing through the Site.	Current and Historical
Sheepfold	Arsenic and pesticides	West of the Site.	Current and Historical

**Table 6-2 Potential Sources of Off-site Contamination (within 250 m of OHL area)**

Potential Off-site Source	Potential Contaminants	Current / Historical
Potential made ground associated with construction of the existing OHL towers.	Metals and inorganic compounds, pH, PAHs, TPH including BTEX and MTBE, SVOCs, VOCs, sulphates, sulphides, phenols.	Current and Historical
Peat, made ground	Ground gas	Current and Historical
Road and access tracks	PAH, TPH	Current and Historical

### 6.2.2 Potential Receptors

The following potential receptors for contamination have been identified:

**Table 6-3 Potential Receptors**

Receptor	Description
Human Health	<ul style="list-style-type: none"> <li>Current and future site users, i.e. visitors to site (members of the public).</li> <li>Future on-site construction and maintenance workers.</li> </ul>



Receptor	Description
The Water Environment	<ul style="list-style-type: none"> <li>River Allt an Rathain River Allt nam Fiodhag River Allt nam Fiodhag; Allt Bail a' Chladaich and unnamed watercourses. Groundwater within superficial deposits.</li> <li>Groundwater within the underlying bedrock aquifer (Loch Eil Group, low productivity aquifer).</li> </ul>
The Built Environment	<ul style="list-style-type: none"> <li>Structures including concrete foundations.</li> </ul>
Sensitive Ecological Sites	<ul style="list-style-type: none"> <li>Glen Affric (NNR - moorland), located within the southwest of the Site.</li> </ul>

### 6.2.3 Potential Pathways

Potential pathways have been identified, which could link the potential sources with the potential receptors. These pathways are discussed by receptor type below in consideration of the development proposals.

**Table 6-4 Potential Pathways**

Pathway	Description
Human Health	<ul style="list-style-type: none"> <li>Future on-site workers by direct contact and/or ingestion of contaminated soil, dust and / or groundwater, inhalation of windblown dust. The presence of airborne dust may be exacerbated by demolition of the existing structures (towers in section 1.2) / construction work;</li> <li>Visitors to the Site area using the access track; and</li> <li>Inhalation of ground gas (confined spaces).</li> </ul>
The Water Environment	<ul style="list-style-type: none"> <li>Groundwater within the superficial deposits by leaching and migration of contaminants via shallow made ground (if present) and natural superficial deposits;</li> <li>Groundwater within the bedrock aquifer by leaching and migration of contaminants via shallow made ground and natural superficial deposits;</li> <li>Surface water via surface water run-off, and lateral migration of contaminants via shallow deposits and service runs; and</li> <li>Surface water by migration of contaminants via groundwater and introduction to river baseflow.</li> </ul>
The Built Environment	<ul style="list-style-type: none"> <li>Concrete construction materials by direct contact with contaminated soil and groundwater (e.g. hydrocarbons) and aggressive ground conditions (pH and sulphate); and</li> <li>Explosive risk from migration and build-up of ground gas within confined spaces.</li> </ul>

### 6.2.4 Discounted Sources / Pathways / Receptors

The following sources, pathways and receptors are discounted from the conceptual site model with the justification presented:

#### Sources (off-site):

- Nearby forestry use is generally not considered as a source of contamination, given the periodic machinery use only;
- The sheepfold shown on historical map 1872 only so it is unlikely to be a source of contamination today; and
- The Site is greenfield with no past historical construction. Asbestos is not anticipated. Moreover, any buildings built after 2000 are not expected to contain asbestos<sup>22</sup>.

#### Receptors:

- Private Water Supply as none within 1 km of the Site;
- Occupied buildings as none are proposed as part of the Proposed Development;
- Off-site third-party neighbours (excluding general visitors). There are no occupied buildings within 1 km of the Site; and
- Archaeological Receptors – No archaeological features have been identified within 1 km of the Site.

<sup>22</sup> UKHSA, 2024. *Asbestos: General information* [online]. Available from: [http://Asbestos:%20general%20information%20-%20GOV.UK%20\(www.gov.uk\)](http://Asbestos:%20general%20information%20-%20GOV.UK%20(www.gov.uk))



## 6.2.5 Qualitative Assessment of Source-Pathway-Receptor

Based on the information provided in this report, the following preliminary risk assessment tables have been formulated, with each identifying possible contaminants and contaminant linkages in the context of the current and Proposed Development.

At this stage, a qualitative risk assessment has been undertaken for these potential source-pathway-receptor linkages based on current DEFRA (Guidelines for Environmental Risk Assessment and Management)<sup>23</sup> and the CIRIA C552 Guidance<sup>24</sup> (see extract of the guidance in **Appendix H** including the coloured legend).

It must be noted that the following assessment is based solely on desktop study information and will require revision following any recommended intrusive site investigation works. The following assessment is based on consideration of both:

- The **likelihood** of an event (probability – takes into account both the presence of the hazard and receptor and the integrity of the pathway); and
- The **severity** of the potential consequence (takes into account both the potential severity of the hazard and the sensitivity of the receptor).

The risks associated with potential on and off-site contaminants identified are detailed in the **Table 6-5** below. The risk assessment ratings are explained in **Appendix H**:

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<sup>23</sup> DEFRA, 2011. *Guidelines for Environmental Risk Assessment – Green Leaves III* [online]. Available from: <https://assets.publishing.service.gov.uk/media/5a79d20540f0b66d161ae5f9/pb13670-green-leaves-iii-1111071.pdf>

<sup>24</sup> Lancefield, Mayell & Rudland, 2001. *Contaminated Land Risk Assessment – A guide to good practice* [online]. Available from: <https://www.ciria.org/CIRIA/ProductExcerpts/C552.aspx>



Table 6-5 Summary of Initial CSM and Risk Assessment

Source	Receptor	Exposure Pathway	Probability	Consequence	Risk Category	Justification	
On-site Contamination sources including made ground associated with construction of the of the existing OHL towers, access roads and tracks, and the potential infilling of the former quarry and peat	Human Health – On-site	Future site users post development	Dermal contact with and ingestion of contaminants in soil, soil-derived dust and water. Inhalation of contaminants in soil-derived dust.	Unlikely	Medium	Low Risk	The recent ground investigation did not encounter made ground on site. Concentrations of chromium recorded within the ground investigation which exceeded the assessment criteria are likely to be representative of natural background concentrations. Given the remote location of the Site and anticipated short duration visits, these concentrations are unlikely to represent a significant risk. For construction workers who would have increased exposure, this would be controlled by good site practice and health and safety legislation. The absence of other recorded contamination within the Proposed Development significantly reduces risks to site users in future. Whilst possible, contamination within the southern and western sections of the Proposed Development is currently unknown, it is unlikely to be present, and (if present at all) is likely to be isolated to localised areas only. Due to the location and nature of the Site, public access is expected to be limited. Ground gas risks associated with peat deposits may warrant further consideration during below ground or confined space working should this be undertaken.
			Inhalation of ground gas / vapour with explosive risk	Unlikely	Medium <sup>25</sup>	Low Risk	
		General public post development	Dermal contact with and ingestion of contaminants in soil, soil-derived dust and water. Inhalation of contaminants in soil-derived dust.	Unlikely	Medium	Low Risk	
		Construction / Maintenance Workers	Dermal contact with and ingestion of contaminants in soil, soil-derived dust and water. Inhalation of ground gas, and contaminants in soil-derived dust.	Unlikely	Medium	Low Risk	
	Water Environment -On-site and Off-site	Superficial and Bedrock Aquifers	Leaching of contaminants in the unsaturated zone to groundwater in underlying aquifers.	Unlikely	Medium	Low Risk	The recent ground investigation undertaken within the Site records groundwater strikes in four boreholes and five trial pits between 0.20 m (TP26, TP30) and 2.60 m bgl (BH17).
			Migration of contaminated water through preferential pathways such as underground services, pipes and granular material to groundwater in underlying aquifers.	Unlikely	Medium	Low Risk	Hydraulic continuity between shallow and deep groundwater is unknown but should be assumed. The limited extent of made ground in the Site and the absence of contamination recorded in samples and the lack of potentially contaminative historical land uses further decreases the risk to groundwater.
		Surface Water Features inc. River Allt an Rathain; River Allt	Lateral migration of contaminated groundwater with	Unlikely	Medium	Low Risk	Due to the presence of peat deposits and free draining soils, and the topography of the Site, the risk to surface

<sup>25</sup> Source severity has been downgraded to 'Medium' as ground gas sources identified have a 'Very Low or 'Low' ground gas generation potential and vapour sources are considered to be limited in potential concentration and extent. Therefore, vapour and ground gas are unlikely to generate significant concentrations capable of meeting the 'Severe' severity rating as defined in CIRIA C552.



Source	Receptor	Exposure Pathway	Probability	Consequence	Risk Category	Justification
	nam Fiodhag; Allt Bail a' Chladaich and unnamed watercourses.	discharge to surface watercourses as base flow.	Unlikely	Medium	Low Risk	water features via shallow deposits and / or surface run-off cannot be discounted. Several watercourses are present across the Site (section 5.4). However, there is limited potential of contaminants on site, which has been confirmed within the Site by the recent ground investigation.
		Discharge of contaminants entrained in surface water run-off followed by overland flow and discharge.				Contamination migration via granular superficial deposits is possible, though the general absence of significant potential contamination sources reduces risks. Overall risk of contaminated surface runoff and / or groundwater migration is considered to be low due to expected lack of significant sources of contamination on-site. Although some of the water features are located within the Site, with appropriate mitigation measures the risk to these are low.
	<b>The Built Environment</b>	Future Structures	Unlikely	Mild	Very Low Risk	Whilst risks cannot be entirely discounted, potential impacts are considered unlikely due to the isolated location of the Site and the general low level of development of the surrounding area.
	<b>Ecological Site</b>	Glen Affric (NNR)	Unlikely	Mild	Very Low Risk	Potential impacts are considered unlikely as no contamination sources identified on The Site.
Off-site contamination sources including off-site made ground associated with construction of the existing OHL towers.	<b>Human Health – On-site</b>	Site users post development	Unlikely	Medium	Low Risk	Off-site contamination from neighbouring sources is a possibility, though the limited occupation of the Site reduces risk.
		Construction / Maintenance Workers	Unlikely	Medium	Low Risk	Risks to construction workers will be managed via adherence to health and safety legislation and regulations.
	<b>The Built Environment</b>	Existing and future structures	Unlikely	Mild	Very Low Risk	Whilst risks cannot be entirely discounted, potential impacts can be managed by engineered mitigation measures.



# 7 Conclusions and Recommendations

## 7.1 Conclusions

Potential sources of contamination within the Site are considered limited and relate to made ground associated with the construction of the OHL towers (on-site and off-site), paths and access tracks (on-site and off-site). Made ground may also be associated with the potential infilling of the quarry. BGS mapping records made ground in one borehole within the southwest of the Site, possibly from track construction. However, the recent 2023 ground investigation did not encounter made ground on site. No asbestos was identified in the recent 2023 ground investigation.

Contamination from these aforementioned potential sources could pose potential risks to human health, the water environment and the built environment if present, but this is considered to be unlikely. There is potential for contaminants to migrate off-site via surface water run-off and transportation through granular and organic soils. However, given the likely limited extent of contaminant sources, it is unlikely to represent a significant impact.

The water environment receptors represent the most sensitive receptors, via leaching of contaminants in the unsaturated zone to groundwater in underlying aquifers which is considered the most sensitive pathway. However, the limited extent of made ground in the area of the Site, and absence of contamination recorded in samples and the lack of potentially contaminative historical land uses further decreases the risk to groundwater. The water environment is considered at low risk, due to expected lack of significant sources of contamination on-site. Although some of the water features are located in the area of the Site with appropriate mitigation measures the risk to these are low.

Additionally, any workers / staff on-site will wear appropriate PPE and health and safety trained prior to any works being undertaken.

Finally, potential ground gas could be generated from infilled quarry (on-site) and peat deposits (on-site / off-site), with pathways to human health receptors via inhalation, migration / build-up of ground gas / explosive risk, respectively. However, the risk rating is low as the recent ground investigation records generally low concentrations of ground gas, with generally low flows. It is considered that construction workers who are required to work in confined spaces / excavations must ensure that the potential risks from ground gas are taken into account of within their health and safety practice.

Based on the available desk study information and the development end use, the Site is classified overall as having a low risk with respect to contaminated land.

Peat is recorded across much of the Site. The very limited investigation records within the Site positively identify peat deposits up to 2.50 m in thickness. Peat probing undertaken as part of the investigation around the proposed Bingally substation site, typically agrees with the exploratory holes positively identifying the peat with the probing indicating the peat is typically less than 2.0 m in thickness, although local deeper deposits are present. The depths and extents noted are based on the investigation records available which are limited to the vicinity of the proposed substation and don't cover most of the Site. The desk-based sources indicate the peat generally falls within Class 5 peatland habitat, however, Class 1 Nationally important peatland habitats are recorded within the southern extent of the Site.

Based on the available desk study information and the Proposed Development layouts, the Site is classified as having a risk with respect to peat and peatland habitat.

## 7.2 Recommendations

The Geo-environmental Desk Study review has not identified unacceptable risks in accordance with LCRM guidance at the Site. However, it is possible that risks to human health and the water environment receptors are present on-site without having been recorded or reported. It is recommended that the following further work / assessment is undertaken to constrain potential risks and liabilities:



- Submission of this report to THC Contaminated Land Officer to obtain their approval of the report's findings. Furthermore, the scope of the Geo-environmental Desk Study has provided a preliminary characterisation of the Site's risk profile. However, as with all desk based studies there is a degree of uncertainty associated with them. In addition, as with any site there may be localised differences in made ground thicknesses, the presence of obstructions and physical or chemical composition, and unrecorded surface or ground disruptions and site activities. It is recommended that the Client and their construction contractors have an unexpected contamination strategy in place throughout the construction of the Proposed Development. If contamination is identified at any point during construction work then contact should be made with a suitably competent environmental consultant for further risk assessment to be undertaken.

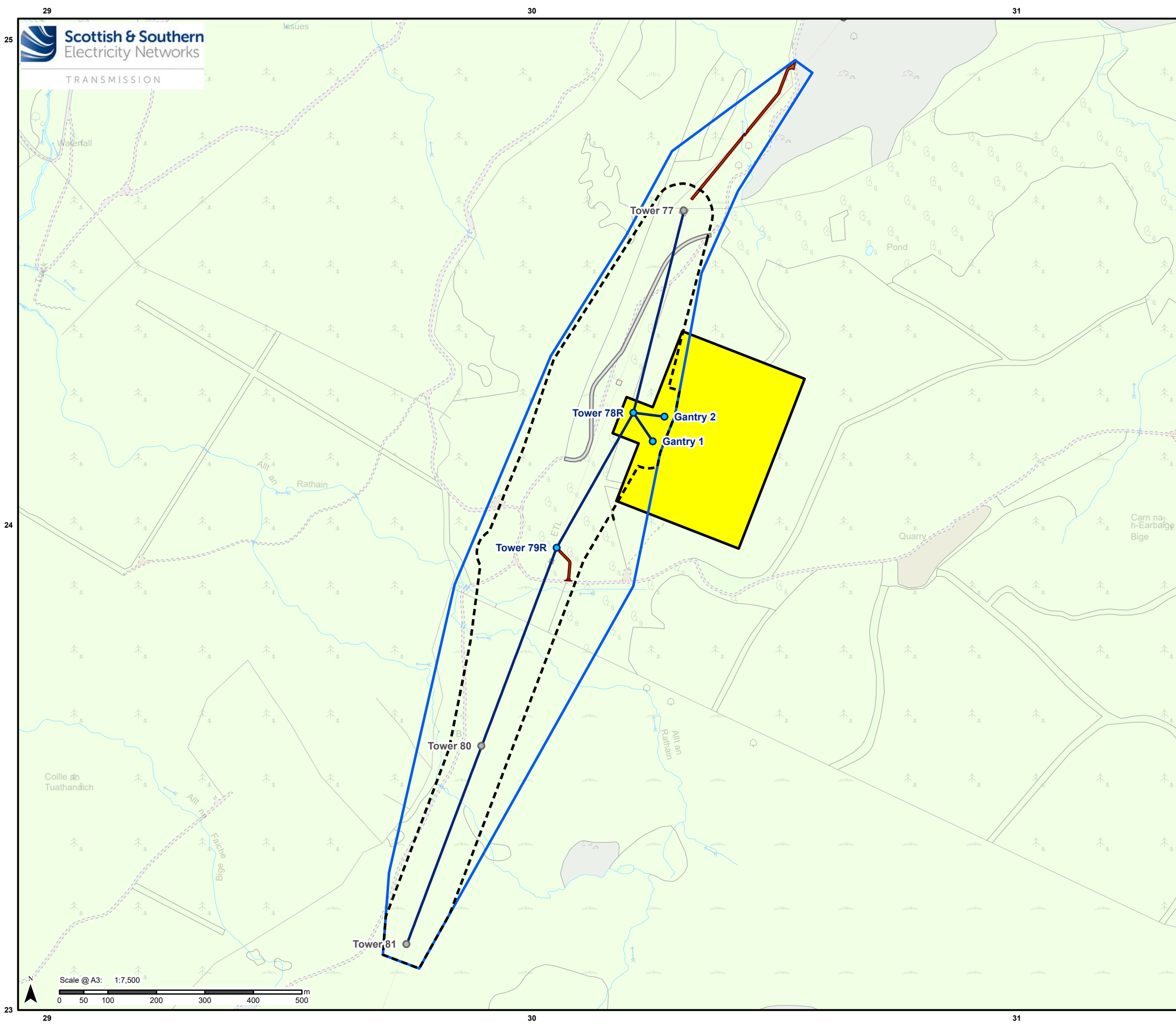
The Desk Study has identified peat is present within the Site and underlying the proposed works covered by this report. Peat can pose a significant risk to the works throughout all phases and is required to be assessed and considered further, especially as Class 1 Nationally important peat and peatland habitats have been recorded within the Site. As such, the following recommendations for the peat are provided:

- Undertake further peat investigation (e.g. peat probing) to cover the full extent of the proposed infrastructure relating to the proposed works.
- Undertake an Environmental Appraisal to assess the significance the proposed works may have on the peatland.
- The design for the proposed works should aim to avoid the excavation and removal of peatland and the proposed layouts should look to avoid areas of deep peat (>1.0 m in thickness) where possible.
- A Peat Management Plan (PMP) should be undertaken to provide details on the volumes of peat estimated to require removal as part of the works and how the peat will be reused. The PMP shall also provide details and guidance on how peat will be excavated, handled, stored, reused, etc. The PMP will require updating throughout each phase of the works.
- A Peatland Landslide Hazard and Risk Assessment (PLHRA) in accordance with Energy Consents Unit guidance document Peat Landslide Hazard and Risk Assessment: Best Practice Guide for Proposed Electricity Generation Developments (April, 2017) should be undertaken. This will identify any areas where an unacceptable risk of a peat landslide is present and provide mitigation measures to reduce the risk and / or impact of such an event.



# Appendix A Figures





### Legend

- Proposed Development Site
- Proposed Bingly 400kV Substation
- Limit of Deviation
- Existing OHL Structures
- Permanent OHL Structures
- Permanent OHL Section Spans
- New Permanent Stone Access
- Existing Access Track

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Project No: LT000521

Project: Bingly 400kV Overhead Line Tie-in

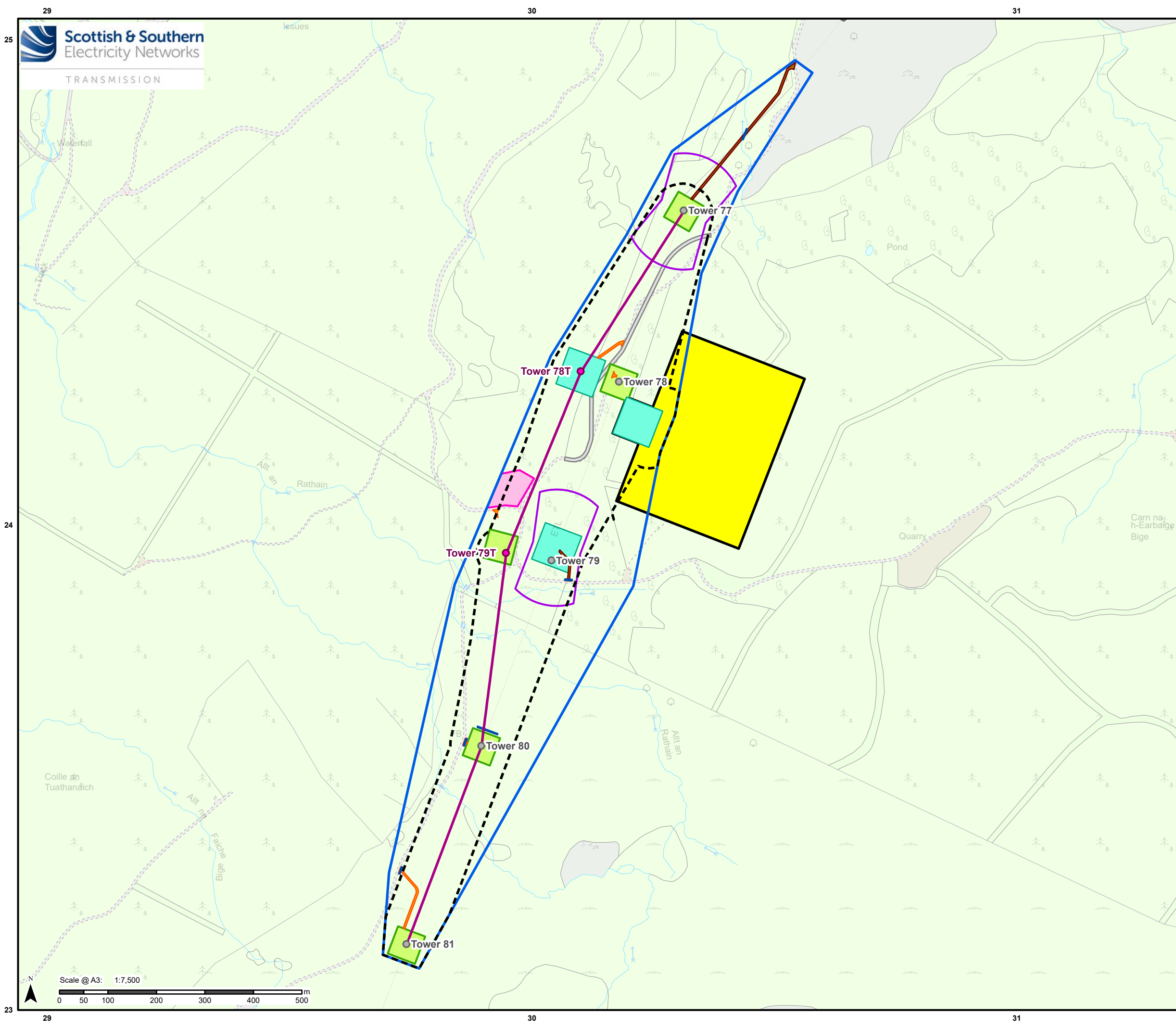
Title: Proposed Site Plan Permanent Arrangement

Drawn by: JBARR

Date: 02/04/2025

Drawing: Figure 1a





### Legend

- Proposed Development Site
- Permanent Layout
  - Proposed Bingly Substation
  - Limit of Deviation
- Existing OHL Structures
- Temporary OHL Structures
- Temporary OHL Section Spans
- Site Compound
- Tower Working Area (60 x 60 m)
- Tower Working Area (80 x 80 m)
- Equipotential Zone
- Proposed Bingly Substation Access Track
- New Permanent Stone Access
- Temporary Access Track Spurs
- Culvert

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Project No: LT000521

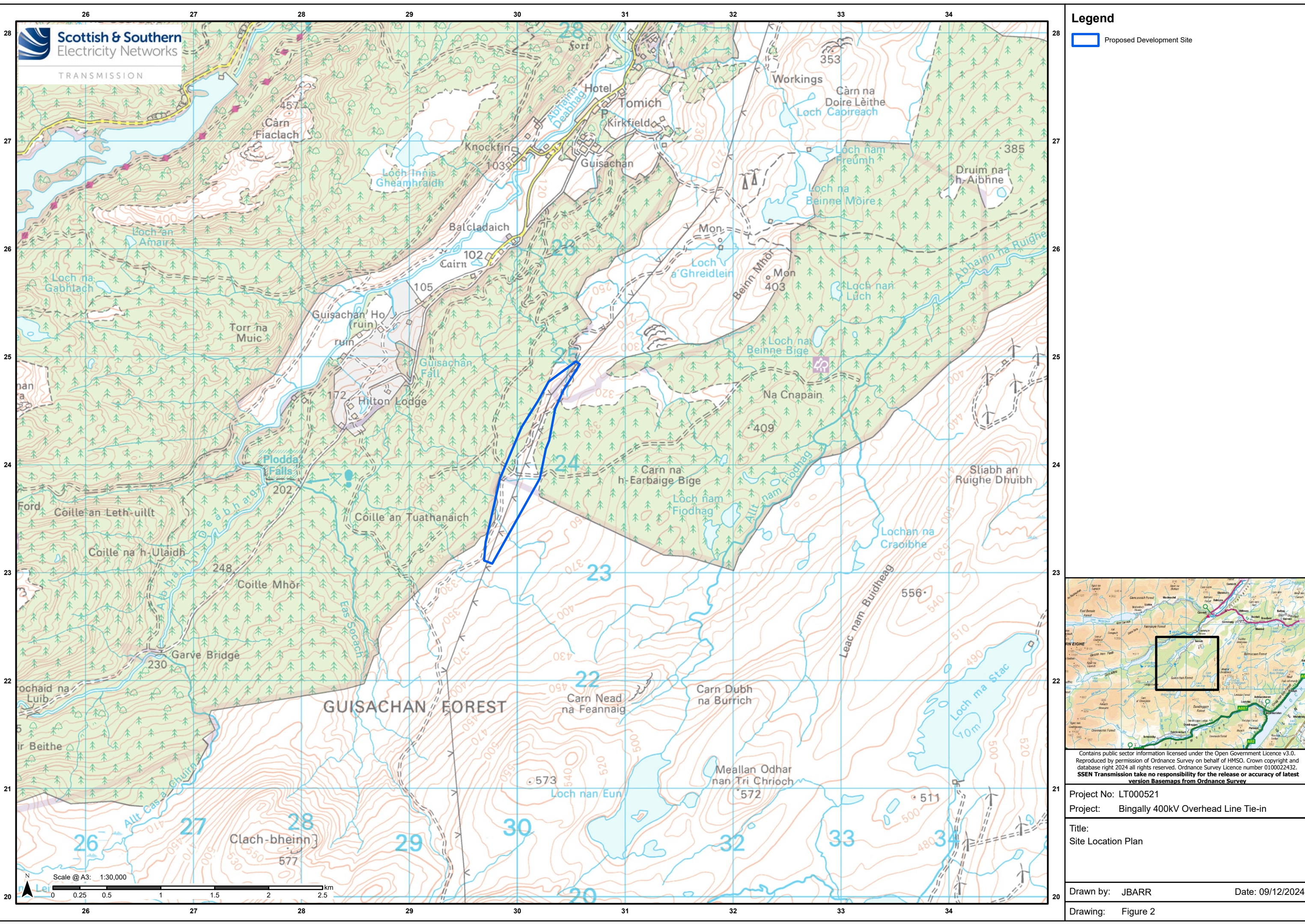
Project: Bingly 400kV Overhead Line Tie-in

Title: Proposed Site Plan Temporary Arrangement

Drawn by: JBARR Date: 02/04/2025

Drawing: Figure 1b





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# Appendix B Site Photographs



**Client Name: SSEN  
Transmission**

**Bingally Overhead Line**

**Project No.  
60701792**

**Photo No.**  
1

**Date:**  
10/05/2024

New substation  
development area  
(proposed Bingally  
substation only)

(facing east)



**Photo No.**  
2

**Date:**  
10/05/2024

New substation  
development area  
(proposed Bingally  
substation only)

(facing north-east)





**Client Name: SSEN  
Transmission****Bingally Overhead Line****Project No.  
60701792****Photo No.**  
3**Date:**  
10/05/2024New substation  
development area  
(proposed Bingally  
substation only)

(facing south)

**Photo No.**  
4**Date:**  
10/05/2024New substation  
development area  
(proposed Bingally  
substation only)

(facing south-east)





**Client Name: SSEN  
Transmission**

**Bingally Overhead Line**

**Project No.  
60701792**

**Photo No.**  
5

**Date:**  
10/05/2024

Monitoring well on the new substation development area (proposed Bingally substation only)

(facing west)



**Photo No.**  
6

**Date:**  
10/05/2024

Off-site gravelly access track with drainage running channel alongside the track, to the north-west of the Proposed Development.

(facing north)





**Client Name: SSEN  
Transmission**

**Bingally Overhead Line**

**Project No.  
60701792**

**Photo No.**  
7

**Date:**  
10/05/2024

Existing pylon associated  
with Beaulieu Denny  
transmission.

(Photo captured looking  
towards the north)



**Photo No.**  
8

**Date:**  
10/05/2024

Offsite old foot bridge  
across burn to the north-  
west of the new substation  
development area  
(proposed Bingally  
substation only)

(facing west)





# Appendix C Groundsure Report



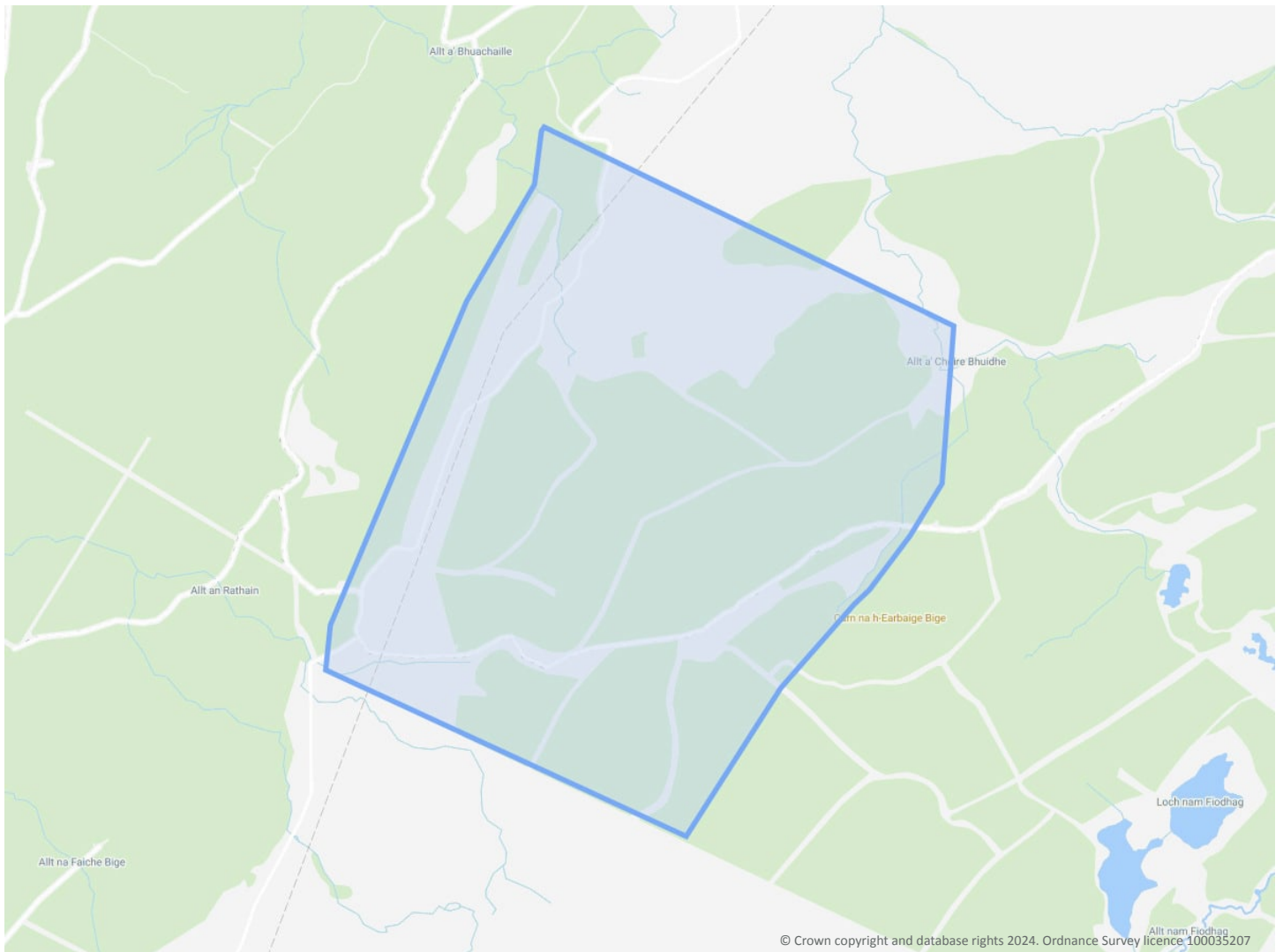
## Scotland, Red Line Boundary

### Order Details

**Date:** 01/05/2024  
**Your ref:** Scotland, Red Line Boundary  
**Our Ref:** GSIP-2024-14714-18280\_A

### Site Details

**Location:** 230710 824321  
**Area:** 148.76 ha  
**Authority:** [The Highland Council](#) ↗



**Summary of findings**

[p. 2](#) >

**Aerial image**

[p. 7](#) >

**OS MasterMap site plan**

N/A: >10ha

[Insight User Guide](#) ↗

Contact us with any questions at:

[info@groundsure.com](mailto:info@groundsure.com) ↗

01273 257 755



## Summary of findings

Page	Section	<u>Past land use</u> >	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">12</a> >	<a href="#">1.1</a> >	<a href="#">Historical industrial land uses</a> >	1	0	0	0	-
13	1.2	Historical tanks	0	0	0	0	-
13	1.3	Historical energy features	0	0	0	0	-
13	1.4	Historical petrol stations	0	0	0	0	-
13	1.5	Historical garages	0	0	0	0	-
14	1.6	Historical military land	0	0	0	0	-
Page	Section	<u>Past land use - un-grouped</u> >	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">15</a> >	<a href="#">2.1</a> >	<a href="#">Historical industrial land uses</a> >	1	0	0	0	-
16	2.2	Historical tanks	0	0	0	0	-
16	2.3	Historical energy features	0	0	0	0	-
16	2.4	Historical petrol stations	0	0	0	0	-
16	2.5	Historical garages	0	0	0	0	-
Page	Section	<u>Waste and landfill</u>	On site	0-50m	50-250m	250-500m	500-2000m
17	3.1	Active or recent landfill	0	0	0	0	-
17	3.2	Historical landfill (BGS records)	0	0	0	0	-
17	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
17	3.4	Licensed waste sites	0	0	0	0	-
17	3.5	Historical waste sites	0	0	0	0	-
Page	Section	<u>Current industrial land use</u> >	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">18</a> >	<a href="#">4.1</a> >	<a href="#">Recent industrial land uses</a> >	4	1	0	-	-
19	4.2	Current or recent petrol stations	0	0	0	0	-
19	4.3	Electricity cables	0	0	0	0	-
19	4.4	Gas pipelines	0	0	0	0	-
19	4.5	Sites determined as Contaminated Land	0	0	0	0	-
20	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
20	4.7	Regulated explosive sites	0	0	0	0	-





20	4.8	Hazardous substance storage/usage	0	0	0	0	-
20	4.9	Part A(1), IPPC and Historic IPC Authorisations	0	0	0	0	-
20	4.10	Part B Authorisations	0	0	0	0	-
21	4.11	Pollution inventory substances	0	0	0	0	-
21	4.12	Pollution inventory waste transfers	0	0	0	0	-
21	4.13	Pollution inventory radioactive waste	0	0	0	0	-
Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
22	5.1	Superficial aquifer	None (within 500m)				
<a href="#">23</a> >	<a href="#">5.2</a> >	<a href="#">Bedrock aquifer</a> >	Identified (within 500m)				
Page	Section	<a href="#">Hydrology</a> >	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">25</a> >	<a href="#">6.1</a> >	<a href="#">Water Network (OS MasterMap)</a> >	9	5	13	-	-
<a href="#">28</a> >	<a href="#">6.2</a> >	<a href="#">Surface water features</a> >	1	2	12	-	-
Page	Section	<a href="#">River flooding</a> >					
<a href="#">29</a> >	<a href="#">7.1</a> >	<a href="#">River flooding</a> >	1 in 30 year, 0.3m - 1.0m (within 50m)				
Page	Section	Coastal flooding					
31	8.1	Coastal flooding	Negligible (within 50m)				
Page	Section	<a href="#">Surface water flooding</a> >					
<a href="#">32</a> >	<a href="#">9.1</a> >	<a href="#">Surface water flooding</a> >	1 in 30 year, Greater than 1.0m (within 50m)				
Page	Section	<a href="#">Groundwater flooding</a> >					
<a href="#">34</a> >	<a href="#">10.1</a> >	<a href="#">Groundwater flooding</a> >	Low (within 50m)				
Page	Section	<a href="#">Environmental designations</a> >	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">35</a> >	<a href="#">11.1</a> >	<a href="#">Sites of Special Scientific Interest (SSSI)</a> >	0	0	0	0	1
36	11.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
<a href="#">36</a> >	<a href="#">11.3</a> >	<a href="#">Special Areas of Conservation (SAC)</a> >	0	0	0	0	1
<a href="#">37</a> >	<a href="#">11.4</a> >	<a href="#">Special Protection Areas (SPA)</a> >	0	0	0	0	1
<a href="#">37</a> >	<a href="#">11.5</a> >	<a href="#">National Nature Reserves (NNR)</a> >	0	0	1	0	1
37	11.6	Local Nature Reserves (LNR)	0	0	0	0	0
<a href="#">38</a> >	<a href="#">11.7</a> >	<a href="#">Designated Ancient Woodland</a> >	0	0	2	0	10
38	11.8	Biosphere Reserves	0	0	0	0	0





39	11.9	Forest Parks	0	0	0	0	0
39	11.10	Marine Conservation Zones	0	0	0	0	0
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
40	12.1	World Heritage Sites	0	0	0	-	-
40	12.2	Area of Outstanding Natural Beauty	0	0	0	-	-
40	12.3	National Parks	0	0	0	-	-
40	12.4	Listed Buildings	0	0	0	-	-
41	12.5	Conservation Areas	0	0	0	-	-
41	12.6	Scheduled Ancient Monuments	0	0	0	-	-
41	12.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations >	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">42 &gt;</a>	<a href="#">13.1 &gt;</a>	<a href="#">Agricultural Land Classification &gt;</a>	Grade 5.3 (within 250m)				
Page	Section	Geology 1:10,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">44 &gt;</a>	<a href="#">14.1 &gt;</a>	<a href="#">10k Availability &gt;</a>	Identified (within 500m)				
46	14.2	Artificial and made ground (10k)	0	0	0	0	-
<a href="#">47 &gt;</a>	<a href="#">14.3 &gt;</a>	<a href="#">Superficial geology (10k) &gt;</a>	17	6	15	20	-
50	14.4	Landslip (10k)	0	0	0	0	-
51	14.5	Bedrock geology (10k)	0	0	0	0	-
<a href="#">51 &gt;</a>	<a href="#">14.6 &gt;</a>	<a href="#">Bedrock faults and other linear features (10k) &gt;</a>	25	3	14	16	-
Page	Section	Geology 1:50,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">55 &gt;</a>	<a href="#">15.1 &gt;</a>	<a href="#">50k Availability &gt;</a>	Identified (within 500m)				
56	15.2	Artificial and made ground (50k)	0	0	0	0	-
56	15.3	Artificial ground permeability (50k)	0	0	-	-	-
<a href="#">57 &gt;</a>	<a href="#">15.4 &gt;</a>	<a href="#">Superficial geology (50k) &gt;</a>	15	4	9	12	-
<a href="#">59 &gt;</a>	<a href="#">15.5 &gt;</a>	<a href="#">Superficial permeability (50k) &gt;</a>	Identified (within 50m)				
60	15.6	Landslip (50k)	0	0	0	0	-
60	15.7	Landslip permeability (50k)	None (within 50m)				
<a href="#">61 &gt;</a>	<a href="#">15.8 &gt;</a>	<a href="#">Bedrock geology (50k) &gt;</a>	1	0	1	0	-
<a href="#">62 &gt;</a>	<a href="#">15.9 &gt;</a>	<a href="#">Bedrock permeability (50k) &gt;</a>	Identified (within 50m)				





<a href="#">62 &gt;</a>	<a href="#">15.10 &gt;</a>	<a href="#">Bedrock faults and other linear features (50k) &gt;</a>	10	0	6	6	-
Page	Section	<a href="#">Boreholes &gt;</a>	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">64 &gt;</a>	<a href="#">16.1 &gt;</a>	<a href="#">BGS Boreholes &gt;</a>	1	1	0	-	-
Page	Section	<a href="#">Natural ground subsidence &gt;</a>					
<a href="#">66 &gt;</a>	<a href="#">17.1 &gt;</a>	<a href="#">Shrink swell clays &gt;</a>	Very low (within 50m)				
<a href="#">68 &gt;</a>	<a href="#">17.2 &gt;</a>	<a href="#">Running sands &gt;</a>	Very low (within 50m)				
<a href="#">70 &gt;</a>	<a href="#">17.3 &gt;</a>	<a href="#">Compressible deposits &gt;</a>	High (within 50m)				
<a href="#">72 &gt;</a>	<a href="#">17.4 &gt;</a>	<a href="#">Collapsible deposits &gt;</a>	Very low (within 50m)				
<a href="#">74 &gt;</a>	<a href="#">17.5 &gt;</a>	<a href="#">Landslides &gt;</a>	Moderate (within 50m)				
<a href="#">76 &gt;</a>	<a href="#">17.6 &gt;</a>	<a href="#">Ground dissolution of soluble rocks &gt;</a>	Negligible (within 50m)				
Page	Section	<a href="#">Mining and ground workings &gt;</a>	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">78 &gt;</a>	<a href="#">18.1 &gt;</a>	<a href="#">BritPits &gt;</a>	1	1	0	0	-
<a href="#">79 &gt;</a>	<a href="#">18.2 &gt;</a>	<a href="#">Surface ground workings &gt;</a>	1	0	0	-	-
79	18.3	Underground workings	0	0	0	0	0
80	18.4	Underground mining extents	0	0	0	0	-
80	18.5	Historical Mineral Planning Areas	0	0	0	0	-
<a href="#">80 &gt;</a>	<a href="#">18.6 &gt;</a>	<a href="#">Non-coal mining &gt;</a>	0	0	0	0	1
80	18.7	JPB mining areas	None (within 0m)				
81	18.8	The Coal Authority non-coal mining	0	0	0	0	-
81	18.9	Researched mining	0	0	0	0	-
81	18.10	Mining record office plans	0	0	0	0	-
81	18.11	BGS mine plans	0	0	0	0	-
82	18.12	Coal mining	None (within 0m)				
82	18.13	Brine areas	None (within 0m)				
82	18.14	Gypsum areas	None (within 0m)				
82	18.15	Tin mining	None (within 0m)				
82	18.16	Clay mining	None (within 0m)				
Page	Section	<a href="#">Ground cavities and sinkholes</a>	On site	0-50m	50-250m	250-500m	500-2000m
83	19.1	Natural cavities	0	0	0	0	-





83	19.2	Mining cavities	0	0	0	0	0
83	19.3	Reported recent incidents	0	0	0	0	-
83	19.4	Historical incidents	0	0	0	0	-
84	19.5	National karst database	0	0	0	0	-
Page	Section	<a href="#">Radon &gt;</a>					
<a href="#">85 &gt;</a>	<a href="#">20.1 &gt;</a>	<a href="#">Radon &gt;</a>	Between 1% and 3% (within 0m)				
Page	Section	<a href="#">Soil chemistry &gt;</a>	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">87 &gt;</a>	<a href="#">21.1 &gt;</a>	<a href="#">BGS Estimated Background Soil Chemistry &gt;</a>	27	1	-	-	-
88	21.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
88	21.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	<a href="#">Railway infrastructure and projects</a>	On site	0-50m	50-250m	250-500m	500-2000m
89	22.1	Underground railways (London)	0	0	0	-	-
89	22.2	Underground railways (Non-London)	0	0	0	-	-
89	22.3	Railway tunnels	0	0	0	-	-
89	22.4	Historical railway and tunnel features	0	0	0	-	-
89	22.5	Royal Mail tunnels	0	0	0	-	-
90	22.6	Historical railways	0	0	0	-	-
90	22.7	Railways	0	0	0	-	-
90	22.8	Crossrail 1	0	0	0	0	-
90	22.9	Crossrail 2	0	0	0	0	-
90	22.10	HS2	0	0	0	0	-



## Recent aerial photograph



Aerial photography supplied by Getmapping PLC. © Copyright Getmapping PLC 2024. All Rights Reserved

Capture Date: 29/05/2020

Site Area: 148.76ha





## Recent site history - 2017 aerial photograph



Capture Date: 06/05/2017

Site Area: 148.76ha





## Recent site history - 2014 aerial photograph



Capture Date: 26/08/2014

Site Area: 148.76ha



Contact us with any questions at:

[info@groundsure.com](mailto:info@groundsure.com)

01273 257 755

Date: 1 May 2024



## Recent site history - 2009 aerial photograph



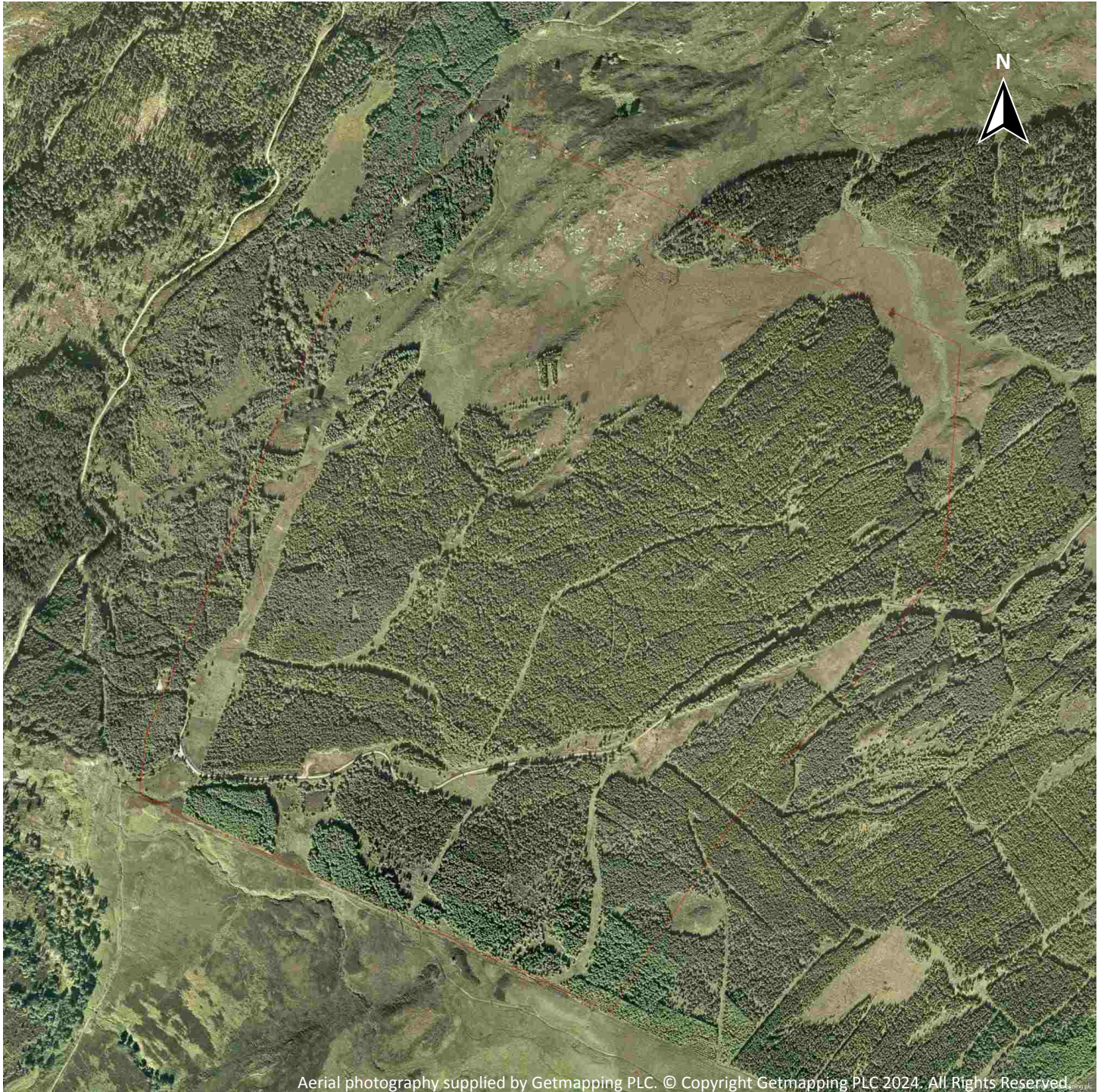
Capture Date: 13/05/2009

Site Area: 148.76ha





## Recent site history - 2006 aerial photograph



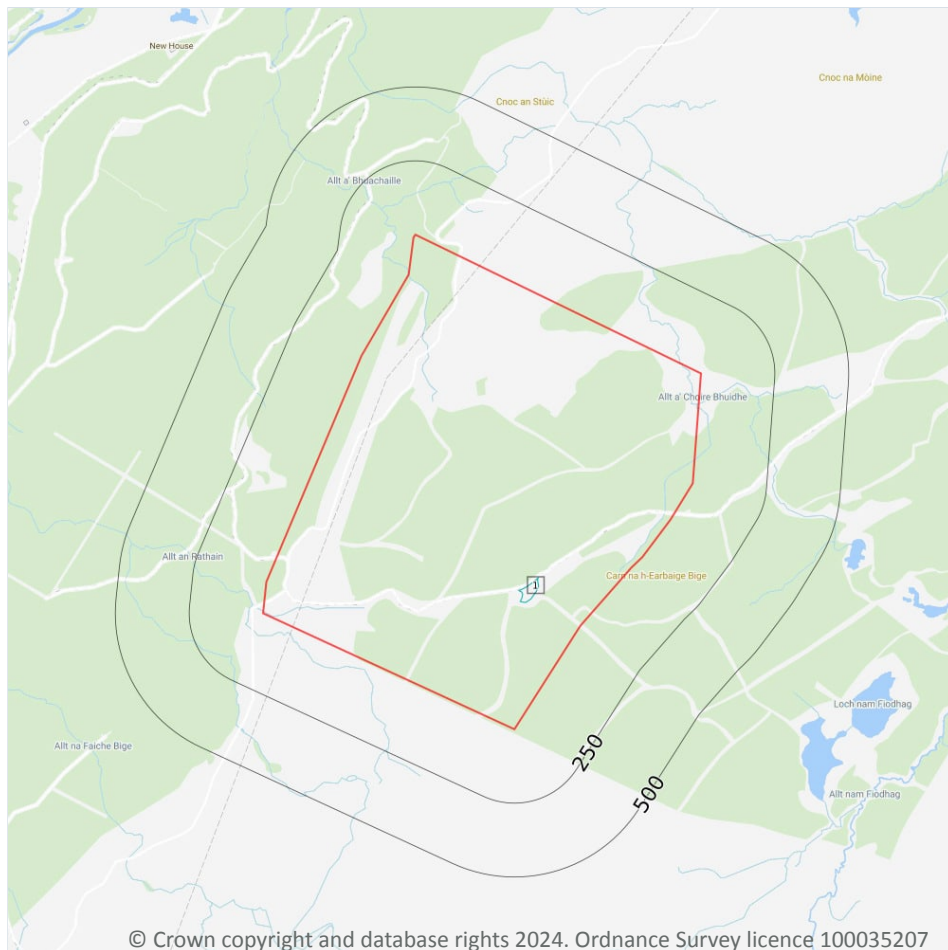
Capture Date: 16/09/2006

Site Area: 148.76ha





## 1 Past land use



— Site Outline

Search buffers in metres (m)

Historical industrial land uses

### 1.1 Historical industrial land uses

#### Records within 500m

1

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 12 >](#)

ID	Location	Land use	Dates present	Group ID
1	On site	Unspecified Disused Quarry	1991	66342





*This data is sourced from Ordnance Survey / Groundsure.*

## 1.2 Historical tanks

**Records within 500m**

**0**

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 ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

*This data is sourced from Ordnance Survey / Groundsure.*

## 1.3 Historical energy features

**Records within 500m**

**0**

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 ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

*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 ungrouped 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 ungrouped 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

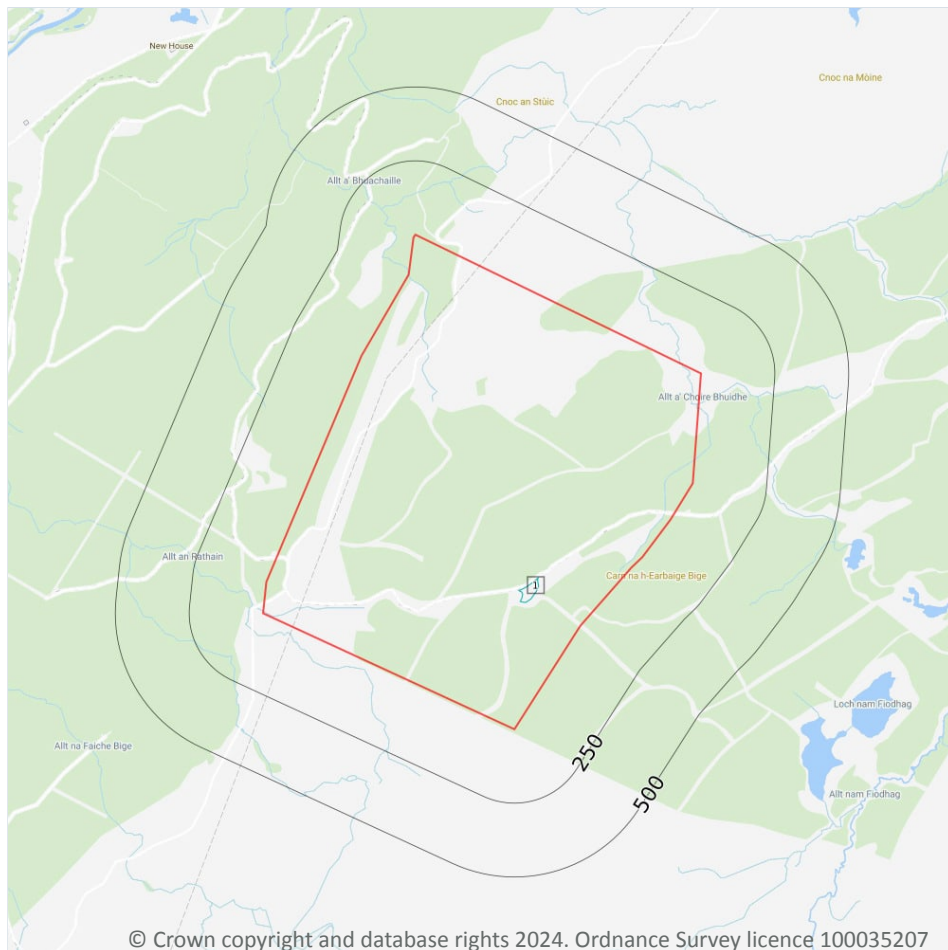
Areas of military land digitised from multiple sources including the National Archives, local records, MOD records and verified other sources, intelligently grouped into contiguous features.

*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

### 2.1 Historical industrial land uses

#### Records within 500m

1

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 15](#) >

ID	Location	Land Use	Date	Group ID
1	On site	Unspecified Disused Quarry	1991	66342

This data is sourced from Ordnance Survey / Groundsure.





## 2.2 Historical tanks

**Records within 500m****0**

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'.

*This data is sourced from Ordnance Survey / Groundsure.*

## 2.3 Historical energy features

**Records within 500m****0**

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'.

*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

### 3.1 Active or recent landfill

Records within 500m

0

Active or recently closed landfill sites under Scottish Environment Protection (SEPA) regulation.

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

### 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 Licensed waste sites

Records within 500m

0

Active or recently closed waste sites under Scottish Environment Protection Agency (SEPA) regulation.

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

### 3.5 Historical waste sites

Records within 500m

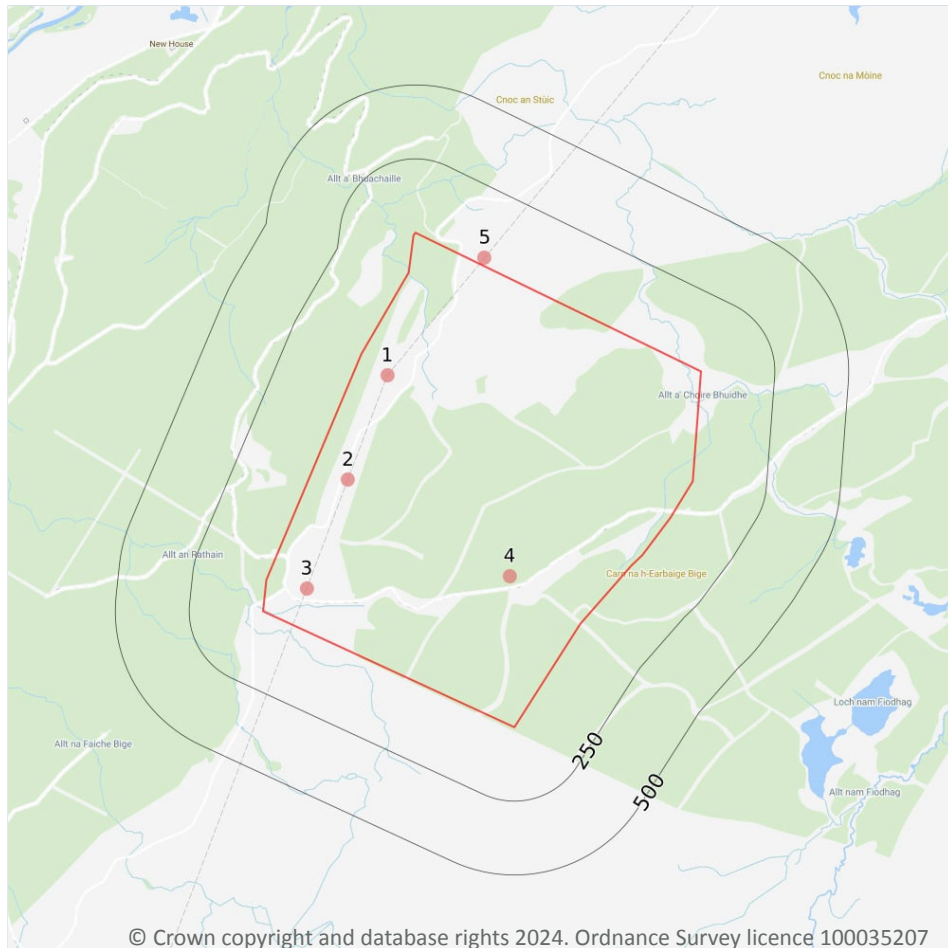
0

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

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



## 4 Current industrial land use



— Site Outline  
Search buffers in metres (m)  
● Recent industrial land uses

### 4.1 Recent industrial land uses

Records within 250m

5

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on [page 18](#) >

ID	Location	Company	Address	Activity	Category
1	On site	Pylon	Inverness, IV4	Electrical Features	Infrastructure and Facilities
2	On site	Pylon	Inverness, IV4	Electrical Features	Infrastructure and Facilities
3	On site	Pylon	Inverness, IV4	Electrical Features	Infrastructure and Facilities





ID	Location	Company	Address	Activity	Category
4	On site	Quarry (Disused)	Inverness, IV4	Unspecified Quarries Or Mines	Extractive Industries
5	26m N	Pylon	Inverness, IV4	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** 0

High voltage underground electricity transmission cables.

*This data is sourced from National Grid.*

## 4.4 Gas pipelines

**Records within 500m** 0

High pressure underground gas transmission pipelines.

*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

0

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.

*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

0

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.

*This data is sourced from Local Authority records.*

## 4.9 Part A(1), IPPC and Historic IPC Authorisations

Records within 500m

0

Records of Part A installations regulated for the release of substances to the environment.

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

## 4.10 Part B Authorisations

Records within 500m

0

Records of Part B installations regulated for the release of substances to the environment.

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





#### 4.11 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.*

#### 4.12 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.*

#### 4.13 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

### 5.1 Superficial aquifer

Records within 500m

0

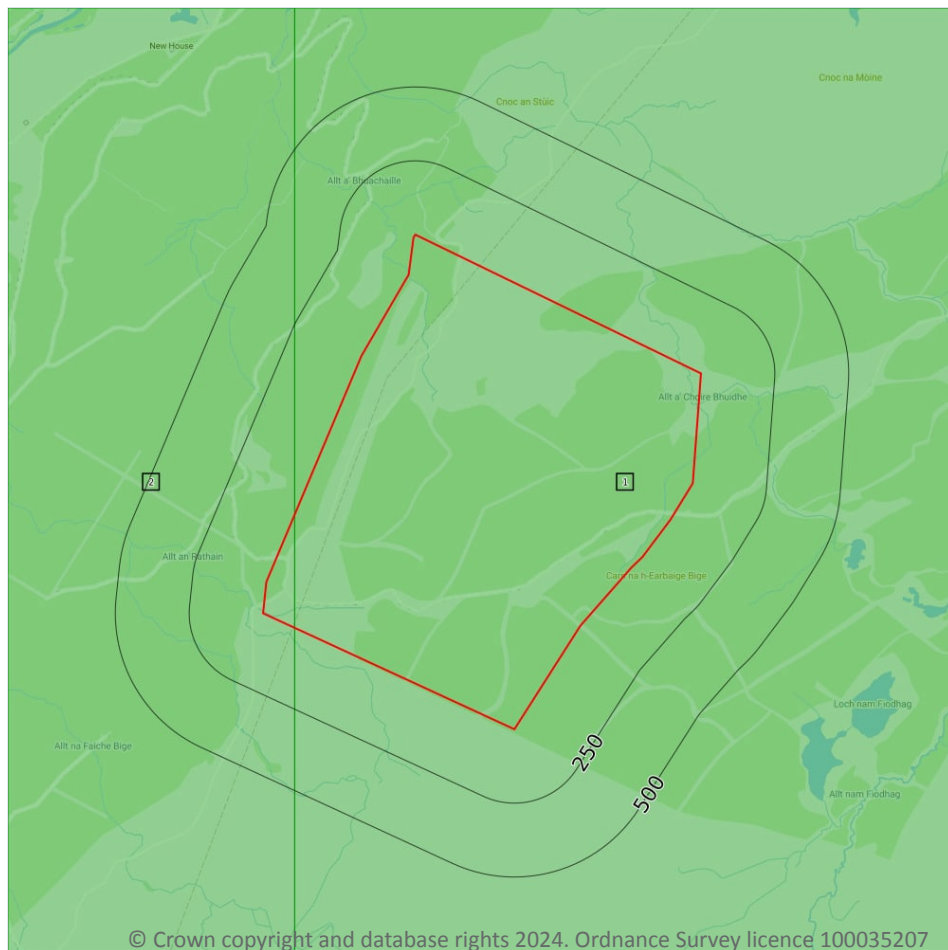
Records of groundwater classification within superficial geology.

*This data is sourced from the British Geological Survey.*





## Bedrock aquifer



- Site Outline**
- Search buffers in metres (m)
- Highly productive - fissures/discontinuities
  - Highly productive - intergranular
  - Moderately productive - fissures/discontinuities
  - Moderately productive - intergranular
  - Low productive - fissures/discontinuities
  - Low productive - intergranular
  - No significant groundwater

### 5.2 Bedrock aquifer

Records within 500m

2

Records of groundwater classification within bedrock geology.

Features are displayed on the Bedrock aquifer map on [page 23](#) >

ID	Location	Description	Flow	Summary	Rock description
1	On site	Low productivity aquifer	Flow is virtually all through fractures and other discontinuities	Small amounts of groundwater in near surface weathered zone and secondary fractures.	LOCH EIL GROUP



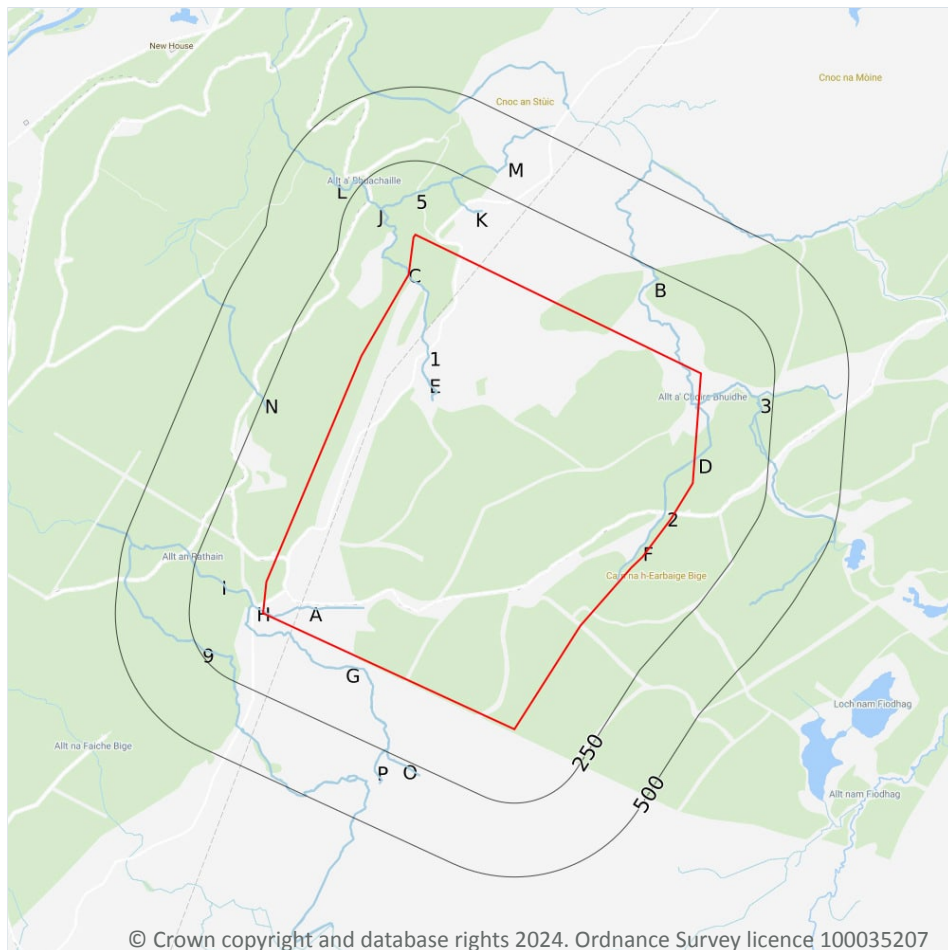


ID	Location	Description	Flow	Summary	Rock description
2	On site	Low productivity aquifer	Flow is virtually all through fractures and other discontinuities	Small amounts of groundwater in near surface weathered zone and secondary fractures.	LOCH EIL GROUP

*This data is sourced from the British Geological Survey.*



## 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)

### 6.1 Water Network (OS MasterMap)

Records within 250m

27

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 25 >](#)

ID	Location	Type of water feature	Ground level	Permanence	Name
1	On site	Inland river not influenced by normal tidal action.	Underground	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.	Underground	Watercourse contains water year round (in normal circumstances)	-
3	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt a' Choire Bhuidhe
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.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt a' Choire Bhuidhe
C	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
D	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
E	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
F	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
G	22m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt an Rathain
H	27m SW	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
H	33m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
H	38m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt an Rathain
I	38m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt an Rathain





ID	Location	Type of water feature	Ground level	Permanence	Name
H	66m SW	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	Allt an Rathain
5	119m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt a' Bhuachaille
J	144m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt a' Bhuachaille
K	153m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
K	160m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
K	160m N	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
9	179m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
J	188m N	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	Allt a' Bhuachaille
L	193m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt a' Bhuachaille
M	210m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt a' Bhuachaille
N	232m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
O	243m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
P	243m 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

**15**

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.

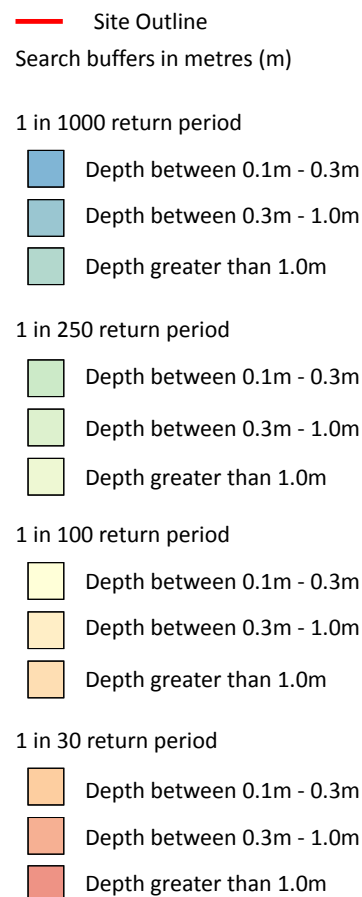
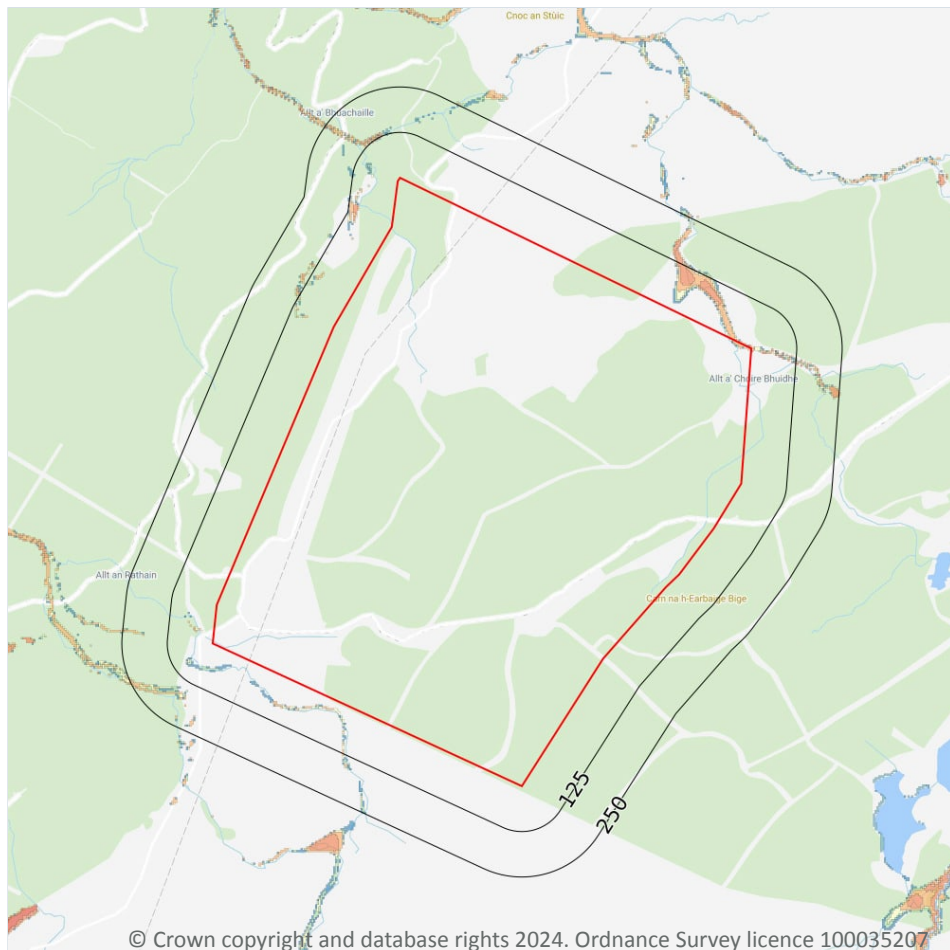
Features are displayed on the Hydrology map on [page 25 >](#)

*This data is sourced from the Ordnance Survey.*





## 7 River flooding



### 7.1 River flooding

**Highest risk on site**

**1 in 30 year, 0.1m - 0.3m**

**Highest risk within 50m**

**1 in 30 year, 0.3m - 1.0m**

This is an assessment of flood risk for rivers in Scotland produced using modelled data, provided by Ambiental Risk Analytics. It also takes account of flood defence information provided by the Scottish Environment Protection Agency (SEPA). It shows the chance of flooding from rivers presented in the following categories:

- 1 in 30 year (3.33%)
- 1 in 100 year (1%)
- 1 in 250 year (0.4%)





- and 1 in 1,000 year (0.1%)

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.

Features are displayed on the River flooding map on [page 29 >](#)

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 0.1m and 0.3m

*This data is sourced from Ambiantal Risk Analytics.*





## 8 Coastal flooding - Coastal flooding

### 8.1 Coastal flooding

Highest risk on site

Negligible

Highest risk within 50m

Negligible

This is an assessment of coastal flood risk in Scotland produced using modelled data, provided by Ambiantal Risk Analytics. It also takes account of flood defence information provided by the Scottish Environment Protection Agency (SEPA). It shows the chance of coastal flooding presented in the following categories:

- 1 in 30 year (3.33%)
- 1 in 100 year (1%)
- 1 in 250 year (0.4%)
- and 1 in 1,000 year (0.1%)

The data shown on the map 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.

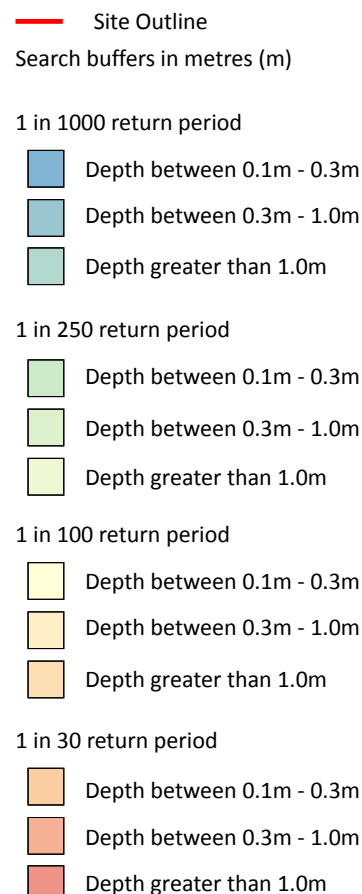
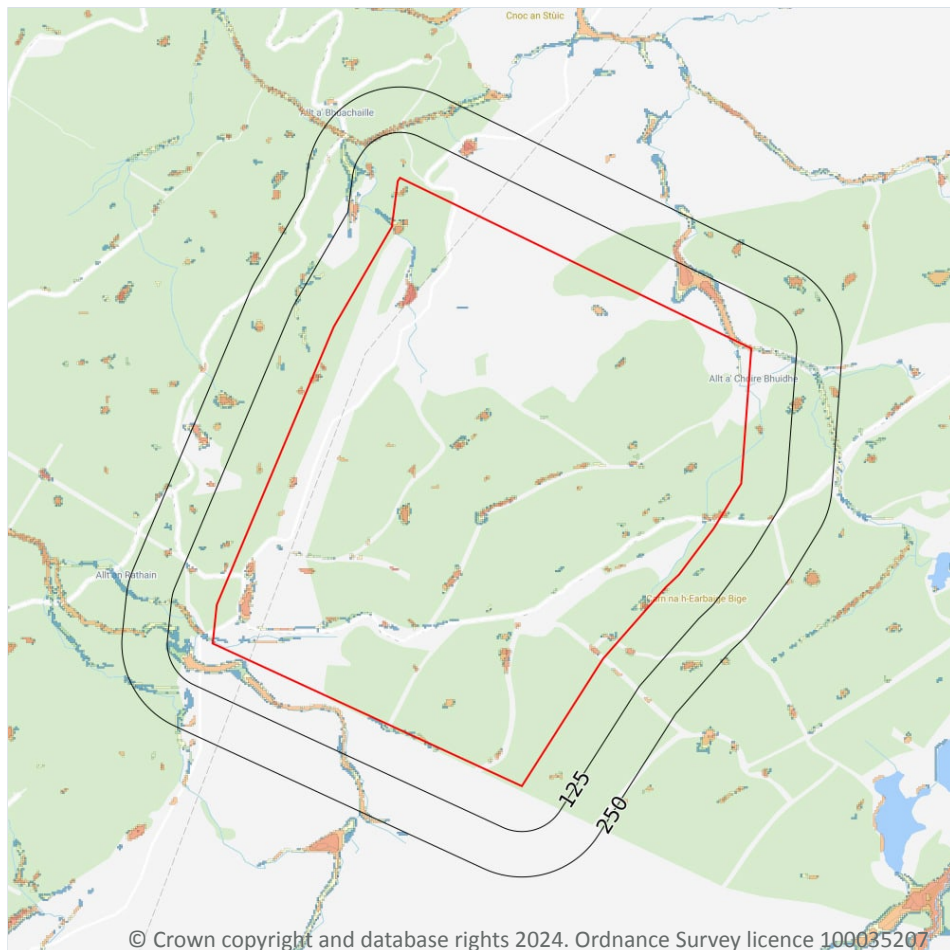
Return period	Maximum modelled depth
1 in 1000 year	Negligible
1 in 250 year	Negligible
1 in 100 year	Negligible
1 in 30 year	Negligible

*This data is sourced from Ambiantal Risk Analytics.*





## 9 Surface water flooding



### 9.1 Surface water flooding

**Highest risk on site**

**1 in 30 year, Greater than 1.0m**

**Highest risk within 50m**

**1 in 30 year, Greater than 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 32 >](#)

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.

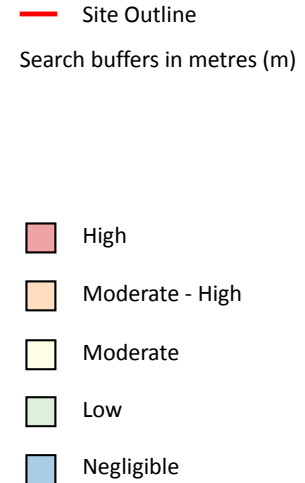
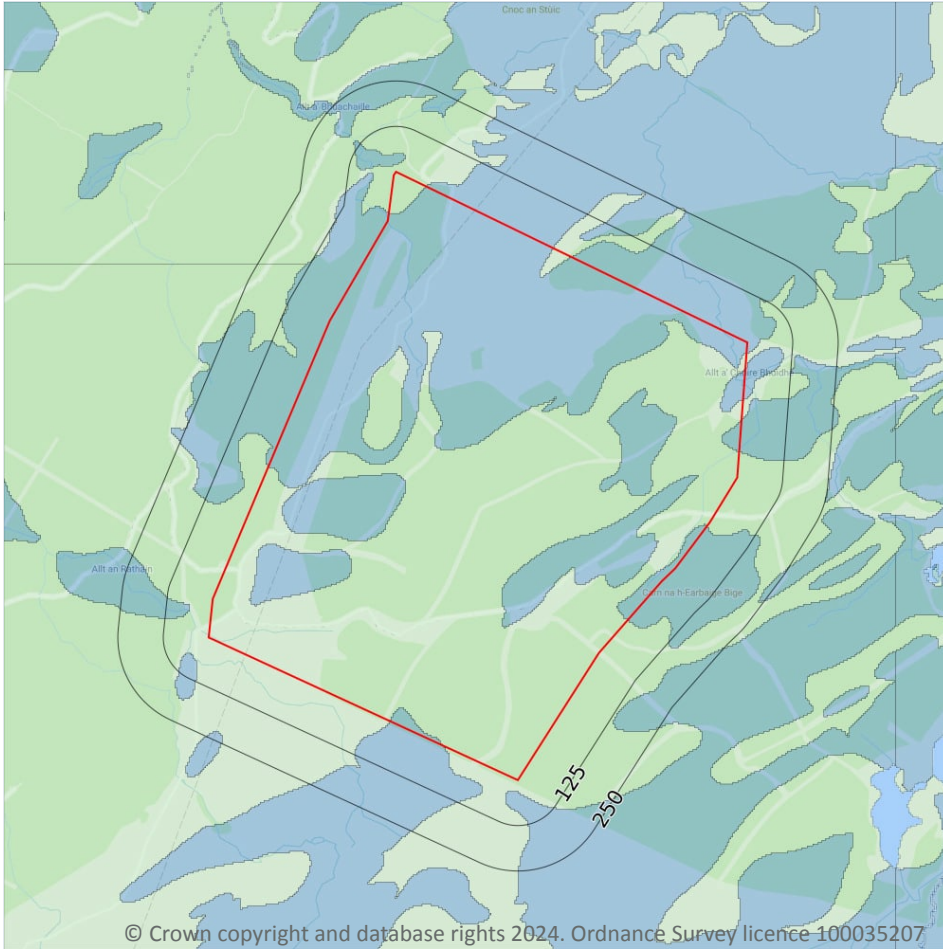
Return period	Maximum modelled depth
1 in 1000 year	Greater than 1.0m
1 in 250 year	Greater than 1.0m
1 in 100 year	Greater than 1.0m
1 in 30 year	Greater than 1.0m

*This data is sourced from Ambiental Risk Analytics.*





## 10 Groundwater flooding



### 10.1 Groundwater flooding

Highest risk on site

Low

Highest risk within 50m

Low

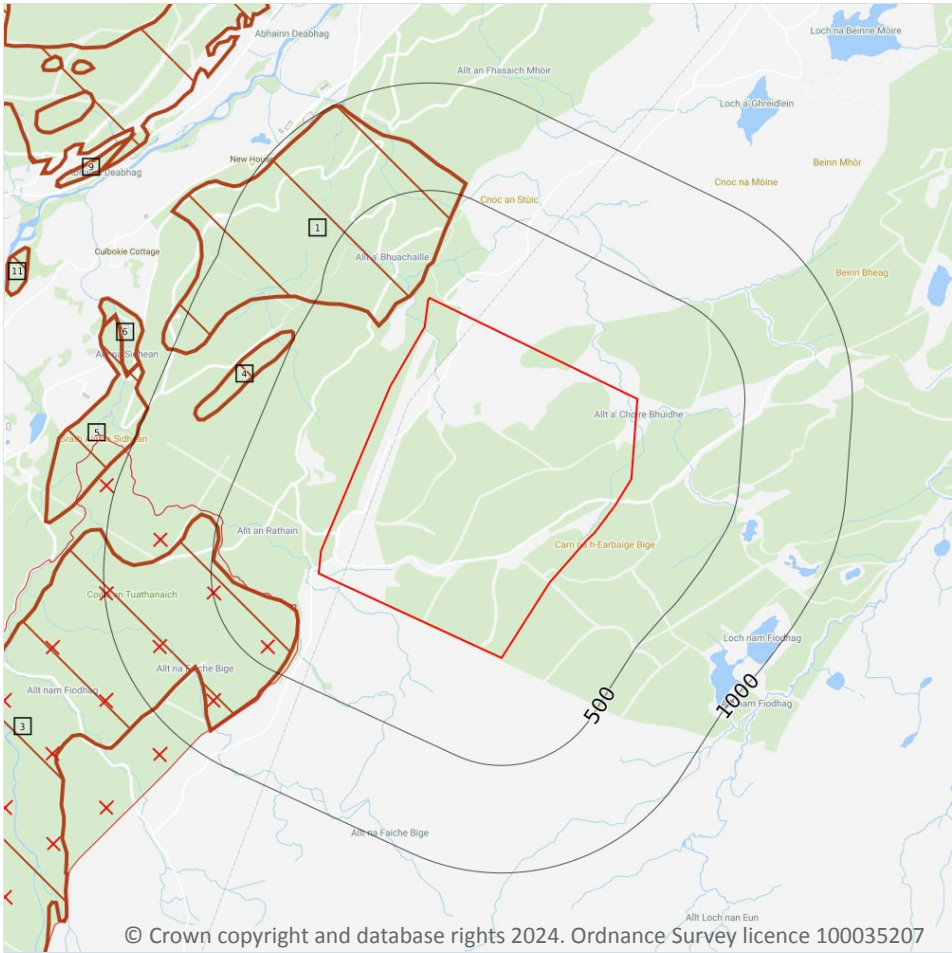
Groundwater flooding is caused by unusually high groundwater levels. It occurs when the water table rises above the ground surface or within underground structures such as basements or cellars. Groundwater flooding tends to exhibit a longer duration than surface water flooding, possibly lasting for weeks 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 34](#) >

*This data is sourced from Ambiantal Risk Analytics.*



# 11 Environmental designations



— Site Outline

Search buffers in metres (m)

Sites of Special Scientific Interest (SSSI)

Special Areas of Conservation (SAC)

Special Protection Areas (SPA)

National Nature Reserves (NNR)

Designated Ancient Woodland


## 11.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m1

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 35](#) >

ID	Location	Name	Data source
-	1981m NW	Glen Affric	Scottish Natural Heritage



Contact us with any questions at:  
[info@groundsure.com](mailto:info@groundsure.com) ↗  
01273 257 755

Date: 1 May 2024

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

## 11.2 Conserved wetland sites (Ramsar sites)

<b>Records within 2000m</b>	<b>0</b>
-----------------------------	----------

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.

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

## 11.3 Special Areas of Conservation (SAC)

<b>Records within 2000m</b>	<b>1</b>
-----------------------------	----------

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 35 >](#)

ID	Location	Name	Features of interest	Habitat description	Data source
-	1981m NW	Strathglass Complex	Clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels; Wet heathland with cross-leaved heath; Dry heaths; Alpine and subalpine heaths; Mountain willow scrub; Montane acid grasslands; Species-rich grassland with mat-grass in upland areas; Tall herb communities; Blanket bog; Very wet mires often identified by an unstable 'quaking' surface; Calcium-rich springwater-fed fens; High-altitude plant communities associated with areas of water seepage; Acidic scree; Plants in crevices in base-rich rocks; Plants in crevices on acid rocks; Caledonian forest; Bog woodland; Atlantic salmon; Otter.	Bogs, Marshes, Water fringed vegetation, Fens; Heath, Scrub, Maquis and Garrigue, Phygrana; Alpine and sub-Alpine grassland; Humid grassland, Mesophile grassland; Broad-leaved deciduous woodland; Dry grassland, Steppes; Inland water bodies (Standing water, Running water); Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites); Inland rocks, Screes, Sands, Permanent Snow and ice; Coniferous woodland	Scottish Natural Heritage

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



## 11.4 Special Protection Areas (SPA)

### Records within 2000m

1

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 35 >](#)

ID	Location	Name	Species of interest	Habitat description	Data source
-	1981m NW	Glen Affric to Strathconon	Golden eagle	Inland water bodies (Standing water, Running water); Mixed woodland; Humid grassland, Mesophile grassland; Bogs, Marshes, Water fringed vegetation, Fens; Coniferous woodland; Inland rocks, Scree, Sands, Permanent Snow and ice; Broad-leaved deciduous woodland; Heath, Scrub, Maquis and Garrigue, Phygrana; Improved grassland; Alpine and sub-Alpine grassland	Scottish Natural Heritage

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

## 11.5 National Nature Reserves (NNR)

### Records within 2000m

2

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.

Features are displayed on the Environmental designations map on [page 35 >](#)

ID	Location	Name	Data source
2	182m SW	Glen Affric	Scottish Natural Heritage
-	1990m NW	Glen Affric	Scottish Natural Heritage

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

## 11.6 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.*





## 11.7 Designated Ancient Woodland

**Records within 2000m****12**

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.

Features are displayed on the Environmental designations map on [page 35 >](#)

ID	Location	Name	Woodland Type
1	76m N	Unknown	Long-Established (of plantation origin)
3	202m SW	Coille An Tuathanaich	Long-Established (of plantation origin)
4	502m NW	Unknown	Long-Established (of plantation origin)
5	997m W	Unknown	Long-Established (of plantation origin)
6	1118m W	Unknown	Long-Established (of plantation origin)
-	1448m N	Unknown	Long-Established (of plantation origin)
8	1458m NW	Unknown	Ancient (of semi-natural origin)
9	1577m NW	Unknown	Ancient (of semi-natural origin)
-	1693m N	Unknown	Long-Established (of plantation origin)
11	1752m NW	Unknown	Long-Established (of plantation origin)
-	1767m W	Unknown	Long-Established (of plantation origin)
-	1817m W	Unknown	Long-Established (of plantation origin)

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

## 11.8 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.*





## 11.9 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.*

## 11.10 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.*





## 12 Visual and cultural designations

### 12.1 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.*

### 12.2 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.*

### 12.3 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.*

### 12.4 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.*

## 12.5 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.*

## 12.6 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.*

## 12.7 Registered Parks and Gardens

Records within 250m

0

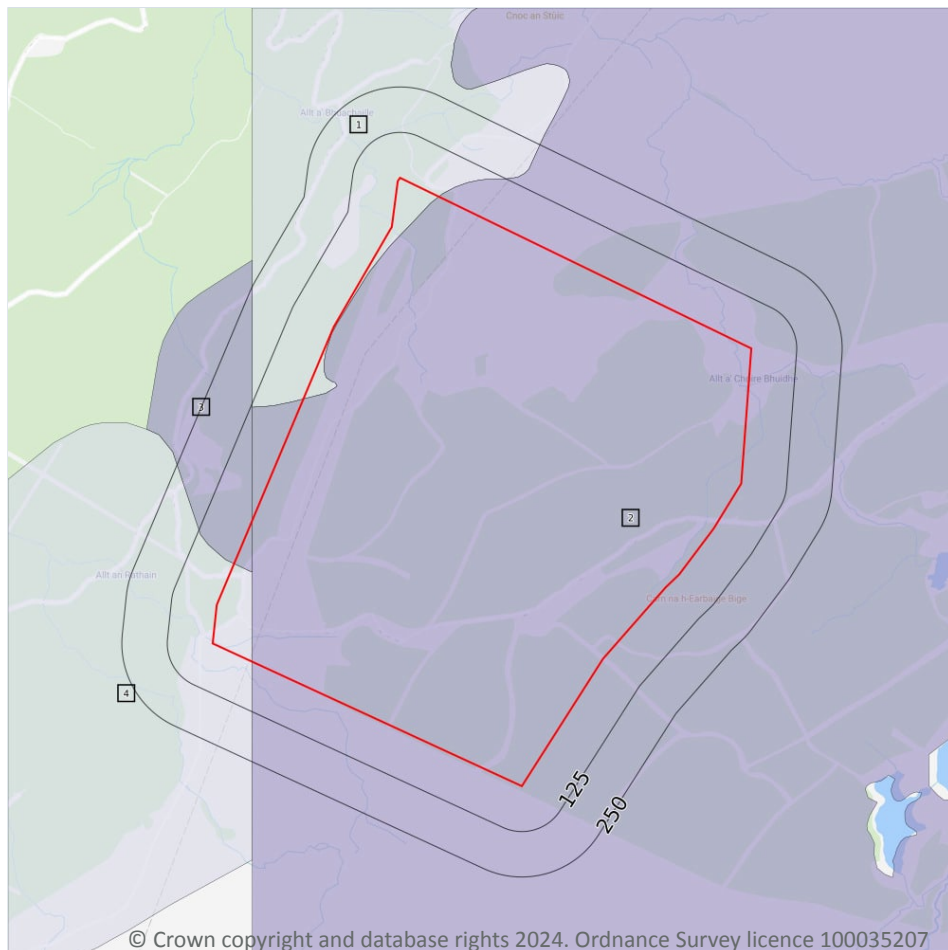
Parks and gardens assessed to be of particular interest and of special historic interest. The emphasis being on 'designed' landscapes, rather than on planting or botanical importance. Registration is a 'material consideration' in the planning process, meaning that planning authorities must consider the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

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





## 13 Agricultural designations



- Site Outline**
- Search buffers in metres (m)**
- Grade 1 - excellent quality
  - Grade 2 - very good quality
  - Grade 3 - good to moderate quality
  - Grade 4 - good quality
  - Grade 5 - moderate quality
  - Grade 6 - poor quality
  - Grade 7 - very poor quality

### 13.1 Agricultural Land Classification

Records within 250m

4

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 42](#) >

ID	Location	Classification	Description
1	On site	Grade 5.2	Land Suited only to Improved Grassland and Rough Grazings
2	On site	Grade 6.3	Land Suited only to Improved Grassland and Rough Grazings
3	On site	Grade 6.3	Land Suited only to Improved Grassland and Rough Grazings





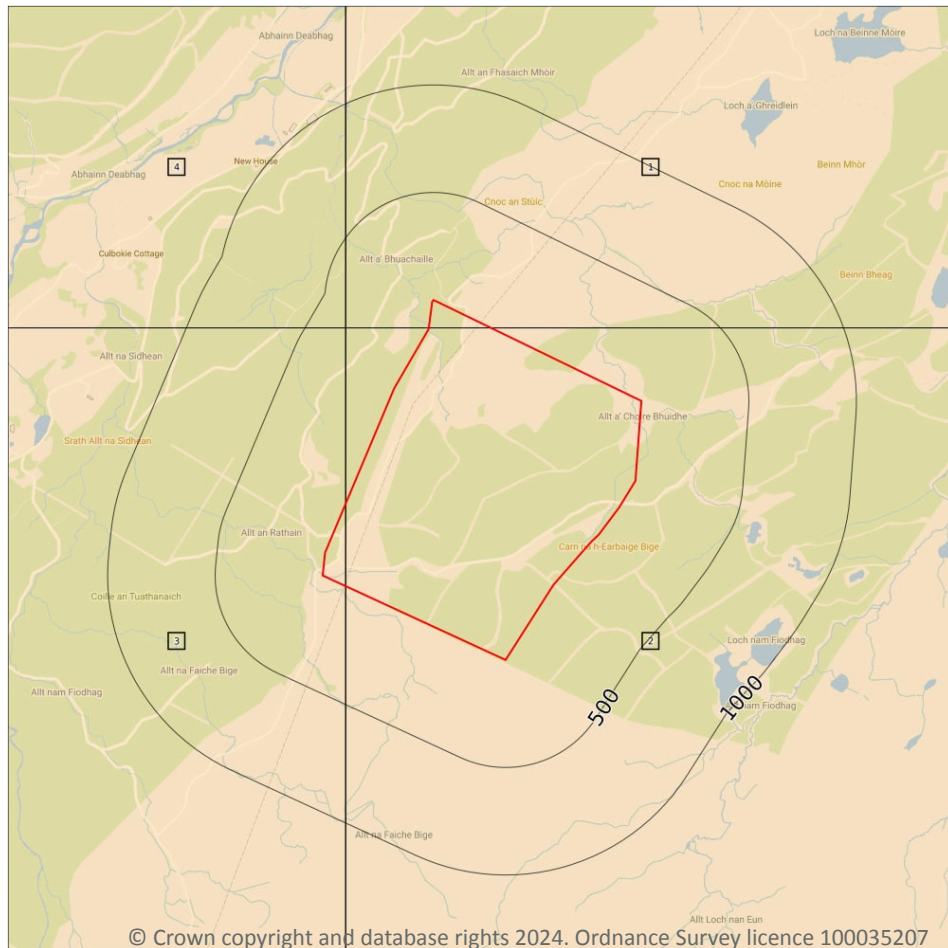
ID	Location	Classification	Description
4	On site	Grade 5.3	Land Suited only to Improved Grassland and Rough Grazings

*This data is sourced from the James Hutton Institute.*





## 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

4

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 44](#) >

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	No coverage	No coverage	NH32NW
2	On site	No coverage	Full	No coverage	No coverage	NH32SW
3	On site	No coverage	Full	No coverage	No coverage	NH22SE
4	336m NW	Full	Full	No coverage	No coverage	NH22NE





*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

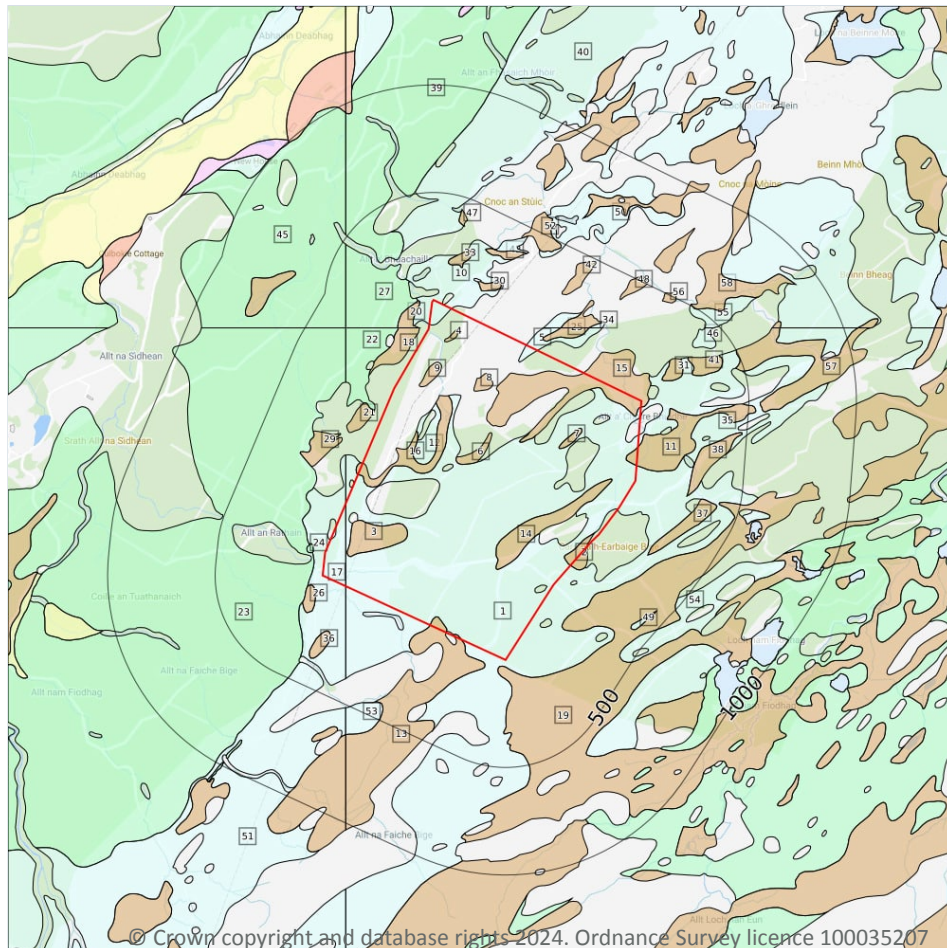
Details of made, worked, infilled, disturbed and landscaped ground at 1:10,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

*This data is sourced from the British Geological Survey.*





## Geology 1:10,000 scale - Superficial



**Site Outline**

Search buffers in metres (m)

**Landslip (10k)**

**Superficial geology (10k)**  
Please see table for more details.

### 14.3 Superficial geology (10k)

Records within 500m

58

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.

Features are displayed on the Geology 1:10,000 scale - Superficial map on [page 47](#) >

ID	Location	LEX Code	Description	Rock description
1	On site	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
2	On site	PEAT-P	Peat - Peat	Peat
3	On site	PEAT-P	Peat - Peat	Peat





ID	Location	LEX Code	Description	Rock description
4	On site	PEAT-P	Peat - Peat	Peat
5	On site	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
6	On site	PEAT-P	Peat - Peat	Peat
7	On site	PEAT-P	Peat - Peat	Peat
8	On site	PEAT-P	Peat - Peat	Peat
9	On site	PEAT-P	Peat - Peat	Peat
10	On site	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
11	On site	PEAT-P	Peat - Peat	Peat
12	On site	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
13	On site	PEAT-P	Peat - Peat	Peat
14	On site	PEAT-P	Peat - Peat	Peat
15	On site	PEAT-P	Peat - Peat	Peat
16	On site	PEAT-P	Peat - Peat	Peat
17	On site	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
18	31m NW	PEAT-P	Peat - Peat	Peat
19	32m S	PEAT-P	Peat - Peat	Peat
20	41m N	PEAT-P	Peat - Peat	Peat
21	45m NW	PEAT-P	Peat - Peat	Peat
22	45m NW	HMGDD-XDSV	Hummocky (moundy) Glacial Deposits, Devensian - Diamicton, Sand And Gravel	Diamicton, Sand And Gravel [unlithified Deposits Coding Scheme - Extended]
23	46m SW	HMGDD-XDSV	Hummocky (moundy) Glacial Deposits, Devensian - Diamicton, Sand And Gravel	Diamicton, Sand And Gravel [unlithified Deposits Coding Scheme - Extended]
24	55m W	HMGDD-XDSV	Hummocky (moundy) Glacial Deposits, Devensian - Diamicton, Sand And Gravel	Diamicton, Sand And Gravel [unlithified Deposits Coding Scheme - Extended]
25	56m NE	PEAT-P	Peat - Peat	Peat
26	66m SW	PEAT-P	Peat - Peat	Peat





ID	Location	LEX Code	Description	Rock description
27	67m N	HMGDD-XDSV	Hummocky (moundy) Glacial Deposits, Devensian - Diamicton, Sand And Gravel	Diamicton, Sand And Gravel [unlithified Deposits Coding Scheme - Extended]
28	107m N	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
29	130m W	PEAT-P	Peat - Peat	Peat
30	136m N	PEAT-P	Peat - Peat	Peat
31	138m NE	PEAT-P	Peat - Peat	Peat
32	142m NE	PEAT-P	Peat - Peat	Peat
33	183m N	PEAT-P	Peat - Peat	Peat
34	200m NE	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
35	223m E	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
36	225m SW	PEAT-P	Peat - Peat	Peat
37	231m E	PEAT-P	Peat - Peat	Peat
38	250m E	PEAT-P	Peat - Peat	Peat
39	251m N	HMGDD-XDSV	Hummocky (moundy) Glacial Deposits, Devensian - Diamicton, Sand And Gravel	Diamicton, Sand And Gravel [unlithified Deposits Coding Scheme - Extended]
40	266m N	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
41	268m NE	PEAT-P	Peat - Peat	Peat
42	286m NE	PEAT-P	Peat - Peat	Peat
43	308m N	PEAT-P	Peat - Peat	Peat
44	335m N	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
45	336m NW	HMGDD-XDSV	Hummocky (moundy) Glacial Deposits, Devensian - Diamicton, Sand And Gravel	Diamicton, Sand And Gravel [unlithified Deposits Coding Scheme - Extended]
46	349m NE	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
47	372m N	PEAT-P	Peat - Peat	Peat
48	381m NE	PEAT-P	Peat - Peat	Peat
49	397m SE	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
50	398m N	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
51	405m SW	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton





ID	Location	LEX Code	Description	Rock description
52	423m N	PEAT-P	Peat - Peat	Peat
53	426m SW	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
54	432m SE	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
55	450m NE	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
56	461m NE	PEAT-P	Peat - Peat	Peat
57	464m NE	PEAT-P	Peat - Peat	Peat
58	495m NE	PEAT-P	Peat - Peat	Peat

*This data is sourced from the British Geological Survey.*

## 14.4 Landslip (10k)

Records within 500m

0

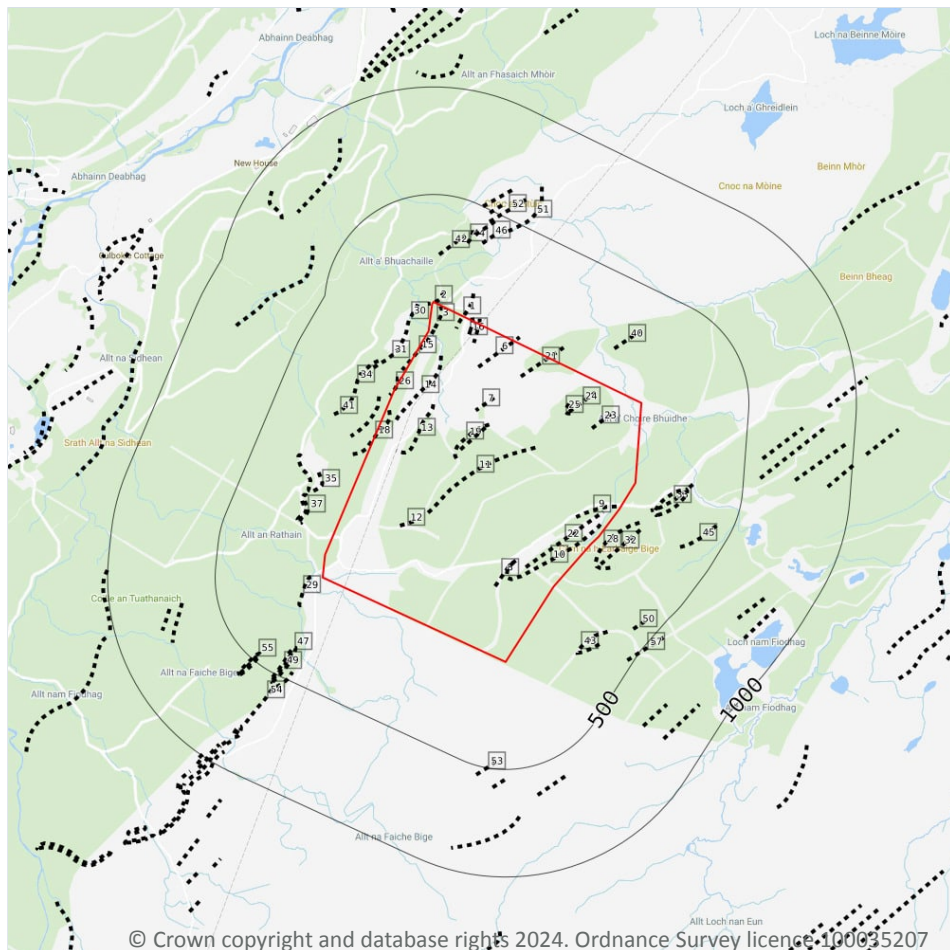
Mass movement deposits on BGS geological maps at 1:10,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

*This data is sourced from the British Geological Survey.*





## Geology 1:10,000 scale - Bedrock



**Site Outline**

Search buffers in metres (m)

..... Bedrock faults and other linear features (10k)

Bedrock geology (10k)  
Please see table for more details.

### 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

58

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.





Features are displayed on the Geology 1:10,000 scale - Bedrock map on [page 51](#) >

ID	Location	Category	Description
1	On site	LANDFORM	Ice marginal glacial meltwater channel, single side right
2	On site	LANDFORM	Ice marginal glacial meltwater channel, single side right
3	On site	LANDFORM	Ice marginal glacial meltwater channel, single side right
4	On site	LANDFORM	Ice marginal glacial meltwater channel, single side right
5	On site	LANDFORM	Ice marginal glacial meltwater channel, single side right
6	On site	LANDFORM	Axis of large-scale glacial flute
7	On site	LANDFORM	Axis of large-scale glacial flute
8	On site	LANDFORM	Marked concave break of slope, arrowheads denote uphill side
9	On site	LANDFORM	Marked concave break of slope, arrowheads denote uphill side
10	On site	LANDFORM	Marked concave break of slope, arrowheads denote uphill side
11	On site	LANDFORM	Marked concave break of slope, arrowheads denote uphill side
12	On site	LANDFORM	Marked concave break of slope, arrowheads denote uphill side
13	On site	LANDFORM	Ice marginal glacial meltwater channel, single side right
14	On site	LANDFORM	Ice marginal glacial meltwater channel, single side right
15	On site	LANDFORM	Ice marginal glacial meltwater channel, single side right
16	On site	LANDFORM	Ice marginal glacial meltwater channel, single side right
17	On site	LANDFORM	Ice marginal glacial meltwater channel, single side right
18	On site	LANDFORM	Ice marginal glacial meltwater channel, single side right
19	On site	LANDFORM	Marked concave break of slope, arrowheads denote uphill side
20	On site	LANDFORM	Axis of large-scale glacial flute
21	On site	LANDFORM	Axis of large-scale glacial flute
22	On site	LANDFORM	Axis of large-scale glacial flute
23	On site	LANDFORM	Axis of large-scale glacial flute
24	On site	LANDFORM	Axis of large-scale glacial flute
25	On site	LANDFORM	Marked concave break of slope, arrowheads denote uphill side
26	0m NW	LANDFORM	Ice marginal glacial meltwater channel, single side right
27	41m NW	LANDFORM	Ice marginal glacial meltwater channel, single side right





ID	Location	Category	Description
28	43m SE	LANDFORM	Marked concave break of slope, arrowheads denote uphill side
29	54m SW	LANDFORM	Marked concave break of slope, arrowheads denote uphill side
30	66m N	LANDFORM	Ice marginal glacial meltwater channel, single side right
31	80m NW	LANDFORM	Ice marginal glacial meltwater channel, single side right
32	96m SE	LANDFORM	Axis of large-scale glacial flute
33	128m E	LANDFORM	Axis of large-scale glacial flute
34	132m NW	LANDFORM	Ice marginal glacial meltwater channel, single side right
35	139m W	LANDFORM	Glacial meltwater channel, undifferentiated, centre line
36	145m E	LANDFORM	Form line
37	153m W	LANDFORM	Crestline of linear feature
38	157m W	LANDFORM	Marked concave break of slope, arrowheads denote uphill side
39	172m W	LANDFORM	Marked concave break of slope, arrowheads denote uphill side
40	173m NE	LANDFORM	Axis of large-scale glacial flute
41	179m NW	LANDFORM	Ice marginal glacial meltwater channel, single side right
42	222m N	LANDFORM	Axis of large-scale glacial flute
43	258m SE	LANDFORM	Marked concave break of slope, arrowheads denote uphill side
44	295m N	LANDFORM	Ice marginal glacial meltwater channel, single side right
45	333m E	LANDFORM	Axis of large-scale glacial flute
46	345m N	LANDFORM	Axis of large-scale glacial flute
47	349m SW	LANDFORM	Marked concave break of slope, arrowheads denote uphill side
48	366m N	LANDFORM	Axis of large-scale glacial flute
49	367m SW	LANDFORM	Crestline of linear feature
50	409m SE	LANDFORM	Crestline of linear feature
51	448m N	LANDFORM	Ice marginal glacial meltwater channel, single side right
52	450m N	LANDFORM	Axis of large-scale glacial flute
53	454m S	LANDFORM	Axis of large-scale glacial flute
54	458m SW	LANDFORM	Crestline of linear feature
55	460m SW	LANDFORM	Marked concave break of slope, arrowheads denote uphill side





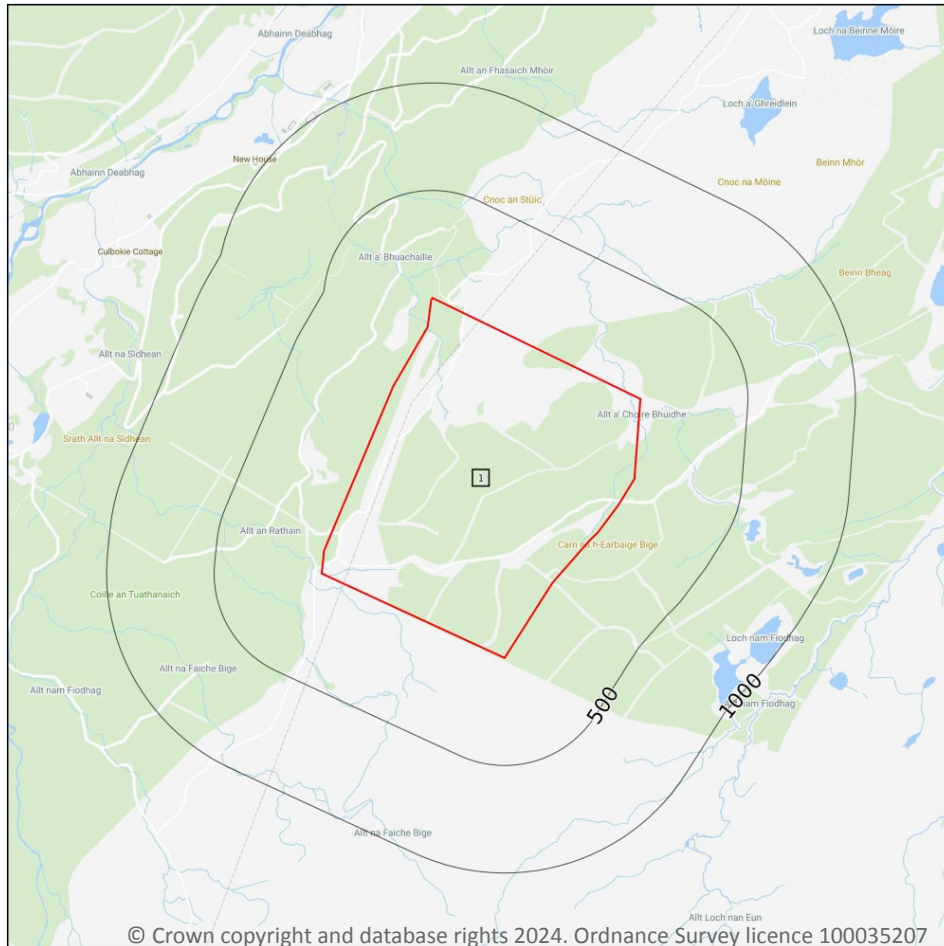
ID	Location	Category	Description
56	469m SW	LANDFORM	Crestline of linear feature
57	473m SE	LANDFORM	Axis of large-scale glacial flute
58	487m N	LANDFORM	Axis of large-scale glacial flute

*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.

Features are displayed on the Geology 1:50,000 scale - Availability map on [page 55](#) >

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	No coverage	Full	Full	No coverage	SC073w_Invermoriston_v4

This data is sourced from the British Geological Survey.





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

### 15.2 Artificial and made ground (50k)

Records within 500m

0

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.

*This data is sourced from the British Geological Survey.*

### 15.3 Artificial ground permeability (50k)

Records within 50m

0

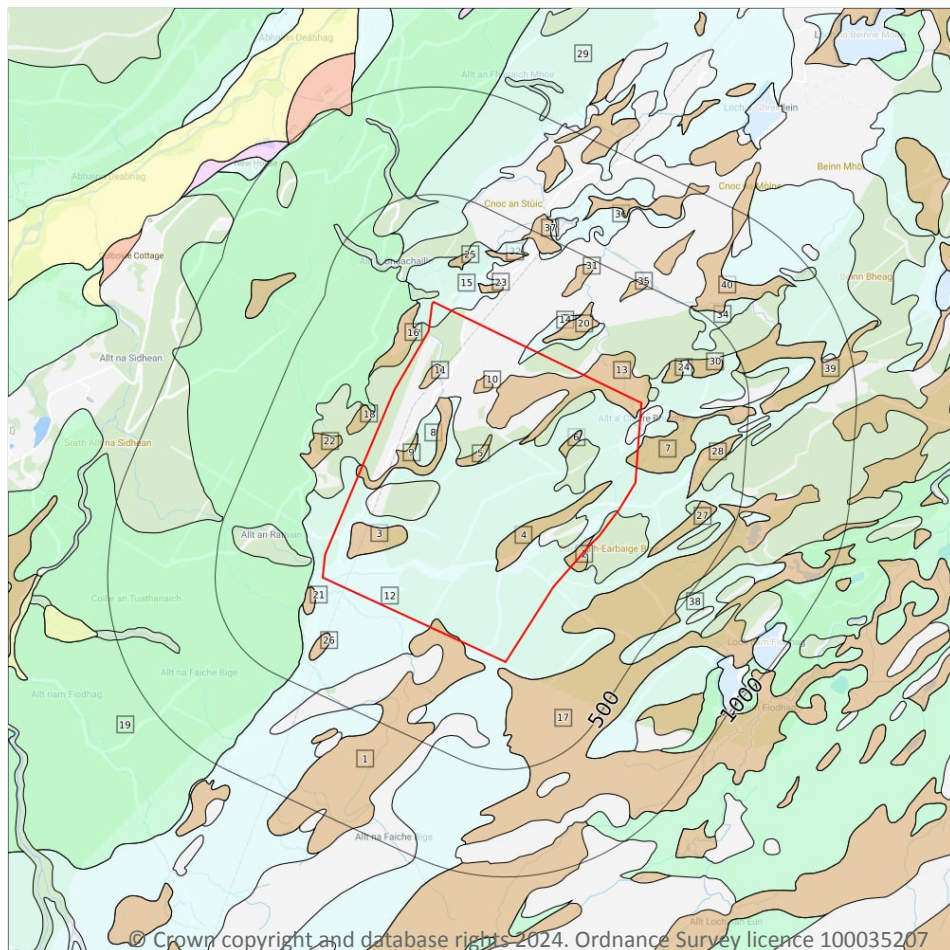
A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any artificial deposits (the zone between the land surface and the water table).

*This data is sourced from the British Geological Survey.*





## Geology 1:50,000 scale - 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

40

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 57](#) >

ID	Location	LEX Code	Description	Rock description
1	On site	PEAT-P	PEAT	PEAT
2	On site	PEAT-P	PEAT	PEAT
3	On site	PEAT-P	PEAT	PEAT
4	On site	PEAT-P	PEAT	PEAT





ID	Location	LEX Code	Description	Rock description
5	On site	PEAT-P	PEAT	PEAT
6	On site	PEAT-P	PEAT	PEAT
7	On site	PEAT-P	PEAT	PEAT
8	On site	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
9	On site	PEAT-P	PEAT	PEAT
10	On site	PEAT-P	PEAT	PEAT
11	On site	PEAT-P	PEAT	PEAT
12	On site	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
13	On site	PEAT-P	PEAT	PEAT
14	On site	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
15	On site	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
16	31m NW	PEAT-P	PEAT	PEAT
17	32m S	PEAT-P	PEAT	PEAT
18	45m NW	PEAT-P	PEAT	PEAT
19	45m NW	HMGDD-XDSV	HUMMOCKY (MOUNDY) GLACIAL DEPOSITS, DEVENSIAN	DIAMICTON, SAND AND GRAVEL
20	56m NE	PEAT-P	PEAT	PEAT
21	67m SW	PEAT-P	PEAT	PEAT
22	130m W	PEAT-P	PEAT	PEAT
23	136m N	PEAT-P	PEAT	PEAT
24	137m NE	PEAT-P	PEAT	PEAT
25	182m N	PEAT-P	PEAT	PEAT
26	225m SW	PEAT-P	PEAT	PEAT
27	231m E	PEAT-P	PEAT	PEAT
28	250m E	PEAT-P	PEAT	PEAT
29	266m N	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
30	268m NE	PEAT-P	PEAT	PEAT





ID	Location	LEX Code	Description	Rock description
31	286m NE	PEAT-P	PEAT	PEAT
32	308m N	PEAT-P	PEAT	PEAT
33	335m N	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
34	349m NE	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
35	381m NE	PEAT-P	PEAT	PEAT
36	398m N	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
37	423m N	PEAT-P	PEAT	PEAT
38	432m SE	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
39	464m NE	PEAT-P	PEAT	PEAT
40	496m NE	PEAT-P	PEAT	PEAT

*This data is sourced from the British Geological Survey.*

## 15.5 Superficial permeability (50k)

Records within 50m

22

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	Mixed	Low	Very Low
On site	Mixed	Low	Very Low
On site	Mixed	Low	Very Low
On site	Mixed	Low	Very Low
On site	Mixed	Low	Very Low
On site	Mixed	Low	Very Low
On site	Mixed	Low	Very Low
On site	Mixed	Low	Very Low
On site	Mixed	Low	Very Low
On site	Mixed	Low	Very Low
On site	Mixed	Low	Very Low





Location	Flow type	Maximum permeability	Minimum permeability
On site	Mixed	High	Low
On site	Mixed	High	Low
On site	Mixed	High	Low
On site	Mixed	High	Low
On site	Mixed	High	Low
31m NW	Mixed	Low	Very Low
32m S	Mixed	Low	Very Low
41m N	Mixed	Low	Very Low
45m NW	Mixed	Low	Very Low
45m NW	Mixed	High	Low
46m SW	Mixed	High	Low

*This data is sourced from the British Geological Survey.*

## 15.6 Landslip (50k)

<b>Records within 500m</b>	<b>0</b>
----------------------------	----------

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)

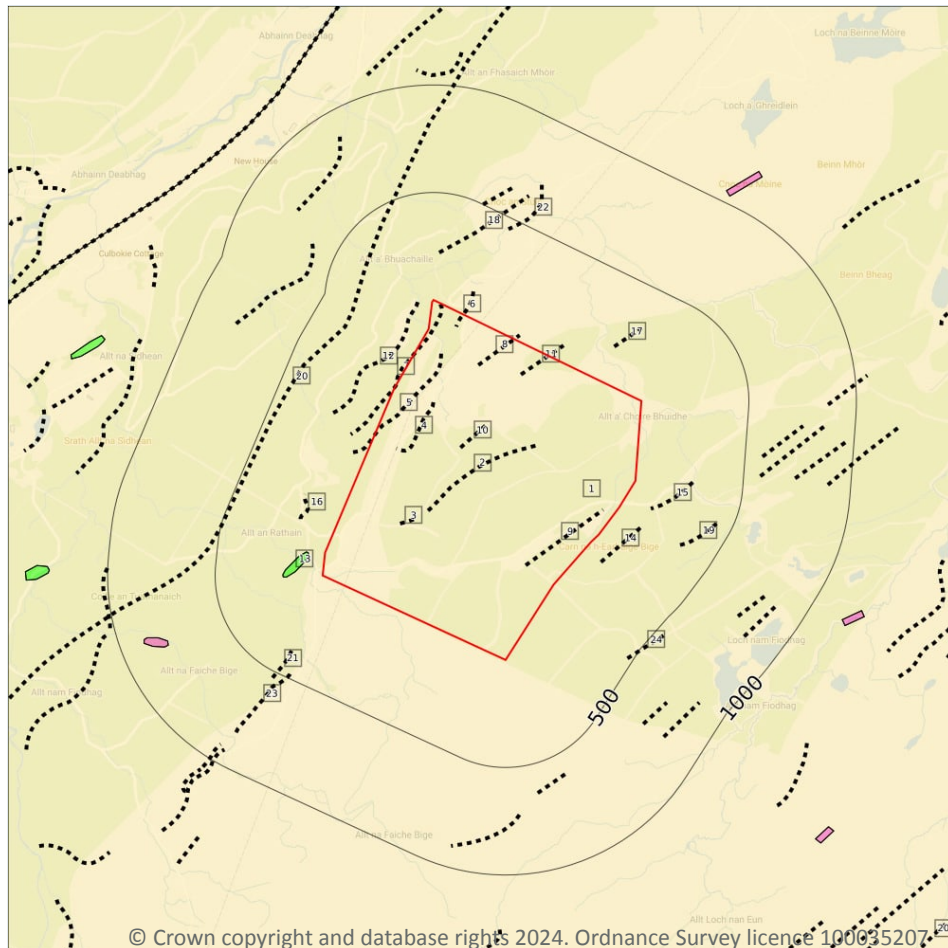
<b>Records within 50m</b>	<b>0</b>
---------------------------	----------

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 61](#) >

ID	Location	LEX Code	Description	Rock age
1	On site	TAPS-PSAMM	TARVIE PSAMMITE FORMATION - PSAMMITE	-
13	76m W	UIPC-AMHS	UNNAMED IGNEOUS INTRUSION, PRE-CALEDONIAN - AMPHIBOLITE AND HORNBLLENDE SCHIST	-

*This data is sourced from the British Geological Survey.*





## 15.9 Bedrock permeability (50k)

Records within 50m

3

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	Fracture	Low	Low
On site	Fracture	Low	Low
On site	Fracture	Low	Low

*This data is sourced from the British Geological Survey.*

## 15.10 Bedrock faults and other linear features (50k)

Records within 500m

22

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.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on [page 61](#) >

ID	Location	Category	Description
2	On site	LANDFORM	Marked concave break in slope
3	On site	LANDFORM	Marked concave break in slope
4	On site	LANDFORM	Ice-marginal glacial single-sided meltwater channel, right
5	On site	LANDFORM	Ice-marginal glacial single-sided meltwater channel, right
6	On site	LANDFORM	Ice-marginal glacial single-sided meltwater channel, right
7	On site	LANDFORM	Ice-marginal glacial single-sided meltwater channel, right
8	On site	LANDFORM	Axis of large-scale glacial flute
9	On site	LANDFORM	Axis of large-scale glacial flute
10	On site	LANDFORM	Axis of large-scale glacial flute
11	On site	LANDFORM	Axis of large-scale glacial flute
12	67m N	LANDFORM	Ice-marginal glacial single-sided meltwater channel, right
14	96m SE	LANDFORM	Axis of large-scale glacial flute





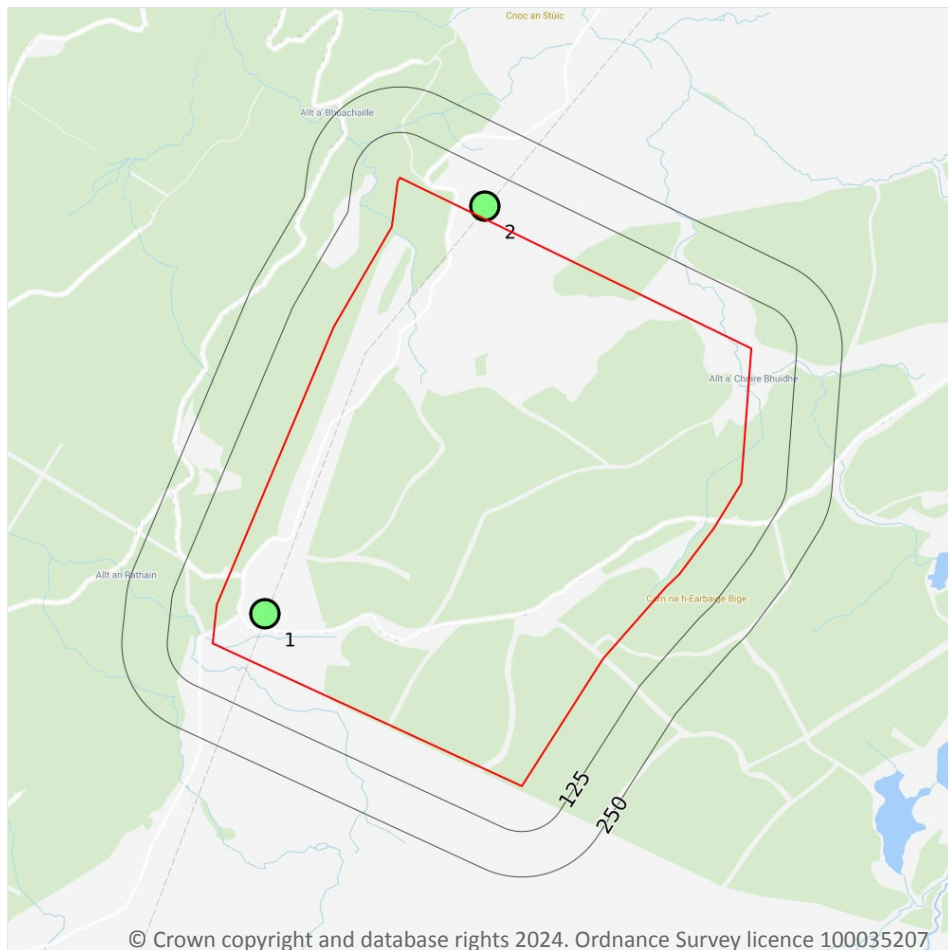
ID	Location	Category	Description
15	129m E	LANDFORM	Axis of large-scale glacial flute
16	153m W	LANDFORM	Linear feature crestline
17	172m NE	LANDFORM	Axis of large-scale glacial flute
18	222m N	LANDFORM	Axis of large-scale glacial flute
19	333m E	LANDFORM	Axis of large-scale glacial flute
20	341m NW	ALTERATION_AREA	Limit of pegmatitic rock veins
21	367m SW	LANDFORM	Linear feature crestline
22	449m N	LANDFORM	Ice-marginal glacial single-sided meltwater channel, right
23	458m SW	LANDFORM	Linear feature crestline
24	474m SE	LANDFORM	Axis of large-scale glacial flute

*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

2

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 64](#) >

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	On site	230037 823930	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF78-A	14.4	N	<a href="#">18949760</a> ↗
2	33m N	230643 825052	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF75-C	13.3	N	<a href="#">18949759</a> ↗



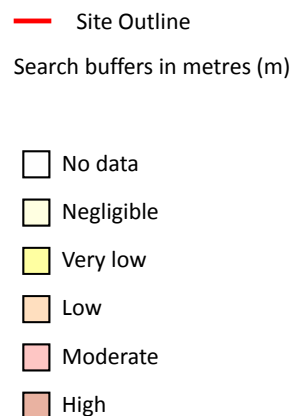
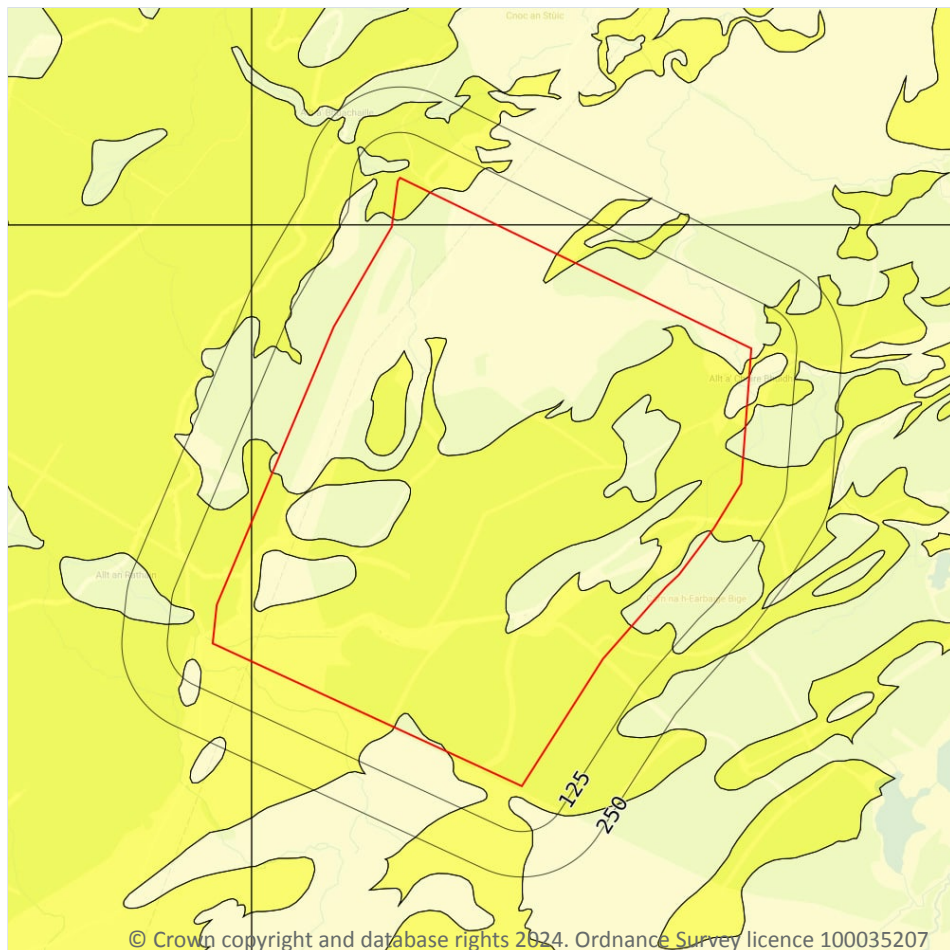


*This data is sourced from the British Geological Survey.*





## 17 Natural ground subsidence - Shrink swell clays



### 17.1 Shrink swell clays

#### Records within 50m

5

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 66](#) >

Location	Hazard rating	Details
On site	Negligible	Ground conditions predominantly non-plastic.
On site	Very low	Ground conditions predominantly low plasticity.
20m N	Negligible	Ground conditions predominantly non-plastic.





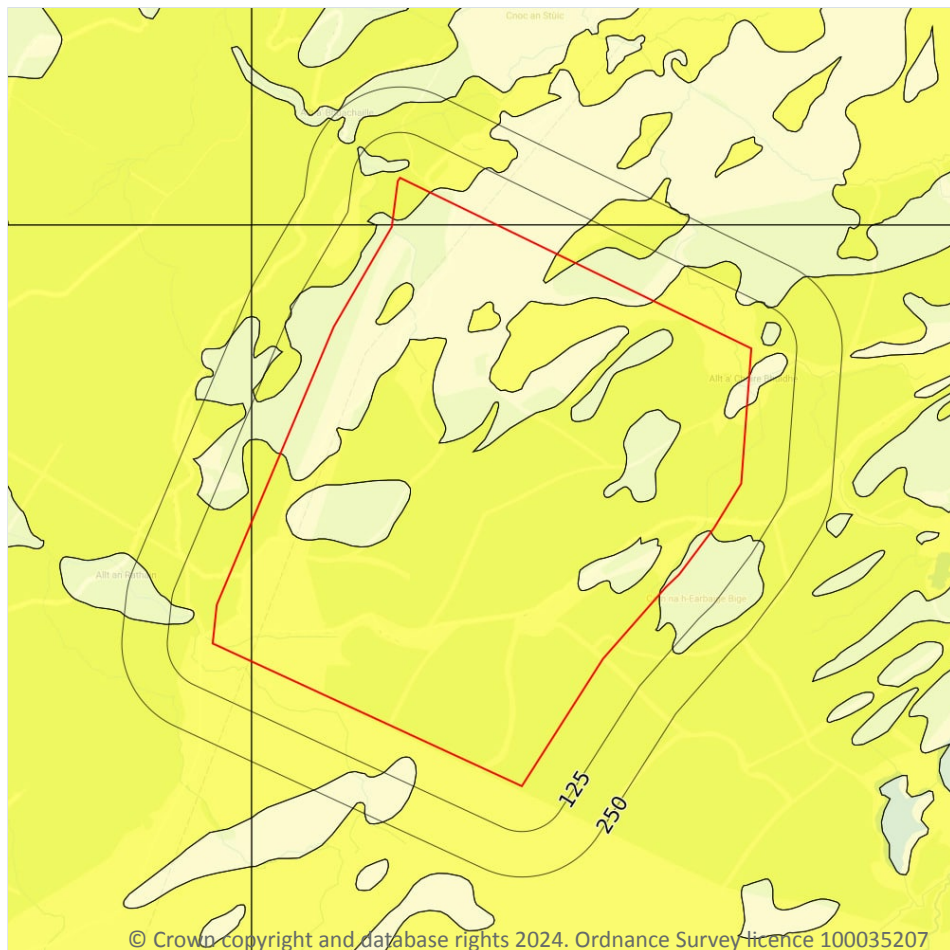
Location	Hazard rating	Details
41m W	Negligible	Ground conditions predominantly non-plastic.
45m NW	Very low	Ground conditions predominantly low plasticity.

*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

6

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 68 >](#)

Location	Hazard rating	Details
On site	Negligible	Running sand conditions are not thought to occur whatever the position of the water table. No identified constraints on lands use due to running conditions.





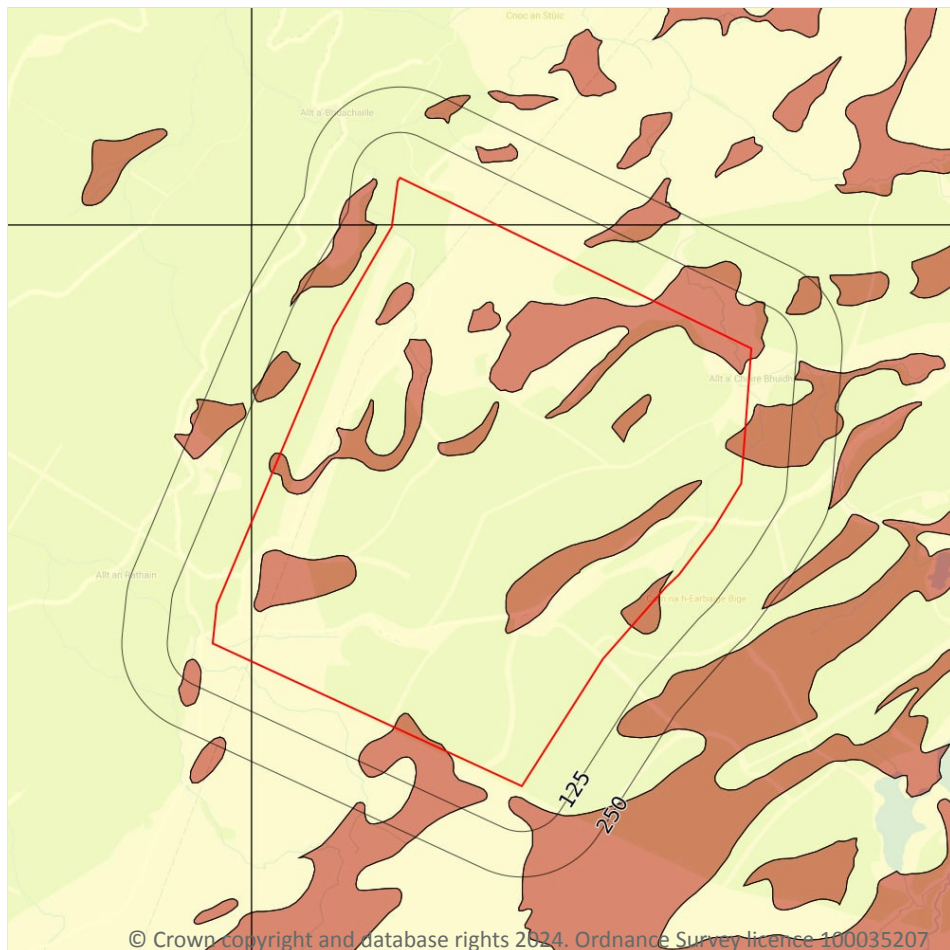
Location	Hazard rating	Details
On site	Very low	Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless water table rises rapidly.
20m N	Negligible	Running sand conditions are not thought to occur whatever the position of the water table. No identified constraints on lands use due to running conditions.
31m NW	Very low	Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless water table rises rapidly.
36m NE	Negligible	Running sand conditions are not thought to occur whatever the position of the water table. No identified constraints on lands use due to running conditions.
41m W	Negligible	Running sand conditions are not thought to occur whatever the position of the water table. No identified constraints on lands use due to running conditions.

*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

6

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 70 >](#)

Location	Hazard rating	Details
On site	Negligible	Compressible strata are not thought to occur.
On site	High	Highly compressible strata present. Significant constraint on land use depending on thickness.





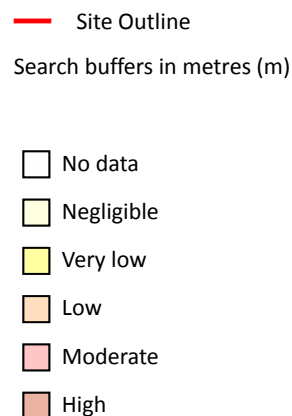
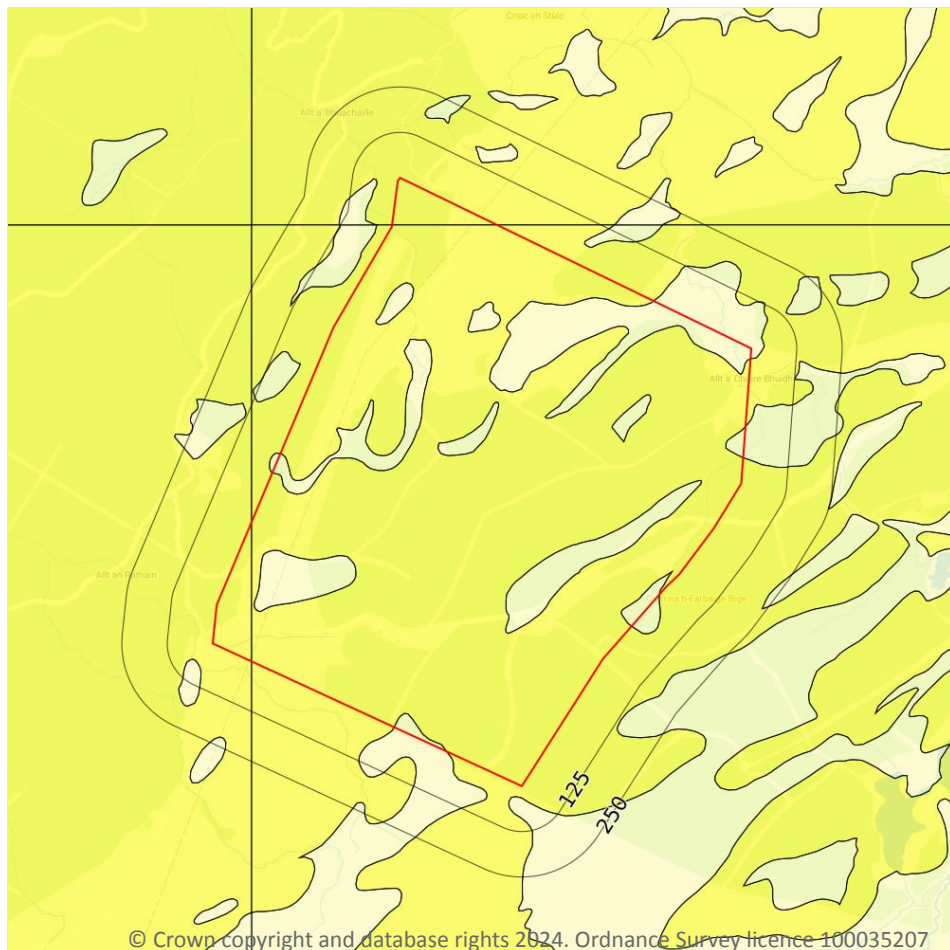
Location	Hazard rating	Details
31m NW	High	Highly compressible strata present. Significant constraint on land use depending on thickness.
32m S	High	Highly compressible strata present. Significant constraint on land use depending on thickness.
41m N	High	Highly compressible strata present. Significant constraint on land use depending on thickness.
45m NW	High	Highly compressible strata present. Significant constraint on land use depending on thickness.

*This data is sourced from the British Geological Survey.*





## Natural ground subsidence - Collapsible deposits



### 17.4 Collapsible deposits

#### Records within 50m

6

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 72 >](#)

Location	Hazard rating	Details
On site	Negligible	Deposits with potential to collapse when loaded and saturated are believed not to be present.
On site	Very low	Deposits with potential to collapse when loaded and saturated are unlikely to be present.
31m NW	Negligible	Deposits with potential to collapse when loaded and saturated are believed not to be present.





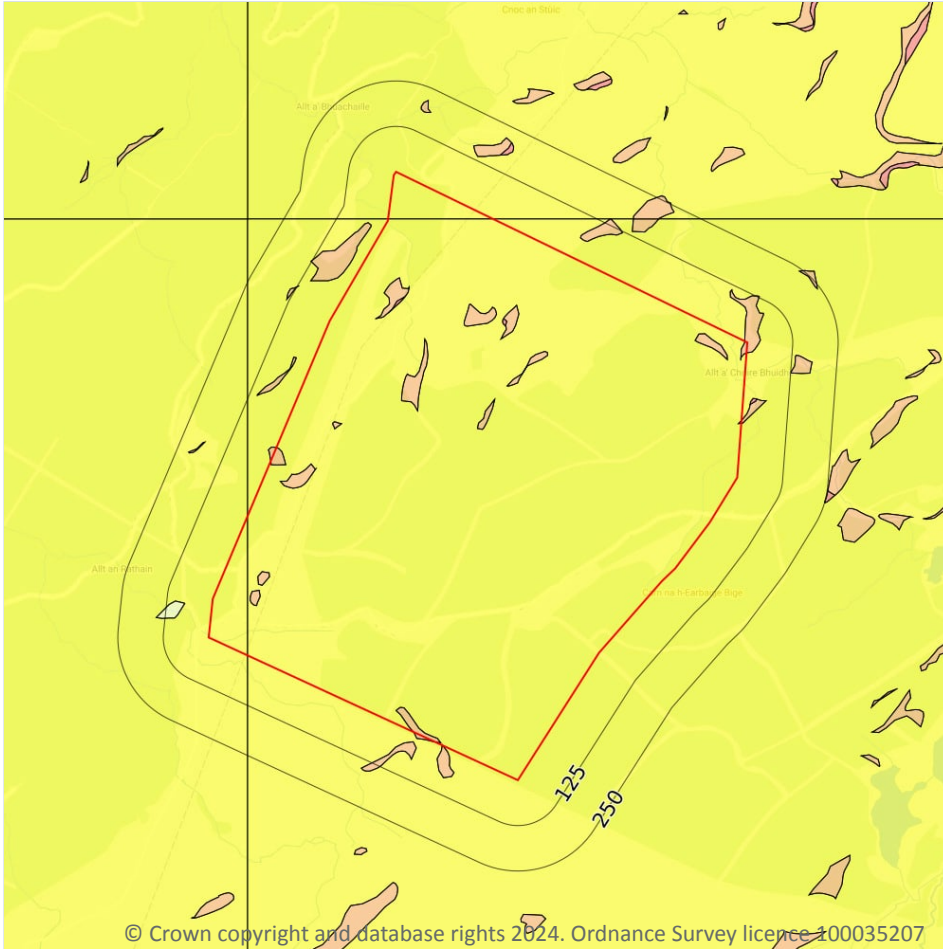
Location	Hazard rating	Details
32m S	Negligible	Deposits with potential to collapse when loaded and saturated are believed not to be present.
41m N	Negligible	Deposits with potential to collapse when loaded and saturated are believed not to be present.
45m NW	Negligible	Deposits with potential to collapse 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

7

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 74](#) >

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.





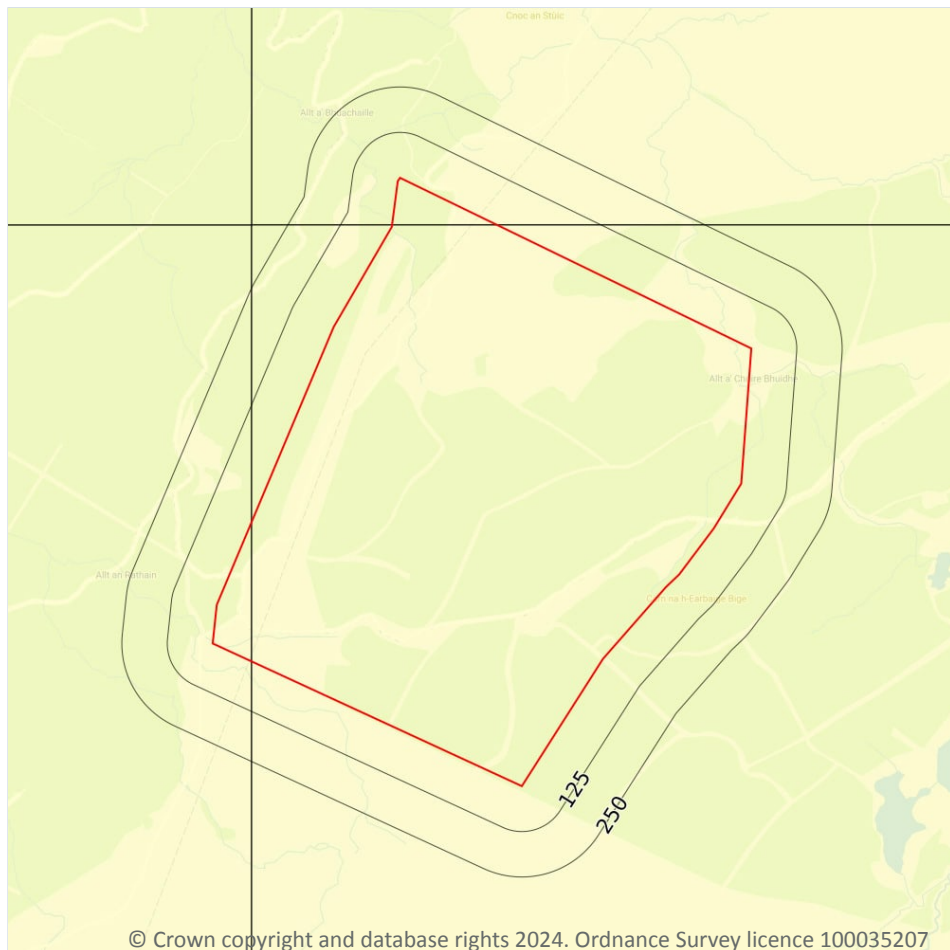
Location	Hazard rating	Details
On site	Low	Slope instability problems may be present or anticipated. Site investigation should consider specifically the slope stability of the site.
On site	Moderate	Slope instability problems are probably present or have occurred in the past. Land use should consider specifically the stability of the site.
20m E	Moderate	Slope instability problems are probably present or have occurred in the past. Land use should consider specifically the stability of the site.
25m S	Low	Slope instability problems may be present or anticipated. Site investigation should consider specifically the slope stability of the site.
31m NW	Low	Slope instability problems may be present or anticipated. Site investigation should consider specifically the slope stability of the site.
45m NW	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

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### 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 76](#)

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.



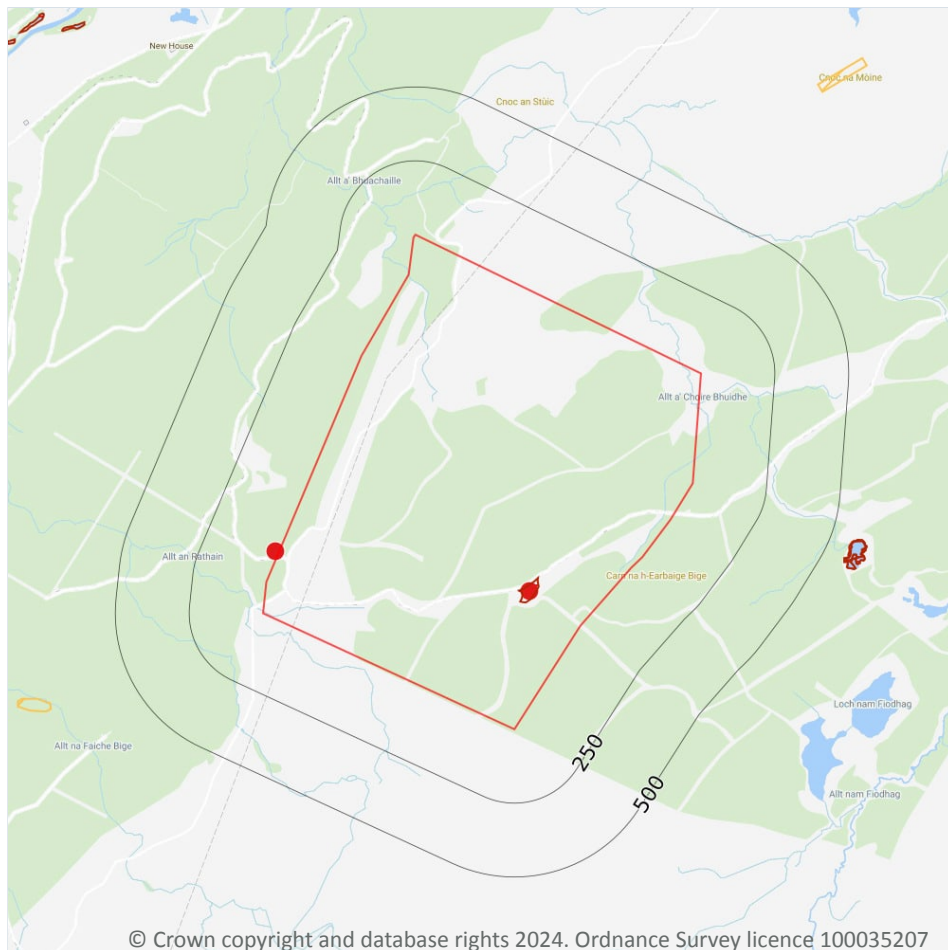


*This data is sourced from the British Geological Survey.*





## 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

2

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.

Features are displayed on the Mining and ground workings map on [page 78 >](#)



ID	Location	Details	Description
A	On site	<b>Name:</b> Guisachan Forest Pit <b>Address:</b> Tomich, Cannich, BEAULY, Ross-shire <b>Commodity:</b> Sand & Gravel <b>Status:</b> Ceased	<b>Type:</b> A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site <b>Status description:</b> Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority
1	10m W	<b>Name:</b> Guisachan Forest Pit <b>Address:</b> Tomich, Cannich, BEAULY, Ross-shire <b>Commodity:</b> Igneous & Metamorphic Rock <b>Status:</b> Ceased	<b>Type:</b> A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site <b>Status description:</b> Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority

*This data is sourced from the British Geological Survey.*

## 18.2 Surface ground workings

<b>Records within 250m</b>	<b>1</b>
----------------------------	----------

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 78 >](#)

ID	Location	Land Use	Year of mapping	Mapping scale
A	On site	Unspecified Disused Quarry	1991	1:10000

*This is data is sourced from Ordnance Survey/Groundsure.*

## 18.3 Underground workings

<b>Records within 1000m</b>	<b>0</b>
-----------------------------	----------

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

*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****1**

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 78 >](#)

ID	Location	Name	Commodity	Class	Likelihood
2	783m SW	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.

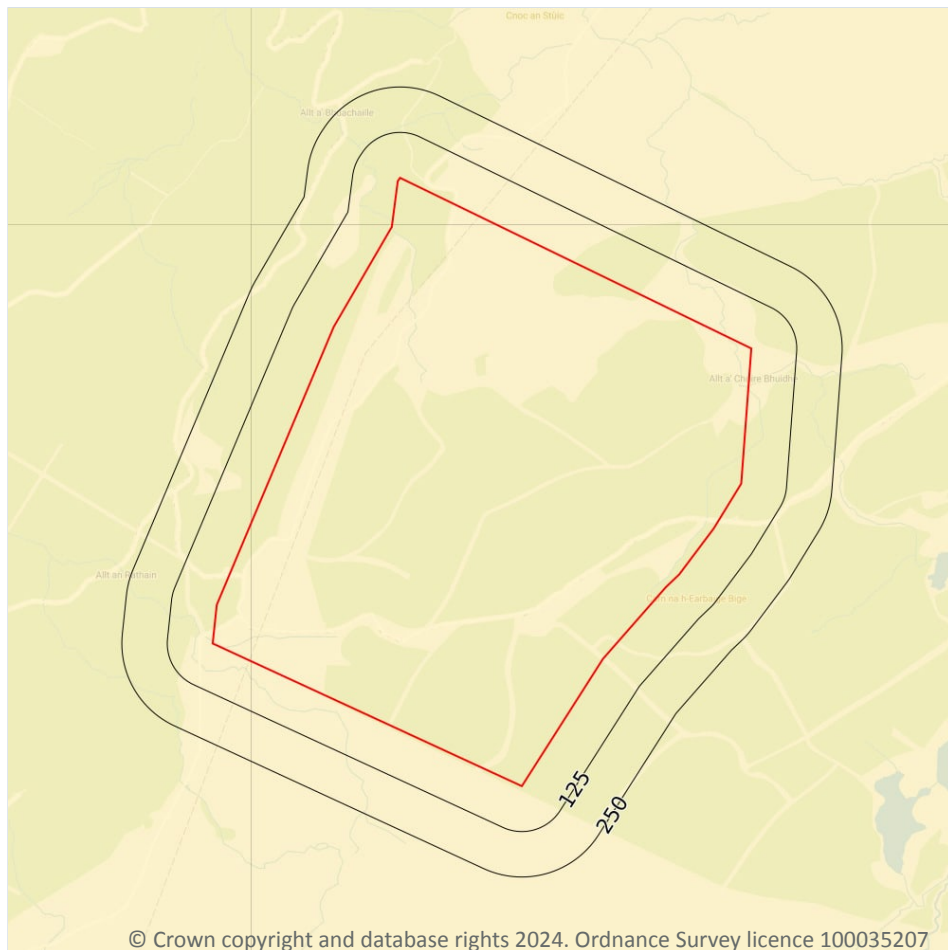
The database is not yet complete, and not all records have been verified. The absence of data does not mean that karst features are not present at a site. A reliability rating is included with each record.

*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 85](#) >

Location	Estimated properties affected	Radon Protection Measures required
On site	Between 1% and 3%	Basic





*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

28

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<sup>2</sup>. 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<sup>2</sup>; 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	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg





Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
19m S	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg

*This data is sourced from the British Geological Survey.*

## 21.2 BGS Estimated Urban Soil Chemistry

<b>Records within 50m</b>	<b>0</b>
---------------------------	----------

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<sup>2</sup>).

*This data is sourced from the British Geological Survey.*

## 21.3 BGS Measured Urban Soil Chemistry

<b>Records within 50m</b>	<b>0</b>
---------------------------	----------

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<sup>2</sup>.

*This data is sourced from the British Geological Survey.*





## 22 Railway infrastructure and projects

### 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	0
---------------------	---

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.

*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

0

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

*This data is sourced from OpenStreetMap.*

## 22.7 Railways

Records within 250m

0

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

*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.*





## Data providers

Groundsure works with respected data providers to bring you the most relevant and accurate information. To find out who they are and their areas of expertise see <https://www.groundsure.com/sources-reference> ↗.

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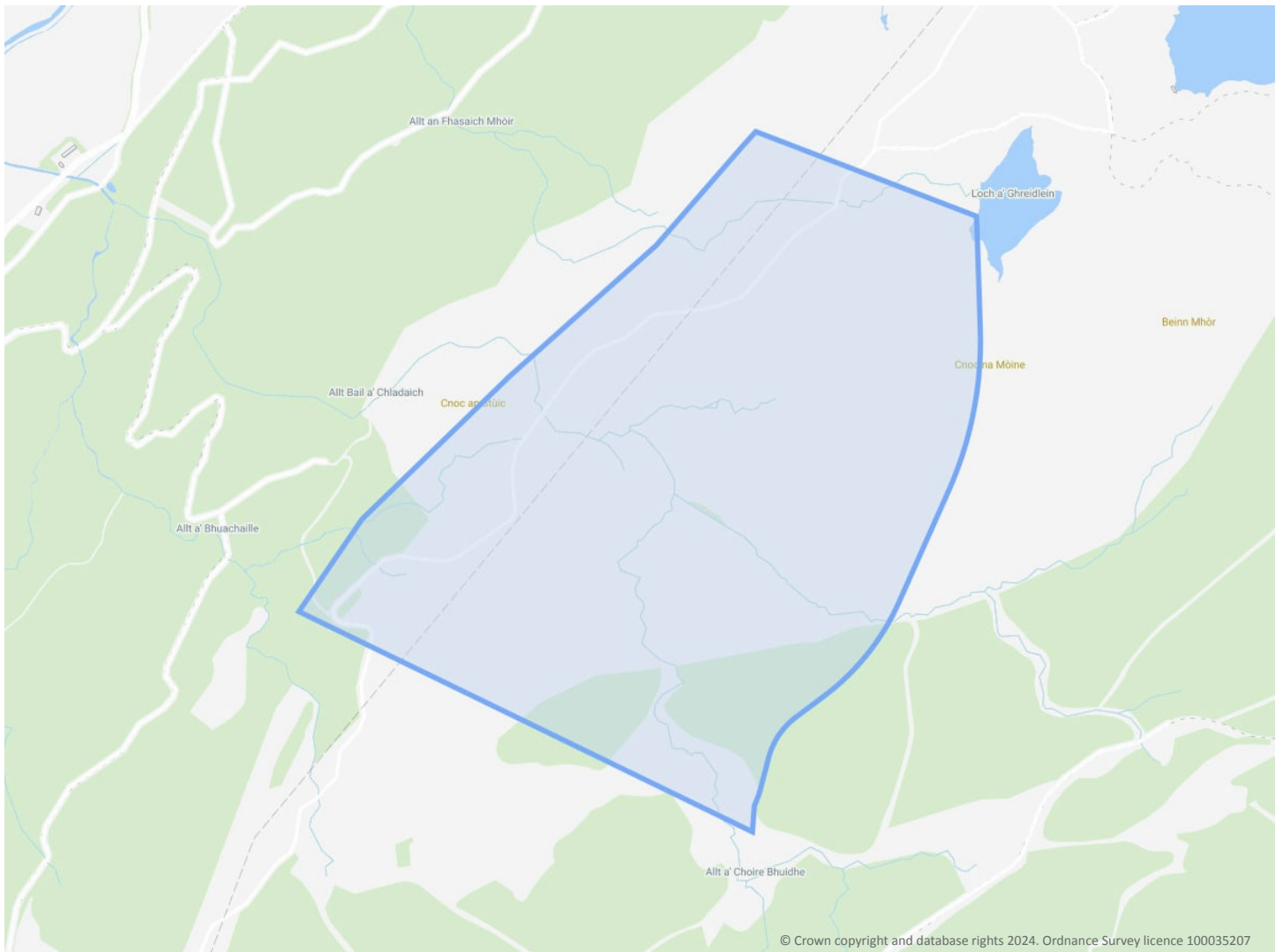
## Scotland, Red Line Boundary

### Order Details

**Date:** 01/05/2024  
**Your ref:** Scotland, Red Line Boundary  
**Our Ref:** GSIP-2024-14714-18280\_B

### Site Details

**Location:** 231527 825150  
**Area:** 120.28 ha  
**Authority:** [The Highland Council](#) ↗



**Summary of findings**

[p. 2 >](#)

**Aerial image**

[p. 7 >](#)

**OS MasterMap site plan**

N/A: >10ha

[Insight User Guide](#) ↗



## Summary of findings

Page	Section	Past land use	On site	0-50m	50-250m	250-500m	500-2000m
12	1.1	Historical industrial land uses	0	0	0	0	-
12	1.2	Historical tanks	0	0	0	0	-
12	1.3	Historical energy features	0	0	0	0	-
13	1.4	Historical petrol stations	0	0	0	0	-
13	1.5	Historical garages	0	0	0	0	-
13	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
14	2.1	Historical industrial land uses	0	0	0	0	-
14	2.2	Historical tanks	0	0	0	0	-
14	2.3	Historical energy features	0	0	0	0	-
14	2.4	Historical petrol stations	0	0	0	0	-
15	2.5	Historical garages	0	0	0	0	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
16	3.1	Active or recent landfill	0	0	0	0	-
16	3.2	Historical landfill (BGS records)	0	0	0	0	-
16	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
16	3.4	Licensed waste sites	0	0	0	0	-
16	3.5	Historical waste sites	0	0	0	0	-
Page	Section	<u>Current industrial land use &gt;</u>	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">17 &gt;</a>	<a href="#">4.1 &gt;</a>	<a href="#">Recent industrial land uses &gt;</a>	3	1	0	-	-
18	4.2	Current or recent petrol stations	0	0	0	0	-
18	4.3	Electricity cables	0	0	0	0	-
18	4.4	Gas pipelines	0	0	0	0	-
18	4.5	Sites determined as Contaminated Land	0	0	0	0	-
18	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
19	4.7	Regulated explosive sites	0	0	0	0	-





19	4.8	Hazardous substance storage/usage	0	0	0	0	-
19	4.9	Part A(1), IPPC and Historic IPC Authorisations	0	0	0	0	-
19	4.10	Part B Authorisations	0	0	0	0	-
19	4.11	Pollution inventory substances	0	0	0	0	-
20	4.12	Pollution inventory waste transfers	0	0	0	0	-
20	4.13	Pollution inventory radioactive waste	0	0	0	0	-
Page	Section	Hydrogeology	On site	0-50m	50-250m	250-500m	500-2000m
21	5.1	Superficial aquifer	None (within 500m)				
<a href="#">22</a> >	<a href="#">5.2</a> >	<a href="#">Bedrock aquifer</a> >	Identified (within 500m)				
Page	Section	<a href="#">Hydrology</a> >	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">24</a> >	<a href="#">6.1</a> >	<a href="#">Water Network (OS MasterMap)</a> >	21	5	8	-	-
<a href="#">27</a> >	<a href="#">6.2</a> >	<a href="#">Surface water features</a> >	1	4	9	-	-
Page	Section	<a href="#">River flooding</a> >					
<a href="#">28</a> >	<a href="#">7.1</a> >	<a href="#">River flooding</a> >	1 in 30 year, 0.3m - 1.0m (within 50m)				
Page	Section	Coastal flooding					
30	8.1	Coastal flooding	Negligible (within 50m)				
Page	Section	<a href="#">Surface water flooding</a> >					
<a href="#">31</a> >	<a href="#">9.1</a> >	<a href="#">Surface water flooding</a> >	1 in 30 year, Greater than 1.0m (within 50m)				
Page	Section	<a href="#">Groundwater flooding</a> >					
<a href="#">33</a> >	<a href="#">10.1</a> >	<a href="#">Groundwater flooding</a> >	Low (within 50m)				
Page	Section	<a href="#">Environmental designations</a> >	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">34</a> >	<a href="#">11.1</a> >	<a href="#">Sites of Special Scientific Interest (SSSI)</a> >	0	0	0	0	1
35	11.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
<a href="#">35</a> >	<a href="#">11.3</a> >	<a href="#">Special Areas of Conservation (SAC)</a> >	0	0	0	0	1
<a href="#">36</a> >	<a href="#">11.4</a> >	<a href="#">Special Protection Areas (SPA)</a> >	0	0	0	0	2
<a href="#">36</a> >	<a href="#">11.5</a> >	<a href="#">National Nature Reserves (NNR)</a> >	0	0	0	0	2
37	11.6	Local Nature Reserves (LNR)	0	0	0	0	0
<a href="#">37</a> >	<a href="#">11.7</a> >	<a href="#">Designated Ancient Woodland</a> >	0	0	1	0	22
38	11.8	Biosphere Reserves	0	0	0	0	0





38	11.9	Forest Parks	0	0	0	0	0
38	11.10	Marine Conservation Zones	0	0	0	0	0
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
39	12.1	World Heritage Sites	0	0	0	-	-
39	12.2	Area of Outstanding Natural Beauty	0	0	0	-	-
39	12.3	National Parks	0	0	0	-	-
39	12.4	Listed Buildings	0	0	0	-	-
40	12.5	Conservation Areas	0	0	0	-	-
40	12.6	Scheduled Ancient Monuments	0	0	0	-	-
40	12.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations >	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">41</a> >	<a href="#">13.1</a> >	<a href="#">Agricultural Land Classification</a> >	Grade 6.3 (within 250m)				
Page	Section	Geology 1:10,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">42</a> >	<a href="#">14.1</a> >	<a href="#">10k Availability</a> >	Identified (within 500m)				
44	14.2	Artificial and made ground (10k)	0	0	0	0	-
<a href="#">45</a> >	<a href="#">14.3</a> >	<a href="#">Superficial geology (10k)</a> >	29	2	17	14	-
48	14.4	Landslip (10k)	0	0	0	0	-
49	14.5	Bedrock geology (10k)	0	0	0	0	-
<a href="#">49</a> >	<a href="#">14.6</a> >	<a href="#">Bedrock faults and other linear features (10k)</a> >	10	7	8	12	-
Page	Section	Geology 1:50,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">52</a> >	<a href="#">15.1</a> >	<a href="#">50k Availability</a> >	Identified (within 500m)				
53	15.2	Artificial and made ground (50k)	0	0	0	0	-
53	15.3	Artificial ground permeability (50k)	0	0	-	-	-
<a href="#">54</a> >	<a href="#">15.4</a> >	<a href="#">Superficial geology (50k)</a> >	25	1	10	9	-
<a href="#">56</a> >	<a href="#">15.5</a> >	<a href="#">Superficial permeability (50k)</a> >	Identified (within 50m)				
58	15.6	Landslip (50k)	0	0	0	0	-
58	15.7	Landslip permeability (50k)	None (within 50m)				
<a href="#">59</a> >	<a href="#">15.8</a> >	<a href="#">Bedrock geology (50k)</a> >	2	0	0	0	-
<a href="#">60</a> >	<a href="#">15.9</a> >	<a href="#">Bedrock permeability (50k)</a> >	Identified (within 50m)				





<a href="#">60 &gt;</a>	<a href="#">15.10 &gt;</a>	<a href="#">Bedrock faults and other linear features (50k) &gt;</a>	6	1	3	6	-
Page	Section	<a href="#">Boreholes &gt;</a>	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">62 &gt;</a>	<a href="#">16.1 &gt;</a>	<a href="#">BGS Boreholes &gt;</a>	8	1	0	-	-
Page	Section	<a href="#">Natural ground subsidence &gt;</a>					
<a href="#">64 &gt;</a>	<a href="#">17.1 &gt;</a>	<a href="#">Shrink swell clays &gt;</a>	Very low (within 50m)				
<a href="#">66 &gt;</a>	<a href="#">17.2 &gt;</a>	<a href="#">Running sands &gt;</a>	Very low (within 50m)				
<a href="#">68 &gt;</a>	<a href="#">17.3 &gt;</a>	<a href="#">Compressible deposits &gt;</a>	High (within 50m)				
<a href="#">69 &gt;</a>	<a href="#">17.4 &gt;</a>	<a href="#">Collapsible deposits &gt;</a>	Very low (within 50m)				
<a href="#">70 &gt;</a>	<a href="#">17.5 &gt;</a>	<a href="#">Landslides &gt;</a>	Moderate (within 50m)				
<a href="#">72 &gt;</a>	<a href="#">17.6 &gt;</a>	<a href="#">Ground dissolution of soluble rocks &gt;</a>	Negligible (within 50m)				
Page	Section	<a href="#">Mining and ground workings &gt;</a>	On site	0-50m	50-250m	250-500m	500-2000m
74	18.1	BritPits	0	0	0	0	-
75	18.2	Surface ground workings	0	0	0	-	-
75	18.3	Underground workings	0	0	0	0	0
75	18.4	Underground mining extents	0	0	0	0	-
75	18.5	Historical Mineral Planning Areas	0	0	0	0	-
<a href="#">75 &gt;</a>	<a href="#">18.6 &gt;</a>	<a href="#">Non-coal mining &gt;</a>	1	0	0	0	0
76	18.7	JPB mining areas	None (within 0m)				
76	18.8	The Coal Authority non-coal mining	0	0	0	0	-
76	18.9	Researched mining	0	0	0	0	-
77	18.10	Mining record office plans	0	0	0	0	-
77	18.11	BGS mine plans	0	0	0	0	-
77	18.12	Coal mining	None (within 0m)				
77	18.13	Brine areas	None (within 0m)				
77	18.14	Gypsum areas	None (within 0m)				
78	18.15	Tin mining	None (within 0m)				
78	18.16	Clay mining	None (within 0m)				
Page	Section	<a href="#">Ground cavities and sinkholes</a>	On site	0-50m	50-250m	250-500m	500-2000m
79	19.1	Natural cavities	0	0	0	0	-

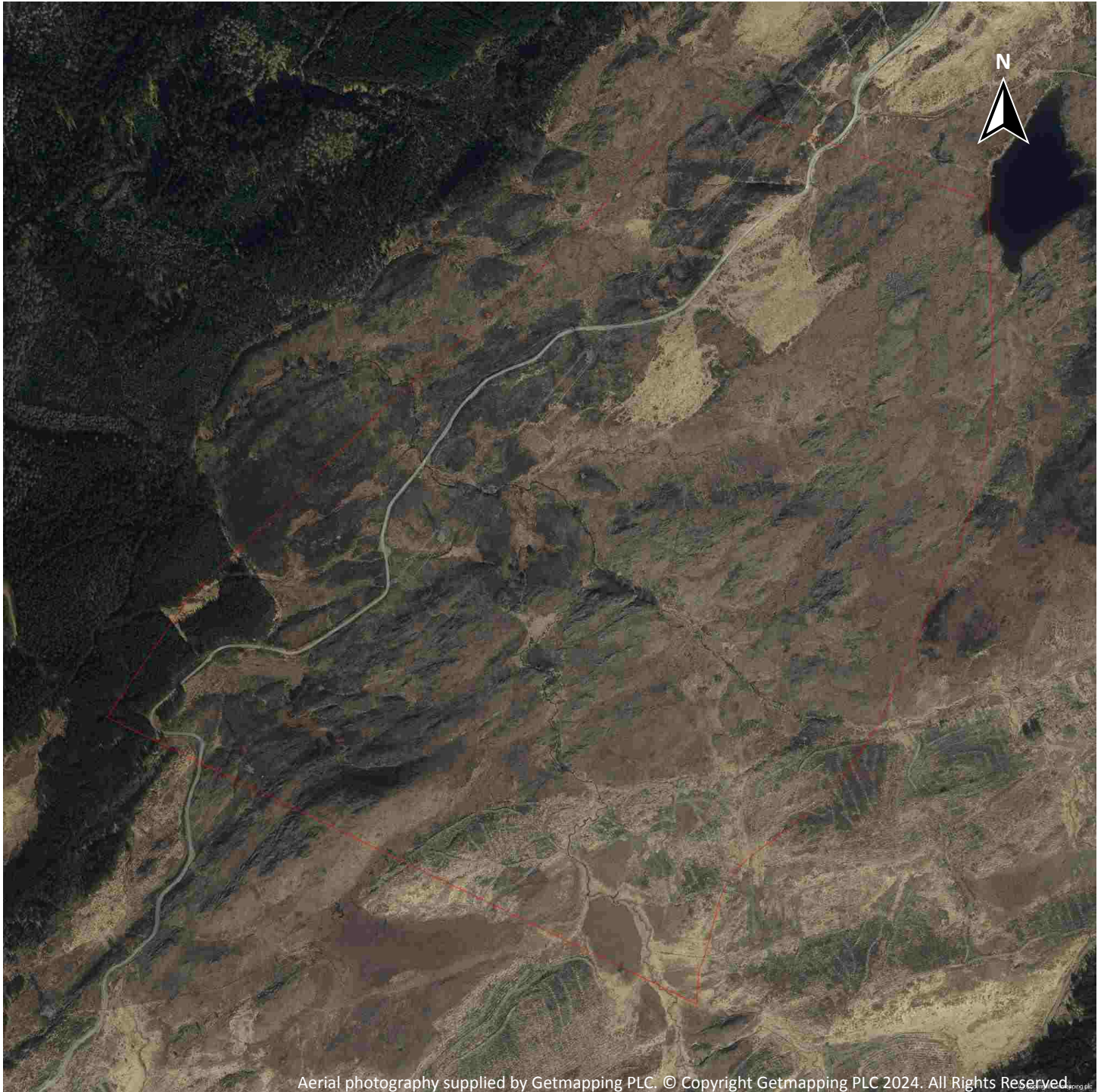




79	19.2	Mining cavities	0	0	0	0	0
79	19.3	Reported recent incidents	0	0	0	0	-
79	19.4	Historical incidents	0	0	0	0	-
80	19.5	National karst database	0	0	0	0	-
Page	Section	<a href="#">Radon &gt;</a>					
<a href="#">81 &gt;</a>	<a href="#">20.1 &gt;</a>	<a href="#">Radon &gt;</a>	Greater than 30% (within 0m)				
Page	Section	<a href="#">Soil chemistry &gt;</a>	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">83 &gt;</a>	<a href="#">21.1 &gt;</a>	<a href="#">BGS Estimated Background Soil Chemistry &gt;</a>	31	2	-	-	-
84	21.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
85	21.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	<a href="#">Railway infrastructure and projects</a>	On site	0-50m	50-250m	250-500m	500-2000m
86	22.1	Underground railways (London)	0	0	0	-	-
86	22.2	Underground railways (Non-London)	0	0	0	-	-
86	22.3	Railway tunnels	0	0	0	-	-
86	22.4	Historical railway and tunnel features	0	0	0	-	-
86	22.5	Royal Mail tunnels	0	0	0	-	-
87	22.6	Historical railways	0	0	0	-	-
87	22.7	Railways	0	0	0	-	-
87	22.8	Crossrail 1	0	0	0	0	-
87	22.9	Crossrail 2	0	0	0	0	-
87	22.10	HS2	0	0	0	0	-



## Recent aerial photograph



Capture Date: 29/05/2020

Site Area: 120.28ha





## An aerial photograph showing a landscape with a red boundary line, a white road, and a north arrow. The landscape is a mix of green forested areas and brownish, possibly cleared or agricultural land. A white road or path winds through the area. A red line outlines a specific region. A north arrow is located in the top right corner, pointing upwards. The text 'Aerial photography supplied by Getmapping PLC. © Copyright Getmapping PLC 2024. All Rights Reserved.' is visible at the bottom of the image.

Site Area: 120.28ha



## Recent site history - 2014 aerial photograph



Capture Date: 26/08/2014

Site Area: 120.28ha





## Recent site history - 2009 aerial photograph



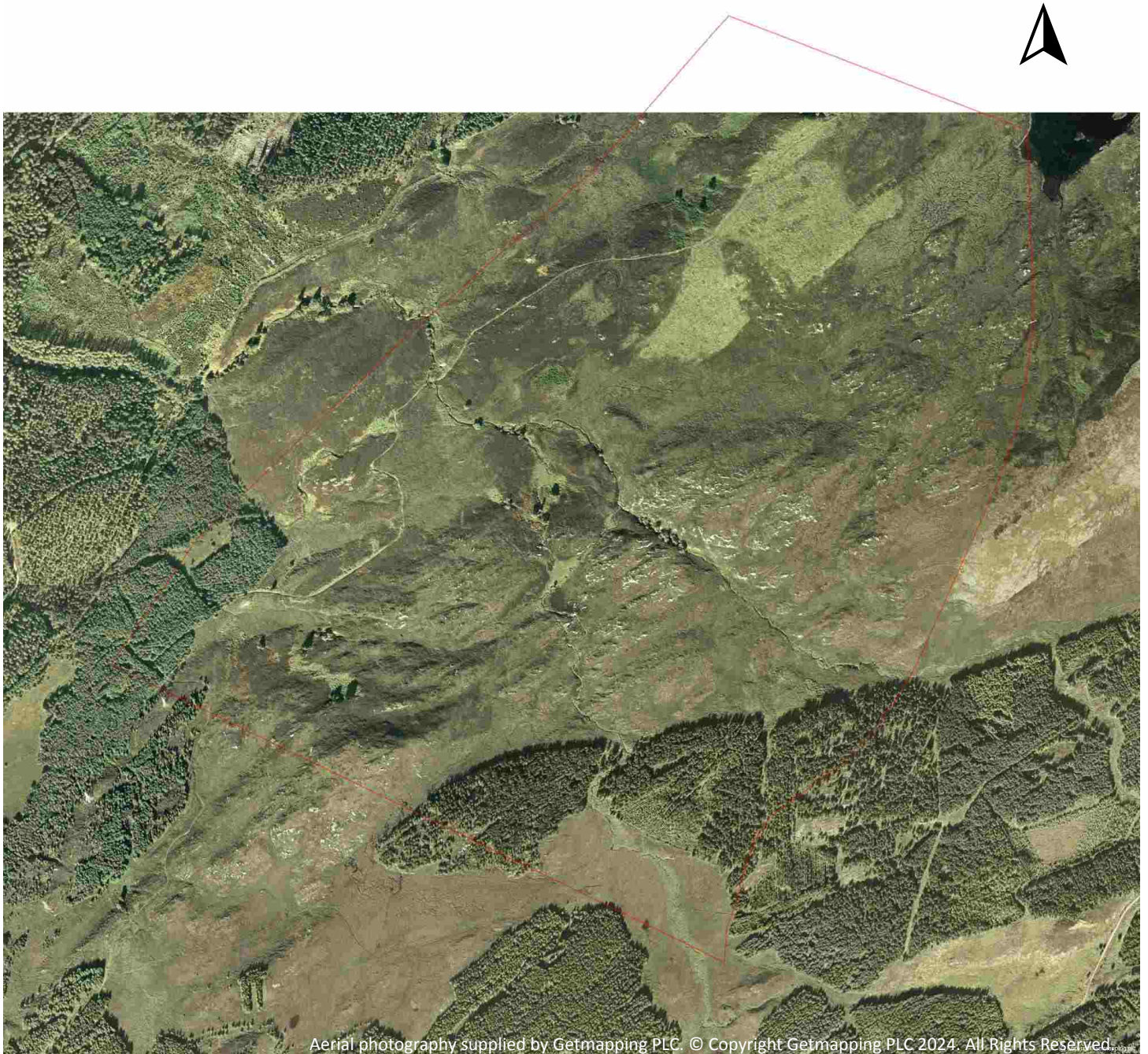
Capture Date: 13/05/2009

Site Area: 120.28ha





## Recent site history - 2006 aerial photograph



Capture Date: 16/09/2006

Site Area: 120.28ha





## 1 Past land use

### 1.1 Historical industrial land uses

**Records within 500m****0**

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'.

*This data is sourced from Ordnance Survey / Groundsure.*

### 1.2 Historical tanks

**Records within 500m****0**

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'.

*This data is sourced from Ordnance Survey / Groundsure.*

### 1.3 Historical energy features

**Records within 500m****0**

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'.

*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 ungrouped 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 ungrouped 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

### 2.1 Historical industrial land uses

Records within 500m

0

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'.

*This data is sourced from Ordnance Survey / Groundsure.*

### 2.2 Historical tanks

Records within 500m

0

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'.

*This data is sourced from Ordnance Survey / Groundsure.*

### 2.3 Historical energy features

Records within 500m

0

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'.

*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

### 3.1 Active or recent landfill

Records within 500m

0

Active or recently closed landfill sites under Scottish Environment Protection (SEPA) regulation.

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

### 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 Licensed waste sites

Records within 500m

0

Active or recently closed waste sites under Scottish Environment Protection Agency (SEPA) regulation.

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

### 3.5 Historical waste sites

Records within 500m

0

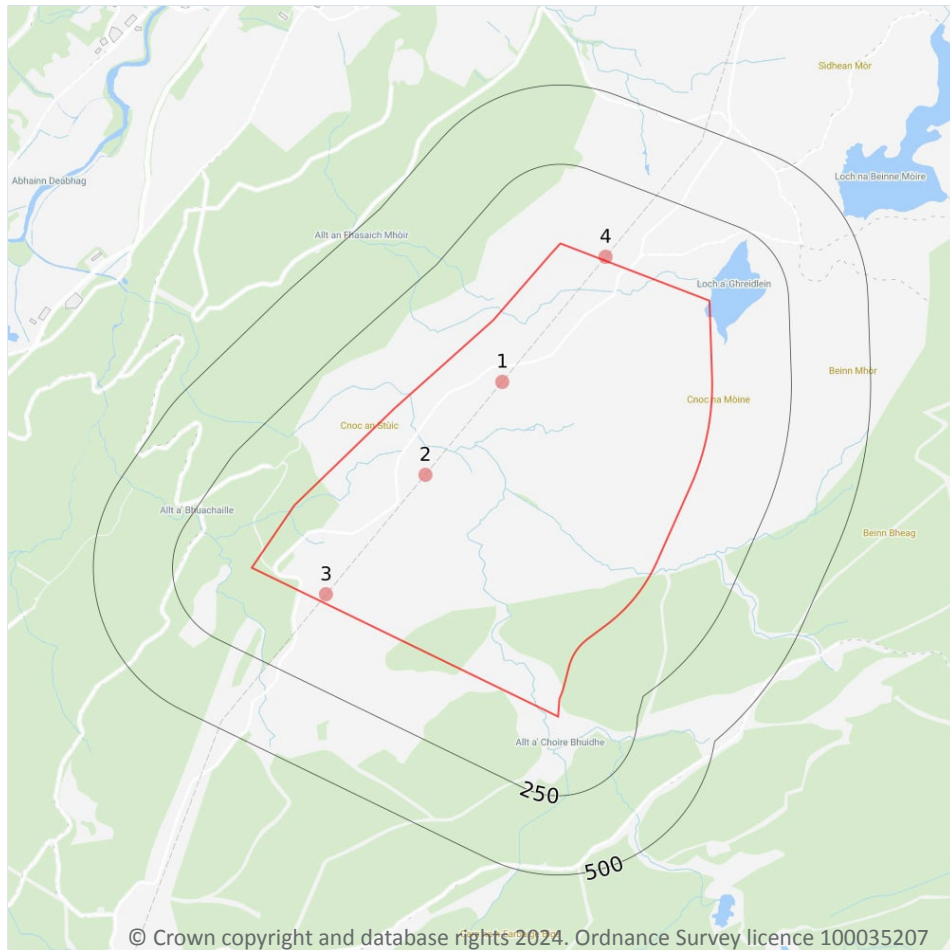
Waste site records derived from Local Authority planning records and high detail historical mapping.

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





## 4 Current industrial land use



- Site Outline
- Search buffers in metres (m)
- Recent industrial land uses

### 4.1 Recent industrial land uses

Records within 250m

4

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on [page 17](#) >

ID	Location	Company	Address	Activity	Category
1	On site	Pylon	Inverness, IV4	Electrical Features	Infrastructure and Facilities
2	On site	Pylon	Inverness, IV4	Electrical Features	Infrastructure and Facilities
3	On site	Pylon	Inverness, IV4	Electrical Features	Infrastructure and Facilities





ID	Location	Company	Address	Activity	Category
4	12m N	Pylon	Inverness, IV4	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	0
---------------------	---

High voltage underground electricity transmission cables.

*This data is sourced from National Grid.*

## 4.4 Gas pipelines

Records within 500m	0
---------------------	---

High pressure underground gas transmission pipelines.

*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	0
---------------------	---

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.

*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

0

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.

*This data is sourced from Local Authority records.*

## 4.9 Part A(1), IPPC and Historic IPC Authorisations

Records within 500m

0

Records of Part A installations regulated for the release of substances to the environment.

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

## 4.10 Part B Authorisations

Records within 500m

0

Records of Part B installations regulated for the release of substances to the environment.

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

## 4.11 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.*



## 4.12 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.*

## 4.13 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

### 5.1 Superficial aquifer

Records within 500m

0

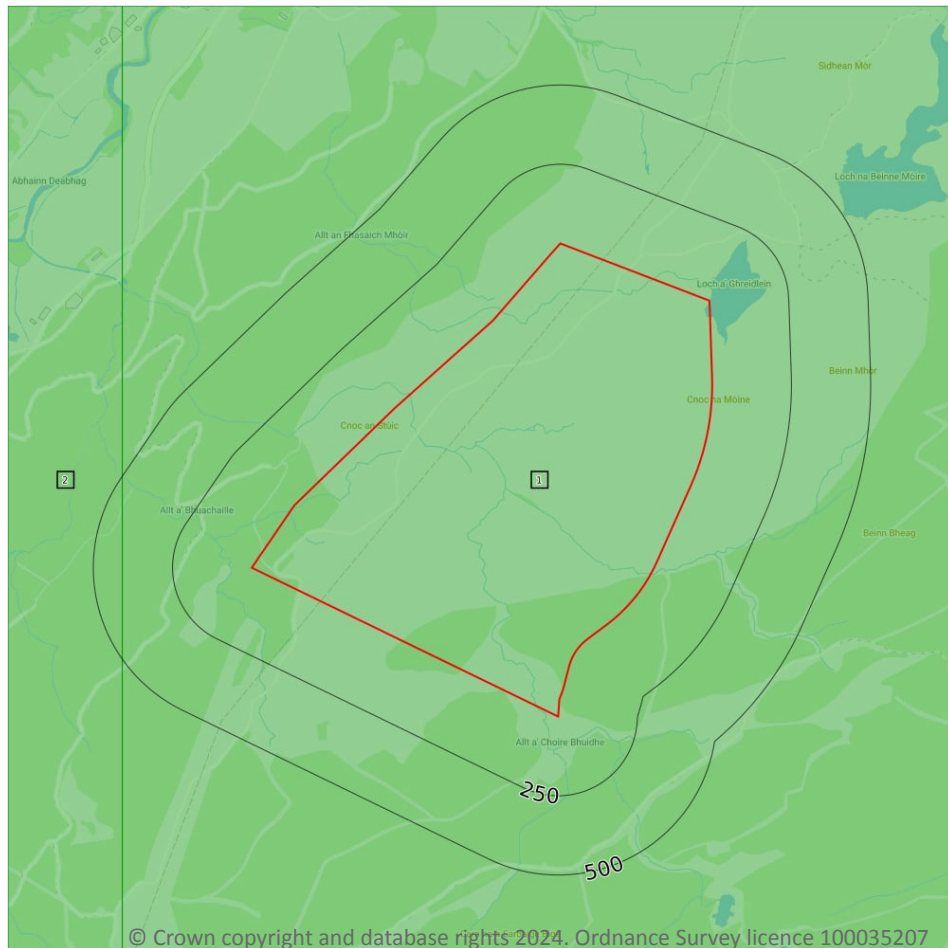
Records of groundwater classification within superficial geology.

*This data is sourced from the British Geological Survey.*





## Bedrock aquifer



- Site Outline**
- Search buffers in metres (m)**
- Site Outline
  - Search buffers in metres (m)
  - Highly productive - fissures/discontinuities
  - Highly productive - intergranular
  - Moderately productive - fissures/discontinuities
  - Moderately productive - intergranular
  - Low productive - fissures/discontinuities
  - Low productive - intergranular
  - No significant groundwater

### 5.2 Bedrock aquifer

#### Records within 500m

2

Records of groundwater classification within bedrock geology.

Features are displayed on the Bedrock aquifer map on [page 22](#) >

ID	Location	Description	Flow	Summary	Rock description
1	On site	Low productivity aquifer	Flow is virtually all through fractures and other discontinuities	Small amounts of groundwater in near surface weathered zone and secondary fractures.	LOCH EIL GROUP





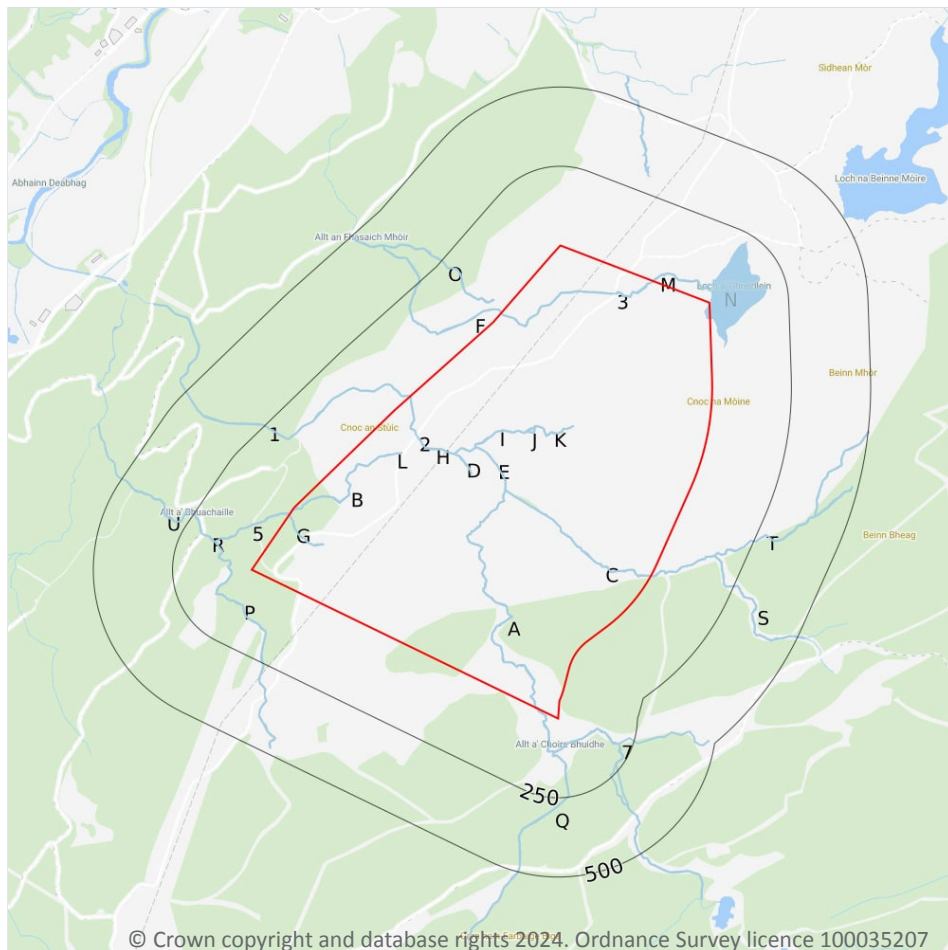
ID	Location	Description	Flow	Summary	Rock description
2	409m W	Low productivity aquifer	Flow is virtually all through fractures and other discontinuities	Small amounts of groundwater in near surface weathered zone and secondary fractures.	LOCH EIL GROUP

*This data is sourced from the British Geological Survey.*





## 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)

### 6.1 Water Network (OS MasterMap)

Records within 250m

34

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 24](#) >

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)	Allt Bail a' Chladaich





ID	Location	Type of water feature	Ground level	Permanence	Name
2	On site	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	Allt Bail a' Chladaich
3	On site	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	Allt an Fhasaich Mhòir
A	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt a' Choire Bhuidhe
B	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt a' Bhuachaille
C	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
D	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
D	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt Bail a' Chladaich
E	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt a' Choire Bhuidhe
F	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt an Fhasaich Mhòir
G	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
G	On site	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
G	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
H	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt Bail a' Chladaich





ID	Location	Type of water feature	Ground level	Permanence	Name
I	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt Bail a' Chladaich
J	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt Bail a' Chladaich
J	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt Bail a' Chladaich
K	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt Bail a' Chladaich
L	On site	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	Allt a' Bhuachaille
L	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt a' Bhuachaille
M	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt an Fhasaich Mhòir
5	4m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt a' Bhuachaille
N	36m NE	Lake, loch or reservoir.	On ground surface	Watercourse contains water year round (in normal circumstances)	Loch a' Ghreidlein
N	36m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt an Fhasaich Mhòir
N	42m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
O	43m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
P	64m W	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
7	83m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt a' Choire Bhuidhe
Q	105m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
R	144m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt a' Bhuachaille
S	157m E	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
T	157m E	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
R	188m W	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	Allt a' Bhuachaille
U	193m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt a' Bhuachaille

*This data is sourced from the Ordnance Survey.*

## 6.2 Surface water features

<b>Records within 250m</b>	<b>14</b>
----------------------------	-----------

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.

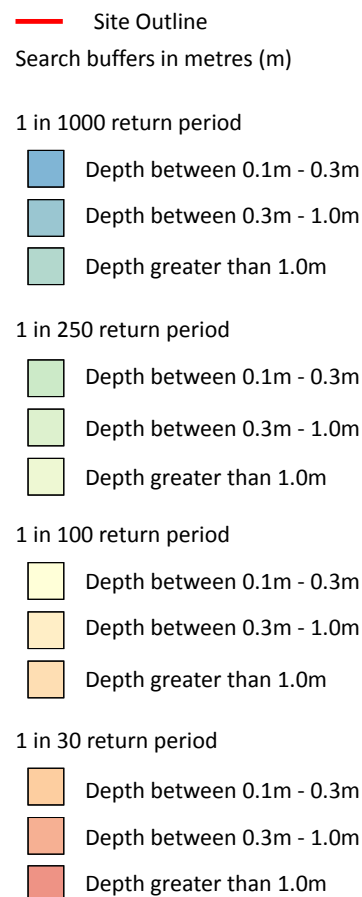
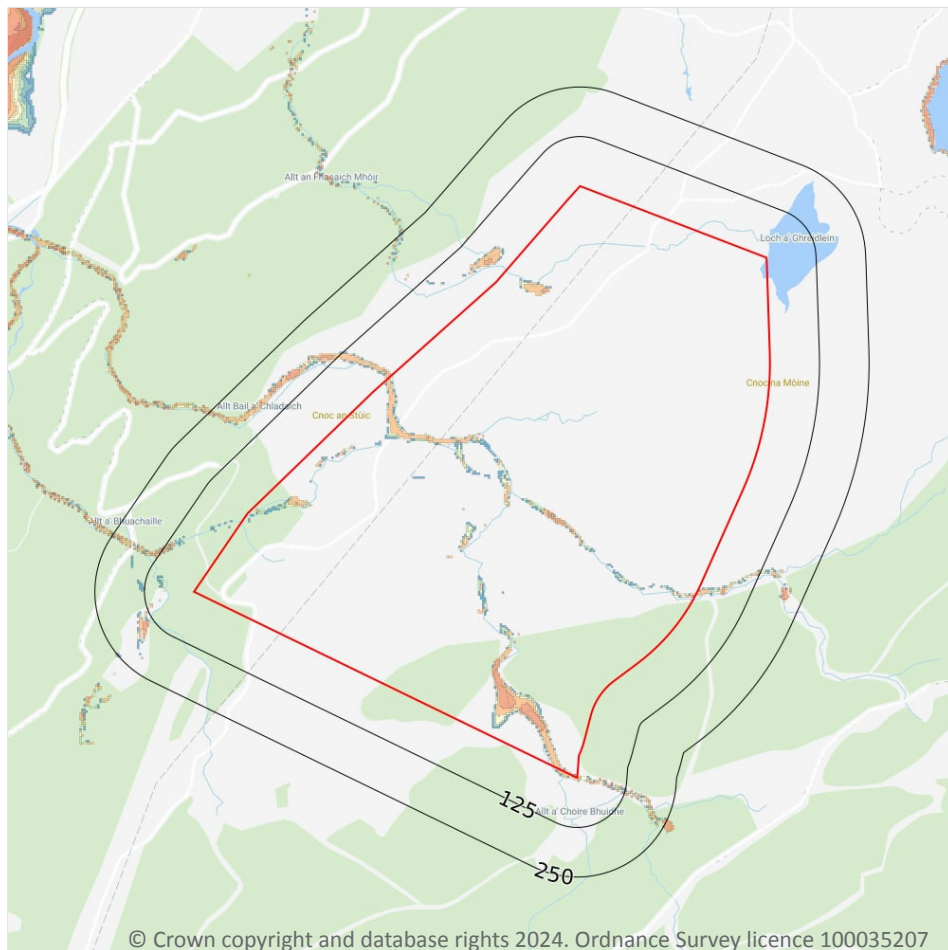
Features are displayed on the Hydrology map on [page 24 >](#)

*This data is sourced from the Ordnance Survey.*





## 7 River flooding



### 7.1 River 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**

This is an assessment of flood risk for rivers in Scotland produced using modelled data, provided by Ambiental Risk Analytics. It also takes account of flood defence information provided by the Scottish Environment Protection Agency (SEPA). It shows the chance of flooding from rivers presented in the following categories:

- 1 in 30 year (3.33%)
- 1 in 100 year (1%)
- 1 in 250 year (0.4%)



- and 1 in 1,000 year (0.1%)

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.

Features are displayed on the River flooding map on [page 28 >](#)

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 Ambiantal Risk Analytics.*





## 8 Coastal flooding - Coastal flooding

### 8.1 Coastal flooding

Highest risk on site

Negligible

Highest risk within 50m

Negligible

This is an assessment of coastal flood risk in Scotland produced using modelled data, provided by Ambiental Risk Analytics. It also takes account of flood defence information provided by the Scottish Environment Protection Agency (SEPA). It shows the chance of coastal flooding presented in the following categories:

- 1 in 30 year (3.33%)
- 1 in 100 year (1%)
- 1 in 250 year (0.4%)
- and 1 in 1,000 year (0.1%)

The data shown on the map 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.

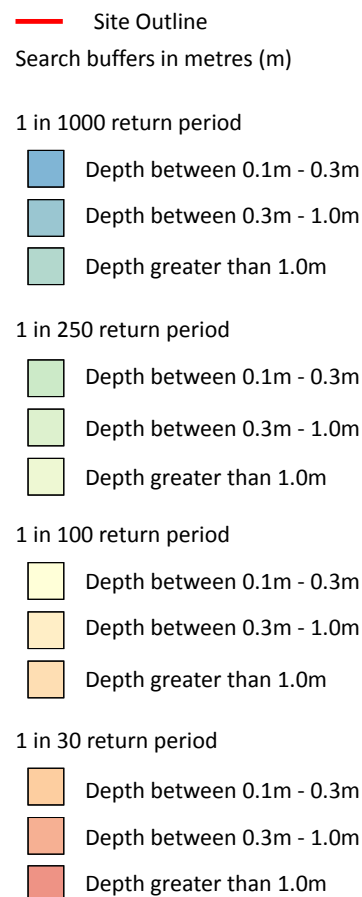
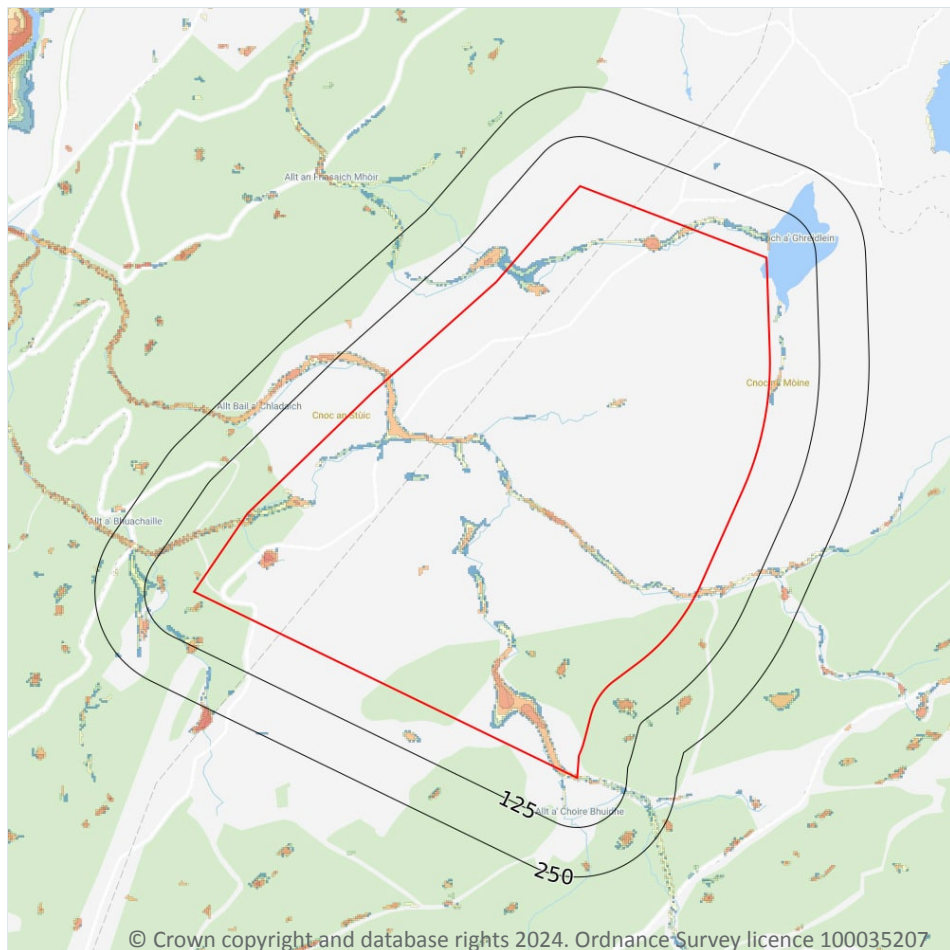
Return period	Maximum modelled depth
1 in 1000 year	Negligible
1 in 250 year	Negligible
1 in 100 year	Negligible
1 in 30 year	Negligible

*This data is sourced from Ambiental Risk Analytics.*





## 9 Surface water flooding



### 9.1 Surface water flooding

**Highest risk on site**

**1 in 30 year, Greater than 1.0m**

**Highest risk within 50m**

**1 in 30 year, Greater than 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 31](#) >

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.

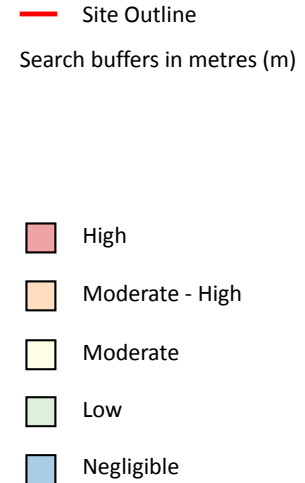
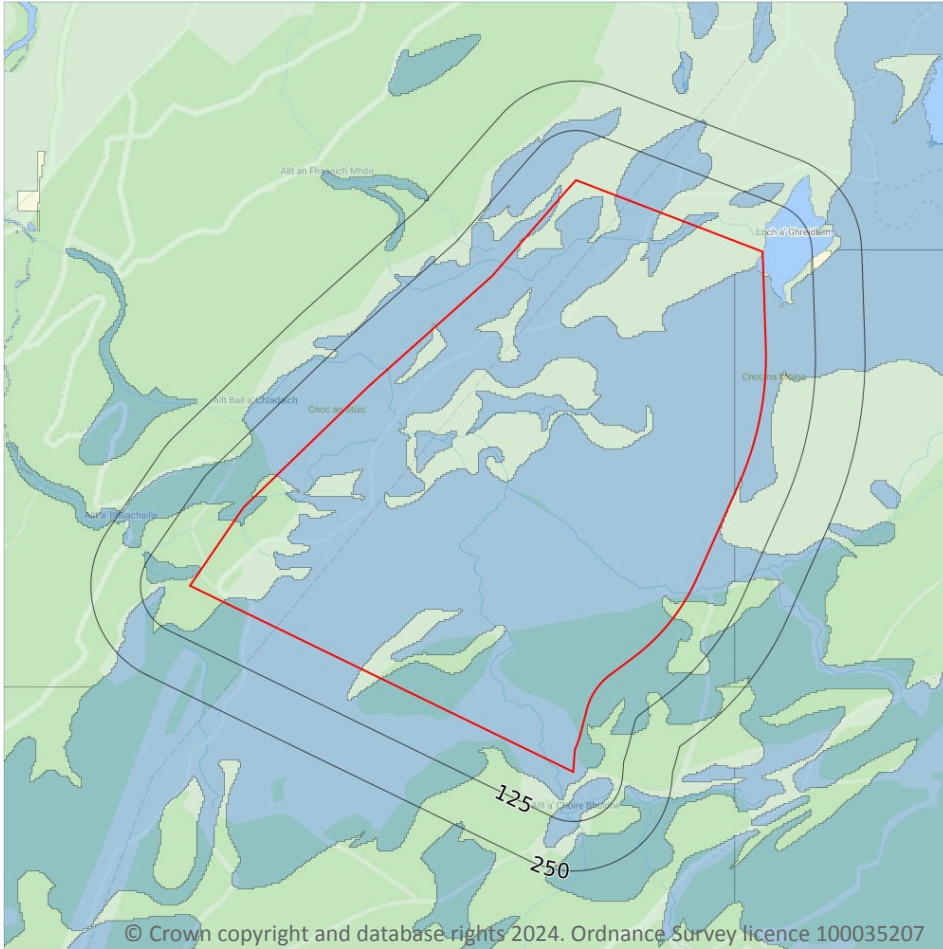
Return period	Maximum modelled depth
1 in 1000 year	Greater than 1.0m
1 in 250 year	Greater than 1.0m
1 in 100 year	Greater than 1.0m
1 in 30 year	Greater than 1.0m

*This data is sourced from Ambiantal Risk Analytics.*





## 10 Groundwater flooding



### 10.1 Groundwater flooding

Highest risk on site

Low

Highest risk within 50m

Low

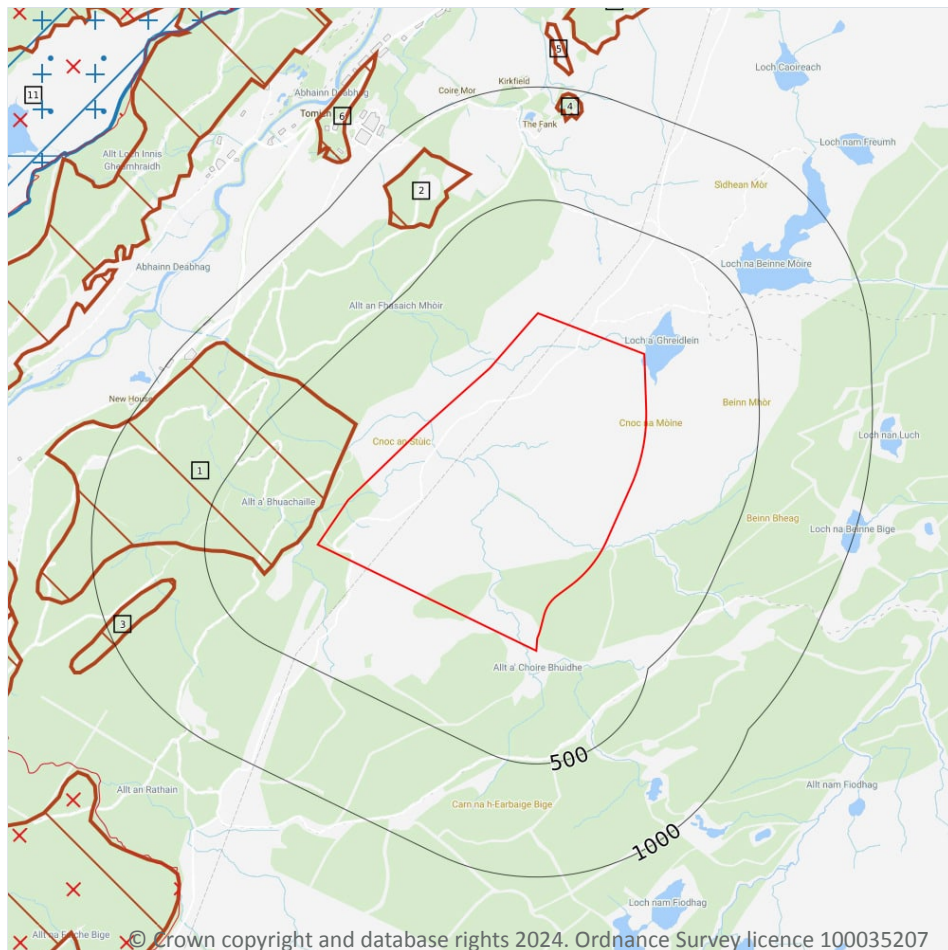
Groundwater flooding is caused by unusually high groundwater levels. It occurs when the water table rises above the ground surface or within underground structures such as basements or cellars. Groundwater flooding tends to exhibit a longer duration than surface water flooding, possibly lasting for weeks 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 33](#) >

*This data is sourced from Ambiantal Risk Analytics.*



## 11 Environmental designations



- Site Outline
- Search buffers in metres (m)
- ▤ Sites of Special Scientific Interest (SSSI)
- + Special Areas of Conservation (SAC)
- Special Protection Areas (SPA)
- × National Nature Reserves (NNR)
- ▤ Designated Ancient Woodland

### 11.1 Sites of Special Scientific Interest (SSSI)

#### Records within 2000m

1

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 34](#) >

ID	Location	Name	Data source
B	1626m N	Glen Affric	Scottish Natural Heritage





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

## 11.2 Conserved wetland sites (Ramsar sites)

<b>Records within 2000m</b>	<b>0</b>
-----------------------------	----------

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.

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

## 11.3 Special Areas of Conservation (SAC)

<b>Records within 2000m</b>	<b>1</b>
-----------------------------	----------

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 34 >](#)

ID	Location	Name	Features of interest	Habitat description	Data source
B	1626m N	Strathglass Complex	Clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels; Wet heathland with cross-leaved heath; Dry heaths; Alpine and subalpine heaths; Mountain willow scrub; Montane acid grasslands; Species-rich grassland with mat-grass in upland areas; Tall herb communities; Blanket bog; Very wet mires often identified by an unstable 'quaking' surface; Calcium-rich springwater-fed fens; High-altitude plant communities associated with areas of water seepage; Acidic scree; Plants in crevices in base-rich rocks; Plants in crevices on acid rocks; Caledonian forest; Bog woodland; Atlantic salmon; Otter.	Bogs, Marshes, Water fringed vegetation, Fens; Heath, Scrub, Maquis and Garrigue, Phygrana; Alpine and sub-Alpine grassland; Humid grassland, Mesophile grassland; Broad-leaved deciduous woodland; Dry grassland, Steppes; Inland water bodies (Standing water, Running water); Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites); Inland rocks, Scree, Sands, Permanent Snow and ice; Coniferous woodland	Scottish Natural Heritage

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



## 11.4 Special Protection Areas (SPA)

### Records within 2000m

2

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 34 >](#)

ID	Location	Name	Species of interest	Habitat description	Data source
20	1836m N	Glen Affric to Strathconon	Golden eagle	Inland water bodies (Standing water, Running water); Mixed woodland; Humid grassland, Mesophile grassland; Bogs, Marshes, Water fringed vegetation, Fens; Coniferous woodland; Inland rocks, Scree, Sands, Permanent Snow and ice; Broad-leaved deciduous woodland; Heath, Scrub, Maquis and Garrigue, Phygrana; Improved grassland; Alpine and sub-Alpine grassland	Scottish Natural Heritage
23	1931m NW	Glen Affric to Strathconon	Golden eagle	Inland water bodies (Standing water, Running water); Mixed woodland; Humid grassland, Mesophile grassland; Bogs, Marshes, Water fringed vegetation, Fens; Coniferous woodland; Inland rocks, Scree, Sands, Permanent Snow and ice; Broad-leaved deciduous woodland; Heath, Scrub, Maquis and Garrigue, Phygrana; Improved grassland; Alpine and sub-Alpine grassland	Scottish Natural Heritage

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

## 11.5 National Nature Reserves (NNR)

### Records within 2000m

2

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.

Features are displayed on the Environmental designations map on [page 34 >](#)

ID	Location	Name	Data source
A	1407m SW	Glen Affric	Scottish Natural Heritage
21	1842m N	Glen Affric	Scottish Natural Heritage

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





## 11.6 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.*

## 11.7 Designated Ancient Woodland

Records within 2000m

23

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.

Features are displayed on the Environmental designations map on [page 34 >](#)

ID	Location	Name	Woodland Type
1	72m W	Unknown	Long-Established (of plantation origin)
2	612m N	Unknown	Long-Established (of plantation origin)
3	654m W	Unknown	Long-Established (of plantation origin)
4	862m N	Balnahoun Wood	Ancient (of semi-natural origin)
5	1066m N	Balnahoun Wood	Ancient (of semi-natural origin)
6	1080m NW	Unknown	Long-Established (of plantation origin)
7	1179m N	Balnahoun Wood	Ancient (of semi-natural origin)
8	1342m W	Unknown	Long-Established (of plantation origin)
9	1375m W	Unknown	Long-Established (of plantation origin)
-	1416m N	Unknown	Other (on Roy map)
11	1428m NW	Unknown	Ancient (of semi-natural origin)
A	1443m SW	Coille An Tuathanaich	Long-Established (of plantation origin)
-	1477m N	Unknown	Ancient (of semi-natural origin)
-	1528m N	Balnahoun Wood	Ancient (of semi-natural origin)
-	1530m N	Unknown	Ancient (of semi-natural origin)
-	1558m N	Unknown	Ancient (of semi-natural origin)





ID	Location	Name	Woodland Type
-	1578m W	Unknown	Ancient (of semi-natural origin)
-	1597m N	Unknown	Ancient (of semi-natural origin)
-	1640m N	Dun Wood	Ancient (of semi-natural origin)
-	1687m N	Unknown	Ancient (of semi-natural origin)
-	1875m W	Unknown	Long-Established (of plantation origin)
-	1985m N	Unknown	Other (on Roy map)
-	1988m N	Unknown	Ancient (of semi-natural origin)

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

## 11.8 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.*

## 11.9 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.*

## 11.10 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.*





## 12 Visual and cultural designations

### 12.1 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.*

### 12.2 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.*

### 12.3 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.*

### 12.4 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.*

## 12.5 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.*

## 12.6 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.*

## 12.7 Registered Parks and Gardens

Records within 250m

0

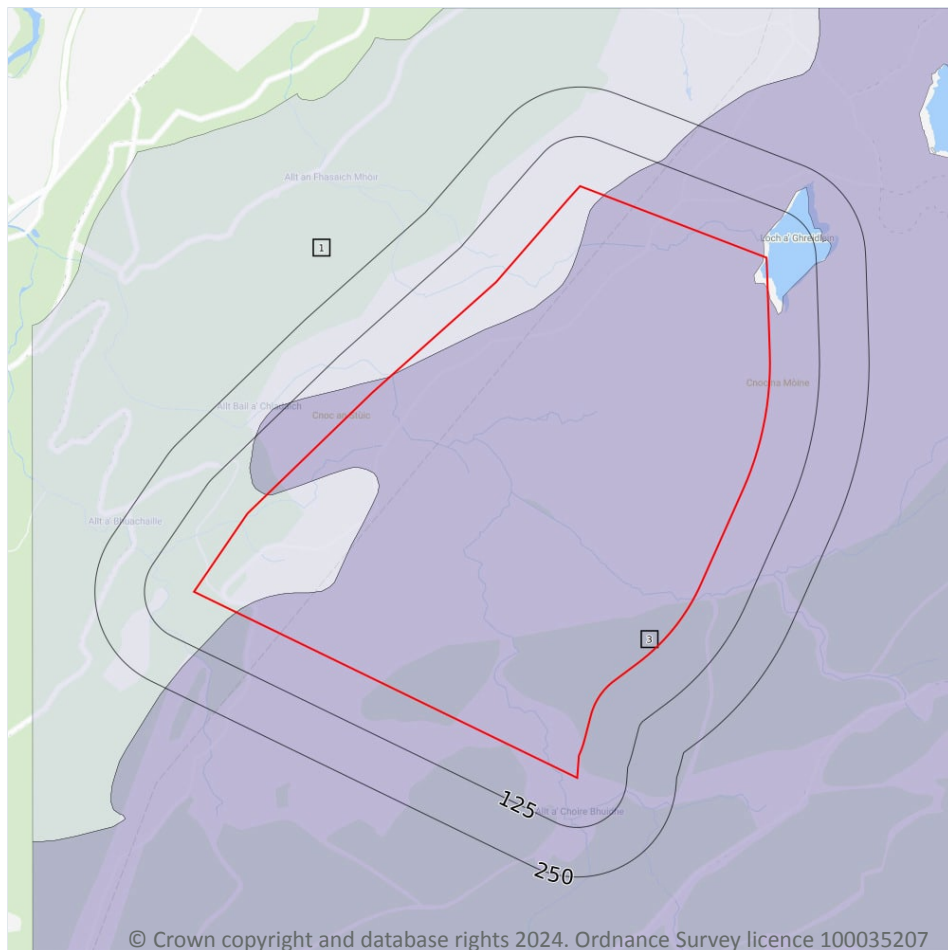
Parks and gardens assessed to be of particular interest and of special historic interest. The emphasis being on 'designed' landscapes, rather than on planting or botanical importance. Registration is a 'material consideration' in the planning process, meaning that planning authorities must consider the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

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





## 13 Agricultural designations



- Site Outline
- Search buffers in metres (m)
- Grade 1 - excellent quality
- Grade 2 - very good quality
- Grade 3 - good to moderate quality
- Grade 4 - good quality
- Grade 5 - moderate quality
- Grade 6 - poor quality
- Grade 7 - very poor quality

### 13.1 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 41](#) >

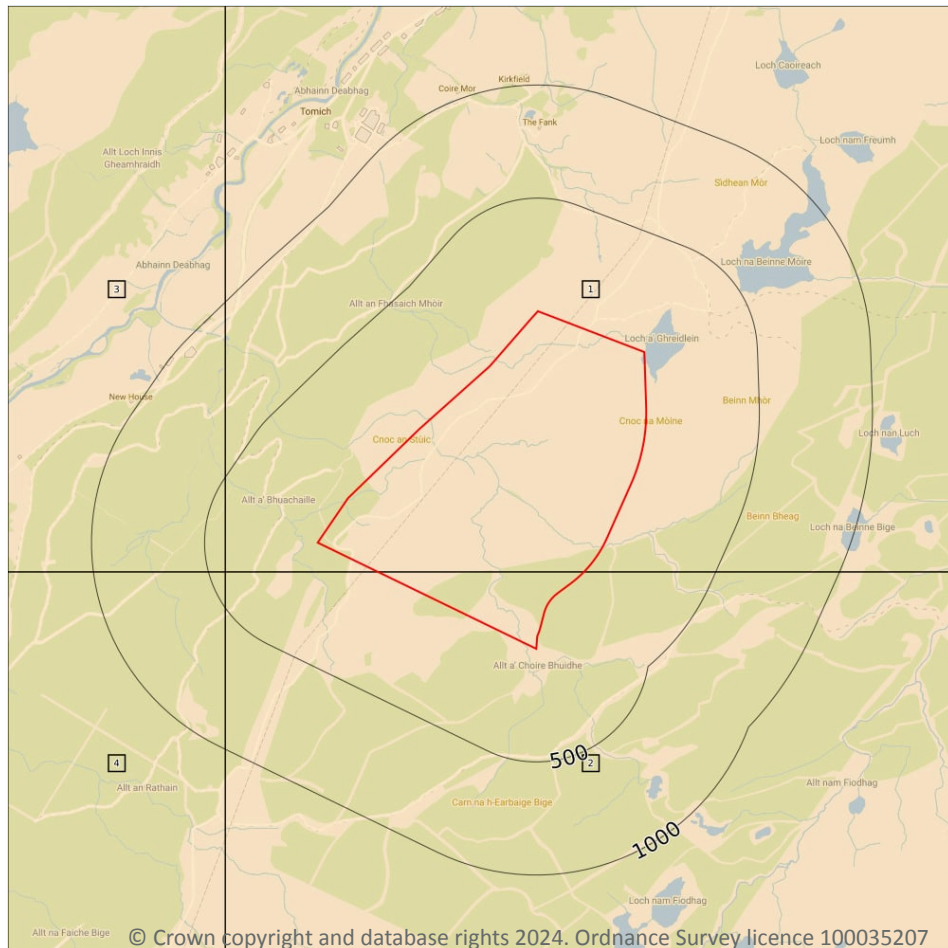
ID	Location	Classification	Description
1	On site	Grade 5.2	Land Suited only to Improved Grassland and Rough Grazings
3	On site	Grade 6.3	Land Suited only to Improved Grassland and Rough Grazings

*This data is sourced from the James Hutton Institute.*





## 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

4

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 42](#) >

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	No coverage	No coverage	NH32NW
2	On site	No coverage	Full	No coverage	No coverage	NH32SW
3	409m W	Full	Full	No coverage	No coverage	NH22NE
4	429m W	No coverage	Full	No coverage	No coverage	NH22SE





*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

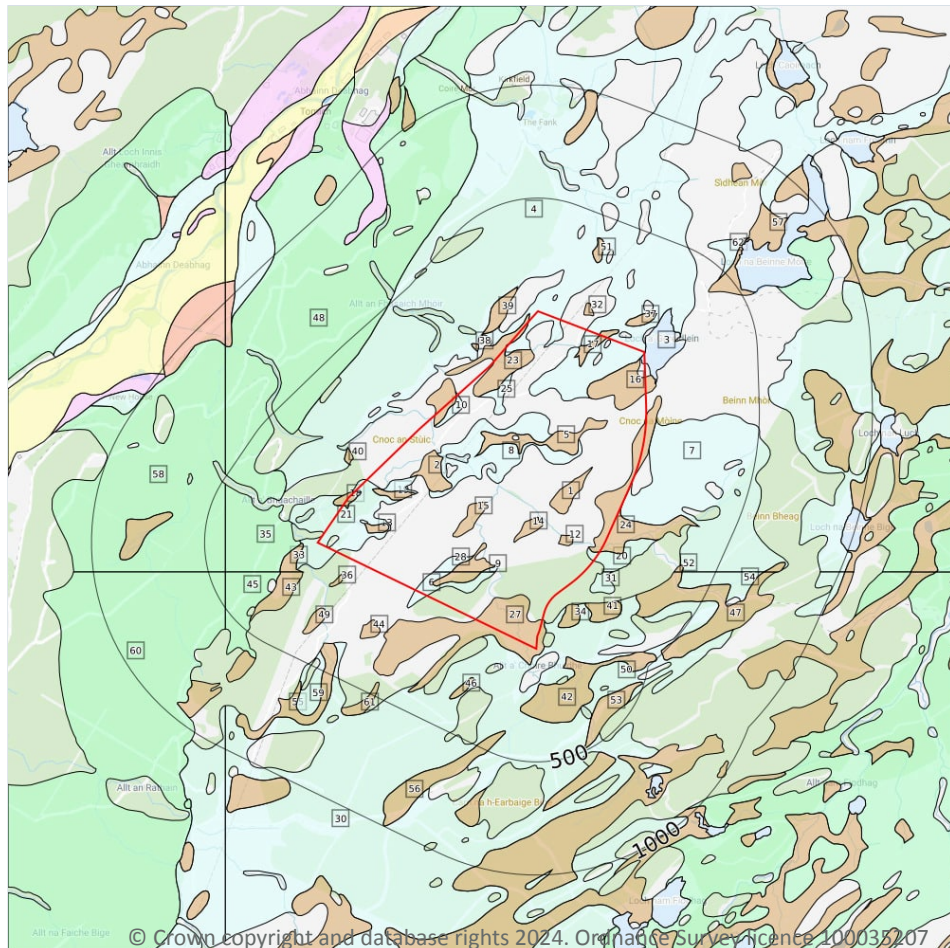
Details of made, worked, infilled, disturbed and landscaped ground at 1:10,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

*This data is sourced from the British Geological Survey.*





## Geology 1:10,000 scale - Superficial



**Site Outline**

Search buffers in metres (m)

**Landslip (10k)**

**Superficial geology (10k)**  
Please see table for more details.

### 14.3 Superficial geology (10k)

Records within 500m

62

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.

Features are displayed on the Geology 1:10,000 scale - Superficial map on [page 45 >](#)

ID	Location	LEX Code	Description	Rock description
1	On site	PEAT-P	Peat - Peat	Peat
2	On site	PEAT-P	Peat - Peat	Peat
3	On site	SUPNM-UKNOWN	Superficial Theme Not Mapped [for Digital Map Use Only] - Unknown/unclassified Entry	Unknown/unclassified Entry





ID	Location	LEX Code	Description	Rock description
4	On site	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
5	On site	PEAT-P	Peat - Peat	Peat
6	On site	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
7	On site	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
8	On site	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
9	On site	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
10	On site	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
11	On site	PEAT-P	Peat - Peat	Peat
12	On site	PEAT-P	Peat - Peat	Peat
13	On site	PEAT-P	Peat - Peat	Peat
14	On site	PEAT-P	Peat - Peat	Peat
15	On site	PEAT-P	Peat - Peat	Peat
16	On site	PEAT-P	Peat - Peat	Peat
17	On site	PEAT-P	Peat - Peat	Peat
18	On site	PEAT-P	Peat - Peat	Peat
19	On site	PEAT-P	Peat - Peat	Peat
20	On site	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
21	On site	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
22	On site	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
23	On site	PEAT-P	Peat - Peat	Peat
24	On site	PEAT-P	Peat - Peat	Peat
25	On site	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
26	On site	PEAT-P	Peat - Peat	Peat





ID	Location	LEX Code	Description	Rock description
27	On site	PEAT-P	Peat - Peat	Peat
28	On site	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
29	On site	PEAT-P	Peat - Peat	Peat
30	12m S	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
31	48m SE	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
32	59m NE	PEAT-P	Peat - Peat	Peat
33	65m W	PEAT-P	Peat - Peat	Peat
34	69m SE	PEAT-P	Peat - Peat	Peat
35	73m W	HMGDD-XDSV	Hummocky (moundy) Glacial Deposits, Devensian - Diamicton, Sand And Gravel	Diamicton, Sand And Gravel [unlithified Deposits Coding Scheme - Extended]
36	80m SW	PEAT-P	Peat - Peat	Peat
37	83m NE	PEAT-P	Peat - Peat	Peat
38	84m N	PEAT-P	Peat - Peat	Peat
39	85m N	PEAT-P	Peat - Peat	Peat
40	98m W	PEAT-P	Peat - Peat	Peat
41	109m SE	PEAT-P	Peat - Peat	Peat
42	138m S	PEAT-P	Peat - Peat	Peat
43	146m SW	PEAT-P	Peat - Peat	Peat
44	199m SW	PEAT-P	Peat - Peat	Peat
45	210m W	HMGDD-XDSV	Hummocky (moundy) Glacial Deposits, Devensian - Diamicton, Sand And Gravel	Diamicton, Sand And Gravel [unlithified Deposits Coding Scheme - Extended]
46	238m S	PEAT-P	Peat - Peat	Peat
47	242m SE	PEAT-P	Peat - Peat	Peat
48	244m W	HMGDD-XDSV	Hummocky (moundy) Glacial Deposits, Devensian - Diamicton, Sand And Gravel	Diamicton, Sand And Gravel [unlithified Deposits Coding Scheme - Extended]
49	250m SW	PEAT-P	Peat - Peat	Peat
50	277m SE	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
51	294m N	PEAT-P	Peat - Peat	Peat





ID	Location	LEX Code	Description	Rock description
52	332m SE	PEAT-P	Peat - Peat	Peat
53	358m SE	PEAT-P	Peat - Peat	Peat
54	365m SE	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
55	370m SW	PEAT-P	Peat - Peat	Peat
56	389m S	PEAT-P	Peat - Peat	Peat
57	390m NE	PEAT-P	Peat - Peat	Peat
58	409m W	HMGDD-XDSV	Hummocky (moundy) Glacial Deposits, Devensian - Diamicton, Sand And Gravel	Diamicton, Sand And Gravel [unlithified Deposits Coding Scheme - Extended]
59	424m SW	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
60	429m W	HMGDD-XDSV	Hummocky (moundy) Glacial Deposits, Devensian - Diamicton, Sand And Gravel	Diamicton, Sand And Gravel [unlithified Deposits Coding Scheme - Extended]
61	438m SW	PEAT-P	Peat - Peat	Peat
62	454m NE	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton

*This data is sourced from the British Geological Survey.*

## 14.4 Landslip (10k)

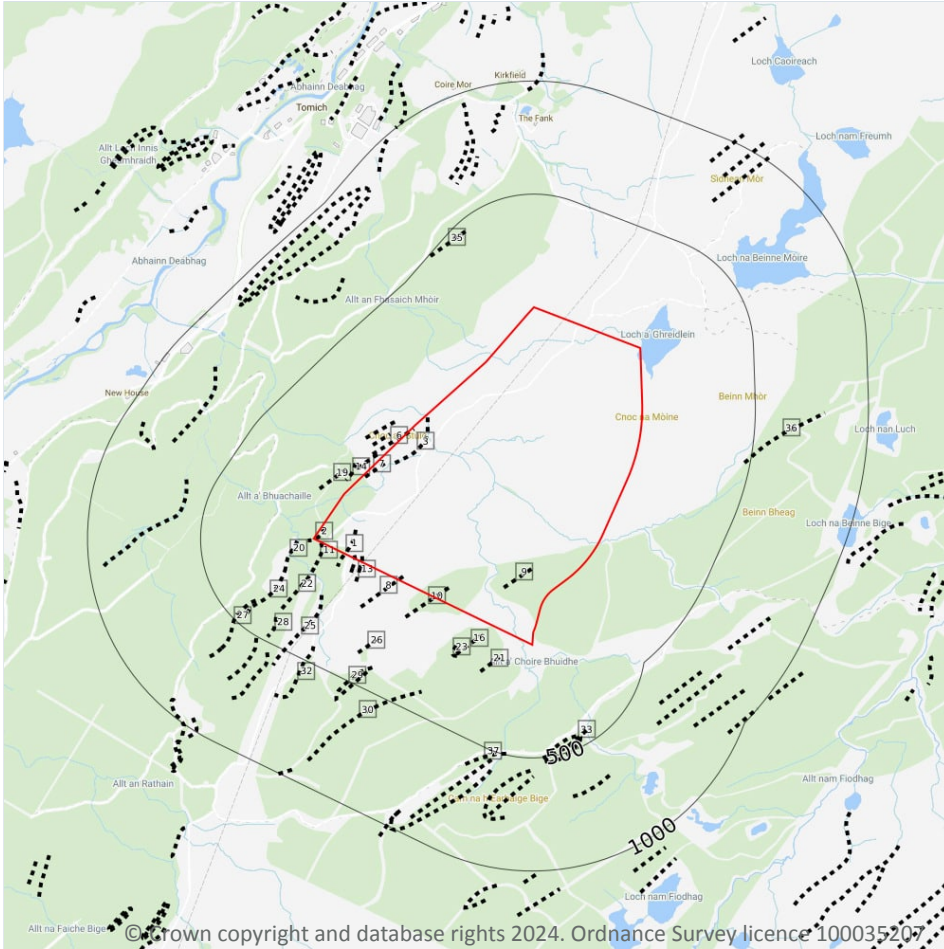
<b>Records within 500m</b>	<b>0</b>
----------------------------	----------

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



**— Site Outline**

**Search buffers in metres (m)**

**.... Bedrock faults and other linear features (10k)**

**Bedrock geology (10k)**  
Please see table for more details.

### 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

37

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.





Features are displayed on the Geology 1:10,000 scale - Bedrock map on [page 49](#) >

ID	Location	Category	Description
1	On site	LANDFORM	Ice mariginal glacial meltwater channel, single side right
2	On site	LANDFORM	Ice mariginal glacial meltwater channel, single side right
3	On site	LANDFORM	Ice mariginal glacial meltwater channel, single side right
4	On site	LANDFORM	Ice mariginal glacial meltwater channel, single side right
5	On site	LANDFORM	Ice mariginal glacial meltwater channel, single side right
6	On site	LANDFORM	Axis of large-scale glacial flute
7	On site	LANDFORM	Axis of large-scale glacial flute
8	On site	LANDFORM	Axis of large-scale glacial flute
9	On site	LANDFORM	Axis of large-scale glacial flute
10	On site	LANDFORM	Axis of large-scale glacial flute
11	4m W	LANDFORM	Ice mariginal glacial meltwater channel, single side right
12	22m W	LANDFORM	Axis of large-scale glacial flute
13	27m SW	LANDFORM	Ice mariginal glacial meltwater channel, single side right
14	39m W	LANDFORM	Ice mariginal glacial meltwater channel, single side right
15	41m SW	LANDFORM	Ice mariginal glacial meltwater channel, single side right
16	49m S	LANDFORM	Axis of large-scale glacial flute
17	49m W	LANDFORM	Axis of large-scale glacial flute
18	69m NW	LANDFORM	Axis of large-scale glacial flute
19	72m W	LANDFORM	Axis of large-scale glacial flute
20	74m W	LANDFORM	Ice mariginal glacial meltwater channel, single side right
21	108m S	LANDFORM	Axis of large-scale glacial flute
22	116m SW	LANDFORM	Ice mariginal glacial meltwater channel, single side right
23	150m S	LANDFORM	Marked concave break of slope, arrowheads denote uphill side
24	180m SW	LANDFORM	Ice mariginal glacial meltwater channel, single side right
25	209m SW	LANDFORM	Ice mariginal glacial meltwater channel, single side right
26	277m SW	LANDFORM	Axis of large-scale glacial flute
27	375m SW	LANDFORM	Ice mariginal glacial meltwater channel, single side right





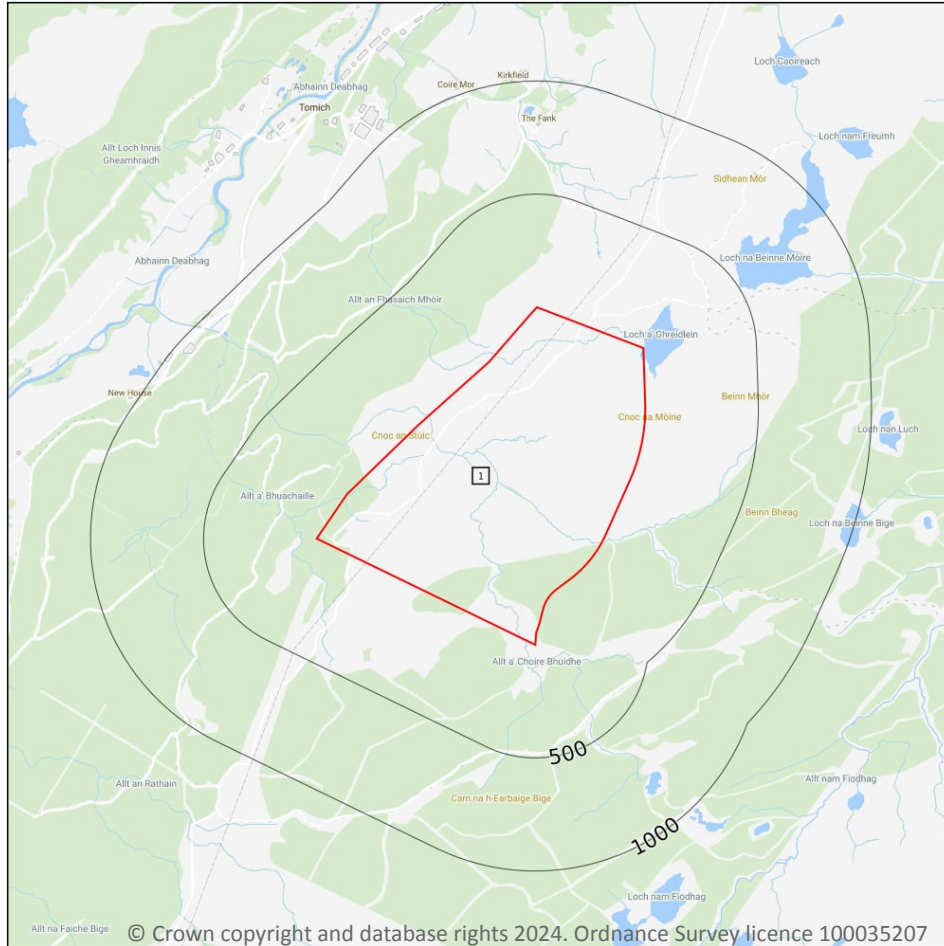
ID	Location	Category	Description
28	385m SW	LANDFORM	Ice marginal glacial meltwater channel, single side right
29	399m SW	LANDFORM	Marked concave break of slope, arrowheads denote uphill side
30	400m S	LANDFORM	Marked concave break of slope, arrowheads denote uphill side
31	414m SW	LANDFORM	Axis of large-scale glacial flute
32	429m SW	LANDFORM	Ice marginal glacial meltwater channel, single side right
33	443m S	LANDFORM	Form line
34	448m S	LANDFORM	Axis of large-scale glacial flute
35	452m N	LANDFORM	Crestline of linear feature
36	476m E	LANDFORM	Axis of large-scale glacial gouge
37	495m S	LANDFORM	Marked concave break of slope, arrowheads denote uphill side

*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.

Features are displayed on the Geology 1:50,000 scale - Availability map on [page 52](#) >

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	No coverage	Full	Full	No coverage	SC073w_Invermoriston_v4

This data is sourced from the British Geological Survey.





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

### 15.2 Artificial and made ground (50k)

Records within 500m

0

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.

*This data is sourced from the British Geological Survey.*

### 15.3 Artificial ground permeability (50k)

Records within 50m

0

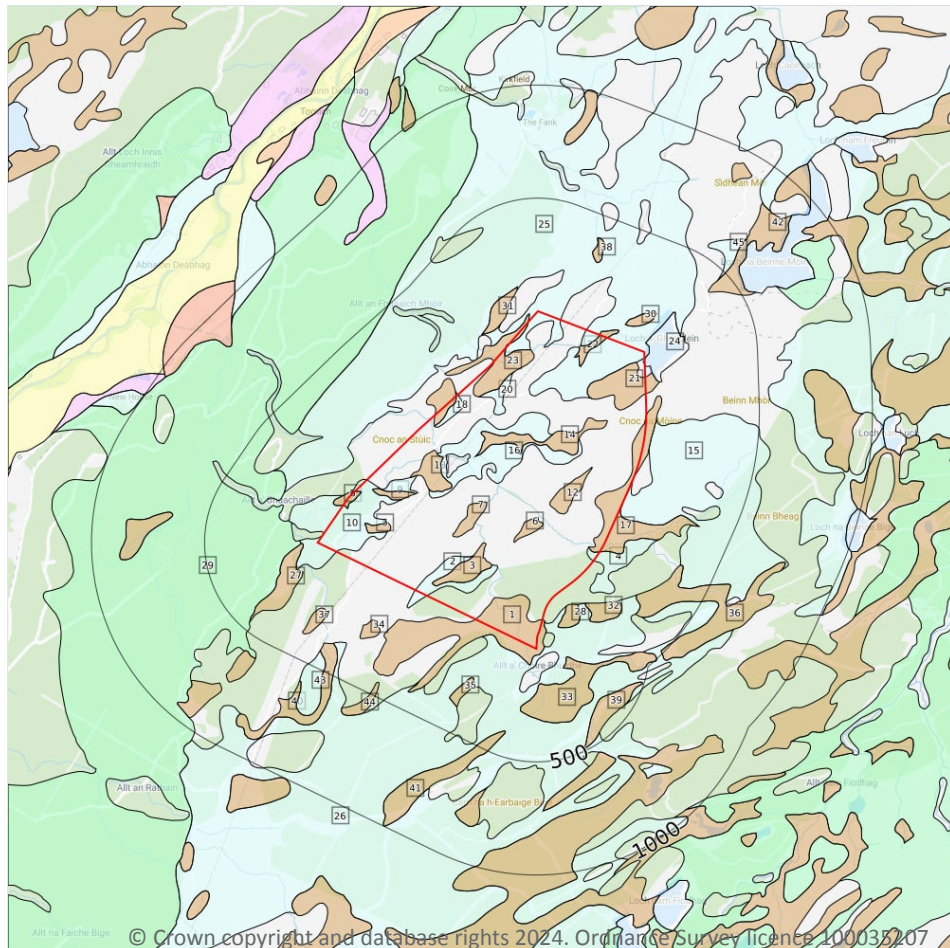
A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any artificial deposits (the zone between the land surface and the water table).

*This data is sourced from the British Geological Survey.*





## Geology 1:50,000 scale - 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

45

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 54](#) >

ID	Location	LEX Code	Description	Rock description
1	On site	PEAT-P	PEAT	PEAT
2	On site	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
3	On site	PEAT-P	PEAT	PEAT





ID	Location	LEX Code	Description	Rock description
4	On site	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
5	On site	PEAT-P	PEAT	PEAT
6	On site	PEAT-P	PEAT	PEAT
7	On site	PEAT-P	PEAT	PEAT
8	On site	PEAT-P	PEAT	PEAT
9	On site	PEAT-P	PEAT	PEAT
10	On site	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
11	On site	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
12	On site	PEAT-P	PEAT	PEAT
13	On site	PEAT-P	PEAT	PEAT
14	On site	PEAT-P	PEAT	PEAT
15	On site	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
16	On site	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
17	On site	PEAT-P	PEAT	PEAT
18	On site	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
19	On site	PEAT-P	PEAT	PEAT
20	On site	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
21	On site	PEAT-P	PEAT	PEAT
22	On site	PEAT-P	PEAT	PEAT
23	On site	PEAT-P	PEAT	PEAT
24	On site	SUPNM-UNKNOWN	SUPERFICIAL THEME NOT MAPPED [FOR DIGITAL MAP USE ONLY]	UNKNOWN/UNCLASSIFIED ENTRY
25	On site	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
26	12m S	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON





ID	Location	LEX Code	Description	Rock description
27	65m W	PEAT-P	PEAT	PEAT
28	69m SE	PEAT-P	PEAT	PEAT
29	74m W	HMGDD-XDSV	HUMMOCKY (MOUNDY) GLACIAL DEPOSITS, DEVENSIAN	DIAMICTON, SAND AND GRAVEL
30	83m NE	PEAT-P	PEAT	PEAT
31	85m N	PEAT-P	PEAT	PEAT
32	109m SE	PEAT-P	PEAT	PEAT
33	138m S	PEAT-P	PEAT	PEAT
34	199m SW	PEAT-P	PEAT	PEAT
35	238m S	PEAT-P	PEAT	PEAT
36	243m SE	PEAT-P	PEAT	PEAT
37	251m SW	PEAT-P	PEAT	PEAT
38	295m N	PEAT-P	PEAT	PEAT
39	358m SE	PEAT-P	PEAT	PEAT
40	370m SW	PEAT-P	PEAT	PEAT
41	389m S	PEAT-P	PEAT	PEAT
42	390m NE	PEAT-P	PEAT	PEAT
43	424m SW	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
44	438m SW	PEAT-P	PEAT	PEAT
45	454m NE	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON

*This data is sourced from the British Geological Survey.*

## 15.5 Superficial permeability (50k)

**Records within 50m**

**30**

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	Mixed	Very High	Very Low
On site	Mixed	Low	Very Low





Location	Flow type	Maximum permeability	Minimum permeability
On site	Mixed	Low	Very Low
On site	Mixed	Low	Very Low
On site	Mixed	Low	Very Low
On site	Mixed	Low	Very Low
On site	Mixed	Low	Very Low
On site	Mixed	Low	Very Low
On site	Mixed	Low	Very Low
On site	Mixed	Low	Very Low
On site	Mixed	Low	Very Low
On site	Mixed	Low	Very Low
On site	Mixed	Low	Very Low
On site	Mixed	Low	Very Low
On site	Mixed	Low	Very Low
On site	Mixed	Low	Very Low
On site	Mixed	Low	Very Low
On site	Mixed	Low	Very Low
On site	Mixed	Low	Very Low
On site	Mixed	Low	Very Low
On site	Mixed	High	Low
On site	Mixed	High	Low
On site	Mixed	High	Low
On site	Mixed	High	Low
On site	Mixed	High	Low
On site	Mixed	High	Low
On site	Mixed	High	Low
On site	Mixed	High	Low
On site	Mixed	High	Low
On site	Mixed	High	Low
On site	Mixed	High	Low
12m S	Mixed	High	Low
49m SE	Mixed	High	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.*





[illegible]

## 15.8 Bedrock geology (50k)

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 59 >](#)

ID	Location	LEX Code	Description	Rock age
1	On site	GMOR-PGLG	GLEN MORISTON VEIN COMPLEX - PEGMATITE AND LEUCOGRANITE	-
2	On site	TAPS-PSAMM	TARVIE PSAMMITE FORMATION - PSAMMITE	-

*This data is sourced from the British Geological Survey.*



## 15.9 Bedrock permeability (50k)

### Records within 50m

**3**

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	Fracture	Low	Low
On site	Fracture	Low	Low
On site	Fracture	Low	Low

*This data is sourced from the British Geological Survey.*

## 15.10 Bedrock faults and other linear features (50k)

### Records within 500m

**16**

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.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on [page 59](#) >

ID	Location	Category	Description
3	On site	LANDFORM	Ice-marginal glacial single-sided meltwater channel, right
4	On site	LANDFORM	Ice-marginal glacial single-sided meltwater channel, right
5	On site	LANDFORM	Axis of large-scale glacial flute
6	On site	LANDFORM	Axis of large-scale glacial flute
7	On site	LANDFORM	Axis of large-scale glacial flute
8	On site	LANDFORM	Axis of large-scale glacial flute
9	4m W	LANDFORM	Ice-marginal glacial single-sided meltwater channel, right
10	69m NW	LANDFORM	Axis of large-scale glacial flute
11	74m W	LANDFORM	Ice-marginal glacial single-sided meltwater channel, right
12	209m SW	LANDFORM	Ice-marginal glacial single-sided meltwater channel, right
13	347m W	ALTERATION_AREA	Limit of pegmatitic rock veins
14	400m S	LANDFORM	Marked concave break in slope



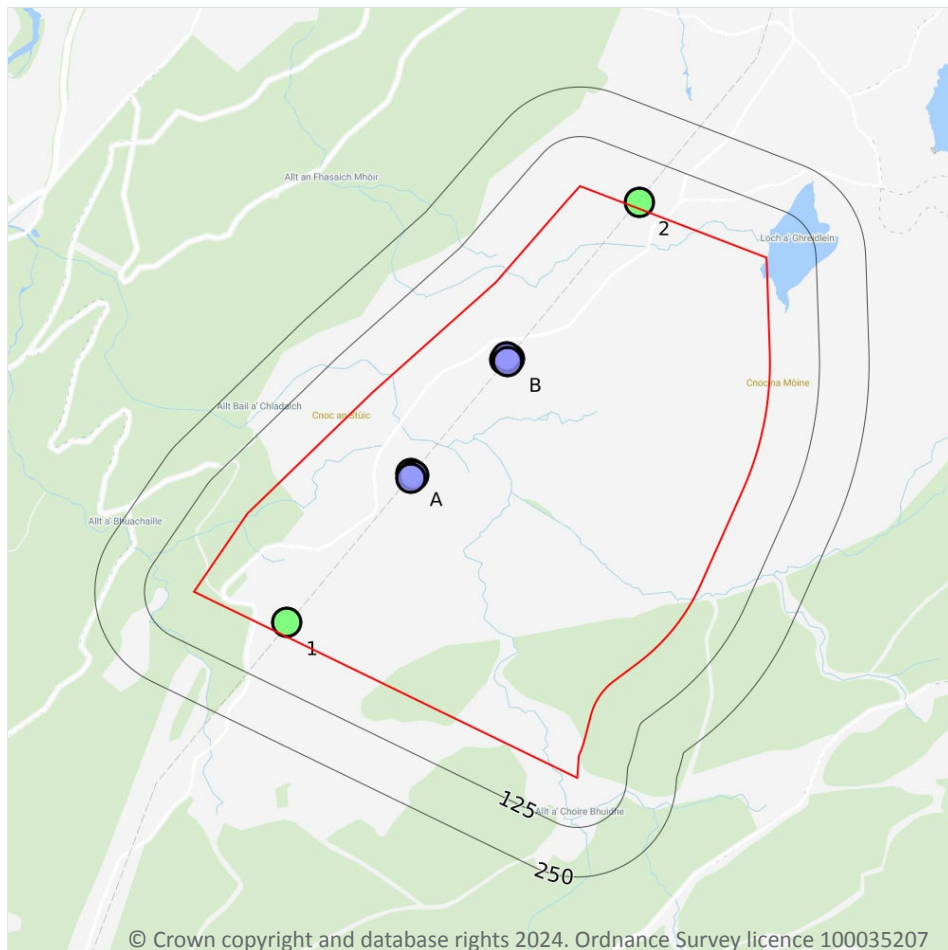


ID	Location	Category	Description
15	414m SW	LANDFORM	Axis of large-scale glacial flute
16	428m SW	LANDFORM	Ice-marginal glacial single-sided meltwater channel, right
17	447m S	LANDFORM	Axis of large-scale glacial flute
18	476m E	LANDFORM	Axis of large-scale glacial furrow, generally associated with drumlins

*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

9

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 62](#) >

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	On site	230643 825052	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF75-C	13.3	N	<a href="#">18949759</a> ↗
A	On site	230955 825428	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF73B-A	13.7	N	<a href="#">18949755</a> ↗





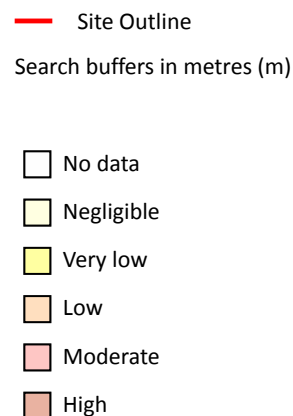
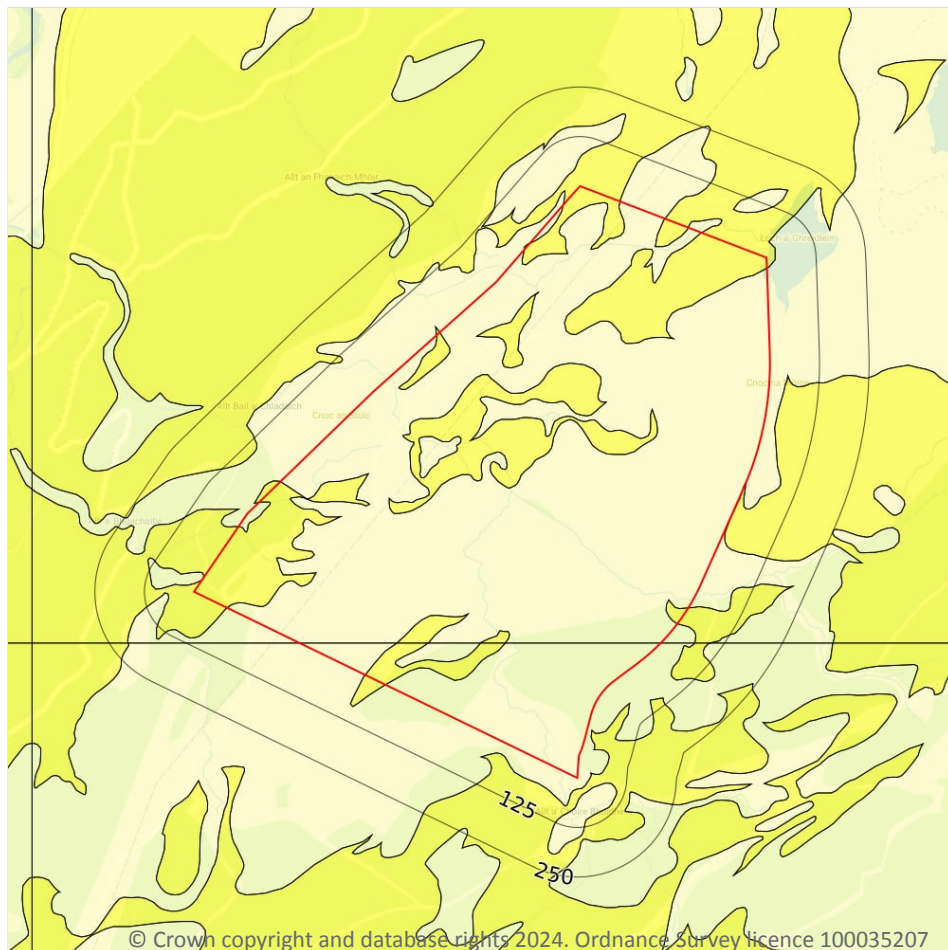
ID	Location	Grid reference	Name	Length	Confidential	Web link
A	On site	230962 825423	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF73B-B	6.0	N	<a href="#">18949756</a> ↗
A	On site	230956 825416	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF73B-C	6.0	N	<a href="#">18949757</a> ↗
B	On site	231205 825716	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF73A-B	14.7	N	<a href="#">18949752</a> ↗
B	On site	231191 825715	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF73A-D	6.0	N	<a href="#">18949754</a> ↗
B	On site	231197 825722	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF73A-A	6.0	N	<a href="#">18949751</a> ↗
B	On site	231199 825709	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF73A-C	6.0	N	<a href="#">18949753</a> ↗
2	15m N	231531 826111	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF72B-B	13.15	N	<a href="#">18949750</a> ↗

*This data is sourced from the British Geological Survey.*





## 17 Natural ground subsidence - Shrink swell clays



### 17.1 Shrink swell clays

#### Records within 50m

6

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 64](#) >

Location	Hazard rating	Details
On site	Negligible	Ground conditions predominantly non-plastic.
On site	Very low	Ground conditions predominantly low plasticity.
12m S	Very low	Ground conditions predominantly low plasticity.





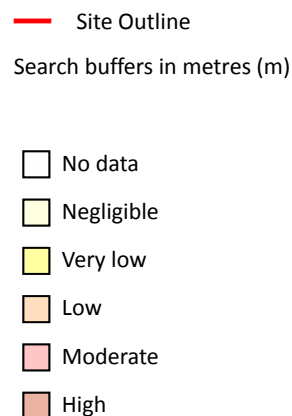
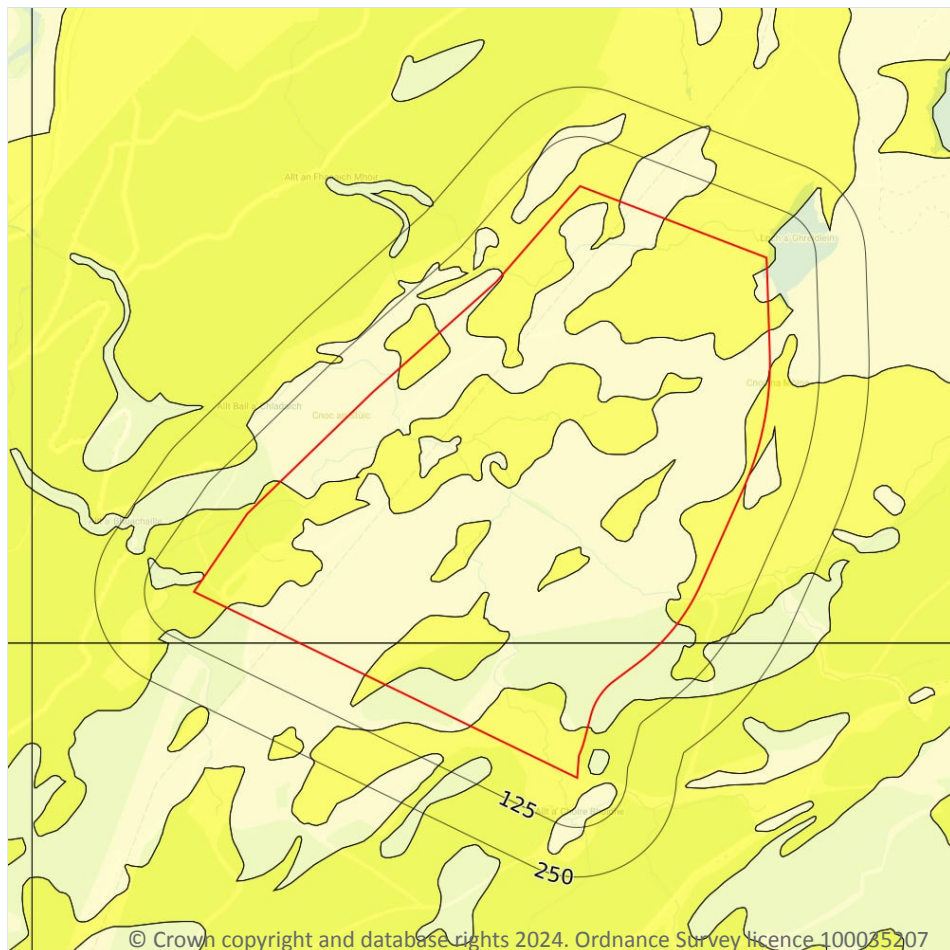
Location	Hazard rating	Details
37m N	Negligible	Ground conditions predominantly non-plastic.
43m S	Negligible	Ground conditions predominantly non-plastic.
49m SE	Very low	Ground conditions predominantly low plasticity.

*This data is sourced from the British Geological Survey.*





## Natural ground subsidence - Running sands



### 17.2 Running sands

#### Records within 50m

6

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 66](#) >

Location	Hazard rating	Details
On site	Negligible	Running sand conditions are not thought to occur whatever the position of the water table. No identified constraints on lands use due to running conditions.



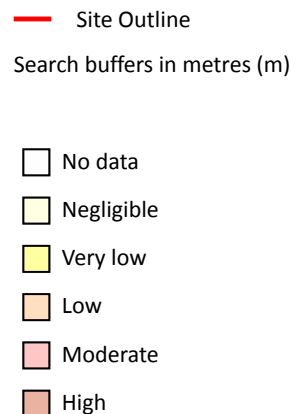
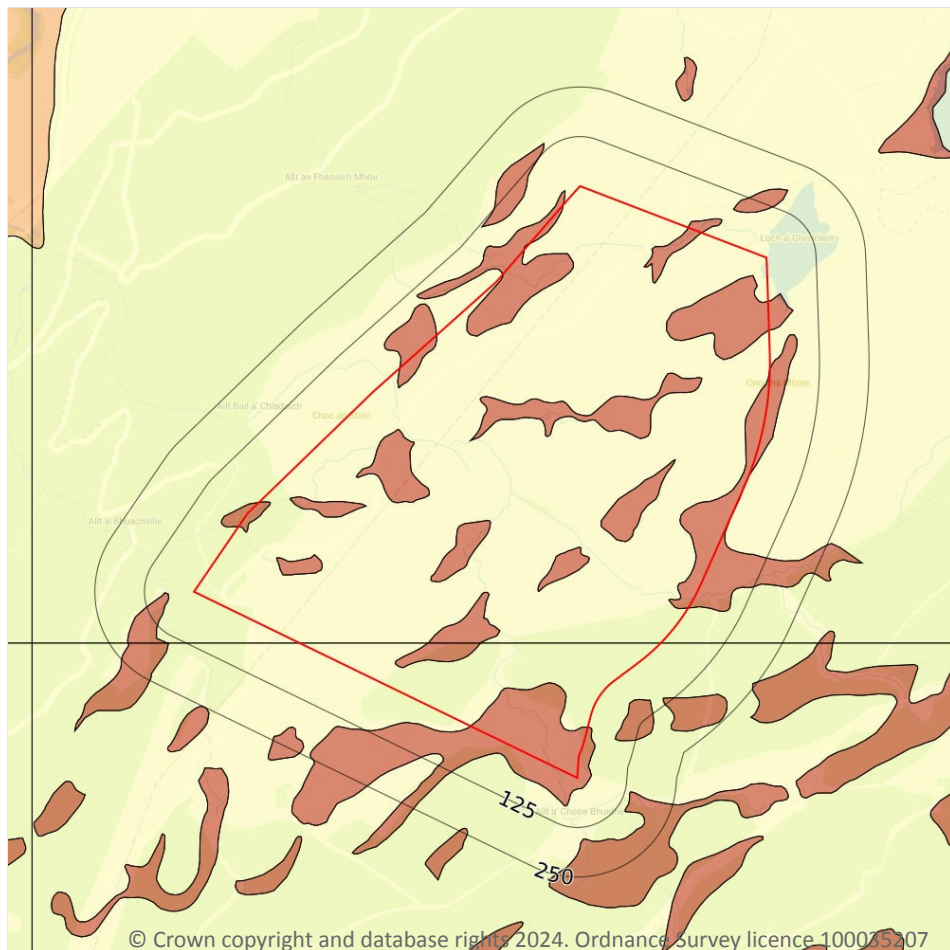
Location	Hazard rating	Details
On site	Very low	Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless water table rises rapidly.
26m S	Negligible	Running sand conditions are not thought to occur whatever the position of the water table. No identified constraints on lands use due to running conditions.
37m N	Negligible	Running sand conditions are not thought to occur whatever the position of the water table. No identified constraints on lands use due to running conditions.
43m S	Negligible	Running sand conditions are not thought to occur whatever the position of the water table. No identified constraints on lands use due to running conditions.
49m SE	Very low	Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless water table rises rapidly.

*This data is sourced from the British Geological Survey.*





## Natural ground subsidence - Compressible deposits



### 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 68](#) >

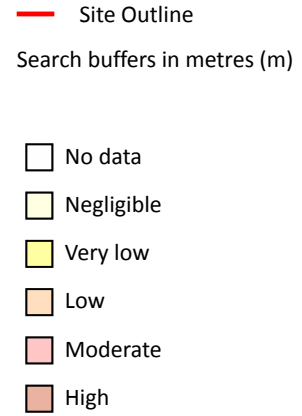
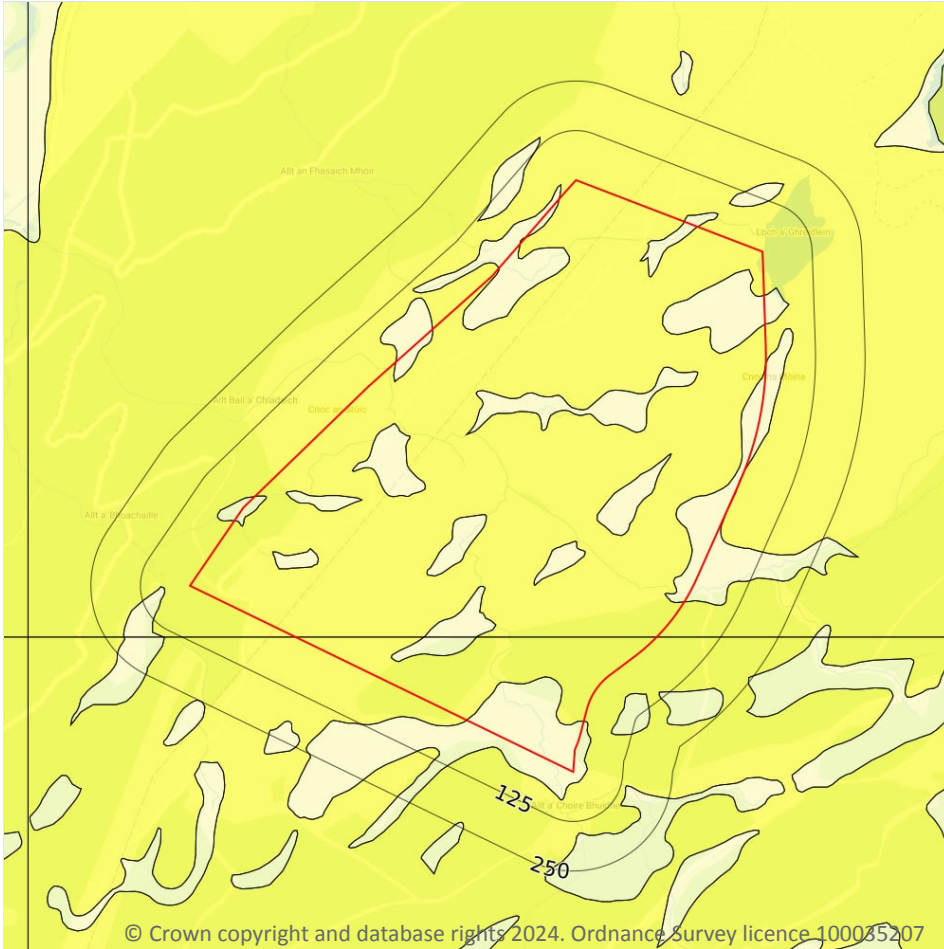
Location	Hazard rating	Details
On site	Negligible	Compressible strata are not thought to occur.
On site	High	Highly compressible strata present. Significant constraint on land use depending on thickness.

This data is sourced from the British Geological Survey.





## Natural ground subsidence - Collapsible deposits



### 17.4 Collapsible deposits

#### Records within 50m

2

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 69](#) >

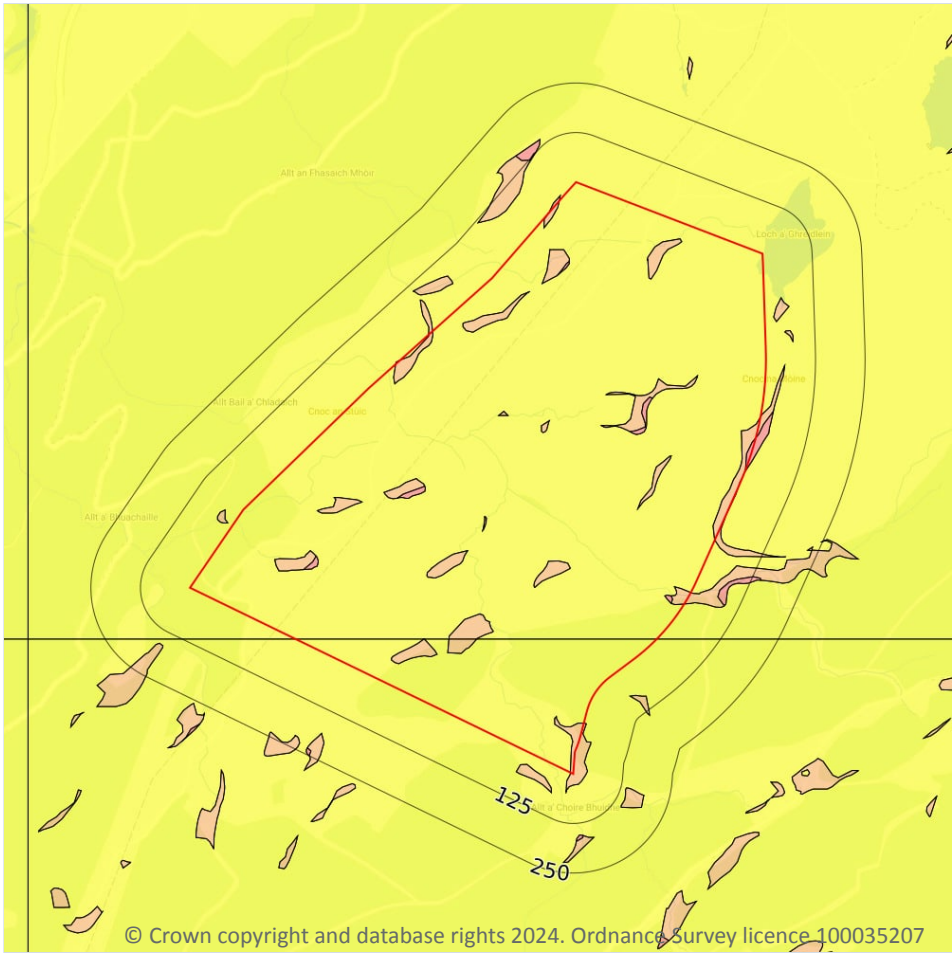
Location	Hazard rating	Details
On site	Negligible	Deposits with potential to collapse when loaded and saturated are believed not to be present.
On site	Very low	Deposits with potential to collapse when loaded and saturated are unlikely to be present.

This data is sourced from the British Geological Survey.





Natural ground subsidence - Landslides



17.5 Landslides

Records within 50m

7

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 70](#) >

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.



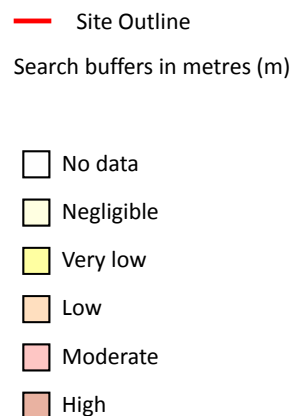
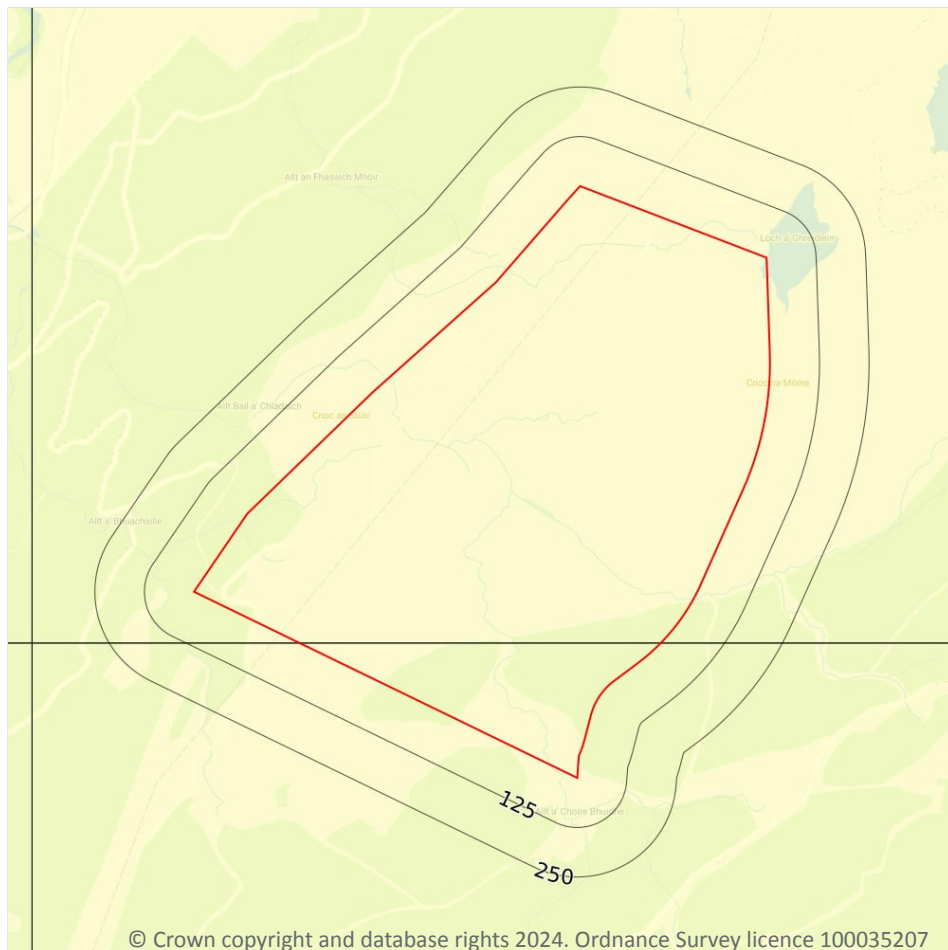
Location	Hazard rating	Details
On site	Low	Slope instability problems may be present or anticipated. Site investigation should consider specifically the slope stability of the site.
On site	Moderate	Slope instability problems are probably present or have occurred in the past. Land use should consider specifically the stability of the site.
14m W	Low	Slope instability problems may be present or anticipated. Site investigation should consider specifically the slope stability of the site.
23m NE	Low	Slope instability problems may be present or anticipated. Site investigation should consider specifically the slope stability of the site.
30m S	Low	Slope instability problems may be present or anticipated. Site investigation should consider specifically the slope stability of the site.
50m NE	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



### 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 72](#)

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.



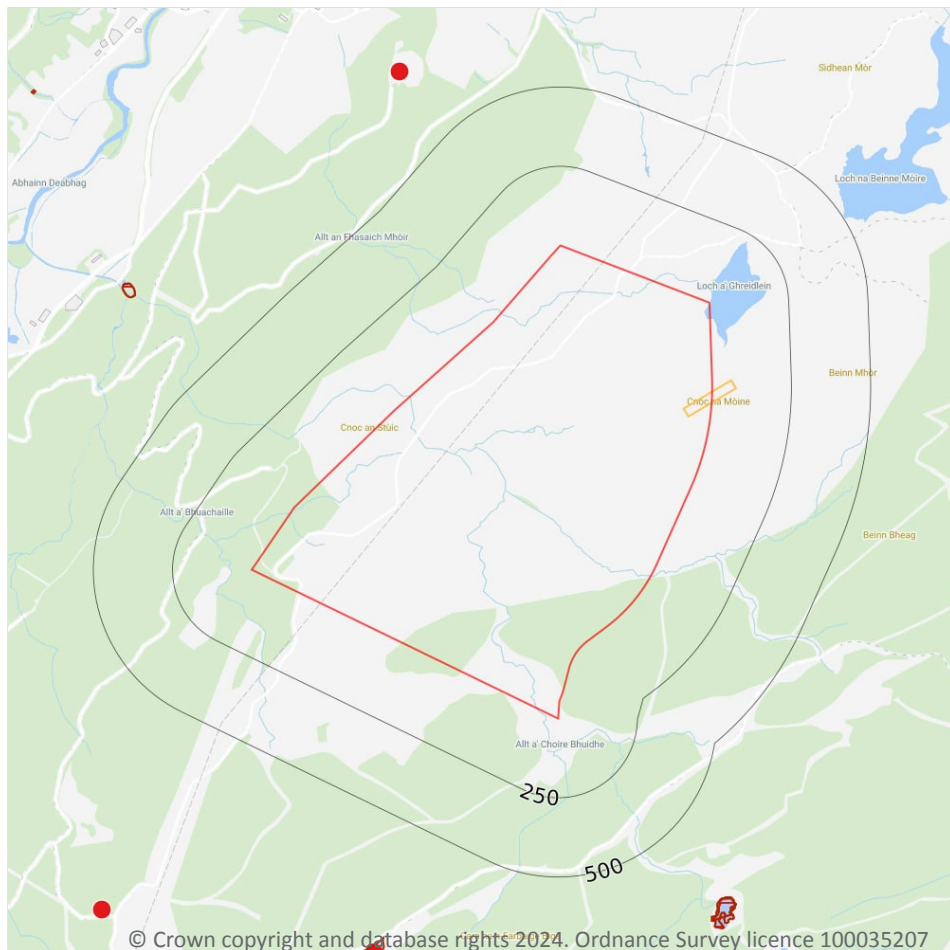


*This data is sourced from the British Geological Survey.*





## 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****0**

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.

*This data is sourced from Ordnance Survey/Groundsure.*

## 18.3 Underground workings

**Records within 1000m****0**

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

*This 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****1**

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 74 >](#)





ID	Location	Name	Commodity	Class	Likelihood
1	On site	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

<b>Records on site</b>	<b>0</b>
------------------------	----------

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

<b>Records within 500m</b>	<b>0</b>
----------------------------	----------

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

<b>Records within 500m</b>	<b>0</b>
----------------------------	----------

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.*





[illegible]

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

Records on site	2
-----------------	---

Features are displayed on the Radon map on [page 81](#) >

Location	Estimated properties affected	Radon Protection Measures required
On site	Greater than 30%	Full



Location	Estimated properties affected	Radon Protection Measures required
On site	Between 1% and 3%	Basic

*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

33

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<sup>2</sup>. 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<sup>2</sup>; 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	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg





Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
22m NE	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	60 - 90 mg/kg	15 - 30 mg/kg
22m NE	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 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<sup>2</sup>).

*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<sup>2</sup>.

*This data is sourced from the British Geological Survey.*





## 22 Railway infrastructure and projects

### 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****0**

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.

*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

0

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

*This data is sourced from OpenStreetMap.*

## 22.7 Railways

Records within 250m

0

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

*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.*





## Data providers

Groundsure works with respected data providers to bring you the most relevant and accurate information. To find out who they are and their areas of expertise see <https://www.groundsure.com/sources-reference> ↗.

## Terms and conditions

Groundsure's Terms and Conditions can be accessed at this link: [www.groundsure.com/terms-and-conditions-april-2023/](https://www.groundsure.com/terms-and-conditions-april-2023/) ↗.





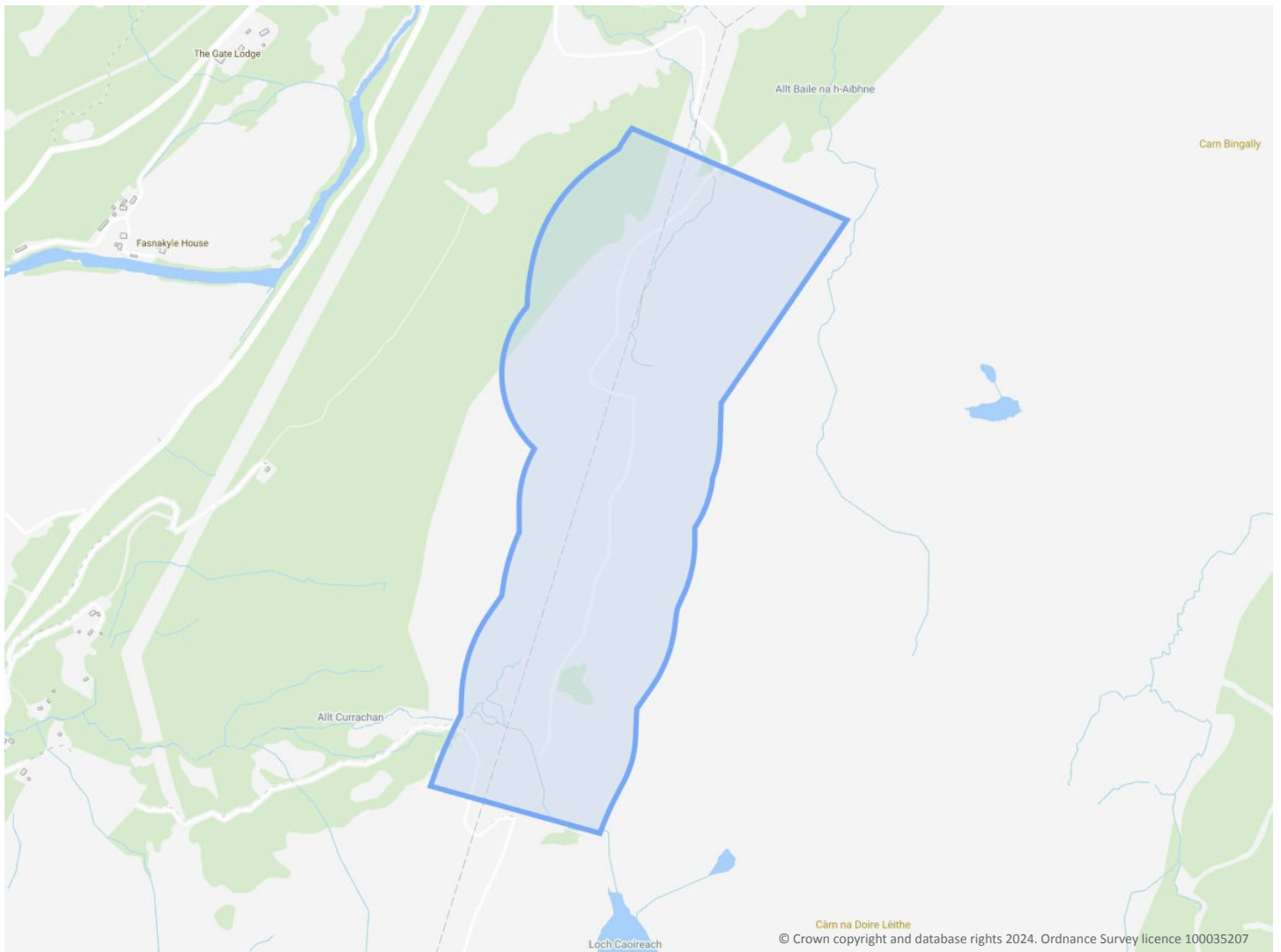
## Scotland, Red Line Boundary

### Order Details

**Date:** 01/05/2024  
**Your ref:** Scotland, Red Line Boundary  
**Our Ref:** GSIP-2024-14714-18280\_D

### Site Details

**Location:** 232388 828266  
**Area:** 72.35 ha  
**Authority:** [The Highland Council](#) ↗



**Summary of findings**

[p. 2 >](#)

**Aerial image**

[p. 7 >](#)

**OS MasterMap site plan**

N/A: >10ha

[Insight User Guide](#) ↗

Contact us with any questions at:

[info@groundsure.com](mailto:info@groundsure.com) ↗

01273 257 755



## Summary of findings

Page	Section	Past land use	On site	0-50m	50-250m	250-500m	500-2000m
12	1.1	Historical industrial land uses	0	0	0	0	-
12	1.2	Historical tanks	0	0	0	0	-
12	1.3	Historical energy features	0	0	0	0	-
13	1.4	Historical petrol stations	0	0	0	0	-
13	1.5	Historical garages	0	0	0	0	-
13	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
14	2.1	Historical industrial land uses	0	0	0	0	-
14	2.2	Historical tanks	0	0	0	0	-
14	2.3	Historical energy features	0	0	0	0	-
14	2.4	Historical petrol stations	0	0	0	0	-
15	2.5	Historical garages	0	0	0	0	-
Page	Section	Waste and landfill	On site	0-50m	50-250m	250-500m	500-2000m
16	3.1	Active or recent landfill	0	0	0	0	-
16	3.2	Historical landfill (BGS records)	0	0	0	0	-
16	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
16	3.4	Licensed waste sites	0	0	0	0	-
16	3.5	Historical waste sites	0	0	0	0	-
Page	Section	<u>Current industrial land use &gt;</u>	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">17 &gt;</a>	<a href="#">4.1 &gt;</a>	<a href="#">Recent industrial land uses &gt;</a>	5	1	0	-	-
18	4.2	Current or recent petrol stations	0	0	0	0	-
18	4.3	Electricity cables	0	0	0	0	-
18	4.4	Gas pipelines	0	0	0	0	-
18	4.5	Sites determined as Contaminated Land	0	0	0	0	-
19	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
19	4.7	Regulated explosive sites	0	0	0	0	-





19	4.8	Hazardous substance storage/usage	0	0	0	0	-
19	4.9	Part A(1), IPPC and Historic IPC Authorisations	0	0	0	0	-
19	4.10	Part B Authorisations	0	0	0	0	-
20	4.11	Pollution inventory substances	0	0	0	0	-
20	4.12	Pollution inventory waste transfers	0	0	0	0	-
20	4.13	Pollution inventory radioactive waste	0	0	0	0	-
Page	Section	<a href="#">Hydrogeology &gt;</a>	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">21 &gt;</a>	<a href="#">5.1 &gt;</a>	<a href="#">Superficial aquifer &gt;</a>	Identified (within 500m)				
<a href="#">22 &gt;</a>	<a href="#">5.2 &gt;</a>	<a href="#">Bedrock aquifer &gt;</a>	Identified (within 500m)				
Page	Section	<a href="#">Hydrology &gt;</a>	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">23 &gt;</a>	<a href="#">6.1 &gt;</a>	<a href="#">Water Network (OS MasterMap) &gt;</a>	13	3	14	-	-
<a href="#">26 &gt;</a>	<a href="#">6.2 &gt;</a>	<a href="#">Surface water features &gt;</a>	1	3	8	-	-
Page	Section	<a href="#">River flooding &gt;</a>					
<a href="#">27 &gt;</a>	<a href="#">7.1 &gt;</a>	<a href="#">River flooding &gt;</a>	1 in 100 year, 0.3m - 1.0m (within 50m)				
Page	Section	Coastal flooding					
29	8.1	Coastal flooding	Negligible (within 50m)				
Page	Section	<a href="#">Surface water flooding &gt;</a>					
<a href="#">30 &gt;</a>	<a href="#">9.1 &gt;</a>	<a href="#">Surface water flooding &gt;</a>	1 in 30 year, Greater than 1.0m (within 50m)				
Page	Section	<a href="#">Groundwater flooding &gt;</a>					
<a href="#">32 &gt;</a>	<a href="#">10.1 &gt;</a>	<a href="#">Groundwater flooding &gt;</a>	Low (within 50m)				
Page	Section	<a href="#">Environmental designations &gt;</a>	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">33 &gt;</a>	<a href="#">11.1 &gt;</a>	<a href="#">Sites of Special Scientific Interest (SSSI) &gt;</a>	0	0	0	0	1
34	11.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
<a href="#">34 &gt;</a>	<a href="#">11.3 &gt;</a>	<a href="#">Special Areas of Conservation (SAC) &gt;</a>	0	0	0	0	1
<a href="#">35 &gt;</a>	<a href="#">11.4 &gt;</a>	<a href="#">Special Protection Areas (SPA) &gt;</a>	0	0	0	0	1
<a href="#">35 &gt;</a>	<a href="#">11.5 &gt;</a>	<a href="#">National Nature Reserves (NNR) &gt;</a>	0	0	0	0	2
35	11.6	Local Nature Reserves (LNR)	0	0	0	0	0
<a href="#">36 &gt;</a>	<a href="#">11.7 &gt;</a>	<a href="#">Designated Ancient Woodland &gt;</a>	4	0	3	5	24
37	11.8	Biosphere Reserves	0	0	0	0	0





37	11.9	Forest Parks	0	0	0	0	0
38	11.10	Marine Conservation Zones	0	0	0	0	0
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
39	12.1	World Heritage Sites	0	0	0	-	-
39	12.2	Area of Outstanding Natural Beauty	0	0	0	-	-
39	12.3	National Parks	0	0	0	-	-
39	12.4	Listed Buildings	0	0	0	-	-
40	12.5	Conservation Areas	0	0	0	-	-
40	12.6	Scheduled Ancient Monuments	0	0	0	-	-
40	12.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations >	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">41 &gt;</a>	<a href="#">13.1 &gt;</a>	<a href="#">Agricultural Land Classification &gt;</a>	Grade 5.2 (within 250m)				
Page	Section	Geology 1:10,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">43 &gt;</a>	<a href="#">14.1 &gt;</a>	<a href="#">10k Availability &gt;</a>	Identified (within 500m)				
44	14.2	Artificial and made ground (10k)	0	0	0	0	-
<a href="#">45 &gt;</a>	<a href="#">14.3 &gt;</a>	<a href="#">Superficial geology (10k) &gt;</a>	6	0	6	6	-
46	14.4	Landslip (10k)	0	0	0	0	-
47	14.5	Bedrock geology (10k)	0	0	0	0	-
<a href="#">47 &gt;</a>	<a href="#">14.6 &gt;</a>	<a href="#">Bedrock faults and other linear features (10k) &gt;</a>	10	2	11	6	-
Page	Section	Geology 1:50,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">50 &gt;</a>	<a href="#">15.1 &gt;</a>	<a href="#">50k Availability &gt;</a>	Identified (within 500m)				
51	15.2	Artificial and made ground (50k)	0	0	0	0	-
51	15.3	Artificial ground permeability (50k)	0	0	-	-	-
<a href="#">52 &gt;</a>	<a href="#">15.4 &gt;</a>	<a href="#">Superficial geology (50k) &gt;</a>	6	0	6	6	-
<a href="#">53 &gt;</a>	<a href="#">15.5 &gt;</a>	<a href="#">Superficial permeability (50k) &gt;</a>	Identified (within 50m)				
54	15.6	Landslip (50k)	0	0	0	0	-
54	15.7	Landslip permeability (50k)	None (within 50m)				
<a href="#">55 &gt;</a>	<a href="#">15.8 &gt;</a>	<a href="#">Bedrock geology (50k) &gt;</a>	1	0	1	1	-
<a href="#">56 &gt;</a>	<a href="#">15.9 &gt;</a>	<a href="#">Bedrock permeability (50k) &gt;</a>	Identified (within 50m)				





<a href="#">56 &gt;</a>	<a href="#">15.10 &gt;</a>	<a href="#">Bedrock faults and other linear features (50k) &gt;</a>	6	1	7	2	-
Page	Section	<a href="#">Boreholes &gt;</a>	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">58 &gt;</a>	<a href="#">16.1 &gt;</a>	<a href="#">BGS Boreholes &gt;</a>	10	2	2	-	-
Page	Section	<a href="#">Natural ground subsidence &gt;</a>					
<a href="#">60 &gt;</a>	<a href="#">17.1 &gt;</a>	<a href="#">Shrink swell clays &gt;</a>	Very low (within 50m)				
<a href="#">61 &gt;</a>	<a href="#">17.2 &gt;</a>	<a href="#">Running sands &gt;</a>	Very low (within 50m)				
<a href="#">63 &gt;</a>	<a href="#">17.3 &gt;</a>	<a href="#">Compressible deposits &gt;</a>	High (within 50m)				
<a href="#">64 &gt;</a>	<a href="#">17.4 &gt;</a>	<a href="#">Collapsible deposits &gt;</a>	Very low (within 50m)				
<a href="#">65 &gt;</a>	<a href="#">17.5 &gt;</a>	<a href="#">Landslides &gt;</a>	Moderate (within 50m)				
<a href="#">67 &gt;</a>	<a href="#">17.6 &gt;</a>	<a href="#">Ground dissolution of soluble rocks &gt;</a>	Negligible (within 50m)				
Page	Section	Mining and ground workings	On site	0-50m	50-250m	250-500m	500-2000m
69	18.1	BritPits	0	0	0	0	-
69	18.2	Surface ground workings	0	0	0	-	-
69	18.3	Underground workings	0	0	0	0	0
69	18.4	Underground mining extents	0	0	0	0	-
70	18.5	Historical Mineral Planning Areas	0	0	0	0	-
70	18.6	Non-coal mining	0	0	0	0	0
70	18.7	JPB mining areas	None (within 0m)				
70	18.8	The Coal Authority non-coal mining	0	0	0	0	-
71	18.9	Researched mining	0	0	0	0	-
71	18.10	Mining record office plans	0	0	0	0	-
71	18.11	BGS mine plans	0	0	0	0	-
71	18.12	Coal mining	None (within 0m)				
71	18.13	Brine areas	None (within 0m)				
72	18.14	Gypsum areas	None (within 0m)				
72	18.15	Tin mining	None (within 0m)				
72	18.16	Clay mining	None (within 0m)				
Page	Section	Ground cavities and sinkholes	On site	0-50m	50-250m	250-500m	500-2000m
73	19.1	Natural cavities	0	0	0	0	-

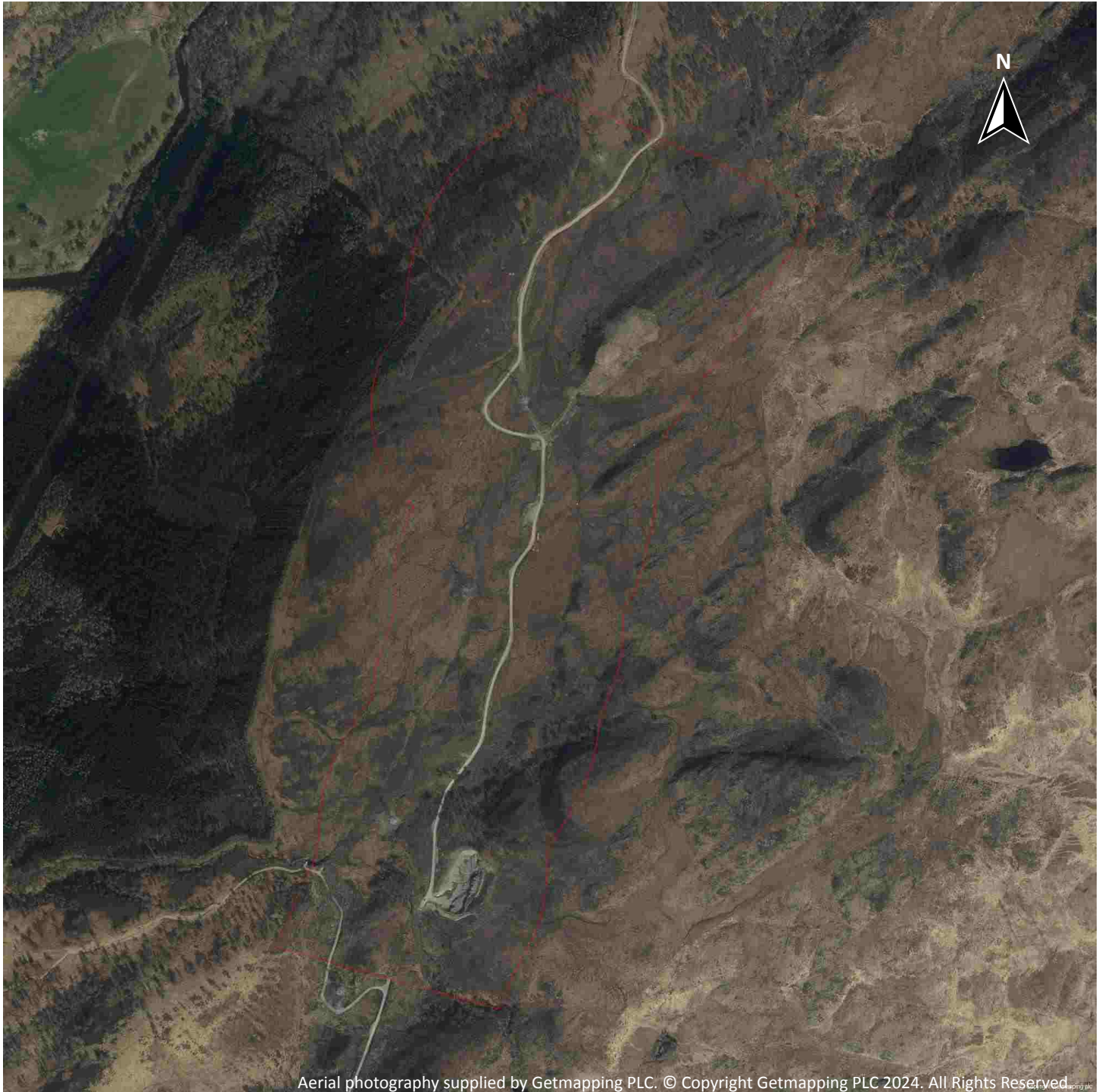




73	19.2	Mining cavities	0	0	0	0	0
73	19.3	Reported recent incidents	0	0	0	0	-
73	19.4	Historical incidents	0	0	0	0	-
74	19.5	National karst database	0	0	0	0	-
Page	Section	<a href="#">Radon &gt;</a>					
<a href="#">75 &gt;</a>	<a href="#">20.1 &gt;</a>	<a href="#">Radon &gt;</a>	Between 1% and 3% (within 0m)				
Page	Section	<a href="#">Soil chemistry &gt;</a>	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">77 &gt;</a>	<a href="#">21.1 &gt;</a>	<a href="#">BGS Estimated Background Soil Chemistry &gt;</a>	22	12	-	-	-
78	21.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
79	21.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	<a href="#">Railway infrastructure and projects</a>	On site	0-50m	50-250m	250-500m	500-2000m
80	22.1	Underground railways (London)	0	0	0	-	-
80	22.2	Underground railways (Non-London)	0	0	0	-	-
80	22.3	Railway tunnels	0	0	0	-	-
80	22.4	Historical railway and tunnel features	0	0	0	-	-
80	22.5	Royal Mail tunnels	0	0	0	-	-
81	22.6	Historical railways	0	0	0	-	-
81	22.7	Railways	0	0	0	-	-
81	22.8	Crossrail 1	0	0	0	0	-
81	22.9	Crossrail 2	0	0	0	0	-
81	22.10	HS2	0	0	0	0	-



## Recent aerial photograph



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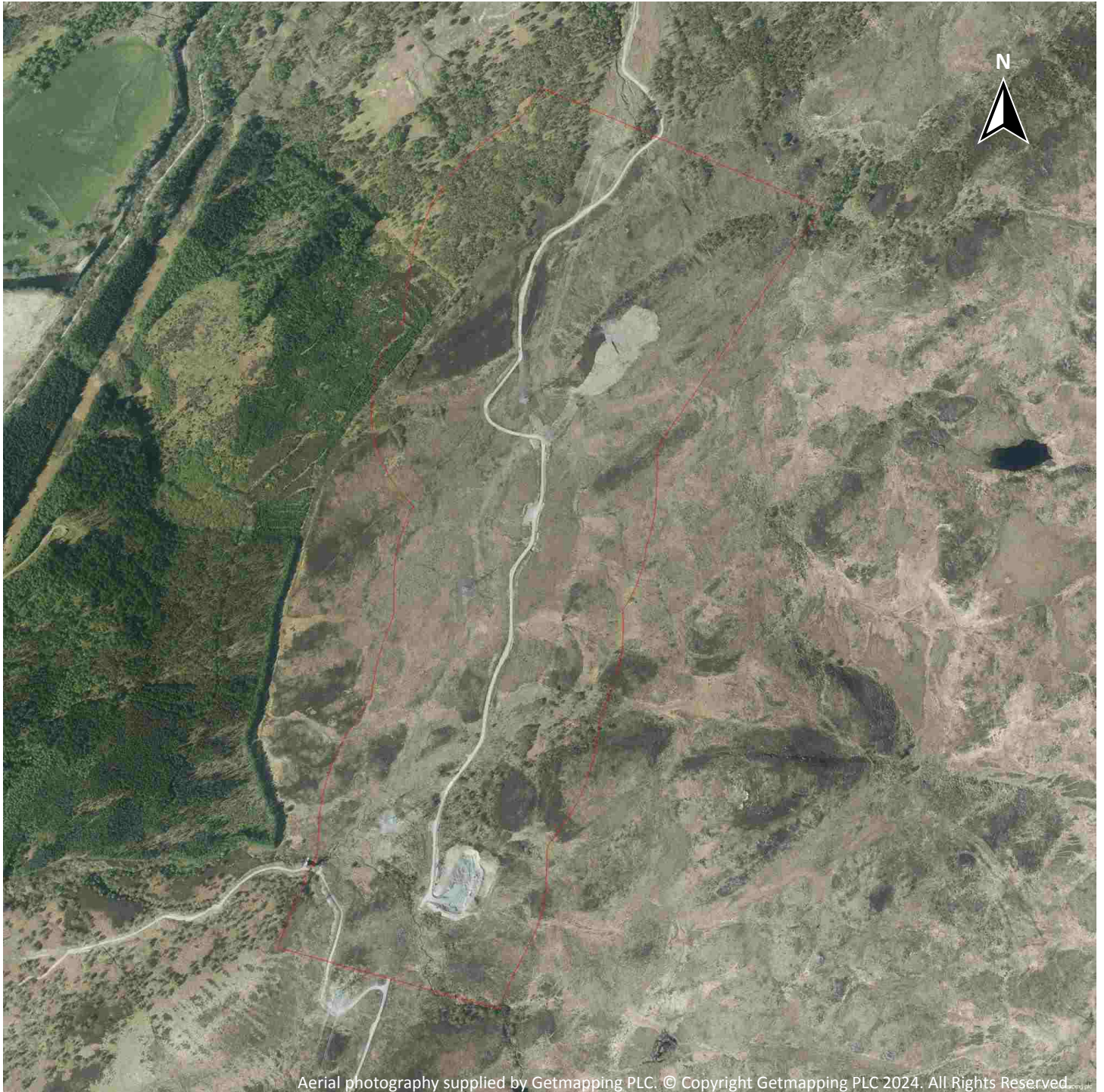
Capture Date: 29/05/2020

Site Area: 72.35ha





## Recent site history - 2017 aerial photograph



Aerial photography supplied by Getmapping PLC. © Copyright Getmapping PLC 2024. All Rights Reserved.

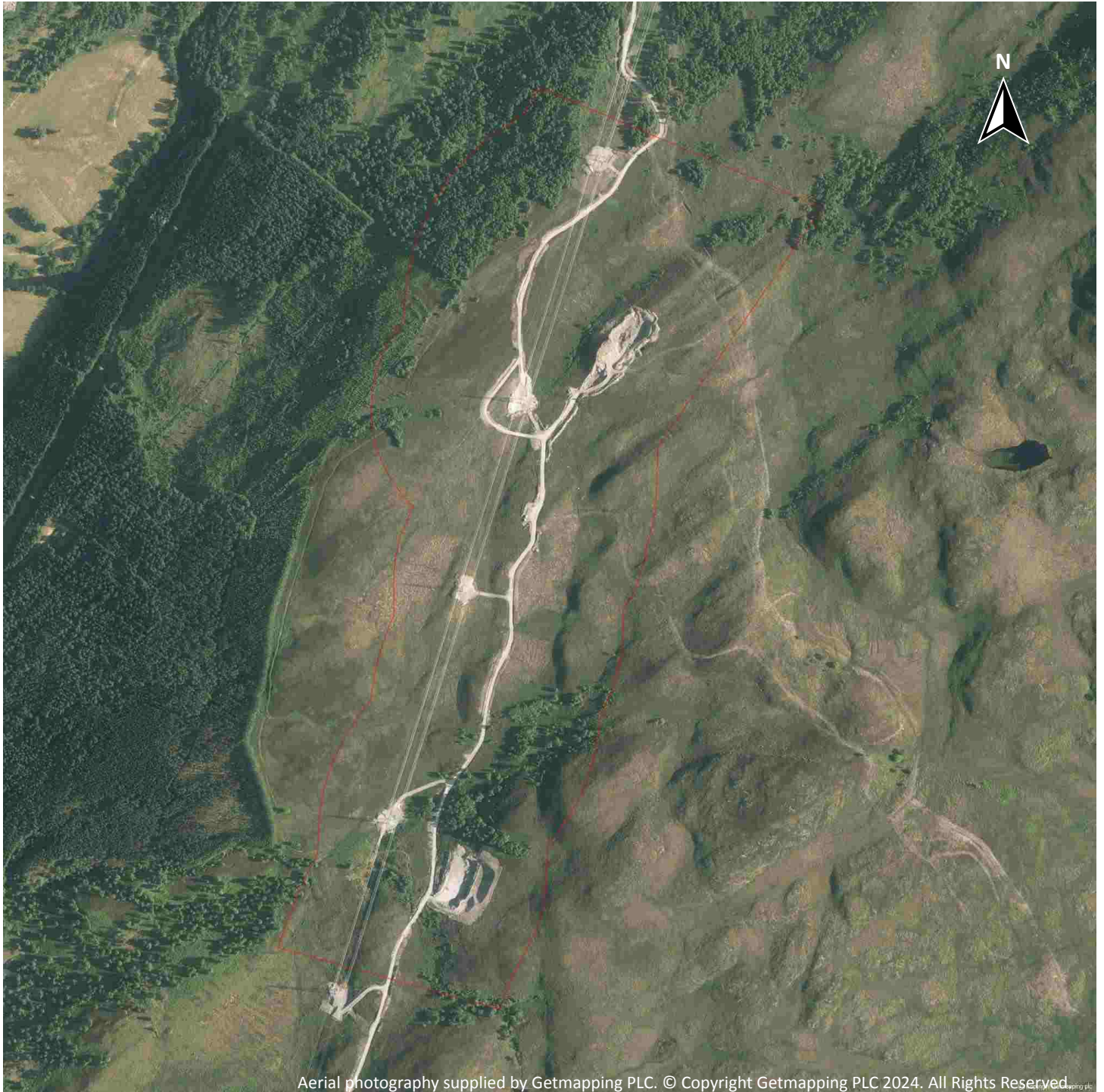
Capture Date: 06/05/2017

Site Area: 72.35ha





## Recent site history - 2013 aerial photograph



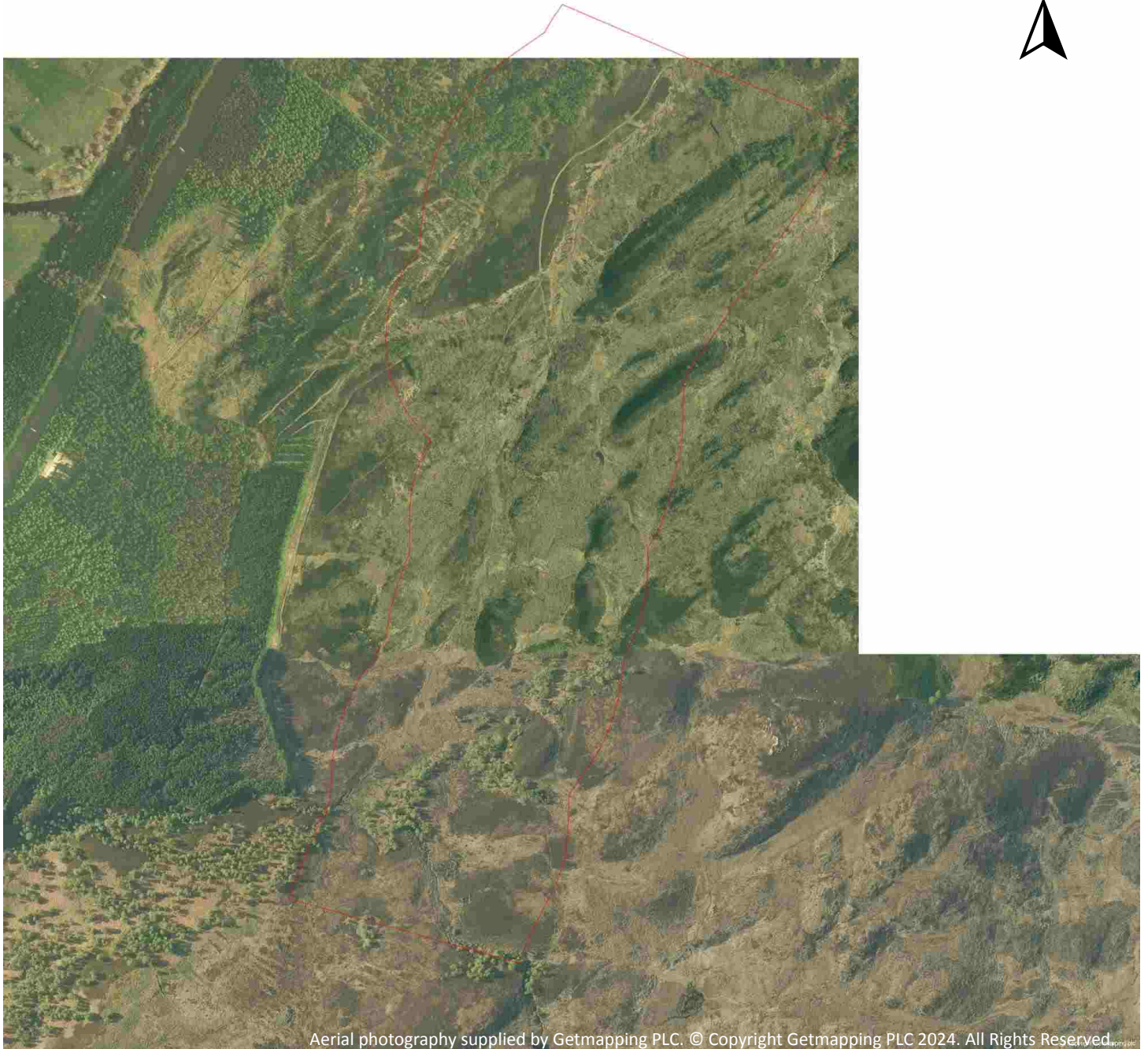
Capture Date: 19/07/2013

Site Area: 72.35ha





## Recent site history - 2009 aerial photograph



Aerial photography supplied by Getmapping PLC. © Copyright Getmapping PLC 2024. All Rights Reserved.

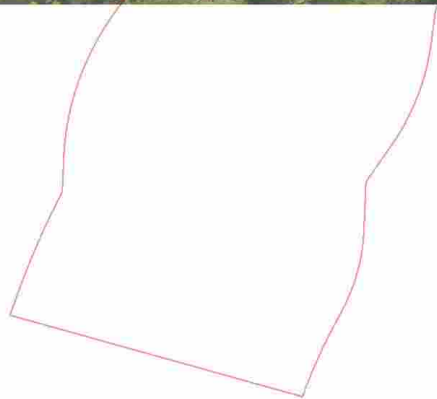
Capture Date: 13/05/2009

Site Area: 72.35ha





## Recent site history - 2008 aerial photograph



Capture Date: 09/05/2008

Site Area: 72.35ha





## 1 Past land use

### 1.1 Historical industrial land uses

**Records within 500m****0**

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'.

*This data is sourced from Ordnance Survey / Groundsure.*

### 1.2 Historical tanks

**Records within 500m****0**

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'.

*This data is sourced from Ordnance Survey / Groundsure.*

### 1.3 Historical energy features

**Records within 500m****0**

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'.

*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 ungrouped 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 ungrouped 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

### 2.1 Historical industrial land uses

**Records within 500m****0**

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'.

*This data is sourced from Ordnance Survey / Groundsure.*

### 2.2 Historical tanks

**Records within 500m****0**

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'.

*This data is sourced from Ordnance Survey / Groundsure.*

### 2.3 Historical energy features

**Records within 500m****0**

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'.

*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

### 3.1 Active or recent landfill

Records within 500m

0

Active or recently closed landfill sites under Scottish Environment Protection (SEPA) regulation.

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

### 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 Licensed waste sites

Records within 500m

0

Active or recently closed waste sites under Scottish Environment Protection Agency (SEPA) regulation.

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

### 3.5 Historical waste sites

Records within 500m

0

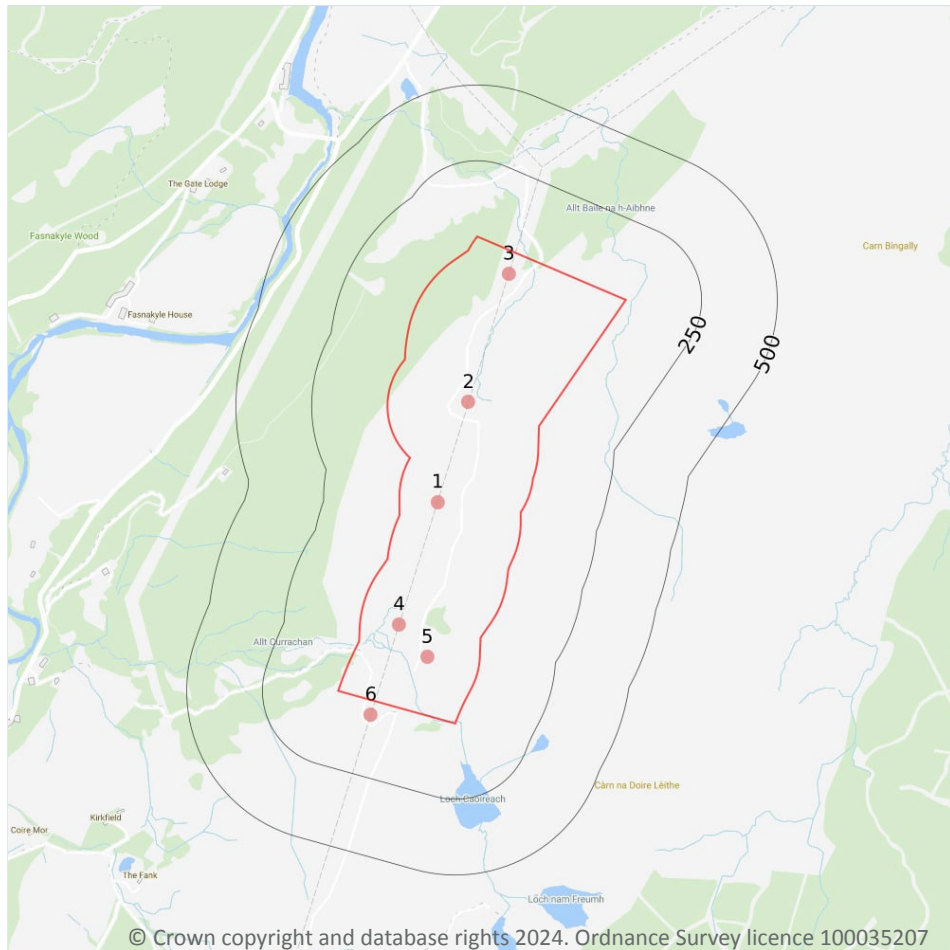
Waste site records derived from Local Authority planning records and high detail historical mapping.

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





## 4 Current industrial land use



— Site Outline  
Search buffers in metres (m)  
● Recent industrial land uses

### 4.1 Recent industrial land uses

Records within 250m

6

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on [page 17](#) >

ID	Location	Company	Address	Activity	Category
1	On site	Pylon	Inverness, IV4	Electrical Features	Infrastructure and Facilities
2	On site	Pylon	Inverness, IV4	Electrical Features	Infrastructure and Facilities
3	On site	Pylon	Inverness, IV4	Electrical Features	Infrastructure and Facilities





ID	Location	Company	Address	Activity	Category
4	On site	Pylon	Inverness, IV4	Electrical Features	Infrastructure and Facilities
5	On site	Workings	Inverness, IV4	Unspecified Quarries Or Mines	Extractive Industries
6	47m S	Pylon	Inverness, IV4	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	0
---------------------	---

High voltage underground electricity transmission cables.

*This data is sourced from National Grid.*

## 4.4 Gas pipelines

Records within 500m	0
---------------------	---

High pressure underground gas transmission pipelines.

*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

0

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.

*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

0

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.

*This data is sourced from Local Authority records.*

## 4.9 Part A(1), IPPC and Historic IPC Authorisations

Records within 500m

0

Records of Part A installations regulated for the release of substances to the environment.

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

## 4.10 Part B Authorisations

Records within 500m

0

Records of Part B installations regulated for the release of substances to the environment.

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



#### 4.11 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.*

#### 4.12 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.*

#### 4.13 Pollution inventory radioactive waste

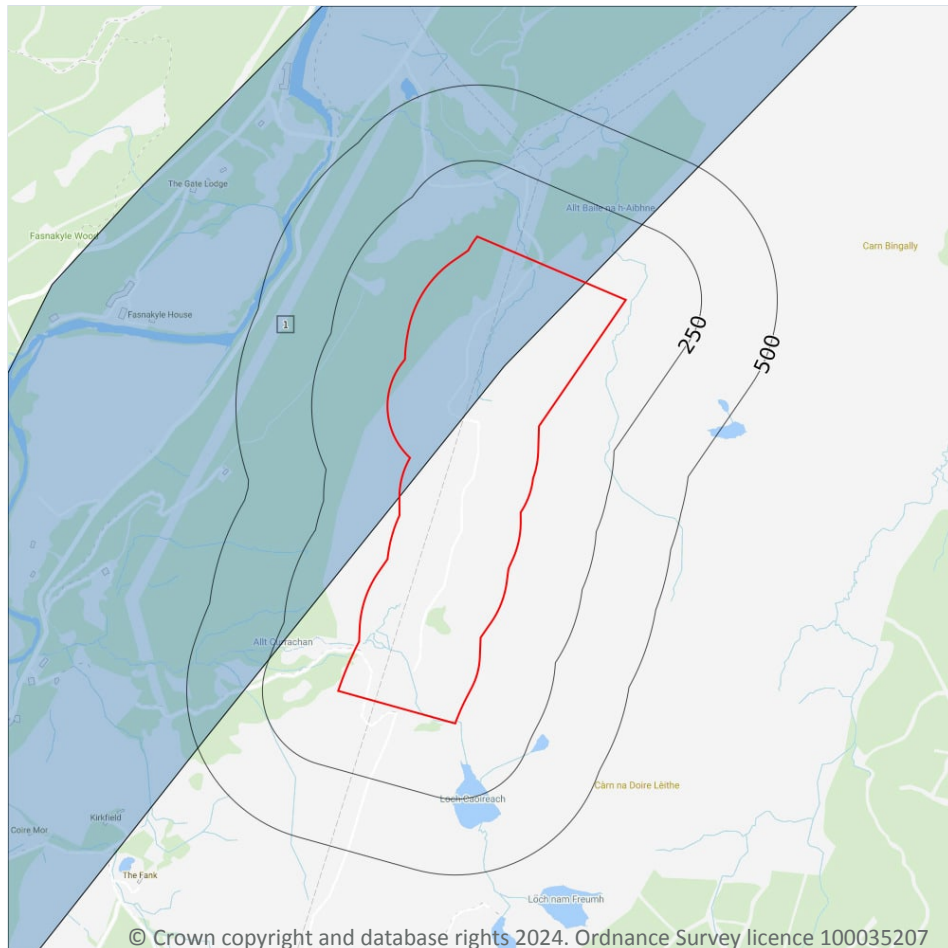
**Records within 500m****0**

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)
- Limited or local potential
- Locally important - intergranular

### 5.1 Superficial aquifer

#### Records within 500m

1

Records of groundwater classification within superficial geology.

Features are displayed on the Hydrogeology map on [page 21](#) >

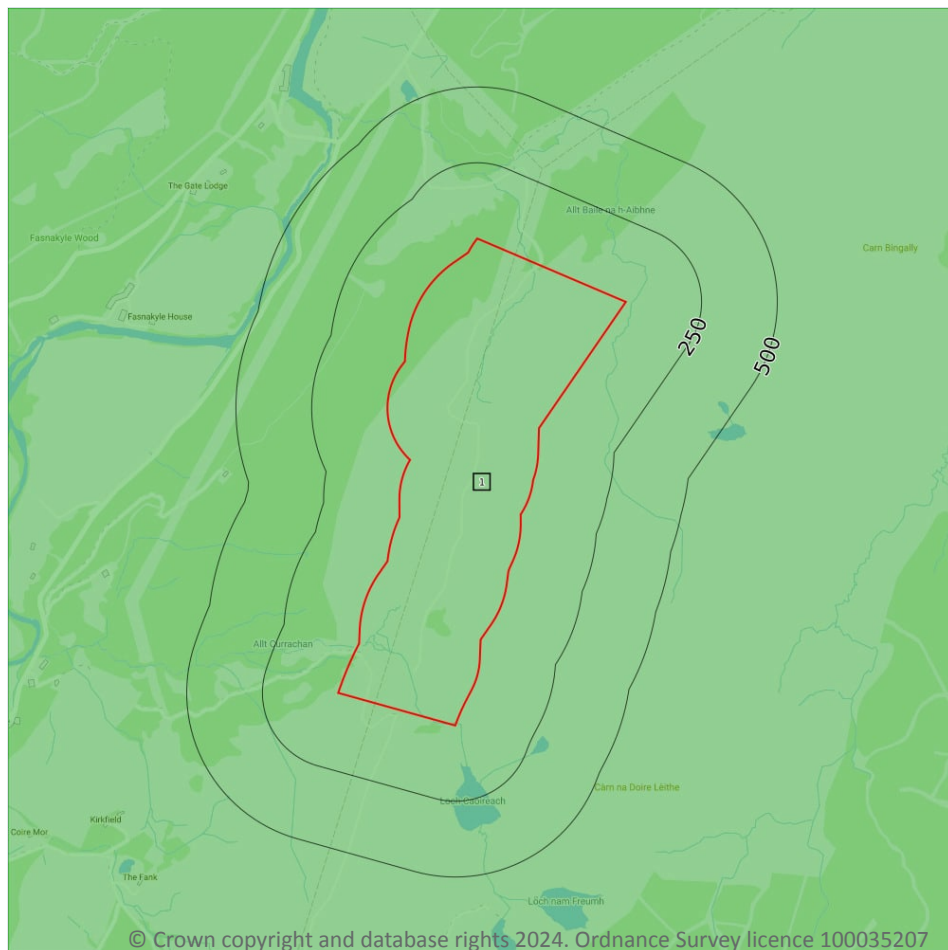
ID	Location	Description	Type	Rock description
1	On site	Concealed aquifers, aquifers of limited potential, regions without significant groundwater	Concealed aquifers; aquifers with limited or local potential	Quaternary Coastal and Fluvatile Alluvium

*This data is sourced from the British Geological Survey.*





## Bedrock aquifer



- Site Outline**
- Search buffers in metres (m)**
- Highly productive - fissures/discontinuities
  - Highly productive - intergranular
  - Moderately productive - fissures/discontinuities
  - Moderately productive - intergranular
  - Low productive - fissures/discontinuities
  - Low productive - intergranular
  - No significant groundwater

### 5.2 Bedrock aquifer

#### Records within 500m

1

Records of groundwater classification within bedrock geology.

Features are displayed on the Bedrock aquifer map on [page 22](#) >

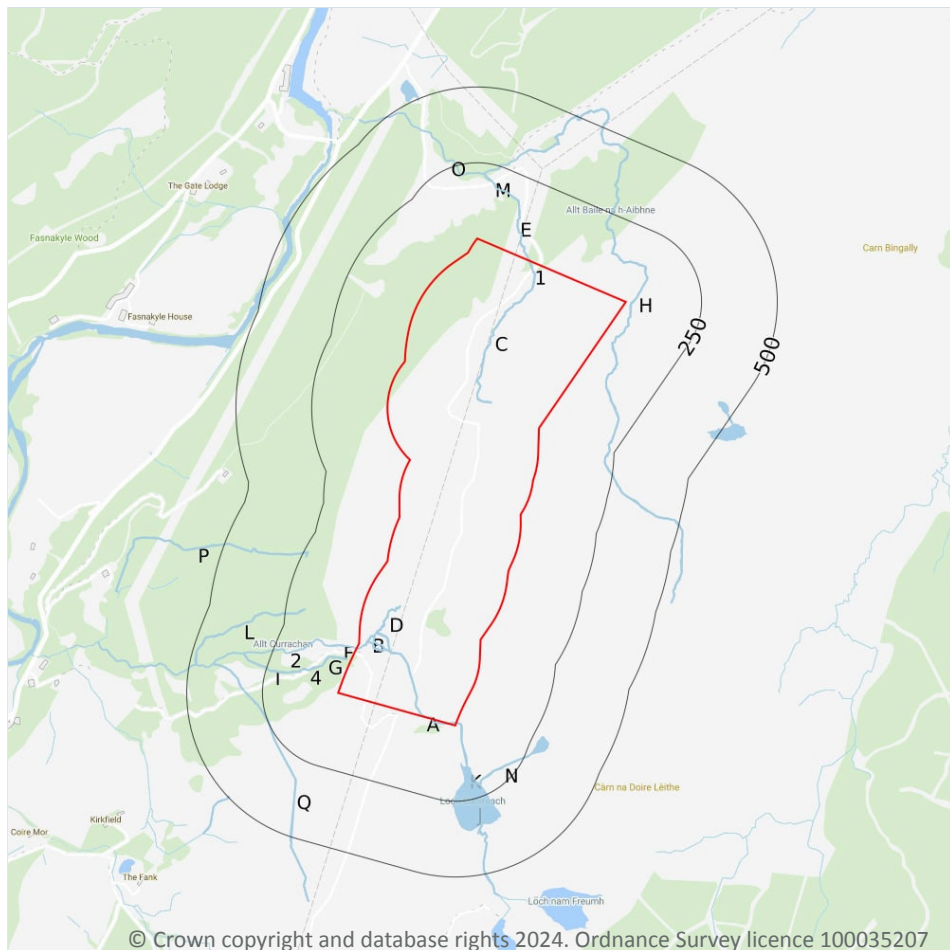
ID	Location	Description	Flow	Summary	Rock description
1	On site	Low productivity aquifer	Flow is virtually all through fractures and other discontinuities	Small amounts of groundwater in near surface weathered zone and secondary fractures.	LOCH EIL GROUP

*This data is sourced from the British Geological Survey.*





## 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)

### 6.1 Water Network (OS MasterMap)

Records within 250m

30

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 23](#) >

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





ID	Location	Type of water feature	Ground level	Permanence	Name
A	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt Currachan
B	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.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt Currachan
B	On site	Lake, loch or reservoir.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt Currachan
B	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.	On ground surface	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)	-
B	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt Currachan
B	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt Currachan
C	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
D	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
E	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
F	11m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt Currachan





ID	Location	Type of water feature	Ground level	Permanence	Name
G	13m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
H	18m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt Baile na h-Aibhne
2	85m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt Currachan
4	117m SW	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
I	120m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
K	138m S	Lake, loch or reservoir.	On ground surface	Watercourse contains water year round (in normal circumstances)	Loch Caoireach
L	185m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
M	191m N	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
J	192m S	Lake, loch or reservoir.	On ground surface	Watercourse contains water year round (in normal circumstances)	Loch Caoireach
K	192m S	Lake, loch or reservoir.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
M	193m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
N	196m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
O	214m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt Baile na h-Aibhne





ID	Location	Type of water feature	Ground level	Permanence	Name
M	215m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt Baile na h-Aibhne
P	235m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
Q	249m SW	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

<b>Records within 250m</b>	<b>12</b>
----------------------------	-----------

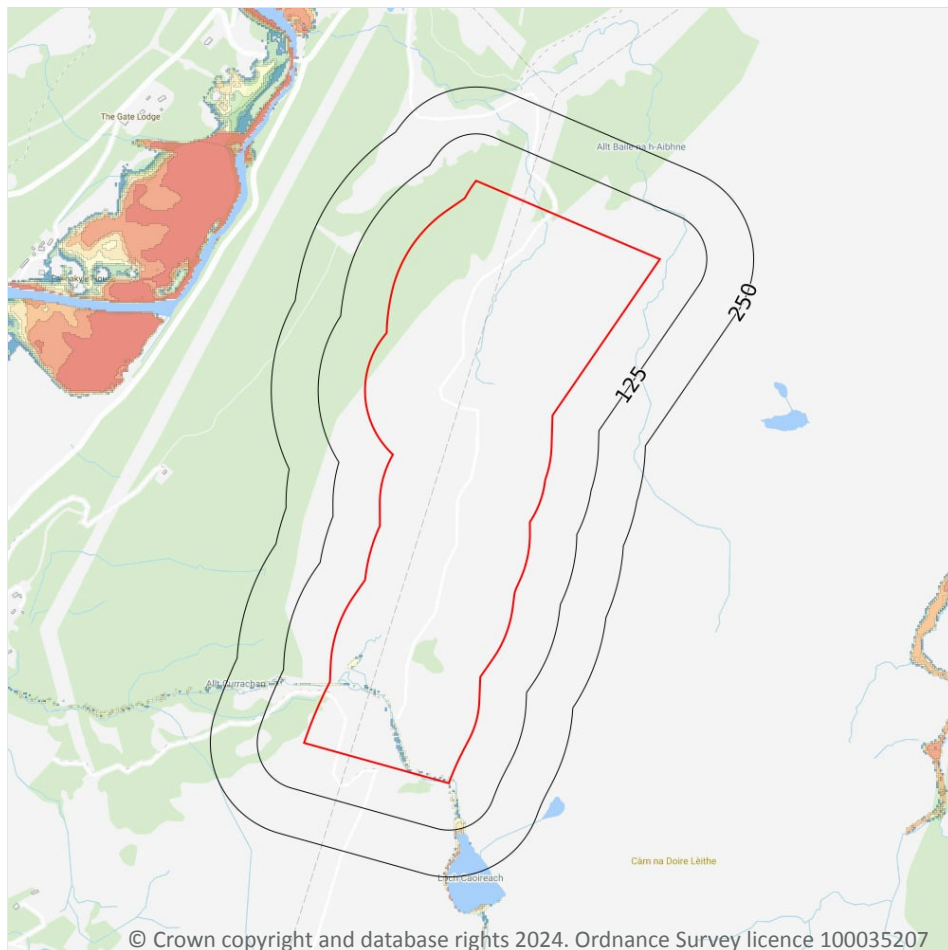
Covering rivers, streams and lakes (some overlap with OS MasterMap Water Network data in previous section) but additionally covers smaller features such as ponds. Rivers and streams narrower than 5m are represented as a single line. Lakes, ponds and rivers or streams wider than 5m are represented as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

Features are displayed on the Hydrology map on [page 23 >](#)

*This data is sourced from the Ordnance Survey.*



## 7 River 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

### 7.1 River flooding

Highest risk on site

1 in 100 year, 0.3m - 1.0m

Highest risk within 50m

1 in 100 year, 0.3m - 1.0m

This is an assessment of flood risk for rivers in Scotland produced using modelled data, provided by Ambiental Risk Analytics. It also takes account of flood defence information provided by the Scottish Environment Protection Agency (SEPA). It shows the chance of flooding from rivers presented in the following categories:

- 1 in 30 year (3.33%)
- 1 in 100 year (1%)
- 1 in 250 year (0.4%)





- and 1 in 1,000 year (0.1%)

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.

Features are displayed on the River flooding map on [page 27 >](#)

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	Negligible

*This data is sourced from Ambiantal Risk Analytics.*





## 8 Coastal flooding - Coastal flooding

### 8.1 Coastal flooding

Highest risk on site

Negligible

Highest risk within 50m

Negligible

This is an assessment of coastal flood risk in Scotland produced using modelled data, provided by Ambiental Risk Analytics. It also takes account of flood defence information provided by the Scottish Environment Protection Agency (SEPA). It shows the chance of coastal flooding presented in the following categories:

- 1 in 30 year (3.33%)
- 1 in 100 year (1%)
- 1 in 250 year (0.4%)
- and 1 in 1,000 year (0.1%)

The data shown on the map 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.

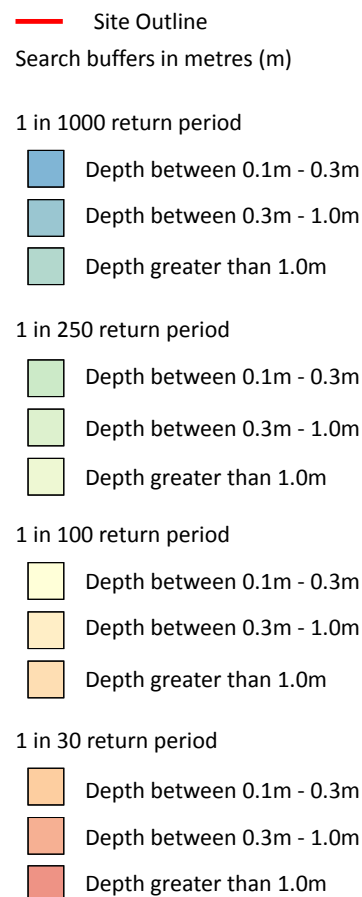
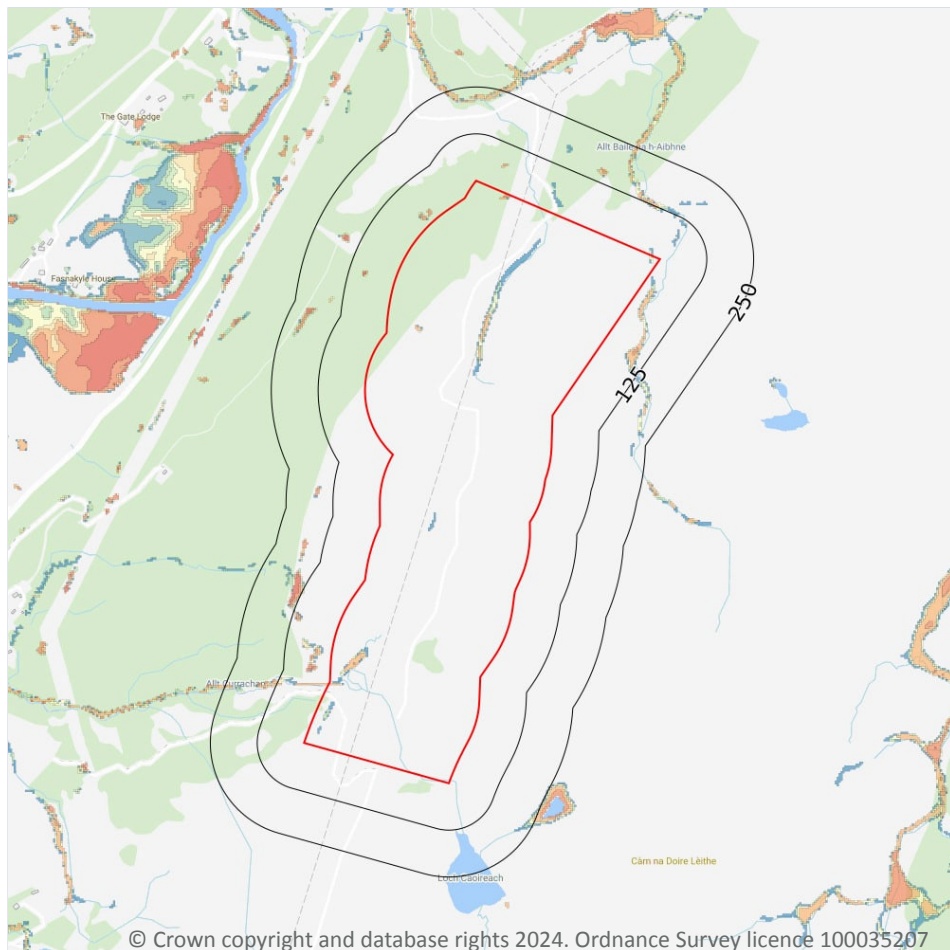
Return period	Maximum modelled depth
1 in 1000 year	Negligible
1 in 250 year	Negligible
1 in 100 year	Negligible
1 in 30 year	Negligible

*This data is sourced from Ambiental Risk Analytics.*





## 9 Surface water flooding



### 9.1 Surface water flooding

**Highest risk on site**

**1 in 30 year, 0.3m - 1.0m**

**Highest risk within 50m**

**1 in 30 year, Greater than 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 30](#) >

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.

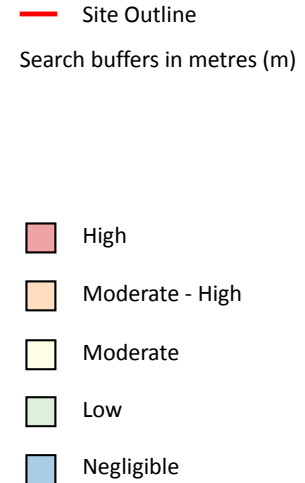
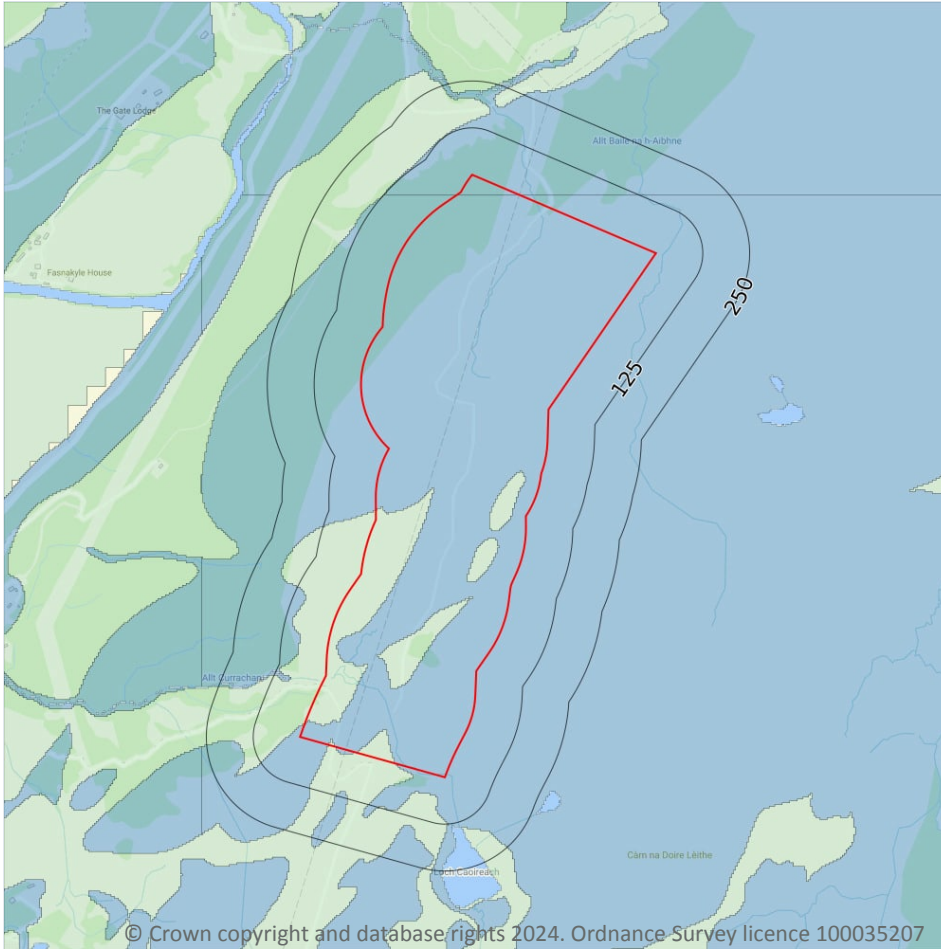
Return period	Maximum modelled depth
1 in 1000 year	Between 0.3m and 1.0m
1 in 250 year	Between 0.3m and 1.0m
1 in 100 year	Between 0.3m and 1.0m
1 in 30 year	Between 0.3m and 1.0m

*This data is sourced from Ambiantal Risk Analytics.*





## 10 Groundwater flooding



### 10.1 Groundwater flooding

Highest risk on site

Low

Highest risk within 50m

Low

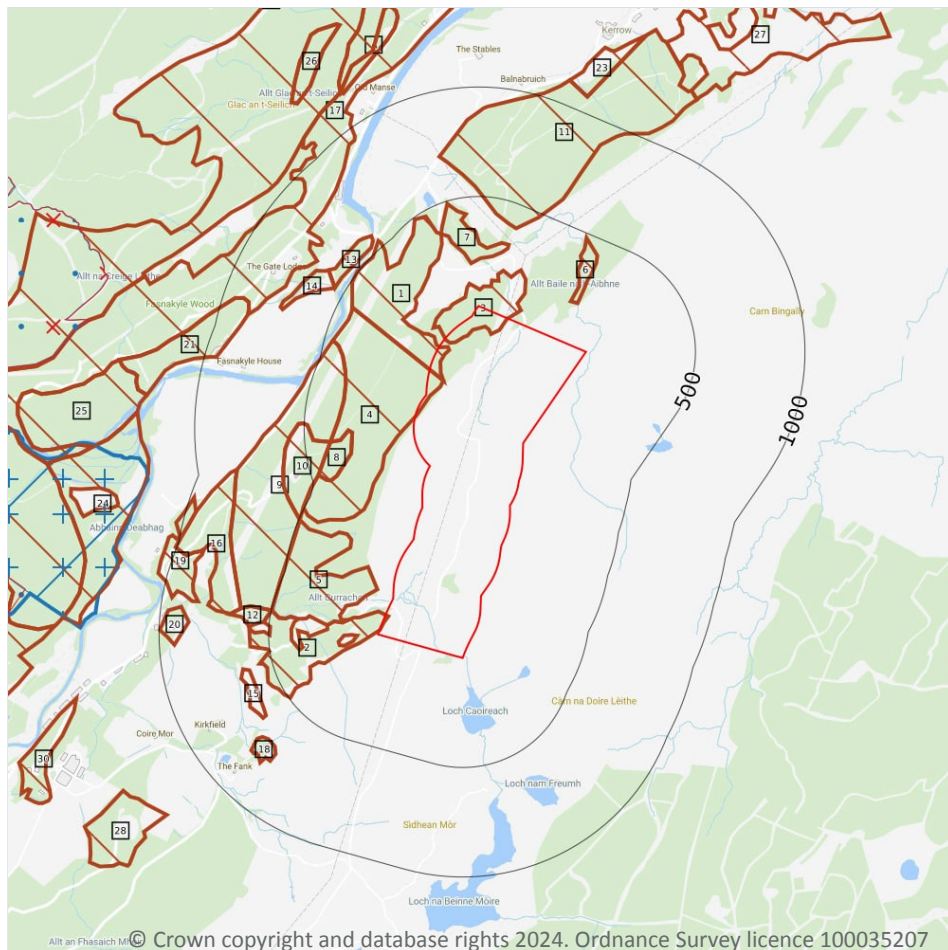
Groundwater flooding is caused by unusually high groundwater levels. It occurs when the water table rises above the ground surface or within underground structures such as basements or cellars. Groundwater flooding tends to exhibit a longer duration than surface water flooding, possibly lasting for weeks 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 32 >](#)

*This data is sourced from Ambient Risk Analytics.*



## 11 Environmental designations



- Site Outline
- Search buffers in metres (m)
- / Sites of Special Scientific Interest (SSSI)
- + Special Areas of Conservation (SAC)
- Special Protection Areas (SPA)
- X National Nature Reserves (NNR)
- / Designated Ancient Woodland

### 11.1 Sites of Special Scientific Interest (SSSI)

#### Records within 2000m

1

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 33](#) >

ID	Location	Name	Data source
B	1209m W	Glen Affric	Scottish Natural Heritage





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

## 11.2 Conserved wetland sites (Ramsar sites)

**Records within 2000m**

**0**

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.

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

## 11.3 Special Areas of Conservation (SAC)

**Records within 2000m**

**1**

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 33 >](#)

ID	Location	Name	Features of interest	Habitat description	Data source
B	1209m W	Strathglass Complex	Clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels; Wet heathland with cross-leaved heath; Dry heaths; Alpine and subalpine heaths; Mountain willow scrub; Montane acid grasslands; Species-rich grassland with mat-grass in upland areas; Tall herb communities; Blanket bog; Very wet mires often identified by an unstable 'quaking' surface; Calcium-rich springwater-fed fens; High-altitude plant communities associated with areas of water seepage; Acidic scree; Plants in crevices in base-rich rocks; Plants in crevices on acid rocks; Caledonian forest; Bog woodland; Atlantic salmon; Otter.	Bogs, Marshes, Water fringed vegetation, Fens; Heath, Scrub, Maquis and Garrigue, Phygrana; Alpine and sub-Alpine grassland; Humid grassland, Mesophile grassland; Broad-leaved deciduous woodland; Dry grassland, Steppes; Inland water bodies (Standing water, Running water); Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites); Inland rocks, Scree, Sands, Permanent Snow and ice; Coniferous woodland	Scottish Natural Heritage

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





## 11.4 Special Protection Areas (SPA)

### Records within 2000m

1

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 33](#) >

ID	Location	Name	Species of interest	Habitat description	Data source
33	1528m NW	Glen Affric to Strathconon	Golden eagle	Inland water bodies (Standing water, Running water); Mixed woodland; Humid grassland, Mesophile grassland; Bogs, Marshes, Water fringed vegetation, Fens; Coniferous woodland; Inland rocks, Scree, Sands, Permanent Snow and ice; Broad-leaved deciduous woodland; Heath, Scrub, Maquis and Garrigue, Phygrana; Improved grassland; Alpine and sub-Alpine grassland	Scottish Natural Heritage

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

## 11.5 National Nature Reserves (NNR)

### Records within 2000m

2

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.

Features are displayed on the Environmental designations map on [page 33](#) >

ID	Location	Name	Data source
32	1527m NW	Glen Affric	Scottish Natural Heritage
34	1624m W	Glen Affric	Scottish Natural Heritage

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

## 11.6 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.*





## 11.7 Designated Ancient Woodland

### Records within 2000m

**36**

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.

Features are displayed on the Environmental designations map on [page 33 >](#)

ID	Location	Name	Woodland Type
1	On site	Unknown	Ancient (of semi-natural origin)
2	On site	Balnahoun Wood	Ancient (of semi-natural origin)
3	On site	Unknown	Ancient (of semi-natural origin)
4	On site	Unknown	Ancient (of semi-natural origin)
5	74m SW	Balnahoun Wood	Ancient (of semi-natural origin)
6	185m NE	Unknown	Ancient (of semi-natural origin)
7	198m N	Unknown	Ancient (of semi-natural origin)
8	281m W	Unknown	Ancient (of semi-natural origin)
9	333m NW	Unknown	Ancient (of semi-natural origin)
10	383m W	Unknown	Other (on Roy map)
11	393m N	Unknown	Ancient (of semi-natural origin)
12	498m SW	Unknown	Ancient (of semi-natural origin)
13	530m NW	Unknown	Long-Established (of plantation origin)
14	547m NW	Unknown	Ancient (of semi-natural origin)
15	606m SW	Balnahoun Wood	Ancient (of semi-natural origin)
16	637m SW	Unknown	Ancient (of semi-natural origin)
17	681m NW	Fasnakyle Wood	Ancient (of semi-natural origin)
18	692m SW	Balnahoun Wood	Ancient (of semi-natural origin)
19	835m SW	Unknown	Ancient (of semi-natural origin)
20	866m SW	Unknown	Other (on Roy map)
21	867m NW	Fasnakyle Wood	Ancient (of semi-natural origin)
22	1047m NW	Fasnakyle Wood	Ancient (of semi-natural origin)





ID	Location	Name	Woodland Type
23	1074m N	Balnahoun Wood	Ancient (of semi-natural origin)
A	1150m N	Comar Wood	Ancient (of semi-natural origin)
A	1162m N	Comar Wood	Ancient (of semi-natural origin)
24	1216m W	Dun Wood	Ancient (of semi-natural origin)
25	1226m W	Fasnakyle Wood	Ancient (of semi-natural origin)
26	1241m NW	Unknown	Ancient (of semi-natural origin)
27	1258m NE	Balnahoun Wood	Ancient (of semi-natural origin)
28	1269m SW	Unknown	Long-Established (of plantation origin)
29	1374m W	Unknown	Ancient (of semi-natural origin)
30	1408m SW	Unknown	Long-Established (of plantation origin)
31	1475m W	Unknown	Ancient (of semi-natural origin)
-	1874m W	Unknown	Ancient (of semi-natural origin)
-	1874m W	Unknown	Ancient (of semi-natural origin)
-	1989m W	Unknown	Ancient (of semi-natural origin)

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

## 11.8 Biosphere Reserves

<b>Records within 2000m</b>	<b>0</b>
-----------------------------	----------

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.*

## 11.9 Forest Parks

<b>Records within 2000m</b>	<b>0</b>
-----------------------------	----------

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.*



## 11.10 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.*





## 12 Visual and cultural designations

### 12.1 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.*

### 12.2 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.*

### 12.3 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.*

### 12.4 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.*

## 12.5 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.*

## 12.6 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.*

## 12.7 Registered Parks and Gardens

Records within 250m

0

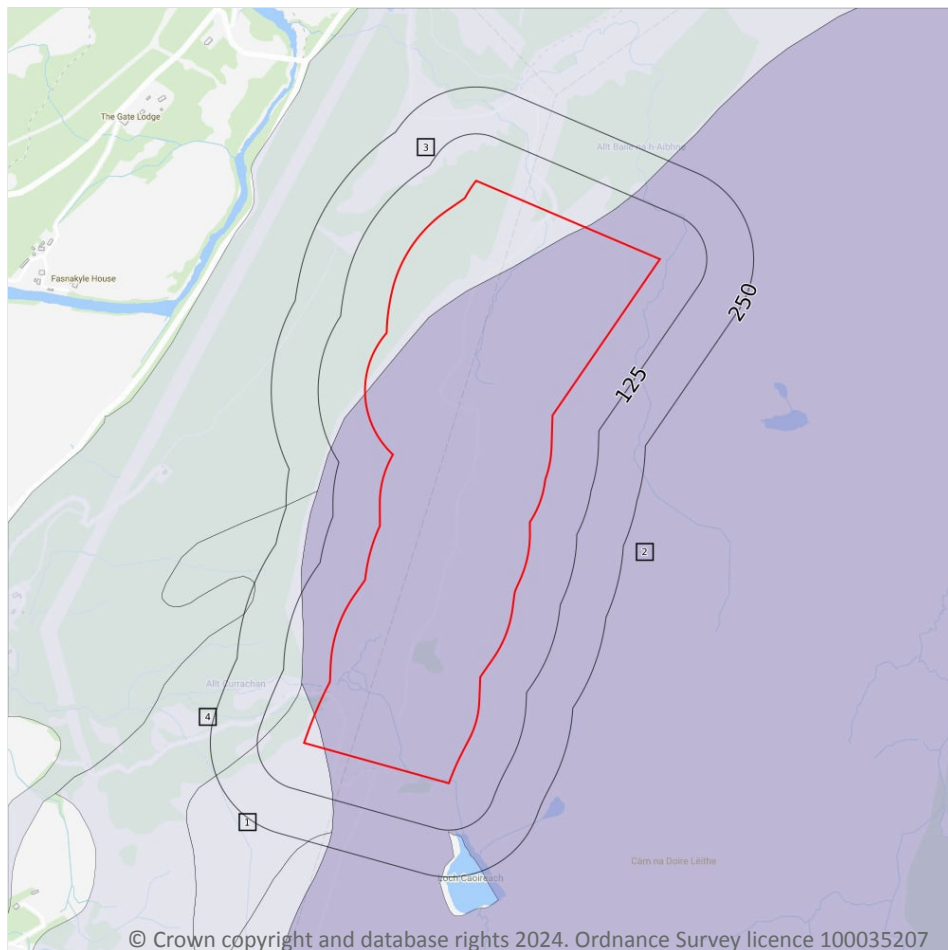
Parks and gardens assessed to be of particular interest and of special historic interest. The emphasis being on 'designed' landscapes, rather than on planting or botanical importance. Registration is a 'material consideration' in the planning process, meaning that planning authorities must consider the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

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





## 13 Agricultural designations



- Site Outline
- Search buffers in metres (m)
- Grade 1 - excellent quality
- Grade 2 - very good quality
- Grade 3 - good to moderate quality
- Grade 4 - good quality
- Grade 5 - moderate quality
- Grade 6 - poor quality
- Grade 7 - very poor quality

### 13.1 Agricultural Land Classification

Records within 250m

4

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 41](#) >

ID	Location	Classification	Description
1	On site	Grade 5.3	Land Suited only to Improved Grassland and Rough Grazings
2	On site	Grade 6.3	Land Suited only to Improved Grassland and Rough Grazings
3	On site	Grade 5.3	Land Suited only to Improved Grassland and Rough Grazings





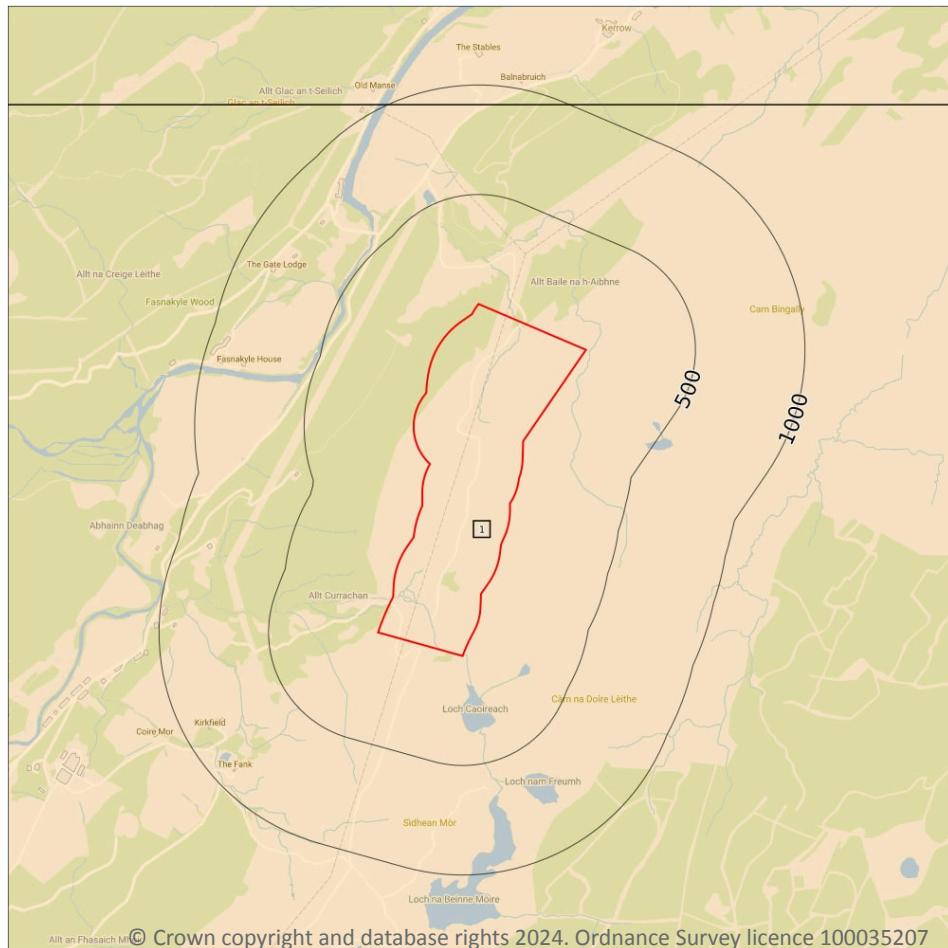
ID	Location	Classification	Description
4	62m SW	Grade 5.2	Land Suited only to Improved Grassland and Rough Grazings

*This data is sourced from the James Hutton Institute.*





## 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 43](#) >

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	No coverage	No coverage	NH32NW

*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.*





Superficial geology (10k)  
Please see table for more details.

## 45



ID	Location	LEX Code	Description	Rock description
3	On site	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
4	On site	PEAT-P	Peat - Peat	Peat
5	On site	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
6	On site	PEAT-P	Peat - Peat	Peat
7	125m N	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
8	125m S	PEAT-P	Peat - Peat	Peat
9	130m S	SUPNM-UNKNOWN	Superficial Theme Not Mapped [for Digital Map Use Only] - Unknown/unclassified Entry	Unknown/unclassified Entry
10	131m SE	PEAT-P	Peat - Peat	Peat
11	195m N	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
12	222m S	PEAT-P	Peat - Peat	Peat
13	286m E	PEAT-P	Peat - Peat	Peat
14	345m SE	PEAT-P	Peat - Peat	Peat
15	394m SE	PEAT-P	Peat - Peat	Peat
16	450m NW	ALV-XSVB	Alluvium - Sand, Gravel And Boulders	Sand, Gravel And Boulders
17	455m S	PEAT-P	Peat - Peat	Peat
18	465m S	PEAT-P	Peat - Peat	Peat

*This data is sourced from the British Geological Survey.*

## 14.4 Landslip (10k)

**Records within 500m**

**0**

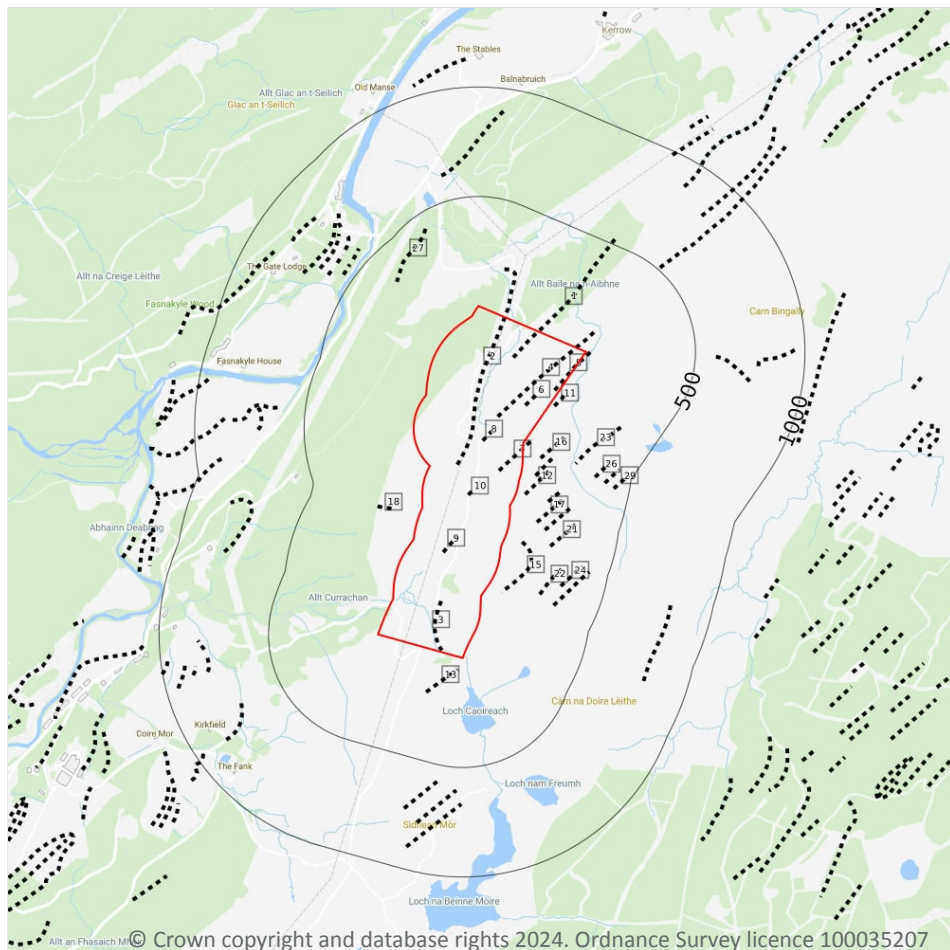
Mass movement deposits on BGS geological maps at 1:10,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

*This data is sourced from the British Geological Survey.*





## Geology 1:10,000 scale - Bedrock



- Site Outline
- Search buffers in metres (m)
- Bedrock faults and other linear features (10k)
- Bedrock geology (10k)  
Please see table for more details.

### 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

29

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.





Features are displayed on the Geology 1:10,000 scale - Bedrock map on [page 47 >](#)

ID	Location	Category	Description
1	On site	LANDFORM	Marked concave break of slope, arrowheads denote uphill side
2	On site	LANDFORM	Marked concave break of slope, arrowheads denote uphill side
3	On site	LANDFORM	Marked concave break of slope, arrowheads denote uphill side
4	On site	LANDFORM	Axis of large-scale glacial flute
5	On site	LANDFORM	Axis of large-scale glacial flute
6	On site	LANDFORM	Axis of large-scale glacial flute
7	On site	LANDFORM	Axis of large-scale glacial flute
8	On site	LANDFORM	Axis of large-scale glacial flute
9	On site	LANDFORM	Axis of large-scale glacial flute
10	On site	LANDFORM	Axis of large-scale glacial flute
11	22m NE	LANDFORM	Axis of large-scale glacial flute
12	41m SE	LANDFORM	Axis of large-scale glacial flute
13	56m S	LANDFORM	Axis of large-scale glacial flute
14	67m E	LANDFORM	Axis of large-scale glacial flute
15	67m S	LANDFORM	Ice marginal glacial meltwater channel, single side right
16	82m E	LANDFORM	Axis of large-scale glacial flute
17	126m SE	LANDFORM	Axis of large-scale glacial flute
18	127m SW	LANDFORM	Marked concave break of slope, arrowheads denote uphill side
19	151m E	LANDFORM	Axis of large-scale glacial flute
20	167m SE	LANDFORM	Axis of large-scale glacial flute
21	208m SE	LANDFORM	Axis of large-scale glacial flute
22	226m SE	LANDFORM	Axis of large-scale glacial flute
23	243m E	LANDFORM	Marked concave break of slope, arrowheads denote uphill side
24	302m SE	LANDFORM	Axis of large-scale glacial flute
25	304m SE	LANDFORM	Axis of large-scale glacial flute
26	336m E	LANDFORM	Axis of large-scale glacial flute
27	337m N	LANDFORM	Marked concave break of slope, arrowheads denote uphill side





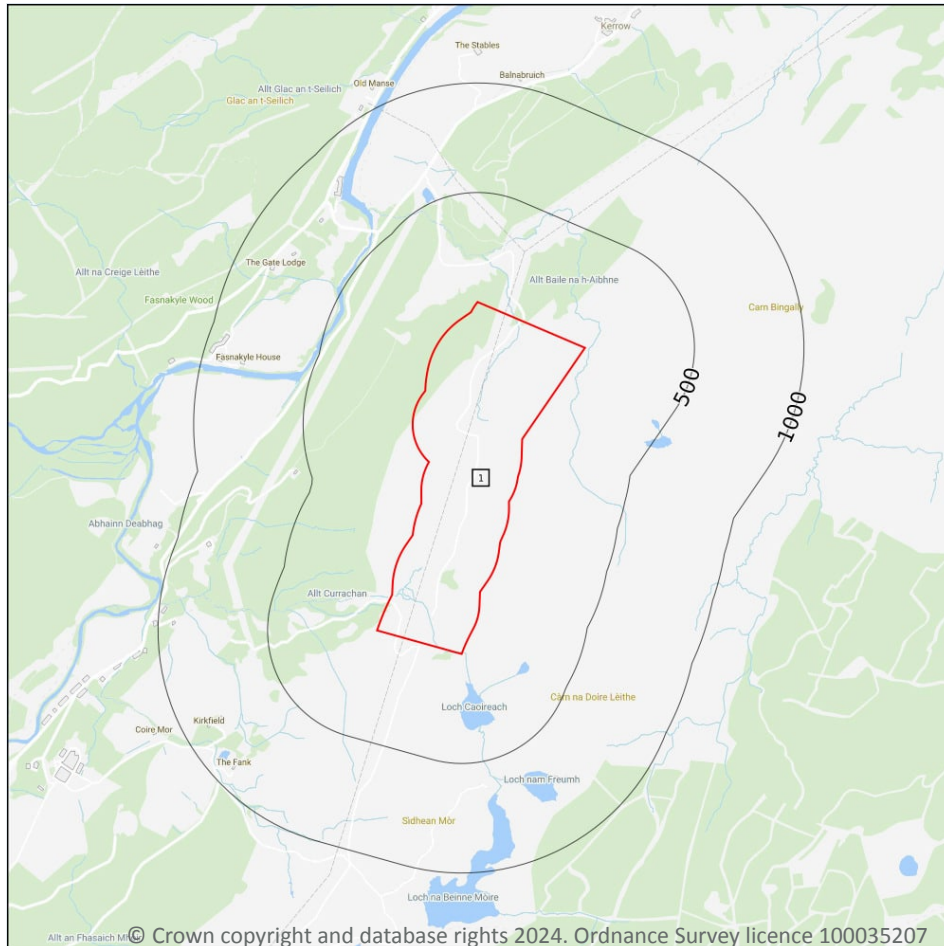
ID	Location	Category	Description
28	384m E	LANDFORM	Axis of large-scale glacial flute
29	428m E	LANDFORM	Axis of large-scale glacial flute

*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.

Features are displayed on the Geology 1:50,000 scale - Availability map on [page 50](#) >

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	No coverage	Full	Full	No coverage	SC073w_Invermoriston_v4

*This data is sourced from the British Geological Survey.*





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

### 15.2 Artificial and made ground (50k)

Records within 500m

0

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.

*This data is sourced from the British Geological Survey.*

### 15.3 Artificial ground permeability (50k)

Records within 50m

0

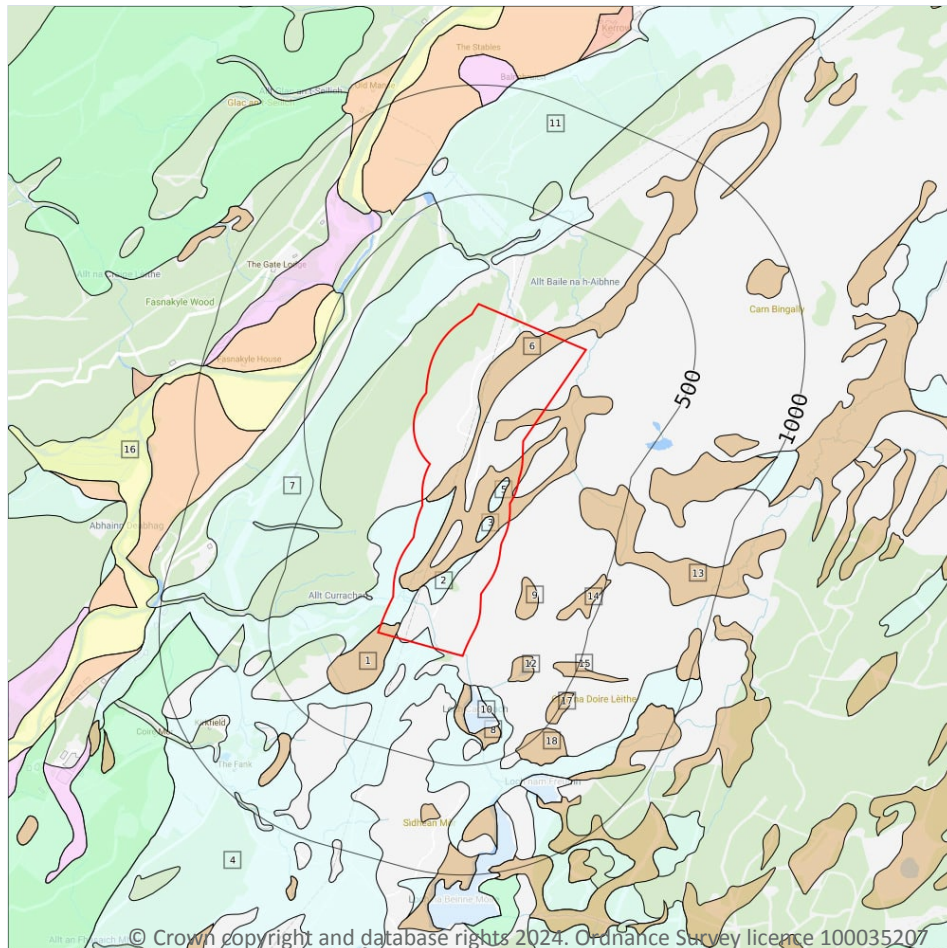
A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any artificial deposits (the zone between the land surface and the water table).

*This data is sourced from the British Geological Survey.*





## Geology 1:50,000 scale - 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

18

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 52](#) >

ID	Location	LEX Code	Description	Rock description
1	On site	PEAT-P	PEAT	PEAT
2	On site	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
3	On site	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON





ID	Location	LEX Code	Description	Rock description
4	On site	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
5	On site	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
6	On site	PEAT-P	PEAT	PEAT
7	125m N	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
8	126m S	PEAT-P	PEAT	PEAT
9	130m SE	PEAT-P	PEAT	PEAT
10	140m S	SUPNM-UNKNOWN	SUPERFICIAL THEME NOT MAPPED [FOR DIGITAL MAP USE ONLY]	UNKNOWN/UNCLASSIFIED ENTRY
11	195m N	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
12	222m S	PEAT-P	PEAT	PEAT
13	286m E	PEAT-P	PEAT	PEAT
14	345m SE	PEAT-P	PEAT	PEAT
15	393m SE	PEAT-P	PEAT	PEAT
16	450m NW	ALV-XSVB	ALLUVIUM	SAND, GRAVEL AND BOULDERS
17	454m S	PEAT-P	PEAT	PEAT
18	465m S	PEAT-P	PEAT	PEAT

*This data is sourced from the British Geological Survey.*

## 15.5 Superficial permeability (50k)

<b>Records within 50m</b>	<b>6</b>
---------------------------	----------

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	Mixed	Low	Very Low
On site	Mixed	Low	Very Low
On site	Mixed	High	Low
On site	Mixed	High	Low
On site	Mixed	High	Low





Location	Flow type	Maximum permeability	Minimum permeability
On site	Mixed	High	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)

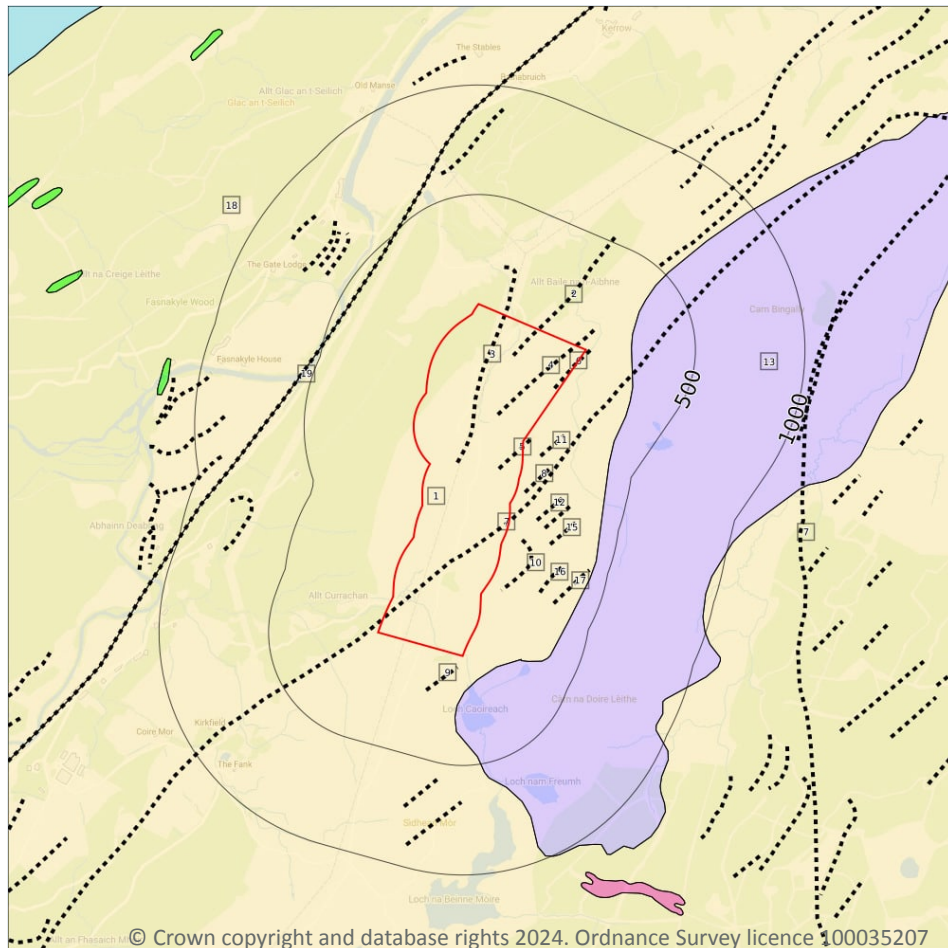
Records within 50m	0
--------------------	---

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

3

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 55 >](#)

ID	Location	LEX Code	Description	Rock age
1	On site	TAPS-PSAMM	TARVIE PSAMMITE FORMATION - PSAMMITE	-
13	128m S	TAPS-PSSP	TARVIE PSAMMITE FORMATION - PSAMMITE AND SEMIPELITE	-





ID	Location	LEX Code	Description	Rock age
18	442m NW	TAPS- PSAMM	TARVIE PSAMMITE FORMATION - PSAMMITE	-

*This data is sourced from the British Geological Survey.*

## 15.9 Bedrock permeability (50k)

<b>Records within 50m</b>	<b>1</b>
---------------------------	----------

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
<b>On site</b>	<b>Fracture</b>	<b>Low</b>	<b>Low</b>

*This data is sourced from the British Geological Survey.*

## 15.10 Bedrock faults and other linear features (50k)

<b>Records within 500m</b>	<b>16</b>
----------------------------	-----------

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.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on [page 55 >](#)

ID	Location	Category	Description
2	On site	LANDFORM	Marked concave break in slope
3	On site	LANDFORM	Marked concave break in slope
4	On site	LANDFORM	Axis of large-scale glacial flute
5	On site	LANDFORM	Axis of large-scale glacial flute
6	On site	LANDFORM	Axis of large-scale glacial flute
7	On site	ALTERATION_AREA	Limit of pegmatitic rock veins
8	40m SE	LANDFORM	Axis of large-scale glacial flute
9	57m S	LANDFORM	Axis of large-scale glacial flute
10	67m S	LANDFORM	Ice-marginal glacial single-sided meltwater channel, right
11	81m E	LANDFORM	Axis of large-scale glacial flute





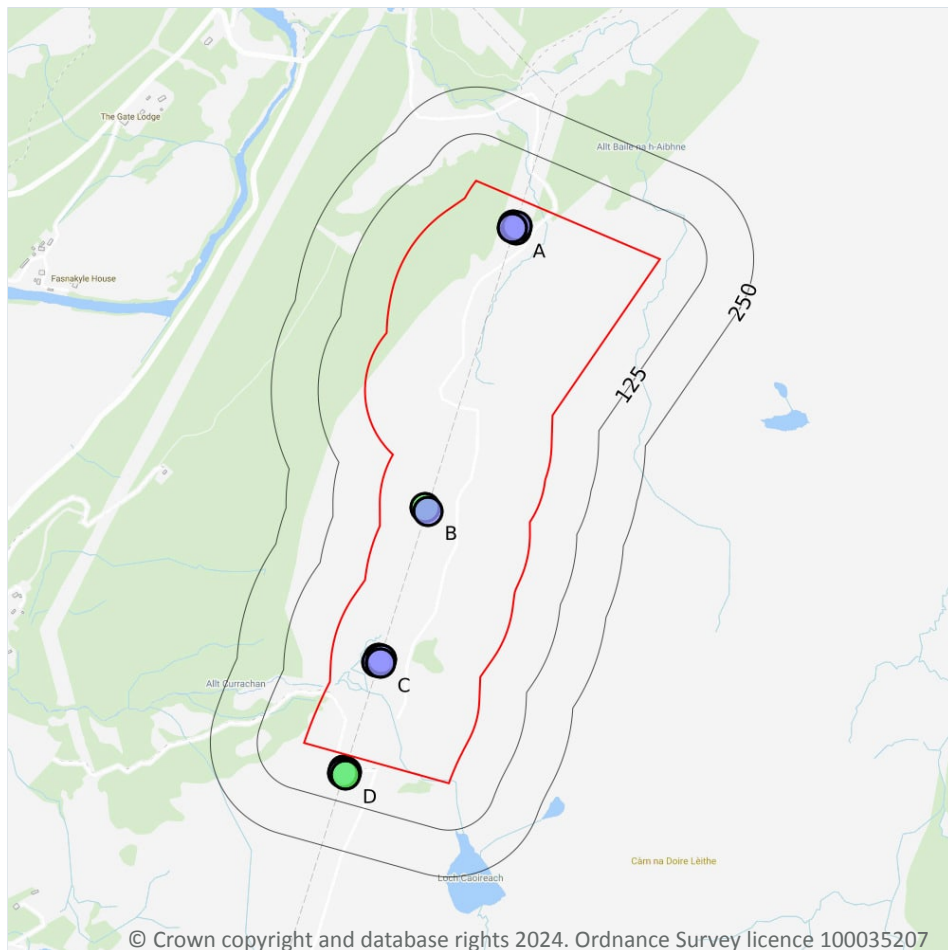
ID	Location	Category	Description
12	126m SE	LANDFORM	Axis of large-scale glacial flute
14	167m SE	LANDFORM	Axis of large-scale glacial flute
15	208m SE	LANDFORM	Axis of large-scale glacial flute
16	226m SE	LANDFORM	Axis of large-scale glacial flute
17	305m SE	LANDFORM	Axis of large-scale glacial flute
19	442m NW	FAULT	Fault, inferred, displacement unknown

*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

14

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 58](#) >

ID	Location	Grid reference	Name	Length	Confidential	Web link
A	On site	232603 828972	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF64A-A	16.1	N	<a href="#">18949723</a> ↗
A	On site	232610 828960	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF64A-C	6.0	N	<a href="#">18949727</a> ↗





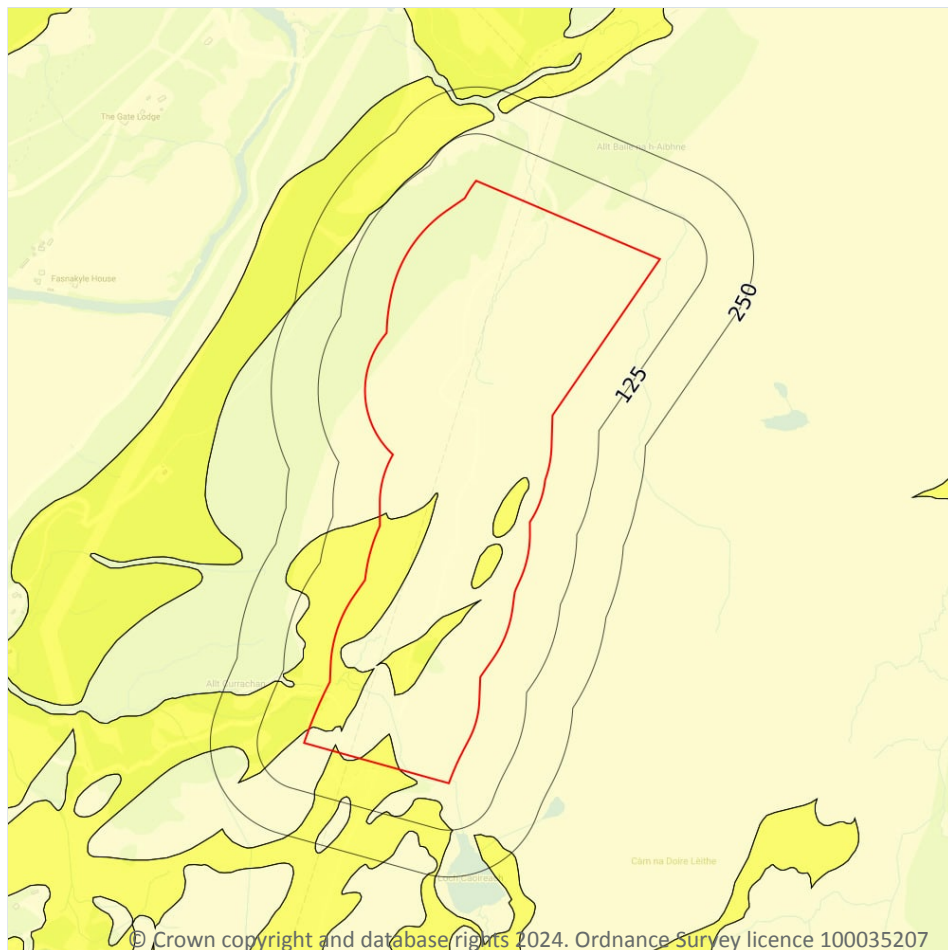
ID	Location	Grid reference	Name	Length	Confidential	Web link
A	On site	232612 828969	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF64A-B	6.0	N	<a href="#">18949725</a> ↗
A	On site	232600 828963	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF64A-D	6.0	N	<a href="#">18949729</a> ↗
B	On site	232368 828219	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF66A-A	13.05	N	<a href="#">18949730</a> ↗
B	On site	232374 828208	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF66A-C	6.0	N	<a href="#">18949731</a> ↗
C	On site	232242 827815	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF67A-A	16.1	N	<a href="#">18949732</a> ↗
C	On site	232239 827806	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF67A-D	6.0	N	<a href="#">18949735</a> ↗
C	On site	232251 827813	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF67A-B	6.0	N	<a href="#">18949733</a> ↗
C	On site	232248 827803	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF67A-C	6.0	N	<a href="#">18949734</a> ↗
D	43m S	232149 827517	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF68A-A	6.0	N	<a href="#">18949736</a> ↗
D	43m S	232157 827514	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF68A-B	6.0	N	<a href="#">18949737</a> ↗
D	51m S	232146 827509	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF68A-D	6.0	N	<a href="#">18949740</a> ↗
D	52m S	232154 827506	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF68A-C	14.25	N	<a href="#">18949738</a> ↗

*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

2

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 60](#) >

Location	Hazard rating	Details
On site	Negligible	Ground conditions predominantly non-plastic.
On site	Very low	Ground conditions predominantly low plasticity.

*This data is sourced from the British Geological Survey.*





## A topographic map of a hill. A red boundary outlines a specific area on the slope. A contour line labeled '125' passes through the red boundary. Other contour lines are visible, including one labeled '250'. The map shows various geographical features like 'The Gate', 'Fairbairn House', and 'Art Building'. The map is overlaid with a grid. The copyright notice at the bottom reads: '© Crown copyright and database rights 2024. Ordnance Survey licence 100085207'

 No data  
 Negligible  
 Very low  
 Low  
 Moderate  
 High

Records within 50m	2
--------------------	---

Features are displayed on the Natural ground subsidence - Running sands map on [page 61](#) >

Location	Hazard rating	Details
On site	Negligible	Running sand conditions are not thought to occur whatever the position of the water table. No identified constraints on lands use due to running conditions.

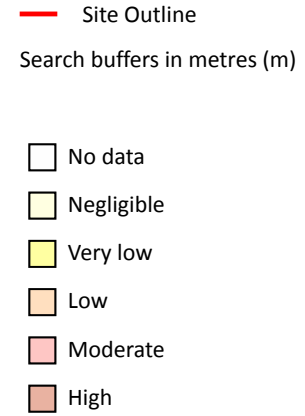
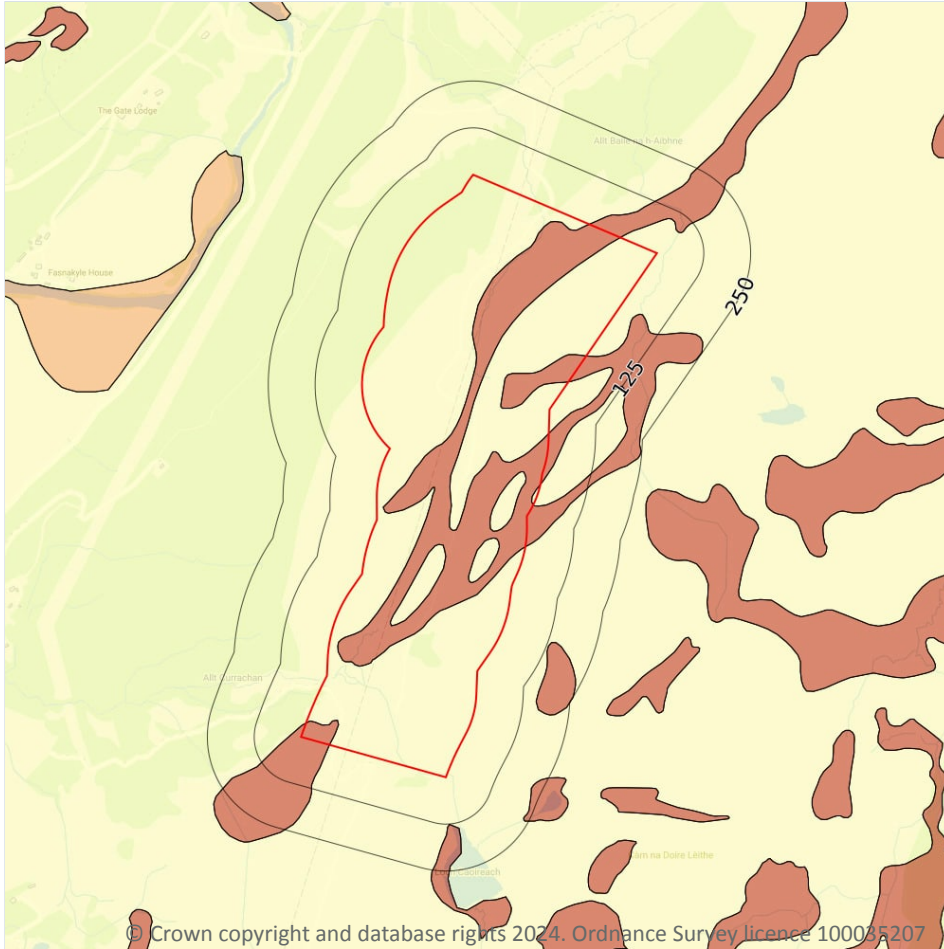


Location	Hazard rating	Details
On site	Very low	Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless water table rises rapidly.

*This data is sourced from the British Geological Survey.*



## Natural ground subsidence - Compressible deposits



### 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 63](#) >

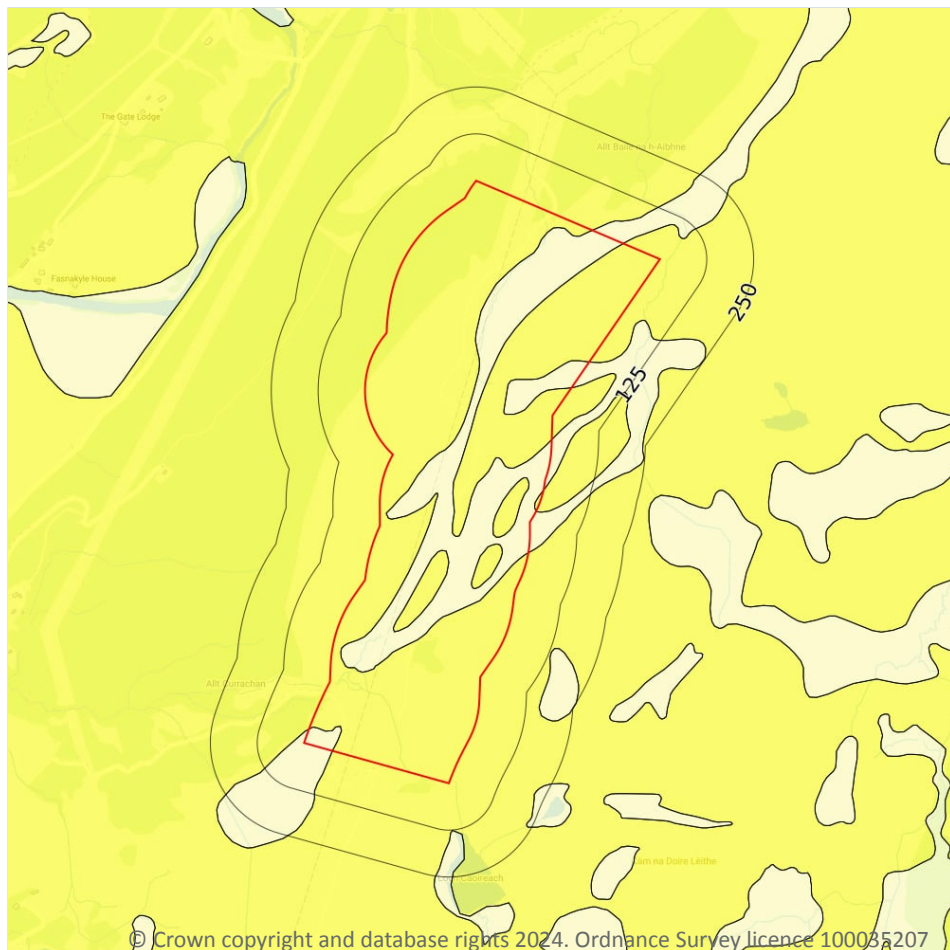
Location	Hazard rating	Details
On site	Negligible	Compressible strata are not thought to occur.
On site	High	Highly compressible strata present. Significant constraint on land use depending on thickness.

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

2

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 64](#) >

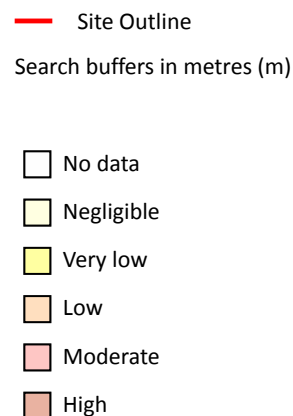
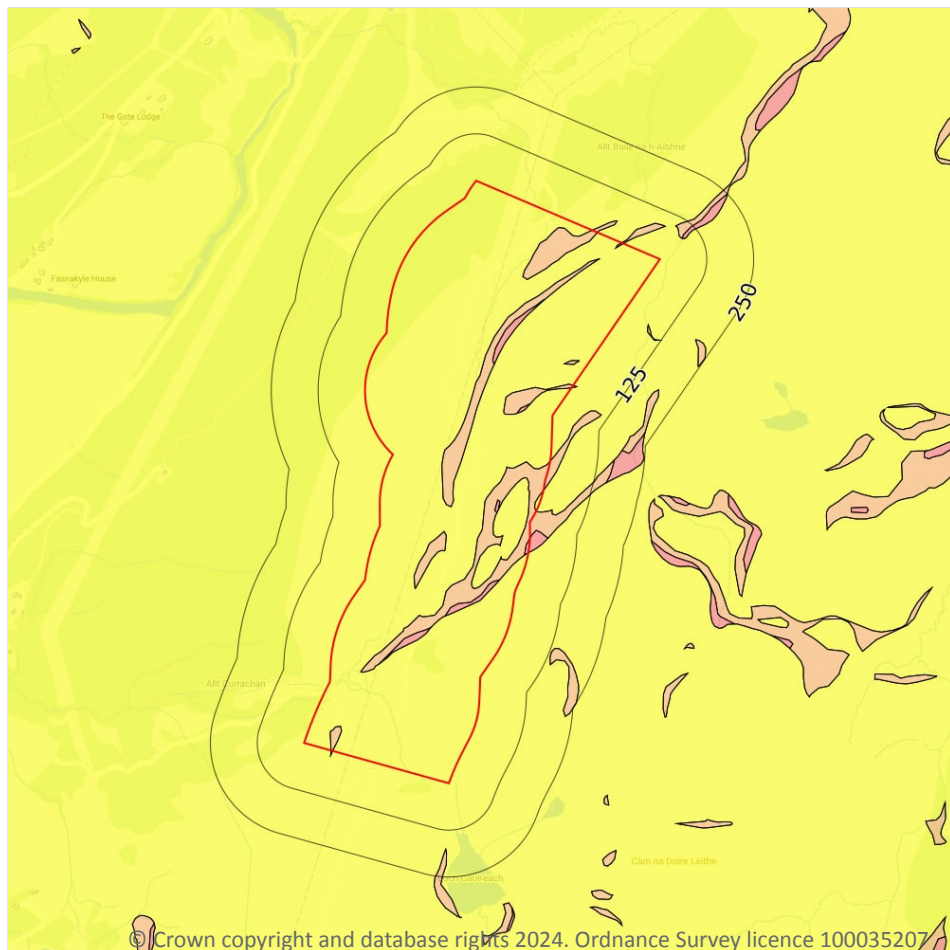
Location	Hazard rating	Details
On site	Negligible	Deposits with potential to collapse when loaded and saturated are believed not to be present.
On site	Very low	Deposits with potential to collapse when loaded and saturated are unlikely to be present.

*This data is sourced from the British Geological Survey.*





## Natural ground subsidence - Landslides



### 17.5 Landslides

#### Records within 50m

3

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 65](#) >

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.





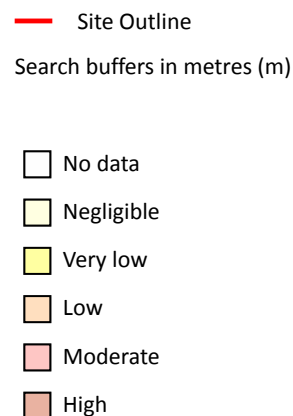
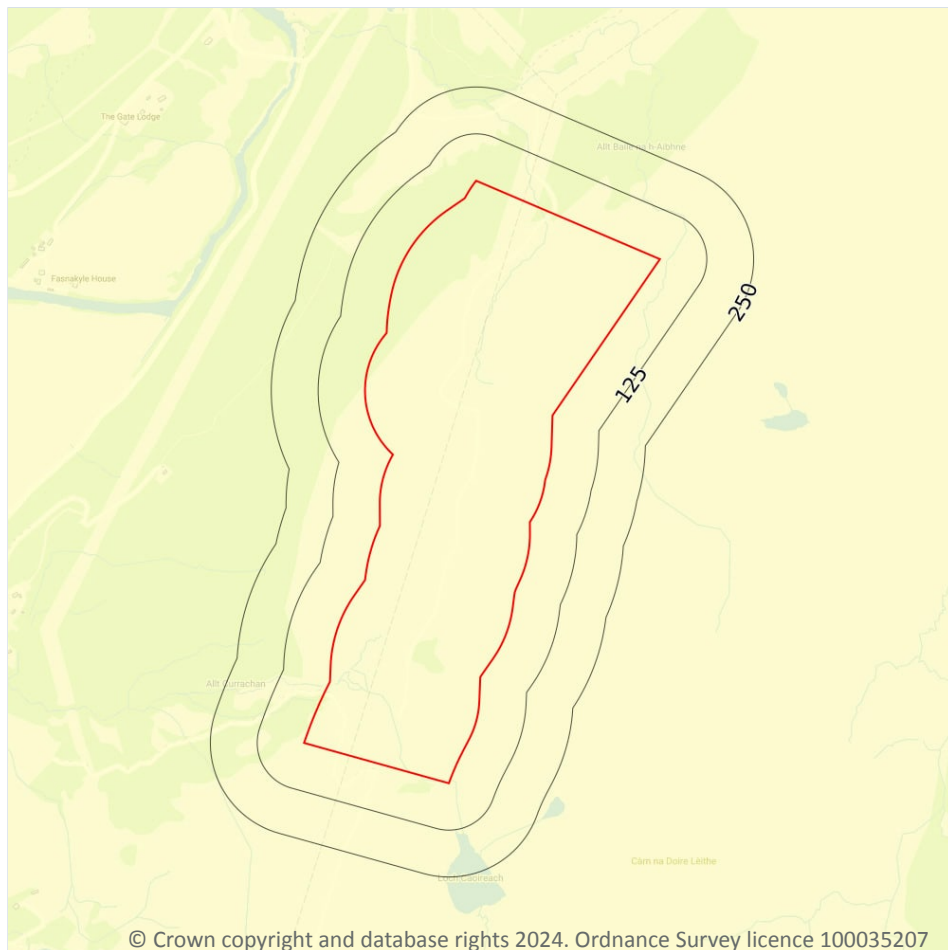
Location	Hazard rating	Details
On site	Low	Slope instability problems may be present or anticipated. Site investigation should consider specifically the slope stability of the site.
On site	Moderate	Slope instability problems are probably present or have occurred in the past. Land use should consider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

*This data is sourced from the British Geological Survey.*





## Natural ground subsidence - Ground dissolution of soluble rocks



### 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 67](#)

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

### 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

0

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.

*This data is sourced from Ordnance Survey/Groundsure.*

### 18.3 Underground workings

Records within 1000m

0

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

*This 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

0

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).

*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.

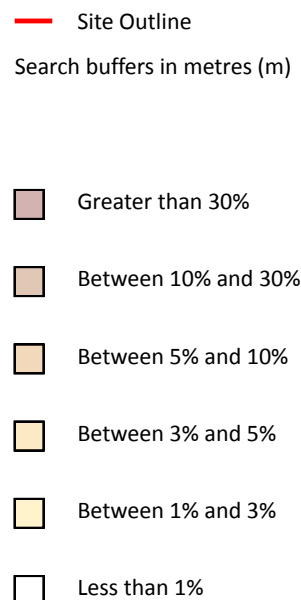
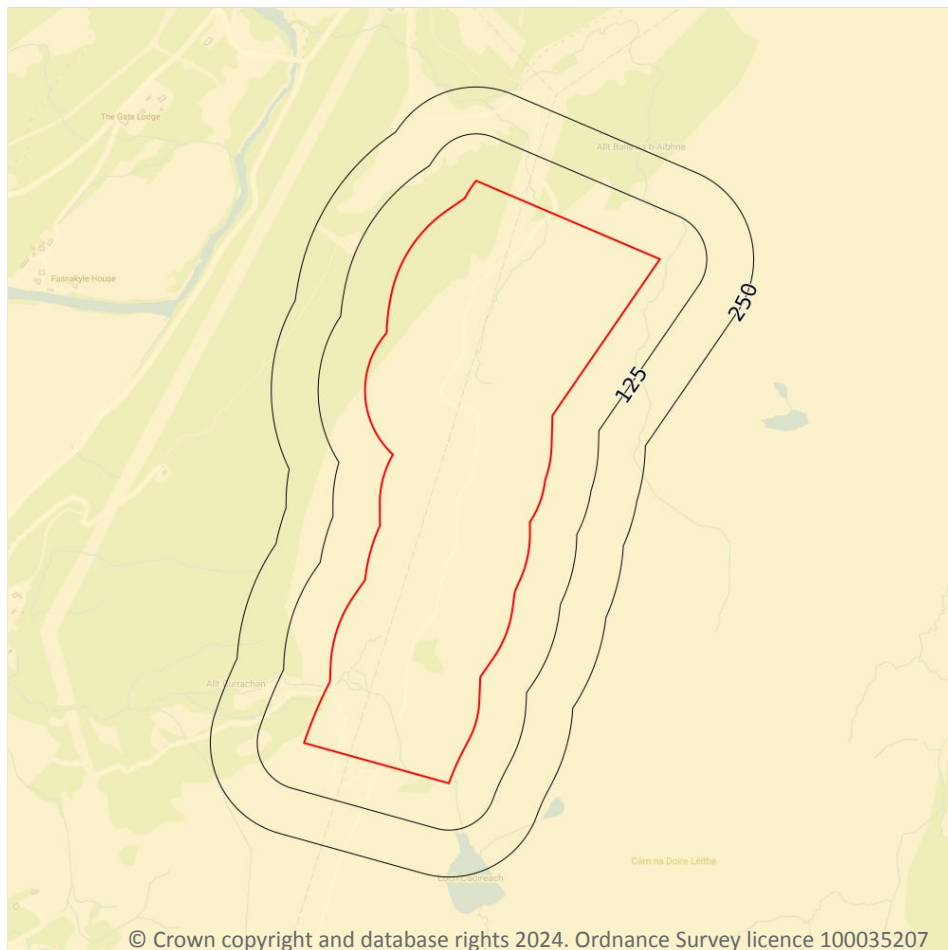
The database is not yet complete, and not all records have been verified. The absence of data does not mean that karst features are not present at a site. A reliability rating is included with each record.

*This data is sourced from the British Geological Survey.*





## 20 Radon



### 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 75 >](#)

Location	Estimated properties affected	Radon Protection Measures required
On site	Between 1% and 3%	Basic





*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

34

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<sup>2</sup>. 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<sup>2</sup>; 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	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg





Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
4m N	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
4m N	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
4m N	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
5m N	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
7m NE	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
7m NE	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
15m NE	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
15m NE	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
29m SW	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
44m SW	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
44m SW	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
46m NE	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 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<sup>2</sup>).

*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<sup>2</sup>.

*This data is sourced from the British Geological Survey.*





## 22 Railway infrastructure and projects

### 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	0
---------------------	---

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.

*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

0

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

*This data is sourced from OpenStreetMap.*

## 22.7 Railways

Records within 250m

0

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

*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.*





## Data providers

Groundsure works with respected data providers to bring you the most relevant and accurate information. To find out who they are and their areas of expertise see <https://www.groundsure.com/sources-reference> ↗.

## Terms and conditions

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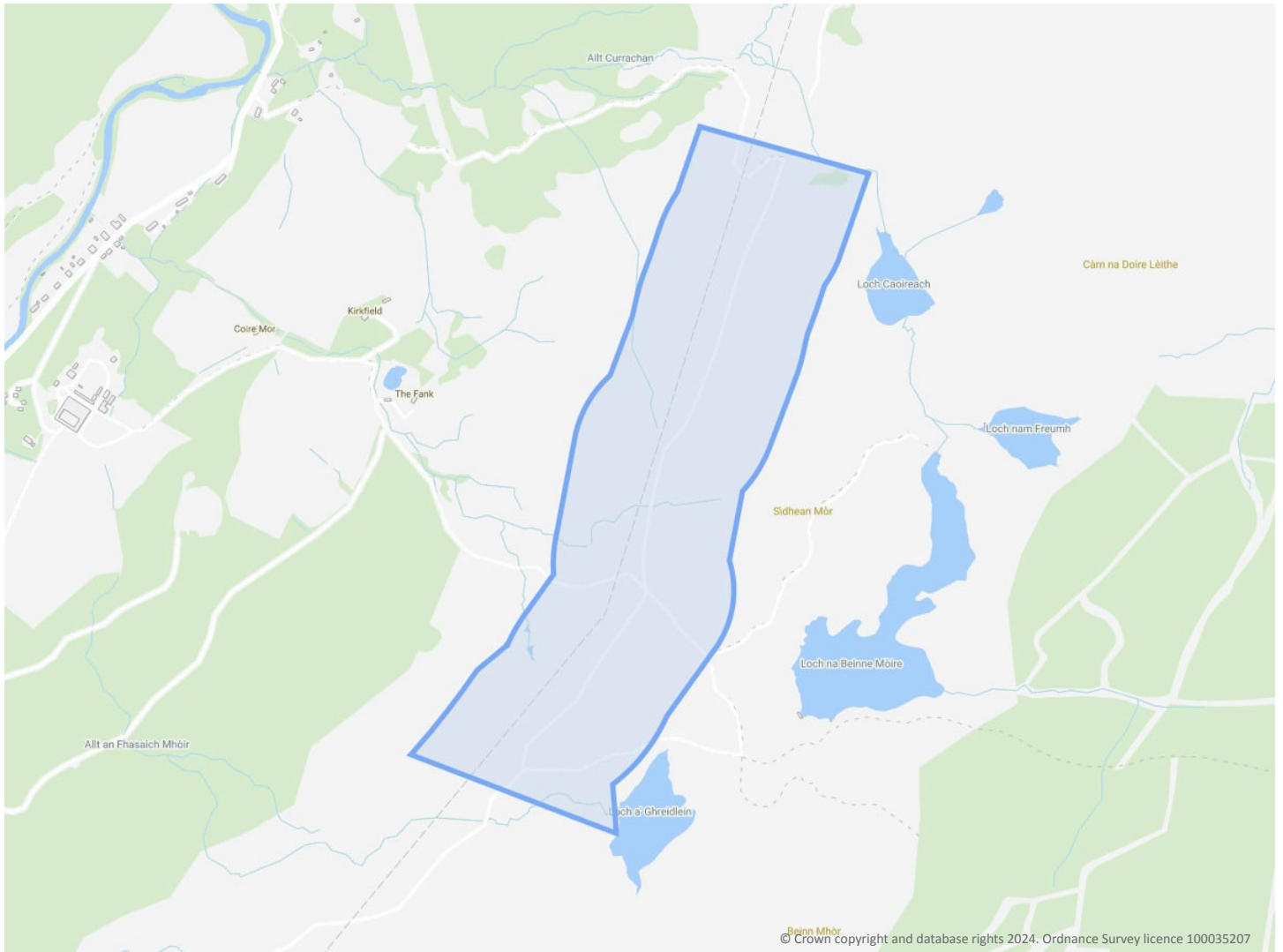
## Scotland, Red Line Boundary

### Order Details

**Date:** 01/05/2024  
**Your ref:** Scotland, Red Line Boundary  
**Our Ref:** GSIP-2024-14714-18280\_C

### Site Details

**Location:** 231975 826763  
**Area:** 66.2 ha  
**Authority:** [The Highland Council](#) ↗



**Summary of findings**

[p. 2 >](#)

**Aerial image**

[p. 7 >](#)

**OS MasterMap site plan**

N/A: >10ha

[Insight User Guide](#) ↗

Contact us with any questions at:

[info@groundsure.com](mailto:info@groundsure.com) ↗

01273 257 755



## Summary of findings

Page	Section	<u>Past land use</u> >	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">12</a> >	<a href="#">1.1</a> >	<a href="#">Historical industrial land uses</a> >	0	0	0	2	-
13	1.2	Historical tanks	0	0	0	0	-
13	1.3	Historical energy features	0	0	0	0	-
13	1.4	Historical petrol stations	0	0	0	0	-
14	1.5	Historical garages	0	0	0	0	-
14	1.6	Historical military land	0	0	0	0	-
Page	Section	<u>Past land use - un-grouped</u> >	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">15</a> >	<a href="#">2.1</a> >	<a href="#">Historical industrial land uses</a> >	0	0	0	2	-
16	2.2	Historical tanks	0	0	0	0	-
16	2.3	Historical energy features	0	0	0	0	-
16	2.4	Historical petrol stations	0	0	0	0	-
16	2.5	Historical garages	0	0	0	0	-
Page	Section	<u>Waste and landfill</u>	On site	0-50m	50-250m	250-500m	500-2000m
17	3.1	Active or recent landfill	0	0	0	0	-
17	3.2	Historical landfill (BGS records)	0	0	0	0	-
17	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
17	3.4	Licensed waste sites	0	0	0	0	-
17	3.5	Historical waste sites	0	0	0	0	-
Page	Section	<u>Current industrial land use</u> >	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">18</a> >	<a href="#">4.1</a> >	<a href="#">Recent industrial land uses</a> >	6	0	1	-	-
19	4.2	Current or recent petrol stations	0	0	0	0	-
19	4.3	Electricity cables	0	0	0	0	-
19	4.4	Gas pipelines	0	0	0	0	-
19	4.5	Sites determined as Contaminated Land	0	0	0	0	-
20	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
20	4.7	Regulated explosive sites	0	0	0	0	-





20	4.8	Hazardous substance storage/usage	0	0	0	0	-
20	4.9	Part A(1), IPPC and Historic IPC Authorisations	0	0	0	0	-
20	4.10	Part B Authorisations	0	0	0	0	-
21	4.11	Pollution inventory substances	0	0	0	0	-
21	4.12	Pollution inventory waste transfers	0	0	0	0	-
21	4.13	Pollution inventory radioactive waste	0	0	0	0	-
Page	Section	<a href="#">Hydrogeology &gt;</a>	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">22 &gt;</a>	<a href="#">5.1 &gt;</a>	<a href="#">Superficial aquifer &gt;</a>	Identified (within 500m)				
<a href="#">23 &gt;</a>	<a href="#">5.2 &gt;</a>	<a href="#">Bedrock aquifer &gt;</a>	Identified (within 500m)				
Page	Section	<a href="#">Hydrology &gt;</a>	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">24 &gt;</a>	<a href="#">6.1 &gt;</a>	<a href="#">Water Network (OS MasterMap) &gt;</a>	14	1	28	-	-
<a href="#">28 &gt;</a>	<a href="#">6.2 &gt;</a>	<a href="#">Surface water features &gt;</a>	1	1	21	-	-
Page	Section	<a href="#">River flooding &gt;</a>					
<a href="#">29 &gt;</a>	<a href="#">7.1 &gt;</a>	<a href="#">River flooding &gt;</a>	1 in 100 year, 0.3m - 1.0m (within 50m)				
Page	Section	Coastal flooding					
31	8.1	Coastal flooding	Negligible (within 50m)				
Page	Section	<a href="#">Surface water flooding &gt;</a>					
<a href="#">32 &gt;</a>	<a href="#">9.1 &gt;</a>	<a href="#">Surface water flooding &gt;</a>	1 in 30 year, 0.1m - 0.3m (within 50m)				
Page	Section	<a href="#">Groundwater flooding &gt;</a>					
<a href="#">34 &gt;</a>	<a href="#">10.1 &gt;</a>	<a href="#">Groundwater flooding &gt;</a>	Low (within 50m)				
Page	Section	<a href="#">Environmental designations &gt;</a>	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">35 &gt;</a>	<a href="#">11.1 &gt;</a>	<a href="#">Sites of Special Scientific Interest (SSSI) &gt;</a>	0	0	0	0	1
36	11.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
<a href="#">36 &gt;</a>	<a href="#">11.3 &gt;</a>	<a href="#">Special Areas of Conservation (SAC) &gt;</a>	0	0	0	0	1
<a href="#">37 &gt;</a>	<a href="#">11.4 &gt;</a>	<a href="#">Special Protection Areas (SPA) &gt;</a>	0	0	0	0	1
<a href="#">37 &gt;</a>	<a href="#">11.5 &gt;</a>	<a href="#">National Nature Reserves (NNR) &gt;</a>	0	0	0	0	2
37	11.6	Local Nature Reserves (LNR)	0	0	0	0	0
<a href="#">38 &gt;</a>	<a href="#">11.7 &gt;</a>	<a href="#">Designated Ancient Woodland &gt;</a>	0	1	2	3	26
39	11.8	Biosphere Reserves	0	0	0	0	0





39	11.9	Forest Parks	0	0	0	0	0
40	11.10	Marine Conservation Zones	0	0	0	0	0
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
41	12.1	World Heritage Sites	0	0	0	-	-
41	12.2	Area of Outstanding Natural Beauty	0	0	0	-	-
41	12.3	National Parks	0	0	0	-	-
41	12.4	Listed Buildings	0	0	0	-	-
42	12.5	Conservation Areas	0	0	0	-	-
42	12.6	Scheduled Ancient Monuments	0	0	0	-	-
42	12.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations >	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">43 &gt;</a>	<a href="#">13.1 &gt;</a>	<a href="#">Agricultural Land Classification &gt;</a>	Grade 6.3 (within 250m)				
Page	Section	Geology 1:10,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">45 &gt;</a>	<a href="#">14.1 &gt;</a>	<a href="#">10k Availability &gt;</a>	Identified (within 500m)				
46	14.2	Artificial and made ground (10k)	0	0	0	0	-
<a href="#">47 &gt;</a>	<a href="#">14.3 &gt;</a>	<a href="#">Superficial geology (10k) &gt;</a>	6	5	10	16	-
49	14.4	Landslip (10k)	0	0	0	0	-
50	14.5	Bedrock geology (10k)	0	0	0	0	-
<a href="#">50 &gt;</a>	<a href="#">14.6 &gt;</a>	<a href="#">Bedrock faults and other linear features (10k) &gt;</a>	2	1	2	6	-
Page	Section	Geology 1:50,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">52 &gt;</a>	<a href="#">15.1 &gt;</a>	<a href="#">50k Availability &gt;</a>	Identified (within 500m)				
53	15.2	Artificial and made ground (50k)	0	0	0	0	-
53	15.3	Artificial ground permeability (50k)	0	0	-	-	-
<a href="#">54 &gt;</a>	<a href="#">15.4 &gt;</a>	<a href="#">Superficial geology (50k) &gt;</a>	5	4	11	15	-
<a href="#">56 &gt;</a>	<a href="#">15.5 &gt;</a>	<a href="#">Superficial permeability (50k) &gt;</a>	Identified (within 50m)				
56	15.6	Landslip (50k)	0	0	0	0	-
57	15.7	Landslip permeability (50k)	None (within 50m)				
<a href="#">58 &gt;</a>	<a href="#">15.8 &gt;</a>	<a href="#">Bedrock geology (50k) &gt;</a>	1	0	1	1	-
<a href="#">59 &gt;</a>	<a href="#">15.9 &gt;</a>	<a href="#">Bedrock permeability (50k) &gt;</a>	Identified (within 50m)				





<a href="#">59 &gt;</a>	<a href="#">15.10 &gt;</a>	<a href="#">Bedrock faults and other linear features (50k) &gt;</a>	2	1	1	3	-
Page	Section	<a href="#">Boreholes &gt;</a>	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">60 &gt;</a>	<a href="#">16.1 &gt;</a>	<a href="#">BGS Boreholes &gt;</a>	12	0	0	-	-
Page	Section	<a href="#">Natural ground subsidence &gt;</a>					
<a href="#">62 &gt;</a>	<a href="#">17.1 &gt;</a>	<a href="#">Shrink swell clays &gt;</a>	Very low (within 50m)				
<a href="#">64 &gt;</a>	<a href="#">17.2 &gt;</a>	<a href="#">Running sands &gt;</a>	Very low (within 50m)				
<a href="#">66 &gt;</a>	<a href="#">17.3 &gt;</a>	<a href="#">Compressible deposits &gt;</a>	High (within 50m)				
<a href="#">68 &gt;</a>	<a href="#">17.4 &gt;</a>	<a href="#">Collapsible deposits &gt;</a>	Very low (within 50m)				
<a href="#">70 &gt;</a>	<a href="#">17.5 &gt;</a>	<a href="#">Landslides &gt;</a>	Low (within 50m)				
<a href="#">72 &gt;</a>	<a href="#">17.6 &gt;</a>	<a href="#">Ground dissolution of soluble rocks &gt;</a>	Negligible (within 50m)				
Page	Section	<a href="#">Mining and ground workings &gt;</a>	On site	0-50m	50-250m	250-500m	500-2000m
74	18.1	BritPits	0	0	0	0	-
75	18.2	Surface ground workings	0	0	0	-	-
75	18.3	Underground workings	0	0	0	0	0
75	18.4	Underground mining extents	0	0	0	0	-
75	18.5	Historical Mineral Planning Areas	0	0	0	0	-
<a href="#">75 &gt;</a>	<a href="#">18.6 &gt;</a>	<a href="#">Non-coal mining &gt;</a>	0	0	0	1	1
76	18.7	JPB mining areas	None (within 0m)				
76	18.8	The Coal Authority non-coal mining	0	0	0	0	-
76	18.9	Researched mining	0	0	0	0	-
77	18.10	Mining record office plans	0	0	0	0	-
77	18.11	BGS mine plans	0	0	0	0	-
77	18.12	Coal mining	None (within 0m)				
77	18.13	Brine areas	None (within 0m)				
77	18.14	Gypsum areas	None (within 0m)				
78	18.15	Tin mining	None (within 0m)				
78	18.16	Clay mining	None (within 0m)				
Page	Section	<a href="#">Ground cavities and sinkholes</a>	On site	0-50m	50-250m	250-500m	500-2000m
79	19.1	Natural cavities	0	0	0	0	-

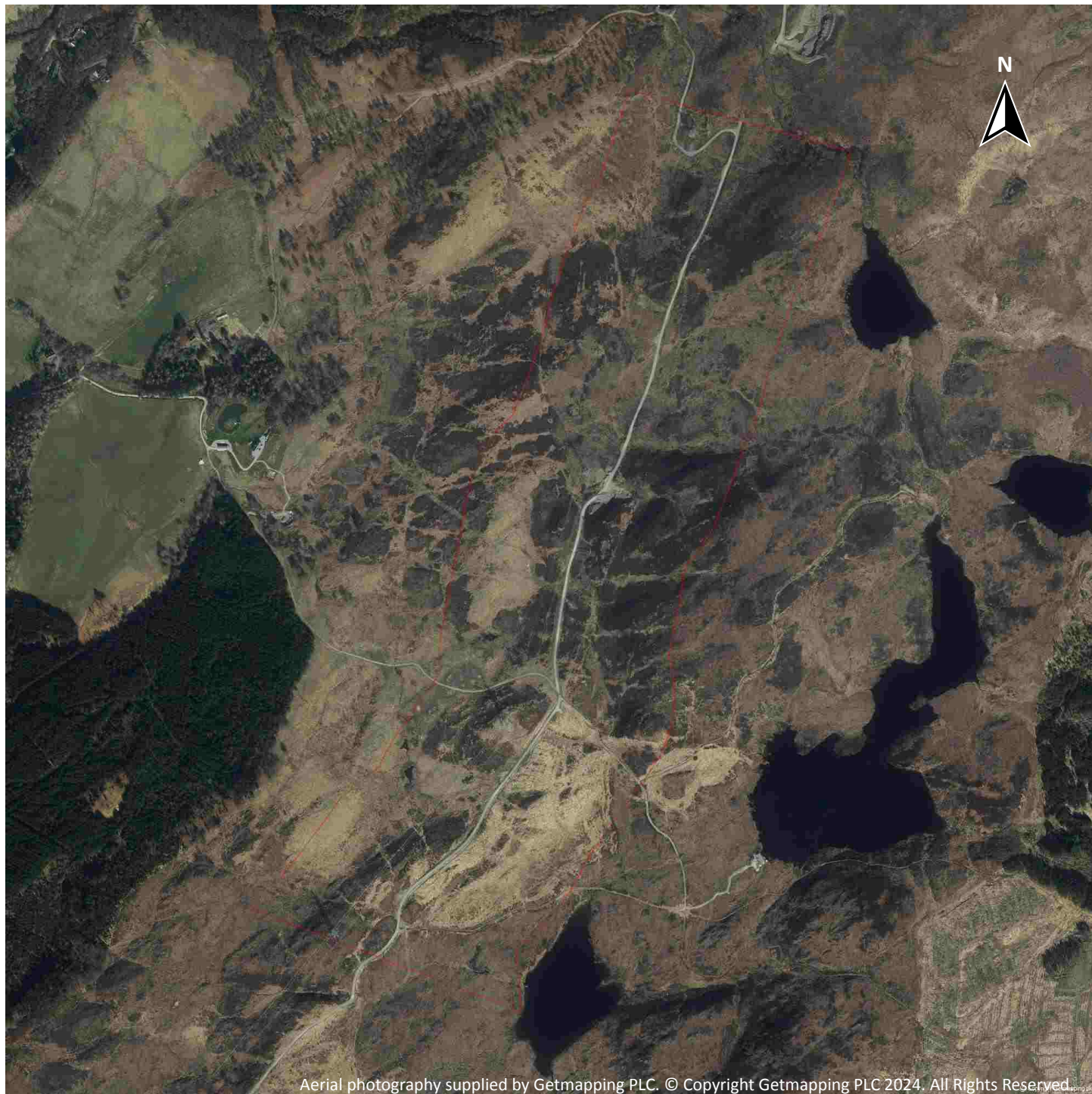




79	19.2	Mining cavities	0	0	0	0	0
79	19.3	Reported recent incidents	0	0	0	0	-
79	19.4	Historical incidents	0	0	0	0	-
80	19.5	National karst database	0	0	0	0	-
Page	Section	<a href="#">Radon &gt;</a>					
<a href="#">81 &gt;</a>	<a href="#">20.1 &gt;</a>	<a href="#">Radon &gt;</a>	Between 1% and 3% (within 0m)				
Page	Section	<a href="#">Soil chemistry &gt;</a>	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">83 &gt;</a>	<a href="#">21.1 &gt;</a>	<a href="#">BGS Estimated Background Soil Chemistry &gt;</a>	20	6	-	-	-
84	21.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
84	21.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	<a href="#">Railway infrastructure and projects</a>	On site	0-50m	50-250m	250-500m	500-2000m
85	22.1	Underground railways (London)	0	0	0	-	-
85	22.2	Underground railways (Non-London)	0	0	0	-	-
85	22.3	Railway tunnels	0	0	0	-	-
85	22.4	Historical railway and tunnel features	0	0	0	-	-
85	22.5	Royal Mail tunnels	0	0	0	-	-
86	22.6	Historical railways	0	0	0	-	-
86	22.7	Railways	0	0	0	-	-
86	22.8	Crossrail 1	0	0	0	0	-
86	22.9	Crossrail 2	0	0	0	0	-
86	22.10	HS2	0	0	0	0	-



## Recent aerial photograph



Aerial photography supplied by Getmapping PLC. © Copyright Getmapping PLC 2024. All Rights Reserved.

Capture Date: 29/05/2020

Site Area: 66.2ha



Contact us with any questions at:

[info@groundsure.com](mailto:info@groundsure.com)

01273 257 755

Date: 1 May 2024



## Recent site history - 2017 aerial photograph



Aerial photography supplied by Getmapping PLC. © Copyright Getmapping PLC 2024. All Rights Reserved.

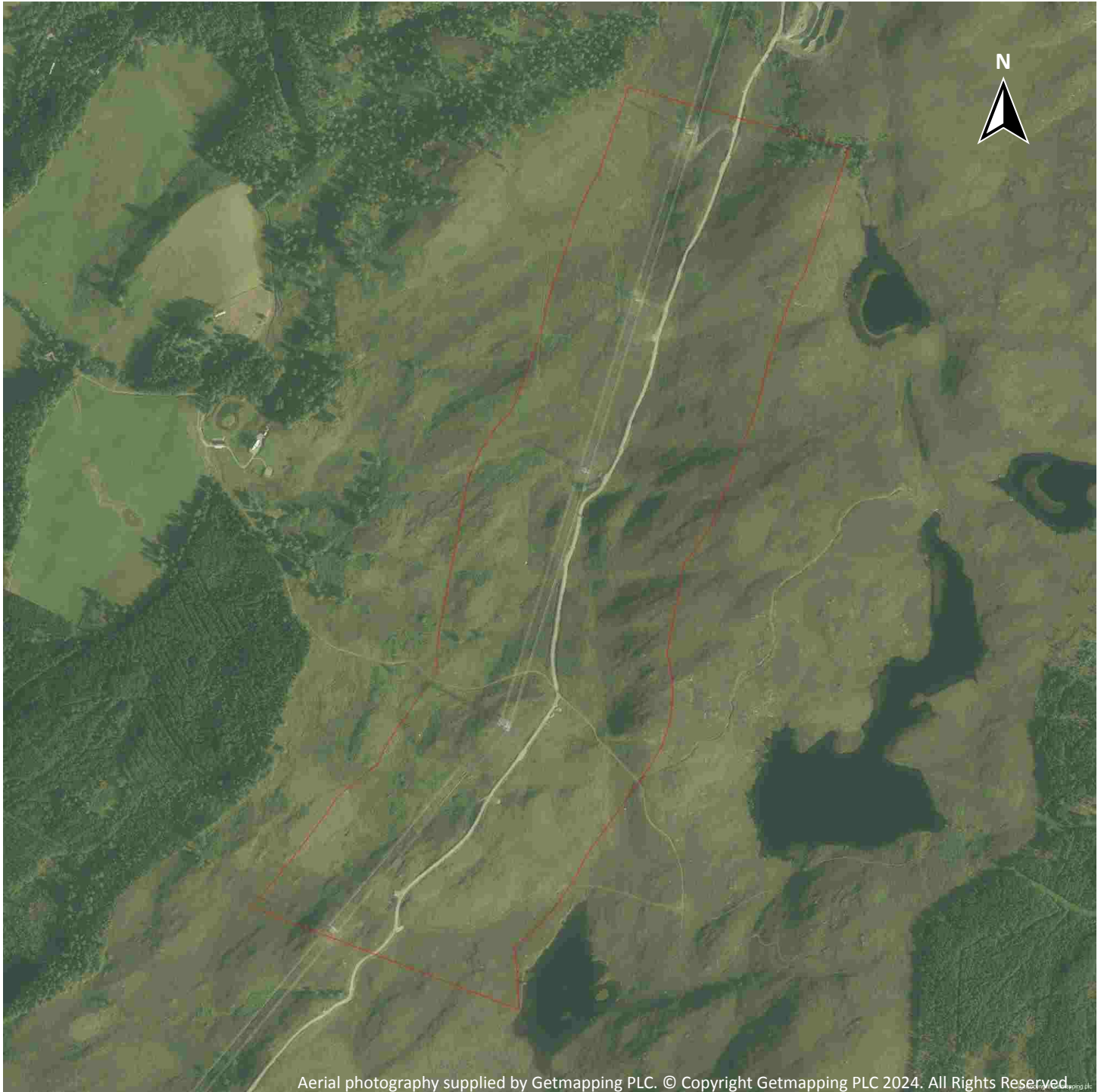
Capture Date: 06/05/2017

Site Area: 66.2ha





## Recent site history - 2014 aerial photograph



Capture Date: 26/08/2014

Site Area: 66.2ha





## Recent site history - 2013 aerial photograph



Capture Date: 19/07/2013

Site Area: 66.2ha



Contact us with any questions at:

[info@groundsure.com](mailto:info@groundsure.com)

01273 257 755

Date: 1 May 2024



## Recent site history - 2009 aerial photograph



Capture Date: 13/05/2009

Site Area: 66.2ha



Contact us with any questions at:

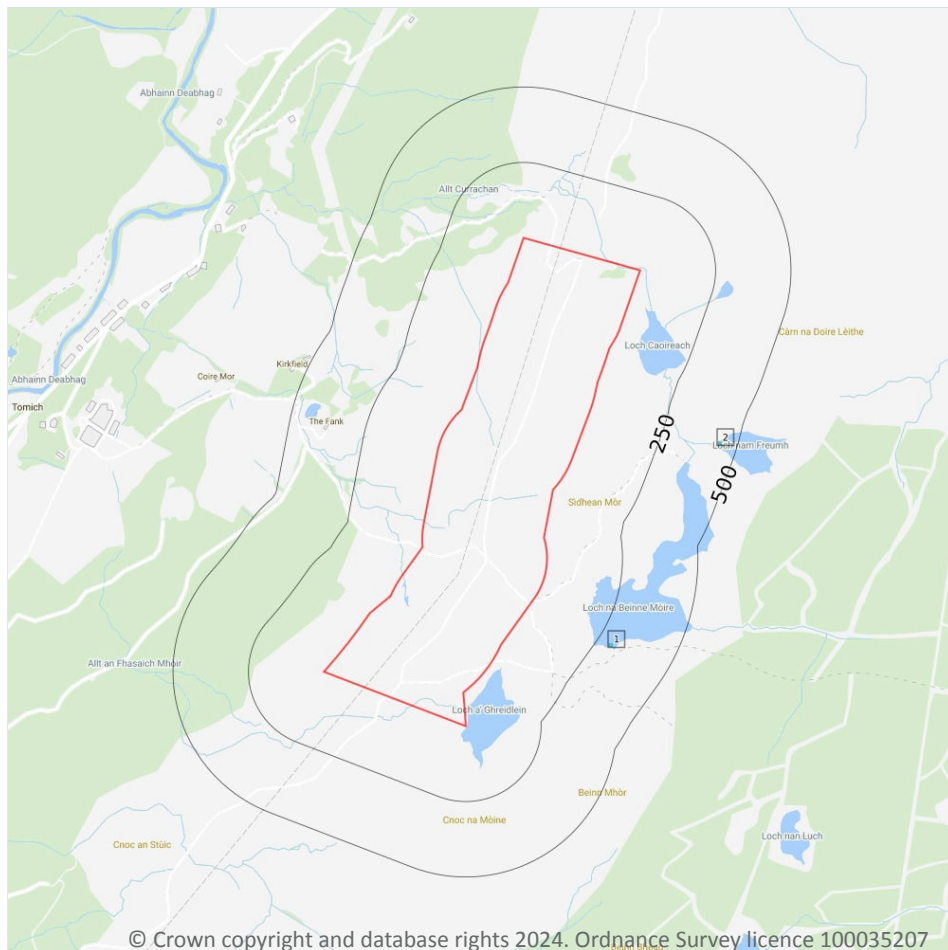
[info@groundsure.com](mailto:info@groundsure.com)

01273 257 755

Date: 1 May 2024



## 1 Past land use



- Site Outline
- Search buffers in metres (m)
- Historical industrial land uses

### 1.1 Historical industrial land uses

#### Records within 500m

2

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 12 >](#)

ID	Location	Land use	Dates present	Group ID
1	291m SE	Boat House	1971	65572





ID	Location	Land use	Dates present	Group ID
2	437m E	Boat House	1971	65573

*This data is sourced from Ordnance Survey / Groundsure.*

## 1.2 Historical tanks

<b>Records within 500m</b>	<b>0</b>
----------------------------	----------

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 ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

*This data is sourced from Ordnance Survey / Groundsure.*

## 1.3 Historical energy features

<b>Records within 500m</b>	<b>0</b>
----------------------------	----------

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 ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

*This data is sourced from Ordnance Survey / Groundsure.*

## 1.4 Historical petrol stations

<b>Records within 500m</b>	<b>0</b>
----------------------------	----------

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 ungrouped 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 ungrouped 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

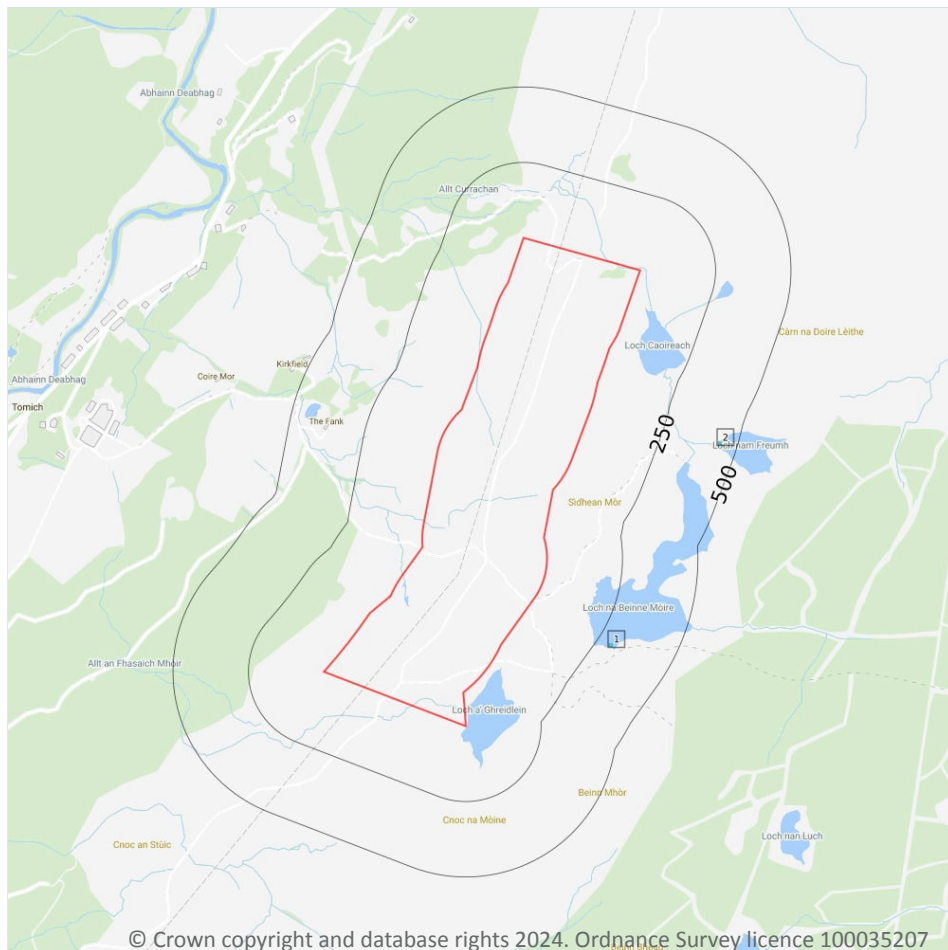
Areas of military land digitised from multiple sources including the National Archives, local records, MOD records and verified other sources, intelligently grouped into contiguous features.

*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

### 2.1 Historical industrial land uses

#### Records within 500m

2

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 15](#) >

ID	Location	Land Use	Date	Group ID
1	291m SE	Boat House	1971	65572
2	437m E	Boat House	1971	65573

This data is sourced from Ordnance Survey / Groundsure.





## 2.2 Historical tanks

**Records within 500m****0**

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'.

*This data is sourced from Ordnance Survey / Groundsure.*

## 2.3 Historical energy features

**Records within 500m****0**

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'.

*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

### 3.1 Active or recent landfill

Records within 500m

0

Active or recently closed landfill sites under Scottish Environment Protection (SEPA) regulation.

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

### 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 Licensed waste sites

Records within 500m

0

Active or recently closed waste sites under Scottish Environment Protection Agency (SEPA) regulation.

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

### 3.5 Historical waste sites

Records within 500m

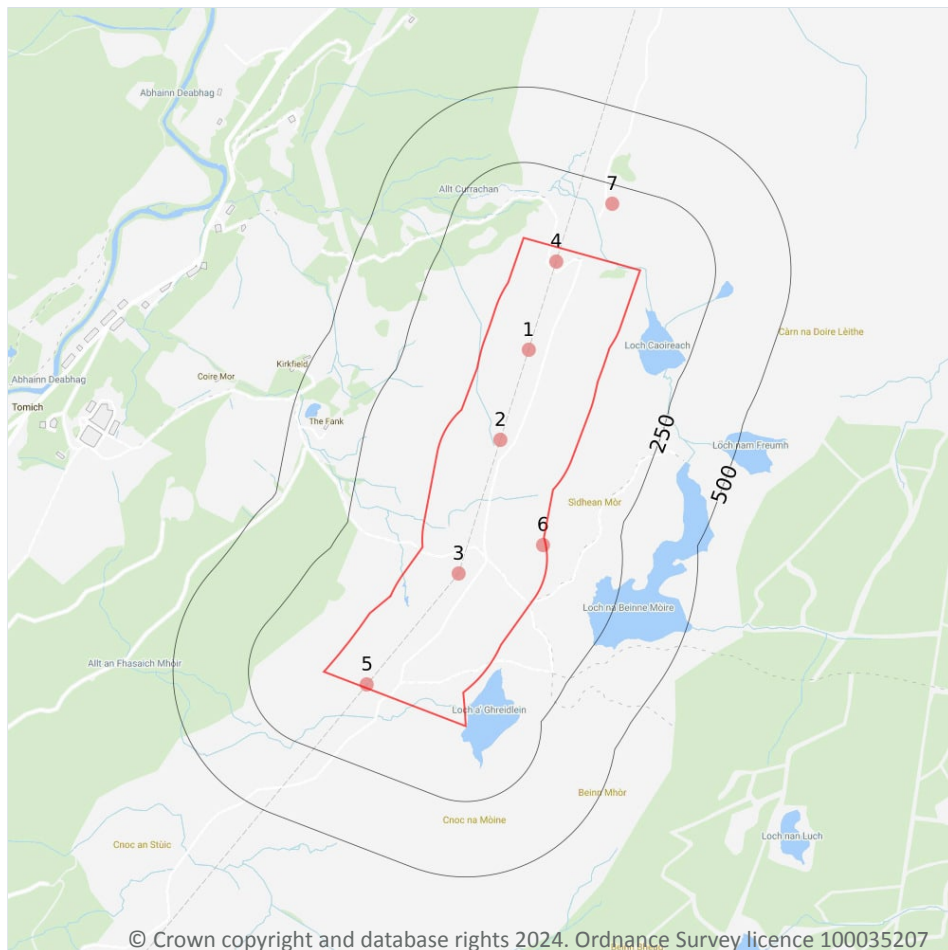
0

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

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



## 4 Current industrial land use



- Site Outline
- Search buffers in metres (m)
- Recent industrial land uses

### 4.1 Recent industrial land uses

#### Records within 250m

7

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on [page 18](#) >

ID	Location	Company	Address	Activity	Category
1	On site	Pylon	Inverness, IV4	Electrical Features	Infrastructure and Facilities
2	On site	Pylon	Inverness, IV4	Electrical Features	Infrastructure and Facilities
3	On site	Pylon	Inverness, IV4	Electrical Features	Infrastructure and Facilities





ID	Location	Company	Address	Activity	Category
4	On site	Pylon	Inverness, IV4	Electrical Features	Infrastructure and Facilities
5	On site	Pylon	Inverness, IV4	Electrical Features	Infrastructure and Facilities
6	On site	Masts	Inverness, IV4	Telecommunications Features	Infrastructure and Facilities
7	186m NE	Workings	Inverness, IV4	Unspecified Quarries Or Mines	Extractive Industries

*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	0
---------------------	---

High voltage underground electricity transmission cables.

*This data is sourced from National Grid.*

## 4.4 Gas pipelines

Records within 500m	0
---------------------	---

High pressure underground gas transmission pipelines.

*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

0

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.

*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

0

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.

*This data is sourced from Local Authority records.*

## 4.9 Part A(1), IPPC and Historic IPC Authorisations

Records within 500m

0

Records of Part A installations regulated for the release of substances to the environment.

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

## 4.10 Part B Authorisations

Records within 500m

0

Records of Part B installations regulated for the release of substances to the environment.

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





#### 4.11 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.*

#### 4.12 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.*

#### 4.13 Pollution inventory radioactive waste

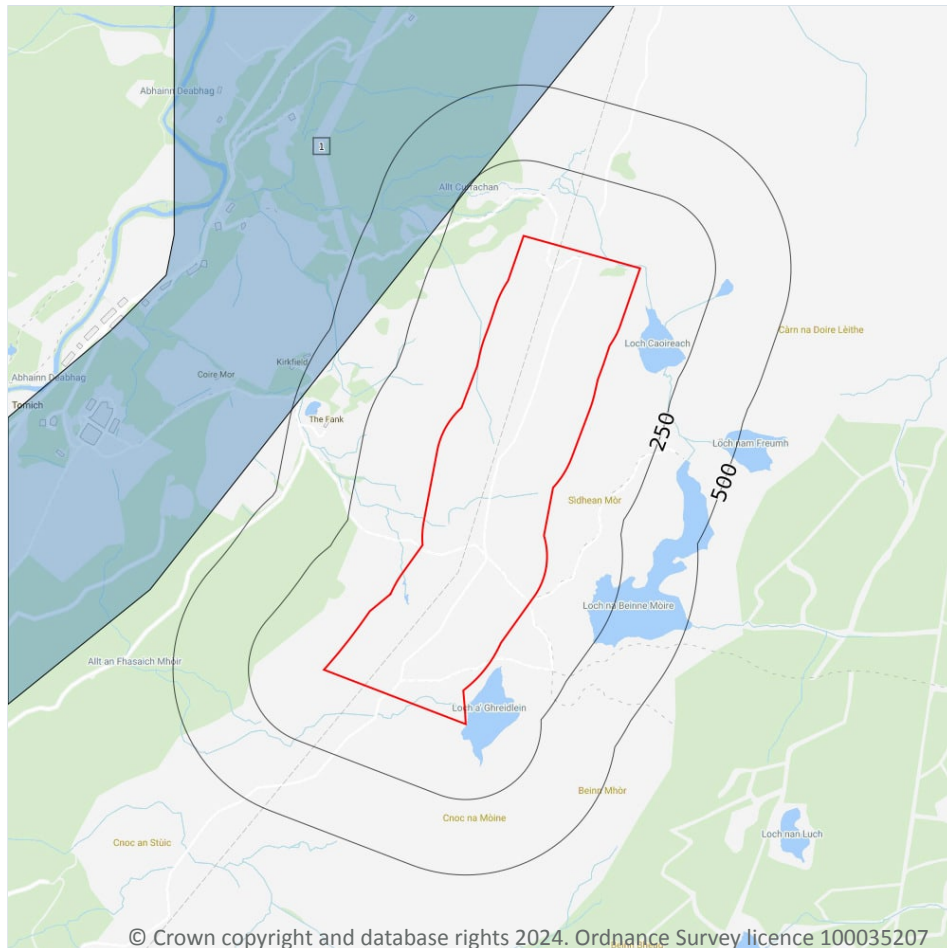
**Records within 500m****0**

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)
- Limited or local potential
- Locally important - intergranular

### 5.1 Superficial aquifer

#### Records within 500m

1

Records of groundwater classification within superficial geology.

Features are displayed on the Hydrogeology map on [page 22](#) >

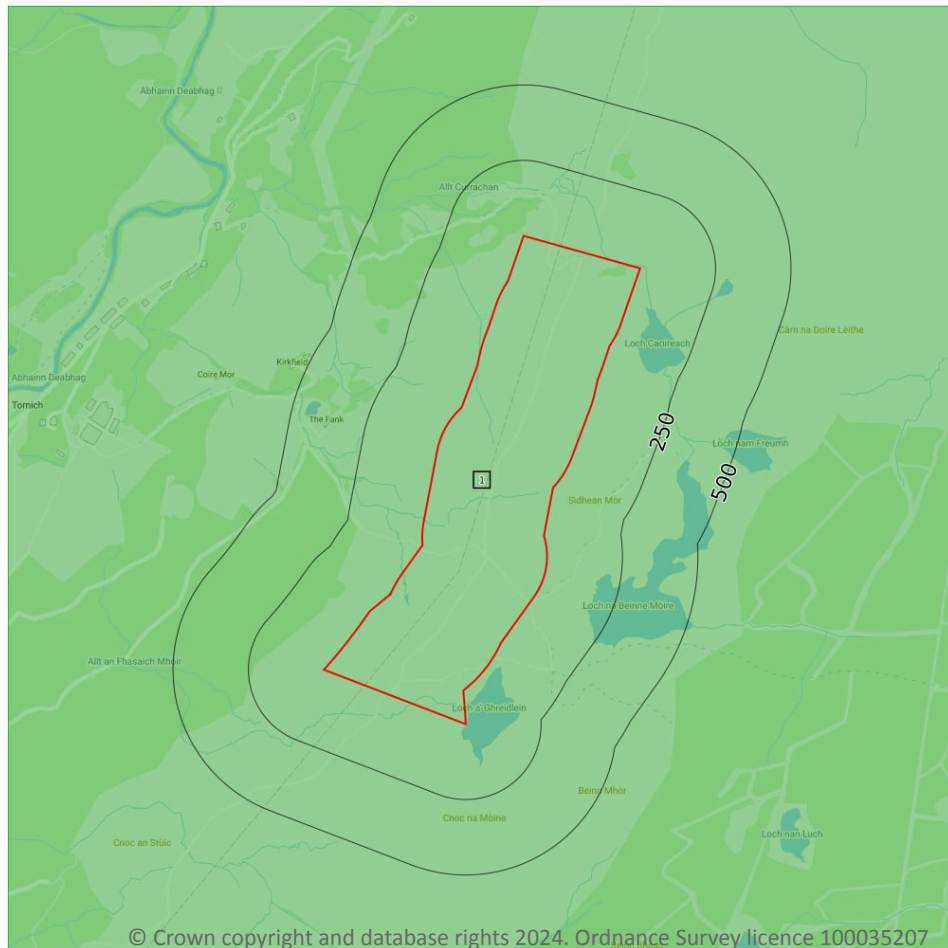
ID	Location	Description	Type	Rock description
1	243m N	Concealed aquifers, aquifers of limited potential, regions without significant groundwater	Concealed aquifers; aquifers with limited or local potential	Quaternary Coastal and Fluvial Alluvium

*This data is sourced from the British Geological Survey.*





## Bedrock aquifer



- Site Outline**
- Search buffers in metres (m)**
- Highly productive - fissures/discontinuities
  - Highly productive - intergranular
  - Moderately productive - fissures/discontinuities
  - Moderately productive - intergranular
  - Low productive - fissures/discontinuities
  - Low productive - intergranular
  - No significant groundwater

### 5.2 Bedrock aquifer

#### Records within 500m

1

Records of groundwater classification within bedrock geology.

Features are displayed on the Bedrock aquifer map on [page 23](#) >

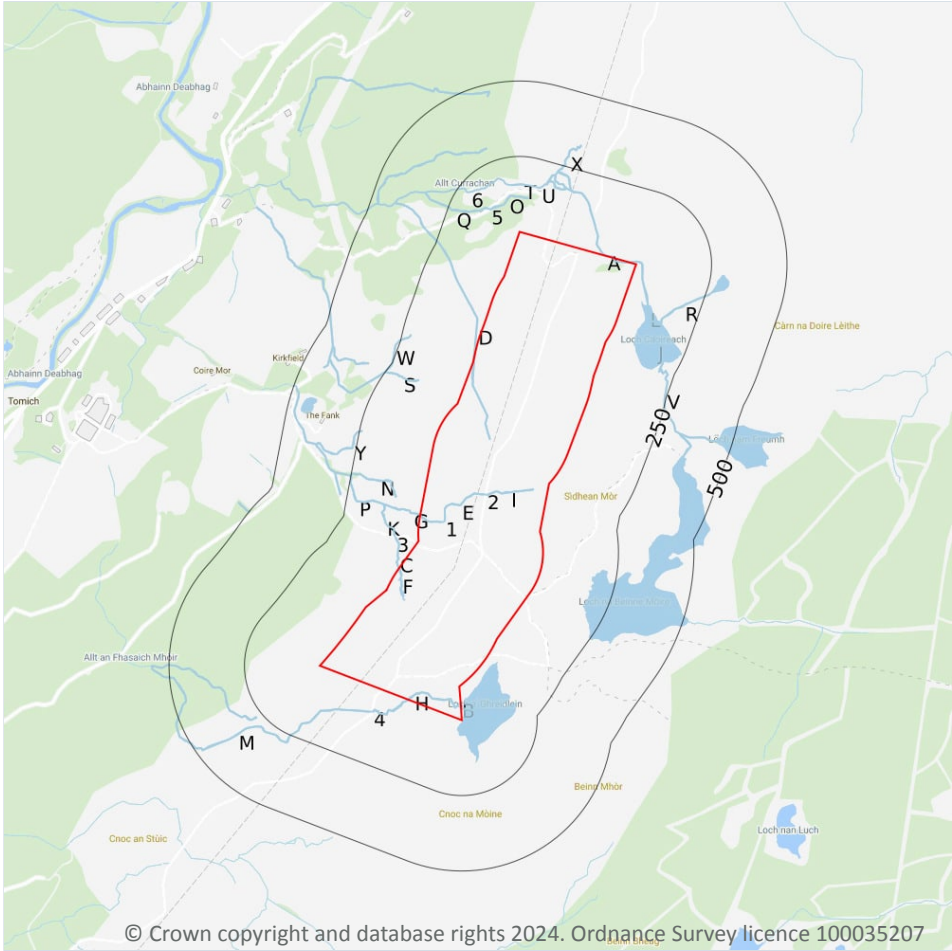
ID	Location	Description	Flow	Summary	Rock description
1	On site	Low productivity aquifer	Flow is virtually all through fractures and other discontinuities	Small amounts of groundwater in near surface weathered zone and secondary fractures.	LOCH EIL GROUP

*This data is sourced from the British Geological Survey.*





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)**

6.1 Water Network (OS MasterMap)

Records within 250m	43
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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 24](#) >

ID	Location	Type of water feature	Ground level	Permanence	Name
1	On site	Lake, loch or reservoir.	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.	Underground	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)	Allt Currachan
B	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.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt an Fhasaich Mhòir
C	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
D	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
E	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
F	On site	Lake, loch or reservoir.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
F	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
F	On site	Lake, loch or reservoir.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
G	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
H	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt an Fhasaich Mhòir
I	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
B	3m S	Lake, loch or reservoir.	On ground surface	Watercourse contains water year round (in normal circumstances)	Loch a' Ghreidlein
3	70m SW	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
K	73m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
4	79m SW	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	Allt an Fhasaich Mhòir
L	80m NE	Lake, loch or reservoir.	On ground surface	Watercourse contains water year round (in normal circumstances)	Loch Caoireach
M	80m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt an Fhasaich Mhòir
N	88m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
J	103m NE	Lake, loch or reservoir.	On ground surface	Watercourse contains water year round (in normal circumstances)	Loch Caoireach
L	103m NE	Lake, loch or reservoir.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
O	104m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
5	122m N	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
P	126m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
Q	126m N	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
R	139m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
S	145m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
T	153m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt Currachan
U	157m N	Lake, loch or reservoir.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt Currachan
6	157m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt Currachan
U	171m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt Currachan
U	173m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt Currachan
U	177m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt Currachan
U	177m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
U	180m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
U	183m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
V	198m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
U	215m N	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
W	219m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
X	224m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
Y	240m W	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

**23**

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.

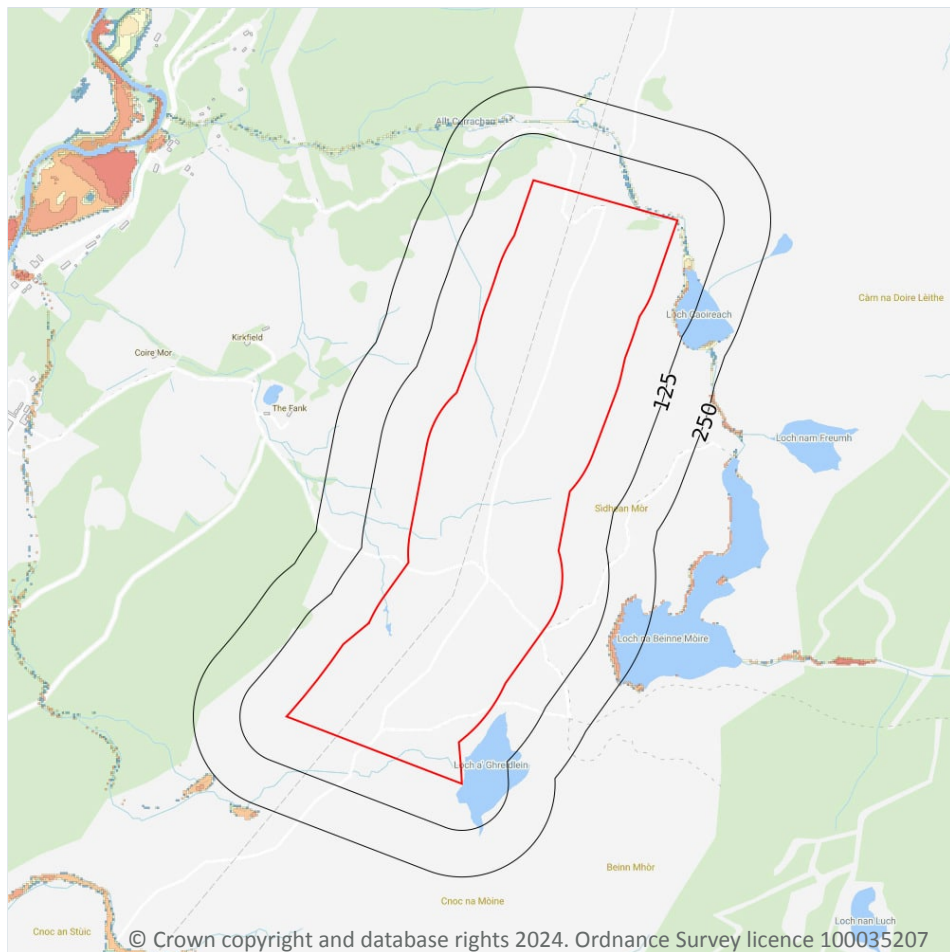
Features are displayed on the Hydrology map on [page 24 >](#)

*This data is sourced from the Ordnance Survey.*





## 7 River 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

### 7.1 River flooding

Highest risk on site

1 in 100 year, 0.3m - 1.0m

Highest risk within 50m

1 in 100 year, 0.3m - 1.0m

This is an assessment of flood risk for rivers in Scotland produced using modelled data, provided by Ambiental Risk Analytics. It also takes account of flood defence information provided by the Scottish Environment Protection Agency (SEPA). It shows the chance of flooding from rivers presented in the following categories:

- 1 in 30 year (3.33%)
- 1 in 100 year (1%)
- 1 in 250 year (0.4%)



- and 1 in 1,000 year (0.1%)

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.

Features are displayed on the River flooding map on [page 29 >](#)

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	Negligible

*This data is sourced from Ambiantal Risk Analytics.*





## 8 Coastal flooding - Coastal flooding

### 8.1 Coastal flooding

Highest risk on site

Negligible

Highest risk within 50m

Negligible

This is an assessment of coastal flood risk in Scotland produced using modelled data, provided by Ambiental Risk Analytics. It also takes account of flood defence information provided by the Scottish Environment Protection Agency (SEPA). It shows the chance of coastal flooding presented in the following categories:

- 1 in 30 year (3.33%)
- 1 in 100 year (1%)
- 1 in 250 year (0.4%)
- and 1 in 1,000 year (0.1%)

The data shown on the map 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.

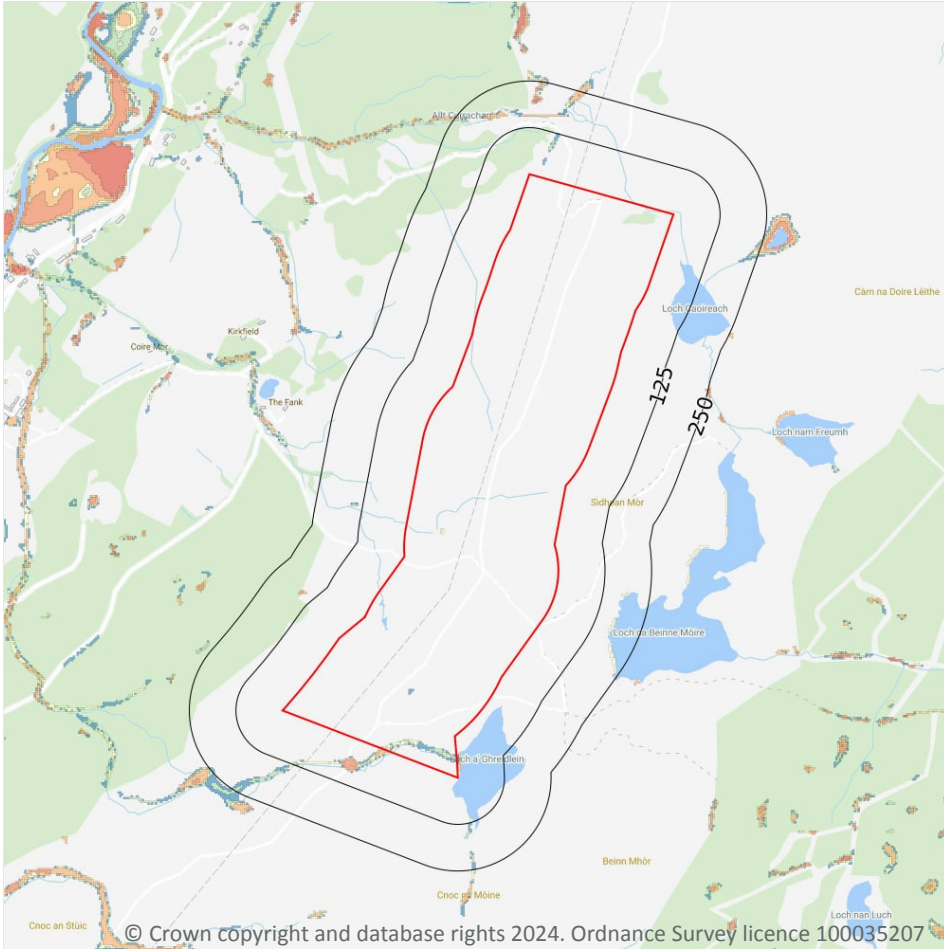
Return period	Maximum modelled depth
1 in 1000 year	Negligible
1 in 250 year	Negligible
1 in 100 year	Negligible
1 in 30 year	Negligible

*This data is sourced from Ambiental Risk Analytics.*





## 9 Surface water flooding



### 9.1 Surface water flooding

**Highest risk on site**

**1 in 30 year, 0.1m - 0.3m**

**Highest risk within 50m**

**1 in 30 year, 0.1m - 0.3m**

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 32 >](#)

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.

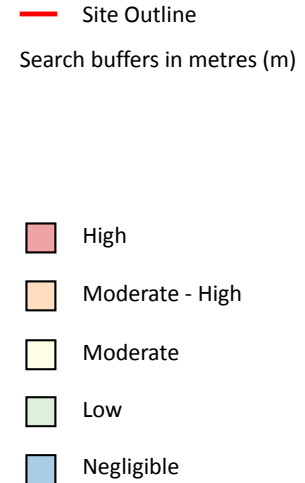
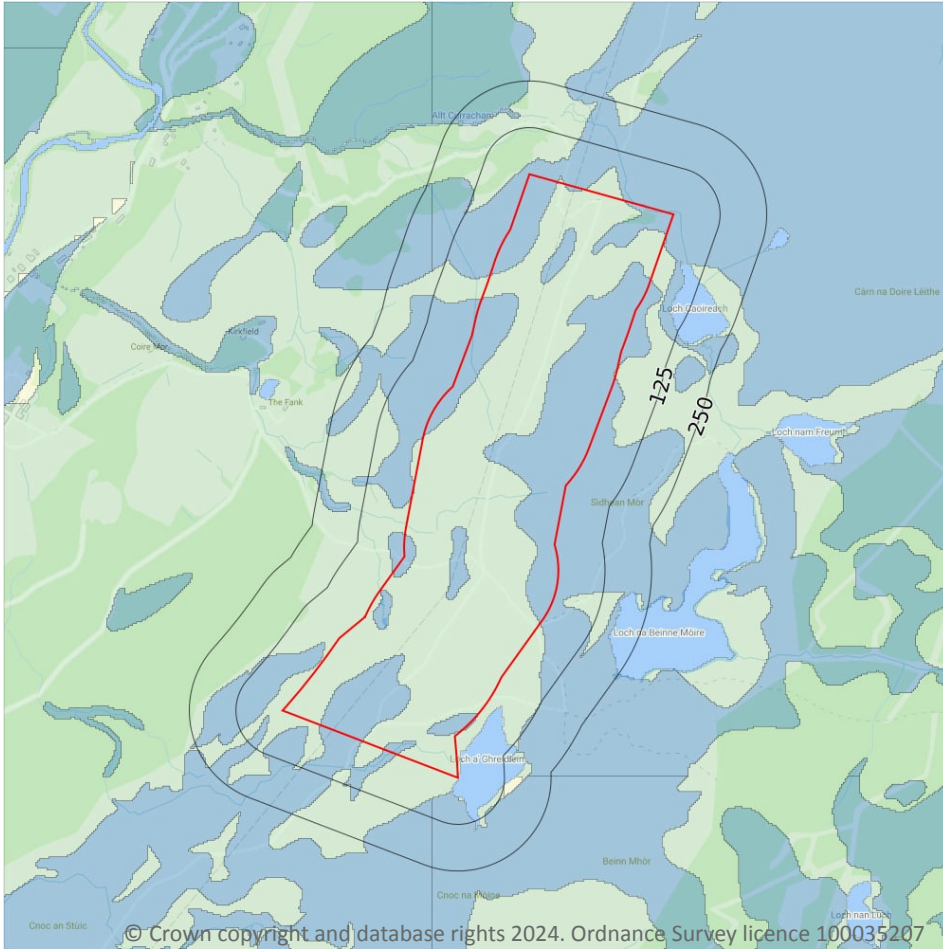
Return period	Maximum modelled depth
1 in 1000 year	Between 0.3m and 1.0m
1 in 250 year	Between 0.3m and 1.0m
1 in 100 year	Between 0.3m and 1.0m
1 in 30 year	Between 0.1m and 0.3m

*This data is sourced from Ambiantal Risk Analytics.*





## 10 Groundwater flooding



### 10.1 Groundwater flooding

Highest risk on site

Low

Highest risk within 50m

Low

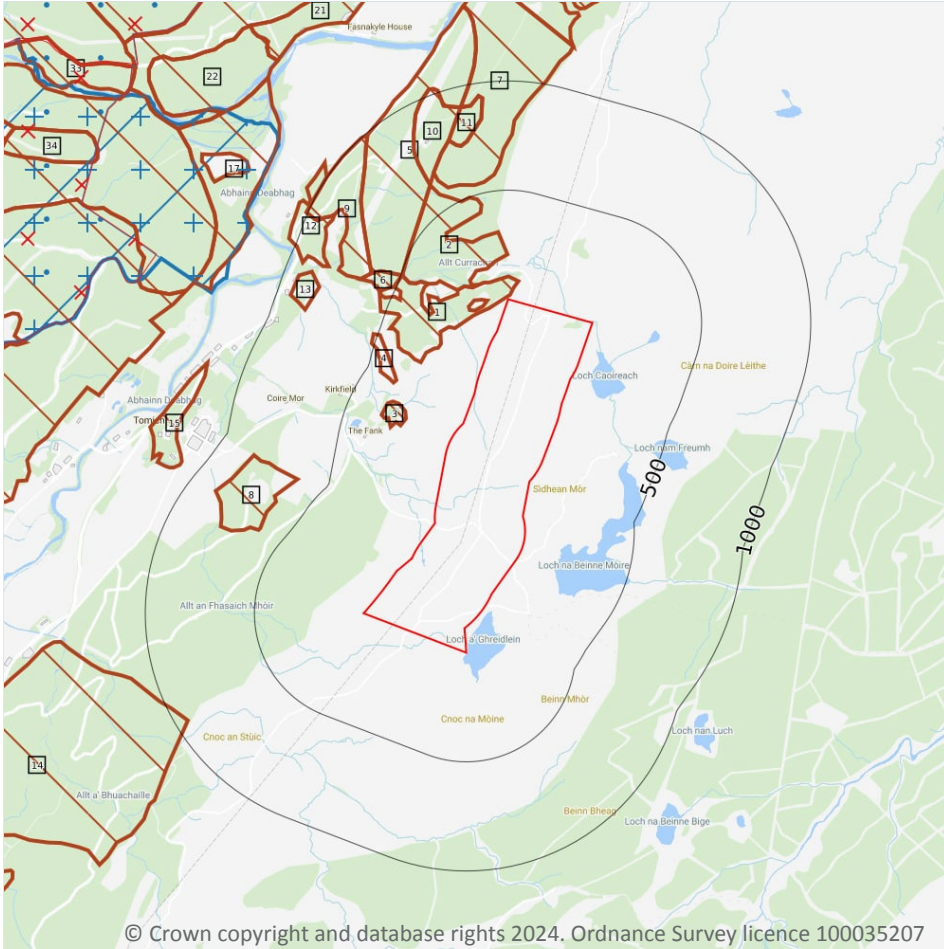
Groundwater flooding is caused by unusually high groundwater levels. It occurs when the water table rises above the ground surface or within underground structures such as basements or cellars. Groundwater flooding tends to exhibit a longer duration than surface water flooding, possibly lasting for weeks 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 34 >](#)

*This data is sourced from Ambiantal Risk Analytics.*



## 11 Environmental designations



- Site Outline
- Search buffers in metres (m)
- Sites of Special Scientific Interest (SSSI)
- + Special Areas of Conservation (SAC)
- Special Protection Areas (SPA)
- × National Nature Reserves (NNR)
- Designated Ancient Woodland

### 11.1 Sites of Special Scientific Interest (SSSI)

#### Records within 2000m

1

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 35](#) >

ID	Location	Name	Data source
A	1218m NW	Glen Affric	Scottish Natural Heritage





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

## 11.2 Conserved wetland sites (Ramsar sites)

<b>Records within 2000m</b>	<b>0</b>
-----------------------------	----------

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.

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

## 11.3 Special Areas of Conservation (SAC)

<b>Records within 2000m</b>	<b>1</b>
-----------------------------	----------

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 35 >](#)

ID	Location	Name	Features of interest	Habitat description	Data source
A	1218m NW	Strathglass Complex	Clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels; Wet heathland with cross-leaved heath; Dry heaths; Alpine and subalpine heaths; Mountain willow scrub; Montane acid grasslands; Species-rich grassland with mat-grass in upland areas; Tall herb communities; Blanket bog; Very wet mires often identified by an unstable 'quaking' surface; Calcium-rich springwater-fed fens; High-altitude plant communities associated with areas of water seepage; Acidic scree; Plants in crevices in base-rich rocks; Plants in crevices on acid rocks; Caledonian forest; Bog woodland; Atlantic salmon; Otter.	Bogs, Marshes, Water fringed vegetation, Fens; Heath, Scrub, Maquis and Garrigue, Phygrana; Alpine and sub-Alpine grassland; Humid grassland, Mesophile grassland; Broad-leaved deciduous woodland; Dry grassland, Steppes; Inland water bodies (Standing water, Running water); Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites); Inland rocks, Scree, Sands, Permanent Snow and ice; Coniferous woodland	Scottish Natural Heritage

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



## 11.4 Special Protection Areas (SPA)

### Records within 2000m

1

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 35](#) >

ID	Location	Name	Species of interest	Habitat description	Data source
24	1551m NW	Glen Affric to Strathconon	Golden eagle	Inland water bodies (Standing water, Running water); Mixed woodland; Humid grassland, Mesophile grassland; Bogs, Marshes, Water fringed vegetation, Fens; Coniferous woodland; Inland rocks, Scree, Sands, Permanent Snow and ice; Broad-leaved deciduous woodland; Heath, Scrub, Maquis and Garrigue, Phygrana; Improved grassland; Alpine and sub-Alpine grassland	Scottish Natural Heritage

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

## 11.5 National Nature Reserves (NNR)

### Records within 2000m

2

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.

Features are displayed on the Environmental designations map on [page 35](#) >

ID	Location	Name	Data source
26	1579m NW	Glen Affric	Scottish Natural Heritage
31	1945m NW	Glen Affric	Scottish Natural Heritage

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

## 11.6 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.*





## 11.7 Designated Ancient Woodland

Records within 2000m

32

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.

Features are displayed on the Environmental designations map on [page 35 >](#)

ID	Location	Name	Woodland Type
1	13m N	Balnahoun Wood	Ancient (of semi-natural origin)
2	151m N	Balnahoun Wood	Ancient (of semi-natural origin)
3	227m NW	Balnahoun Wood	Ancient (of semi-natural origin)
4	357m NW	Balnahoun Wood	Ancient (of semi-natural origin)
5	495m NW	Unknown	Ancient (of semi-natural origin)
6	495m NW	Unknown	Ancient (of semi-natural origin)
7	545m N	Unknown	Ancient (of semi-natural origin)
8	613m W	Unknown	Long-Established (of plantation origin)
9	631m NW	Unknown	Ancient (of semi-natural origin)
10	633m N	Unknown	Other (on Roy map)
11	735m N	Unknown	Ancient (of semi-natural origin)
12	820m NW	Unknown	Ancient (of semi-natural origin)
13	824m NW	Unknown	Other (on Roy map)
14	943m SW	Unknown	Long-Established (of plantation origin)
15	1082m W	Unknown	Long-Established (of plantation origin)
16	1197m N	Unknown	Ancient (of semi-natural origin)
17	1219m NW	Dun Wood	Ancient (of semi-natural origin)
18	1339m NW	Unknown	Ancient (of semi-natural origin)
19	1371m N	Unknown	Ancient (of semi-natural origin)
20	1391m NW	Unknown	Ancient (of semi-natural origin)
21	1466m N	Fasnakyle Wood	Ancient (of semi-natural origin)
22	1497m NW	Fasnakyle Wood	Ancient (of semi-natural origin)





ID	Location	Name	Woodland Type
-	1547m N	Unknown	Ancient (of semi-natural origin)
25	1558m NW	Fasnakyle Wood	Ancient (of semi-natural origin)
-	1594m N	Unknown	Long-Established (of plantation origin)
-	1701m NE	Unknown	Ancient (of semi-natural origin)
-	1747m N	Unknown	Ancient (of semi-natural origin)
30	1925m NW	Fasnakyle Wood	Ancient (of semi-natural origin)
-	1955m N	Unknown	Ancient (of semi-natural origin)
33	1983m NW	Unknown	Ancient (of semi-natural origin)
34	1989m NW	Unknown	Ancient (of semi-natural origin)
35	1997m SW	Unknown	Long-Established (of plantation origin)

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

## 11.8 Biosphere Reserves

<b>Records within 2000m</b>	<b>0</b>
-----------------------------	----------

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.*

## 11.9 Forest Parks

<b>Records within 2000m</b>	<b>0</b>
-----------------------------	----------

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.*



## 11.10 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.*





## 12 Visual and cultural designations

### 12.1 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.*

### 12.2 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.*

### 12.3 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.*

### 12.4 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.*

## 12.5 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.*

## 12.6 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.*

## 12.7 Registered Parks and Gardens

Records within 250m

0

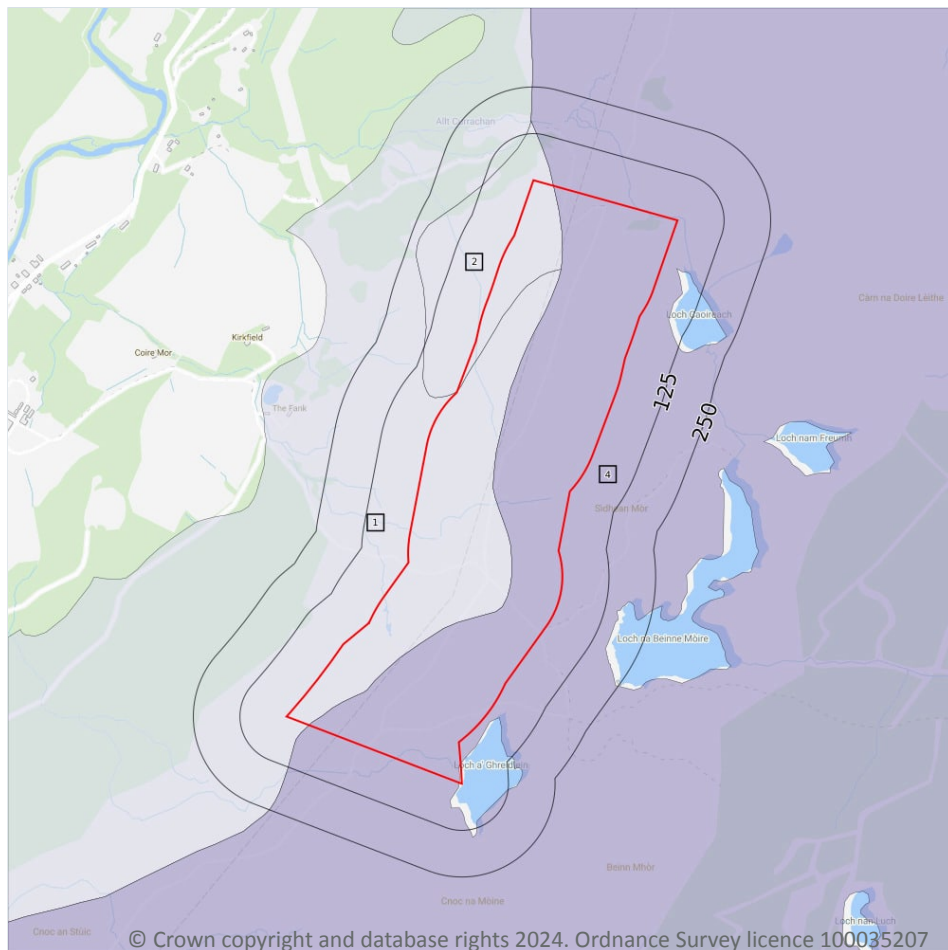
Parks and gardens assessed to be of particular interest and of special historic interest. The emphasis being on 'designed' landscapes, rather than on planting or botanical importance. Registration is a 'material consideration' in the planning process, meaning that planning authorities must consider the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

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





## 13 Agricultural designations



- Site Outline
- Search buffers in metres (m)
- Grade 1 - excellent quality
- Grade 2 - very good quality
- Grade 3 - good to moderate quality
- Grade 4 - good quality
- Grade 5 - moderate quality
- Grade 6 - poor quality
- Grade 7 - very poor quality

### 13.1 Agricultural Land Classification

Records within 250m

3

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 43](#) >

ID	Location	Classification	Description
1	On site	Grade 5.2	Land Suited only to Improved Grassland and Rough Grazings
2	On site	Grade 5.3	Land Suited only to Improved Grassland and Rough Grazings
4	On site	Grade 6.3	Land Suited only to Improved Grassland and Rough Grazings



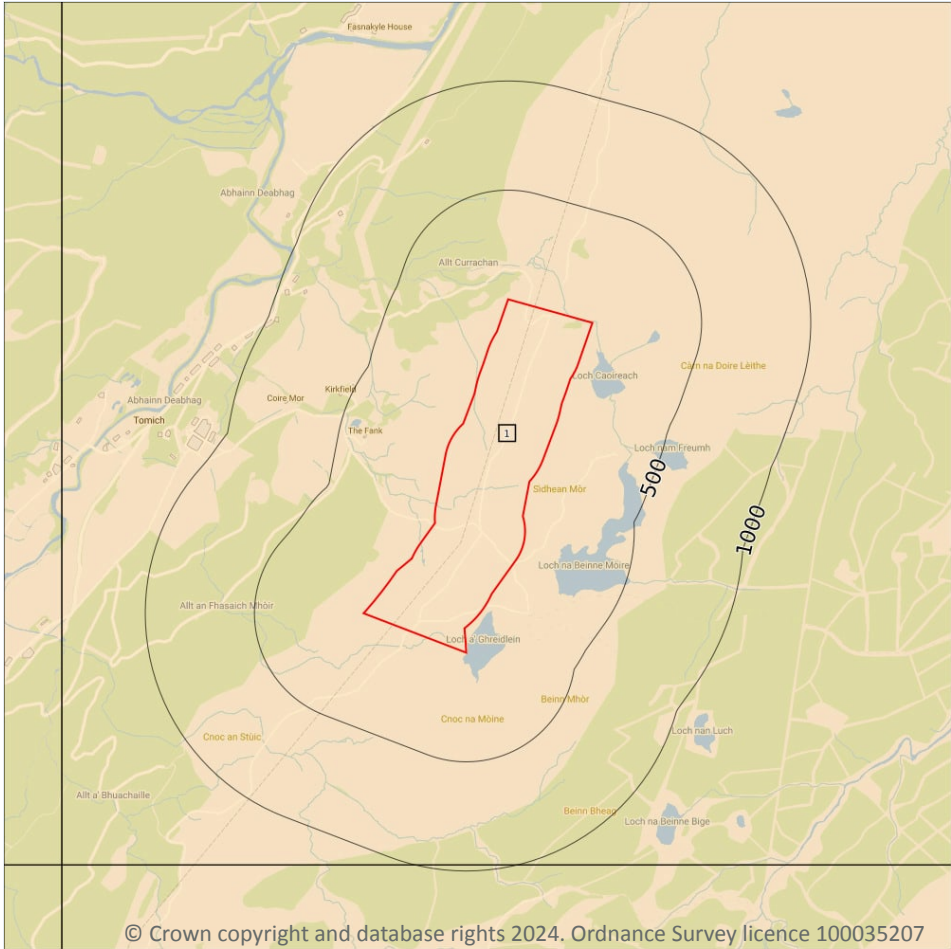


*This data is sourced from the James Hutton Institute.*





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 45](#) >

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	No coverage	No coverage	NH32NW

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

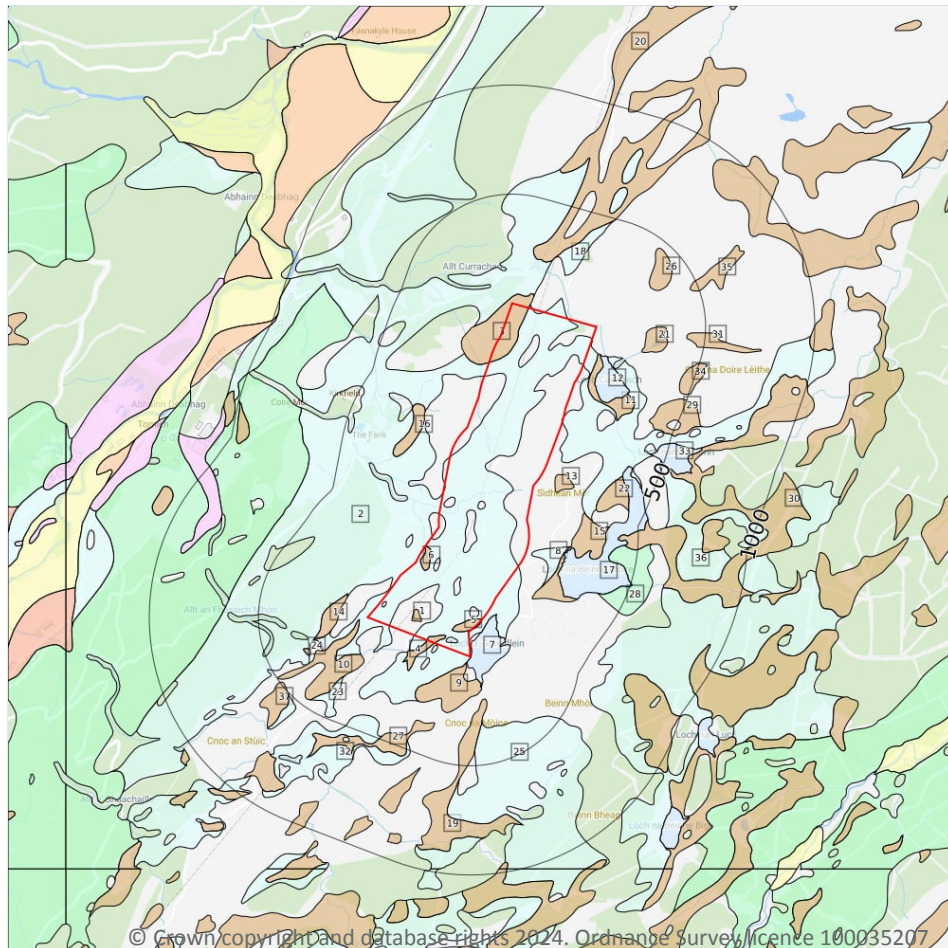
Details of made, worked, infilled, disturbed and landscaped ground at 1:10,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

*This data is sourced from the British Geological Survey.*





## Geology 1:10,000 scale - Superficial



- Site Outline
- Search buffers in metres (m)
- Landslip (10k)
- Superficial geology (10k)  
Please see table for more details.

### 14.3 Superficial geology (10k)

Records within 500m

37

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.

Features are displayed on the Geology 1:10,000 scale - Superficial map on [page 47](#) >

ID	Location	LEX Code	Description	Rock description
1	On site	PEAT-P	Peat - Peat	Peat
2	On site	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
3	On site	PEAT-P	Peat - Peat	Peat





ID	Location	LEX Code	Description	Rock description
4	On site	PEAT-P	Peat - Peat	Peat
5	On site	PEAT-P	Peat - Peat	Peat
6	On site	PEAT-P	Peat - Peat	Peat
7	4m S	SUPNM-UNKNOWN	Superficial Theme Not Mapped [for Digital Map Use Only] - Unknown/unclassified Entry	Unknown/unclassified Entry
8	27m SE	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
9	33m S	PEAT-P	Peat - Peat	Peat
10	40m SW	PEAT-P	Peat - Peat	Peat
11	47m NE	PEAT-P	Peat - Peat	Peat
12	61m NE	SUPNM-UNKNOWN	Superficial Theme Not Mapped [for Digital Map Use Only] - Unknown/unclassified Entry	Unknown/unclassified Entry
13	61m E	PEAT-P	Peat - Peat	Peat
14	126m SW	PEAT-P	Peat - Peat	Peat
15	134m S	PEAT-P	Peat - Peat	Peat
16	166m NW	PEAT-P	Peat - Peat	Peat
17	172m SE	SUPNM-UNKNOWN	Superficial Theme Not Mapped [for Digital Map Use Only] - Unknown/unclassified Entry	Unknown/unclassified Entry
18	188m N	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
19	204m S	PEAT-P	Peat - Peat	Peat
20	224m N	PEAT-P	Peat - Peat	Peat
21	230m NE	PEAT-P	Peat - Peat	Peat
22	285m E	PEAT-P	Peat - Peat	Peat
23	290m SW	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
24	301m SW	PEAT-P	Peat - Peat	Peat
25	303m S	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
26	306m NE	PEAT-P	Peat - Peat	Peat
27	342m S	PEAT-P	Peat - Peat	Peat
28	373m SE	HMGDD-XDSV	Hummocky (moundy) Glacial Deposits, Devensian - Diamicton, Sand And Gravel	Diamicton, Sand And Gravel [unlithified Deposits Coding Scheme - Extended]
29	381m E	PEAT-P	Peat - Peat	Peat





ID	Location	LEX Code	Description	Rock description
30	407m SE	PEAT-P	Peat - Peat	Peat
31	416m NE	PEAT-P	Peat - Peat	Peat
32	417m SW	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
33	428m E	SUPNM-UNKNOWN	Superficial Theme Not Mapped [for Digital Map Use Only] - Unknown/unclassified Entry	Unknown/unclassified Entry
34	444m NE	PEAT-P	Peat - Peat	Peat
35	463m NE	PEAT-P	Peat - Peat	Peat
36	485m E	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
37	488m SW	PEAT-P	Peat - Peat	Peat

*This data is sourced from the British Geological Survey.*

## 14.4 Landslip (10k)

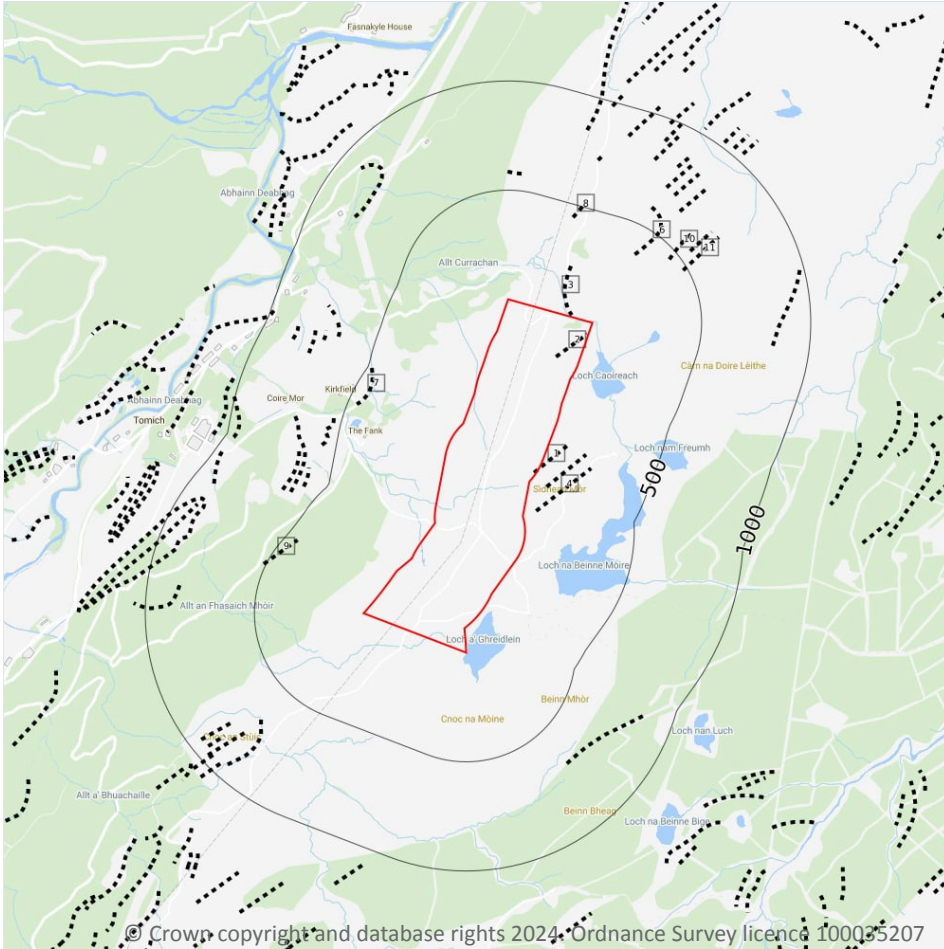
<b>Records within 500m</b>	<b>0</b>
----------------------------	----------

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



**— Site Outline**

**Search buffers in metres (m)**

**.... Bedrock faults and other linear features (10k)**

**Bedrock geology (10k)**  
Please see table for more details.

### 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

11

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.





Features are displayed on the Geology 1:10,000 scale - Bedrock map on [page 50 >](#)

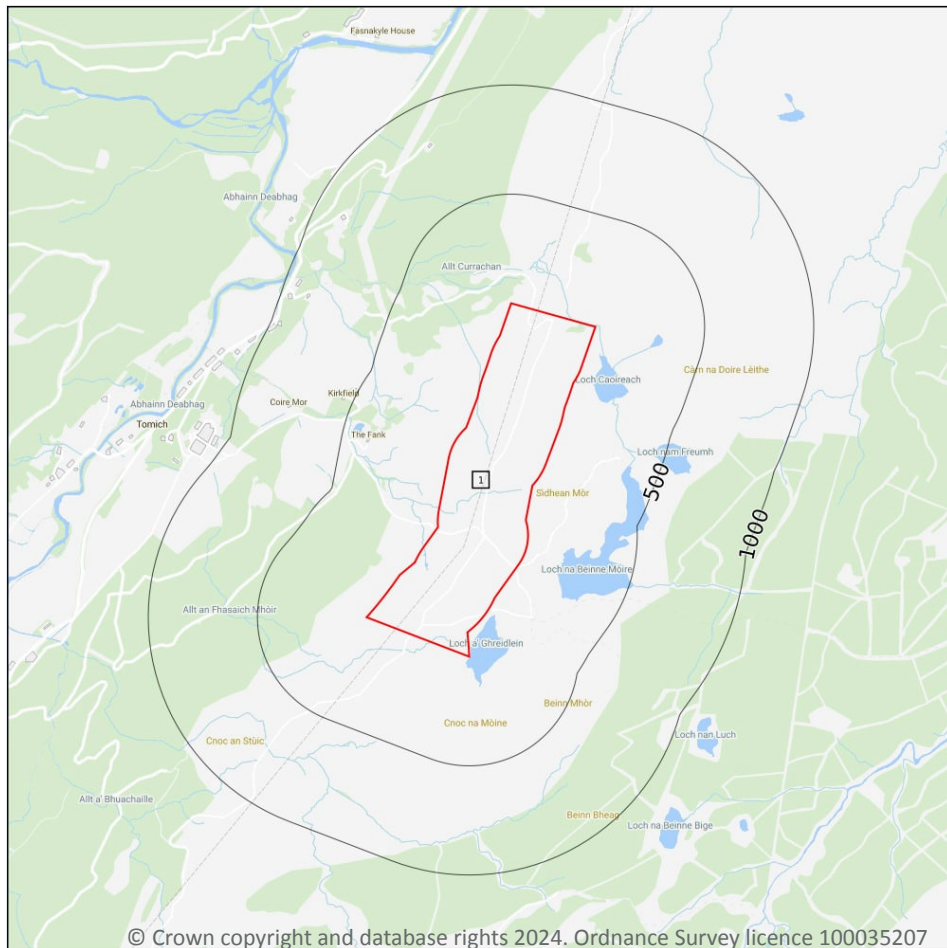
ID	Location	Category	Description
1	On site	LANDFORM	Axis of large-scale glacial flute
2	On site	LANDFORM	Axis of large-scale glacial flute
3	9m NE	LANDFORM	Marked concave break of slope, arrowheads denote uphill side
4	56m SE	LANDFORM	Axis of large-scale glacial flute
5	76m E	LANDFORM	Axis of large-scale glacial flute
6	349m NE	LANDFORM	Ice marginal glacial meltwater channel, single side right
7	432m NW	LANDFORM	Ice marginal glacial meltwater channel, single side right
8	441m N	LANDFORM	Axis of large-scale glacial flute
9	449m W	LANDFORM	Crestline of linear feature
10	457m NE	LANDFORM	Axis of large-scale glacial flute
11	480m NE	LANDFORM	Axis of large-scale glacial flute

*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.

Features are displayed on the Geology 1:50,000 scale - Availability map on [page 52](#) >

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	No coverage	Full	Full	No coverage	SC073w_Invermoriston_v4

This data is sourced from the British Geological Survey.





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

### 15.2 Artificial and made ground (50k)

Records within 500m

0

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.

*This data is sourced from the British Geological Survey.*

### 15.3 Artificial ground permeability (50k)

Records within 50m

0

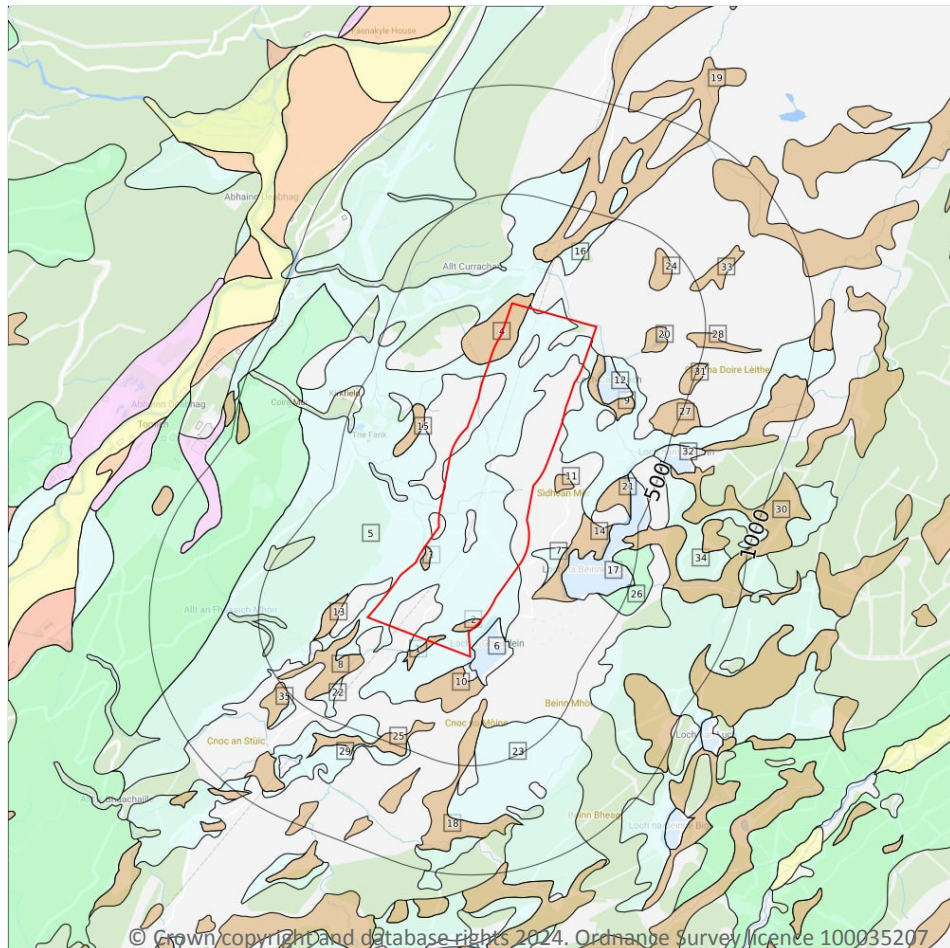
A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any artificial deposits (the zone between the land surface and the water table).

*This data is sourced from the British Geological Survey.*





## Geology 1:50,000 scale - 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

35

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 54](#) >

ID	Location	LEX Code	Description	Rock description
1	On site	PEAT-P	PEAT	PEAT
2	On site	PEAT-P	PEAT	PEAT
3	On site	PEAT-P	PEAT	PEAT
4	On site	PEAT-P	PEAT	PEAT





ID	Location	LEX Code	Description	Rock description
5	On site	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
6	8m S	SUPNM-UNKNOWN	SUPERFICIAL THEME NOT MAPPED [FOR DIGITAL MAP USE ONLY]	UNKNOWN/UNCLASSIFIED ENTRY
7	27m SE	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
8	40m SW	PEAT-P	PEAT	PEAT
9	48m NE	PEAT-P	PEAT	PEAT
10	54m S	PEAT-P	PEAT	PEAT
11	61m E	PEAT-P	PEAT	PEAT
12	78m NE	SUPNM-UNKNOWN	SUPERFICIAL THEME NOT MAPPED [FOR DIGITAL MAP USE ONLY]	UNKNOWN/UNCLASSIFIED ENTRY
13	126m SW	PEAT-P	PEAT	PEAT
14	134m S	PEAT-P	PEAT	PEAT
15	166m NW	PEAT-P	PEAT	PEAT
16	188m N	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
17	190m SE	SUPNM-UNKNOWN	SUPERFICIAL THEME NOT MAPPED [FOR DIGITAL MAP USE ONLY]	UNKNOWN/UNCLASSIFIED ENTRY
18	204m S	PEAT-P	PEAT	PEAT
19	223m N	PEAT-P	PEAT	PEAT
20	230m NE	PEAT-P	PEAT	PEAT
21	284m E	PEAT-P	PEAT	PEAT
22	290m SW	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
23	303m S	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
24	306m NE	PEAT-P	PEAT	PEAT
25	342m S	PEAT-P	PEAT	PEAT
26	375m SE	HMGDD-XDSV	HUMMOCKY (MOUNDY) GLACIAL DEPOSITS, DEVENSIAN	DIAMICTON, SAND AND GRAVEL
27	381m E	PEAT-P	PEAT	PEAT
28	416m NE	PEAT-P	PEAT	PEAT
29	417m SW	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
30	428m SE	PEAT-P	PEAT	PEAT





ID	Location	LEX Code	Description	Rock description
31	444m NE	PEAT-P	PEAT	PEAT
32	445m E	SUPNM-UNKNOWN	SUPERFICIAL THEME NOT MAPPED [FOR DIGITAL MAP USE ONLY]	UNKNOWN/UNCLASSIFIED ENTRY
33	463m NE	PEAT-P	PEAT	PEAT
34	485m E	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
35	489m SW	PEAT-P	PEAT	PEAT

*This data is sourced from the British Geological Survey.*

## 15.5 Superficial permeability (50k)

<b>Records within 50m</b>	<b>9</b>
---------------------------	----------

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
<b>On site</b>	<b>Mixed</b>	<b>Low</b>	<b>Very Low</b>
<b>On site</b>	<b>Mixed</b>	<b>Low</b>	<b>Very Low</b>
<b>On site</b>	<b>Mixed</b>	<b>Low</b>	<b>Very Low</b>
<b>On site</b>	<b>Mixed</b>	<b>Low</b>	<b>Very Low</b>
<b>On site</b>	<b>Mixed</b>	<b>High</b>	<b>Low</b>
8m S	Mixed	Very High	Very Low
27m SE	Mixed	High	Low
40m SW	Mixed	Low	Very Low
48m NE	Mixed	Low	Very Low

*This data is sourced from the British Geological Survey.*

## 15.6 Landslip (50k)

<b>Records within 500m</b>	<b>0</b>
----------------------------	----------

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

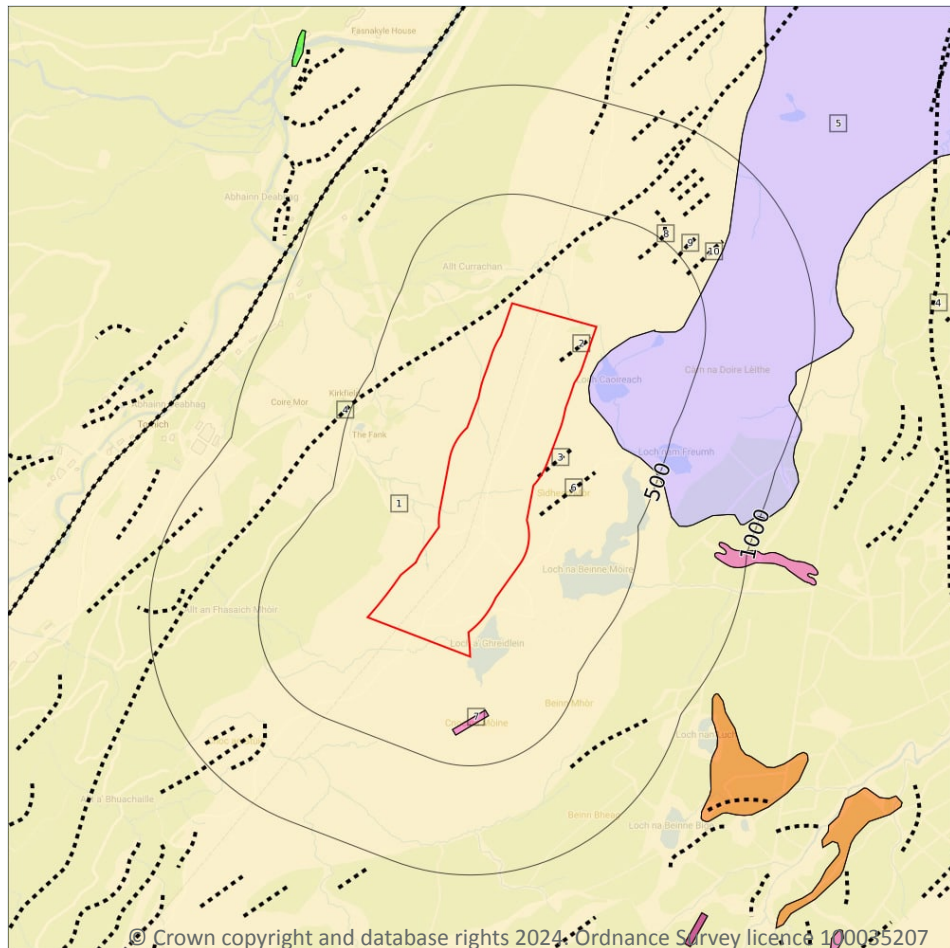
A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any landslip deposits (the zone between the land surface and the water table).

*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

3

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 58 >](#)

ID	Location	LEX Code	Description	Rock age
1	On site	TAPS-PSAMM	TARVIE PSAMMITE FORMATION - PSAMMITE	-
5	51m NE	TAPS-PSSP	TARVIE PSAMMITE FORMATION - PSAMMITE AND SEMIPELITE	-





ID	Location	LEX Code	Description	Rock age
7	255m S	GMOR-PGLG	GLEN MORISTON VEIN COMPLEX - PEGMATITE AND LEUCOGRANITE	-

*This data is sourced from the British Geological Survey.*

## 15.9 Bedrock permeability (50k)

<b>Records within 50m</b>	<b>1</b>
---------------------------	----------

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
<b>On site</b>	<b>Fracture</b>	<b>Low</b>	<b>Low</b>

*This data is sourced from the British Geological Survey.*

## 15.10 Bedrock faults and other linear features (50k)

<b>Records within 500m</b>	<b>7</b>
----------------------------	----------

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.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on [page 58 >](#)

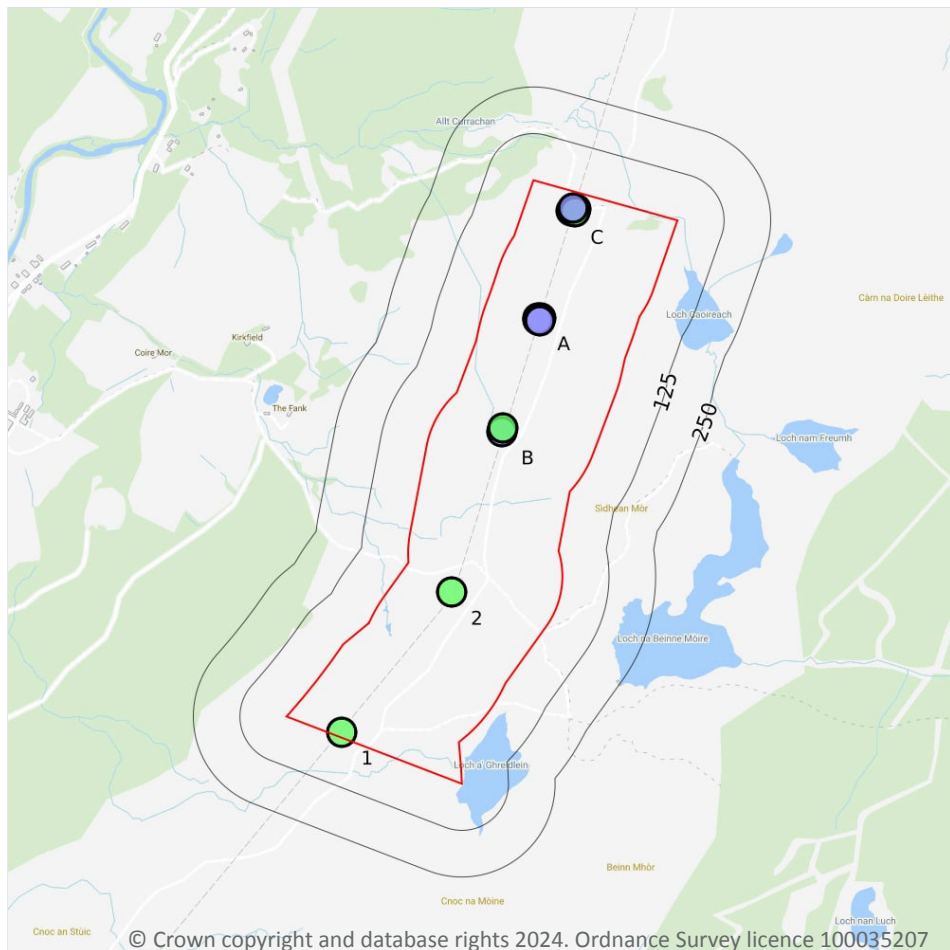
ID	Location	Category	Description
<b>2</b>	<b>On site</b>	<b>LANDFORM</b>	<b>Axis of large-scale glacial flute</b>
<b>3</b>	<b>On site</b>	<b>LANDFORM</b>	<b>Axis of large-scale glacial flute</b>
4	34m N	ALTERATION_AREA	Limit of pegmatitic rock veins
6	56m SE	LANDFORM	Axis of large-scale glacial flute
8	348m NE	LANDFORM	Ice-marginal glacial single-sided meltwater channel, right
9	457m NE	LANDFORM	Axis of large-scale glacial flute
10	480m NE	LANDFORM	Axis of large-scale glacial flute

*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

12

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 60](#) >

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	On site	231531 826111	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF72B-B	13.15	N	<a href="#">18949750</a> ↗
2	On site	231825 826486	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF71A-A	12.6	N	<a href="#">18949749</a> ↗





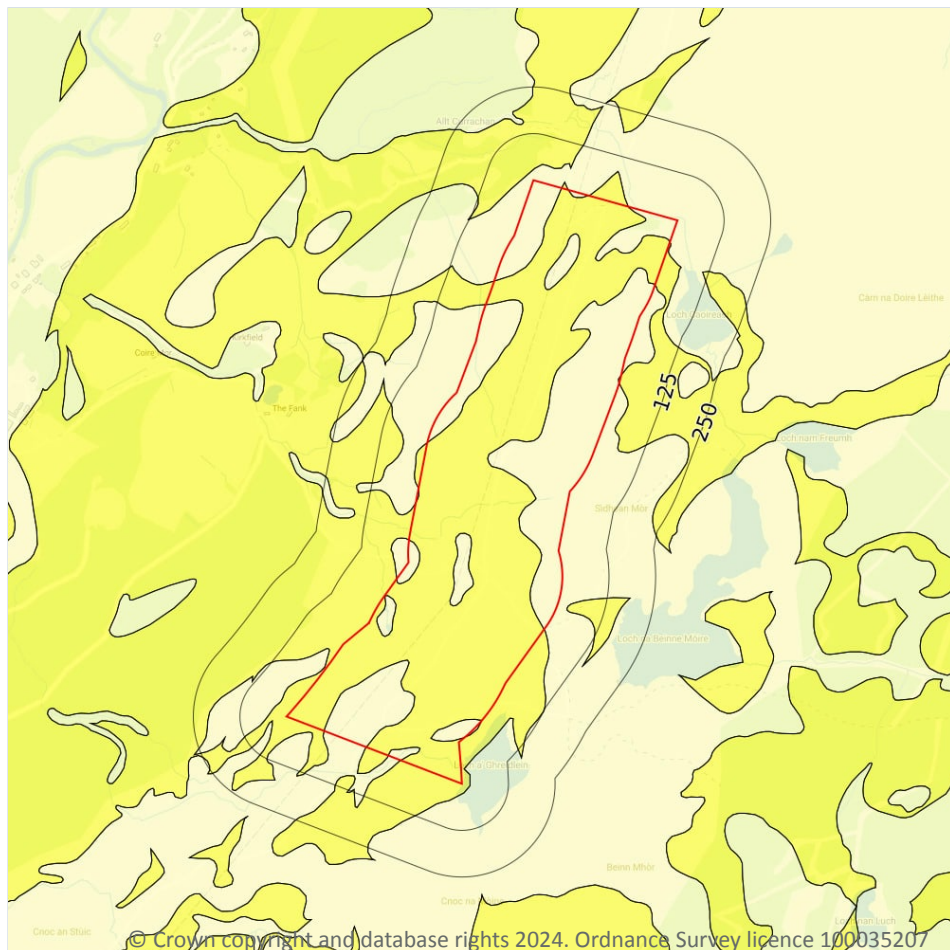
ID	Location	Grid reference	Name	Length	Confidential	Web link
A	On site	232057 827222	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF68B-A	13.15	N	<a href="#">18949741</a> ↗
A	On site	232064 827220	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF68B-B	6.0	N	<a href="#">18949742</a> ↗
A	On site	232055 827215	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF68B-D	6.0	N	<a href="#">18949744</a> ↗
A	On site	232062 827213	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF68B-C	6.0	N	<a href="#">18949743</a> ↗
B	On site	231960 826916	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF70A-D	6.0	N	<a href="#">18949746</a> ↗
B	On site	231963 826925	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF70A-A	13.6	N	<a href="#">18949745</a> ↗
C	On site	232146 827509	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF68A-D	6.0	N	<a href="#">18949740</a> ↗
C	On site	232157 827514	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF68A-B	6.0	N	<a href="#">18949737</a> ↗
C	On site	232154 827506	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF68A-C	14.25	N	<a href="#">18949738</a> ↗
C	On site	232149 827517	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF68A-A	6.0	N	<a href="#">18949736</a> ↗

*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

4

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 62 >](#)

Location	Hazard rating	Details
On site	Negligible	Ground conditions predominantly non-plastic.
On site	Very low	Ground conditions predominantly low plasticity.
5m SW	Negligible	Ground conditions predominantly non-plastic.





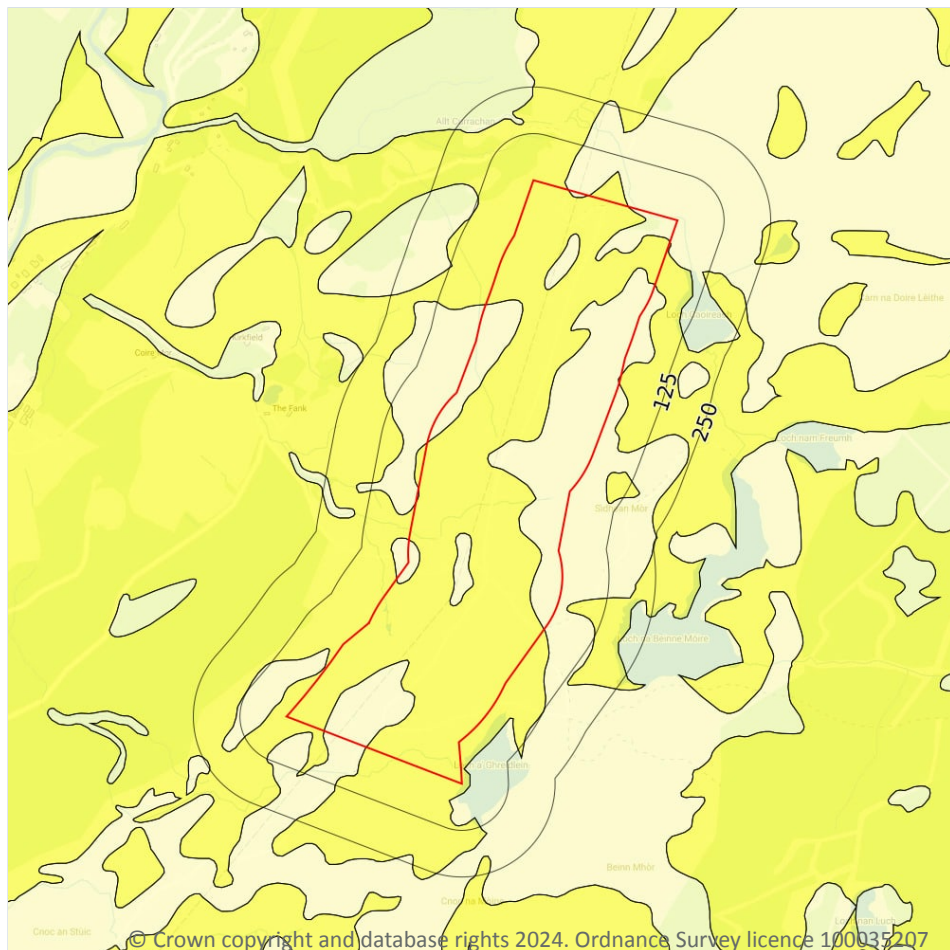
Location	Hazard rating	Details
27m SE	Very low	Ground conditions predominantly low plasticity.

*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

3

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 64](#) >

Location	Hazard rating	Details
On site	Negligible	Running sand conditions are not thought to occur whatever the position of the water table. No identified constraints on lands use due to running conditions.



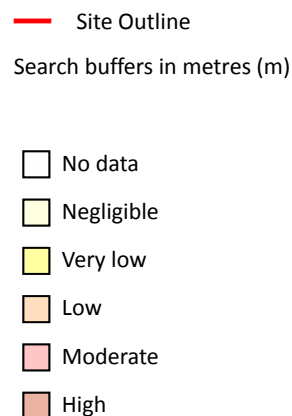
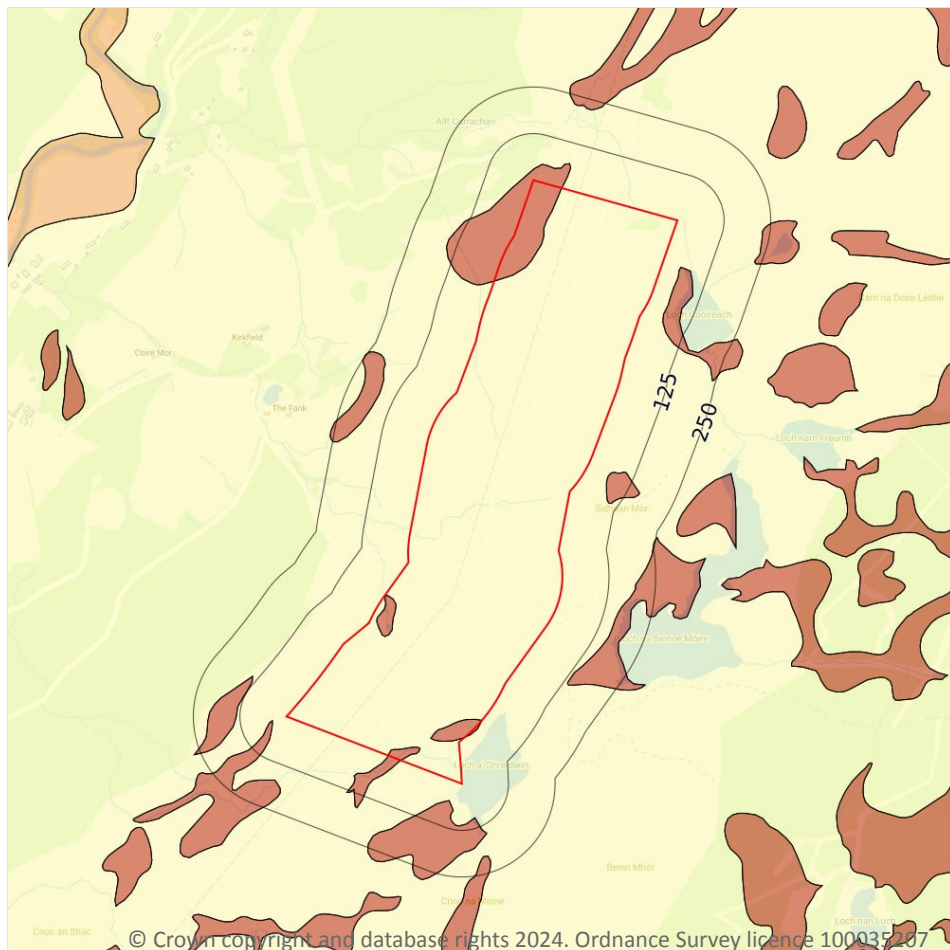
Location	Hazard rating	Details
On site	Very low	Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless water table rises rapidly.
5m SW	Negligible	Running sand conditions are not thought to occur whatever the position of the water table. No identified constraints on lands use due to running conditions.

*This data is sourced from the British Geological Survey.*





## Natural ground subsidence - Compressible deposits



### 17.3 Compressible deposits

#### Records within 50m

4

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 66 >](#)

Location	Hazard rating	Details
On site	Negligible	Compressible strata are not thought to occur.
On site	High	Highly compressible strata present. Significant constraint on land use depending on thickness.



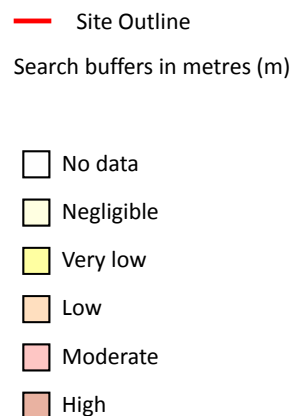
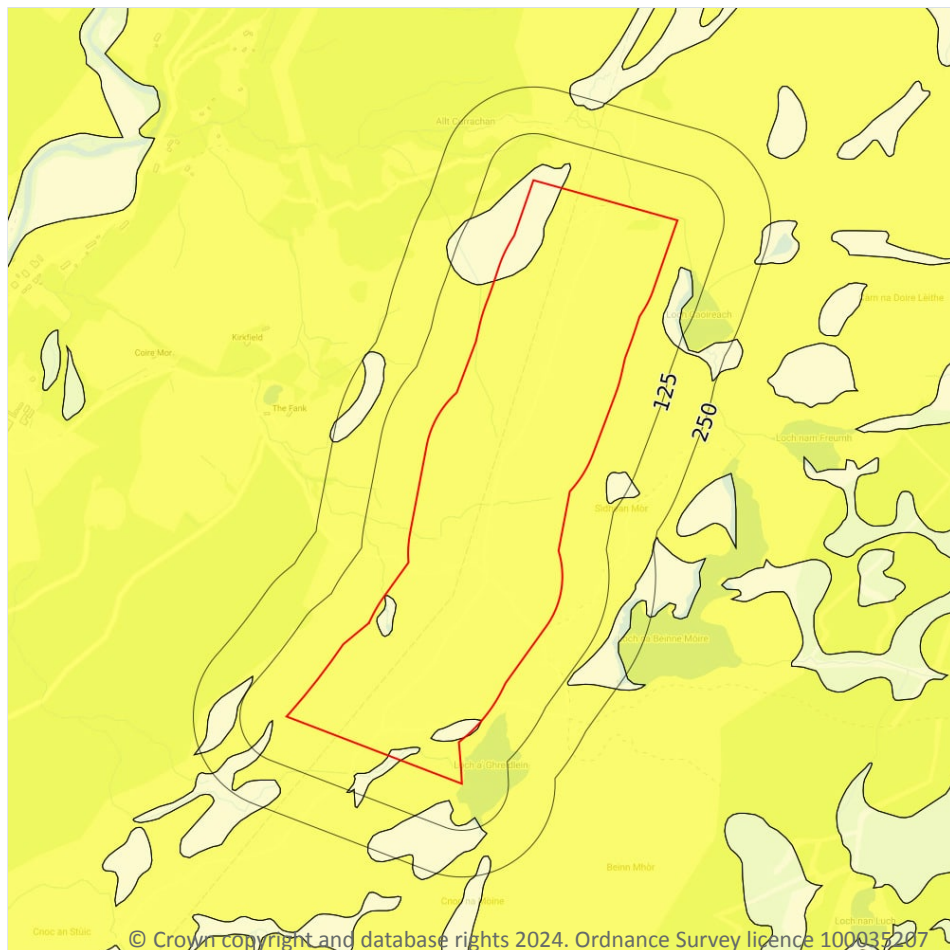


Location	Hazard rating	Details
40m SW	High	Highly compressible strata present. Significant constraint on land use depending on thickness.
48m NE	High	Highly compressible strata present. Significant constraint on land use depending on thickness.

*This data is sourced from the British Geological Survey.*



## Natural ground subsidence - Collapsible deposits



### 17.4 Collapsible deposits

#### Records within 50m

4

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 68](#) >

Location	Hazard rating	Details
On site	Negligible	Deposits with potential to collapse when loaded and saturated are believed not to be present.
On site	Very low	Deposits with potential to collapse when loaded and saturated are unlikely to be present.
40m SW	Negligible	Deposits with potential to collapse when loaded and saturated are believed not to be present.



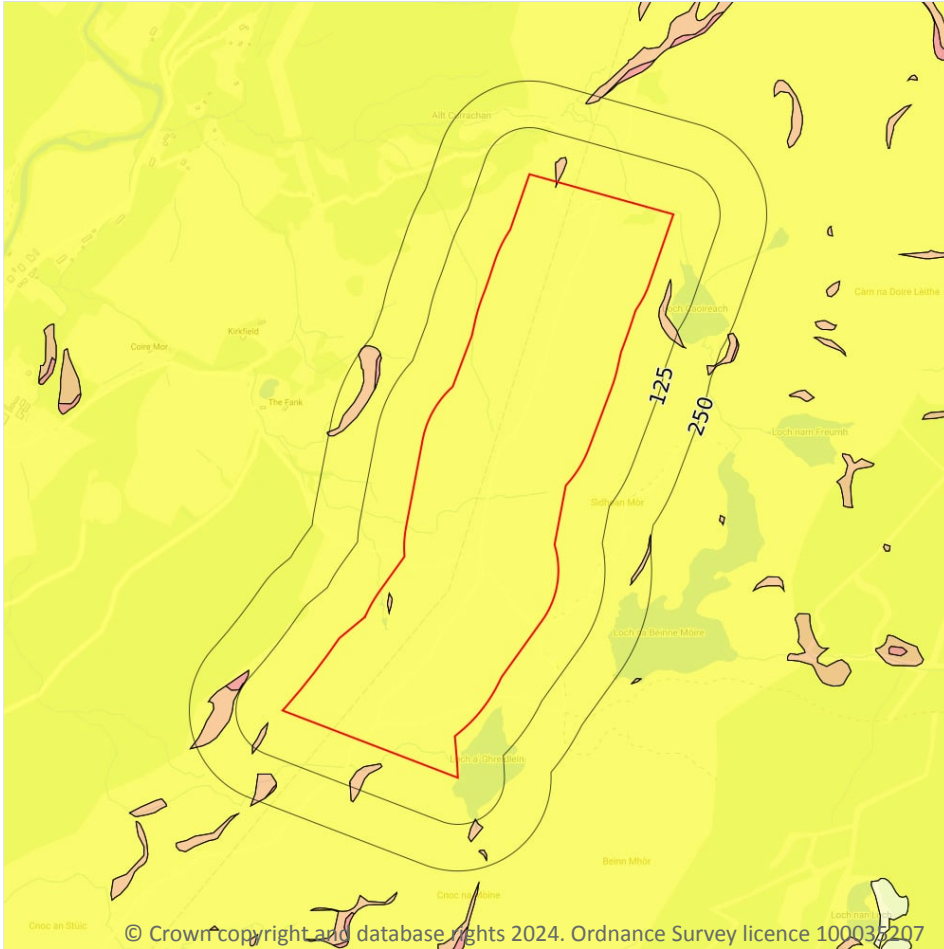


Location	Hazard rating	Details
48m NE	Negligible	Deposits with potential to collapse when loaded and saturated are believed not to be present.

*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 70 >](#)

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.





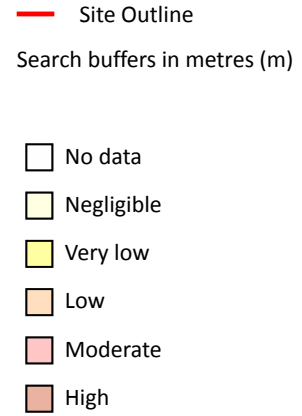
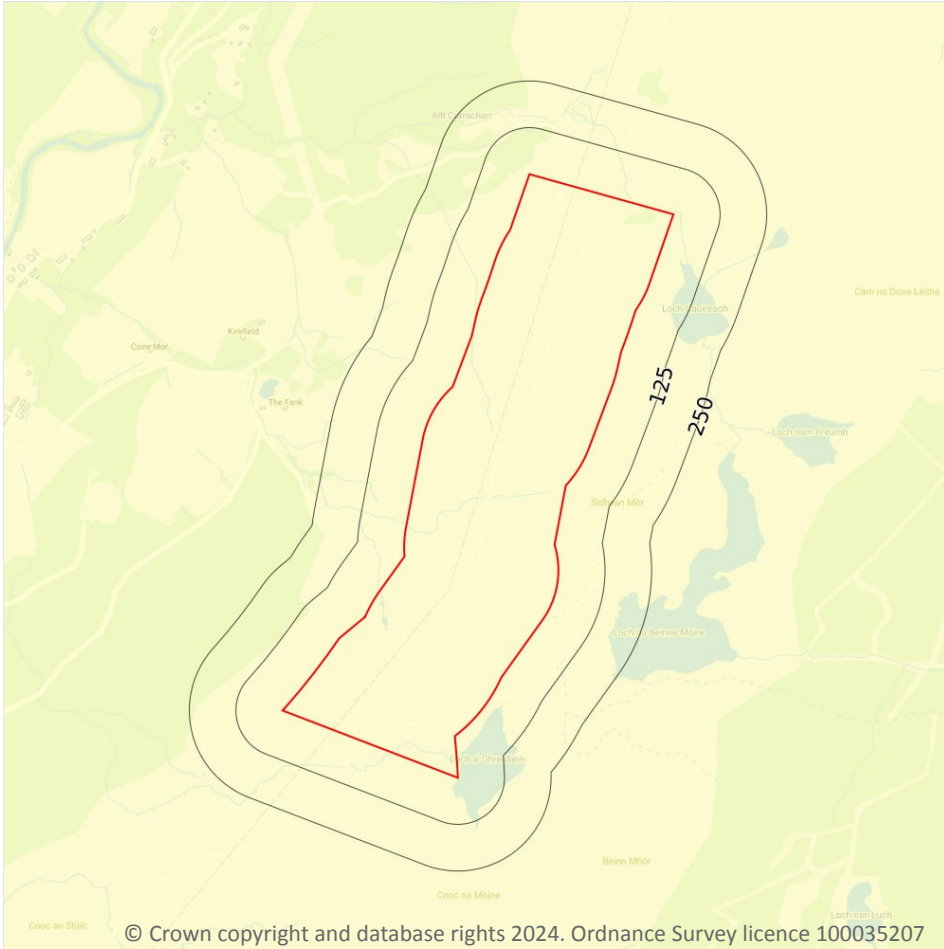
Location	Hazard rating	Details
On site	Low	<b>Slope instability problems may be present or anticipated. Site investigation should consider specifically the slope stability of the site.</b>
40m S	Low	Slope instability problems may be present or anticipated. Site investigation should consider specifically the slope stability of the site.
50m NE	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



### 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 72](#)

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.



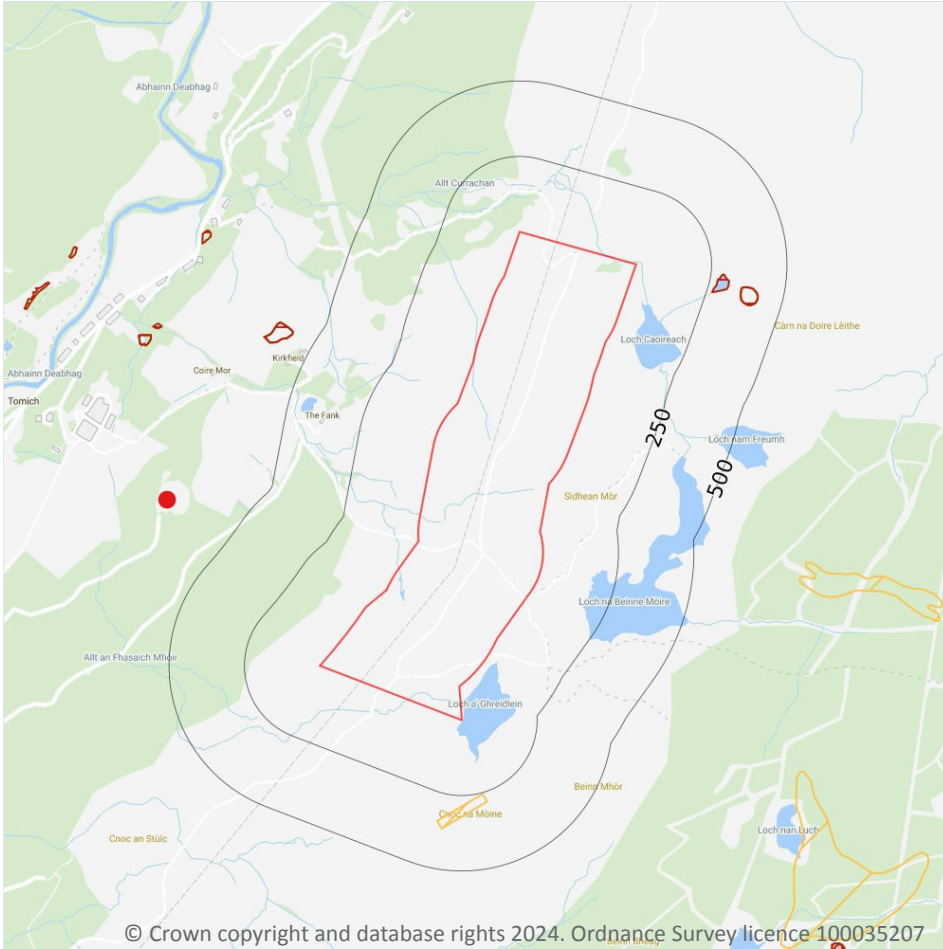


*This data is sourced from the British Geological Survey.*





## 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

0

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.

*This data is sourced from Ordnance Survey/Groundsure.*

## 18.3 Underground workings

Records within 1000m

0

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

*This 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

2

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 74](#) >



ID	Location	Name	Commodity	Class	Likelihood
1	255m S	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.
4	854m E	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.

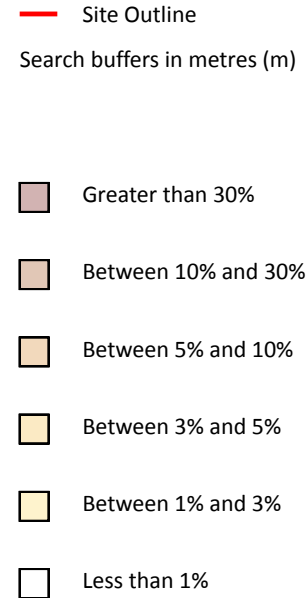
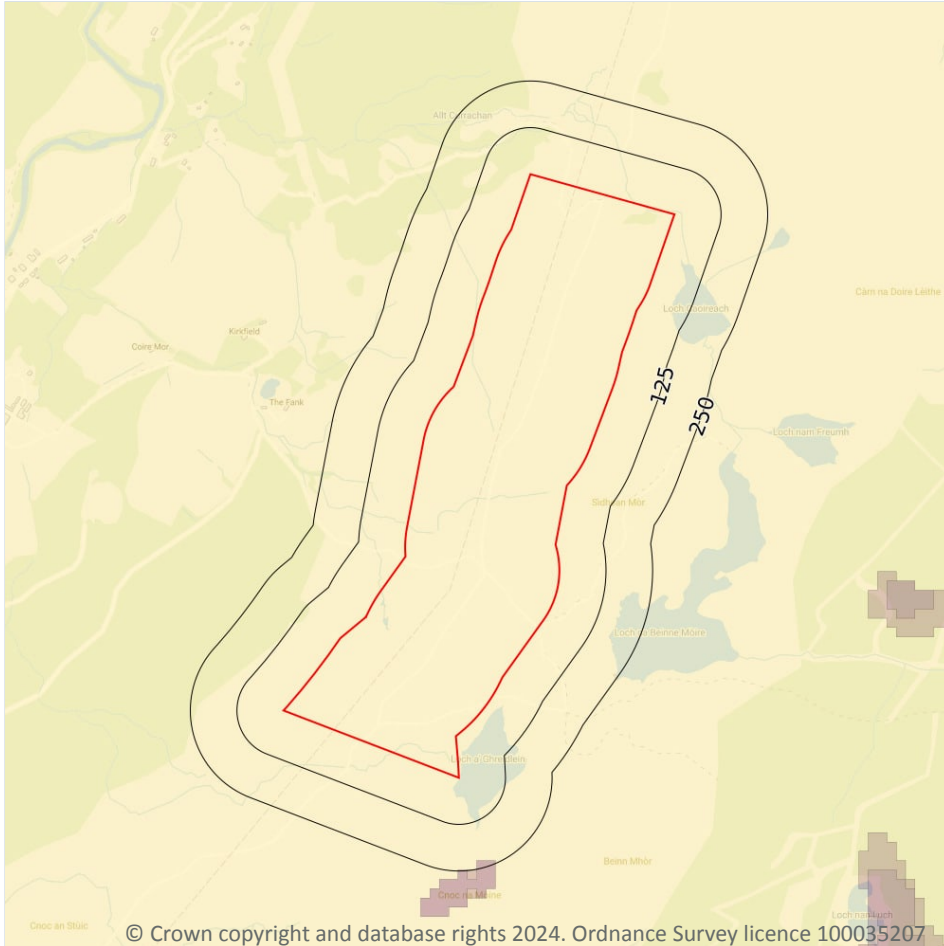
The database is not yet complete, and not all records have been verified. The absence of data does not mean that karst features are not present at a site. A reliability rating is included with each record.

*This data is sourced from the British Geological Survey.*





## 20 Radon



### 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 81](#) >

Location	Estimated properties affected	Radon Protection Measures required
On site	Between 1% and 3%	Basic





*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

26

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<sup>2</sup>. 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<sup>2</sup>; 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	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	60 - 90 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg





Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
1m SW	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
8m N	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
11m N	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
11m N	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
12m N	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
12m N	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 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<sup>2</sup>).

*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<sup>2</sup>.

*This data is sourced from the British Geological Survey.*



## 22 Railway infrastructure and projects

### 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	0
---------------------	---

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.

*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

0

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

*This data is sourced from OpenStreetMap.*

## 22.7 Railways

Records within 250m

0

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

*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.*





## Data providers

Groundsure works with respected data providers to bring you the most relevant and accurate information. To find out who they are and their areas of expertise see <https://www.groundsure.com/sources-reference> ↗.

## Terms and conditions

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## Scotland, Red Line Boundary

### Order Details

**Date:** 01/05/2024  
**Your ref:** Scotland, Red Line Boundary  
**Our Ref:** GSIP-2024-14714-18280\_E

### Site Details

**Location:** 233099 829193  
**Area:** 82.98 ha  
**Authority:** [The Highland Council](#) ↗



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**Summary of findings**

[p. 2 >](#)

**Aerial image**

[p. 7 >](#)

**OS MasterMap site plan**

N/A: >10ha

[Insight User Guide](#) ↗

Contact us with any questions at:

[info@groundsure.com](mailto:info@groundsure.com) ↗

01273 257 755



## Summary of findings

Page	Section	<u>Past land use</u> >	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">12</a> >	<a href="#">1.1</a> >	<a href="#">Historical industrial land uses</a> >	0	0	0	2	-
<a href="#">13</a> >	<a href="#">1.2</a> >	<a href="#">Historical tanks</a> >	0	0	0	2	-
13	1.3	Historical energy features	0	0	0	0	-
13	1.4	Historical petrol stations	0	0	0	0	-
14	1.5	Historical garages	0	0	0	0	-
14	1.6	Historical military land	0	0	0	0	-
Page	Section	<u>Past land use - un-grouped</u> >	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">15</a> >	<a href="#">2.1</a> >	<a href="#">Historical industrial land uses</a> >	0	0	0	2	-
<a href="#">16</a> >	<a href="#">2.2</a> >	<a href="#">Historical tanks</a> >	0	0	0	2	-
16	2.3	Historical energy features	0	0	0	0	-
16	2.4	Historical petrol stations	0	0	0	0	-
16	2.5	Historical garages	0	0	0	0	-
Page	Section	<u>Waste and landfill</u>	On site	0-50m	50-250m	250-500m	500-2000m
17	3.1	Active or recent landfill	0	0	0	0	-
17	3.2	Historical landfill (BGS records)	0	0	0	0	-
17	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
17	3.4	Licensed waste sites	0	0	0	0	-
17	3.5	Historical waste sites	0	0	0	0	-
Page	Section	<u>Current industrial land use</u> >	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">18</a> >	<a href="#">4.1</a> >	<a href="#">Recent industrial land uses</a> >	2	1	3	-	-
19	4.2	Current or recent petrol stations	0	0	0	0	-
19	4.3	Electricity cables	0	0	0	0	-
19	4.4	Gas pipelines	0	0	0	0	-
19	4.5	Sites determined as Contaminated Land	0	0	0	0	-
20	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
20	4.7	Regulated explosive sites	0	0	0	0	-





20	4.8	Hazardous substance storage/usage	0	0	0	0	-
20	4.9	Part A(1), IPPC and Historic IPC Authorisations	0	0	0	0	-
20	4.10	Part B Authorisations	0	0	0	0	-
21	4.11	Pollution inventory substances	0	0	0	0	-
21	4.12	Pollution inventory waste transfers	0	0	0	0	-
21	4.13	Pollution inventory radioactive waste	0	0	0	0	-
Page	Section	<a href="#">Hydrogeology &gt;</a>	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">22 &gt;</a>	<a href="#">5.1 &gt;</a>	<a href="#">Superficial aquifer &gt;</a>	Identified (within 500m)				
<a href="#">23 &gt;</a>	<a href="#">5.2 &gt;</a>	<a href="#">Bedrock aquifer &gt;</a>	Identified (within 500m)				
Page	Section	<a href="#">Hydrology &gt;</a>	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">25 &gt;</a>	<a href="#">6.1 &gt;</a>	<a href="#">Water Network (OS MasterMap) &gt;</a>	3	2	16	-	-
<a href="#">27 &gt;</a>	<a href="#">6.2 &gt;</a>	<a href="#">Surface water features &gt;</a>	1	1	11	-	-
Page	Section	River flooding					
28	7.1	River flooding	Negligible (within 50m)				
Page	Section	Coastal flooding					
29	8.1	Coastal flooding	Negligible (within 50m)				
Page	Section	<a href="#">Surface water flooding &gt;</a>					
<a href="#">30 &gt;</a>	<a href="#">9.1 &gt;</a>	<a href="#">Surface water flooding &gt;</a>	1 in 30 year, Greater than 1.0m (within 50m)				
Page	Section	<a href="#">Groundwater flooding &gt;</a>					
<a href="#">32 &gt;</a>	<a href="#">10.1 &gt;</a>	<a href="#">Groundwater flooding &gt;</a>	Low (within 50m)				
Page	Section	<a href="#">Environmental designations &gt;</a>	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">33 &gt;</a>	<a href="#">11.1 &gt;</a>	<a href="#">Sites of Special Scientific Interest (SSSI) &gt;</a>	0	0	0	0	1
34	11.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
<a href="#">34 &gt;</a>	<a href="#">11.3 &gt;</a>	<a href="#">Special Areas of Conservation (SAC) &gt;</a>	0	0	0	0	1
<a href="#">35 &gt;</a>	<a href="#">11.4 &gt;</a>	<a href="#">Special Protection Areas (SPA) &gt;</a>	0	0	0	0	1
<a href="#">35 &gt;</a>	<a href="#">11.5 &gt;</a>	<a href="#">National Nature Reserves (NNR) &gt;</a>	0	0	0	0	1
35	11.6	Local Nature Reserves (LNR)	0	0	0	0	0
<a href="#">36 &gt;</a>	<a href="#">11.7 &gt;</a>	<a href="#">Designated Ancient Woodland &gt;</a>	4	0	2	2	33
37	11.8	Biosphere Reserves	0	0	0	0	0





38	11.9	Forest Parks	0	0	0	0	0
38	11.10	Marine Conservation Zones	0	0	0	0	0
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
39	12.1	World Heritage Sites	0	0	0	-	-
39	12.2	Area of Outstanding Natural Beauty	0	0	0	-	-
39	12.3	National Parks	0	0	0	-	-
39	12.4	Listed Buildings	0	0	0	-	-
40	12.5	Conservation Areas	0	0	0	-	-
40	12.6	Scheduled Ancient Monuments	0	0	0	-	-
40	12.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations >	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">41</a> >	<a href="#">13.1</a> >	<a href="#">Agricultural Land Classification</a> >	Grade 5.3 (within 250m)				
Page	Section	Geology 1:10,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">42</a> >	<a href="#">14.1</a> >	<a href="#">10k Availability</a> >	Identified (within 500m)				
43	14.2	Artificial and made ground (10k)	0	0	0	0	-
<a href="#">44</a> >	<a href="#">14.3</a> >	<a href="#">Superficial geology (10k)</a> >	2	1	7	6	-
45	14.4	Landslip (10k)	0	0	0	0	-
46	14.5	Bedrock geology (10k)	0	0	0	0	-
<a href="#">46</a> >	<a href="#">14.6</a> >	<a href="#">Bedrock faults and other linear features (10k)</a> >	8	1	4	11	-
Page	Section	Geology 1:50,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">48</a> >	<a href="#">15.1</a> >	<a href="#">50k Availability</a> >	Identified (within 500m)				
49	15.2	Artificial and made ground (50k)	0	0	0	0	-
49	15.3	Artificial ground permeability (50k)	0	0	-	-	-
<a href="#">50</a> >	<a href="#">15.4</a> >	<a href="#">Superficial geology (50k)</a> >	2	0	4	4	-
<a href="#">51</a> >	<a href="#">15.5</a> >	<a href="#">Superficial permeability (50k)</a> >	Identified (within 50m)				
51	15.6	Landslip (50k)	0	0	0	0	-
52	15.7	Landslip permeability (50k)	None (within 50m)				
<a href="#">53</a> >	<a href="#">15.8</a> >	<a href="#">Bedrock geology (50k)</a> >	2	0	0	2	-
<a href="#">54</a> >	<a href="#">15.9</a> >	<a href="#">Bedrock permeability (50k)</a> >	Identified (within 50m)				





<a href="#">54 &gt;</a>	<a href="#">15.10 &gt;</a>	<a href="#">Bedrock faults and other linear features (50k) &gt;</a>	7	2	1	5	-
Page	Section	<a href="#">Boreholes &gt;</a>	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">56 &gt;</a>	<a href="#">16.1 &gt;</a>	<a href="#">BGS Boreholes &gt;</a>	6	4	8	-	-
Page	Section	<a href="#">Natural ground subsidence &gt;</a>					
<a href="#">58 &gt;</a>	<a href="#">17.1 &gt;</a>	<a href="#">Shrink swell clays &gt;</a>	Very low (within 50m)				
<a href="#">59 &gt;</a>	<a href="#">17.2 &gt;</a>	<a href="#">Running sands &gt;</a>	Very low (within 50m)				
<a href="#">61 &gt;</a>	<a href="#">17.3 &gt;</a>	<a href="#">Compressible deposits &gt;</a>	High (within 50m)				
<a href="#">62 &gt;</a>	<a href="#">17.4 &gt;</a>	<a href="#">Collapsible deposits &gt;</a>	Very low (within 50m)				
<a href="#">63 &gt;</a>	<a href="#">17.5 &gt;</a>	<a href="#">Landslides &gt;</a>	Moderate (within 50m)				
<a href="#">65 &gt;</a>	<a href="#">17.6 &gt;</a>	<a href="#">Ground dissolution of soluble rocks &gt;</a>	Negligible (within 50m)				
Page	Section	Mining and ground workings	On site	0-50m	50-250m	250-500m	500-2000m
67	18.1	BritPits	0	0	0	0	-
67	18.2	Surface ground workings	0	0	0	-	-
67	18.3	Underground workings	0	0	0	0	0
67	18.4	Underground mining extents	0	0	0	0	-
68	18.5	Historical Mineral Planning Areas	0	0	0	0	-
68	18.6	Non-coal mining	0	0	0	0	0
68	18.7	JPB mining areas	None (within 0m)				
68	18.8	The Coal Authority non-coal mining	0	0	0	0	-
69	18.9	Researched mining	0	0	0	0	-
69	18.10	Mining record office plans	0	0	0	0	-
69	18.11	BGS mine plans	0	0	0	0	-
69	18.12	Coal mining	None (within 0m)				
69	18.13	Brine areas	None (within 0m)				
70	18.14	Gypsum areas	None (within 0m)				
70	18.15	Tin mining	None (within 0m)				
70	18.16	Clay mining	None (within 0m)				
Page	Section	Ground cavities and sinkholes	On site	0-50m	50-250m	250-500m	500-2000m
71	19.1	Natural cavities	0	0	0	0	-





71	19.2	Mining cavities	0	0	0	0	0
71	19.3	Reported recent incidents	0	0	0	0	-
71	19.4	Historical incidents	0	0	0	0	-
72	19.5	National karst database	0	0	0	0	-
Page	Section	<a href="#">Radon &gt;</a>					
<a href="#">73 &gt;</a>	<a href="#">20.1 &gt;</a>	<a href="#">Radon &gt;</a>	Between 1% and 3% (within 0m)				
Page	Section	<a href="#">Soil chemistry &gt;</a>	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">75 &gt;</a>	<a href="#">21.1 &gt;</a>	<a href="#">BGS Estimated Background Soil Chemistry &gt;</a>	61	6	-	-	-
77	21.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
78	21.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	<a href="#">Railway infrastructure and projects</a>	On site	0-50m	50-250m	250-500m	500-2000m
79	22.1	Underground railways (London)	0	0	0	-	-
79	22.2	Underground railways (Non-London)	0	0	0	-	-
79	22.3	Railway tunnels	0	0	0	-	-
79	22.4	Historical railway and tunnel features	0	0	0	-	-
79	22.5	Royal Mail tunnels	0	0	0	-	-
80	22.6	Historical railways	0	0	0	-	-
80	22.7	Railways	0	0	0	-	-
80	22.8	Crossrail 1	0	0	0	0	-
80	22.9	Crossrail 2	0	0	0	0	-
80	22.10	HS2	0	0	0	0	-



## Recent aerial photograph



Aerial photography supplied by Getmapping PLC. © Copyright Getmapping PLC 2024. All Rights Reserved.

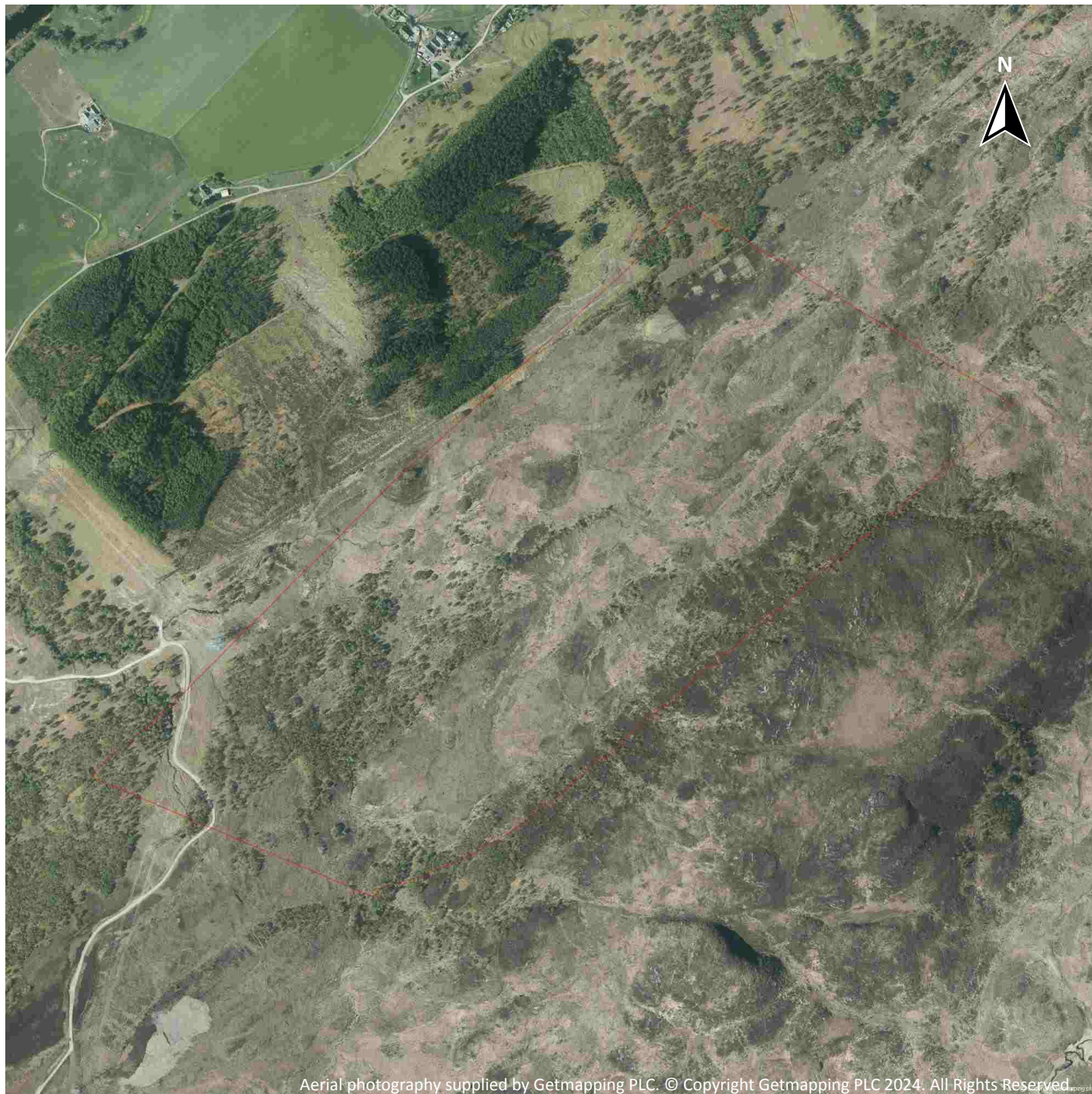
Capture Date: 29/05/2020

Site Area: 82.98ha





## Recent site history - 2017 aerial photograph



Capture Date: 06/05/2017

Site Area: 82.98ha



Contact us with any questions at:

[info@groundsure.com](mailto:info@groundsure.com)

01273 257 755

Date: 1 May 2024



## Recent site history - 2014 aerial photograph



Aerial photography supplied by Getmapping PLC. © Copyright Getmapping PLC 2024. All Rights Reserved

Capture Date: 26/08/2014

Site Area: 82.98ha





## Recent site history - 2013 aerial photograph



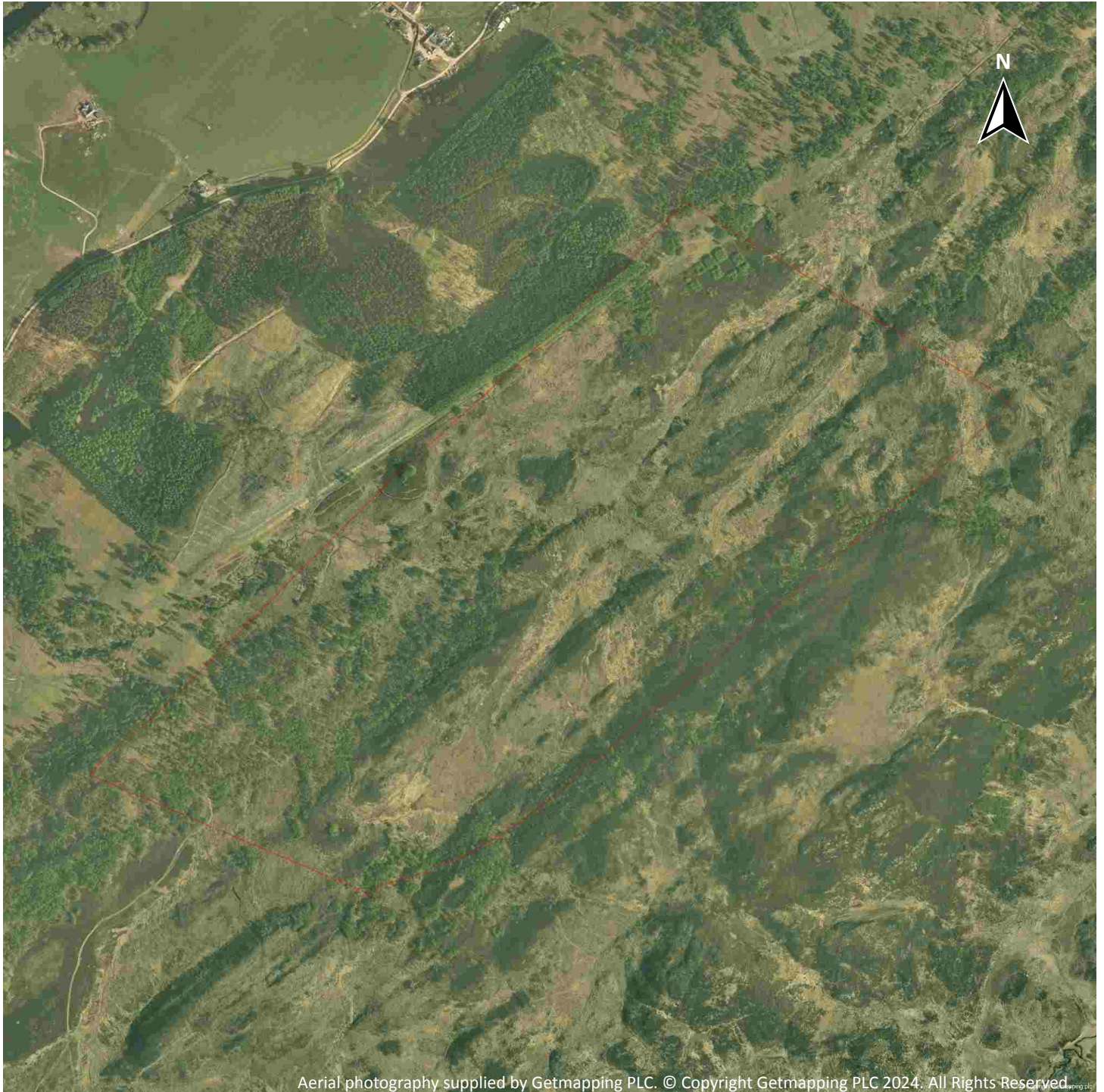
Capture Date: 19/07/2013

Site Area: 82.98ha





## Recent site history - 2008 aerial photograph



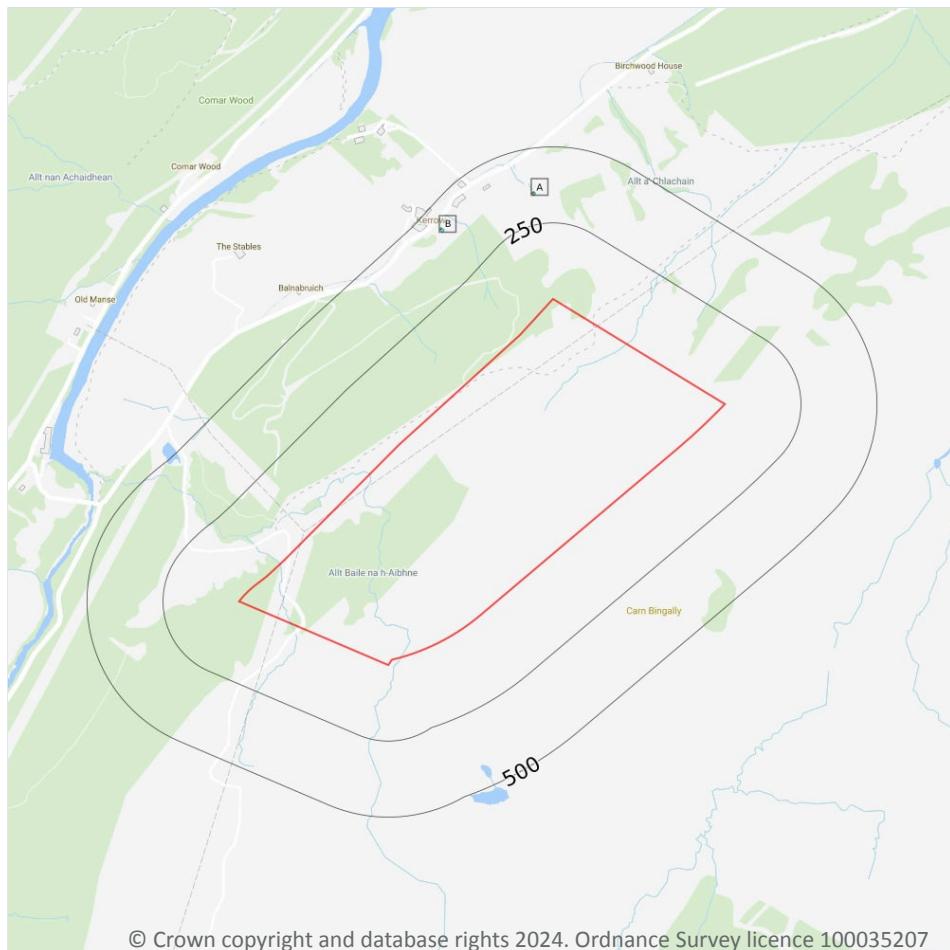
Capture Date: 09/05/2008

Site Area: 82.98ha





## 1 Past land use



- Site Outline
- Search buffers in metres (m)
- Historical industrial land uses
- Historical tanks

### 1.1 Historical industrial land uses

#### Records within 500m

2

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 12 >](#)

ID	Location	Land use	Dates present	Group ID
A	346m N	Unspecified Tank	1971	63431





ID	Location	Land use	Dates present	Group ID
B	417m N	Unspecified Tank	1971	63428

*This data is sourced from Ordnance Survey / Groundsure.*

## 1.2 Historical tanks

### Records within 500m

**2**

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 ungrouped 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 12 >](#)

ID	Location	Land use	Dates present	Group ID
A	351m N	Unspecified Tank	1969	6991
B	425m N	Unspecified Tank	1969	6992

*This data is sourced from Ordnance Survey / Groundsure.*

## 1.3 Historical energy features

### Records within 500m

**0**

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 ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

*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 ungrouped 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 ungrouped 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

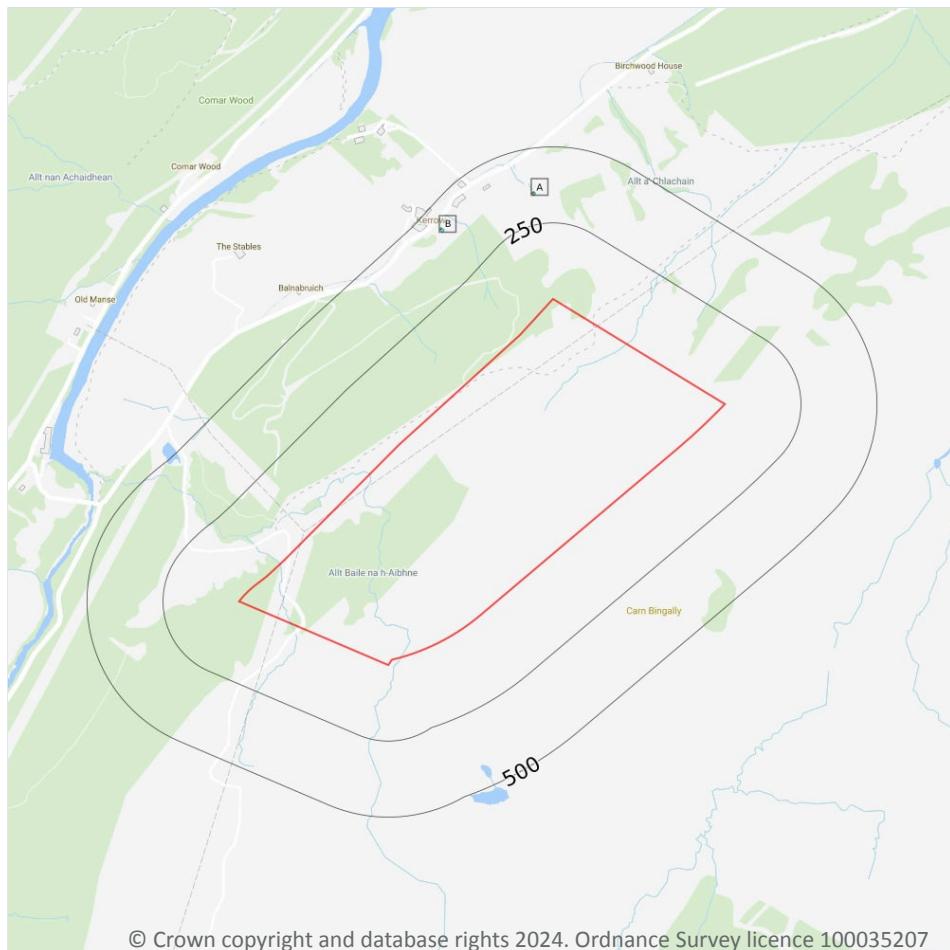
Areas of military land digitised from multiple sources including the National Archives, local records, MOD records and verified other sources, intelligently grouped into contiguous features.

*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

### 2.1 Historical industrial land uses

#### Records within 500m

2

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 15](#) >

ID	Location	Land Use	Date	Group ID
A	346m N	Unspecified Tank	1971	63431
B	417m N	Unspecified Tank	1971	63428

*This data is sourced from Ordnance Survey / Groundsure.*





## 2.2 Historical tanks

**Records within 500m****2**

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 15 >](#)

ID	Location	Land Use	Date	Group ID
A	351m N	Unspecified Tank	1969	6991
B	425m N	Unspecified Tank	1969	6992

*This data is sourced from Ordnance Survey / Groundsure.*

## 2.3 Historical energy features

**Records within 500m****0**

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'.

*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

### 3.1 Active or recent landfill

Records within 500m

0

Active or recently closed landfill sites under Scottish Environment Protection (SEPA) regulation.

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

### 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 Licensed waste sites

Records within 500m

0

Active or recently closed waste sites under Scottish Environment Protection Agency (SEPA) regulation.

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

### 3.5 Historical waste sites

Records within 500m

0

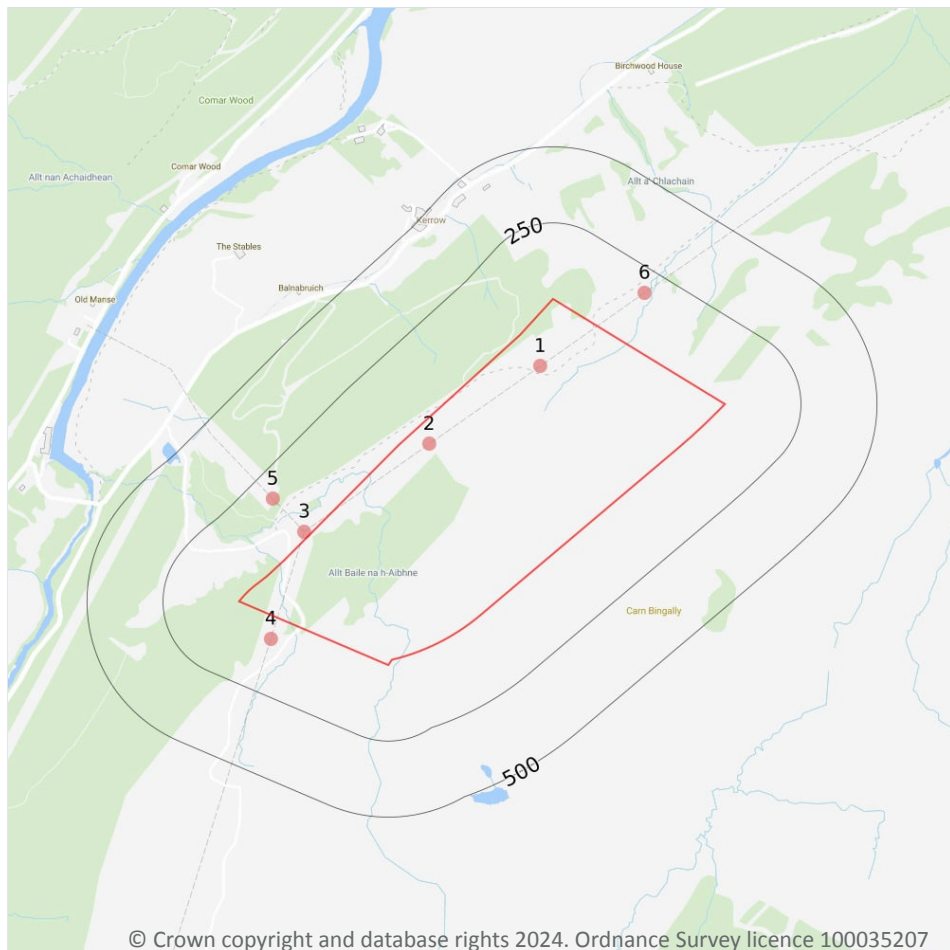
Waste site records derived from Local Authority planning records and high detail historical mapping.

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





## 4 Current industrial land use



- Site Outline
- Search buffers in metres (m)
- Recent industrial land uses

### 4.1 Recent industrial land uses

Records within 250m

6

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on [page 18](#) >

ID	Location	Company	Address	Activity	Category
1	On site	Pylon	Inverness, IV4	Electrical Features	Infrastructure and Facilities
2	On site	Pylon	Inverness, IV4	Electrical Features	Infrastructure and Facilities
3	20m W	Pylon	Inverness, IV4	Electrical Features	Infrastructure and Facilities





ID	Location	Company	Address	Activity	Category
4	72m SW	Pylon	Inverness, IV4	Electrical Features	Infrastructure and Facilities
5	169m W	Pylon	Inverness, IV4	Electrical Features	Infrastructure and Facilities
6	174m NE	Pylon	Inverness, IV4	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** 0

High voltage underground electricity transmission cables.

*This data is sourced from National Grid.*

## 4.4 Gas pipelines

**Records within 500m** 0

High pressure underground gas transmission pipelines.

*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****0**

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.

*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****0**

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.

*This data is sourced from Local Authority records.*

## 4.9 Part A(1), IPPC and Historic IPC Authorisations

**Records within 500m****0**

Records of Part A installations regulated for the release of substances to the environment.

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

## 4.10 Part B Authorisations

**Records within 500m****0**

Records of Part B installations regulated for the release of substances to the environment.

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





#### 4.11 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.*

#### 4.12 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.*

#### 4.13 Pollution inventory radioactive waste

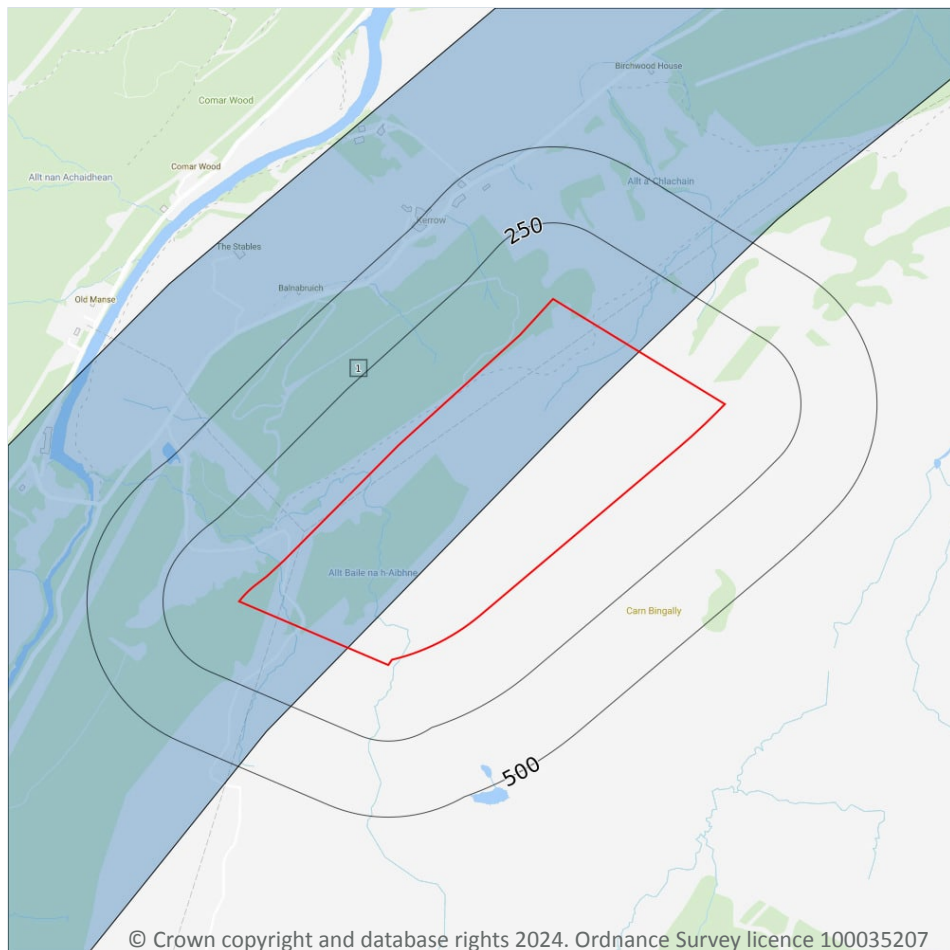
**Records within 500m****0**

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)
- Limited or local potential
  - Locally important - intergranular

### 5.1 Superficial aquifer

#### Records within 500m

1

Records of groundwater classification within superficial geology.

Features are displayed on the Hydrogeology map on [page 22 >](#)

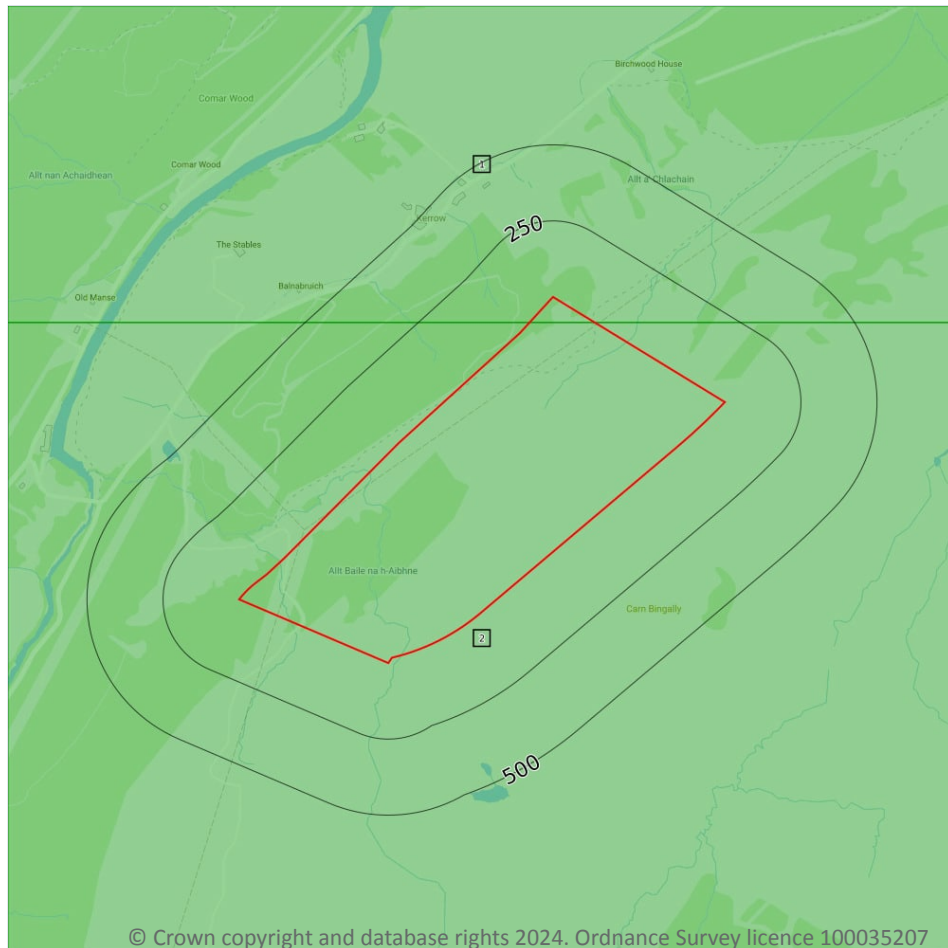
ID	Location	Description	Type	Rock description
1	On site	Concealed aquifers, aquifers of limited potential, regions without significant groundwater	Concealed aquifers; aquifers with limited or local potential	Quaternary Coastal and Fluvial Alluvium

*This data is sourced from the British Geological Survey.*





## Bedrock aquifer



- Site Outline**
- Search buffers in metres (m)**
- Highly productive - fissures/discontinuities
  - Highly productive - intergranular
  - Moderately productive - fissures/discontinuities
  - Moderately productive - intergranular
  - Low productive - fissures/discontinuities
  - Low productive - intergranular
  - No significant groundwater

### 5.2 Bedrock aquifer

#### Records within 500m

2

Records of groundwater classification within bedrock geology.

Features are displayed on the Bedrock aquifer map on [page 23](#) >

ID	Location	Description	Flow	Summary	Rock description
1	On site	Low productivity aquifer	Flow is virtually all through fractures and other discontinuities	Small amounts of groundwater in near surface weathered zone and secondary fractures.	LOCH EIL GROUP



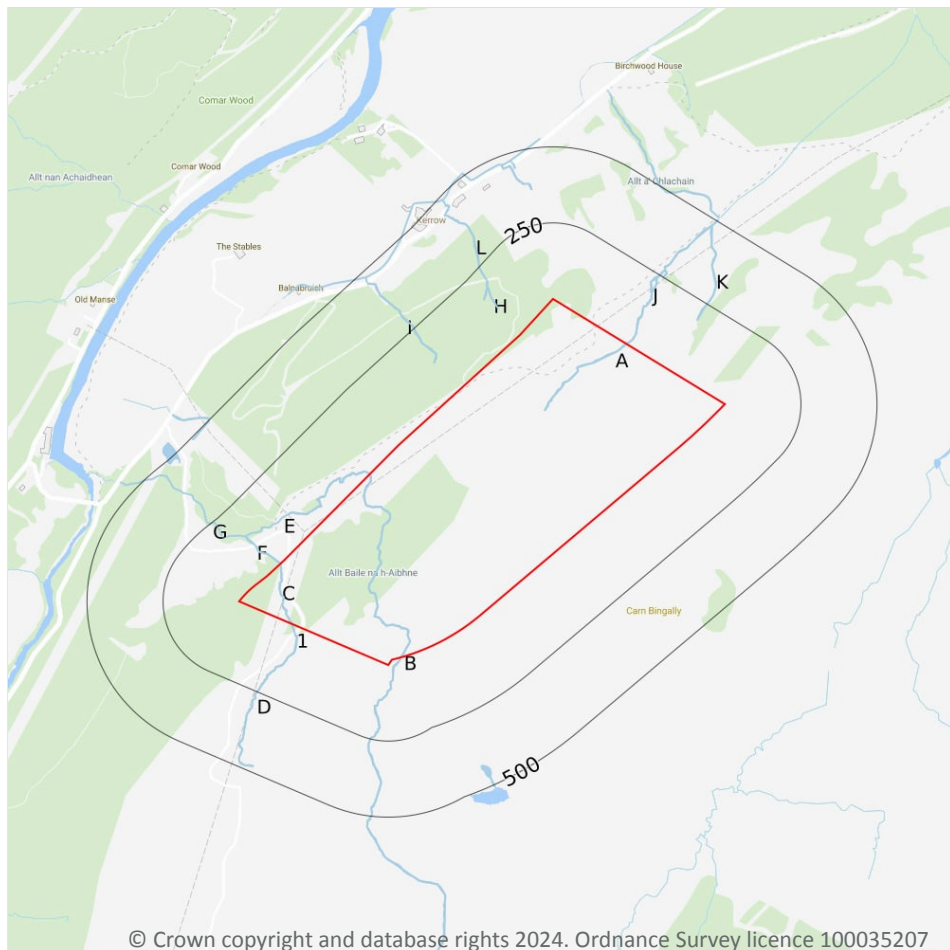


ID	Location	Description	Flow	Summary	Rock description
2	On site	Low productivity aquifer	Flow is virtually all through fractures and other discontinuities	Small amounts of groundwater in near surface weathered zone and secondary fractures.	LOCH EIL GROUP

*This data is sourced from the British Geological Survey.*



## 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)

### 6.1 Water Network (OS MasterMap)

Records within 250m

21

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 25](#) >

ID	Location	Type of water feature	Ground level	Permanence	Name
A	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt a' Chlachain





ID	Location	Type of water feature	Ground level	Permanence	Name
B	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt Baile na h-Aibhne
C	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
1	22m SW	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
D	25m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
E	97m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt Baile na h-Aibhne
F	99m W	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
E	104m W	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	Allt Baile na h-Aibhne
F	104m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
F	105m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt Baile na h-Aibhne
H	111m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
I	120m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
G	144m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt Baile na h-Aibhne
H	164m N	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
H	185m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
J	185m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
K	187m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
H	199m N	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
L	206m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
J	240m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt a' Chlachain
J	247m NE	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

**13**

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 25 >](#)

*This data is sourced from the Ordnance Survey.*





## 7 River flooding

### 7.1 River flooding

Highest risk on site

Negligible

Highest risk within 50m

Negligible

This is an assessment of flood risk for rivers in Scotland produced using modelled data, provided by Ambiental Risk Analytics. It also takes account of flood defence information provided by the Scottish Environment Protection Agency (SEPA). It shows the chance of flooding from rivers presented in the following categories:

- 1 in 30 year (3.33%)
- 1 in 100 year (1%)
- 1 in 250 year (0.4%)
- and 1 in 1,000 year (0.1%)

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	Negligible
1 in 250 year	Negligible
1 in 100 year	Negligible
1 in 30 year	Negligible

*This data is sourced from Ambiental Risk Analytics.*





## 8 Coastal flooding - Coastal flooding

### 8.1 Coastal flooding

Highest risk on site

Negligible

Highest risk within 50m

Negligible

This is an assessment of coastal flood risk in Scotland produced using modelled data, provided by Ambiental Risk Analytics. It also takes account of flood defence information provided by the Scottish Environment Protection Agency (SEPA). It shows the chance of coastal flooding presented in the following categories:

- 1 in 30 year (3.33%)
- 1 in 100 year (1%)
- 1 in 250 year (0.4%)
- and 1 in 1,000 year (0.1%)

The data shown on the map 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.

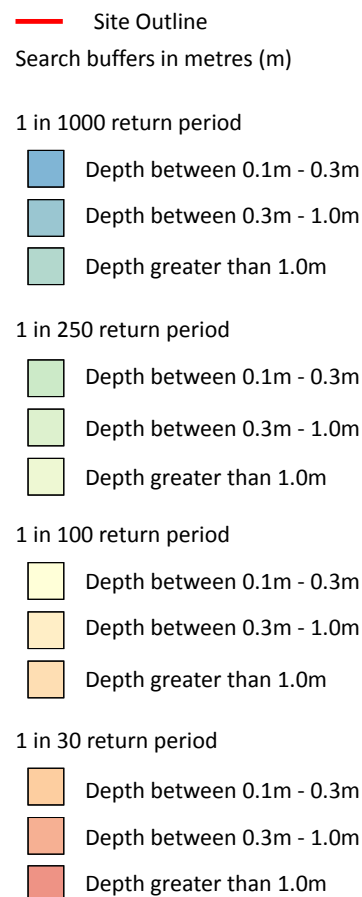
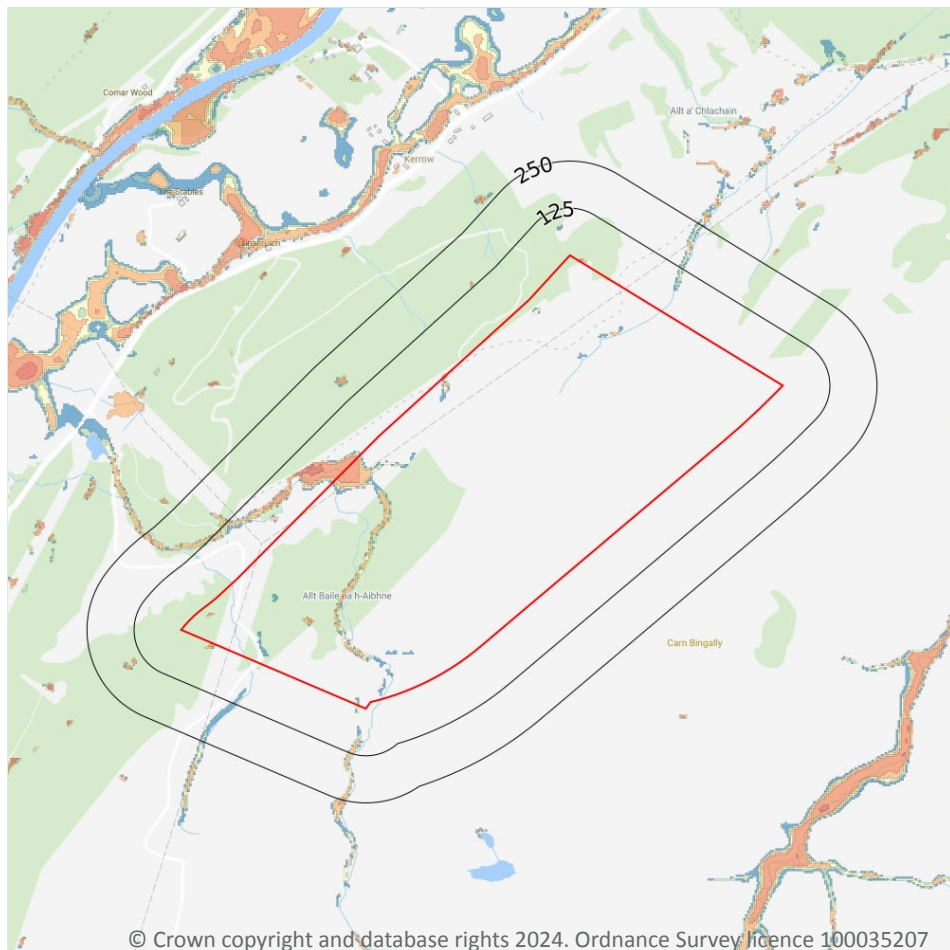
Return period	Maximum modelled depth
1 in 1000 year	Negligible
1 in 250 year	Negligible
1 in 100 year	Negligible
1 in 30 year	Negligible

*This data is sourced from Ambiental Risk Analytics.*





## 9 Surface water flooding



### 9.1 Surface water flooding

**Highest risk on site**

**1 in 30 year, Greater than 1.0m**

**Highest risk within 50m**

**1 in 30 year, Greater than 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 30 >](#)

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.

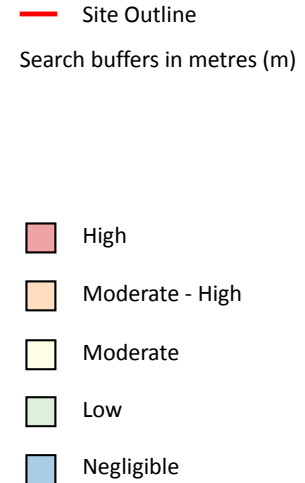
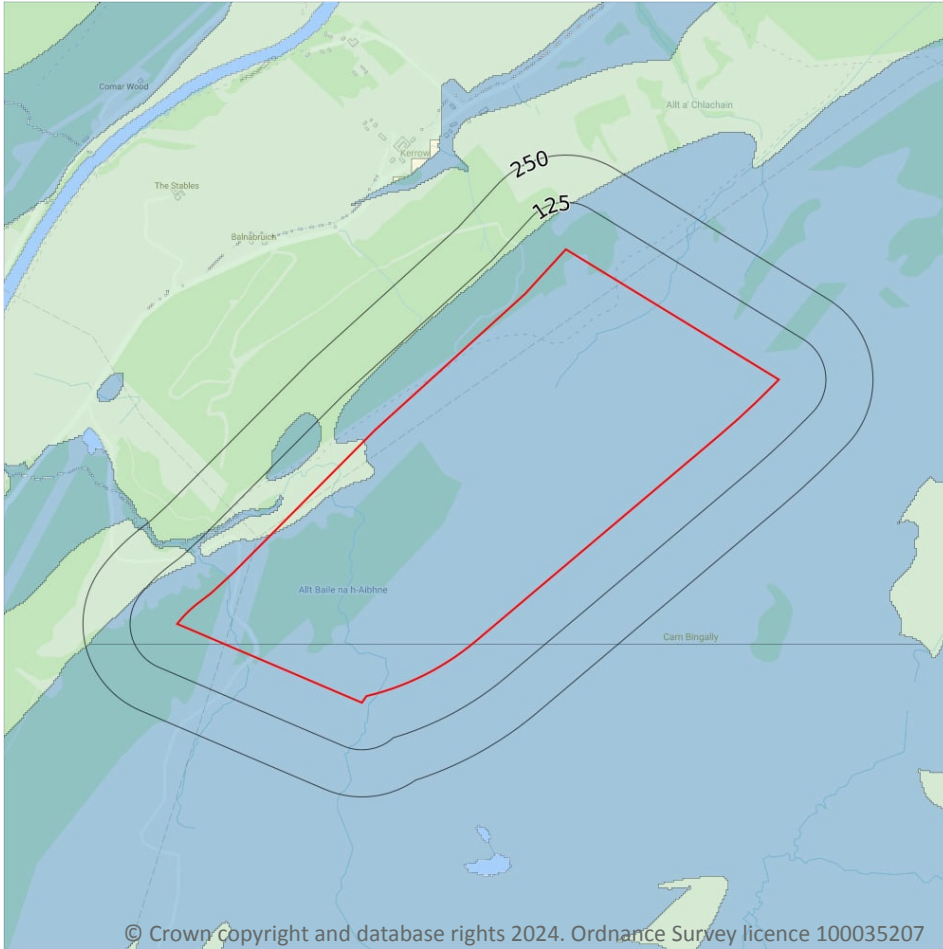
Return period	Maximum modelled depth
1 in 1000 year	Greater than 1.0m
1 in 250 year	Greater than 1.0m
1 in 100 year	Greater than 1.0m
1 in 30 year	Greater than 1.0m

*This data is sourced from Ambiantal Risk Analytics.*





## 10 Groundwater flooding



### 10.1 Groundwater flooding

Highest risk on site

Low

Highest risk within 50m

Low

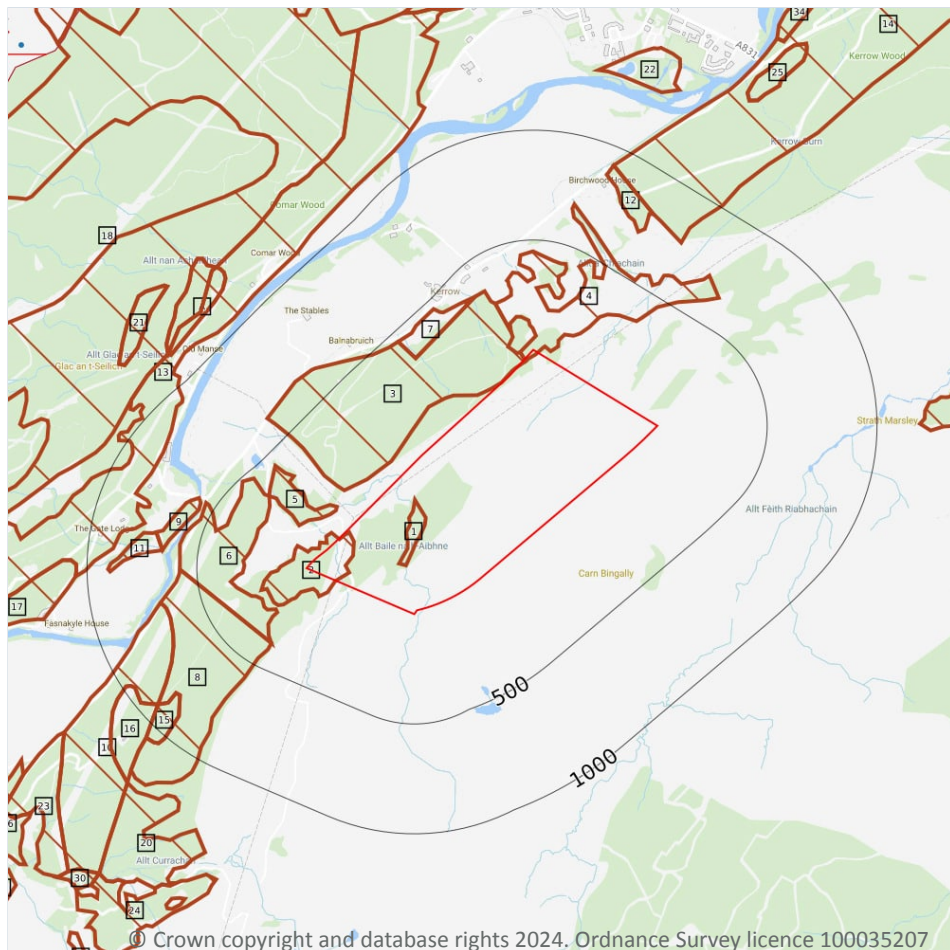
Groundwater flooding is caused by unusually high groundwater levels. It occurs when the water table rises above the ground surface or within underground structures such as basements or cellars. Groundwater flooding tends to exhibit a longer duration than surface water flooding, possibly lasting for weeks 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 32 >](#)

*This data is sourced from Ambient Risk Analytics.*



## 11 Environmental designations



- Site Outline
- Search buffers in metres (m)
- Sites of Special Scientific Interest (SSSI)
- + Special Areas of Conservation (SAC)
- Special Protection Areas (SPA)
- X National Nature Reserves (NNR)
- Designated Ancient Woodland

### 11.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m

1

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 33](#) >

ID	Location	Name	Data source
-	1687m SW	Glen Affric	Scottish Natural Heritage





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

## 11.2 Conserved wetland sites (Ramsar sites)

**Records within 2000m**

**0**

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.

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

## 11.3 Special Areas of Conservation (SAC)

**Records within 2000m**

**1**

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 33 >](#)

ID	Location	Name	Features of interest	Habitat description	Data source
-	1687m SW	Strathglass Complex	Clear-water lakes or lochs with aquatic vegetation and poor to moderate nutrient levels; Wet heathland with cross-leaved heath; Dry heaths; Alpine and subalpine heaths; Mountain willow scrub; Montane acid grasslands; Species-rich grassland with mat-grass in upland areas; Tall herb communities; Blanket bog; Very wet mires often identified by an unstable 'quaking' surface; Calcium-rich springwater-fed fens; High-altitude plant communities associated with areas of water seepage; Acidic scree; Plants in crevices in base-rich rocks; Plants in crevices on acid rocks; Caledonian forest; Bog woodland; Atlantic salmon; Otter.	Bogs, Marshes, Water fringed vegetation, Fens; Heath, Scrub, Maquis and Garrigue, Phygrana; Alpine and sub-Alpine grassland; Humid grassland, Mesophile grassland; Broad-leaved deciduous woodland; Dry grassland, Steppes; Inland water bodies (Standing water, Running water); Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites); Inland rocks, Scree, Sands, Permanent Snow and ice; Coniferous woodland	Scottish Natural Heritage

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





## 11.4 Special Protection Areas (SPA)

Records within 2000m	1
----------------------	---

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 33](#) >

ID	Location	Name	Species of interest	Habitat description	Data source
32	1697m W	Glen Affric to Strathconon	Golden eagle	Inland water bodies (Standing water, Running water); Mixed woodland; Humid grassland, Mesophile grassland; Bogs, Marshes, Water fringed vegetation, Fens; Coniferous woodland; Inland rocks, Scree, Sands, Permanent Snow and ice; Broad-leaved deciduous woodland; Heath, Scrub, Maquis and Garrigue, Phygrana; Improved grassland; Alpine and sub-Alpine grassland	Scottish Natural Heritage

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

## 11.5 National Nature Reserves (NNR)

Records within 2000m	1
----------------------	---

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.

Features are displayed on the Environmental designations map on [page 33](#) >

ID	Location	Name	Data source
31	1695m W	Glen Affric	Scottish Natural Heritage

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

## 11.6 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.*



## 11.7 Designated Ancient Woodland

### Records within 2000m

**41**

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.

Features are displayed on the Environmental designations map on [page 33 >](#)

ID	Location	Name	Woodland Type
1	On site	Unknown	Ancient (of semi-natural origin)
2	On site	Unknown	Ancient (of semi-natural origin)
3	On site	Unknown	Ancient (of semi-natural origin)
4	On site	Balnahoun Wood	Ancient (of semi-natural origin)
5	101m W	Unknown	Ancient (of semi-natural origin)
6	234m SW	Unknown	Ancient (of semi-natural origin)
7	346m NW	Balnahoun Wood	Ancient (of semi-natural origin)
8	366m SW	Unknown	Ancient (of semi-natural origin)
9	558m W	Unknown	Long-Established (of plantation origin)
10	660m SW	Unknown	Ancient (of semi-natural origin)
11	661m W	Unknown	Ancient (of semi-natural origin)
12	708m NE	Unknown	Ancient (of semi-natural origin)
13	765m W	Fasnakyle Wood	Ancient (of semi-natural origin)
14	768m NE	Unknown	Ancient (of semi-natural origin)
15	817m SW	Unknown	Ancient (of semi-natural origin)
16	918m SW	Unknown	Other (on Roy map)
17	1048m W	Fasnakyle Wood	Ancient (of semi-natural origin)
18	1076m W	Fasnakyle Wood	Ancient (of semi-natural origin)
A	1132m NW	Comar Wood	Ancient (of semi-natural origin)
A	1145m NW	Comar Wood	Ancient (of semi-natural origin)
19	1196m E	Unknown	Ancient (of semi-natural origin)
20	1202m SW	Balnahoun Wood	Ancient (of semi-natural origin)





ID	Location	Name	Woodland Type
21	1237m W	Unknown	Ancient (of semi-natural origin)
22	1307m N	Unknown	Other (on Roy map)
23	1332m SW	Unknown	Ancient (of semi-natural origin)
24	1462m SW	Balnahoun Wood	Ancient (of semi-natural origin)
25	1482m NE	Kerrow Wood	Ancient (of semi-natural origin)
26	1565m SW	Unknown	Ancient (of semi-natural origin)
-	1568m W	Fasnakyle Wood	Ancient (of semi-natural origin)
28	1591m N	Comar Wood	Ancient (of semi-natural origin)
-	1631m W	Dun Wood	Ancient (of semi-natural origin)
30	1680m SW	Unknown	Ancient (of semi-natural origin)
-	1758m N	Unknown	Other (on Roy map)
34	1789m NE	Unknown	Ancient (of semi-natural origin)
-	1800m E	Coille Na Ceardaich	Ancient (of semi-natural origin)
-	1822m N	Unknown	Other (on Roy map)
-	1846m E	Coille Na Ceardaich	Ancient (of semi-natural origin)
-	1902m E	Coille Na Ceardaich	Ancient (of semi-natural origin)
39	1931m SW	Unknown	Other (on Roy map)
40	1964m SW	Balnahoun Wood	Ancient (of semi-natural origin)
-	1991m NE	Unknown	Ancient (of semi-natural origin)

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

## 11.8 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.*





## 11.9 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.*

## 11.10 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.*





## 12 Visual and cultural designations

### 12.1 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.*

### 12.2 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.*

### 12.3 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.*

### 12.4 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.*

## 12.5 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.*

## 12.6 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.*

## 12.7 Registered Parks and Gardens

Records within 250m

0

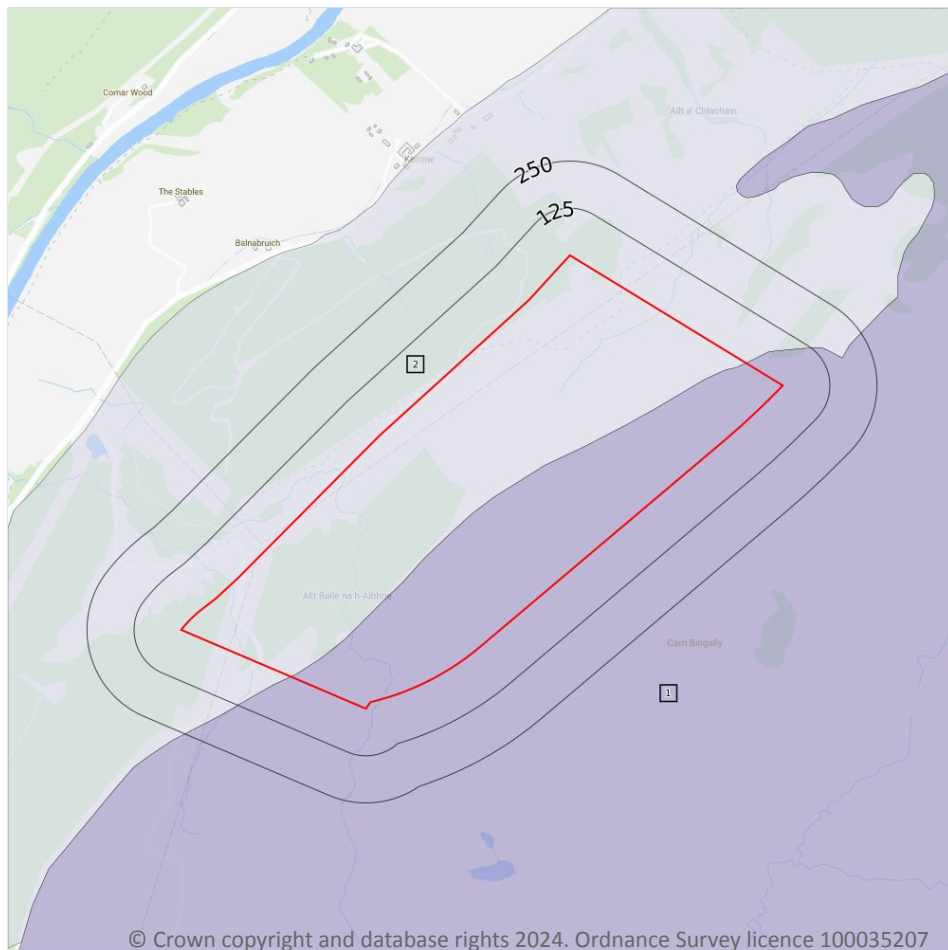
Parks and gardens assessed to be of particular interest and of special historic interest. The emphasis being on 'designed' landscapes, rather than on planting or botanical importance. Registration is a 'material consideration' in the planning process, meaning that planning authorities must consider the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

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





## 13 Agricultural designations



- Site Outline
- Search buffers in metres (m)
- Grade 1 - excellent quality
- Grade 2 - very good quality
- Grade 3 - good to moderate quality
- Grade 4 - good quality
- Grade 5 - moderate quality
- Grade 6 - poor quality
- Grade 7 - very poor quality

### 13.1 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 41](#) >

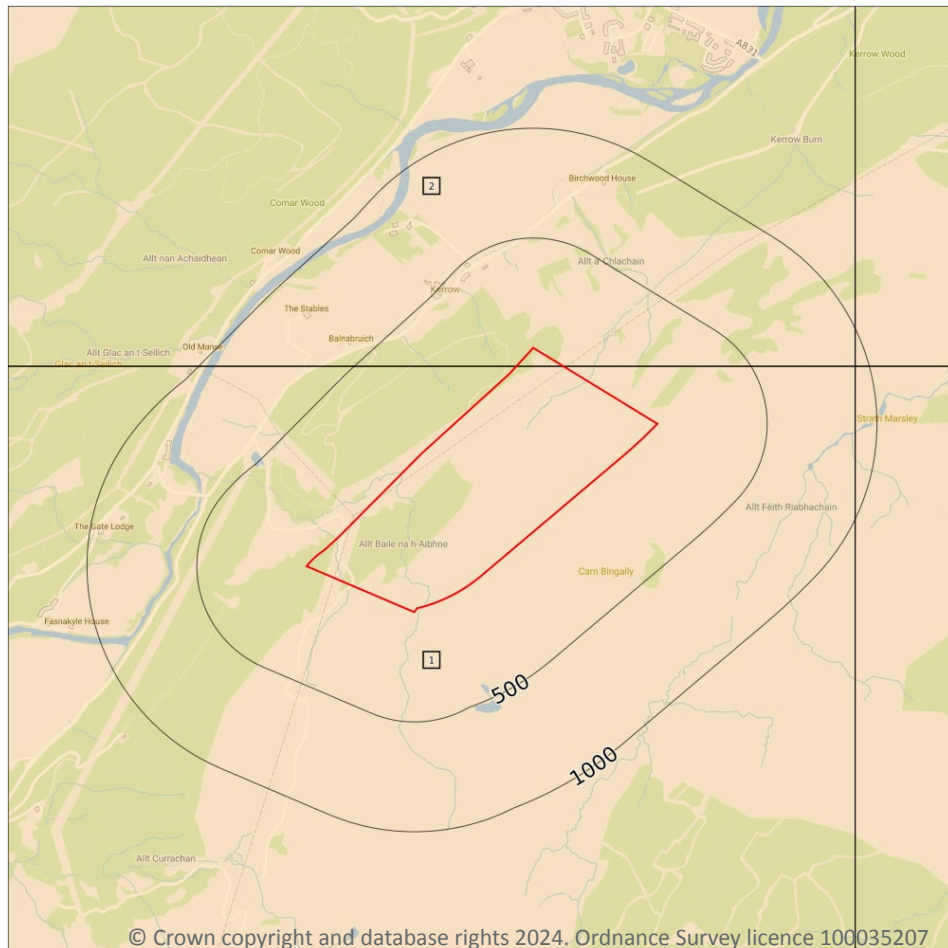
ID	Location	Classification	Description
1	On site	Grade 6.3	Land Suited only to Improved Grassland and Rough Grazings
2	On site	Grade 5.3	Land Suited only to Improved Grassland and Rough Grazings

*This data is sourced from the James Hutton Institute.*





## 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

2

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 42](#) >

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	No coverage	No coverage	NH32NW
2	On site	No coverage	Full	No coverage	No coverage	NH33SW

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

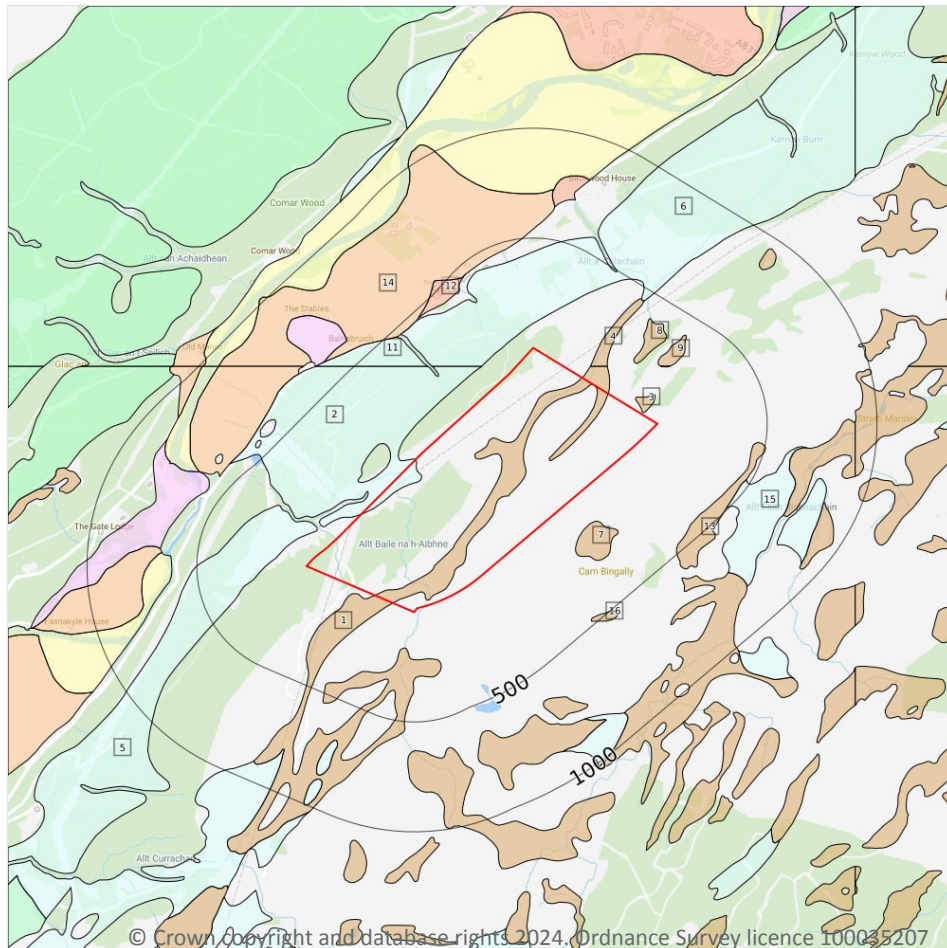
Details of made, worked, infilled, disturbed and landscaped ground at 1:10,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

*This data is sourced from the British Geological Survey.*





## Geology 1:10,000 scale - Superficial



**Site Outline**

Search buffers in metres (m)

**Landslip (10k)**

**Superficial geology (10k)**  
Please see table for more details.

### 14.3 Superficial geology (10k)

#### Records within 500m

16

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.

Features are displayed on the Geology 1:10,000 scale - Superficial map on [page 44](#) >

ID	Location	LEX Code	Description	Rock description
1	On site	PEAT-P	Peat - Peat	Peat
2	On site	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
3	9m NE	PEAT-P	Peat - Peat	Peat





ID	Location	LEX Code	Description	Rock description
4	64m NE	PEAT-P	Peat - Peat	Peat
5	89m W	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
6	90m N	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
7	138m E	PEAT-P	Peat - Peat	Peat
8	184m NE	PEAT-P	Peat - Peat	Peat
9	232m NE	PEAT-P	Peat - Peat	Peat
10	232m NE	PEAT-P	Peat - Peat	Peat
11	276m NW	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
12	423m N	ALF-XVSZC	Alluvial Fan Deposits - Gravel, Sand, Silt And Clay	Gravel, Sand, Silt And Clay
13	431m E	PEAT-P	Peat - Peat	Peat
14	453m N	RTDU-XSV	River Terrace Deposits (undifferentiated) - Sand And Gravel	Sand And Gravel
15	471m E	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
16	474m SE	PEAT-P	Peat - Peat	Peat

*This data is sourced from the British Geological Survey.*

## 14.4 Landslip (10k)

**Records within 500m**

**0**

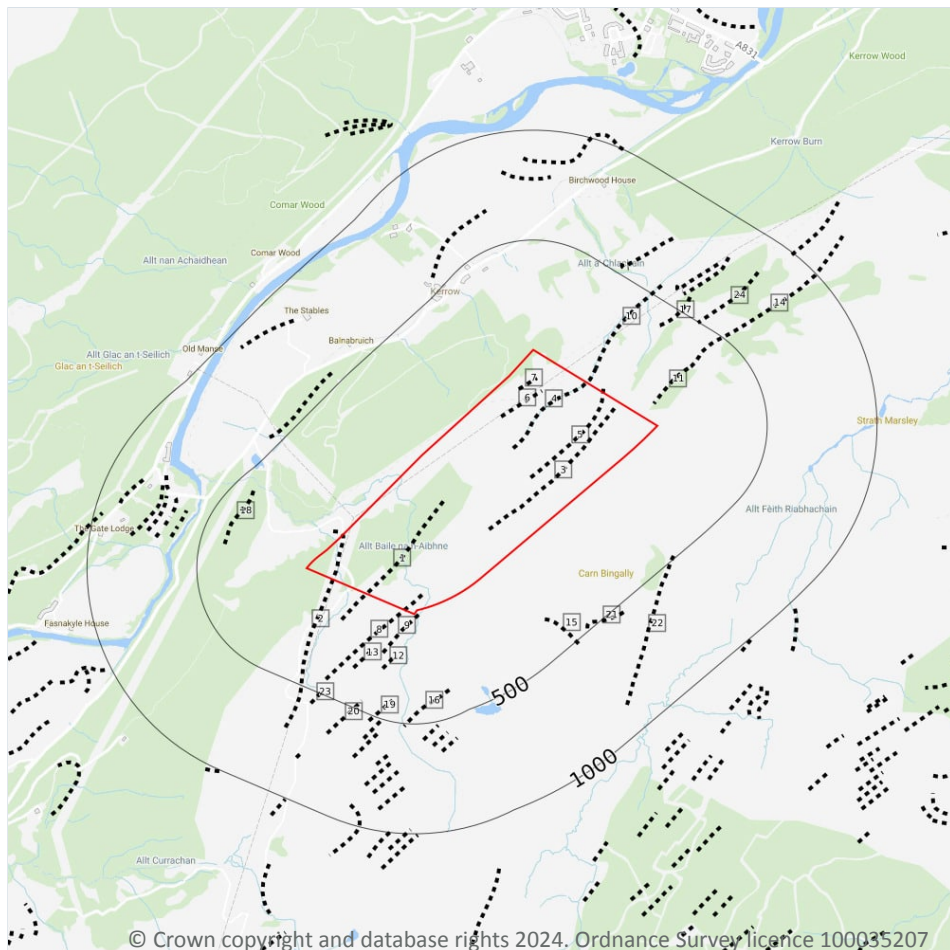
Mass movement deposits on BGS geological maps at 1:10,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

*This data is sourced from the British Geological Survey.*





## Geology 1:10,000 scale - Bedrock



**Site Outline**

Search buffers in metres (m)

..... Bedrock faults and other linear features (10k)

Bedrock geology (10k)  
Please see table for more details.

### 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

24

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.





Features are displayed on the Geology 1:10,000 scale - Bedrock map on [page 46 >](#)

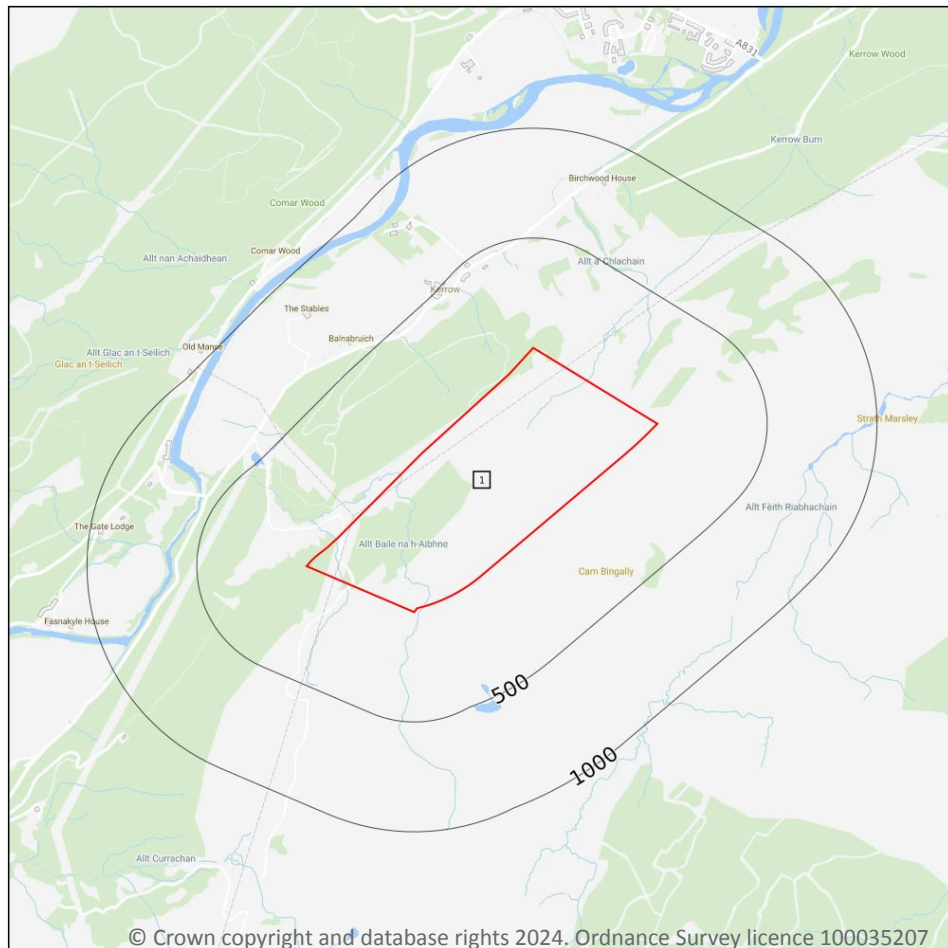
ID	Location	Category	Description
1	On site	LANDFORM	Marked concave break of slope, arrowheads denote uphill side
2	On site	LANDFORM	Marked concave break of slope, arrowheads denote uphill side
3	On site	LANDFORM	Marked concave break of slope, arrowheads denote uphill side
4	On site	LANDFORM	Ice marginal glacial meltwater channel, single side right
5	On site	LANDFORM	Ice marginal glacial meltwater channel, single side right
6	On site	LANDFORM	Axis of large-scale glacial flute
7	On site	LANDFORM	Axis of large-scale glacial flute
8	On site	LANDFORM	Axis of large-scale glacial flute
9	12m SW	LANDFORM	Axis of large-scale glacial flute
10	77m NE	LANDFORM	Ice marginal glacial meltwater channel, single side right
11	78m NE	LANDFORM	Marked concave break of slope, arrowheads denote uphill side
12	203m SW	LANDFORM	Axis of large-scale glacial flute
13	217m SW	LANDFORM	Axis of large-scale glacial flute
14	297m NE	LANDFORM	Marked concave break of slope, arrowheads denote uphill side
15	325m SE	LANDFORM	Glacial meltwater channel, undifferentiated, centre line
16	380m S	LANDFORM	Marked concave break of slope, arrowheads denote uphill side
17	386m NE	LANDFORM	Ice marginal glacial meltwater channel, single side right
18	389m W	LANDFORM	Marked concave break of slope, arrowheads denote uphill side
19	404m SW	LANDFORM	Axis of large-scale glacial flute
20	457m SW	LANDFORM	Axis of large-scale glacial flute
21	474m SE	LANDFORM	Ice marginal glacial meltwater channel, single side left
22	487m E	LANDFORM	Marked concave break of slope, arrowheads denote uphill side
23	492m SW	LANDFORM	Axis of large-scale glacial flute
24	496m NE	LANDFORM	Ice marginal glacial meltwater channel, single side right

*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.

Features are displayed on the Geology 1:50,000 scale - Availability map on [page 48](#) >

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	No coverage	Full	Full	No coverage	SC073w_Invermoriston_v4

This data is sourced from the British Geological Survey.





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

### 15.2 Artificial and made ground (50k)

Records within 500m

0

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.

*This data is sourced from the British Geological Survey.*

### 15.3 Artificial ground permeability (50k)

Records within 50m

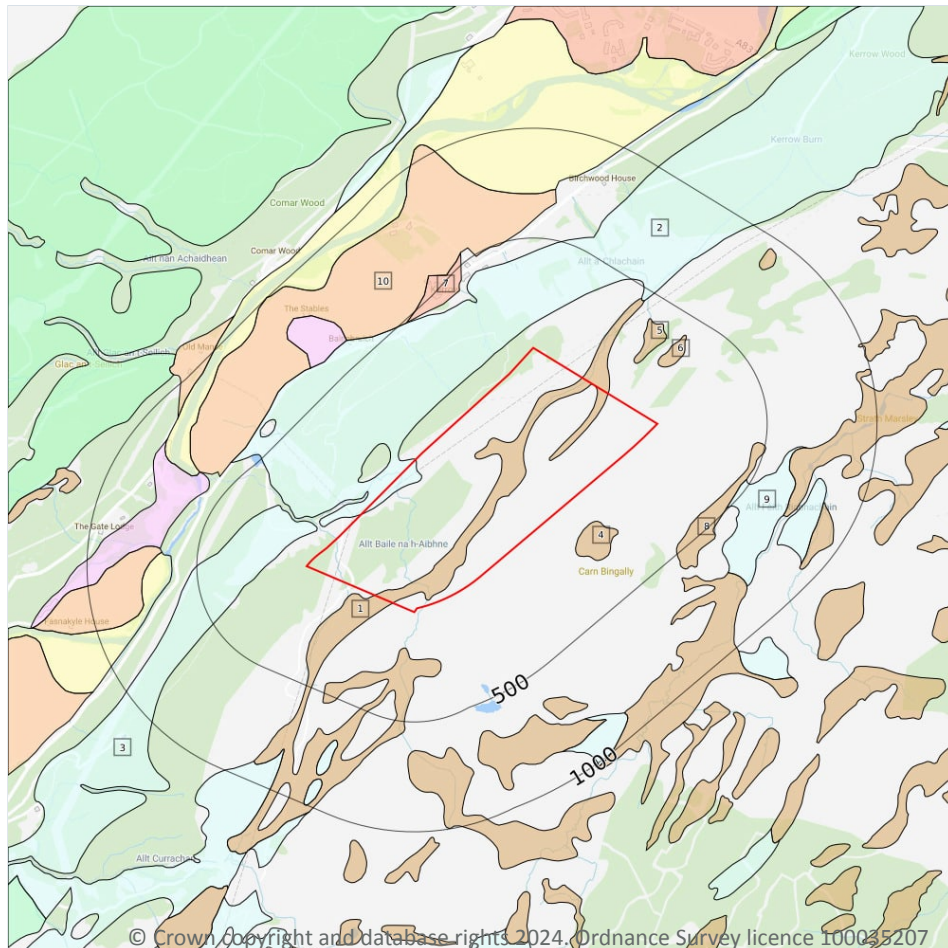
0

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any artificial 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 - 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

10

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 50 >](#)

ID	Location	LEX Code	Description	Rock description
1	On site	PEAT-P	PEAT	PEAT
2	On site	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
3	89m W	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON





ID	Location	LEX Code	Description	Rock description
4	138m E	PEAT-P	PEAT	PEAT
5	184m NE	PEAT-P	PEAT	PEAT
6	232m NE	PEAT-P	PEAT	PEAT
7	423m N	ALF-XVSZC	ALLUVIAL FAN DEPOSITS	GRAVEL, SAND, SILT AND CLAY
8	430m E	PEAT-P	PEAT	PEAT
9	471m E	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
10	487m NW	RTDU-XSV	RIVER TERRACE DEPOSITS (UNDIFFERENTIATED)	SAND AND GRAVEL

*This data is sourced from the British Geological Survey.*

## 15.5 Superficial permeability (50k)

<b>Records within 50m</b>	<b>2</b>
---------------------------	----------

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
<b>On site</b>	<b>Mixed</b>	<b>Low</b>	<b>Very Low</b>
<b>On site</b>	<b>Mixed</b>	<b>High</b>	<b>Low</b>

*This data is sourced from the British Geological Survey.*

## 15.6 Landslip (50k)

<b>Records within 500m</b>	<b>0</b>
----------------------------	----------

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

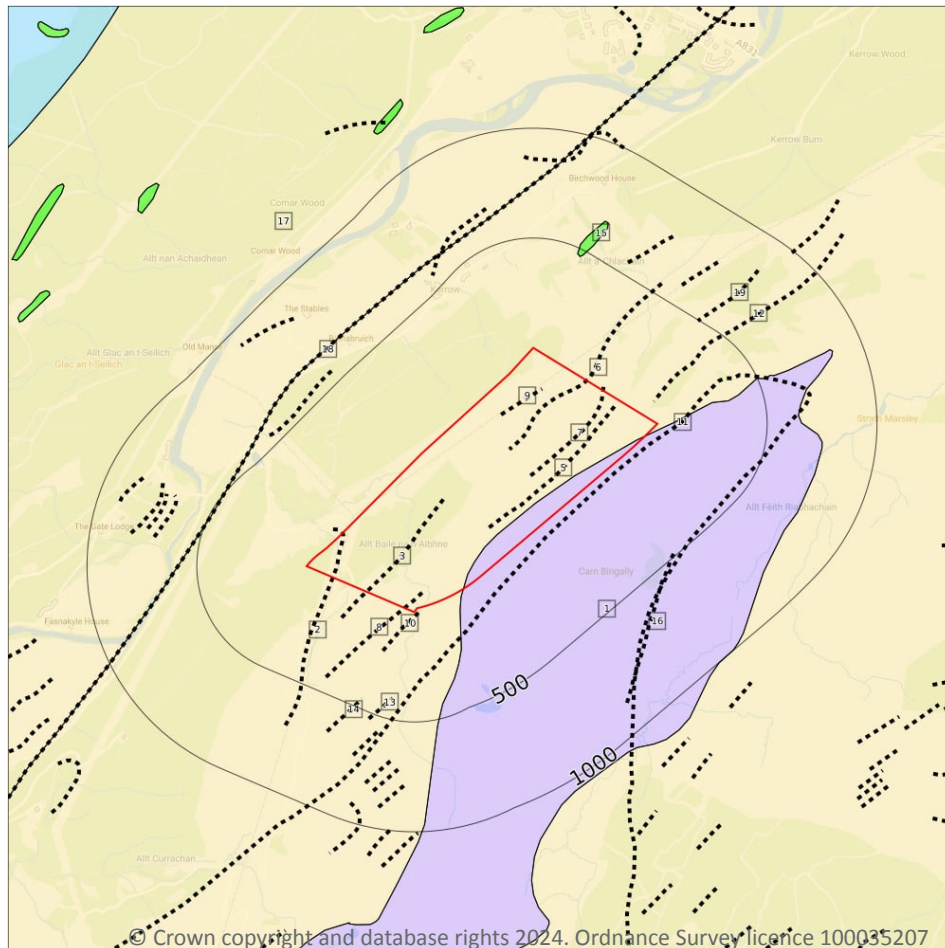
A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any landslip deposits (the zone between the land surface and the water table).

*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

4

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 53 >](#)

ID	Location	LEX Code	Description	Rock age
1	On site	TAPS-PSSP	TARVIE PSAMMITE FORMATION - PSAMMITE AND SEMIPELITE	-
2	On site	TAPS-PSAMM	TARVIE PSAMMITE FORMATION - PSAMMITE	-





ID	Location	LEX Code	Description	Rock age
15	467m NE	UIPC-AMHS	UNNAMED IGNEOUS INTRUSION, PRE-CALEDONIAN - AMPHIBOLITE AND HORNBLÉNDE SCHIST	-
17	491m W	TAPS-PSAMM	TARVIE PSAMMITE FORMATION - PSAMMITE	-

*This data is sourced from the British Geological Survey.*

## 15.9 Bedrock permeability (50k)

Records within 50m

3

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	Fracture	Low	Low
On site	Fracture	Low	Low
On site	Fracture	Low	Low

*This data is sourced from the British Geological Survey.*

## 15.10 Bedrock faults and other linear features (50k)

Records within 500m

15

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.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on [page 53](#) >

ID	Location	Category	Description
3	On site	LANDFORM	Marked concave break in slope
4	On site	LANDFORM	Marked concave break in slope
5	On site	LANDFORM	Marked concave break in slope
6	On site	LANDFORM	Ice-marginal glacial single-sided meltwater channel, right
7	On site	LANDFORM	Ice-marginal glacial single-sided meltwater channel, right
8	On site	LANDFORM	Axis of large-scale glacial flute





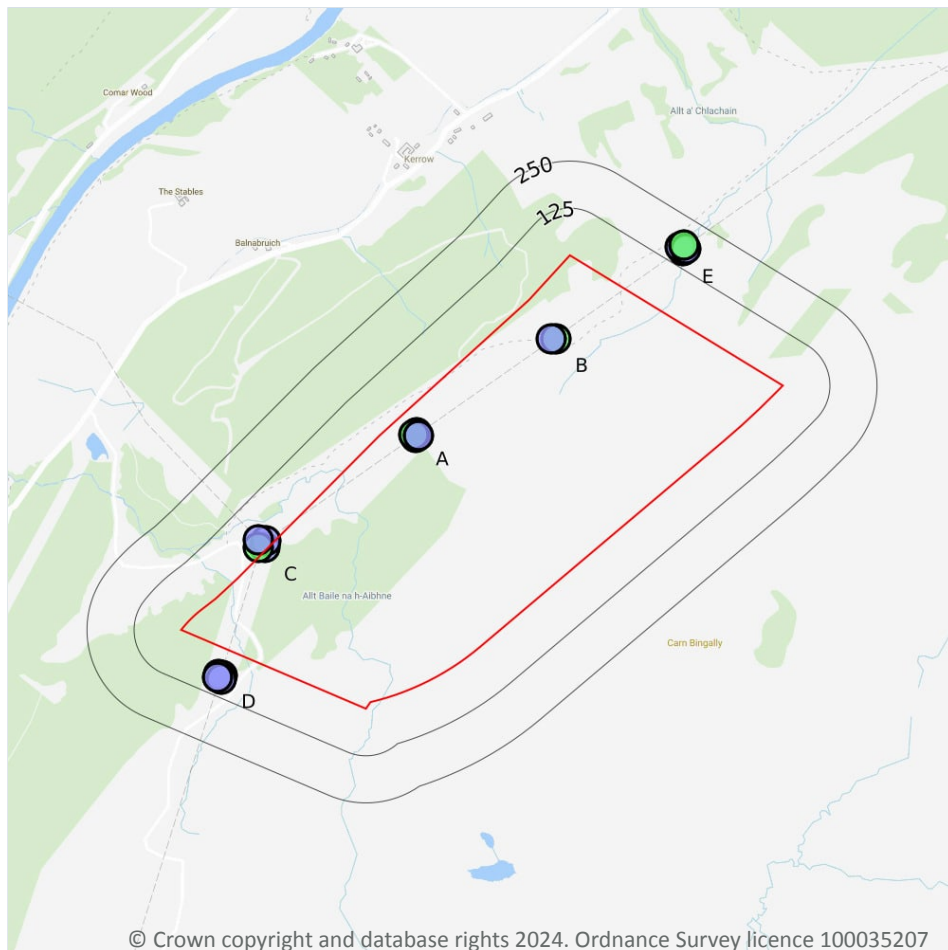
ID	Location	Category	Description
9	On site	LANDFORM	Axis of large-scale glacial flute
10	12m SW	LANDFORM	Axis of large-scale glacial flute
11	34m E	ALTERATION_AREA	Limit of pegmatitic rock veins
12	79m NE	LANDFORM	Marked concave break in slope
13	404m SW	LANDFORM	Axis of large-scale glacial flute
14	457m SW	LANDFORM	Axis of large-scale glacial flute
16	487m E	LANDFORM	Marked concave break in slope
18	491m W	FAULT	Fault, inferred, displacement unknown
19	496m NE	LANDFORM	Ice-marginal glacial single-sided meltwater channel, right

*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

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### 16.1 BGS Boreholes

Records within 250m

18

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 56](#) >

ID	Location	Grid reference	Name	Length	Confidential	Web link
A	On site	233128 829613	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF62-A	3.5	N	<a href="#">18949712</a> ↗
A	On site	233125 829600	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF62-C	4.5	N	<a href="#">18949714</a> ↗





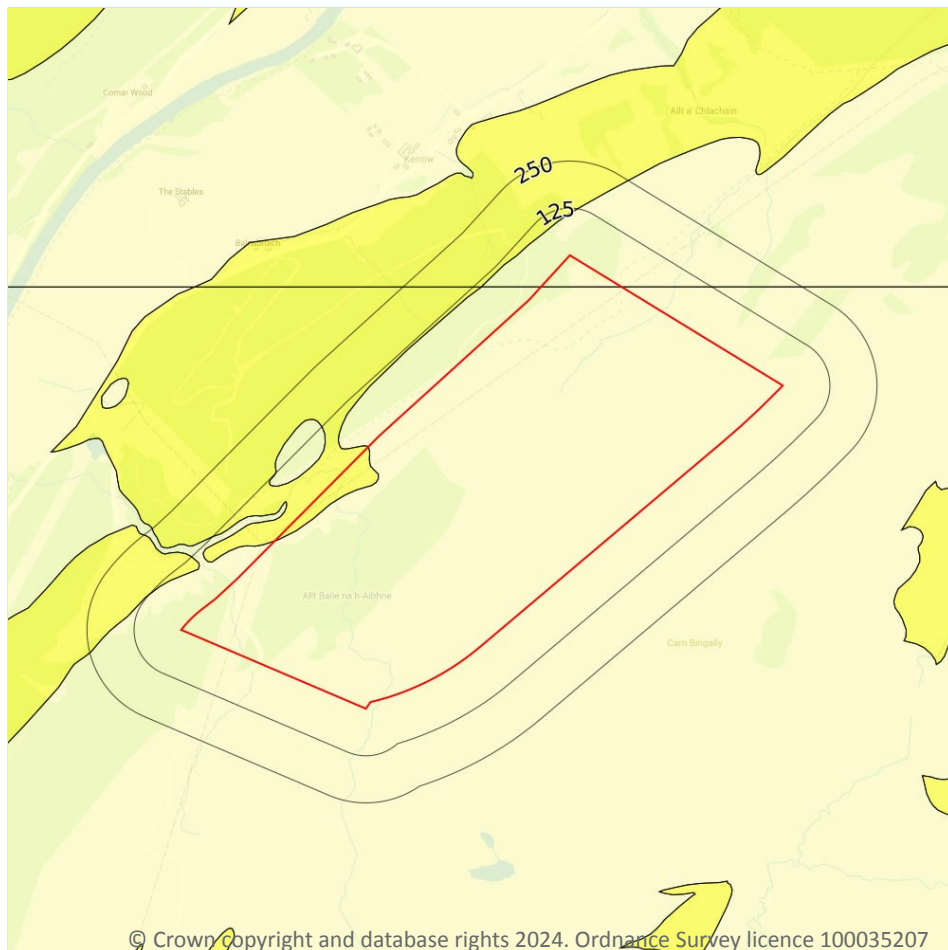
ID	Location	Grid reference	Name	Length	Confidential	Web link
A	On site	233120 829607	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF62-D	14.0	N	<a href="#">18949715</a> ↗
A	On site	233133 829605	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF62-B	3.5	N	<a href="#">18949713</a> ↗
B	On site	233498 829861	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF61-B	14.0	N	<a href="#">18949709</a> ↗
B	On site	233485 829863	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF61-D	4.0	N	<a href="#">18949710</a> ↗
C	7m W	232725 829309	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF63-B	6.0	N	<a href="#">18949719</a> ↗
C	18m W	232727 829327	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF63-A	6.0	N	<a href="#">18949717</a> ↗
C	20m W	232707 829310	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF63-C	14.5	N	<a href="#">18949720</a> ↗
C	32m W	232708 829328	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF63-D	6.0	N	<a href="#">18949721</a> ↗
D	68m SW	232612 828969	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF64A-B	6.0	N	<a href="#">18949725</a> ↗
D	69m SW	232603 828972	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF64A-A	16.1	N	<a href="#">18949723</a> ↗
D	77m SW	232610 828960	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF64A-C	6.0	N	<a href="#">18949727</a> ↗
D	79m SW	232600 828963	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF64A-D	6.0	N	<a href="#">18949729</a> ↗
E	168m NE	233834 830097	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF60-C	7.5	N	<a href="#">18949707</a> ↗
E	171m NE	233828 830105	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF60-D	6.5	N	<a href="#">18949708</a> ↗
E	176m NE	233842 830102	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF60-B	4.9	N	<a href="#">18949706</a> ↗
E	181m NE	233836 830111	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF60-A	16.0	N	<a href="#">18949704</a> ↗

*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

2

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 58 >](#)

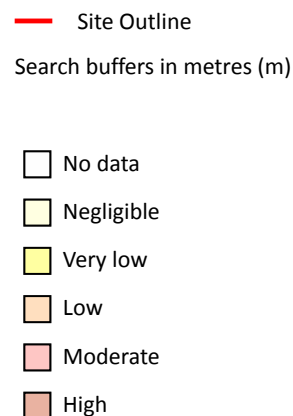
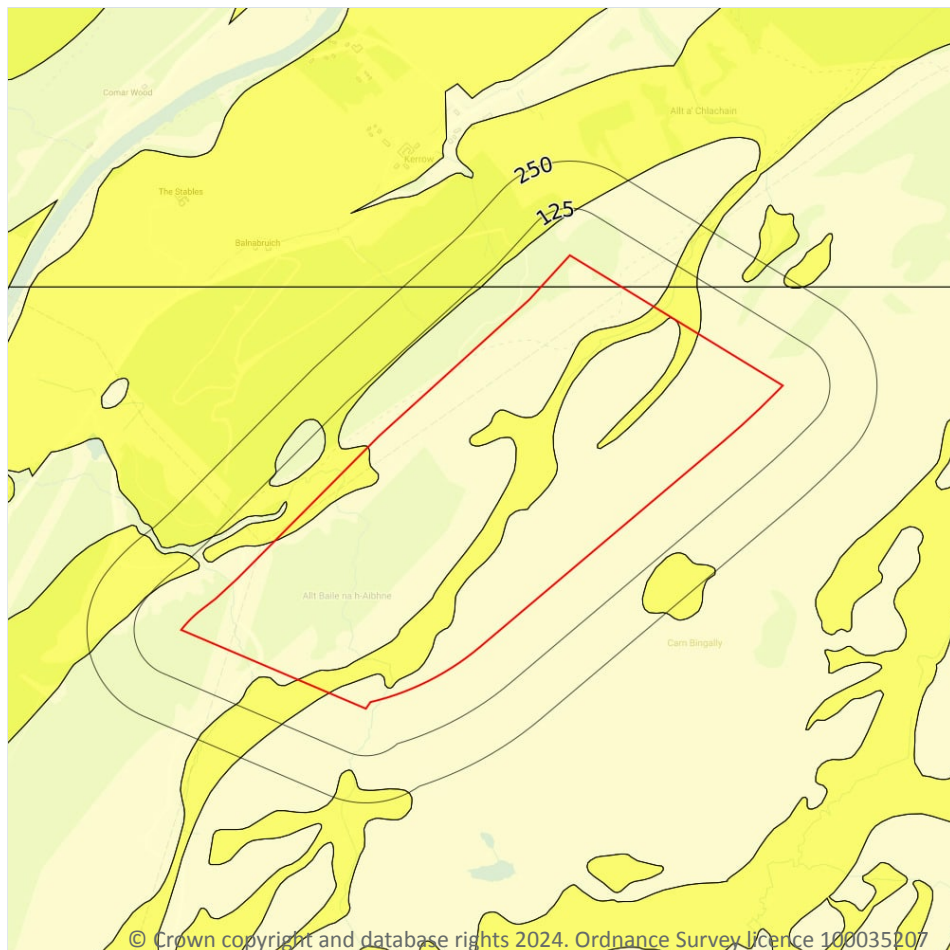
Location	Hazard rating	Details
On site	Negligible	Ground conditions predominantly non-plastic.
On site	Very low	Ground conditions predominantly low plasticity.

*This data is sourced from the British Geological Survey.*





## Natural ground subsidence - Running sands



### 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 59 >](#)

Location	Hazard rating	Details
On site	Negligible	Running sand conditions are not thought to occur whatever the position of the water table. No identified constraints on lands use due to running conditions.



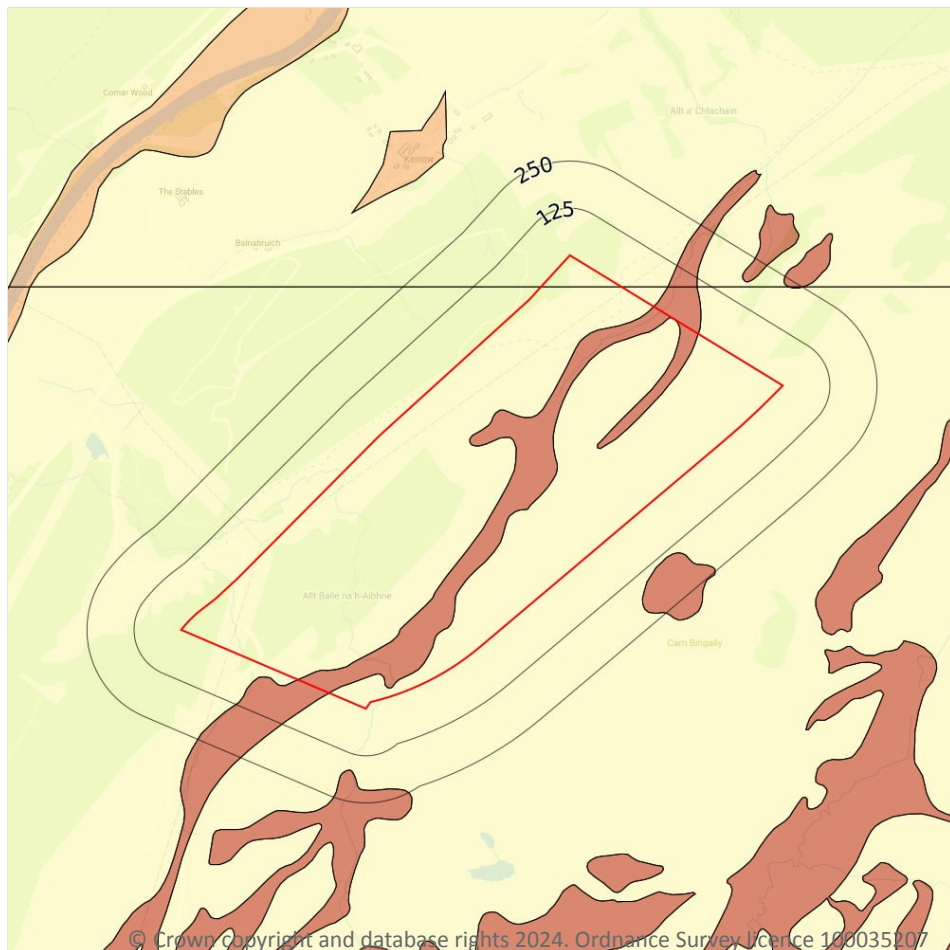


Location	Hazard rating	Details
On site	Very low	Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless water table rises rapidly.

*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 61](#) >

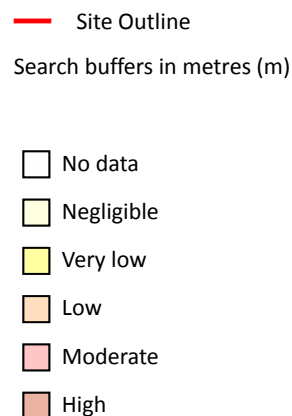
Location	Hazard rating	Details
On site	Negligible	Compressible strata are not thought to occur.
On site	High	Highly compressible strata present. Significant constraint on land use depending on thickness.

*This data is sourced from the British Geological Survey.*





## Natural ground subsidence - Collapsible deposits



### 17.4 Collapsible deposits

#### Records within 50m

2

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 62 >](#)

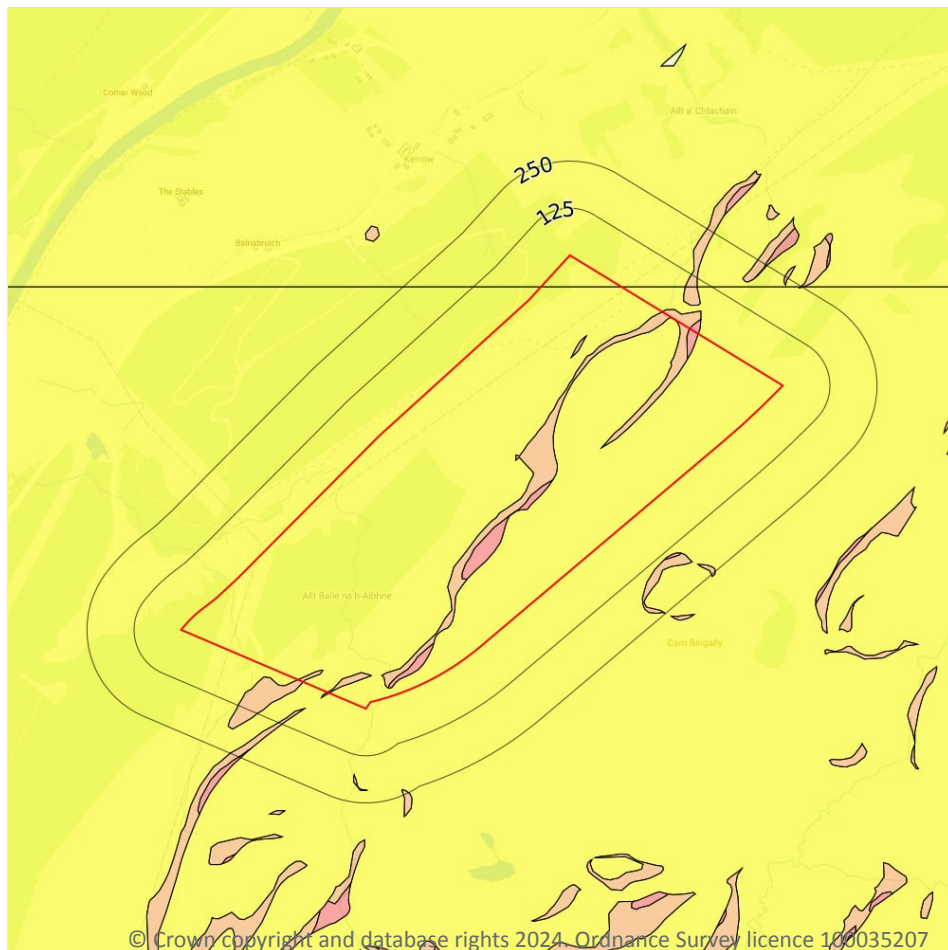
Location	Hazard rating	Details
On site	Negligible	Deposits with potential to collapse when loaded and saturated are believed not to be present.
On site	Very low	Deposits with potential to collapse when loaded and saturated are unlikely to be present.

*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

3

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 63](#) >

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.





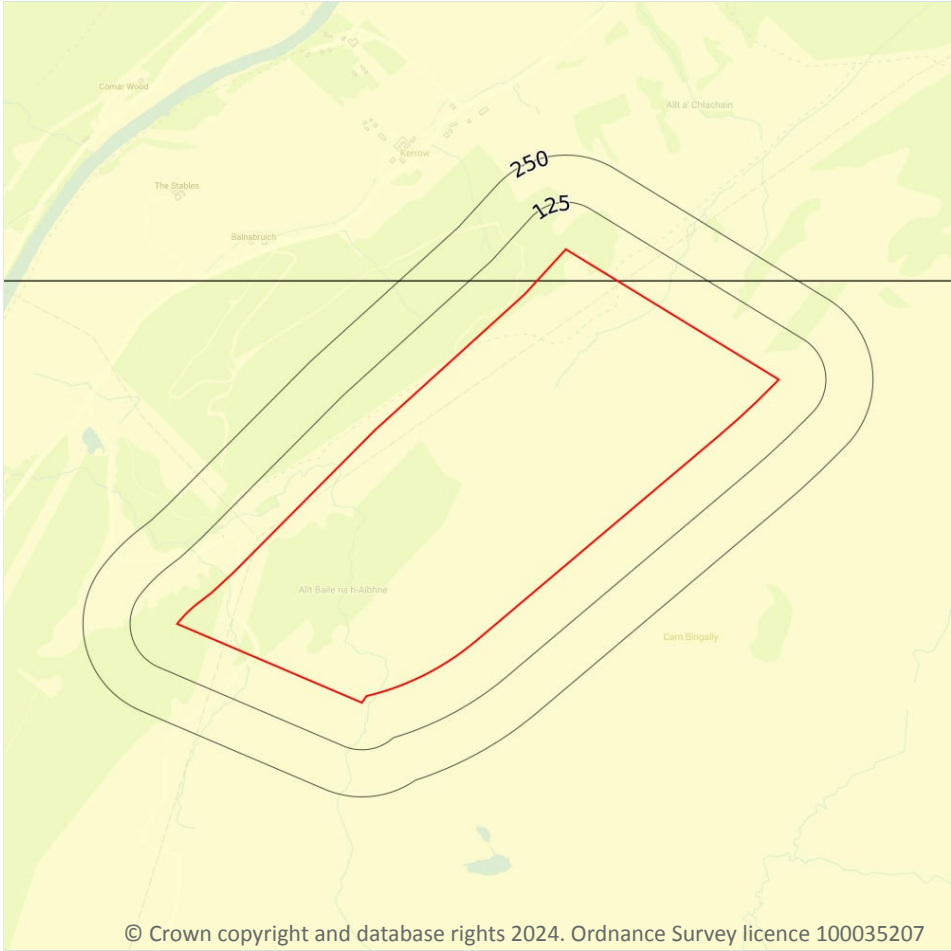
Location	Hazard rating	Details
On site	Low	Slope instability problems may be present or anticipated. Site investigation should consider specifically the slope stability of the site.
On site	Moderate	Slope instability problems are probably present or have occurred in the past. Land use should consider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

*This data is sourced from the British Geological Survey.*





Natural ground subsidence - Ground dissolution of soluble rocks



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 65](#) >

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

### 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

0

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.

*This data is sourced from Ordnance Survey/Groundsure.*

### 18.3 Underground workings

Records within 1000m

0

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

*This 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

**0**

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).

*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.

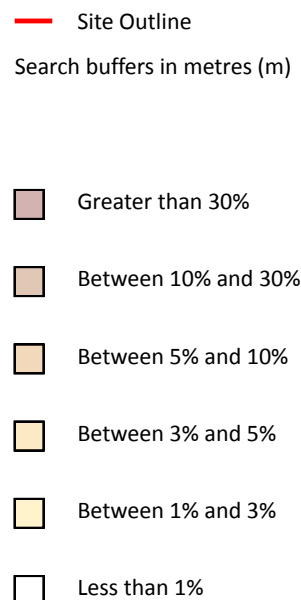
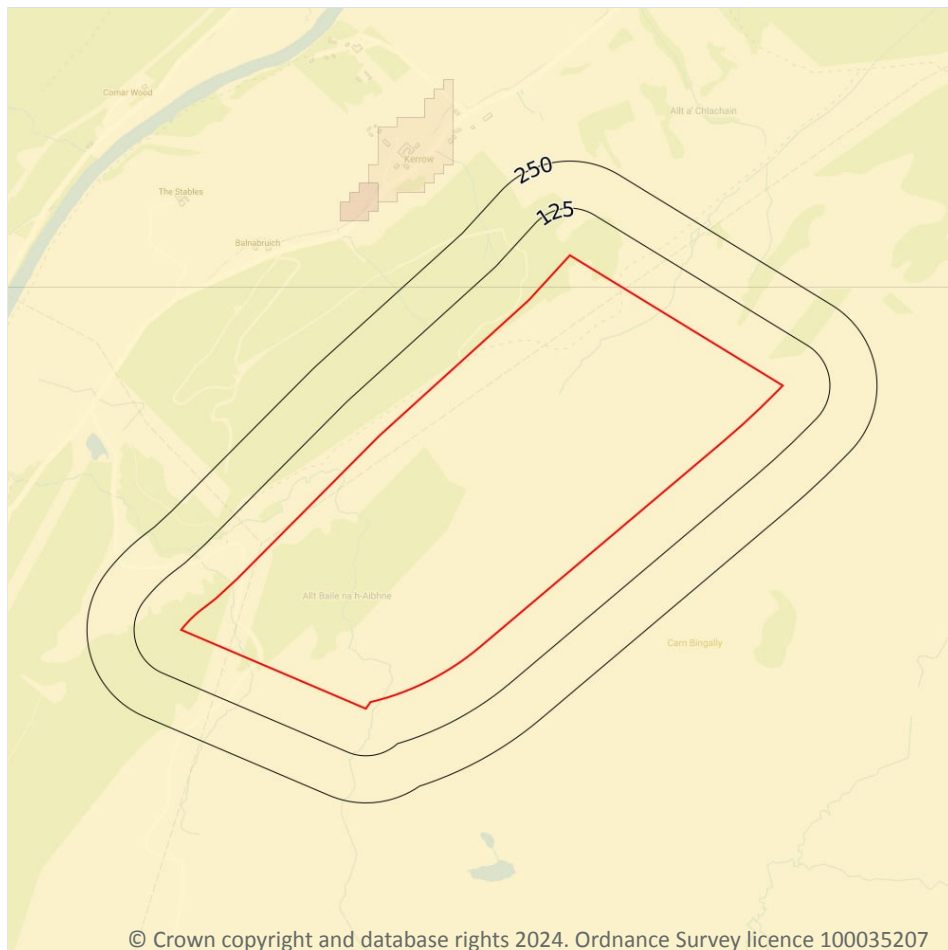
The database is not yet complete, and not all records have been verified. The absence of data does not mean that karst features are not present at a site. A reliability rating is included with each record.

*This data is sourced from the British Geological Survey.*





## 20 Radon



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### 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 73](#) >

Location	Estimated properties affected	Radon Protection Measures required
On site	Between 1% and 3%	Basic





*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


67

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<sup>2</sup>. 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<sup>2</sup>; 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	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg








Contact us with any questions at:  
[info@groundsurre.com](mailto:info@groundsurre.com) ↗  
 01273 257 755

**Date:** 1 May 2024





Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
0m SW	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
0m N	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
3m SW	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
4m SW	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
22m NW	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
22m NW	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 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<sup>2</sup>).





*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<sup>2</sup>.

*This data is sourced from the British Geological Survey.*





## 22 Railway infrastructure and projects

### 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	0
---------------------	---

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.

*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

0

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

*This data is sourced from OpenStreetMap.*

## 22.7 Railways

Records within 250m

0

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

*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.*





## Data providers

Groundsure works with respected data providers to bring you the most relevant and accurate information. To find out who they are and their areas of expertise see <https://www.groundsure.com/sources-reference> ↗.

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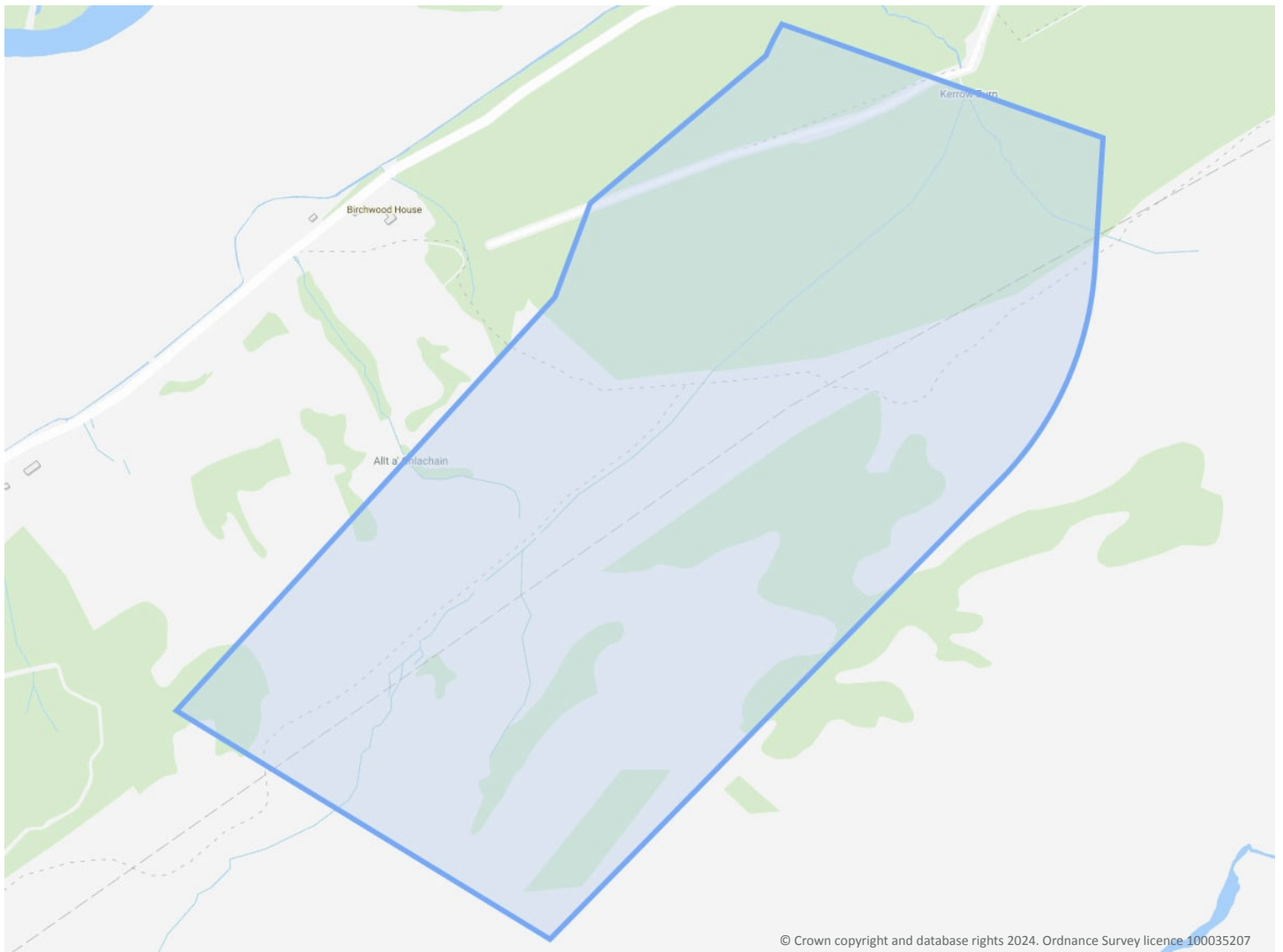
## Scotland, Red Line Boundary

### Order Details

**Date:** 01/05/2024  
**Your ref:** Scotland, Red Line Boundary  
**Our Ref:** GSIP-2024-14714-18280\_F

### Site Details

**Location:** 234660 830632  
**Area:** 95.86 ha  
**Authority:** [The Highland Council](#) ↗



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**Summary of findings**

[p. 2 >](#)

**Aerial image**

[p. 7 >](#)

**OS MasterMap site plan**

N/A: >10ha

[Insight User Guide](#) ↗

Contact us with any questions at:

[info@groundsure.com](mailto:info@groundsure.com) ↗

01273 257 755



## Summary of findings

Page	Section	<a href="#">Past land use &gt;</a>	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">12 &gt;</a>	<a href="#">1.1 &gt;</a>	<a href="#">Historical industrial land uses &gt;</a>	0	0	0	5	-
<a href="#">13 &gt;</a>	<a href="#">1.2 &gt;</a>	<a href="#">Historical tanks &gt;</a>	0	0	0	2	-
13	1.3	Historical energy features	0	0	0	0	-
14	1.4	Historical petrol stations	0	0	0	0	-
14	1.5	Historical garages	0	0	0	0	-
14	1.6	Historical military land	0	0	0	0	-
Page	Section	<a href="#">Past land use - un-grouped &gt;</a>	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">15 &gt;</a>	<a href="#">2.1 &gt;</a>	<a href="#">Historical industrial land uses &gt;</a>	0	0	0	5	-
<a href="#">16 &gt;</a>	<a href="#">2.2 &gt;</a>	<a href="#">Historical tanks &gt;</a>	0	0	0	2	-
16	2.3	Historical energy features	0	0	0	0	-
16	2.4	Historical petrol stations	0	0	0	0	-
17	2.5	Historical garages	0	0	0	0	-
Page	Section	<a href="#">Waste and landfill &gt;</a>	On site	0-50m	50-250m	250-500m	500-2000m
18	3.1	Active or recent landfill	0	0	0	0	-
18	3.2	Historical landfill (BGS records)	0	0	0	0	-
<a href="#">19 &gt;</a>	<a href="#">3.3 &gt;</a>	<a href="#">Historical landfill (LA/mapping records) &gt;</a>	0	0	0	1	-
19	3.4	Licensed waste sites	0	0	0	0	-
19	3.5	Historical waste sites	0	0	0	0	-
Page	Section	<a href="#">Current industrial land use &gt;</a>	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">20 &gt;</a>	<a href="#">4.1 &gt;</a>	<a href="#">Recent industrial land uses &gt;</a>	4	0	1	-	-
21	4.2	Current or recent petrol stations	0	0	0	0	-
21	4.3	Electricity cables	0	0	0	0	-
21	4.4	Gas pipelines	0	0	0	0	-
21	4.5	Sites determined as Contaminated Land	0	0	0	0	-
22	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
22	4.7	Regulated explosive sites	0	0	0	0	-





22	4.8	Hazardous substance storage/usage	0	0	0	0	-
22	4.9	Part A(1), IPPC and Historic IPC Authorisations	0	0	0	0	-
22	4.10	Part B Authorisations	0	0	0	0	-
23	4.11	Pollution inventory substances	0	0	0	0	-
23	4.12	Pollution inventory waste transfers	0	0	0	0	-
23	4.13	Pollution inventory radioactive waste	0	0	0	0	-
Page	Section	<a href="#">Hydrogeology &gt;</a>	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">24 &gt;</a>	<a href="#">5.1 &gt;</a>	<a href="#">Superficial aquifer &gt;</a>	Identified (within 500m)				
<a href="#">25 &gt;</a>	<a href="#">5.2 &gt;</a>	<a href="#">Bedrock aquifer &gt;</a>	Identified (within 500m)				
Page	Section	<a href="#">Hydrology &gt;</a>	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">27 &gt;</a>	<a href="#">6.1 &gt;</a>	<a href="#">Water Network (OS MasterMap) &gt;</a>	15	2	19	-	-
<a href="#">30 &gt;</a>	<a href="#">6.2 &gt;</a>	<a href="#">Surface water features &gt;</a>	1	1	5	-	-
Page	Section	<a href="#">River flooding &gt;</a>					
<a href="#">31 &gt;</a>	<a href="#">7.1 &gt;</a>	<a href="#">River flooding &gt;</a>	1 in 30 year, 0.3m - 1.0m (within 50m)				
Page	Section	Coastal flooding					
33	8.1	Coastal flooding	Negligible (within 50m)				
Page	Section	<a href="#">Surface water flooding &gt;</a>					
<a href="#">34 &gt;</a>	<a href="#">9.1 &gt;</a>	<a href="#">Surface water flooding &gt;</a>	1 in 30 year, Greater than 1.0m (within 50m)				
Page	Section	<a href="#">Groundwater flooding &gt;</a>					
<a href="#">36 &gt;</a>	<a href="#">10.1 &gt;</a>	<a href="#">Groundwater flooding &gt;</a>	Low (within 50m)				
Page	Section	<a href="#">Environmental designations &gt;</a>	On site	0-50m	50-250m	250-500m	500-2000m
37	11.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
38	11.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
38	11.3	Special Areas of Conservation (SAC)	0	0	0	0	0
<a href="#">38 &gt;</a>	<a href="#">11.4 &gt;</a>	<a href="#">Special Protection Areas (SPA) &gt;</a>	0	0	0	0	1
39	11.5	National Nature Reserves (NNR)	0	0	0	0	0
39	11.6	Local Nature Reserves (LNR)	0	0	0	0	0
<a href="#">39 &gt;</a>	<a href="#">11.7 &gt;</a>	<a href="#">Designated Ancient Woodland &gt;</a>	3	0	2	3	31
41	11.8	Biosphere Reserves	0	0	0	0	0





41	11.9	Forest Parks	0	0	0	0	0
41	11.10	Marine Conservation Zones	0	0	0	0	0
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
42	12.1	World Heritage Sites	0	0	0	-	-
42	12.2	Area of Outstanding Natural Beauty	0	0	0	-	-
42	12.3	National Parks	0	0	0	-	-
42	12.4	Listed Buildings	0	0	0	-	-
43	12.5	Conservation Areas	0	0	0	-	-
43	12.6	Scheduled Ancient Monuments	0	0	0	-	-
43	12.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations >	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">44</a> >	<a href="#">13.1</a> >	<a href="#">Agricultural Land Classification</a> >	Grade 4.2 (within 250m)				
Page	Section	Geology 1:10,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">46</a> >	<a href="#">14.1</a> >	<a href="#">10k Availability</a> >	Identified (within 500m)				
48	14.2	Artificial and made ground (10k)	0	0	0	0	-
<a href="#">49</a> >	<a href="#">14.3</a> >	<a href="#">Superficial geology (10k)</a> >	8	0	5	10	-
50	14.4	Landslip (10k)	0	0	0	0	-
51	14.5	Bedrock geology (10k)	0	0	0	0	-
<a href="#">51</a> >	<a href="#">14.6</a> >	<a href="#">Bedrock faults and other linear features (10k)</a> >	13	1	2	4	-
Page	Section	Geology 1:50,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">53</a> >	<a href="#">15.1</a> >	<a href="#">50k Availability</a> >	Identified (within 500m)				
54	15.2	Artificial and made ground (50k)	0	0	0	0	-
54	15.3	Artificial ground permeability (50k)	0	0	-	-	-
<a href="#">55</a> >	<a href="#">15.4</a> >	<a href="#">Superficial geology (50k)</a> >	5	0	3	6	-
<a href="#">56</a> >	<a href="#">15.5</a> >	<a href="#">Superficial permeability (50k)</a> >	Identified (within 50m)				
57	15.6	Landslip (50k)	0	0	0	0	-
57	15.7	Landslip permeability (50k)	None (within 50m)				
<a href="#">58</a> >	<a href="#">15.8</a> >	<a href="#">Bedrock geology (50k)</a> >	1	1	1	1	-
<a href="#">59</a> >	<a href="#">15.9</a> >	<a href="#">Bedrock permeability (50k)</a> >	Identified (within 50m)				





<a href="#">59 &gt;</a>	<a href="#">15.10 &gt;</a>	<a href="#">Bedrock faults and other linear features (50k) &gt;</a>	7	1	2	3	-
Page	Section	<a href="#">Boreholes &gt;</a>	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">61 &gt;</a>	<a href="#">16.1 &gt;</a>	<a href="#">BGS Boreholes &gt;</a>	15	0	2	-	-
Page	Section	<a href="#">Natural ground subsidence &gt;</a>					
<a href="#">63 &gt;</a>	<a href="#">17.1 &gt;</a>	<a href="#">Shrink swell clays &gt;</a>	Very low (within 50m)				
<a href="#">65 &gt;</a>	<a href="#">17.2 &gt;</a>	<a href="#">Running sands &gt;</a>	Very low (within 50m)				
<a href="#">67 &gt;</a>	<a href="#">17.3 &gt;</a>	<a href="#">Compressible deposits &gt;</a>	High (within 50m)				
<a href="#">68 &gt;</a>	<a href="#">17.4 &gt;</a>	<a href="#">Collapsible deposits &gt;</a>	Very low (within 50m)				
<a href="#">69 &gt;</a>	<a href="#">17.5 &gt;</a>	<a href="#">Landslides &gt;</a>	Moderate (within 50m)				
<a href="#">71 &gt;</a>	<a href="#">17.6 &gt;</a>	<a href="#">Ground dissolution of soluble rocks &gt;</a>	Negligible (within 50m)				
Page	Section	<a href="#">Mining and ground workings &gt;</a>	On site	0-50m	50-250m	250-500m	500-2000m
73	18.1	BritPits	0	0	0	0	-
74	18.2	Surface ground workings	0	0	0	-	-
74	18.3	Underground workings	0	0	0	0	0
74	18.4	Underground mining extents	0	0	0	0	-
74	18.5	Historical Mineral Planning Areas	0	0	0	0	-
<a href="#">74 &gt;</a>	<a href="#">18.6 &gt;</a>	<a href="#">Non-coal mining &gt;</a>	0	0	0	0	1
75	18.7	JPB mining areas	None (within 0m)				
75	18.8	The Coal Authority non-coal mining	0	0	0	0	-
75	18.9	Researched mining	0	0	0	0	-
76	18.10	Mining record office plans	0	0	0	0	-
76	18.11	BGS mine plans	0	0	0	0	-
76	18.12	Coal mining	None (within 0m)				
76	18.13	Brine areas	None (within 0m)				
76	18.14	Gypsum areas	None (within 0m)				
77	18.15	Tin mining	None (within 0m)				
77	18.16	Clay mining	None (within 0m)				
Page	Section	<a href="#">Ground cavities and sinkholes</a>	On site	0-50m	50-250m	250-500m	500-2000m
78	19.1	Natural cavities	0	0	0	0	-





78	19.2	Mining cavities	0	0	0	0	0
78	19.3	Reported recent incidents	0	0	0	0	-
78	19.4	Historical incidents	0	0	0	0	-
79	19.5	National karst database	0	0	0	0	-
Page	Section	<a href="#">Radon &gt;</a>					
<a href="#">80 &gt;</a>	<a href="#">20.1 &gt;</a>	<a href="#">Radon &gt;</a>	Between 1% and 3% (within 0m)				
Page	Section	<a href="#">Soil chemistry &gt;</a>	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">82 &gt;</a>	<a href="#">21.1 &gt;</a>	<a href="#">BGS Estimated Background Soil Chemistry &gt;</a>	21	5	-	-	-
83	21.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
83	21.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	<a href="#">Railway infrastructure and projects</a>	On site	0-50m	50-250m	250-500m	500-2000m
84	22.1	Underground railways (London)	0	0	0	-	-
84	22.2	Underground railways (Non-London)	0	0	0	-	-
84	22.3	Railway tunnels	0	0	0	-	-
84	22.4	Historical railway and tunnel features	0	0	0	-	-
84	22.5	Royal Mail tunnels	0	0	0	-	-
85	22.6	Historical railways	0	0	0	-	-
85	22.7	Railways	0	0	0	-	-
85	22.8	Crossrail 1	0	0	0	0	-
85	22.9	Crossrail 2	0	0	0	0	-
85	22.10	HS2	0	0	0	0	-



## Recent aerial photograph



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Capture Date: 29/05/2020

Site Area: 95.86ha





## Recent site history - 2017 aerial photograph



Capture Date: 06/05/2017

Site Area: 95.86ha





## Recent site history - 2014 aerial photograph



Capture Date: 26/08/2014

Site Area: 95.86ha





## Recent site history - 2013 aerial photograph



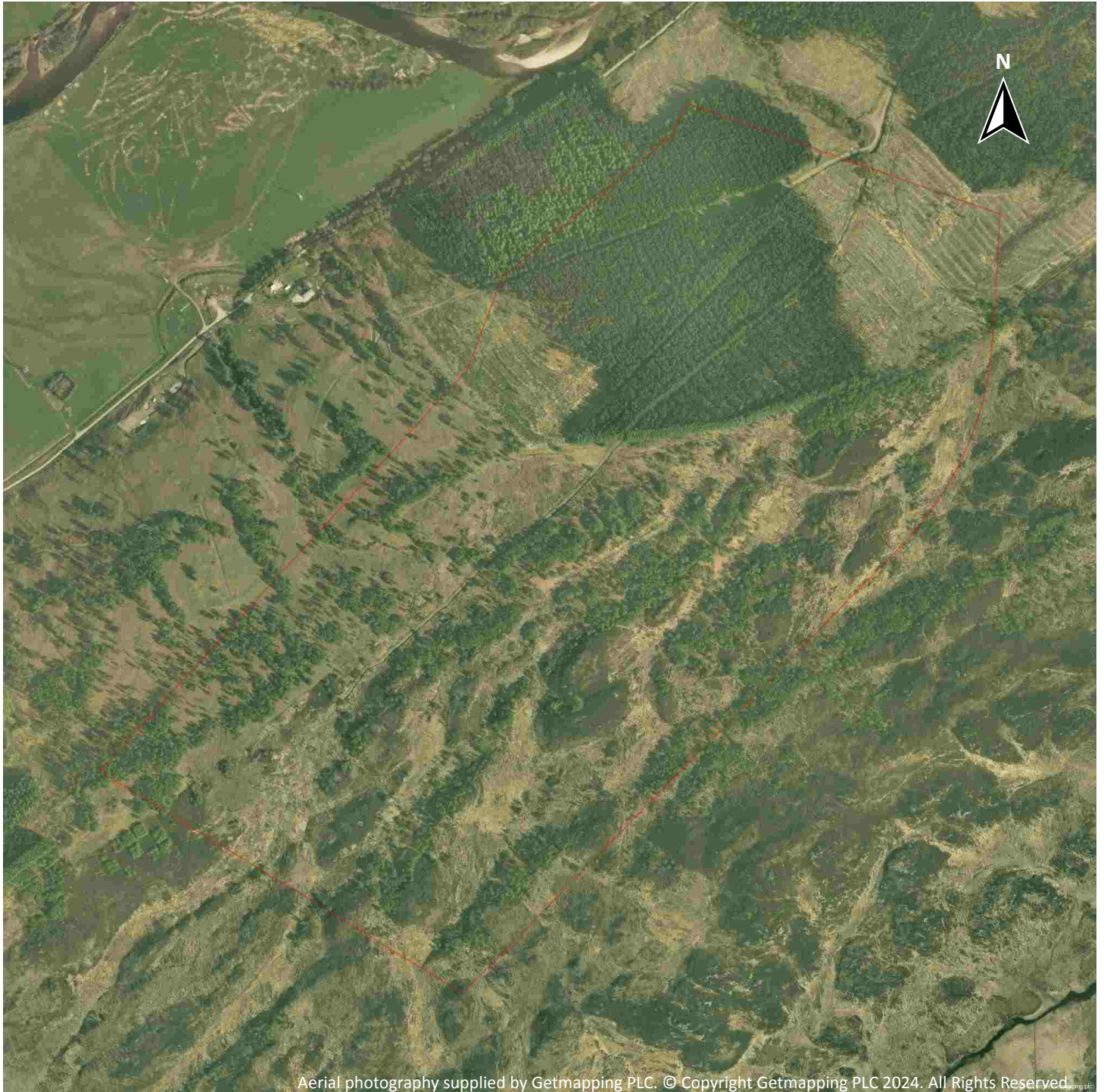
Capture Date: 19/07/2013

Site Area: 95.86ha





## Recent site history - 2008 aerial photograph



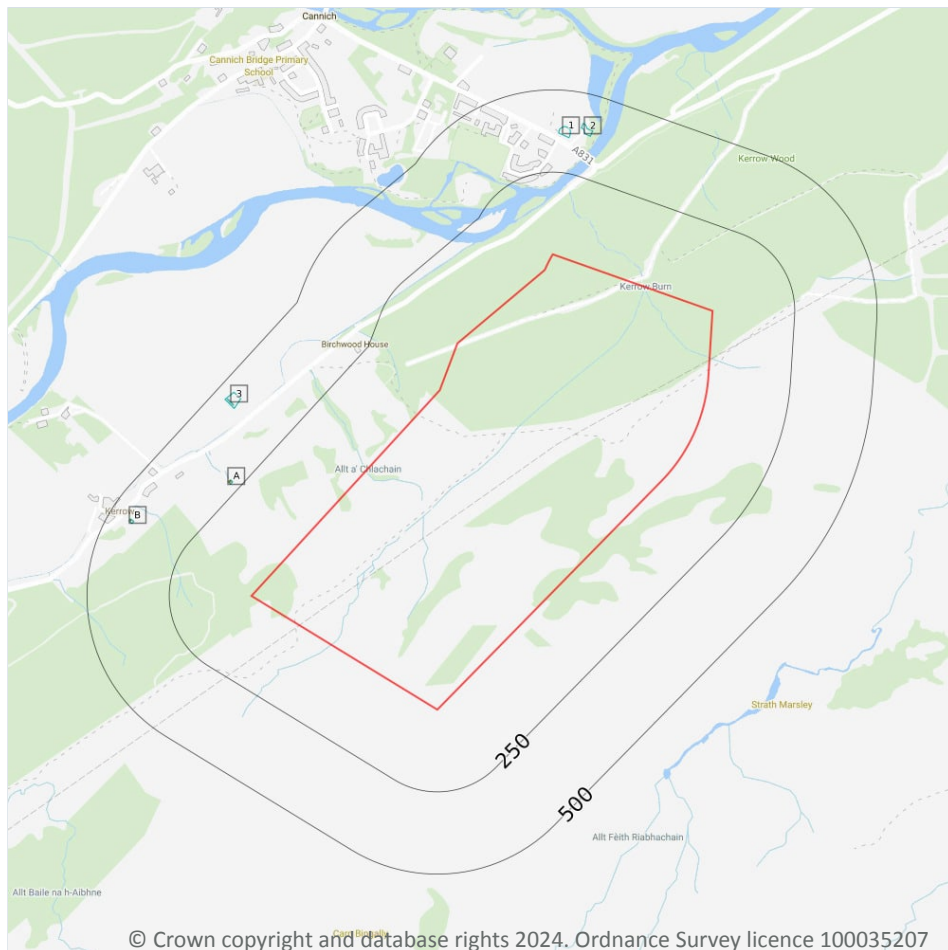
Capture Date: 09/05/2008

Site Area: 95.86ha





## 1 Past land use



- Site Outline
- Search buffers in metres (m)
- Historical industrial land uses
- Historical tanks

### 1.1 Historical industrial land uses

#### Records within 500m

5

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 12 >](#)

ID	Location	Land use	Dates present	Group ID
A	276m W	Unspecified Tank	1971	63431





ID	Location	Land use	Dates present	Group ID
1	358m N	Sand Pit	1901	64150
2	377m N	Disused Sewage Beds	1971	63065
3	424m W	Burial Ground	1971	67751
B	424m W	Unspecified Tank	1971	63428

This data is sourced from Ordnance Survey / Groundsure.

## 1.2 Historical tanks

<b>Records within 500m</b>	<b>2</b>
----------------------------	----------

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 ungrouped 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 12 >](#)

ID	Location	Land use	Dates present	Group ID
A	281m W	Unspecified Tank	1969	6991
B	432m W	Unspecified Tank	1969	6992

This data is sourced from Ordnance Survey / Groundsure.

## 1.3 Historical energy features

<b>Records within 500m</b>	<b>0</b>
----------------------------	----------

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 ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

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 ungrouped 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 ungrouped 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**

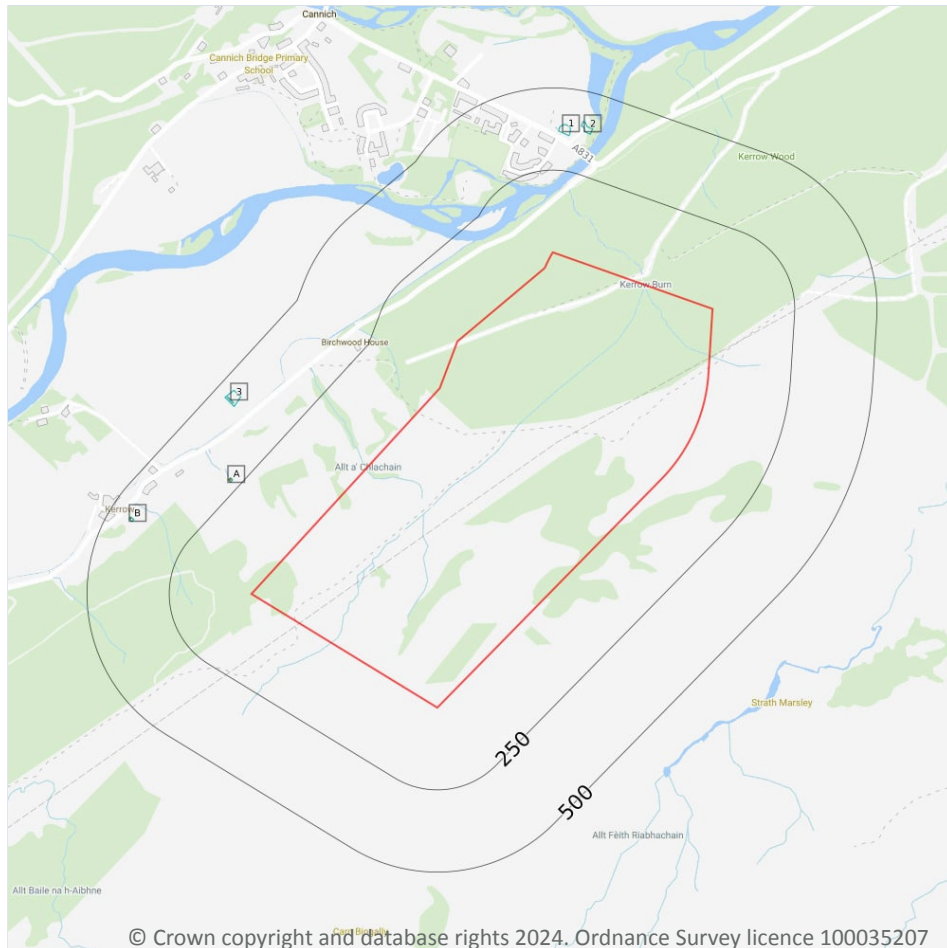
Areas of military land digitised from multiple sources including the National Archives, local records, MOD records and verified other sources, intelligently grouped into contiguous features.

*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

### 2.1 Historical industrial land uses

Records within 500m

5

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 15](#) >

ID	Location	Land Use	Date	Group ID
A	276m W	Unspecified Tank	1971	63431
1	358m N	Sand Pit	1901	64150
2	377m N	Disused Sewage Beds	1971	63065





ID	Location	Land Use	Date	Group ID
3	424m W	Burial Ground	1971	67751
B	424m W	Unspecified Tank	1971	63428

*This data is sourced from Ordnance Survey / Groundsure.*

## 2.2 Historical tanks

### Records within 500m

**2**

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 15 >](#)

ID	Location	Land Use	Date	Group ID
A	281m W	Unspecified Tank	1969	6991
B	432m W	Unspecified Tank	1969	6992

*This data is sourced from Ordnance Survey / Groundsure.*

## 2.3 Historical energy features

### Records within 500m

**0**

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'.

*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

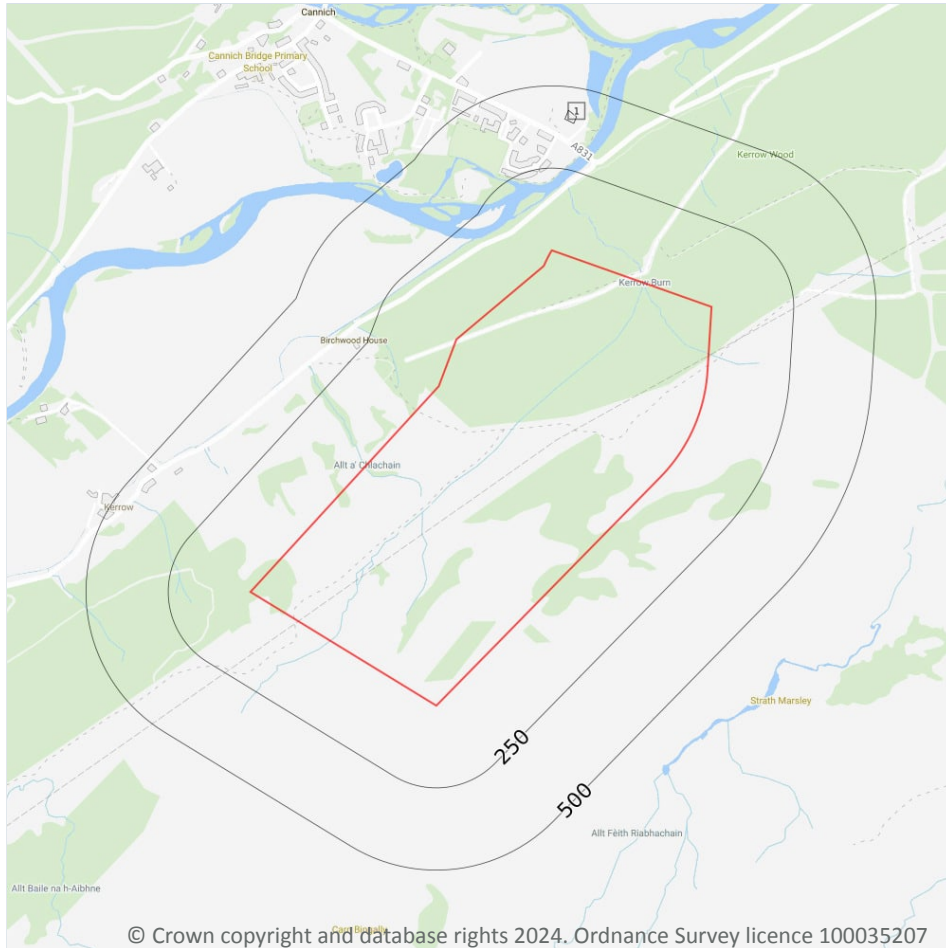
Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

*This data is sourced from Ordnance Survey / Groundsure.*





## 3 Waste and landfill



- Site Outline
- Search buffers in metres (m)
- Historical landfill (LA/OS)

### 3.1 Active or recent landfill

Records within 500m

0

Active or recently closed landfill sites under Scottish Environment Protection (SEPA) regulation.

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

### 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****1**

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

Features are displayed on the Waste and landfill map on [page 18 >](#)

ID	Location	Site address	Source	Data type
1	392m N	Refuse Tip	1969 mapping	Polygon

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

### 3.4 Licensed waste sites

**Records within 500m****0**

Active or recently closed waste sites under Scottish Environment Protection Agency (SEPA) regulation.

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

### 3.5 Historical waste sites

**Records within 500m****0**

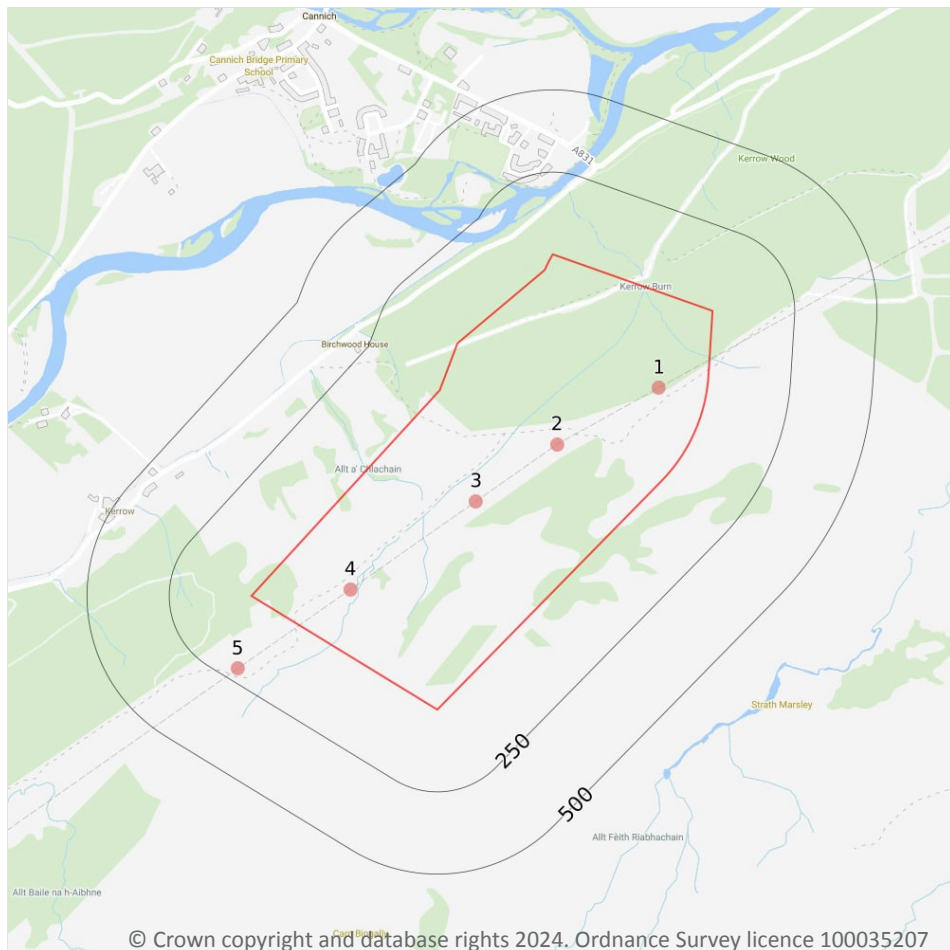
Waste site records derived from Local Authority planning records and high detail historical mapping.

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





## 4 Current industrial land use



— Site Outline

Search buffers in metres (m)

● Recent industrial land uses

### 4.1 Recent industrial land uses

Records within 250m

5

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on [page 20 >](#)

ID	Location	Company	Address	Activity	Category
1	On site	Pylon	Inverness, IV63	Electrical Features	Infrastructure and Facilities
2	On site	Pylon	Inverness, IV4	Electrical Features	Infrastructure and Facilities
3	On site	Pylon	Inverness, IV4	Electrical Features	Infrastructure and Facilities





ID	Location	Company	Address	Activity	Category
4	On site	Pylon	Inverness, IV4	Electrical Features	Infrastructure and Facilities
5	211m SW	Pylon	Inverness, IV4	Electrical Features	Infrastructure and Facilities

*This data is sourced from Ordnance Survey.*

## 4.2 Current or recent petrol stations

<b>Records within 500m</b>	<b>0</b>
----------------------------	----------

Open, closed, under development and obsolete petrol stations.

*This data is sourced from Experian.*

## 4.3 Electricity cables

<b>Records within 500m</b>	<b>0</b>
----------------------------	----------

High voltage underground electricity transmission cables.

*This data is sourced from National Grid.*

## 4.4 Gas pipelines

<b>Records within 500m</b>	<b>0</b>
----------------------------	----------

High pressure underground gas transmission pipelines.

*This data is sourced from National Grid.*

## 4.5 Sites determined as Contaminated Land

<b>Records within 500m</b>	<b>0</b>
----------------------------	----------

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

0

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.

*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

0

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.

*This data is sourced from Local Authority records.*

## 4.9 Part A(1), IPPC and Historic IPC Authorisations

Records within 500m

0

Records of Part A installations regulated for the release of substances to the environment.

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

## 4.10 Part B Authorisations

Records within 500m

0

Records of Part B installations regulated for the release of substances to the environment.

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





#### 4.11 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.*

#### 4.12 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.*

#### 4.13 Pollution inventory radioactive waste

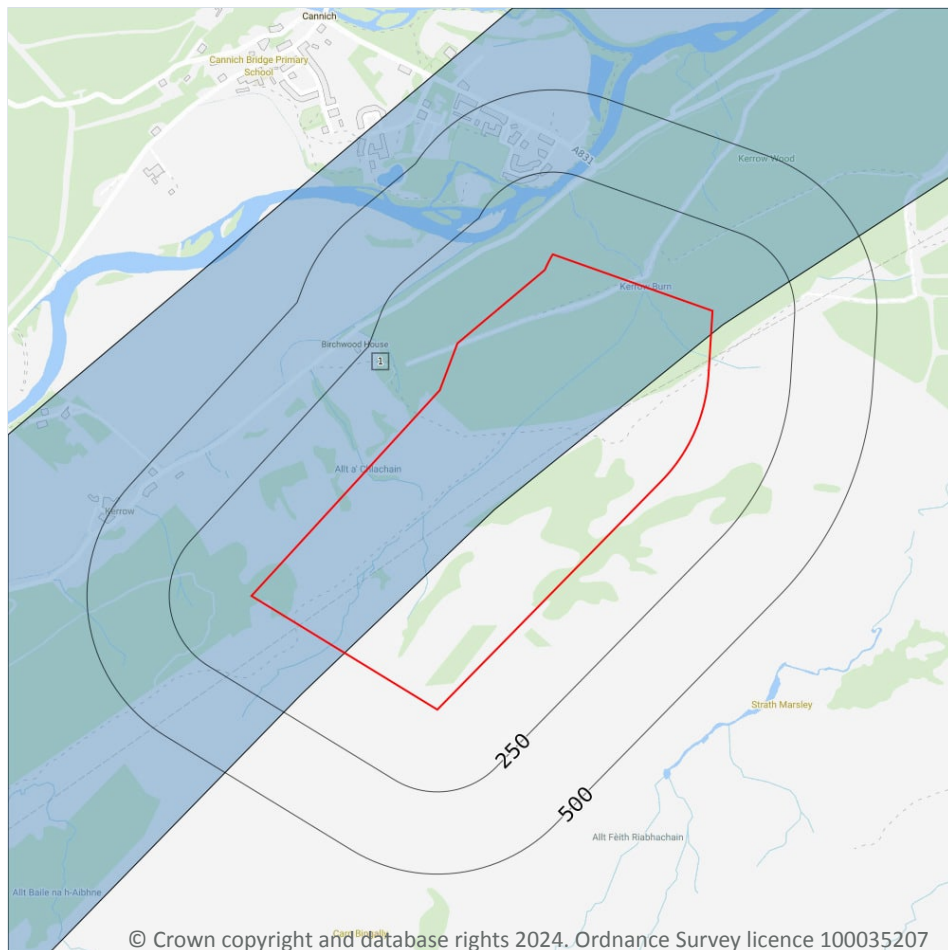
**Records within 500m****0**

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)
- Limited or local potential
- Locally important - intergranular

### 5.1 Superficial aquifer

#### Records within 500m

1

Records of groundwater classification within superficial geology.

Features are displayed on the Hydrogeology map on [page 24](#) >

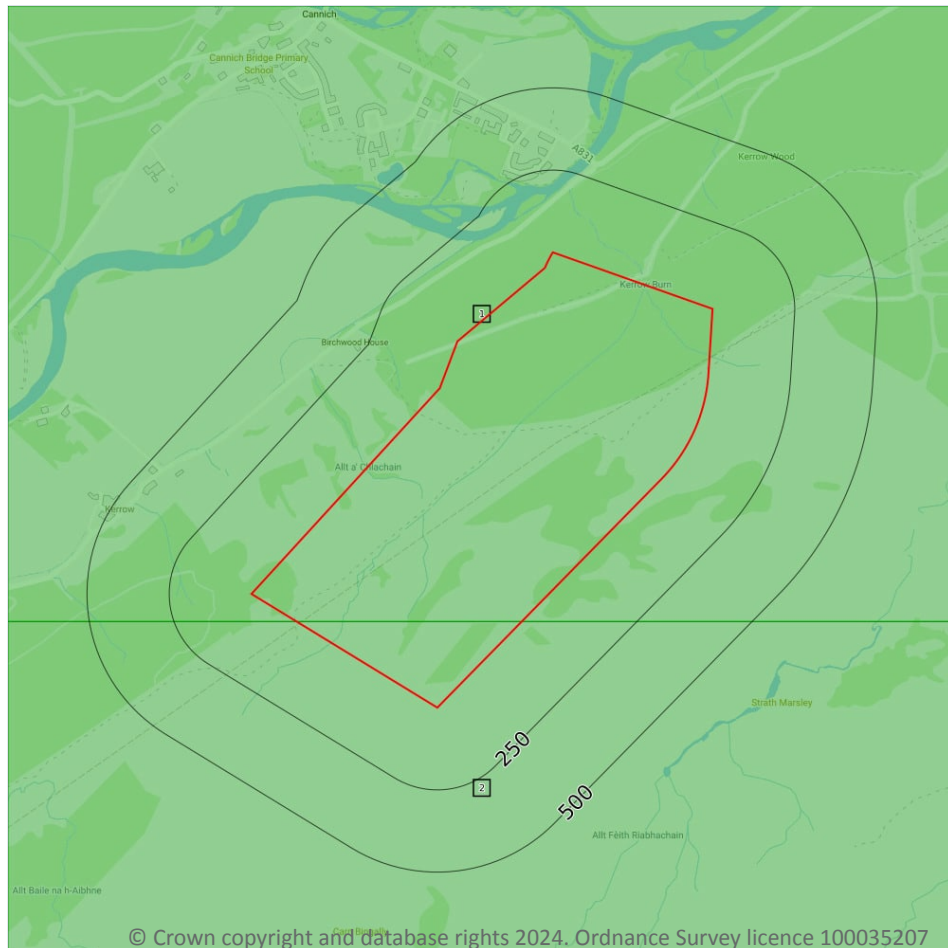
ID	Location	Description	Type	Rock description
1	On site	Concealed aquifers, aquifers of limited potential, regions without significant groundwater	Concealed aquifers; aquifers with limited or local potential	Quaternary Coastal and Fluvatile Alluvium

*This data is sourced from the British Geological Survey.*





## Bedrock aquifer



- Site Outline**
- Search buffers in metres (m)**
- Highly productive - fissures/discontinuities
  - Highly productive - intergranular
  - Moderately productive - fissures/discontinuities
  - Moderately productive - intergranular
  - Low productive - fissures/discontinuities
  - Low productive - intergranular
  - No significant groundwater

### 5.2 Bedrock aquifer

Records within 500m

2

Records of groundwater classification within bedrock geology.

Features are displayed on the Bedrock aquifer map on [page 25](#) >

ID	Location	Description	Flow	Summary	Rock description
1	On site	Low productivity aquifer	Flow is virtually all through fractures and other discontinuities	Small amounts of groundwater in near surface weathered zone and secondary fractures.	LOCH EIL GROUP





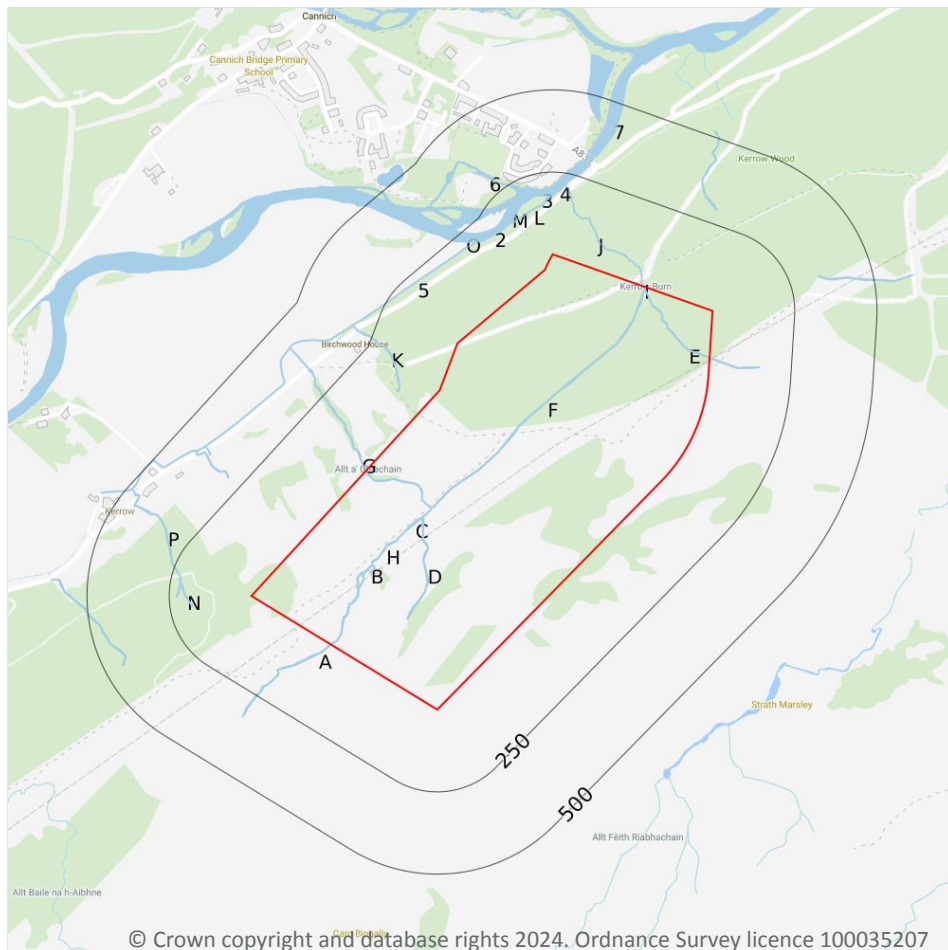
ID	Location	Description	Flow	Summary	Rock description
2	On site	Low productivity aquifer	Flow is virtually all through fractures and other discontinuities	Small amounts of groundwater in near surface weathered zone and secondary fractures.	LOCH EIL GROUP

*This data is sourced from the British Geological Survey.*





## 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)

### 6.1 Water Network (OS MasterMap)

Records within 250m

36

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 27](#) >

ID	Location	Type of water feature	Ground level	Permanence	Name
A	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt a' Chlachain





ID	Location	Type of water feature	Ground level	Permanence	Name
B	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt a' Chlachain
B	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.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
C	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt a' Chlachain
C	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt a' Chlachain
C	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt a' Chlachain
C	On site	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	Allt a' Chlachain
C	On site	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
D	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
E	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Kerrow Burn
F	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
G	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt a' Chlachain
H	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt a' Chlachain





ID	Location	Type of water feature	Ground level	Permanence	Name
I	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Kerrow Burn
I	18m NE	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	Kerrow Burn
J	26m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Kerrow Burn
K	90m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
L	146m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Glass
2	171m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Glass
M	171m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Glass
N	182m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
3	191m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Glass
4	192m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Glass
L	193m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Glass
M	193m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Glass
5	200m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt a' Chlachain





ID	Location	Type of water feature	Ground level	Permanence	Name
6	200m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
O	205m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Glass
N	218m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
N	219m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
7	221m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Glass
N	224m W	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
P	229m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
O	238m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Glass
O	238m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Glass

*This data is sourced from the Ordnance Survey.*

## 6.2 Surface water features

<b>Records within 250m</b>	<b>7</b>
----------------------------	----------

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.

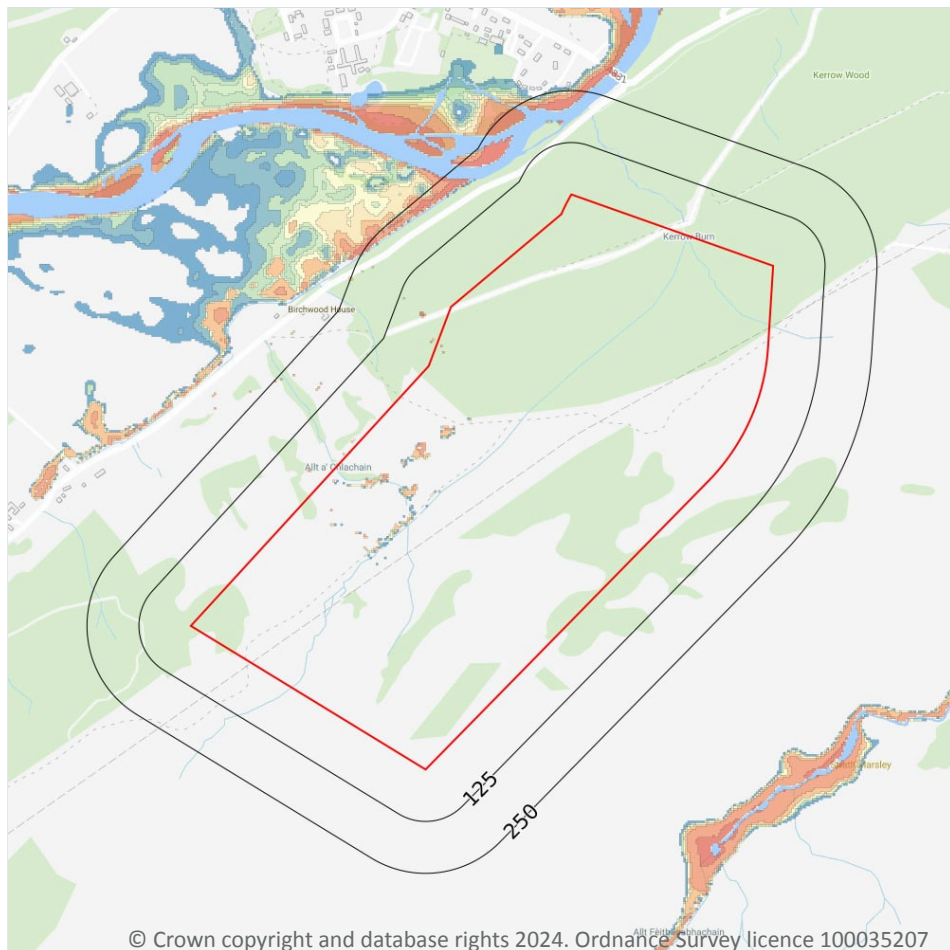
Features are displayed on the Hydrology map on [page 27 >](#)

*This data is sourced from the Ordnance Survey.*





## 7 River 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

### 7.1 River 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

This is an assessment of flood risk for rivers in Scotland produced using modelled data, provided by Ambiental Risk Analytics. It also takes account of flood defence information provided by the Scottish Environment Protection Agency (SEPA). It shows the chance of flooding from rivers presented in the following categories:

- 1 in 30 year (3.33%)
- 1 in 100 year (1%)
- 1 in 250 year (0.4%)



- and 1 in 1,000 year (0.1%)

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.

Features are displayed on the River flooding map on [page 31 >](#)

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 Ambiantal Risk Analytics.*





## 8 Coastal flooding - Coastal flooding

### 8.1 Coastal flooding

Highest risk on site

Negligible

Highest risk within 50m

Negligible

This is an assessment of coastal flood risk in Scotland produced using modelled data, provided by Ambiental Risk Analytics. It also takes account of flood defence information provided by the Scottish Environment Protection Agency (SEPA). It shows the chance of coastal flooding presented in the following categories:

- 1 in 30 year (3.33%)
- 1 in 100 year (1%)
- 1 in 250 year (0.4%)
- and 1 in 1,000 year (0.1%)

The data shown on the map 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.

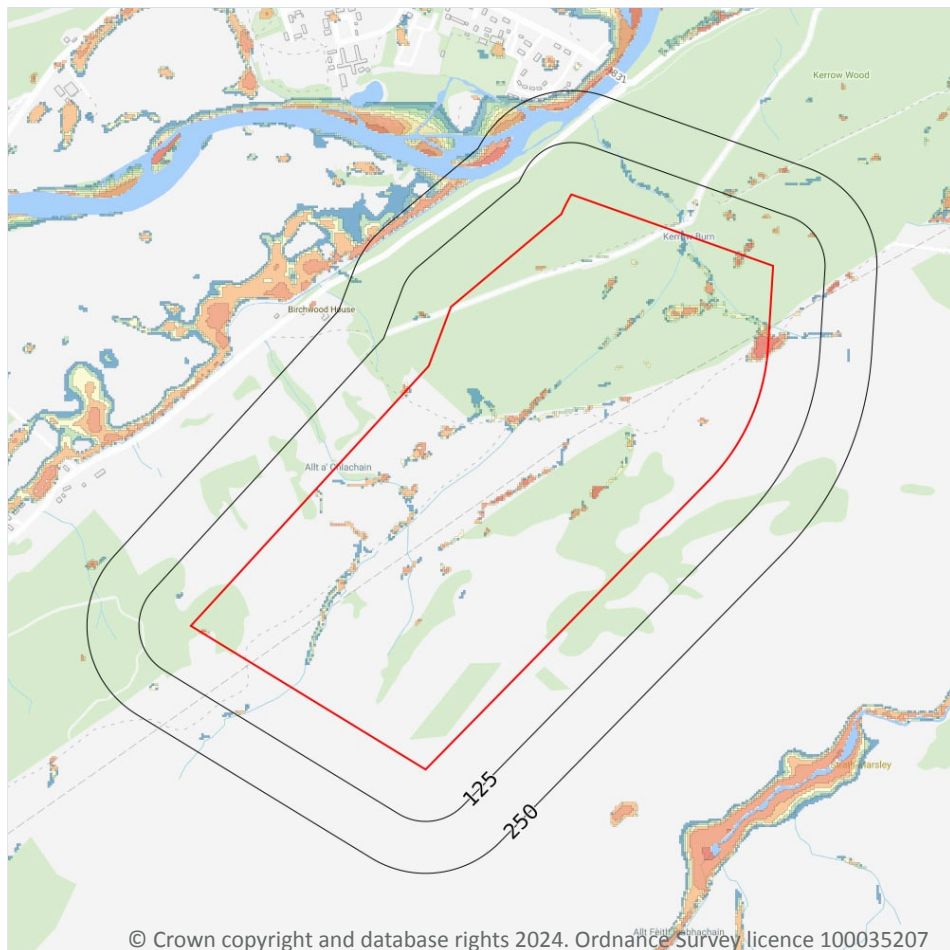
Return period	Maximum modelled depth
1 in 1000 year	Negligible
1 in 250 year	Negligible
1 in 100 year	Negligible
1 in 30 year	Negligible

*This data is sourced from Ambiental Risk Analytics.*





## 9 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

### 9.1 Surface water flooding

Highest risk on site

1 in 30 year, Greater than 1.0m

Highest risk within 50m

1 in 30 year, Greater than 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 34 >](#)

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.

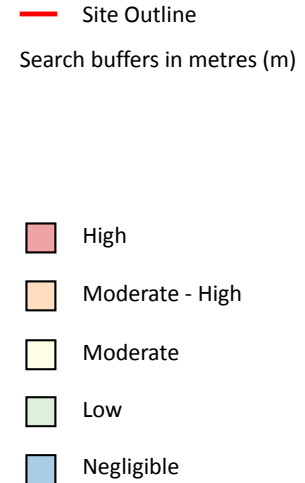
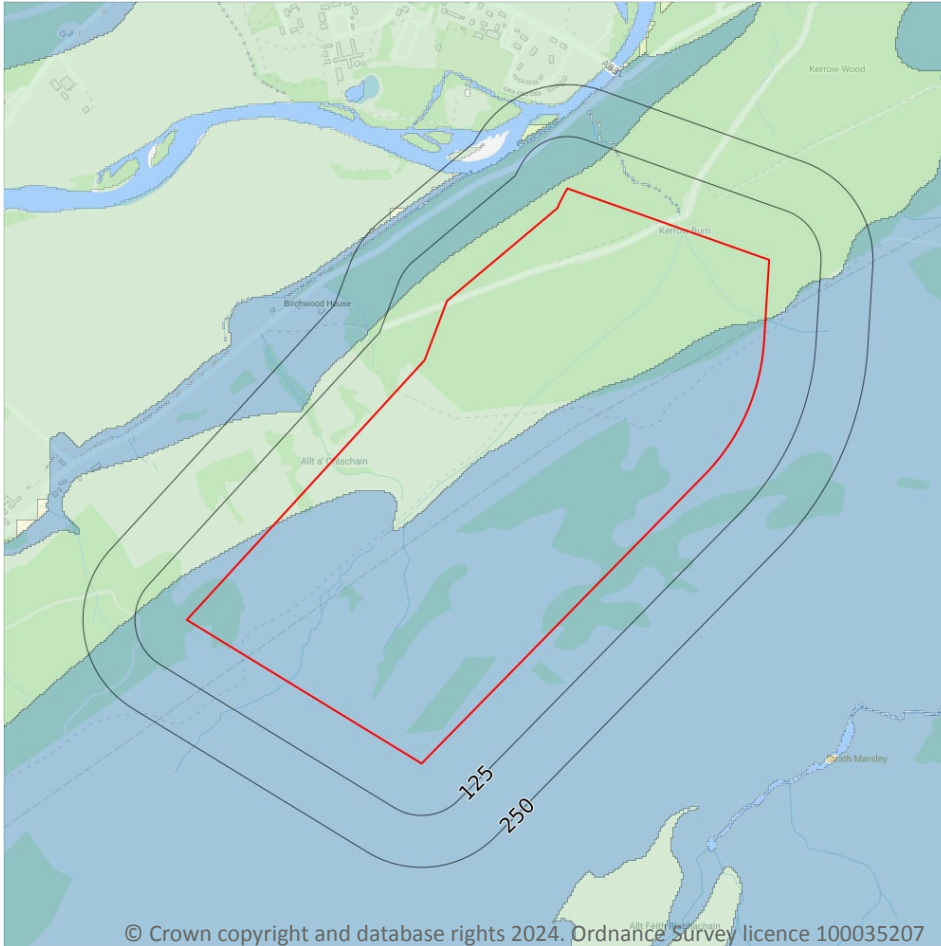
Return period	Maximum modelled depth
1 in 1000 year	Greater than 1.0m
1 in 250 year	Greater than 1.0m
1 in 100 year	Greater than 1.0m
1 in 30 year	Greater than 1.0m

*This data is sourced from Ambiantal Risk Analytics.*





## 10 Groundwater flooding



### 10.1 Groundwater flooding

Highest risk on site

Low

Highest risk within 50m

Low

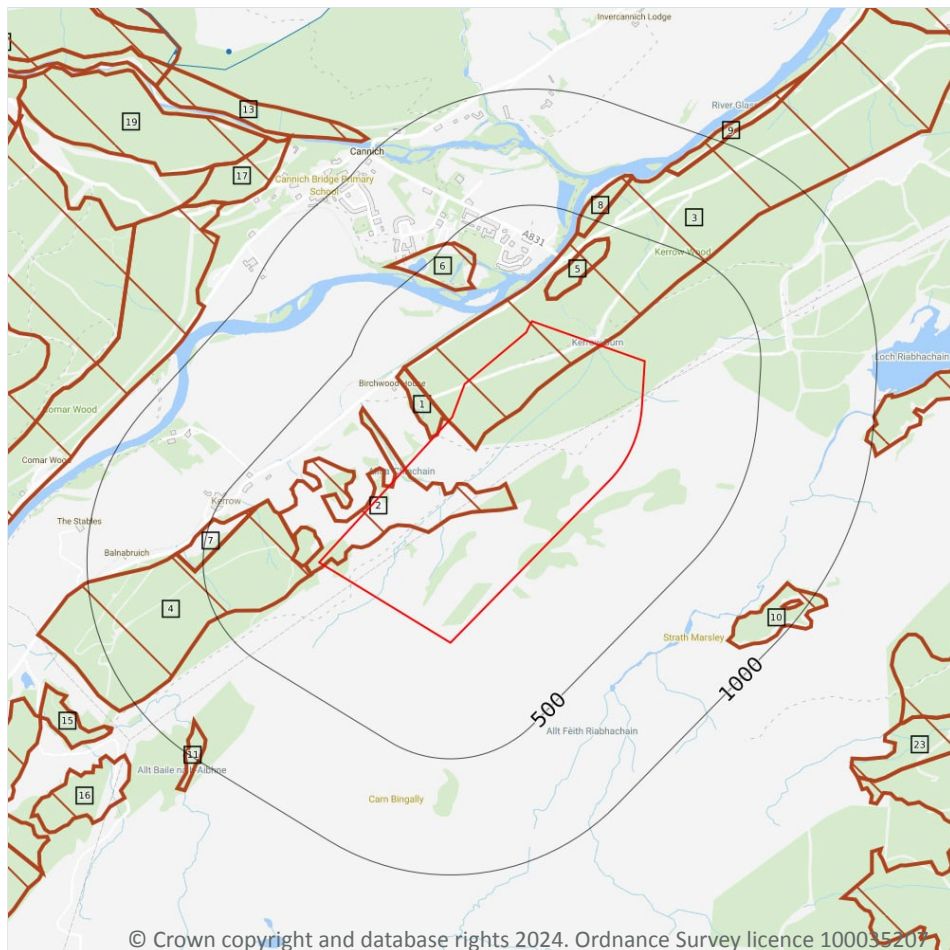
Groundwater flooding is caused by unusually high groundwater levels. It occurs when the water table rises above the ground surface or within underground structures such as basements or cellars. Groundwater flooding tends to exhibit a longer duration than surface water flooding, possibly lasting for weeks 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 36](#) >

*This data is sourced from Ambiantal Risk Analytics.*



## 11 Environmental designations



- Site Outline
- Search buffers in metres (m)
- Special Protection Areas (SPA)
- × National Nature Reserves (NNR)
- ▨ Designated Ancient Woodland

### 11.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m

0

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.

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



## 11.2 Conserved wetland sites (Ramsar sites)

Records within 2000m

0

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.

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

## 11.3 Special Areas of Conservation (SAC)

Records within 2000m

0

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.

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

## 11.4 Special Protection Areas (SPA)

Records within 2000m

1

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 37](#) >

ID	Location	Name	Species of interest	Habitat description	Data source
22	1518m N	Glen Affric to Strathconon	Golden eagle	Inland water bodies (Standing water, Running water); Mixed woodland; Humid grassland, Mesophile grassland; Bogs, Marshes, Water fringed vegetation, Fens; Coniferous woodland; Inland rocks, Scree, Sands, Permanent Snow and ice; Broad-leaved deciduous woodland; Heath, Scrub, Maquis and Garrigue, Phygrana; Improved grassland; Alpine and sub-Alpine grassland	Scottish Natural Heritage

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





## 11.5 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.*

## 11.6 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.*

## 11.7 Designated Ancient Woodland

**Records within 2000m****39**

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.

Features are displayed on the Environmental designations map on [page 37 >](#)

ID	Location	Name	Woodland Type
1	On site	Unknown	Ancient (of semi-natural origin)
2	On site	Balnahoun Wood	Ancient (of semi-natural origin)
3	On site	Unknown	Ancient (of semi-natural origin)
4	56m SW	Unknown	Ancient (of semi-natural origin)
5	114m N	Kerrow Wood	Ancient (of semi-natural origin)
6	289m N	Unknown	Other (on Roy map)
7	359m W	Balnahoun Wood	Ancient (of semi-natural origin)
8	420m N	Unknown	Ancient (of semi-natural origin)
9	804m NE	Unknown	Ancient (of semi-natural origin)
10	810m SE	Unknown	Ancient (of semi-natural origin)





ID	Location	Name	Woodland Type
11	870m SW	Unknown	Ancient (of semi-natural origin)
12	975m E	Unknown	Ancient (of semi-natural origin)
13	1059m N	Unknown	Other (on Roy map)
14	1080m W	Fasnakyle Wood	Ancient (of semi-natural origin)
15	1144m SW	Unknown	Ancient (of semi-natural origin)
16	1180m SW	Unknown	Ancient (of semi-natural origin)
17	1205m NW	Comar Wood	Ancient (of semi-natural origin)
18	1282m W	Fasnakyle Wood	Ancient (of semi-natural origin)
19	1350m NW	Unknown	Other (on Roy map)
20	1374m SW	Unknown	Ancient (of semi-natural origin)
21	1419m E	Coille Na Ceardaich	Ancient (of semi-natural origin)
-	1438m W	Comar Wood	Ancient (of semi-natural origin)
-	1492m W	Comar Wood	Ancient (of semi-natural origin)
23	1584m SE	Coille Na Ceardaich	Ancient (of semi-natural origin)
24	1656m SE	Coille Na Ceardaich	Ancient (of semi-natural origin)
-	1663m SW	Unknown	Long-Established (of plantation origin)
-	1691m W	Unknown	Ancient (of semi-natural origin)
-	1732m N	Carnoch Wood	Ancient (of semi-natural origin)
-	1766m SE	Coille Na Ceardaich	Ancient (of semi-natural origin)
29	1790m SW	Unknown	Ancient (of semi-natural origin)
30	1808m NE	Unknown	Ancient (of semi-natural origin)
-	1812m N	Carnoch Wood	Ancient (of semi-natural origin)
-	1845m SE	Coille Na Ceardaich	Ancient (of semi-natural origin)
33	1847m NW	Unknown	Ancient (of semi-natural origin)
34	1860m NW	Unknown	Ancient (of semi-natural origin)
-	1902m E	Breckry Wood	Ancient (of semi-natural origin)
-	1906m SW	Unknown	Ancient (of semi-natural origin)
-	1953m SE	Coille Na Ceardaich	Ancient (of semi-natural origin)





ID	Location	Name	Woodland Type
38	1992m NW	Unknown	Other (on Roy map)

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

## 11.8 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.*

## 11.9 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.*

## 11.10 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.*





## 12 Visual and cultural designations

### 12.1 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.*

### 12.2 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.*

### 12.3 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.*

### 12.4 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.*

## 12.5 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.*

## 12.6 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.*

## 12.7 Registered Parks and Gardens

Records within 250m

0

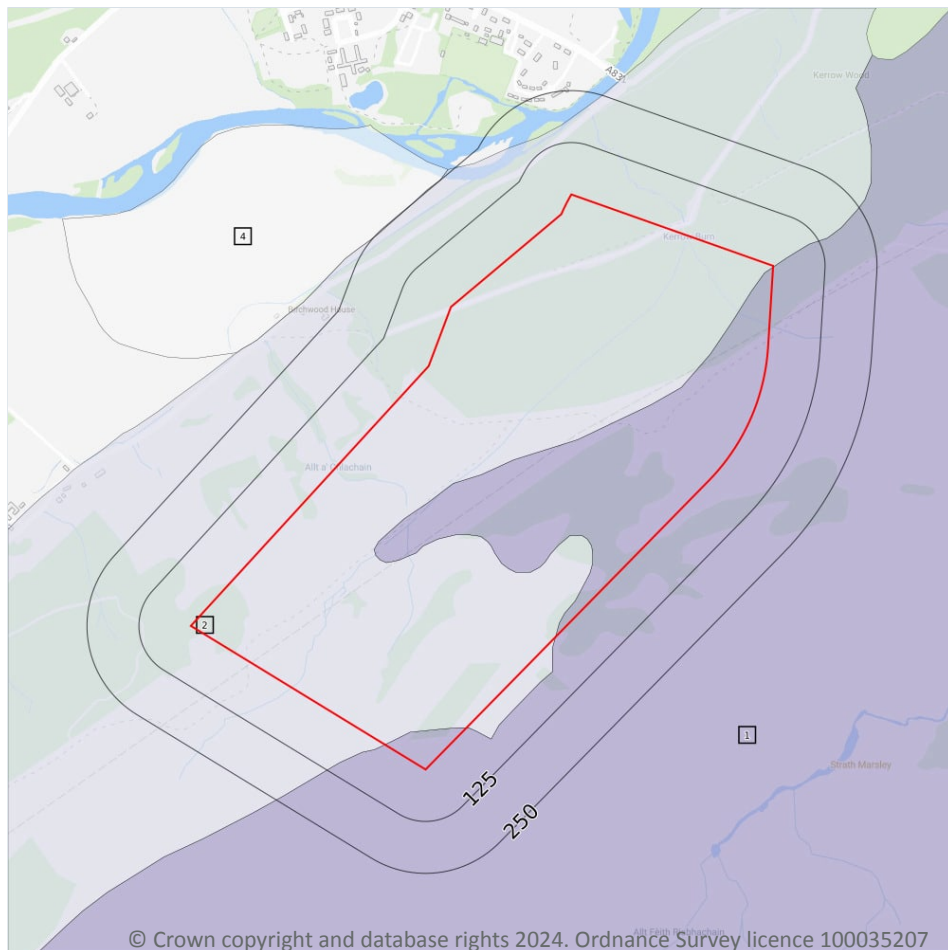
Parks and gardens assessed to be of particular interest and of special historic interest. The emphasis being on 'designed' landscapes, rather than on planting or botanical importance. Registration is a 'material consideration' in the planning process, meaning that planning authorities must consider the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

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





## 13 Agricultural designations



- Site Outline**
- Search buffers in metres (m)**
- Grade 1 - excellent quality
  - Grade 2 - very good quality
  - Grade 3 - good to moderate quality
  - Grade 4 - good quality
  - Grade 5 - moderate quality
  - Grade 6 - poor quality
  - Grade 7 - very poor quality

### 13.1 Agricultural Land Classification

Records within 250m

3

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 44](#) >

ID	Location	Classification	Description
1	On site	Grade 6.3	Land Suited only to Improved Grassland and Rough Grazings
2	On site	Grade 5.3	Land Suited only to Improved Grassland and Rough Grazings
4	247m NW	Grade 4.2	Land Suited to Arable Cropping



*This data is sourced from the James Hutton Institute.*





[illegible]

Full coverage  
 Partial coverage  
 No coverage

Records within 500m	4
---------------------	---

Features are displayed on the Geology 1:10,000 scale - Availability map on [page 46 >](#)

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	Full	Full	No coverage	No coverage	NH32NW
2	On site	No coverage	Full	No coverage	No coverage	NH33SW
3	64m NE	No coverage	Full	No coverage	No coverage	NH33SE
4	460m SE	Full	Full	No coverage	No coverage	NH32NE



*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

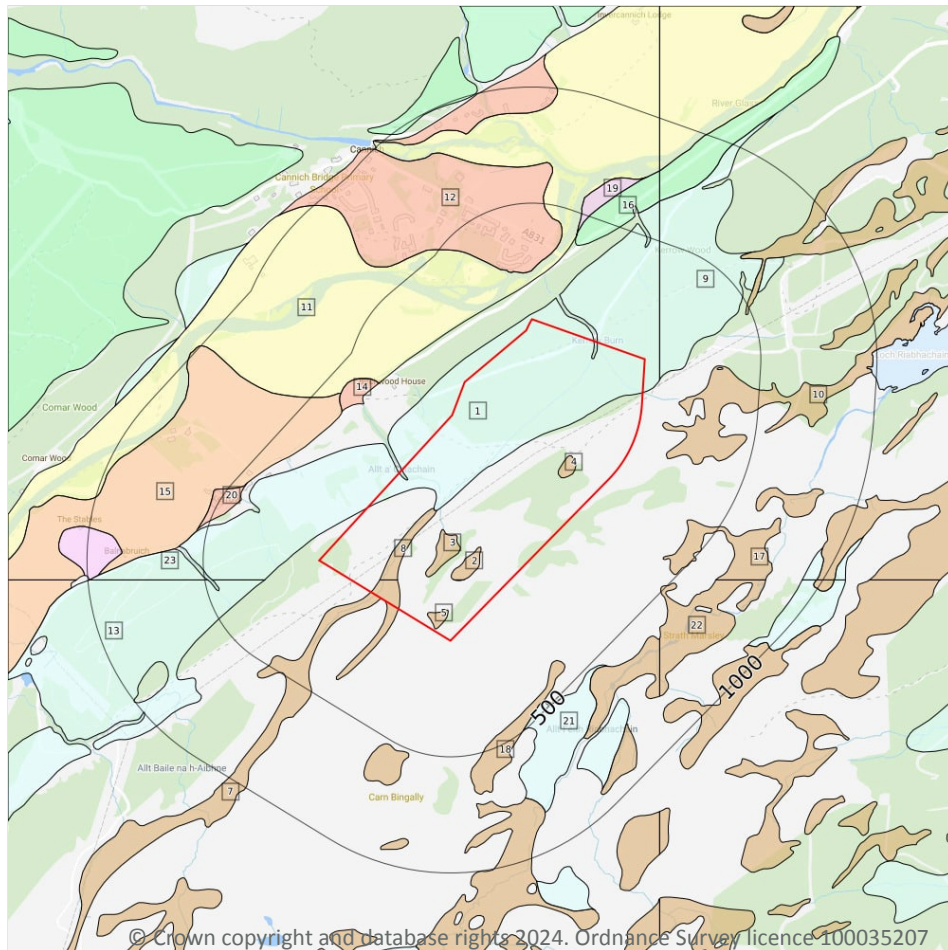
Details of made, worked, infilled, disturbed and landscaped ground at 1:10,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

*This data is sourced from the British Geological Survey.*





## Geology 1:10,000 scale - Superficial



**Site Outline**

Search buffers in metres (m)

**Landslip (10k)**

**Superficial geology (10k)**  
Please see table for more details.

### 14.3 Superficial geology (10k)

Records within 500m

23

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.

Features are displayed on the Geology 1:10,000 scale - Superficial map on [page 49](#) >

ID	Location	LEX Code	Description	Rock description
1	On site	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
2	On site	PEAT-P	Peat - Peat	Peat
3	On site	PEAT-P	Peat - Peat	Peat





ID	Location	LEX Code	Description	Rock description
4	On site	PEAT-P	Peat - Peat	Peat
5	On site	PEAT-P	Peat - Peat	Peat
6	On site	PEAT-P	Peat - Peat	Peat
7	On site	PEAT-P	Peat - Peat	Peat
8	On site	PEAT-P	Peat - Peat	Peat
9	64m NE	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
10	101m E	PEAT-P	Peat - Peat	Peat
11	138m N	ALV-XSVB	Alluvium - Sand, Gravel And Boulders	Sand, Gravel And Boulders
12	203m N	ALF-XVSZC	Alluvial Fan Deposits - Gravel, Sand, Silt And Clay	Gravel, Sand, Silt And Clay
13	250m SW	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
14	314m NW	ALF-XVSZC	Alluvial Fan Deposits - Gravel, Sand, Silt And Clay	Gravel, Sand, Silt And Clay
15	354m W	RTDU-XSV	River Terrace Deposits (undifferentiated) - Sand And Gravel	Sand And Gravel
16	366m N	HMGDD-XDSV	Hummocky (moundy) Glacial Deposits, Devensian - Diamicton, Sand And Gravel	Diamicton, Sand And Gravel [unlithified Deposits Coding Scheme - Extended]
17	373m E	PEAT-P	Peat - Peat	Peat
18	380m S	PEAT-P	Peat - Peat	Peat
19	400m N	GFSDD-XSVB	Glaciofluvial Sheet Deposits, Devensian - Sand, Gravel And Boulders	Sand, Gravel And Boulders
20	425m W	ALF-XVSZC	Alluvial Fan Deposits - Gravel, Sand, Silt And Clay	Gravel, Sand, Silt And Clay
21	466m S	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
22	487m SE	PEAT-P	Peat - Peat	Peat
23	488m W	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton

*This data is sourced from the British Geological Survey.*

## 14.4 Landslip (10k)

<b>Records within 500m</b>	<b>0</b>
----------------------------	----------

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.*





[illegible]

## 14.5 Bedrock geology (10k)

0

*This data is sourced from the British Geological Survey.*

## 20





Features are displayed on the Geology 1:10,000 scale - Bedrock map on [page 51](#) >

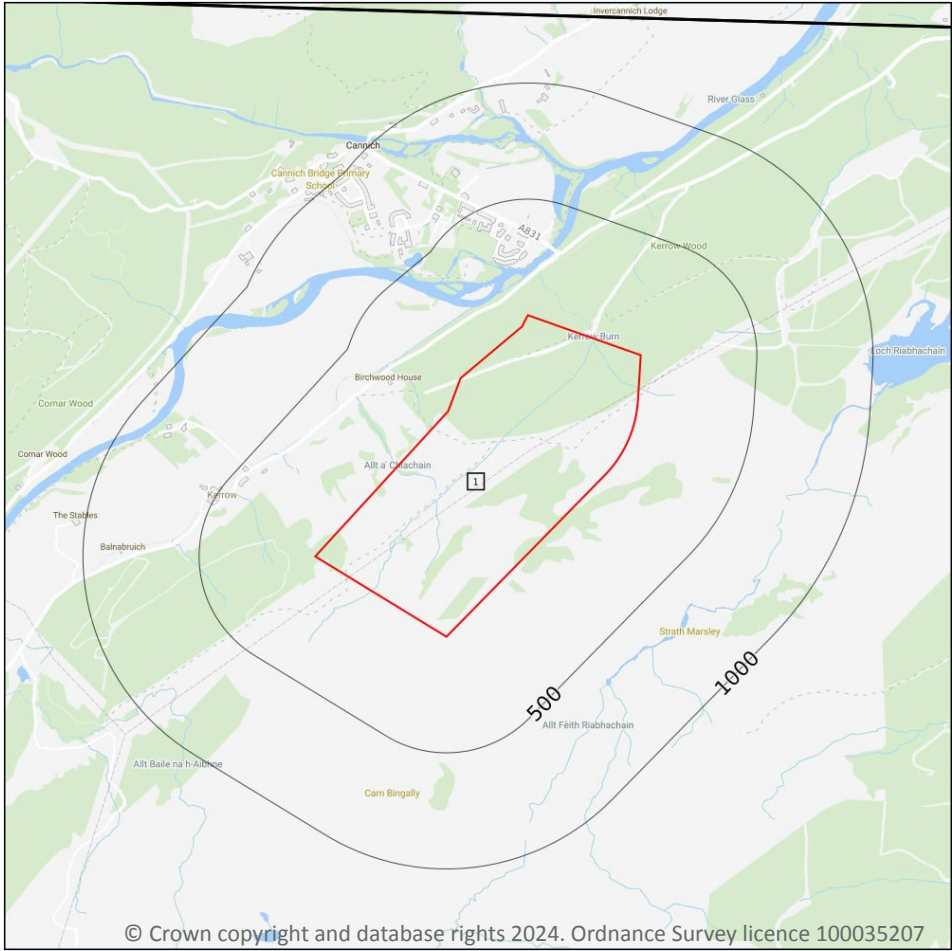
ID	Location	Category	Description
1	On site	LANDFORM	Marked concave break of slope, arrowheads denote uphill side
2	On site	LANDFORM	Ice mariginal glacial meltwater channel, single side right
3	On site	LANDFORM	Ice mariginal glacial meltwater channel, single side right
4	On site	LANDFORM	Marked concave break of slope, arrowheads denote uphill side
5	On site	LANDFORM	Marked concave break of slope, arrowheads denote uphill side
6	On site	LANDFORM	Axis of large-scale glacial flute
7	On site	LANDFORM	Ice mariginal glacial meltwater channel, single side right
8	On site	LANDFORM	Ice mariginal glacial meltwater channel, single side right
9	On site	LANDFORM	Ice mariginal glacial meltwater channel, single side right
10	On site	LANDFORM	Marked concave break of slope, arrowheads denote uphill side
11	On site	LANDFORM	Ice mariginal glacial meltwater channel, single side right
12	On site	LANDFORM	Ice mariginal glacial meltwater channel, single side right
13	On site	LANDFORM	Axis of large-scale glacial flute
14	35m SW	LANDFORM	Marked concave break of slope, arrowheads denote uphill side
15	101m SW	LANDFORM	Axis of large-scale glacial flute
16	139m SW	LANDFORM	Axis of large-scale glacial flute
17	256m NW	LANDFORM	Palaeochannel, centre line (within terrace or fan)
18	432m N	LANDFORM	Backfeature of terrace margin, arrowheads denote uphill side
19	467m E	LANDFORM	Glacial meltwater channel, undifferentiated, centre line
20	473m NW	LANDFORM	Palaeochannel, centre line (within terrace or fan)

*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.

Features are displayed on the Geology 1:50,000 scale - Availability map on [page 53](#) >

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	No coverage	Full	Full	No coverage	SC073w_Invermoriston_v4

This data is sourced from the British Geological Survey.



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

### 15.2 Artificial and made ground (50k)

Records within 500m

0

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.

*This data is sourced from the British Geological Survey.*

### 15.3 Artificial ground permeability (50k)

Records within 50m

0

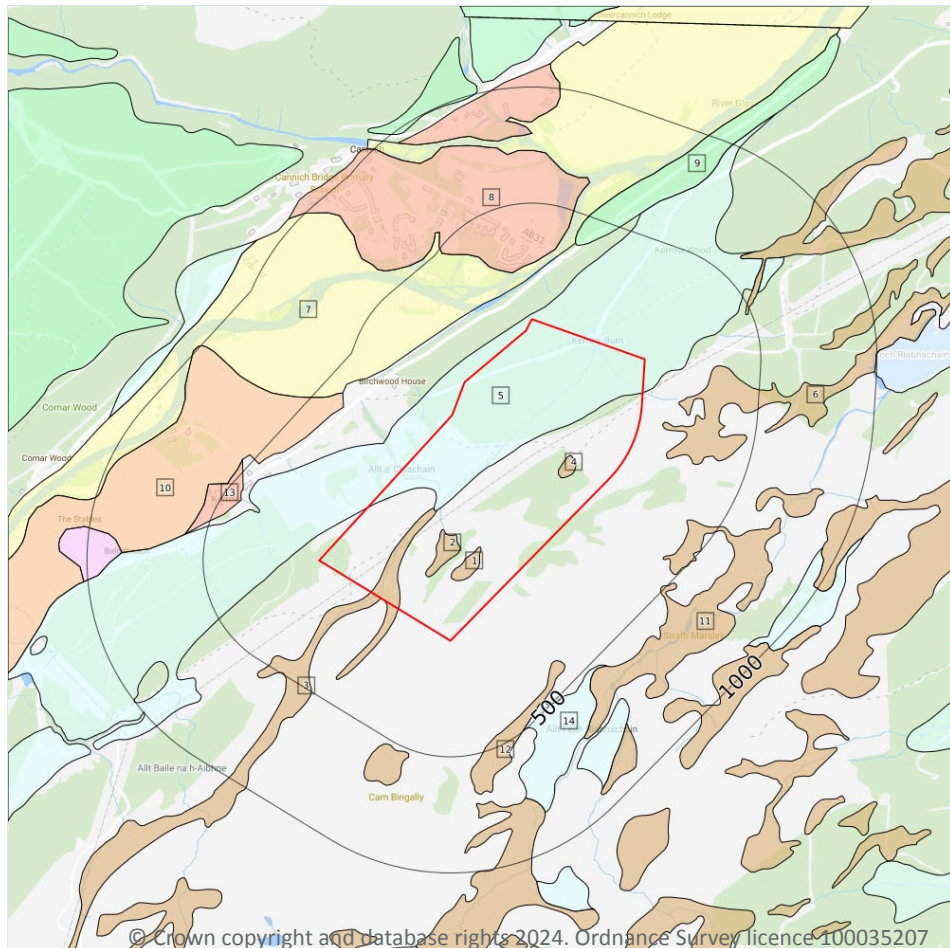
A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any artificial deposits (the zone between the land surface and the water table).

*This data is sourced from the British Geological Survey.*





## Geology 1:50,000 scale - 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

14

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 55](#) >

ID	Location	LEX Code	Description	Rock description
1	On site	PEAT-P	PEAT	PEAT
2	On site	PEAT-P	PEAT	PEAT
3	On site	PEAT-P	PEAT	PEAT
4	On site	PEAT-P	PEAT	PEAT





ID	Location	LEX Code	Description	Rock description
5	On site	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
6	101m E	PEAT-P	PEAT	PEAT
7	156m N	ALV-XSVB	ALLUVIUM	SAND, GRAVEL AND BOULDERS
8	217m N	ALF-XVSZC	ALLUVIAL FAN DEPOSITS	GRAVEL, SAND, SILT AND CLAY
9	366m N	HMGDD-XDSV	HUMMOCKY (MOUNDY) GLACIAL DEPOSITS, DEVENSIAN	DIAMICTON, SAND AND GRAVEL
10	369m NW	RTDU-XSV	RIVER TERRACE DEPOSITS (UNDIFFERENTIATED)	SAND AND GRAVEL
11	373m E	PEAT-P	PEAT	PEAT
12	380m S	PEAT-P	PEAT	PEAT
13	425m W	ALF-XVSZC	ALLUVIAL FAN DEPOSITS	GRAVEL, SAND, SILT AND CLAY
14	467m S	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON

*This data is sourced from the British Geological Survey.*

## 15.5 Superficial permeability (50k)

<b>Records within 50m</b>	<b>7</b>
---------------------------	----------

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	Mixed	Low	Very Low
On site	Mixed	Low	Very Low
On site	Mixed	Low	Very Low
On site	Mixed	Low	Very Low
On site	Mixed	Low	Very Low
On site	Mixed	Low	Very Low
On site	Mixed	High	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

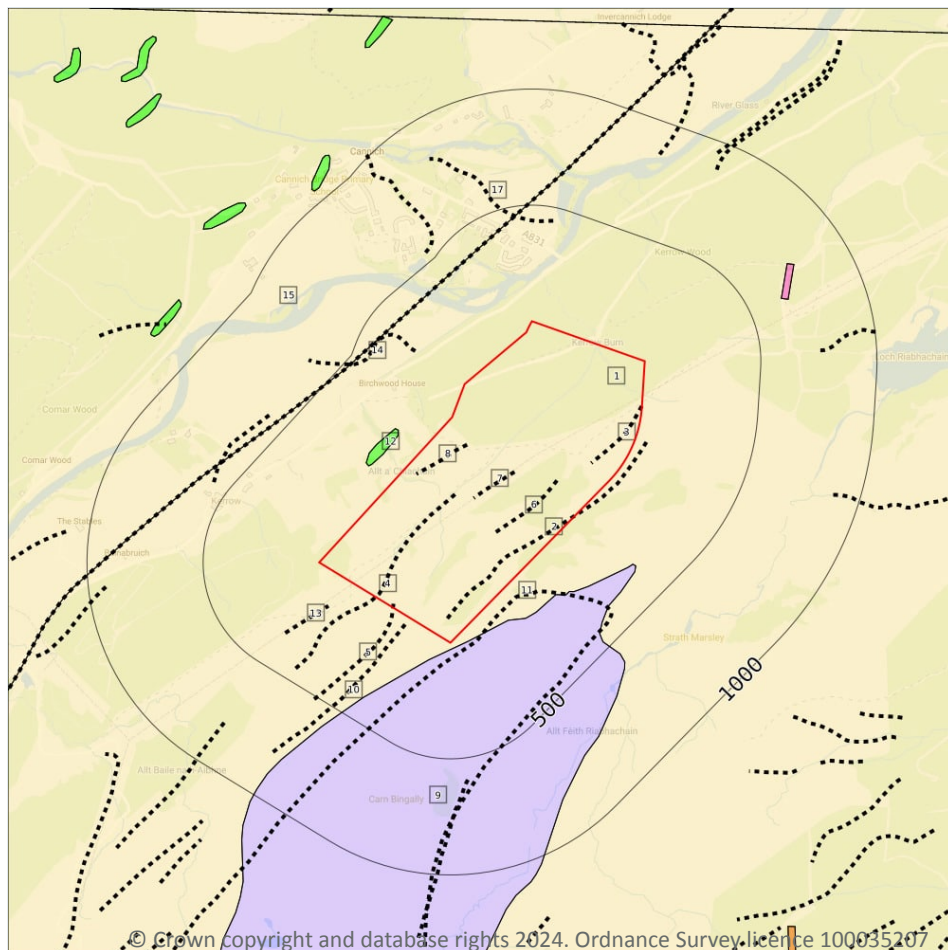
A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any landslip deposits (the zone between the land surface and the water table).

*This data is sourced from the British Geological Survey.*





## Geology 1:50,000 scale - Bedrock



### 15.8 Bedrock geology (50k)

#### Records within 500m

4

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 58 >](#)

ID	Location	LEX Code	Description	Rock age
1	On site	TAPS-PSAMM	TARVIE PSAMMITE FORMATION - PSAMMITE	-
9	27m S	TAPS-PSSP	TARVIE PSAMMITE FORMATION - PSAMMITE AND SEMIPELITE	-





ID	Location	LEX Code	Description	Rock age
12	112m W	UIPC-AMHS	UNNAMED IGNEOUS INTRUSION, PRE-CALEDONIAN - AMPHIBOLITE AND HORNBLENDE SCHIST	-
15	387m N	TAPS-PSAMM	TARVIE PSAMMITE FORMATION - PSAMMITE	-

*This data is sourced from the British Geological Survey.*

## 15.9 Bedrock permeability (50k)

### Records within 50m

**3**

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	Fracture	Low	Low
On site	Fracture	Low	Low
27m S	Fracture	Low	Low

*This data is sourced from the British Geological Survey.*

## 15.10 Bedrock faults and other linear features (50k)

### Records within 500m

**13**

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.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on [page 58 >](#)

ID	Location	Category	Description
2	On site	LANDFORM	Marked concave break in slope
3	On site	LANDFORM	Ice-marginal glacial single-sided meltwater channel, right
4	On site	LANDFORM	Ice-marginal glacial single-sided meltwater channel, right
5	On site	LANDFORM	Ice-marginal glacial single-sided meltwater channel, right
6	On site	LANDFORM	Ice-marginal glacial single-sided meltwater channel, right
7	On site	LANDFORM	Axis of large-scale glacial flute





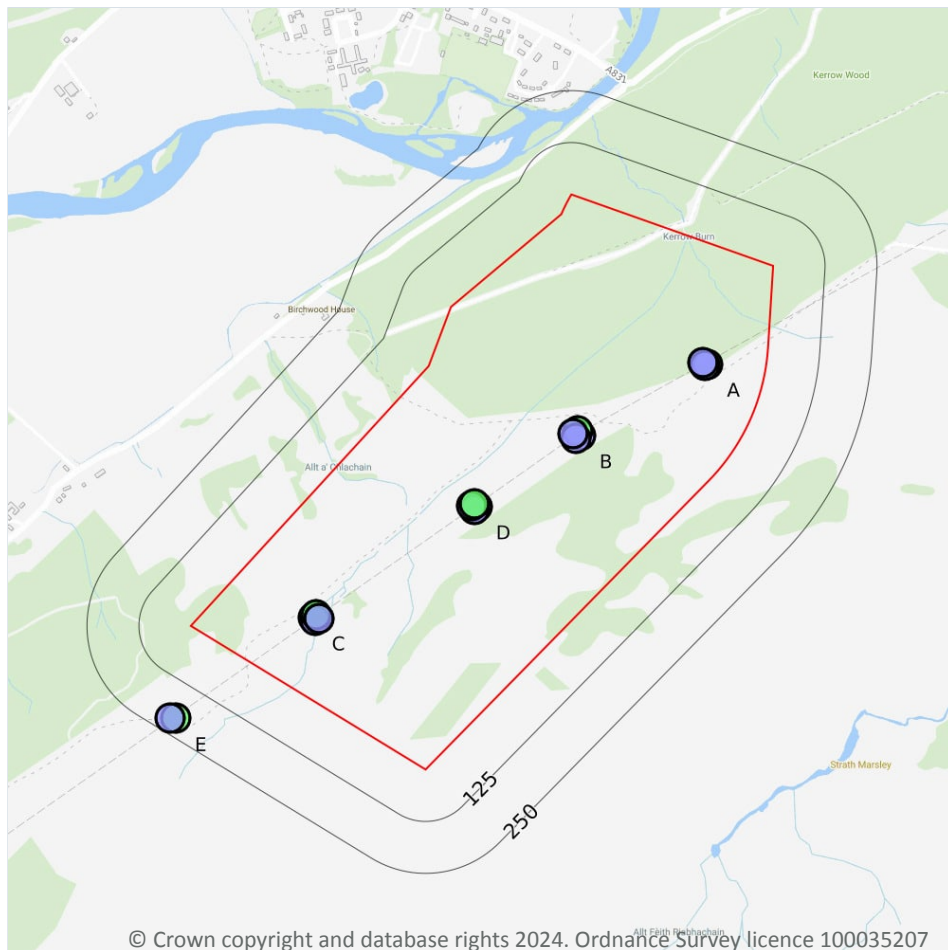
ID	Location	Category	Description
8	On site	LANDFORM	Axis of large-scale glacial flute
10	35m SW	LANDFORM	Marked concave break in slope
11	57m S	ALTERATION_AREA	Limit of pegmatitic rock veins
13	139m SW	LANDFORM	Axis of large-scale glacial flute
14	256m NW	LANDFORM	Palaeochannel centre line (other than glacial meltwater channel or of unknown origin)
16	387m N	FAULT	Fault, inferred, displacement unknown
17	432m N	LANDFORM	Back-feature of terrace

*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

17

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 61](#) >

ID	Location	Grid reference	Name	Length	Confidential	Web link
A	On site	234779 830714	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF57-B	14.0	N	<a href="#">18949403</a> ↗
A	On site	234771 830710	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF57-C	4.0	N	<a href="#">18949406</a> ↗





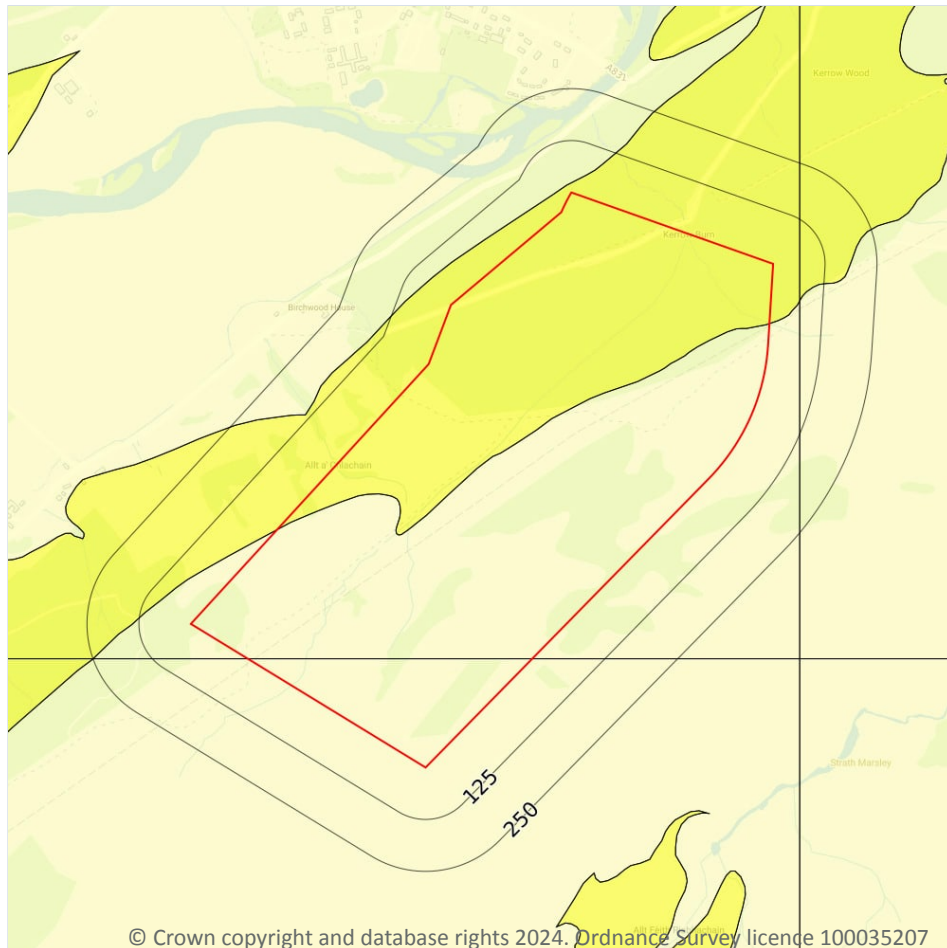
ID	Location	Grid reference	Name	Length	Confidential	Web link
A	On site	234766 830718	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF57-D	4.5	N	<a href="#">18949686</a> ↗
B	On site	234472 830542	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF58-B	7.0	N	<a href="#">18949688</a> ↗
B	On site	234465 830553	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF58-A	17.2	N	<a href="#">18949687</a> ↗
B	On site	234461 830535	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF58-C	6.5	N	<a href="#">18949689</a> ↗
B	On site	234454 830546	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF58-D	7.0	N	<a href="#">18949696</a> ↗
C	On site	233828 830105	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF60-D	6.5	N	<a href="#">18949708</a> ↗
C	On site	233834 830097	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF60-C	7.5	N	<a href="#">18949707</a> ↗
C	On site	233836 830111	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF60-A	16.0	N	<a href="#">18949704</a> ↗
C	On site	233842 830102	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF60-B	4.9	N	<a href="#">18949706</a> ↗
D	On site	234223 830371	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF59-B	3.5	N	<a href="#">18949698</a> ↗
D	On site	234216 830365	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF59-C	9.0	N	<a href="#">18949699</a> ↗
D	On site	234210 830373	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF59-D	3.5	N	<a href="#">18949700</a> ↗
D	On site	234218 830378	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF59-A	11.65	N	<a href="#">18949697</a> ↗
E	209m SW	233498 829861	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF61-B	14.0	N	<a href="#">18949709</a> ↗
E	214m SW	233485 829863	BEAULY DENNY 400KV OVERHEAD TRANSMISSION LINE BF61-D	4.0	N	<a href="#">18949710</a> ↗

*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

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### 17.1 Shrink swell clays

Records within 50m

3

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 63](#) >

Location	Hazard rating	Details
On site	Negligible	Ground conditions predominantly non-plastic.
On site	Very low	Ground conditions predominantly low plasticity.
21m N	Negligible	Ground conditions predominantly non-plastic.



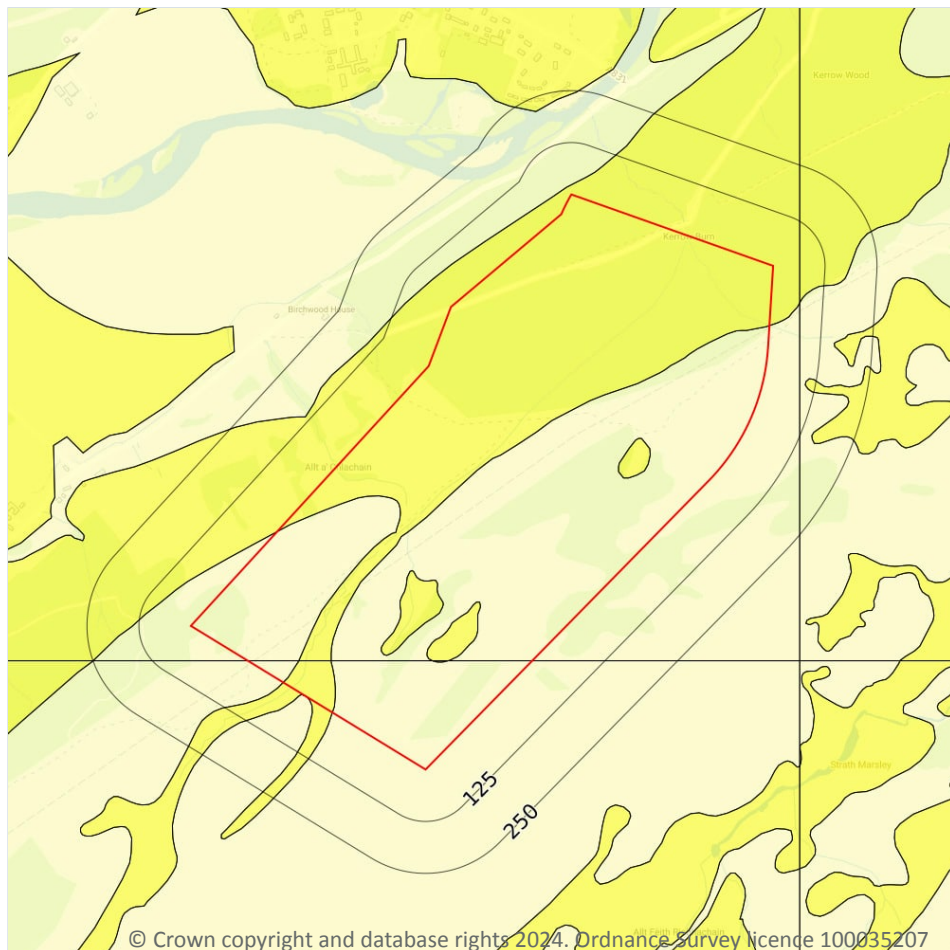


*This data is sourced from the British Geological Survey.*





## 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

3

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 65](#) >

Location	Hazard rating	Details
On site	Negligible	Running sand conditions are not thought to occur whatever the position of the water table. No identified constraints on lands use due to running conditions.





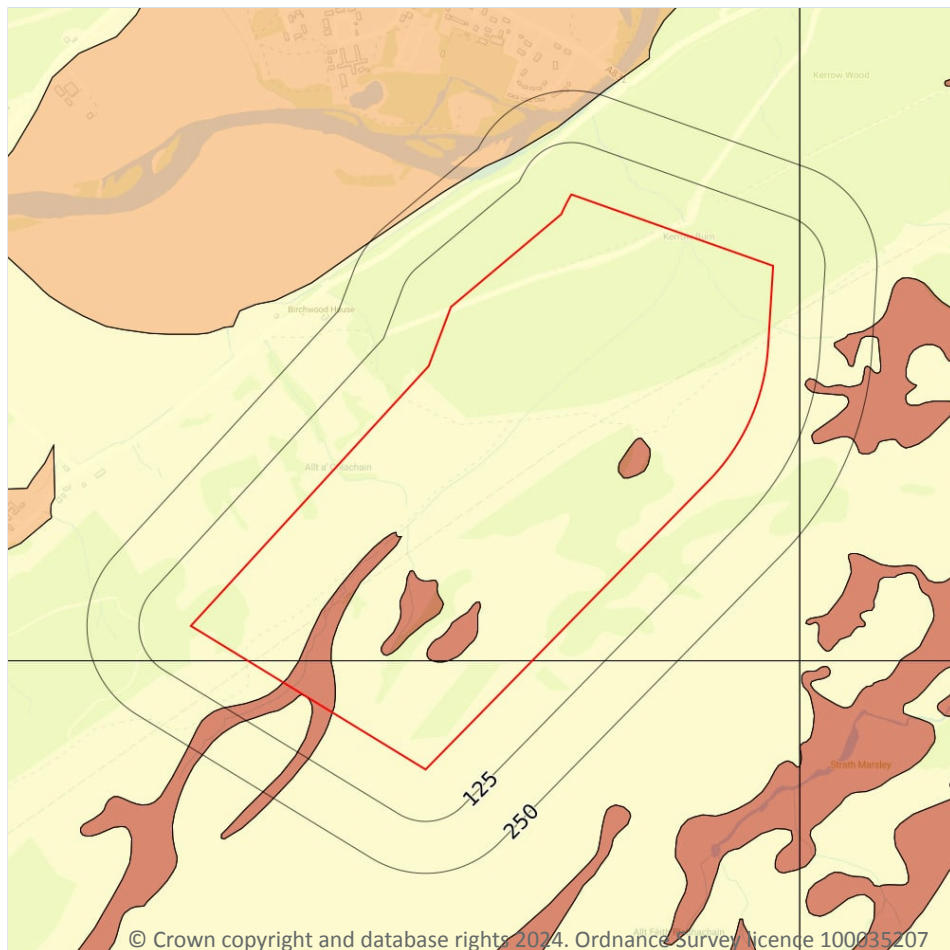
Location	Hazard rating	Details
On site	Very low	Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless water table rises rapidly.
21m N	Negligible	Running sand conditions are not thought to occur whatever the position of the water table. No identified constraints on lands use due to running conditions.

*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 67](#) >

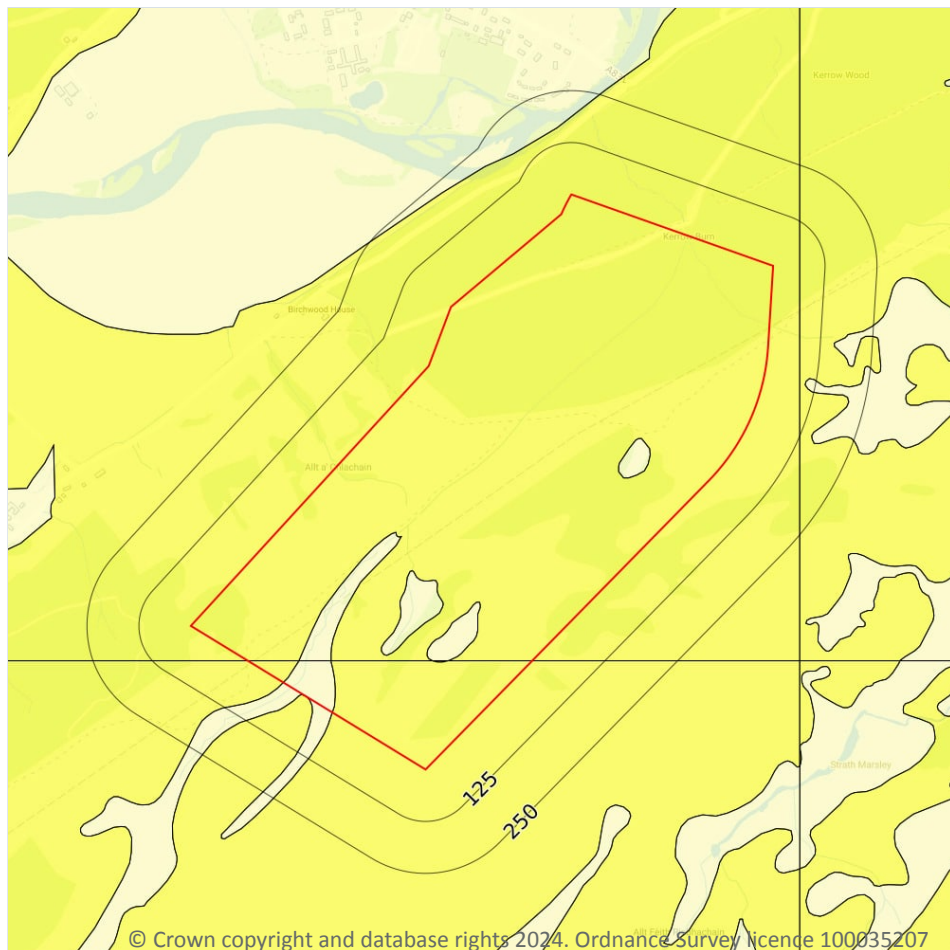
Location	Hazard rating	Details
On site	Negligible	Compressible strata are not thought to occur.
On site	High	Highly compressible strata present. Significant constraint on land use depending on thickness.

*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

2

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 68](#) >

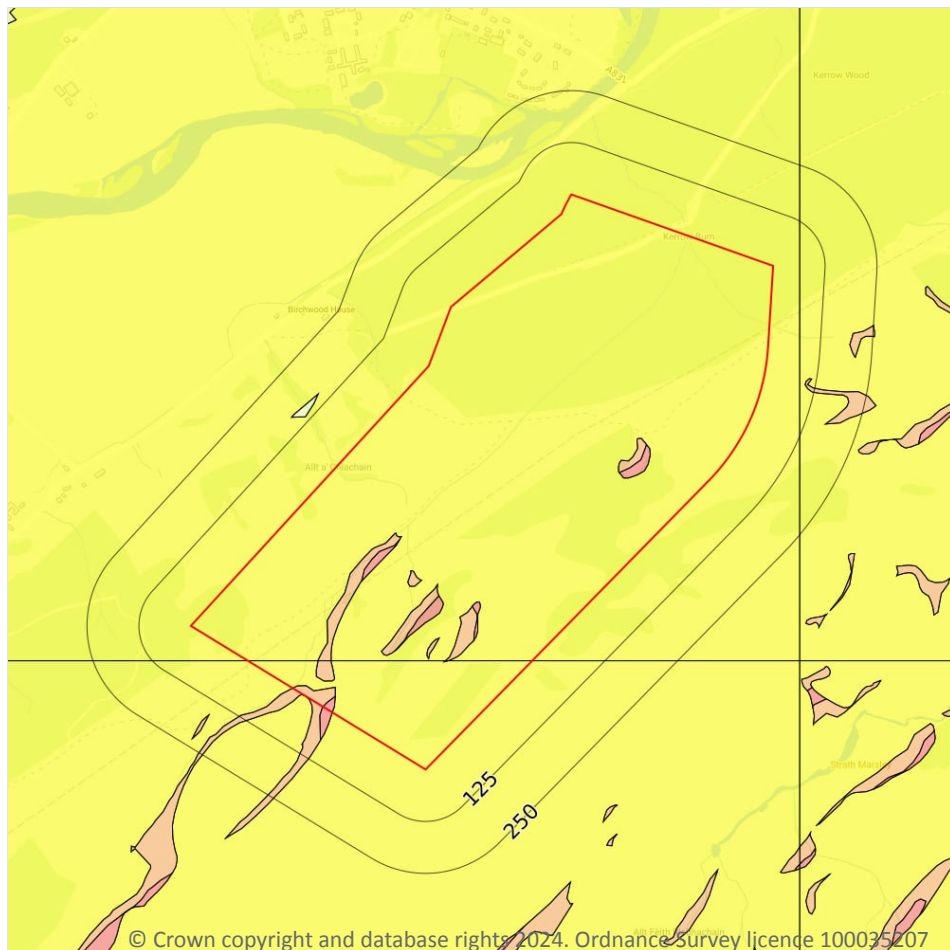
Location	Hazard rating	Details
On site	Negligible	Deposits with potential to collapse when loaded and saturated are believed not to be present.
On site	Very low	Deposits with potential to collapse when loaded and saturated are unlikely to be present.

*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

3

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 69](#) >

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.





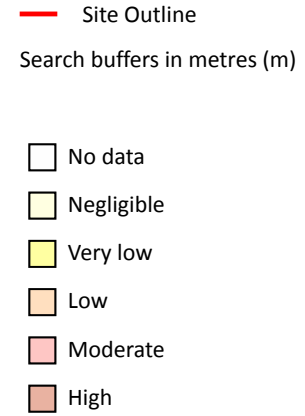
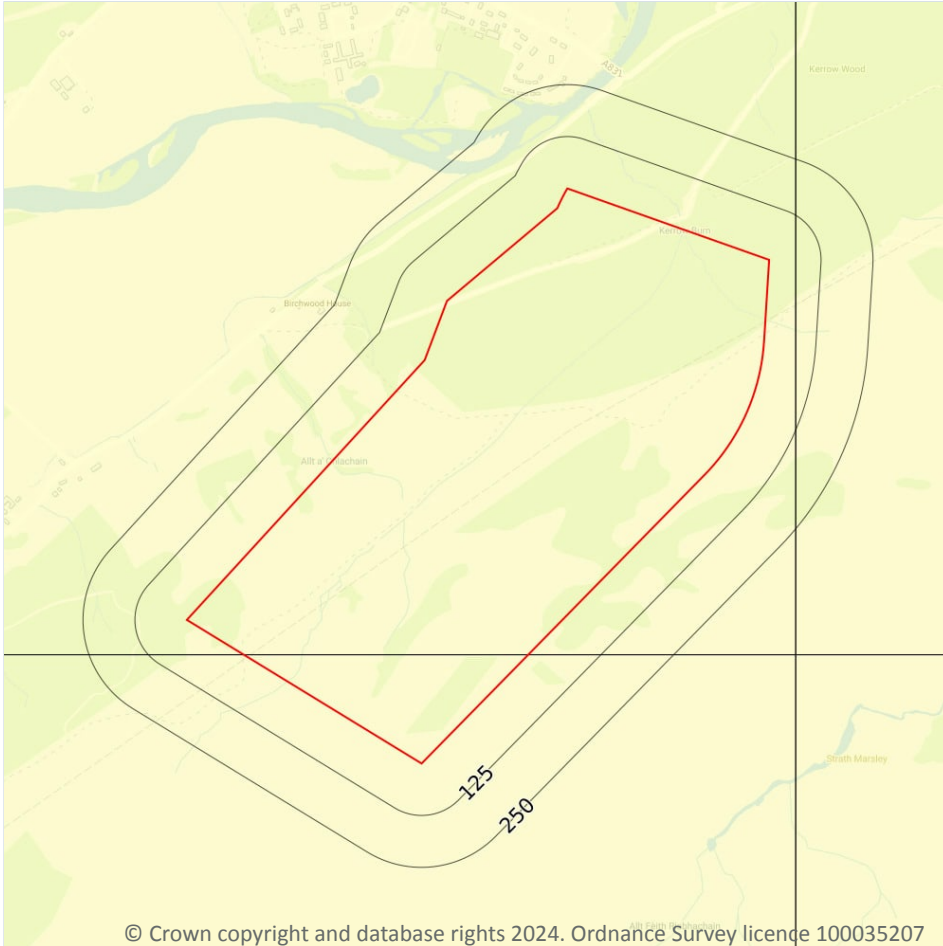
Location	Hazard rating	Details
On site	Low	Slope instability problems may be present or anticipated. Site investigation should consider specifically the slope stability of the site.
On site	Moderate	Slope instability problems are probably present or have occurred in the past. Land use should consider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

*This data is sourced from the British Geological Survey.*





## Natural ground subsidence - Ground dissolution of soluble rocks



### 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 71](#)

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.



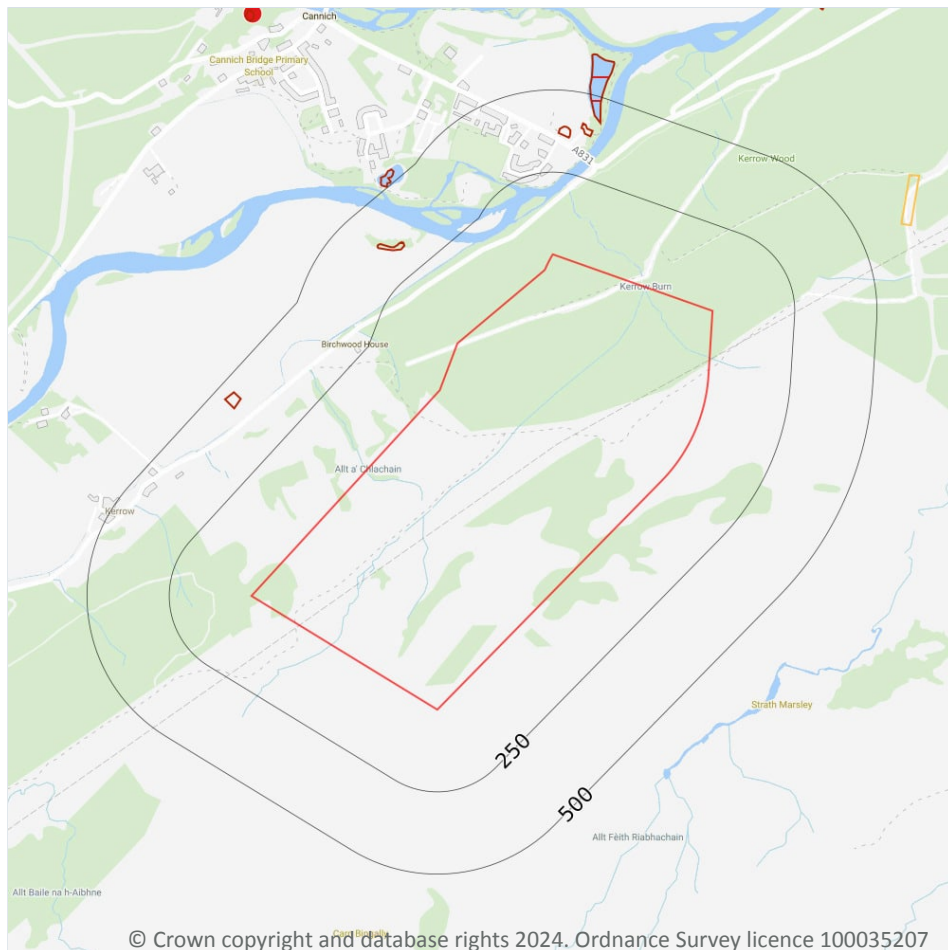


*This data is sourced from the British Geological Survey.*





## 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****0**

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.

*This data is sourced from Ordnance Survey/Groundsure.*

## 18.3 Underground workings

**Records within 1000m****0**

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

*This 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****1**

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 73](#) >





ID	Location	Name	Commodity	Class	Likelihood
7	632m NE	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

<b>Records on site</b>	<b>0</b>
------------------------	----------

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

<b>Records within 500m</b>	<b>0</b>
----------------------------	----------

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

<b>Records within 500m</b>	<b>0</b>
----------------------------	----------

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.

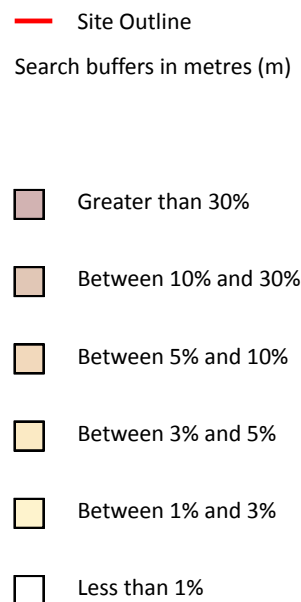
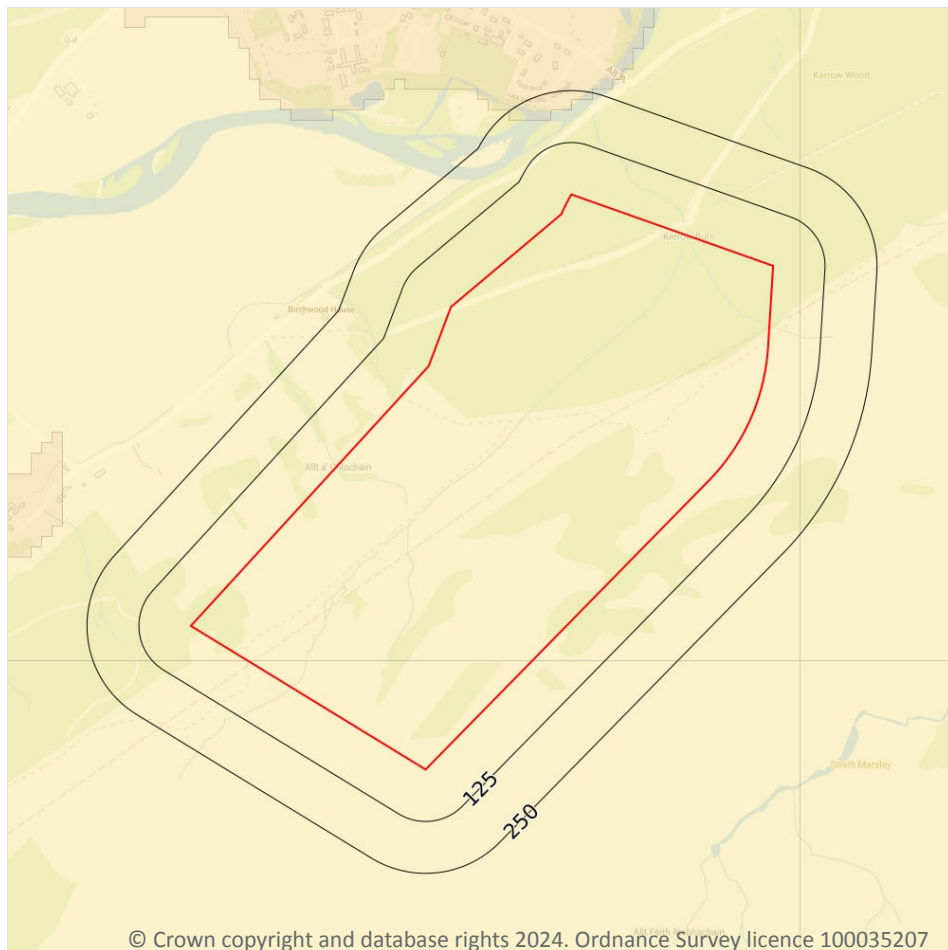
The database is not yet complete, and not all records have been verified. The absence of data does not mean that karst features are not present at a site. A reliability rating is included with each record.

*This data is sourced from the British Geological Survey.*





## 20 Radon



### 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 80](#) >

Location	Estimated properties affected	Radon Protection Measures required
On site	Between 1% and 3%	Basic





*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

26

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<sup>2</sup>. 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<sup>2</sup>; 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	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg





Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
14m S	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
14m S	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
24m SW	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
27m S	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
34m SW	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 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<sup>2</sup>).

*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<sup>2</sup>.

*This data is sourced from the British Geological Survey.*





## 22 Railway infrastructure and projects

### 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	0
---------------------	---

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.

*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

0

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

*This data is sourced from OpenStreetMap.*

## 22.7 Railways

Records within 250m

0

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

*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.*





## Data providers

Groundsure works with respected data providers to bring you the most relevant and accurate information. To find out who they are and their areas of expertise see <https://www.groundsure.com/sources-reference> ↗.

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## Scotland, Red Line Boundary

### Order Details

**Date:** 01/05/2024  
**Your ref:** Scotland, Red Line Boundary  
**Our Ref:** GSIP-2024-14714-18280\_G

### Site Details

**Location:** 234948 831451  
**Area:** 40.1 ha  
**Authority:** [The Highland Council](#) ↗



**Summary of findings**

[p. 2 >](#)

**Aerial image**

[p. 7 >](#)

**OS MasterMap site plan**

N/A: >10ha

[Insight User Guide](#) ↗



## Summary of findings

Page	Section	<a href="#">Past land use &gt;</a>	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">12 &gt;</a>	<a href="#">1.1 &gt;</a>	<a href="#">Historical industrial land uses &gt;</a>	1	0	2	0	-
13	1.2	Historical tanks	0	0	0	0	-
13	1.3	Historical energy features	0	0	0	0	-
13	1.4	Historical petrol stations	0	0	0	0	-
14	1.5	Historical garages	0	0	0	0	-
14	1.6	Historical military land	0	0	0	0	-
Page	Section	<a href="#">Past land use - un-grouped &gt;</a>	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">15 &gt;</a>	<a href="#">2.1 &gt;</a>	<a href="#">Historical industrial land uses &gt;</a>	1	0	2	0	-
16	2.2	Historical tanks	0	0	0	0	-
16	2.3	Historical energy features	0	0	0	0	-
16	2.4	Historical petrol stations	0	0	0	0	-
16	2.5	Historical garages	0	0	0	0	-
Page	Section	<a href="#">Waste and landfill &gt;</a>	On site	0-50m	50-250m	250-500m	500-2000m
17	3.1	Active or recent landfill	0	0	0	0	-
17	3.2	Historical landfill (BGS records)	0	0	0	0	-
<a href="#">18 &gt;</a>	<a href="#">3.3 &gt;</a>	<a href="#">Historical landfill (LA/mapping records) &gt;</a>	0	0	1	0	-
18	3.4	Licensed waste sites	0	0	0	0	-
18	3.5	Historical waste sites	0	0	0	0	-
Page	Section	<a href="#">Current industrial land use &gt;</a>	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">19 &gt;</a>	<a href="#">4.1 &gt;</a>	<a href="#">Recent industrial land uses &gt;</a>	0	0	2	-	-
20	4.2	Current or recent petrol stations	0	0	0	0	-
20	4.3	Electricity cables	0	0	0	0	-
20	4.4	Gas pipelines	0	0	0	0	-
20	4.5	Sites determined as Contaminated Land	0	0	0	0	-
20	4.6	Control of Major Accident Hazards (COMAH)	0	0	0	0	-
21	4.7	Regulated explosive sites	0	0	0	0	-





21	4.8	Hazardous substance storage/usage	0	0	0	0	-
21	4.9	Part A(1), IPPC and Historic IPC Authorisations	0	0	0	0	-
21	4.10	Part B Authorisations	0	0	0	0	-
21	4.11	Pollution inventory substances	0	0	0	0	-
22	4.12	Pollution inventory waste transfers	0	0	0	0	-
22	4.13	Pollution inventory radioactive waste	0	0	0	0	-
Page	Section	<a href="#">Hydrogeology &gt;</a>	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">23 &gt;</a>	<a href="#">5.1 &gt;</a>	<a href="#">Superficial aquifer &gt;</a>	Identified (within 500m)				
<a href="#">24 &gt;</a>	<a href="#">5.2 &gt;</a>	<a href="#">Bedrock aquifer &gt;</a>	Identified (within 500m)				
Page	Section	<a href="#">Hydrology &gt;</a>	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">25 &gt;</a>	<a href="#">6.1 &gt;</a>	<a href="#">Water Network (OS MasterMap) &gt;</a>	21	6	20	-	-
<a href="#">29 &gt;</a>	<a href="#">6.2 &gt;</a>	<a href="#">Surface water features &gt;</a>	1	3	4	-	-
Page	Section	<a href="#">River flooding &gt;</a>					
<a href="#">30 &gt;</a>	<a href="#">7.1 &gt;</a>	<a href="#">River flooding &gt;</a>	1 in 30 year, Greater than 1.0m (within 50m)				
Page	Section	Coastal flooding					
32	8.1	Coastal flooding	Negligible (within 50m)				
Page	Section	<a href="#">Surface water flooding &gt;</a>					
<a href="#">33 &gt;</a>	<a href="#">9.1 &gt;</a>	<a href="#">Surface water flooding &gt;</a>	1 in 30 year, Greater than 1.0m (within 50m)				
Page	Section	<a href="#">Groundwater flooding &gt;</a>					
<a href="#">35 &gt;</a>	<a href="#">10.1 &gt;</a>	<a href="#">Groundwater flooding &gt;</a>	Moderate (within 50m)				
Page	Section	<a href="#">Environmental designations &gt;</a>	On site	0-50m	50-250m	250-500m	500-2000m
36	11.1	Sites of Special Scientific Interest (SSSI)	0	0	0	0	0
37	11.2	Conserved wetland sites (Ramsar sites)	0	0	0	0	0
37	11.3	Special Areas of Conservation (SAC)	0	0	0	0	0
<a href="#">37 &gt;</a>	<a href="#">11.4 &gt;</a>	<a href="#">Special Protection Areas (SPA) &gt;</a>	0	0	0	0	2
38	11.5	National Nature Reserves (NNR)	0	0	0	0	0
38	11.6	Local Nature Reserves (LNR)	0	0	0	0	0
<a href="#">38 &gt;</a>	<a href="#">11.7 &gt;</a>	<a href="#">Designated Ancient Woodland &gt;</a>	3	1	0	1	22
39	11.8	Biosphere Reserves	0	0	0	0	0





40	11.9	Forest Parks	0	0	0	0	0
40	11.10	Marine Conservation Zones	0	0	0	0	0
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
41	12.1	World Heritage Sites	0	0	0	-	-
41	12.2	Area of Outstanding Natural Beauty	0	0	0	-	-
41	12.3	National Parks	0	0	0	-	-
41	12.4	Listed Buildings	0	0	0	-	-
42	12.5	Conservation Areas	0	0	0	-	-
42	12.6	Scheduled Ancient Monuments	0	0	0	-	-
42	12.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations >	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">43</a> >	<a href="#">13.1</a> >	<a href="#">Agricultural Land Classification</a> >	Grade 4.1 (within 250m)				
Page	Section	Geology 1:10,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">45</a> >	<a href="#">14.1</a> >	<a href="#">10k Availability</a> >	Identified (within 500m)				
46	14.2	Artificial and made ground (10k)	0	0	0	0	-
<a href="#">47</a> >	<a href="#">14.3</a> >	<a href="#">Superficial geology (10k)</a> >	7	0	3	3	-
48	14.4	Landslip (10k)	0	0	0	0	-
49	14.5	Bedrock geology (10k)	0	0	0	0	-
<a href="#">49</a> >	<a href="#">14.6</a> >	<a href="#">Bedrock faults and other linear features (10k)</a> >	2	1	10	4	-
Page	Section	Geology 1:50,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">51</a> >	<a href="#">15.1</a> >	<a href="#">50k Availability</a> >	Identified (within 500m)				
52	15.2	Artificial and made ground (50k)	0	0	0	0	-
52	15.3	Artificial ground permeability (50k)	0	0	-	-	-
<a href="#">53</a> >	<a href="#">15.4</a> >	<a href="#">Superficial geology (50k)</a> >	3	0	3	3	-
<a href="#">54</a> >	<a href="#">15.5</a> >	<a href="#">Superficial permeability (50k)</a> >	Identified (within 50m)				
54	15.6	Landslip (50k)	0	0	0	0	-
55	15.7	Landslip permeability (50k)	None (within 50m)				
<a href="#">56</a> >	<a href="#">15.8</a> >	<a href="#">Bedrock geology (50k)</a> >	1	0	1	2	-
<a href="#">57</a> >	<a href="#">15.9</a> >	<a href="#">Bedrock permeability (50k)</a> >	Identified (within 50m)				





<a href="#">57 &gt;</a>	<a href="#">15.10 &gt;</a>	<a href="#">Bedrock faults and other linear features (50k) &gt;</a>	2	1	4	2	-
Page	Section	Boreholes	On site	0-50m	50-250m	250-500m	500-2000m
59	16.1	BGS Boreholes	0	0	0	-	-
<a href="#">60 &gt;</a>	<a href="#">17.1 &gt;</a>	<a href="#">Shrink swell clays &gt;</a>	Very low (within 50m)				
<a href="#">61 &gt;</a>	<a href="#">17.2 &gt;</a>	<a href="#">Running sands &gt;</a>	Very low (within 50m)				
<a href="#">63 &gt;</a>	<a href="#">17.3 &gt;</a>	<a href="#">Compressible deposits &gt;</a>	Low (within 50m)				
<a href="#">65 &gt;</a>	<a href="#">17.4 &gt;</a>	<a href="#">Collapsible deposits &gt;</a>	Very low (within 50m)				
<a href="#">66 &gt;</a>	<a href="#">17.5 &gt;</a>	<a href="#">Landslides &gt;</a>	Very low (within 50m)				
<a href="#">67 &gt;</a>	<a href="#">17.6 &gt;</a>	<a href="#">Ground dissolution of soluble rocks &gt;</a>	Negligible (within 50m)				
Page	Section	<a href="#">Mining and ground workings &gt;</a>	On site	0-50m	50-250m	250-500m	500-2000m
69	18.1	BritPits	0	0	0	0	-
<a href="#">70 &gt;</a>	<a href="#">18.2 &gt;</a>	<a href="#">Surface ground workings &gt;</a>	1	0	3	-	-
70	18.3	Underground workings	0	0	0	0	0
70	18.4	Underground mining extents	0	0	0	0	-
70	18.5	Historical Mineral Planning Areas	0	0	0	0	-
<a href="#">71 &gt;</a>	<a href="#">18.6 &gt;</a>	<a href="#">Non-coal mining &gt;</a>	0	0	0	1	0
71	18.7	JPB mining areas	None (within 0m)				
71	18.8	The Coal Authority non-coal mining	0	0	0	0	-
72	18.9	Researched mining	0	0	0	0	-
72	18.10	Mining record office plans	0	0	0	0	-
72	18.11	BGS mine plans	0	0	0	0	-
72	18.12	Coal mining	None (within 0m)				
72	18.13	Brine areas	None (within 0m)				
73	18.14	Gypsum areas	None (within 0m)				
73	18.15	Tin mining	None (within 0m)				
73	18.16	Clay mining	None (within 0m)				
Page	Section	Ground cavities and sinkholes	On site	0-50m	50-250m	250-500m	500-2000m
74	19.1	Natural cavities	0	0	0	0	-

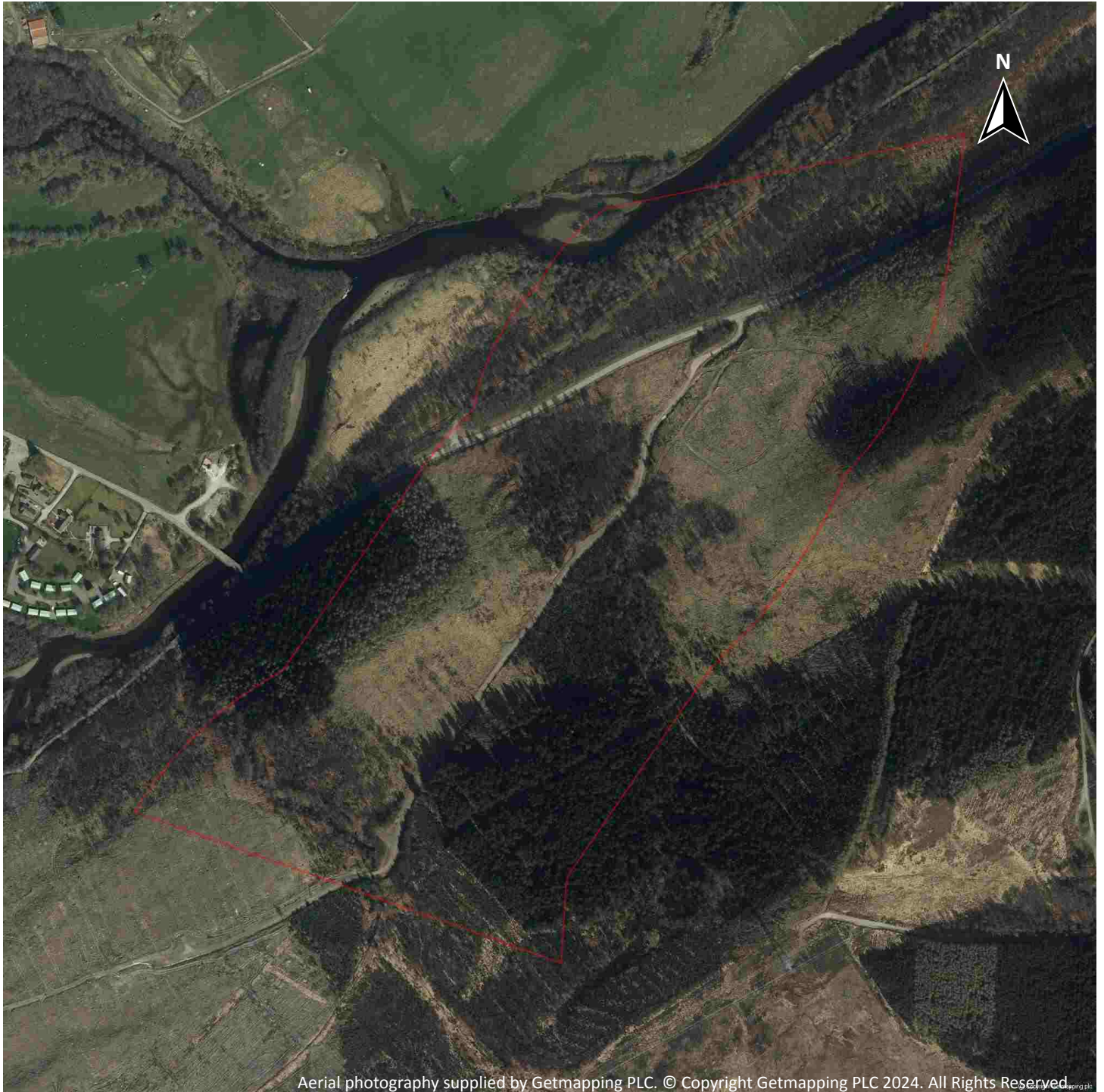




74	19.2	Mining cavities	0	0	0	0	0
74	19.3	Reported recent incidents	0	0	0	0	-
74	19.4	Historical incidents	0	0	0	0	-
75	19.5	National karst database	0	0	0	0	-
Page	Section	<a href="#">Radon &gt;</a>					
<a href="#">76 &gt;</a>	<a href="#">20.1 &gt;</a>	<a href="#">Radon &gt;</a>	Between 1% and 3% (within 0m)				
Page	Section	<a href="#">Soil chemistry &gt;</a>	On site	0-50m	50-250m	250-500m	500-2000m
<a href="#">78 &gt;</a>	<a href="#">21.1 &gt;</a>	<a href="#">BGS Estimated Background Soil Chemistry &gt;</a>	11	0	-	-	-
78	21.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
79	21.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	<a href="#">Railway infrastructure and projects</a>	On site	0-50m	50-250m	250-500m	500-2000m
80	22.1	Underground railways (London)	0	0	0	-	-
80	22.2	Underground railways (Non-London)	0	0	0	-	-
80	22.3	Railway tunnels	0	0	0	-	-
80	22.4	Historical railway and tunnel features	0	0	0	-	-
80	22.5	Royal Mail tunnels	0	0	0	-	-
81	22.6	Historical railways	0	0	0	-	-
81	22.7	Railways	0	0	0	-	-
81	22.8	Crossrail 1	0	0	0	0	-
81	22.9	Crossrail 2	0	0	0	0	-
81	22.10	HS2	0	0	0	0	-



## Recent aerial photograph



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Capture Date: 29/05/2020

Site Area: 40.1ha





## Recent site history - 2017 aerial photograph



Aerial photography supplied by Getmapping PLC. © Copyright Getmapping PLC 2024. All Rights Reserved.

Capture Date: 06/05/2017

Site Area: 40.1ha



Contact us with any questions at:

[info@groundsure.com](mailto:info@groundsure.com)

01273 257 755

Date: 1 May 2024



## Recent site history - 2013 aerial photograph



Aerial photography supplied by Getmapping PLC. © Copyright Getmapping PLC 2024. All Rights Reserved.

Capture Date: 19/07/2013

Site Area: 40.1ha





## Recent site history - 2008 aerial photograph



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Capture Date: 09/05/2008

Site Area: 40.1ha





## Recent site history - 2005 aerial photograph



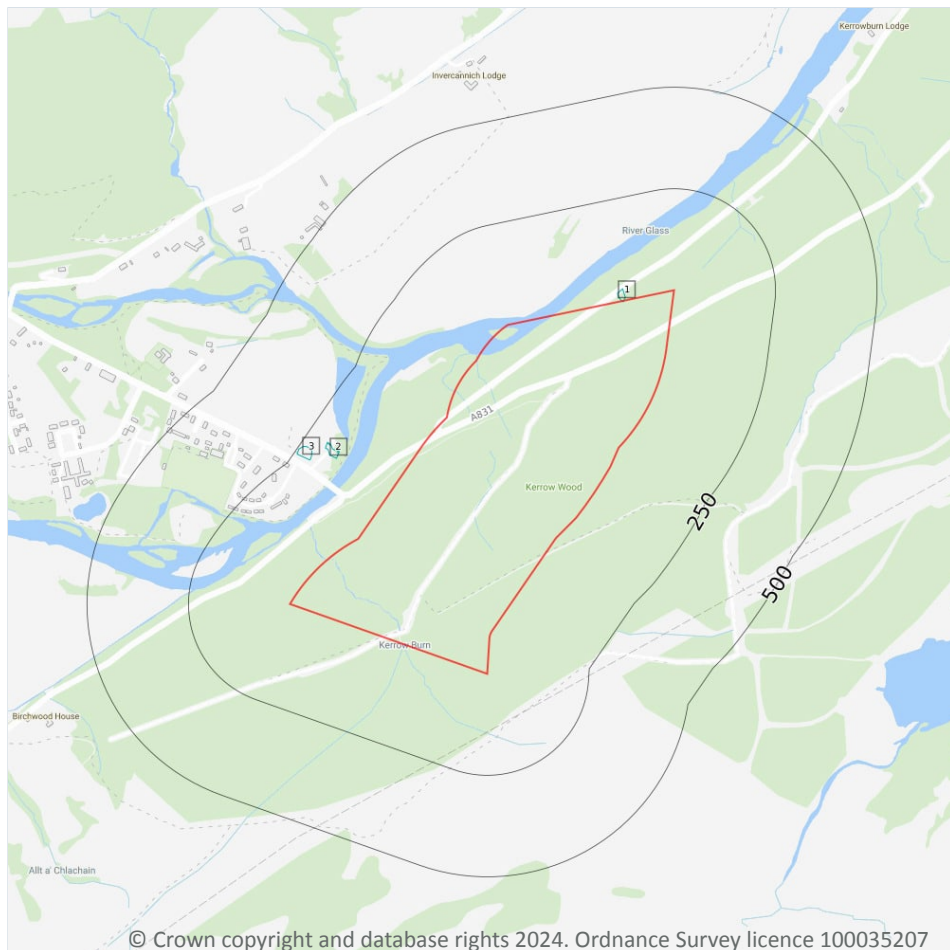
Capture Date: 25/04/2005

Site Area: 40.1ha





## 1 Past land use



- Site Outline
- Search buffers in metres (m)
- Historical industrial land uses

### 1.1 Historical industrial land uses

#### Records within 500m

3

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 12 >](#)

ID	Location	Land use	Dates present	Group ID
1	On site	Sand Pit	1901	64151





ID	Location	Land use	Dates present	Group ID
2	157m W	Disused Sewage Beds	1971	63065
3	208m W	Sand Pit	1901	64150

*This data is sourced from Ordnance Survey / Groundsure.*

## 1.2 Historical tanks

**Records within 500m**

**0**

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 ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

*This data is sourced from Ordnance Survey / Groundsure.*

## 1.3 Historical energy features

**Records within 500m**

**0**

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 ungrouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

*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 ungrouped 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 ungrouped 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

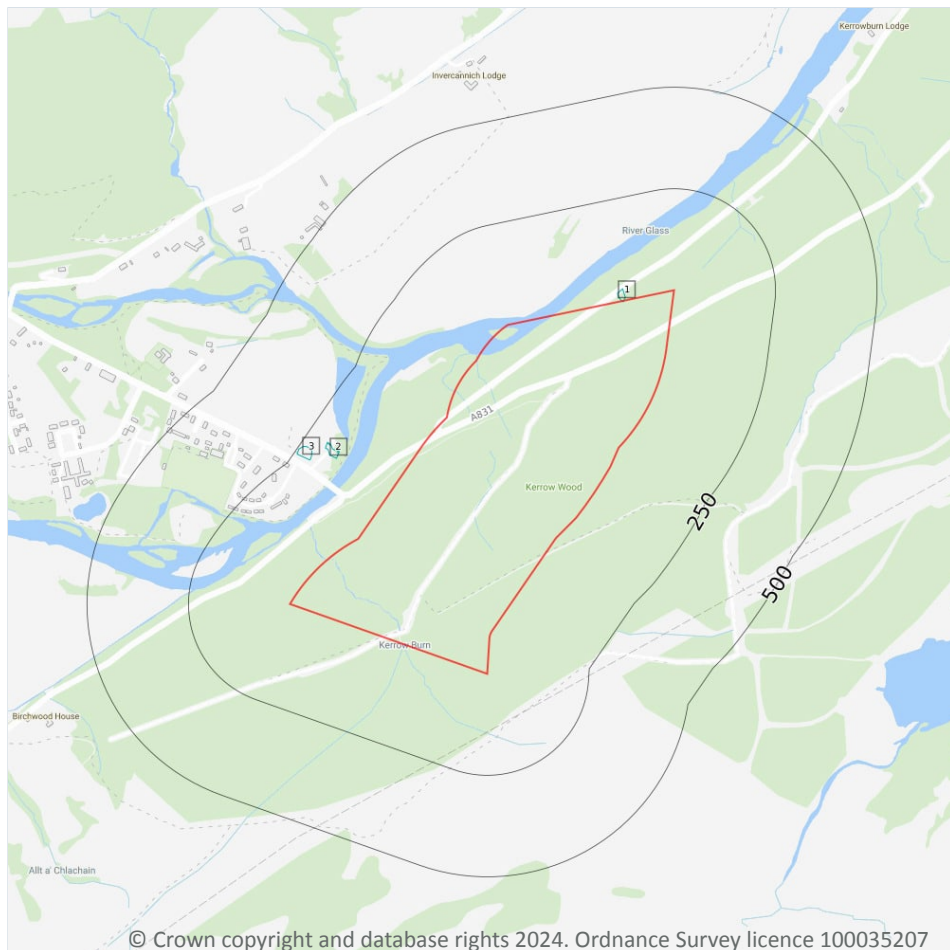
0

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

### 2.1 Historical industrial land uses

Records within 500m

3

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 15](#) >

ID	Location	Land Use	Date	Group ID
1	On site	Sand Pit	1901	64151
2	157m W	Disused Sewage Beds	1971	63065
3	208m W	Sand Pit	1901	64150





*This data is sourced from Ordnance Survey / Groundsure.*

## 2.2 Historical tanks

**Records within 500m**

**0**

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'.

*This data is sourced from Ordnance Survey / Groundsure.*

## 2.3 Historical energy features

**Records within 500m**

**0**

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'.

*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**

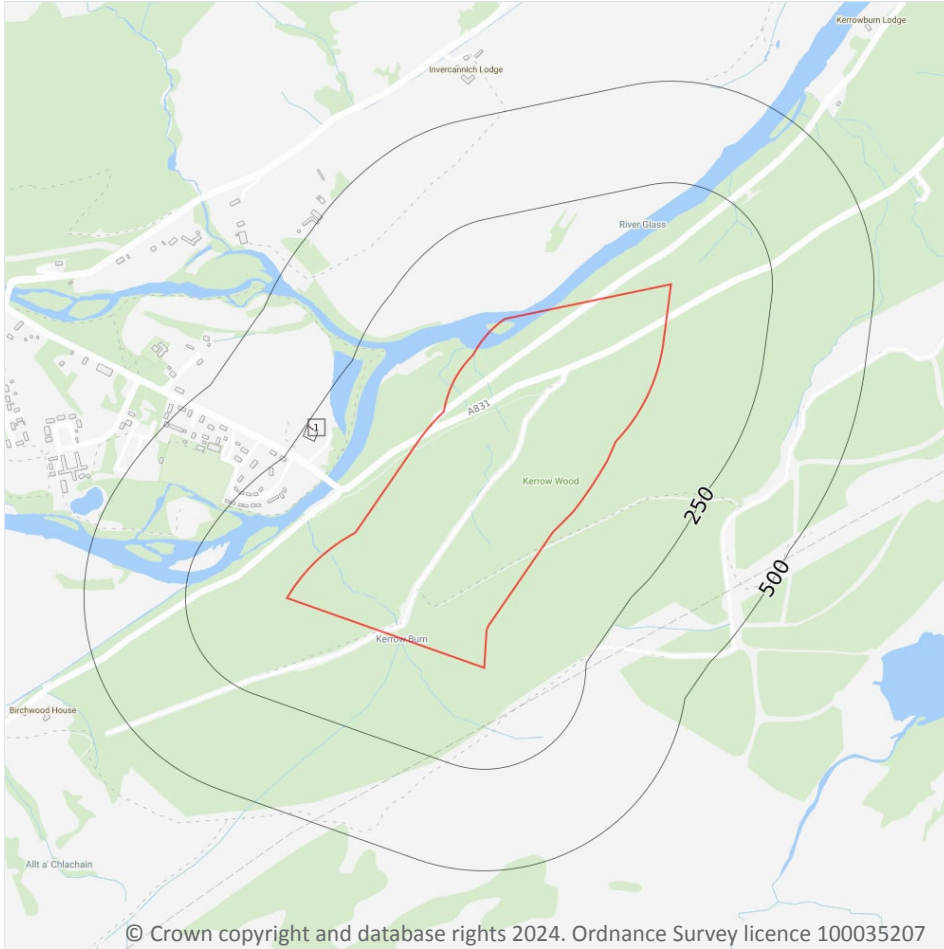
Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

*This data is sourced from Ordnance Survey / Groundsure.*





## 3 Waste and landfill



- Site Outline
- Search buffers in metres (m)
- Historical landfill (LA/OS)

### 3.1 Active or recent landfill

Records within 500m

0

Active or recently closed landfill sites under Scottish Environment Protection (SEPA) regulation.

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

### 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****1**

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

Features are displayed on the Waste and landfill map on [page 17 >](#)

ID	Location	Site address	Source	Data type
1	211m W	Refuse Tip	1969 mapping	Polygon

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

### 3.4 Licensed waste sites

**Records within 500m****0**

Active or recently closed waste sites under Scottish Environment Protection Agency (SEPA) regulation.

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

### 3.5 Historical waste sites

**Records within 500m****0**

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

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





## 4 Current industrial land use



- Site Outline
- Search buffers in metres (m)
- Recent industrial land uses

### 4.1 Recent industrial land uses

#### Records within 250m

2

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on [page 19](#) >

ID	Location	Company	Address	Activity	Category
A	159m W	Works	Inverness, IV4	Unspecified Works Or Factories	Industrial Features
A	161m W	Sewage Works	Inverness, IV4	Waste Storage, Processing and Disposal	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****0**

High voltage underground electricity transmission cables.

*This data is sourced from National Grid.*

## 4.4 Gas pipelines

**Records within 500m****0**

High pressure underground gas transmission pipelines.

*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****0**

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.

*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

0

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.

*This data is sourced from Local Authority records.*

## 4.9 Part A(1), IPPC and Historic IPC Authorisations

Records within 500m

0

Records of Part A installations regulated for the release of substances to the environment.

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

## 4.10 Part B Authorisations

Records within 500m

0

Records of Part B installations regulated for the release of substances to the environment.

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

## 4.11 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.*



## 4.12 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.*

## 4.13 Pollution inventory radioactive waste

Records within 500m

0

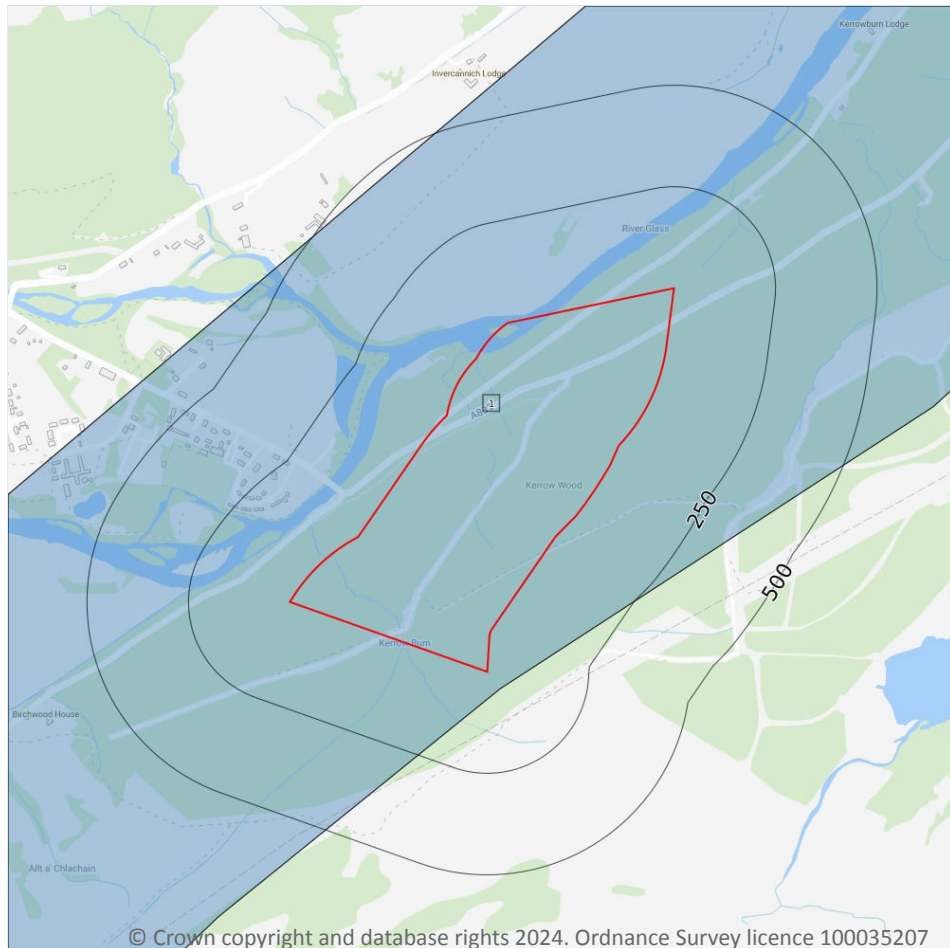
The pollution inventory (radioactive wastes) includes reporting on annual releases of radioactive substances from a site, including the means of release. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

*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)
- Limited or local potential
- Locally important - intergranular

### 5.1 Superficial aquifer

Records within 500m

1

Records of groundwater classification within superficial geology.

Features are displayed on the Hydrogeology map on [page 23 >](#)

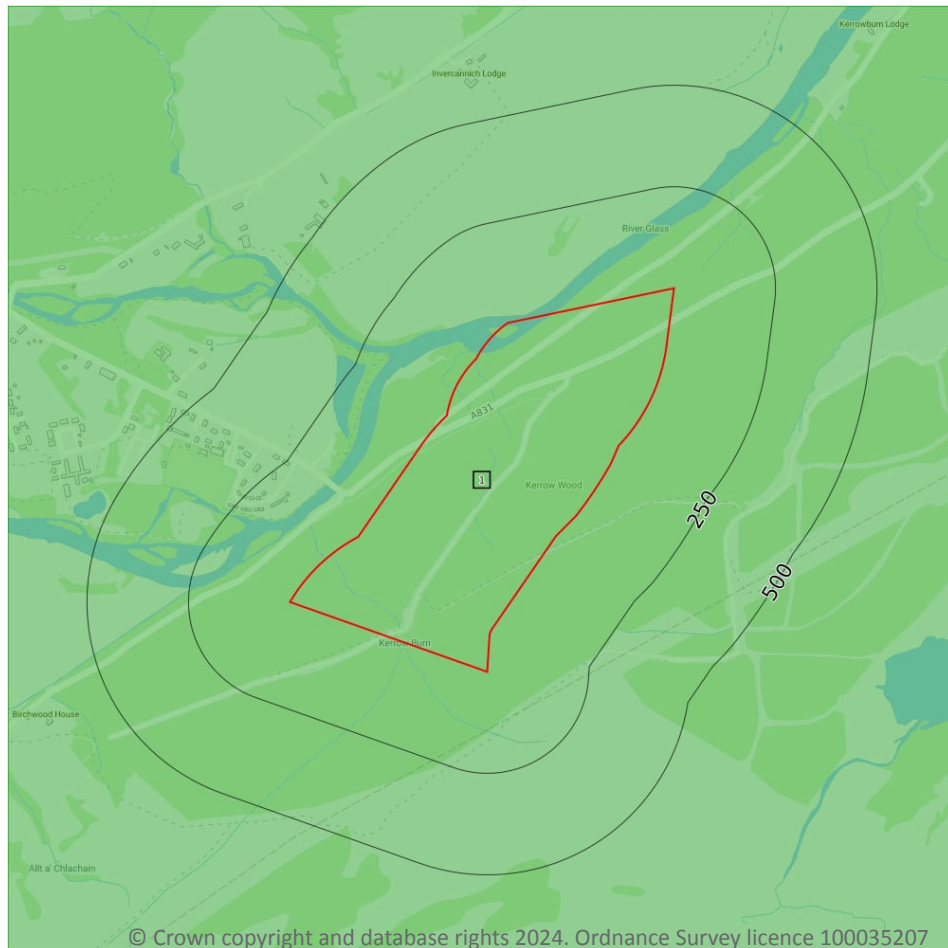
ID	Location	Description	Type	Rock description
1	On site	Concealed aquifers, aquifers of limited potential, regions without significant groundwater	Concealed aquifers; aquifers with limited or local potential	Quaternary Coastal and Fluvatile Alluvium

*This data is sourced from the British Geological Survey.*





## Bedrock aquifer



- Site Outline**
- Search buffers in metres (m)**
- Highly productive - fissures/discontinuities
  - Highly productive - intergranular
  - Moderately productive - fissures/discontinuities
  - Moderately productive - intergranular
  - Low productive - fissures/discontinuities
  - Low productive - intergranular
  - No significant groundwater

### 5.2 Bedrock aquifer

#### Records within 500m

1

Records of groundwater classification within bedrock geology.

Features are displayed on the Bedrock aquifer map on [page 24](#) >

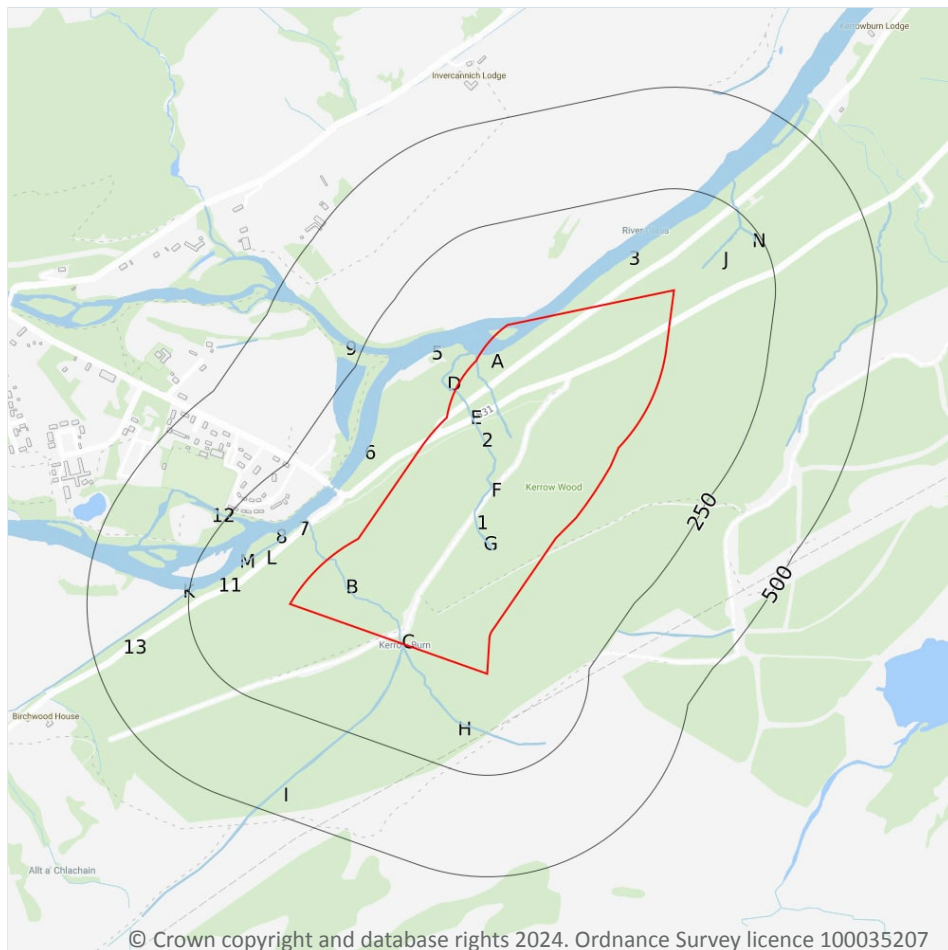
ID	Location	Description	Flow	Summary	Rock description
1	On site	Low productivity aquifer	Flow is virtually all through fractures and other discontinuities	Small amounts of groundwater in near surface weathered zone and secondary fractures.	LOCH EIL GROUP

*This data is sourced from the British Geological Survey.*





## 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)

### 6.1 Water Network (OS MasterMap)

Records within 250m

47

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 25](#) >

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





ID	Location	Type of water feature	Ground level	Permanence	Name
C	On site	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	Kerrow Burn
C	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Kerrow Burn
D	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
E	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
E	On site	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
F	On site	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
G	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)	River Glass
H	5m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Kerrow Burn
I	5m SW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
A	7m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Glass
A	22m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Glass
A	31m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Glass





ID	Location	Type of water feature	Ground level	Permanence	Name
5	66m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Glass
J	88m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
L	115m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Glass
6	116m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Glass
7	122m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Glass
8	123m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Glass
9	146m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Cannich
11	170m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Glass
M	170m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Glass
12	174m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
L	174m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Glass
M	183m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Glass
N	225m NE	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
N	226m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
13	234m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	Allt a' Chlachain
K	234m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Glass
N	237m NE	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
K	238m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Glass
K	238m W	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	River Glass
N	242m NE	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

8

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.

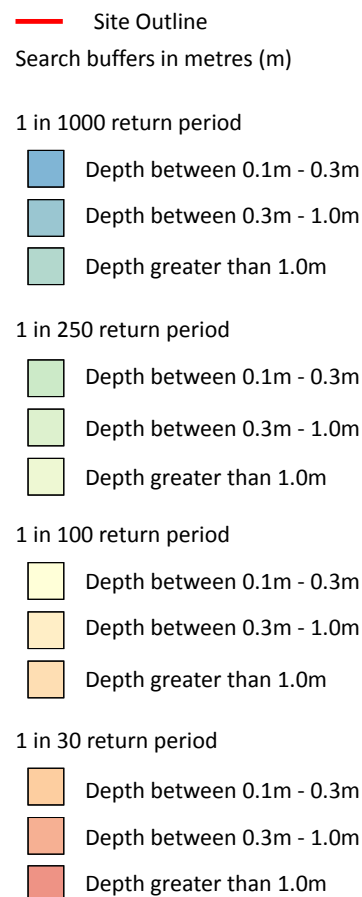
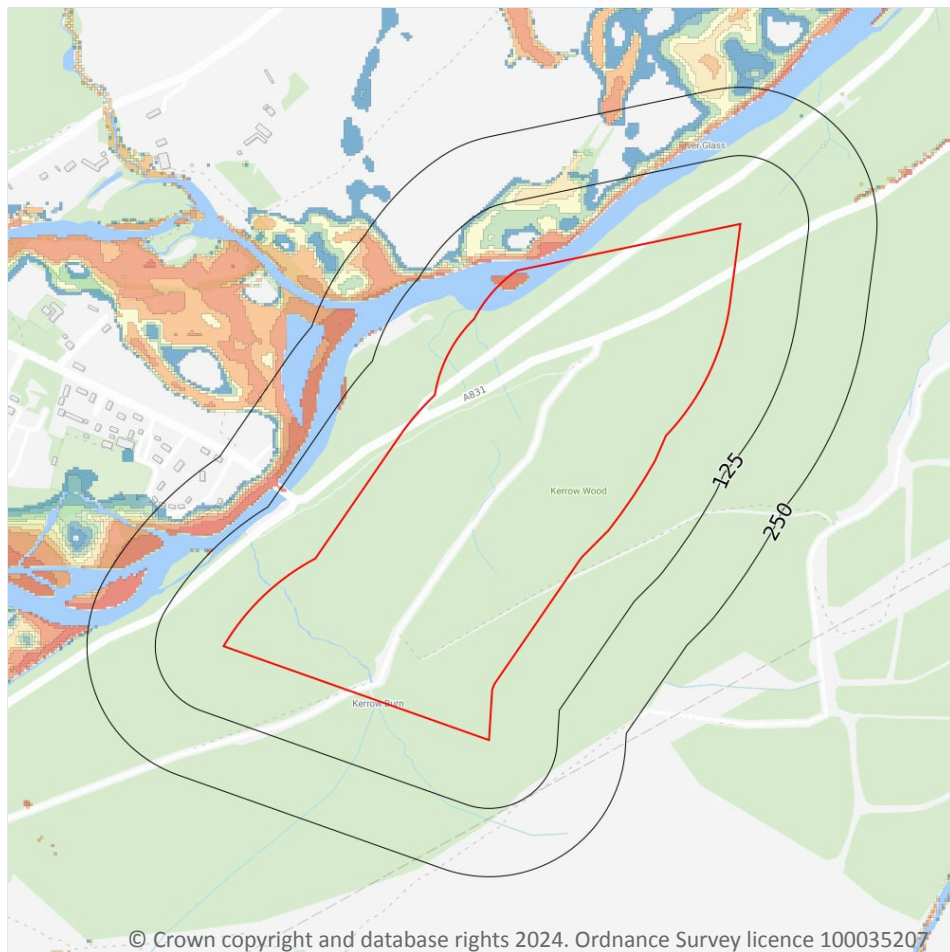
Features are displayed on the Hydrology map on [page 25 >](#)

*This data is sourced from the Ordnance Survey.*





## 7 River flooding



### 7.1 River flooding

**Highest risk on site**

**1 in 30 year, Greater than 1.0m**

**Highest risk within 50m**

**1 in 30 year, Greater than 1.0m**

This is an assessment of flood risk for rivers in Scotland produced using modelled data, provided by Ambiental Risk Analytics. It also takes account of flood defence information provided by the Scottish Environment Protection Agency (SEPA). It shows the chance of flooding from rivers presented in the following categories:

- 1 in 30 year (3.33%)
- 1 in 100 year (1%)
- 1 in 250 year (0.4%)



- and 1 in 1,000 year (0.1%)

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.

Features are displayed on the River flooding map on [page 30 >](#)

Return period	Maximum modelled depth
1 in 1000 year	Greater than 1.0m
1 in 250 year	Greater than 1.0m
1 in 100 year	Greater than 1.0m
1 in 30 year	Greater than 1.0m

*This data is sourced from Ambiantal Risk Analytics.*





## 8 Coastal flooding - Coastal flooding

### 8.1 Coastal flooding

Highest risk on site

Negligible

Highest risk within 50m

Negligible

This is an assessment of coastal flood risk in Scotland produced using modelled data, provided by Ambiental Risk Analytics. It also takes account of flood defence information provided by the Scottish Environment Protection Agency (SEPA). It shows the chance of coastal flooding presented in the following categories:

- 1 in 30 year (3.33%)
- 1 in 100 year (1%)
- 1 in 250 year (0.4%)
- and 1 in 1,000 year (0.1%)

The data shown on the map 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.

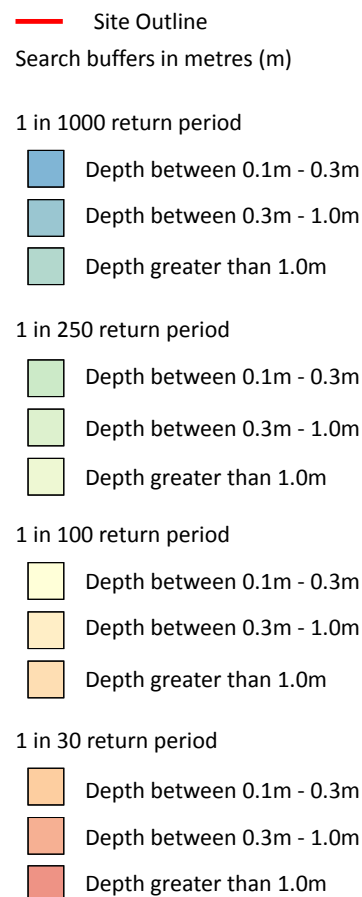
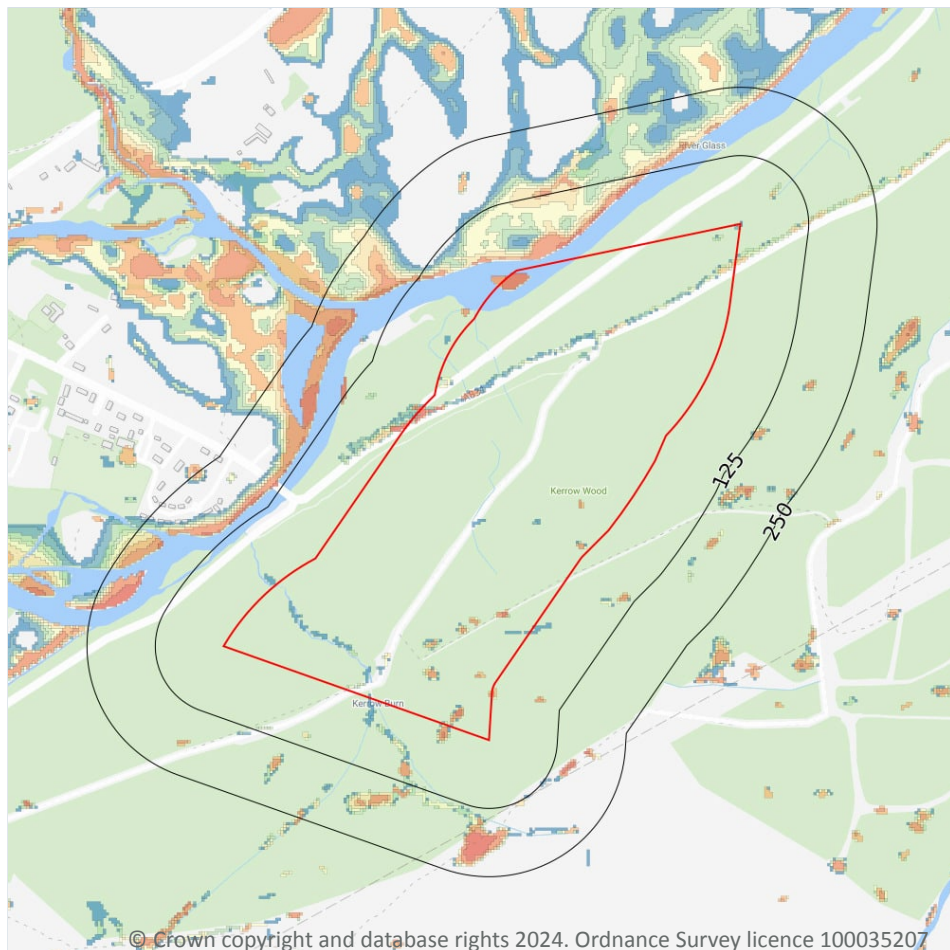
Return period	Maximum modelled depth
1 in 1000 year	Negligible
1 in 250 year	Negligible
1 in 100 year	Negligible
1 in 30 year	Negligible

*This data is sourced from Ambiental Risk Analytics.*





## 9 Surface water flooding



### 9.1 Surface water flooding

**Highest risk on site**

**1 in 30 year, Greater than 1.0m**

**Highest risk within 50m**

**1 in 30 year, Greater than 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 33](#) >

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.

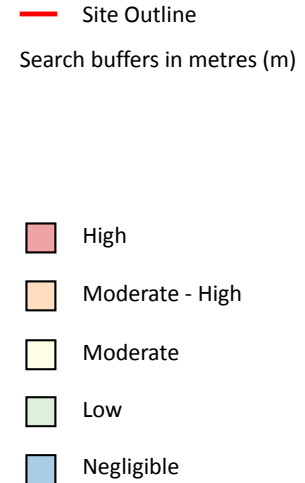
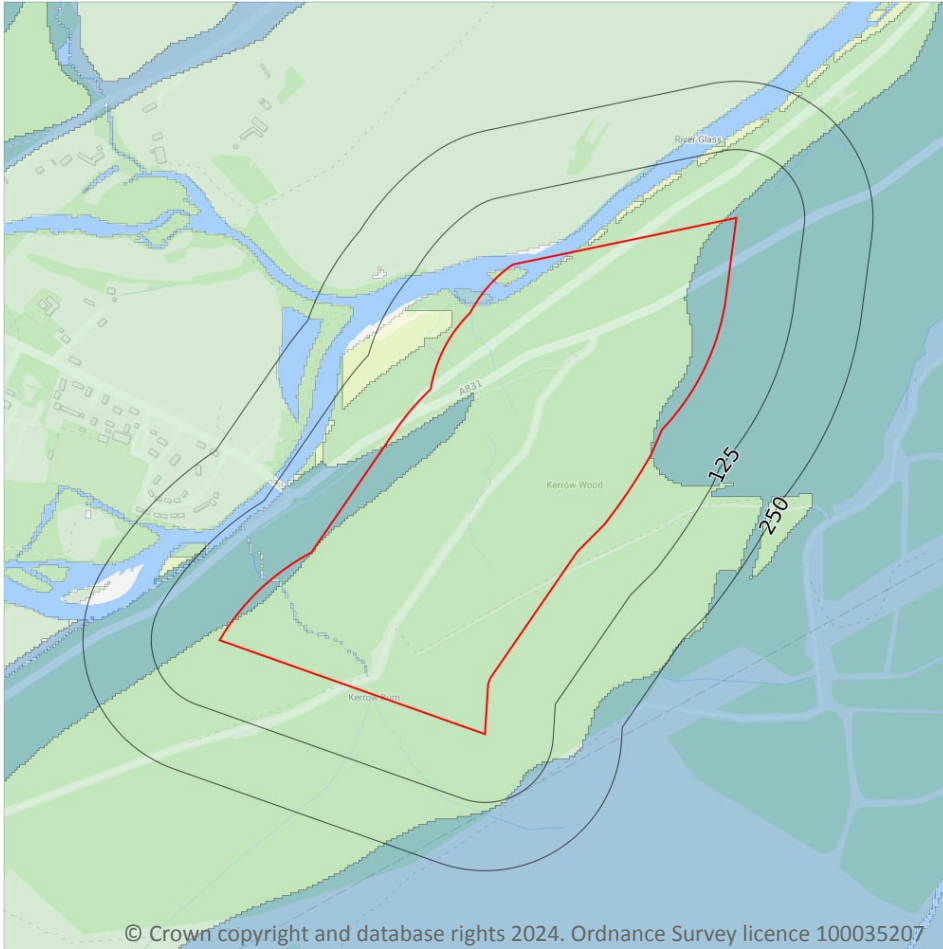
Return period	Maximum modelled depth
1 in 1000 year	Greater than 1.0m
1 in 250 year	Greater than 1.0m
1 in 100 year	Greater than 1.0m
1 in 30 year	Greater than 1.0m

*This data is sourced from Ambiantal Risk Analytics.*





## 10 Groundwater flooding



### 10.1 Groundwater flooding

Highest risk on site

Moderate

Highest risk within 50m

Moderate

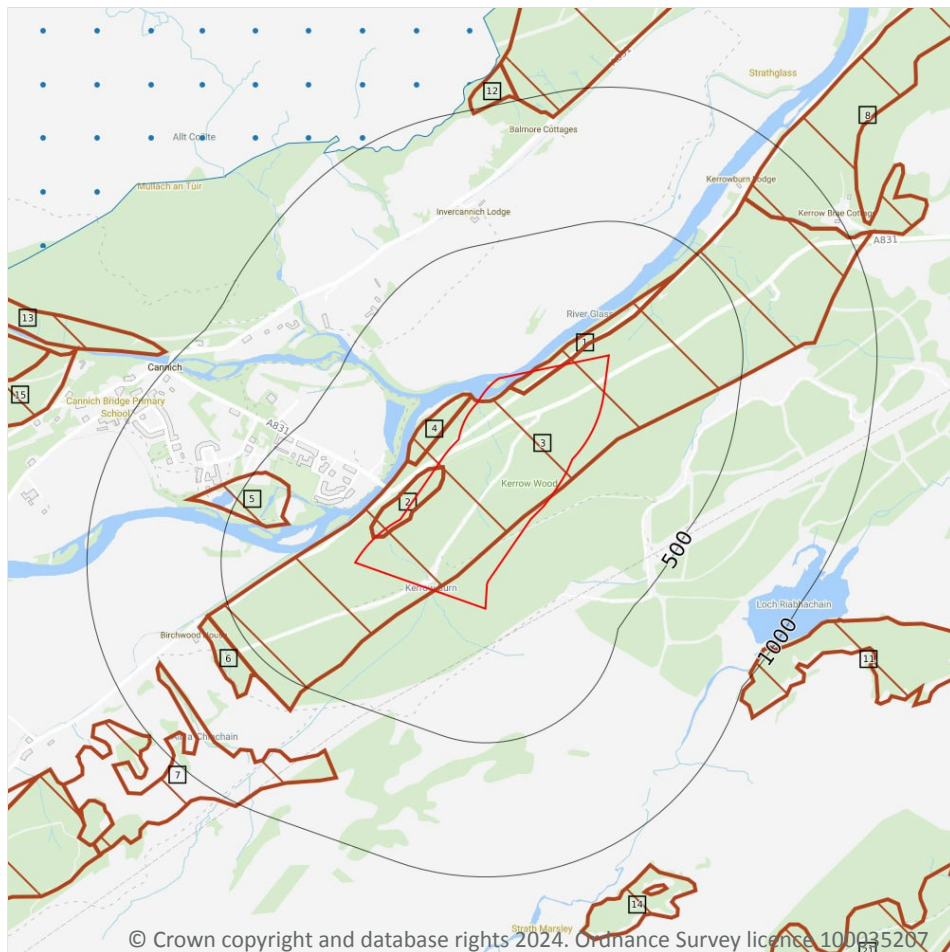
Groundwater flooding is caused by unusually high groundwater levels. It occurs when the water table rises above the ground surface or within underground structures such as basements or cellars. Groundwater flooding tends to exhibit a longer duration than surface water flooding, possibly lasting for weeks 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 35 >](#)

*This data is sourced from Ambiantal Risk Analytics.*



## 11 Environmental designations



- Site Outline
- Search buffers in metres (m)
- Special Protection Areas (SPA)
- ▨ Designated Ancient Woodland

### 11.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m

0

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.

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



## 11.2 Conserved wetland sites (Ramsar sites)

Records within 2000m	0
----------------------	---

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.

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

## 11.3 Special Areas of Conservation (SAC)

Records within 2000m	0
----------------------	---

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.

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

## 11.4 Special Protection Areas (SPA)

Records within 2000m	2
----------------------	---

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 36 >](#)

ID	Location	Name	Species of interest	Habitat description	Data source
10	926m N	Glen Affric to Strathconon	Golden eagle	Inland water bodies (Standing water, Running water); Mixed woodland; Humid grassland, Mesophile grassland; Bogs, Marshes, Water fringed vegetation, Fens; Coniferous woodland; Inland rocks, Scree, Sands, Permanent Snow and ice; Broad-leaved deciduous woodland; Heath, Scrub, Maquis and Garrigue, Phygrana; Improved grassland; Alpine and sub-Alpine grassland	Scottish Natural Heritage
-	1374m N	Glen Affric to Strathconon	Golden eagle	Inland water bodies (Standing water, Running water); Mixed woodland; Humid grassland, Mesophile grassland; Bogs, Marshes, Water fringed vegetation, Fens; Coniferous woodland; Inland rocks, Scree, Sands, Permanent Snow and ice; Broad-leaved deciduous woodland; Heath, Scrub, Maquis and Garrigue, Phygrana; Improved grassland; Alpine and sub-Alpine grassland	Scottish Natural Heritage



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

## 11.5 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.*

## 11.6 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.*

## 11.7 Designated Ancient Woodland

Records within 2000m

27

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.

Features are displayed on the Environmental designations map on [page 36](#) >

ID	Location	Name	Woodland Type
1	On site	Unknown	Ancient (of semi-natural origin)
2	On site	Kerrow Wood	Ancient (of semi-natural origin)
3	On site	Unknown	Ancient (of semi-natural origin)
4	32m N	Unknown	Ancient (of semi-natural origin)
5	289m W	Unknown	Other (on Roy map)
6	551m SW	Unknown	Ancient (of semi-natural origin)
7	698m SW	Balnahoun Wood	Ancient (of semi-natural origin)
8	774m NE	Unknown	Ancient (of semi-natural origin)





ID	Location	Name	Woodland Type
9	912m N	Carnoch Wood	Ancient (of semi-natural origin)
11	977m SE	Unknown	Ancient (of semi-natural origin)
12	986m N	Carnoch Wood	Ancient (of semi-natural origin)
13	1044m W	Unknown	Other (on Roy map)
14	1136m S	Unknown	Ancient (of semi-natural origin)
15	1276m W	Comar Wood	Ancient (of semi-natural origin)
16	1368m SW	Unknown	Ancient (of semi-natural origin)
18	1386m W	Unknown	Other (on Roy map)
-	1399m W	Fasnakyle Wood	Ancient (of semi-natural origin)
20	1425m SW	Balnahoun Wood	Ancient (of semi-natural origin)
21	1634m SE	Coille Na Ceardaich	Ancient (of semi-natural origin)
-	1752m W	Fasnakyle Wood	Ancient (of semi-natural origin)
-	1798m N	Carnoch Wood	Ancient (of semi-natural origin)
-	1899m W	Unknown	Ancient (of semi-natural origin)
-	1899m W	Unknown	Ancient (of semi-natural origin)
-	1909m SE	Coille Na Ceardaich	Ancient (of semi-natural origin)
-	1943m SE	Breckry Wood	Ancient (of semi-natural origin)
-	1947m E	Unknown	Long-Established (of plantation origin)
-	1972m SE	Coille Na Ceardaich	Ancient (of semi-natural origin)

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

## 11.8 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.*





## 11.9 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.*

## 11.10 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.*





## 12 Visual and cultural designations

### 12.1 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.*

### 12.2 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.*

### 12.3 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.*

### 12.4 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.*

## 12.5 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.*

## 12.6 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.*

## 12.7 Registered Parks and Gardens

Records within 250m

0

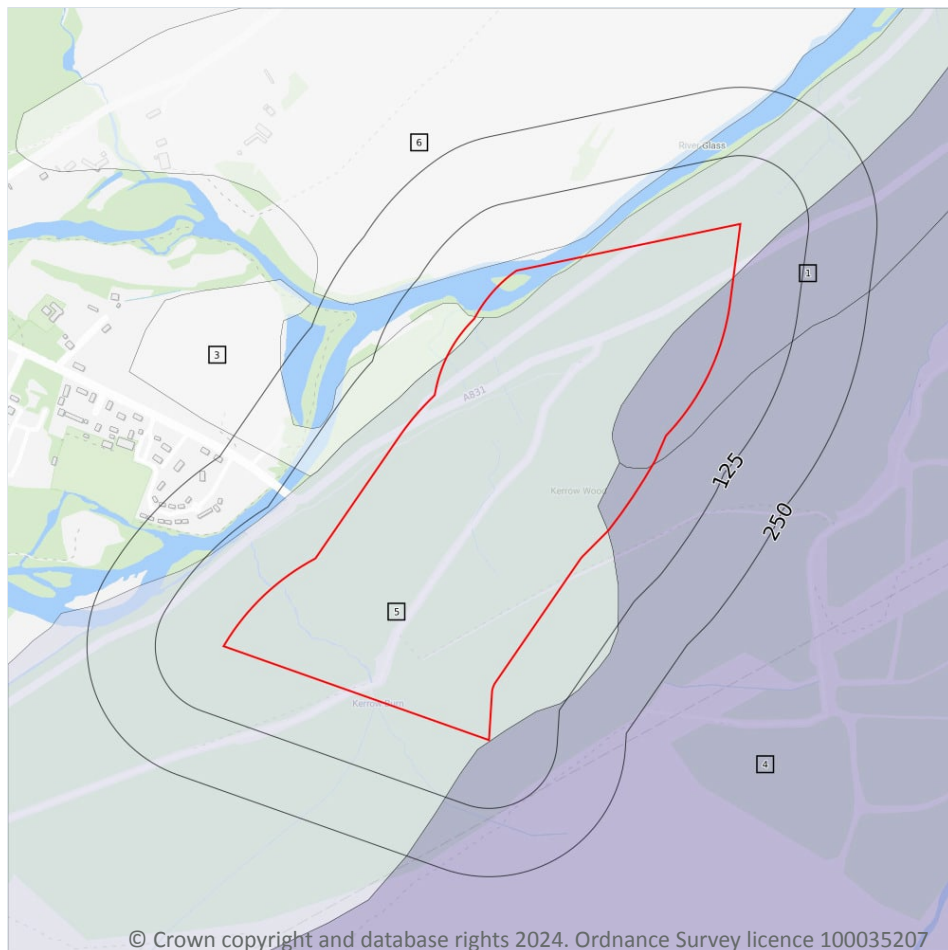
Parks and gardens assessed to be of particular interest and of special historic interest. The emphasis being on 'designed' landscapes, rather than on planting or botanical importance. Registration is a 'material consideration' in the planning process, meaning that planning authorities must consider the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

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





## 13 Agricultural designations



- Site Outline
- Search buffers in metres (m)
- Grade 1 - excellent quality
- Grade 2 - very good quality
- Grade 3 - good to moderate quality
- Grade 4 - good quality
- Grade 5 - moderate quality
- Grade 6 - poor quality
- Grade 7 - very poor quality

### 13.1 Agricultural Land Classification

Records within 250m

5

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 43](#) >

ID	Location	Classification	Description
1	On site	Grade 6.2	Land Suited only to Improved Grassland and Rough Grazings
3	On site	Grade 4.1	Land Suited to Arable Cropping
4	On site	Grade 6.3	Land Suited only to Improved Grassland and Rough Grazings





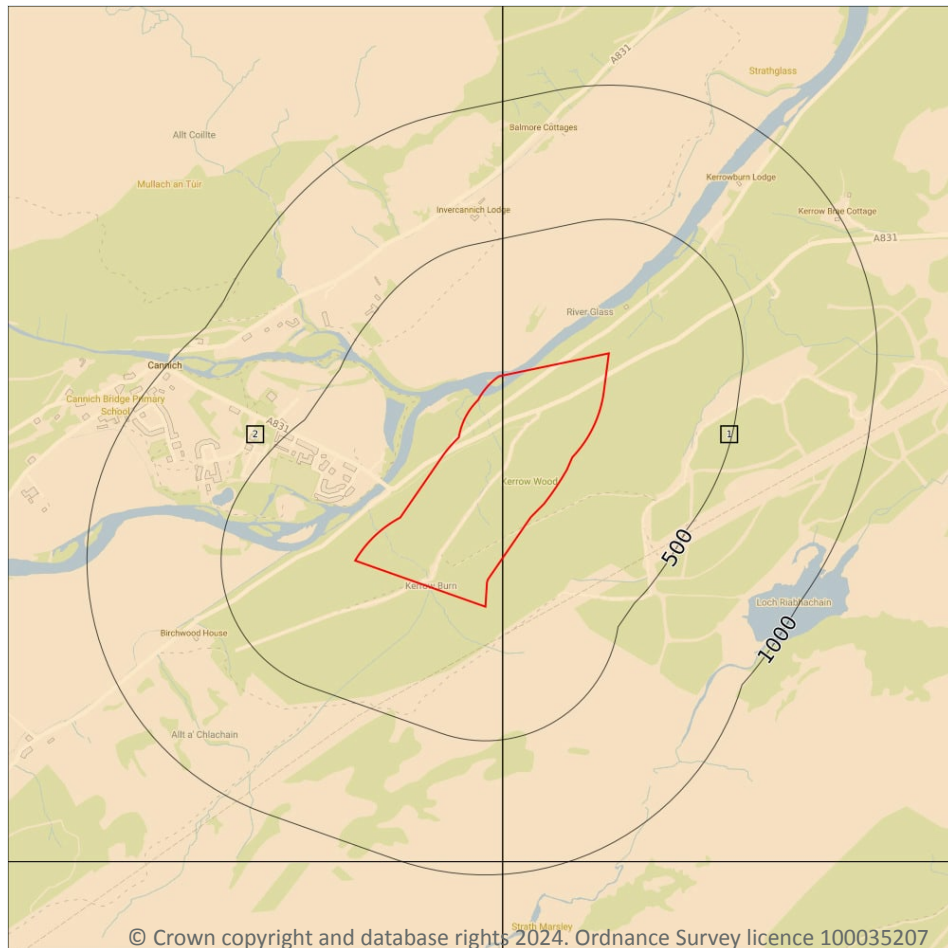
ID	Location	Classification	Description
5	On site	Grade 5.3	Land Suited only to Improved Grassland and Rough Grazings
6	21m N	Grade 4.1	Land Suited to Arable Cropping

*This data is sourced from the James Hutton Institute.*





## 14 Geology 1:10,000 scale - Availability



— Site Outline  
Search buffers in metres (m)

- Full coverage
- Partial coverage
- No coverage

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### 14.1 10k Availability

#### Records within 500m

2

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 45](#) >

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	No coverage	Full	No coverage	No coverage	NH33SE
2	On site	No coverage	Full	No coverage	No coverage	NH33SW

*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.*





This topographic map shows the Kilmacshann area in County Wick, Ireland. A red-outlined site area is located in the center, containing points 1, 2, and 3. Point 1 is on the western shore of a lake, point 2 is on the eastern shore, and point 3 is on a small peninsula. Other numbered points are scattered across the map: 4, 5, 6, 7, 8, 9, 10, 11, 12, and 13. The map features various geographical features including the River Glenties, Kilmacshann Lodge, Kilmacshann Cottage, and Kilmacshann House. The map is color-coded to show different land types: green for forest, yellow for open land, and brown for built-up areas. A scale bar at the bottom indicates distances up to 1000 meters. The map is titled '© Crown copyright and database rights 2024. Ordnance Survey Licence 100035207'.

### 14.3 Superficial geology (10k)

13

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.

Features are displayed on the Geology 1:10,000 scale - Superficial map on [page 47](#) >

ID	Location	LEX Code	Description	Rock description
1	On site	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
2	On site	HMGDD-XDSV	Hummocky (moundy) Glacial Deposits, Devensian - Diamicton, Sand And Gravel	Diamicton, Sand And Gravel [unlithified Deposits Coding Scheme - Extended]



ID	Location	LEX Code	Description	Rock description
3	On site	GFSDDD-XSVB	Glaciofluvial Sheet Deposits, Devensian - Sand, Gravel And Boulders	Sand, Gravel And Boulders
4	On site	ALV-XSVB	Alluvium - Sand, Gravel And Boulders	Sand, Gravel And Boulders
5	On site	HMGDD-XDSV	Hummocky (moundy) Glacial Deposits, Devensian - Diamicton, Sand And Gravel	Diamicton, Sand And Gravel [unlithified Deposits Coding Scheme - Extended]
6	On site	ALV-XSVB	Alluvium - Sand, Gravel And Boulders	Sand, Gravel And Boulders
7	On site	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
8	130m E	PEAT-P	Peat - Peat	Peat
9	135m W	ALF-XVSZC	Alluvial Fan Deposits - Gravel, Sand, Silt And Clay	Gravel, Sand, Silt And Clay
10	233m E	TILLD-DMTN	Till, Devensian - Diamicton	Diamicton
11	463m NE	PEAT-P	Peat - Peat	Peat
12	494m NW	ALF-XVSZC	Alluvial Fan Deposits - Gravel, Sand, Silt And Clay	Gravel, Sand, Silt And Clay
13	498m S	PEAT-P	Peat - Peat	Peat

*This data is sourced from the British Geological Survey.*

## 14.4 Landslip (10k)

<b>Records within 500m</b>	<b>0</b>
----------------------------	----------

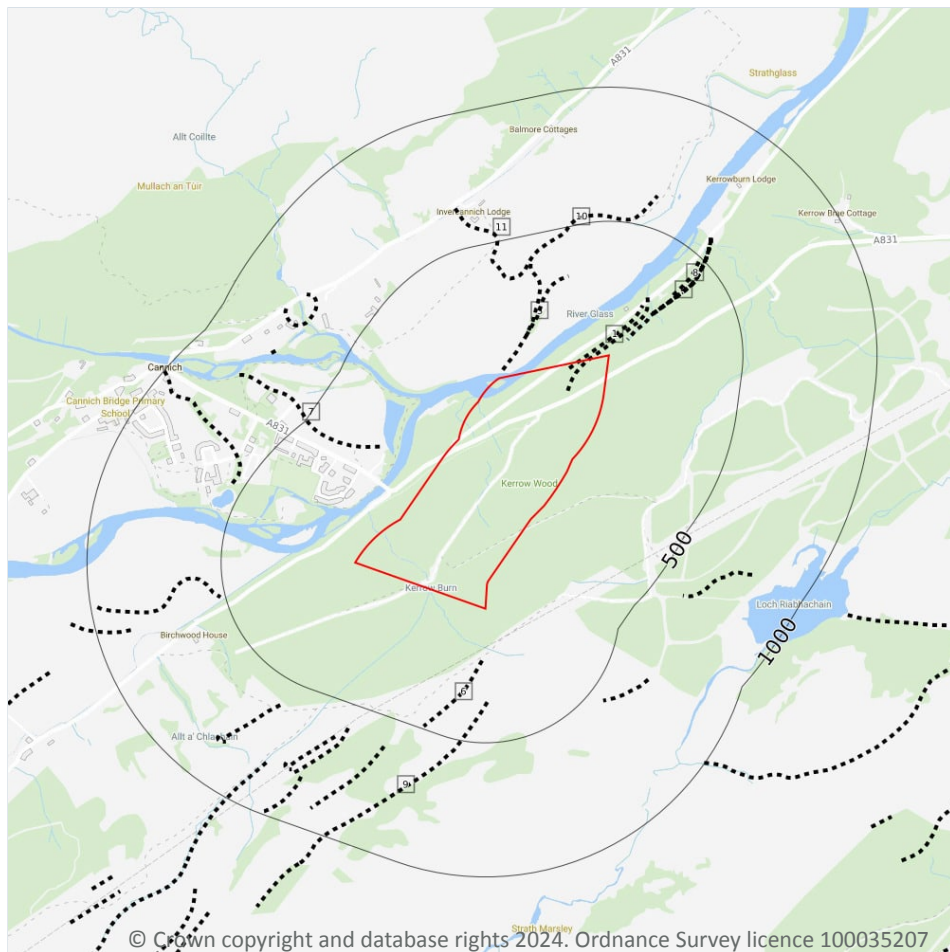
Mass movement deposits on BGS geological maps at 1:10,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

*This data is sourced from the British Geological Survey.*





## Geology 1:10,000 scale - Bedrock



**— Site Outline**

Search buffers in metres (m)

**.... Bedrock faults and other linear features (10k)**

**Bedrock geology (10k)**  
Please see table for more details.

### 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

17

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.





Features are displayed on the Geology 1:10,000 scale - Bedrock map on [page 49 >](#)

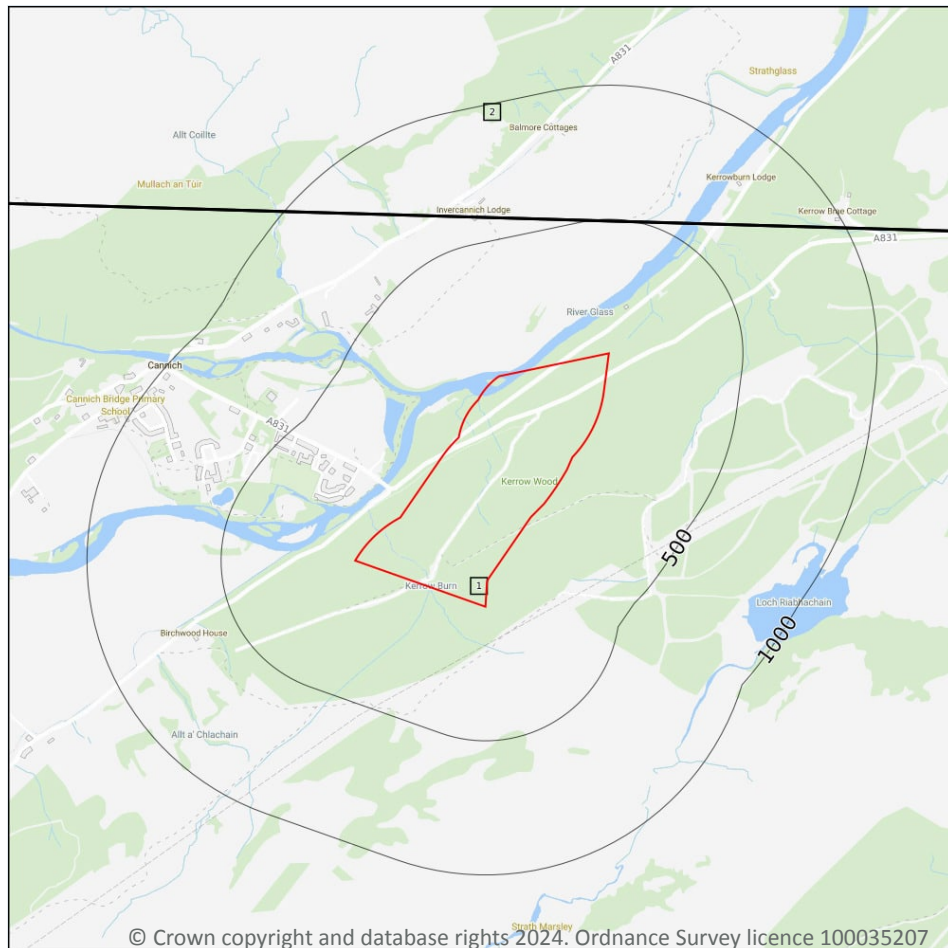
ID	Location	Category	Description
1	On site	LANDFORM	Crestline of linear feature
2	On site	LANDFORM	Ice marginal glacial meltwater channel, single side right
3	28m N	LANDFORM	Palaeochannel, centre line (within terrace or fan)
4	92m NE	LANDFORM	Ice marginal glacial meltwater channel, single side right
5	134m N	LANDFORM	Palaeochannel, centre line (within terrace or fan)
6	194m S	LANDFORM	Ice marginal glacial meltwater channel, single side right
7	217m W	LANDFORM	Backfeature of terrace margin, arrowheads denote uphill side
A	218m NE	LANDFORM	Ice marginal glacial meltwater channel, single sided right, head only
A	218m NE	LANDFORM	Ice marginal glacial meltwater channel, single sided right, head only
A	218m NE	LANDFORM	Ice marginal glacial meltwater channel, single sided right, head only
A	218m NE	LANDFORM	Ice marginal glacial meltwater channel, single sided right, head only
A	218m NE	LANDFORM	Ice marginal glacial meltwater channel, single sided right, head only
A	218m NE	LANDFORM	Marked concave break of slope, arrowheads denote uphill side
8	328m NE	LANDFORM	Crestline of linear feature
9	348m S	LANDFORM	Marked concave break of slope, arrowheads denote uphill side
10	355m N	LANDFORM	Palaeochannel, centre line (within terrace or fan)
11	380m N	LANDFORM	Palaeochannel, centre line (within terrace or fan)

*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

2

An indication on the coverage of 1:50,000 scale geology data for the site. Either 'Full' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:50,000 scale - Availability map on [page 51](#) >

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	On site	No coverage	Full	Full	No coverage	SC073w_Invermoriston_v4
2	493m NE	No coverage	Full	Full	No coverage	SC083w_Strathconon_v4

This data is sourced from the British Geological Survey.





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

### 15.2 Artificial and made ground (50k)

Records within 500m

0

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.

*This data is sourced from the British Geological Survey.*

### 15.3 Artificial ground permeability (50k)

Records within 50m

0

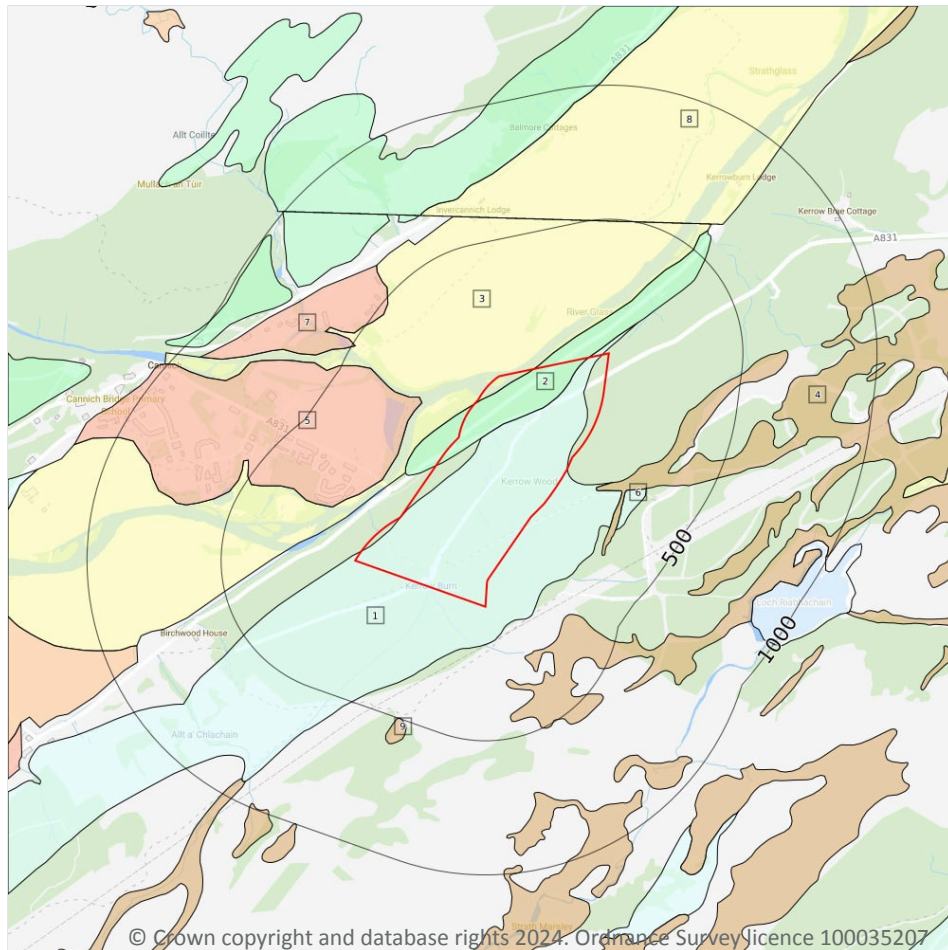
A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any artificial deposits (the zone between the land surface and the water table).

*This data is sourced from the British Geological Survey.*





## Geology 1:50,000 scale - 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

9

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 53](#) >

ID	Location	LEX Code	Description	Rock description
1	On site	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
2	On site	HMGDD-XDSV	HUMMOCKY (MOUNDY) GLACIAL DEPOSITS, DEVENSIAN	DIAMICTON, SAND AND GRAVEL
3	On site	ALV-XSVB	ALLUVIUM	SAND, GRAVEL AND BOULDERS





ID	Location	LEX Code	Description	Rock description
4	130m E	PEAT-P	PEAT	PEAT
5	135m W	ALF-XVSZC	ALLUVIAL FAN DEPOSITS	GRAVEL, SAND, SILT AND CLAY
6	233m E	TILLD-DMTN	TILL, DEVENSIAN	DIAMICTON
7	470m NW	ALF-XVSZC	ALLUVIAL FAN DEPOSITS	GRAVEL, SAND, SILT AND CLAY
8	493m NE	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL
9	497m S	PEAT-P	PEAT	PEAT

*This data is sourced from the British Geological Survey.*

## 15.5 Superficial permeability (50k)

<b>Records within 50m</b>	<b>6</b>
---------------------------	----------

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	Very High	High
On site	Intergranular	Very High	High
On site	Mixed	High	Low
On site	Mixed	High	Low
On site	Mixed	High	Low
On site	Mixed	High	Low

*This data is sourced from the British Geological Survey.*

## 15.6 Landslip (50k)

<b>Records within 500m</b>	<b>0</b>
----------------------------	----------

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.*





— Site Outline

Search buffers in metres (m)

.... Bedrock faults and other linear features (50k)

Bedrock geology (50k)

Please see table for more details.

Records within 500m	4
---------------------	---

Features are displayed on the Geology 1:50,000 scale - Bedrock map on [page 56 >](#)

ID	Location	LEX Code	Description	Rock age
1	On site	TAPS-PSAMM	TARVIE PSAMMITE FORMATION - PSAMMITE	-
8	241m N	TAPS-PSAMM	TARVIE PSAMMITE FORMATION - PSAMMITE	-



ID	Location	LEX Code	Description	Rock age
10	311m E	GMOR-PGLG	GLEN MORISTON VEIN COMPLEX - PEGMATITE AND LEUCOGRANITE	-
13	493m NE	TAPS-PSAMM	TARVIE PSAMMITE FORMATION - PSAMMITE	-

*This data is sourced from the British Geological Survey.*

## 15.9 Bedrock permeability (50k)

<b>Records within 50m</b>	<b>2</b>
---------------------------	----------

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	Fracture	Low	Low
On site	Fracture	Low	Low

*This data is sourced from the British Geological Survey.*

## 15.10 Bedrock faults and other linear features (50k)

<b>Records within 500m</b>	<b>9</b>
----------------------------	----------

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.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on [page 56](#) >

ID	Location	Category	Description
2	On site	LANDFORM	Linear feature crestline
3	On site	LANDFORM	Ice-marginal glacial single-sided meltwater channel, right
4	28m N	LANDFORM	Palaeochannel centre line (other than glacial meltwater channel or of unknown origin)
5	194m S	LANDFORM	Ice-marginal glacial single-sided meltwater channel, right
6	217m W	LANDFORM	Back-feature of terrace
7	218m NE	LANDFORM	Ice-marginal glacial single-sided meltwater channel, right (head)
9	241m N	FAULT	Fault, inferred, displacement unknown





ID	Location	Category	Description
11	349m S	LANDFORM	Marked concave break in slope
12	355m N	LANDFORM	Palaeochannel centre line (other than glacial meltwater channel or of unknown origin)

*This data is sourced from the British Geological Survey.*





## 16 Boreholes

### 16.1 BGS Boreholes

Records within 250m

0

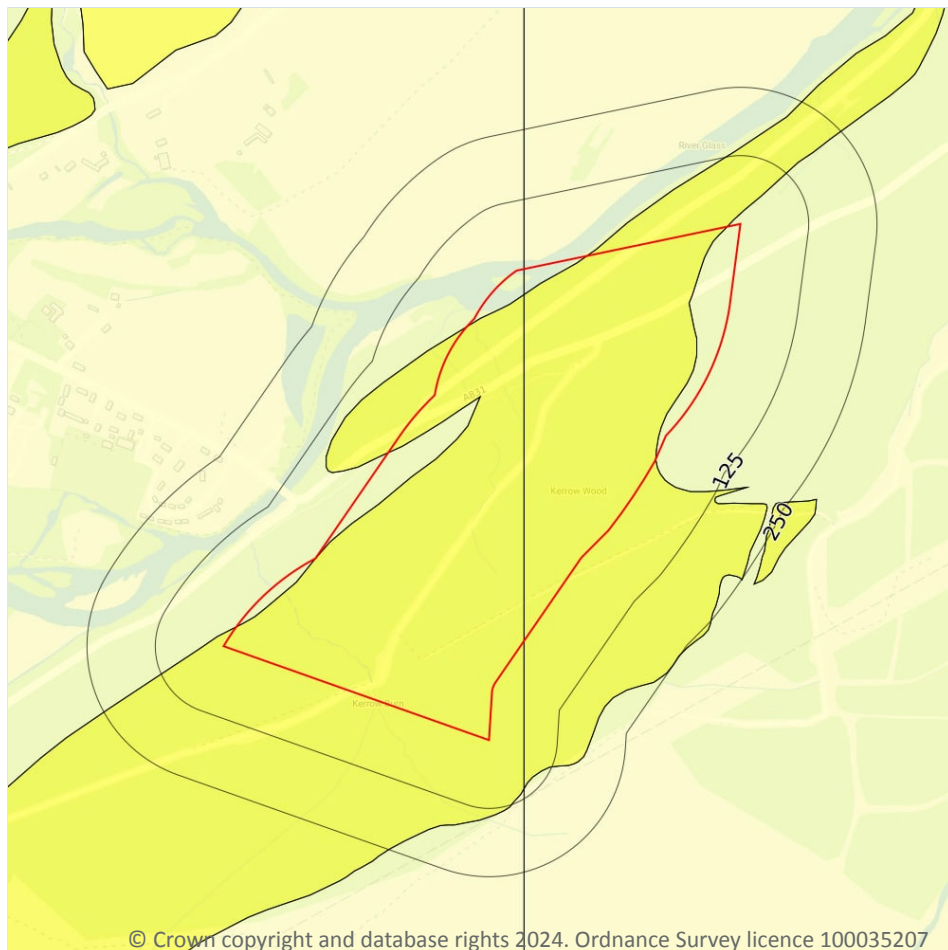
The Single Onshore Boreholes Index (SOBI); an index of over one million records of boreholes, shafts and wells from all forms of drilling and site investigation work held by the British Geological Survey. Covering onshore and nearshore boreholes dating back to at least 1790 and ranging from one to several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

*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

2

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 60](#) >

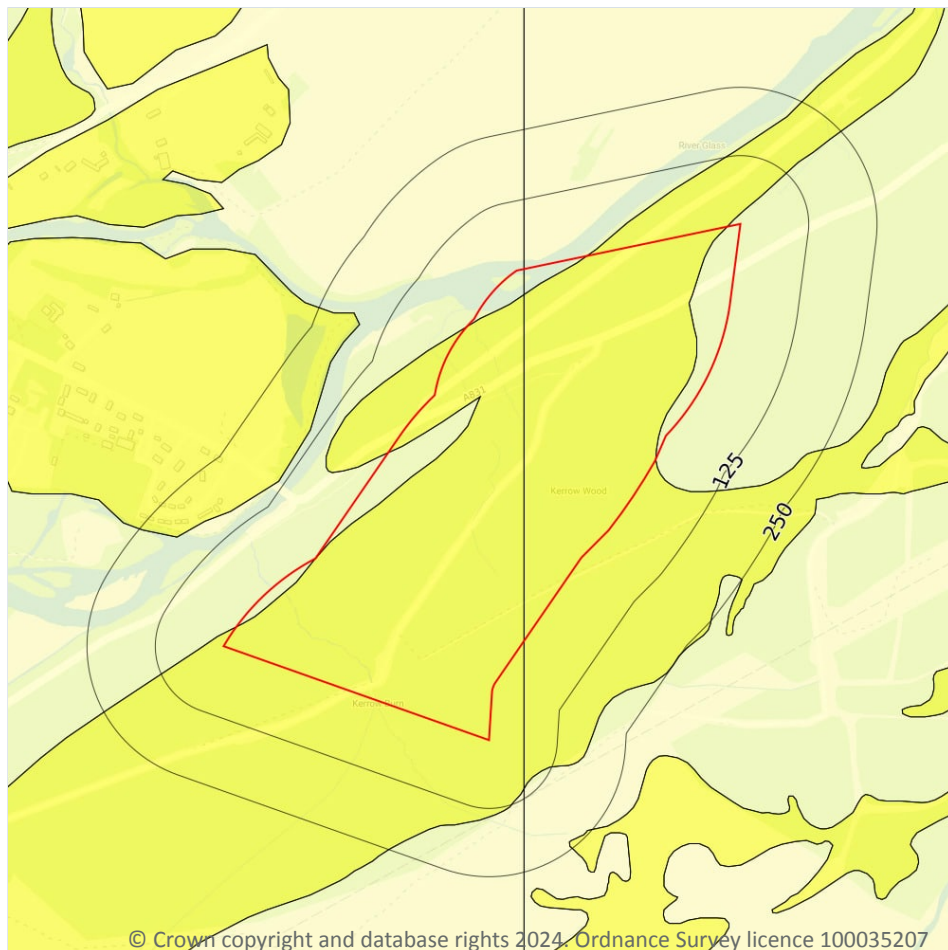
Location	Hazard rating	Details
On site	Negligible	Ground conditions predominantly non-plastic.
On site	Very low	Ground conditions predominantly low plasticity.

*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 61](#) >

Location	Hazard rating	Details
On site	Negligible	Running sand conditions are not thought to occur whatever the position of the water table. No identified constraints on lands use due to running conditions.



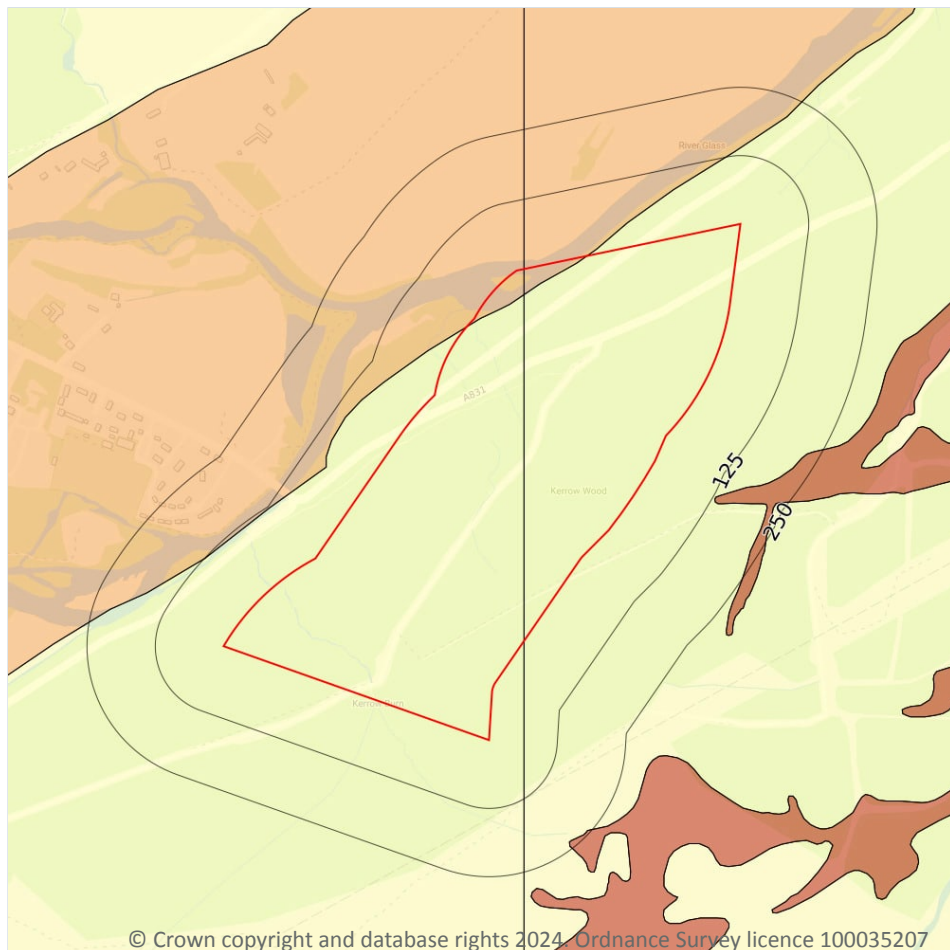


Location	Hazard rating	Details
On site	Very low	Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless water table rises rapidly.

*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 63](#) >

Location	Hazard rating	Details
On site	Negligible	Compressible strata are not thought to occur.
On site	Low	Compressibility and uneven settlement potential may be present. Land use should consider specifically the compressibility and variability of the site.



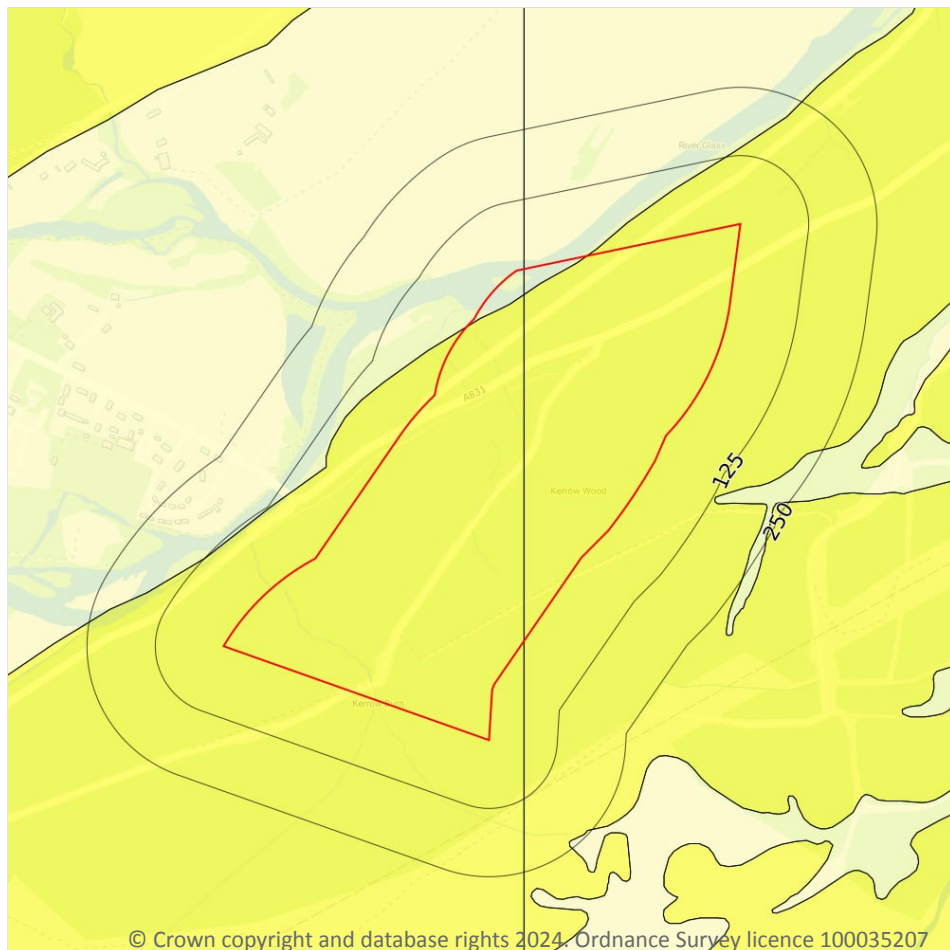


*This data is sourced from the British Geological Survey.*





## 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

2

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 65 >](#)

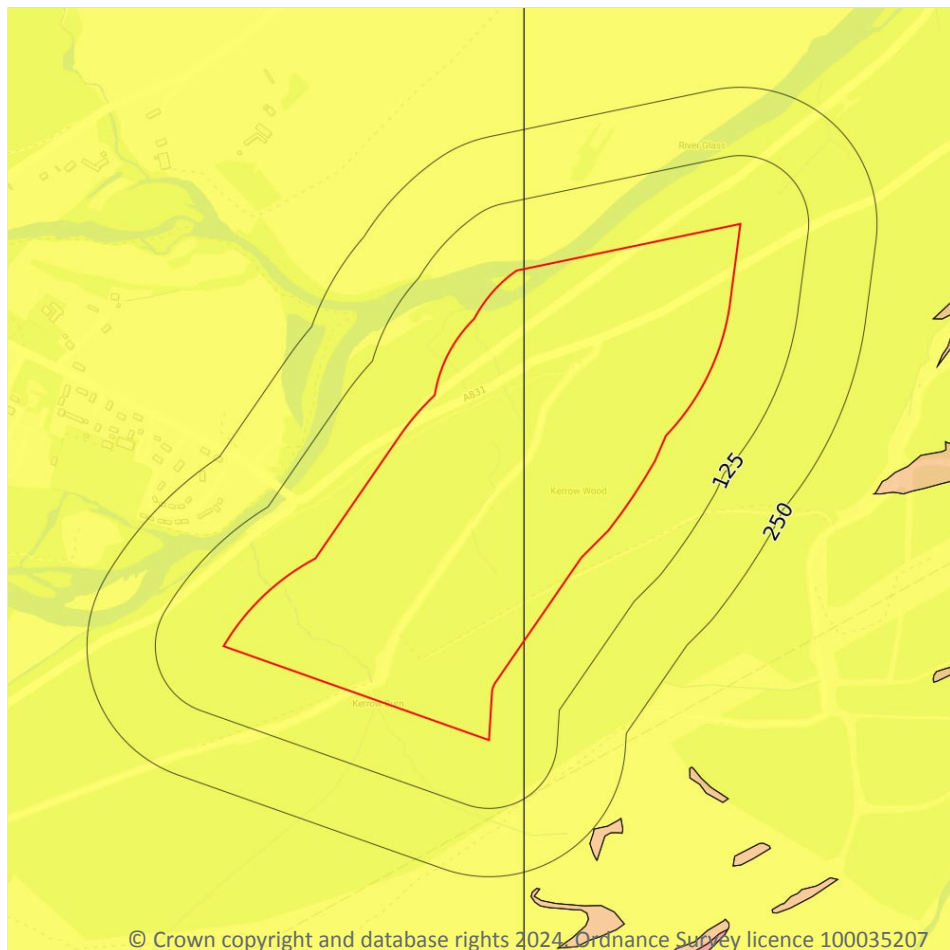
Location	Hazard rating	Details
On site	Negligible	Deposits with potential to collapse when loaded and saturated are believed not to be present.
On site	Very low	Deposits with potential to collapse when loaded and saturated are unlikely to be present.

*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

1

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 66](#) >

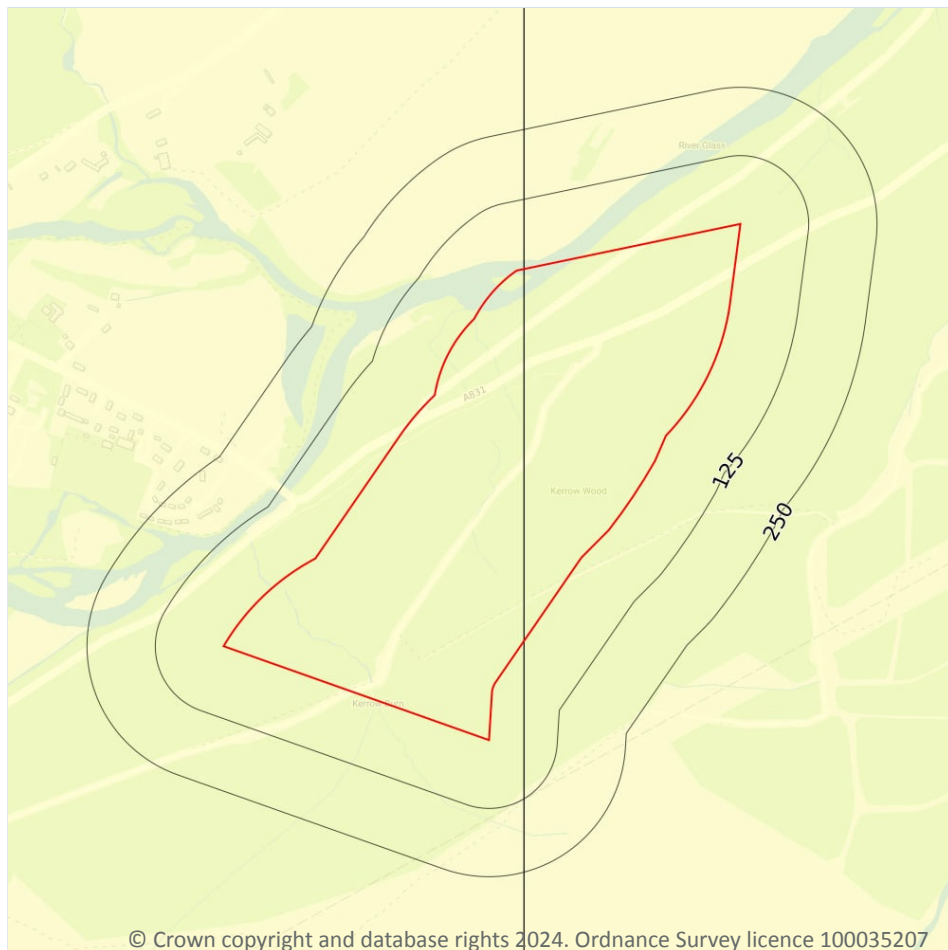
Location	Hazard rating	Details
On site	Very low	Slope instability problems are not likely to occur but consideration to potential problems of adjacent areas impacting on the site should always be considered.

*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 67](#)

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.



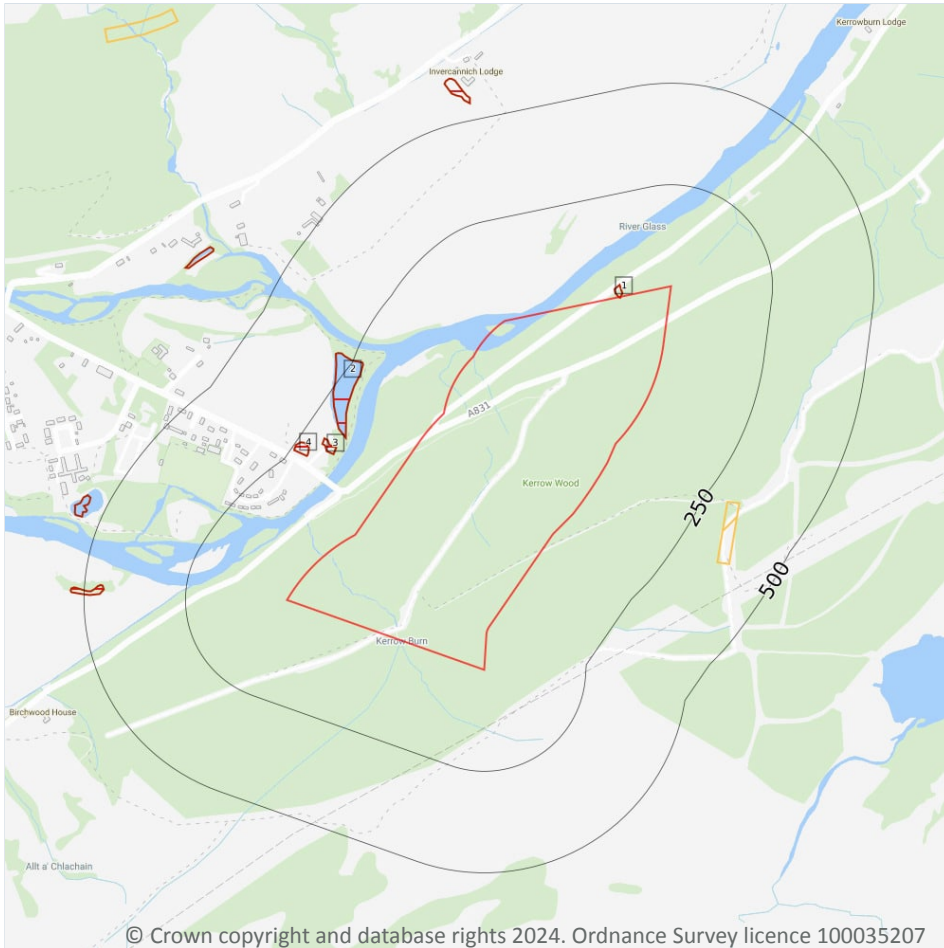


*This data is sourced from the British Geological Survey.*





## 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

4

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 69 >](#)

ID	Location	Land Use	Year of mapping	Mapping scale
1	On site	Sand Pit	1901	1:10560
2	155m W	Water Body	1971	1:10000
3	157m W	Disused Sewage Beds	1971	1:10000
4	208m W	Sand Pit	1901	1:10560

*This data is sourced from Ordnance Survey/Groundsure.*

## 18.3 Underground workings

### Records within 1000m

0

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

*This 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

1

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 69 >](#)

ID	Location	Name	Commodity	Class	Likelihood
5	303m E	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.

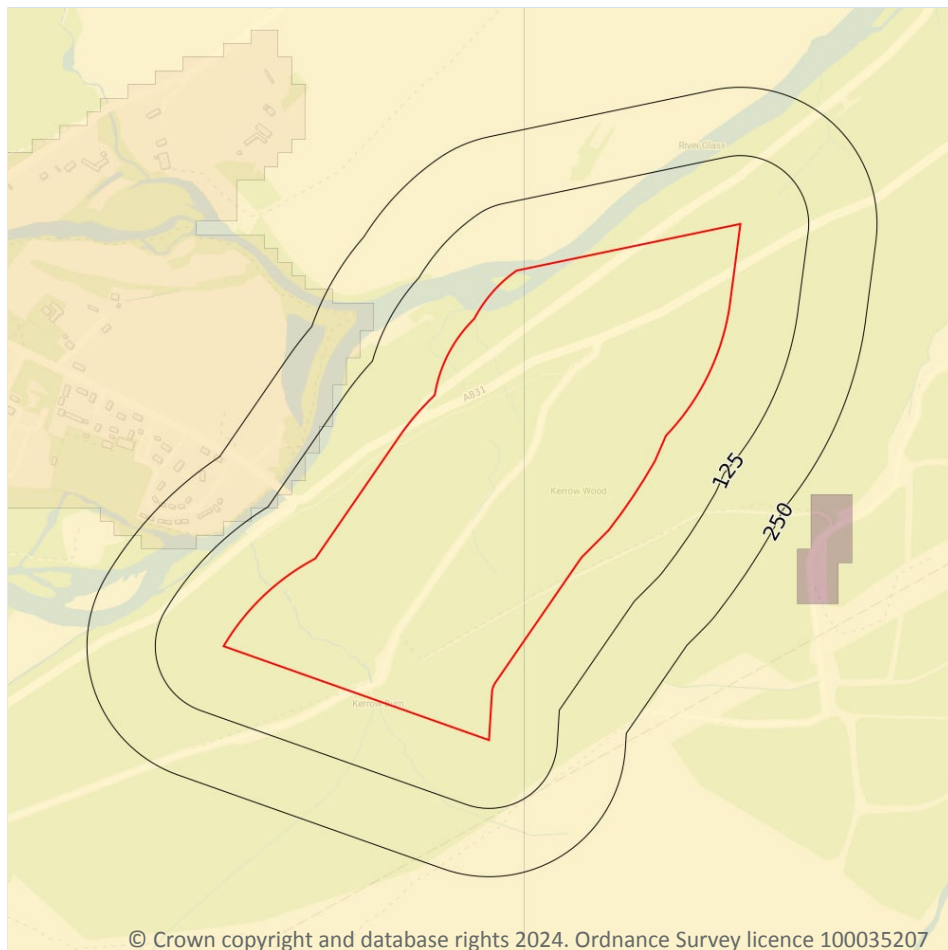
The database is not yet complete, and not all records have been verified. The absence of data does not mean that karst features are not present at a site. A reliability rating is included with each record.

*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 76 >](#)

Location	Estimated properties affected	Radon Protection Measures required
On site	Between 1% and 3%	Basic





*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

11

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<sup>2</sup>. 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<sup>2</sup>; 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	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 mg/kg
On site	15 mg/kg	-	100 mg/kg	60 mg/kg	No data	40 - 60 mg/kg	15 - 30 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<sup>2</sup>).

*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<sup>2</sup>.

*This data is sourced from the British Geological Survey.*





## 22 Railway infrastructure and projects

### 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	0
---------------------	---

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.

*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

0

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

*This data is sourced from OpenStreetMap.*

## 22.7 Railways

Records within 250m

0

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

*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.*





## Data providers

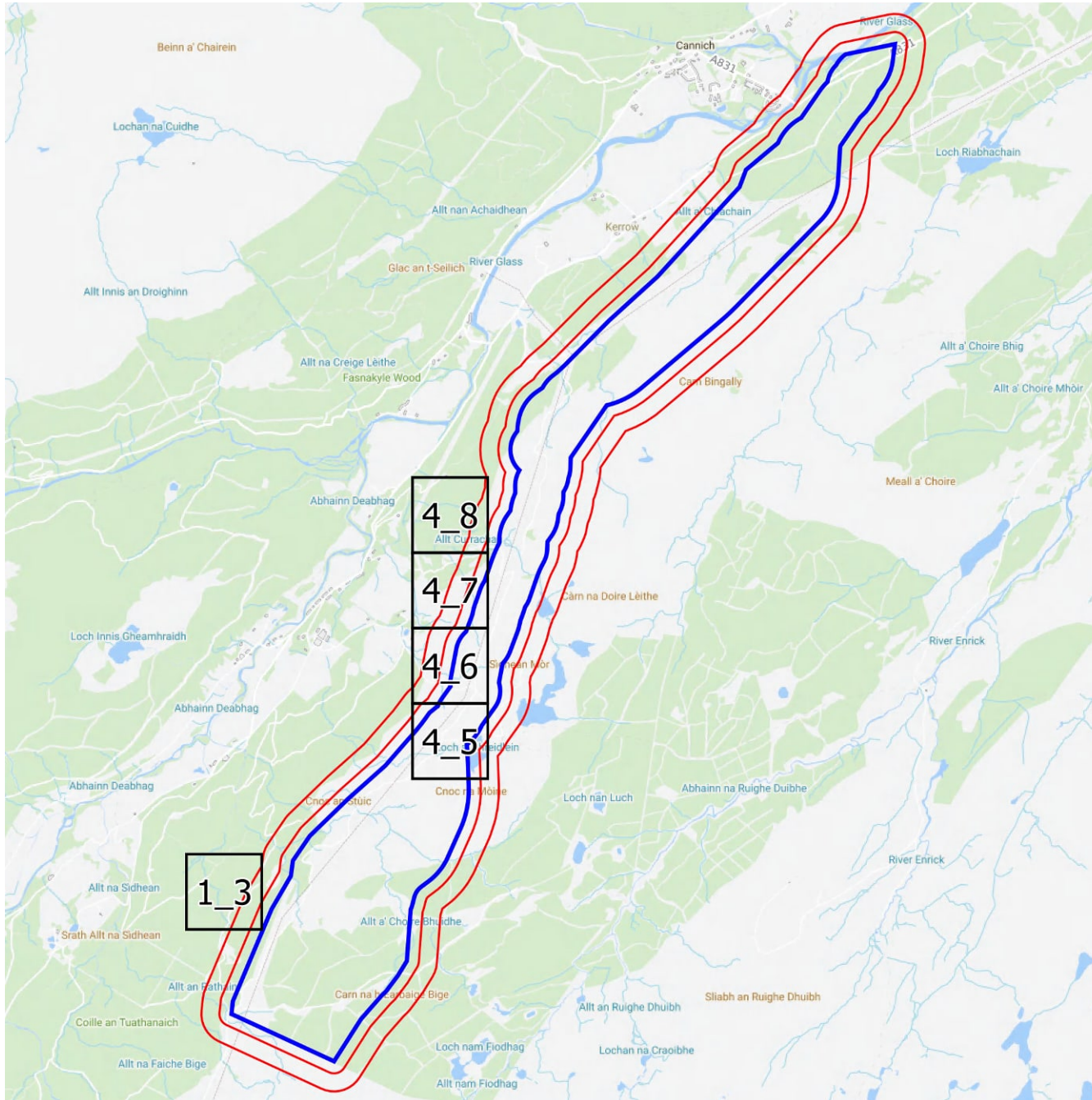
Groundsure works with respected data providers to bring you the most relevant and accurate information. To find out who they are and their areas of expertise see <https://www.groundsure.com/sources-reference> ↗.

## Terms and conditions

Groundsure's Terms and Conditions can be accessed at this link: [www.groundsure.com/terms-and-conditions-april-2023/](https://www.groundsure.com/terms-and-conditions-april-2023/) ↗.

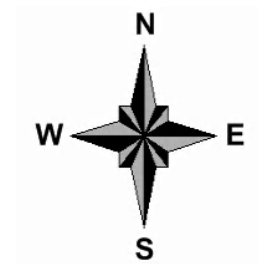






**Groundsure**  
INSIGHTS

1:2,500 Scale Grid Index





**Site Details:**

Scotland, Red Line Boundary

**Client Ref:** Scotland, Red Line Boundary  
**Report Ref:** GSIP-2024-14714-18279\_LS\_1\_3  
**Grid Ref:** 229831, 824862

**Map Name:** National Grid

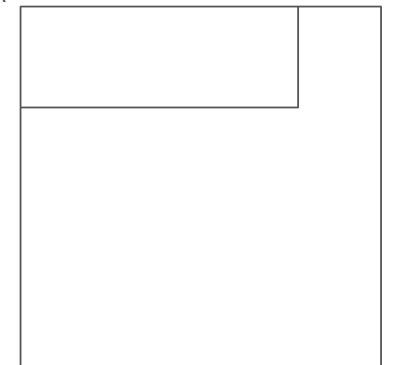
**Map date:** 1970

**Scale:** 1:2,500

**Printed at:** 1:2,500



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

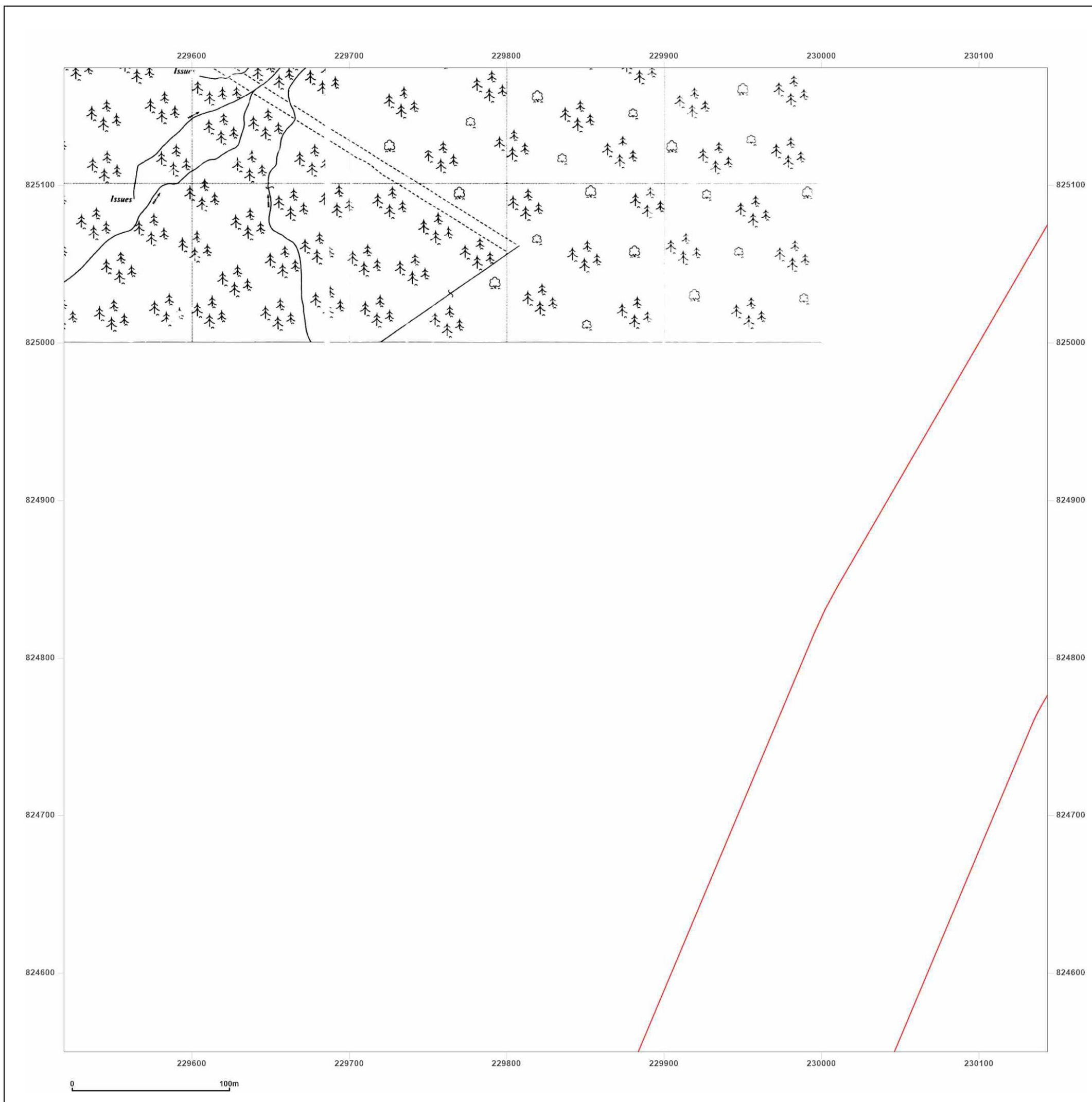


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**Site Details:**

Scotland, Red Line Boundary

**Client Ref:** Scotland, Red Line Boundary  
**Report Ref:** GSIP-2024-14714-18279\_LS\_1\_3  
**Grid Ref:** 229831, 824862

**Map Name:** National Grid

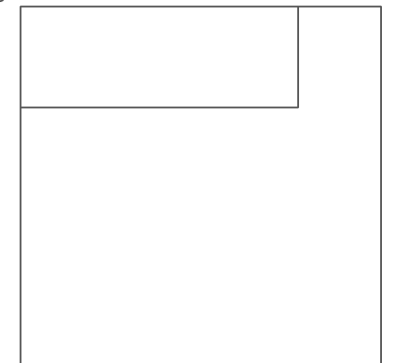
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**Printed at:** 1:2,500



Surveyed 1970  
Revised 1970  
Edition N/A  
Copyright 1970  
Levelled 1953

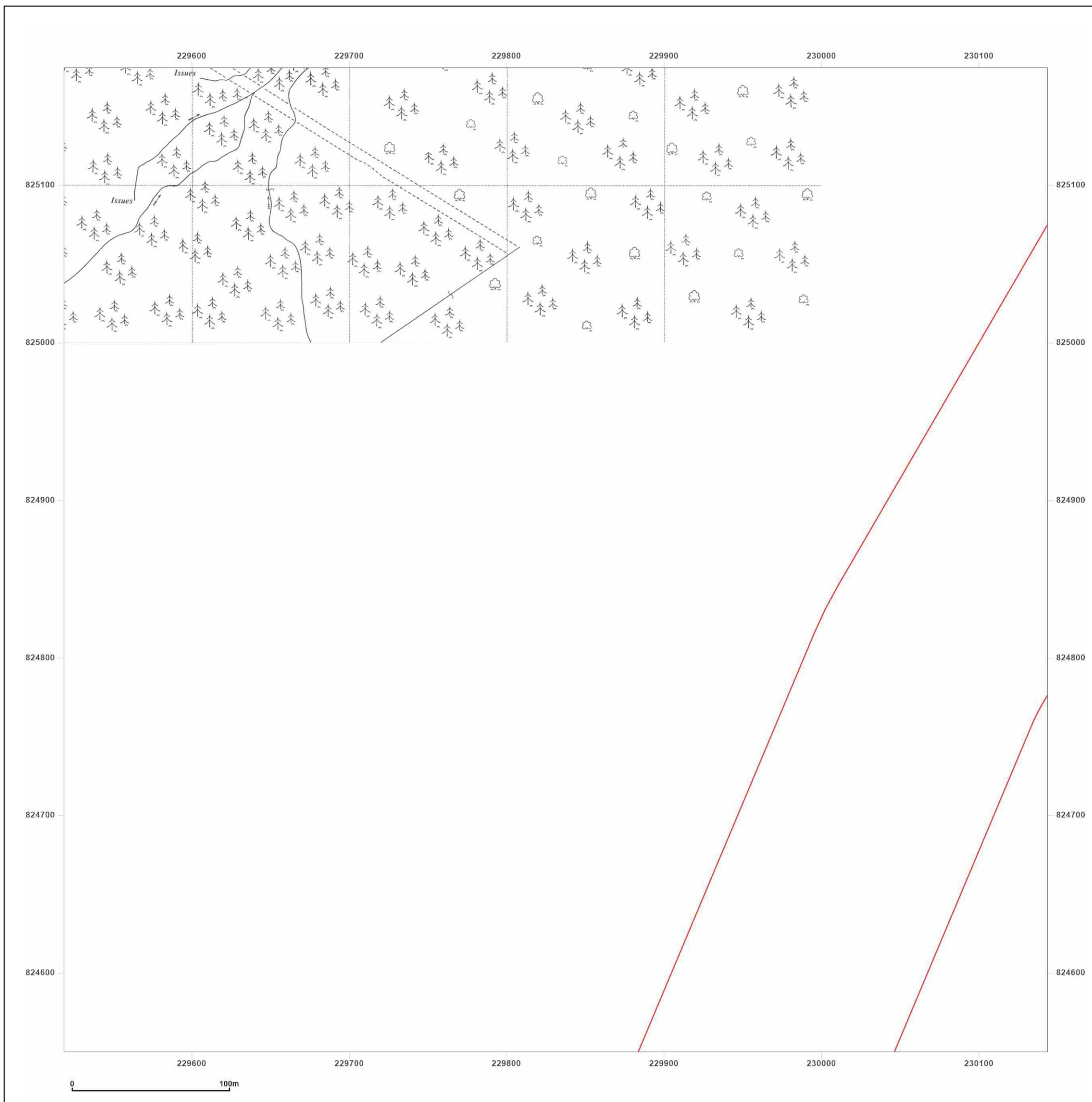


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**Site Details:**

Scotland, Red Line Boundary

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**Map Name:** National Grid

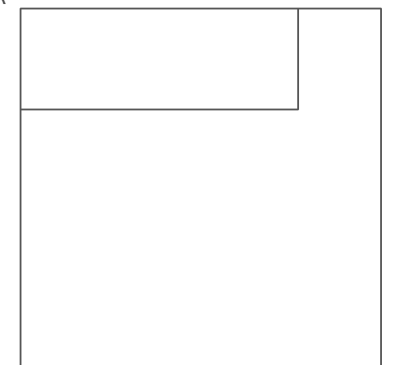
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**Printed at:** 1:2,500



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Edition N/A  
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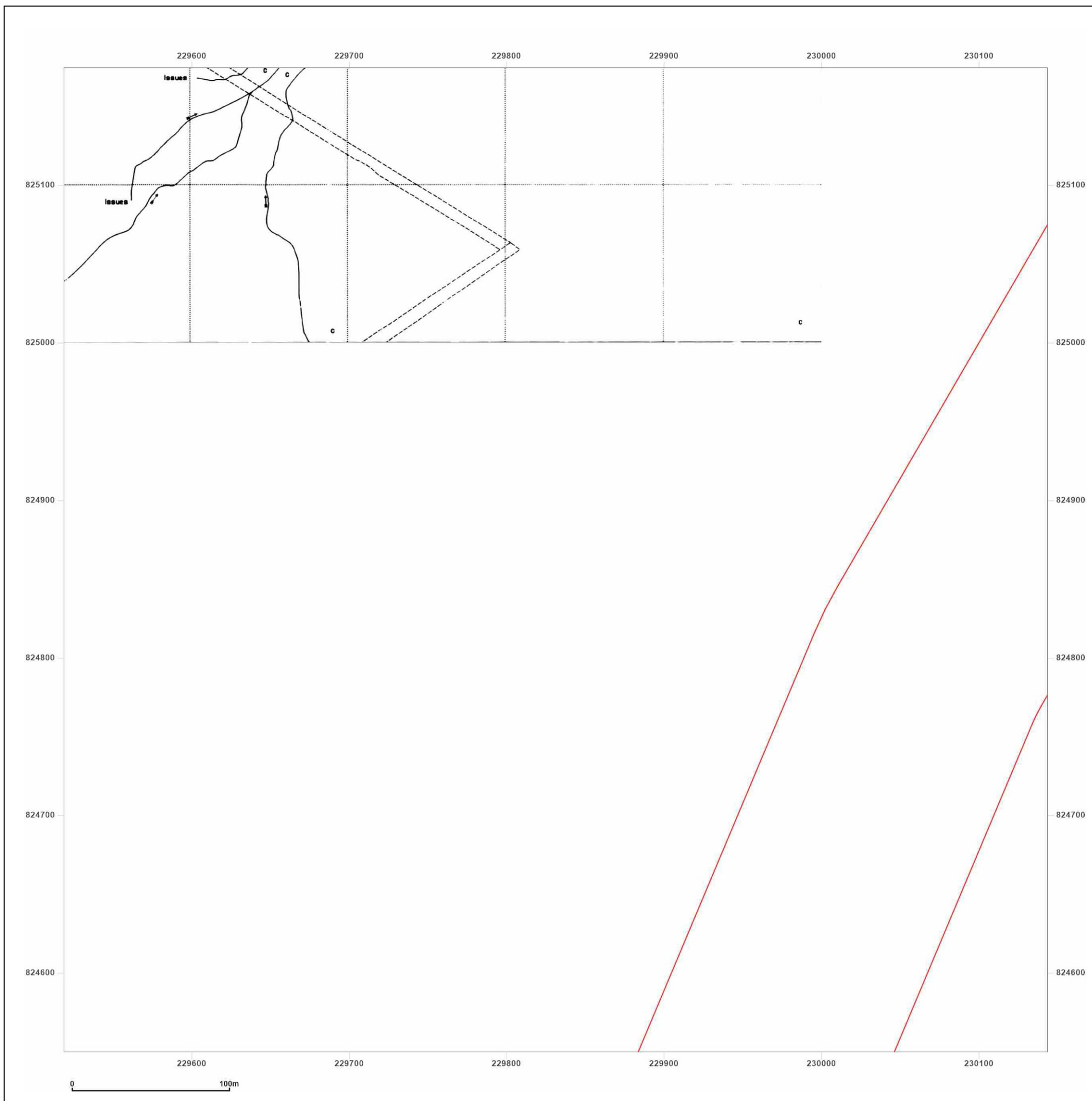


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Site Details:

Scotland, Red Line Boundary

Client Ref:

Report Ref:

Grid Ref:

Scotland, Red Line Boundary

GSIP-2024-14714-18279\_LS\_4\_5

231706, 826112

Map Name:

Map date:

Scale:

Printed at:

National Grid

1968

1:2,500

1:2,500


Surveyed 1968

Revised 1968

Edition N/A

Copyright 1970

Levelled 1953



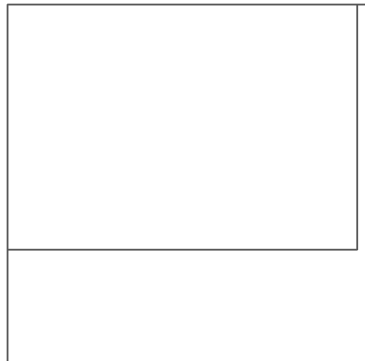
Surveyed 1968

Revised 1968

Edition N/A

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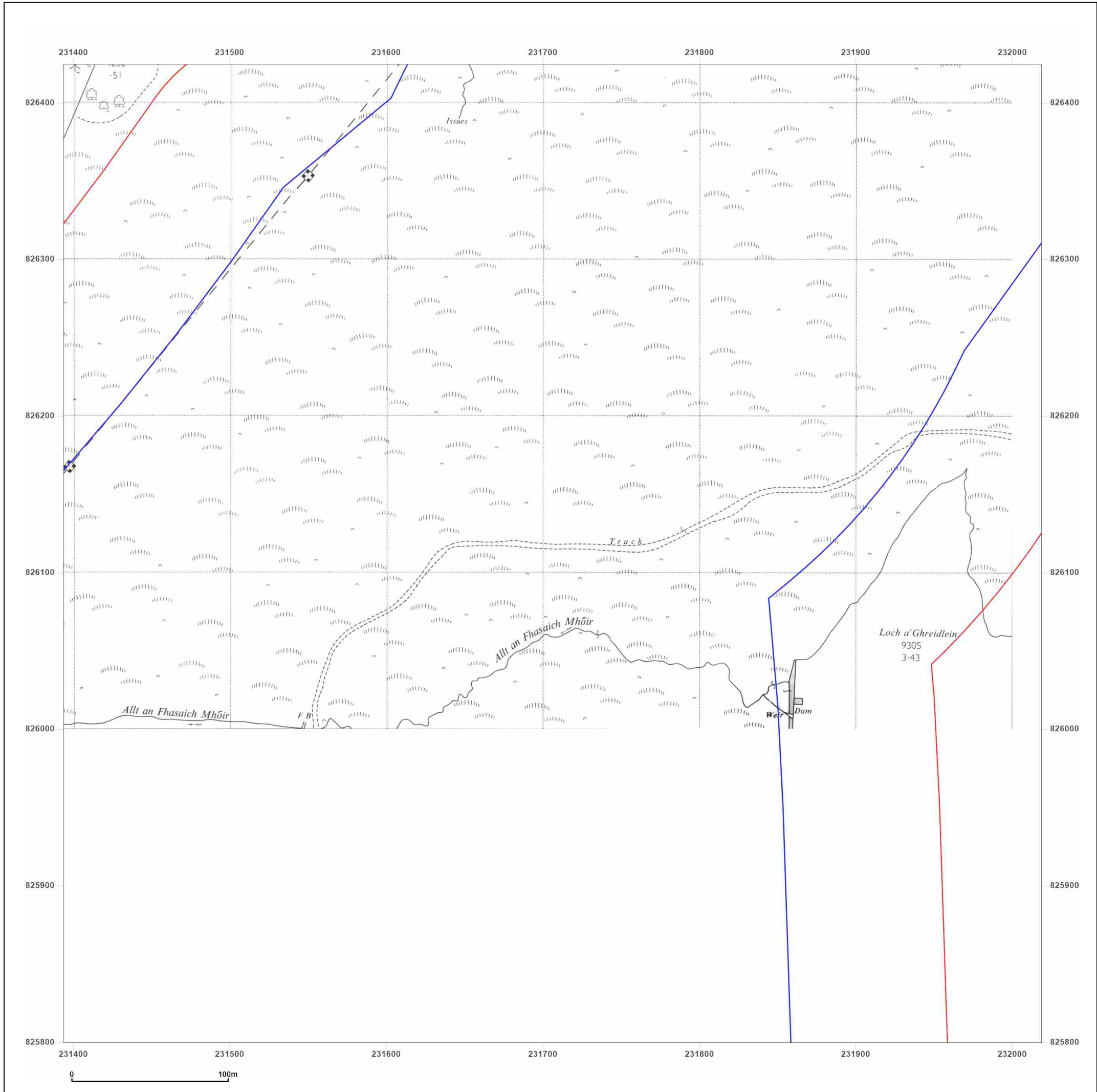
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**Site Details:**

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**Client Ref:** Scotland, Red Line Boundary  
**Report Ref:** GSIP-2024-14714-18279\_LS\_4\_5  
**Grid Ref:** 231706, 826112

**Map Name:** National Grid

**Map date:** 1970

**Scale:** 1:2,500

**Printed at:** 1:2,500



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Revised N/A  
Edition N/A  
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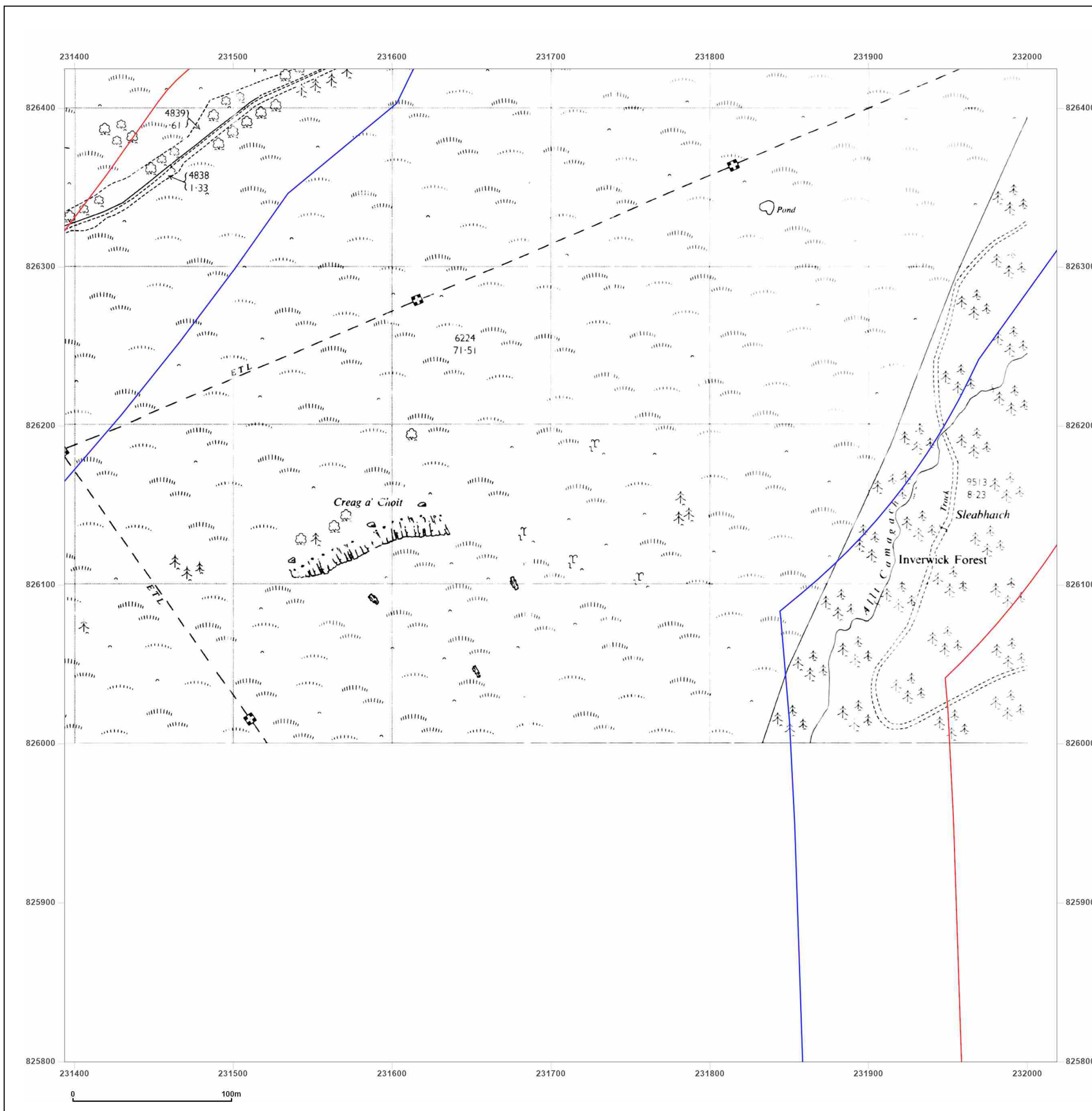


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**Site Details:**

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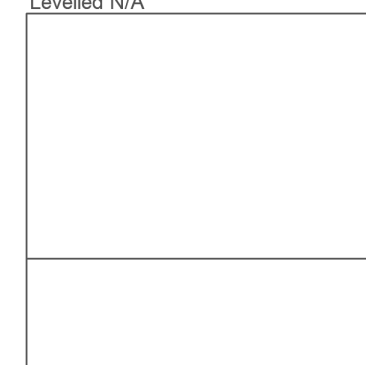
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Edition N/A  
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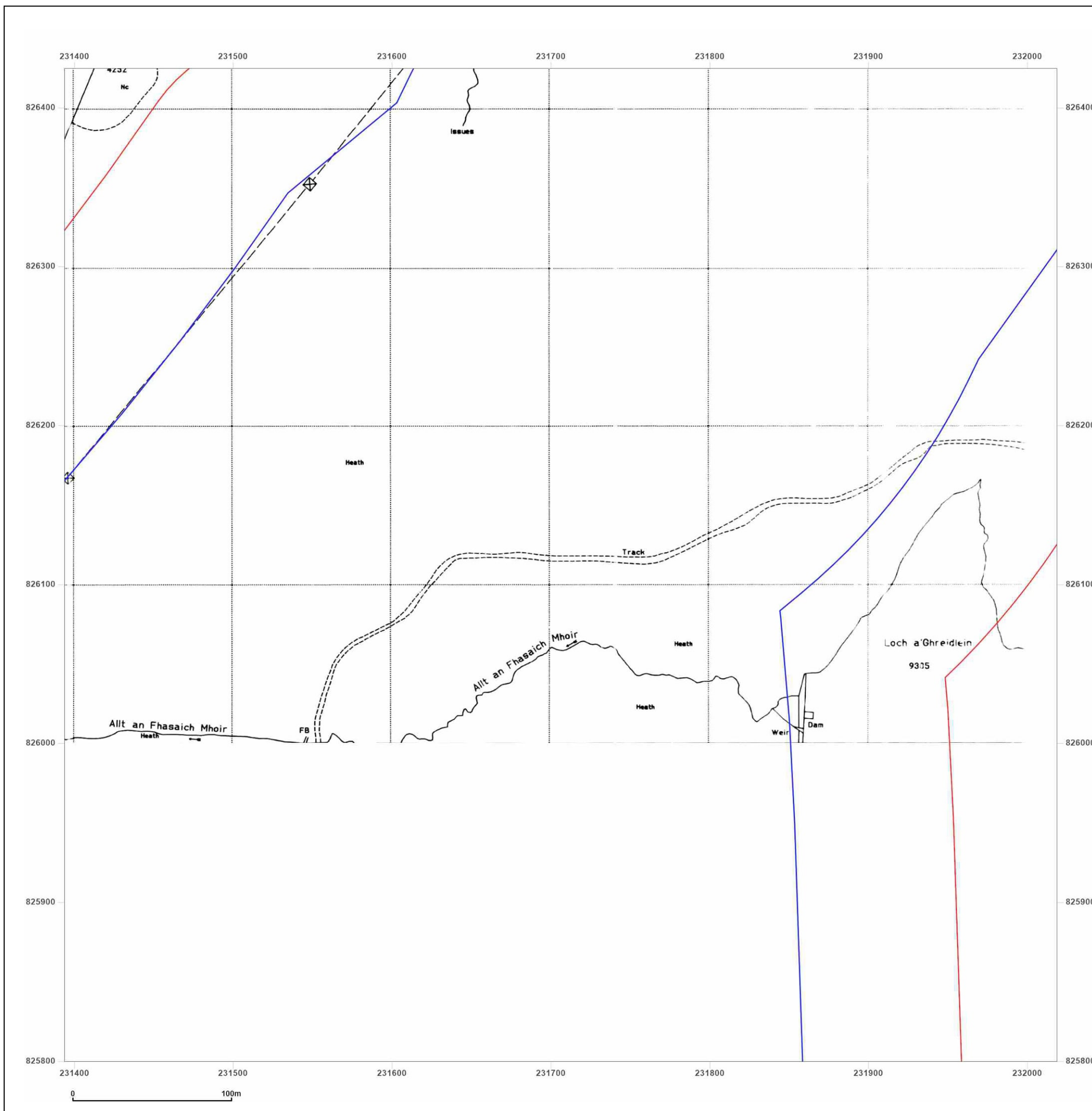


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**Site Details:**

Scotland, Red Line Boundary

**Client Ref:** Scotland, Red Line Boundary  
**Report Ref:** GSIP-2024-14714-18279\_LS\_4\_6  
**Grid Ref:** 231706, 826737

**Map Name:** National Grid

**Map date:** 1968-1969

**Scale:** 1:2,500

**Printed at:** 1:2,500



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Edition N/A  
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Edition N/A  
Copyright 1970  
Levelled 1953

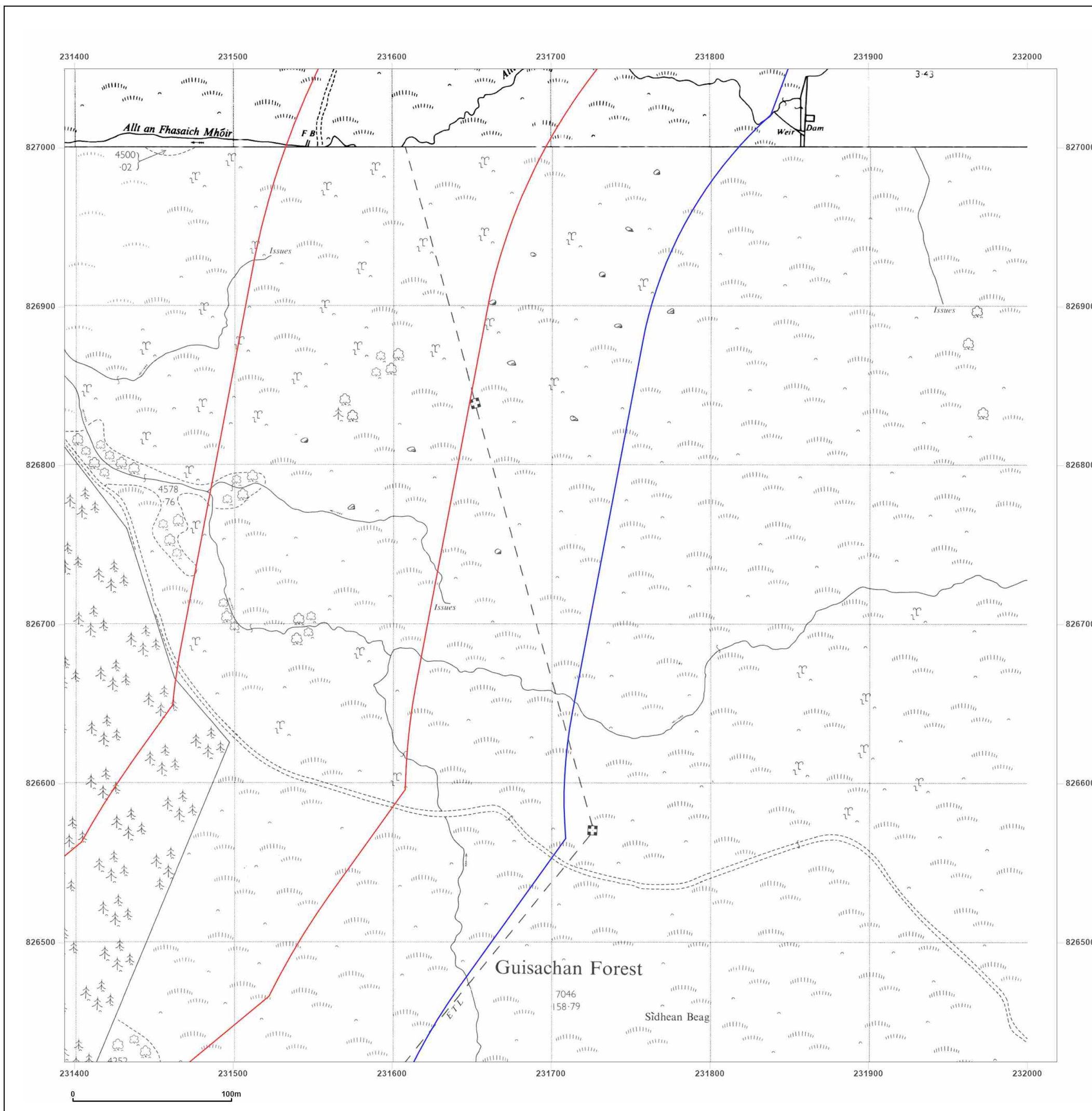


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#### Site Details:

Scotland, Red Line Boundary

**Client Ref:** Scotland, Red Line Boundary  
**Report Ref:** GSIP-2024-14714-18279\_LS\_4\_6  
**Grid Ref:** 231706, 826737

**Map Name:** National Grid

**Map date:** 1968-1970

**Scale:** 1:2,500

**Printed at:** 1:2,500



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 Edition N/A  
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 Revised N/A  
 Edition N/A  
 Copyright N/A  
 Levelled N/A

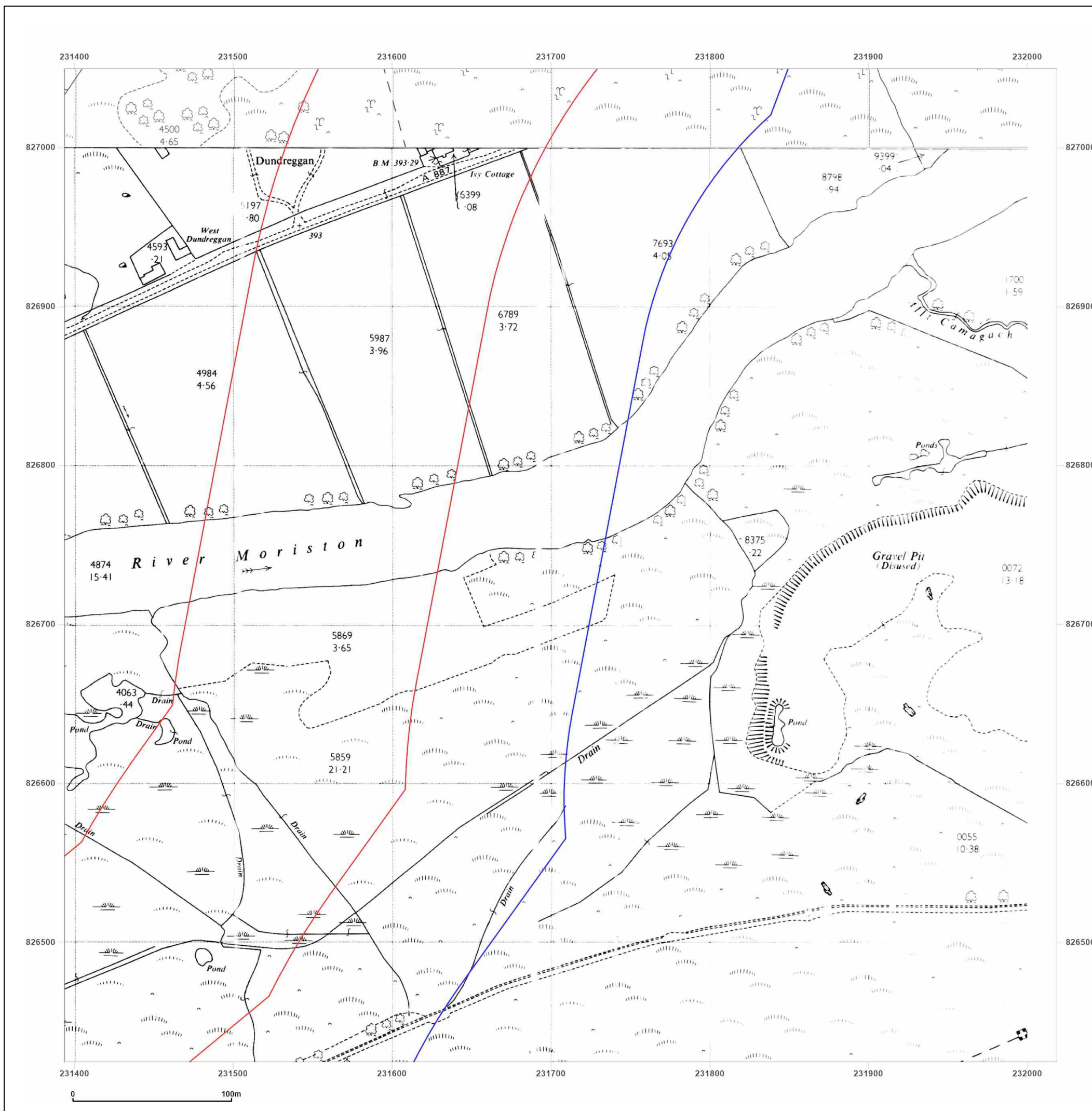


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#### Site Details:

Scotland, Red Line Boundary

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**Map Name:** National Grid

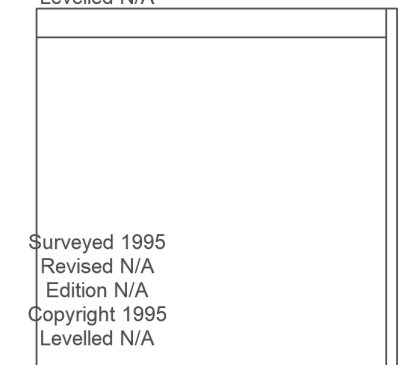
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 Edition N/A  
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 Levelled N/A

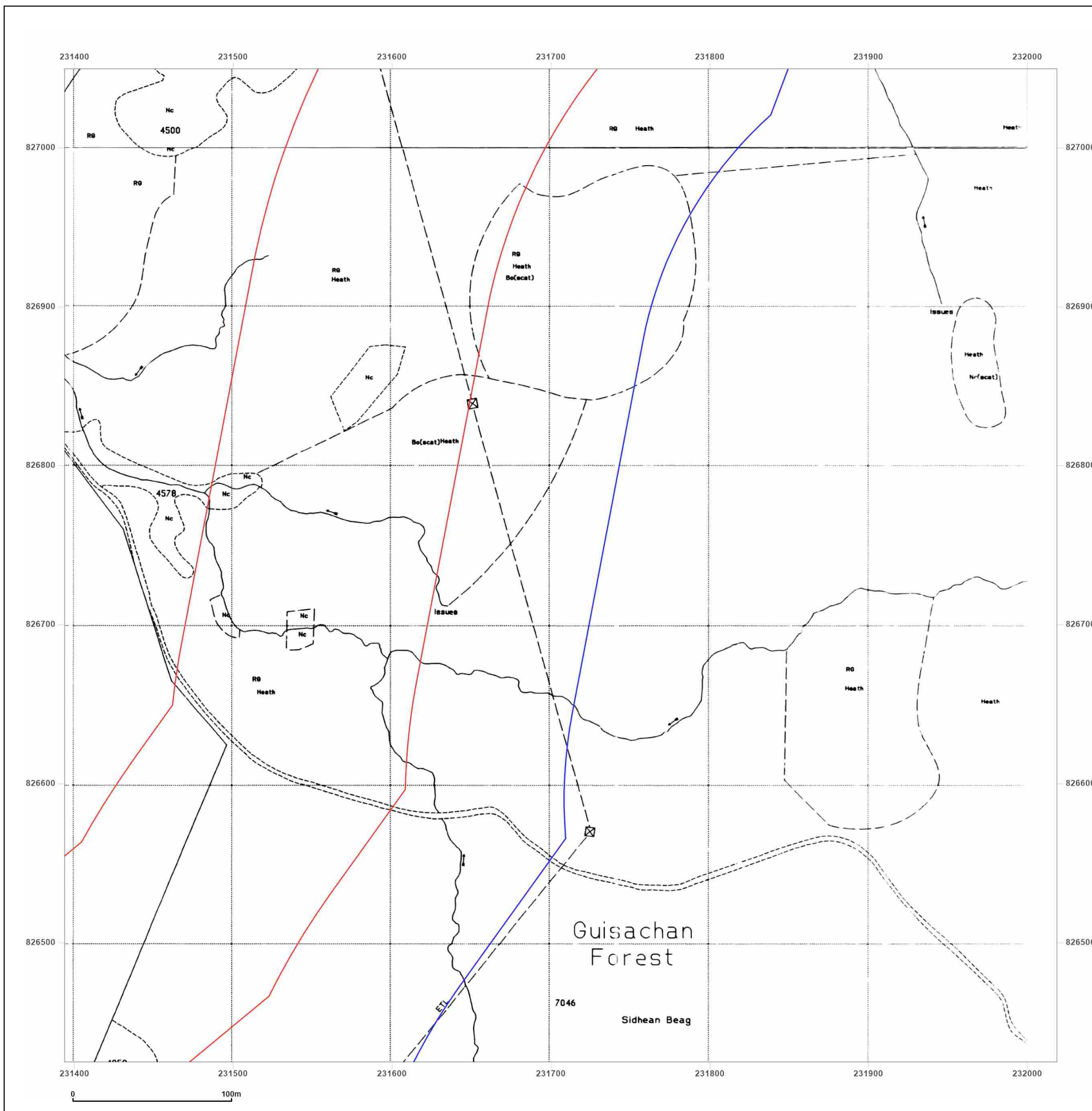


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**Site Details:**

Scotland, Red Line Boundary

**Client Ref:** Scotland, Red Line Boundary  
**Report Ref:** GSIP-2024-14714-18279\_LS\_4\_7  
**Grid Ref:** 231706, 827362

**Map Name:** National Grid

**Map date:** 1968

**Scale:** 1:2,500

**Printed at:** 1:2,500



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Edition N/A  
Copyright 1969  
Levelled 1953

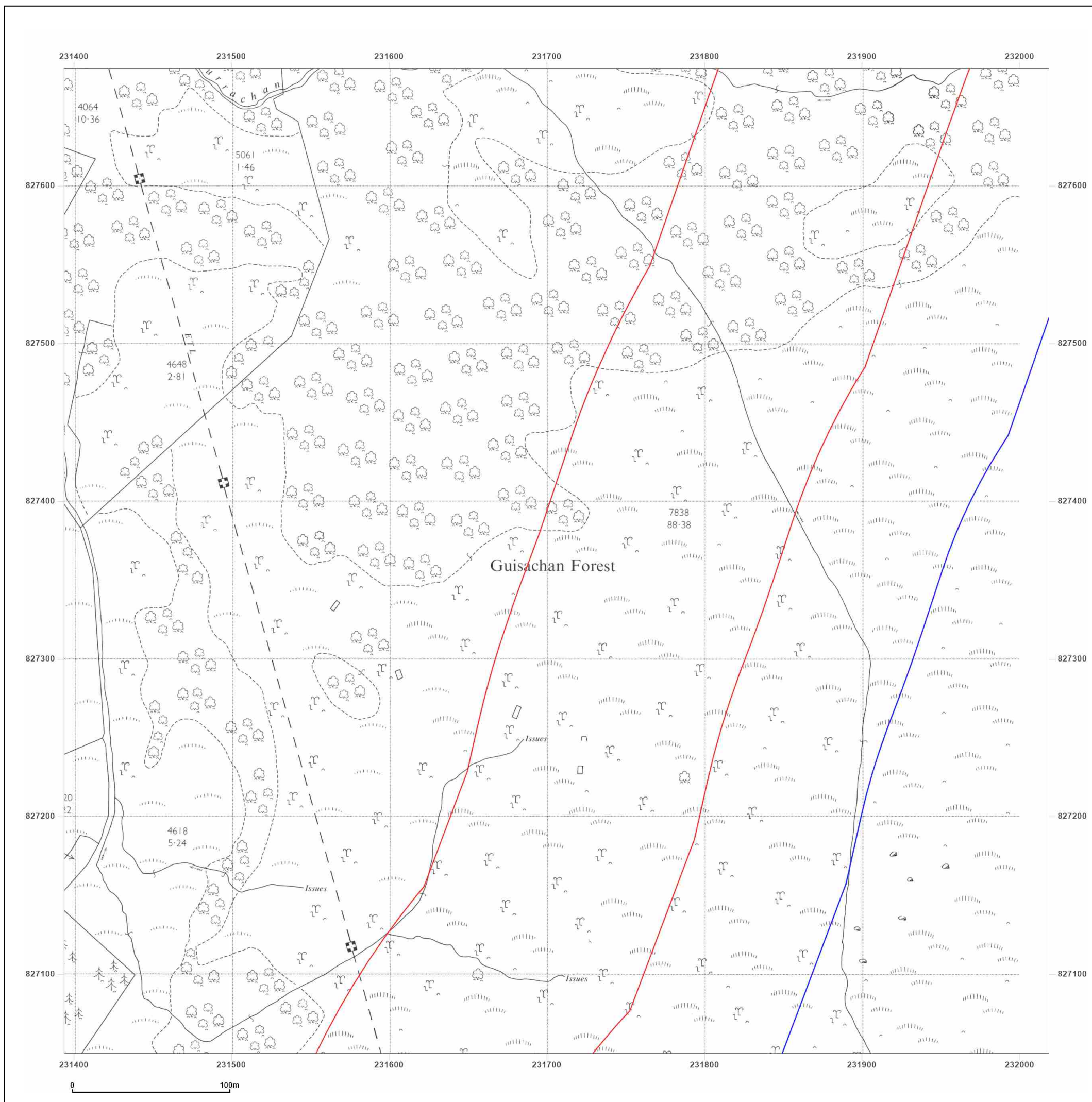


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**Site Details:**

Scotland, Red Line Boundary

**Client Ref:** Scotland, Red Line Boundary  
**Report Ref:** GSIP-2024-14714-18279\_LS\_4\_7  
**Grid Ref:** 231706, 827362

**Map Name:** National Grid

**Map date:** 1969

**Scale:** 1:2,500

**Printed at:** 1:2,500



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Edition N/A  
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Levelled N/A

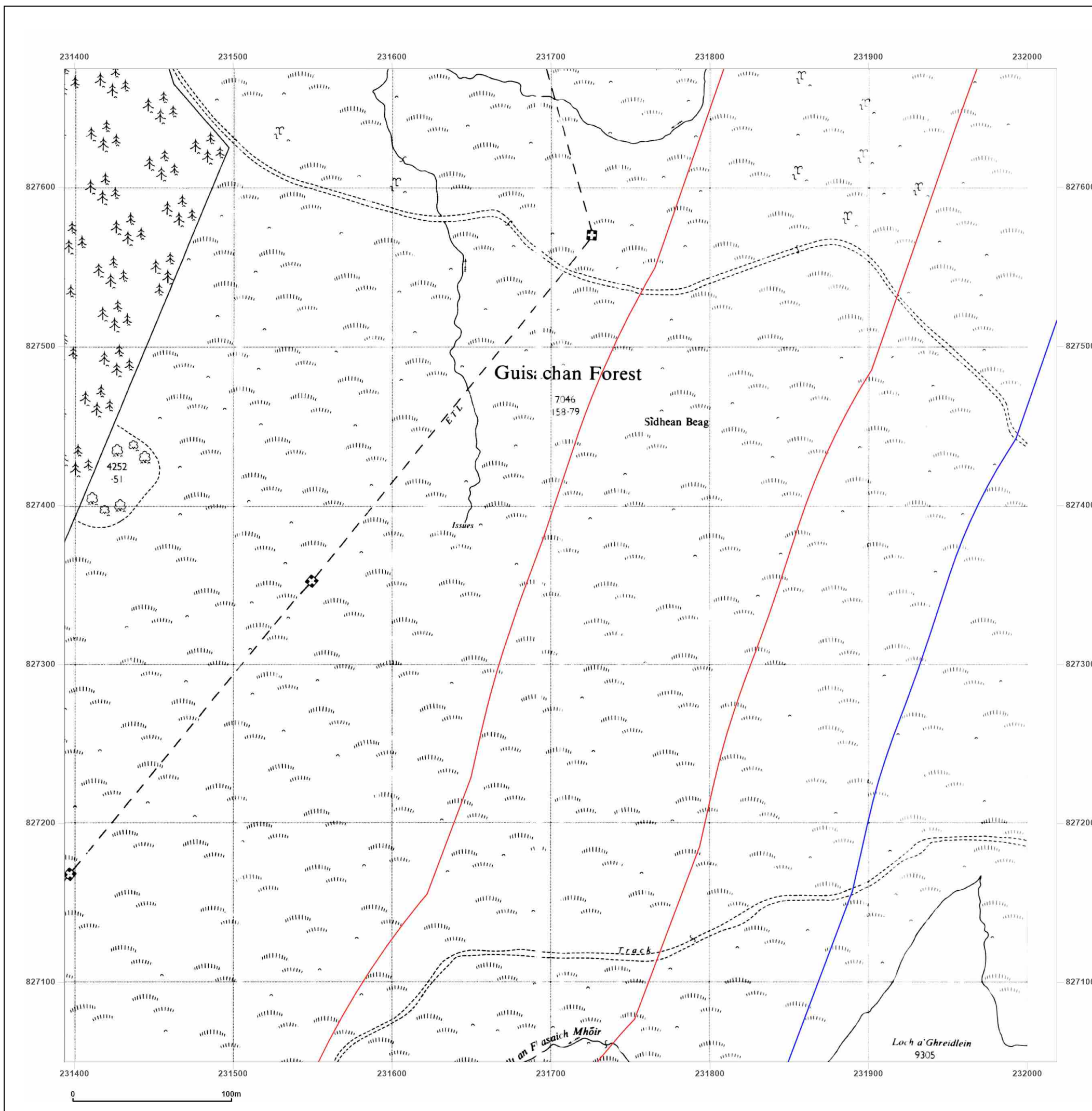


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**Site Details:**

Scotland, Red Line Boundary

**Client Ref:** Scotland, Red Line Boundary  
**Report Ref:** GSIP-2024-14714-18279\_LS\_4\_7  
**Grid Ref:** 231706, 827362

**Map Name:** National Grid

**Map date:** 1995

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Edition N/A  
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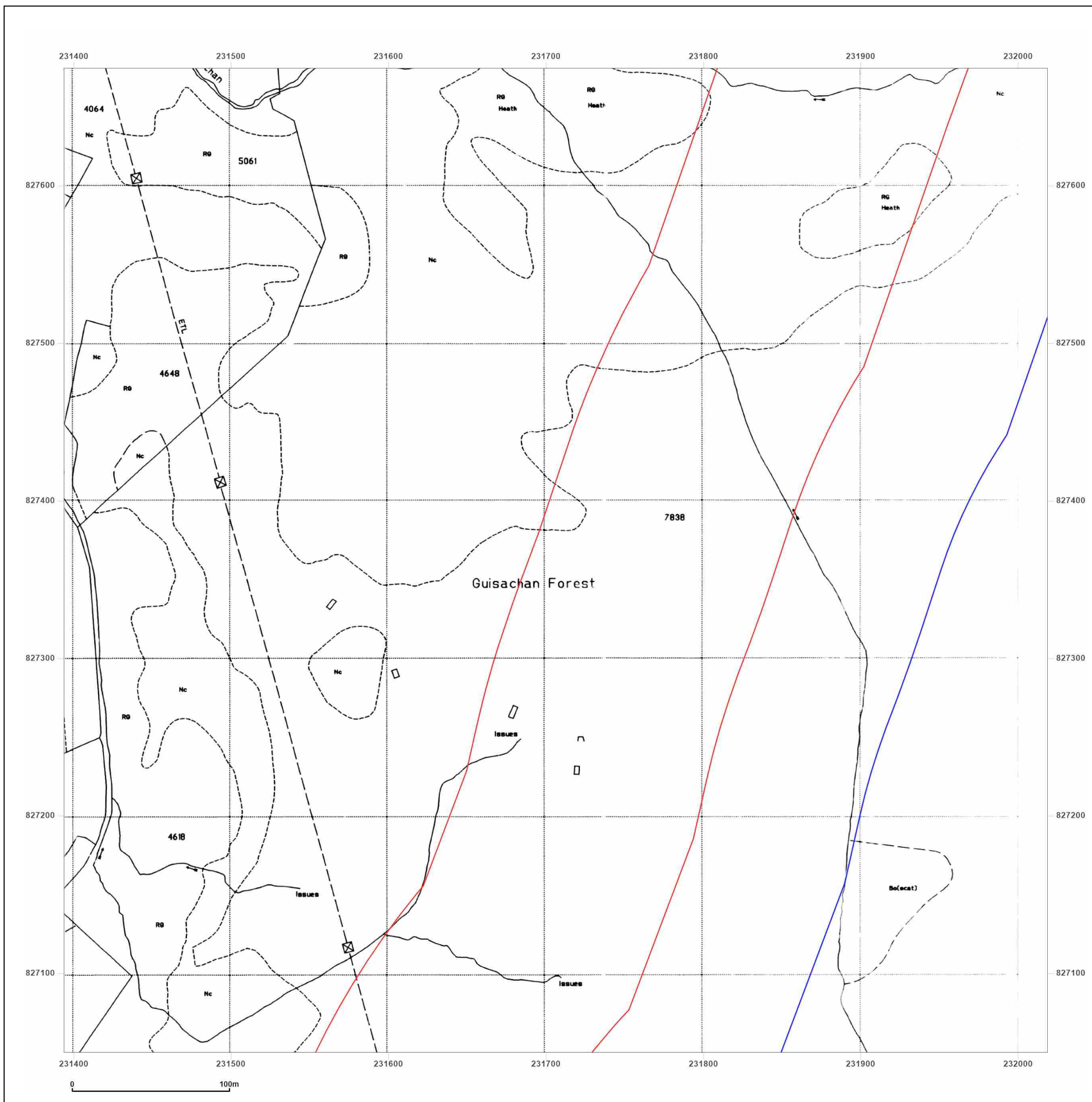


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**Site Details:**

Scotland, Red Line Boundary

**Client Ref:** Scotland, Red Line Boundary  
**Report Ref:** GSIP-2024-14714-18279\_LS\_4\_8  
**Grid Ref:** 231706, 827987

**Map Name:** National Grid

**Map date:** 1968

**Scale:** 1:2,500

**Printed at:** 1:2,500



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Revised N/A  
Edition N/A  
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Revised 1968  
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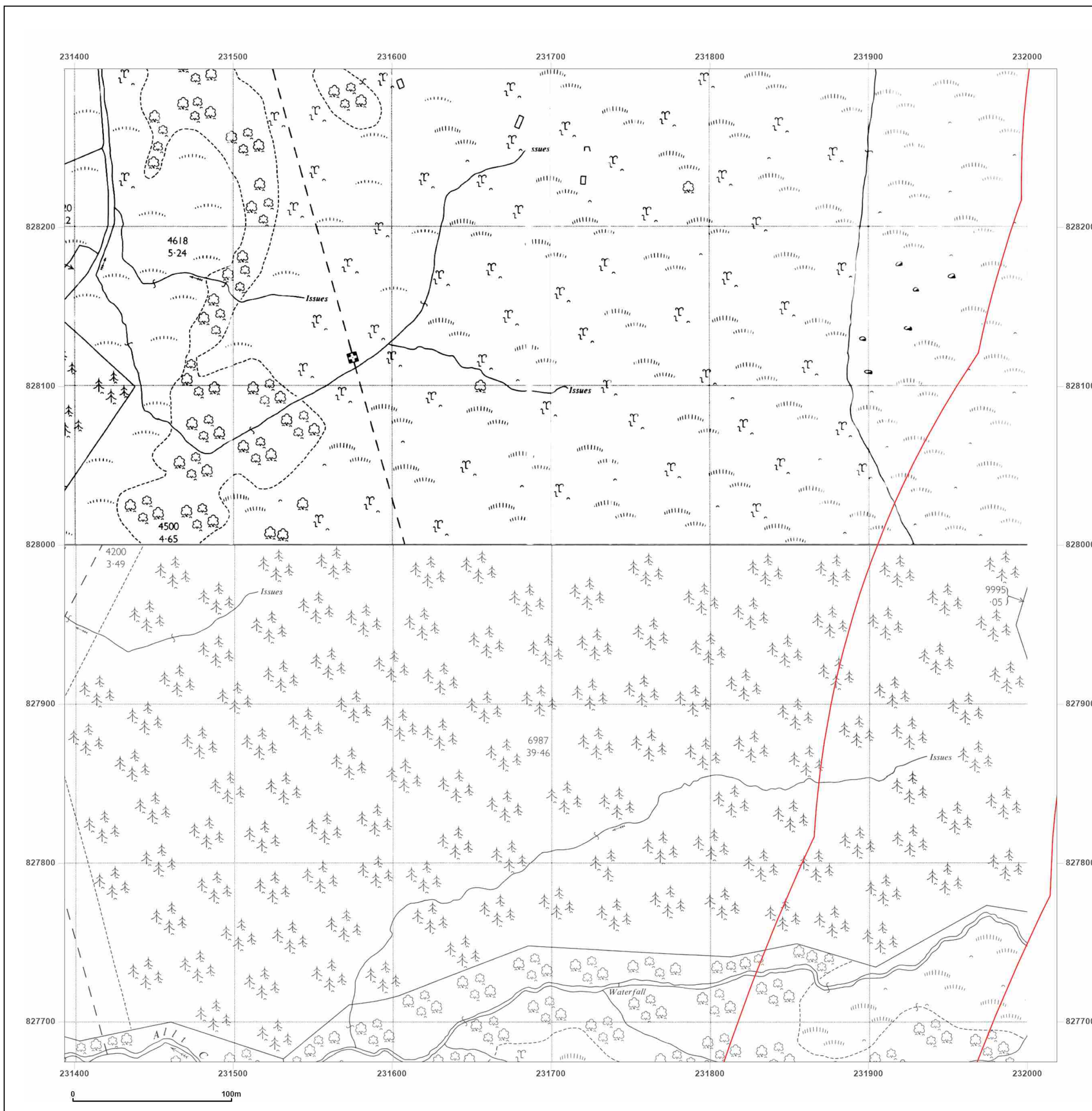


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#### Site Details:

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**Client Ref:** Scotland, Red Line Boundary  
**Report Ref:** GSIP-2024-14714-18279\_LS\_4\_8  
**Grid Ref:** 231706, 827987

**Map Name:** National Grid

**Map date:** 1968-1969

**Scale:** 1:2,500

**Printed at:** 1:2,500



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Revised N/A  
Edition N/A  
Copyright N/A  
Levelled N/A

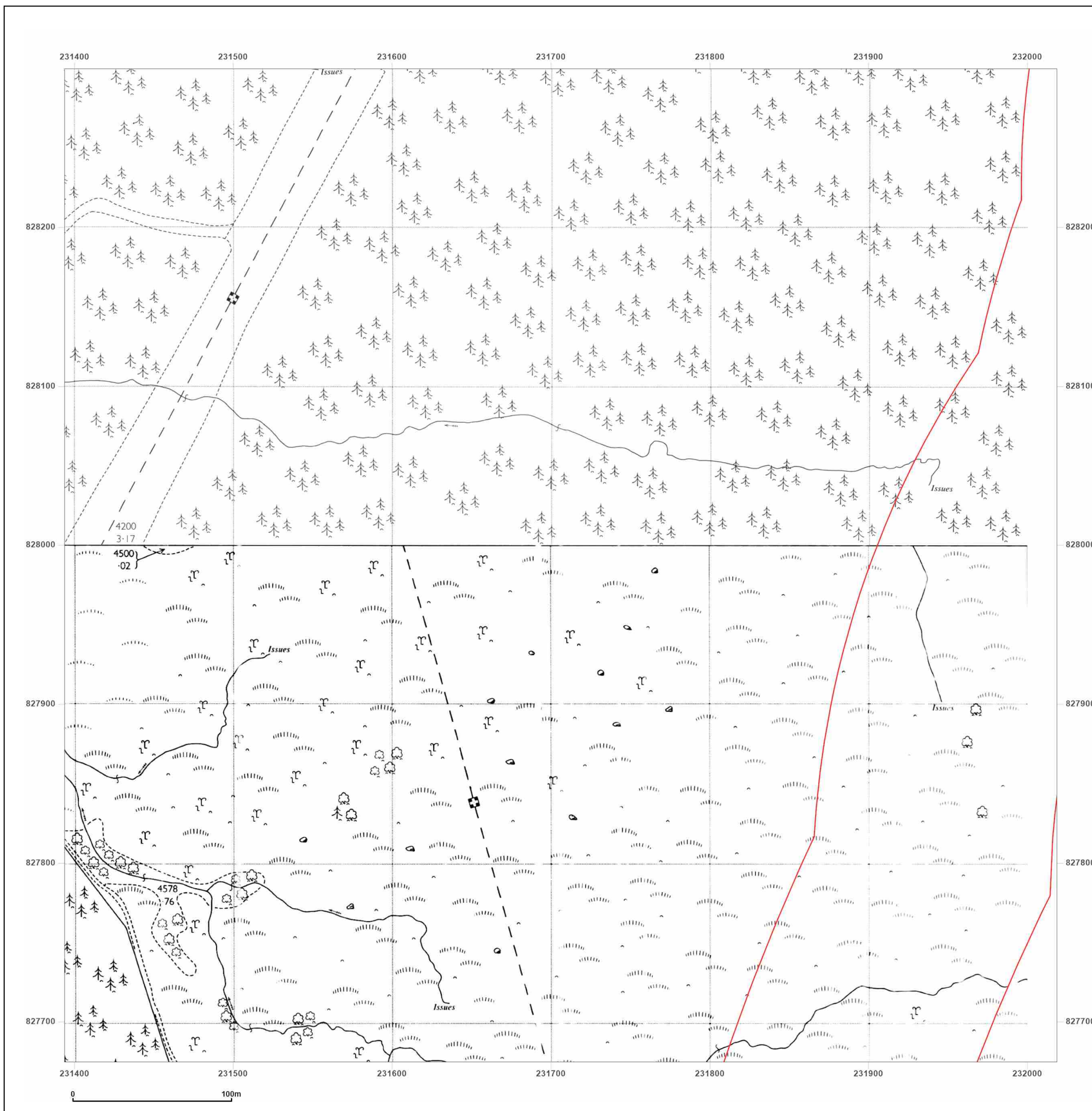


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**Grid Ref:** 231706, 827987

**Map Name:** National Grid

**Map date:** 1995

**Scale:** 1:2,500

**Printed at:** 1:2,500



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Edition N/A  
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Revised N/A  
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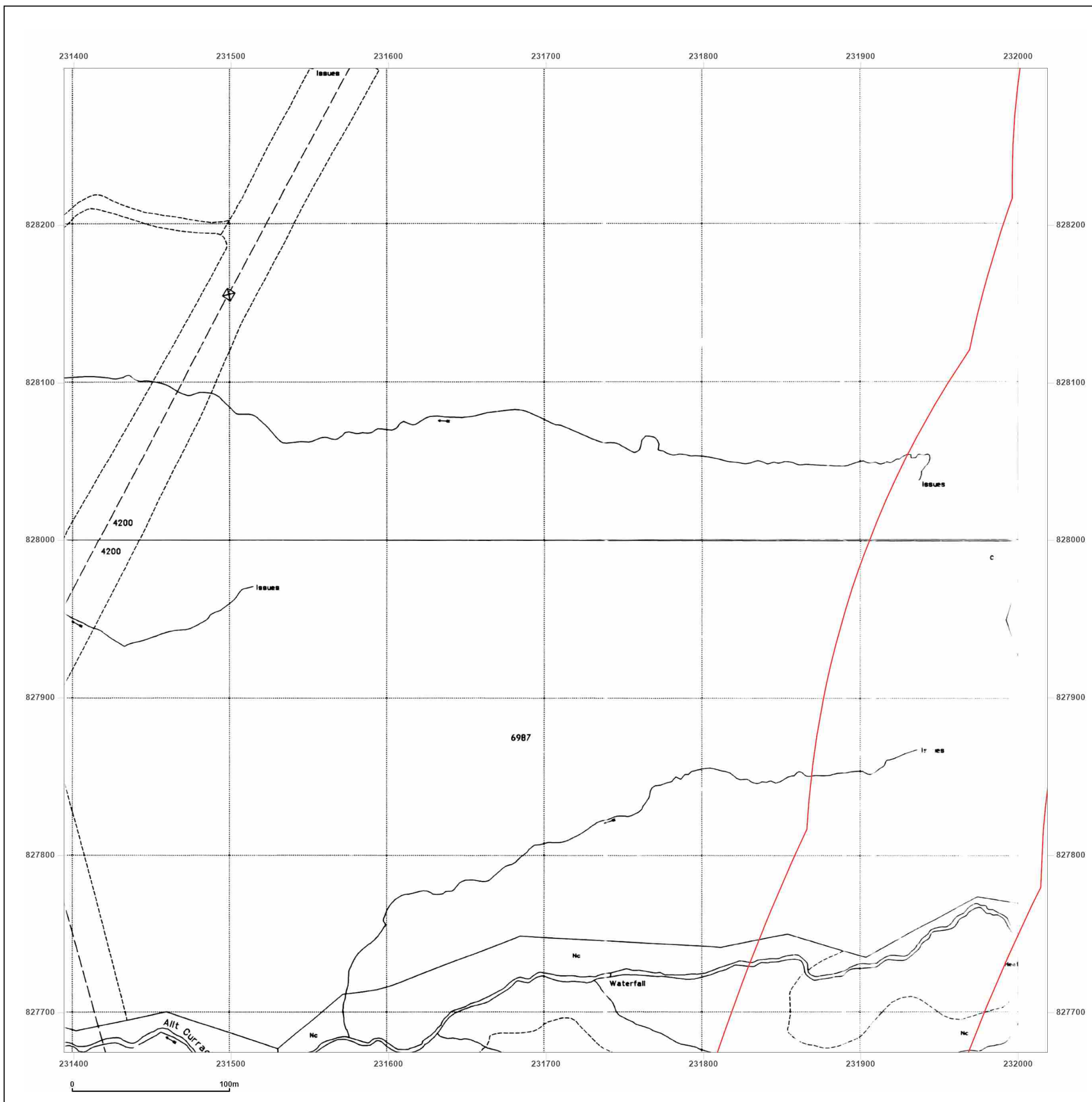


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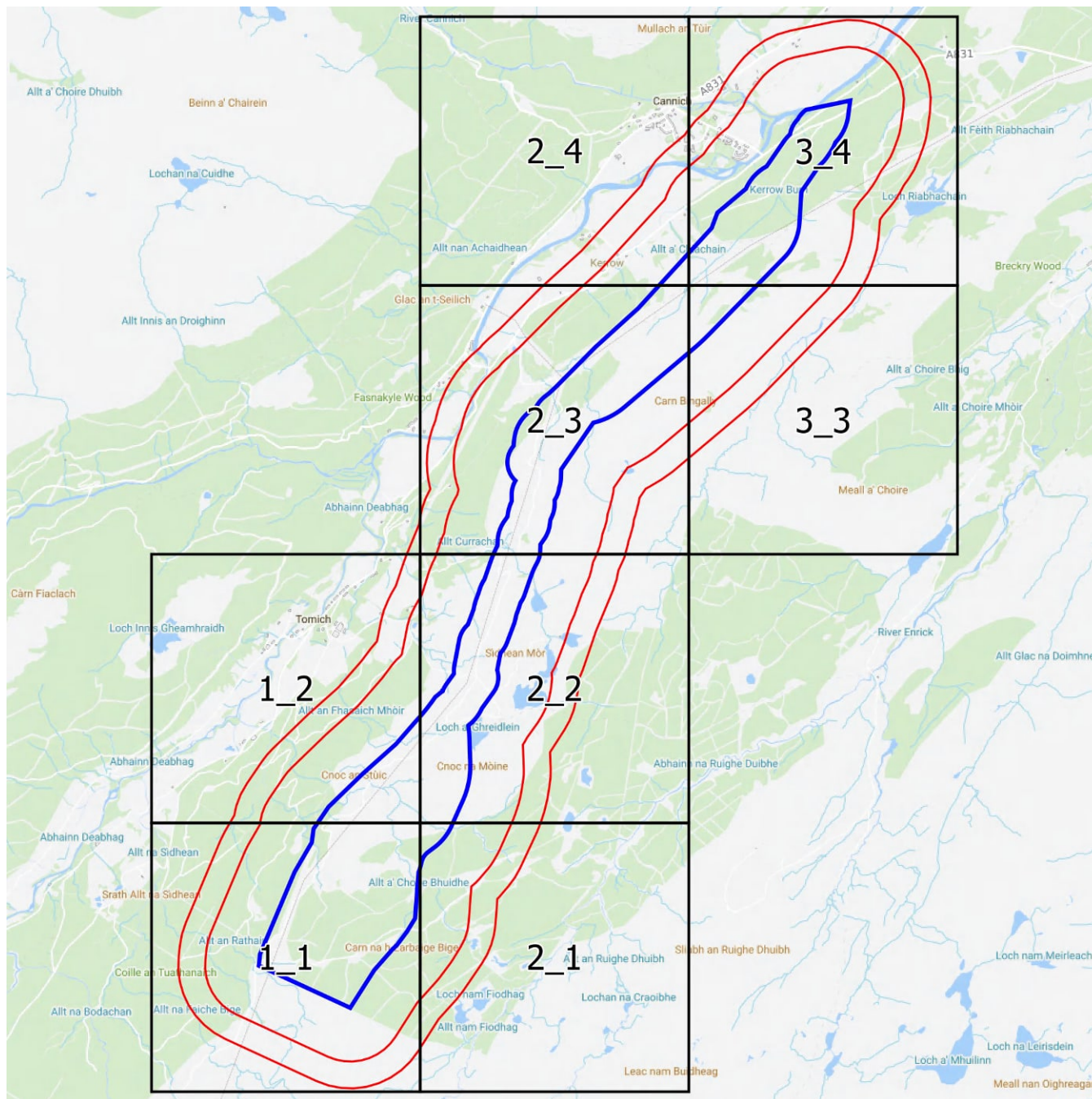
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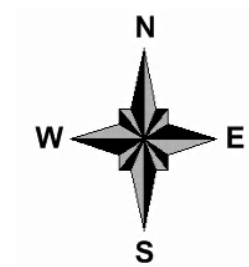






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## Small Scale Grid Index





**Site Details:**

Scotland, Red Line Boundary

**Client Ref:** Scotland, Red Line Boundary  
**Report Ref:** GSIP-2024-14714-18279\_SS\_1\_1  
**Grid Ref:** 230144, 823925

**Map Name:** County Series

**Map date:** 1872

**Scale:** 1:10,560

**Printed at:** 1:10,560



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

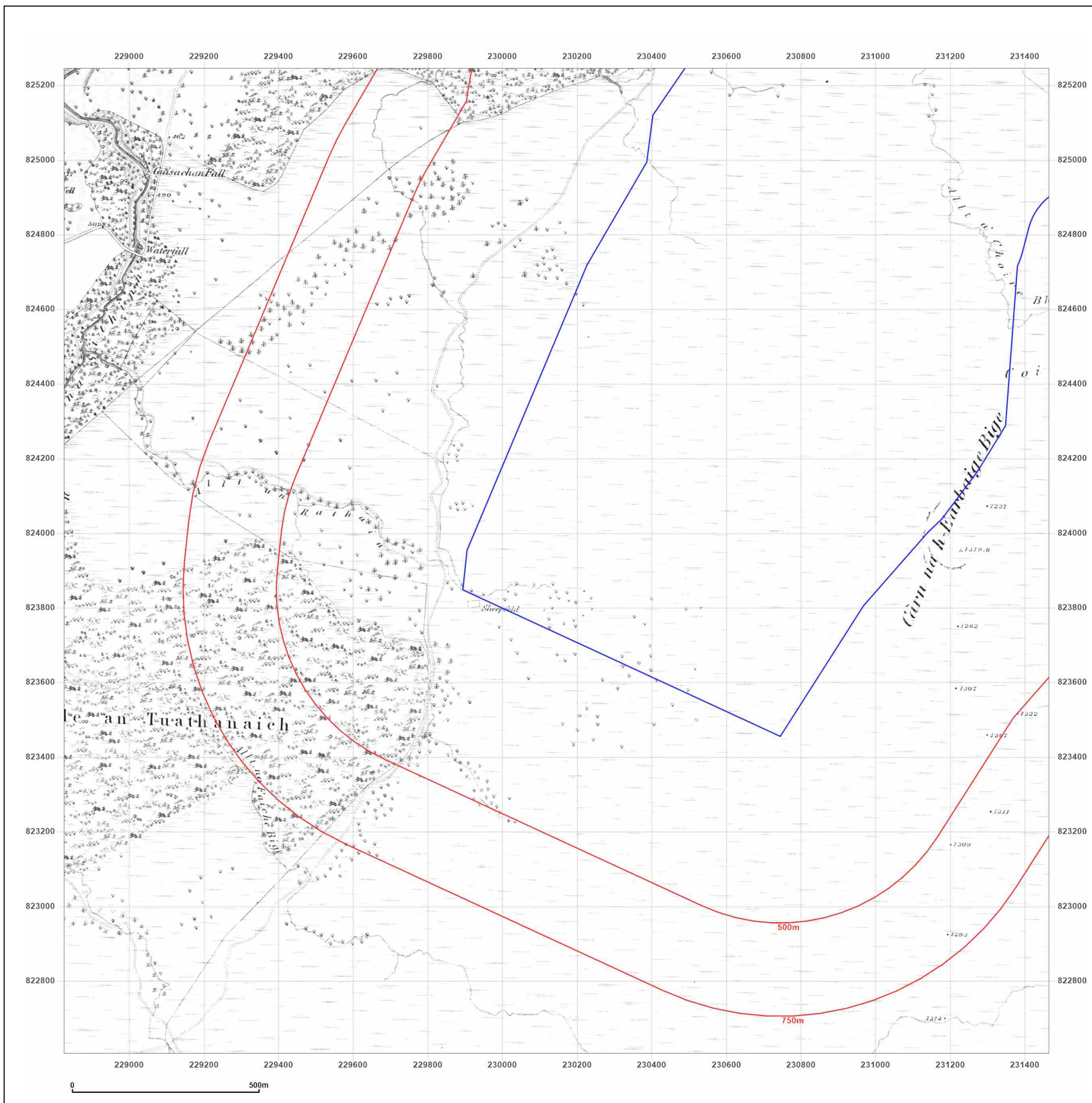


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**Grid Ref:** 230144, 823925

**Map Name:** County Series

**Map date:** 1901

**Scale:** 1:10,560

**Printed at:** 1:10,560



Surveyed 1872  
Revised 1901  
Edition N/A  
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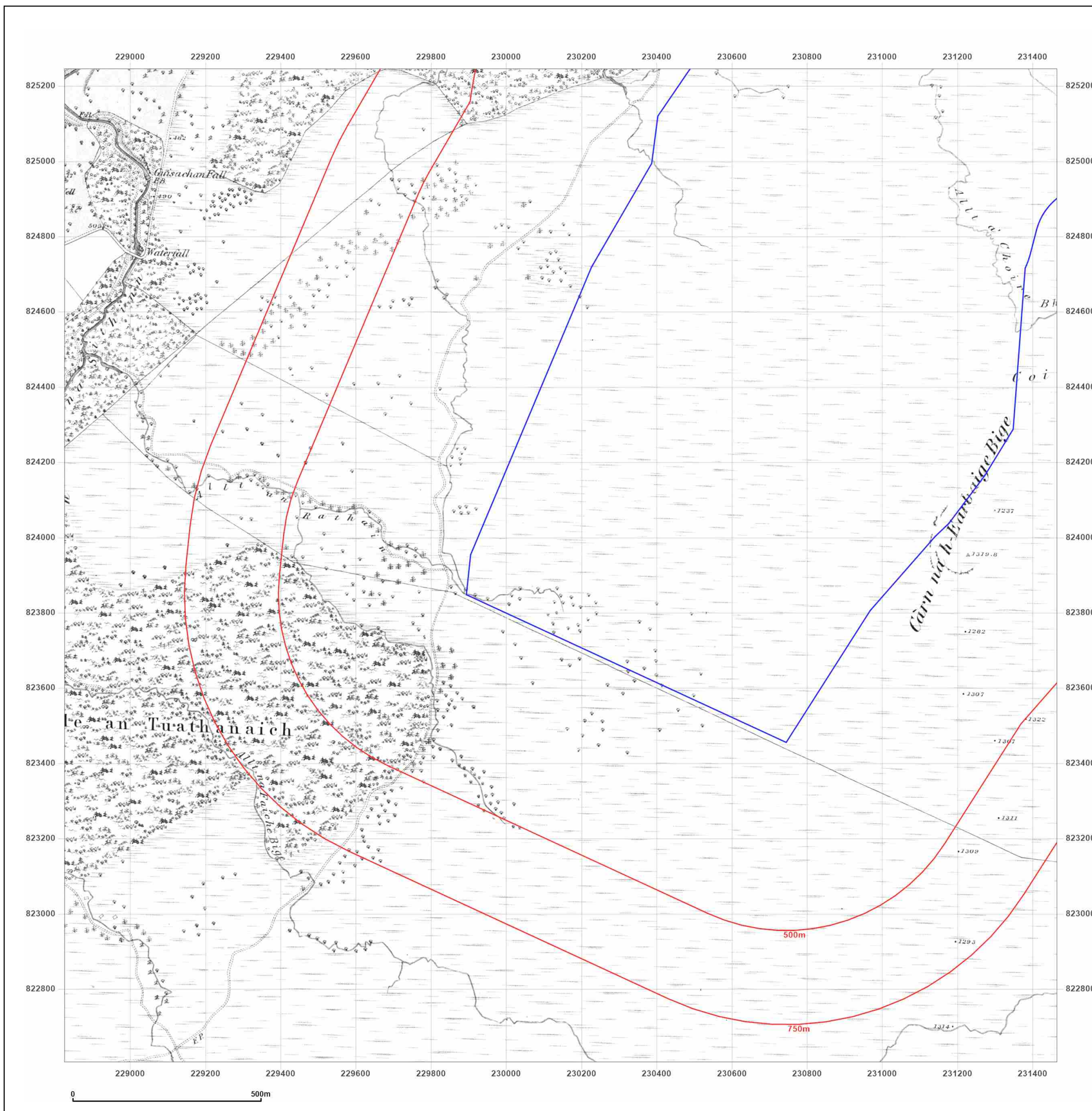


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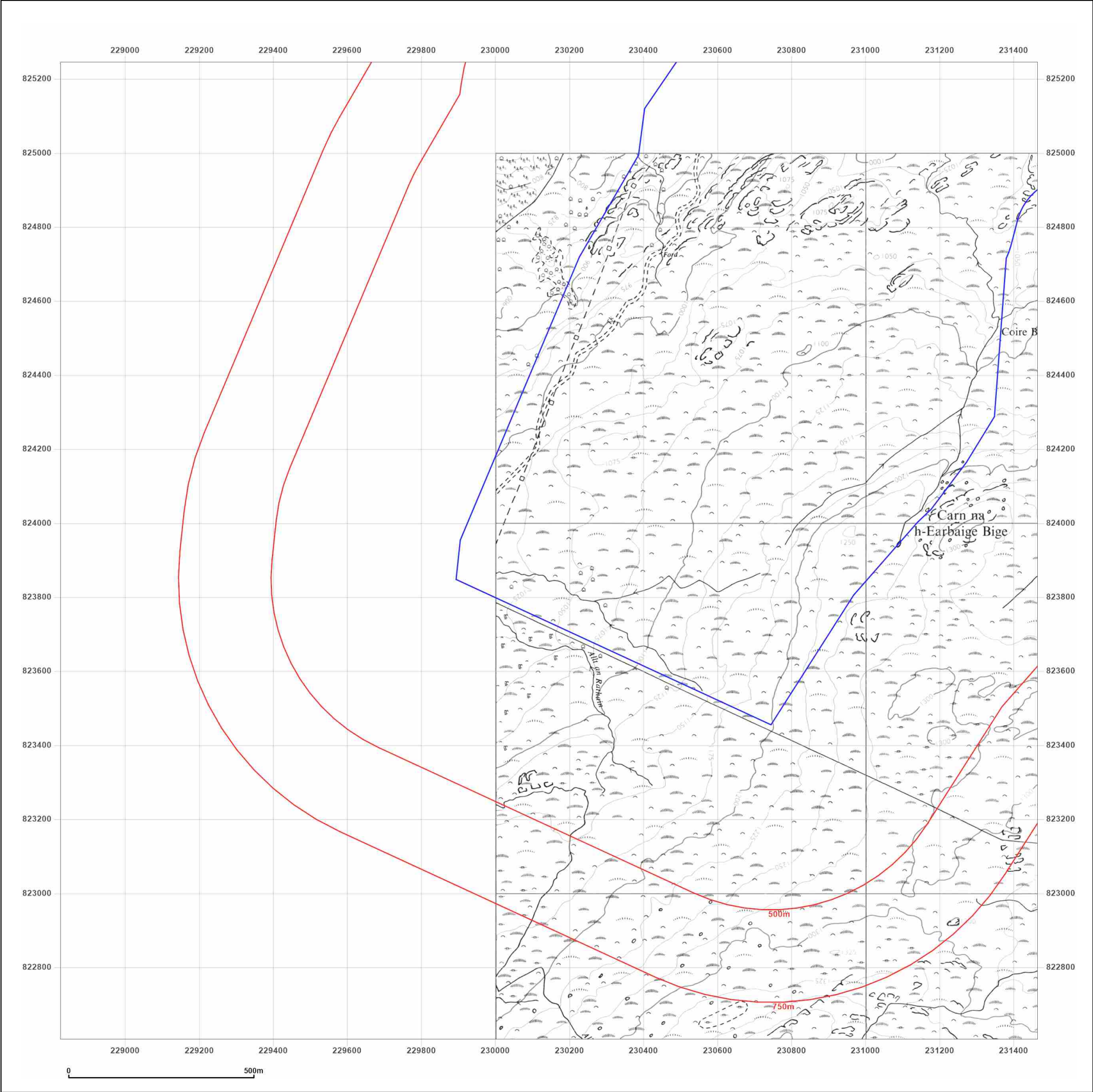
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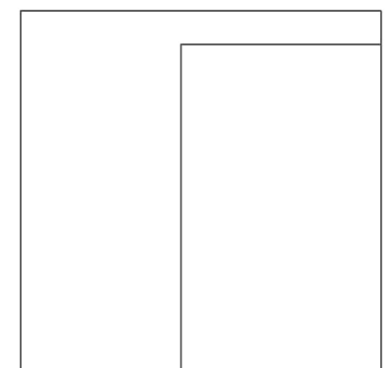
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**Grid Ref:** 230144, 823925

**Map Name:** Provisional

**Map date:** 1969

**Scale:** 1:10,560

**Printed at:** 1:10,560



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**Site Details:**

Scotland, Red Line Boundary

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**Report Ref:** GSIP-2024-14714-18279\_SS\_1\_1  
**Grid Ref:** 230144, 823925

**Map Name:** National Grid

**Map date:** 1971

**Scale:** 1:10,000

**Printed at:** 1:10,000



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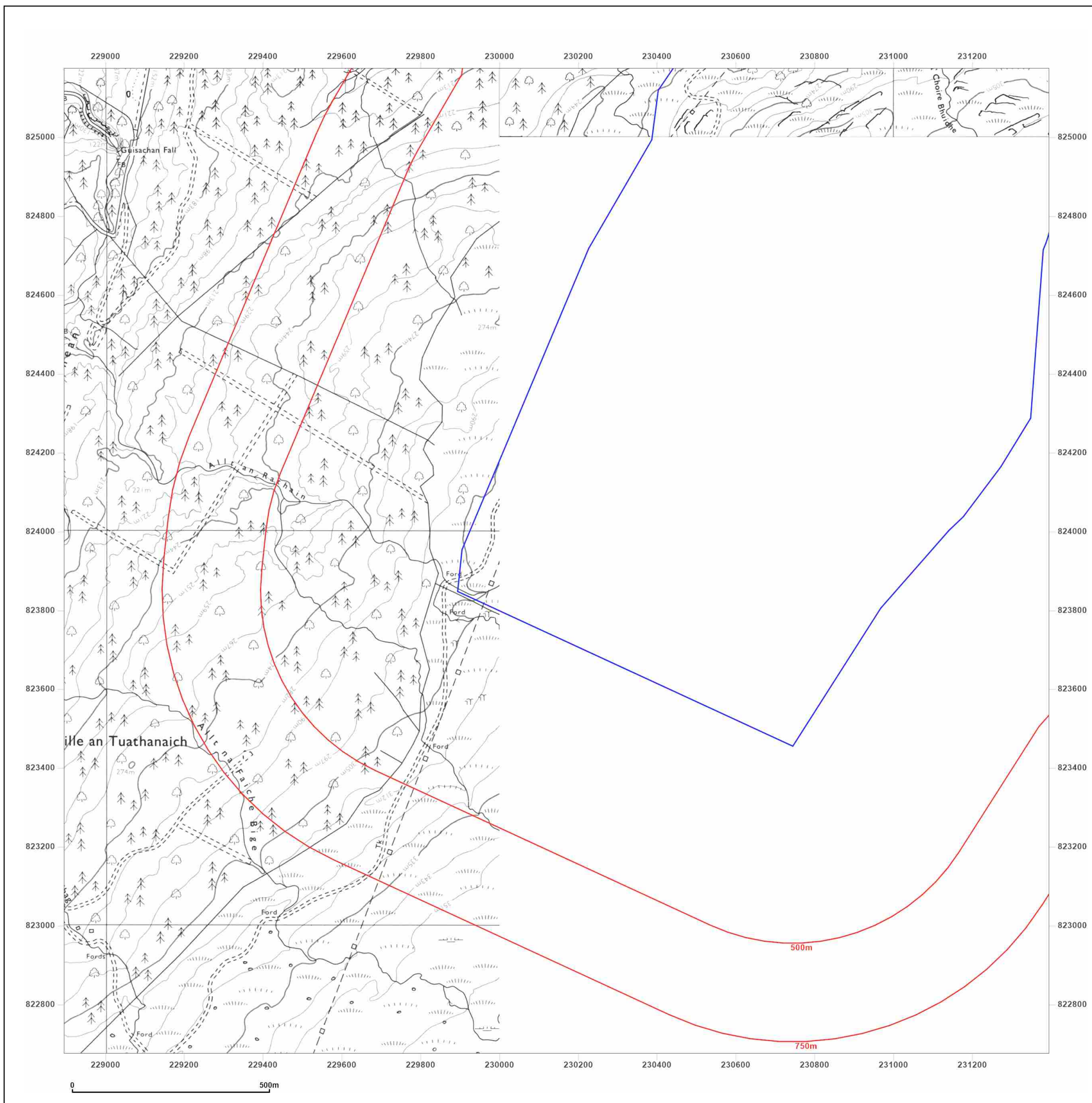


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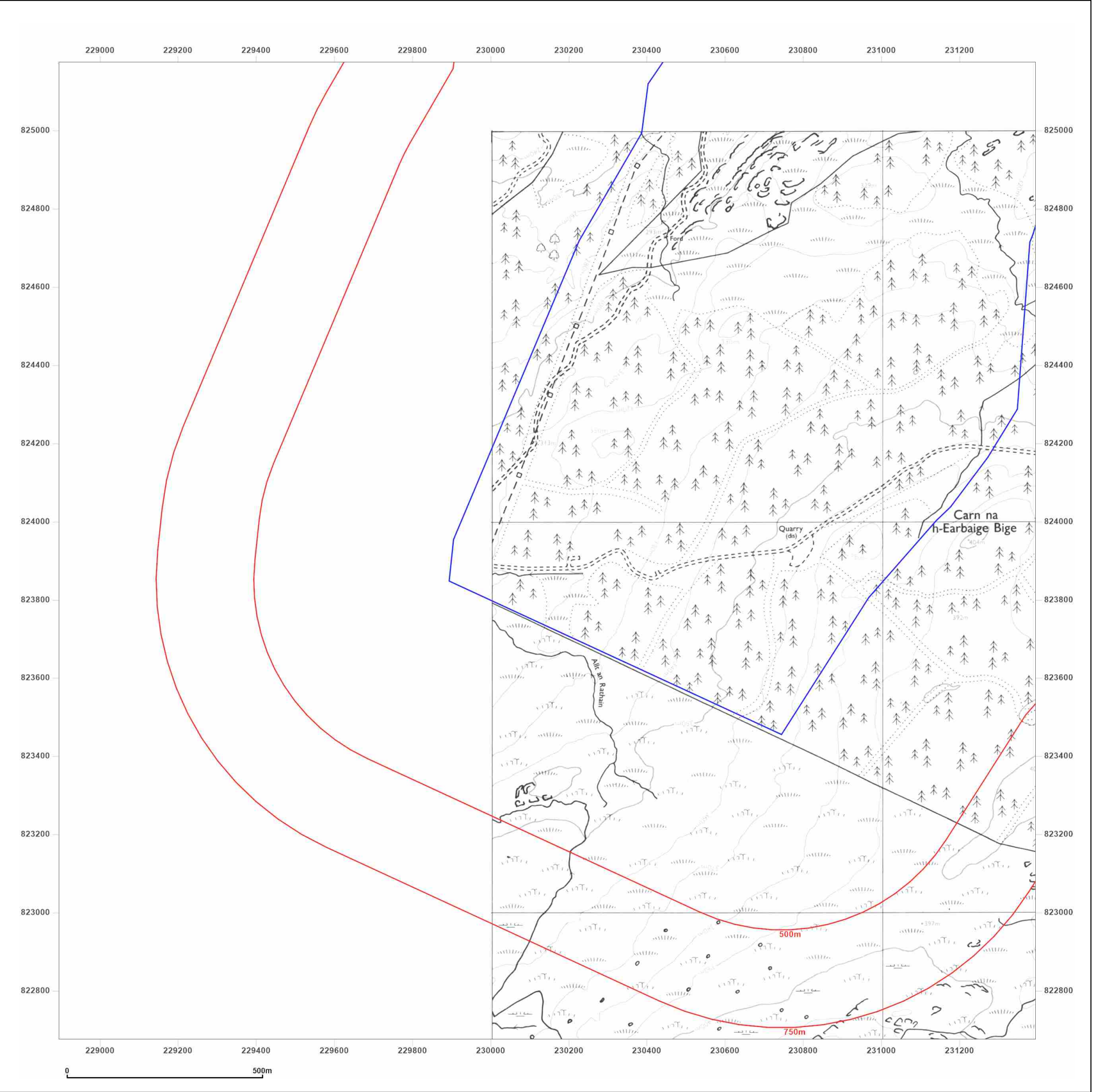
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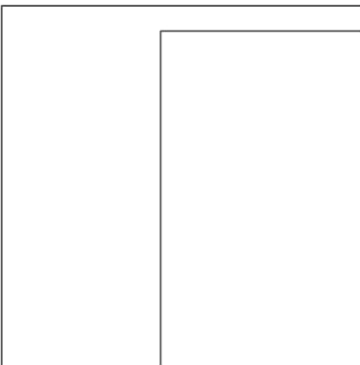
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**Grid Ref:** 230144, 823925

**Map Name:** National Grid

**Map date:** 1991

**Scale:** 1:10,000

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**Site Details:**

Scotland, Red Line Boundary

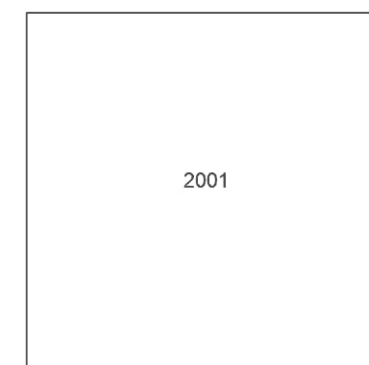
**Client Ref:** Scotland, Red Line Boundary  
**Report Ref:** GSIP-2024-14714-18279\_SS\_1\_1  
**Grid Ref:** 230144, 823925

**Map Name:** National Grid

**Map date:** 2001

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**Printed at:** 1:10,000

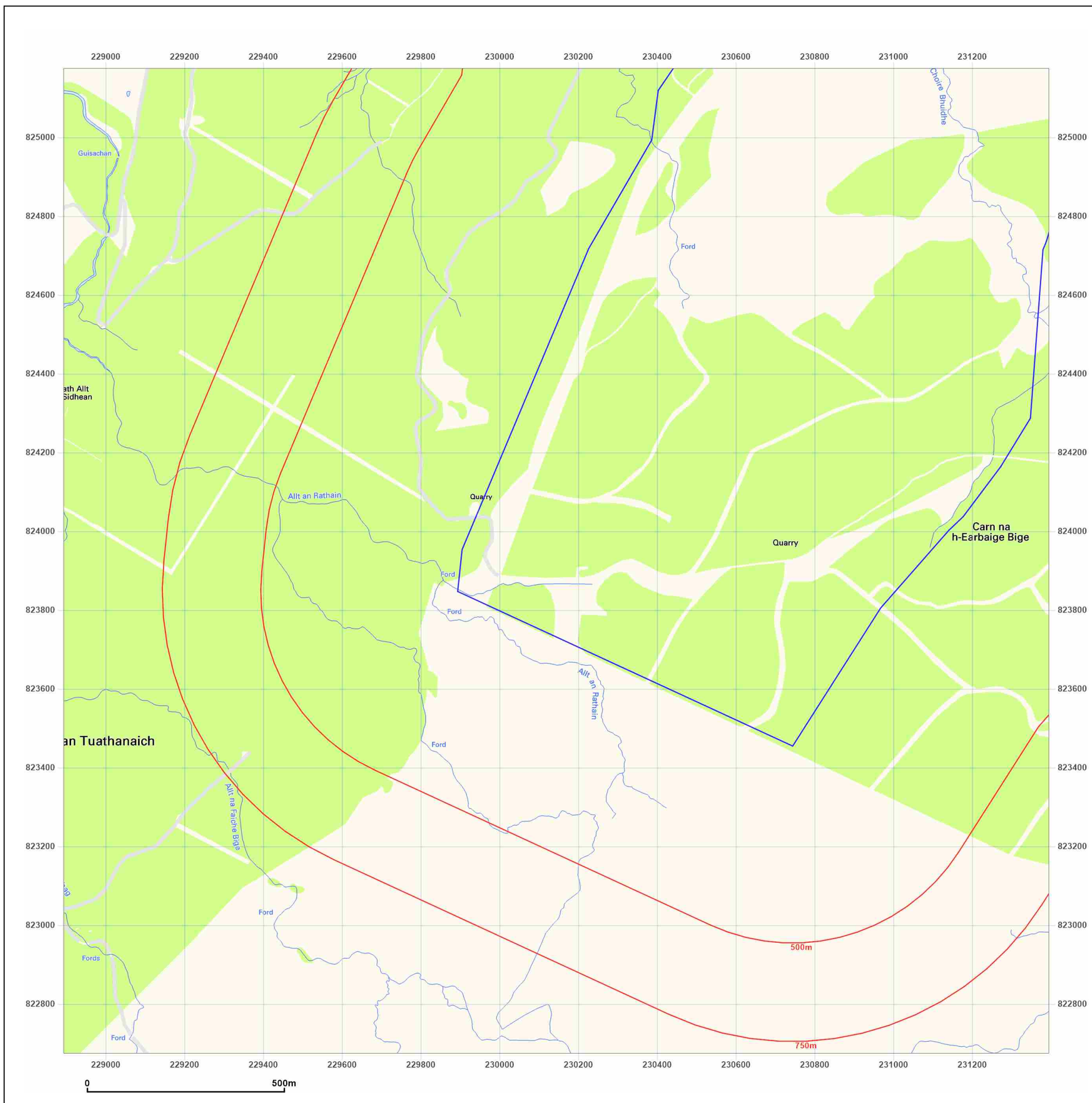


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**Site Details:**

Scotland, Red Line Boundary

**Client Ref:** Scotland, Red Line Boundary  
**Report Ref:** GSIP-2024-14714-18279\_SS\_1\_1  
**Grid Ref:** 230144, 823925

**Map Name:** National Grid

**Map date:** 2010

**Scale:** 1:10,000

**Printed at:** 1:10,000



2010

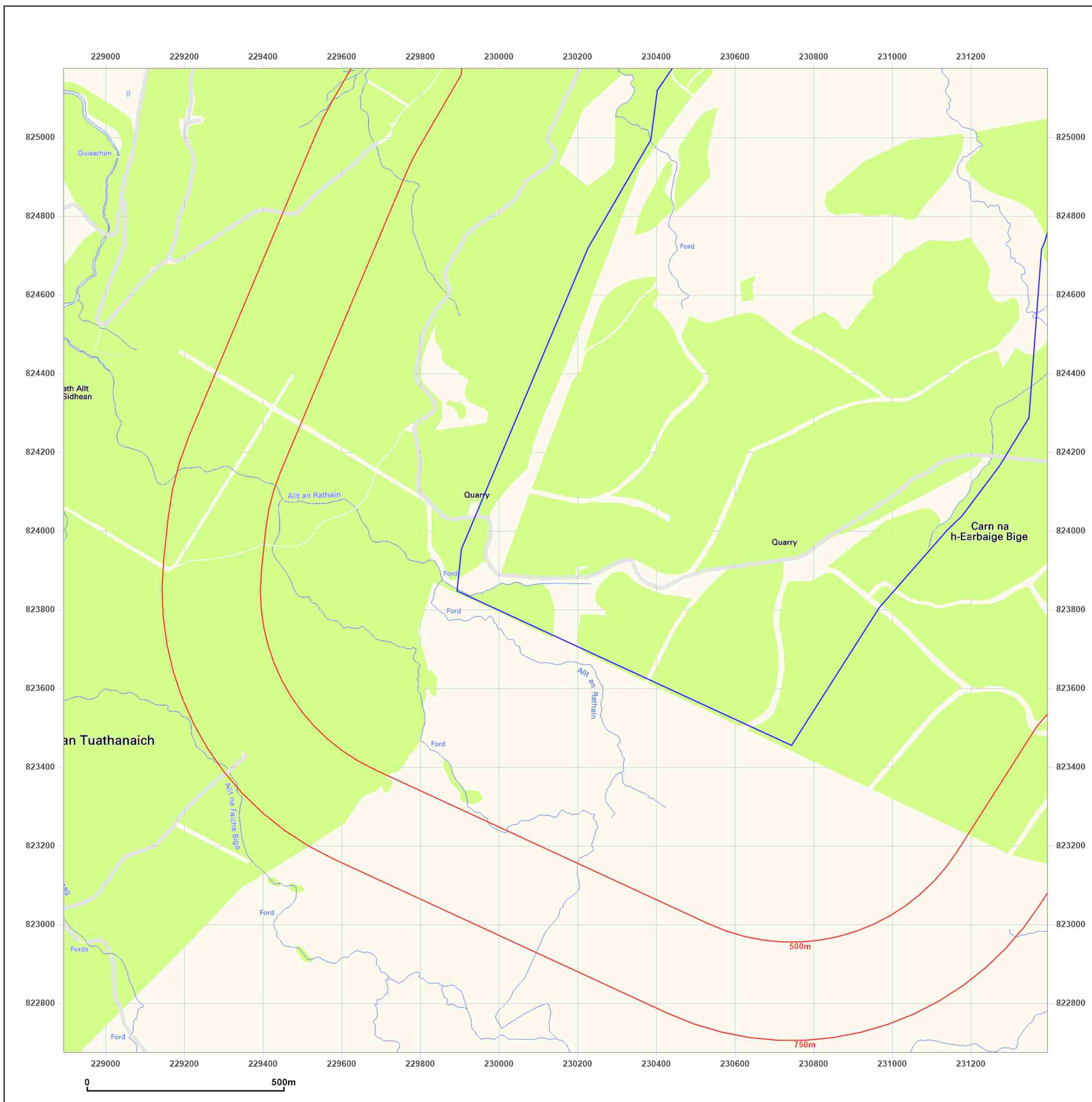


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**Site Details:**

Scotland, Red Line Boundary

**Client Ref:** Scotland, Red Line Boundary  
**Report Ref:** GSIP-2024-14714-18279\_SS\_1\_1  
**Grid Ref:** 230144, 823925

**Map Name:** National Grid

**Map date:** 2024

**Scale:** 1:10,000

**Printed at:** 1:10,000



2024

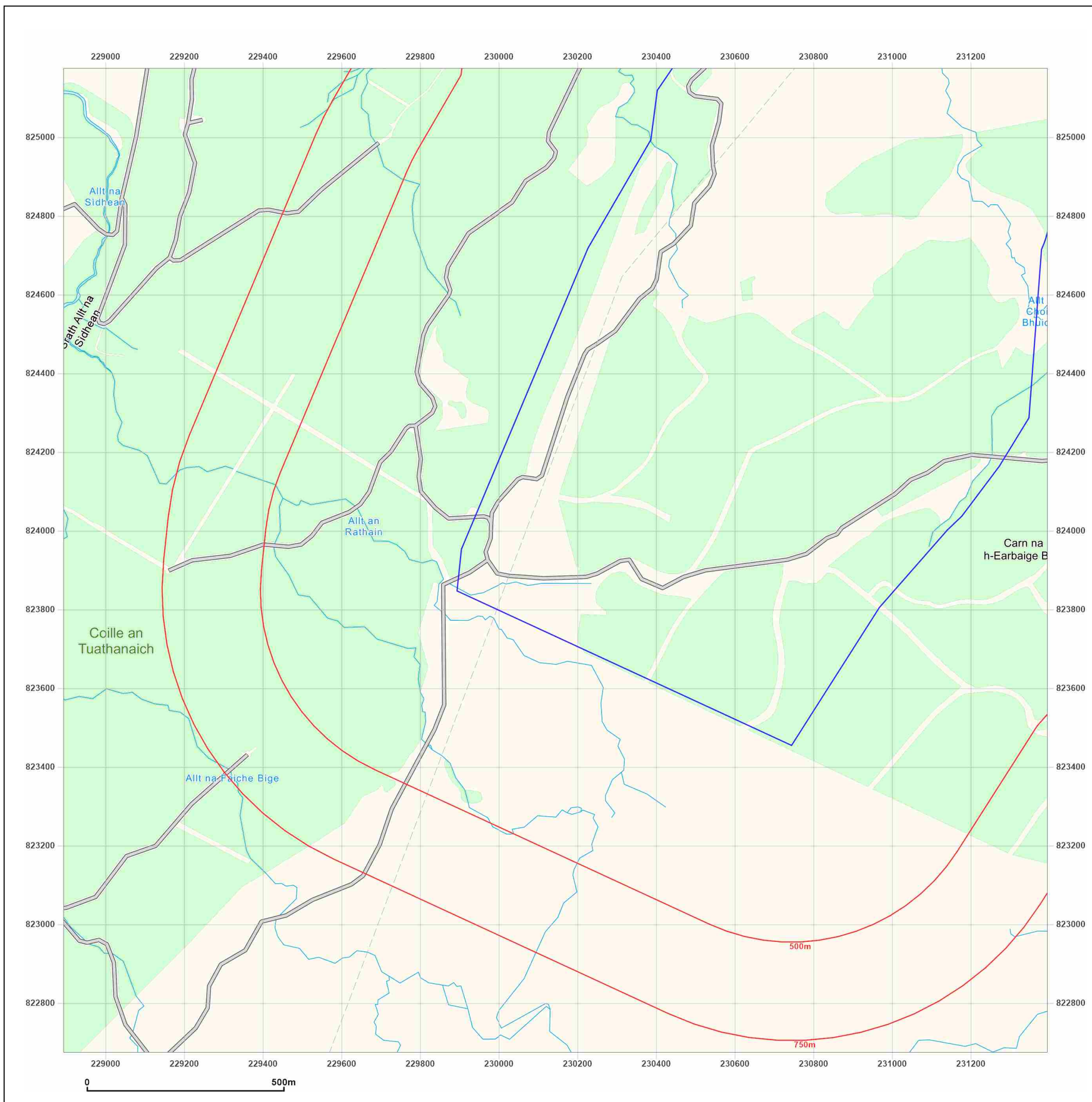


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**Site Details:**

Scotland, Red Line Boundary

**Client Ref:** Scotland, Red Line Boundary  
**Report Ref:** GSIP-2024-14714-18279\_SS\_1\_2  
**Grid Ref:** 230144, 826425

**Map Name:** County Series

**Map date:** 1872

**Scale:** 1:10,560

**Printed at:** 1:10,560



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

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

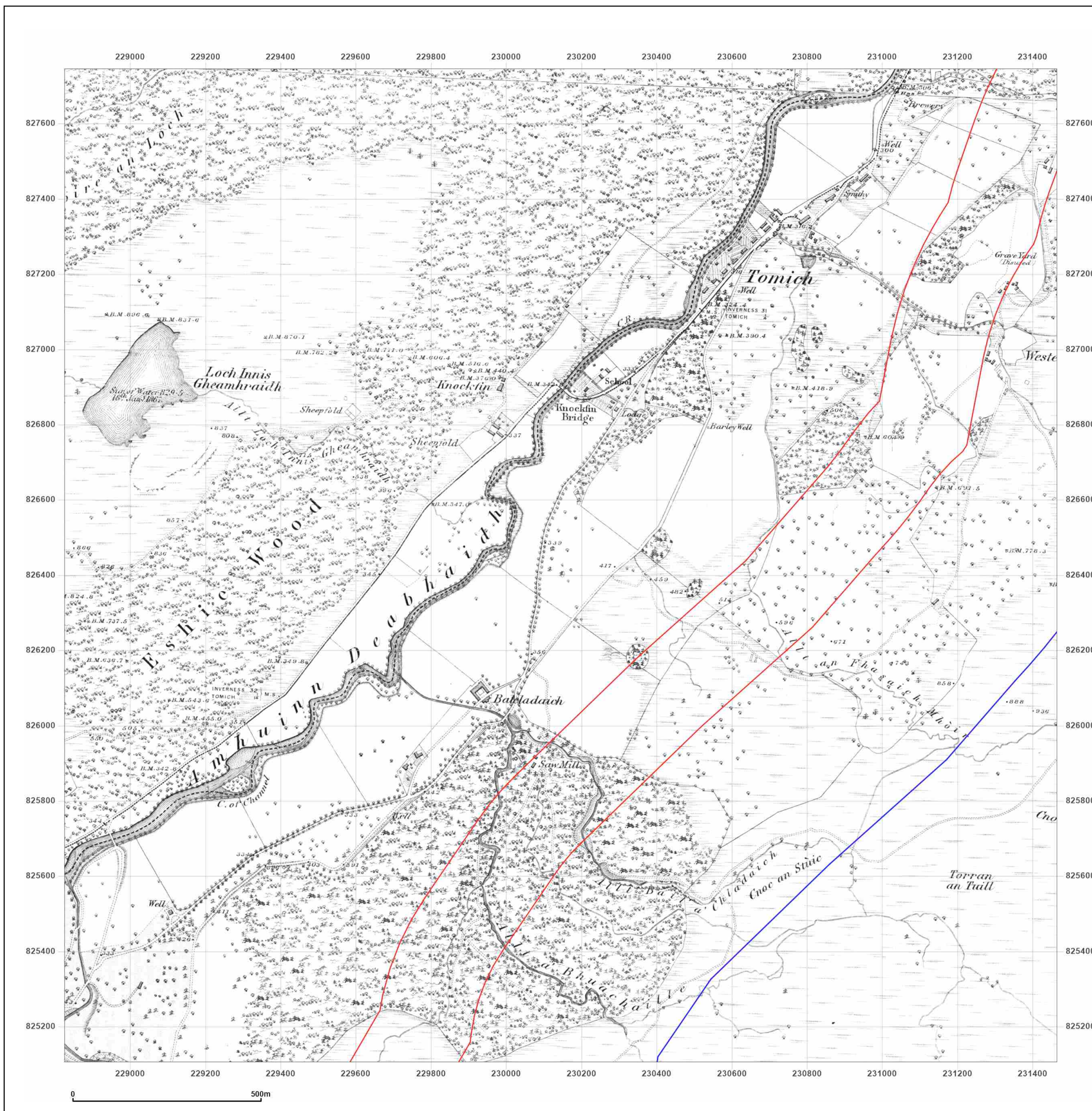


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**Site Details:**

Scotland, Red Line Boundary

**Client Ref:** Scotland, Red Line Boundary  
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**Grid Ref:** 230144, 826425

**Map Name:** County Series

**Map date:** 1901

**Scale:** 1:10,560

**Printed at:** 1:10,560



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Edition N/A  
Copyright N/A  
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Surveyed 1872  
Revised 1901  
Edition N/A  
Copyright N/A  
Levelled N/A

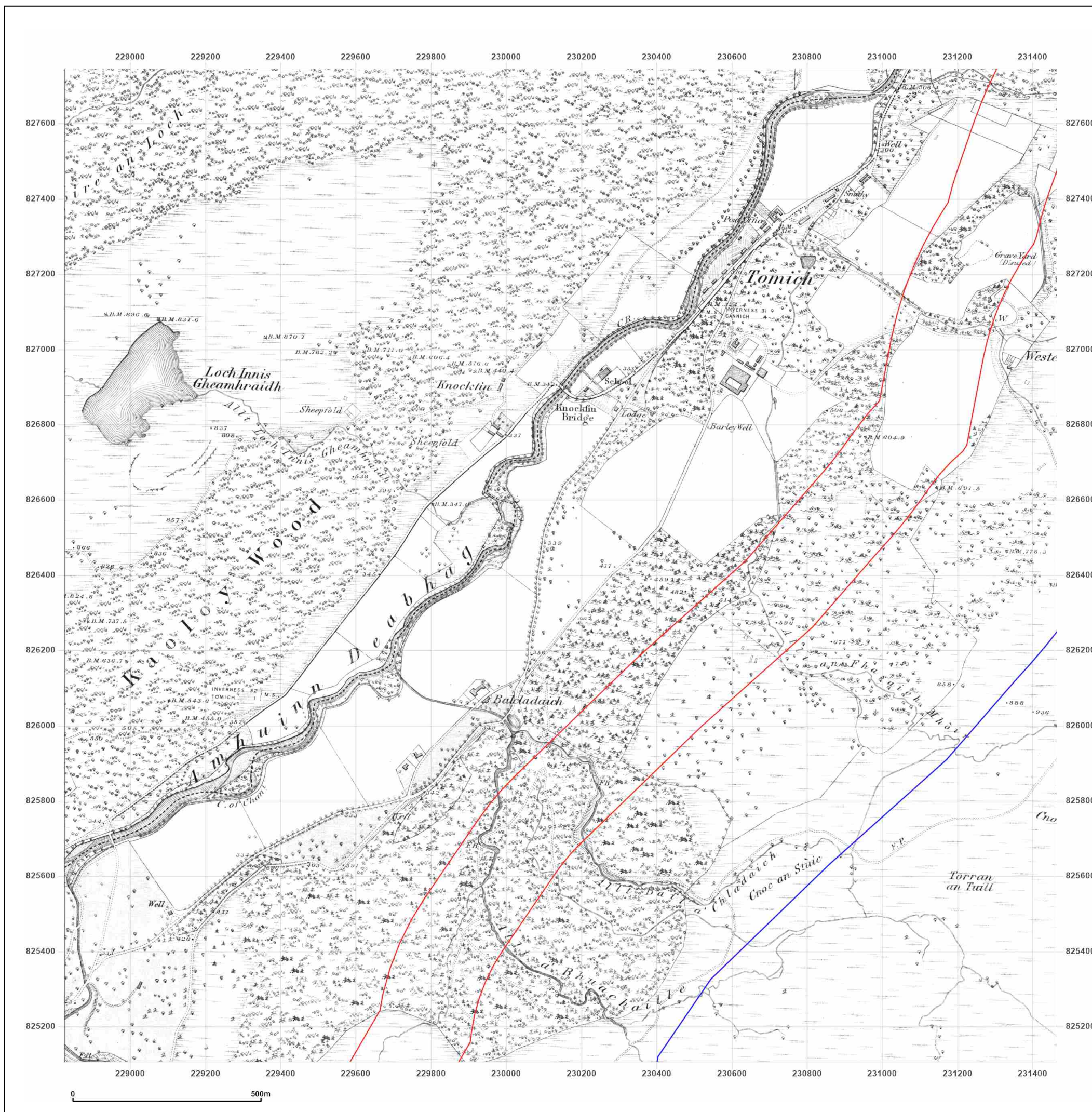


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**Site Details:**

Scotland, Red Line Boundary

**Client Ref:** Scotland, Red Line Boundary  
**Report Ref:** GSIP-2024-14714-18279\_SS\_1\_2  
**Grid Ref:** 230144, 826425

**Map Name:** National Grid  
**Map date:** 1971  
**Scale:** 1:10,000  
**Printed at:** 1:10,000

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Levelled N/A

Surveyed 1969  
Revised 1971  
Edition N/A  
Copyright 1971  
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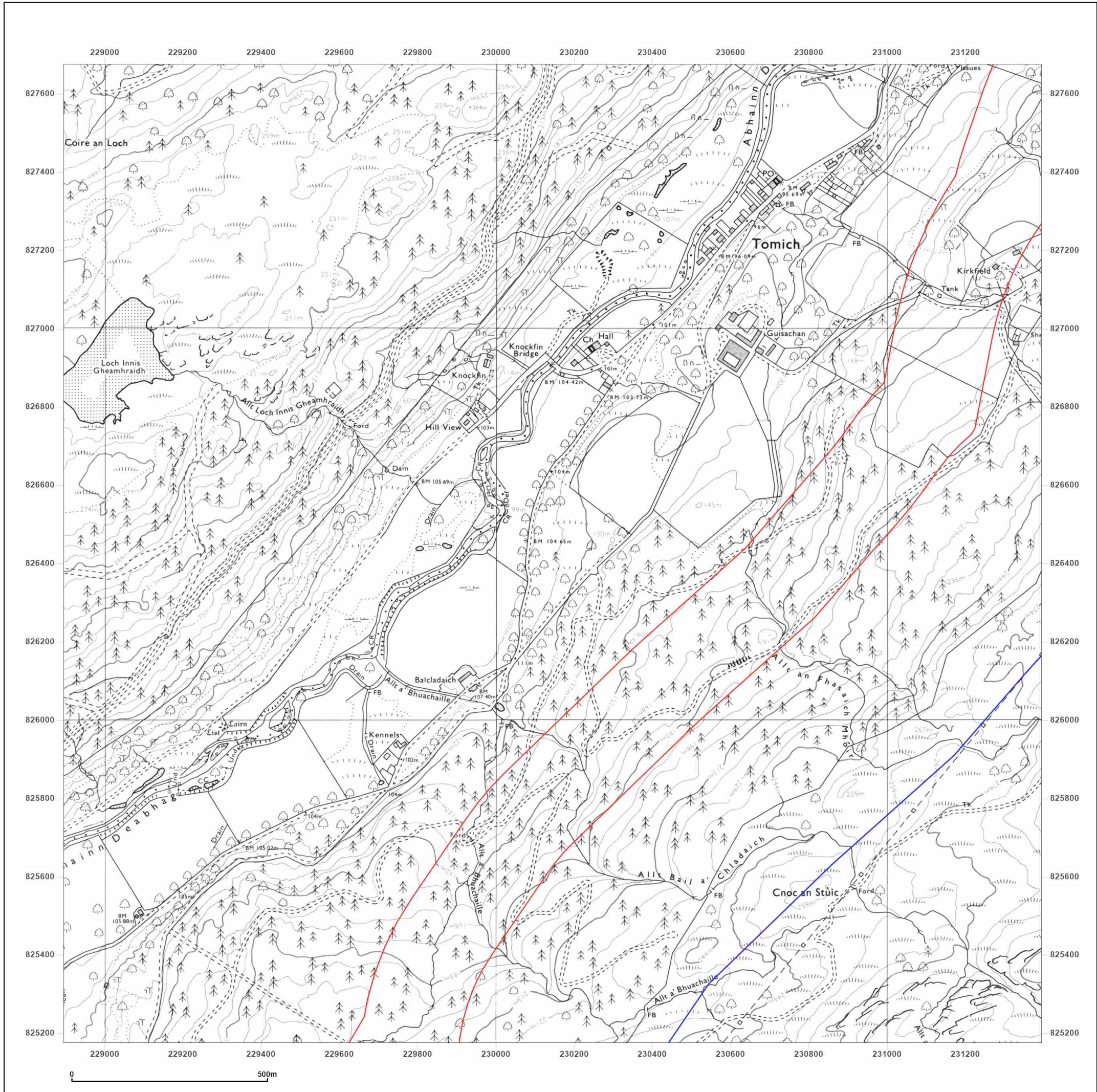


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**Site Details:**

Scotland, Red Line Boundary

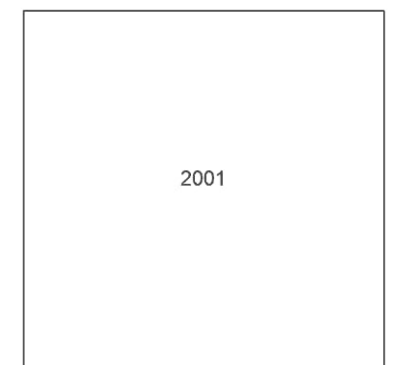
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**Map date:** 2001

**Scale:** 1:10,000

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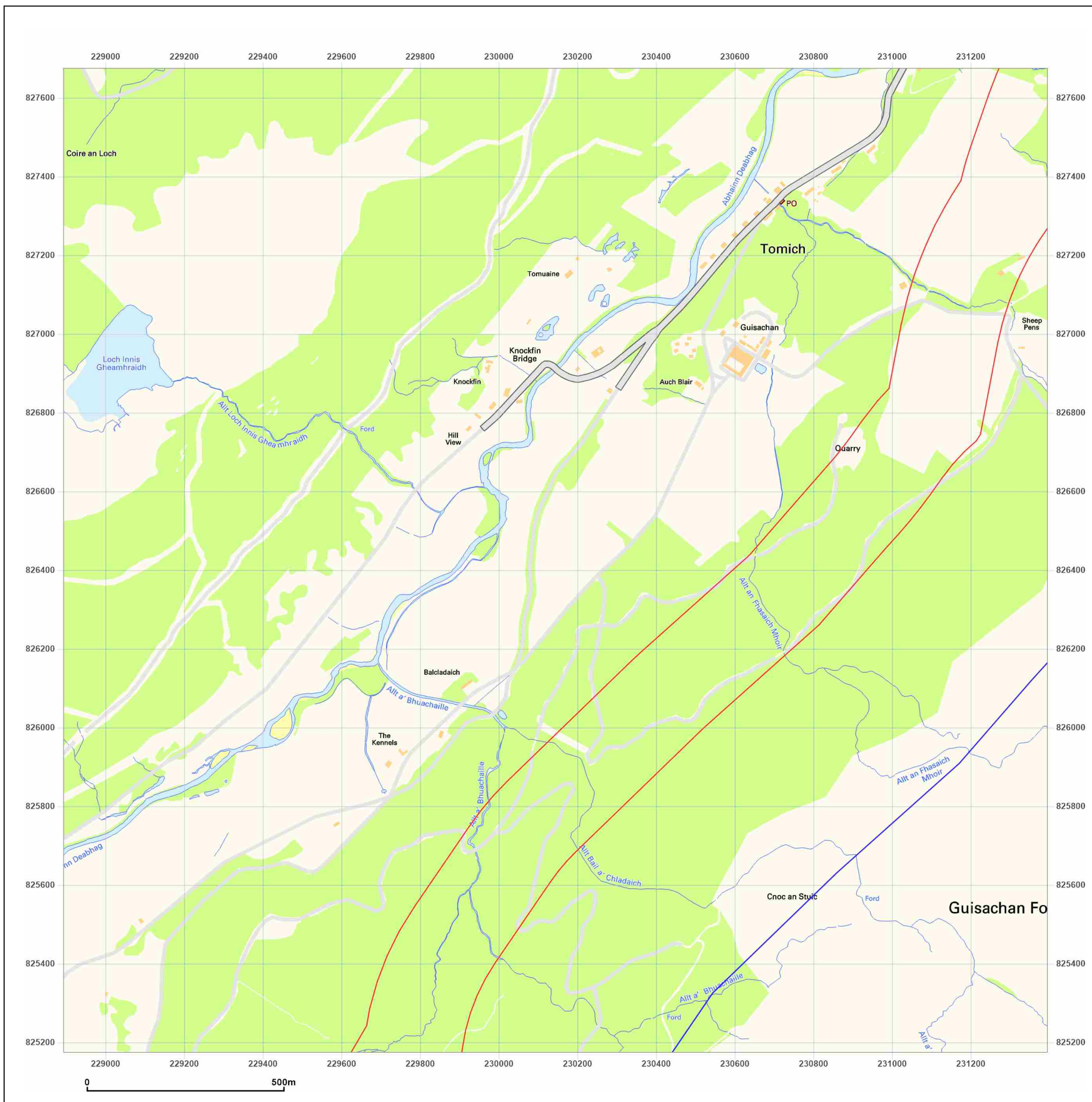


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**Site Details:**

Scotland, Red Line Boundary

**Client Ref:** Scotland, Red Line Boundary  
**Report Ref:** GSIP-2024-14714-18279\_SS\_1\_2  
**Grid Ref:** 230144, 826425

**Map Name:** National Grid

**Map date:** 2010

**Scale:** 1:10,000

**Printed at:** 1:10,000



2010

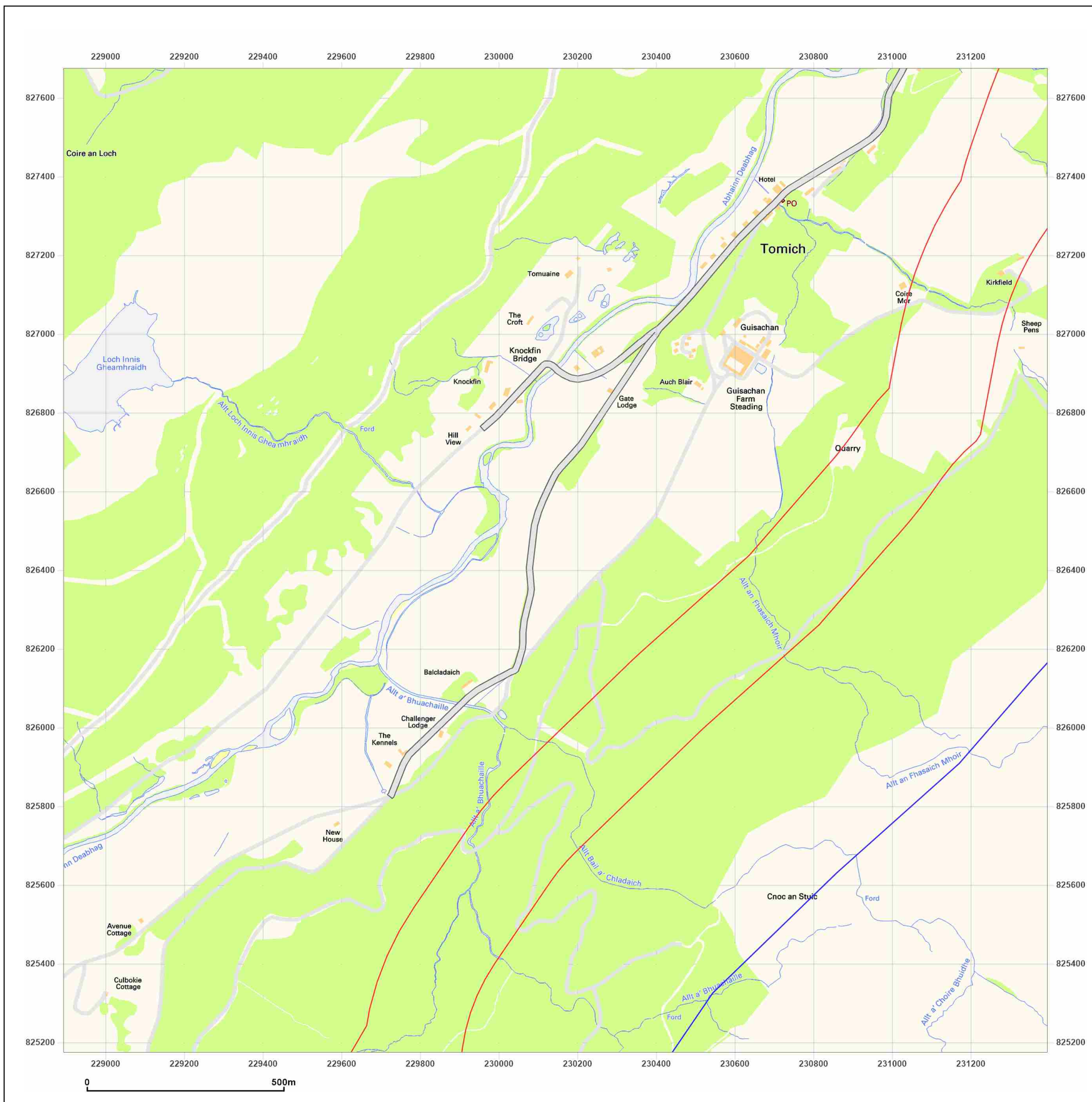


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**Site Details:**

Scotland, Red Line Boundary

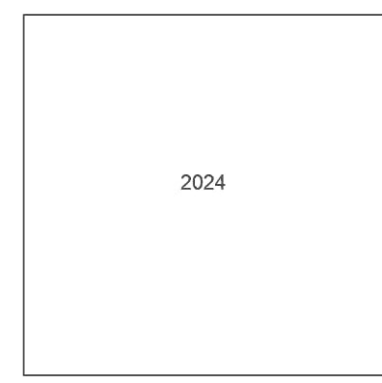
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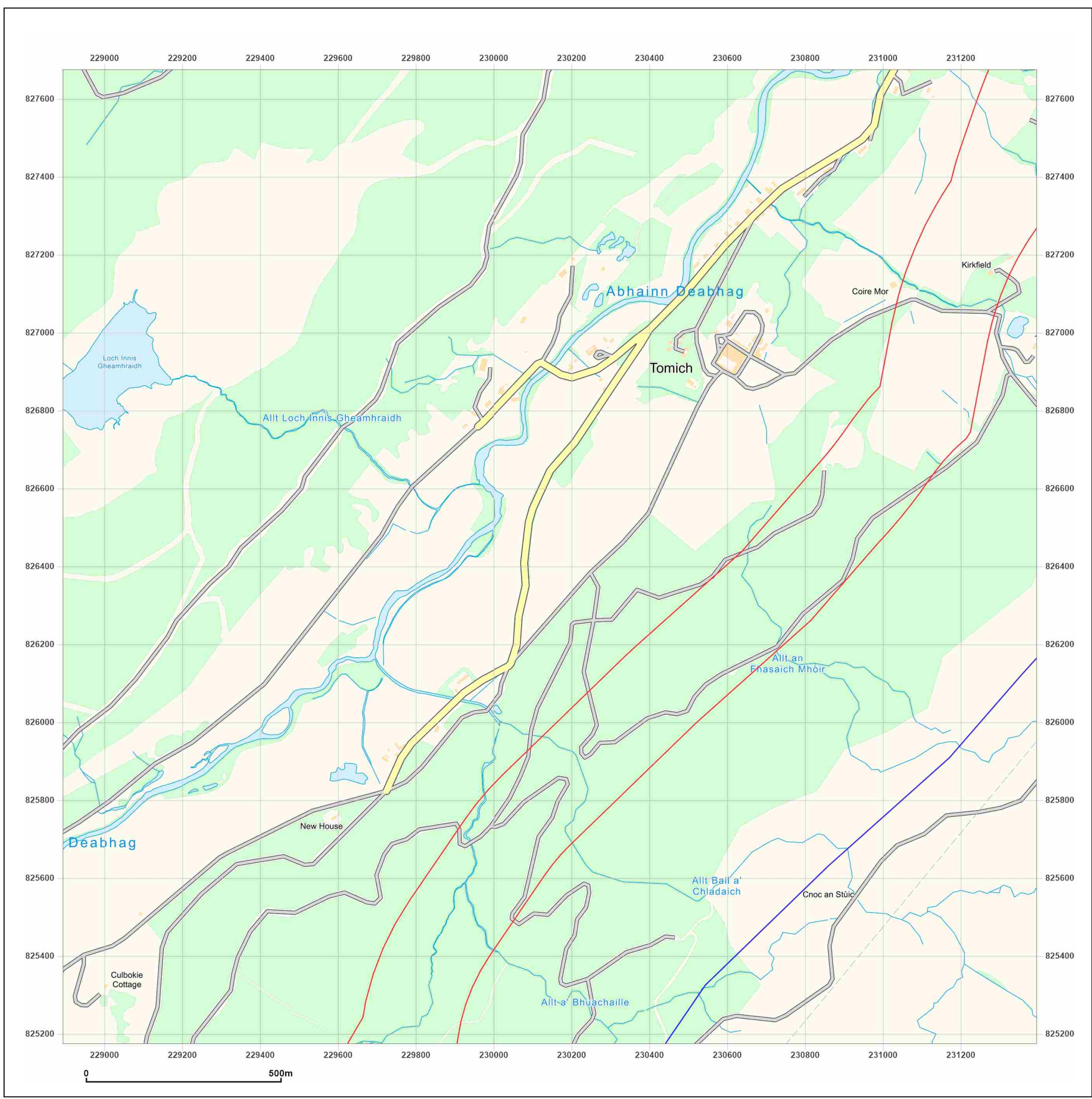


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**Site Details:**

Scotland, Red Line Boundary

**Client Ref:** Scotland, Red Line Boundary  
**Report Ref:** GSIP-2024-14714-18279\_SS\_2\_1  
**Grid Ref:** 232644, 823925

**Map Name:** County Series

**Map date:** 1872

**Scale:** 1:10,560

**Printed at:** 1:10,560



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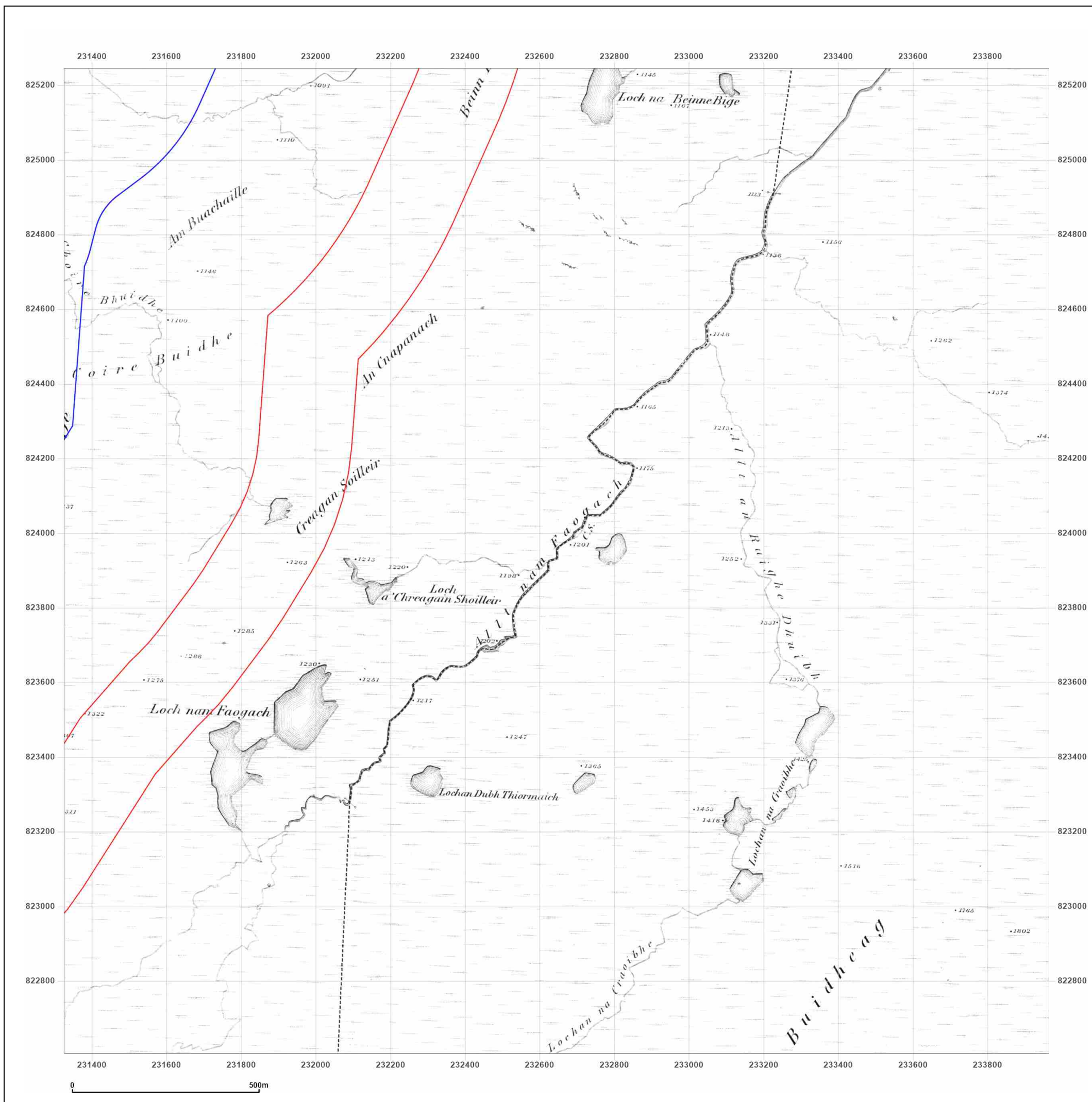


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**Site Details:**

Scotland, Red Line Boundary

**Client Ref:** Scotland, Red Line Boundary  
**Report Ref:** GSIP-2024-14714-18279\_SS\_2\_1  
**Grid Ref:** 232644, 823925

**Map Name:** County Series

**Map date:** 1901

**Scale:** 1:10,560

**Printed at:** 1:10,560



Surveyed 1872  
Revised 1901  
Edition N/A  
Copyright N/A  
Levelled N/A

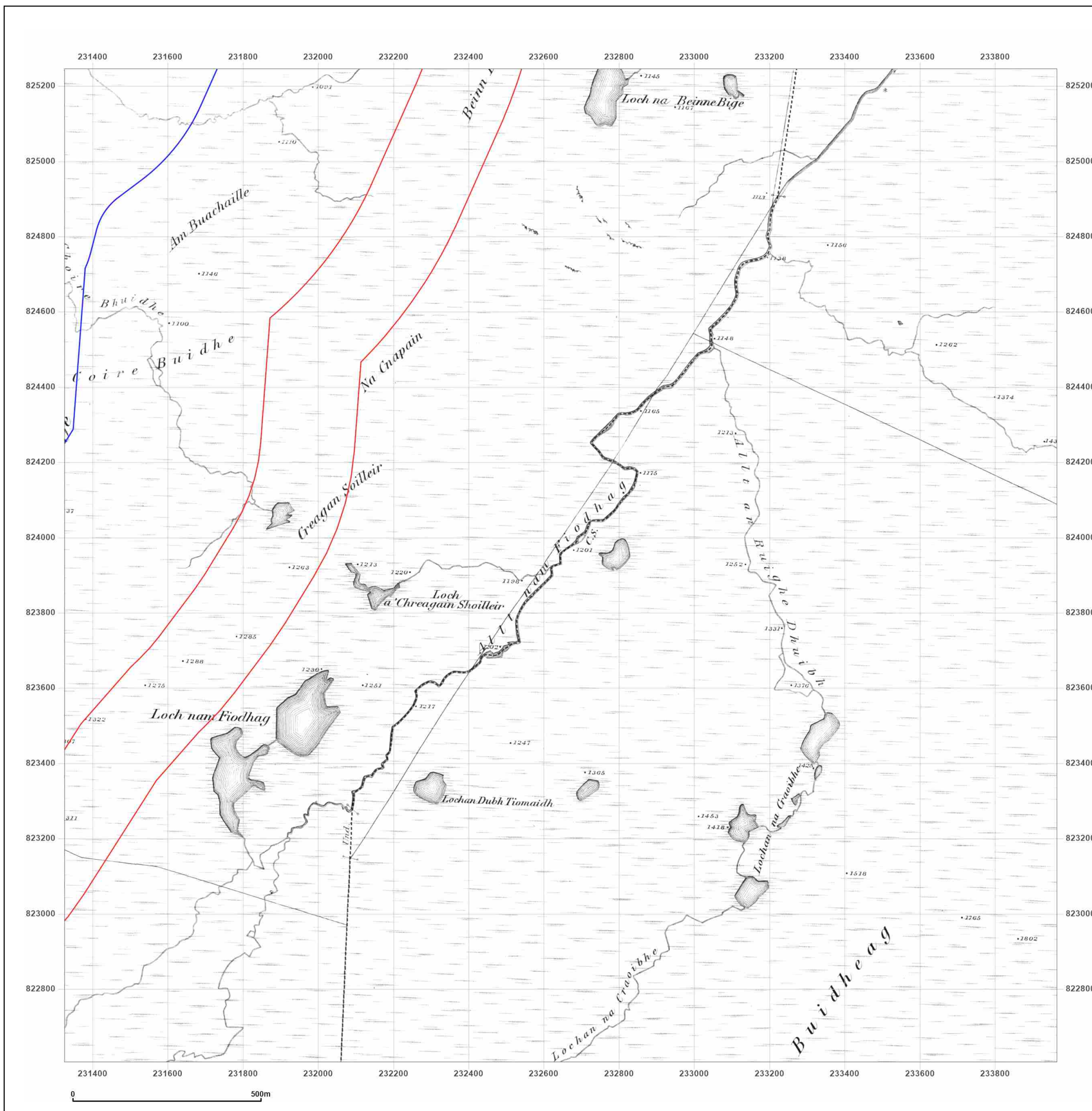


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**Site Details:**

Scotland, Red Line Boundary

**Client Ref:** Scotland, Red Line Boundary  
**Report Ref:** GSIP-2024-14714-18279\_SS\_2\_1  
**Grid Ref:** 232644, 823925

**Map Name:** Provisional

**Map date:** 1969

**Scale:** 1:10,560

**Printed at:** 1:10,560



Surveyed 1966  
Revised 1969  
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Copyright N/A  
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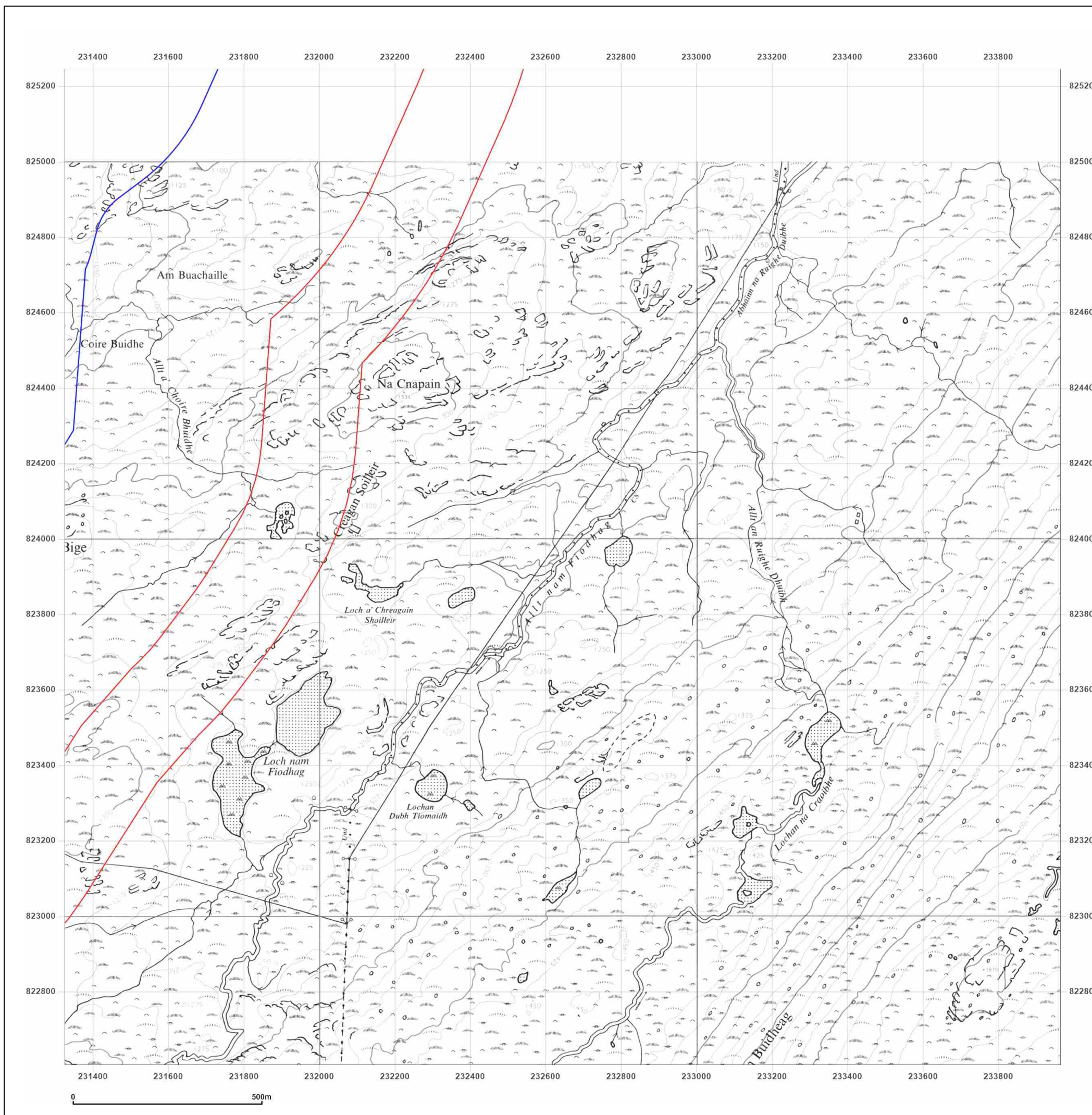


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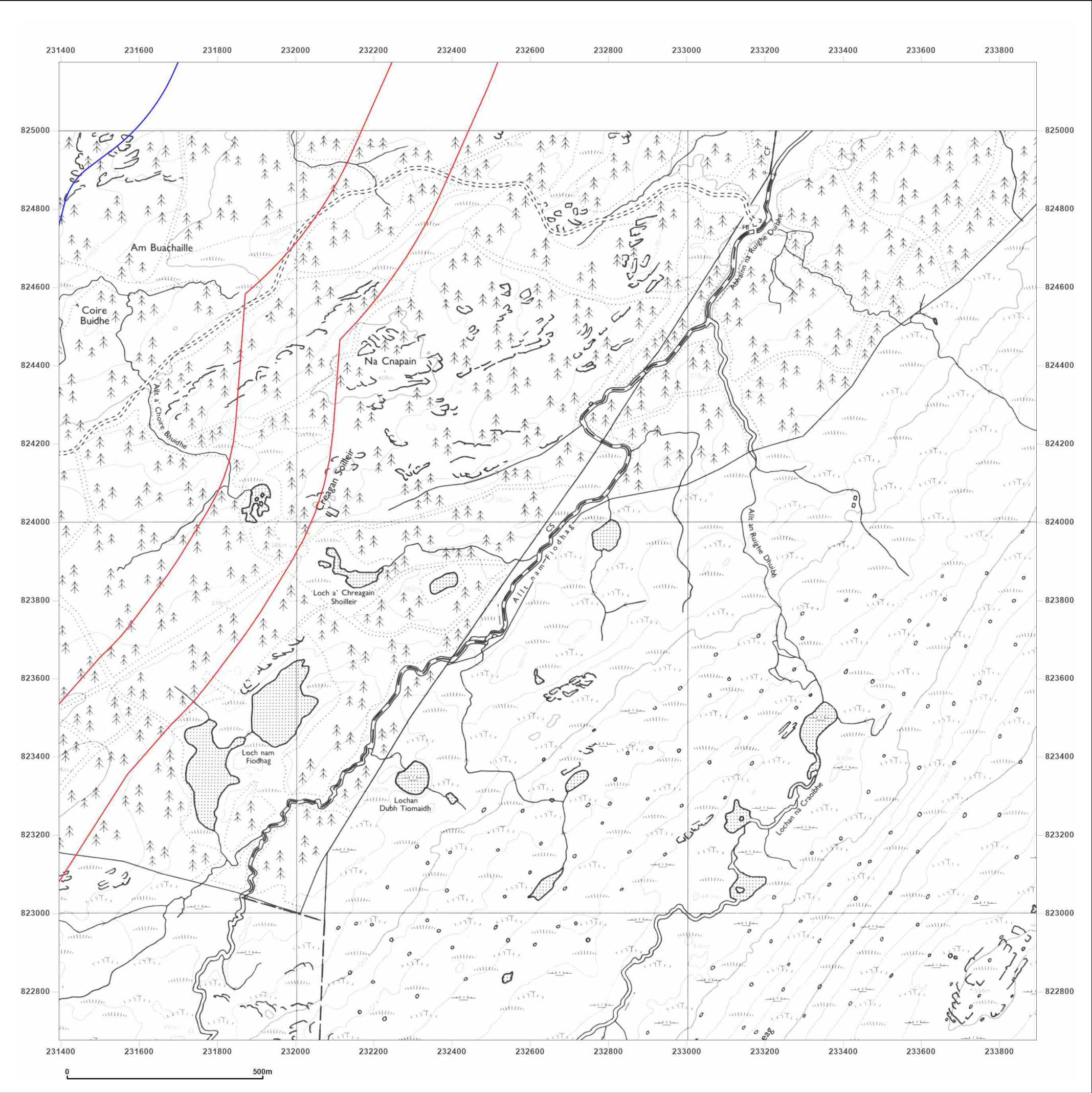
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Site Details:

Scotland, Red Line Boundary

Client Ref: Scotland, Red Line Boundary  
Report Ref: GSIP-2024-14714-18279\_SS\_2\_1  
Grid Ref: 232644, 823925

Map Name: National Grid

Map date: 1991

Scale: 1:10,000

Printed at: 1:10,000



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**Site Details:**

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**Client Ref:** Scotland, Red Line Boundary  
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**Map Name:** National Grid

**Map date:** 2001

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2001

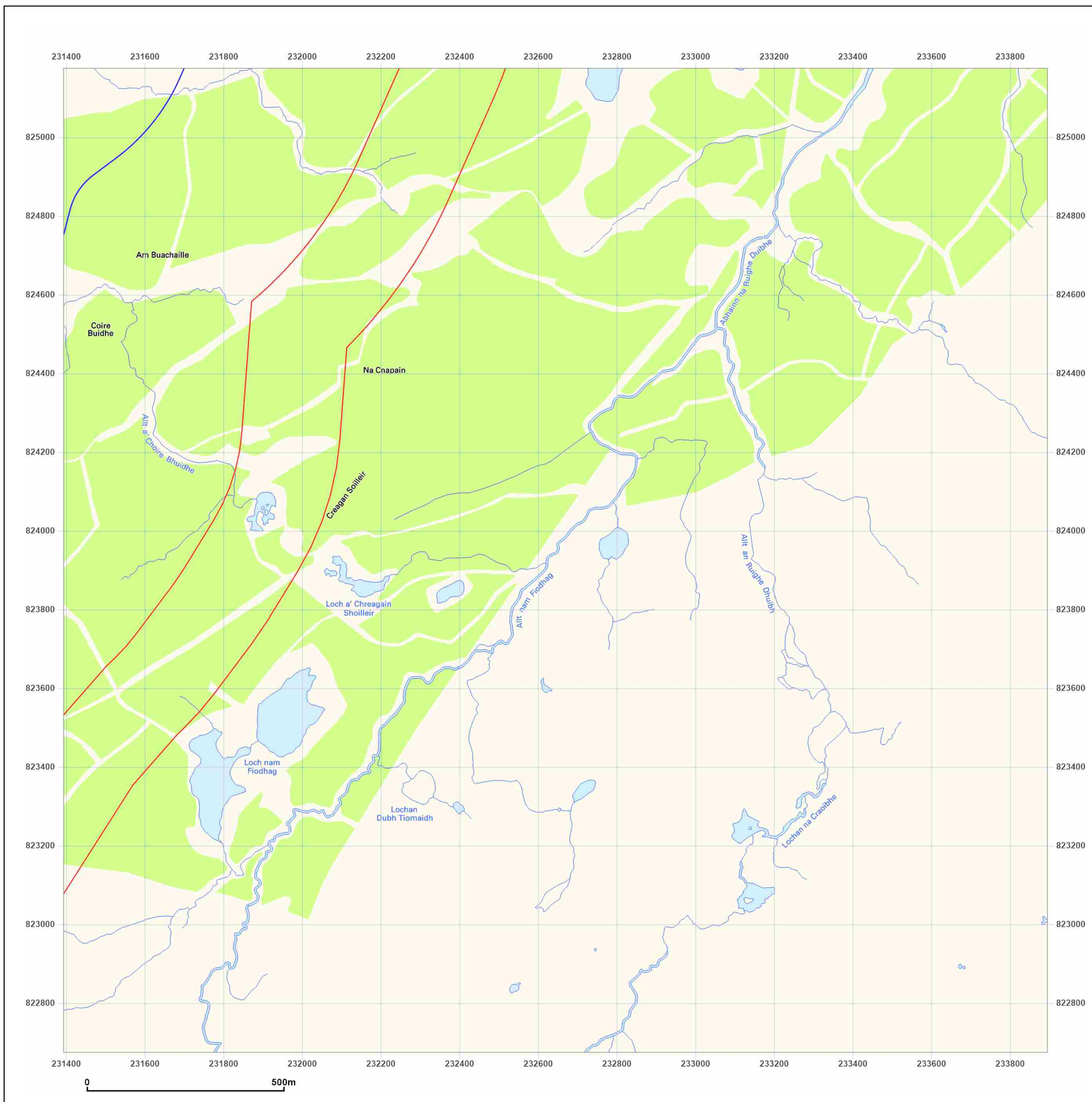


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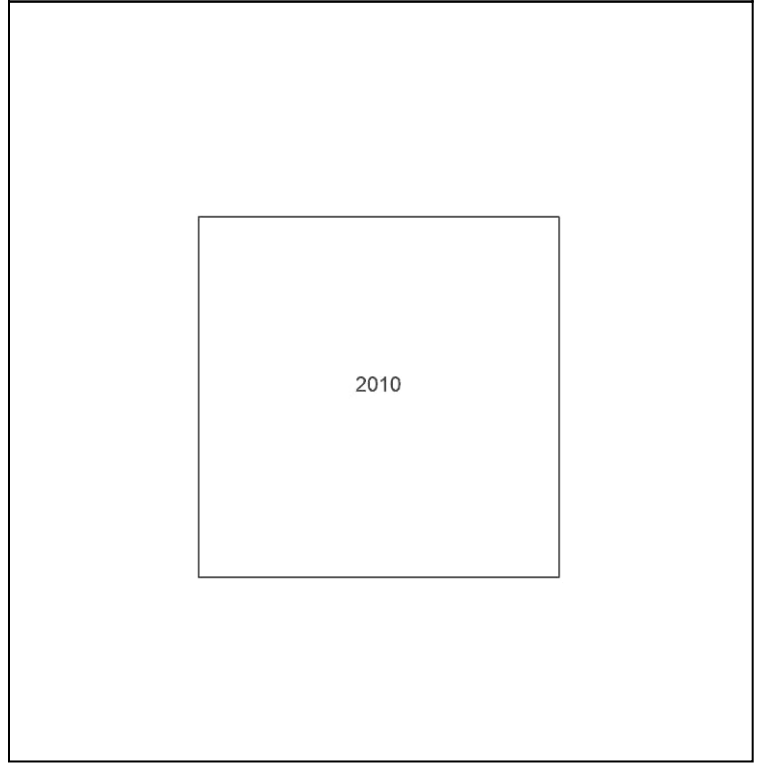
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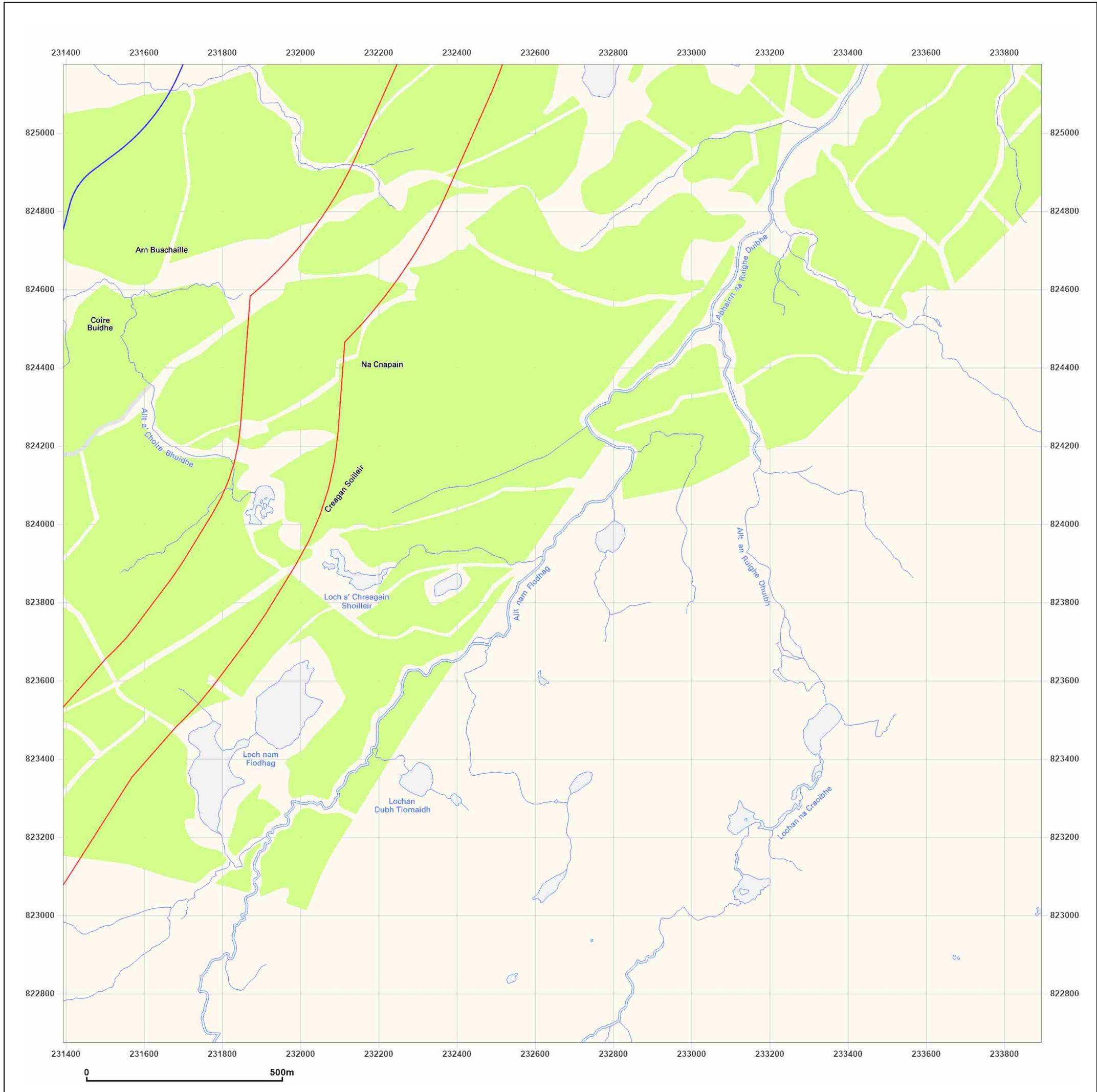


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**Site Details:**

Scotland, Red Line Boundary

**Client Ref:** Scotland, Red Line Boundary  
**Report Ref:** GSIP-2024-14714-18279\_SS\_2\_1  
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**Map Name:** National Grid

**Map date:** 2024

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2024

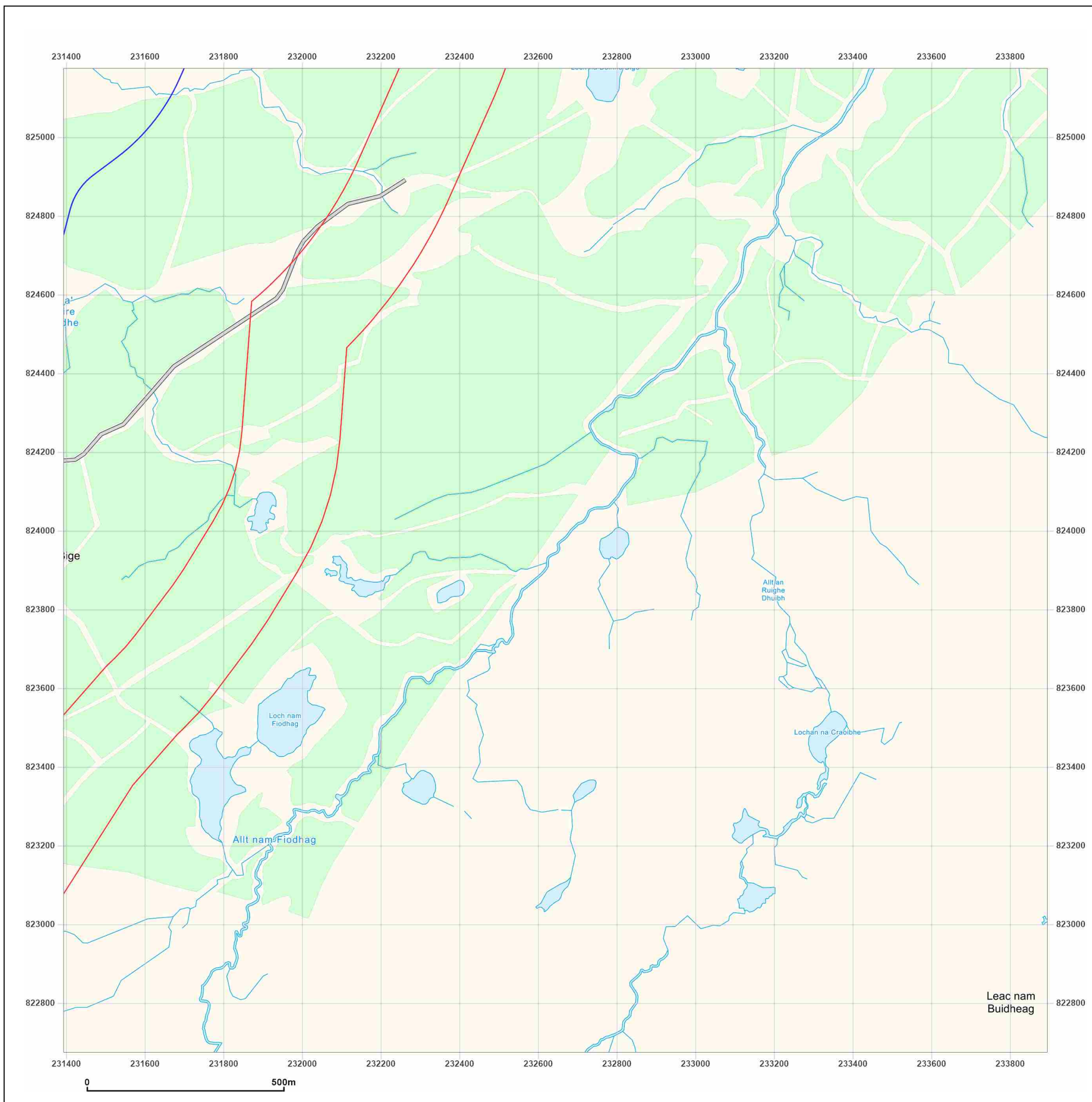


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**Site Details:**

Scotland, Red Line Boundary

**Client Ref:** Scotland, Red Line Boundary  
**Report Ref:** GSIP-2024-14714-18279\_SS\_2\_2  
**Grid Ref:** 232644, 826425

**Map Name:** County Series

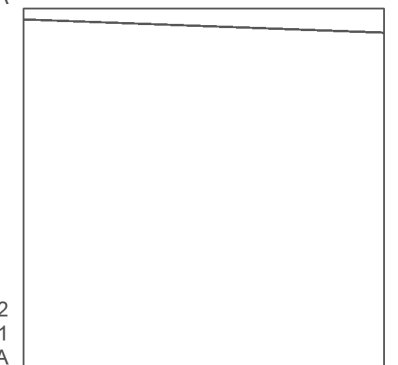
**Map date:** 1901

**Scale:** 1:10,560

**Printed at:** 1:10,560



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Revised 1901  
Edition N/A  
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Revised 1901  
Edition N/A  
Copyright N/A  
Levelled N/A

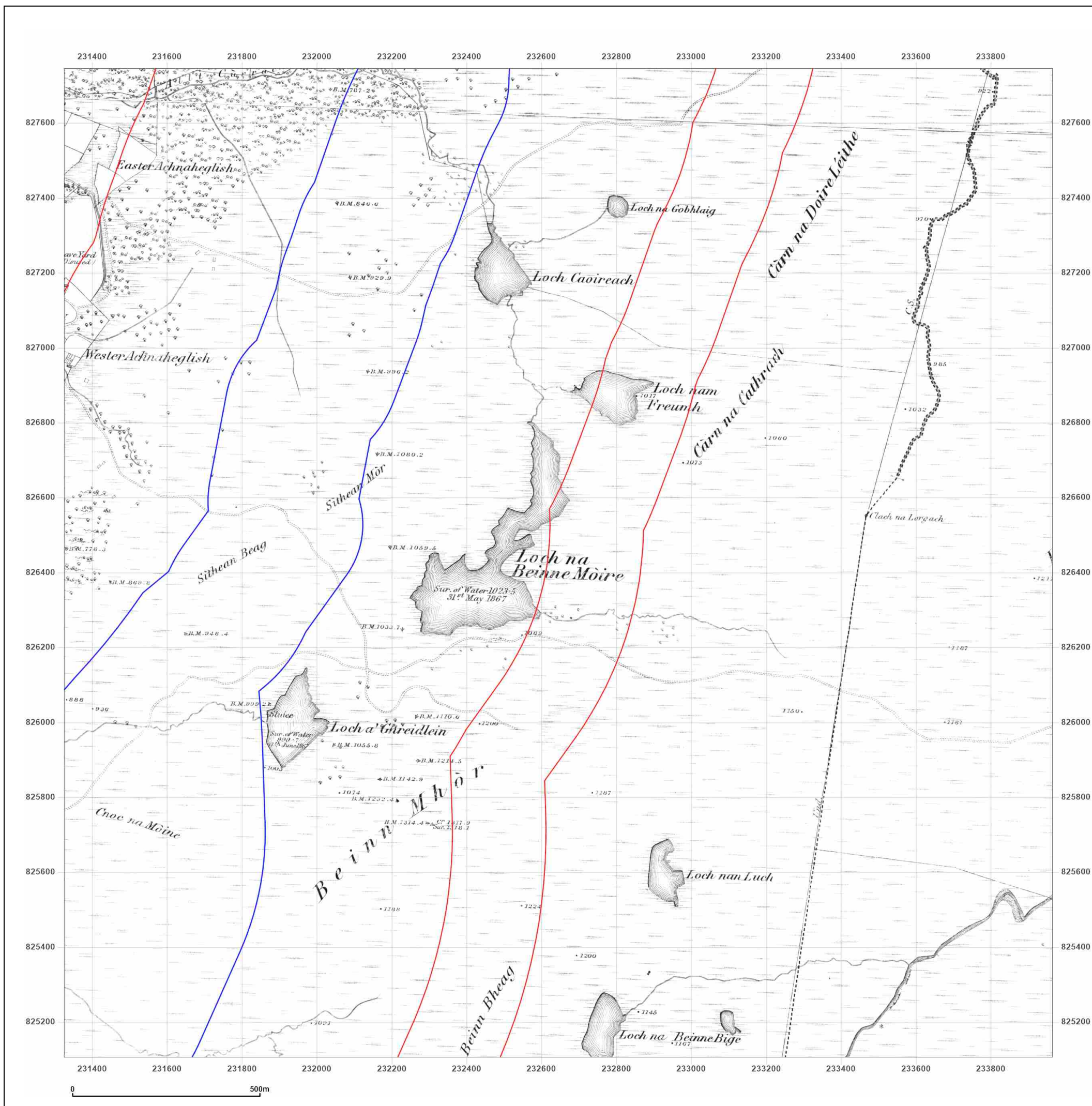


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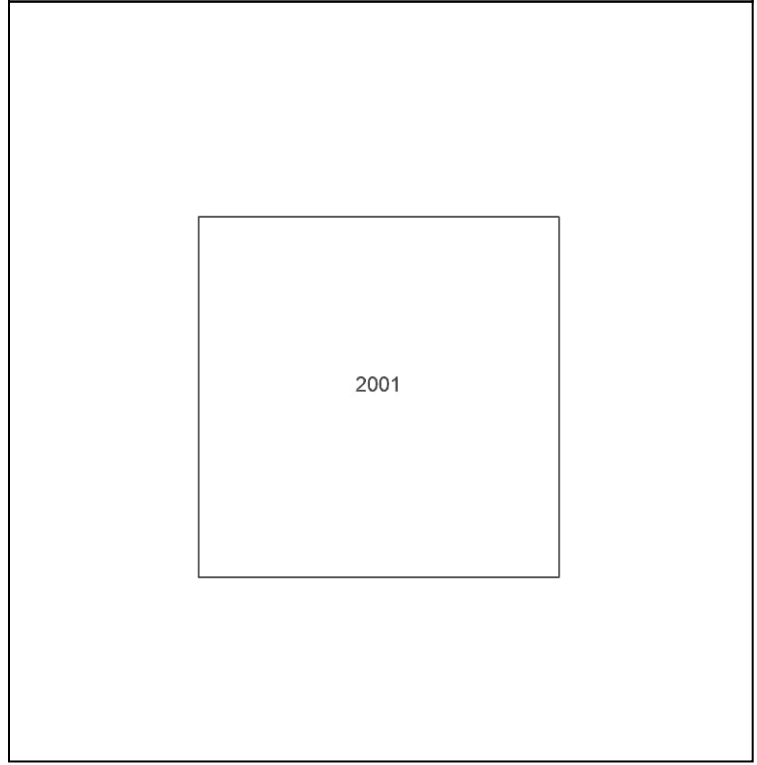
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Scotland, Red Line Boundary

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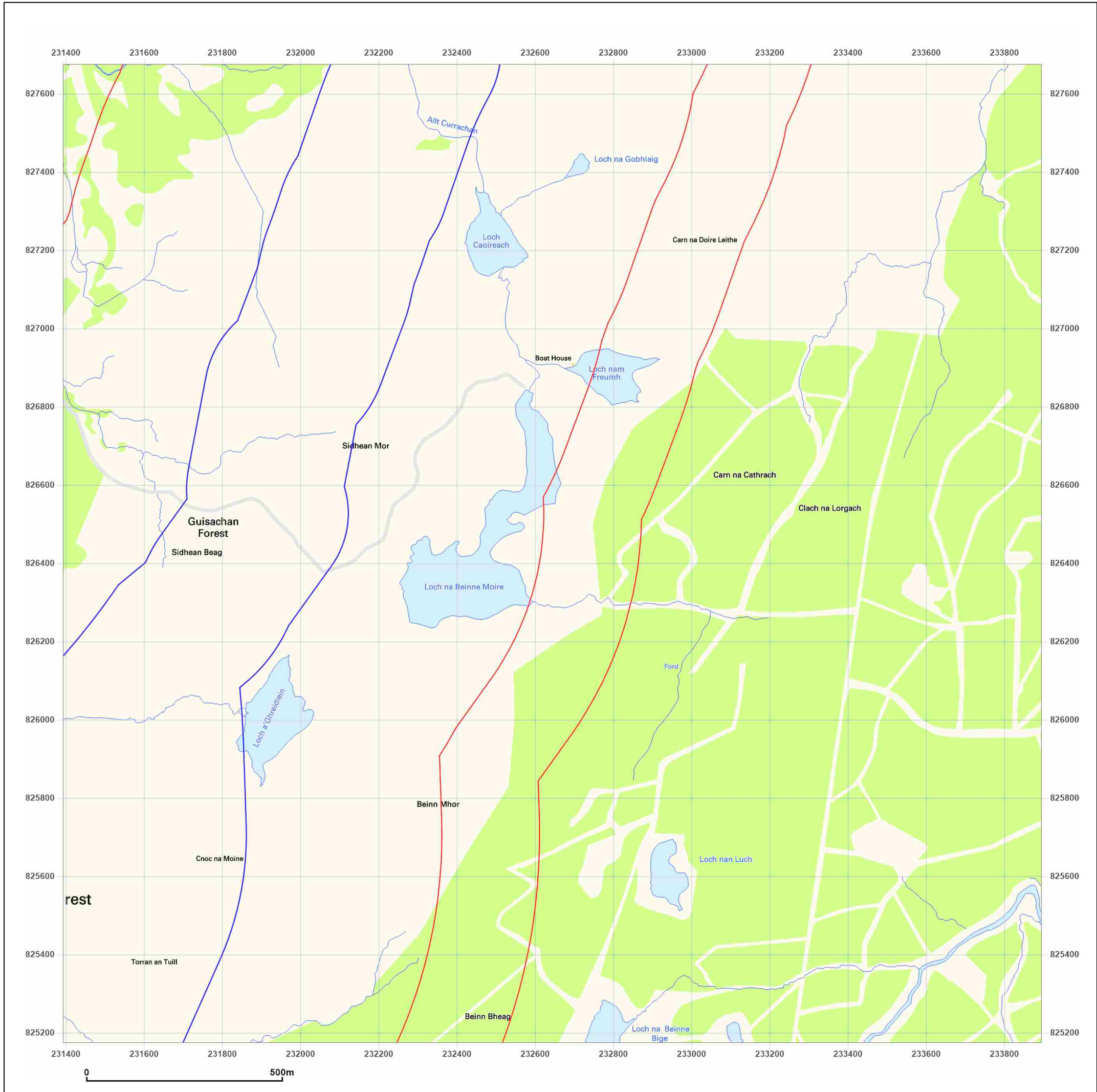


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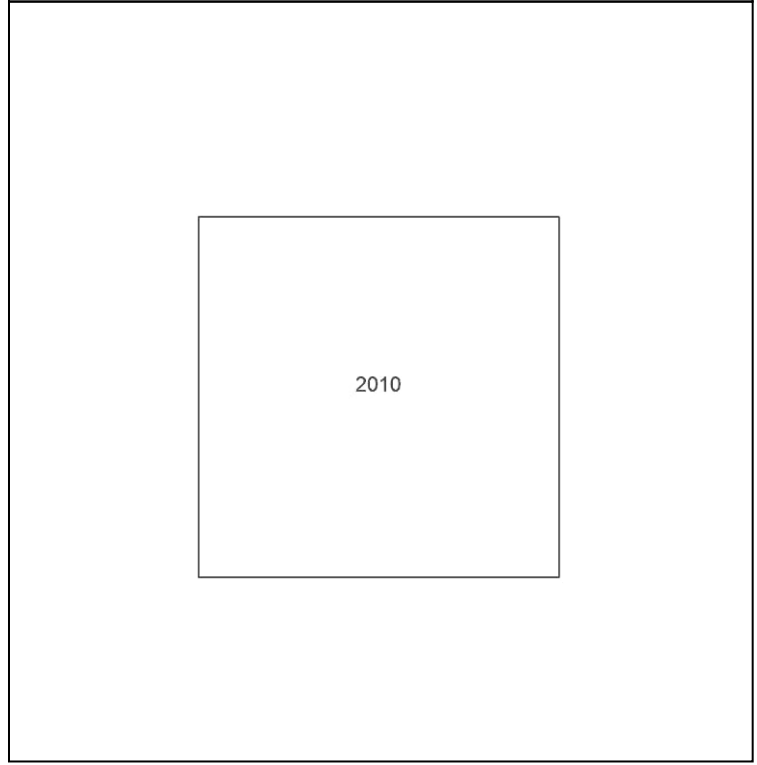
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**Map Name:** National Grid  
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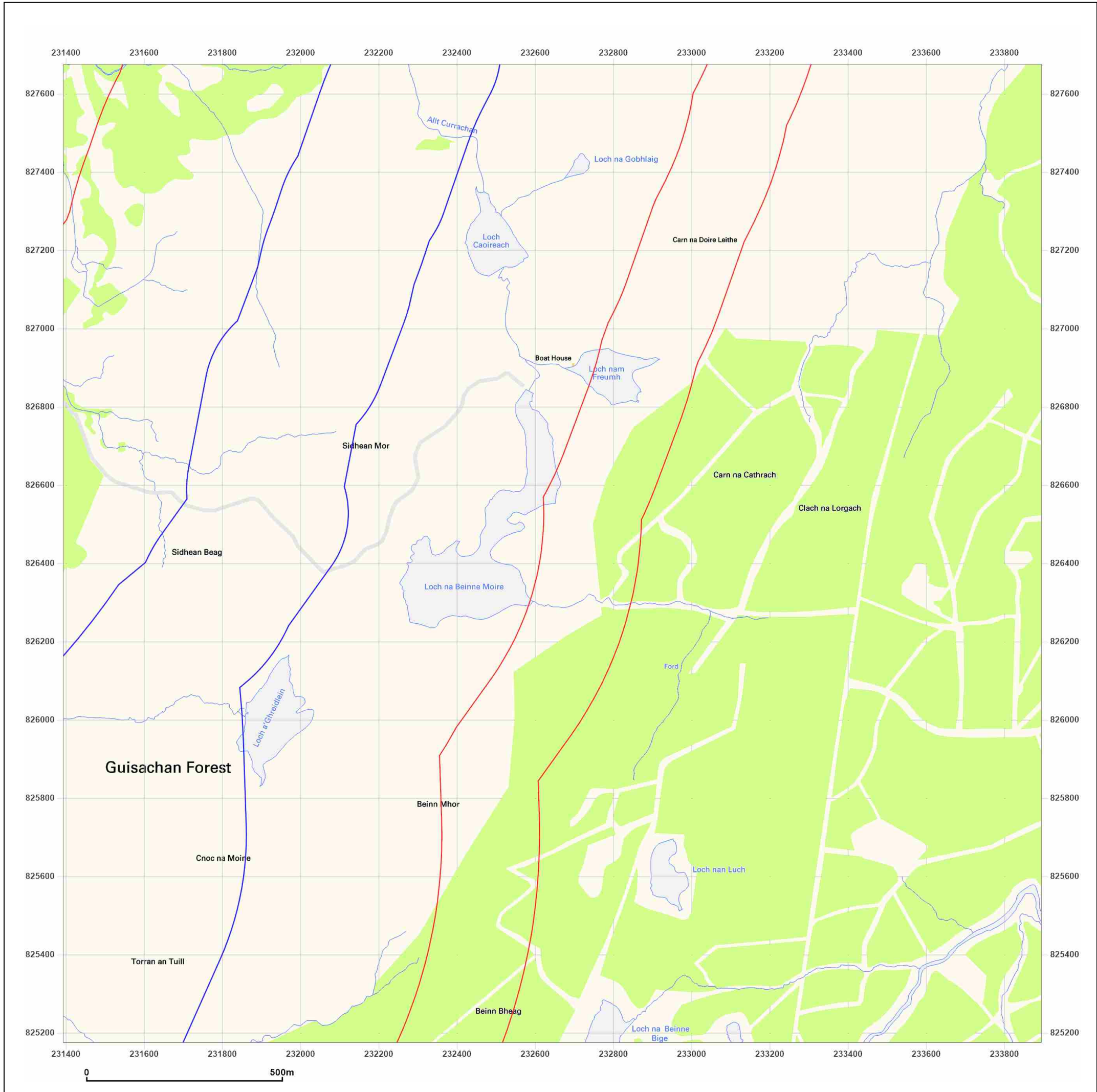


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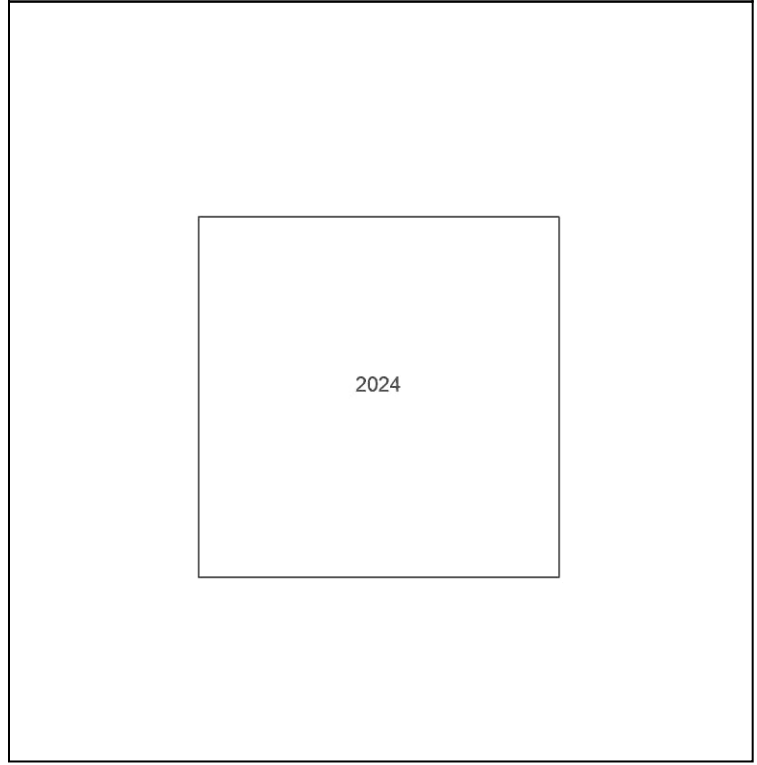
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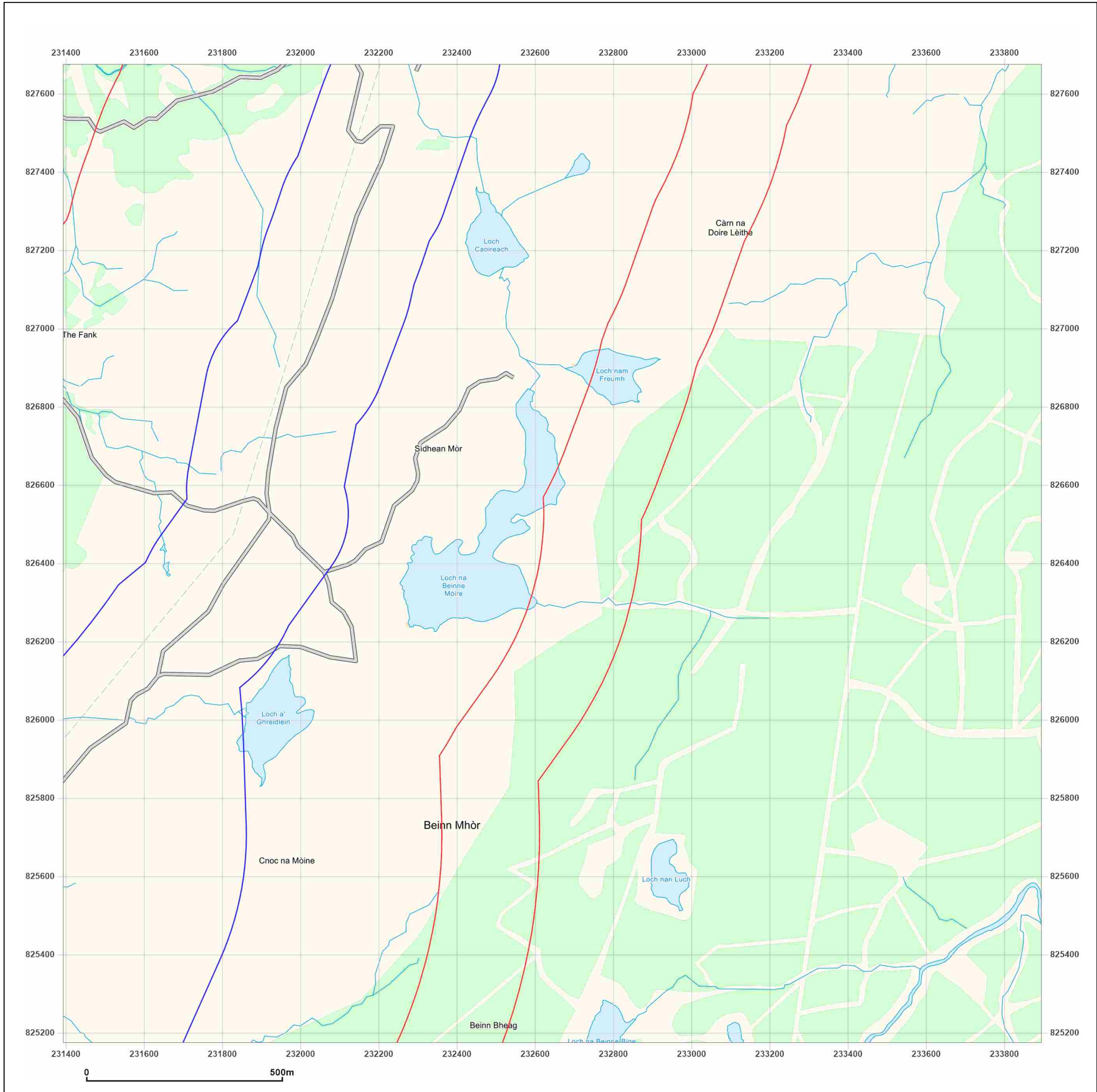


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Scotland, Red Line Boundary

**Client Ref:** Scotland, Red Line Boundary  
**Report Ref:** GSIP-2024-14714-18279\_SS\_2\_3  
**Grid Ref:** 232644, 828925

**Map Name:** County Series

**Map date:** 1901

**Scale:** 1:10,560

**Printed at:** 1:10,560



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Revised 1901  
Edition N/A  
Copyright N/A  
Levelled N/A

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Revised 1901  
Edition N/A  
Copyright N/A  
Levelled N/A

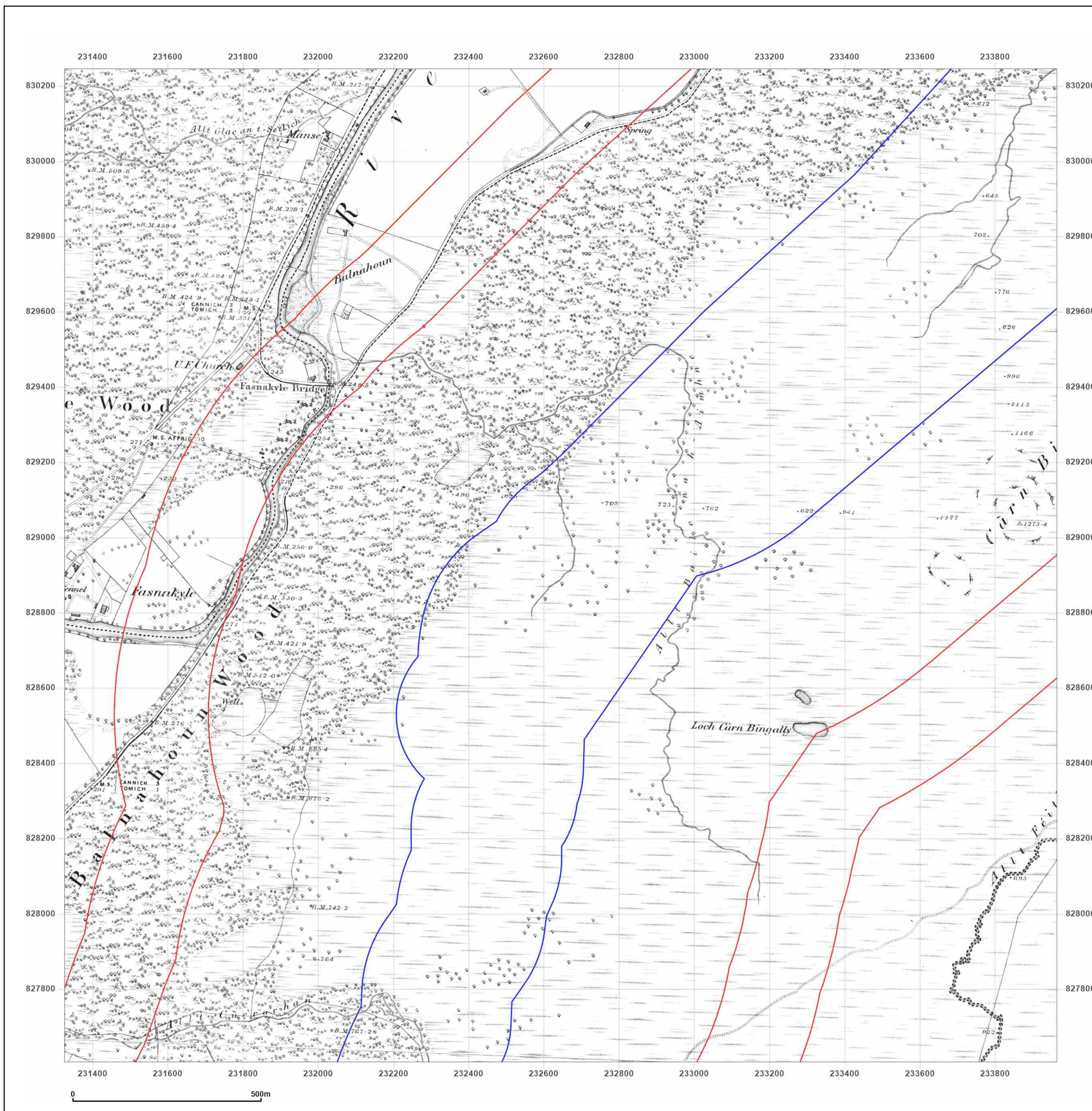


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**Site Details:**

Scotland, Red Line Boundary

**Client Ref:** Scotland, Red Line Boundary  
**Report Ref:** GSIP-2024-14714-18279\_SS\_2\_3  
**Grid Ref:** 232644, 828925

**Map Name:** National Grid

**Map date:** 1971

**Scale:** 1:10,000

**Printed at:** 1:10,000



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Copyright 1971  
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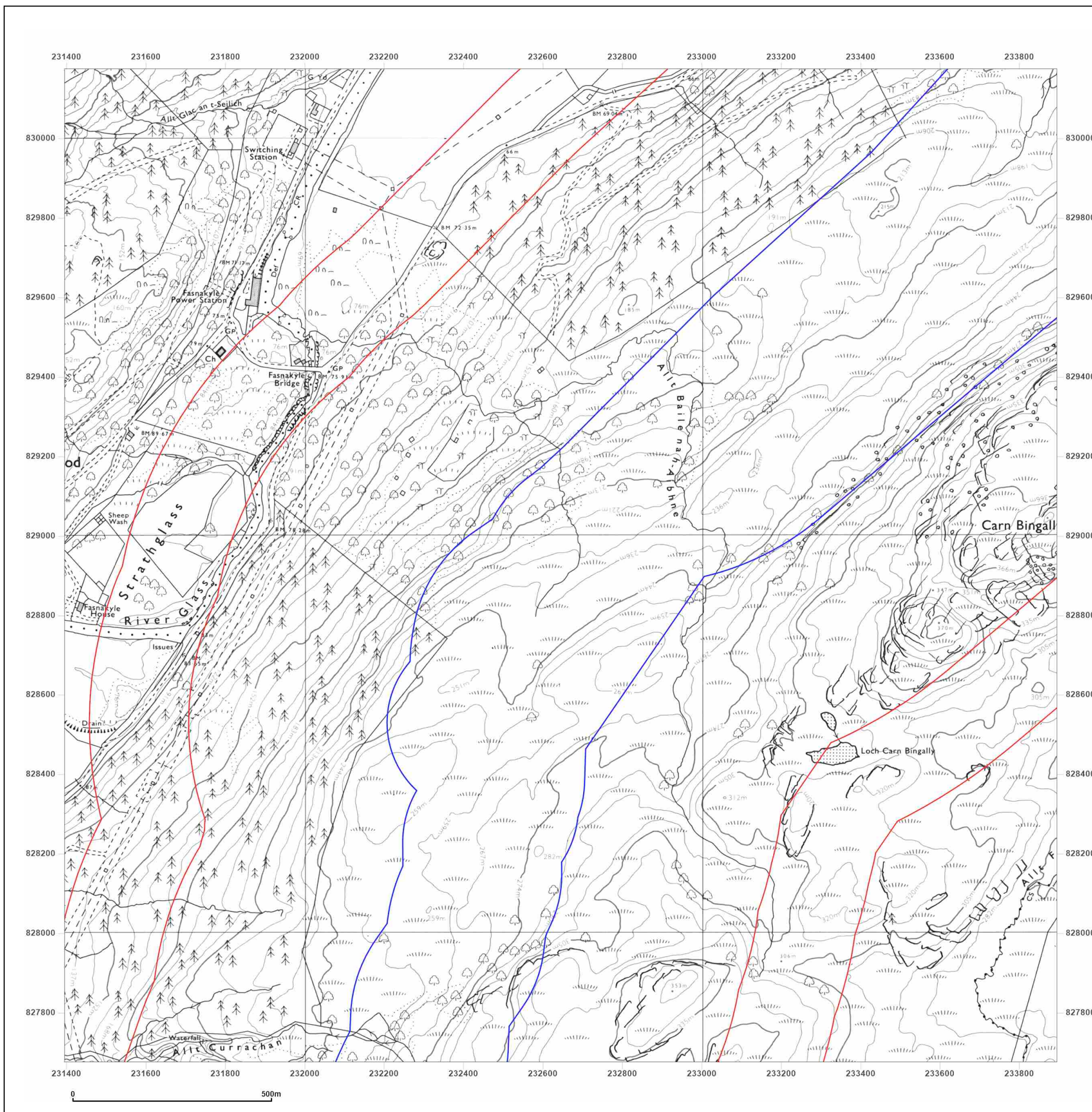


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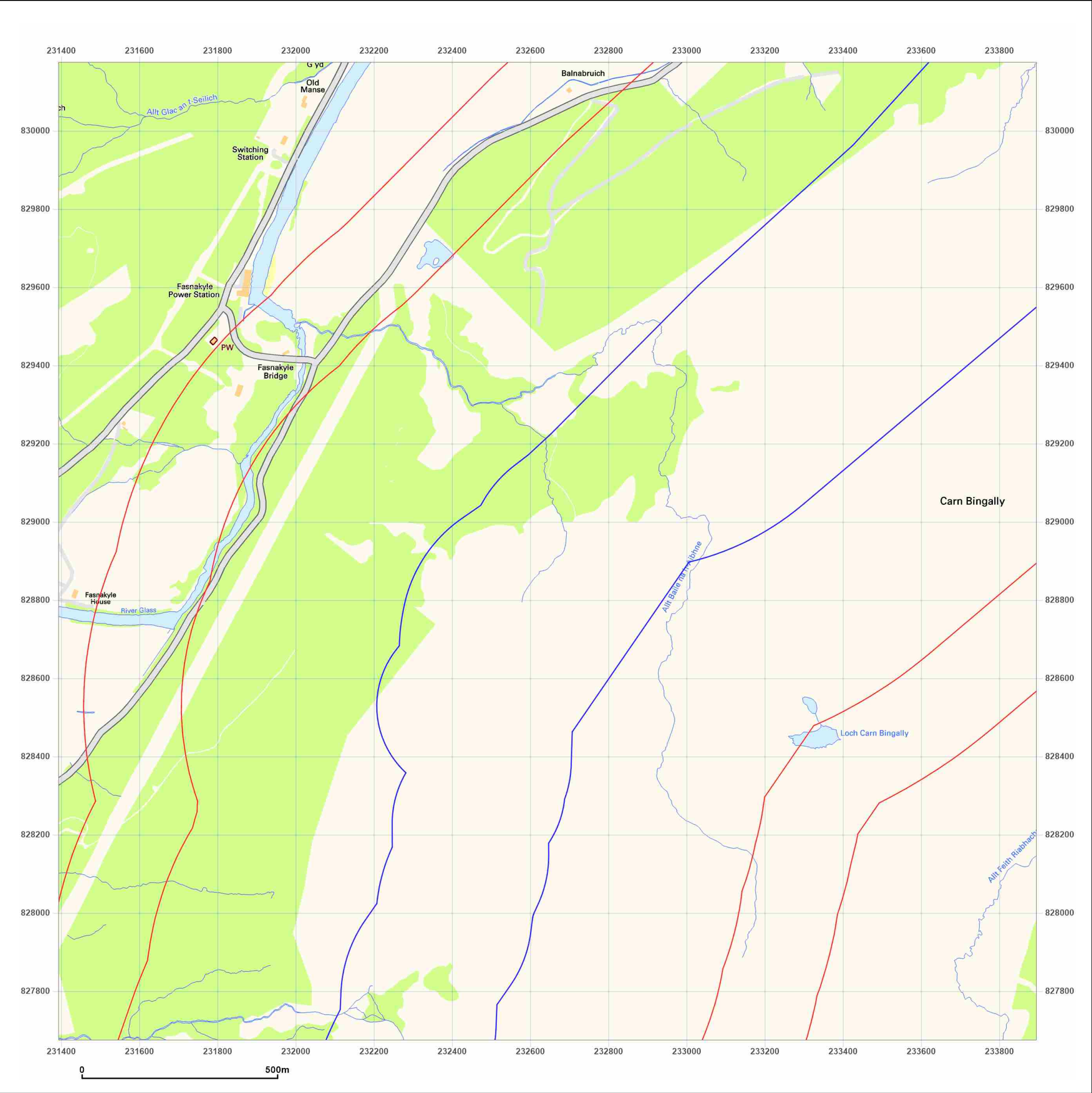
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Scotland, Red Line Boundary

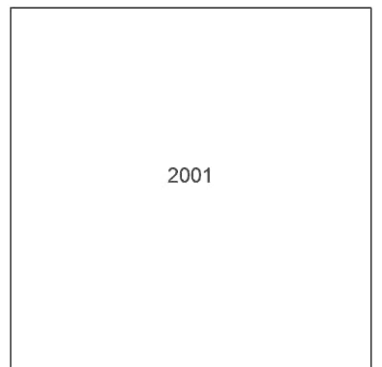
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**Map Name:** National Grid

**Map date:** 2001

**Scale:** 1:10,000

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Scotland, Red Line Boundary

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**Map Name:** National Grid

**Map date:** 2010

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2010

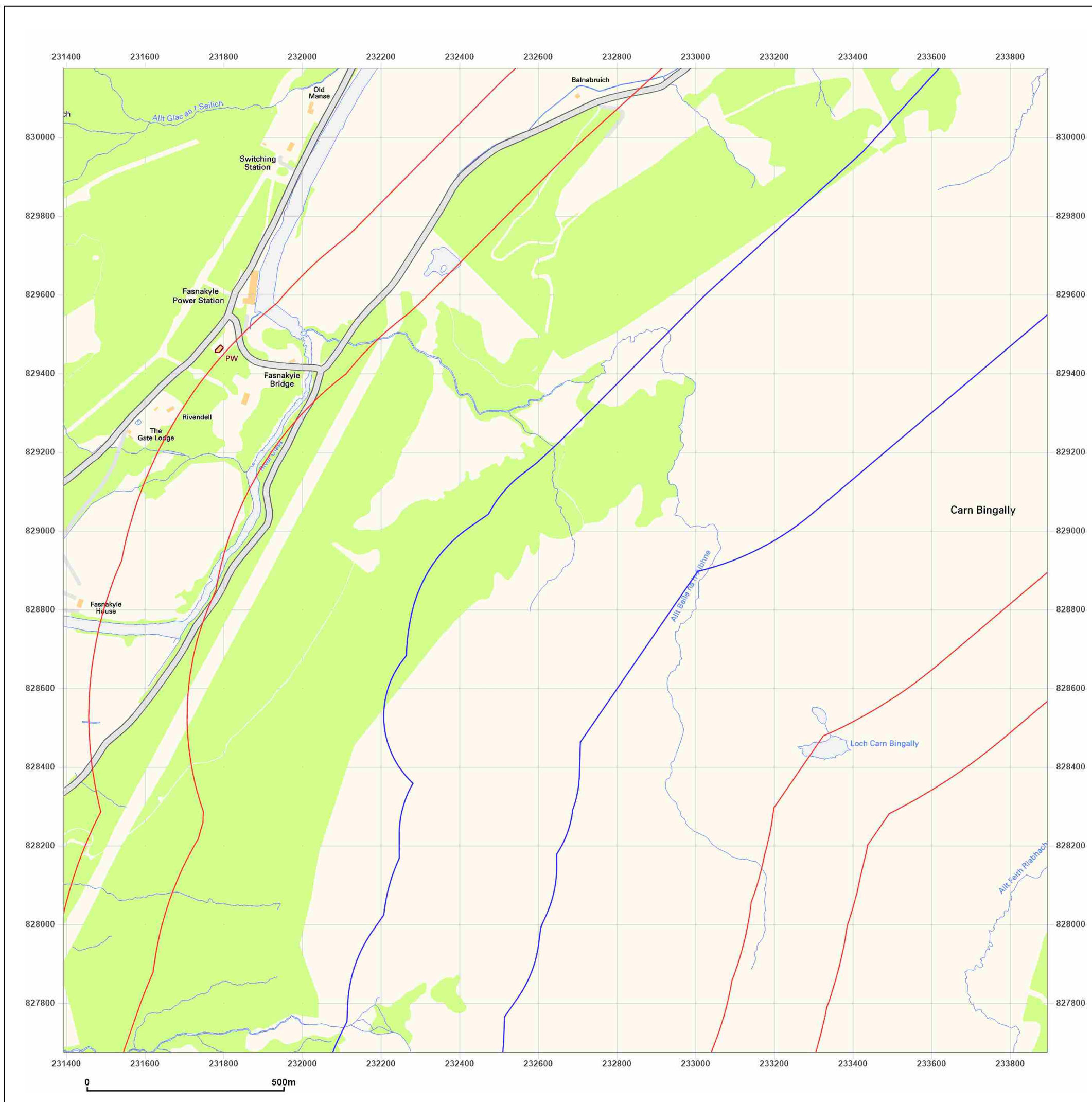


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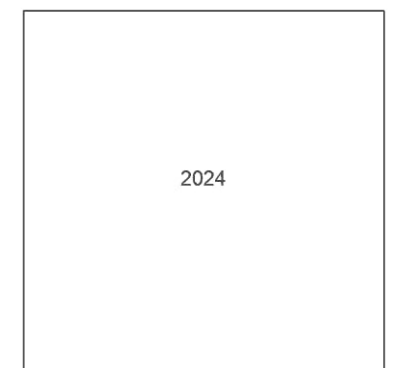
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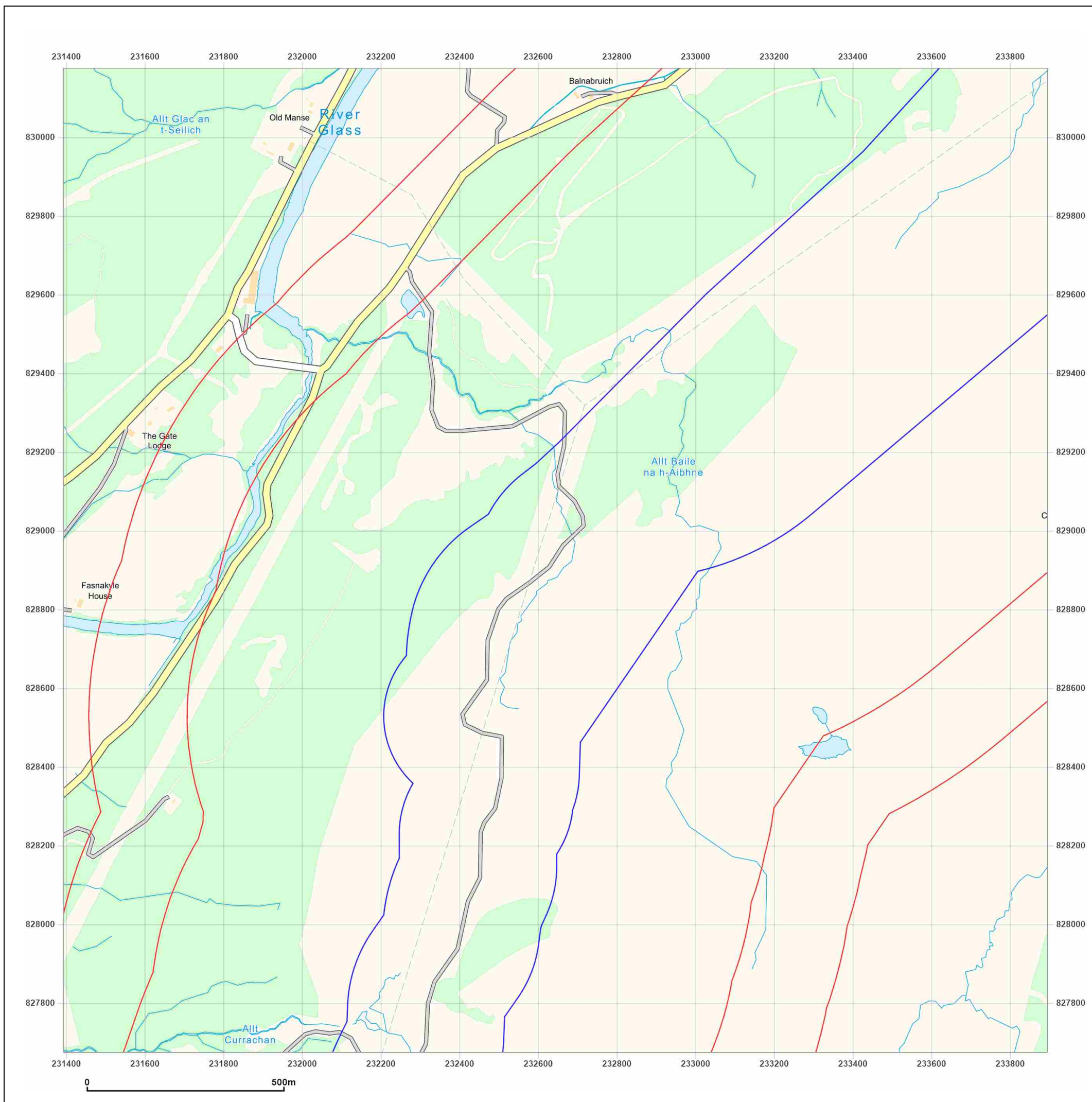


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**Site Details:**

Scotland, Red Line Boundary

**Client Ref:** Scotland, Red Line Boundary  
**Report Ref:** GSIP-2024-14714-18279\_SS\_2\_4  
**Grid Ref:** 232644, 831425

**Map Name:** County Series

**Map date:** 1872

**Scale:** 1:10,560

**Printed at:** 1:10,560



Surveyed 1872  
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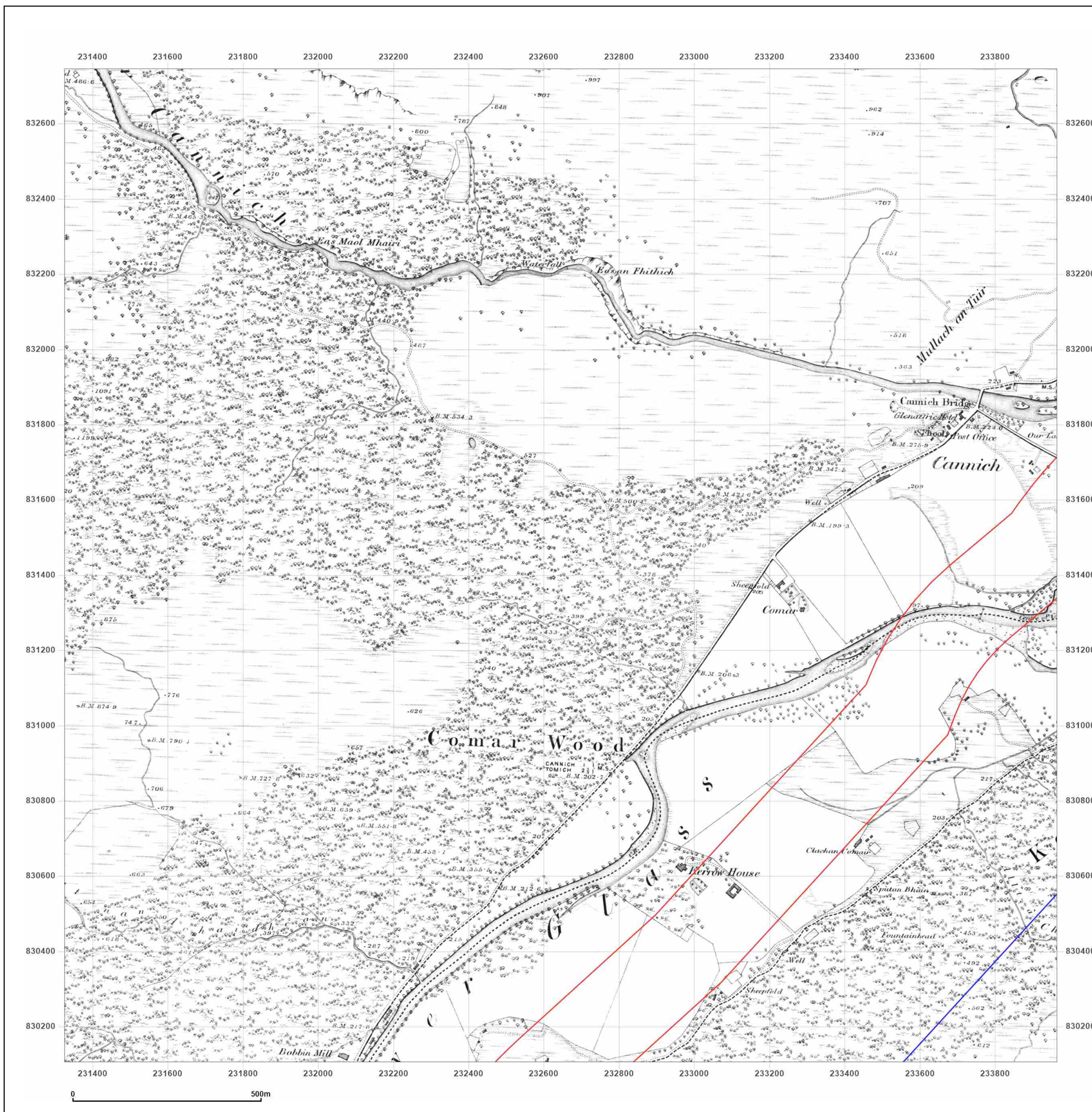


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**Site Details:**

Scotland, Red Line Boundary

**Client Ref:** Scotland, Red Line Boundary  
**Report Ref:** GSIP-2024-14714-18279\_SS\_2\_4  
**Grid Ref:** 232644, 831425

**Map Name:** County Series

**Map date:** 1901

**Scale:** 1:10,560

**Printed at:** 1:10,560



Surveyed 1872  
Revised 1901  
Edition N/A  
Copyright N/A  
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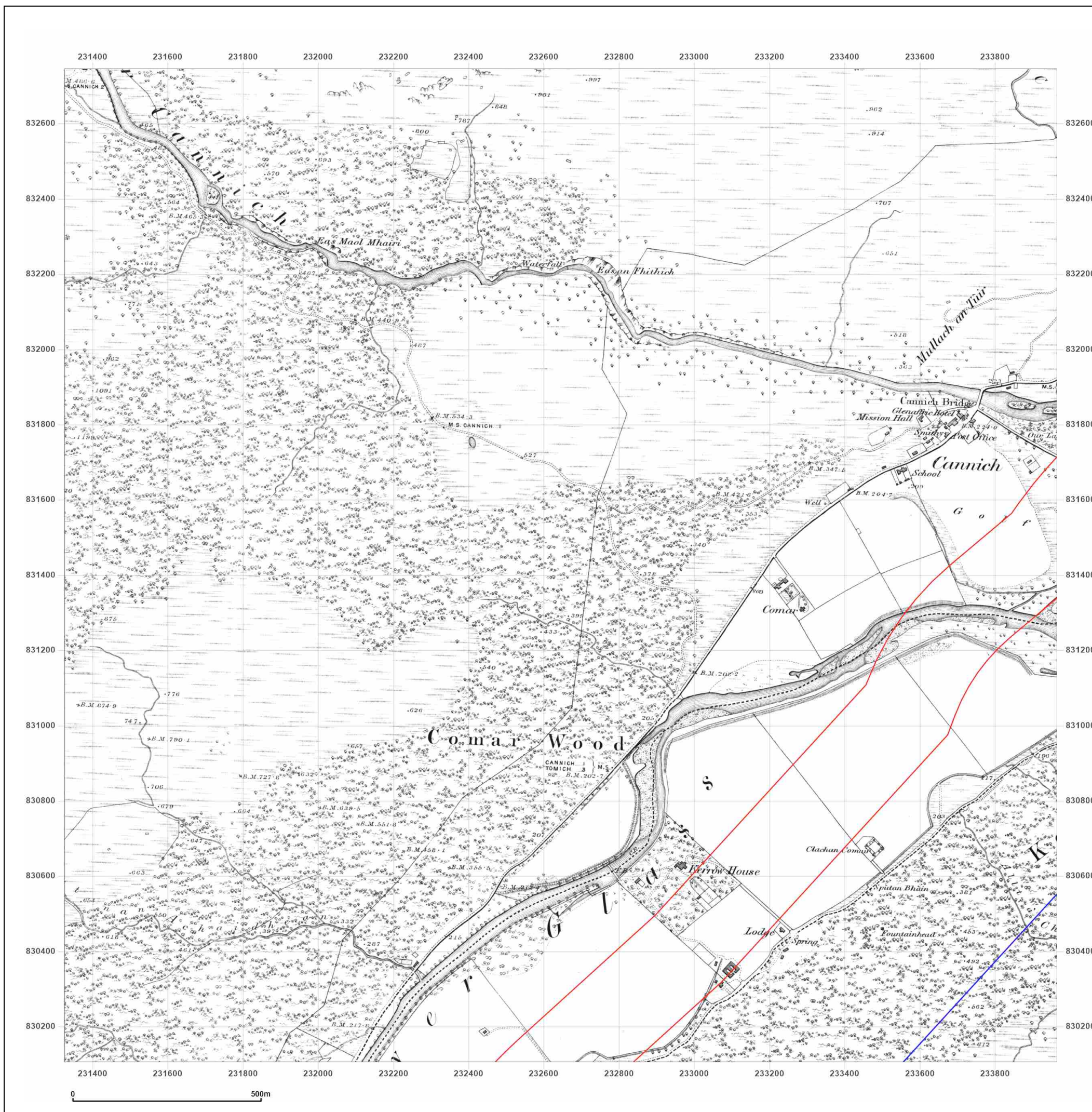


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Site Details:

Scotland, Red Line Boundary

Client Ref:

Report Ref:

Grid Ref:

Scotland, Red Line Boundary

GSIP-2024-14714-18279\_SS\_2\_4

232644, 831425

Map Name:

Map date:

Scale:

Printed at:

National Grid

1971

1:10,000

1:10,000

Surveyed 1969

Revised 1971

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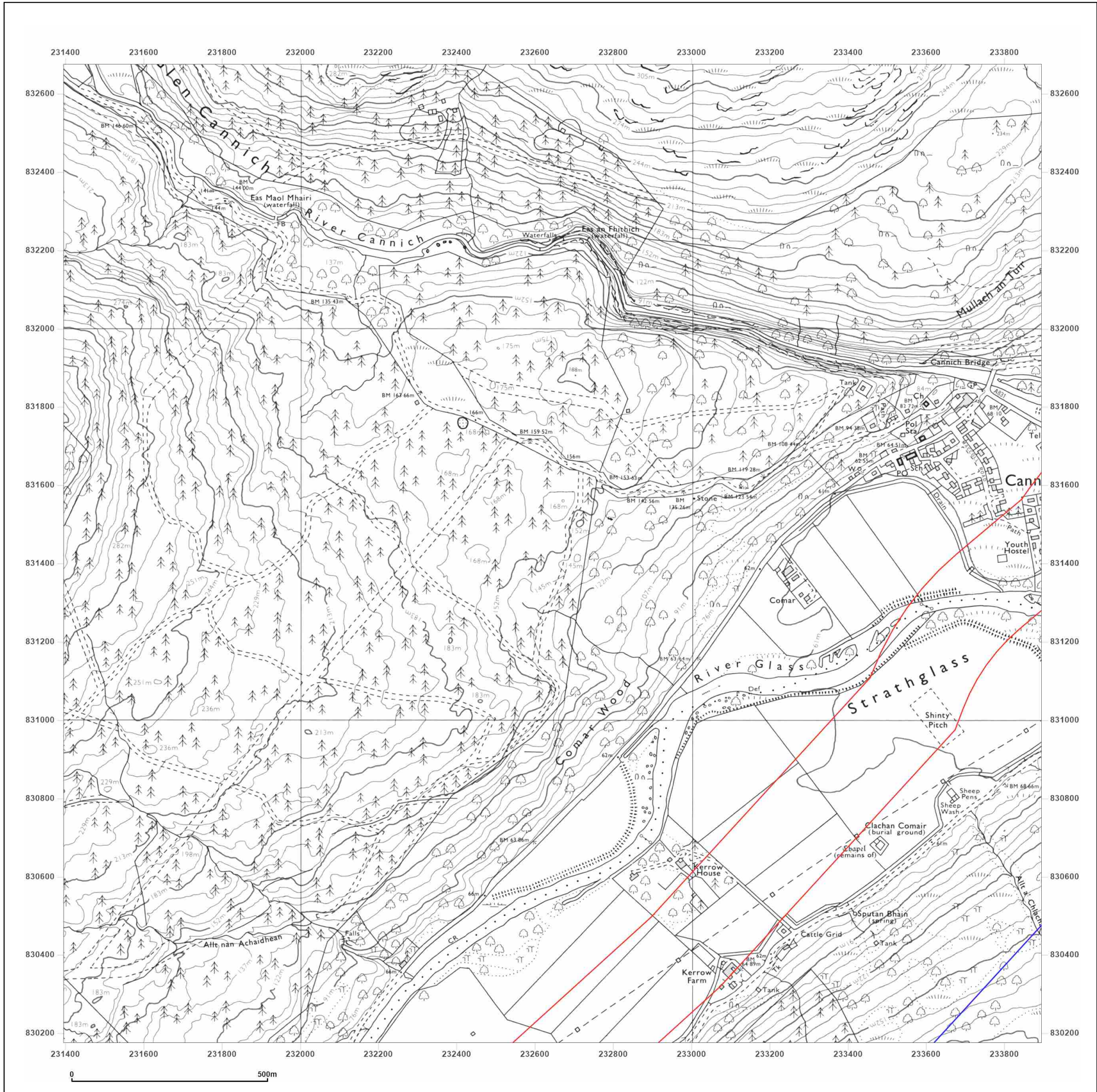
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2001

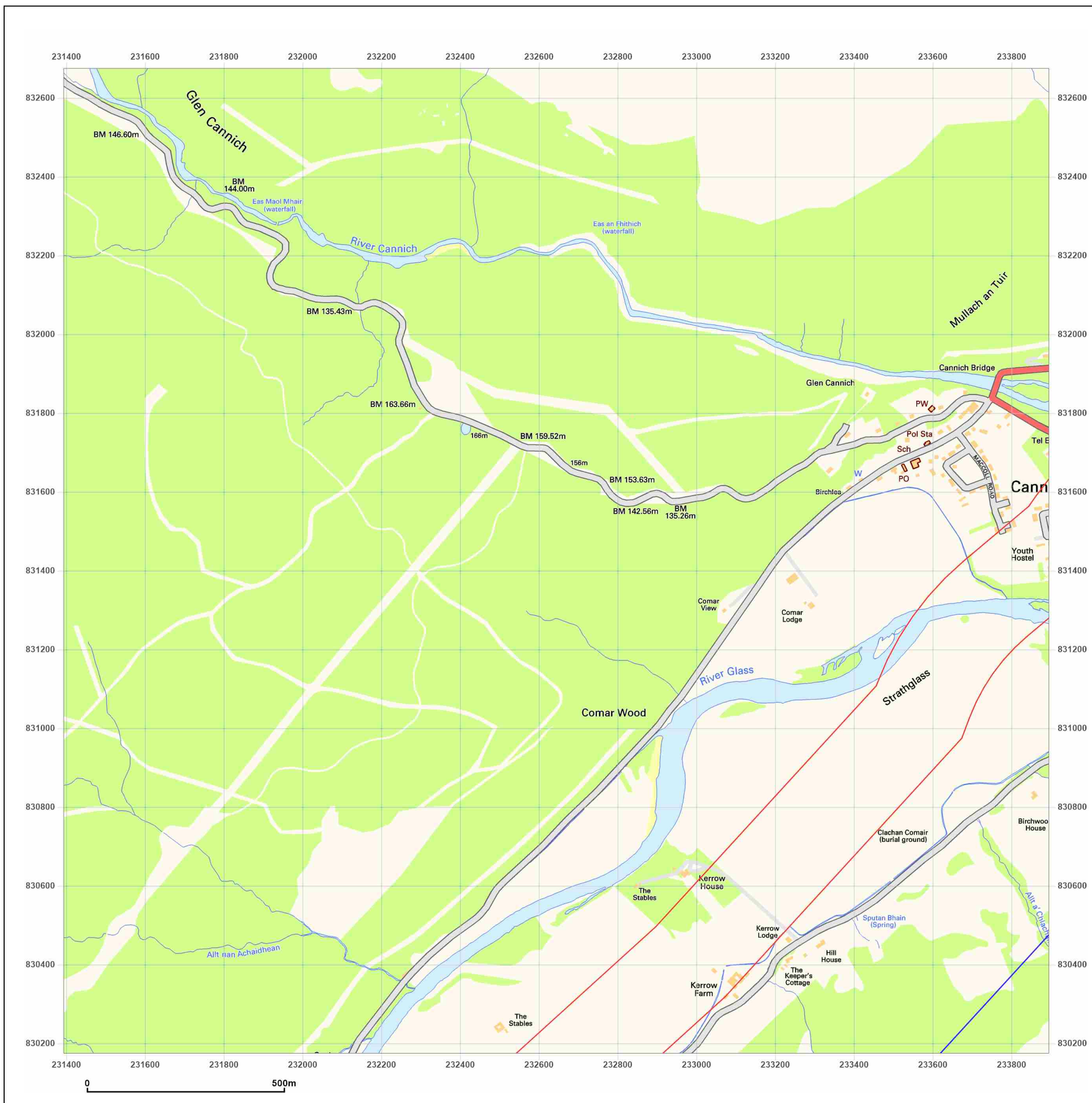


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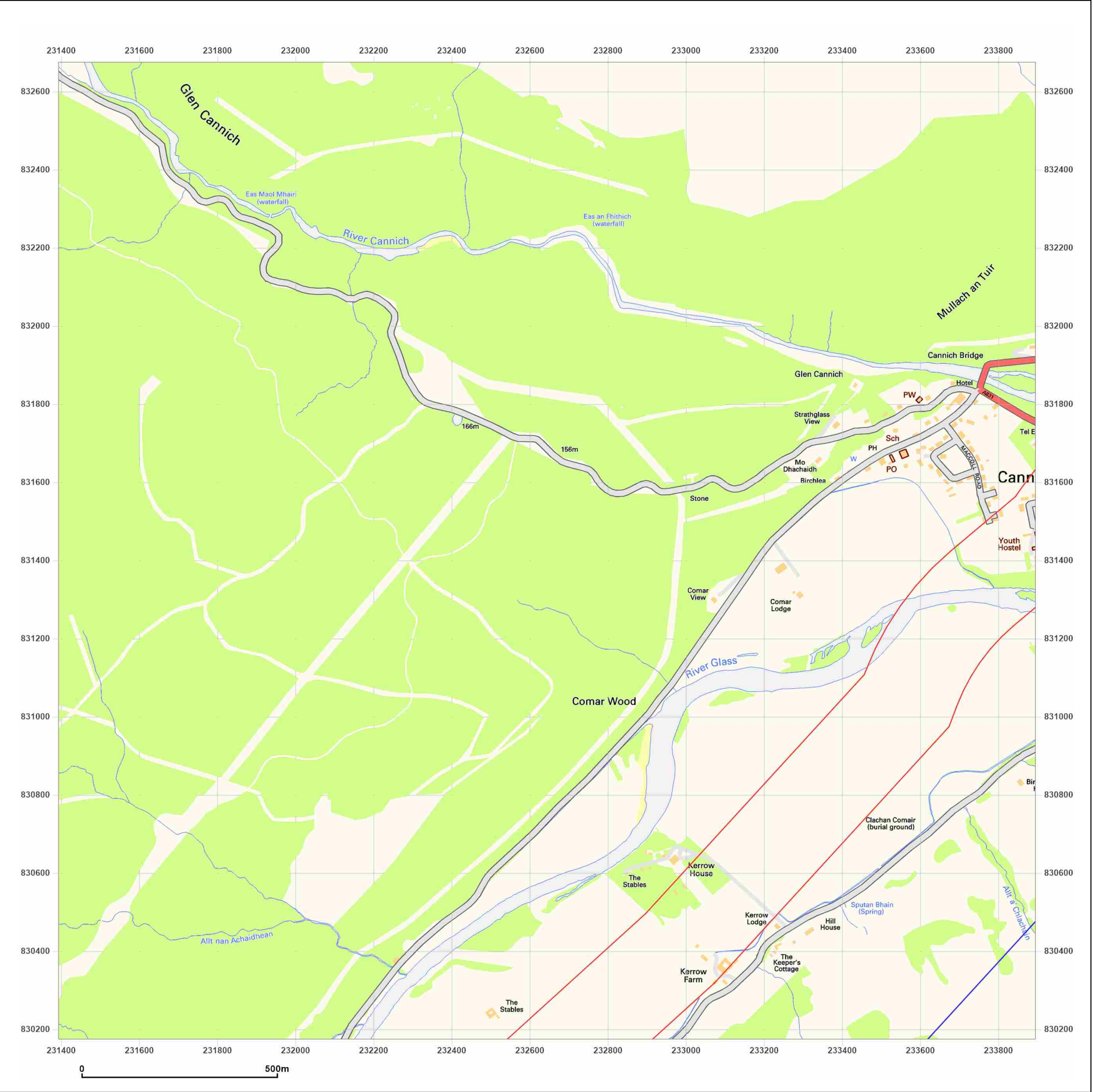
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**Map Name:** National Grid

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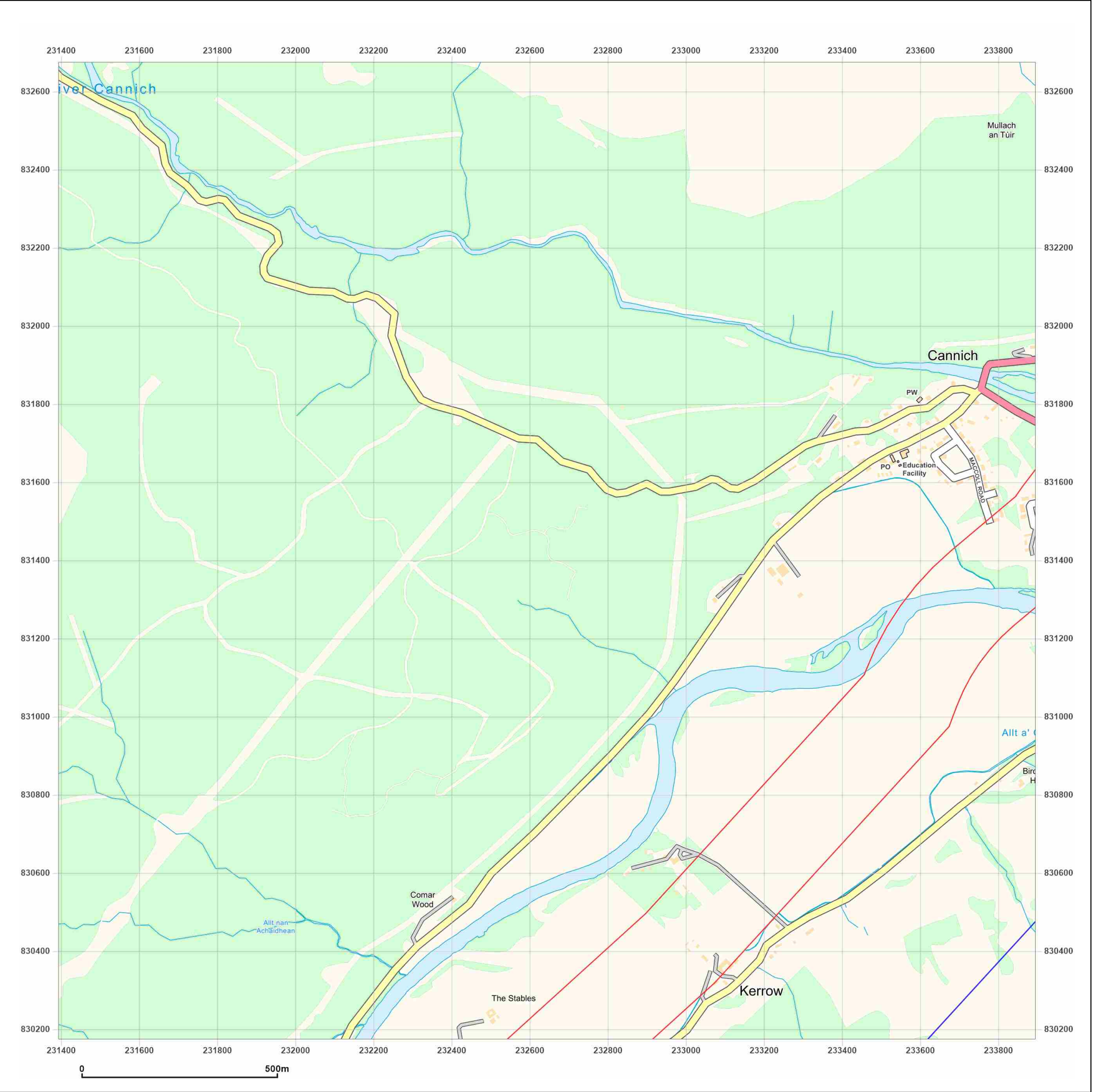
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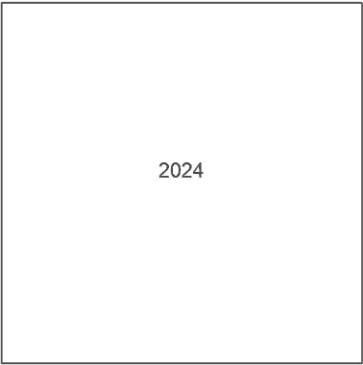
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**Site Details:**

Scotland, Red Line Boundary

**Client Ref:** Scotland, Red Line Boundary  
**Report Ref:** GSIP-2024-14714-18279\_SS\_3\_3  
**Grid Ref:** 235144, 828925

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**Map date:** 1871-1872

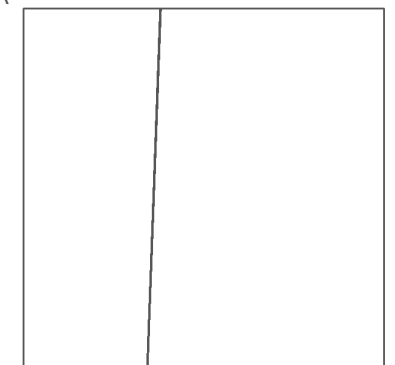
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Edition N/A  
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Levelled N/A

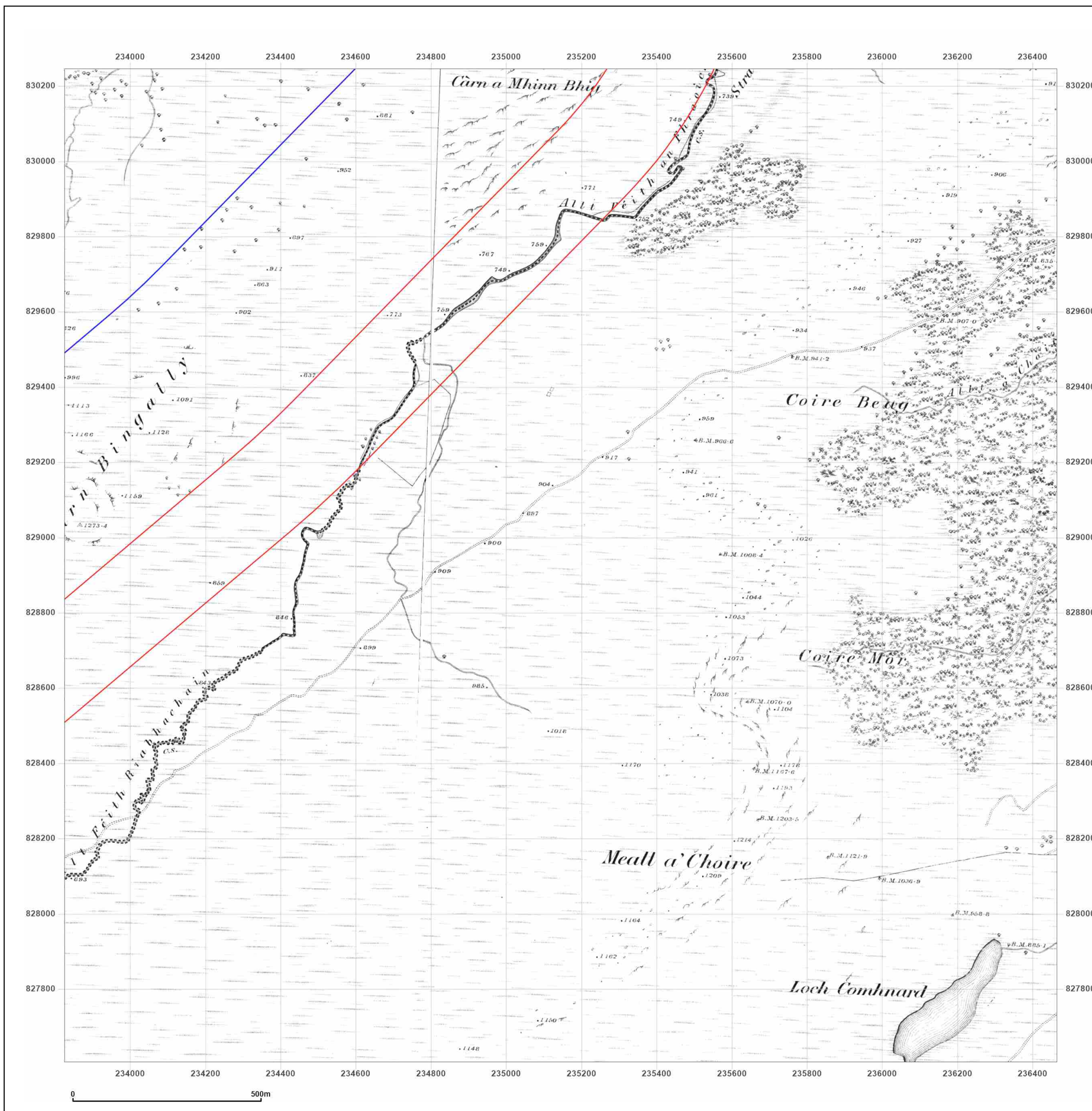


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**Map Name:** County Series

**Map date:** 1901

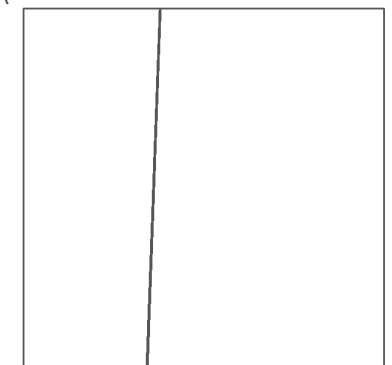
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Edition N/A  
Copyright N/A  
Levelled N/A

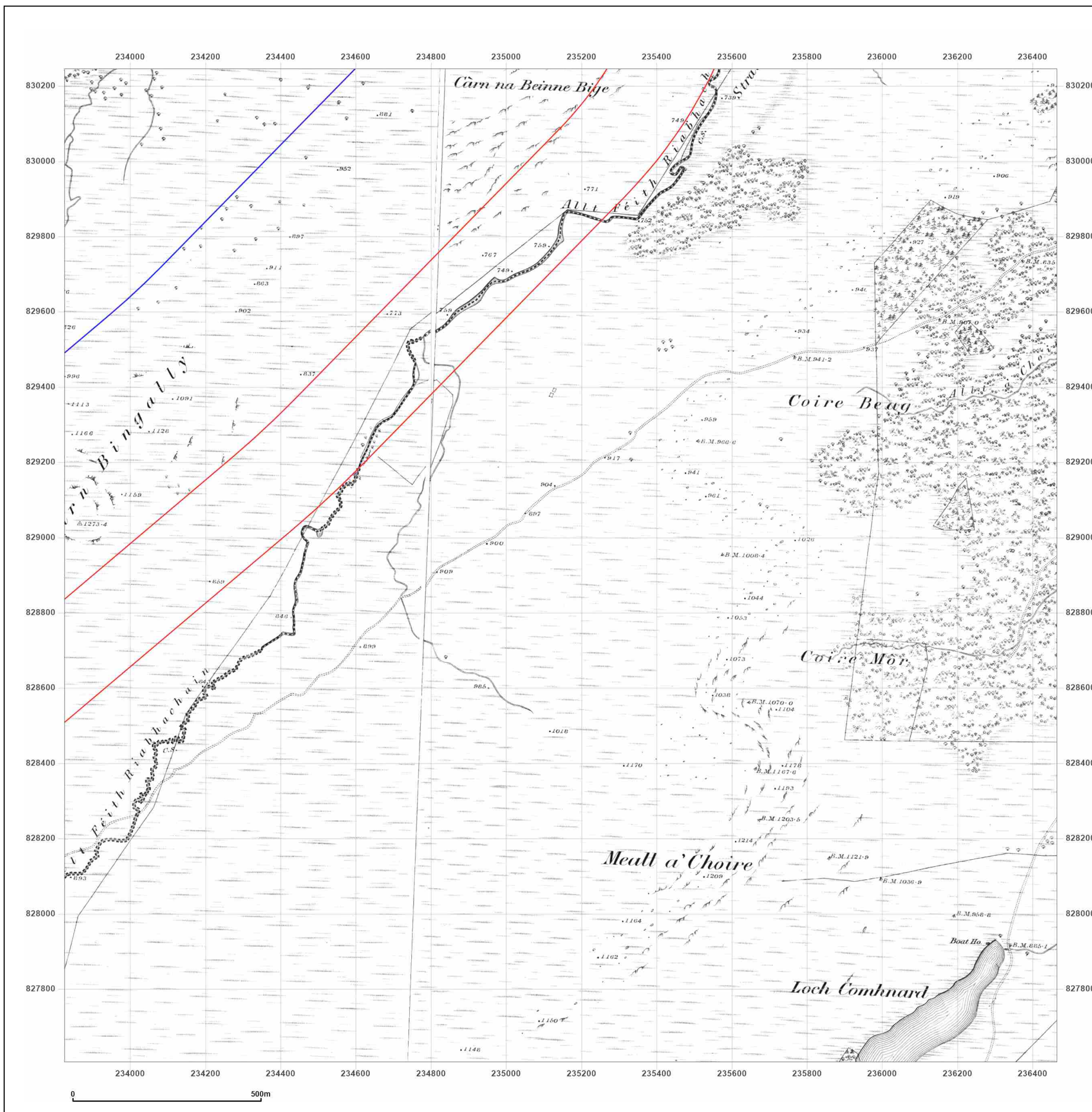


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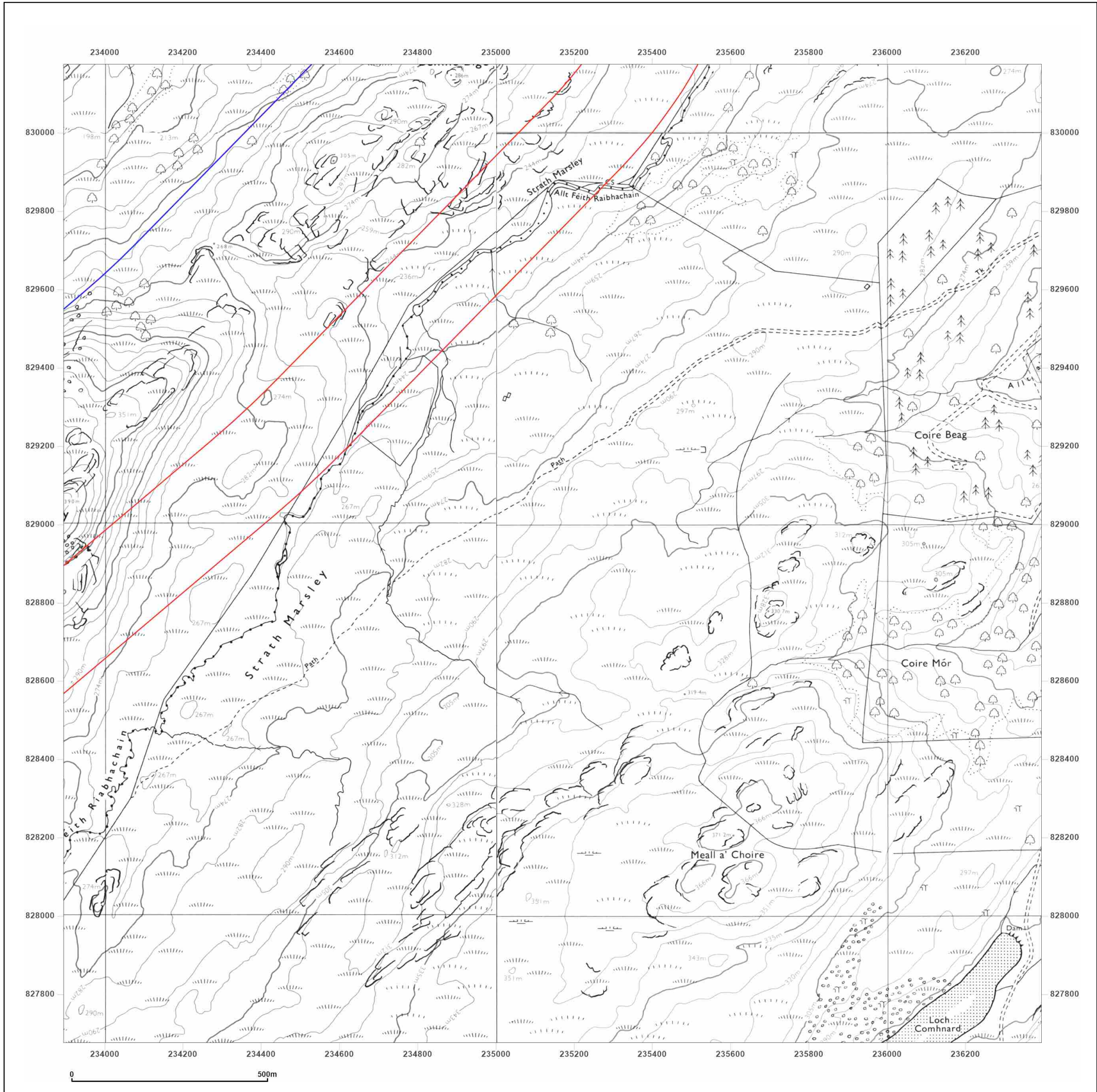


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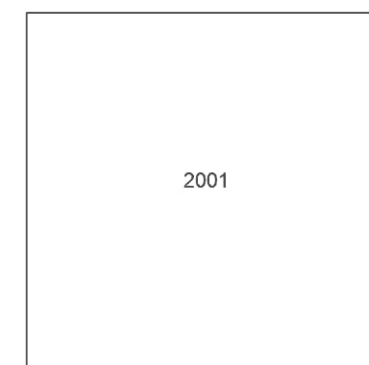
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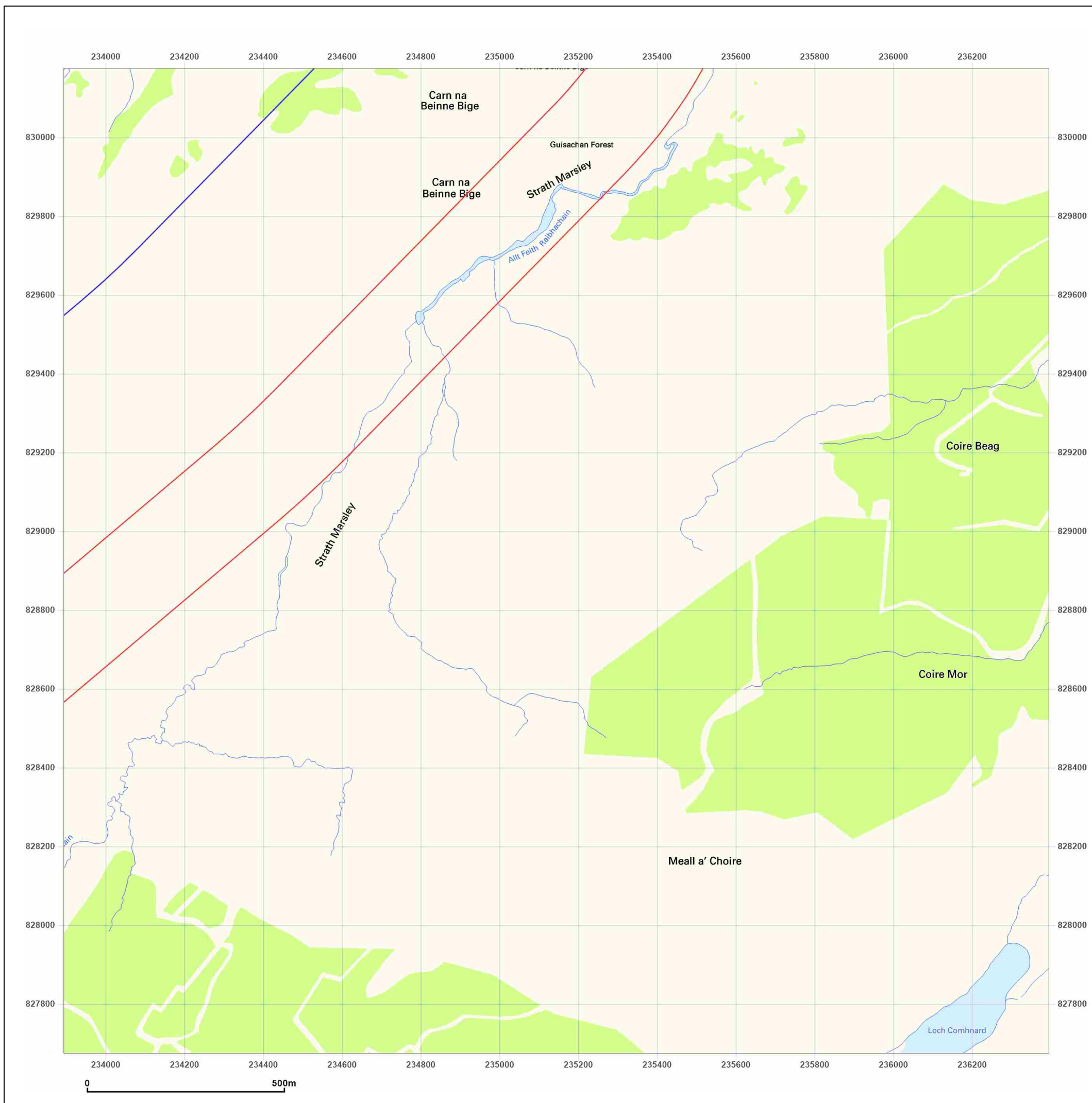


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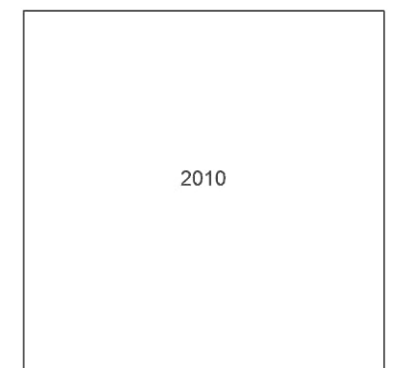
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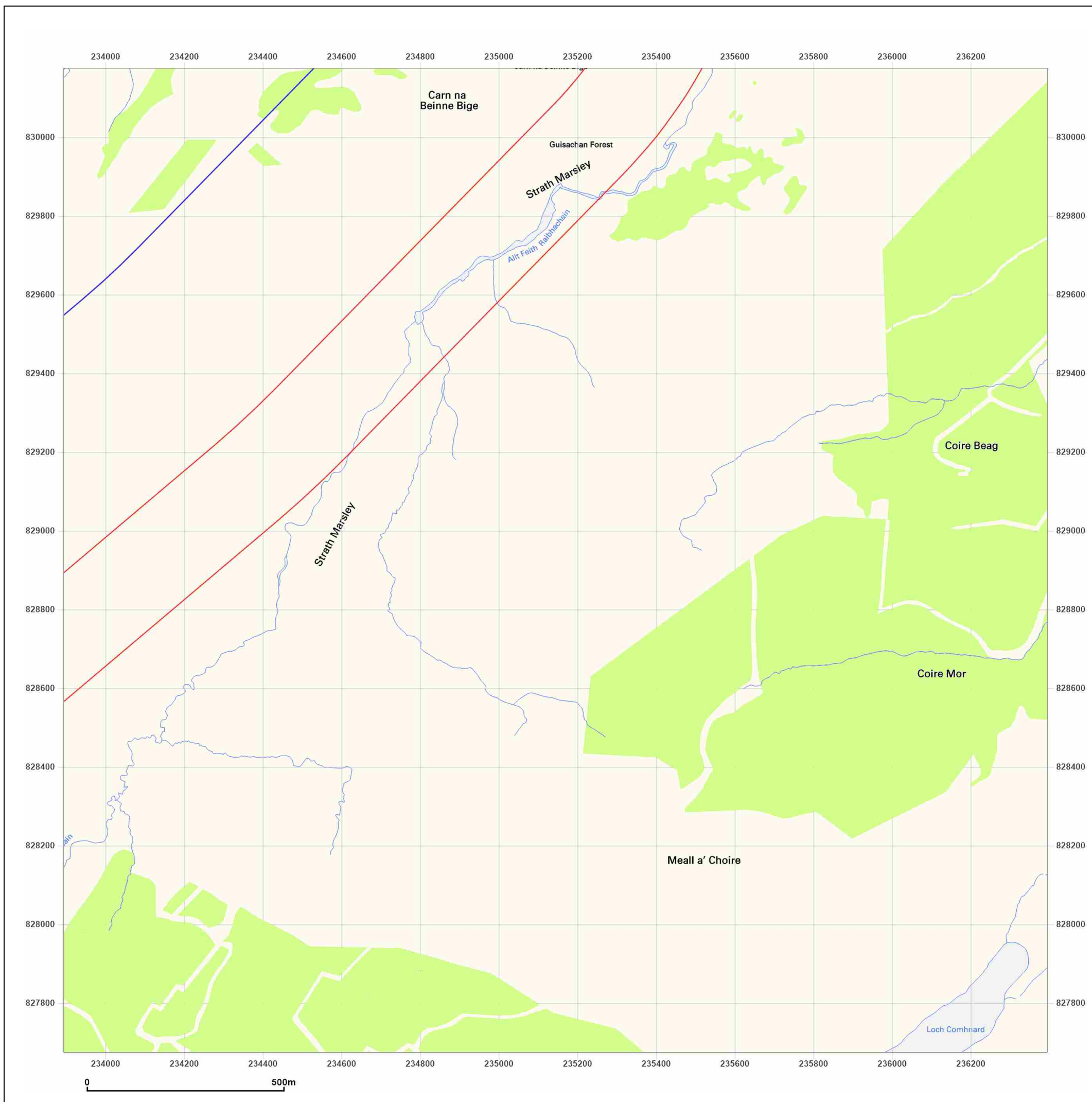


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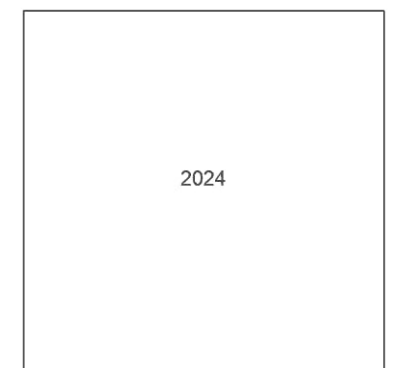
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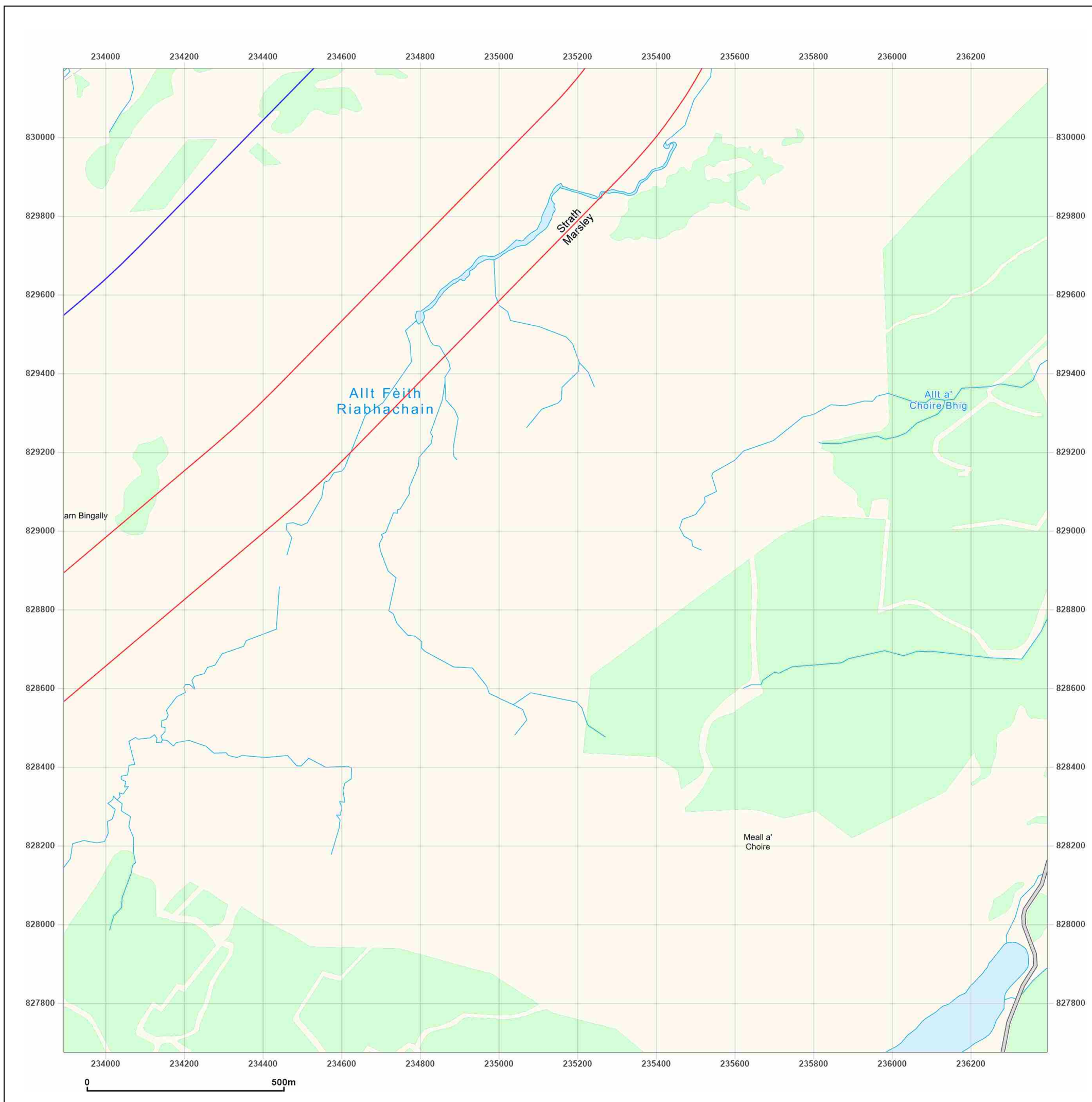


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**Site Details:**

Scotland, Red Line Boundary

**Client Ref:** Scotland, Red Line Boundary  
**Report Ref:** GSIP-2024-14714-18279\_SS\_3\_4  
**Grid Ref:** 235144, 831425

**Map Name:** County Series

**Map date:** 1871-1872

**Scale:** 1:10,560

**Printed at:** 1:10,560



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Surveyed 1871  
Revised 1871  
Edition N/A  
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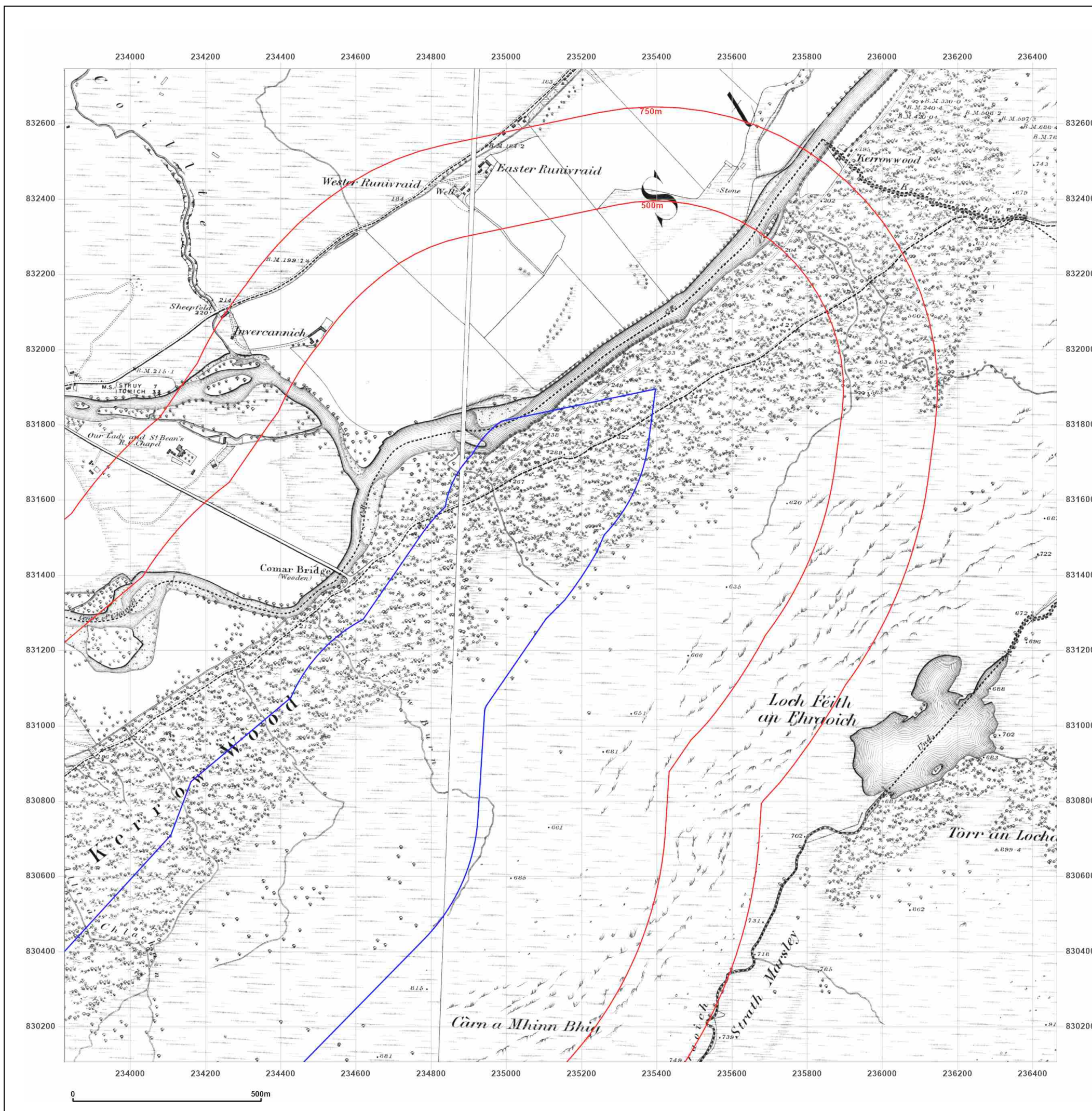


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**Site Details:**

Scotland, Red Line Boundary

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**Report Ref:** GSIP-2024-14714-18279\_SS\_3\_4  
**Grid Ref:** 235144, 831425

**Map Name:** County Series

**Map date:** 1901

**Scale:** 1:10,560

**Printed at:** 1:10,560



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Surveyed 1871  
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Edition N/A  
Copyright N/A  
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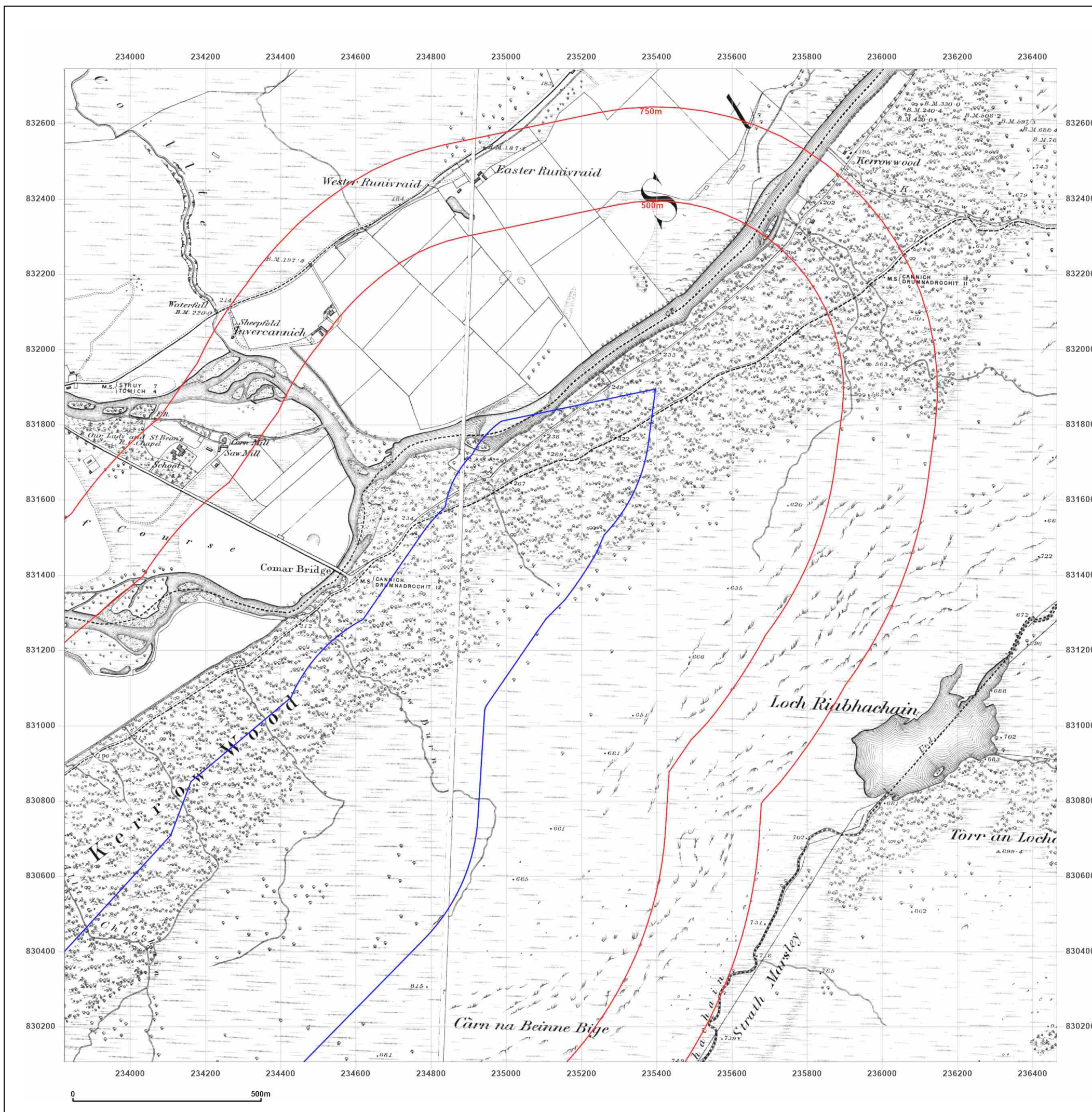


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Site Details:

Scotland, Red Line Boundary

Client Ref:

Scotland, Red Line Boundary

Report Ref:

GSIP-2024-14714-18279\_SS\_3\_4

Grid Ref:

235144, 831425

Map Name:

National Grid

Map date:

1971

Scale:

1:10,000


Printed at:

1:10,000

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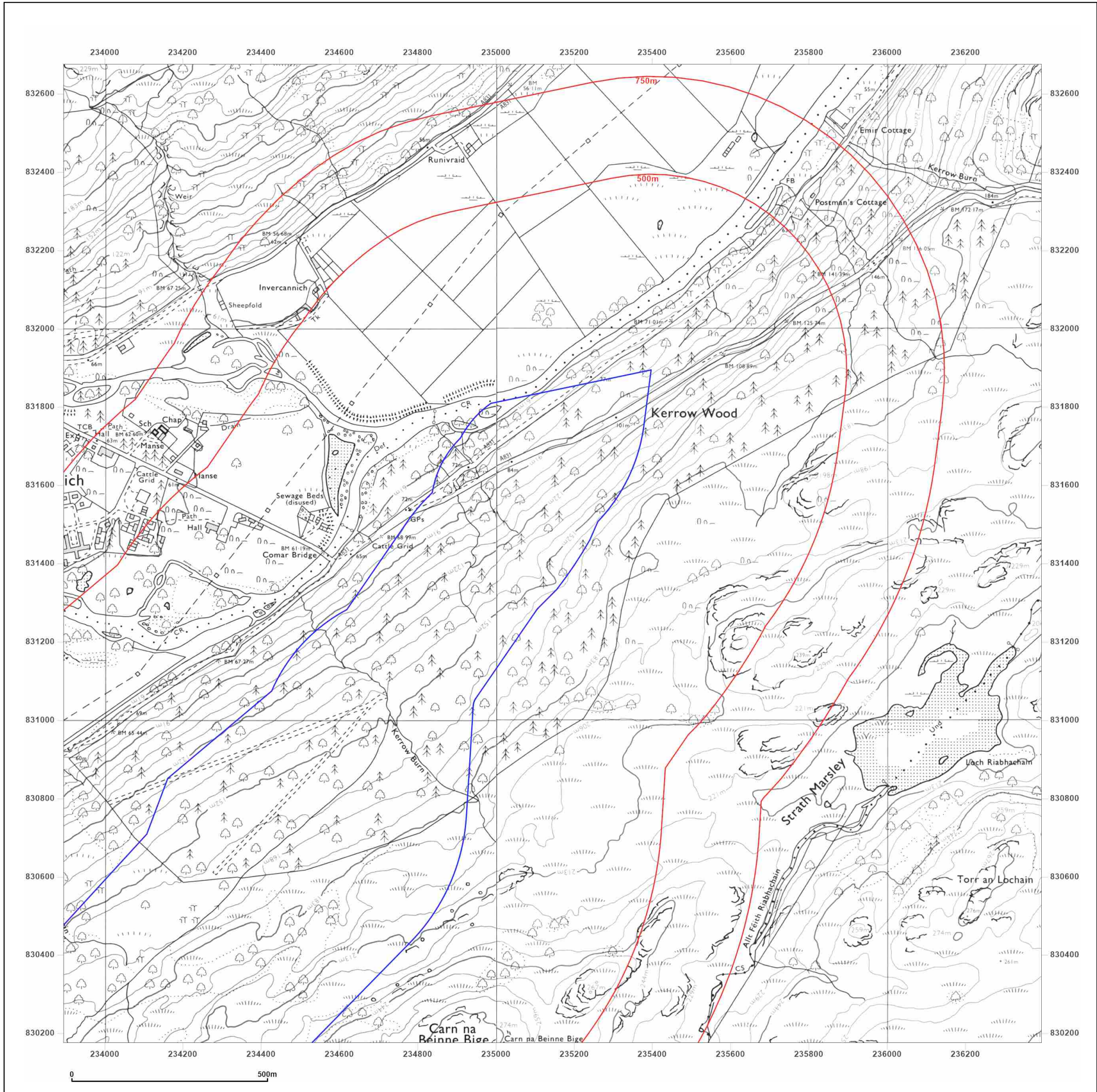
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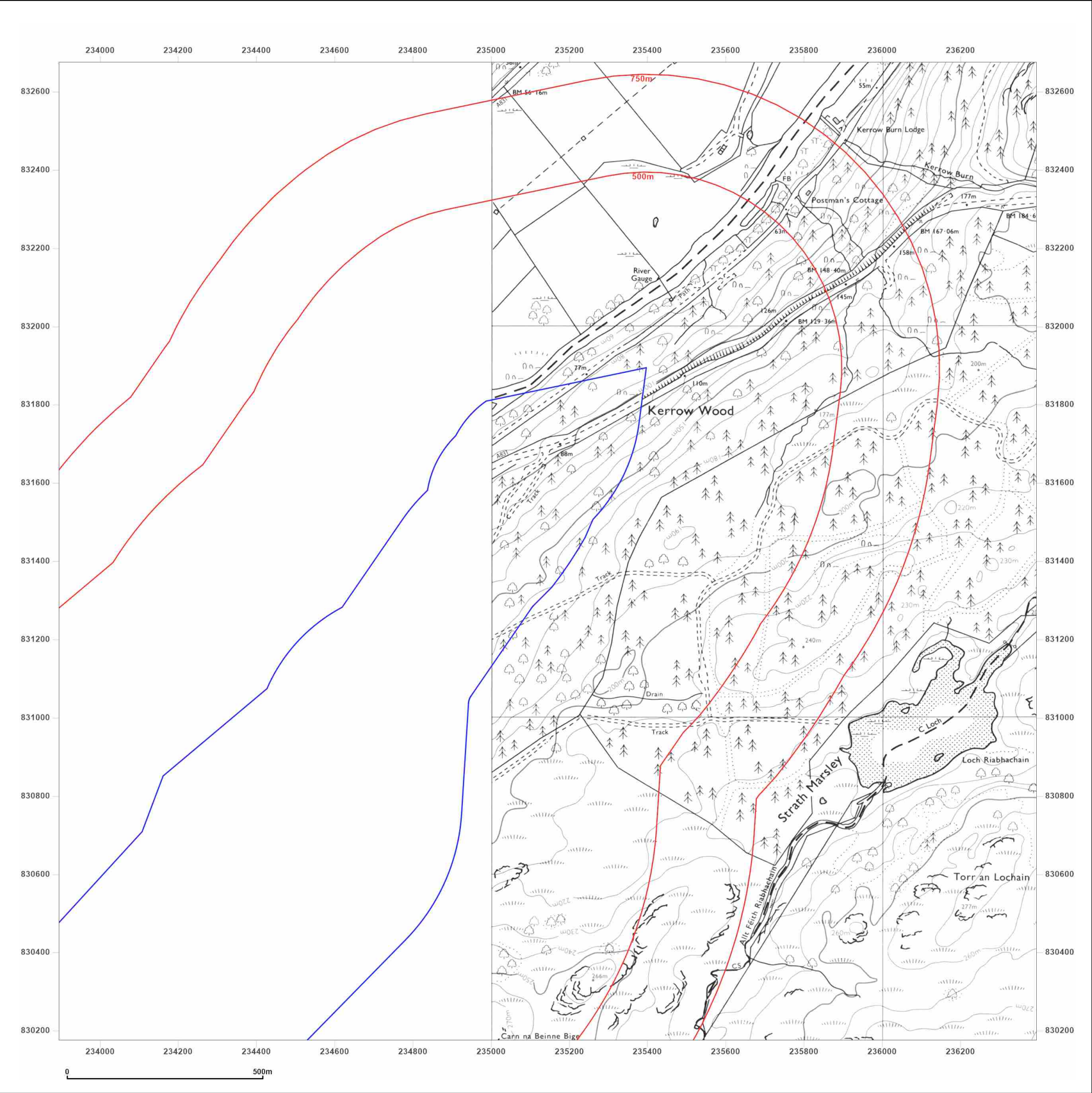


The map shows a rural landscape with contour lines indicating elevation. A red line boundary is drawn across the map, starting from the top left and curving towards the bottom right. A blue line boundary is also visible, starting from the bottom left and curving towards the top right. The map includes a grid with coordinates 234000 to 236200 and 830200 to 832600. A scale bar at the bottom left indicates 0 to 500m. A north arrow is located on the right side of the map.

Key features on the map include:

- Runivraid
- Invercannich
- Sheepfold
- TCB
- Sch
- Chap
- Manse
- Manse
- Sewage Beds (disused)
- Comar Bridge
- Kerrow Wood
- Kerrow Burn
- Strath Marsley
- Loch Riabhachain
- Torr an Lochain
- Carn na Beinne Bige





**Site Details:**

Scotland, Red Line Boundary

**Client Ref:** Scotland, Red Line Boundary  
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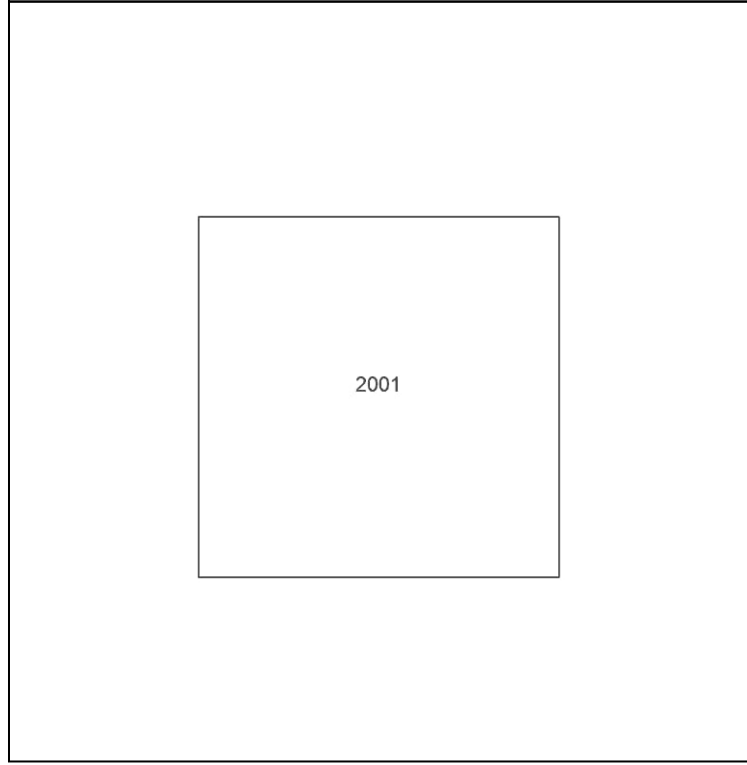
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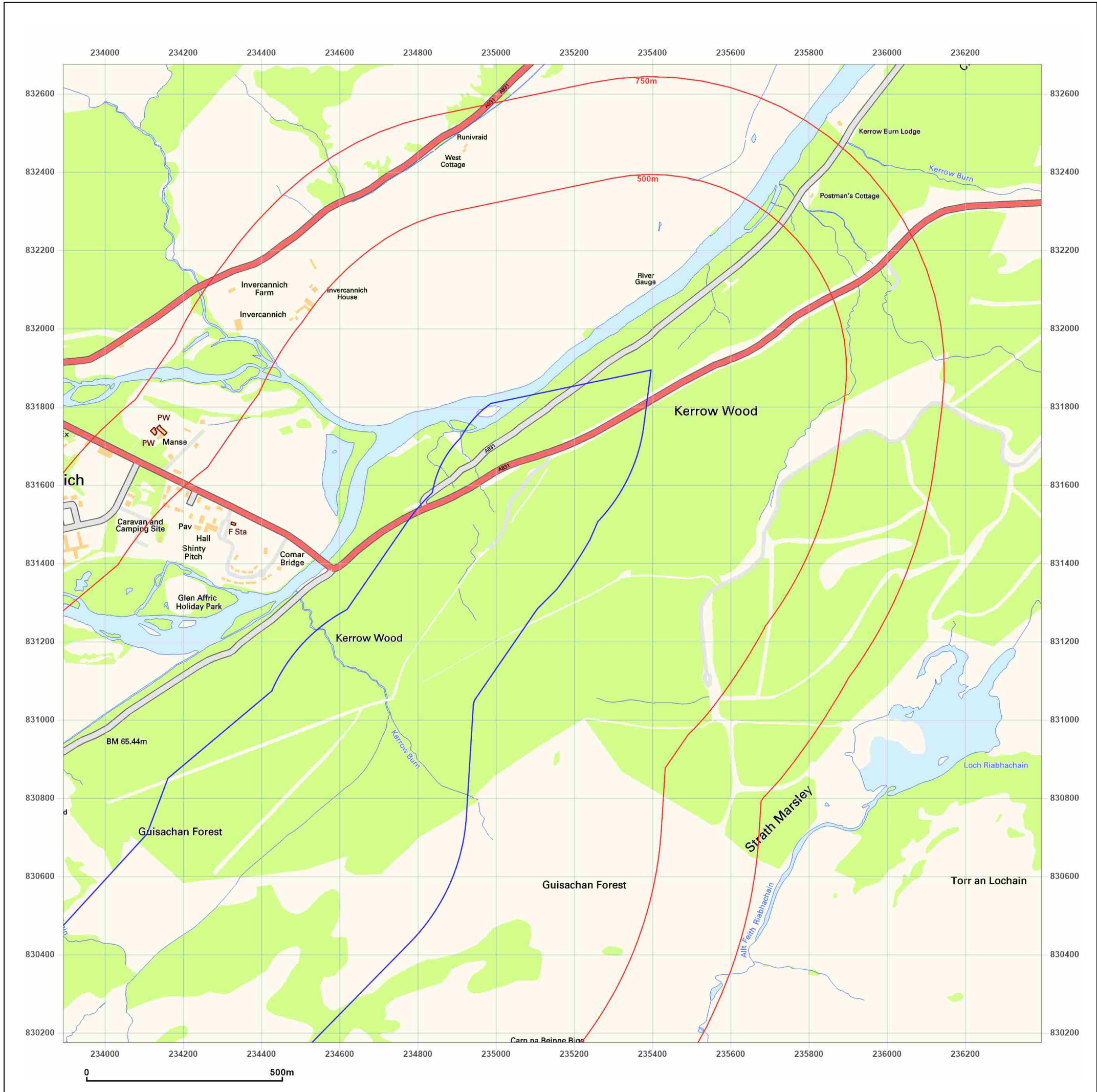
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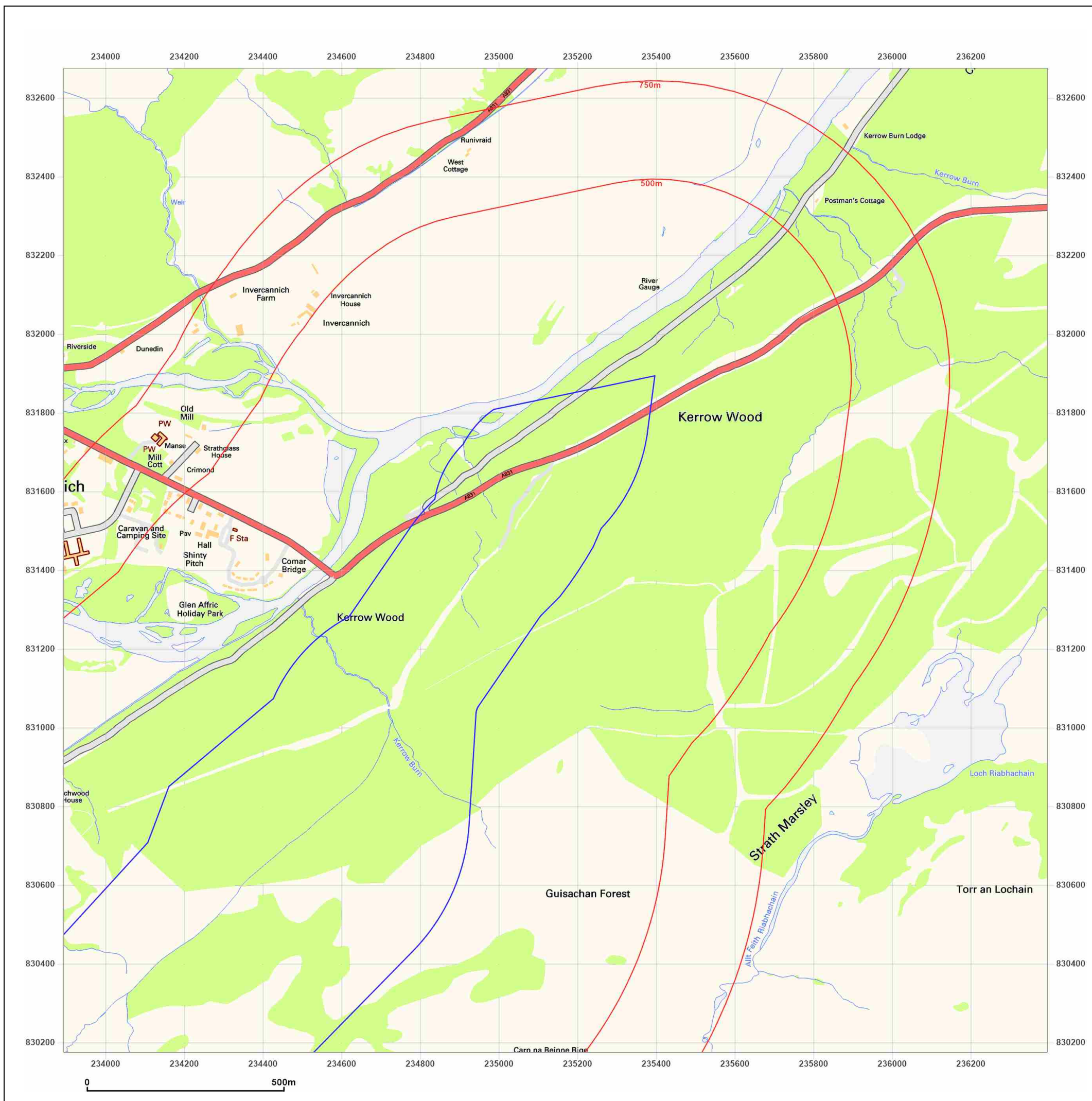


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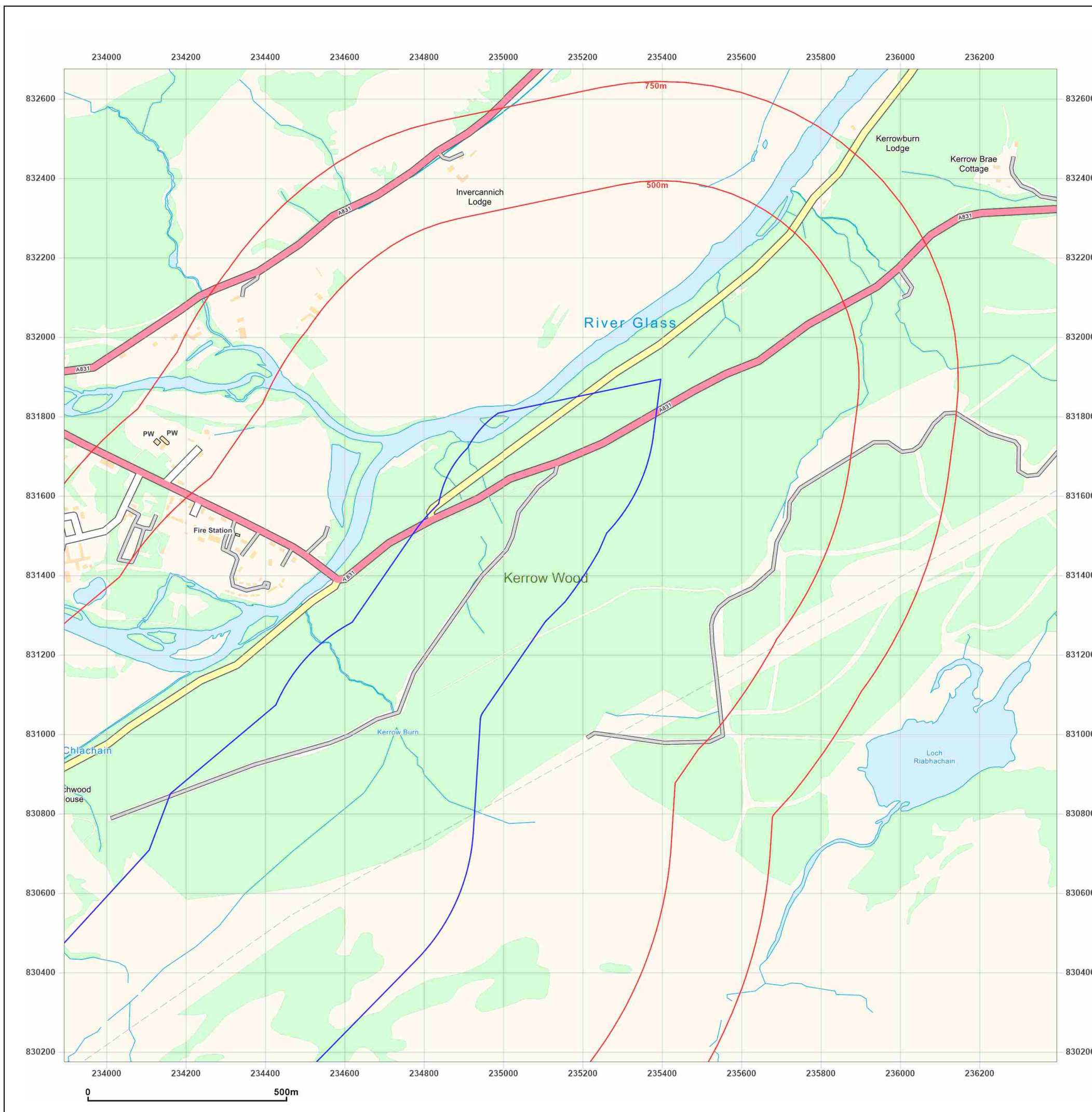


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# Appendix D SSEN Transmission Desk Study



## ASTI Substation Site – LT521 Fasnakyle Ground Investigation Report

Document no: B2468300-JAC-ZZ-XX-RP-GE-0001

Version: 00

Scottish & Southern Electricity Networks Transmission  
LT521

ASTI Substation Site – LT521 Fasnakyle  
22 April 2024





ASTI Substation Site – LT521 Fasnakyle  
Ground Investigation Report

**Client name:** Scottish & Southern Electricity Networks Transmission  
**Project name:** ASTI Substation Site – LT521 Fasnakyle  
**Client reference:** LT521 **Project no:** B2468300  
**Document no:** B2468300-JAC-ZZ-XX-RP-GE-0001 **Project manager:** Matthew Boyle  
**Version:** 00 **Prepared by:** James Wilkes  
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Jacobs U.K. Limited

95 Bothwell Street  
Glasgow, Scotland G2 7HX  
United Kingdom

T +44 (0)141 243 8000  
F +44 (0)141 226 3109  
www.jacobs.com

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## Appendices

Appendix A. Drawings

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Appendix C. Geotechnical Risk Register

Appendix D. Pre Desk Study UXO Assessment



## 1. Introduction

### 1.1 Scheme Background

Scottish & Southern Electricity Networks Transmission (SSEN) propose to construct a new 400kV substation at a site approximately 3.0km south of Tomich in the Scottish Highlands. The proposed substation is referred to as Fasnakyle substation for the purpose of this report but is also known as Bingally substation.

The proposed substation is required to allow the upgrade of the existing Beauly to Denny overhead line to accommodate a second 400kV circuit and support the wider connection of offshore renewables and the transition to a low carbon energy network.

The scope of the works associated with the proposed substation is listed below:

- Construction of a new approximately 380m x 295m earthworks platform to accommodate the new 400kV substation and associated access roads and equipment;
- Installation of two new super grid transformers;
- A new substation control building;
- Construction of a new access road to the site and associated earthworks;
- Connection to the existing Beauly to Denny 400 kV overhead line;
- Connection of the new and current substations via approx. 8km of 132kV underground cables.

SSEN designed a ground investigation (GI) to assess the ground conditions and geotechnical risks associated with the development and provide information for detailed design. A preferred site had not been identified when the GI scope was developed, so an extended site was investigated as part of the works. The proposed cable route and new access road were not investigated as part of the ground investigation. A separate ground investigation may be required for these works at a later stage.

Jacobs UK Ltd (Jacobs) were appointed in October 2023 as Investigation Supervisor for the ground investigation, tasked with providing technical supervision of the GI site works, checking the GI factual report and preparing a Ground Investigation Report summarising the ground conditions for the scheme.

The ground investigation was undertaken by Igne, formerly known as Raeburn Drilling and Geotechnical Ltd, with the findings summarised in their factual report for the works.

### 1.2 Scope and Objective of the Report

This Ground Investigation Report (GIR) has been produced in accordance with the requirements of section 6 (Ground Investigation Report) of Eurocode 7: Geotechnical Design – Part 2 (BS EN 1997-2:2007) [1]. In addition, the requirements of CD 622 [2] and SH 4/89 [3] have been taken into consideration where applicable.

The purpose of the GIR is as follows:

- To provide a general account of the ground conditions in the study area;
- Summarise the publicly available geotechnical and geo-environmental information available for the project, including information provided by SSEN;
- To present and summarise the in situ and laboratory test data, and comment on their potential impact on the construction of the substation;



- To present a ground model for the study area;
- To present a preliminary geo-environmental assessment;
- To identify constraints within the study area from a geotechnical and geo-environmental perspective; and
- Summarise the various ground risks by means of a geotechnical risk register.

### 1.3 Site Description

The site for the proposed substation is located south west of Inverness, approximately 3.0km south of Tomich in the Scottish Highlands. The site is approximately 14km west of Invermoriston and centred at approximate National Grid Reference (NGR) NH 30494 24406.

At the time of the GI two separate locations were being considered for the substation within the Fasnakyle site, referred to as 'Site D' and 'Site D Alternative'. In this report both 'Site D' and 'Site D Alternative' are considered as 'the site' and the information presented as site wide and is not subdivided into the two subsections. The site location and potential substation locations are shown in Figure 1-1 and Figure 1-2

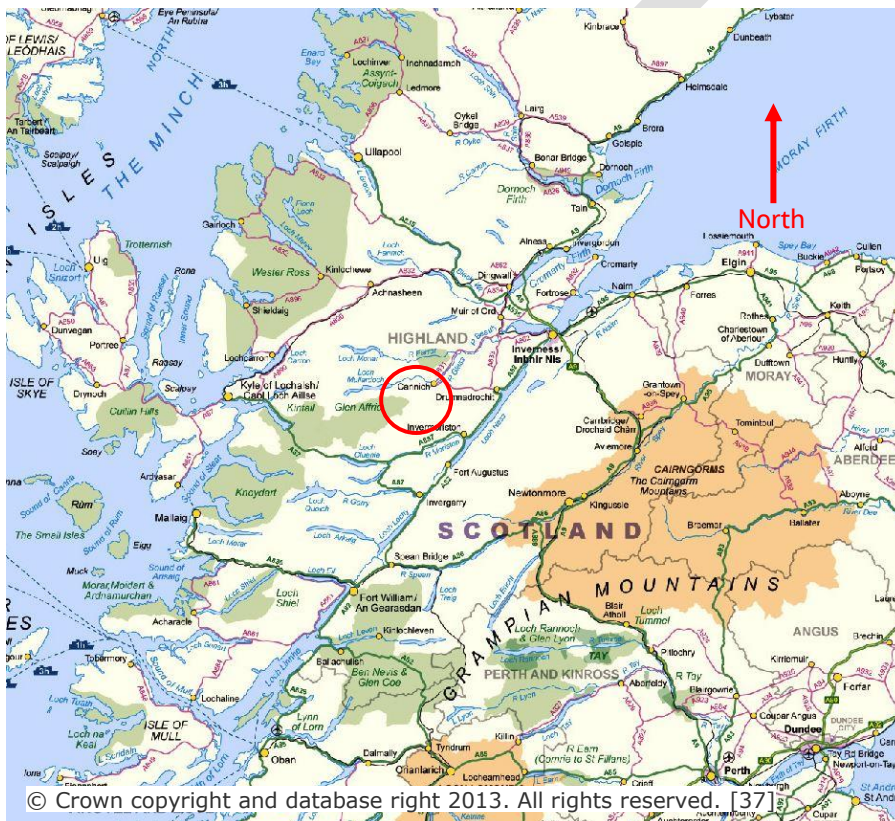
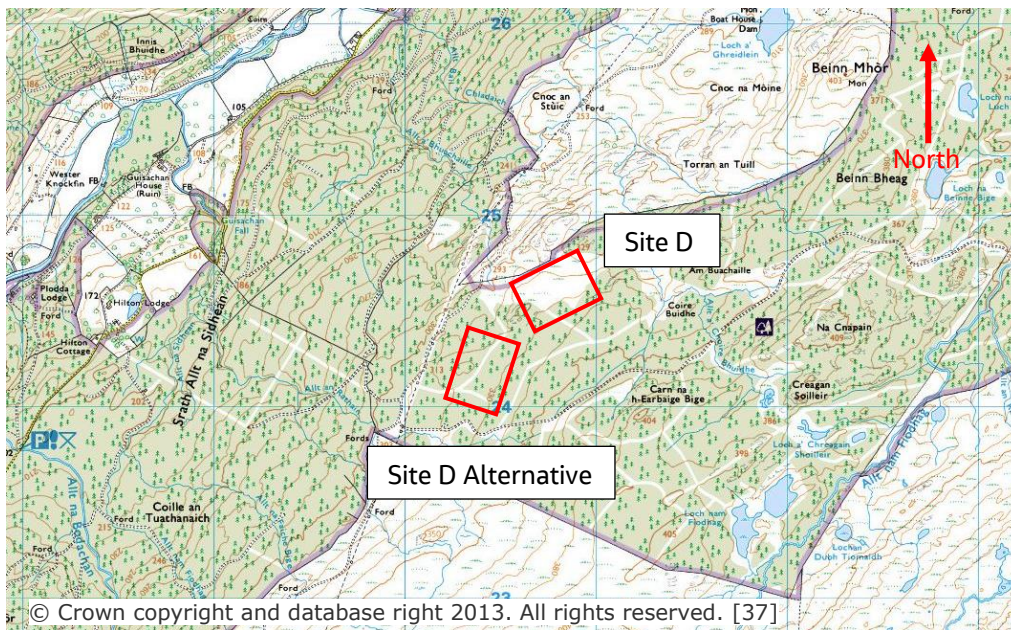


Figure 1-1 - Fasnakyle Substation - Site Location





**Figure 1-2 - Fasnakyle Substation – Potential Substation Locations**

Both potential substation locations are located predominantly on felled commercial forest land; however, moorland and occasional craggy rock outcrops are present to the north affecting the Site D location. The site is bounded by the felled commercial forest to the north, south and east. To the west, the site is bounded by the existing Beaulieu to Denny overhead line.

The site generally rises from the west to the east towards Beinn Mhòr, which peaks at 403m AOD approximately 1.7km east of the site. Site D rises approximately 32m to a maximum level of approximately 339.0m AOD, and Site D Alternative rises approximately 25m to a maximum level of 340m AOD.

There are several drainage ditches recorded across the site, mostly along former firebreaks and brash tracks between sections of tree plantations. The drainage ditches on site generally flow from east to west given the general topography change in this direction.

## 1.4 Geotechnical Category

BS EN 1997-1 [4] defines three different Geotechnical Categories for structures:

- Category 1 – small and relatively simple structures.
- Category 2 – conventional types of structures and foundations with no exceptional risk or difficult soil or loading conditions.
- Category 3 – structures or parts of structures, which fall outside the limits of geotechnical categories 1 and 2.

Based on the proposed development, Geotechnical Category 2 is recommended for the proposed scheme.

## 1.5 Report Format

The format of this report broadly follows the suggested format of a Ground Investigation Report in Appendix F of CD 622 “Managing Geotechnical Risk” [2]. This is the standard applied for highways projects, nevertheless has relevance to this scheme which includes similar elements of highways schemes such as earthworks.



The Geotechnical Risk Register presented in Appendix C of this report uses the Project Risk Register format provided by SSEN.

## **1.6 Limitations**

The findings contained within this report are based on the information obtained from a variety of sources and third parties (including the GI contractor) as detailed in the report, which are considered reliable. Nevertheless, the authenticity and reliability of the information cannot be fully guaranteed. Furthermore, it is possible that the research carried out, whilst fully appropriate to meet the requirements of the brief, may not indicate the full extent of the ground conditions across the site, and the existence of other information sources. Assuming such sources exist, their information could not have been used in the formulation of the findings presented in this report.

The information contained within this report is based on factual information available at the time of writing. The following limitations and exceptions relating to this report should also be observed:

- (i) No Preliminary Sources Study Report (PSSR) is available for the site. All sources have been identified at the time of writing with no reference to any previous reports.
- (ii) This report is based on information contained within the version of the Final Factual Report and AGS data file received on 21st March 2024. The Final Factual Report and AGS file require a small number of corrections to the report prior to its finalisation, which are outstanding at the time of writing.
- (iii) Discussions of soil properties is based on the available GI information at the time of writing. However, as with any GI, unforeseen ground conditions that were not recorded within the available exploratory hole information cannot be ruled out.
- (iv) Factual information only is presented in the summarising tables and graphical form to assist with the selection of design values of parameters. Design values of soil and rock parameters shall be determined by the Scheme Designer and be appropriate to the design approach and proposed solution.



## 2. Existing Information

Reference has been made to the existing desk study information contained within the following in preparation of this report:

- LT521 Pre-construction Information Report [5]
- LT521 Ground Investigation Technical Specification Report [6]

### 2.1 Walkover Survey

A site walkover was undertaken by Jacobs personnel across several days in November 2023 at the start of the ground investigation field works.

The main objective of the site walkover was to check potential access routes for GI and check proposed GI locations. As part of the walkover survey, relevant geotechnical observations were made for future use in the Ground Investigation Report.

The following observations were made during the walkover survey:

- Evidence of recent tree felling was observed across the majority of the site, extending from the southern site boundary to approximately halfway up Site D. The tree felling has left an irregular ground surface with many tree stumps and logs at the surface.
- The northern half of Site D consists of open moorland, bound by a deer fence to the northwest. Frequent rock outcrops were observed across this area of the site.
- Localised standing water and very soft ground was frequently observed across the site suggesting the majority of the site may be underlain by peat deposits.
- Two rock outcrops were observed in the west of Site D Alternative and the western boundary of Site D on areas of local high ground suggesting shallow bedrock is likely to be present in these areas.
- A small watercourse was observed at the northern end of Site D Alternative, running approximately southeast to northwest.
- Several drainage ditches were identified, mostly along former firebreaks and brash tracks between sections of tree plantations. The drainage ditches on site generally flow from east to west given the general elevation change in this direction.
- The existing Beaulieu to Denny 400kV overhead line was observed to the west of the site, running approximately north to south and bounding the southern half of the site to the west.

### 2.2 Historical Development of the Area

A review of the site history was carried out using historical maps available from the National Library of Scotland [7]. The review was carried out using historic Ordnance Survey maps dating from 1752 to 1961, alongside British Geological Survey (BGS) from 1993 and 2012 [8]. A review of aerial imagery was also carried out using available imagery from Google Maps [9] dating from 1985 to 2020.

No historic buildings were noted within the boundaries of the site and there is no indication that the area has been used for anything other than forestry in the past. Aerial imagery suggest that the commercial forest was planted prior to 1989 and was deforested in 2016.

The Beaulieu to Denny overhead line first appears on the Ordnance Survey map series 1949-1973 and has remained in the same location to the present day, including when it was upgraded to the current 400kV /



275kV circuits in 2015. The access tracks are also first shown on the Ordnance Survey map series 1949-1973 and were likely constructed at the same time as the Beauly to Denny overhead line.

## 2.3 Geology

The anticipated geological conditions at the site have been derived from the following sources:

- BGS Geo-index online database – onshore map [10]
- Geological Survey of Scotland, 1:50,000 geological map series 73W, Invermoriston, Solid, 1993 [11]
- Geological Survey of Scotland, 1:50,000 geological map series 73W, Invermoriston, Superficial, 2012 [12]

### 2.3.1 Made Ground

The geological maps do not show the presence of Made Ground underlying the site; however, localised Made Ground associated with the construction of the existing roads and stone tracks may exist at the site. Furthermore, Made Ground associated with the construction of the Beauly to Denny overhead line may be present in the form of temporary earthwork platforms, temporary drainage and access tracks and forestry land use.

### 2.3.2 Superficial Geology

The superficial geology is indicated by the BGS GeoIndex Map [10] to primarily consist of Glacial Till; however, a large area of “no information” is shown towards the northern end of the site suggesting that bedrock is at or near the surface within this area. In addition, large areas of Peat are shown sporadically throughout the site.

The Glacial Till is described on the BGS GeoIndex Map [10] as unsorted and unstratified drift, generally overconsolidated, deposited directly by and underneath a glacier without subsequent reworking by water from the glacier. Furthermore, it consists of a heterogeneous mixture of clay, sand, gravel and boulders varying in size and shape.

The Peat is described on the BGS GeoIndex Map [10] as a partially decomposed mass of semi-carbonised vegetation which has grown under waterlogged, anaerobic conditions, usually in bogs or swamps.

### 2.3.3 Solid Geology

The solid geology is indicated by the BGS GeoIndex Map [10] to consist of metasedimentary rock of the Tarvie Psammite Formation, which is part of the Loch Eil Group. The nearest fault is located over 1km to the west of the site and is noted to outcrop in the valley floor.

The Tarvie Psammite Formation is described to be at least 2.5km thick, up to about 5.0km, and is described as predominantly psammite, thin-bedded, siliceous to micaceous and generally fine grained. Local, thin semipelite beds are muscovite-rich and locally migmatitic. Large quartzite lenses are also noted to occur, particularly near the base.

## 2.4 Historical Ground Investigation

According to the BGS GeoIndex [10], there are no historical boreholes within the site, but there are nine historical boreholes within 500m of the site, all associated with the design and construction of the upgrade to the Beauly to Denny overhead line. The historical boreholes within 500m of the site are listed below in Table 2-1.



**Table 2-1 - Summary of historic boreholes**

Borehole	Description	Depth (m)
NH32SW1	Made Ground	0.40m
	Sand and Gravel	1.10m
	Weathered Psammite / Broken Rock *	2.50m
	Psammite	14.40m
NH22SE1	Peat	0.80m
	Sand	1.50m
	Sand and Gravel *	2.00m
	Sand *	4.00m
	Psammite	16.00m
NH22SE2	Peat	0.70m
	Sand and Gravel*	2.00m
	Sand*	2.90m
	Weathered Psammite*	6.00m
NH22SE3	Peat	0.60m
	Sand and Gravel*	1.70m
	Sand*	3.60m
	Weathered Psammite*	6.00m
NH22SE4	Peat	0.70m
	Sand and Gravel*	2.00m
	Sand*	3.90m
	Psammite*	6.00m
NH32NW54	Peat	1.10m
	Sand and Gravel*	1.70m
	Psammite	13.70m
NH32NW55	Peat	1.00m
	Sand and Gravel*	2.80m
	Psammite*	6.00m
NH32NW56	Peat	1.00m
	Sand and Gravel*	1.80m
	Psammite*	6.00m
NH32NW57	Peat	1.00m
	Sand and Gravel*	1.30m
	Psammite	13.30m
* Description based on drilling observations only.		

## 2.5 Hydrology

A watercourse was identified while on site that was not identified on any available information. The watercourse is located immediately adjacent to the northern boundary of Site D Alternative and runs southeast to northwest. Several drainage ditches were observed to run along former fire breaks or brash tracks. The drainage ditches generally flow east to west.

No watercourses are classified within 500m of the site on SEPA's Water Classification Hub [13].

Loch Beinn a' Mheadhoin, Loch an Eang, Loch nan Eun, and Loch ma Stac are located 5.5km, 4.8km and 3.2km respectively. All three are all recorded as being in good condition [13].

A review of the Scottish Environmental Protection Agency (SEPA) Flood Map [14] indicates there is no risk of fluvial flooding within 1km of the site. There is medium to high risk of surface flooding in localised areas across the site.



## **2.6 Hydrogeology**

The 1:625,000 Hydrogeology Mapping included in the BGS GeolIndex [10] indicates that the area is underlain by impermeable Precambrian rocks, generally without groundwater except at shallow depth. The geology is therefore considered a low productivity aquifer with small amounts of groundwater in near surface weathered zone and secondary fractures.

The SEPA Water Classification Hub [13] records the site to be within the Northern Highlands groundwater body (ID: 150701) which has an overall status of “good”.

## **2.7 Mining & Quarrying**

The Coal Authority interactive map viewer [15] indicates the site to lie outside the Coal Authority consultation area and not to be located within a coalfield area.

A historic quarry is located in Tomich, recorded as Guisachan Quarry, and is currently marked as inactive. The quarry is first shown on the 1968 OS map [7] in its present day location.

## **2.8 Unexploded Ordnance**

A pre-desk study unexploded ordnance (UXO) threat assessment was undertaken by Zetica and is included in Appendix D [16], at the request of SSEN, in advanced of the ground investigation works at the site. The pre-desk study assessment report concluded that there is an unlikely potential to encounter UXO. Accordingly, a detailed desk study was not deemed necessary for the site.

## **2.9 Utilities**

Utility information was obtained by SSEN as part of the pre-construction information package issued in advance of the ground investigation works.

The Beaulay to Denny high voltage power line (400kV and 275kV) is shown on the utility plans provided at the western edge of the site, as observed on site. No other overhead or underground utilities are shown within 100m of the site.

## **2.10 Statutory Designations**

Scotland's Historic Environment Pastmap website [8] records no historic buildings or protected sites within the site boundary, though Tomich Village on the access road to the site is marked as a conservation area.

## **2.11 Land Contamination**

There is the potential for discrete areas of Made Ground to be encountered during development works associated with the existing power line access tracks/infrastructure and forestry land use. No additional potential sources of contamination have been identified.

The UK Health Security Agency records [17] indicate there is a maximum radon potential of 1-3% in the vicinity of the site. However, the site is less than 100 metres from a region where radon potential is over 30%.

NatureScot SiteLink indicates that the site is not located within 1km of an SSSI, SAC, SPA or any other area of interest [18].

An assessment of potential contamination is provided in Section 6.



## 3. Field and Laboratory Studies

### 3.1 Ground Investigations

A Ground Investigation (GI) was undertaken for the LT521 Fasnakyle project between 06 November 2023 and 15 January 2024. The GI was undertaken by Igne (formerly Raeburn Drilling Geotechnical Ltd) on behalf of SSEN with Jacobs undertaking the role of Investigation Supervisor. The findings of the investigation are contained in the following report:

- Proposed LT521 Fasnakyle 400 kV Substation, Report on Ground Investigation, Igne, XXXX 2024.

#### 3.1.1 Aim of Ground Investigation

The aim of the ground investigation was to provide information on the ground and groundwater conditions at the site to establish a ground model for design, to assist in identifying a preferred location for the proposed substation and to investigate and quantify the geotechnical and geo-environmental conditions at the site. A further aim of the investigation was to enable soil classification and derivation of geotechnical and geochemical parameters of the encountered materials for the design of the earthworks and structures associated with the proposed new substation.

#### 3.1.2 Design of Ground Investigation

The design of the GI was undertaken by SSEN. In Jacobs' capacity as Investigation Supervisor, where additional geotechnical constraints were identified during the investigation, changes to the design scope were made following discussion with SSEN. Further details on the scope changes are provided in Section 3.2.1.

### 3.2 Description of Fieldwork

The scope of works for this ground investigation, including the amendments to the scope discussed in Section 3.2.1, was as follows:

- 25 No. dynamic sample boreholes with in situ testing and rotary core follow-on in bedrock to a maximum depth of 15m below ground level (bgl).
- 38 No. machine excavated trial pits.
- Peat probing on a 10m x 10m grid across the site.
- 6 No. in situ thermal resistivity tests.
- 1 No. Soakaway tests.
- 13 No. Gas and groundwater monitoring installations.
- Geotechnical, chemical, and geo-environmental laboratory testing.

The locations of the exploratory holes are shown on the Site Plan provided in Igne's factual report for the works [19], and on the plans provided in Appendix A.

#### 3.2.1 Development of Ground Investigation

During the GI, the scope of the works was amended to investigate additional geotechnical constraints identified on the site and to remove locations deemed no longer required. The following changes were made to the original scope:



- Several locations were moved within the southern end of the site to provide greater coverage within the site boundary. In addition, additional boreholes (BH27 and BH28) and trial pits (TP31 to TP37) were added to the scope to compensate for the increased spacing between exploratory positions and provide further information in the southeast of the site.
- Additional boreholes were carried out at BH24A and BH26A due to BH24 and BH26 not collecting samples within the superficial deposits.
- BH01, BH05, BH06, BH07 and BH10 were removed from the ground investigation scope as the southern site (Site D Alternative) was identified as the preferred location for the substation during the works, and therefore, these positions were no longer required.
- 6 No. boreholes were drilled with a smaller diameter core barrel (BH02, BH03, BH11, BH12, BH14, BH17) to increase the Contractor's productivity and reduce the overall site works programme.
- An additional trial pit (TP36A) was carried out to locate bedrock at TP36 as the trial pit terminated at shallow depth after encountering buried logs and could not be advanced.
- 15 No. thermal resistivity tests were scheduled, however due to shallow bedrock and unsuitable material, only 6 no. were completed (at TP10, TP15, TP26, TP28, TP30 and TP37).
- 6 No. soakaway tests were scheduled, however due to shallow bedrock and unsuitable superficial deposits, only 1 No. was completed (at TP28).

### **3.2.2 In Situ Testing and Sampling**

The following in situ testing was undertaken during the ground investigation works to determine the geotechnical and chemical properties of the materials encountered on site.

- 26 No. Standard Penetration Tests (SPTs) were carried out within the boreholes using a split barrel sampler to obtain an indication of the relative density of the granular soils. Tests were undertaken from the base of the hand dug inspection pit to bedrock.
- 6 No. in situ thermal resistivity tests were carried out within selected trial pits to determine the thermal resistivity of the in situ soils for the design of buried cables.
- 1 No. soakaway test was undertaken within TP28 to obtain an indication of the soil infiltration rate for use in the design of Sustainable Urban Drainage System (SUDS) features.
- Recovery of disturbed samples from all exploratory holes and hand pits for geotechnical, geochemical and geo-environmental laboratory testing.

### **3.3 Laboratory Testing**

The laboratory testing was carried out by Terra Tek Ltd. who hold UKAS Accreditation for the scheduled tests. A list of the geotechnical, geochemical and geo-environmental tests schedules is provided below in Table 3-1 and Table 3-2.



**Table 3-1 - Summary of Geotechnical Tests**

Geotechnical Tests – Soil	Geotechnical Tests – Rock
Moisture Content	Los Angeles Abrasion value
Liquid and Plastic Limit	Slake Durability
Particle Size Distribution Tests	Magnesium Soundness
Moisture Content Tests	Aggregate Crushing Value
California Bearing Ratio	Point Loads
One-dimensional Consolidation Tests	Unconfined Uniaxial Compressive Strength
Compaction Testing	Micro Deval
Thermal Resistivity	Resistance to fragmentation
Organic Matter	Water absorption
BRE Suite B	BRE Suite B
PH Value	Flakiness Index
Sulphate Content (2:1)	

**Table 3-2 - Summary of Geo-Environmental Tests**

Geo-Environmental Tests
Metals (Arsenic, Boron, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Zinc)
Inorganic Suite
TPHCWG/VPHCWG
TPHCWG Aliphatic/Aromatic Split
Polyaromatic Hydrocarbons (PAH) (USEPA 16)
VOCs/VOCs(BTEX)
Asbestos



## 4. Ground Summary

Soil and rock units have been classified using the available geological maps and information gathered during the ground investigation including soil and rock descriptions, in situ and laboratory testing across the entire site (both Site D and Site D Alternative). The soil and rock classifications and geology codes assigned are given in Table 4-1 in stratigraphic order. A geology code has been assigned to all descriptions made during the ground investigation.

**Table 4-1 - Site Geology Codes**

Stratum	Reference Code 1	Reference Code 2	Geological Classification
Topsoil	TPS	TPS	Topsoil
Peat	PT	PEAT	Peat
Glacial Deposits	GD	GD-G	Granular Glacial Deposits
Weathered Bedrock	WR	WR-WR	Weathered Bedrock
Bedrock	BR	BR-IGN	Igneous Intrusion
		BR-MSED	Metasedimentary

### 4.1 Ground Model

A 3D ground model has been produced using the computer software, Leapfrog Works. A topographic survey provided by SSEN was incorporated into the model and the AGS file was used to build the ground model in Leapfrog. Geology Reference Code 1 was used to create the ground model to show the bedrock; glacial and peat deposits across the site, bedrock types have not been differentiated. Cross Sections A-A', B-B', C-C' and D-D' indicating the general stratigraphy across the site are provided in Appendix A, with a layout plan indicating their location.

The following assumptions have been made in developing the Leapfrog model and cross sections:

- The peat probe locations were not surveyed; therefore, their coordinates were plotted onto the topographic survey to determine the ground level at each probe location.
- Topsoil was encountered in TP16 and TP27 only and has therefore been excluded from the model.
- Weathered bedrock was encountered in localised areas throughout the site. Due to the method of triangulation used by the software, the thickness of weathered bedrock was overestimated by the software. As a result, the weathered bedrock has not been included in the cross sections in Appendix A.
- Bedrock has been assumed at the base of the trial pits where the pit terminated on 'possible bedrock'.
- The sections have been cut through the southern area of the site; with the understanding that the substation is likely to be located at 'Site D Alternative' (see Figure 2).

### 4.2 Stratigraphy

The general ground conditions at the site comprises Peat overlying Granular Glacial Deposits and bedrock, predominately comprising psammite of the Tarvie Psammite Formation with occasional igneous intrusions. Locally the Peat was found to be directly overlying bedrock.



Bedrock was encountered at shallow depths across the site, typically less than 3m below existing ground level. Locally bedrock was recorded at or near the surface, with an occasional thin layer of weathered bedrock also recorded.

### **4.3 Topsoil (TPS-TPS)**

Topsoil was encountered in exploratory holes TP16 and TP27 only, recorded to a maximum depth of 0.30m below existing ground level. The Topsoil was described as brown gravelly sandy silty TOPSOIL and dark brown sandy locally spongy fibrous peaty TOPSOIL within TP16 and TP27 respectively.

No in situ testing was carried out within the Topsoil and no laboratory testing was undertaken on samples of the Topsoil obtained from the above trial pits.

### **4.4 Peat (PT-PT)**

Peat was encountered across the site within 13 No. boreholes and in all trial pits, except for TP16 and TP27 where Topsoil was encountered above the Granular Glacial Deposits. Suspected Peat was also encountered within the 5,991 No. peat probes undertaken across the site.

Peat was encountered from ground level to a maximum depth of 3.50m (BH28) within the boreholes and trial pits. The Peat was typically described as dark brown slightly sandy plastic amorphous locally spongey fibrous PEAT.

The Von Post codes used to describe the Peat within the site ranges from H2 to H8, where H2 indicates that the material is almost entirely undecomposed and the plant matter remains are still easily identifiable. H8 indicates the Peat is very highly decomposed and contains a large quantity of amorphous material and very indistinct plant structure.

The data from the peat probes has been used to prepare contour plots and peat thickness heat maps for the site. These contour plots and heat maps are provided within Appendix A.

The peat probes carried out across the site suggest the Peat is typically less than 2m in thickness; however, local areas of deeper Peat exist across the site. A significant area of deep Peat was recorded at the northern end of the site, with a maximum depth of 7.82m recorded in PP5078.

### **4.5 Granular Glacial Deposits (GD-G)**

Granular Glacial Deposits was encountered across most of the site within 19 No. boreholes and 32 No. trial pits. The Granular Glacial Deposits was typically encountered beneath the Peat or Topsoil, ranging in thickness from 0.10m (TP22) to 2.70m (BH18), and was recorded to a maximum depth of 5.00m (BH28).

The deposits are typically described as medium dense to very dense brown or grey silty fine to coarse SAND and fine to coarse angular to subangular GRAVEL of psammite and granite with low to medium cobble and boulder content. Cobbles and boulders are generally angular to subangular of psammite and granite. Local areas of high cobble and boulder content are also recorded on the logs.

### **4.6 Weathered Bedrock**

Weathered bedrock was recorded within 11 No. boreholes and 13 No. trial pits across the site. The weathered bedrock was not extensively recorded and was found in localised areas beneath the Granular Glacial Deposits.

The weathered bedrock is generally described as an "obstruction (possible rock)" on the trial pit logs and is typically 0.10m in thickness. It is believed this 0.10m thick layer shown at the base of the 13 No. trial pits has been artificially included to show bedrock at the base of the trial pit log, and it is unlikely the trial pits encountered a consistent 0.10m thick weathered bedrock layer across the site.



The majority of the weathered bedrock recorded on the borehole logs is based on the driller's description as the boreholes were commonly advanced by rotary percussive methods and therefore it was not possible to obtain samples for logging. It is likely that several of these occurrences have been incorrectly logged and the borehole was actually advanced through very dense Granular Glacial Deposits or fractured bedrock.

Samples of suspected weathered bedrock were obtained from 3 No. boreholes and was typically described as light brown granite or psammite recovered as gravelly SAND or sandy GRAVEL.

In the boreholes, the weathered bedrock was generally recorded beneath the Peat or Granular Glacial Deposits at depths between 0.40m and 3.10m below ground level, with thicknesses between 0.20m (BH12) and 2.70m (BH09).

A localised area of deeper weathered bedrock was encountered in the southeast of the site, where the weathered bedrock was recovered as sand or gravel if the borehole was advanced by rotary percussive methods, or as non-intact core if recovered by rotary core follow-on. The weathered bedrock was recorded to depths of 4.40m bgl in BH22 and 7.60m bgl in BH25. Where the weathered bedrock was cored, it was described as weak locally medium strong pinkish grey psammite, distinctly weathered evident as a reduction in strength, recovered as non intact.

## **4.7 Bedrock**

Bedrock was encountered within all boreholes at the site at depths between ground level (BH19 and BH20) and 7.60m bgl (BH25). Within the trial pits probable bedrock was encountered at depths between 0.30m (TP09) and 3.00m bgl (TP28). Trial pits TP11, TP17, TP26 and TP36 terminated at depths of 1.50m, 2.50m, 2.00m and 1.40m bgl respectively without encountering bedrock.

The bedrock at the site was found to be primarily a metasedimentary rock with occasional igneous intrusions, details of which are provided in Sections 0 and 4.7.2.

### **4.7.1 Metasedimentary Bedrock**

Psammite was encountered in all boreholes across the site at depths between ground level (BH19 and BH20) and 13.10m bgl (BH25). The engineering description provided for the psammite was found to vary across the site, broadly falling into two groups typically described as:

- Medium strong to very strong grey PSAMMITE with occasional subhorizontal or subvertical quartz veins (up to 20mm). Moderately, locally slightly or highly weathered evident as localised orange brown staining on the fracture surfaces and rare clay, sand or gravel infilling on the fracture surfaces.
- Very weak to moderately weak grey and brown PSAMMITE with rare subvertical quartz veins (up to 10mm). Moderately, locally highly weathered evident as orange brown staining on fracture surfaces, localised reduction in strength on fracture surfaces, with occasional sand or gravel infilling on the fracture surfaces.

Typically, one to three fracture sets were recorded within the psammite bedrock with evidence of low and high angle bedding fractures throughout. These typically ranged from:

- Shallow dipping 10-30° closely locally medium spaced, planar and smooth, locally rough fractures.
- 60-90° medium locally closely spaced, planar and smooth, locally stepped and rough fractures.

A single occurrence of pelite was recorded in borehole BH26 at the southern end of the site between 3.00m and 8.60m bgl. The pelite is described as weak to strong, predominantly moderately weathered evident as orange brown staining on the fracture surfaces, local reduction in strength on the fracture surfaces and local gravel infill on the fracture surfaces. For the purpose of the ground model the pelite has been included with the psammite.



### 4.7.2 Igneous Bedrock

Granite was encountered in 13 No. boreholes across the site at depths between 1.10m (BH11) to 8.40m bgl (BH24) with thicknesses varying between 0.20m (BH15) and 5.00m bgl (BH02). The engineering description provided for the granite was found to vary across the site, broadly falling into two groups typically described as:

- Weak and moderately weak, locally medium strong, pinkish brown granite. Moderately locally highly weathered evident as orange brown staining on the fracture surfaces and a reduction in strength on the fracture surfaces.
- Medium strong to very strong pinkish brown or pinkish grey granite. Slightly to moderately weathered evident as orange brown staining on the fracture surfaces and localised reduction in strength on the fracture surfaces.

Typically, one to three fracture sets were recorded within the granite bedrock with evidence of low and high angle bedding fractures throughout. These typically ranged from:

- Shallow dipping 10-40° closely spaced, planar and smooth, locally rough fractures.
- 60-80° closely locally medium spaced, planar and smooth, locally stepped and rough fractures.

## 4.8 Groundwater Strikes

Groundwater strikes were observed in 16 No. boreholes and 24 No. trial pits at the site in the Peat and Granular Glacial Deposits between 0.10m (TP34) and 3.20m bgl (BH28). No groundwater observations were recorded during rock coring due to the use of water flush.

Within the trial pits the groundwater was described as a slow seepage, slow flow and steady flow, but some occurrences of a fast flow were also recorded.

The groundwater strikes were monitored for 20 minutes within 5 No. boreholes with rises between 0.00m (BH24A) and 0.95m (BH15) generally recorded; however, the groundwater in BH28 rose to the surface after being struck towards the base of the Peat at 3.20m bgl.



**Table 4-2 - Summary of groundwater strikes**

Exploratory Hole ID	Water Strike (mbgl)	Rise (mbgl)
BH12	1.80	N/A
BH13	1.10	N/A
BH14	1.30	0.80
BH15	1.30	0.35
BH16	1.40	1.00
BH17	3.20	N/A
BH18	2.60	N/A
BH21	1.20	N/A
BH22	0.50	N/A
BH23	0.50	N/A
BH24	0.65	N/A
BH24A	0.50	0.50
BH25	0.30	N/A
BH26A	0.30	N/A
BH27	1.95	N/A
BH28	3.20	0.00
TP01	1.00	N/A
TP05	0.70	N/A
TP06	0.30	N/A
TP10	0.30	N/A
TP11	1.50	N/A
TP15	1.20	N/A
TP17	2.50	N/A
TP20	0.50	N/A
TP21	0.40	N/A
TP22	0.30	N/A
TP23	0.40	N/A
TP24	0.20	N/A
TP25	0.40	N/A
TP26	0.20	N/A
TP28	2.90	N/A
TP29	1.90	N/A
TP30	0.20	N/A
TP31	0.40	N/A
TP33	0.50	N/A
TP34	0.10	N/A
TP35	0.50	N/A
TP36	1.40	N/A
TP36A	0.80	N/A
TP37	0.40	N/A



## 4.9 Groundwater Monitoring

Gas and groundwater monitoring instrumentation was installed in selected boreholes across the site to provide groundwater level and gas concentration data. Details of boreholes with gas and groundwater monitoring instrumentation, together with the monitoring results are provided in the Factual Report (E1) and reproduced in Figures GW-01 and GW-02 in Appendix B.

Gas and groundwater monitoring was undertaken in available boreholes during the site works and in the post site monitoring between January and March 2024. Further monitoring data is expected for April 2024. A summary of instrumentation and groundwater monitoring is provided in Table 4-3. Gas monitoring results are summarised in Section 6.

**Table 4-3 – Groundwater Monitoring Levels**

Exploratory Hole ID	Installation		Stratigraphic Unit	Monitored Level			
	Type	Response Zone (mbgl)		Deepest		Shallowest	
				m bgl	m AOD	m bgl	m AOD
BH02	SP	1.75-6.25	Bedrock – Granite	5.06	319.15	0.42	323.79
BH04	SP	2.00-7.50	Bedrock – Granite and Psammite	0.54	324.48	0.42	324.60
BH08 <sup>(1)</sup>	SP	2.10-6.80	Bedrock – Granite and Psammite	0.00	334.07	+0.30	334.37
BH11	SP	1.60-6.10	Bedrock – Granite and Psammite	4.85	325.74	3.55	327.04
BH14	SP	1.80-6.75	Bedrock – Psammite	0.36	305.70	0.11	305.95
BH16	SP	2.40-7.25	Bedrock – Granite and Psammite	0.70	324.72	0.54	324.88
BH18	SP	1.00-2.60	Granular Glacial Deposits	1.98	314.77	0.50	316.25
BH21	SP	3.10-8.00	Bedrock – Granite and Psammite	0.36	326.13	0.25	326.24
BH22	SP	2.00-11.50	Bedrock – Granite and Psammite	0.85	332.99	0.69	333.15
BH23	SP	2.50-6.50	Bedrock – Psammite	0.30	315.70	0.00	316.00
BH25	SP	1.00-6.60	Weathered Bedrock – Granite and Psammite	0.20	331.85	0.16	331.89
BH26	SP	1.00-3.00	Granular Glacial Deposits	0.80	314.26	0.00	315.06
BH27	SP	3.10-9.90	Bedrock – Granite and Psammite	0.43	331.26	0.16	331.53



**Notes:**

- <sup>(1)</sup> Artesian groundwater was recorded in BH08 on 30/01/2024, at +0.3m above ground level.

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## **5. Engineering Properties**

### **5.1 Introduction**

The in situ and laboratory test results for each material type identified in Section 4 are summarised in a series of tables in the following sections and, where appropriate, in figures, which are presented in Appendix B of this report.

Standard Penetration Tests within boreholes were undertaken to obtain an indication of the relative density of granular soils. The energy ratio of the SPT hammer was recorded by the contractor during the GI. The SPT values reported within this GIR have taken the energy ratio into consideration and the correction factor given within BS EN 22467-3 [20] has been applied to the raw SPT 'N' values to provide SPT  $N_{60}$  values within this report.

### **5.2 Topsoil**

No in situ testing was carried out within the Topsoil. Laboratory testing in the form of thermal resistivity/conductivity was undertaken on one sample of the Topsoil obtained during the GI; however, as this was described as a peaty topsoil, the results have been included within the Peat in Section 5.3.

### **5.3 Peat**

In situ testing in the form of thermal resistivity/conductivity and SPTs were carried out within the Peat deposits at the site. Laboratory testing was undertaken on selected samples collected from the exploratory holes. The in situ and laboratory test results are summarised in Table 5-15.1.



**Table 5-1 - Summary of In Situ and Laboratory Test Results for Peat**

Test (Units of measurement)		No. Tests	Results				Figure Ref (Appendix B)
			Minimum	Maximum	Median	Mean	
In-Situ Thermal Conductivity (W/Km)		2	1.251	1.325	1.288		TR-02
In-Situ Thermal Resistivity (Km/W)			0.754	0.799	0.777		
SPT (N <sub>60</sub> Values)		1	1				SPT-01
Water Content (%)		18	19	1353	521	545	MC-01
Bulk Density (Mg/m <sup>3</sup> )		5 <sup>(1)</sup>	0.99	1.86	1.23	1.31	N/A
Dry Density (Mg/m <sup>3</sup> )		5 <sup>(1)</sup>	0.18	1.48	0.50	0.62	
pH		5	4.0	5.0	4.5	4.5	
Organic Matter (%)		14	12.6	24.4	19.2	18.8	
Sulphate, water soluble (as SO <sub>4</sub> ) (mg/l)		5	13	76	45	42	
Acid Soluble Sulphate (%)		4	0.12	0.51	0.27	0.29	
Laboratory Thermal Conductivity (W/Km)	NMC	3	0.59	1.66	0.77	1.00	TR-02
	DRY		0.04	0.24	0.14	0.14	
Laboratory Thermal Resistivity (Km/W)	NMC	3	0.60	1.68	1.30	1.19	
	DRY		4.15	22.25	7.20	11.20	

**Notes:**

- <sup>(1)</sup> Results obtained from laboratory thermal resistivity/conductivity tests and a single oedometer test.

A single one dimensional consolidation (oedometer) test was carried out on a sample of Peat from BH17 and returned an Mv value of 3.46m<sup>2</sup>/MN at the existing overburden pressure, suggesting the material is highly compressible. Reference should be made to the test plot provided in Igne's factual report for the detailed test results.

## 5.4 Granular Glacial Deposits

In situ testing in the form of thermal resistivity/conductivity, SPTs and a single Soakaway test were carried out within the Granular Glacial Deposits at the site. Laboratory testing was undertaken on selected samples collected from the exploratory holes. The in situ and laboratory test results are summarised in Table 5-2.



**Table 5-2 - Summary of In Situ and Laboratory Test Results for Glacial Granular Deposits**

Test (Units of measurement)		No. Tests	Results				Figure Ref (Appendix B)
			Minimum	Maximum	Median	Mean	
In-Situ Thermal Conductivity (W/mK)		4	0.717	5.232	1.453	2.214	TR-03
In-Situ Thermal Resistivity (mK/W)			0.191	1.395	0.737	0.765	
SPT (N <sub>60</sub> Values)		13	23	72	50	51	SPT-02
Water Content (%)		10	6	338	25	53	MC-02
Bulk Density (Mg/m <sup>3</sup> ) <sup>(1)</sup>		14	1.60	2.20	2.03	2.01	N/A
Dry Density (Mg/m <sup>3</sup> ) <sup>(1)</sup>		14	1.05	2.01	1.79	1.71	
Liquid Limit (%) <sup>(2)</sup>		2	33	34	33.5		
pH		7	5	7	6	6	
Organic Matter (%)		4	2.1	25	3.5	8.5	
Sulphate, water soluble (as SO <sub>4</sub> ) (mg/l)		7	9	36	24	21	
Acid Soluble Sulphate (%)		7	0.02	0.05	0.03	0.03	
Laboratory Thermal Conductivity (W/mK)	NMC	11	0.55	2.16	1.54	1.46	TR-03
	DRY		0.06	0.31	0.23	0.21	
Laboratory Thermal Resistivity (mK/W)	NMC	11	0.46	1.77	0.65	0.81	
	DRY		3.17	16.66	4.32	6.20	
California Bearing Ratio (%)		3	2	60	13	25	N/A
Optimum Moisture Content (%)	4.5kg	4	7.7	16	9.45	10.65	COM-01
Maximum Dry Density (Mg/m <sup>3</sup> )	4.5kg	4	1.61	2.06	1.98	1.91	
Shear Strength - Angle of shearing resistance (°)		1	40				N/A
Shear Strength - Cohesion (kPa)			8				

**Notes:**

- (1) Results obtained from laboratory thermal resistivity/conductivity tests, CBR tests and shear box tests.
- (2) 2 No. Atterberg tests were carried out on samples of the Granular Glacial Deposits, all of which confirmed the material to be non plastic.

22 No. Particle Size Distribution tests (PSDs) were carried out on samples of the Granular Glacial Deposits (Figure PSD-01) and show the material is generally well graded with a fines content ranging from 2% to 33%.



The SPT N<sub>60</sub> values indicate that the material is typically dense to very dense (Figure SPT-02); however, a single occurrence of medium dense material was encountered in BH18 at 1.20m bgl.

1 No. Soakaway test was performed adjacent to TP28 within the Granular Glacial Deposits; however, the soil infiltration rate could not be determined. Reference should be made to the test plot provided in Igne's factual report for the detailed test results.

## 5.5 Weathered Bedrock

In situ testing in the form of SPTs were carried out within the Weathered Bedrock at the site. Laboratory testing was undertaken on selected samples collected from the exploratory holes. The in situ and laboratory test results are summarised in Table 5-3.

Table 5-3 - Summary of In Situ and Laboratory Test Results for Weathered Bedrock

Test (Units of measurement)	No. Tests	Results				Figure Ref (Appendix B)
		Minimum	Maximum	Median	Mean	
SPT (N <sub>60</sub> Values)	8	50				SPT-03
pH	1	1				N/A
Sulphate, water soluble (as SO <sub>4</sub> ) (mg/l)	1	11				
Acid Soluble Sulphate (%)	1	0.02				

A single PSD test was carried out on a sample of the Weathered Bedrock (PSD-02) and shows the material to be generally gap graded with a fines content of 9%.

## 5.6 Metasedimentary Bedrock

The bedrock encountered during the GI was comprised predominately of Psammite. A summary of the rock quality is presented in Table 5-4 and a summary of the laboratory test results undertaken on selected samples of the psammite is provided in Table 5-5. **Error! Reference source not found..**

Table 5-4 - Summary of Rock Quality for Metasedimentary Bedrock

Core Quality	No. Tests	Results				Figure Ref (Appendix B)
		Minimum	Maximum	Median	Mean	
Total Core Recovery (TCR)	140	60	100	100	99	N/A
Solid Core Recovery (SCR)	140	0	100	84	76.3	
Rock Quality Designation (RQD)	140	0	95	28	34.5	
Fracture Index (FI)	140	3	NI/>20 <sup>(1)</sup>	9	10.4	

Notes:

- (1) NI and >20 values assigned a value of 20 in calculations of median and mean to prevent skewing of results by their exclusion.



**Table 5-5 - Summary of Laboratory Test Results for Metasedimentary Bedrock**

Test (Units of measurement)	No. Tests		Results				Figure Ref (Appendix B)
			Minimum	Maximum	Median	Mean	
Point Load Tests ( $I_{s50}$ ) (kPa)	145		0.04	14.55	4.76	4.41	PLT-02
Unconfined Compressive Strength (MPa)	20		10	98	51	51	UCS-02
Los Angeles Coefficient	4		21	37	21.5	25.3	N/A
Slake Durability Index (%)	4		82.8	98.6	97.9	94.3	
Aggregate Crushing Values	4		15	18	16	16.3	
Soundness by Magnesium Sulphate	3		8	12	12	10.7	
Flakiness Index	1		22				
Micro Deval	1		57				
Water Absorption (%)	1		0.8				
Acid Soluble Sulphate (%)	4	0.02	1.13		0.06	0.32	

**Notes:**

- (1) The PLT tests were carried out on both axial and diametral orientations, as well as a small number on irregular lump samples where full core was not available.
- (2) 5 No. Standard Penetration Tests were undertaken at rockhead, all of which recorded refusal (i.e. SPT  $N > 50$ ).

Based on the Fracture Index and UCS information, the excavatability of the metasedimentary bedrock has been categorised as 'easy' to 'very hard ripping' following the method of assessment provided in Pettifer and Fookes [21]. Reference should be made to the excavatability plot (EX-02) provided in Appendix B.

## 5.7 Igneous Bedrock

The occasional igneous intrusions encountered during the GI comprised of Granite. A summary of the rock quality is presented in Table 5-4 and a summary of the laboratory test results undertaken on selected samples of the psammite is provided in Table 5-5. **Error! Reference source not found..**

**Table 5-6 - Summary of Rock Quality for Igneous Bedrock**

Core Quality	No. Tests		Results				Figure Ref (Appendix B)
			Minimum	Maximum	Median	Mean	
Total Core Recovery (TCR)	34		85	100	100	99.3	N/A
Solid Core Recovery (SCR)	34		0	100	82	77.1	
Rock Quality Designation (RQD)	34		0	100	42	36.6	
Fracture Index (FI)	34		2	NI/ $>20^{(1)}$	10	10.9	

**Notes:**

- (1) NI and  $>20$  values assigned a value of 20 in calculations of median and mean to prevent skewing of results by their exclusion.



**Table 5-7 - Summary of Laboratory Test Results for Igneous Bedrock**

Test (Units of measurement)	No. Tests	Results				Figure Ref (Appendix B)
		Minimum	Maximum	Median	Mean	
Point Load Tests ( $I_{s50}$ ) (kPa)	32	0.18	8.8	3.9	3.5	PLT-01
Unconfined Compressive Strength (MPa)	3	12	26	21	20	UCS-01
Soundness by Magnesium Sulphate	1	11				N/A

**Notes:**

- (1) The PLT tests were carried out on both axial and diametral orientations, as well as a small number on irregular lump samples where full core was not available.

Based on the Fracture Index and UCS information, the excavatability of the igneous bedrock has been categorised as 'easy ripping' following the method of assessment provided in Pettifer and Fookes [21]. Reference should be made to the excavatability plot (EX-01) provided in Appendix B.



## **6. Assessment of Potential Contamination**

### **6.1 Introduction**

A review of the GI information has been undertaken to assess potential contamination risks and constraints associated with the proposed works to be undertaken at the site. This land contamination assessment has been undertaken generally in accordance with BS 10175:2011+A2:2017 [22] and relevant technical guidance including Land Contamination Risk Management (LCRM) [23].

In accordance with the above approach, a preliminary risk assessment was initially completed, including a review of the plausible site sources, pathways and receptors.

Potential sources, pathways and receptors relevant to the preliminary Conceptual Site Model (CSM) are detailed below.

### **6.2 Potential Sources of Land Contamination**

Historical mapping consulted as part of the initial desk study showed no potential contamination sources to be present within the site area with no Made Ground deposits recorded during the recent GI.

There is the potential for discrete areas of Made Ground to be encountered during development works associated with the existing power line access tracks/infrastructure and forestry land use.

### **6.3 Potential Pathways and Receptors**

Works to be undertaken at the site will include the excavation of topsoil and superficial deposits to allow the construction of the new 400kV substation, transformers, substation control building and associated underground cable connections and utilities.

It is proposed that any excavated soil/rock materials will be potentially re-used on site with any geotechnically or chemically unsuitable materials requiring off-site disposal.

A number of potential exposure and migration pathways have been identified for the site, along with potential receptors that may be at risk. These are discussed below

- Construction Workers – During the excavation works, construction workers may be exposed to subsurface soils and shallow groundwater, therefore, if present, any contaminants in both surface and deeper soils and/or groundwater may pose a potential risk through dermal contact with soil, ingestion of contaminants or inhalation of ground gas and soil vapour (primarily during below ground works / excavations).
- Site End Users – Future site users may be impacted by soils re-used on site for landscaping purposes which may pose a potential risk through dermal contact / ingestion of contaminants. The inhalation of ground gas and soil vapour (primarily within buildings) should also be considered.
- Buildings and infrastructure on site and off site – Potential to be impacted by ground gas and soil vapour – potential creation of off-site migration pathways.

Potential exposure pathways and subsequent receptors that have been excluded from the CSM are detailed below:

- Water Environment – (surface water and groundwater) The Water Environment has not been considered given the lack of potential land contamination sources and nature of the construction works proposed, as it is assumed any pathways will already be in place.

The assessment of risks posed by the works are detailed in the following sections.



## **6.4 Assessment of Risks to Construction Workers and Site End Users from Soils**

Chemical analysis results for the soils have been compared against published Generic Assessment Criteria (GAC). To provide an indication of the potential acute risks to human health which would apply to short term exposure for construction workers, where available, soil analysis results have been compared against the SoBRA Acute Generic Assessment Criteria (AGAC) (Version 2.0, July 2020). For other determinands where acute criteria are not available, GACs relating to chronic risk to human health for residential end use without plant uptake have been used as a screening tool to indicate the potential presence of potentially harmful contaminants.

Whilst the scheme will primarily comprise hardstanding and substation/transformer infrastructure, it is proposed that areas of soft landscaping are incorporated into the design that may result in the site end users coming into contact with site soils. Therefore the soil chemical analysis results been assessed against Generic Assessment Criteria (GAC) for a conservative commercial/industrial end use scenario.

The following hierarchy of published GAC sources has been used:

- SoBRA, Acute Generic Assessment Criteria. Version 2.0, July 2020 (Construction Workers only) [24]
- Land Quality Management (LQM) / Chartered Institute of Environmental Health (CIEH), S4ULs for Human Health Risk Assessment, 2015 [25]
- Department for Environments, SP1010 – Development of Category 4 Screening Levels (C4SLs) for Assessment of Land Affected by Contamination, Contaminated Land: Applications in Real Environments (CL:AIRE), 2014 (lead only) [26]
- EIC/AGS/CL:AIRE Soil Generic Assessment Criteria for Human Health Risk Assessment, 2010 [27]

It should be noted that where the GAC values are soil organic matter (SOM) dependent, the lowest most conservative assessment criteria for a 1% soil organic matter have been used as a range of organic matter values have been recorded (0.4 to 18%).

### **Risks to Construction Workers**

A comparison of available soil chemical results did not note any exceedances of the AGACs.

It should be noted that speciation analysis was not undertaken and therefore the most conservative GAC value for chromium VI has been used within the assessment which is unlikely to be present at the site given the noted history. However, further speciated analysis will be required to investigate what species of chromium is present within the soils across the site to confirm that it is present in the less toxic chromium III form. It should be noted that the GAC value for chromium VI is 6mg/kg compared to a value of 910mg/kg for chromium III.

Exceedances of residential (without plant uptake) GAC values were recorded in soils (both Made Ground and natural deposits) for chromium with exceedances recorded in 24 of the 26 samples analysed. A maximum concentration of 37mg/kg was recorded in TP014 @ 0.5m which was taken with natural silty sand and gravel.

All other chemical determinands were recorded below the relevant assessment criteria. No asbestos containing materials were identified within the samples screened.

Residual risks to construction workers from soils can be controlled by use of safe systems of work by the appointed Contractor and, as a last resort, by use of Personal Protective Equipment (PPE). These should focus on the minimisation of dust generation, ingestion and dermal contact.

The risks posed to construction workers should be considered during the design and construction stages of the scheme as more information becomes available and construction methods are finalised.



## **Risks to Site End Users**

A single exceedance of the commercial/industrial end use GAC value for chromium was recorded in TP014 @ 0.5m with a concentration of 37mg/kg recorded.

As previously stated, speciation analysis was not undertaken and therefore the most conservative GAC value for chromium VI has been used within the assessment (33mg/kg) compared to a value of 8,600mg/kg for chromium III. Chromium concentrations should be re-assessed pre-construction and mitigation measures applied if required.

Risks to end users from soil contamination can be managed by ensuring that any soils re-used on site are not exposed and clean imported soils are placed at the surface to provide a suitable growing medium.

## **6.5 Assessment of Risks to Construction Workers and End Users from Groundwater**

Resting groundwater levels across the site area have been recorded to be near the ground surface and therefore the primary pathways for exposure of construction workers during site works will be through direct contact and/or accidental ingestion of groundwater primarily within excavations.

Groundwater analysis has not been undertaken during the GI works therefore characterisation of the groundwater through comparison with published Generic Assessment Criteria (GAC) to provide an indication of the potential acute risks to human health which would apply to short term exposure for construction workers has not been undertaken. However, due to the absence of potential contamination sources, it is considered unlikely that, contaminated groundwater will be encountered within the site area.

Residual risks to construction workers from groundwater can be controlled by use of safe systems of work by the appointed Contractor and, as a last resort, by use of Personal Protective Equipment (PPE). These should focus on the minimisation of ingestion and dermal contact.

The risks posed to construction workers should be considered during the design and construction stages of the scheme as more information becomes available and construction methods are finalised.

## **6.6 Assessment of Risks to Construction Workers and End Users from Ground Gas**

Gas monitoring was undertaken at 13 No. locations to assess any potential risks to construction workers from exposure to potentially asphyxiating or flammable gas concentrations within any below ground works and/ or within confined spaces.

The monitoring was undertaken over three rounds with a range in atmospheric pressure between 950 and 987mbar. Flow rates were variable over rounds with peak flow rates ranging from negative 0.5 l/hr (BH21) to 3.1 l/hr (BH02).

### **Risks to Construction Workers – Ground Gas**

Ground gas levels were compared to published thresholds considered appropriate for the protection of construction and maintenance workers. To assess potential risks posed to construction workers during below ground works the monitoring results have been screened against assessment criteria as follows:

- Carbon dioxide, carbon monoxide and hydrogen sulphide: Workplace Exposure Limits (WELs) for long-term and short-term exposure in accordance with Health and Safety Executive (HSE), 'EH40/2005 Workplace Exposure Limits.



- Methane: methane is potentially explosive in air, and concentrations have been compared with the Lower Explosive Limit (LEL) of 5 % v/v and Upper Explosive Limit (UEL) of 15 % v/v.
- Oxygen: in accordance with the Mines and Quarries Act 1954 sufficiency of oxygen is deemed as concentrations of 19 % v/v in air and above. As such oxygen concentrations have been compared to this defined sufficiency of oxygen threshold value.

Full ground gas results are presented in the GI Factual Report and with exceedances summarised below:

- Methane concentrations did not exceed either the LEL and UEL.
- The short term and long term exposure limits for carbon dioxide, carbon monoxide and hydrogen sulphide were not exceeded.
- Depleted oxygen concentrations (below 19 %v/v) were recorded in all 13 locations monitored with a minimum concentration of 15.2%v/v being recorded in BH02.

The results show that ground conditions at the site are unlikely to present a potential asphyxiating or explosive risk to construction workers.

However, due to the presence of peat deposits across the site, ground gas risks may warrant further consideration during below ground or confined space working should this be undertaken.

It is recommended that appropriate risk assessments and working methods should be developed and adopted by the Contractor during below ground site construction works including excavations and piling with due consideration of the wider site setting. This should include as a minimum, gas monitoring undertaken prior to any entry into excavations, confined spaces or below ground structures and use of personal gas monitors to detect explosive gases or depleted oxygen levels and the use of PPE including respiratory protective equipment (RPE) as a last resort.

The risks posed to construction workers should be considered during the design and construction stages of the scheme as more information becomes available and construction methods are finalised.

#### **Risks to Site End Users – Ground Gas**

As detailed above, elevated flow rates and/or ground gas concentrations have not been recorded across the proposed scheme construction area. However, as stated above, due to the presence of peat deposits across the site area, the design of building and/or substructures proposed to be included within the proposed development and the final scheme design should take cognisance of the ground gas regime at the site. An assessment of the risks posed should be undertaken in accordance with CIRIA C665 'Assessing risks posed by hazardous ground gases to buildings' and BS 8485 'Code of Practice for the Design of Protective Measures for Methane and Carbon Dioxide Ground Gases for New Buildings' and suitable gas mitigation measures incorporated into the final building design if required.

## **6.7 Materials management of soils and groundwater**

From current development proposals, it is proposed that soil materials are excavated to allow construction of the new 400kV substation, transformers, substation control building and associated underground cable connections and utilities. It is proposed that any excavated soil/rock materials will be potentially re-used on site with any geotechnically or chemically unsuitable materials requiring off-site disposal.

Soil disposal options should be considered during the design and construction stages of the project as more information becomes available and construction methods are finalised. The management of any excess peat arisings will also require appropriate consideration. Further sampling and full Waste Acceptance Criteria (WAC) testing should be undertaken to determine a provisional classification of the material for disposal in line with BS EN 12457 (multipart document) [28].



It should also be noted that individual landfill sites have specific conditions for accepting waste detailed in their licences; therefore, it should be confirmed with them at an early stage that they can accept these materials for disposal. The final waste classification for the soils will be determined by the receiving landfill operator.

The risks posed to surface waters should be considered during the design and construction stages of the scheme as more information becomes available and construction methods are finalised. Potential risks to surface waters from all construction activities including the use of imported soils/ reused soils should also be reviewed. This should include the management of groundwater migration, sediment/silt runoff and the discharge of groundwater during dewatering activities.

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## 7. Geotechnical Risk Register

The detailed assessment of the ground conditions carried out as part of the Ground Investigation Report has identified geotechnical risks that have the potential to impact detailed design of the proposed LT521 Fasnakyle scheme.

A Geotechnical Risk Register has been produced based in the SSEN project risk register format and presented within Appendix C.

The Geotechnical Risk Register provided within Appendix C reflects the current level of understanding of the geotechnical and geo-environmental aspects of the study area.

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## 8. Engineering Assessment

As described in Section 1.1, the aim of the project is to upgrade the existing Beauly to Denny overhead line to accommodate a second 400kV circuit, which necessitates the need for a new substation at Fasnakyle.

In accordance with Eurocode 7 (BS EN 1997-1 [4]), the project falls under Geotechnical Category 2, which includes conventional types of structures and foundations with no exceptional risk or difficult ground or loading conditions.

While 'Site D Alternative' has been identified as the preferred location for the substation, the site layout and foundation locations are unknown at the time of writing. A substation platform level of 327.8m AOD has been confirmed by the Client, which would require significant earthworks to achieve on the side long ground present at the site. Generally, upfilling would be required across much of the platform area to achieve the proposed platform level, but cutting would be required to the east.

It is expected that the platform and upfill material would comprise suitable imported fill and site won materials where the latter is deemed to be suitable for re-use. The GI suggests the cutting to the east of the proposed platform is likely to be in bedrock, so there is an opportunity to win material in this area for re-use. An earthwork strategy should be developed for the site to understand the earthworks balance and identify opportunities to minimise waste and disposal costs on the project.

A key risk at the site is the presence of Peat and how this will be addressed within the detailed design. The Peat has been found to have a low strength and be highly compressible, which could result in excessive total or differential settlement or bearing failure beneath the platform if the Peat is not removed or improved. A Peat Management Plan may be required depending on the proposed solution.

Reference should be made to the Preliminary Engineering Assessment Report for further details on the above.



## 9. Conclusions

SSEN propose to build a new 400kV substation south of Tomich in the Scottish Highlands. A ground investigation was undertaken to determine the ground conditions at the proposed substation location and to establish geotechnical risks to the project. The proposed new underground cable and new access road were not investigated as part of the GI and have not been considered in this report. A separate ground investigation may be required for these works.

The GI has shown the ground conditions at the site typically consists of Peat overlying Granular Glacial Deposits and bedrock, predominately comprising psammite with occasional granite intrusions. Bedrock was encountered at shallow depths across the site, typically less than 3m below ground level. Locally bedrock was recorded at or near the surface, with an occasional thin layer of weathered bedrock also recorded.

The key geotechnical risks are provided within the geotechnical risk register as outlined in Section 7 and are summarised below.

- The presence of peat which have low bearing capacity and may result in excessive total or differential settlement or bearing failure if not removed. These deposits are likely to have reduced trafficability for earthworks plant.
- Groundwater levels are indicated to be shallow across the site, with a local area of artesian groundwater recorded. These could cause issues during construction, particularly in areas of excavation.
- With the exception of forestry and the existing SSE infrastructure, the site has not been developed with no made ground encountered during the ground investigations. No significant pollutant linkages are considered to be present in relation to the proposed commercial land use - no remedial measures are therefore likely to be required.
- No elevated ground gas concentrations have been recorded across the site in gas monitoring undertaken thus far – due to the presence of peat deposits across the site area there is the potential for asphyxiating conditions to be encountered, further assessment may be required with respect to entry to excavations/confined spaces and the building design.

It is expected that the following will be required for the detailed design:

- Confirmation of the loads that will be imposed by the various substation infrastructure.
- A full re-use assessment based on the proposed end use of the material likely to be excavated during construction, to determine whether it can be safely re-used on site and/or to determine status should off-site disposal be required.
- Development of a groundwater and surface water monitoring programme during construction works as part of the Construction Environmental Management Plan (CEMP) to determine the impact of construction activities on the water environment.



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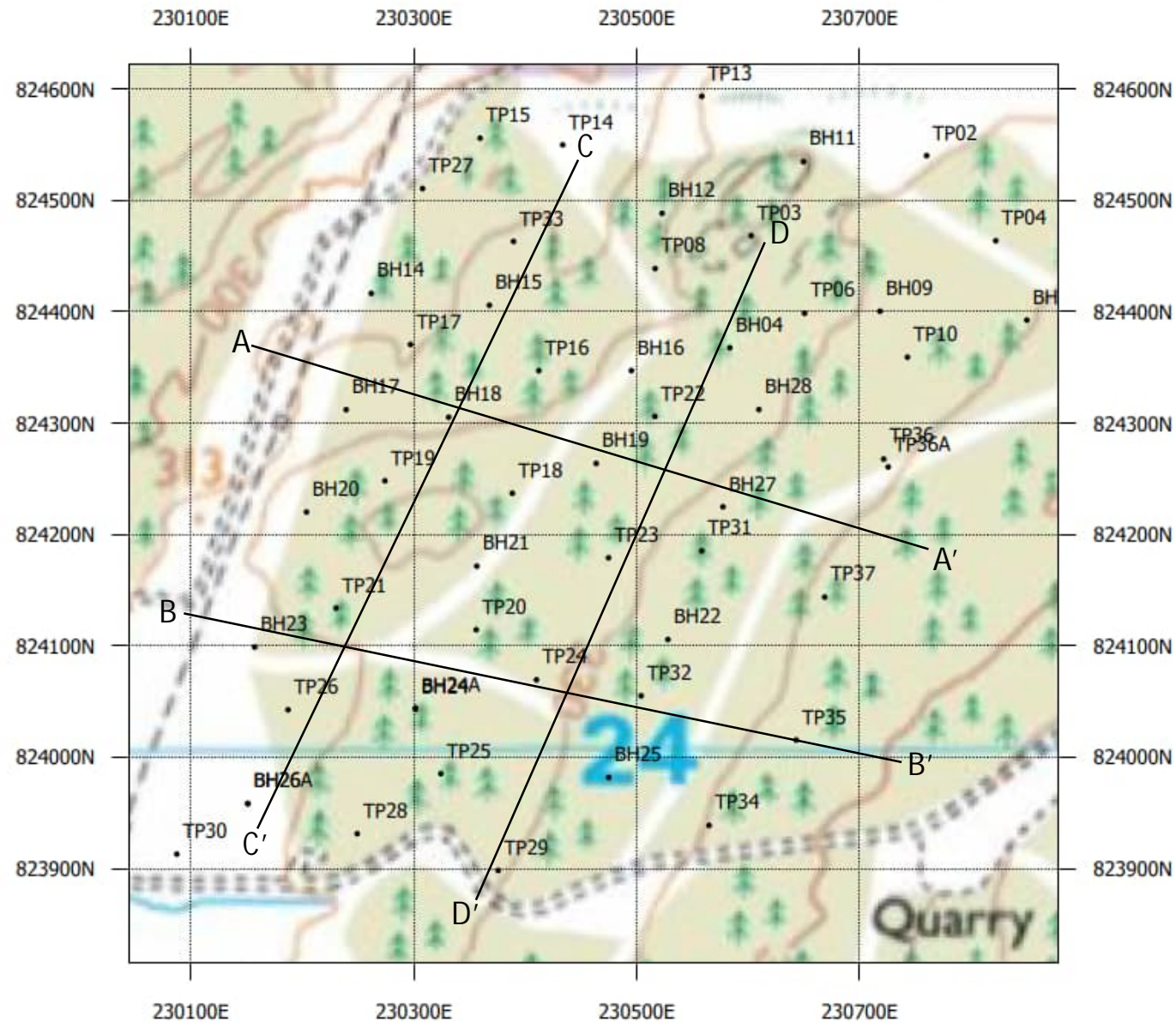


## Appendix A. Drawings

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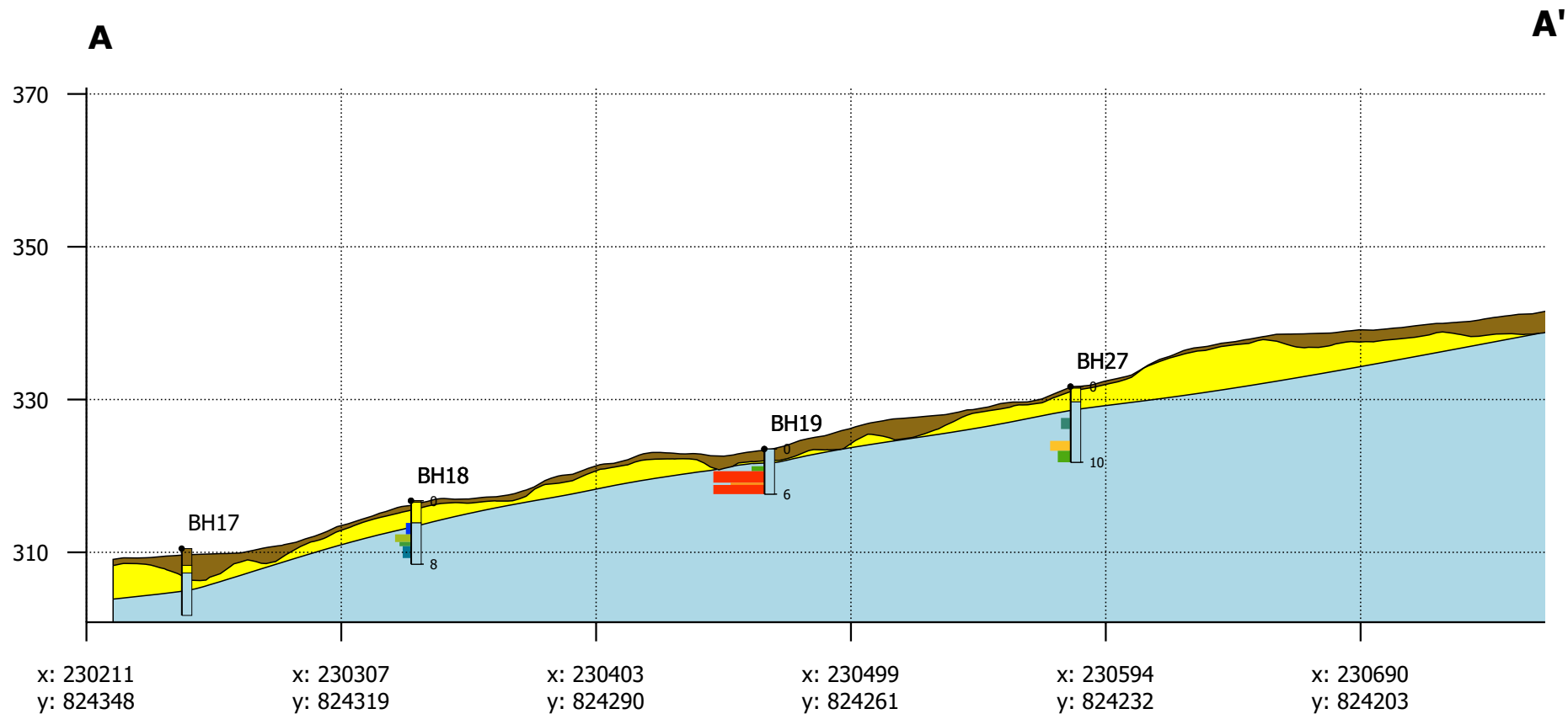


# Cross Section Location





# A-A' Cross Section



## Notes:

Exploratory holes shown on the section are within 40m of the section line.  
 Depths of boreholes are shown as meters below ground level.

## Legend

### RQD



### GM



## Location

A: 230211, 824348  
 B: 230759, 824182

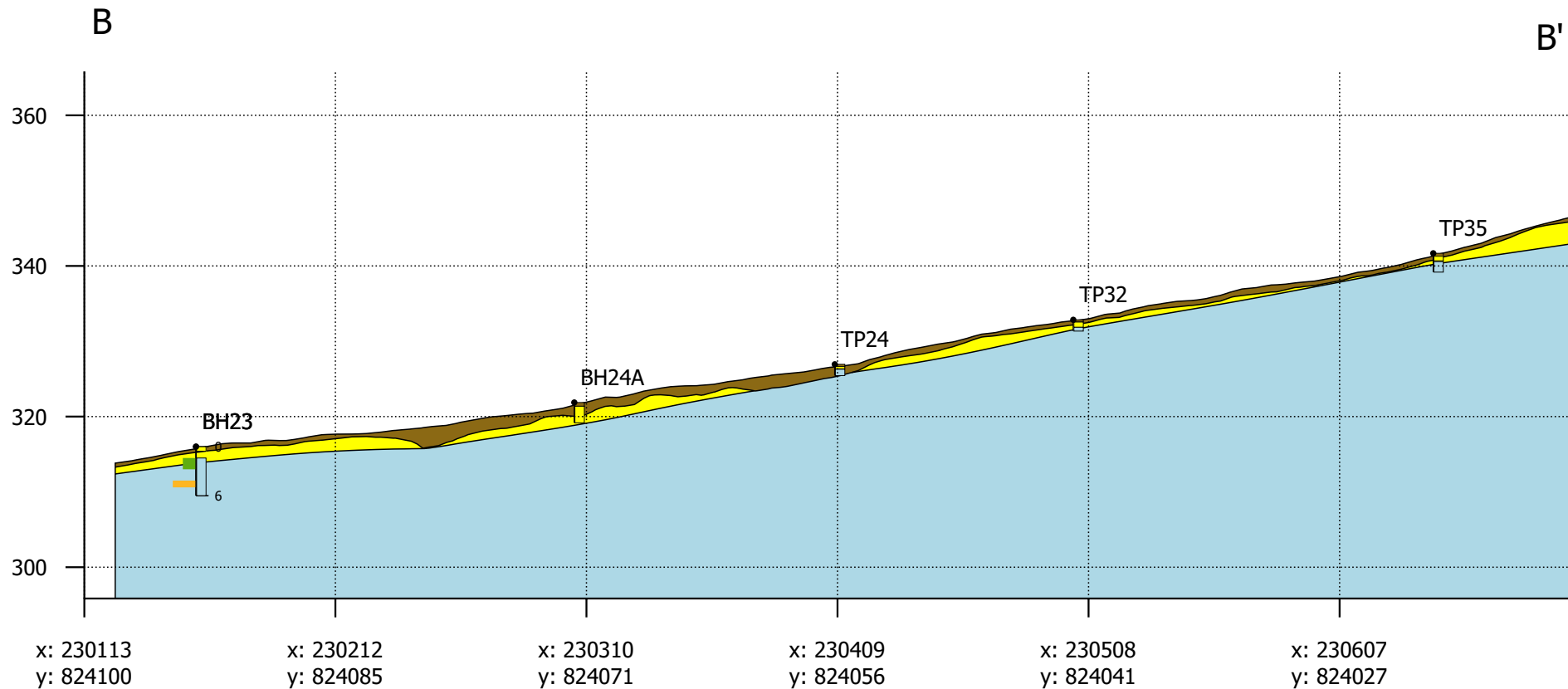
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Vertical exaggeration: 3x





# B-B' Cross Section

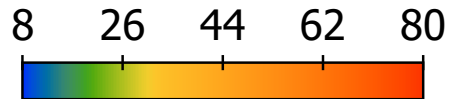


## Notes:

Exploratory holes shown on the section are within 40m of the section line.  
 Depths of boreholes are shown as meters below ground level.

## Legend

### RQD



### GM



## Location

A: 230113, 824100  
 B: 230697, 824014

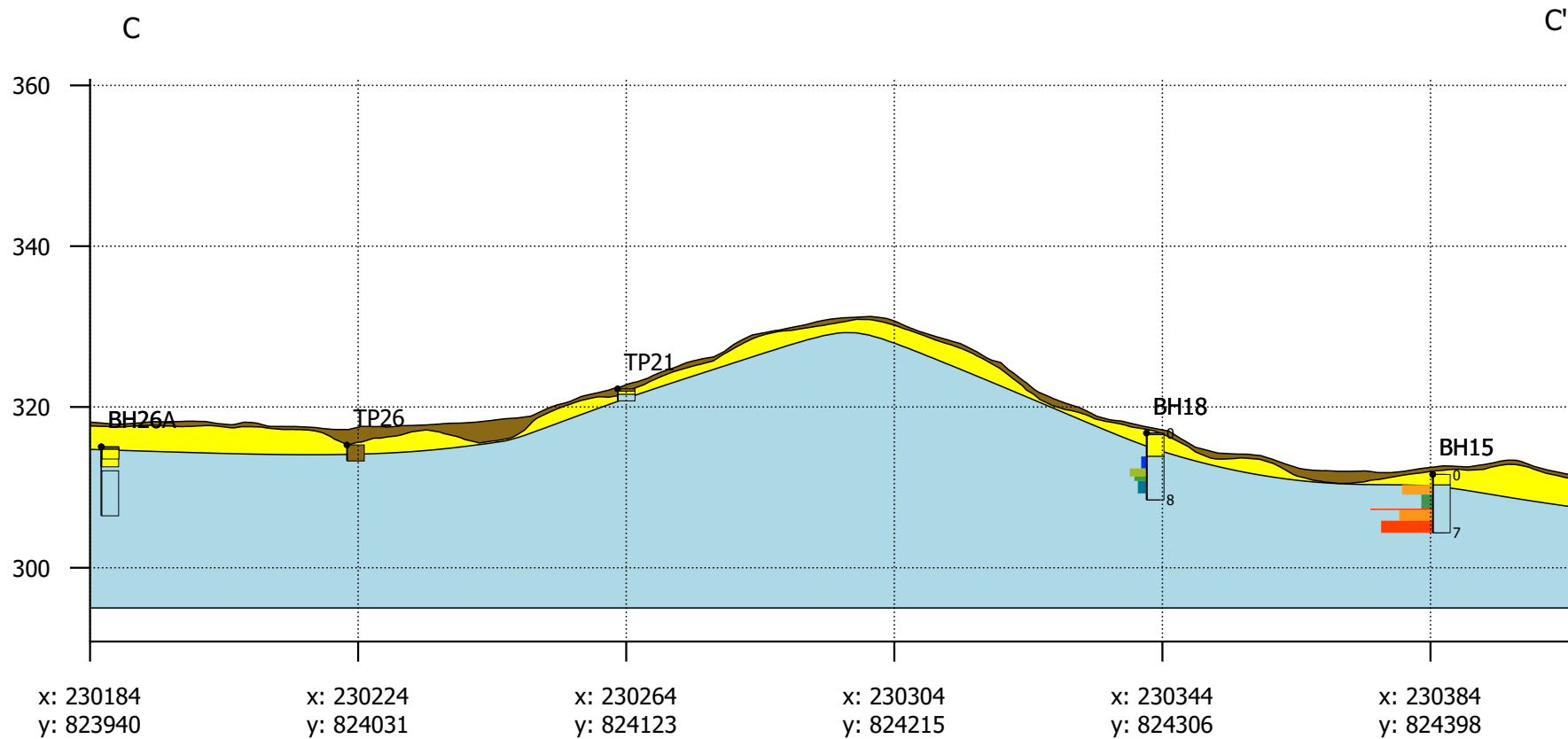
Scale: 1:2,500

Vertical exaggeration: 3x





# C-C' Cross Section

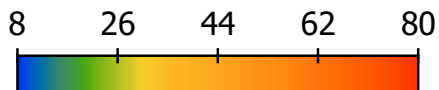


## Notes:

Exploratory holes shown on the section are within 40m of the section line.  
 Depths of boreholes are shown as meters below ground level.

## Legend

### RQD



### GM



## Location

A: 230184, 823940  
 B: 230405, 824447

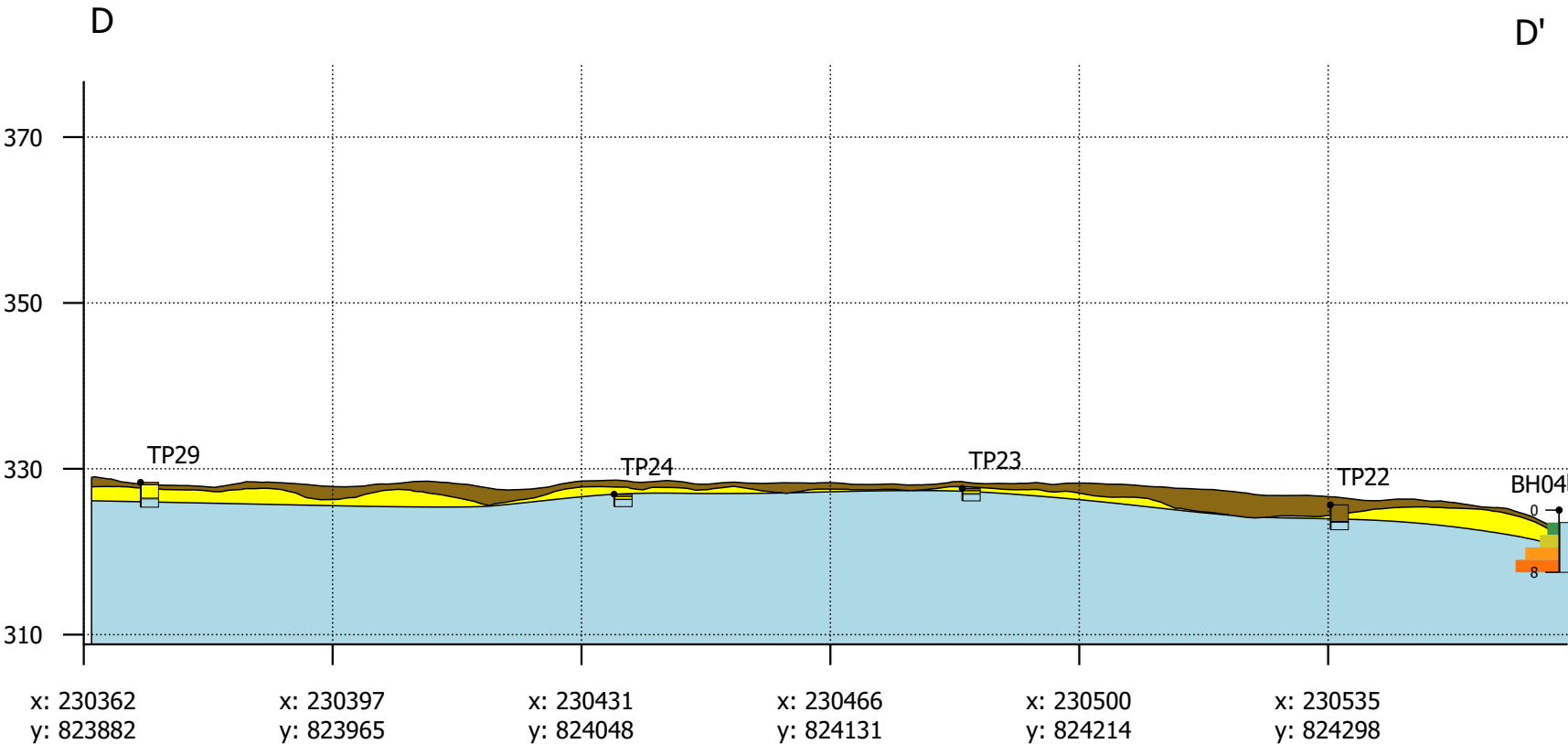
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Vertical exaggeration: 3x

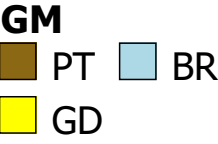
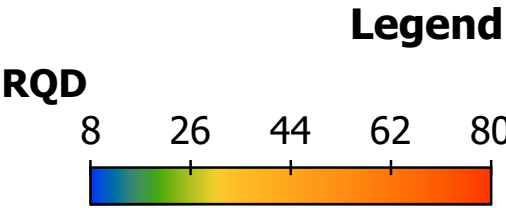




# D-D' Cross Section

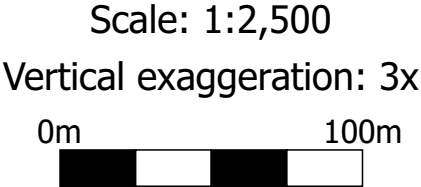


Notes:  
Exploratory holes shown on the section are within 20m of the section line.  
Depths of boreholes are shown as meters below ground level.



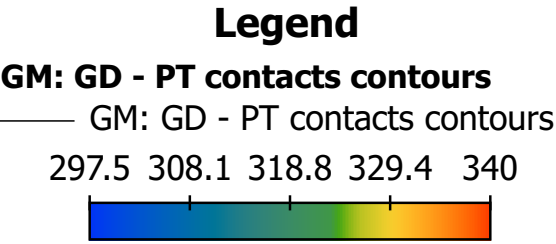
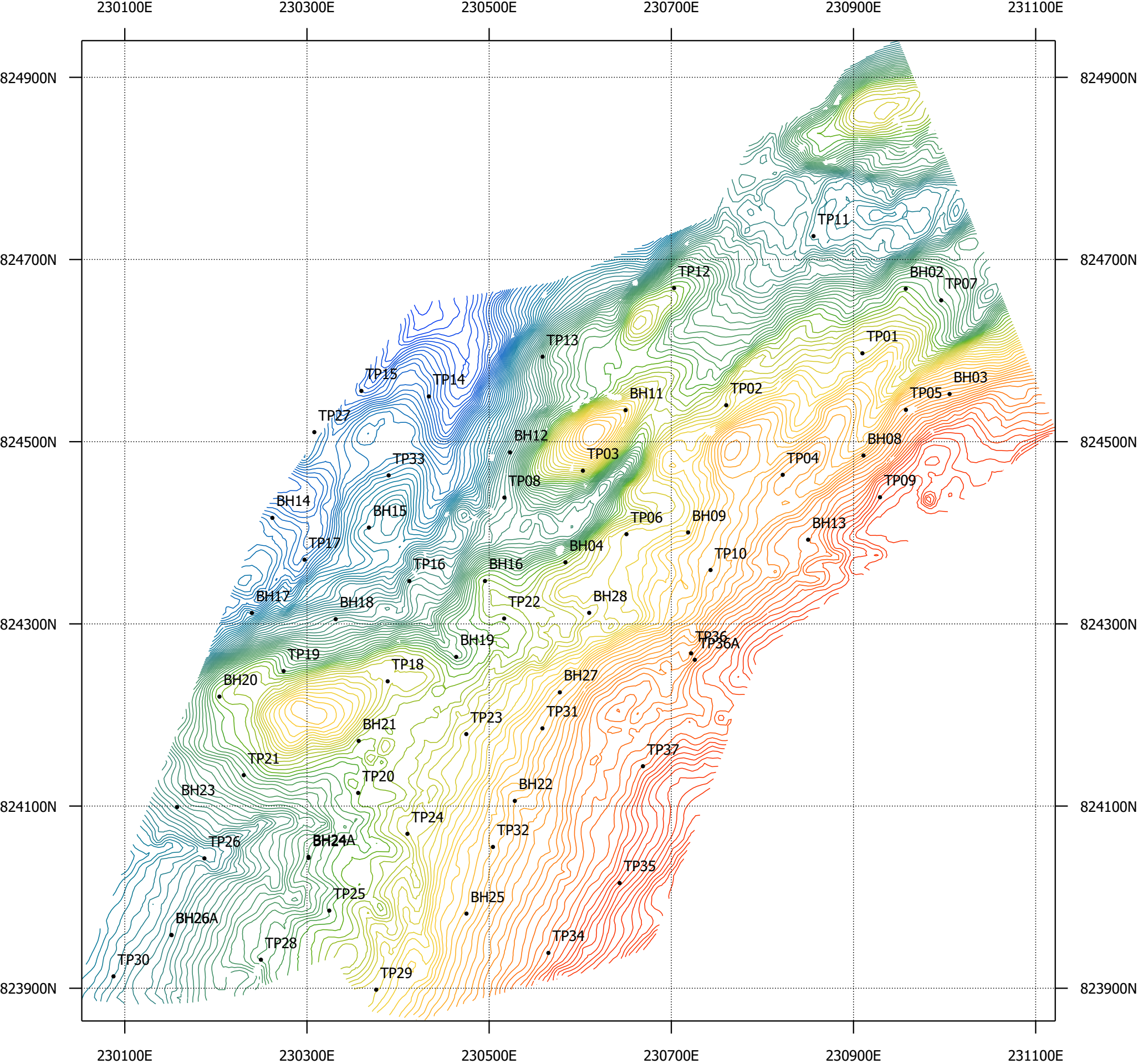
**Location**

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B: 230568, 824378

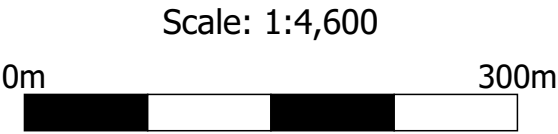




# Contour Map- Elevation at base of Peat

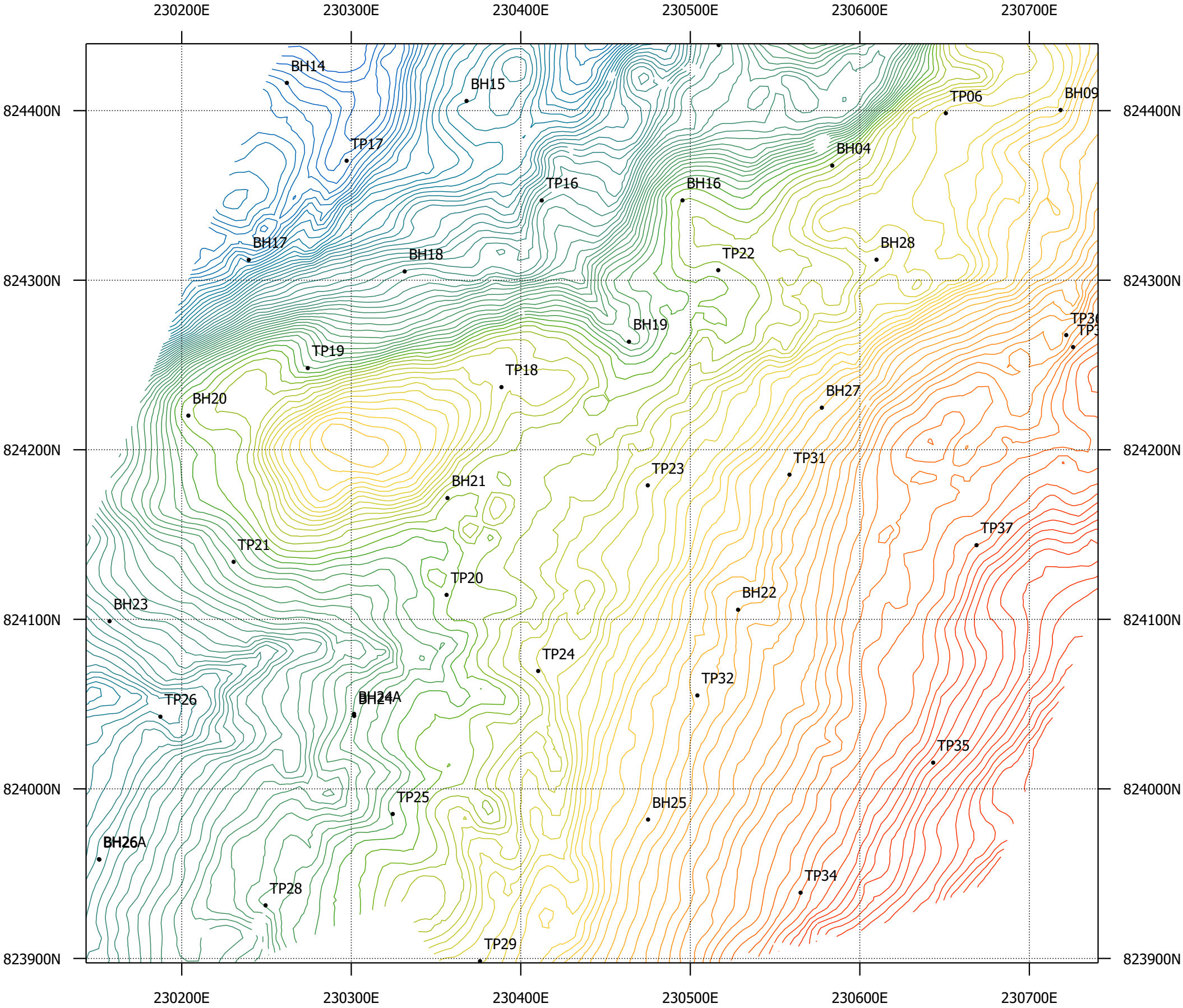


Note: Contours are spaced at 0.50m intervals





# Contours- Southern Site



**Legend**

**GM: GD - PT contacts contours**

— GM: GD - PT contacts contours

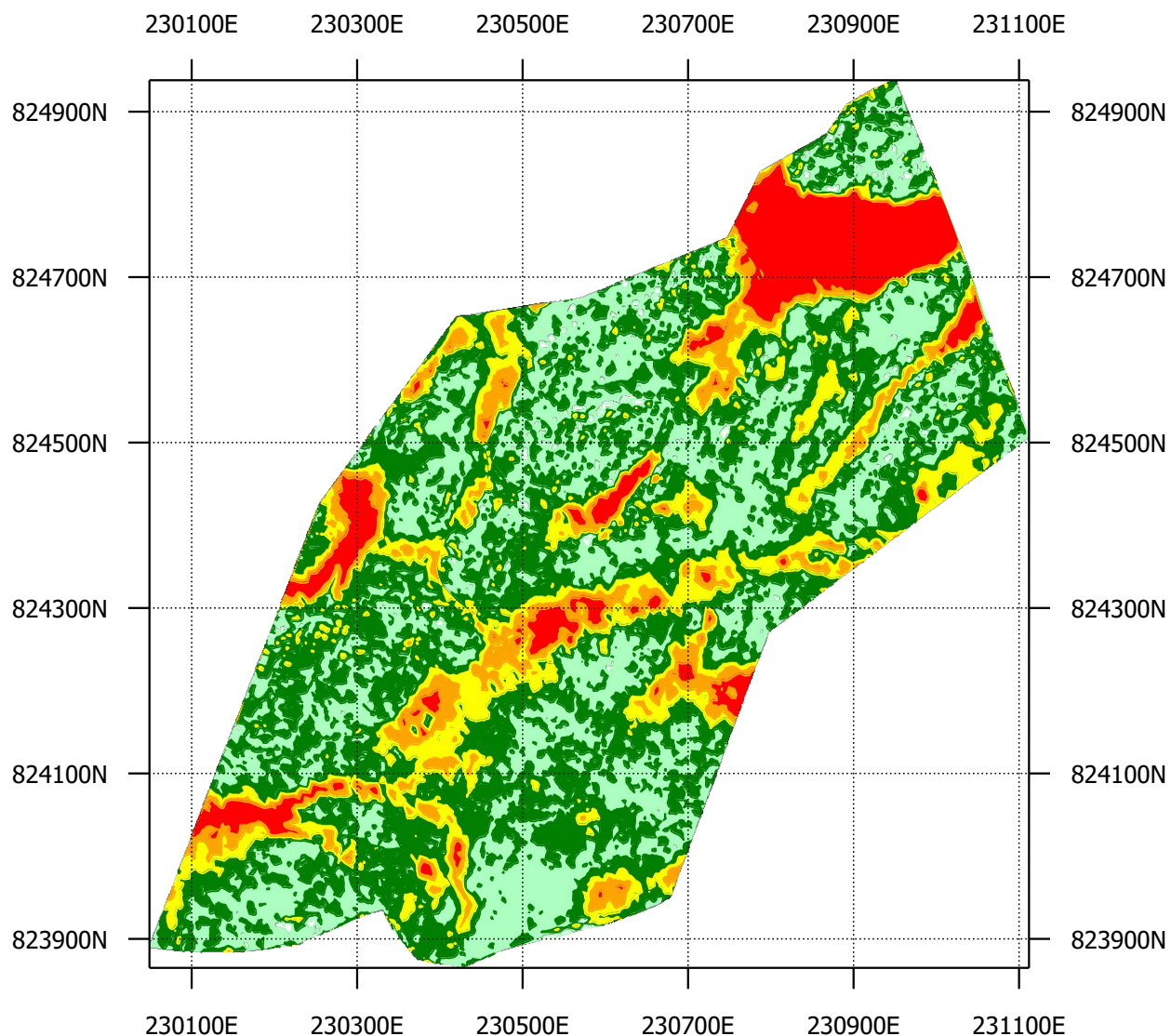
297.5 308.1 318.8 329.4 340

Note: Contours are spaced at 0.50m intervals

Scale: 1:2,500



# Peat Thickness Heat Map



## Location

230049, 824938, 0

231112, 824938, 0

### Location Details - Peat Base Depth outside Model Boundary contours



Scale: 1:8,500

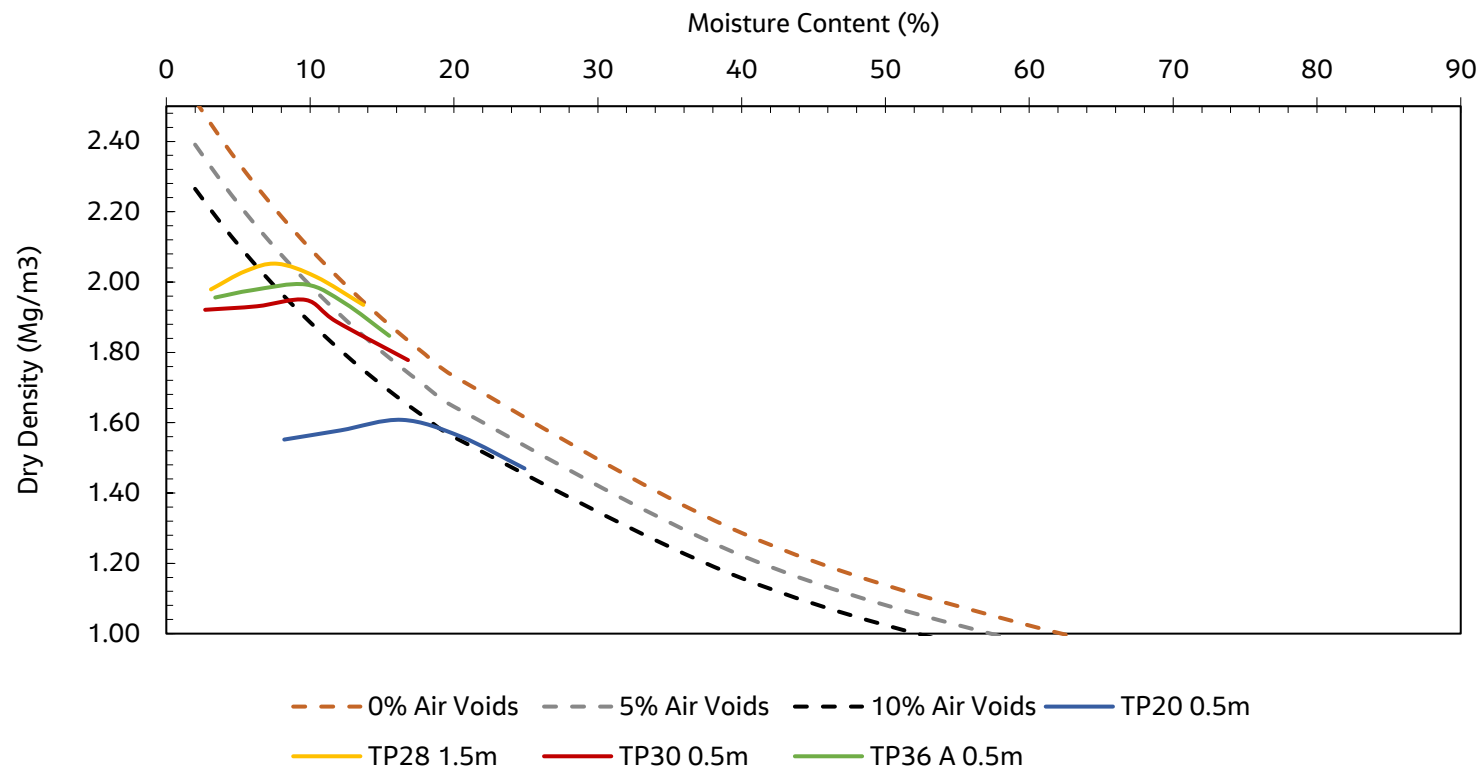




## Appendix B. Figures

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**Notes:**

Air void lines can only be shown on individual test sheets. Please refer to Factual Report for individual test sheets.

# Jacobs

Client

Scottish & Southern Electricity Networks  
Transmission

Project

ASTI Substation Site – LT521 Fasnakyle

Title:

Dry Density v. Moisture Content  
*Granular Glacial Deposits*

Jacobs No.: B2468300

Section:

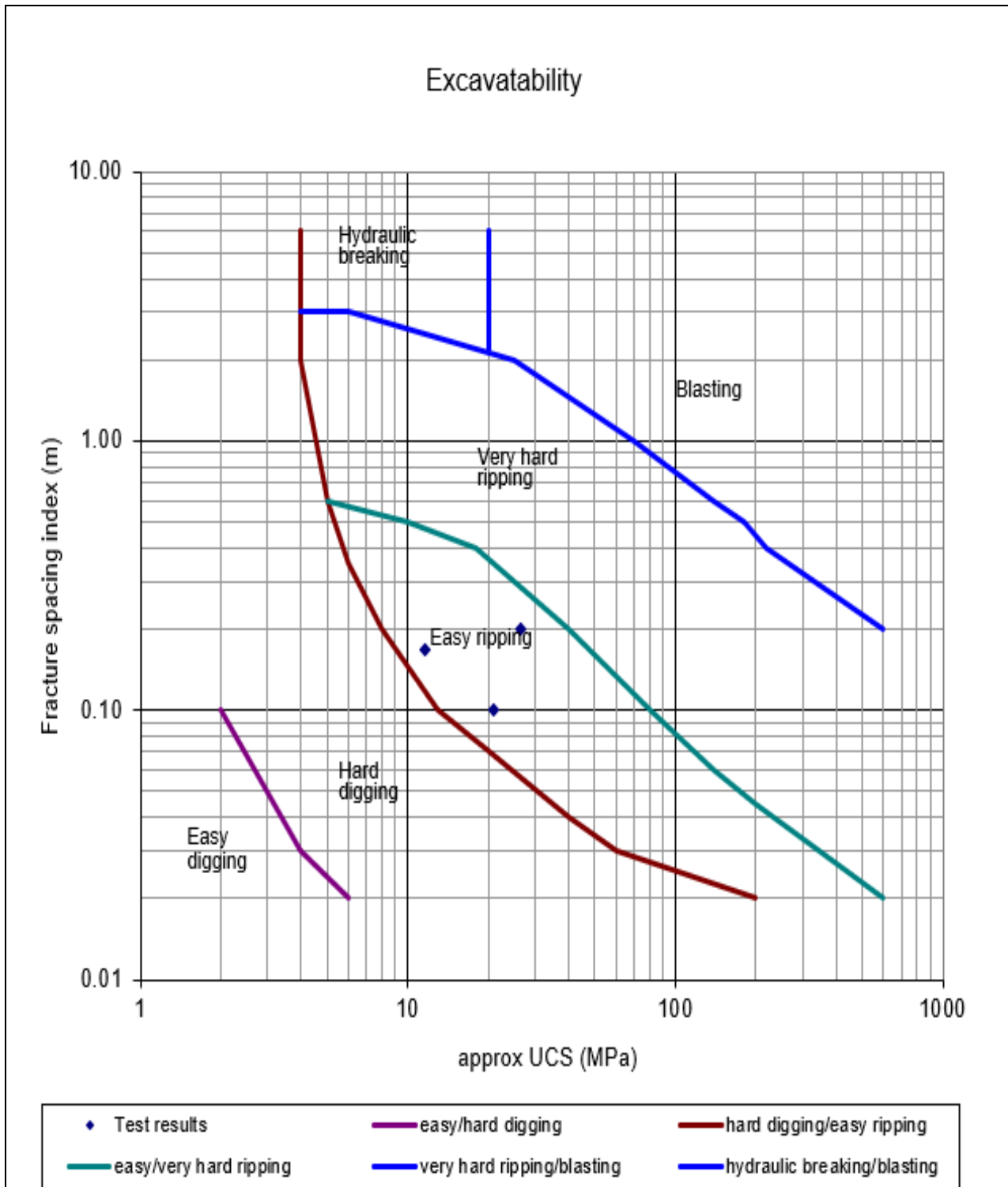
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COM-01

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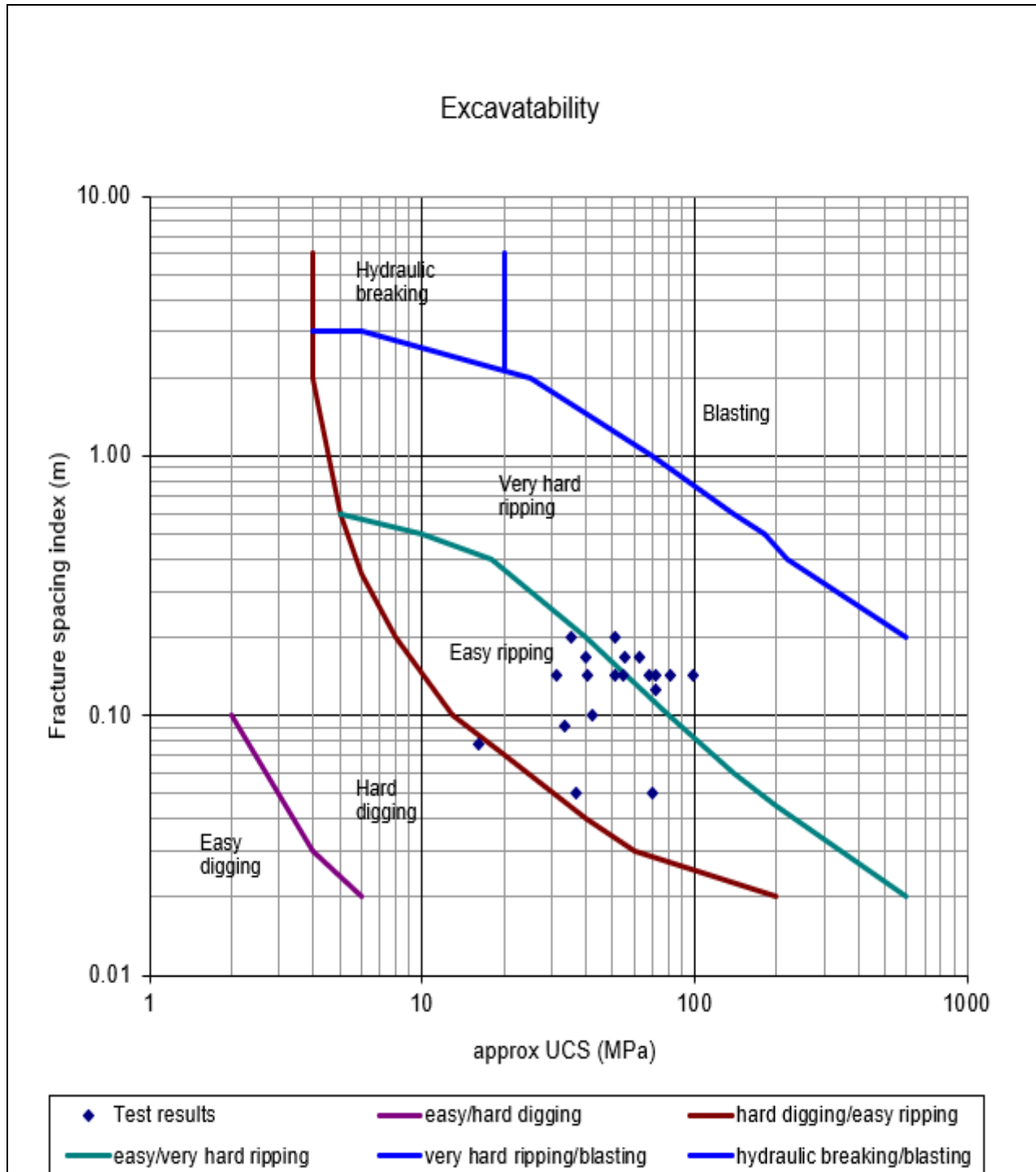
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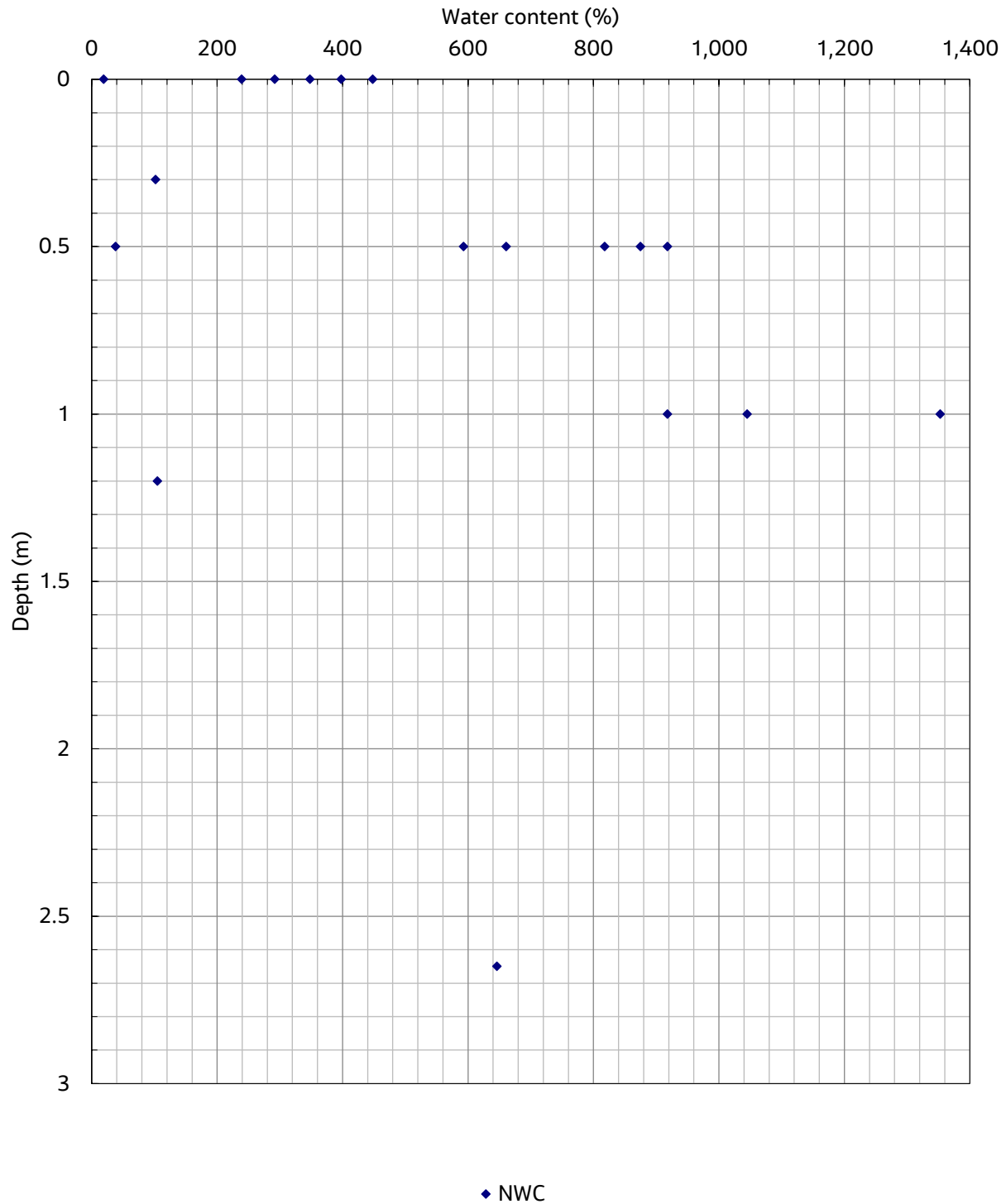
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Client	Figure Title:	Excavatability <i>Igneous Bedrock</i>	
Scottish & Southern Electricity Networks Transmission	Jacobs No.:	B2468300	Not to Scale
Project	Figure No.:	EX-01	Rev 0
ASTI Substation Site – LT521 Fasnakyle			



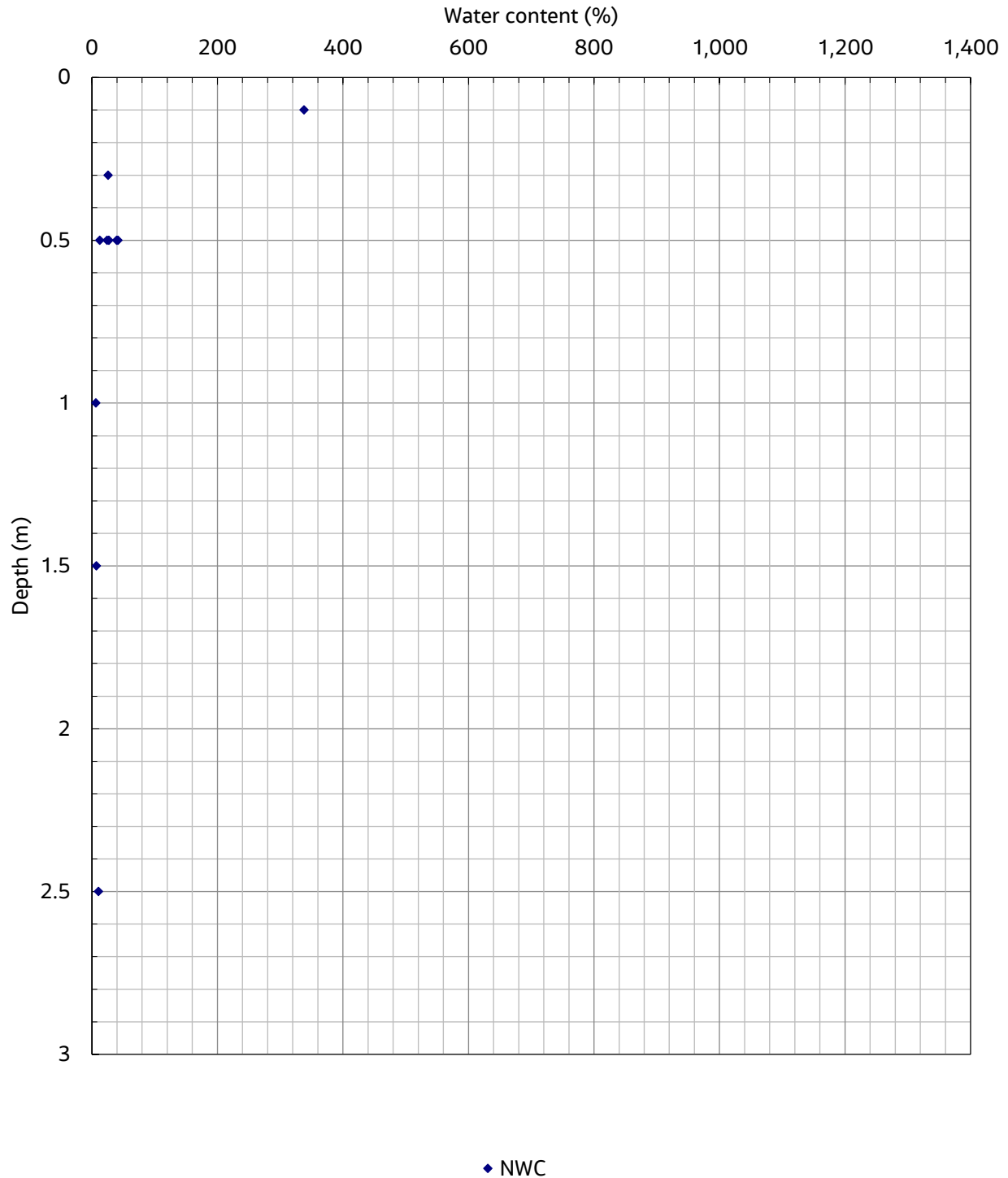


		Notes:	
Client	Figure Title:	Excavatability <i>Metasedimentary Bedrock</i>	
Scottish & Southern Electricity Networks Transmission	Jacobs No.:	B2468300	Not to Scale
Project	Figure No.:	EX-02	Rev 0
ASTI Substation Site – LT521 Fasnakyle			






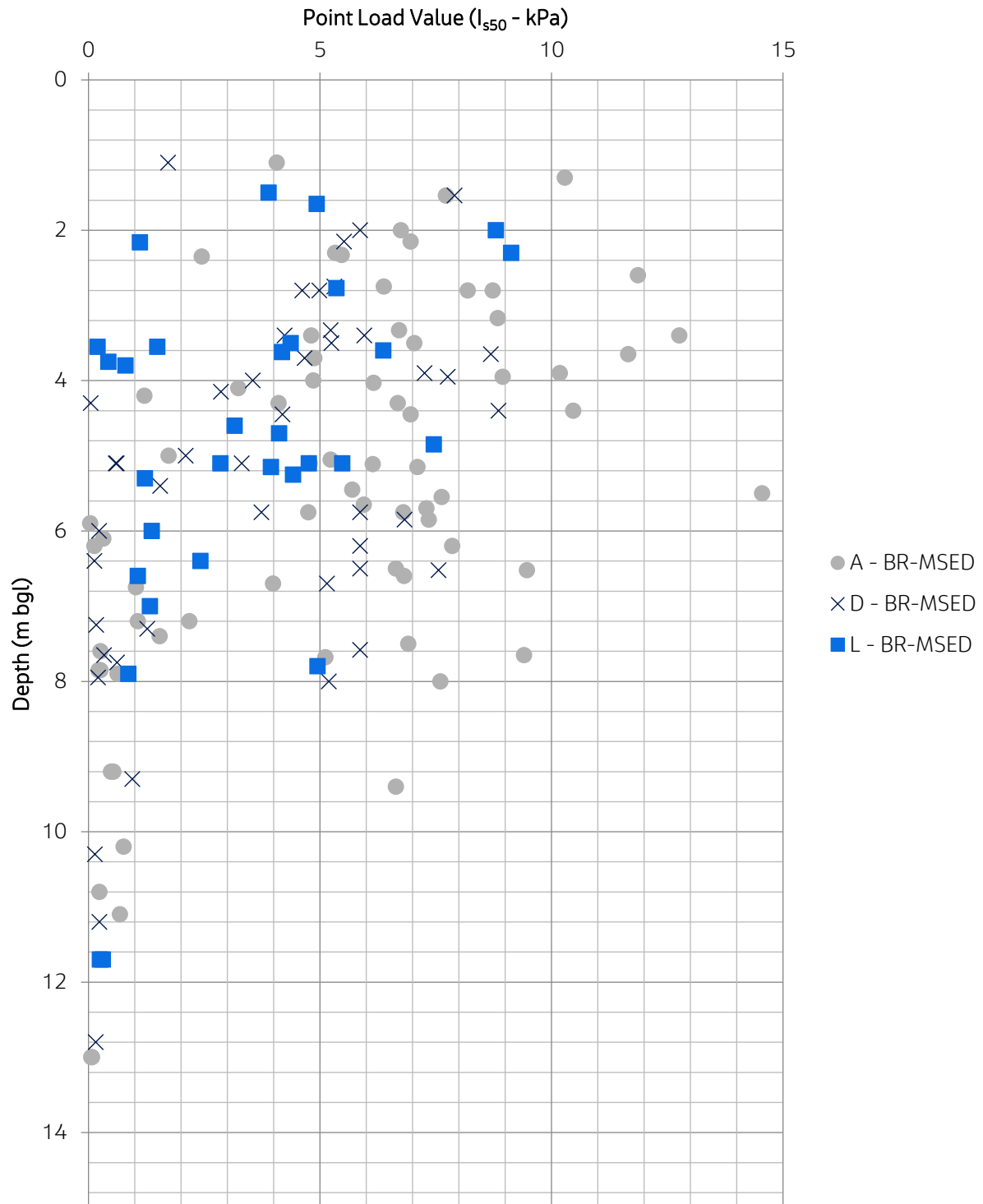






	Notes: Corrected $I_{s50}$ used. Units: kPa		
Client  Scottish & Southern Electricity Networks Transmission	Figure Title:	Point Load Test vs Depth <i>Igneous Intrusion</i>	
Project  ASTI Substation Site – LT521 Fasnakyle	Jacobs No.:	B2468300	Not to Scale
	Figure No.:	PLT-01	Rev 0

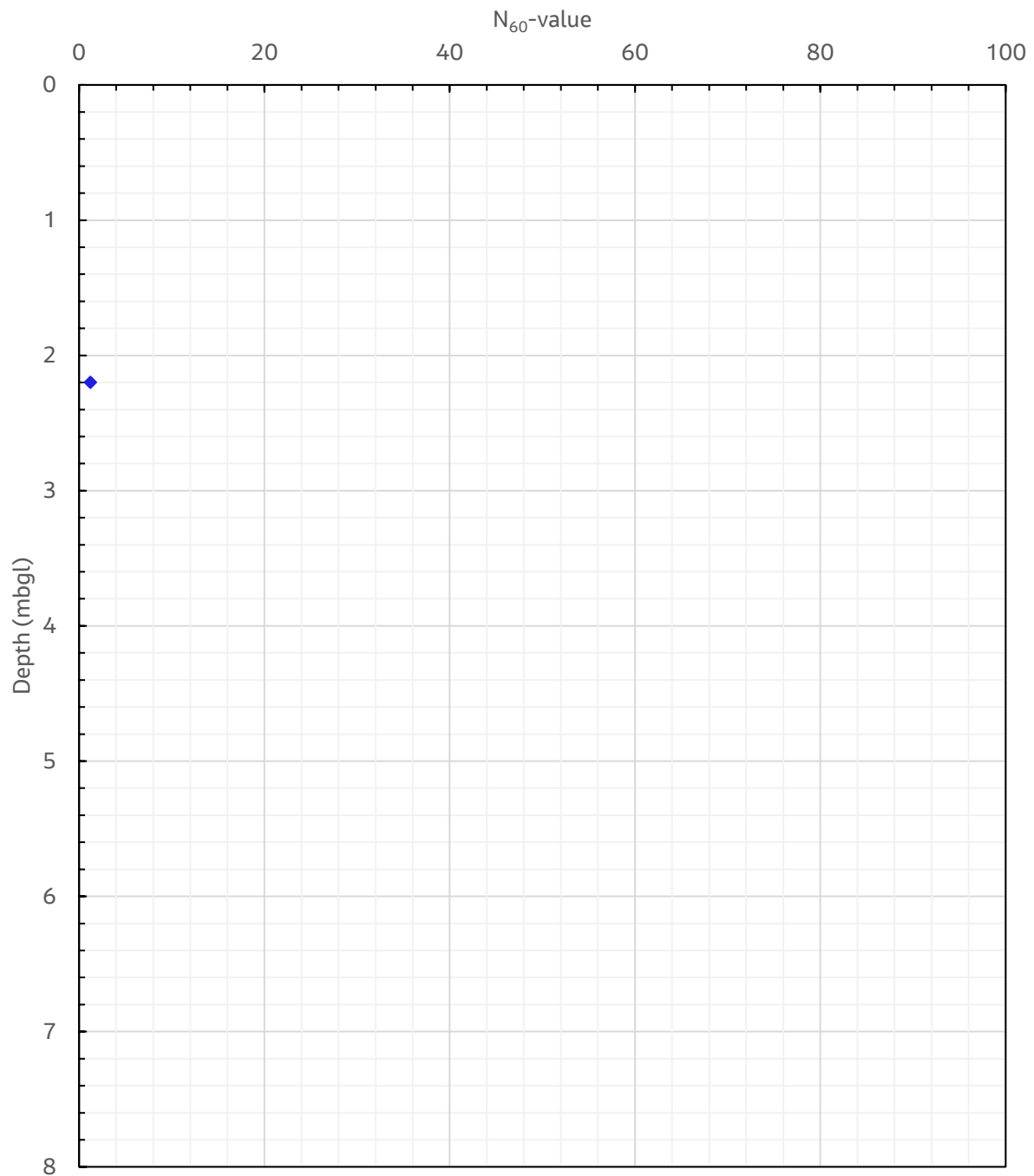




Notes:  
Corrected  $I_{s50}$  used.  
Units: kPa

Client	Figure Title:	Point Load Test vs Depth <i>Metasedimentary</i>	
Scottish & Southern Electricity Networks Transmission	Jacobs No.:	B2468300	Not to Scale
Project	Figure No.:	PLT-02	Rev 0
ASTI Substation Site – LT521 Fasnakyle			





Notes:

Client

Scottish & Southern Electricity Networks  
Transmission

Project

ASTI Substation Site – LT521 Fasnakyle

Figure Title:

SPT N<sub>60</sub> Value vs Depth  
*Peat*

Jacobs No.:

B2468300

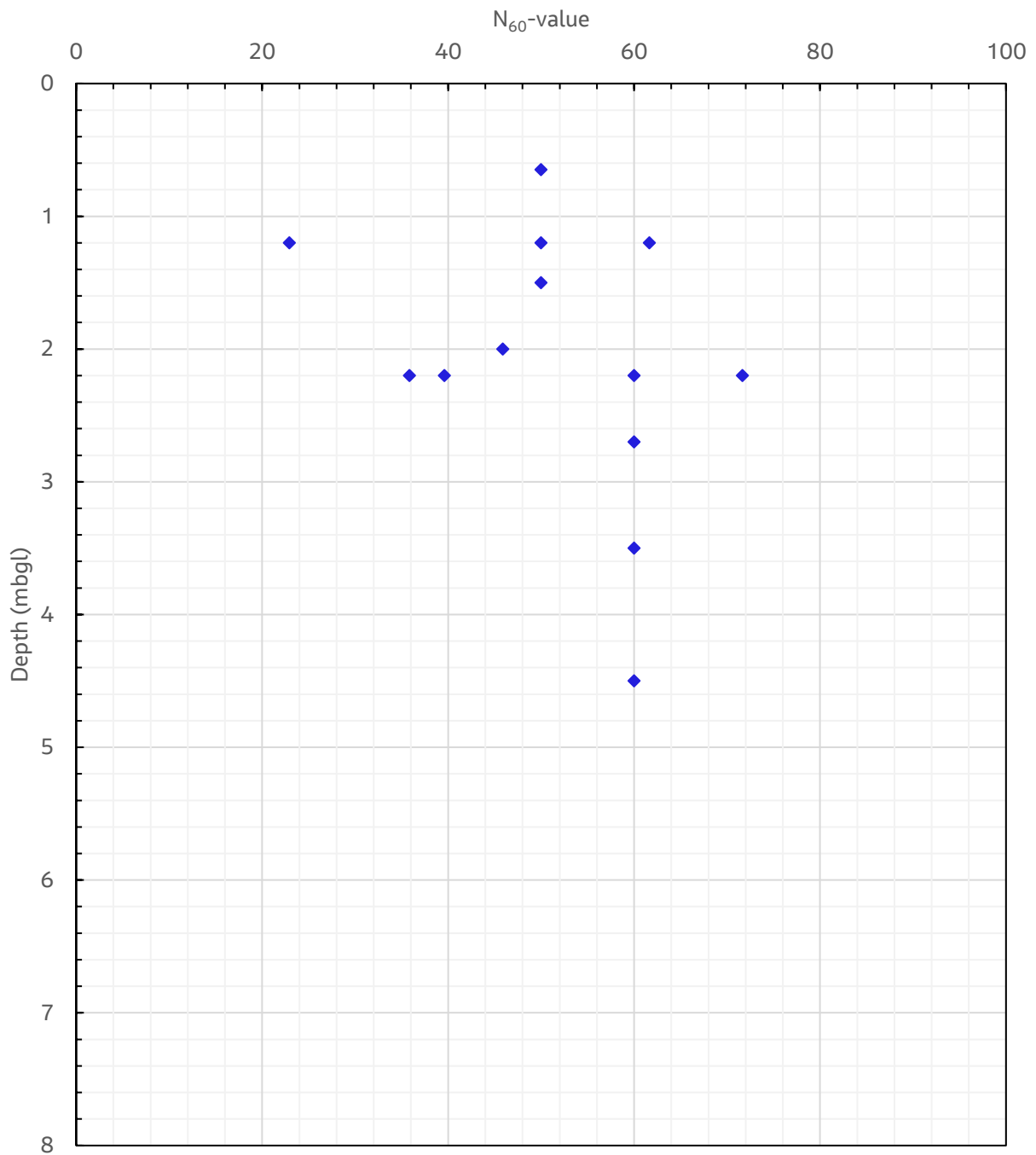
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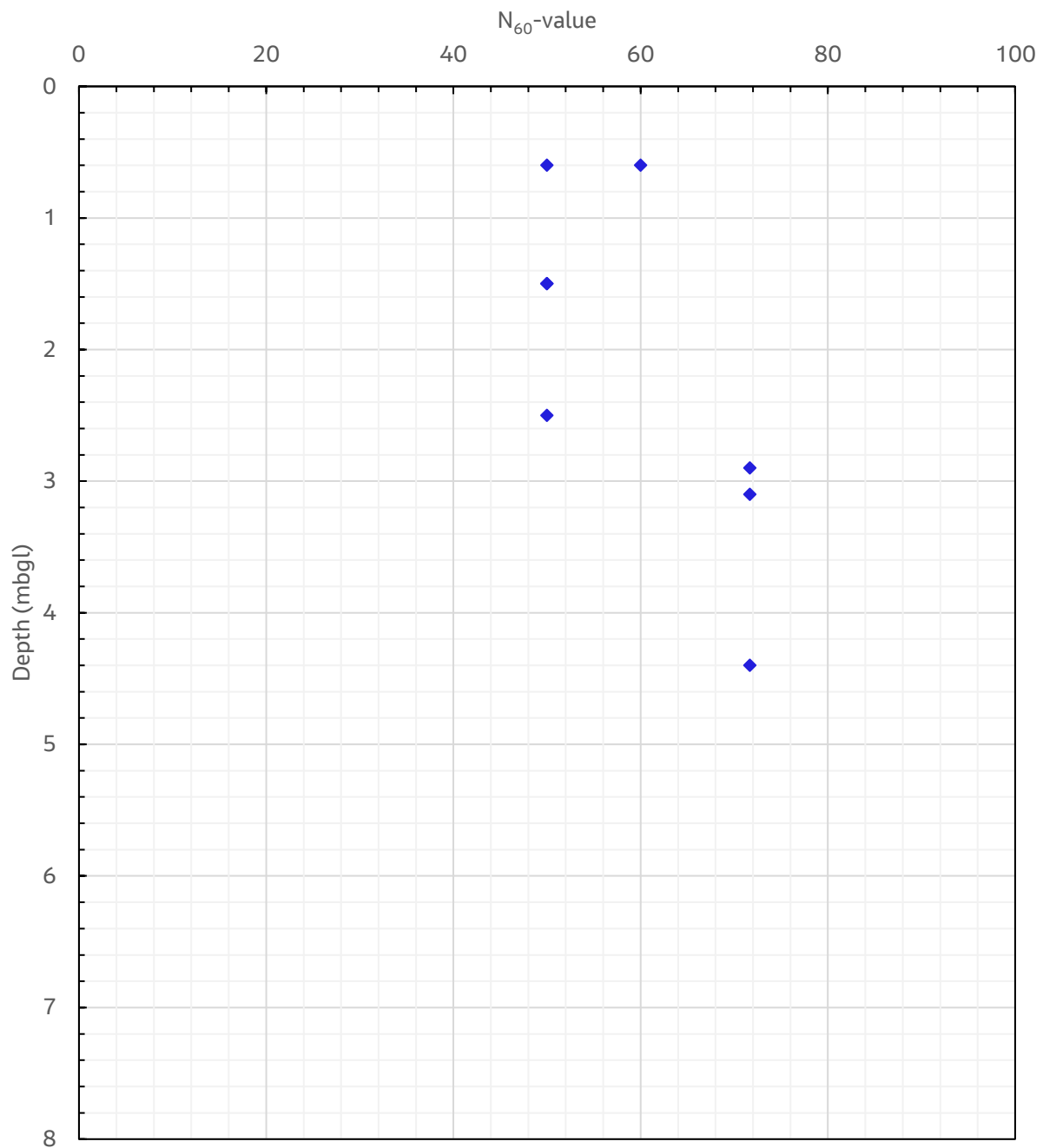
SPT-01

Rev 0









Notes:

Client

Scottish & Southern Electricity Networks  
Transmission

Project

ASTI Substation Site – LT521 Fasnakyle

Figure Title:

SPT N<sub>60</sub> Value vs Depth  
*Weathered Rock*

Jacobs No.:

B2468300

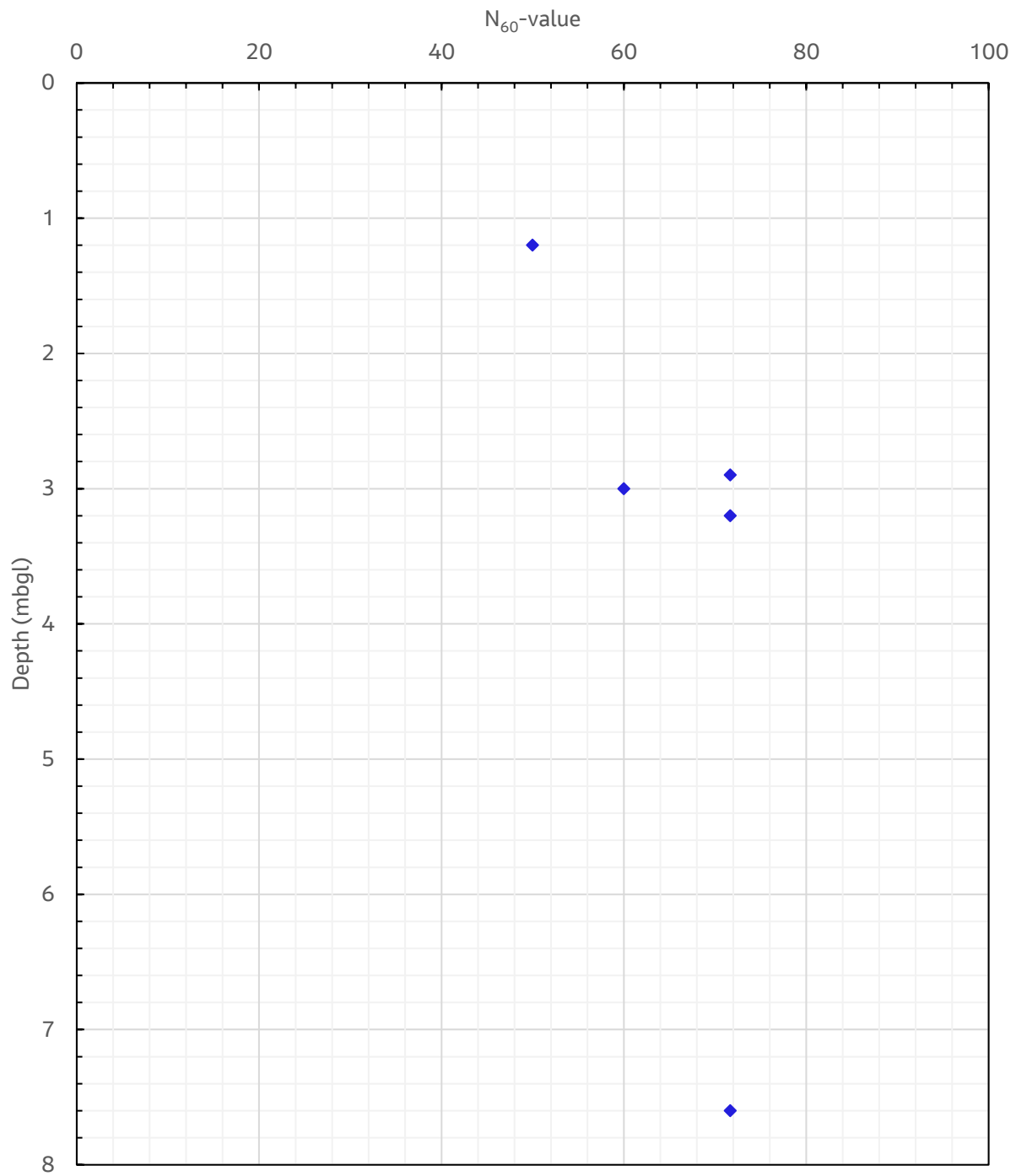
Not to Scale

Figure No.:

SPT-03

Rev 0





# Jacobs

Notes:

Client

Scottish & Southern Electricity Networks  
Transmission

Project

ASTI Substation Site – LT521 Fasnakyle

Figure Title:

SPT N<sub>60</sub> Value vs Depth  
*Bedrock – Metasedimentary*

Jacobs No.:

B2468300

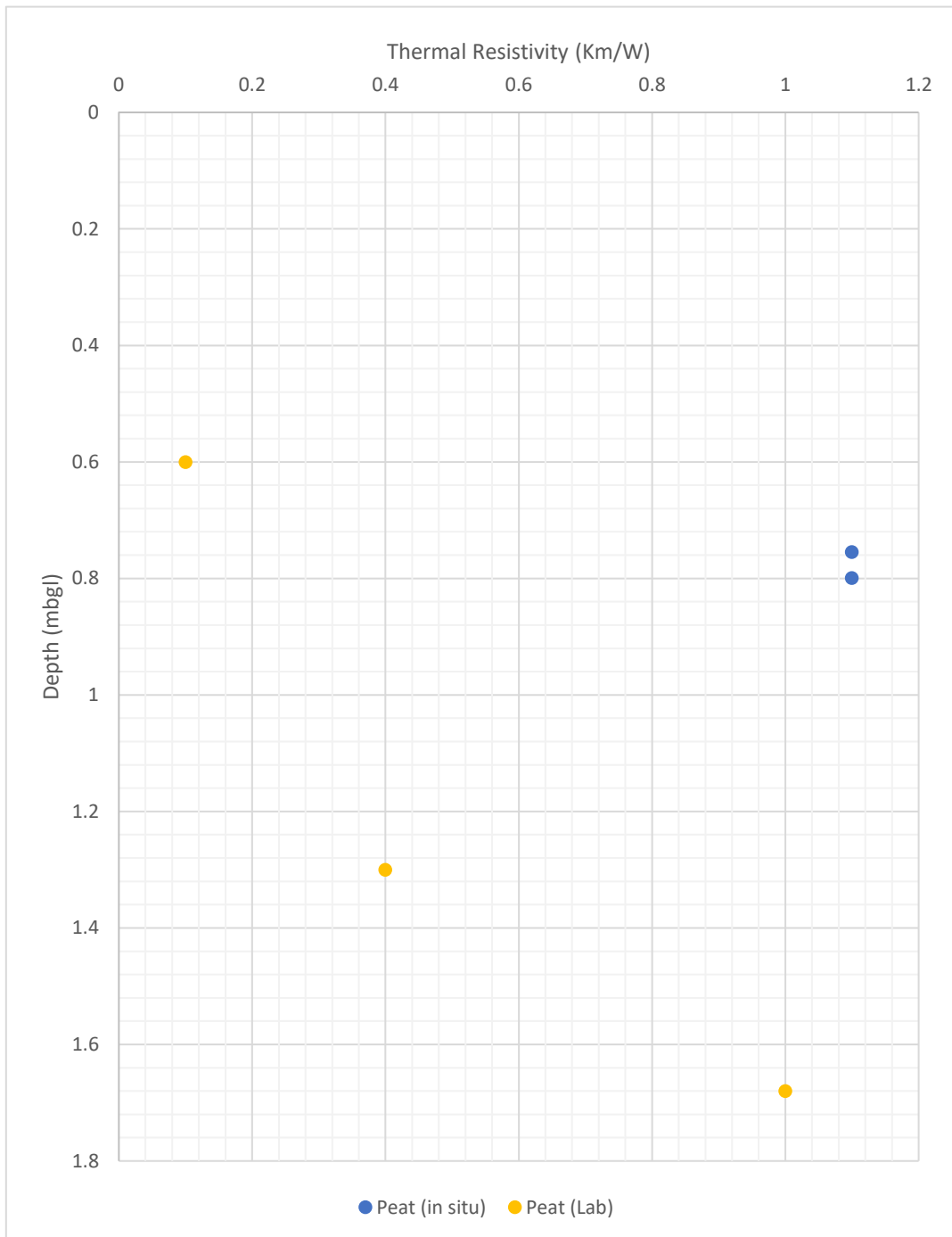
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Figure No.:

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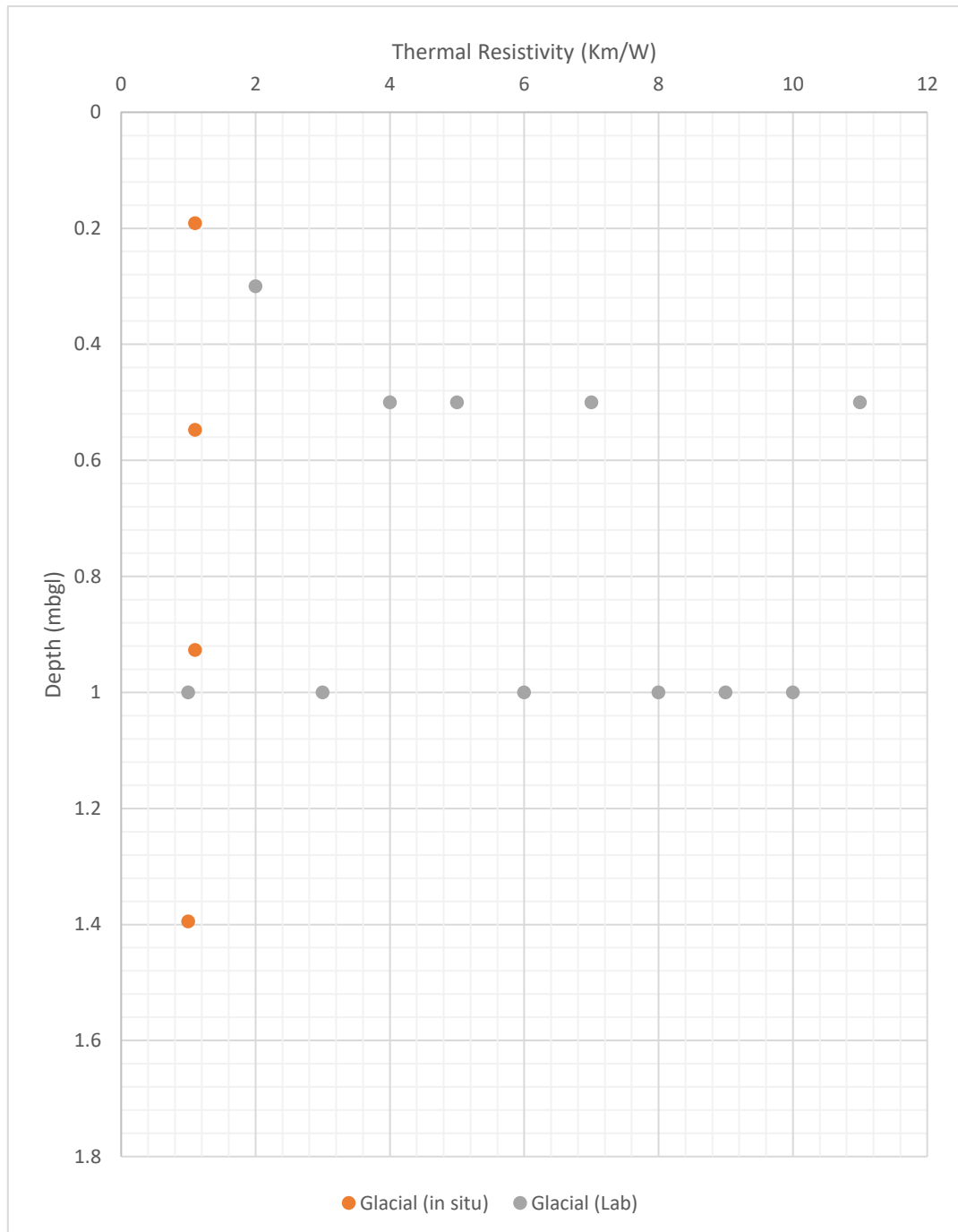
Rev 0



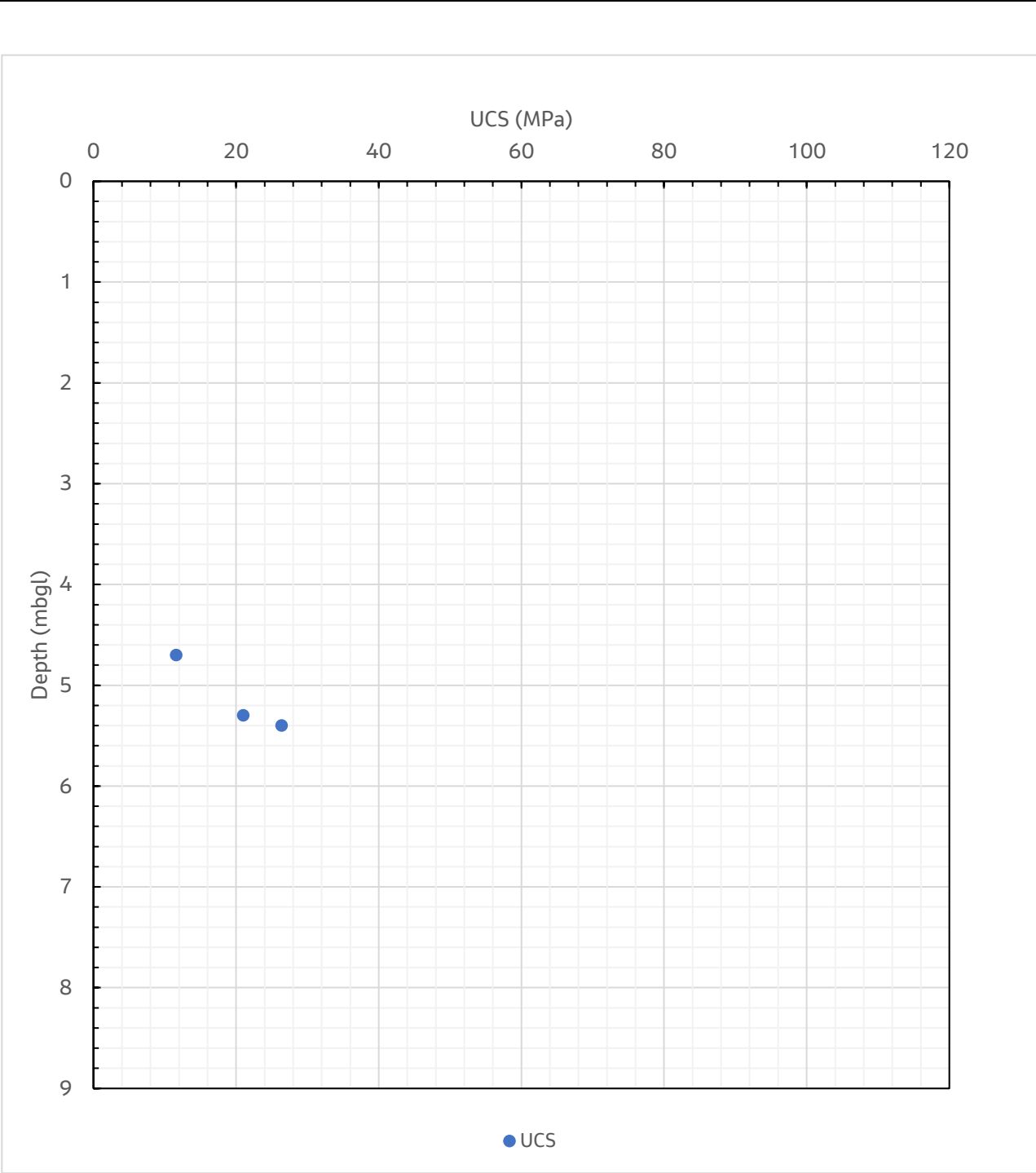


		Notes:	
Client	Figure Title:	Thermal Conductivity vs Thermal Resistivity <i>Peat</i>	
Scottish & Southern Electricity Networks Transmission	Jacobs No.:	B2468300	Not to Scale
Project	Figure No.:	TR-01	Rev 0
ASTI Substation Site – LT521 Fasnakyle			



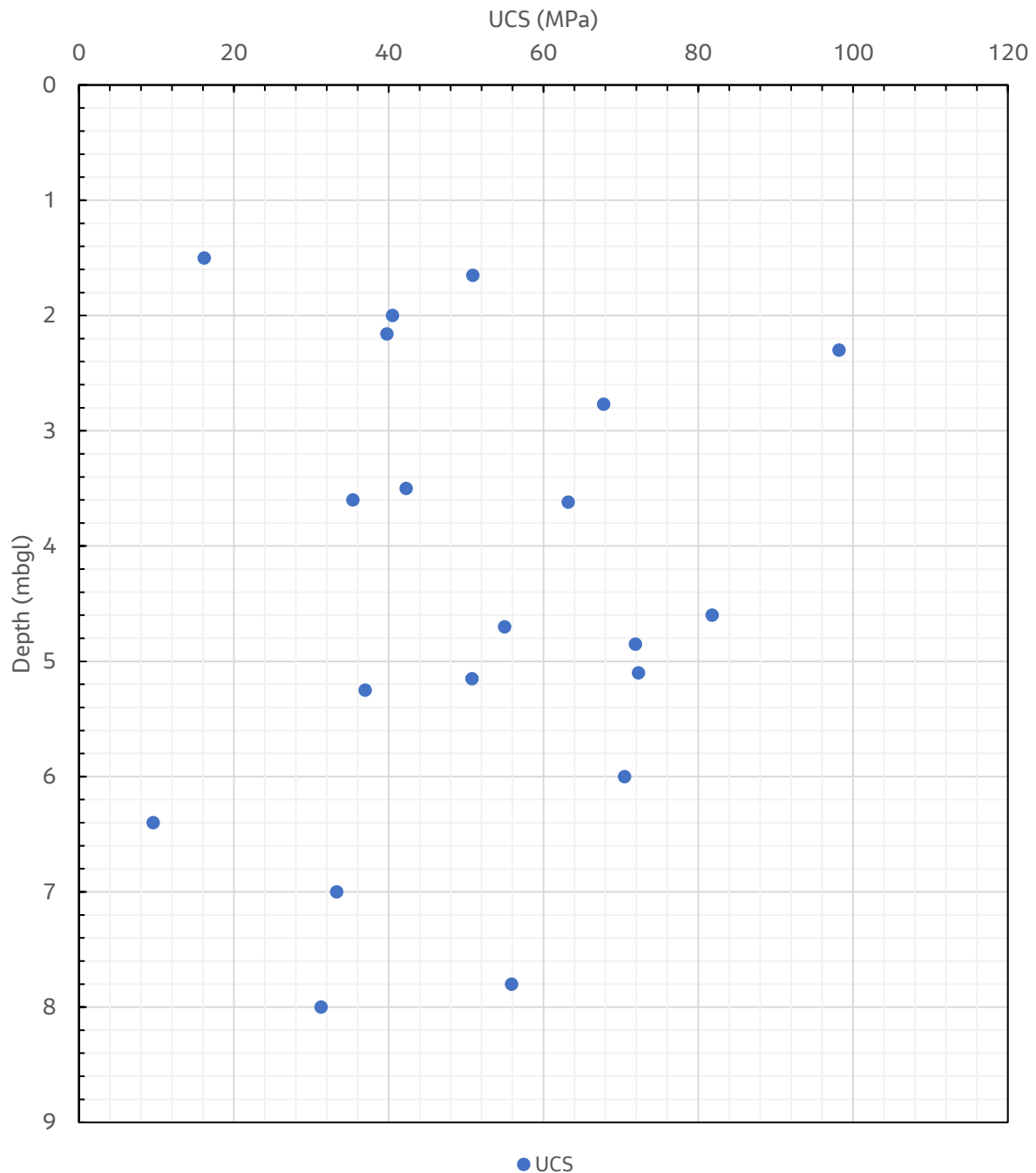






Jacobs		Notes:	
Client	Figure Title:	UCS vs Depth Igneous Bedrock	
Scottish & Southern Electricity Networks Transmission	Jacobs No.:	B2468300	Not to Scale
Project	Figure No.:	UCS-01	Rev 0
ASTI Substation Site – LT521 Fasnakyle			





Notes:

Client

Scottish & Southern Electricity Networks  
Transmission

Project

ASTI Substation Site – LT521 Fasnakyle

Figure Title:

UCS vs Depth  
*Metasedimentary Bedrock*

Jacobs No.:

B2468300

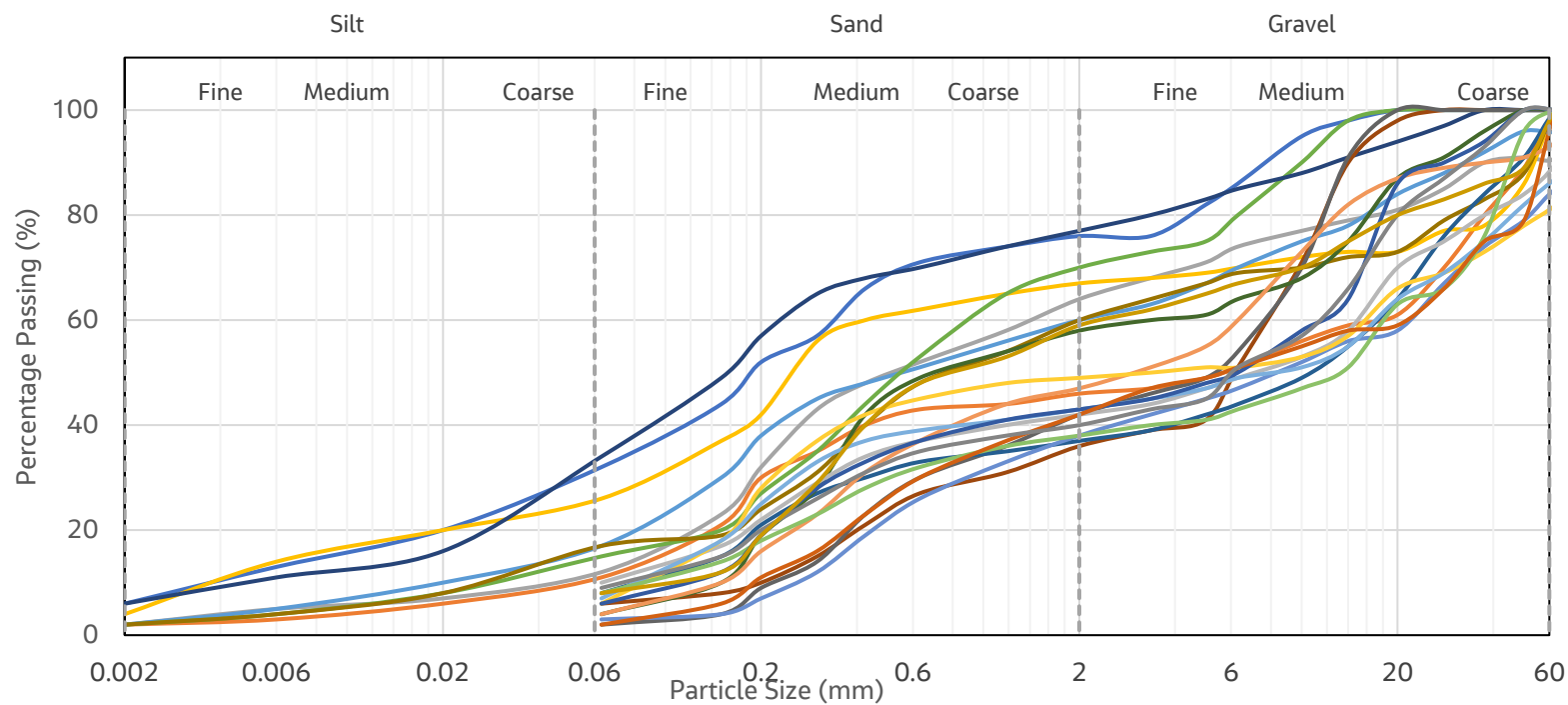
Not to Scale

Figure No.:

UCS-02

Rev 0





Notes:

## Jacobs

Client

Scottish & Southern Electricity Networks  
Transmission

Project

ASTI Substation Site – LT521 Fasnakyle

Title:

Particle Size Distribution  
Granular Glacial Deposits

Jacobs No.:

B2468300

Section:

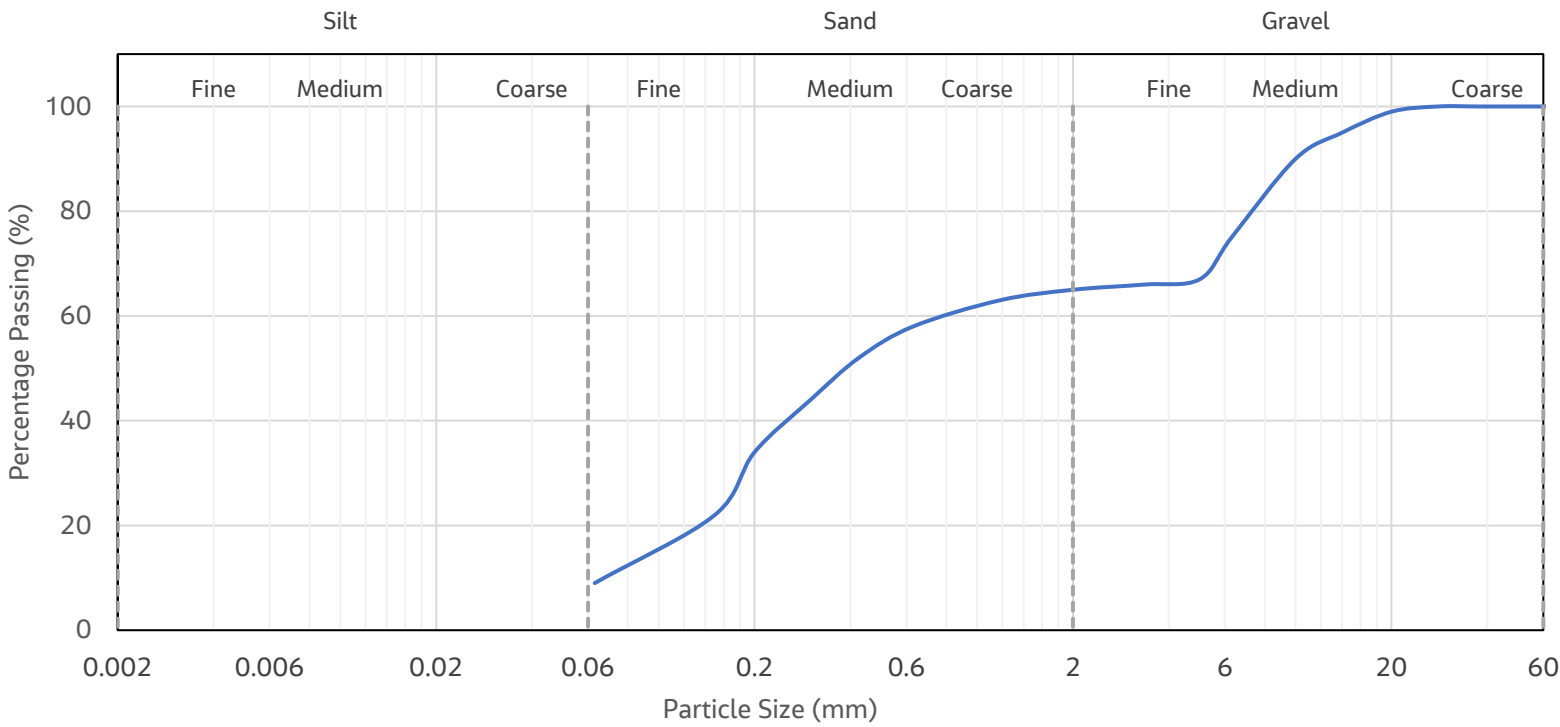
Figure No.:

PSD-01

Rev

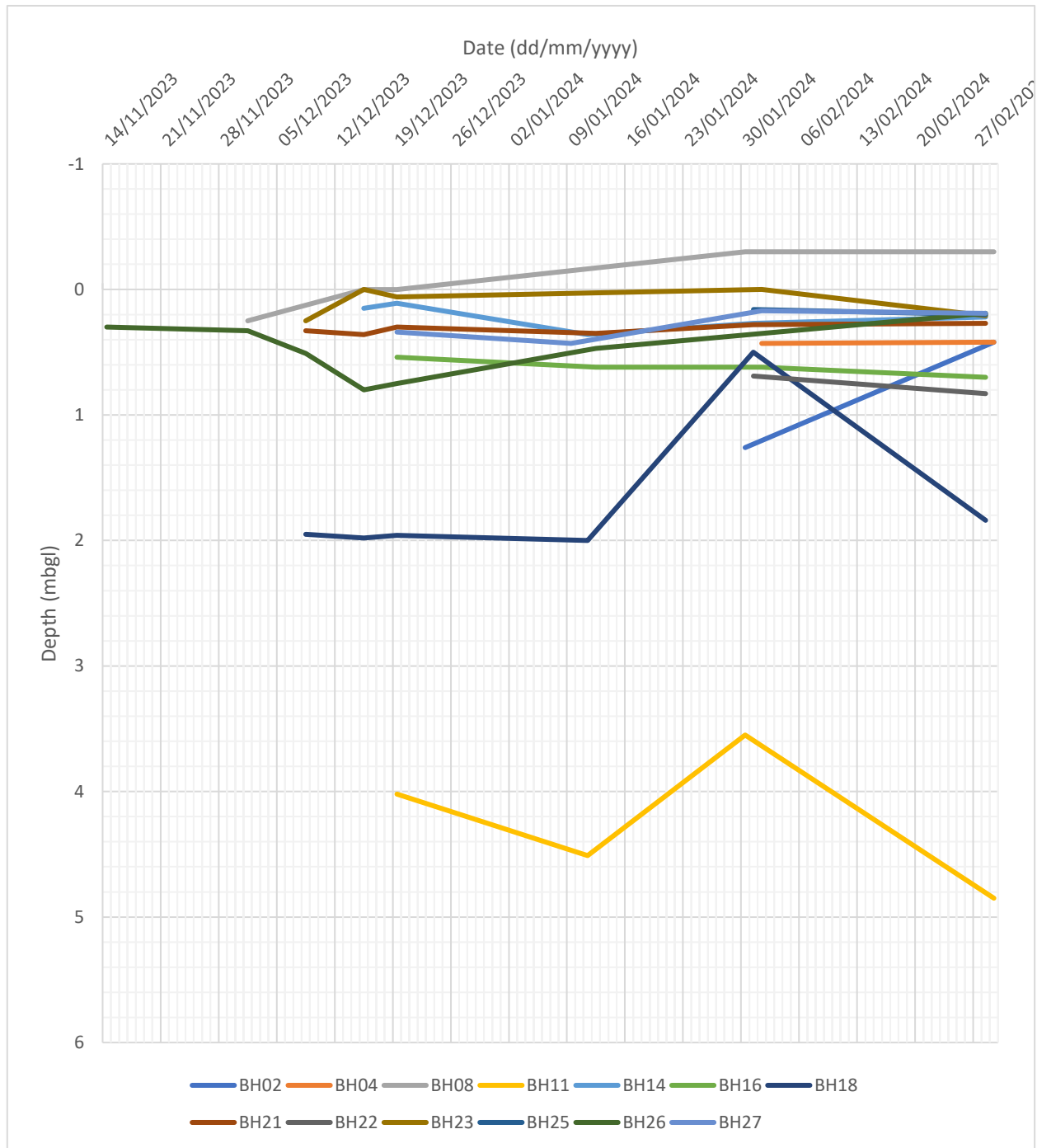
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Notes:	<div>Jacobs</div>		Title:	Particle Size Distribution Weathered Bedrock	
	Client	Scottish & Southern Electricity Networks Transmission			
	Project	ASTI Substation Site – LT521 Fasnakyle	Jacobs No.:	B2468300	
			Section:		Rev
			Figure No.:	PSD-02	0



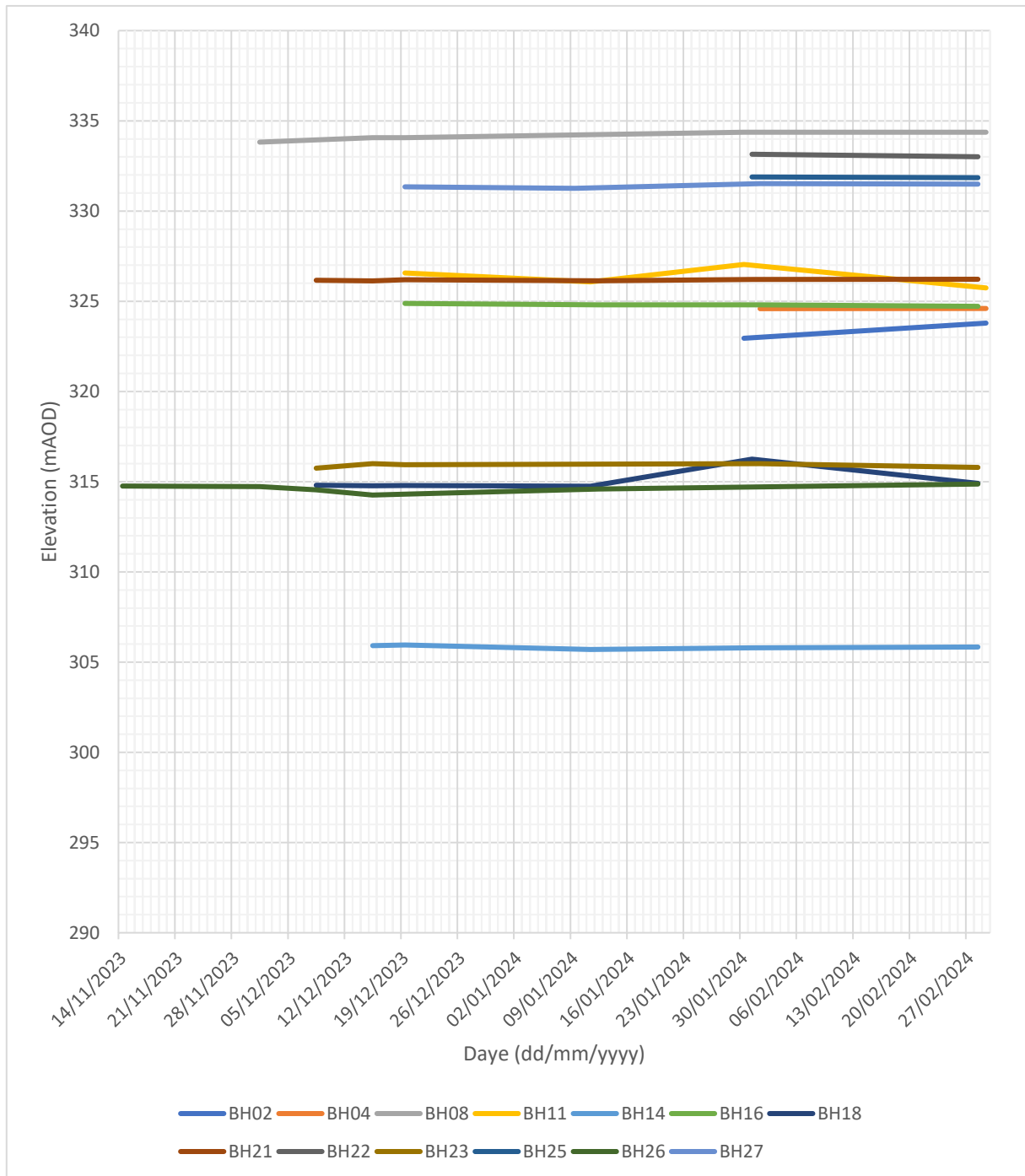


## Notes:

BH08 recorded artesian water on 30/01/2024 and 29/04/2024

Client	Figure Title:	Groundwater monitoring vs Depth <i>All</i>		
SSEN				
Project	Jacobs No.:	B2468300	Not to Scale	
Fasnakyle 400kV Substation	Figure No.:	GW-01		Rev 0





Notes:  
BH08 recorded artesian water on 30/01/2024 and 29/04/2024

Client

Scottish & Southern Electricity  
Networks Transmission

Project

ASTI Substation Site – LT521  
Fasnakyle

Figure Title:

Groundwater monitoring vs Elevation  
*All*

Jacobs No.:

B2468300

Not to Scale

Figure No.:

GW-02

Rev 0



## Appendix C. Geotechnical Risk Register

DRAFT



## **Appendix D. Pre Desk Study UXO Assessment**

DRAFT



## Pre-Desk Study Assessment

Site:	LTS21, Knockfin, Scotland
Client:	Jacobs
Contact:	James Wilkes
Date:	8 <sup>th</sup> November 2023
Pre-WWI Military Activity on or Affecting the Site	None identified.
WWI Military Activity on or Affecting the Site	None identified.
WWI Strategic Targets (within 5km of Site)	The following strategic targets were located in the vicinity of the Site: ■ Transport infrastructure and public utilities.
WWI Bombing	None identified on the Site.
Interwar Military Activity on or Affecting the Site	None identified.
WWII Military Activity on or Affecting the Site	Ad hoc military training is known to have occurred in rural areas of Scotland during WWII. No readily available records have been found to indicate that military training took place on the Site.
WWII Strategic Targets (within 5km of Site)	The following strategic targets were located in the vicinity of the Site: ■ Transport infrastructure and public utilities.
WWII Bombing Decoys (within 5km of Site)	None.
WWII Bombing	During WWII the Site was located in the Landward Area (LA) of Inverness-shire, which officially recorded 94No. High Explosive (HE) bombs with a bombing density of less than 0.1 bombs per 405 hectares (ha).  No readily available records have been found to indicate that the Site was bombed.
Post-WWII Military Activity on or Affecting the Site	None identified.
Recommendation	A detailed desk study, whilst always prudent, is not considered essential in this instance.
Further information	For information about Zetica's detailed UXO desk studies and other UXO services, please visit our website: <a href="http://www.zeticauxo.com">www.zeticauxo.com</a> .  Details and downloadable resources covering the most common sources of UXO hazard affecting sites in the UK can be found <a href="#">here</a> .  If you have any further queries, please don't hesitate to get in contact with us at <a href="mailto:uxo@zetica.com">uxo@zetica.com</a> or 01993 886 682.

This summary is based on a cursory review of readily available records. Caution is advised if you plan to action work based on this summary.

It should be noted that where a potentially significant source of UXO hazard has been identified on the Site, the requirement for a detailed desk study and risk assessment has been confirmed and no further research will be undertaken at this stage. It is possible that further in-depth research as part of a detailed UXO desk study and risk assessment may identify other potential sources of UXO hazard on the Site.





## SSEN TRANSMISSION

PROPOSED LT521 FASNAKYLE 400 KV SUBSTATION  
NEAR TOMICH  
SCOTTISH HIGHLANDS

### REPORT ON GROUND INVESTIGATION

Client:

**SSEN Transmission**

Consulting Engineers:

**Jacobs**

95 Bothwell Street

Glasgow

G2 7HX

**Contract Number: 26560**

Date of Issue: 23 May 2024

Report Issue: Final

Report Type: Factual

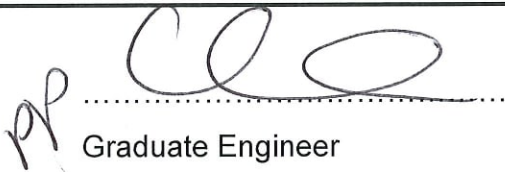
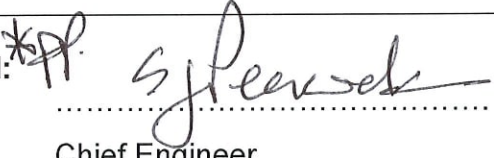


Raeburn Drilling & Geotechnical Limited trading as Igne.  
Whistleberry Road, Hamilton ML3 0HP  
Registered in Scotland No. 00094320



PROPOSED LT521 FASNAKYLE 400KV SUBSTATION  
NEAR TOMICH  
SCOTTISH HIGHLANDS

**Report Type :** Factual  
**Report Issue :** Final  
**File Number :** P:\26560\Report\Report.docx  
**Contract Number :** 26560  
**Issuing Office :** Hamilton

<b>Originator:</b>		
J McGarrigle	Graduate Engineer	23 May 2024
<b>Checked &amp; Approved:</b>		
FM Raeburn	Chief Engineer	23 May 2024

**For and on Behalf of Raeburn Drilling and Geotechnical Limited Trading as Igne**

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Total No of Text Pages: 6

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## **SSEN TRANSMISSION**

### **PROPOSED LT521 FASNAKYLE 400KV SUBSTATION NEAR TOMICH SCOTTISH HIGHLANDS**

#### **REPORT ON GROUND INVESTIGATION**

**Contract No. 26560**

**23 May 2024**

#### **1. INTRODUCTION**

It is proposed to construct the new Fasnakyle 400kV substation, near Tomich in the Scottish Highlands. On the instructions of Scottish & Southern Electricity Networks (SSEN) and to their specification aided by instructions given on site by SSEN's Consulting Engineers, Jacobs, an investigation was carried out to provide information on the ground conditions for design and construction of the proposed works and any geochemical contamination of the site. A factual report only was requested.

The comments given in this report and any opinions expressed therein are based on the ground conditions encountered during the site work, on the results of any in-situ or laboratory testing and any professional third party input. Whilst every effort has been made to ensure the accuracy of the data supplied and any analysis or interpretation derived from it, the possibility exists of variations in the ground, groundwater and ground gas conditions around, below and between the extent of the exploratory positions. No liability can be accepted for any such variations in these conditions. Furthermore, any recommendations are specific to the development as detailed in this Report and no liability will be accepted should they be used for the design of alternative schemes, by third parties, without prior consultation with Raeburn Drilling & Geotechnical Limited trading as Igne.





## **2. LOCATION OF SITE**

The site lies approximately 3km south of the village of Tomich and is accessed by existing forestry tracks (approximate National Grid reference NH299240).

A plan showing the approximate location of the site is given in Figure A1 in Appendix A.

## **3. GROUND INVESTIGATION**

### **3.1 Site Work**

The site work was carried out during the period 6<sup>th</sup> November 2023 to 23<sup>rd</sup> of January 2024, in accordance with the guidelines laid down in EN1997-2:2007 (Ref. 1), BS5930 (Ref. 2), BS10175 (Ref. 3) and in-house procedures. The results of the site work are given in Appendix B, C, D, E, F, and G. A schedule of the site works is presented as Figure B0.

Twenty-five boreholes were sunk by a mixture of dynamic sampling, rotary open-hole and rotary core drilling methods, and thirty eight trial pits were excavated by mechanical means, at the positions shown on the site plan (Fig. A2 in Appendix A). The depths of the boreholes and trial pits, the descriptions of the strata encountered and comments on the ground-water conditions are given in the borehole and trial pit records (Figs. B1 to B63 in Appendix B). The positions and depths of the boreholes and trial pits were determined by the Client and were set out on site by Raeburn Drilling & Geotechnical Limited trading as Igne in conjunction with the Consulting Engineers.

Disturbed and 100mm diameter tube samples were taken at the depths shown on the borehole and trial pit records and were despatched, together with the rock cores, to the depot at Hamilton for storage. Geochemical soil samples were taken directly into tubs. Samples for volatiles analysis were taken into vials, filling the container completely such that no voids were present. Geochemical samples were stored on site and transported to the laboratory in cool boxes. Each sample was uniquely identified and a transmittal note system used throughout sample transfer.

Photographs were taken of the rock core recovered from the boreholes and a copy is presented as Figure C1 to C23 in Appendix C.





Photographs were also taken of the trial pits and associated spoil heaps and a copy is presented as Figures C24 to C61 in Appendix C.

Standard (split-barrel sampler and cone) penetration tests (Ref. 4) were made to assess the relative density of the materials encountered. The values of penetration resistance, given in the borehole records, are not corrected for energy ratio, or in any other way. The references to relative density under the heading "Description of Strata" in the borehole records are based on the field values of penetration resistance uncorrected for the effects of overburden pressure. Three sets of equipment were used for the tests and the Hammer Energy Test Reports are presented as Figures H1 to H3 in Appendix H. Which set was used in each borehole is noted in the "Remarks" section of the borehole record.

Six thousand two hundred and seventy peat probes were undertaken across the site and the results are presented in figure B64 in Appendix B.

In situ thermal resistivity tests (Ref. 5) were attempted in fifteen trial pits. The results are given as Figure D1 in Appendix D.

One soakaway test (Ref. 6) was carried out in TP28 (see Fig. B0). The results are given as Figure D2 in Appendix D.

A nominal 50mm diameter perforated standpipe was installed in thirteen boreholes, details of which are given on the relevant records. Water level readings were undertaken in the instruments weekly during the site works. Tests were subsequently carried out to determine the methane, carbon dioxide, carbon monoxide, hydrogen sulphide and oxygen contents of the gas in the standpipes. In addition, water level readings were taken in the instruments. The results of the monitoring are given in Figure E1 in Appendix E.

All of the standpipes were purged of three well volumes for well development where water quality readings were taken and the results are given in Figure E2 in Appendix E.

The ground levels and co-ordinates at the borehole and trial pit positions, given on the records and Figure B0, were determined using a Global Positioning System and are related to Ordnance Datum and the National Grid, respectively.





### 3.2 Laboratory Testing

A series of test schedules were forwarded by the Consulting Engineers. The laboratory testing was carried out by Terra Tek Limited (trading as Igne) who hold UKAS Accreditation for the scheduled tests.

The geotechnical laboratory testing was carried out in accordance with the referenced testing procedures given below. The results are given in Appendix F1 and comprised the following:

<b>Description of Test</b>	<b>Figures</b>	<b>Ref</b>
Moisture Content Tests	F1	7
Liquid and Plastic Limit Tests	F2 and F3	7
Particle Size Distribution Tests	F4 to F26	7
Moisture Content/Dry Density Relationship Tests	F27 to F30	8
California Bearing Ratio (CBR) Tests	F31 to F33	8
One Dimensional Consolidation Test	F34	7
Large Shear Box Tests	F35	7
Thermal Conductivity/Resistivity and Bulk Density Tests	F36 to F49	5

BRE suite tests were undertaken on a series of soil samples from across the site. The results are presented in Derwentside Environmental Testing Services (DETS) Report References 23-29964, 24-00916, 24-0918 and 24-01789 and included in Appendix F1.

The geotechnical rock testing was carried out in accordance with the referenced testing procedure given below. The results are given in Appendix F2 and comprised the following:

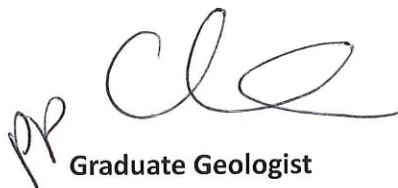
<b>Description of Test</b>	<b>Figures</b>	<b>Ref</b>
Resistance to Fragmentation Tests	F1	9
Particle Density and Water Absorption Tests	F2	10
Slake Durability Tests	F3	10
Soundness by Magnesium Sulphate Tests	F4	11
Flakiness index Tests	F5	12
Aggregate Crushing Value Tests	F6	13
Point load tests	F17	14



Description of Test	Figures	Ref
Unconfined Uniaxial Compressive Strength	F8 to F36	15
Micro Deval	F37	16

BRE suite tests were undertaken on a series of rock samples. The results are presented in Derwentside Environmental Testing Services (DETS) Report References 24-01641 and 24-1642 and included in Appendix F2.

In addition, environmental contaminant testing was carried out on samples of soil recovered from across the site. The results are given in Appendix G and are included in Derwentside Environmental Testing Services (DETS) Report References: 23-27909, 23-27898, 23-28008, 23-28158-0, 23-28261, 23-28262-0, 23-28468, 23-28626, 23-29162 & 24-00791.

  
Graduate Geologist

  
Chief Engineer

**For and on Behalf of Raeburn Drilling and Geotechnical Limited Trading as Igne  
Ground Investigation Department  
Hamilton**

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- (1) BS EN 1997-2. Eurocode 7 : Geotechnical design – Part 2 : Design assisted by laboratory testing. 2007.
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- (3) BS10175: Code of Practice for the Investigation of Potentially Contaminated Sites, British Standards Institution, 2011 + A1:2013.
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- (12) BS EN 933-3:1997 Tests for geometrical properties of aggregates. Determination of particle shape. Flakiness index. 1997.
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- (16) BS EN 1097-1:2011. Tests for mechanical and physical properties of aggregates. Determination of the resistance to wear (micro-Deval). 2011.





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

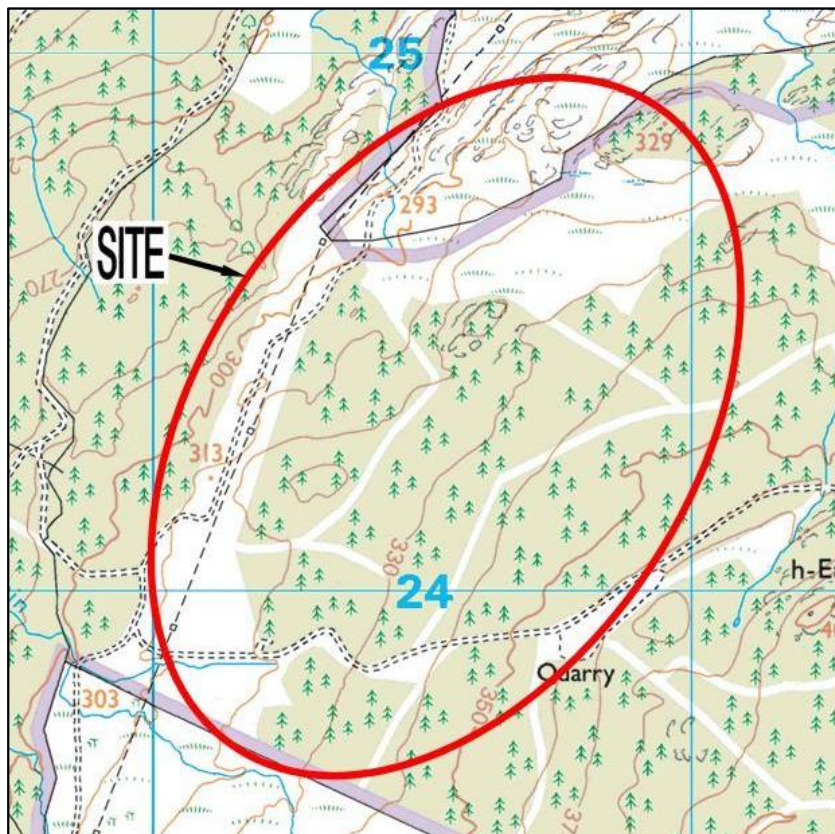
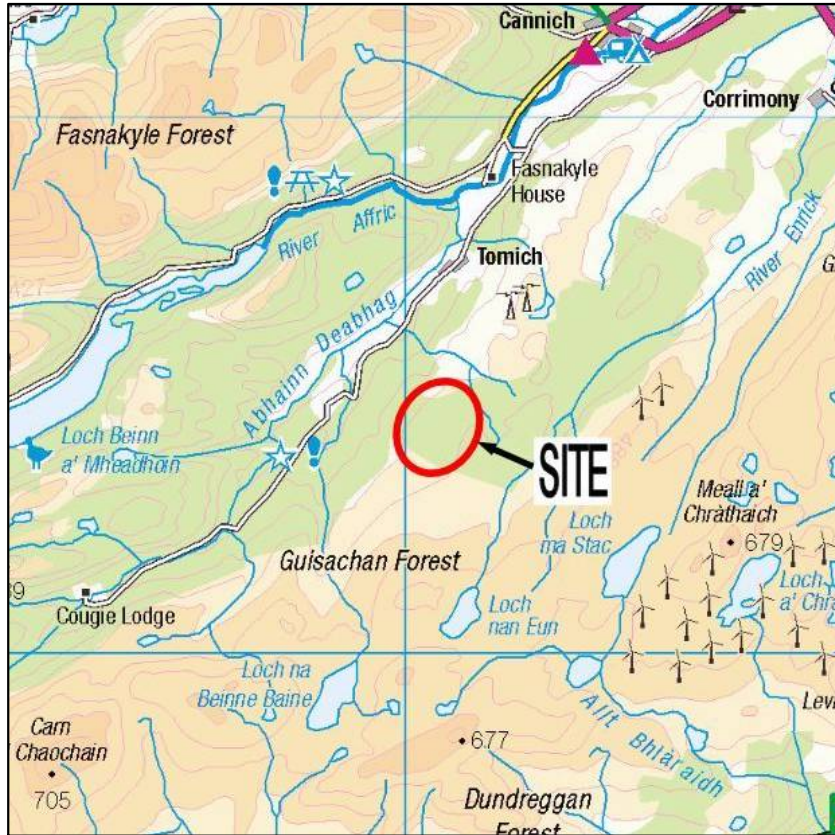
Client: SSEN Transmission

Engineer: Jacobs

APPENDIX A  
PLANS















Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

APPENDIX B  
SITE WORKS







Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

## Boring

The standard method of boring in soil for ground investigation is known as the cable tool method. It uses various tools worked on a wire cable, typically a shell in non-cohesive soils such as sand and gravel, and a clay cutter in cohesive soils such as clay. Very dense soils, boulders or other hard obstructions are disturbed or broken up by chiselling and the fragments removed with the shell. Where the ground conditions require, the borehole is lined with driven steel casings of such sizes that the bottom of the borehole is not less than 125mm diameter.

Where there are constraints upon access, alternative methods of soft ground boring are available. However, each has limitations that need to be taken into account when assessing their suitability and the ground conditions inferred from their results.

## Rotary Drilling

Rotary drilling is employed to extend ground investigation beyond the practical limit of cable tool boring in hard formations, commonly rock. Core drilling is used to obtain continuous intact samples of the formation and is generally undertaken with double tube swivel type core barrels fitted with tungsten or diamond bits as appropriate to formation type and hardness. Open-hole rotary drilling using tricone rock roller bits or tungsten insert drag bits, or down-the-hole hammers, is carried out where more limited information is sufficient, strata identification being made from cuttings only. Open-hole rotary drilling methods may also be employed for fast penetration of soils where detailed sampling is not required, prior to coring at depth. Air or water is the flushing medium normally used with rotary drilling methods. Where the ground conditions require, the borehole is lined with inserted or drilled-in casing. Rotary percussion allows dynamic sampling within soils.

## Sonic Drilling

Sonic drilling is employed as an alternative boring method for soft ground and rock. The sonic rig operates much like any conventional top-drive rotary rig. The main difference is that a sonic drill rig has a specially designed hydraulically powered drill head or oscillator which produces adjustable high frequency vibratory forces. Sonic samples are extruded direct to plastic liner bags or semi-rigid plastic liners for rapid inspection. Bulk and small disturbed samples are then taken from the plastic liner bags.

## Trial Pits

Trial pits are excavated by hand or machine for a number of purposes such as avoiding services, exposing foundations or obtaining a better view of shallow ground conditions.

## Samples and In-situ Tests

Tube samples of cohesive soils are generally taken with a 100mm internal diameter open drive sampler known as a U100, with an area ratio of 30%. The sampler is driven into the soil at the bottom of the borehole by a sliding hammer. After a sample is taken, the drive head and cutting shoe are unscrewed from the sample tube and any wet or disturbed soil removed from either end. The sample tube is then sealed with wax and fitted with plastic end caps.

A range of more specialised equipment, e.g. thin walled open drive sampler (UT100), piston or foil samplers, may be used to obtain higher quality samples in conditions where conventional open drive sampling is impracticable or unsatisfactory. The UT100 sampler is specifically utilised to obtain class 1 samples of cohesive soils as required under BS EN1997-2.

Disturbed samples are taken from the boring tools or trial pits at regular intervals. The samples are sealed in airtight containers. Bulk samples are large disturbed samples from the boring tools, or from trial pits, generally where tube samples are unavailable.

The Standard Penetration Test, SPT, in accordance with BS EN ISO 22476-3, determines the resistance of soil to the penetration of a split barrel sampler. A 50mm diameter split barrel sampler is driven 450mm into the soil using a 63.5kg hammer with a 760mm drop, and the penetration resistance, the "N" value, is expressed as the number of blows required to achieve 300mm penetration below an initial penetration of 150mm, the seating drive, through any disturbed soil at the bottom of the borehole.

In coarse soils, the Cone Penetration Test (CPT) is conducted in the same manner as the SPT but using a 50mm diameter 60 degree apex solid cone point to replace the split barrel sampler.

## Peat Probing

Generally, peat probing is carried out using a Mackintosh Probe. The probe is pushed through the peat until resistance is met then the depth at which this occurred is recorded.

## Groundwater

Borehole water levels are recorded, together with the depths at which seepages or inflows of groundwater are detected and the observations noted on the borehole or trial pit records. These observations may not give an accurate indication of groundwater conditions, for the following reasons:

- The trial pit or borehole is rarely left standing at the relevant depth for sufficient time for the water level to reach equilibrium.
- A permeable stratum may have been sealed off by the borehole casing.
- It may have been necessary to add water to the borehole to facilitate progress.
- There may be seasonal, tidal or other effects at the site.

A more accurate record of groundwater behaviour may be obtained from standpipes or standpipe piezometers.

## Gases

Determination and measurement of gases in the ground, commonly in relation to landfills, may be made directly from the ground surface, where a hole is formed by driving a solid and rigid steel spike to depths normally in the range 1.0 to 1.5m. Gas emissions are analysed using an appropriate portable analyser. However, research has shown that the small sample hole size and smearing effects can give a false negative result.

Where more accurate or longer term measurement of emissions is required, gas monitoring standpipes are installed in boreholes.







Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

## SOIL SAMPLES

U (X) General purpose tube sample; X No of blows to drive sampler  
Piston Piston sample

NOTE: Tube samples are 100mm diameter unless otherwise specified in the remarks. Suffix 'a' indicates sample not recovered; suffix 'b' indicates full penetration of sampler not obtained;  
suffix 'c' indicates full penetration of sampler but limited recovery

D/J/T/V Small Disturbed/Jar/Tub/Vial sample

B/LB Bag/Large Bag sample

UT (X) Thin walled push in sampler (type OS-T/W); X No of blows to drive sampler

ET Sample appropriate for geochemical analyses (tub)

## CORE RECOVERY AND ROCK QUALITY

C Core Sample

TCR Total Core Recovery: The total core recovered expressed as a percentage of the core run length

SCR Solid Core Recovery: The core recovered as solid cylinders expressed as a percentage of the core run length

RQD Rock Quality Designation: The core recovered as solid cylinders of length 100mm or more expressed as a percentage of core run length.

RO-S/RO-R Rotary Open Hole Drilling through Soil / Rotary Open Hole Drilling through Rock

FI Fracture Index: The number of discontinuities expressed as fractures per metre

Flush "Depth" indicates depth down to which recorded "Returns" relate

NI Non Intact

NR No Recovery (assumed)

## GROUND-WATER

W Water Sample

∇ Ground-water encountered

∇ Depth to which ground-water rose

∇ Ground-water cut off by the casing

WS Water Sample from Standpipe

## IN SITU AND FIELD TESTS

SPT=X a/b (pen) Standard penetration test (split barrel sampler(SPT) or cone (CPT)); X is the penetration (N) value;  
or  
CPT=X a/b (pen) 'a' is blow/75mm for seating drive; 'b' is blows/75mm for test drive; (pen) is test drive penetration if less than 300mm.

CBR California bearing ratio test

MCV Moisture condition value test

K Permeability test

HP Hand penetrometer test

FV Field vane test

HV Hand vane test (I = Initial, R = Residual)

ID Density test

PID Photo Ionisation Detector (ppm)

## LEGENDS

Material legends are in accordance with ISO 710-1 and 710-2

# before a description indicates that it is based on the Driller's record.

## INSTALLATIONS (BACKFILL)



Concrete



Bentonite



Spoil



Bentonite/cement grout



Sand



Solid pipe



Gravel



Slotted pipe



Porous element



Wooden plug



Asphalt

## DIMENSIONS

All dimensions in metres unless otherwise stated.

## ROTARY DRILLING SIZES

Letter	Nominal Diameter (mm)	
	Borehole	Core
Standard		
N	76	54
H	100	76
P	121	92
S	146	113
Non-standard		
412	108	75

Other casing and borehole diameter sizes are available and may be used where required. Details will be on the individual BH logs.

## KEY TO BOREHOLE AND TRIAL PIT RECORDS





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs



### Activity Type/Method Key

CC	Concrete Coring
COM	Rotary Percussion
CP	Cable Percussion (Shell and Auger)
CPT	Static Cone Penetration Test
DCP	Dynamic Cone Penetrometer
DP	Dynamic Cone Sampling
GBS	Geobor-S
HP	Hand Excavated Trial Pit
ICBR	In Situ CBR Test
IDEN	In Situ Density Test
IP	Inspection Pit
IRES	In Situ Resistivity Test
IVAN	In Situ Vane Test
MOSTAP	Monster Steek Apparaat
MP	Mackintosh Probe
PP	Peat Probe
RC	Rotary Coring
RO	Rotary Open Hole
RO-R	Rotary Open in Rock
RO-S	Rotary Open in Soils
SB	Sonic Boring
SC	Sonic Coring
SCP	Static Cone Penetrometer
SL	Sampling Location
SO	Sonic Open Holing
TP	Trial Pit/Trench
WLS	Dynamic (Windowless) Sampler
WS	Window Sampler

## KEY TO BOREHOLE AND TRIAL PIT RECORDS





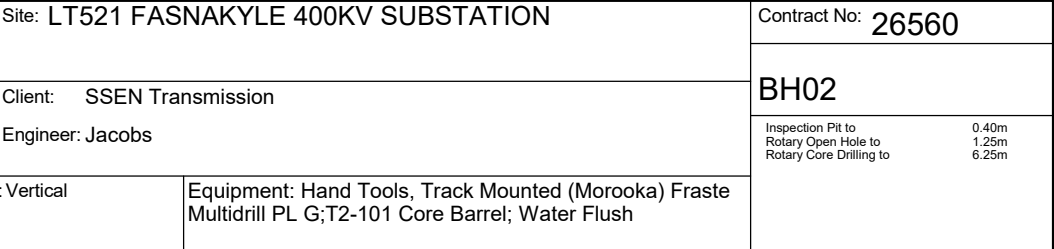
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			Client: SSEN Transmission Engineer: Jacobs				
Exploration Point	Co-ordinates		Ground Level (mO.D.)	Method	Figure No	Installation	Remarks
	Easting (m)	Northing (m)					
BH02	230957.4	824667.9	324.21	IP+RO+RC	B1	1	
BH03	231005.5	824552.3	334.84	IP+RO+RC	B2		
BH04	230583.7	824367.6	325.02	RO+RC	B3	1	
BH08	230911.0	824484.8	334.07	IP+RO+RC	B4	1	
BH09	230718.4	824400.4	330.21	IP+RO+RC	B5		
BH11	230649.8	824534.6	330.59	IP+RO+RC	B6	1	
BH12	230522.9	824488.3	316.47	IP+RO+RC	B7		
BH13	230850.2	824392.4	337.96	IP+RO+RC	B8		
BH14	230262.0	824416.4	306.06	IP+RO+RC	B9	1	
BH15	230368.0	824405.7	311.60	IP+RO+RC	B10		
BH16	230495.4	824347.1	325.42	IP+RO+RC	B11	1	
BH17	230239.5	824312.0	310.49	IP+WLS+RO+RC	B12		
BH18	230331.5	824305.2	316.75	IP+WLS+RC	B13	1	
BH19	230463.8	824263.7	323.52	RO+RC	B14		
BH20	230203.9	824220.1	324.57	RO+RC	B15		
BH21	230356.8	824171.5	326.49	IP+WLS+RO+RC	B16	1	
BH22	230528.2	824105.7	333.84	IP+WLS+RO+RC	B17	1	
BH23	230157.4	824098.9	316.00	IP+RO+RC	B18	1	
BH24	230301.7	824043.0	321.96	IP+RO+RC	B19		
BH24A	230301.7	824044.2	321.87	IP+WLS	B20		
BH25	230475.1	823981.9	332.05	IP+WLS+RO+RC	B21	1	
BH26	230151.4	823958.3	315.06	IP+RO+RC	B22	1	
BH26A	230151.1	823958.5	315.03	IP+WLS	B23		
BH27	230577.6	824224.8	331.69	IP+WLS+RO+RC	B24	1	
BH28	230609.8	824312.1	328.38	IP+WLS+RO+RC	B25		
TP01	230909.8	824597.0	328.24	TP	B26		
TP02	230760.3	824540.0	327.80	TP	B27		
TP03	230602.9	824468.1	327.16	TP	B28		
TP04	230822.3	824463.6	334.79	TP	B29		
TP05	230957.5	824534.9	334.48	TP	B30		
TP06	230650.7	824398.5	328.35	TP	B31		
TP07	230996.3	824655.2	322.32	TP	B32		
TP08	230516.7	824438.7	317.13	TP	B33		
TP09	230929.1	824439.0	341.21	TP	B34		
TP10	230743.1	824359.1	333.41	TP	B35		
TP11	230856.1	824725.7	318.83	TP	B36		
TP12	230703.0	824668.6	324.71	TP	B37		
TP13	230558.6	824593.3	318.63	TP	B38		
TP14	230433.8	824549.7	303.60	TP	B39		
Originator		Title: SCHEDULE OF SITE WORKS				<div></div> <div>B0</div> <div>Sheet 1 of 2</div>	
CR							
Chk & App	Status						
FMR	Final						

Style: SCHEDULE OF BH & TP File: P:\GINTW\PROJECTS\26560.GPJ Printed: 07/03/2024 09:18:25 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com










Remarks: # Description based on Driller's log. An inspection pit was excavated by hand to a depth of 0.40m to clear services. Exemption No. 01/2024 due to encountering possible rock. No ground-water observations are recorded due to the use of water flush. The Penetration Tests were carried out using Trip Hammer RD54. A 50mm diameter perforated standpipe was installed to a depth of 6.25m.	To Depth	
	Boring	Casing
	175 101	1.25 6.25

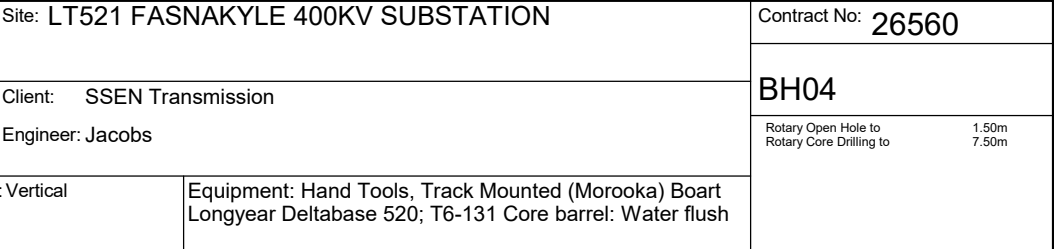
Driller DB	Originator JM	Ground-water				Water Added		Chiselling		hh:mm	Returns	Flush				Fig No:
		Struck	Rose To	Time(min)	Cut Off	From	To	From	To			Type	From (m)	To (m)		
Chk & App FMR	Status <b>Final</b>										100 100	Air Water	0.40 1.25	1.25 6.25		B1 Sheet 1 of 1 Scale 1:50

Style: BOREHOLE NEW File: P:\GINTWP\PROJECTS\26560.GPJ+44 (0)1698 719999 Printed: 07/03/2024 19:09:11  
Raeburn Drilling and Geotechnical trading as GNE, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries.raeburndrilling@igne.com










Remarks: # Description based on Driller's log. An inspection pit was not excavated due to shallow rock. Exemption number 03/2024 due to encountering possible rock. Ground-water was encountered at a depth of 1.50m. The Penetration Tests were carried out using Trip Hammer RD24. A 50mm diameter perforated standpipe was installed to a depth of 7.50m.	To Depth	
	Boring	Casing
	175 131	1.50 7.50

Driller	Originator	Ground-water				Water Added		Chiselling		Flush					Fig No:	
SW	JM	Struck	Rose To	Time(min)	Cut Off	From	To	From	To	hh:mm	Returns	Type	From (m)			To (m)
Chk & App FMR	Status <b>Final</b>										100	Water	1.50			7.50

B3  
Sheet 1 of 1  
Scale 1:50

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Site: LT521 FASNAKYLE 400KV SUBSTATION		Contract No: 26560
Client: SSEN Transmission		BH09
Engineer: Jacobs		Inspection Pit to 0.40m Rotary Open Hole to 3.10m Rotary Core Drilling to 8.60m
Vertical	Equipment: Hand Tools, Track Mounted Commachio Geo 205; Water Flush;T6-131 Core Barrel	



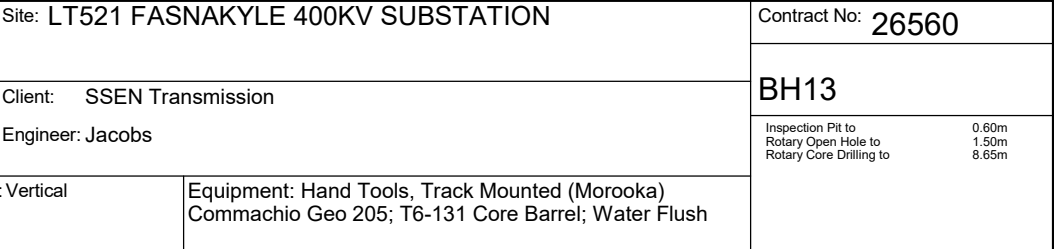
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				Site: LT521 FASNAKYLE 400KV SUBSTATION										Contract No: 26560							
				Client: SSEN Transmission										BH11							
				Engineer: Jacobs										Inspection Pit to 0.20m Rotary Open Hole to 1.10m Rotary Core Drilling to 6.10m							
Location: E 230649.8 N 824534.6				Orientation: Vertical				Equipment: Hand Tools, Track Mounted Commachio Geo 205;T2-101 Core Barrel; Water Flush													
Progress 19/12 2023	Samples		Tests				Casing Depth	Level (mOD)	Depth	Description of Strata						Legend	Water Depth	Backfill			
	Depth	Type	Depth	Result														Symbol	Depth		
19/12 2023																					
								330.59		# PEAT											
								330.39	0.20	# Grey PSAMMITE								0.50			
								329.49	1.10	Medium strong, locally moderately weak pinkish grey GRANITE. Moderately, locally highly weathered evident as an orange brown staining on fracture surfaces, locally reduced to gravel on fracture surfaces and a localised reduction of strength on fracture surfaces. Fractures are closely spaced, 60°-70°, planar and smooth								1.60			
								328.29	2.30	Strong, locally medium strong grey micaceous PSAMMITE with occasional bands of garnet up to 2mm and rare subhorizontal quartz veining up to 30mm. Moderately, locally highly weathered evident as an orange brown staining on fracture surfaces, localised reduction of strength on fracture surfaces and sand and gravel locally infilling fracture surfaces. Two fracture sets were identified; No.1: closely, locally medium spaced, 10°-20°, planar and smooth, locally stepped and rough. Single 80°, planar and smooth fracture								2.10			
								326.99	3.60	Medium strong, locally strong grey micaceous PSAMMITE with occasional garnet bands up to 3mm and occasional 20°-30° dipping quartz veins up to 10mm. Slightly weathered evident as an orange brown staining on fracture surfaces. Two fracture sets were identified; No.1: closely, locally medium spaced, 20°-30°, planar and smooth. No.2: single 70°, planar and smooth fracture											
								324.49	6.10	END OF BOREHOLE							1.00m	6.10			
19/12																					
Remarks: # Description based on Driller's log. An inspection pit was excavated by hand to a depth of 0.20m to clear services. Exemption No. 83/2023 due to encountering possible rock. No ground-water observations are recorded due to the use of water flush. The Penetration Tests were carried out using Trip Hammer RD54. A 50mm diameter perforated standpipe was installed to a depth of 6.10m.																					
Driller SW		Originator JM		Ground-water				Water Added		Chiselling		Flush				Fig No:					
				Struck	Rose To	Time(min)	Cut Off	From	To	From	To	hh:mm	Returns	Type	From (m)	To (m)					
													100	Air	0.20	1.10					
													100	Water	1.10	6.10					
Chk & App FMR		Status Final														B6 Sheet 1 of 1 Scale 1:50					




Site: LT521 FASNAKYLE 400KV SUBSTATION		Contract No: 26560
Client: SSEN Transmission		BH12
Engineer: Jacobs		
Vertical	Equipment: Hand Tools, Track Mounted Commachio Geo 205;T2-101 Core Barrel; Water Flush	Inspection Pit to 0.25m Rotary Open Hole to 2.10m Rotary Core Drilling to 7.40m






Remarks: # Description based on Driller's log. An inspection pit was excavated by hand to a depth of 0.60m to clear services. Exemption No. 74/2023 due to encountering possible rock. Ground-water was encountered at a depth of 1.10m. Below 1.10m no ground-water observations are recorded due to the use of water flush. The Penetration Tests were carried out using Trip Hammer R125.	Hole Diam.	To Depth	
		Boring	Casing
	175 131	1.50 8.65	1.50

Driller GR	Originator JM	Ground-water				Water Added		Chiselling		Flush					Fig No:	
		Struck 1.10	Rose To	Time(min)	Cut Off	From	To	From	To	hh:mm	Returns	Type	From (m)			To (m)
Chk & App FMR	Status <b>Final</b>										100 100	Air Water	0.60 1.50	1.50 8.65		<b>B8</b> Sheet 1 of 1 Scale 1:50



Progress 4/12/2023  04/12   
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Site: LT521 FASNAKYLE 400KV SUBSTATION

Client: SSEN Transmission

Engineer: Jacobs

Contract No: 26560

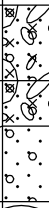
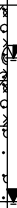


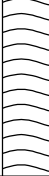


BH15

Inspection Pit to 0.80m  
Rotary Open Hole to 1.30m  
Rotary Core Drilling to 7.25m

Location: E 230368.0  
N 824405.7

Orientation: Vertical

Equipment: Hand Tools, Track Mounted (Morooka) Fraste  
Multidrill PL G; T6-131 Core Barrel & T2-101 Core Barrel;  
Water Flush

Progress	Samples		Tests				Casing Depth	Level (mOD)	Depth	Description of Strata	Legend	Water Depth	Backfill															
	Depth	Type	Depth	Result									Symbol	Depth														
28/11/2023	0.10	B						1.30	311.60																			
	0.30	ES							311.10	0.50																		
	0.50	B, D, ES							310.80	0.80																		
	0.80	D, ES																										
																									TCR	SCR	RQD	FI
																									310.30	1.30		
	1.30	100							78	46						7												
	309.10	2.50																										
	308.90	2.70																										
	3.70	100								67						17	NI	3	7									
			4.25	100	93	93																						
			4.40	100	90	50																						
28/11																												
29/11																												

Remarks:

# Description based on Driller's log.  
An inspection pit was excavated by hand to a depth of 0.80m to clear services. Exemption No. 72/2023 due to encountering possible rock.  
Ground-water was encountered at a depth of 1.30m, rising to 0.35m after 20mins.  
Below 1.30m no ground-water observations are recorded due to use of water flush.  
The Penetration Tests were carried out using Trip Hammer RD24.

Driller DB

Originator JM

Chk & App FMR

Status Final

Ground-water

Struck 1.30

Rose To 0.35

Time(min) 20.00

Cut Off

Water Added

From

To

Chiselling

From

To

hh:mm

Returns

100

100

Type

Air

Water

From (m)

0.80

1.30

To (m)

1.30

7.25

Fig No:

B10
























Sheet 1 of 1

Scale 1:50


Style: BOREHOLE NEW File: P:\GINTWP\PROJECTS\26560.GPJ-44 (0)1698 710999 Printed: 07/03/2024 19:09:25 Raeburn Drilling and Geotechnical trading as IGNE Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries.raeburndrilling@igne.com



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		Site: LT521 FASNAKYLE 400KV SUBSTATION										Contract No: 26560					
		Client: SSEN Transmission										BH16					
		Engineer: Jacobs										Inspection Pit to 0.40m Rotary Open Hole to 1.40m Rotary Core Drilling to 7.25m					
Location: E 230495.4 N 824347.1				Orientation: Vertical				Equipment: Hand Tools, Track Mounted (Morooka) Fraste Multidrill PL G; T6-131 Core Barrel Core Barrel; Water Flush									
Progress 18/12 2023	Samples		Tests				Casing Depth	Level (mOD)	Depth	Description of Strata	Legend	Water Depth	Backfill				
	Depth	Type	Depth	Result									Symbol	Depth			
18/12	0.00	B						325.42		Brown silty fine to coarse SAND							
	0.40	B						325.02	0.40	Weathered broken PSAMMITE recovered as brown very gravelly silty fine to coarse sand. Gravel is fine to coarse angular and subangular					0.50		
	0.60	ES															
18/12								324.02	1.40	Very strong, locally strong dark grey micaceous PSAMMITE with frequent healed incipient fractures. Moderately weathered evident as an orange brown staining on fracture surfaces and localised reduction of strength on fracture surfaces. Two fracture sets were identified; No.1: medium spaced, 10°-20°, planar and smooth, locally planar and rough. No.2: medium, locally closely spaced, 70°-80°, planar and smooth							
19/12								321.77	3.65	....from 3.57m to 3.65m: very strong pinkish brown granite							
19/12								320.67	4.75	Very strong dark grey PSAMMITE with frequent healed incipient fractures and rare quartz veining up to 5mm. Slightly weathered evident as an orange brown staining on fracture surfaces. Two fracture sets were identified; No.1: very closely, locally medium spaced, 10°-20°, planar and smooth, locally planar and rough. No.2: closely spaced, 60°-70°, stepped and smooth							
19/12								319.02	6.40	Medium strong, locally strong and very strong PSAMMITE with frequent healed incipient fractures and occasional quartz veining dipping at 30°-40° up to 10mm. Locally moderately weathered evident as an orange brown staining on fracture surfaces. Fractures are closely spaced, 20°-30°, planar and smooth							
19/12								318.17	7.25	....below 6.00m: moderately weathered evident as reduction of strength on fracture surfaces and sand infilling between fractures							
19/12										Strong, locally very strong very thinly banded pinkish brown GRANITE with a single quartz vein dipping at 40°, 30mm wide and psammite xenoliths at top. Moderately weathered evident as a localised reduction in strength on fracture surfaces and gravel locally infilling fracture surfaces. Two fracture sets were identified; No.1: closely spaced, 10°-20°, planar and rough, locally planar and smooth. No.2: single 70°-80°, stepped and rough fracture							
END OF BOREHOLE																	
Remarks: # Description based on Driller's log. An inspection pit was excavated by hand to a depth of 0.40m to clear services. Exemption No. 81/2023 due to encountering possible rock. Ground-water was encountered at a depth of 1.40m, rising to 1.00m after 20mins. Below 1.40m no ground-water observations are recorded due to the use of water flush. The Penetration Tests were carried out using Trip Hammer RD24. A 50mm diameter perforated standpipe was installed to a depth of 7.25m.												Hole Diam.	To Depth				
												175	1.40	1.40			
												131	7.25				
Driller WW	Originator JM	Ground-water				Water Added		Chiselling		Flush					Fig No:  B11 Sheet 1 of 1 Scale 1:50		
		Struck	Rose To	Time(min)	Cut Off	From	To	From	To	hh:mm	Returns	Type	From (m)			To (m)	
		1.40	1.00	15.00							100 100	Air Water	0.40 1.40			1.40 2.60	
Chk & App FMR	Status Final																



Driller WW	Originator JM	Ground-water				Water Added		Chiselling			Flush					Fig No:
		Struck 3.20	Rose To	Time(min)	Cut Off	From	To	From	To	hh:mm	Returns 100 100	Type Air Water	From (m) 1.20 3.40	To (m) 3.40 8.75		
Chk & App FMR	Status <b>Final</b>															B12 Sheet 1 of 1 Scale 1:50





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

BH18

Inspection Pit to 1.20m  
WLS to 2.90m  
Rotary Core Drilling to 8.30m

Location: E 230331.5  
N 824305.2

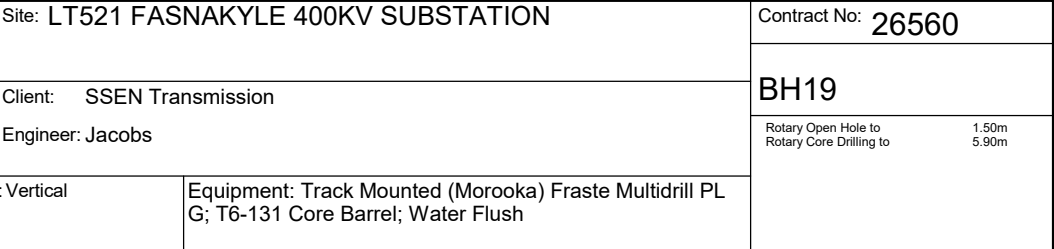
Orientation: Vertical

Equipment: Hand Tools, Track Mounted (Morooka) Fraste  
Multidrill PL G; T6-131 Core Barrel; Water Flush


Progress	Samples		Tests				Casing Depth	Level (mOD)	Depth	Description of Strata	Legend	Water Depth	Backfill																															
	Depth	Type	Depth	Result									Symbol	Depth																														
23/11/2023	0.20	B, D	1.20	SPT=16	2.2/2.5/3.6				1.20	316.75	0.20	Brown gravelly sandy plastic amorphous PEAT (H7/B2). Sand is fine to coarse. Gravel is fine to coarse angular to subrounded of psammite and granite			0.50																													
	0.30	ES								316.55						Brown very gravelly silty fine to coarse SAND with cobbles. Gravel is fine to coarse angular to subrounded of psammite and granite. Cobbles are subangular of psammite																												
	0.50	ES																																										
	0.60	B																																										
	1.00	ES								315.55							1.20	Medium dense grey very gravelly silty fine to coarse SAND with cobbles. Gravel is fine and medium subangular and subrounded of psammite and granite. Cobbles are subangular of psammite																										
	1.20-2.00	D, D																																										
	1.20	D, D																																										
	2.00	D	2.00	SPT=32	25.12/6.7/7.12				2.00		....below 2.00m: dense			1.50																														
	2.00-2.30	UL																																										
	2.30	B																																										
	2.30																																											
	2.90	D	2.90	TCR	SCR	RQD	FI	313.85	2.90	Strong grey thinly foliated PSAMMITE with rare quartz veins dipping at 10°-20°, up to 10mm wide. Moderately weathered evident as an orange brown staining on fracture surfaces. Three fracture sets were identified; No.1: closely spaced, 10°-20°, planar and smooth. No.2: single 40°-50°, stepped and smooth fracture. No.3: single 70°-80°, planar and rough fracture			2.60																															
100														67	8	11																												
4.40	100	50	25	NI	11	312.35	4.40	Strong grey thinly foliated PSAMMITE with healed incipient fractures and occasional pinkish brown granite intrusions up to 150mm. Moderately weathered evident as an orange brown staining on fracture surfaces. Two fracture sets were identified; No.1: medium spaced, 10°-20°, planar and smooth. No.2: single 50°-60°, planar and smooth fracture																																				
												5.40	100	76	18	17	311.40	5.35	Strong, locally medium strong pinkish brown GRANITE. Moderately weathered evident as an orange brown staining on fracture surfaces and localised reduction of strength on fracture surfaces. Fractures are closely spaced, 30°-40°, planar and smooth																									
																							5.95	100	86	13	NI	311.10	5.65	Strong, locally medium strong grey thinly foliated PSAMMITE. Moderately weathered evident as an orange brown staining on fracture surfaces. Single 30°-40°, planar and smooth fracture			1.70m											
																																		7.50	100	0	0	NI	310.95	5.80	Strong, locally medium strong pinkish brown GRANITE. Moderately weathered evident as an orange brown staining on fracture surfaces and localised reduction of strength on fracture surfaces. Three fracture sets were identified; No.1: closely spaced, 30°-40°, planar and smooth. No.2: closely spaced, 60°-70°, planar and smooth. No.3: single 60°-70°, undulating and rough fracture			2.00m
7.50	100	0	0	NI	308.45	8.30	END OF BOREHOLE			8.30																																		
											Remarks:												Hole Diam.	To Depth																				
# Description based on Driller's log.												175	2.90	2.90																														
An inspection pit was excavated by hand to a depth of 1.20m to clear services.												131	8.30																															
Ground-water was encountered at a depth of 2.60m.																																												
Below 2.90m no ground-water observations are recorded due to use of water flush.																																												
The Penetration Tests were carried out using Trip Hammer RD24.																																												
A 50mm diameter perforated standpipe was installed to a depth of 2.60m.																																												
SPT at 2.90m N>50 25(50)/50(20).																																												
Driller DB	Originator JM	Ground-water				Water Added		Chiselling			Flush				Fig No:	B13	Sheet 1 of 1	Scale 1:50																										
		Struck	Rose To	Time(min)	Cut Off	From	To	From	To	hh:mm	Returns	Type	From (m)	To (m)																														
Chk & App FMR	Status Final	2.60									100	Air	1.20	2.90																														
											100	Water	2.90	8.30																														

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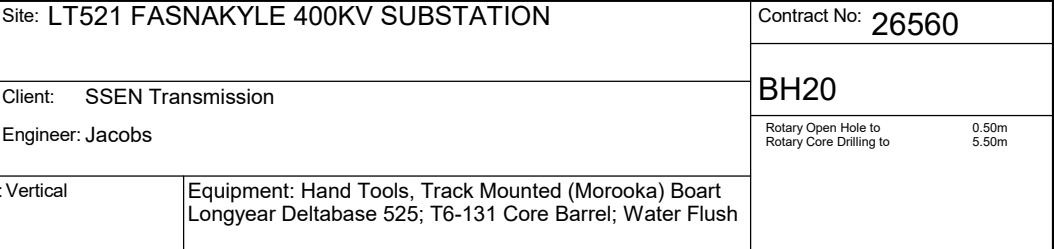


Remarks: # Description based on Driller's log. An inspection pit was not excavated due to shallow rock. Exemption No. 78/2023 due to encountering possible rock. Below 1.50m no ground-water observations are recorded due to the use of water flush.	To Depth	
	Boring	Casing
	175	1.50
	131	5.90
		1.50

Driller CT	Originator JM	Ground-water				Water Added		Chiselling		hh:mm	Flush					Fig No:
		Struck	Rose To	Time(min)	Cut Off	From	To	From	To		Returns	Type	From (m)	To (m)		
Chk & App FMR	Status <b>Final</b>										100 100	Air Water	0.00 1.50	1.50 5.90		B14 Sheet 1 of 1 Scale 1:50

Style: BOREHOLE NEW File: P:\GINTWP\PROJECTS\26560.GPJ+44 (0)1698 719999 Printed: 07/03/2024 19:09:31  
Raeburn Drilling and Geotechnical trading as GNE, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries.raeburndrilling@igne.com






Remarks: # Description based on Driller's log. An inspection pit was not excavated due to shallow rock. Exemption No. 73/2023 due to encountering possible bedrock. No ground-water observations are recorded due to the use of water flush.	To Depth	
	Boring	Casing
	175	0.50
	131	5.50

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Remarks:															Hole Diam.	To Depth	
# Description based on Driller's log. An inspection pit was excavated by hand to a depth of 1.20m to clear services. Ground-water was encountered at a depth of 1.20m. The Penetration Tests were carried out using Trip Hammer RD51. A 50mm diameter perforated standpipe was installed to a depth of 8.00m. SPT at 3.00m N>50 25(10)/50(15).																Boring	Casing
																175 131	5.90 8.00
Driller CT	Originator JM	Ground-water				Water Added		Chiselling			Flush					Fig No:  B16 Sheet 1 of 1 Scale 1:50	
		Struck	Rose To	Time(min)	Cut Off	From	To	From	To	hh:mm	Returns	Type	From (m)	To (m)			
		1.20			2.00						100 100	Air Water	1.20 3.00	3.00 8.00			
Chk & App FMR	Status Final																



Style: BOREHOLE NEW File: P:\GINTWP\PROJECTS\26560.GPJ-44 (0) 1698 710999 Printed: 07/03/2024 19:09:36 Raeburn Drilling and Geotechnical trading as IGNE. Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries.raeburndrilling@igne.com







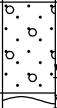


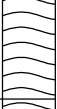


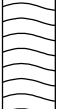





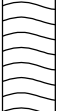


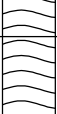



			Site: LT521 FASNAKYLE 400KV SUBSTATION										Contract No: 26560				
			Client: SSEN Transmission										BH22				
			Engineer: Jacobs														
Location: E 230528.2 N 824105.7				Orientation: Vertical				Equipment: Hand Tools, Track Mounted (Morooka) Commachio Geo 205; T6-131 Core Barrel; Water Flush									
Progress 20/11 2023	Samples		Tests				Casing Depth	Level (mOD)	Depth	Description of Strata	Legend	Water Depth	Backfill				
	Depth	Type	Depth	Result									Depth				
20/11	0.30	B, D, ES	0.60	CPT>50 10.12/12.15.18.5 (235)	TCR	SCR	RQD	FI	333.84	0.30	Brown gravelly silty fine to coarse SAND with cobbles. Gravel is fine to coarse angular to subrounded of psammite. Cobbles are angular and subangular of psammite # Yellow brown weathered PSAMMITE		0.50m	0.50			
	0.60	D															
	1.50	D															
	332.34	1.50	Medium strong, locally weak pinkish grey GRANITE. Highly weathered evident as locally reduced to sand. Recovered as non-intact		2.00												
						329.84	4.00	Weak pinkish grey GRANITE. Highly weathered evident a reduction in strength on fracture surfaces and reduced to sand and gravel near fractures. Two fracture sets were identified; No.1: closely, locally medium spaced, 40°-50°, planar and rough, locally stepped and rough. No.2: single 80°, planar and rough fracture		2.50							
											5.00	100	57	14	10		
																328.14	5.70
	326.64	7.20	Weak and moderately weak brown PSAMMITE with a single granite intrusion up to 40mm. Moderately, locally highly weathered evident as an orange brown staining on fracture surfaces and reduction of strength on fracture surfaces, locally to sand and gravel. Three fracture sets were identified; No.1: closely spaced, 10°-20°, planar and smooth. No.2: closely spaced, 40°-50°, planar and smooth. No.3: single 80°, planar and smooth fracture ....at 9.20m: 50mm granite intrusion		1.00m												
						323.84	10.00										
21/11	5.70	60	29	20	13			NI	11								
						8.70	100			57	25	11					
NI	323.84	10.00															
			Remarks:	# Description based on Driller's log. An inspection pit was excavated by hand to a depth of 0.60m to clear services. Exemption No. 69/2023 due to encountering possible rock. Ground-water was encountered at a depth of 0.50m. Below 1.50m no ground-water observations are recorded due to use of water flush. The Penetration Tests were carried out using Trip Hammer RD125. A 50mm diameter perforated standpipe was installed to a depth of 11.50m. SPT at 1.50m N>50 25(65)/40.10(95).	Hole Diam.	To Depth Boring	Casing										
Driller PS	Originator JM	Struck 0.50						Rose To	Time(min)	Cut Off	Water Added From To	Chiselling From To hh:mm	Returns 100 100	Type Air Water	Flush From (m) To (m) 0.60 1.50 1.50 11.50		
			Chk & App FMR	Status Final													
Fig No: B17 Sheet 1 of 2 Scale 1:50																	




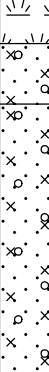
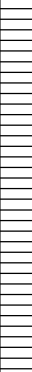

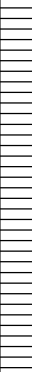

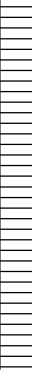



Fig No:  
B17  
Sheet 2 of 2  
Scale 1:50



<div></div>				Site: LT521 FASNAKYLE 400KV SUBSTATION						Contract No: 26560										
				Client: SSEN Transmission Engineer: Jacobs						BH23 Inspection Pit to 0.60m Rotary Open Hole to 1.50m Rotary Core Drilling to 4.50m										
Location: E 230157.4 N 824098.9				Orientation: Vertical				Equipment: Hand Tools, Track Mounted (Morooka) Boart Longyear Deltabase 525; T6-131 Core Barrel; Water Flush												
Progress	Samples		Tests				Casing Depth	Level (mOD)	Depth	Description of Strata	Legend	Water Depth	Backfill							
	Depth	Type	Depth	Result									Symbol	Depth						
23/11/2023	0.30	D, ES	0.60	SPT>50	25 (35)/50 (20)			0.00	316.00		Brown slightly silty fine to coarse SAND and fine to coarse angular to subrounded GRAVEL of psammite				0.50					
	0.50	B, D, ES																		
	0.60	D																		
				TCR	SCR	RQD	FI		314.50	1.50	# Grey brown PSAMMITE with fractures									
			1.50	97	80	21										Medium strong thinly foliated grey PSAMMITE. Moderately, locally highly weathered evident as an orange brown staining on fracture surfaces and local reduction in strength to sand and gravel on fracture surfaces. Two fracture sets were identified; No.1: medium spaced, 10°-20°, planar and smooth. No.2: medium spaced, 60°-70°, planar and smooth				2.50
23/11									313.00	3.00	Medium strong thinly foliated grey PSAMMITE with frequent micaceous bands. Moderately, locally highly weathered evident as an orange brown staining on fracture surfaces, a reduction of strength on fracture surfaces, locally with sand infilling. Stratum is highly fractured throughout. Where visible, two fracture sets were identified; No.1: very closely spaced, 80°-90°, planar and smooth, locally planar and rough. No.2: closely spaced, 60°-70°, planar and smooth				0.40m					
			3.00	100	57	0														
			3.47	100	76	0														
			3.85	100	0	0														
											Medium strong thinly foliated grey PSAMMITE with frequent micaceous bands. Moderately weathered evident as an orange brown staining on fracture surfaces. Two fracture sets were identified; No.1: closely spaced, 50°-60°, planar and smooth. No.2: widely spaced, 80°-90°, planar and smooth				0.40m					
			4.12	100	0	0														
27/11			4.50	100	77	37			311.50	4.50										
											Medium strong grey PSAMMITE with a subhorizontal quartz vein 30mm wide at 5.90m and occasional granite intrusions up to 40mm. Moderately, locally highly weathered evident as penetrative orange brown staining throughout and localised reduction of strength on fracture surfaces. Fractures are closely spaced, 40°-50°, planar and smooth				0.00m					
			5.40	100	40	0														
			5.80	100	74	0			310.20	5.80										
28/11			6.30	100	65	0			309.50	6.50						6.50				
END OF BOREHOLE																				
Remarks: # Description based on Driller's log. An inspection pit was excavated by hand to a depth of 0.60m to clear services. Exemption No. 70/2023 due to encountering possible rock. Ground-water was encountered at a depth of 0.50m. Below 1.50m no ground-water observations are recorded due to the use of water flush. The Penetration Tests were carried out using Trip Hammer RD51. A 50mm diameter perforated standpipe was installed to a depth of 6.50m.																				
												Hole Diam.	To Depth							
												175	Boring	Casing						
												131	1.50	3.00						
													6.50							
Driller CT	Originator JM	Ground-water				Water Added		Chiselling		Flush				Fig No:						
		Struck	Rose To	Time(min)	Cut Off	From	To	From	To	hh:mm	Returns	Type	From (m)	To (m)						
		0.50			0.70						100	Air	0.60	1.50						
Chk & App FMR	Status Final										100	Water	1.50	6.50						
B18 Sheet 1 of 1 Scale 1:50																				



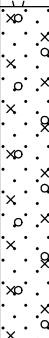



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		Site: LT521 FASNAKYLE 400KV SUBSTATION										Contract No: 26560						
		Client: SSEN Transmission										BH24						
		Engineer: Jacobs																
Location: E 230301.7 N 824043.0				Orientation: Vertical			Equipment: Hand Tools, Track Mounted (Morooka) Boart Longyear Deltabase 525; T6-131 Core Barrel; Water Flush											
Progress 15/11 2023	Samples		Tests				Casing Depth	Level (mOD)	Depth	Description of Strata	Legend	Water Depth	Backfill Symbol	Backfill Depth				
	Depth	Type	Depth	Result											Depth			
15/11								321.96		# Dark brown PEAT		0.65m						
								321.66	0.30	# Yellowish brown slightly silty SAND with gravel								
								321.26	0.70	# Yellowish brown slightly silty SAND with gravel and weathered rock fragments								
16/11								319.46	2.50	# Yellowish brown PSAMMITE		0.60m						
								318.96	3.00	Weak, locally very weak thinly laminated yellowish brown PSAMMITE. Distinctly weathered evident as an orange brown staining on fracture surfaces and locally reduced to sand and gravel on fracture surfaces. Stratum is highly fractured throughout. Where visible, fractures are closely spaced, 40°-50°, planar and smooth								
17/11								317.86	4.10	Weak and very weak, locally moderately strong very thinly laminated yellowish brown PSAMMITE with healed incipient fractures. Moderately, locally highly weathered evident as an orange brown staining throughout and locally reduced to sand on fracture surfaces. Three fracture sets were identified; No.1: closely spaced, 10°-20°, planar and smooth. No. 2: closely spaced, 20°-30°, planar and smooth. No.3 medium spaced, 60°-70°, planar and rough		1.00m						
17/11								313.86	8.10	Medium strong orange brown GRANITE. Moderately weathered evident as an orange brown staining on fracture surfaces. Fractures are closely spaced, 50°-60°, planar and rough		0.45m		8.40				
								313.56	8.40	END OF BOREHOLE								
Remarks: # Description based on Driller's log. An inspection pit was excavated by hand to a depth of 0.70m to clear services. Exemption number 68/2023 due to hard digging. Ground-water was encountered at a depth of 0.65m. Below 3.00m no ground-water observations are recorded due to the use of water flush. The Penetration Tests were carried out using Trip Hammer RD51.												Hole Diam.	To Depth					
												175	Boring	Casing				
												131	3.00	3.00				
													8.40					
Driller CT	Originator JM	Ground-water				Water Added		Chiselling			Flush					Fig No:  B19 Sheet 1 of 1 Scale 1:50		
Chk & App FMR	Status Final	Struck	Rose To	Time(min)	Cut Off	From	To	From	To	hh:mm	Returns	Type	From (m)	To (m)				
		0.65										100	Air	0.70			3.00	
															100	Water	3.00	8.40



Style: BOREHOLE NEW File: P:\GINTWP\PROJECTS\26560.GPJ-44 (0)1698 710999 Printed: 07/03/2024 19:09:41 Raeburn Drilling and Geotechnical trading as IGNE Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries.raeburndrilling@igne.com

		Site: LT521 FASNAKYLE 400KV SUBSTATION										Contract No: 26560					
		Client: SSEN Transmission										BH24A					
		Engineer: Jacobs															
Location: E 230301.7 N 824044.2				Orientation: Vertical				Equipment: Hand Tools, Track Mounted (Morooka) Boart Longyear Deltabase 525									
Progress 20/11 2023	Samples		Tests		Casing Depth	Level (mOD)	Depth	Description of Strata	Legend	Water Depth	Backfill						
	Depth	Type	Depth	Result							Symbol	Depth					
	0.50	B, D, ES				321.87	0.50	Brown very gravelly sandy plastic amorphous PEAT (H8/B4). Sand is fine to coarse. Gravel is fine to coarse angular to subrounded of psammite and pelite									
	1.00	B, D, ES						Brown very gravelly very silty fine to coarse SAND. Gravel is fine to coarse angular to subrounded of psammite and pelite									
	1.20-2.20	UL(102)															
	2.20	D	2.20	SPT=33 7.6 /6.8,9.10	2.20			....below 2.20m: dense									
20/11	2.70	D				319.17	2.70	END OF BOREHOLE		Dry		2.70					
Remarks: # Description based on Driller's log. An inspection pit was excavated by hand to a depth of 1.20m to clear services. Ground-water was encountered at a depth of 0.50m. The Penetration Tests were carried out using Trip Hammer RD51. SPT at 2.70m N>50 18.7 (80)/50 (25).										Hole Diam.	To Depth						
										175	2.70	2.70					
Driller CT	Originator JM	Ground-water				Water Added		Chiselling		Flush					Fig No:  B20 Sheet 1 of 1 Scale 1:50		
		Struck	Rose To	Time(min)	Cut Off	From	To	From	To	hh:mm	Returns	Type	From (m)			To (m)	
		0.50	0.50	20.00	2.50												
Chk & App FMR	Status Final																



<div></div>			Site: LT521 FASNAKYLE 400KV SUBSTATION							Contract No: 26560						
			Client: SSEN Transmission							BH25						
			Engineer: Jacobs							Inspection Pit to 1.20m WLS to 2.80m Rotary Open Hole to 4.40m Rotary Core Drilling to 5.90m Rotary Open Hole to 7.60m Rotary Core Drilling to 13.10m						
Location: E 230475.1 N 823981.9			Orientation: Vertical			Equipment: Hand Tools, Track Mounted (Morooka) Fraste Multidrill PL G; T6-131 Core Barrel; Water Flush										
Progress	Samples		Tests			Casing Depth	Level (mOD)	Depth	Description of Strata	Legend	Water Depth	Backfill				
	Depth	Type	Depth	Result								Symbol	Depth			
20/11/2023	0.10	B, D					332.05		Dark brown plastic amorphous PEAT with rootlets and wood fragments (H7/B3)		Dry		0.50			
	0.30	ES					331.55	0.50								
	0.50	B, D, ES														
20/11	1.20	D	1.20	SPT=43 4.7/8.10.12.13			330.85	1.20	Light brown gravelly slightly silty fine to coarse SAND with cobbles. Gravel is fine to coarse angular to subrounded of psammite and granite. Cobbles are angular and subangular of psammite		0.50m		1.00			
	1.20-2.20	UL							Dense brown slightly gravelly slightly silty fine to coarse SAND. Gravel is fine to coarse subangular and subrounded of pelite and granite							
	2.20	D					329.85	2.20								
	2.20-2.80	UL	2.20	SPT=25 2.2/1.6.10.8			329.25	2.80	Medium dense brown very gravelly slightly silty fine to coarse SAND. Gravel is fine to coarse subangular and subrounded of pelite and granite							
	2.80	B														
	2.90	D														
	3.10	B, D	2.90	SPT>50 10.14/18.32 (110) SPT>50 17.8 (105)/25.50 (70)					Light brown GRANITE recovered as gravelly fine to coarse sand							
	4.40	D	4.40	27	0	0		327.65	4.40					Weak, locally medium strong pinkish grey PSAMMITE. Distinctly weathered evident as a reduction in strength. Recovered as non-intact		
6.00	B						326.15	5.90	Light brown PSAMMITE recovered as gravelly fine to coarse sand							
7.60	D	7.60	73	40	0		324.45	7.60	Weak brown PSAMMITE. Highly weathered evident as a localised reduction of strength on fracture surfaces, sand infilling between fracture surfaces and locally recovered as gravel. Three fracture sets were identified; No.1: closely spaced, 20°-30°, planar and smooth. No.2: medium spaced, 60°-70°, planar and smooth, locally planar and rough. No.3 single 80°-90°, planar and smooth fracture							
21/11		9.10	100	50	0						1.50m 1.30m					
Remarks: # Description based on Driller's log. An inspection pit was excavated by hand to a depth of 1.20m to clear services. Groundwater was encountered at a depth of 0.30m. Below 4.40m no ground-water observations are recorded due to the use of water flush. The Penetration Tests were carried out using Trip Hammer RD51. A 50mm diameter perforated standpipe was installed to a depth of 6.60m. SPT 4.40m N>50 25(10)/50(5). SPT 7.60m N>50 25(15)/50(5).										Hole Diam.	To Depth					
										175	Boring	Casing				
										131	13.10	4.40				
Driller DB	Originator JM	Ground-water			Water Added		Chiselling			Flush					Fig No:  B21 Sheet 1 of 2 Scale 1:50	
Chk & App FMR	Status Final	Struck	Rose To	Time(min)	Cut Off	From	To	From	To	hh:mm	Returns	Type	From (m)			To (m)
		0.30			0.50						100 100	Air Water	1.20 4.40			4.40 13.10




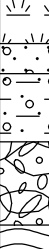








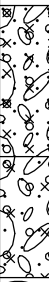




























































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			Site: LT521 FASNAKYLE 400KV SUBSTATION										Contract No: 26560							
			Client: SSEN Transmission										BH26A							
			Engineer: Jacobs																	
Location: E 230151.1 N 823958.5				Orientation: Vertical				Equipment: Hand Tools, Track Mounted (Morooka) Commachio Geo 205				Inspection Pit to WLS to 0.65m 2.50m								
Progress 20/11 2023	Samples		Tests		Casing Depth	Level (mOD)	Depth	Description of Strata	Legend	Water Depth	Backfill Symbol	Depth								
	Depth	Type	Depth	Result																
	0.30	B, D, ES	0.65	CPT>50 10.15 (140)/12.17.16.5 (235)									0.00	315.03		Dark brown very gravelly plastic amorphous PEAT with cobbles (H8/B4). Gravel is fine to coarse angular to subrounded of pelite. Cobbles are angular and subangular of pelite				0.30
	0.50	B, D, ES																		
	0.65-0.95	UL																		
	1.50	D												314.73 0.30		Brown slightly silty fine to coarse SAND and fine to coarse angular to subrounded GRAVEL of psammite with cobbles. Cobbles are subangular of psammite				
														314.53 0.50		Brown slightly clayey fine to coarse SAND and fine to coarse angular to subrounded GRAVEL of psammite				
														314.08 0.95		# BOULDERS with some silty sand				
														313.53 1.50		# Yellow brown weathered PSAMMITE				
														312.53 2.50						
END OF BOREHOLE																				
Remarks: # Description based on Driller's log. An inspection pit was excavated by hand to a depth of 0.65m to clear services. Exemption No. 67A/2023 due to hard digging. Ground-water was encountered at a depth of 0.30m. The Penetration Tests were carried out using Trip Hammer RD125. CPT 2.50m N>50 25(35)/50 (20).												Hole Diam.	To Depth Boring Casing							
												175	2.50	2.50						
Driller	Originator JM	Ground-water				Water Added		Chiselling			Flush				Fig No:  B23 Sheet 1 of 1 Scale 1:50					
		Struck 0.30	Rose To	Time(min)	Cut Off	From	To	From	To	hh:mm	Returns 100	Type Air	From (m) 0.65	To (m) 2.50						
Chk & App FMR	Status Final																			



Style: BOREHOLE NEW File: P:\GINTWP\PROJECTS\26560.GPJ-44 (0)1698 710999 Printed: 07/03/2024 19:09:49 Raeburn Drilling and Geotechnical trading as IGNE Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries.raeburndrilling@igne.com








		Site: LT521 FASNAKYLE 400KV SUBSTATION										Contract No: 26560							
		Client: SSEN Transmission										BH27							
		Engineer: Jacobs																	
Location: E 230577.6 N 824224.8				Orientation: Vertical				Equipment: Hand Tools, Track Mounted (Morooka) Commachio Geo 205; T6-131 Core Barrel; Water Flush				Inspection Pit to 1.20m WLS to 1.95m Rotary Open Hole to 2.60m Rotary Core Drilling to 9.90m							
Progress	Samples		Tests				Casing Depth	Level (mOD)	Depth	Description of Strata	Legend	Water Depth	Backfill						
	Depth	Type	Depth	Result									Symbol	Depth					
28/11/2023	0.30	D	1.20	SPT>50	25 (50)/50 (30)				1.20	331.69	0.20	# PEAT				0.50			
	0.50	B, D																	
	1.00	B, D																	
	1.20	B, D																	
	2.00	B																	
					TCR	SCR	RQD	FI											
					2.60	100	43	0		NI									
27/11			4.10	100	81	15	10	2.60	327.89	3.80	Medium strong pinkish brown GRANITE. Moderately weathered evident as an orange brown staining on fracture surfaces and reduction of strength on fracture surfaces. Fractures are closely spaced, 20°-30°, planar and smooth				3.10				
									327.29	4.40	Medium strong grey PSAMMITE. Moderately weathered evident as an orange brown staining on fracture surfaces and reduction of strength on fracture surfaces. Two fracture sets were identified; No.1: closely spaced, 30°-40°, planar and smooth. No.2: closely spaced, perpendicular to set one, planar and smooth				3.60				
									326.14	5.55	Medium strong grey PSAMMITE with occasional granite intrusions up to 100mm. Two fracture sets were identified; No.1: closely, locally medium spaced, 30°-40°, planar and smooth, locally planar and rough. No.2: single 60°-70°, undulating and rough fracture								
									324.59	7.10	Strong, locally medium strong grey PSAMMITE with occasional granite intrusions up to 20mm. Moderately, locally highly weathered evident as a reduction of strength on fracture surfaces and locally reduced to gravel on fracture surfaces. Two fracture sets were identified; No.1: closely, locally medium spaced, 30°-40°, planar and smooth. No.2: single 60°-70°, stepped and smooth fracture								
28/11			8.40	100	60	20	>20	2.60											
																			
																			
																			
																			
																			
																			
																			
																			
																			
																			
																			
																			
																			
																			
																			
																			
																			
																			
																			
																			
																			
Remarks:														END OF BOREHOLE		Hole Diam.		To Depth	
# Description based on Driller's log.																Boring		Casing	
An inspection pit was excavated by hand to a depth of 1.20m to clear services.																175		2.60	
Ground-water was encountered at a depth of 1.95m.																131		9.90	
Below 2.60m no ground-water observations are recorded due to the use of water flush.																			
The Penetration Tests were carried out using Trip Hammer RD125.																			
A 50mm diameter perforated standpipe was installed to a depth of 9.90m.																			
Driller GR	Originator JM	Ground-water				Water Added		Chiselling			Flush				Fig No:	B24 Sheet 1 of 1 Scale 1:50			
		Struck	Rose To	Time(min)	Cut Off	From	To	From	To	hh:mm	Returns	Type	From (m)	To (m)					
		1.95									100	Air	1.20	2.60					
											100	Water	2.60	9.90					
Chk & App FMR	Status Final																		



<div></div>				Site: LT521 FASNAKYLE 400KV SUBSTATION										Contract No: 26560				
				Client: SSEN Transmission										BH28				
				Engineer: Jacobs										Inspection Pit to 1.20m WLS to 4.50m Rotary Open Hole to 5.00m Rotary Core Drilling to 9.95m				
Location: E 230609.8 N 824312.1				Orientation: Vertical				Equipment: Hand Tools, Track Mounted (Morooka) Boart Longyear Deltabase 525; T6-131 Core Barrel; Water Flush										
Progress 14/12/2023	Samples		Tests				Casing Depth	Level (mOD)	Depth	Description of Strata	Legend	Water Depth	Backfill					
	Depth	Type	Depth	Result									Symbol	Depth				
14/12/2023							328.38			Brown spongy pseudo-fibrous PEAT with rootlets (H6/B2)								
	0.30	B, ES					328.08	0.30		Brown plastic amorphous PEAT (H8/B3)								
	0.50	B, ES																
	1.00	B, ES																
	1.20-2.20	UL																
	2.20-3.50	D	2.20	SPT=1	0.0/0.0/0.1		2.20											
	2.65	B																
	3.00-3.50	UL																
	3.50	D	3.50	SPT=54	6.8/9.10.13.22		3.50	324.88	3.50		Very dense grey very sandy slightly silty fine and medium angular and subangular GRAVEL of psammite and granite. Sand is fine to coarse							
	3.95	B																
	4.50	D	4.50	SPT>50	25 (60)/50 (20)		4.50											
				TCR	SCR	RQD	FI	323.38	5.00		Weak, locally medium strong pinkish brown GRANITE. Moderatly weathered evident as a reduction of strength on fracture surfaces and greenish brown staining at base. Stratum is highly fractured throughout. Where visible, two fracture sets were identified; No.1: closely spaced, 10°-20°, planar and rough, locally planar and smooth. No.2: single 70°, planar and rough fracture							
	5.00		100	64	43		NI											
						10												
		6.00	100	95	62					Weak, locally moderately weak and medium strong grey micaceous PSAMMITE with a single subvertical granite intrusion and a single quartz vein dipping at 70°, up to 5mm wide. Moderately weathered evident as sand and gravel locally infilling fracture surfaces, localised reduction of strength on fracture surfaces and orange brown staining throughout. Two fracture sets were identified; No.1: closely, locally medium spaced, 10°-20°, planar and rough. No.2: medium spaced, 70°-80°, planar and rough, locally planar and smooth								
						6												
7.45		100	65	0			320.93	7.45		Strong grey micaceous PSAMMITE with occasional granite intrusions up to 80mm. Locally moderately weathered evident as local sand infilling between fractures and a localised reduction of strength on fracture surfaces. Three fracture sets were identified; No.1: closely, locally medium spaced, 30°-40°, planar and rough, locally planar and smooth. No.2: single 80°, planar and smooth fracture. No.3: single 80°-90°, stepped and rough fracture		1.00m						
7.85		100	96	66								1.20m						
						6												
9.00		100	89	64								1.00m						
												1.00m						
15/12							5.00	318.43	9.95	...at 9.70m: 50mm thick micaceous band containing garnets up to 2mm		0.80m	9.95					
Remarks:												END OF BOREHOLE		Hole Diam.		To Depth		
# Description based on Driller's log. An inspection pit was excavated by hand to a depth of 1.20m to clear services. Ground-water was encountered at a depth of 3.20m, rising to ground-level after 20mins. Below 5.00m no ground-water observations are recorded due to water flush. The Penetration Tests were carried out using Trip Hammer RD51.												Boring		Casing				
												175		4.90		5.00		
												131		9.95				
Driller WW		Originator JM		Ground-water			Water Added		Chiselling			Flush				Fig No:  B25 Sheet 1 of 1 Scale 1:50		
				Struck	Rose To	Time(min)	Cut Off	From	To	From	To	hh:mm	Returns	Type	From (m)			To (m)
				3.20	0.00	15.00							100 100	Air Water	1.20 4.90			4.90 9.95
Chk & App FMR		Status Final																








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				Site: LT521 FASNAKYLE 400KV SUBSTATION				Contract No: 26560			
Client: SSEN Transmission Engineer: Jacobs				Trial Pit No. TP01				Trial Pit to 1.20m			
								Width - 1.50m Length - 2.00m			
Location: E 230909.8 N 824597.0				Orientation: Vertical				Equipment: 15T Tracked Excavator			
Progress	Sample	Samples and Tests			Level (m)	Depth	Description of Strata	Legend	Water Depth	Backfill	
Depth	Type	Result								Symbol	Depth
29/11/2023	0.00	B, D, ES			328.24		Dark brown spongy fibrous, locally spongy psuedo-fibrous PEAT (H2/B1)				
	0.50	B, B, D, ES			327.94	0.30	Dark brown to brown sandy spongy psuedofibrous, locally plastic amorphous PEAT (H4/B2). Sand is fine to coarse				
	1.00	B, B, D, ES			327.34	0.90	Grey silty fine to coarse SAND and fine to coarse angular to subrounded GRAVEL of psammite and granite with low cobble content. Cobbles are angular and subangular of psammite				
29/11					327.04	1.20	Grey silty fine to coarse SAND and fine to coarse angular to subrounded GRAVEL of psammite and granite with low cobble content. Cobbles are angular and subangular of psammite				
							--- OBSTRUCTION (possible rock) --- END OF TRIAL PIT				
Remarks: Trial pit CAT scanned prior to excavation to check for services. The walls of the pit stood vertical throughout excavation. Ground-water was encountered at a depth of 1.00m. Trial pit was terminated at a depth of 1.20m due to hard digging (possible bedrock). In-situ thermal resistivity test carried out at a depth of 1.10m.											
Driller	Originator FP	Ground-water								 Fig No: B26 Sheet 1 of 1 Scale 1:50	
Struck	Rose To	Time(mins)	Cut Off								
1.00											
Chk & App FMR	Status FINAL										









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				Site: LT521 FASNAKYLE 400KV SUBSTATION				Contract No: 26560			
Client: SSEN Transmission Engineer: Jacobs				Trial Pit No. TP02				Trial Pit to 0.80m			
								Width - 1.50m Length - 1.80m			
Location: E 230760.3 N 824540.0				Orientation: Vertical				Equipment: 15T Tracked Excavator			
Progress	Sample Depth	Samples and Tests			Level (m)	Depth	Description of Strata	Legend	Water Depth	Backfill	
		Type	Result							Symbol	Depth
29/11/2023	0.00	B, D, ES			327.80		Dark brown plastic amorphous, locally spongy psuedo-fibrous PEAT (H5/B1)				
	0.30	B, B			327.50	0.30	Brownish grey slightly silty fine to coarse SAND and fine to coarse angular and subangular GRAVEL of psammite with medium cobble content. Cobbles are angular and subangular of psammite				
	0.50	B, D, ES									
29/11	0.80	D			327.00	0.80	...OBSTRUCTION (possible rock) END OF TRIAL PIT		Dry		
Remarks: Trial pit CAT scanned prior to excavation to check for services. The walls of the pit stood vertical throughout excavation. Ground-water was not encountered. Trial pit was terminated at a depth of 0.80m due to hard digging (possible bedrock).											
Driller	Originator FP	Ground-water								Fig No:  B27 Sheet 1 of 1 Scale 1:50	
Chk & App FMR	Status FINAL	Struck	Rose To	Time(mins)	Cut Off						









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				Site: LT521 FASNAKYLE 400KV SUBSTATION				Contract No: 26560					
Client: SSEN Transmission Engineer: Jacobs				Trial Pit No. TP03				Trial Pit to 0.80m					
								Width - 1.50m Length - 2.50m					
Location: E 230602.9 N 824468.1				Orientation: Vertical				Equipment: 15T Tracked Excavator					
Progress	Sample Depth	Samples and Tests			Level (m)	Depth	Description of Strata	Legend	Water Depth	Backfill			
4/12 2023	0.00	B, D, ES			327.16		Dark brown plastic amorphous, locally spongy fibrous PEAT with roots (H5/B1)						
	0.40	B			326.76	0.40	Brownish yellow gravelly slightly silty fine to coarse SAND with low cobble content. Gravel is fine to coarse angular and subangular of psammite. Cobbles are angular of psammite						
	0.50	D, ES											
4/12	0.80	D			326.36	0.80	.....OBSTRUCTION (possible rock) END OF TRIAL PIT		Dry				
<p>Remarks:</p> <p>Trial pit CAT scanned prior to excavation to check for services. The walls of the pit stood vertical throughout excavation. Ground-water was not encountered. Trial pit was terminated at a depth of 0.80m due to hard digging (possible bedrock).</p>													
Driller		Originator FP		Ground-water								Fig No: B28 Sheet 1 of 1 Scale 1:50	
Struck		Rose To		Time(mins)		Cut Off							
Chk & App FMR		Status FINAL											





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				Site: LT521 FASNAKYLE 400KV SUBSTATION				Contract No: 26560			
Client: SSEN Transmission Engineer: Jacobs				Trial Pit No. TP04				Trial Pit to 0.50m			
								Width - 1.50m Length - 2.00m			
Location: E 230822.3 N 824463.6				Orientation: Vertical				Equipment: 15T Tracked Excavator			
Progress	Sample Depth	Samples and Tests		Level (m)	Depth	Description of Strata	Legend	Water Depth	Backfill		
		Type	Result						Symbol	Depth	
28/11/2023	0.00	B, B, D, ES		334.79		Dark brown slightly sandy spongy fibrous, locally plastic amorphous PEAT with roots (H3/B1). Sand is fine to coarse					
	0.30	B		334.49	0.30						
28/11	0.50	D		334.29	0.50	Brown slightly silty fine to coarse SAND and fine to coarse angular and subangular GRAVEL of psammite with high cobble content. Cobbles are angular of psammite		Dry			
						.....OBSTRUCTION (possible rock)..... END OF TRIAL PIT					
Remarks: Trial pit CAT scanned prior to excavation to check for services. The walls of the pit stood vertical throughout excavation. Ground-water was not encountered. Trial pit was terminated at a depth of 0.50m due to hard digging (possible bedrock).											
Driller	Originator FP	Ground-water						Fig No: B29 Sheet 1 of 1 Scale 1:50			
Chk & App FMR	Status FINAL	Struck	Rose To	Time(mins)	Cut Off						









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				Site: LT521 FASNAKYLE 400KV SUBSTATION				Contract No: 26560							
				Client: SSEN Transmission				Trial Pit No. TP05							
				Engineer: Jacobs				Trial Pit to 0.90m							
Location: E 230957.5 N 824534.9				Orientation: Vertical				Equipment: 15T Tracked Excavator				Width - 1.50m Length - 2.20m			
Progress 28/11/2023  28/11	Sample Depth	Samples and Tests			Level (m)	Depth	Description of Strata	Legend	Water Depth	Backfill					
		Type	Result							Symbol	Depth				
		B, D, ES													
		B, B, D, ES													
	0.00			334.48		Dark brown plastic amorphous, locally spongy fibrous PEAT (H5/B2)									
	0.50			334.18	0.30	Brownish yellow silty fine to coarse SAND and fine to coarse angular to subrounded GRAVEL of psammite and granite with low cobble content. Cobbles are angular to subrounded of psammite and granite									
	0.70	B													
	0.80	D		333.58	0.90	....OBSTRCUTION (possible rock)									
----- END OF TRIAL PIT -----															
Remarks: Trial pit CAT scanned prior to excavation to check for services. The walls of the pit stood vertical throughout excavation. Ground-water was encountered at a depth of 0.70m. Trial pit was terminated at a depth of 0.90m due to hard digging (possible bedrock).															
Driller	Originator FP	Ground-water								 Fig No:  B30 Sheet 1 of 1 Scale 1:50					
Chk & App FMR	Status FINAL	Struck	Rose To	Time(mins)	Cut Off										
		0.70													



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				Site: LT521 FASNAKYLE 400KV SUBSTATION				Contract No: 26560			
Client: SSEN Transmission Engineer: Jacobs				Trial Pit No. TP06				Trial Pit to 0.70m			
								Width - 2.40m Length - 2.80m			
Location: E 230650.7 N 824398.5				Orientation: Vertical				Equipment: 15T Tracked Excavator			
Progress	Sample Depth	Samples and Tests			Level (m)	Depth	Description of Strata	Legend	Water Depth	Backfill	
		Type	Result								Symbol
24/11/2023	0.00	B, B, D, ES			328.35		Dark brown spongey psuedo-fibrous, locally spongey fibrous PEAT with roots and wood (H3/B2)				
	0.40	B			327.95	0.40	Brownish yellow very sandy slightly silty fine to coarse angular and subangular GRAVEL of psammite and granite with low cobble content. Sand is fine to coarse. Cobbles are angular of psamite and granite				
24/11	0.50	D, ES			327.65	0.70					
<p>....OBSTRUCTION (possible rock)----- END OF TRIAL PIT</p>											
Remarks: Trial pit CAT scanned prior to excavation to check for services. The walls of the pit stood vertical throughout excavation. Ground-water was encountered at a depth of 0.30m. Trial pit was terminated at a depth of 0.70m due to hard digging (possible bedrock).											
Driller	Originator FP	Ground-water								 Fig No: B31 Sheet 1 of 1 Scale 1:50	
		Struck	Rose To	Time(mins)	Cut Off						
Chk & App FMR	Status FINAL	0.30									





			Site: LT521 FASNAKYLE 400KV SUBSTATION					Contract No: 26560			
			Client: SSEN Transmission					Trial Pit No. TP07			
			Engineer: Jacobs					Trial Pit to 0.60m			
Location: E 230996.3 N 824655.2			Orientation: Vertical			Equipment: 15T Tracked Excavator			Width - 1.50m Length - 2.10m		
Progress 29/11/2023 29/11	Sample Depth	Samples and Tests			Level (m)	Depth	Description of Strata	Legend	Water Depth	Backfill	
		Type	Result							Symbol	Depth
		B, D, ES									
		B, B, B									
	0.00				322.32		Dark brown plastic amorphous, locally spongy fibrous PEAT (H5/B2)				
	0.30				322.02	0.30					
	0.50	D, ES			321.72	0.60	Grey sandy slightly silty fine to coarse angular and subangular GRAVEL of psammite and granite with medium cobble content. Sand is fine to coarse. Cobbles are angular and subangular of psammite				
	0.60	D					....OBSTRUCTION (possible rock) END OF TRIAL PIT		Dry		
Remarks: Trial pit CAT scanned prior to excavation to check for services. The walls of the pit stood vertical throughout excavation. Ground-water was not encountered. Trial pit was terminated at a depth of 0.60m due to hard digging (possible bedrock).											
Driller		Originator FP		Ground-water						Fig No:  B32 Sheet 1 of 1 Scale 1:50	
				Struck	Rose To	Time(mins)	Cut Off				
Chk & App FMR		Status FINAL									

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			Site: LT521 FASNAKYLE 400KV SUBSTATION				Contract No: 26560			
Client: SSEN Transmission Engineer: Jacobs			Trial Pit No. TP08				Trial Pit to 0.50m			
							Width - 1.80m Length - 2.50m			
Location: E 230516.7 N 824438.7		Orientation: Vertical		Equipment: 15T Tracked Excavator						
Progress	Sample Depth	Samples and Tests			Level (m)	Depth	Description of Strata	Legend	Water Depth	Backfill
4/12/2023	0.00	Type	Result		317.13		Dark brown plastic amorphous, locally spongy fibrous PEAT with roots (H5/B2)			
	0.30		B, D, ES		316.83	0.30				
	0.40		B, B							
4/12	0.50		D		316.63	0.50	Grey slightly silty fine to coarse SAND and fine to coarse angular and subangular GRAVEL of psammite and granite with medium cobble content. Cobbles are angular and subangular of psammite		Dry	
			ES				.....OBSTRUCTION (possible rock) END OF TRIAL PIT			
Remarks: Trial pit CAT scanned prior to excavation to check for services. The walls of the pit stood vertical throughout excavation. Ground-water was not encountered. Trial pit was terminated at a depth of 0.50m due to hard digging (possible bedrock). In-situ thermal resistivity test not carried out due to unsuitable material. Soakaway test cancelled.										
Driller	Originator FP	Ground-water							 Fig No: B33 Sheet 1 of 1 Scale 1:50	
Chk & App FMR	Status FINAL	Struck	Rose To	Time(mins)	Cut Off					


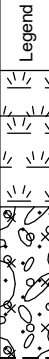





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				Site: LT521 FASNAKYLE 400KV SUBSTATION				Contract No: 26560			
Client: SSEN Transmission Engineer: Jacobs				Trial Pit No. TP09				Trial Pit to 0.30m			
								Width - 1.50m Length - 2.00m			
Location: E 230929.1 N 824439.0				Orientation: Vertical				Equipment: 15T Tracked Excavator			
Progress	Sample Depth	Samples and Tests			Level (m)	Depth	Description of Strata	Legend	Water Depth	Backfill	
28/11 2023 28/11	0.00 0.20 0.30	B, B, D, ES			341.21						
		D			340.91	0.30	Dark brown to brown sandy plastic amorphous PEAT with roots (H6/B1). Sand is fine to coarse				
		B					.....OBSTRUCTION (possible rock)..... END OF TRIAL PIT		Dry		
Remarks: Trial pit CAT scanned prior to excavation to check for services. The walls of the pit stood vertical throughout excavation. Ground-water was not encountered. Trial pit was terminated at a depth of 0.30m due to hard digging (possible bedrock).											
Driller	Originator FP	Ground-water								 Fig No: B34 Sheet 1 of 1 Scale 1:50	
Chk & App FMR	Status FINAL	Struck	Rose To	Time(mins)	Cut Off						













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				Site: LT521 FASNAKYLE 400KV SUBSTATION				Contract No: 26560						
Client: SSEN Transmission Engineer: Jacobs				Trial Pit No. TP10				Trial Pit to 1.90m						
								Width - 1.50m Length - 2.80m						
Location: E 230743.1 N 824359.1				Orientation: Vertical				Equipment: 15T Tracked Excavator						
Progress	Sample Depth	Samples and Tests		Level (m)	Depth	Description of Strata	Legend	Water Depth	Backfill					
24/11/2023	0.00	B, D, ES							333.41	0.30	Dark brown spongey psuedo-fibrous, locally plastic amorphous PEAT (H4/B2)			
	0.50	B, D, ES							333.11	0.30	Dark brown spongey psuedo-fibrous, locally spongey fibrous PEAT (H3/B2)			
	1.00	B, D, ES							332.51	0.90	Dark grey very sandy silty fine to coarse angular to subrounded GRAVEL of granite and psammite with low cobble and boulder content. Sand is fine to coarse. Cobbles and boulders are angular of psammite (up to 800mm)			
	1.50	B												
24/11	1.90	D		331.51	1.90	... OBSTRUCTION (probable rock)								
END OF TRIAL PIT														
Remarks: Trial pit CAT scanned prior to excavation to check for services. The walls of the pit stood vertical throughout excavation. Ground-water was encountered at a depth of 0.30m. Trial pit was terminated at a depth of 1.90m due to hard digging (possible bedrock). In-situ thermal resistivity test carried out at a depth of 1.10m.														
Driller	Originator FP	Ground-water						Fig No: B35 Sheet 1 of 1 Scale 1:50						
Chk & App FMR	Status FINAL	Struck 0.30	Rose To	Time(mins)	Cut Off									









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				Site: LT521 FASNAKYLE 400KV SUBSTATION				Contract No: 26560			
Client: SSEN Transmission Engineer: Jacobs				Trial Pit No. TP11				Trial Pit to 1.50m			
								Width - 1.50m Length - 2.50m			
Location: E 230856.1 N 824725.7				Orientation: Vertical				Equipment: 15T Tracked Excavator			
Progress	Sample Depth	Samples and Tests		Level (m)	Depth	Description of Strata	Legend	Water Depth	Backfill		
		Type	Result						Symbol	Depth	
4/12 2023	0.00	B, D, ES		318.83	0.30	Dark brown to brown spongy fibrous, locally spongy pseudo-fibrous PEAT (H2/B2)					
	0.50	B, D, ES		318.53		Brown spongy pseudo-fibrous, locally plastic amorphous PEAT (H5/B2)					
	1.00	B, B, D, ES									
4/12	1.50	D		317.33	1.50	----- END OF TRIAL PIT -----					
Remarks: Trial pit CAT scanned prior to excavation to check for services. The walls of the pit collapsed throughout excavation. Ground-water was encountered at a depth of 1.50m. Trial pit was terminated at a depth of 1.50m due to wall instability.											
Driller	Originator FP	Ground-water						Fig No: B36 Sheet 1 of 1 Scale 1:50			
Chk & App FMR	Status FINAL	Struck	Rose To	Time(mins)	Cut Off						
		1.50									





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				Site: LT521 FASNAKYLE 400KV SUBSTATION				Contract No: 26560			
Client: SSEN Transmission Engineer: Jacobs				Trial Pit No. TP12				Trial Pit to 0.80m			
								Width - 1.50m Length - 2.50m			
Location: E 230703.0 N 824668.6				Orientation: Vertical				Equipment: 15T Tracked Excavator			
Progress	Sample Depth	Samples and Tests			Level (m)	Depth	Description of Strata	Legend	Water Depth	Backfill	
		Type	Result							Symbol	Depth
29/11/2023	0.00	B, D, ES			324.71		Dark brown sandy spongy fibrous, locally plastic amorphous PEAT with rootlets (H3/B2). Sand is fine to coarse				
	0.30	B			324.41	0.30					
	0.50	B, B, D, ES					Brownish yellow slightly silty fine to coarse SAND and fine to coarse angular and subangular GRAVEL of psammite with low cobble content. Cobbles are angular and subangular of psammite				
29/11	0.70	D			323.91	0.80	....OBSTRUCTION (possible rock) END OF TRIAL PIT		Dry		
Remarks: Trial pit CAT scanned prior to excavation to check for services. The walls of the pit stood vertical throughout excavation. Ground-water was not encountered. Trial pit was terminated at a depth of 0.80m due to hard digging (possible bedrock). In-situ thermal resistivity test not carried out due to unsuitable material.											
Driller	Originator FP	Ground-water								 Fig No: B37 Sheet 1 of 1 Scale 1:50	
Chk & App FMR	Status FINAL	Struck	Rose To	Time(mins)	Cut Off						











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				Site: LT521 FASNAKYLE 400KV SUBSTATION				Contract No: 26560			
Client: SSEN Transmission Engineer: Jacobs				Trial Pit No. TP13				Trial Pit to 0.40m			
								Width - 1.50m Length - 2.10m			
Location: E 230558.6 N 824593.3				Orientation: Vertical				Equipment: 15T Tracked Excavator			
Progress	Sample Depth	Samples and Tests			Level (m)	Depth	Description of Strata	Legend	Water Depth	Backfill	
29/11/2023	0.00	Type	Result		318.63						
	0.30		B, B, D, ES				Dark brown to brown slightly silty sandy spongey fibrous, locally plastic amorphous PEAT with rootlets (H3/B2). Sand is fine to coarse				
29/11	0.40		D		318.23	0.40	...OBSTRUCTION (possible rock)				
			B, D				END OF TRIAL PIT		Dry		
Remarks: Trial pit CAT scanned prior to excavation to check for services. The walls of the pit stood vertical throughout excavation. Ground-water was not encountered. Trial pit was terminated at a depth of 0.40m due to hard digging (possible bedrock). In-situ thermal resistivity test not carried out due to unsuitable material.											
Driller	Originator FP	Ground-water								 Fig No: B38 Sheet 1 of 1 Scale 1:50	
Chk & App FMR	Status FINAL	Struck	Rose To	Time(mins)	Cut Off						





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				Site: LT521 FASNAKYLE 400KV SUBSTATION				Contract No: 26560			
Client: SSEN Transmission Engineer: Jacobs				Trial Pit No. TP14				Trial Pit to 0.90m			
								Width - 1.50m Length - 2.00m			
Location: E 230433.8 N 824549.7				Orientation: Vertical				Equipment: 15T Tracked Excavator			
Progress	Sample Depth	Samples and Tests			Level (m)	Depth	Description of Strata	Legend	Water Depth	Backfill	
		Type	Result							Symbol	Depth
27/11/2023	0.00	B, D, ES			303.60		Dark brown plastic amorphous, locally spongy fibrous PEAT (H4/B1)				
	0.50	B, B, B, D, ES			303.30	0.30	Brownish orange slightly silty fine to coarse SAND and fine to coarse angular to subrounded GRAVEL of psammite and granite with medium cobble content. Cobbles are angular to subrounded of psammite and granite				
27/11					302.70	0.90	....OBSTRUCTION (possible rock) ----- END OF TRIAL PIT		Dry		
Remarks: Trial pit CAT scanned prior to excavation to check for services. The walls of the pit stood vertical throughout excavation. Ground-water was not encountered. Trial pit was terminated at a depth of 0.90m due to hard digging (possible bedrock). In-situ thermal resistivity test not carried out due to unsuitable material. Soakaway test cancelled.											
Driller	Originator FP	Ground-water								 Fig No: B39 Sheet 1 of 1 Scale 1:50	
Chk & App FMR	Status FINAL	Struck	Rose To	Time(mins)	Cut Off						









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				Site: LT521 FASNAKYLE 400KV SUBSTATION				Contract No: 26560							
				Client: SSEN Transmission				Trial Pit No. TP15							
				Engineer: Jacobs				Trial Pit to 1.80m							
Location: E 230359.7 N 824555.7				Orientation: Vertical				Equipment: 15T Tracked Excavator				Width - 1.50m Length - 2.00m			
Progress 27/11/2023	Sample Depth	Samples and Tests			Level (m)	Depth	Description of Strata	Legend	Water Depth	Backfill					
		Type	Result							Symbol	Depth				
		0.00	B, D, ES												
		0.50	B, D, ES												
		1.00	B, B, D, ES												
1.50	B, D, ES														
					303.66	0.30	Dark brown spongy fibrous PEAT (H2/B1)								
					303.36		Dark brown to brown spongy psuedo-fibrous, locally plastic amorphous PEAT with traces of vegetation (H4/B2)								
					302.26	1.40									
					301.86	1.80	Dark grey slightly gravelly silty fine to coarse SAND. Gravel is fine to coarse angular and subangular of psammite								
							....OBSTRUCTION (possible rock)								
							END OF TRIAL PIT								
Remarks: Trial pit CAT scanned prior to excavation to check for services. The walls of the pit stood vertical throughout excavation. Ground-water was encountered at a depth of 1.20m. Trial pit was terminated at a depth of 1.80m due to hard digging (possible bedrock). In-situ thermal resistivity test carried out at a depth of 1.10m.															
Driller	Originator FP	Ground-water										Fig No:  B40 Sheet 1 of 1 Scale 1:50			
Chk & App FMR	Status FINAL	Struck	Rose To	Time(mins)	Cut Off										
		1.20													













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				Site: LT521 FASNAKYLE 400KV SUBSTATION				Contract No: 26560			
Client: SSEN Transmission Engineer: Jacobs				Trial Pit No. TP16				Trial Pit to 0.80m			
								Width - 1.50m Length - 2.40m			
Location: E 230412.4 N 824347.0				Orientation: Vertical				Equipment: 15T Tracked Excavator			
Progress	Sample Depth	Samples and Tests			Level (m)	Depth	Description of Strata	Legend	Water Depth	Backfill	
27/11/2023	0.00	B, D, ES			316.93						
	0.50	B, B, D, ES			316.63	0.30	Brown slightly gravelly sandy silty TOPSOIL with low cobble content. Sand is fine to coarse. Gravel is fine to coarse angular to subrounded of psammite and granite. Cobbles are angular and subangular of psammite.				
	0.80	D			316.13	0.80	Brownish grey slightly silty fine to coarse SAND and fine to coarse angular to subrounded GRAVEL of psammite and granite with medium cobble content. Cobbles are angular and subangular of psammite.		Dry		
							...OBSTRUCTION (possible rock) END OF TRIAL PIT				
Remarks: Trial pit CAT scanned prior to excavation to check for services. The walls of the pit stood vertical throughout excavation. Ground-water was not encountered. Trial pit was terminated at a depth of 0.80m due to hard digging (possible bedrock).											
Driller	Originator FP	Ground-water								 Fig No: B41 Sheet 1 of 1 Scale 1:50	
Chk & App FMR	Status FINAL	Struck	Rose To	Time(mins)	Cut Off						








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				Site: LT521 FASNAKYLE 400KV SUBSTATION				Contract No: 26560							
				Client: SSEN Transmission				Trial Pit No. TP17							
				Engineer: Jacobs				Trial Pit to 2.50m							
Location: E 230297.3 N 824370.5				Orientation: Vertical				Equipment: 15T Tracked Excavator				Width - 1.50m Length - 2.20m			
Progress 27/11/2023	Sample Depth	Samples and Tests			Level (m)	Depth	Description of Strata	Legend	Water Depth	Backfill					
		Type	Result							Symbol	Depth				
	0.00	B, D, ES			307.90	0.30	Dark brown to brown spongy fibrous, locally spongy psuedo-fibrous PEAT with roots (H2/B2)								
	0.50	B, D, ES					Brown locally dark brown organic spongy pseudo-fibrous, locally plastic amorphous PEAT with traces of roots and vegetation (H4/B3)								
	1.00	B, B, D, ES													
	1.50	B, D													
	2.00	B, D													
27/11	2.50	D			305.40	2.50	END OF TRIAL PIT								
<p>Remarks:</p> <p>Trial pit CAT scanned prior to excavation to check for services.</p> <p>The walls of the pit collapsed throughout excavation.</p> <p>Ground-water was encountered at a depth of 2.50m.</p> <p>Trial pit was terminated at a depth of 2.50m due to ground-water ingress and wall stability.</p>															
Driller		Originator FP		Ground-water								Fig No:  B42 Sheet 1 of 1 Scale 1:50			
Struck 2.50		Rose To		Time(mins)		Cut Off									
Chk & App FMR		Status FINAL													









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				Site: LT521 FASNAKYLE 400KV SUBSTATION				Contract No: 26560				
Client: SSEN Transmission Engineer: Jacobs				Trial Pit No. TP18				Trial Pit to 1.10m				
								Width - 2.40m Length - 3.10m				
Location: E 230388.6 N 824236.9				Orientation: Vertical				Equipment: 15T Tracked Excavator				
Progress	Sample Depth	Samples and Tests			Level (m)	Depth	Description of Strata	Legend	Water Depth	Backfill		
		Type	Result								Symbol	Depth
23/11/2023	0.00	B, D, ES			326.96		Dark brown to brown spongy fibrous, locally plastic amorphous PEAT (H3/B2)					
	0.50	B, B, D, ES										
	23/11	0.80	B			326.16	0.80	Grey slightly silty fine to coarse SAND and fine to coarse angular to subrounded GRAVEL of psammite with low cobble content. Cobbles are angular and subangular of psammite			Dry	
		1.00	D, ES			325.86	1.10					
							... OBSTRUCTION (possible rock) END OF TRIAL PIT					
Remarks: Trial pit CAT scanned prior to excavation to check for services. The walls of the pit stood vertical throughout excavation. Ground-water was not encountered. Trial pit was terminated at a depth of 1.10m due to hard digging (possible bedrock).												
Driller		Originator FP		Ground-water								
Struck		Rose To		Time(mins)		Cut Off		Fig No:  B43 Sheet 1 of 1 Scale 1:50				
Chk & App FMR		Status FINAL										



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				Site: LT521 FASNAKYLE 400KV SUBSTATION				Contract No: 26560			
Client: SSEN Transmission Engineer: Jacobs				Trial Pit No. TP19				Trial Pit to 0.80m			
								Width - 2.40m Length - 3.00m			
Location: E 230274.4 N 824248.2				Orientation: Vertical				Equipment: 15T Tracked Excavator			
Progress	Sample Depth	Samples and Tests			Level (m)	Depth	Description of Strata	Legend	Water Depth	Backfill	
		Type	Result							Symbol	Depth
23/11/2023	0.00	B, D, ES			323.35		Dark brown plastic amorphous, locally spongy psuedo-fibrous PEAT (H4/B2)				
	0.30	B									
	0.50	D, ES			322.75	0.60					
23/11	0.60	B									
	0.70	D			322.55	0.80	Brownish yellow slightly silty fine to coarse SAND and fine to coarse angular and subangular GRAVEL of psammite with medium cobble content. Cobbles are angular and subangular of subangular of psammite		Dry		
							---OBSTRUCTION (possible rock)--- END OF TRIAL PIT				
Remarks: Trial pit CAT scanned prior to excavation to check for services. The walls of the pit stood vertical throughout excavation. Ground-water was not encountered. Trial pit was terminated at a depth of 0.80m due to hard digging (possible bedrock). In-situ thermal resistivity test not carried out due to unsuitable material.											
Driller	Originator FP	Ground-water								 Fig No: B44 Sheet 1 of 1 Scale 1:50	
Chk & App FMR	Status FINAL	Struck	Rose To	Time(mins)	Cut Off						



Site: LT521 FASNAKYLE 400KV SUBSTATION		Contract No: 26560
Client: SSEN Transmission		Trial Pit No. <b>TP20</b>
Engineer: Jacobs		Trial Pit to 1.10m
Vertical	Equipment: 15T Tracked Excavator	Width - 2.40m Length - 3.00m












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				Site: LT521 FASNAKYLE 400KV SUBSTATION				Contract No: 26560							
				Client: SSEN Transmission				Trial Pit No. TP21							
				Engineer: Jacobs				Trial Pit to 0.70m							
Location: E 230230.6 N 824133.9				Orientation: Vertical				Equipment: 15T Tracked Excavator				Width - 2.40m Length - 3.00m			
Progress 23/11/2023	Sample Depth	Samples and Tests			Level (m)	Depth	Description of Strata	Legend	Water Depth	Backfill					
		Type	Result							Symbol	Depth				
		B, D, ES													
		B, B, D, ES													
0.00			322.26		Dark brown plastic amorphous, locally spongy fibrous PEAT (H5/B2)										
0.50			321.96	0.30	Brownish yellow gravelly silty fine to coarse SAND. Gravel is fine to coarse angular to subrounded of psammite										
0.70	D		321.56	0.70	... OBSTRUCTION (possible rock)										
							END OF TRIAL PIT								
Remarks: Trial pit CAT scanned prior to excavation to check for services. The walls of the pit stood vertical throughout excavation. Ground-water was encountered at a depth of 0.40m. Trial pit was terminated at a depth of 0.70m due to hard digging (possible bedrock).															
Driller	Originator FP	Ground-water								 Fig No: B46 Sheet 1 of 1 Scale 1:50					
Chk & App FMR	Status FINAL	Struck	Rose To	Time(mins)	Cut Off										
		0.40													








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				Site: LT521 FASNAKYLE 400KV SUBSTATION				Contract No: 26560					
Client: SSEN Transmission Engineer: Jacobs				Trial Pit No. TP22				Trial Pit to 2.10m					
								Width - 1.50m Length - 2.80m					
Location: E 230516.5 N 824305.9				Orientation: Vertical				Equipment: 15T Tracked Excavator					
Progress 24/11 2023	Sample Depth	Samples and Tests			Level (m)	Depth	Description of Strata	Legend	Water Depth	Backfill			
		Type	Result							Symbol	Depth		
24/11	0.00	B, D, ES			325.65		Dark brown spongey psuedo-fibrous PEAT (H3/B1)						
	0.50	B, D, ES			325.25	0.40	Dark brown locally brown spongey psuedo-fibrous, locally spongey fibrous PEAT with traces of vegetation (H2/B3)						
	1.00	D, ES											
	1.50	B, D											
	2.00	B, D			323.65 323.55	2.00 2.10	Grey gravelly slightly silty fine to coarse SAND with low cobble content. Gravel is fine to coarse angular and subangular of psammite. Cobbles are angular and subangular of psammite						
							<div>OBSTRUCTION (possible rock)</div> <div>END OF TRIAL PIT</div>						
<p>Remarks:</p> <p>Trial pit CAT scanned prior to excavation to check for services.</p> <p>The walls of the pit stood vertical throughout excavation.</p> <p>Ground-water was encountered at a depth of 0.30m.</p> <p>Trial pit was terminated at a depth of 2.10m due to hard digging (possible bedrock).</p>													
Driller		Originator FP		Ground-water								Fig No:  B47 Sheet 1 of 1 Scale 1:50	
Struck 0.30		Rose To		Time(mins)		Cut Off							
Chk & App FMR		Status FINAL											







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				Site: LT521 FASNAKYLE 400KV SUBSTATION				Contract No: 26560			
Client: SSEN Transmission Engineer: Jacobs				Trial Pit No. TP23				Trial Pit to 0.70m			
								Width - 2.40m Length - 2.80m			
Location: E 230474.9 N 824179.0				Orientation: Vertical				Equipment: 15T Tracked Excavator			
Progress	Sample Depth	Samples and Tests			Level (m)	Depth	Description of Strata	Legend	Water Depth	Backfill	
22/11/2023	0.00	B, D, ES			327.63		Dark brown plastic amorphous, locally spongy fibrous PEAT (H5/B3)				
	0.30	B, B			327.33	0.30	Grey sandy slightly silty fine to coarse angular to subangular GRAVEL of psammite with medium cobble content. Sand is fine to coarse. Cobbles are angular and subangular of psammite				
	0.50	D, ES									
	0.70	D			326.93	0.70					
<p>Remarks:</p> <p>Trial pit CAT scanned prior to excavation to check for services. The walls of the pit stood vertical throughout excavation. Ground-water was encountered at a depth of 0.40m. Trial pit was terminated at a depth of 0.70m due to hard digging (possible bedrock).</p>											
Driller	Originator FP	Ground-water								 Fig No: B48 Sheet 1 of 1 Scale 1:50	
Struck	Rose To	Time(mins)	Cut Off								
0.40											
Chk & App FMR	Status FINAL										



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







				Site: LT521 FASNAKYLE 400KV SUBSTATION				Contract No: 26560							
				Client: SSEN Transmission				Trial Pit No. TP24							
				Engineer: Jacobs				Trial Pit to 0.65m							
Location: E 230410.3 N 824069.5				Orientation: Vertical				Equipment: 15T Tracked Excavator				Width - 2.40m Length - 2.80m			
Progress 22/11/2023 22/11	Sample Depth	Samples and Tests			Level (m)	Depth	Description of Strata	Legend	Water Depth	Backfill					
		Type	Result							Symbol	Depth				
		B, D, ES													
		B, B													
D, ES															
<p>Remarks:</p> <p>Trial pit CAT scanned prior to excavation to check for services. The walls of the pit stood vertical throughout excavation. Ground-water was encountered at a depth of 0.20m. Trial pit was terminated at a depth of 0.65m due to hard digging (possible bedrock).</p>															
Driller		Originator FP		Ground-water				 Fig No:  B49 Sheet 1 of 1 Scale 1:50							
				Struck	Rose To	Time(mins)	Cut Off								
Chk & App FMR		Status FINAL		0.20											



Site: LT521 FASNAKYLE 400KV SUBSTATION		Contract No: 26560
Client: SSEN Transmission		Trial Pit No. <b>TP25</b>
Engineer: Jacobs		Trial Pit to 1.20m
Vertical	Equipment: 15T Tracked Excavator	Width - 2.40m Length - 3.00m







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				Site: LT521 FASNAKYLE 400KV SUBSTATION					Contract No: 26560			
				Client: SSEN Transmission					Trial Pit No. TP26			
				Engineer: Jacobs					Trial Pit to 2.00m			
Location: E 230187.4 N 824042.6				Orientation: Vertical			Equipment: 15T Tracked Excavator			Width - 2.00m Length - 2.10m		
Progress 22/11/2023	Sample Depth	Samples and Tests			Level (m)	Depth	Description of Strata	Legend	Water Depth	Backfill		
		Type	Result							Symbol	Depth	
		0.00	B, D, ES			315.28		Dark brown spongy fibrous, locally spongy psuedo-fibrous PEAT (H2/B1)				
0.50	B, D, ES			314.98	0.30	Dark brown locally brown spongy psuedo-fibrous, locally plastic amorphous PEAT (H4/B2)						
1.00	B, D, ES											
1.50	B											
22/11/2023	2.00	D			313.28	2.00	END OF TRIAL PIT					
Remarks: Trial pit CAT scanned prior to excavation to check for services. The walls of the pit stood vertical throughout excavation. Ground-water was encountered at a depth of 0.20m. Trial pit was terminated at a depth of 2.00m due to wall instability and water ingress. In-situ thermal resistivity test carried out at a depth of 1.10m. Soakaway test cancelled.												
Driller		Originator FP		Ground-water						Fig No:  B51 Sheet 1 of 1 Scale 1:50		
Chk & App FMR		Status FINAL		Struck	Rose To	Time(mins)	Cut Off					
				0.20								



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				Site: LT521 FASNAKYLE 400KV SUBSTATION				Contract No: 26560			
Client: SSEN Transmission Engineer: Jacobs				Trial Pit No. TP27				Trial Pit to 0.40m			
								Width - 1.50m Length - 2.10m			
Location: E 230308.1 N 824510.5				Orientation: Vertical				Equipment: 15T Tracked Excavator			
Progress	Sample Depth	Samples and Tests			Level (m)	Depth	Description of Strata	Legend	Water Depth	Backfill	
27/11/2023	0.00	B, D, ES			307.57						
	0.20	B, B			307.37	0.20	Dark brown sandy locally spongy fibrous peaty TOPSOIL. Sand is fine to coarse				
	0.30	D			307.17	0.40	Brownish yellow slightly silty fine to coarse SAND and fine to coarse angular and subangular GRAVEL of psammite and granite with medium cobble content. Cobbles are angular and subangular of psammite and granite		Dry		
	0.40	D					...OBSTRUCTION (possible rock) END OF TRIAL PIT				
<p>Remarks:</p> <p>Trial pit CAT scanned prior to excavation to check for services.</p> <p>The walls of the pit stood vertical throughout excavation.</p> <p>Ground-water was not encountered.</p> <p>Trial pit was terminated at a depth of 0.40m due to hard digging (possible bedrock).</p> <p>In-situ thermal resistivity test not carried out due to unsuitable material.</p> <p>Soakaway test cancelled.</p>											
Driller	Originator FP	Ground-water								 Fig No: B52 Sheet 1 of 1 Scale 1:50	
Chk & App FMR	Status FINAL	Struck	Rose To	Time(mins)	Cut Off						














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				Site: LT521 FASNAKYLE 400KV SUBSTATION				Contract No: 26560			
Client: SSEN Transmission Engineer: Jacobs				Trial Pit No. TP29				Trial Pit to 2.00m			
								Width - 2.40m Length - 3.40m			
Location: E 230375.9 N 823898.4				Orientation: Vertical				Equipment: 15T Tracked Excavator			
Progress	Sample Depth	Samples and Tests			Level (m)	Depth	Description of Strata	Legend	Water Depth	Backfill	
		Type	Result							Symbol	Depth
21/11/2023	0.00	B, D, ES			328.37		Dark brown slightly sandy plastic amorphous, locally spongey psuedo-fibrous PEAT (H5/B2). Sand is fine to coarse				
	0.50	B, D, ES			328.07	0.30					
	1.00	B, D, ES									
	1.50	B, B, D									
	1.90	D			326.37	2.00	.... OBSTRUCTION (possible rock)				
END OF TRIAL PIT											
Remarks: Trial pit CAT scanned prior to excavation to check for services. The walls of the pit stood vertical throughout excavation. Ground-water was encountered at a depth of 1.90m. Trial pit was terminated at a depth of 2.00m due to hard digging (possible bedrock).											
Driller	Originator FP	Ground-water								Fig No:  B54 Sheet 1 of 1 Scale 1:50	
Struck 1.90	Rose To	Time(mins)	Cut Off								
Chk & App FMR	Status FINAL										









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				Site: LT521 FASNAKYLE 400KV SUBSTATION				Contract No: 26560							
				Client: SSEN Transmission				Trial Pit No. TP30							
				Engineer: Jacobs				Trial Pit to 1.10m							
Location: E 230087.6 N 823913.0				Orientation: Vertical				Equipment: 15T Tracked Excavator				Width - 2.40m Length - 3.10m			
Progress 21/11/2023	Sample Depth	Samples and Tests			Level (m)	Depth	Description of Strata	Legend	Water Depth	Backfill					
		Type	Result							Symbol	Depth				
21/11	0.00	B, D, ES			312.91		Dark brown plastic amorphous, locally spongy psuedo-fibrous PEAT (H5/B2)								
	0.50	B, D, ES			312.51	0.40	Light brown slightly sandy slightly silty fine to coarse angular and subangular GRAVEL of psammite with medium cobble content. Sand is fine to coarse. Cobbles are angular and subangular of psammite								
	0.80	B, B													
	0.90	ES													
21/11	1.00	D			311.81	1.10	....OBSTRUCTION (possible rock)								
----- END OF TRIAL PIT -----															
Remarks: Trial pit CAT scanned prior to excavation to check for services. The walls of the pit stood vertical throughout excavation. Ground-water was encountered at a depth of 0.20m. Trial pit was terminated at a depth of 1.10m due to hard digging (possible bedrock). In-situ thermal resistivity test not carried out due to unsuitable material. Soakaway test cancelled.															
Driller		Originator FP		Ground-water								Fig No:  B55 Sheet 1 of 1 Scale 1:50			
Struck 0.20		Rose To		Time(mins)		Cut Off									
Chk & App FMR		Status FINAL													


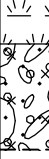




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				Site: LT521 FASNAKYLE 400KV SUBSTATION				Contract No: 26560			
Client: SSEN Transmission Engineer: Jacobs				Trial Pit No. TP31				Trial Pit to 0.80m			
								Width - 2.40m Length - 3.00m			
Location: E 230558.5 N 824185.3				Orientation: Vertical				Equipment: 15T Tracked Excavator			
Progress	Sample Depth	Samples and Tests		Level (m)	Depth	Description of Strata	Legend	Water Depth	Backfill		
		Type	Result						Symbol	Depth	
23/11/2023	0.00	B, D, ES		332.27		Dark brown spongy fibrous, locally plastic amorphous PEAT (H2/B2)					
	0.50	B, B, B, D, ES		331.87	0.40	Dark grey sandy slightly silty fine to coarse angular and subangular GRAVEL of psammite with low cobble content. Sand is fine to coarse. Cobble are angular and subangular of psammite					
23/11	0.80	D		331.47	0.80	.....OBSTRUCTION (possible rock) END OF TRIAL PIT					
Remarks: Trial pit CAT scanned prior to excavation to check for services. The walls of the pit stood vertical throughout excavation. Ground-water was encountered at a depth of 0.40m. Trial pit was terminated at a depth of 0.80m due to hard digging (possible bedrock).											
Driller	Originator FP	Ground-water						Fig No: B56 Sheet 1 of 1 Scale 1:50			
Chk & App FMR	Status FINAL	Struck 0.40	Rose To	Time(mins)	Cut Off						


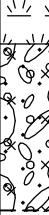





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				Site: LT521 FASNAKYLE 400KV SUBSTATION				Contract No: 26560			
Client: SSEN Transmission Engineer: Jacobs				Trial Pit No. TP32				Trial Pit to 1.00m			
								Width - 2.40m Length - 3.00m			
Location: E 230504.2 N 824055.1				Orientation: Vertical				Equipment: 15T Tracked Excavator			
Progress	Sample Depth	Samples and Tests		Level (m)	Depth	Description of Strata	Legend	Water Depth	Backfill		
		Type	Result						Symbol	Depth	
22/11/2023	0.00	B, D, ES		332.85	0.30	Dark brown spongy amorphous, locally spongy psuedo-fibrous PEAT (H5/B2)					
	0.50	B, B, D, ES		332.55		Dark grey very sandy silty fine to coarse angular and subangular GRAVEL of psammite with medium cobble content. Sand is fine to coarse. Cobbles are angular and subangular of psammite					
22/11	1.00	D, ES		331.85	1.00	....OBSTRUCTION (possible rock) ----- END OF TRIAL PIT		Dry			
Remarks: Trial pit CAT scanned prior to excavation to check for services. The walls of the pit stood vertical throughout excavation. Ground-water was not encountered. Trial pit was terminated at a depth of 1.00m due to hard digging (possible bedrock).											
Driller	Originator FP	Ground-water						Fig No:  B57 Sheet 1 of 1 Scale 1:50			
Chk & App FMR	Status FINAL	Struck	Rose To	Time(mins)	Cut Off						


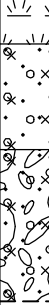




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				Site: LT521 FASNAKYLE 400KV SUBSTATION				Contract No: 26560			
Client: SSEN Transmission Engineer: Jacobs				Trial Pit No. TP33				Trial Pit to 1.40m			
								Width - 1.50m Length - 2.50m			
Location: E 230389.7 N 824463.0				Orientation: Vertical				Equipment: 15T Tracked Excavator			
Progress	Sample Depth	Samples and Tests		Level (m)	Depth	Description of Strata	Legend	Water Depth	Backfill		
		Type	Result						Symbol	Depth	
27/11/2023	0.00	B, D, ES		308.96		Dark brown plastic amorphous, locally spongy pseudo-fibrous PEAT (H5/B2)					
	0.50	B, B, D, ES		308.66	0.30	Brownish orange very sandy slightly silty fine to coarse angular to subrounded GRAVEL of psammite and granite with low cobble content. Sand is fine to coarse. Cobbles are angular and subangular of psammite					
	1.00	B, D, ES									
27/11	1.40	D		307.56	1.40	....OBSTRUCTION (possible rock) ----- END OF TRIAL PIT					
Remarks: Trial pit CAT scanned prior to excavation to check for services. The walls of the pit stood vertical throughout excavation. Ground-water was encountered at a depth of 0.50m. Trial pit was terminated at a depth of 1.40m due to hard digging (possible bedrock).											
Driller	Originator FP	Ground-water						Fig No:  B58 Sheet 1 of 1 Scale 1:50			
Chk & App FMR	Status FINAL	Struck	Rose To	Time(mins)	Cut Off						
		0.50									









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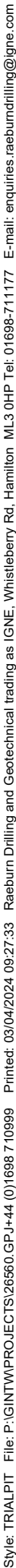
				Site: LT521 FASNAKYLE 400KV SUBSTATION				Contract No: 26560						
Client: SSEN Transmission Engineer: Jacobs				Trial Pit No. TP34				Trial Pit to 2.00m						
								Width - 2.40m Length - 3.40m						
Location: E 230565.0 N 823938.8				Orientation: Vertical				Equipment: 15T Tracked Excavator						
Progress	Sample Depth	Samples and Tests		Level (m)	Depth	Description of Strata	Legend	Water Depth	Backfill					
21/11/2023	0.00	B, D, ES							339.06		Dark brown slightly sandy plastic amorphous, locally spongy psuedo-fibrous PEAT (H5/B2)			Depth
	0.50	B, D, ES							338.76	0.30	Dark grey to grey very sandy silty fine to coarse angular and subangular GRAVEL of psammite and pegmatite with low cobble content. Sand is fine to coarse. Cobbles are angular and subangular of psammite			
	1.00	B, D, ES							338.06	1.00	Dark grey slightly sandy slightly silty fine to coarse angular and subangular GRAVEL of psammite and pegmatite with medium cobble content. Sand is fine to coarse. Cobbles are angular and subangular of psammite			
	1.50	B, B, D							337.06	2.00	.... OBSTRUCTION (possible rock)			
END OF TRIAL PIT														
Remarks: Trial pit CAT scanned prior to excavation to check for services. The walls of the pit stood vertical throughout excavation. Ground-water was encountered at a depth of 0.10m. Trial pit was terminated at a depth of 2.00m due to hard digging (possible bedrock). In-situ thermal resistivity test carried out at a depth of 1.00m.														
Driller	Originator FP	Ground-water						Fig No: B59 Sheet 1 of 1 Scale 1:50						
Chk & App FMR	Status FINAL	Struck	Rose To	Time(mins)	Cut Off									
		0.10												




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				Site: LT521 FASNAKYLE 400KV SUBSTATION				Contract No: 26560			
Client: SSEN Transmission Engineer: Jacobs				Trial Pit No. TP35				Trial Pit to 1.10m			
								Width - 2.40m Length - 3.20m			
Location: E 230643.3 N 824015.5				Orientation: Vertical				Equipment: 15T Tracked Excavator			
Progress	Sample	Samples and Tests		Level (m)	Depth	Description of Strata	Legend	Water Depth	Backfill		
Depth	Type	Result							Symbol	Depth	
22/11/2023	0.00	B, D, ES		341.68		Dark brown plastic amorphous, locally spongy fibrous PEAT (H5/B3)					
	0.50	B, B, D, ES		341.28	0.40	Dark grey sandy slightly silty fine to coarse angular and subangular GRAVEL of psammite and granite with medium cobble content. Sand is fine to coarse. Cobbles are angular and subangular of psammite					
22/11	1.00	B, D, ES		340.58	1.10	....OBSTRUCTION (possible rock) -----END OF TRIAL PIT-----					
Remarks: Trial pit CAT scanned prior to excavation to check for services. The walls of the pit stood vertical throughout excavation. Ground-water was encountered at a depth of 0.50m. Trial pit was terminated at a depth of 1.10m due to hard digging (possible bedrock).											
Driller	Originator FP	Ground-water						Fig No:  B60 Sheet 1 of 1 Scale 1:50			
Chk & App FMR	Status FINAL	Struck 0.50	Rose To	Time(mins)	Cut Off						













Remarks: Trial pit CAT scanned prior to excavation to check for services. The walls of the pit stood vertical throughout excavation. Ground-water was encountered at a depth of 0.80m. Trial pit was terminated at a depth of 0.90m due to hard digging (possible bedrock).													
Driller	Originator KF												
Chk & App FMR	Status <b>FINAL</b>												
<table border="1"> <thead> <tr> <th colspan="4">Ground-water</th> </tr> <tr> <th>Struck</th> <th>Rose To</th> <th>Time(mins)</th> <th>Cut Off</th> </tr> </thead> <tbody> <tr> <td>0.80</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		Ground-water				Struck	Rose To	Time(mins)	Cut Off	0.80			
Ground-water													
Struck	Rose To	Time(mins)	Cut Off										
0.80													
 <div> <b>B62</b>            Sheet 1 of 1            Scale 1:50         </div>													



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				Site: LT521 FASNAKYLE 400KV SUBSTATION				Contract No: 26560							
				Client: SSEN Transmission				Trial Pit No. TP37							
				Engineer: Jacobs				Trial Pit to 0.90m							
Location: E 230668.8 N 824143.7				Orientation: Vertical				Equipment: 15T Tracked Excavator				Width - 2.00m Length - 2.50m			
Progress 24/11/2023	Sample Depth	Samples and Tests			Level (m)	Depth	Description of Strata	Legend	Water Depth	Backfill					
		Type	Result							Symbol	Depth				
	0.00	B, D, ES			339.14		Dark brown spongy psuedo-fibrous, locally plastic amorphous PEAT (H4/B1)								
	0.50	B, B, D, ES			338.74	0.40	Brownish yellow sandy slightly silty fine to coarse angular and subangular GRAVEL of psammite and granite with medium cobble content. Sand is fine to coarse. Cobbles are angular of psamite and granite								
23/11					338.24	0.90	...OBSTRUCTION (possible rock) END OF TRIAL PIT								
Remarks: Trial pit CAT scanned prior to excavation to check for services. The walls of the pit stood vertical throughout excavation. Ground-water was encountered at a depth of 0.40m. Trial pit was terminated at a depth of 0.90m due to hard digging (possible bedrock). In-situ thermal resistivity test not carried out due to unsuitable material.															
Driller		Originator FP		Ground-water								Fig No:  B63 Sheet 1 of 1 Scale 1:50			
Struck 0.40		Rose To		Time(mins)		Cut Off									
Chk & App FMR		Status FINAL													



Easting	Northing	Point ID	Depth (m)	Date
230048	823888	PP0001	0.35	07/11/2023
230052	823897	PP0002	0.19	07/11/2023
230055	823907	PP0003	0.17	07/11/2023
230059	823916	PP0004	0.3	07/11/2023
230062	823925	PP0005	0.64	07/11/2023
230066	823935	PP0006	0.97	07/11/2023
230070	823944	PP0007	1.48	07/11/2023
230073	823953	PP0008	1.76	07/11/2023
230077	823963	PP0009	1.58	07/11/2023
230080	823972	PP0010	1.06	07/11/2023
230084	823981	PP0011	0.91	07/11/2023
230087	823991	PP0012	1.01	07/11/2023
230091	824000	PP0013	1.52	07/11/2023
230095	824009	PP0014	1.71	07/11/2023
230098	824019	PP0015	1.82	07/11/2023
230102	824028	PP0016	2.46	07/11/2023
230105	824037	PP0017	2.77	07/11/2023
230109	824047	PP0018	2.75	07/11/2023
230113	824056	PP0019	2.11	07/11/2023
230116	824065	PP0020	1.69	07/11/2023
230120	824075	PP0021	1.26	07/11/2023
230123	824084	PP0022	0.82	07/11/2023
230127	824093	PP0023	0.46	07/11/2023
230130	824103	PP0024	0.49	07/11/2023
230134	824112	PP0025	0.43	07/11/2023
230138	824121	PP0026	0.45	07/11/2023
230141	824131	PP0027	0.27	07/11/2023
230145	824140	PP0028	0.42	07/11/2023
230148	824149	PP0029	0.51	07/11/2023
230152	824159	PP0030	0.31	07/11/2023
230156	824168	PP0031	0.76	07/11/2023
230159	824177	PP0032	0.37	07/11/2023
230163	824187	PP0033	0.49	07/11/2023
230166	824196	PP0034	0.34	07/11/2023
230170	824205	PP0035	0.35	07/11/2023
230173	824215	PP0036	0.29	07/11/2023
230177	824224	PP0037	0.29	07/11/2023
230181	824233	PP0038	0.3	07/11/2023
230184	824243	PP0039	0.36	07/11/2023
230188	824252	PP0040	0.57	07/11/2023
230191	824261	PP0041	0.51	07/11/2023
230195	824271	PP0042	0.69	07/11/2023
230199	824280	PP0043	0.47	07/11/2023
230202	824289	PP0044	0.39	07/11/2023
230206	824299	PP0045	0.37	07/11/2023
230209	824308	PP0046	2.22	07/11/2023
230213	824317	PP0047	2.01	07/11/2023
230216	824327	PP0048	3.01	07/11/2023
230220	824336	PP0049	1.51	07/11/2023
230224	824345	PP0050	0.66	07/11/2023
230227	824355	PP0051	0.62	07/11/2023
230231	824364	PP0052	0.46	07/11/2023
230234	824373	PP0053	0.81	07/11/2023
230238	824383	PP0054	0.88	07/11/2023
230242	824392	PP0055	0.71	07/11/2023
230245	824401	PP0056	0.71	07/11/2023
230249	824411	PP0057	0.35	07/11/2023
230252	824420	PP0058	0.67	07/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230256	824429	PP0059	1.15	07/11/2023
230259	824439	PP0060	1.58	07/11/2023
230263	824448	PP0061	1.31	07/11/2023
230267	824457	PP0062	2.07	07/11/2023
230270	824467	PP0063	0.6	07/11/2023
230058	823886	PP0064	0.54	07/11/2023
230061	823896	PP0065	0.57	07/11/2023
230065	823905	PP0066	0.66	07/11/2023
230069	823914	PP0067	0.77	07/11/2023
230072	823924	PP0068	1.08	07/11/2023
230076	823933	PP0069	1.11	07/11/2023
230079	823942	PP0070	1.14	07/11/2023
230083	823952	PP0071	1.06	07/11/2023
230087	823961	PP0072	1.09	07/11/2023
230090	823970	PP0073	0.94	07/11/2023
230094	823980	PP0074	1.1	07/11/2023
230097	823989	PP0075	1.15	07/11/2023
230101	823998	PP0076	1.5	07/11/2023
230104	824008	PP0077	1.55	07/11/2023
230108	824017	PP0078	1.45	07/11/2023
230112	824026	PP0079	1.88	07/11/2023
230115	824036	PP0080	2.06	07/11/2023
230119	824045	PP0081	2.88	07/11/2023
230122	824054	PP0082	2.12	07/11/2023
230126	824064	PP0083	2.18	07/11/2023
230130	824073	PP0084	1.26	07/11/2023
230133	824082	PP0085	0.38	07/11/2023
230137	824092	PP0086	0.44	07/11/2023
230140	824101	PP0087	0.5	07/11/2023
230144	824110	PP0088	0.41	07/11/2023
230147	824120	PP0089	0.38	07/11/2023
230151	824129	PP0090	0.51	07/11/2023
230155	824138	PP0091	0.39	07/11/2023
230158	824148	PP0092	0.35	07/11/2023
230162	824157	PP0093	0.35	07/11/2023
230165	824166	PP0094	0.28	07/11/2023
230169	824176	PP0095	0.55	07/11/2023
230173	824185	PP0096	0.54	07/11/2023
230176	824194	PP0097	0.42	07/11/2023
230180	824204	PP0098	0.36	07/11/2023
230183	824213	PP0099	0.43	07/11/2023
230187	824222	PP0100	0.83	07/11/2023
230190	824232	PP0101	0.24	08/11/2023
230194	824241	PP0102	0.47	08/11/2023
230198	824250	PP0103	0.43	08/11/2023
230201	824260	PP0104	0.38	08/11/2023
230205	824269	PP0105	0.43	08/11/2023
230208	824278	PP0106	0.3	08/11/2023
230212	824288	PP0107	0.3	08/11/2023
230216	824297	PP0108	0.66	08/11/2023
230219	824306	PP0109	1.51	08/11/2023
230223	824316	PP0110	2.63	08/11/2023
230226	824325	PP0111	3.23	08/11/2023
230230	824334	PP0112	1.41	08/11/2023
230233	824344	PP0113	0.62	08/11/2023
230237	824353	PP0114	0.49	08/11/2023
230241	824362	PP0115	0.55	08/11/2023
230244	824372	PP0116	0.4	08/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230248	824381	PP0117	0.49	08/11/2023
230251	824390	PP0118	1.03	08/11/2023
230255	824400	PP0119	0.74	08/11/2023
230259	824409	PP0120	0.71	08/11/2023
230262	824418	PP0121	0.79	08/11/2023
230266	824428	PP0122	1.33	08/11/2023
230269	824437	PP0123	1.3	08/11/2023
230273	824446	PP0124	1.61	08/11/2023
230276	824456	PP0125	1.84	08/11/2023
230280	824465	PP0126	1.55	08/11/2023
230284	824474	PP0127	0.63	08/11/2023
230287	824484	PP0128	0.35	08/11/2023
230291	824493	PP0129	0.43	08/11/2023
230068	823885	PP0130	0.35	08/11/2023
230071	823894	PP0131	0.53	08/11/2023
230075	823903	PP0132	0.57	08/11/2023
230078	823913	PP0133	1.08	08/11/2023
230082	823922	PP0134	1.03	08/11/2023
230086	823931	PP0135	0.81	08/11/2023
230089	823941	PP0136	1.08	08/11/2023
230093	823950	PP0137	0.61	08/11/2023
230096	823959	PP0138	0.54	08/11/2023
230100	823969	PP0139	0.95	08/11/2023
230104	823978	PP0140	0.8	08/11/2023
230107	823987	PP0141	1.18	08/11/2023
230111	823997	PP0142	1.18	08/11/2023
230114	824006	PP0143	1.12	08/11/2023
230118	824015	PP0144	1.51	08/11/2023
230121	824025	PP0145	1.91	08/11/2023
230125	824034	PP0146	1.82	08/11/2023
230129	824043	PP0147	3.09	08/11/2023
230132	824053	PP0148	3.47	08/11/2023
230136	824062	PP0149	1.04	08/11/2023
230139	824071	PP0150	0.69	08/11/2023
230143	824081	PP0151	0.63	08/11/2023
230147	824090	PP0152	0.19	08/11/2023
230150	824099	PP0153	0.48	08/11/2023
230154	824109	PP0154	0.5	08/11/2023
230157	824118	PP0155	0.48	08/11/2023
230161	824127	PP0156	0.53	08/11/2023
230164	824137	PP0157	0.63	08/11/2023
230168	824146	PP0158	0.38	08/11/2023
230172	824155	PP0159	0.63	08/11/2023
230175	824165	PP0160	0.4	08/11/2023
230179	824174	PP0161	0.37	08/11/2023
230182	824183	PP0162	0.64	08/11/2023
230186	824193	PP0163	0.46	08/11/2023
230190	824202	PP0164	0.4	08/11/2023
230193	824211	PP0165	0.34	08/11/2023
230197	824221	PP0166	0.39	08/11/2023
230200	824230	PP0167	0.29	08/11/2023
230204	824239	PP0168	0.49	08/11/2023
230207	824249	PP0169	0.23	08/11/2023
230211	824258	PP0170	0.52	08/11/2023
230215	824267	PP0171	1.02	08/11/2023
230218	824277	PP0172	0.33	08/11/2023
230222	824286	PP0173	0.87	08/11/2023
230225	824295	PP0174	0.99	08/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230229	824305	PP0175	1.48	08/11/2023
230233	824314	PP0176	0.8	08/11/2023
230236	824323	PP0177	3.01	08/11/2023
230240	824333	PP0178	1.7	08/11/2023
230243	824342	PP0179	1.72	08/11/2023
230247	824351	PP0180	0.77	08/11/2023
230250	824361	PP0181	0.98	08/11/2023
230254	824370	PP0182	0.57	08/11/2023
230258	824379	PP0183	0.77	08/11/2023
230261	824389	PP0184	1.01	08/11/2023
230265	824398	PP0185	0.88	08/11/2023
230268	824407	PP0186	1.39	08/11/2023
230272	824417	PP0187	1.78	08/11/2023
230276	824426	PP0188	1.88	08/11/2023
230279	824435	PP0189	2.11	08/11/2023
230283	824445	PP0190	2.12	08/11/2023
230286	824454	PP0191	2.28	08/11/2023
230290	824463	PP0192	1.62	08/11/2023
230293	824473	PP0193	0.34	08/11/2023
230297	824482	PP0194	0.15	08/11/2023
230301	824491	PP0195	0.36	08/11/2023
230304	824501	PP0196	0.53	08/11/2023
230308	824510	PP0197	0.29	08/11/2023
230078	823883	PP0198	0.47	08/11/2023
230081	823892	PP0199	0.76	08/11/2023
230085	823902	PP0200	1.07	08/11/2023
230088	823911	PP0201	0.53	08/11/2023
230092	823920	PP0202	0.61	08/11/2023
230095	823930	PP0203	0.51	08/11/2023
230099	823939	PP0204	0.45	08/11/2023
230103	823948	PP0205	0.44	08/11/2023
230106	823958	PP0206	0.88	08/11/2023
230110	823967	PP0207	0.83	08/11/2023
230113	823976	PP0208	0.92	08/11/2023
230117	823986	PP0209	1.3	08/11/2023
230121	823995	PP0210	1.55	08/11/2023
230124	824004	PP0211	1.67	08/11/2023
230128	824014	PP0212	1.9	08/11/2023
230131	824023	PP0213	2.03	08/11/2023
230135	824032	PP0214	1.96	08/11/2023
230139	824042	PP0215	2.04	08/11/2023
230142	824051	PP0216	3.42	08/11/2023
230146	824060	PP0217	3.33	08/11/2023
230149	824070	PP0218	1.44	08/11/2023
230153	824079	PP0219	0.69	08/11/2023
230156	824088	PP0220	0.48	08/11/2023
230160	824098	PP0221	0.49	08/11/2023
230164	824107	PP0222	0.52	08/11/2023
230167	824116	PP0223	0.42	08/11/2023
230171	824126	PP0224	0.36	08/11/2023
230174	824135	PP0225	0.45	08/11/2023
230178	824144	PP0226	0.52	08/11/2023
230182	824154	PP0227	0.5	08/11/2023
230185	824163	PP0228	0.37	08/11/2023
230189	824172	PP0229	0.37	08/11/2023
230192	824182	PP0230	0.48	08/11/2023
230196	824191	PP0231	0.47	08/11/2023
230199	824200	PP0232	0.42	08/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230203	824210	PP0233	0.59	08/11/2023
230207	824219	PP0234	0.45	08/11/2023
230210	824228	PP0235	0.47	08/11/2023
230214	824238	PP0236	0.75	08/11/2023
230217	824247	PP0237	0.54	08/11/2023
230221	824256	PP0238	0.61	08/11/2023
230225	824266	PP0239	0.58	08/11/2023
230228	824275	PP0240	0.32	08/11/2023
230232	824284	PP0241	0.51	08/11/2023
230235	824294	PP0242	0.5	08/11/2023
230239	824303	PP0243	0.68	08/11/2023
230242	824312	PP0244	2.28	08/11/2023
230246	824322	PP0245	3.64	08/11/2023
230250	824331	PP0246	4.64	08/11/2023
230253	824340	PP0247	2.24	08/11/2023
230257	824350	PP0248	1.77	08/11/2023
230260	824359	PP0249	1.39	08/11/2023
230264	824368	PP0250	1.3	08/11/2023
230268	824378	PP0251	0.89	08/11/2023
230271	824387	PP0252	1.23	08/11/2023
230275	824396	PP0253	1.41	08/11/2023
230278	824406	PP0254	1.53	08/11/2023
230282	824415	PP0255	1.81	08/11/2023
230285	824424	PP0256	2.53	08/11/2023
230289	824434	PP0257	2.54	08/11/2023
230293	824443	PP0258	2.42	08/11/2023
230296	824452	PP0259	2.43	08/11/2023
230300	824462	PP0260	1.52	08/11/2023
230303	824471	PP0261	0.74	08/11/2023
230307	824480	PP0262	0.51	08/11/2023
230311	824490	PP0263	0.34	08/11/2023
230314	824499	PP0264	0.66	08/11/2023
230318	824509	PP0265	0.57	08/11/2023
230321	824518	PP0266	0.58	08/11/2023
230325	824527	PP0267	0.46	08/11/2023
230328	824537	PP0268	0.36	08/11/2023
230087	823881	PP0269	0.39	08/11/2023
230091	823891	PP0270	0.42	08/11/2023
230095	823900	PP0271	0.54	08/11/2023
230098	823909	PP0272	0.59	08/11/2023
230102	823919	PP0273	0.47	08/11/2023
230105	823928	PP0274	0.34	08/11/2023
230109	823937	PP0275	0.36	08/11/2023
230113	823947	PP0276	0.6	08/11/2023
230116	823956	PP0277	0.46	08/11/2023
230120	823965	PP0278	0.55	08/11/2023
230123	823975	PP0279	0.79	08/11/2023
230127	823984	PP0280	1.11	08/11/2023
230130	823993	PP0281	0.62	08/11/2023
230134	824003	PP0282	1.61	08/11/2023
230138	824012	PP0283	1.44	08/11/2023
230141	824021	PP0284	1.28	08/11/2023
230145	824031	PP0285	1.96	08/11/2023
230148	824040	PP0286	2.11	08/11/2023
230152	824049	PP0287	3.09	08/11/2023
230156	824059	PP0288	3.64	08/11/2023
230159	824068	PP0289	1.74	08/11/2023
230163	824077	PP0290	1.03	08/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230166	824087	PP0291	0.88	08/11/2023
230170	824096	PP0292	0.5	08/11/2023
230173	824105	PP0293	0.29	08/11/2023
230177	824115	PP0294	0.34	08/11/2023
230181	824124	PP0295	0.44	08/11/2023
230184	824133	PP0296	0.45	08/11/2023
230188	824143	PP0297	0.69	08/11/2023
230191	824152	PP0298	0.52	08/11/2023
230195	824161	PP0299	0.54	08/11/2023
230199	824171	PP0300	0.59	08/11/2023
230202	824180	PP0301	0.38	09/11/2023
230206	824189	PP0302	0.37	09/11/2023
230209	824199	PP0303	0.76	09/11/2023
230213	824208	PP0304	0.4	09/11/2023
230216	824217	PP0305	0.44	09/11/2023
230220	824227	PP0306	0.61	09/11/2023
230224	824236	PP0307	0.62	09/11/2023
230227	824245	PP0308	0.53	09/11/2023
230231	824255	PP0309	0.5	09/11/2023
230234	824264	PP0310	0.65	09/11/2023
230238	824273	PP0311	0.56	09/11/2023
230242	824283	PP0312	0.44	09/11/2023
230245	824292	PP0313	0.64	09/11/2023
230249	824301	PP0314	0.38	09/11/2023
230252	824311	PP0315	0.77	09/11/2023
230256	824320	PP0316	1.79	09/11/2023
230259	824329	PP0317	2.31	09/11/2023
230263	824339	PP0318	3.69	09/11/2023
230267	824348	PP0319	3.56	09/11/2023
230270	824357	PP0320	2.76	09/11/2023
230274	824367	PP0321	2.7	09/11/2023
230277	824376	PP0322	2.11	09/11/2023
230281	824385	PP0323	1.81	09/11/2023
230285	824395	PP0324	1.35	09/11/2023
230288	824404	PP0325	1.73	09/11/2023
230292	824413	PP0326	2.39	09/11/2023
230295	824423	PP0327	2.96	09/11/2023
230299	824432	PP0328	2.78	09/11/2023
230302	824441	PP0329	2.53	09/11/2023
230306	824451	PP0330	2.31	09/11/2023
230310	824460	PP0331	1.94	09/11/2023
230313	824469	PP0332	1.09	09/11/2023
230317	824479	PP0333	0.62	09/11/2023
230320	824488	PP0334	0.75	09/11/2023
230324	824497	PP0335	0.85	09/11/2023
230328	824507	PP0336	0.75	09/11/2023
230331	824516	PP0337	0.62	09/11/2023
230335	824526	PP0338	0.77	09/11/2023
230338	824535	PP0339	1.12	09/11/2023
230342	824544	PP0340	1.13	09/11/2023
230345	824554	PP0341	0.93	09/11/2023
230349	824563	PP0342	0.43	09/11/2023
230353	824572	PP0343	0.25	09/11/2023
230097	823880	PP0344	0.33	09/11/2023
230101	823889	PP0345	0.6	09/11/2023
230104	823898	PP0346	0.54	09/11/2023
230108	823908	PP0347	0.33	09/11/2023
230112	823917	PP0348	0.51	09/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230115	823926	PP0349	0.55	09/11/2023
230119	823936	PP0350	0.4	09/11/2023
230122	823945	PP0351	0.55	09/11/2023
230126	823954	PP0352	0.37	09/11/2023
230130	823964	PP0353	0.73	09/11/2023
230133	823973	PP0354	0.88	09/11/2023
230137	823982	PP0355	1.05	09/11/2023
230140	823992	PP0356	0.92	09/11/2023
230144	824001	PP0357	1.16	09/11/2023
230147	824010	PP0358	1.58	09/11/2023
230151	824020	PP0359	1.74	09/11/2023
230155	824029	PP0360	2.17	09/11/2023
230158	824038	PP0361	2.05	09/11/2023
230162	824048	PP0362	3.48	09/11/2023
230165	824057	PP0363	3.34	09/11/2023
230169	824066	PP0364	1.8	09/11/2023
230173	824076	PP0365	1.17	09/11/2023
230176	824085	PP0366	0.59	09/11/2023
230180	824094	PP0367	0.42	09/11/2023
230183	824104	PP0368	0.32	09/11/2023
230187	824113	PP0369	0.53	09/11/2023
230190	824122	PP0370	0.47	09/11/2023
230194	824132	PP0371	0.44	09/11/2023
230198	824141	PP0372	0.51	09/11/2023
230201	824150	PP0373	0.67	09/11/2023
230205	824160	PP0374	0.28	09/11/2023
230208	824169	PP0375	0.34	09/11/2023
230212	824178	PP0376	0.6	09/11/2023
230216	824188	PP0377	0.5	09/11/2023
230219	824197	PP0378	0.55	09/11/2023
230223	824206	PP0379	0.52	09/11/2023
230226	824216	PP0380	0.7	09/11/2023
230230	824225	PP0381	0.52	09/11/2023
230233	824234	PP0382	0.5	09/11/2023
230237	824244	PP0383	0.59	09/11/2023
230241	824253	PP0384	0.57	09/11/2023
230244	824262	PP0385	0.5	09/11/2023
230248	824272	PP0386	0.61	09/11/2023
230251	824281	PP0387	0.66	21/11/2023
230255	824290	PP0388	0.37	21/11/2023
230259	824300	PP0389	0.75	09/11/2023
230262	824309	PP0390	0.61	09/11/2023
230266	824318	PP0391	0.49	09/11/2023
230269	824328	PP0392	0.69	09/11/2023
230273	824337	PP0393	0.74	09/11/2023
230276	824346	PP0394	1.36	09/11/2023
230280	824356	PP0395	2.26	09/11/2023
230284	824365	PP0396	3.45	09/11/2023
230287	824374	PP0397	3.21	09/11/2023
230291	824384	PP0398	2.83	09/11/2023
230294	824393	PP0399	2.8	09/11/2023
230298	824402	PP0400	2.37	09/11/2023
230302	824412	PP0401	2.3	09/11/2023
230305	824421	PP0402	2.83	09/11/2023
230309	824430	PP0403	2.84	09/11/2023
230312	824440	PP0404	2.62	09/11/2023
230316	824449	PP0405	2.5	09/11/2023
230319	824458	PP0406	1.52	09/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230323	824468	PP0407	1.35	09/11/2023
230327	824477	PP0408	0.88	09/11/2023
230330	824486	PP0409	0.79	09/11/2023
230334	824496	PP0410	0.49	09/11/2023
230337	824505	PP0411	0.5	09/11/2023
230341	824515	PP0412	0.54	09/11/2023
230345	824524	PP0413	0.45	09/11/2023
230348	824533	PP0414	0.5	09/11/2023
230352	824543	PP0415	0.9	09/11/2023
230355	824552	PP0416	1.15	09/11/2023
230359	824561	PP0417	1.79	09/11/2023
230362	824571	PP0418	0.84	09/11/2023
230366	824580	PP0419	0.68	09/11/2023
230370	824589	PP0420	1.09	09/11/2023
230107	823878	PP0421	0.37	09/11/2023
230111	823887	PP0422	0.33	09/11/2023
230114	823897	PP0423	0.41	09/11/2023
230118	823906	PP0424	0.29	09/11/2023
230121	823915	PP0425	0.42	09/11/2023
230125	823925	PP0426	0.36	09/11/2023
230129	823934	PP0427	0.55	09/11/2023
230132	823943	PP0428	0.53	09/11/2023
230136	823953	PP0429	0.43	09/11/2023
230139	823962	PP0430	0.59	09/11/2023
230143	823971	PP0431	0.58	09/11/2023
230147	823981	PP0432	0.66	09/11/2023
230150	823990	PP0433	0.65	09/11/2023
230154	823999	PP0434	1	09/11/2023
230157	824009	PP0435	1.41	09/11/2023
230161	824018	PP0436	1.29	09/11/2023
230165	824027	PP0437	1.37	09/11/2023
230168	824037	PP0438	1.95	09/11/2023
230172	824046	PP0439	2.88	09/11/2023
230175	824055	PP0440	3.55	09/11/2023
230179	824065	PP0441	1.32	09/11/2023
230182	824074	PP0442	0.9	09/11/2023
230186	824083	PP0443	0.79	09/11/2023
230190	824093	PP0444	0.62	09/11/2023
230193	824102	PP0445	0.56	09/11/2023
230197	824111	PP0446	0.38	09/11/2023
230200	824121	PP0447	0.52	09/11/2023
230204	824130	PP0448	0.62	09/11/2023
230208	824139	PP0449	0.35	09/11/2023
230211	824149	PP0450	0.83	09/11/2023
230215	824158	PP0451	0.27	09/11/2023
230218	824167	PP0452	0.47	09/11/2023
230222	824177	PP0453	0.51	09/11/2023
230225	824186	PP0454	0.64	09/11/2023
230229	824195	PP0455	0.5	09/11/2023
230233	824205	PP0456	0.6	09/11/2023
230236	824214	PP0457	0.55	09/11/2023
230240	824223	PP0458	0.35	09/11/2023
230243	824233	PP0459	0.69	09/11/2023
230247	824242	PP0460	0.5	09/11/2023
230251	824251	PP0461	0.59	09/11/2023
230254	824261	PP0462	0.5	09/11/2023
230258	824270	PP0463	0.73	09/11/2023
230261	824279	PP0464	0.9	09/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230265	824289	PP0465	0.59	09/11/2023
230268	824298	PP0466	0.6	09/11/2023
230272	824307	PP0467	0.3	09/11/2023
230276	824317	PP0468	2.13	09/11/2023
230279	824326	PP0469	2.12	09/11/2023
230283	824335	PP0470	2.75	09/11/2023
230286	824345	PP0471	2.79	09/11/2023
230290	824354	PP0472	3.11	09/11/2023
230294	824363	PP0473	3.11	09/11/2023
230297	824373	PP0474	2.82	09/11/2023
230301	824382	PP0475	3.4	09/11/2023
230304	824391	PP0476	3.59	09/11/2023
230308	824401	PP0477	3.4	09/11/2023
230311	824410	PP0478	2.82	09/11/2023
230315	824419	PP0479	2.49	09/11/2023
230319	824429	PP0480	1.69	09/11/2023
230322	824438	PP0481	1.77	09/11/2023
230326	824447	PP0482	1.55	09/11/2023
230329	824457	PP0483	1.62	09/11/2023
230333	824466	PP0484	0.94	09/11/2023
230337	824475	PP0485	0.67	09/11/2023
230340	824485	PP0486	0.58	09/11/2023
230344	824494	PP0487	0.39	09/11/2023
230347	824504	PP0488	0.56	09/11/2023
230351	824513	PP0489	0.53	09/11/2023
230354	824522	PP0490	0.34	09/11/2023
230358	824532	PP0491	0.64	09/11/2023
230362	824541	PP0492	0.67	09/11/2023
230365	824550	PP0493	1.17	09/11/2023
230369	824560	PP0494	2.18	09/11/2023
230372	824569	PP0495	2.55	09/11/2023
230376	824578	PP0496	1.91	09/11/2023
230380	824588	PP0497	1.4	09/11/2023
230383	824597	PP0498	0.86	09/11/2023
230121	823886	PP0499	0.6	10/11/2023
230124	823895	PP0500	0.66	10/11/2023
230128	823904	PP0501	0.73	10/11/2023
230131	823914	PP0502	0.54	10/11/2023
230135	823923	PP0503	0.53	10/11/2023
230139	823932	PP0504	0.82	10/11/2023
230142	823942	PP0505	0.43	10/11/2023
230146	823951	PP0506	0.37	10/11/2023
230149	823960	PP0507	0.57	10/11/2023
230153	823970	PP0508	0.41	10/11/2023
230156	823979	PP0509	0.63	10/11/2023
230160	823988	PP0510	0.81	10/11/2023
230164	823998	PP0511	1.09	10/11/2023
230167	824007	PP0512	0.99	10/11/2023
230171	824016	PP0513	1.17	10/11/2023
230174	824026	PP0514	1.19	10/11/2023
230178	824035	PP0515	1.17	10/11/2023
230182	824044	PP0516	2.21	10/11/2023
230185	824054	PP0517	2.78	10/11/2023
230189	824063	PP0518	0.9	10/11/2023
230192	824072	PP0519	0.8	10/11/2023
230196	824082	PP0520	0.69	10/11/2023
230199	824091	PP0521	0.51	10/11/2023
230203	824100	PP0522	0.64	10/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230207	824110	PP0523	0.48	10/11/2023
230210	824119	PP0524	0.48	10/11/2023
230214	824128	PP0525	0.59	10/11/2023
230217	824138	PP0526	0.41	10/11/2023
230221	824147	PP0527	0.4	10/11/2023
230225	824156	PP0528	0.72	10/11/2023
230228	824166	PP0529	0.52	10/11/2023
230232	824175	PP0530	0.59	10/11/2023
230235	824184	PP0531	0.49	10/11/2023
230239	824194	PP0532	0.36	10/11/2023
230242	824203	PP0533	0.52	10/11/2023
230246	824212	PP0534	0.53	10/11/2023
230250	824222	PP0535	0.65	10/11/2023
230253	824231	PP0536	0.62	10/11/2023
230257	824240	PP0537	0.75	10/11/2023
230260	824250	PP0538	0.55	10/11/2023
230264	824259	PP0539	0.63	10/11/2023
230268	824268	PP0540	0.45	10/11/2023
230271	824278	PP0541	0.47	10/11/2023
230275	824287	PP0542	0.75	10/11/2023
230278	824296	PP0543	0.45	10/11/2023
230282	824306	PP0544	0.5	10/11/2023
230285	824315	PP0545	0.48	10/11/2023
230289	824324	PP0546	0.86	10/11/2023
230293	824334	PP0547	0.87	10/11/2023
230296	824343	PP0548	0.53	10/11/2023
230300	824352	PP0549	1.55	10/11/2023
230303	824362	PP0550	1.89	10/11/2023
230307	824371	PP0551	1.99	10/11/2023
230311	824380	PP0552	2.16	10/11/2023
230314	824390	PP0553	2.82	10/11/2023
230318	824399	PP0554	3.12	10/11/2023
230321	824408	PP0555	2.83	10/11/2023
230325	824418	PP0556	2.11	10/11/2023
230328	824427	PP0557	1.9	10/11/2023
230332	824436	PP0558	1.93	10/11/2023
230336	824446	PP0559	0.63	10/11/2023
230339	824455	PP0560	0.58	10/11/2023
230343	824464	PP0561	0.54	11/11/2023
230346	824474	PP0562	0.78	11/11/2023
230350	824483	PP0563	0.57	11/11/2023
230354	824493	PP0564	0.38	11/11/2023
230357	824502	PP0565	0.4	11/11/2023
230361	824511	PP0566	0.37	11/11/2023
230364	824521	PP0567	0.46	11/11/2023
230368	824530	PP0568	0.15	11/11/2023
230371	824539	PP0569	0.32	11/11/2023
230375	824549	PP0570	0.49	11/11/2023
230379	824558	PP0571	0.96	11/11/2023
230382	824567	PP0572	1.22	11/11/2023
230386	824577	PP0573	1.42	11/11/2023
230389	824586	PP0574	2.38	11/11/2023
230393	824595	PP0575	1.85	11/11/2023
230397	824605	PP0576	1.3	11/11/2023
230400	824614	PP0577	0.92	11/11/2023
230404	824623	PP0578	0.61	11/11/2023
230407	824633	PP0579	0.57	11/11/2023
230411	824642	PP0580	0.59	11/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230414	824651	PP0581	0.5	11/11/2023
230418	824661	PP0582	beyond dear fence	11/11/2023
230422	824670	PP0583	beyond dear fence	11/11/2023
230425	824679	PP0584	beyond dear fence	11/11/2023
230130	823884	PP0585	0.66	11/11/2023
230134	823893	PP0586	0.3	11/11/2023
230138	823903	PP0587	0.36	11/11/2023
230141	823912	PP0588	0.41	11/11/2023
230145	823921	PP0589	0.48	11/11/2023
230148	823931	PP0590	0.53	11/11/2023
230152	823940	PP0591	0.4	11/11/2023
230156	823949	PP0592	0.58	11/11/2023
230159	823959	PP0593	0.53	11/11/2023
230163	823968	PP0594	0.55	11/11/2023
230166	823977	PP0595	0.47	11/11/2023
230170	823987	PP0596	0.4	11/11/2023
230173	823996	PP0597	0.63	11/11/2023
230177	824005	PP0598	0.47	11/11/2023
230181	824015	PP0599	0.69	11/11/2023
230184	824024	PP0600	1.14	11/11/2023
230188	824033	PP0601	1.23	11/11/2023
230191	824043	PP0602	3.08	11/11/2023
230195	824052	PP0603	3.38	11/11/2023
230199	824061	PP0604	1.8	11/11/2023
230202	824071	PP0605	0.4	11/11/2023
230206	824080	PP0606	0.5	11/11/2023
230209	824089	PP0607	0.66	11/11/2023
230213	824099	PP0608	0.4	11/11/2023
230216	824108	PP0609	0.65	11/11/2023
230220	824117	PP0610	0.5	11/11/2023
230224	824127	PP0611	0.48	11/11/2023
230227	824136	PP0612	0.69	11/11/2023
230231	824145	PP0613	0.47	11/11/2023
230234	824155	PP0614	0.6	11/11/2023
230238	824164	PP0615	0.48	11/11/2023
230242	824173	PP0616	0.41	11/11/2023
230245	824183	PP0617	0.48	11/11/2023
230249	824192	PP0618	0.49	11/11/2023
230252	824201	PP0619	0.52	11/11/2023
230256	824211	PP0620	0.46	11/11/2023
230259	824220	PP0621	0.48	11/11/2023
230263	824229	PP0622	0.34	11/11/2023
230267	824239	PP0623	0.43	11/11/2023
230270	824248	PP0624	0.69	11/11/2023
230274	824257	PP0625	0.71	11/11/2023
230277	824267	PP0626	0.46	11/11/2023
230281	824276	PP0627	0.78	11/11/2023
230285	824285	PP0628	0.45	11/11/2023
230288	824295	PP0629	0.7	11/11/2023
230292	824304	PP0630	0.47	11/11/2023
230295	824313	PP0631	0.84	11/11/2023
230299	824323	PP0632	0.61	11/11/2023
230302	824332	PP0633	0.77	11/11/2023
230306	824341	PP0634	0.51	11/11/2023
230310	824351	PP0635	0.3	11/11/2023
230313	824360	PP0636	0.53	11/11/2023
230317	824369	PP0637	1.04	11/11/2023
230320	824379	PP0638	1.45	11/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230324	824388	PP0639	1.87	11/11/2023
230328	824397	PP0640	1.4	11/11/2023
230331	824407	PP0641	1.14	11/11/2023
230335	824416	PP0642	0.5	11/11/2023
230338	824425	PP0643	0.34	11/11/2023
230342	824435	PP0644	0.6	11/11/2023
230345	824444	PP0645	0.43	11/11/2023
230349	824453	PP0646	0.66	11/11/2023
230353	824463	PP0647	0.86	11/11/2023
230356	824472	PP0648	0.87	11/11/2023
230360	824481	PP0649	0.64	11/11/2023
230363	824491	PP0650	0.49	11/11/2023
230367	824500	PP0651	0.42	11/11/2023
230371	824510	PP0652	0.22	11/11/2023
230374	824519	PP0653	1.1	11/11/2023
230378	824528	PP0654	0.4	11/11/2023
230381	824538	PP0655	0.42	11/11/2023
230385	824547	PP0656	0.48	11/11/2023
230388	824556	PP0657	0.75	11/11/2023
230392	824566	PP0658	0.55	11/11/2023
230396	824575	PP0659	0.18	11/11/2023
230399	824584	PP0660	0.34	11/11/2023
230403	824594	PP0661	0.8	11/11/2023
230406	824603	PP0662	0.9	11/11/2023
230410	824612	PP0663	2.05	11/11/2023
230414	824622	PP0664	2	11/11/2023
230417	824631	PP0665	1.69	11/11/2023
230421	824640	PP0666	1.4	11/11/2023
230424	824650	PP0667	1.16	11/11/2023
230428	824659	PP0668	beyond dear fence	11/11/2023
230431	824668	PP0669	beyond dear fence	11/11/2023
230435	824678	PP0670	beyond dear fence	11/11/2023
230439	824687	PP0671	beyond dear fence	11/11/2023
230140	823882	PP0672	0.63	11/11/2023
230144	823892	PP0673	0.47	11/11/2023
230147	823901	PP0674	0.2	11/11/2023
230151	823910	PP0675	0.52	11/11/2023
230155	823920	PP0676	0.3	11/11/2023
230158	823929	PP0677	0.21	11/11/2023
230162	823938	PP0678	0.35	11/11/2023
230165	823948	PP0679	0.31	11/11/2023
230169	823957	PP0680	0.23	11/11/2023
230173	823966	PP0681	0.66	11/11/2023
230176	823976	PP0682	0.42	11/11/2023
230180	823985	PP0683	0.53	11/11/2023
230183	823994	PP0684	0.39	11/11/2023
230187	824004	PP0685	0.56	11/11/2023
230190	824013	PP0686	0.67	11/11/2023
230194	824022	PP0687	0.92	11/11/2023
230198	824032	PP0688	3.06	11/11/2023
230201	824041	PP0689	2.73	11/11/2023
230205	824050	PP0690	2.5	11/11/2023
230208	824060	PP0691	2.5	11/11/2023
230212	824069	PP0692	2.29	11/11/2023
230216	824078	PP0693	0.48	11/11/2023
230219	824088	PP0694	0.29	11/11/2023
230223	824097	PP0695	0.75	11/11/2023
230226	824106	PP0696	0.66	11/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230230	824116	PP0697	0.42	11/11/2023
230234	824125	PP0698	0.63	11/11/2023
230237	824134	PP0699	0.55	11/11/2023
230241	824144	PP0700	0.64	11/11/2023
230244	824153	PP0701	0.67	11/11/2023
230248	824162	PP0702	0.5	11/11/2023
230251	824172	PP0703	0.65	11/11/2023
230255	824181	PP0704	0.39	11/11/2023
230259	824190	PP0705	0.54	11/11/2023
230262	824200	PP0706	0.55	11/11/2023
230266	824209	PP0707	0.42	11/11/2023
230269	824218	PP0708	0.58	11/11/2023
230273	824228	PP0709	0.8	11/11/2023
230277	824237	PP0710	0.42	11/11/2023
230280	824246	PP0711	0.73	11/11/2023
230284	824256	PP0712	0.58	11/11/2023
230287	824265	PP0713	0.82	11/11/2023
230291	824274	PP0714	0.8	11/11/2023
230294	824284	PP0715	0.49	11/11/2023
230298	824293	PP0716	0.6	11/11/2023
230302	824302	PP0717	0.55	11/11/2023
230305	824312	PP0718	0.42	11/11/2023
230309	824321	PP0719	0.71	11/11/2023
230312	824330	PP0720	0.88	11/11/2023
230316	824340	PP0721	0.72	11/11/2023
230320	824349	PP0722	0.5	11/11/2023
230323	824358	PP0723	0.74	11/11/2023
230327	824368	PP0724	1.08	11/11/2023
230330	824377	PP0725	0.51	11/11/2023
230334	824386	PP0726	0.9	11/11/2023
230337	824396	PP0727	0.72	11/11/2023
230341	824405	PP0728	0.51	11/11/2023
230345	824414	PP0729	0.37	11/11/2023
230348	824424	PP0730	0.36	11/11/2023
230352	824433	PP0731	0.24	11/11/2023
230355	824442	PP0732	0.3	11/11/2023
230359	824452	PP0733	0.44	11/11/2023
230363	824461	PP0734	0.84	11/11/2023
230366	824470	PP0735	0.94	11/11/2023
230370	824480	PP0736	0.75	11/11/2023
230373	824489	PP0737	0.48	11/11/2023
230377	824499	PP0738	0.43	11/11/2023
230380	824508	PP0739	0.62	11/11/2023
230384	824517	PP0740	0.33	11/11/2023
230388	824527	PP0741	0.4	11/11/2023
230391	824536	PP0742	0.43	11/11/2023
230395	824545	PP0743	0.37	11/11/2023
230398	824555	PP0744	0.47	11/11/2023
230402	824564	PP0745	0.32	11/11/2023
230406	824573	PP0746	0.39	11/11/2023
230409	824583	PP0747	0.42	11/11/2023
230413	824592	PP0748	0.44	11/11/2023
230416	824601	PP0749	0.52	11/11/2023
230420	824611	PP0750	0.99	11/11/2023
230423	824620	PP0751	2	11/11/2023
230427	824629	PP0752	1.83	11/11/2023
230431	824639	PP0753	1.27	11/11/2023
230434	824648	PP0754	0.82	11/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230438	824657	PP0755	0.57	11/11/2023
230441	824667	PP0756	beyond dear fence	11/11/2023
230445	824676	PP0757	beyond dear fence	11/11/2023
230449	824685	PP0758	beyond dear fence	11/11/2023
230150	823881	PP0759	0.39	12/11/2023
230154	823890	PP0760	0.13	12/11/2023
230157	823899	PP0761	0.49	12/11/2023
230161	823909	PP0762	0.18	12/11/2023
230165	823918	PP0763	0.48	12/11/2023
230168	823927	PP0764	0.31	12/11/2023
230172	823937	PP0765	0.69	12/11/2023
230175	823946	PP0766	0.4	12/11/2023
230179	823955	PP0767	0.44	12/11/2023
230182	823965	PP0768	0.33	12/11/2023
230186	823974	PP0769	0.56	12/11/2023
230190	823983	PP0770	0.53	12/11/2023
230193	823993	PP0771	0.46	12/11/2023
230197	824002	PP0772	0.47	12/11/2023
230200	824011	PP0773	0.4	12/11/2023
230204	824021	PP0774	0.63	12/11/2023
230208	824030	PP0775	2.44	12/11/2023
230211	824039	PP0776	2.03	12/11/2023
230215	824049	PP0777	3.14	12/11/2023
230218	824058	PP0778	2.47	12/11/2023
230222	824067	PP0779	3.02	12/11/2023
230225	824077	PP0780	0.83	12/11/2023
230229	824086	PP0781	0.46	12/11/2023
230233	824095	PP0782	0.52	12/11/2023
230236	824105	PP0783	0.38	12/11/2023
230240	824114	PP0784	0.5	12/11/2023
230243	824123	PP0785	0.32	12/11/2023
230247	824133	PP0786	0.55	12/11/2023
230251	824142	PP0787	0.6	12/11/2023
230254	824151	PP0788	0.41	12/11/2023
230258	824161	PP0789	0.3	12/11/2023
230261	824170	PP0790	0.43	12/11/2023
230265	824179	PP0791	0.43	12/11/2023
230268	824189	PP0792	0.32	12/11/2023
230272	824198	PP0793	0.6	12/11/2023
230276	824207	PP0794	0.43	12/11/2023
230279	824217	PP0795	0.45	12/11/2023
230283	824226	PP0796	0.64	12/11/2023
230286	824235	PP0797	0.51	12/11/2023
230290	824245	PP0798	0.48	12/11/2023
230294	824254	PP0799	0.47	12/11/2023
230297	824263	PP0800	0.5	12/11/2023
230301	824273	PP0801	0.63	12/11/2023
230304	824282	PP0802	0.69	12/11/2023
230308	824291	PP0803	1.03	12/11/2023
230311	824301	PP0804	0.58	12/11/2023
230315	824310	PP0805	0.38	12/11/2023
230319	824319	PP0806	0.29	12/11/2023
230322	824329	PP0807	0.89	12/11/2023
230326	824338	PP0808	0.59	12/11/2023
230329	824347	PP0809	0.3	12/11/2023
230333	824357	PP0810	0.68	12/11/2023
230337	824366	PP0811	1.15	12/11/2023
230340	824375	PP0812	1.07	12/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230344	824385	PP0813	0.7	12/11/2023
230347	824394	PP0814	0.22	12/11/2023
230351	824403	PP0815	0.28	12/11/2023
230354	824413	PP0816	0.24	12/11/2023
230358	824422	PP0817	0.35	12/11/2023
230362	824431	PP0818	0.44	12/11/2023
230365	824441	PP0819	0.43	11/11/2023
230369	824450	PP0820	0.65	11/11/2023
230372	824459	PP0821	0.36	11/11/2023
230376	824469	PP0822	0.69	11/11/2023
230380	824478	PP0823	0.77	11/11/2023
230383	824488	PP0824	0.81	11/11/2023
230387	824497	PP0825	0.74	11/11/2023
230390	824506	PP0826	0.58	11/11/2023
230394	824516	PP0827	0.31	11/11/2023
230397	824525	PP0828	0.5	11/11/2023
230401	824534	PP0829	0.32	11/11/2023
230405	824544	PP0830	0.27	11/11/2023
230408	824553	PP0831	0.39	11/11/2023
230412	824562	PP0832	0.5	11/11/2023
230415	824572	PP0833	0.43	11/11/2023
230419	824581	PP0834	0.35	11/11/2023
230423	824590	PP0835	0.44	11/11/2023
230426	824600	PP0836	0.4	11/11/2023
230430	824609	PP0837	0.49	11/11/2023
230433	824618	PP0838	1.4	11/11/2023
230437	824628	PP0839	1.4	11/11/2023
230440	824637	PP0840	1.07	11/11/2023
230444	824646	PP0841	0.74	11/11/2023
230448	824656	PP0842	0.33	11/11/2023
230451	824665	PP0843	beyond dear fence	11/11/2023
230455	824674	PP0844	beyond dear fence	11/11/2023
230458	824684	PP0845	beyond dear fence	11/11/2023
230462	824693	PP0846	beyond dear fence	11/11/2023
230160	823879	PP0847	on track	12/11/2023
230164	823888	PP0848	0.53	12/11/2023
230167	823898	PP0849	0.2	12/11/2023
230171	823907	PP0850	0.44	12/11/2023
230174	823916	PP0851	0.49	12/11/2023
230178	823926	PP0852	0.4	12/11/2023
230182	823935	PP0853	0.35	12/11/2023
230185	823944	PP0854	0.39	12/11/2023
230189	823954	PP0855	0.34	12/11/2023
230192	823963	PP0856	0.46	12/11/2023
230196	823972	PP0857	0.68	12/11/2023
230199	823982	PP0858	0.41	12/11/2023
230203	823991	PP0859	0.62	12/11/2023
230207	824000	PP0860	0.35	12/11/2023
230210	824010	PP0861	0.5	12/11/2023
230214	824019	PP0862	0.37	12/11/2023
230217	824028	PP0863	2.09	12/11/2023
230221	824038	PP0864	1.35	12/11/2023
230225	824047	PP0865	1.89	12/11/2023
230228	824056	PP0866	0.75	12/11/2023
230232	824066	PP0867	2.59	12/11/2023
230235	824075	PP0868	2.38	12/11/2023
230239	824084	PP0869	0.4	12/11/2023
230242	824094	PP0870	0.51	12/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230246	824103	PP0871	0.33	12/11/2023
230250	824112	PP0872	0.43	12/11/2023
230253	824122	PP0873	0.54	12/11/2023
230257	824131	PP0874	0.18	12/11/2023
230260	824140	PP0875	0.34	12/11/2023
230264	824150	PP0876	0.36	12/11/2023
230268	824159	PP0877	0.5	12/11/2023
230271	824168	PP0878	0.37	12/11/2023
230275	824178	PP0879	0.26	12/11/2023
230278	824187	PP0880	0.52	12/11/2023
230282	824196	PP0881	0.34	12/11/2023
230285	824206	PP0882	0.23	12/11/2023
230289	824215	PP0883	0.19	12/11/2023
230293	824224	PP0884	0.36	12/11/2023
230296	824234	PP0885	0.31	12/11/2023
230300	824243	PP0886	0.82	12/11/2023
230303	824252	PP0887	0.59	12/11/2023
230307	824262	PP0888	0.56	12/11/2023
230311	824271	PP0889	0.55	12/11/2023
230314	824280	PP0890	0.74	12/11/2023
230318	824290	PP0891	0.87	12/11/2023
230321	824299	PP0892	0.45	12/11/2023
230325	824308	PP0893	0.45	12/11/2023
230328	824318	PP0894	0.3	12/11/2023
230332	824327	PP0895	0.89	12/11/2023
230336	824336	PP0896	0.42	21/11/2023
230339	824346	PP0897	0.35	21/11/2023
230343	824355	PP0898	0.68	21/11/2023
230346	824364	PP0899	1.72	21/11/2023
230350	824374	PP0900	1.29	21/11/2023
230354	824383	PP0901	1	21/11/2023
230357	824392	PP0902	0.28	21/11/2023
230361	824402	PP0903	0.2	21/11/2023
230364	824411	PP0904	0.36	21/11/2023
230368	824420	PP0905	0.35	21/11/2023
230371	824430	PP0906	0.57	21/11/2023
230375	824439	PP0907	0.27	21/11/2023
230379	824448	PP0908	0.33	21/11/2023
230382	824458	PP0909	0.33	21/11/2023
230386	824467	PP0910	0.49	21/11/2023
230389	824477	PP0911	0.34	21/11/2023
230393	824486	PP0912	0.83	21/11/2023
230397	824495	PP0913	0.68	21/11/2023
230400	824505	PP0914	0.45	21/11/2023
230404	824514	PP0915	0.28	21/11/2023
230407	824523	PP0916	0.22	21/11/2023
230411	824533	PP0917	0.45	21/11/2023
230414	824542	PP0918	0.33	21/11/2023
230418	824551	PP0919	0.71	21/11/2023
230422	824561	PP0920	0.54	21/11/2023
230425	824570	PP0921	0.4	21/11/2023
230429	824579	PP0922	0.53	21/11/2023
230432	824589	PP0923	0.35	21/11/2023
230436	824598	PP0924	0.52	21/11/2023
230440	824607	PP0925	0.55	21/11/2023
230443	824617	PP0926	0.96	21/11/2023
230447	824626	PP0927	0.82	21/11/2023
230450	824635	PP0928	0.94	21/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230454	824645	PP0929	0.99	21/11/2023
230457	824654	PP0930	1.04	21/11/2023
230461	824663	PP0931	beyond dear fence	21/11/2023
230465	824673	PP0932	beyond dear fence	21/11/2023
230468	824682	PP0933	beyond dear fence	21/11/2023
230472	824691	PP0934	beyond dear fence	21/11/2023
230475	824701	PP0935	beyond dear fence	21/11/2023
230173	823887	PP0936	0.34	14/11/2023
230177	823896	PP0937	0.48	14/11/2023
230181	823905	PP0938	0.34	14/11/2023
230184	823915	PP0939	0.51	14/11/2023
230188	823924	PP0940	0.35	14/11/2023
230191	823933	PP0941	0.33	14/11/2023
230195	823943	PP0942	0.35	14/11/2023
230199	823952	PP0943	0.36	14/11/2023
230202	823961	PP0944	0.26	14/11/2023
230206	823971	PP0945	0.63	14/11/2023
230209	823980	PP0946	0.34	14/11/2023
230213	823989	PP0947	0.39	14/11/2023
230216	823999	PP0948	0.25	14/11/2023
230220	824008	PP0949	0.34	14/11/2023
230224	824017	PP0950	0.19	14/11/2023
230227	824027	PP0951	2.24	14/11/2023
230231	824036	PP0952	1.2	14/11/2023
230234	824045	PP0953	0.62	14/11/2023
230238	824055	PP0954	0.45	14/11/2023
230242	824064	PP0955	1.13	14/11/2023
230245	824073	PP0956	2.7	14/11/2023
230249	824083	PP0957	2.92	14/11/2023
230252	824092	PP0958	0.5	14/11/2023
230256	824101	PP0959	0.47	14/11/2023
230259	824111	PP0960	0.36	14/11/2023
230263	824120	PP0961	1.04	14/11/2023
230267	824129	PP0962	0.67	14/11/2023
230270	824139	PP0963	0.43	14/11/2023
230274	824148	PP0964	0.59	14/11/2023
230277	824157	PP0965	0.28	14/11/2023
230281	824167	PP0966	0.18	14/11/2023
230285	824176	PP0967	0.19	14/11/2023
230288	824185	PP0968	0.39	14/11/2023
230292	824195	PP0969	0.69	14/11/2023
230295	824204	PP0970	0.19	14/11/2023
230299	824213	PP0971	0.49	14/11/2023
230303	824223	PP0972	0.36	14/11/2023
230306	824232	PP0973	0.54	14/11/2023
230310	824241	PP0974	0.42	14/11/2023
230313	824251	PP0975	0.74	14/11/2023
230317	824260	PP0976	0.87	14/11/2023
230320	824269	PP0977	0.87	14/11/2023
230324	824279	PP0978	0.68	14/11/2023
230328	824288	PP0979	0.57	14/11/2023
230331	824297	PP0980	0.35	14/11/2023
230335	824307	PP0981	0.22	14/11/2023
230338	824316	PP0982	0.53	14/11/2023
230342	824325	PP0983	0.63	14/11/2023
230346	824335	PP0984	0.59	14/11/2023
230349	824344	PP0985	0.44	21/11/2023
230353	824353	PP0986	0.77	21/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230356	824363	PP0987	1.4	21/11/2023
230360	824372	PP0988	1.83	21/11/2023
230363	824381	PP0989	0.79	21/11/2023
230367	824391	PP0990	0.33	21/11/2023
230371	824400	PP0991	0.25	21/11/2023
230374	824409	PP0992	0.47	21/11/2023
230378	824419	PP0993	0.33	21/11/2023
230381	824428	PP0994	0.38	21/11/2023
230385	824437	PP0995	0.32	21/11/2023
230389	824447	PP0996	0.46	21/11/2023
230392	824456	PP0997	0.5	21/11/2023
230396	824465	PP0998	0.37	21/11/2023
230399	824475	PP0999	0.27	21/11/2023
230403	824484	PP1000	0.61	21/11/2023
230406	824494	PP1001	0.47	21/11/2023
230410	824503	PP1002	0.56	21/11/2023
230414	824512	PP1003	0.2	21/11/2023
230417	824522	PP1004	0.43	21/11/2023
230421	824531	PP1005	0.36	21/11/2023
230424	824540	PP1006	0.39	21/11/2023
230428	824550	PP1007	0.39	21/11/2023
230432	824559	PP1008	0.31	21/11/2023
230435	824568	PP1009	0.21	21/11/2023
230439	824578	PP1010	0.4	21/11/2023
230442	824587	PP1011	0.41	21/11/2023
230446	824596	PP1012	0.49	21/11/2023
230449	824606	PP1013	0.5	21/11/2023
230453	824615	PP1014	0.99	21/11/2023
230457	824624	PP1015	0.55	21/11/2023
230460	824634	PP1016	0.96	21/11/2023
230464	824643	PP1017	1.6	21/11/2023
230467	824652	PP1018	1.39	21/11/2023
230471	824662	PP1019	beyond dear fence	21/11/2023
230475	824671	PP1020	beyond dear fence	21/11/2023
230478	824680	PP1021	beyond dear fence	21/11/2023
230482	824690	PP1022	beyond dear fence	21/11/2023
230485	824699	PP1023	beyond dear fence	21/11/2023
230489	824708	PP1024	beyond dear fence	21/11/2023
230183	823885	PP1025	0.3	14/11/2023
230187	823894	PP1026	0.45	14/11/2023
230191	823904	PP1027	0.3	14/11/2023
230194	823913	PP1028	0.47	14/11/2023
230198	823922	PP1029	0.17	14/11/2023
230201	823932	PP1030	0.26	14/11/2023
230205	823941	PP1031	0.22	14/11/2023
230208	823950	PP1032	0.35	14/11/2023
230212	823960	PP1033	0.4	14/11/2023
230216	823969	PP1034	0.57	14/11/2023
230219	823978	PP1035	0.31	14/11/2023
230223	823988	PP1036	0.4	14/11/2023
230226	823997	PP1037	0.26	14/11/2023
230230	824006	PP1038	0.33	14/11/2023
230234	824016	PP1039	0.19	14/11/2023
230237	824025	PP1040	1.8	14/11/2023
230241	824034	PP1041	1.46	14/11/2023
230244	824044	PP1042	0.85	14/11/2023
230248	824053	PP1043	0.46	14/11/2023
230251	824062	PP1044	0.4	14/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230255	824072	PP1045	0.82	14/11/2023
230259	824081	PP1046	2.59	14/11/2023
230262	824090	PP1047	1.06	14/11/2023
230266	824100	PP1048	0.77	14/11/2023
230269	824109	PP1049	0.58	14/11/2023
230273	824118	PP1050	0.33	14/11/2023
230277	824128	PP1051	0.37	14/11/2023
230280	824137	PP1052	0.2	14/11/2023
230284	824146	PP1053	0.43	14/11/2023
230287	824156	PP1054	0.46	14/11/2023
230291	824165	PP1055	0.45	14/11/2023
230294	824174	PP1056	0.33	14/11/2023
230298	824184	PP1057	0.29	14/11/2023
230302	824193	PP1058	0.38	14/11/2023
230305	824202	PP1059	0.31	14/11/2023
230309	824212	PP1060	0.56	14/11/2023
230312	824221	PP1061	0.22	14/11/2023
230316	824230	PP1062	0.44	14/11/2023
230320	824240	PP1063	0.38	14/11/2023
230323	824249	PP1064	0.15	14/11/2023
230327	824258	PP1065	0.65	14/11/2023
230330	824268	PP1066	0.95	14/11/2023
230334	824277	PP1067	0.52	14/11/2023
230337	824286	PP1068	0.35	14/11/2023
230341	824296	PP1069	0.45	14/11/2023
230345	824305	PP1070	0.28	14/11/2023
230348	824314	PP1071	0.49	14/11/2023
230352	824324	PP1072	0.86	21/11/2023
230355	824333	PP1073	0.49	21/11/2023
230359	824342	PP1074	0.38	21/11/2023
230363	824352	PP1075	1.07	21/11/2023
230366	824361	PP1076	1.33	21/11/2023
230370	824370	PP1077	1.38	21/11/2023
230373	824380	PP1078	0.68	21/11/2023
230377	824389	PP1079	0.29	21/11/2023
230380	824398	PP1080	0.58	21/11/2023
230384	824408	PP1081	0.35	21/11/2023
230388	824417	PP1082	0.48	21/11/2023
230391	824426	PP1083	0.25	21/11/2023
230395	824436	PP1084	0.42	21/11/2023
230398	824445	PP1085	0.49	21/11/2023
230402	824454	PP1086	0.42	21/11/2023
230406	824464	PP1087	0.45	21/11/2023
230409	824473	PP1088	0.27	21/11/2023
230413	824483	PP1089	0.34	21/11/2023
230416	824492	PP1090	0.53	21/11/2023
230420	824501	PP1091	0.42	21/11/2023
230423	824511	PP1092	0.27	21/11/2023
230427	824520	PP1093	0.27	21/11/2023
230431	824529	PP1094	0.49	21/11/2023
230434	824539	PP1095	0.57	21/11/2023
230438	824548	PP1096	0.65	21/11/2023
230441	824557	PP1097	0.53	21/11/2023
230445	824567	PP1098	0.49	21/11/2023
230449	824576	PP1099	0.47	21/11/2023
230452	824585	PP1100	0.82	21/11/2023
230456	824595	PP1101	0.91	21/11/2023
230459	824604	PP1102	0.8	21/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230463	824613	PP1103	0.63	21/11/2023
230466	824623	PP1104	1.15	21/11/2023
230470	824632	PP1105	1.6	21/11/2023
230474	824641	PP1106	1.71	21/11/2023
230477	824651	PP1107	1.6	21/11/2023
230481	824660	PP1108	1	21/11/2023
230484	824669	PP1109	beyond dear fence	21/11/2023
230488	824679	PP1110	beyond dear fence	21/11/2023
230492	824688	PP1111	beyond dear fence	21/11/2023
230495	824697	PP1112	beyond dear fence	21/11/2023
230499	824707	PP1113	beyond dear fence	21/11/2023
230502	824716	PP1114	beyond dear fence	21/11/2023
230193	823883	PP1115	on track	15/11/2023
230197	823893	PP1116	on track	15/11/2023
230200	823902	PP1117	0.05	15/11/2023
230204	823911	PP1118	0.1	15/11/2023
230208	823921	PP1119	0.29	15/11/2023
230211	823930	PP1120	0.19	15/11/2023
230215	823939	PP1121	0.24	15/11/2023
230218	823949	PP1122	0.14	15/11/2023
230222	823958	PP1123	0.33	15/11/2023
230225	823967	PP1124	0.27	15/11/2023
230229	823977	PP1125	0.36	15/11/2023
230233	823986	PP1126	0.53	15/11/2023
230236	823995	PP1127	0.42	15/11/2023
230240	824005	PP1128	0.36	15/11/2023
230243	824014	PP1129	0.26	15/11/2023
230247	824023	PP1130	0.87	15/11/2023
230251	824033	PP1131	1.37	15/11/2023
230254	824042	PP1132	0.64	15/11/2023
230258	824051	PP1133	0.39	15/11/2023
230261	824061	PP1134	0.73	15/11/2023
230265	824070	PP1135	0.5	15/11/2023
230268	824079	PP1136	1.85	15/11/2023
230272	824089	PP1137	2.05	15/11/2023
230276	824098	PP1138	0.72	15/11/2023
230279	824107	PP1139	0.29	15/11/2023
230283	824117	PP1140	0.33	15/11/2023
230286	824126	PP1141	0.79	15/11/2023
230290	824135	PP1142	0.62	15/11/2023
230294	824145	PP1143	0.47	15/11/2023
230297	824154	PP1144	0.82	15/11/2023
230301	824163	PP1145	0.49	15/11/2023
230304	824173	PP1146	0.49	15/11/2023
230308	824182	PP1147	0.54	15/11/2023
230311	824191	PP1148	0.19	15/11/2023
230315	824201	PP1149	0.34	15/11/2023
230319	824210	PP1150	0.45	15/11/2023
230322	824219	PP1151	0.44	15/11/2023
230326	824229	PP1152	0.19	15/11/2023
230329	824238	PP1153	0.53	15/11/2023
230333	824247	PP1154	0.36	15/11/2023
230337	824257	PP1155	0.34	15/11/2023
230340	824266	PP1156	0.33	15/11/2023
230344	824275	PP1157	0.35	15/11/2023
230347	824285	PP1158	0.31	15/11/2023
230351	824294	PP1159	0.34	15/11/2023
230354	824303	PP1160	0.58	21/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230358	824313	PP1161	0.47	21/11/2023
230362	824322	PP1162	0.34	21/11/2023
230365	824331	PP1163	0.73	21/11/2023
230369	824341	PP1164	0.53	21/11/2023
230372	824350	PP1165	0.48	21/11/2023
230376	824359	PP1166	1.48	21/11/2023
230380	824369	PP1167	1.78	21/11/2023
230383	824378	PP1168	1.36	21/11/2023
230387	824387	PP1169	0.73	21/11/2023
230390	824397	PP1170	0.24	21/11/2023
230394	824406	PP1171	0.38	21/11/2023
230397	824415	PP1172	0.33	21/11/2023
230401	824425	PP1173	0.24	21/11/2023
230405	824434	PP1174	0.38	21/11/2023
230408	824443	PP1175	0.48	21/11/2023
230412	824453	PP1176	0.3	21/11/2023
230415	824462	PP1177	0.22	21/11/2023
230419	824472	PP1178	0.31	21/11/2023
230423	824481	PP1179	0.24	21/11/2023
230426	824490	PP1180	0.32	21/11/2023
230430	824500	PP1181	0.47	21/11/2023
230433	824509	PP1182	0.39	21/11/2023
230437	824518	PP1183	0.5	21/11/2023
230440	824528	PP1184	0.6	21/11/2023
230444	824537	PP1185	0.98	21/11/2023
230448	824546	PP1186	1.42	21/11/2023
230451	824556	PP1187	1.4	21/11/2023
230455	824565	PP1188	1.19	21/11/2023
230458	824574	PP1189	1.02	21/11/2023
230462	824584	PP1190	1.02	21/11/2023
230466	824593	PP1191	1.32	21/11/2023
230469	824602	PP1192	1	21/11/2023
230473	824612	PP1193	1.42	21/11/2023
230476	824621	PP1194	1.63	21/11/2023
230480	824630	PP1195	1.32	21/11/2023
230483	824640	PP1196	0.63	21/11/2023
230487	824649	PP1197	1.07	21/11/2023
230491	824658	PP1198	0.74	21/11/2023
230494	824668	PP1199	0.32	21/11/2023
230498	824677	PP1200	beyond dear fence	21/11/2023
230501	824686	PP1201	beyond dear fence	21/11/2023
230505	824696	PP1202	beyond dear fence	21/11/2023
230509	824705	PP1203	beyond dear fence	21/11/2023
230512	824714	PP1204	beyond dear fence	21/11/2023
230516	824724	PP1205	beyond dear fence	21/11/2023
230203	823882	PP1206	on track	15/11/2023
230207	823891	PP1207	0.45	15/11/2023
230210	823900	PP1208	0.24	15/11/2023
230214	823910	PP1209	0.08	15/11/2023
230217	823919	PP1210	0.27	15/11/2023
230221	823928	PP1211	0.29	15/11/2023
230225	823938	PP1212	0.45	15/11/2023
230228	823947	PP1213	0.4	15/11/2023
230232	823956	PP1214	0.24	15/11/2023
230235	823966	PP1215	0.36	15/11/2023
230239	823975	PP1216	0.6	15/11/2023
230242	823984	PP1217	0.75	15/11/2023
230246	823994	PP1218	0.54	15/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230250	824003	PP1219	0.3	15/11/2023
230253	824012	PP1220	0.28	15/11/2023
230257	824022	PP1221	0.48	15/11/2023
230260	824031	PP1222	1.55	15/11/2023
230264	824040	PP1223	0.73	15/11/2023
230268	824050	PP1224	0.63	15/11/2023
230271	824059	PP1225	0.52	15/11/2023
230275	824068	PP1226	0.59	15/11/2023
230278	824078	PP1227	1.95	15/11/2023
230282	824087	PP1228	2.45	15/11/2023
230285	824096	PP1229	0.84	15/11/2023
230289	824106	PP1230	0.58	15/11/2023
230293	824115	PP1231	0.44	15/11/2023
230296	824124	PP1232	0.78	15/11/2023
230300	824134	PP1233	0.63	15/11/2023
230303	824143	PP1234	0.5	15/11/2023
230307	824152	PP1235	0.74	15/11/2023
230311	824162	PP1236	0.34	15/11/2023
230314	824171	PP1237	0.36	15/11/2023
230318	824180	PP1238	0.16	15/11/2023
230321	824190	PP1239	0.71	15/11/2023
230325	824199	PP1240	0.71	15/11/2023
230328	824208	PP1241	0.58	15/11/2023
230332	824218	PP1242	0.49	15/11/2023
230336	824227	PP1243	0.36	15/11/2023
230339	824236	PP1244	0.29	15/11/2023
230343	824246	PP1245	0.56	15/11/2023
230346	824255	PP1246	0.62	15/11/2023
230350	824264	PP1247	0.38	15/11/2023
230354	824274	PP1248	0.49	15/11/2023
230357	824283	PP1249	0.34	15/11/2023
230361	824292	PP1250	0.68	15/11/2023
230364	824302	PP1251	0.45	15/11/2023
230368	824311	PP1252	1.02	15/11/2023
230372	824320	PP1253	0.68	15/11/2023
230375	824330	PP1254	0.46	15/11/2023
230379	824339	PP1255	0.35	15/11/2023
230382	824348	PP1256	0.69	15/11/2023
230386	824358	PP1257	0.85	15/11/2023
230389	824367	PP1258	1.62	15/11/2023
230393	824376	PP1259	1.2	15/11/2023
230397	824386	PP1260	1.02	15/11/2023
230400	824395	PP1261	0.42	15/11/2023
230404	824404	PP1262	0.28	15/11/2023
230407	824414	PP1263	0.27	15/11/2023
230411	824423	PP1264	0.38	15/11/2023
230415	824432	PP1265	0.44	21/11/2023
230418	824442	PP1266	0.62	21/11/2023
230422	824451	PP1267	0.41	21/11/2023
230425	824461	PP1268	0.36	21/11/2023
230429	824470	PP1269	0.37	21/11/2023
230432	824479	PP1270	0.31	21/11/2023
230436	824489	PP1271	0.57	21/11/2023
230440	824498	PP1272	0.63	21/11/2023
230443	824507	PP1273	1.31	21/11/2023
230447	824517	PP1274	1.61	21/11/2023
230450	824526	PP1275	1.98	21/11/2023
230454	824535	PP1276	1.53	21/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230458	824545	PP1277	1.72	21/11/2023
230461	824554	PP1278	1.83	21/11/2023
230465	824563	PP1279	1.71	21/11/2023
230468	824573	PP1280	1.92	21/11/2023
230472	824582	PP1281	1.83	21/11/2023
230475	824591	PP1282	1.27	21/11/2023
230479	824601	PP1283	0.98	21/11/2023
230483	824610	PP1284	0.99	21/11/2023
230486	824619	PP1285	1.38	21/11/2023
230490	824629	PP1286	1.12	21/11/2023
230493	824638	PP1287	0.81	21/11/2023
230497	824647	PP1288	0.43	21/11/2023
230501	824657	PP1289	0.69	21/11/2023
230504	824666	PP1290	0.79	21/11/2023
230508	824675	PP1291	beyond dear fence	21/11/2023
230511	824685	PP1292	beyond dear fence	21/11/2023
230515	824694	PP1293	beyond dear fence	21/11/2023
230518	824703	PP1294	beyond dear fence	21/11/2023
230522	824713	PP1295	beyond dear fence	21/11/2023
230526	824722	PP1296	beyond dear fence	21/11/2023
230529	824731	PP1297	beyond dear fence	21/11/2023
230213	823880	PP1298	on track	15/11/2023
230217	823889	PP1299	0.05	15/11/2023
230220	823899	PP1300	0.41	15/11/2023
230224	823908	PP1301	0.34	15/11/2023
230227	823917	PP1302	0.81	15/11/2023
230231	823927	PP1303	0.75	15/11/2023
230234	823936	PP1304	0.61	15/11/2023
230238	823945	PP1305	0.64	15/11/2023
230242	823955	PP1306	0.95	15/11/2023
230245	823964	PP1307	0.41	15/11/2023
230249	823973	PP1308	0.21	15/11/2023
230252	823983	PP1309	0.76	15/11/2023
230256	823992	PP1310	0.81	15/11/2023
230260	824001	PP1311	0.52	15/11/2023
230263	824011	PP1312	1.82	15/11/2023
230267	824020	PP1313	1.87	15/11/2023
230270	824029	PP1314	1.63	15/11/2023
230274	824039	PP1315	0.75	15/11/2023
230277	824048	PP1316	0.48	15/11/2023
230281	824057	PP1317	0.51	15/11/2023
230285	824067	PP1318	0.57	15/11/2023
230288	824076	PP1319	1.64	15/11/2023
230292	824085	PP1320	0.95	15/11/2023
230295	824095	PP1321	0.98	15/11/2023
230299	824104	PP1322	0.83	15/11/2023
230303	824113	PP1323	0.67	15/11/2023
230306	824123	PP1324	0.5	15/11/2023
230310	824132	PP1325	0.69	15/11/2023
230313	824141	PP1326	0.42	15/11/2023
230317	824151	PP1327	0.9	15/11/2023
230320	824160	PP1328	0.47	15/11/2023
230324	824169	PP1329	0.39	15/11/2023
230328	824179	PP1330	0.72	15/11/2023
230331	824188	PP1331	0.54	15/11/2023
230335	824197	PP1332	0.4	15/11/2023
230338	824207	PP1333	0.67	15/11/2023
230342	824216	PP1334	0.74	15/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230346	824225	PP1335	0.6	15/11/2023
230349	824235	PP1336	0.84	15/11/2023
230353	824244	PP1337	0.46	15/11/2023
230356	824253	PP1338	0.85	15/11/2023
230360	824263	PP1339	0.73	15/11/2023
230363	824272	PP1340	0.83	15/11/2023
230367	824281	PP1341	0.4	15/11/2023
230371	824291	PP1342	0.23	15/11/2023
230374	824300	PP1343	1.15	15/11/2023
230378	824309	PP1344	0.75	15/11/2023
230381	824319	PP1345	0.25	15/11/2023
230385	824328	PP1346	0.95	15/11/2023
230389	824337	PP1347	1.2	15/11/2023
230392	824347	PP1348	1.87	15/11/2023
230396	824356	PP1349	1.9	15/11/2023
230399	824365	PP1350	1.53	15/11/2023
230403	824375	PP1351	1.23	15/11/2023
230406	824384	PP1352	1	15/11/2023
230410	824393	PP1353	0.74	15/11/2023
230414	824403	PP1354	1.12	15/11/2023
230417	824412	PP1355	1.03	15/11/2023
230421	824421	PP1356	0.87	15/11/2023
230424	824431	PP1357	0.8	22/11/2023
230428	824440	PP1358	0.76	22/11/2023
230432	824450	PP1359	0.77	22/11/2023
230435	824459	PP1360	0.76	22/11/2023
230439	824468	PP1361	0.47	22/11/2023
230442	824478	PP1362	0.56	22/11/2023
230446	824487	PP1363	0.37	22/11/2023
230449	824496	PP1364	0.58	22/11/2023
230453	824506	PP1365	2.19	22/11/2023
230457	824515	PP1366	2.02	22/11/2023
230460	824524	PP1367	2.19	22/11/2023
230464	824534	PP1368	1.9	22/11/2023
230467	824543	PP1369	1.9	22/11/2023
230471	824552	PP1370	1.66	22/11/2023
230475	824562	PP1371	1.97	22/11/2023
230478	824571	PP1372	2.02	22/11/2023
230482	824580	PP1373	1.95	22/11/2023
230485	824590	PP1374	1.61	22/11/2023
230489	824599	PP1375	1.45	22/11/2023
230492	824608	PP1376	1.28	22/11/2023
230496	824618	PP1377	1.2	22/11/2023
230500	824627	PP1378	0.59	22/11/2023
230503	824636	PP1379	0.26	22/11/2023
230507	824646	PP1380	0.53	22/11/2023
230510	824655	PP1381	0.42	22/11/2023
230514	824664	PP1382	1.95	22/11/2023
230518	824674	PP1383	beyond deer fence	22/11/2023
230521	824683	PP1384	beyond deer fence	22/11/2023
230525	824692	PP1385	beyond deer fence	22/11/2023
230528	824702	PP1386	beyond deer fence	22/11/2023
230532	824711	PP1387	beyond deer fence	22/11/2023
230535	824720	PP1388	beyond deer fence	22/11/2023
230539	824730	PP1389	beyond deer fence	22/11/2023
230543	824739	PP1390	beyond deer fence	22/11/2023
230226	823888	PP1391	on track	15/11/2023
230230	823897	PP1392	0.27	15/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230234	823906	PP1393	0.22	15/11/2023
230237	823916	PP1394	0.52	15/11/2023
230241	823925	PP1395	0.22	15/11/2023
230244	823934	PP1396	0.13	15/11/2023
230248	823944	PP1397	0.83	15/11/2023
230251	823953	PP1398	0.43	15/11/2023
230255	823962	PP1399	0.71	15/11/2023
230259	823972	PP1400	0.42	15/11/2023
230262	823981	PP1401	0.48	15/11/2023
230266	823990	PP1402	0.39	15/11/2023
230269	824000	PP1403	0.18	15/11/2023
230273	824009	PP1404	1.63	15/11/2023
230277	824018	PP1405	0.77	15/11/2023
230280	824028	PP1406	0.57	15/11/2023
230284	824037	PP1407	0.84	15/11/2023
230287	824046	PP1408	0.64	15/11/2023
230291	824056	PP1409	0.54	15/11/2023
230294	824065	PP1410	0.43	15/11/2023
230298	824074	PP1411	0.64	15/11/2023
230302	824084	PP1412	2.28	15/11/2023
230305	824093	PP1413	0.84	15/11/2023
230309	824102	PP1414	0.62	15/11/2023
230312	824112	PP1415	0.83	15/11/2023
230316	824121	PP1416	0.89	15/11/2023
230320	824130	PP1417	1.09	15/11/2023
230323	824140	PP1418	0.82	15/11/2023
230327	824149	PP1419	1.1	15/11/2023
230330	824158	PP1420	0.95	15/11/2023
230334	824168	PP1421	0.68	15/11/2023
230337	824177	PP1422	0.22	15/11/2023
230341	824186	PP1423	0.49	15/11/2023
230345	824196	PP1424	0.53	15/11/2023
230348	824205	PP1425	0.44	15/11/2023
230352	824214	PP1426	0.62	15/11/2023
230355	824224	PP1427	0.4	15/11/2023
230359	824233	PP1428	0.45	15/11/2023
230363	824242	PP1429	0.37	15/11/2023
230366	824252	PP1430	0.39	15/11/2023
230370	824261	PP1431	0.81	15/11/2023
230373	824270	PP1432	0.52	15/11/2023
230377	824280	PP1433	0.29	15/11/2023
230380	824289	PP1434	0.41	15/11/2023
230384	824298	PP1435	0.05	15/11/2023
230388	824308	PP1436	0.79	15/11/2023
230391	824317	PP1437	0.23	15/11/2023
230395	824326	PP1438	0.48	15/11/2023
230398	824336	PP1439	1.63	15/11/2023
230402	824345	PP1440	1	15/11/2023
230406	824354	PP1441	0.51	15/11/2023
230409	824364	PP1442	1.07	15/11/2023
230413	824373	PP1443	0.2	15/11/2023
230416	824382	PP1444	0.39	15/11/2023
230420	824392	PP1445	0.58	15/11/2023
230423	824401	PP1446	0.84	15/11/2023
230427	824410	PP1447	1.63	15/11/2023
230431	824420	PP1448	1.46	15/11/2023
230434	824429	PP1449	1.52	22/11/2023
230438	824438	PP1450	1.63	22/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230441	824448	PP1451	0.83	22/11/2023
230445	824457	PP1452	0.98	22/11/2023
230449	824467	PP1453	0.89	22/11/2023
230452	824476	PP1454	0.77	22/11/2023
230456	824485	PP1455	0.46	22/11/2023
230459	824495	PP1456	0.43	22/11/2023
230463	824504	PP1457	0.73	22/11/2023
230466	824513	PP1458	0.36	22/11/2023
230470	824523	PP1459	0.37	22/11/2023
230474	824532	PP1460	0.27	22/11/2023
230477	824541	PP1461	1.26	22/11/2023
230481	824551	PP1462	2.03	22/11/2023
230484	824560	PP1463	1.84	22/11/2023
230488	824569	PP1464	1.9	22/11/2023
230492	824579	PP1465	1.76	22/11/2023
230495	824588	PP1466	1.27	22/11/2023
230499	824597	PP1467	0.36	22/11/2023
230502	824607	PP1468	1.12	22/11/2023
230506	824616	PP1469	0.78	22/11/2023
230509	824625	PP1470	0.25	22/11/2023
230513	824635	PP1471	0.18	22/11/2023
230517	824644	PP1472	0.27	22/11/2023
230520	824653	PP1473	0.3	22/11/2023
230524	824663	PP1474	0.36	22/11/2023
230527	824672	PP1475	beyond dear fence	22/11/2023
230531	824681	PP1476	beyond dear fence	22/11/2023
230535	824691	PP1477	beyond dear fence	22/11/2023
230538	824700	PP1478	beyond dear fence	22/11/2023
230542	824709	PP1479	beyond dear fence	22/11/2023
230545	824719	PP1480	beyond dear fence	22/11/2023
230549	824728	PP1481	beyond dear fence	22/11/2023
230552	824737	PP1482	beyond dear fence	22/11/2023
230240	823895	PP1483	0.45	16/11/2023
230243	823905	PP1484	0.38	16/11/2023
230247	823914	PP1485	0.37	16/11/2023
230251	823923	PP1486	0.28	16/11/2023
230254	823933	PP1487	0.21	16/11/2023
230258	823942	PP1488	0.75	16/11/2023
230261	823951	PP1489	0.41	16/11/2023
230265	823961	PP1490	0.31	16/11/2023
230268	823970	PP1491	0.53	16/11/2023
230272	823979	PP1492	0.62	16/11/2023
230276	823989	PP1493	0.98	16/11/2023
230279	823998	PP1494	1.14	16/11/2023
230283	824007	PP1495	0.77	16/11/2023
230286	824017	PP1496	0.11	16/11/2023
230290	824026	PP1497	0.49	16/11/2023
230294	824035	PP1498	0.58	16/11/2023
230297	824045	PP1499	0.62	16/11/2023
230301	824054	PP1500	0.25	16/11/2023
230304	824063	PP1501	0.57	16/11/2023
230308	824073	PP1502	2	16/11/2023
230311	824082	PP1503	1.79	16/11/2023
230315	824091	PP1504	0.69	16/11/2023
230319	824101	PP1505	0.28	16/11/2023
230322	824110	PP1506	0.93	16/11/2023
230326	824119	PP1507	0.71	16/11/2023
230329	824129	PP1508	1.24	16/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230333	824138	PP1509	1.16	16/11/2023
230337	824147	PP1510	1.7	16/11/2023
230340	824157	PP1511	1.53	16/11/2023
230344	824166	PP1512	0.62	16/11/2023
230347	824175	PP1513	0.66	16/11/2023
230351	824185	PP1514	0.47	16/11/2023
230354	824194	PP1515	0.33	16/11/2023
230358	824203	PP1516	0.48	16/11/2023
230362	824213	PP1517	0.52	16/11/2023
230365	824222	PP1518	0.43	16/11/2023
230369	824231	PP1519	0.58	16/11/2023
230372	824241	PP1520	1.09	16/11/2023
230376	824250	PP1521	0.45	16/11/2023
230380	824259	PP1522	0.67	16/11/2023
230383	824269	PP1523	0.39	16/11/2023
230387	824278	PP1524	0.61	16/11/2023
230390	824287	PP1525	0.88	16/11/2023
230394	824297	PP1526	0.82	16/11/2023
230398	824306	PP1527	1.31	16/11/2023
230401	824315	PP1528	0.74	16/11/2023
230405	824325	PP1529	0.66	16/11/2023
230408	824334	PP1530	0.71	16/11/2023
230412	824343	PP1531	0.12	16/11/2023
230415	824353	PP1532	0.19	16/11/2023
230419	824362	PP1533	0.55	16/11/2023
230423	824371	PP1534	0.2	16/11/2023
230426	824381	PP1535	0.13	16/11/2023
230430	824390	PP1536	0.71	16/11/2023
230433	824399	PP1537	1.23	16/11/2023
230437	824409	PP1538	1.44	16/11/2023
230441	824418	PP1539	1.68	16/11/2023
230444	824427	PP1540	0.8	22/11/2023
230448	824437	PP1541	1.75	22/11/2023
230451	824446	PP1542	1.63	22/11/2023
230455	824456	PP1543	1.1	22/11/2023
230458	824465	PP1544	0.73	22/11/2023
230462	824474	PP1545	0.79	22/11/2023
230466	824484	PP1546	0.41	22/11/2023
230469	824493	PP1547	0.17	22/11/2023
230473	824502	PP1548	0.29	22/11/2023
230476	824512	PP1549	0.3	22/11/2023
230480	824521	PP1550	0.31	22/11/2023
230484	824530	PP1551	0.15	22/11/2023
230487	824540	PP1552	0.72	22/11/2023
230491	824549	PP1553	0.26	22/11/2023
230494	824558	PP1554	0.16	22/11/2023
230498	824568	PP1555	0.22	22/11/2023
230501	824577	PP1556	0.84	22/11/2023
230505	824586	PP1557	0.64	22/11/2023
230509	824596	PP1558	1.33	22/11/2023
230512	824605	PP1559	0.94	22/11/2023
230516	824614	PP1560	0.85	22/11/2023
230519	824624	PP1561	0.29	22/11/2023
230523	824633	PP1562	0.25	22/11/2023
230527	824642	PP1563	0.29	22/11/2023
230530	824652	PP1564	0.37	22/11/2023
230534	824661	PP1565	0.41	22/11/2023
230537	824670	PP1566	0.29	22/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230541	824680	PP1567	beyond dear fence	22/11/2023
230544	824689	PP1568	beyond dear fence	22/11/2023
230548	824698	PP1569	beyond dear fence	22/11/2023
230552	824708	PP1570	beyond dear fence	22/11/2023
230555	824717	PP1571	beyond dear fence	22/11/2023
230559	824726	PP1572	beyond dear fence	22/11/2023
230562	824736	PP1573	beyond dear fence	22/11/2023
230566	824745	PP1574	beyond dear fence	22/11/2023
230253	823903	PP1575	0.22	16/11/2023
230257	823912	PP1576	0.05	16/11/2023
230260	823922	PP1577	0.1	16/11/2023
230264	823931	PP1578	0.46	16/11/2023
230268	823940	PP1579	0.55	16/11/2023
230271	823950	PP1580	0.33	16/11/2023
230275	823959	PP1581	0.72	16/11/2023
230278	823968	PP1582	0.71	16/11/2023
230282	823978	PP1583	0.3	16/11/2023
230286	823987	PP1584	0.56	16/11/2023
230289	823996	PP1585	2.16	16/11/2023
230293	824006	PP1586	1.57	16/11/2023
230296	824015	PP1587	1.22	16/11/2023
230300	824024	PP1588	0.41	16/11/2023
230303	824034	PP1589	0.39	16/11/2023
230307	824043	PP1590	0.19	16/11/2023
230311	824052	PP1591	0.44	16/11/2023
230314	824062	PP1592	0.63	16/11/2023
230318	824071	PP1593	1.11	16/11/2023
230321	824080	PP1594	3.01	16/11/2023
230325	824090	PP1595	0.74	16/11/2023
230329	824099	PP1596	0.68	16/11/2023
230332	824108	PP1597	0.24	16/11/2023
230336	824118	PP1598	1.07	16/11/2023
230339	824127	PP1599	0.91	16/11/2023
230343	824136	PP1600	1.18	16/11/2023
230346	824146	PP1601	1.81	16/11/2023
230350	824155	PP1602	1.33	16/11/2023
230354	824164	PP1603	2.04	16/11/2023
230357	824174	PP1604	1.81	16/11/2023
230361	824183	PP1605	0.95	16/11/2023
230364	824192	PP1606	1.03	16/11/2023
230368	824202	PP1607	0.41	16/11/2023
230372	824211	PP1608	0.49	16/11/2023
230375	824220	PP1609	0.28	16/11/2023
230379	824230	PP1610	0.52	16/11/2023
230382	824239	PP1611	0.44	16/11/2023
230386	824248	PP1612	0.63	16/11/2023
230389	824258	PP1613	0.27	16/11/2023
230393	824267	PP1614	0.51	16/11/2023
230397	824276	PP1615	0.17	16/11/2023
230400	824286	PP1616	0.15	16/11/2023
230404	824295	PP1617	0.38	16/11/2023
230407	824304	PP1618	1.14	16/11/2023
230411	824314	PP1619	1.34	16/11/2023
230415	824323	PP1620	0.21	16/11/2023
230418	824332	PP1621	0.14	16/11/2023
230422	824342	PP1622	0.26	16/11/2023
230425	824351	PP1623	0.1	16/11/2023
230429	824360	PP1624	0.32	16/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230432	824370	PP1625	0.34	16/11/2023
230436	824379	PP1626	0.4	16/11/2023
230440	824388	PP1627	0.18	16/11/2023
230443	824398	PP1628	0.49	16/11/2023
230447	824407	PP1629	0.14	16/11/2023
230450	824416	PP1630	0.09	16/11/2023
230454	824426	PP1631	0.4	22/11/2023
230458	824435	PP1632	0.22	22/11/2023
230461	824445	PP1633	1.45	22/11/2023
230465	824454	PP1634	0.88	22/11/2023
230468	824463	PP1635	0.4	22/11/2023
230472	824473	PP1636	0.59	22/11/2023
230475	824482	PP1637	0.49	22/11/2023
230479	824491	PP1638	0.44	22/11/2023
230483	824501	PP1639	0.3	22/11/2023
230486	824510	PP1640	0.38	22/11/2023
230490	824519	PP1641	0.15	22/11/2023
230493	824529	PP1642	0.45	22/11/2023
230497	824538	PP1643	0.75	22/11/2023
230501	824547	PP1644	0.69	22/11/2023
230504	824557	PP1645	0.46	22/11/2023
230508	824566	PP1646	0.64	22/11/2023
230511	824575	PP1647	0.16	22/11/2023
230515	824585	PP1648	0.4	22/11/2023
230518	824594	PP1649	0.05	22/11/2023
230522	824603	PP1650	0.41	22/11/2023
230526	824613	PP1651	0.4	22/11/2023
230529	824622	PP1652	0.32	22/11/2023
230533	824631	PP1653	0.23	22/11/2023
230536	824641	PP1654	0.43	22/11/2023
230540	824650	PP1655	0.56	22/11/2023
230544	824659	PP1656	0.11	22/11/2023
230547	824669	PP1657	0.27	22/11/2023
230551	824678	PP1658	beyond dear fence	22/11/2023
230554	824687	PP1659	beyond dear fence	22/11/2023
230558	824697	PP1660	beyond dear fence	22/11/2023
230561	824706	PP1661	beyond dear fence	22/11/2023
230565	824715	PP1662	beyond dear fence	22/11/2023
230569	824725	PP1663	beyond dear fence	22/11/2023
230572	824734	PP1664	beyond dear fence	22/11/2023
230576	824743	PP1665	beyond dear fence	22/11/2023
230579	824753	PP1666	beyond dear fence	22/11/2023
230263	823901	PP1667	on track	16/11/2023
230267	823911	PP1668	0.1	16/11/2023
230270	823920	PP1669	0.42	16/11/2023
230274	823929	PP1670	0.52	16/11/2023
230277	823939	PP1671	0.66	16/11/2023
230281	823948	PP1672	0.33	16/11/2023
230285	823957	PP1673	0.47	16/11/2023
230288	823967	PP1674	0.17	16/11/2023
230292	823976	PP1675	0.52	16/11/2023
230295	823985	PP1676	1	16/11/2023
230299	823995	PP1677	0.84	16/11/2023
230303	824004	PP1678	0.62	16/11/2023
230306	824013	PP1679	0.88	16/11/2023
230310	824023	PP1680	0.45	16/11/2023
230313	824032	PP1681	0.28	16/11/2023
230317	824041	PP1682	0.44	16/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230320	824051	PP1683	0.32	16/11/2023
230324	824060	PP1684	0.21	16/11/2023
230328	824069	PP1685	1.57	16/11/2023
230331	824079	PP1686	0.34	16/11/2023
230335	824088	PP1687	1.01	16/11/2023
230338	824097	PP1688	0.52	16/11/2023
230342	824107	PP1689	0.9	16/11/2023
230346	824116	PP1690	1.05	16/11/2023
230349	824125	PP1691	0.23	16/11/2023
230353	824135	PP1692	1.75	16/11/2023
230356	824144	PP1693	1.91	16/11/2023
230360	824153	PP1694	1.9	16/11/2023
230363	824163	PP1695	1.82	16/11/2023
230367	824172	PP1696	2.11	16/11/2023
230371	824181	PP1697	1.92	16/11/2023
230374	824191	PP1698	1.89	16/11/2023
230378	824200	PP1699	1.55	16/11/2023
230381	824209	PP1700	1	16/11/2023
230385	824219	PP1701	0.93	16/11/2023
230389	824228	PP1702	0.97	16/11/2023
230392	824237	PP1703	0.9	16/11/2023
230396	824247	PP1704	0.66	16/11/2023
230399	824256	PP1705	0.55	16/11/2023
230403	824265	PP1706	0.17	16/11/2023
230406	824275	PP1707	0.05	16/11/2023
230410	824284	PP1708	0.77	16/11/2023
230414	824293	PP1709	0.4	16/11/2023
230417	824303	PP1710	0.88	16/11/2023
230421	824312	PP1711	0.81	16/11/2023
230424	824321	PP1712	0.52	16/11/2023
230428	824331	PP1713	0.34	16/11/2023
230432	824340	PP1714	0.47	16/11/2023
230435	824349	PP1715	0.46	16/11/2023
230439	824359	PP1716	0.52	16/11/2023
230442	824368	PP1717	0.39	16/11/2023
230446	824377	PP1718	0.06	16/11/2023
230449	824387	PP1719	0.25	16/11/2023
230453	824396	PP1720	0.24	16/11/2023
230457	824405	PP1721	0.39	16/11/2023
230460	824415	PP1722	0.24	22/11/2023
230464	824424	PP1723	0.36	22/11/2023
230467	824434	PP1724	0.47	22/11/2023
230471	824443	PP1725	0.24	22/11/2023
230475	824452	PP1726	0.72	22/11/2023
230478	824462	PP1727	0.8	22/11/2023
230482	824471	PP1728	0.97	22/11/2023
230485	824480	PP1729	1.05	22/11/2023
230489	824490	PP1730	0.35	22/11/2023
230492	824499	PP1731	0.48	22/11/2023
230496	824508	PP1732	0.46	22/11/2023
230500	824518	PP1733	0.3	22/11/2023
230503	824527	PP1734	0.38	22/11/2023
230507	824536	PP1735	0.59	22/11/2023
230510	824546	PP1736	0.59	22/11/2023
230514	824555	PP1737	0.39	22/11/2023
230518	824564	PP1738	0.25	22/11/2023
230521	824574	PP1739	0.19	22/11/2023
230525	824583	PP1740	0.12	22/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230528	824592	PP1741	0.52	22/11/2023
230532	824602	PP1742	0.47	22/11/2023
230535	824611	PP1743	0.29	22/11/2023
230539	824620	PP1744	0.51	22/11/2023
230543	824630	PP1745	0.7	22/11/2023
230546	824639	PP1746	0.28	22/11/2023
230550	824648	PP1747	0.22	22/11/2023
230553	824658	PP1748	0.3	22/11/2023
230557	824667	PP1749	0.33	22/11/2023
230561	824676	PP1750	0.67	22/11/2023
230564	824686	PP1751	beyond dear fence	22/11/2023
230568	824695	PP1752	beyond dear fence	22/11/2023
230571	824704	PP1753	beyond dear fence	22/11/2023
230575	824714	PP1754	beyond dear fence	22/11/2023
230578	824723	PP1755	beyond dear fence	22/11/2023
230582	824732	PP1756	beyond dear fence	22/11/2023
230586	824742	PP1757	beyond dear fence	22/11/2023
230589	824751	PP1758	beyond dear fence	22/11/2023
230593	824760	PP1759	beyond dear fence	22/11/2023
230277	823909	PP1760	on track	16/11/2023
230280	823918	PP1761	0.49	16/11/2023
230284	823928	PP1762	0.42	16/11/2023
230287	823937	PP1763	0.05	16/11/2023
230291	823946	PP1764	0.28	16/11/2023
230294	823956	PP1765	0.19	16/11/2023
230298	823965	PP1766	0.63	16/11/2023
230302	823974	PP1767	0.39	16/11/2023
230305	823984	PP1768	1.12	16/11/2023
230309	823993	PP1769	1.02	16/11/2023
230312	824002	PP1770	0.51	16/11/2023
230316	824012	PP1771	0.7	16/11/2023
230320	824021	PP1772	0.24	16/11/2023
230323	824030	PP1773	0.36	16/11/2023
230327	824040	PP1774	0.28	16/11/2023
230330	824049	PP1775	0.53	16/11/2023
230334	824058	PP1776	0.52	16/11/2023
230337	824068	PP1777	0.59	16/11/2023
230341	824077	PP1778	1.8	16/11/2023
230345	824086	PP1779	1.01	16/11/2023
230348	824096	PP1780	0.76	16/11/2023
230352	824105	PP1781	0.57	16/11/2023
230355	824114	PP1782	0.68	16/11/2023
230359	824124	PP1783	1.28	16/11/2023
230363	824133	PP1784	1.41	16/11/2023
230366	824142	PP1785	1.87	16/11/2023
230370	824152	PP1786	0.1	16/11/2023
230373	824161	PP1787	1.91	16/11/2023
230377	824170	PP1788	1.83	16/11/2023
230380	824180	PP1789	1.94	16/11/2023
230384	824189	PP1790	2.32	16/11/2023
230388	824198	PP1791	1.79	16/11/2023
230391	824208	PP1792	1.6	16/11/2023
230395	824217	PP1793	1.56	16/11/2023
230398	824226	PP1794	1	16/11/2023
230402	824236	PP1795	0.38	16/11/2023
230406	824245	PP1796	0.47	16/11/2023
230409	824254	PP1797	0.64	16/11/2023
230413	824264	PP1798	0.27	16/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230416	824273	PP1799	0.38	16/11/2023
230420	824282	PP1800	0.62	16/11/2023
230423	824292	PP1801	0.6	16/11/2023
230427	824301	PP1802	1.34	16/11/2023
230431	824310	PP1803	0.94	16/11/2023
230434	824320	PP1804	0.05	16/11/2023
230438	824329	PP1805	0.27	16/11/2023
230441	824338	PP1806	0.77	16/11/2023
230445	824348	PP1807	0.29	16/11/2023
230449	824357	PP1808	0.34	16/11/2023
230452	824366	PP1809	0.46	16/11/2023
230456	824376	PP1810	0.53	16/11/2023
230459	824385	PP1811	0.92	16/11/2023
230463	824394	PP1812	0.72	16/11/2023
230467	824404	PP1813	0.41	16/11/2023
230470	824413	PP1814	0.2	22/11/2023
230474	824422	PP1815	0.19	22/11/2023
230477	824432	PP1816	0.63	22/11/2023
230481	824441	PP1817	0.83	22/11/2023
230484	824451	PP1818	0.55	22/11/2023
230488	824460	PP1819	0.17	22/11/2023
230492	824469	PP1820	0.31	22/11/2023
230495	824479	PP1821	0.69	22/11/2023
230499	824488	PP1822	0.13	22/11/2023
230502	824497	PP1823	0.31	22/11/2023
230506	824507	PP1824	0.17	22/11/2023
230510	824516	PP1825	0.51	22/11/2023
230513	824525	PP1826	0.19	22/11/2023
230517	824535	PP1827	0.37	22/11/2023
230520	824544	PP1828	0.42	22/11/2023
230524	824553	PP1829	0.48	22/11/2023
230527	824563	PP1830	0.21	22/11/2023
230531	824572	PP1831	0.22	22/11/2023
230535	824581	PP1832	0.31	22/11/2023
230538	824591	PP1833	0.44	22/11/2023
230542	824600	PP1834	0.42	22/11/2023
230545	824609	PP1835	0.32	22/11/2023
230549	824619	PP1836	0.19	22/11/2023
230553	824628	PP1837	0.29	22/11/2023
230556	824637	PP1838	0.3	22/11/2023
230560	824647	PP1839	0.17	22/11/2023
230563	824656	PP1840	0.2	22/11/2023
230567	824665	PP1841	0.57	22/11/2023
230570	824675	PP1842	0.32	22/11/2023
230574	824684	PP1843	beyond dear fence	22/11/2023
230578	824693	PP1844	beyond dear fence	22/11/2023
230581	824703	PP1845	beyond dear fence	22/11/2023
230585	824712	PP1846	beyond dear fence	22/11/2023
230588	824721	PP1847	beyond dear fence	22/11/2023
230592	824731	PP1848	beyond dear fence	22/11/2023
230596	824740	PP1849	beyond dear fence	22/11/2023
230599	824749	PP1850	beyond dear fence	22/11/2023
230603	824759	PP1851	beyond dear fence	22/11/2023
230606	824768	PP1852	beyond dear fence	22/11/2023
230290	823917	PP1853	0.39	14/11/2023
230294	823926	PP1854	0.34	14/11/2023
230297	823935	PP1855	0.54	14/11/2023
230301	823945	PP1856	0.43	14/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230304	823954	PP1857	0.59	14/11/2023
230308	823963	PP1858	0.31	14/11/2023
230312	823973	PP1859	0.7	14/11/2023
230315	823982	PP1860	0.4	14/11/2023
230319	823991	PP1861	0.6	14/11/2023
230322	824001	PP1862	0.7	14/11/2023
230326	824010	PP1863	0.98	14/11/2023
230329	824019	PP1864	0.5	14/11/2023
230333	824029	PP1865	0.55	14/11/2023
230337	824038	PP1866	0.56	14/11/2023
230340	824047	PP1867	0.5	14/11/2023
230344	824057	PP1868	0.66	14/11/2023
230347	824066	PP1869	1.42	14/11/2023
230351	824075	PP1870	1.09	14/11/2023
230355	824085	PP1871	1.94	14/11/2023
230358	824094	PP1872	0.8	14/11/2023
230362	824103	PP1873	0.57	14/11/2023
230365	824113	PP1874	0.84	14/11/2023
230369	824122	PP1875	1.1	14/11/2023
230372	824131	PP1876	1.35	14/11/2023
230376	824141	PP1877	1.67	14/11/2023
230380	824150	PP1878	2.66	14/11/2023
230383	824159	PP1879	0.33	14/11/2023
230387	824169	PP1880	0.31	14/11/2023
230390	824178	PP1881	2.62	14/11/2023
230394	824187	PP1882	2.4	14/11/2023
230398	824197	PP1883	2.01	14/11/2023
230401	824206	PP1884	1.67	14/11/2023
230405	824215	PP1885	1.66	14/11/2023
230408	824225	PP1886	0.58	14/11/2023
230412	824234	PP1887	0.44	14/11/2023
230415	824243	PP1888	0.2	14/11/2023
230419	824253	PP1889	0.72	14/11/2023
230423	824262	PP1890	0.1	14/11/2023
230426	824271	PP1891	0.39	14/11/2023
230430	824281	PP1892	0.72	14/11/2023
230433	824290	PP1893	0.77	14/11/2023
230437	824299	PP1894	1.32	14/11/2023
230441	824309	PP1895	0.66	14/11/2023
230444	824318	PP1896	0.65	14/11/2023
230448	824327	PP1897	0.81	14/11/2023
230451	824337	PP1898	0.8	14/11/2023
230455	824346	PP1899	0.98	14/11/2023
230458	824355	PP1900	1.07	14/11/2023
230462	824365	PP1901	0.81	14/11/2023
230466	824374	PP1902	0.55	14/11/2023
230469	824383	PP1903	0.98	14/11/2023
230473	824393	PP1904	0.71	14/11/2023
230476	824402	PP1905	0.45	14/11/2023
230480	824411	PP1906	0.27	22/11/2023
230484	824421	PP1907	0.53	22/11/2023
230487	824430	PP1908	1.04	22/11/2023
230491	824440	PP1909	0.7	22/11/2023
230494	824449	PP1910	0.28	22/11/2023
230498	824458	PP1911	0.21	22/11/2023
230501	824468	PP1912	0.54	22/11/2023
230505	824477	PP1913	0.22	22/11/2023
230509	824486	PP1914	0.45	22/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230512	824496	PP1915	0.63	22/11/2023
230516	824505	PP1916	0.59	22/11/2023
230519	824514	PP1917	0.16	22/11/2023
230523	824524	PP1918	0.54	22/11/2023
230527	824533	PP1919	0.23	22/11/2023
230530	824542	PP1920	0.34	22/11/2023
230534	824552	PP1921	0.6	22/11/2023
230537	824561	PP1922	0.61	22/11/2023
230541	824570	PP1923	0.42	22/11/2023
230544	824580	PP1924	0.53	22/11/2023
230548	824589	PP1925	0.43	22/11/2023
230552	824598	PP1926	0.58	22/11/2023
230555	824608	PP1927	0.69	22/11/2023
230559	824617	PP1928	0.48	22/11/2023
230562	824626	PP1929	0.3	22/11/2023
230566	824636	PP1930	0.24	22/11/2023
230570	824645	PP1931	0.39	22/11/2023
230573	824654	PP1932	0.34	22/11/2023
230577	824664	PP1933	0.27	22/11/2023
230580	824673	PP1934	0.36	22/11/2023
230584	824682	PP1935	0.38	22/11/2023
230587	824692	PP1936	beyond dear fence	22/11/2023
230591	824701	PP1937	beyond dear fence	22/11/2023
230595	824710	PP1938	beyond dear fence	22/11/2023
230598	824720	PP1939	beyond dear fence	22/11/2023
230602	824729	PP1940	beyond dear fence	22/11/2023
230605	824738	PP1941	beyond dear fence	22/11/2023
230609	824748	PP1942	beyond dear fence	22/11/2023
230613	824757	PP1943	beyond dear fence	22/11/2023
230616	824766	PP1944	beyond dear fence	22/11/2023
230620	824776	PP1945	beyond dear fence	22/11/2023
230303	823924	PP1946	0.35	14/11/2023
230307	823934	PP1947	0.38	14/11/2023
230311	823943	PP1948	0.47	14/11/2023
230314	823952	PP1949	0.32	14/11/2023
230318	823962	PP1950	0.53	14/11/2023
230321	823971	PP1951	0.65	14/11/2023
230325	823980	PP1952	0.6	14/11/2023
230329	823990	PP1953	0.49	14/11/2023
230332	823999	PP1954	0.45	14/11/2023
230336	824008	PP1955	0.51	14/11/2023
230339	824018	PP1956	0.53	14/11/2023
230343	824027	PP1957	0.38	14/11/2023
230346	824036	PP1958	0.69	14/11/2023
230350	824046	PP1959	0.51	14/11/2023
230354	824055	PP1960	0.46	14/11/2023
230357	824064	PP1961	1.29	14/11/2023
230361	824074	PP1962	0.54	14/11/2023
230364	824083	PP1963	1.72	14/11/2023
230368	824092	PP1964	1.58	14/11/2023
230372	824102	PP1965	1.13	14/11/2023
230375	824111	PP1966	1.23	14/11/2023
230379	824120	PP1967	1.25	14/11/2023
230382	824130	PP1968	1.05	14/11/2023
230386	824139	PP1969	1.2	14/11/2023
230389	824148	PP1970	1.66	14/11/2023
230393	824158	PP1971	1.65	14/11/2023
230397	824167	PP1972	1.63	14/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230400	824176	PP1973	1.95	14/11/2023
230404	824186	PP1974	1.95	14/11/2023
230407	824195	PP1975	1.78	14/11/2023
230411	824204	PP1976	1.57	14/11/2023
230415	824214	PP1977	1.47	14/11/2023
230418	824223	PP1978	0.72	14/11/2023
230422	824232	PP1979	0.32	14/11/2023
230425	824242	PP1980	0.22	14/11/2023
230429	824251	PP1981	0.48	14/11/2023
230432	824260	PP1982	0.4	14/11/2023
230436	824270	PP1983	0.49	14/11/2023
230440	824279	PP1984	0.48	14/11/2023
230443	824288	PP1985	1.2	14/11/2023
230447	824298	PP1986	0.48	14/11/2023
230450	824307	PP1987	0.4	14/11/2023
230454	824316	PP1988	0.46	14/11/2023
230458	824326	PP1989	0.32	14/11/2023
230461	824335	PP1990	0.43	14/11/2023
230465	824344	PP1991	0.28	14/11/2023
230468	824354	PP1992	0.49	14/11/2023
230472	824363	PP1993	0.36	14/11/2023
230475	824372	PP1994	0.33	14/11/2023
230479	824382	PP1995	0.54	14/11/2023
230483	824391	PP1996	0.48	14/11/2023
230486	824400	PP1997	0.49	14/11/2023
230490	824410	PP1998	0.08	22/11/2023
230493	824419	PP1999	0.11	22/11/2023
230497	824429	PP2000	0.29	22/11/2023
230501	824438	PP2001	0.19	22/11/2023
230504	824447	PP2002	0.3	22/11/2023
230508	824457	PP2003	0.29	22/11/2023
230511	824466	PP2004	0.49	22/11/2023
230515	824475	PP2005	0.32	22/11/2023
230518	824485	PP2006	0.35	22/11/2023
230522	824494	PP2007	0.42	22/11/2023
230526	824503	PP2008	0.13	22/11/2023
230529	824513	PP2009	0.36	22/11/2023
230533	824522	PP2010	0.28	22/11/2023
230536	824531	PP2011	0.39	22/11/2023
230540	824541	PP2012	0.35	22/11/2023
230544	824550	PP2013	0.33	22/11/2023
230547	824559	PP2014	0.38	22/11/2023
230551	824569	PP2015	0.56	22/11/2023
230554	824578	PP2016	0.18	22/11/2023
230558	824587	PP2017	0.42	22/11/2023
230561	824597	PP2018	0.27	22/11/2023
230565	824606	PP2019	0.37	22/11/2023
230569	824615	PP2020	0.29	22/11/2023
230572	824625	PP2021	0.54	22/11/2023
230576	824634	PP2022	0.37	22/11/2023
230579	824643	PP2023	0.29	22/11/2023
230583	824653	PP2024	0.5	22/11/2023
230587	824662	PP2025	0.42	22/11/2023
230590	824671	PP2026	0.4	22/11/2023
230594	824681	PP2027	0.46	22/11/2023
230597	824690	PP2028	beyond dear fence	22/11/2023
230601	824699	PP2029	beyond dear fence	22/11/2023
230604	824709	PP2030	beyond dear fence	22/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230608	824718	PP2031	beyond dear fence	22/11/2023
230612	824727	PP2032	beyond dear fence	22/11/2023
230615	824737	PP2033	beyond dear fence	22/11/2023
230619	824746	PP2034	beyond dear fence	22/11/2023
230622	824755	PP2035	beyond dear fence	22/11/2023
230626	824765	PP2036	beyond dear fence	22/11/2023
230630	824774	PP2037	beyond dear fence	22/11/2023
230633	824783	PP2038	beyond dear fence	22/11/2023
230317	823932	PP2039	0.43	15/11/2023
230320	823941	PP2040	0.43	15/11/2023
230324	823951	PP2041	0.43	15/11/2023
230328	823960	PP2042	0.59	15/11/2023
230331	823969	PP2043	0.55	15/11/2023
230335	823979	PP2044	0.58	15/11/2023
230338	823988	PP2045	0.76	15/11/2023
230342	823997	PP2046	0.79	15/11/2023
230346	824007	PP2047	0.86	15/11/2023
230349	824016	PP2048	0.33	15/11/2023
230353	824025	PP2049	0.55	15/11/2023
230356	824035	PP2050	0.64	15/11/2023
230360	824044	PP2051	0.95	15/11/2023
230363	824053	PP2052	1.71	15/11/2023
230367	824063	PP2053	0.65	15/11/2023
230371	824072	PP2054	0.74	15/11/2023
230374	824081	PP2055	0.61	15/11/2023
230378	824091	PP2056	1.08	15/11/2023
230381	824100	PP2057	0.91	15/11/2023
230385	824109	PP2058	1.87	15/11/2023
230389	824119	PP2059	1.43	15/11/2023
230392	824128	PP2060	1.1	15/11/2023
230396	824137	PP2061	1.23	15/11/2023
230399	824147	PP2062	1.1	15/11/2023
230403	824156	PP2063	1.7	15/11/2023
230406	824165	PP2064	1.58	15/11/2023
230410	824175	PP2065	1.85	15/11/2023
230414	824184	PP2066	1.6	15/11/2023
230417	824193	PP2067	1.78	15/11/2023
230421	824203	PP2068	1.57	15/11/2023
230424	824212	PP2069	1.38	15/11/2023
230428	824221	PP2070	1.03	15/11/2023
230432	824231	PP2071	0.45	15/11/2023
230435	824240	PP2072	0.18	15/11/2023
230439	824249	PP2073	0.35	15/11/2023
230442	824259	PP2074	0.59	15/11/2023
230446	824268	PP2075	0.48	15/11/2023
230449	824277	PP2076	1.78	15/11/2023
230453	824287	PP2077	0.49	15/11/2023
230457	824296	PP2078	0.47	15/11/2023
230460	824305	PP2079	0.6	15/11/2023
230464	824315	PP2080	0.59	15/11/2023
230467	824324	PP2081	0.72	15/11/2023
230471	824333	PP2082	0.66	15/11/2023
230475	824343	PP2083	0.44	15/11/2023
230478	824352	PP2084	0.4	15/11/2023
230482	824361	PP2085	0.49	15/11/2023
230485	824371	PP2086	0.58	15/11/2023
230489	824380	PP2087	0.64	15/11/2023
230492	824389	PP2088	0.6	15/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230496	824399	PP2089	0.37	22/11/2023
230500	824408	PP2090	0.24	22/11/2023
230503	824418	PP2091	0.17	22/11/2023
230507	824427	PP2092	0.27	22/11/2023
230510	824436	PP2093	0.59	22/11/2023
230514	824446	PP2094	0.37	22/11/2023
230518	824455	PP2095	0.55	22/11/2023
230521	824464	PP2096	0.27	22/11/2023
230525	824474	PP2097	0.3	22/11/2023
230528	824483	PP2098	0.38	22/11/2023
230532	824492	PP2099	0.34	22/11/2023
230536	824502	PP2100	0.27	22/11/2023
230539	824511	PP2101	0.46	22/11/2023
230543	824520	PP2102	0.45	22/11/2023
230546	824530	PP2103	0.43	22/11/2023
230550	824539	PP2104	0.5	22/11/2023
230553	824548	PP2105	0.99	22/11/2023
230557	824558	PP2106	0.42	22/11/2023
230561	824567	PP2107	0.4	22/11/2023
230564	824576	PP2108	0.39	22/11/2023
230568	824586	PP2109	0.33	22/11/2023
230571	824595	PP2110	0.3	22/11/2023
230575	824604	PP2111	0.27	22/11/2023
230579	824614	PP2112	0.32	22/11/2023
230582	824623	PP2113	0.29	22/11/2023
230586	824632	PP2114	0.38	22/11/2023
230589	824642	PP2115	0.29	22/11/2023
230593	824651	PP2116	0.67	22/11/2023
230596	824660	PP2117	0.7	22/11/2023
230600	824670	PP2118	0.39	22/11/2023
230604	824679	PP2119	0.38	22/11/2023
230607	824688	PP2120	0.38	22/11/2023
230611	824698	PP2121	beyond dear fence	22/11/2023
230614	824707	PP2122	beyond dear fence	22/11/2023
230618	824716	PP2123	beyond dear fence	22/11/2023
230622	824726	PP2124	beyond dear fence	22/11/2023
230625	824735	PP2125	beyond dear fence	22/11/2023
230629	824744	PP2126	beyond dear fence	22/11/2023
230632	824754	PP2127	beyond dear fence	22/11/2023
230636	824763	PP2128	beyond dear fence	22/11/2023
230639	824772	PP2129	beyond dear fence	22/11/2023
230643	824782	PP2130	beyond dear fence	22/11/2023
230327	823930	PP2131	0.34	15/11/2023
230330	823940	PP2132	0.43	15/11/2023
230334	823949	PP2133	0.51	15/11/2023
230338	823958	PP2134	0.79	15/11/2023
230341	823968	PP2135	0.71	15/11/2023
230345	823977	PP2136	0.78	15/11/2023
230348	823986	PP2137	0.39	15/11/2023
230352	823996	PP2138	0.69	15/11/2023
230355	824005	PP2139	0.74	15/11/2023
230359	824014	PP2140	0.82	15/11/2023
230363	824024	PP2141	0.87	15/11/2023
230366	824033	PP2142	0.84	15/11/2023
230370	824042	PP2143	0.71	15/11/2023
230373	824052	PP2144	1.1	15/11/2023
230377	824061	PP2145	1.8	15/11/2023
230381	824070	PP2146	0.54	15/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230384	824080	PP2147	0.6	15/11/2023
230388	824089	PP2148	0.6	15/11/2023
230391	824098	PP2149	0.72	15/11/2023
230395	824108	PP2150	1.77	15/11/2023
230398	824117	PP2151	1.55	15/11/2023
230402	824126	PP2152	1.15	15/11/2023
230406	824136	PP2153	1.01	15/11/2023
230409	824145	PP2154	1.06	15/11/2023
230413	824154	PP2155	0.96	15/11/2023
230416	824164	PP2156	1.48	15/11/2023
230420	824173	PP2157	1.51	15/11/2023
230424	824182	PP2158	0.87	15/11/2023
230427	824192	PP2159	1.44	15/11/2023
230431	824201	PP2160	1.37	15/11/2023
230434	824210	PP2161	1.31	15/11/2023
230438	824220	PP2162	1.45	15/11/2023
230441	824229	PP2163	1.9	15/11/2023
230445	824238	PP2164	0.6	15/11/2023
230449	824248	PP2165	0.81	15/11/2023
230452	824257	PP2166	0.51	15/11/2023
230456	824266	PP2167	1.22	15/11/2023
230459	824276	PP2168	1.04	15/11/2023
230463	824285	PP2169	1.1	15/11/2023
230467	824294	PP2170	0.41	15/11/2023
230470	824304	PP2171	0.33	15/11/2023
230474	824313	PP2172	0.44	15/11/2023
230477	824322	PP2173	0.28	15/11/2023
230481	824332	PP2174	0.29	15/11/2023
230484	824341	PP2175	0.51	15/11/2023
230488	824350	PP2176	0.49	15/11/2023
230492	824360	PP2177	0.52	15/11/2023
230495	824369	PP2178	0.56	15/11/2023
230499	824378	PP2179	0.64	15/11/2023
230502	824388	PP2180	1.01	15/11/2023
230506	824397	PP2181	0.59	22/11/2023
230510	824406	PP2182	0.37	22/11/2023
230513	824416	PP2183	0.44	22/11/2023
230517	824425	PP2184	0.52	22/11/2023
230520	824435	PP2185	0.89	22/11/2023
230524	824444	PP2186	0.5	22/11/2023
230527	824453	PP2187	0.76	22/11/2023
230531	824463	PP2188	0.42	22/11/2023
230535	824472	PP2189	0.41	22/11/2023
230538	824481	PP2190	0.32	22/11/2023
230542	824491	PP2191	0.36	22/11/2023
230545	824500	PP2192	0.64	22/11/2023
230549	824509	PP2193	0.35	22/11/2023
230553	824519	PP2194	0.47	22/11/2023
230556	824528	PP2195	0.4	22/11/2023
230560	824537	PP2196	0.53	22/11/2023
230563	824547	PP2197	0.39	22/11/2023
230567	824556	PP2198	0.41	22/11/2023
230570	824565	PP2199	0.17	22/11/2023
230574	824575	PP2200	0.39	22/11/2023
230578	824584	PP2201	0.38	22/11/2023
230581	824593	PP2202	0.35	22/11/2023
230585	824603	PP2203	0.29	22/11/2023
230588	824612	PP2204	0.22	22/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230592	824621	PP2205	0.41	22/11/2023
230596	824631	PP2206	0.5	22/11/2023
230599	824640	PP2207	0.5	22/11/2023
230603	824649	PP2208	0.34	22/11/2023
230606	824659	PP2209	0.29	22/11/2023
230610	824668	PP2210	0.27	22/11/2023
230613	824677	PP2211	0.37	22/11/2023
230617	824687	PP2212	0.35	22/11/2023
230621	824696	PP2213	0.33	22/11/2023
230624	824705	PP2214	beyond dear fence	22/11/2023
230628	824715	PP2215	beyond dear fence	22/11/2023
230631	824724	PP2216	beyond dear fence	22/11/2023
230635	824733	PP2217	beyond dear fence	22/11/2023
230639	824743	PP2218	beyond dear fence	22/11/2023
230642	824752	PP2219	beyond dear fence	22/11/2023
230646	824761	PP2220	beyond dear fence	22/11/2023
230649	824771	PP2221	beyond dear fence	22/11/2023
230653	824780	PP2222	beyond dear fence	22/11/2023
230656	824789	PP2223	beyond dear fence	22/11/2023
230337	823929	PP2224	0.42	15/11/2023
230340	823938	PP2225	0.5	15/11/2023
230344	823947	PP2226	0.51	15/11/2023
230347	823957	PP2227	0.58	15/11/2023
230351	823966	PP2228	0.82	15/11/2023
230355	823975	PP2229	0.72	15/11/2023
230358	823985	PP2230	0.52	15/11/2023
230362	823994	PP2231	0.69	15/11/2023
230365	824003	PP2232	0.97	15/11/2023
230369	824013	PP2233	0.87	15/11/2023
230372	824022	PP2234	0.98	15/11/2023
230376	824031	PP2235	0.62	15/11/2023
230380	824041	PP2236	0.64	15/11/2023
230383	824050	PP2237	1.58	15/11/2023
230387	824059	PP2238	1.8	15/11/2023
230390	824069	PP2239	0.72	15/11/2023
230394	824078	PP2240	0.58	15/11/2023
230398	824087	PP2241	0.48	15/11/2023
230401	824097	PP2242	0.69	15/11/2023
230405	824106	PP2243	1.6	15/11/2023
230408	824115	PP2244	1.8	15/11/2023
230412	824125	PP2245	1.15	15/11/2023
230415	824134	PP2246	1.27	15/11/2023
230419	824143	PP2247	1.58	15/11/2023
230423	824153	PP2248	1.01	15/11/2023
230426	824162	PP2249	1.18	15/11/2023
230430	824171	PP2250	1.03	15/11/2023
230433	824181	PP2251	1.25	15/11/2023
230437	824190	PP2252	1.18	15/11/2023
230441	824199	PP2253	1.48	15/11/2023
230444	824209	PP2254	1.18	15/11/2023
230448	824218	PP2255	1.5	15/11/2023
230451	824227	PP2256	1.56	15/11/2023
230455	824237	PP2257	1.65	15/11/2023
230458	824246	PP2258	1.71	15/11/2023
230462	824255	PP2259	1.48	15/11/2023
230466	824265	PP2260	2.21	15/11/2023
230469	824274	PP2261	0.95	15/11/2023
230473	824283	PP2262	0.87	15/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230476	824293	PP2263	1.09	15/11/2023
230480	824302	PP2264	0.54	15/11/2023
230484	824311	PP2265	0.71	15/11/2023
230487	824321	PP2266	0.6	15/11/2023
230491	824330	PP2267	0.63	15/11/2023
230494	824339	PP2268	0.27	15/11/2023
230498	824349	PP2269	0.59	15/11/2023
230501	824358	PP2270	0.59	15/11/2023
230505	824367	PP2271	0.57	15/11/2023
230509	824377	PP2272	0.63	15/11/2023
230512	824386	PP2273	0.69	15/11/2023
230516	824395	PP2274	0.58	23/11/2023
230519	824405	PP2275	0.69	23/11/2023
230523	824414	PP2276	0.61	23/11/2023
230527	824424	PP2277	1.17	23/11/2023
230530	824433	PP2278	0.74	23/11/2023
230534	824442	PP2279	0.45	23/11/2023
230537	824452	PP2280	0.48	23/11/2023
230541	824461	PP2281	0.32	23/11/2023
230544	824470	PP2282	0.13	23/11/2023
230548	824480	PP2283	0.3	23/11/2023
230552	824489	PP2284	0.26	23/11/2023
230555	824498	PP2285	0.84	23/11/2023
230559	824508	PP2286	0.41	23/11/2023
230562	824517	PP2287	0.51	23/11/2023
230566	824526	PP2288	0.32	23/11/2023
230570	824536	PP2289	0.42	23/11/2023
230573	824545	PP2290	0.48	23/11/2023
230577	824554	PP2291	0.45	23/11/2023
230580	824564	PP2292	0.28	23/11/2023
230584	824573	PP2293	0.34	23/11/2023
230587	824582	PP2294	0.47	23/11/2023
230591	824592	PP2295	0.38	23/11/2023
230595	824601	PP2296	0.55	23/11/2023
230598	824610	PP2297	0.43	23/11/2023
230602	824620	PP2298	0.29	23/11/2023
230605	824629	PP2299	0.4	23/11/2023
230609	824638	PP2300	0.38	23/11/2023
230613	824648	PP2301	0.27	23/11/2023
230616	824657	PP2302	0.52	23/11/2023
230620	824666	PP2303	0.44	23/11/2023
230623	824676	PP2304	0.31	23/11/2023
230627	824685	PP2305	0.15	23/11/2023
230630	824694	PP2306	0.29	23/11/2023
230634	824704	PP2307	0.36	23/11/2023
230638	824713	PP2308	beyond dear fence	23/11/2023
230641	824722	PP2309	beyond dear fence	23/11/2023
230645	824732	PP2310	beyond dear fence	23/11/2023
230648	824741	PP2311	beyond dear fence	23/11/2023
230652	824750	PP2312	beyond dear fence	23/11/2023
230656	824760	PP2313	beyond dear fence	23/11/2023
230659	824769	PP2314	beyond dear fence	23/11/2023
230663	824778	PP2315	beyond dear fence	23/11/2023
230666	824788	PP2316	beyond dear fence	23/11/2023
230670	824797	PP2317	beyond dear fence	23/11/2023
230343	823918	PP2318	0.27	15/11/2023
230346	823927	PP2319	0.74	15/11/2023
230350	823936	PP2320	0.59	15/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230354	823946	PP2321	0.78	15/11/2023
230357	823955	PP2322	0.8	15/11/2023
230361	823964	PP2323	0.87	15/11/2023
230364	823974	PP2324	0.69	15/11/2023
230368	823983	PP2325	0.35	15/11/2023
230372	823992	PP2326	1.12	15/11/2023
230375	824002	PP2327	0.63	15/11/2023
230379	824011	PP2328	0.7	15/11/2023
230382	824020	PP2329	0.77	15/11/2023
230386	824030	PP2330	0.78	15/11/2023
230389	824039	PP2331	0.67	15/11/2023
230393	824048	PP2332	1.87	15/11/2023
230397	824058	PP2333	1.49	15/11/2023
230400	824067	PP2334	0.75	15/11/2023
230404	824076	PP2335	0.57	15/11/2023
230407	824086	PP2336	0.5	15/11/2023
230411	824095	PP2337	1.44	15/11/2023
230415	824104	PP2338	1.34	15/11/2023
230418	824114	PP2339	1.82	15/11/2023
230422	824123	PP2340	0.79	15/11/2023
230425	824132	PP2341	0.84	15/11/2023
230429	824142	PP2342	0.9	15/11/2023
230432	824151	PP2343	1.11	15/11/2023
230436	824160	PP2344	0.69	15/11/2023
230440	824170	PP2345	1.32	15/11/2023
230443	824179	PP2346	1.43	15/11/2023
230447	824188	PP2347	1.25	15/11/2023
230450	824198	PP2348	1.39	15/11/2023
230454	824207	PP2349	1.72	15/11/2023
230458	824216	PP2350	1.54	15/11/2023
230461	824226	PP2351	1.37	15/11/2023
230465	824235	PP2352	1.64	15/11/2023
230468	824244	PP2353	1.6	15/11/2023
230472	824254	PP2354	1.47	15/11/2023
230475	824263	PP2355	1.82	15/11/2023
230479	824272	PP2356	1.79	15/11/2023
230483	824282	PP2357	0.84	15/11/2023
230486	824291	PP2358	1.06	15/11/2023
230490	824300	PP2359	0.69	15/11/2023
230493	824310	PP2360	0.76	15/11/2023
230497	824319	PP2361	0.51	15/11/2023
230501	824328	PP2362	0.68	15/11/2023
230504	824338	PP2363	0.28	15/11/2023
230508	824347	PP2364	0.73	15/11/2023
230511	824356	PP2365	0.58	15/11/2023
230515	824366	PP2366	0.6	15/11/2023
230518	824375	PP2367	0.62	15/11/2023
230522	824384	PP2368	0.74	15/11/2023
230526	824394	PP2369	0.94	23/11/2023
230529	824403	PP2370	0.83	23/11/2023
230533	824413	PP2371	0.51	23/11/2023
230536	824422	PP2372	0.43	23/11/2023
230540	824431	PP2373	0.73	23/11/2023
230544	824441	PP2374	0.49	23/11/2023
230547	824450	PP2375	0.48	23/11/2023
230551	824459	PP2376	0.25	23/11/2023
230554	824469	PP2377	0.07	23/11/2023
230558	824478	PP2378	0.14	23/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230562	824487	PP2379	0.2	23/11/2023
230565	824497	PP2380	0.31	23/11/2023
230569	824506	PP2381	0.5	23/11/2023
230572	824515	PP2382	0.39	23/11/2023
230576	824525	PP2383	0.53	23/11/2023
230579	824534	PP2384	0.45	23/11/2023
230583	824543	PP2385	0.43	23/11/2023
230587	824553	PP2386	0.39	23/11/2023
230590	824562	PP2387	0.27	23/11/2023
230594	824571	PP2388	0.34	23/11/2023
230597	824581	PP2389	0.14	23/11/2023
230601	824590	PP2390	0.47	23/11/2023
230605	824599	PP2391	0.35	23/11/2023
230608	824609	PP2392	0.27	23/11/2023
230612	824618	PP2393	0.4	23/11/2023
230615	824627	PP2394	0.19	23/11/2023
230619	824637	PP2395	0.36	23/11/2023
230622	824646	PP2396	0.66	23/11/2023
230626	824655	PP2397	0.42	23/11/2023
230630	824665	PP2398	0.56	23/11/2023
230633	824674	PP2399	0.39	23/11/2023
230637	824683	PP2400	0.51	23/11/2023
230640	824693	PP2401	0.43	23/11/2023
230644	824702	PP2402	0.29	23/11/2023
230648	824711	PP2403	beyond dear fence	23/11/2023
230651	824721	PP2404	beyond dear fence	23/11/2023
230655	824730	PP2405	beyond dear fence	23/11/2023
230658	824739	PP2406	beyond dear fence	23/11/2023
230662	824749	PP2407	beyond dear fence	23/11/2023
230665	824758	PP2408	beyond dear fence	23/11/2023
230669	824767	PP2409	beyond dear fence	23/11/2023
230673	824777	PP2410	beyond dear fence	23/11/2023
230676	824786	PP2411	beyond dear fence	23/11/2023
230680	824795	PP2412	beyond dear fence	23/11/2023
230683	824805	PP2413	beyond dear fence	23/11/2023
230349	823907	PP2414	0.47	15/11/2023
230353	823916	PP2415	0.89	15/11/2023
230356	823925	PP2416	1.38	15/11/2023
230360	823935	PP2417	1.44	15/11/2023
230364	823944	PP2418	1.37	15/11/2023
230367	823953	PP2419	1.1	15/11/2023
230371	823963	PP2420	0.41	15/11/2023
230374	823972	PP2421	0.72	15/11/2023
230378	823981	PP2422	2.49	15/11/2023
230381	823991	PP2423	2.44	15/11/2023
230385	824000	PP2424	0.58	15/11/2023
230389	824009	PP2425	0.41	15/11/2023
230392	824019	PP2426	0.55	15/11/2023
230396	824028	PP2427	0.84	15/11/2023
230399	824037	PP2428	1.11	15/11/2023
230403	824047	PP2429	1.32	15/11/2023
230407	824056	PP2430	1.38	15/11/2023
230410	824065	PP2431	0.87	15/11/2023
230414	824075	PP2432	0.58	15/11/2023
230417	824084	PP2433	0.72	15/11/2023
230421	824093	PP2434	0.39	15/11/2023
230424	824103	PP2435	0.52	15/11/2023
230428	824112	PP2436	1.01	15/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230432	824121	PP2437	1.18	15/11/2023
230435	824131	PP2438	0.67	15/11/2023
230439	824140	PP2439	0.64	16/11/2023
230442	824149	PP2440	0.75	16/11/2023
230446	824159	PP2441	0.84	16/11/2023
230450	824168	PP2442	1.14	16/11/2023
230453	824177	PP2443	1.27	16/11/2023
230457	824187	PP2444	1.33	16/11/2023
230460	824196	PP2445	1.23	16/11/2023
230464	824205	PP2446	0.59	16/11/2023
230467	824215	PP2447	1.81	16/11/2023
230471	824224	PP2448	1.42	16/11/2023
230475	824233	PP2449	1.54	16/11/2023
230478	824243	PP2450	1.79	16/11/2023
230482	824252	PP2451	1.57	16/11/2023
230485	824261	PP2452	1.47	16/11/2023
230489	824271	PP2453	1.68	16/11/2023
230493	824280	PP2454	1.92	16/11/2023
230496	824289	PP2455	1.94	16/11/2023
230500	824299	PP2456	1.1	16/11/2023
230503	824308	PP2457	0.74	16/11/2023
230507	824317	PP2458	0.65	16/11/2023
230510	824327	PP2459	0.44	16/11/2023
230514	824336	PP2460	0.3	16/11/2023
230518	824345	PP2461	0.46	16/11/2023
230521	824355	PP2462	0.39	16/11/2023
230525	824364	PP2463	0.28	16/11/2023
230528	824373	PP2464	1.02	16/11/2023
230532	824383	PP2465	1.12	29/11/2023
230536	824392	PP2466	1.15	29/11/2023
230539	824402	PP2467	1.44	29/11/2023
230543	824411	PP2468	1.86	29/11/2023
230546	824420	PP2469	1	29/11/2023
230550	824430	PP2470	0.33	29/11/2023
230553	824439	PP2471	0.48	29/11/2023
230557	824448	PP2472	0.4	29/11/2023
230561	824458	PP2473	0.39	29/11/2023
230564	824467	PP2474	0.27	29/11/2023
230568	824476	PP2475	0.21	29/11/2023
230571	824486	PP2476	0.32	29/11/2023
230575	824495	PP2477	0.33	29/11/2023
230579	824504	PP2478	0.25	29/11/2023
230582	824514	PP2479	0.58	29/11/2023
230586	824523	PP2480	0.3	29/11/2023
230589	824532	PP2481	0.32	29/11/2023
230593	824542	PP2482	0.24	29/11/2023
230596	824551	PP2483	0.47	29/11/2023
230600	824560	PP2484	0.24	29/11/2023
230604	824570	PP2485	0.57	29/11/2023
230607	824579	PP2486	0.36	29/11/2023
230611	824588	PP2487	0.53	29/11/2023
230614	824598	PP2488	0.35	29/11/2023
230618	824607	PP2489	0.3	29/11/2023
230622	824616	PP2490	0.32	29/11/2023
230625	824626	PP2491	0.36	29/11/2023
230629	824635	PP2492	0.73	29/11/2023
230632	824644	PP2493	0.84	29/11/2023
230636	824654	PP2494	0.5	29/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230639	824663	PP2495	0.39	29/11/2023
230643	824672	PP2496	0.34	29/11/2023
230647	824682	PP2497	0.4	29/11/2023
230650	824691	PP2498	0.39	29/11/2023
230654	824700	PP2499	0.42	29/11/2023
230657	824710	PP2500	0.91	29/11/2023
230661	824719	PP2501	1.18	29/11/2023
230665	824728	PP2502	beyond dear fence	29/11/2023
230668	824738	PP2503	beyond dear fence	29/11/2023
230672	824747	PP2504	beyond dear fence	29/11/2023
230675	824756	PP2505	beyond dear fence	29/11/2023
230679	824766	PP2506	beyond dear fence	29/11/2023
230682	824775	PP2507	beyond dear fence	29/11/2023
230686	824784	PP2508	beyond dear fence	29/11/2023
230690	824794	PP2509	beyond dear fence	29/11/2023
230693	824803	PP2510	beyond dear fence	29/11/2023
230697	824812	PP2511	beyond dear fence	29/11/2023
230355	823896	PP2512	0.46	16/11/2023
230359	823905	PP2513	0.56	16/11/2023
230363	823914	PP2514	0.61	16/11/2023
230366	823924	PP2515	0.77	16/11/2023
230370	823933	PP2516	0.94	16/11/2023
230373	823942	PP2517	0.82	16/11/2023
230377	823952	PP2518	0.5	16/11/2023
230381	823961	PP2519	0.81	16/11/2023
230384	823970	PP2520	0.85	16/11/2023
230388	823980	PP2521	2.57	16/11/2023
230391	823989	PP2522	1.67	16/11/2023
230395	823998	PP2523	0.91	16/11/2023
230398	824008	PP2524	0.62	16/11/2023
230402	824017	PP2525	0.56	16/11/2023
230406	824026	PP2526	0.65	16/11/2023
230409	824036	PP2527	0.79	16/11/2023
230413	824045	PP2528	1.6	16/11/2023
230416	824054	PP2529	1.03	16/11/2023
230420	824064	PP2530	0.54	16/11/2023
230424	824073	PP2531	0.86	16/11/2023
230427	824082	PP2532	0.69	16/11/2023
230431	824092	PP2533	0.88	16/11/2023
230434	824101	PP2534	1.68	16/11/2023
230438	824110	PP2535	1.54	16/11/2023
230441	824120	PP2536	1.81	16/11/2023
230445	824129	PP2537	0.85	16/11/2023
230449	824138	PP2538	0.49	16/11/2023
230452	824148	PP2539	0.53	16/11/2023
230456	824157	PP2540	0.64	16/11/2023
230459	824166	PP2541	1	16/11/2023
230463	824176	PP2542	0.59	16/11/2023
230467	824185	PP2543	0.4	16/11/2023
230470	824194	PP2544	1.04	16/11/2023
230474	824204	PP2545	1.65	16/11/2023
230477	824213	PP2546	0.88	16/11/2023
230481	824222	PP2547	1.29	16/11/2023
230484	824232	PP2548	1.46	16/11/2023
230488	824241	PP2549	1.69	16/11/2023
230492	824250	PP2550	1.74	16/11/2023
230495	824260	PP2551	2.54	16/11/2023
230499	824269	PP2552	2.11	16/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230502	824278	PP2553	1.65	16/11/2023
230506	824288	PP2554	1.43	16/11/2023
230510	824297	PP2555	1.8	16/11/2023
230513	824306	PP2556	1.36	16/11/2023
230517	824316	PP2557	0.89	16/11/2023
230520	824325	PP2558	0.55	16/11/2023
230524	824334	PP2559	0.51	16/11/2023
230527	824344	PP2560	0.65	16/11/2023
230531	824353	PP2561	0.62	16/11/2023
230535	824362	PP2562	0.56	16/11/2023
230538	824372	PP2563	1.39	16/11/2023
230542	824381	PP2564	1	29/11/2023
230545	824390	PP2565	1.55	29/11/2023
230549	824400	PP2566	1	29/11/2023
230553	824409	PP2567	0.53	29/11/2023
230556	824419	PP2568	2.37	29/11/2023
230560	824428	PP2569	0.66	29/11/2023
230563	824437	PP2570	0.52	29/11/2023
230567	824447	PP2571	0.33	29/11/2023
230570	824456	PP2572	0.34	29/11/2023
230574	824465	PP2573	0.19	29/11/2023
230578	824475	PP2574	0.42	29/11/2023
230581	824484	PP2575	0.18	29/11/2023
230585	824493	PP2576	0.19	29/11/2023
230588	824503	PP2577	0.22	29/11/2023
230592	824512	PP2578	0.26	29/11/2023
230596	824521	PP2579	0.26	29/11/2023
230599	824531	PP2580	0.56	29/11/2023
230603	824540	PP2581	0.54	29/11/2023
230606	824549	PP2582	0.29	29/11/2023
230610	824559	PP2583	0.44	29/11/2023
230613	824568	PP2584	0.52	29/11/2023
230617	824577	PP2585	0.41	29/11/2023
230621	824587	PP2586	0.37	29/11/2023
230624	824596	PP2587	0.41	29/11/2023
230628	824605	PP2588	0.43	29/11/2023
230631	824615	PP2589	0.33	29/11/2023
230635	824624	PP2590	0.32	29/11/2023
230639	824633	PP2591	0.92	29/11/2023
230642	824643	PP2592	0.76	29/11/2023
230646	824652	PP2593	0.21	29/11/2023
230649	824661	PP2594	0.49	29/11/2023
230653	824671	PP2595	0.67	29/11/2023
230656	824680	PP2596	0.45	29/11/2023
230660	824689	PP2597	0.25	29/11/2023
230664	824699	PP2598	0.39	29/11/2023
230667	824708	PP2599	0.9	29/11/2023
230671	824717	PP2600	1.31	29/11/2023
230674	824727	PP2601	beyond deer fence	29/11/2023
230678	824736	PP2602	beyond deer fence	29/11/2023
230682	824745	PP2603	beyond deer fence	29/11/2023
230685	824755	PP2604	beyond deer fence	29/11/2023
230689	824764	PP2605	beyond deer fence	29/11/2023
230692	824773	PP2606	beyond deer fence	29/11/2023
230696	824783	PP2607	beyond deer fence	29/11/2023
230699	824792	PP2608	beyond deer fence	29/11/2023
230703	824801	PP2609	beyond deer fence	29/11/2023
230707	824811	PP2610	beyond deer fence	29/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230710	824820	PP2611	beyond dear fence	29/11/2023
230362	823885	PP2612	1.1	16/11/2023
230365	823894	PP2613	0.6	16/11/2023
230369	823903	PP2614	0.44	16/11/2023
230372	823913	PP2615	0.52	16/11/2023
230376	823922	PP2616	0.32	16/11/2023
230380	823931	PP2617	0.53	16/11/2023
230383	823941	PP2618	0.5	16/11/2023
230387	823950	PP2619	0.6	16/11/2023
230390	823959	PP2620	1.68	16/11/2023
230394	823969	PP2621	1.39	16/11/2023
230398	823978	PP2622	1.3	16/11/2023
230401	823987	PP2623	0.69	16/11/2023
230405	823997	PP2624	0.8	16/11/2023
230408	824006	PP2625	0.65	16/11/2023
230412	824015	PP2626	1.2	16/11/2023
230415	824025	PP2627	1.31	16/11/2023
230419	824034	PP2628	1.38	16/11/2023
230423	824043	PP2629	0.66	16/11/2023
230426	824053	PP2630	0.49	16/11/2023
230430	824062	PP2631	0.72	16/11/2023
230433	824071	PP2632	1	16/11/2023
230437	824081	PP2633	1.13	16/11/2023
230441	824090	PP2634	1.28	16/11/2023
230444	824099	PP2635	1.01	16/11/2023
230448	824109	PP2636	0.98	16/11/2023
230451	824118	PP2637	1.17	16/11/2023
230455	824127	PP2638	0.69	16/11/2023
230458	824137	PP2639	0.7	16/11/2023
230462	824146	PP2640	0.59	16/11/2023
230466	824155	PP2641	0.48	16/11/2023
230469	824165	PP2642	0.69	16/11/2023
230473	824174	PP2643	0.41	16/11/2023
230476	824183	PP2644	0.62	16/11/2023
230480	824193	PP2645	0.87	16/11/2023
230484	824202	PP2646	1.1	16/11/2023
230487	824211	PP2647	1.24	16/11/2023
230491	824221	PP2648	0.85	16/11/2023
230494	824230	PP2649	1.75	16/11/2023
230498	824239	PP2650	1.1	16/11/2023
230501	824249	PP2651	1.12	16/11/2023
230505	824258	PP2652	1.05	16/11/2023
230509	824267	PP2653	1.24	16/11/2023
230512	824277	PP2654	2.82	16/11/2023
230516	824286	PP2655	2.01	16/11/2023
230519	824295	PP2656	2.1	16/11/2023
230523	824305	PP2657	1.47	16/11/2023
230527	824314	PP2658	0.92	16/11/2023
230530	824323	PP2659	0.73	16/11/2023
230534	824333	PP2660	0.79	16/11/2023
230537	824342	PP2661	0.73	16/11/2023
230541	824351	PP2662	0.32	16/11/2023
230544	824361	PP2663	0.32	16/11/2023
230548	824370	PP2664	0.41	16/11/2023
230552	824379	PP2665	0.83	29/11/2023
230555	824389	PP2666	1.19	29/11/2023
230559	824398	PP2667	1.43	29/11/2023
230562	824408	PP2668	2.35	29/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230566	824417	PP2669	2.54	29/11/2023
230570	824426	PP2670	0.56	29/11/2023
230573	824436	PP2671	0.29	29/11/2023
230577	824445	PP2672	0.35	29/11/2023
230580	824454	PP2673	0.42	29/11/2023
230584	824464	PP2674	0.28	29/11/2023
230587	824473	PP2675	0.36	29/11/2023
230591	824482	PP2676	0.27	29/11/2023
230595	824492	PP2677	0.36	29/11/2023
230598	824501	PP2678	0.48	29/11/2023
230602	824510	PP2679	0.35	29/11/2023
230605	824520	PP2680	0.28	29/11/2023
230609	824529	PP2681	0.27	29/11/2023
230613	824538	PP2682	0.4	29/11/2023
230616	824548	PP2683	0.43	29/11/2023
230620	824557	PP2684	0.4	29/11/2023
230623	824566	PP2685	0.43	29/11/2023
230627	824576	PP2686	0.42	29/11/2023
230631	824585	PP2687	0.36	29/11/2023
230634	824594	PP2688	0.43	29/11/2023
230638	824604	PP2689	0.37	29/11/2023
230641	824613	PP2690	0.3	29/11/2023
230645	824622	PP2691	0.36	29/11/2023
230648	824632	PP2692	0.39	29/11/2023
230652	824641	PP2693	0.31	29/11/2023
230656	824650	PP2694	0.28	29/11/2023
230659	824660	PP2695	0.3	29/11/2023
230663	824669	PP2696	0.58	29/11/2023
230666	824678	PP2697	0.36	29/11/2023
230670	824688	PP2698	0.61	29/11/2023
230674	824697	PP2699	0.7	29/11/2023
230677	824706	PP2700	0.85	29/11/2023
230681	824716	PP2701	0.85	29/11/2023
230684	824725	PP2702	1.14	29/11/2023
230688	824734	PP2703	beyond dear fence	29/11/2023
230691	824744	PP2704	beyond dear fence	29/11/2023
230695	824753	PP2705	beyond dear fence	29/11/2023
230699	824762	PP2706	beyond dear fence	29/11/2023
230702	824772	PP2707	beyond dear fence	29/11/2023
230706	824781	PP2708	beyond dear fence	29/11/2023
230709	824790	PP2709	beyond dear fence	29/11/2023
230713	824800	PP2710	beyond dear fence	29/11/2023
230717	824809	PP2711	beyond dear fence	29/11/2023
230720	824818	PP2712	beyond dear fence	29/11/2023
230724	824828	PP2713	beyond dear fence	29/11/2023
230372	823883	PP2714	0.96	16/11/2023
230375	823892	PP2715	0.66	16/11/2023
230379	823902	PP2716	0.63	16/11/2023
230382	823911	PP2717	0.58	16/11/2023
230386	823920	PP2718	0.7	16/11/2023
230390	823930	PP2719	0.68	16/11/2023
230393	823939	PP2720	1.2	16/11/2023
230397	823948	PP2721	1.12	16/11/2023
230400	823958	PP2722	1.57	16/11/2023
230404	823967	PP2723	1.42	16/11/2023
230407	823976	PP2724	0.67	16/11/2023
230411	823986	PP2725	0.79	16/11/2023
230415	823995	PP2726	1.94	16/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230418	824004	PP2727	2.22	16/11/2023
230422	824014	PP2728	2.64	16/11/2023
230425	824023	PP2729	1.28	16/11/2023
230429	824032	PP2730	0.85	16/11/2023
230433	824042	PP2731	0.71	16/11/2023
230436	824051	PP2732	0.76	16/11/2023
230440	824060	PP2733	0.77	16/11/2023
230443	824070	PP2734	0.67	16/11/2023
230447	824079	PP2735	0.52	16/11/2023
230450	824088	PP2736	0.57	16/11/2023
230454	824098	PP2737	0.24	16/11/2023
230458	824107	PP2738	0.84	16/11/2023
230461	824116	PP2739	1.18	16/11/2023
230465	824126	PP2740	0.69	16/11/2023
230468	824135	PP2741	0.67	16/11/2023
230472	824144	PP2742	0.65	16/11/2023
230476	824154	PP2743	0.65	16/11/2023
230479	824163	PP2744	0.57	16/11/2023
230483	824172	PP2745	0.51	16/11/2023
230486	824182	PP2746	0.54	16/11/2023
230490	824191	PP2747	0.72	16/11/2023
230493	824200	PP2748	0.87	16/11/2023
230497	824210	PP2749	1	16/11/2023
230501	824219	PP2750	1.51	16/11/2023
230504	824228	PP2751	1.57	16/11/2023
230508	824238	PP2752	1.49	16/11/2023
230511	824247	PP2753	2.48	16/11/2023
230515	824256	PP2754	2.73	16/11/2023
230519	824266	PP2755	2.81	16/11/2023
230522	824275	PP2756	2.82	16/11/2023
230526	824284	PP2757	2.31	16/11/2023
230529	824294	PP2758	2.39	16/11/2023
230533	824303	PP2759	1.73	16/11/2023
230536	824312	PP2760	1.1	16/11/2023
230540	824322	PP2761	0.88	16/11/2023
230544	824331	PP2762	0.61	16/11/2023
230547	824340	PP2763	0.58	16/11/2023
230551	824350	PP2764	0.5	16/11/2023
230554	824359	PP2765	0.45	16/11/2023
230558	824368	PP2766	0.46	16/11/2023
230562	824378	PP2767	0.4	29/11/2023
230565	824387	PP2768	1.46	29/11/2023
230569	824397	PP2769	1.91	29/11/2023
230572	824406	PP2770	2.45	29/11/2023
230576	824415	PP2771	1.36	29/11/2023
230579	824425	PP2772	1.31	29/11/2023
230583	824434	PP2773	0.87	29/11/2023
230587	824443	PP2774	0.39	29/11/2023
230590	824453	PP2775	0.33	29/11/2023
230594	824462	PP2776	0.4	29/11/2023
230597	824471	PP2777	0.23	29/11/2023
230601	824481	PP2778	0.33	29/11/2023
230605	824490	PP2779	0.36	29/11/2023
230608	824499	PP2780	0.27	29/11/2023
230612	824509	PP2781	0.48	29/11/2023
230615	824518	PP2782	0.37	29/11/2023
230619	824527	PP2783	0.47	29/11/2023
230622	824537	PP2784	0.66	29/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230626	824546	PP2785	0.49	29/11/2023
230630	824555	PP2786	0.39	29/11/2023
230633	824565	PP2787	0.79	29/11/2023
230637	824574	PP2788	0.57	29/11/2023
230640	824583	PP2789	0.59	29/11/2023
230644	824593	PP2790	0.57	29/11/2023
230648	824602	PP2791	0.57	29/11/2023
230651	824611	PP2792	0.29	29/11/2023
230655	824621	PP2793	0.39	29/11/2023
230658	824630	PP2794	0.2	29/11/2023
230662	824639	PP2795	0.08	29/11/2023
230665	824649	PP2796	0.39	29/11/2023
230669	824658	PP2797	0.34	29/11/2023
230673	824667	PP2798	0.35	29/11/2023
230676	824677	PP2799	0.36	29/11/2023
230680	824686	PP2800	0.57	29/11/2023
230683	824695	PP2801	0.54	29/11/2023
230687	824705	PP2802	0.31	29/11/2023
230691	824714	PP2803	0.31	29/11/2023
230694	824723	PP2804	0.71	29/11/2023
230698	824733	PP2805	1.34	29/11/2023
230701	824742	PP2806	beyond deer fence	29/11/2023
230705	824751	PP2807	beyond deer fence	29/11/2023
230708	824761	PP2808	beyond deer fence	29/11/2023
230712	824770	PP2809	beyond deer fence	29/11/2023
230716	824779	PP2810	beyond deer fence	29/11/2023
230719	824789	PP2811	beyond deer fence	29/11/2023
230723	824798	PP2812	beyond deer fence	29/11/2023
230726	824807	PP2813	beyond deer fence	29/11/2023
230730	824817	PP2814	beyond deer fence	29/11/2023
230734	824826	PP2815	beyond deer fence	29/11/2023
230737	824835	PP2816	beyond deer fence	29/11/2023
230378	823872	PP2817	0.44	17/11/2023
230381	823881	PP2818	0.6	17/11/2023
230385	823891	PP2819	0.74	17/11/2023
230389	823900	PP2820	0.85	17/11/2023
230392	823909	PP2821	0.72	17/11/2023
230396	823919	PP2822	0.51	17/11/2023
230399	823928	PP2823	0.38	17/11/2023
230403	823937	PP2824	0.56	17/11/2023
230407	823947	PP2825	0.44	17/11/2023
230410	823956	PP2826	0.49	17/11/2023
230414	823965	PP2827	0.87	17/11/2023
230417	823975	PP2828	1.59	17/11/2023
230421	823984	PP2829	2.03	17/11/2023
230424	823993	PP2830	2.17	17/11/2023
230428	824003	PP2831	1.76	17/11/2023
230432	824012	PP2832	1.29	17/11/2023
230435	824021	PP2833	0.93	17/11/2023
230439	824031	PP2834	0.77	17/11/2023
230442	824040	PP2835	0.91	17/11/2023
230446	824049	PP2836	0.96	17/11/2023
230450	824059	PP2837	0.63	17/11/2023
230453	824068	PP2838	0.49	17/11/2023
230457	824077	PP2839	0.89	17/11/2023
230460	824087	PP2840	0.57	17/11/2023
230464	824096	PP2841	0.52	17/11/2023
230467	824105	PP2842	0.5	17/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230471	824115	PP2843	0.61	17/11/2023
230475	824124	PP2844	0.69	17/11/2023
230478	824133	PP2845	0.77	17/11/2023
230482	824143	PP2846	0.56	17/11/2023
230485	824152	PP2847	0.68	17/11/2023
230489	824161	PP2848	0.44	17/11/2023
230493	824171	PP2849	0.6	17/11/2023
230496	824180	PP2850	0.69	17/11/2023
230500	824189	PP2851	0.62	17/11/2023
230503	824199	PP2852	0.69	17/11/2023
230507	824208	PP2853	0.88	17/11/2023
230510	824217	PP2854	1.25	17/11/2023
230514	824227	PP2855	1.42	17/11/2023
230518	824236	PP2856	1.02	17/11/2023
230521	824245	PP2857	1.91	17/11/2023
230525	824255	PP2858	2.47	17/11/2023
230528	824264	PP2859	2.89	17/11/2023
230532	824273	PP2860	2.7	17/11/2023
230536	824283	PP2861	2.64	17/11/2023
230539	824292	PP2862	2.64	17/11/2023
230543	824301	PP2863	2.16	17/11/2023
230546	824311	PP2864	1.18	17/11/2023
230550	824320	PP2865	1.1	17/11/2023
230553	824329	PP2866	0.75	17/11/2023
230557	824339	PP2867	0.49	17/11/2023
230561	824348	PP2868	0.1	17/11/2023
230564	824357	PP2869	0.51	17/11/2023
230568	824367	PP2870	0.26	17/11/2023
230571	824376	PP2871	0.29	23/11/2023
230575	824386	PP2872	0.19	23/11/2023
230579	824395	PP2873	1.76	23/11/2023
230582	824404	PP2874	1.66	23/11/2023
230586	824414	PP2875	2.38	23/11/2023
230589	824423	PP2876	2.26	23/11/2023
230593	824432	PP2877	2.37	23/11/2023
230596	824442	PP2878	0.78	23/11/2023
230600	824451	PP2879	0.36	23/11/2023
230604	824460	PP2880	0.45	23/11/2023
230607	824470	PP2881	0.37	23/11/2023
230611	824479	PP2882	0.27	23/11/2023
230614	824488	PP2883	0.27	23/11/2023
230618	824498	PP2884	0.57	23/11/2023
230622	824507	PP2885	0.42	23/11/2023
230625	824516	PP2886	0.37	23/11/2023
230629	824526	PP2887	0.36	23/11/2023
230632	824535	PP2888	0.38	23/11/2023
230636	824544	PP2889	0.38	23/11/2023
230639	824554	PP2890	0.55	23/11/2023
230643	824563	PP2891	0.24	23/11/2023
230647	824572	PP2892	0.55	23/11/2023
230650	824582	PP2893	0.75	23/11/2023
230654	824591	PP2894	0.32	23/11/2023
230657	824600	PP2895	0.51	23/11/2023
230661	824610	PP2896	0.37	23/11/2023
230665	824619	PP2897	0.1	23/11/2023
230668	824628	PP2898	0.42	23/11/2023
230672	824638	PP2899	0.35	23/11/2023
230675	824647	PP2900	0.16	23/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230679	824656	PP2901	0.3	23/11/2023
230682	824666	PP2902	0.45	23/11/2023
230686	824675	PP2903	0.47	23/11/2023
230690	824684	PP2904	0.2	23/11/2023
230693	824694	PP2905	0.35	23/11/2023
230697	824703	PP2906	0.46	23/11/2023
230700	824712	PP2907	0.62	23/11/2023
230704	824722	PP2908	0.67	23/11/2023
230708	824731	PP2909	0.36	23/11/2023
230711	824740	PP2910	0.7	23/11/2023
230715	824750	PP2911	beyond deer fence	23/11/2023
230718	824759	PP2912	beyond deer fence	23/11/2023
230722	824768	PP2913	beyond deer fence	23/11/2023
230725	824778	PP2914	beyond deer fence	23/11/2023
230729	824787	PP2915	beyond deer fence	23/11/2023
230733	824796	PP2916	beyond deer fence	23/11/2023
230736	824806	PP2917	beyond deer fence	23/11/2023
230740	824815	PP2918	beyond deer fence	23/11/2023
230743	824824	PP2919	beyond deer fence	23/11/2023
230747	824834	PP2920	beyond deer fence	23/11/2023
230751	824843	PP2921	beyond deer fence	23/11/2023
230388	823870	PP2922	1.4	14/11/2023
230391	823880	PP2923	0.46	14/11/2023
230395	823889	PP2924	0.52	14/11/2023
230398	823898	PP2925	0.63	14/11/2023
230402	823908	PP2926	0.55	14/11/2023
230406	823917	PP2927	0.44	14/11/2023
230409	823926	PP2928	0.14	14/11/2023
230413	823936	PP2929	0.3	14/11/2023
230416	823945	PP2930	0.38	14/11/2023
230420	823954	PP2931	0.87	15/11/2023
230424	823964	PP2932	1.9	15/11/2023
230427	823973	PP2933	1.2	15/11/2023
230431	823982	PP2934	1.12	15/11/2023
230434	823992	PP2935	0.95	15/11/2023
230438	824001	PP2936	0.3	15/11/2023
230441	824010	PP2937	0.44	15/11/2023
230445	824020	PP2938	0.49	15/11/2023
230449	824029	PP2939	0.54	15/11/2023
230452	824038	PP2940	0.79	15/11/2023
230456	824048	PP2941	0.59	15/11/2023
230459	824057	PP2942	0.55	15/11/2023
230463	824066	PP2943	0.46	15/11/2023
230467	824076	PP2944	0.71	15/11/2023
230470	824085	PP2945	0.71	15/11/2023
230474	824094	PP2946	0.57	15/11/2023
230477	824104	PP2947	0.18	15/11/2023
230481	824113	PP2948	0.61	15/11/2023
230484	824122	PP2949	0.39	15/11/2023
230488	824132	PP2950	0.49	15/11/2023
230492	824141	PP2951	0.49	15/11/2023
230495	824150	PP2952	0.37	15/11/2023
230499	824160	PP2953	0.18	15/11/2023
230502	824169	PP2954	0.37	15/11/2023
230506	824178	PP2955	0.46	15/11/2023
230510	824188	PP2956	0.92	15/11/2023
230513	824197	PP2957	0.97	15/11/2023
230517	824206	PP2958	1.46	15/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230520	824216	PP2959	1.17	15/11/2023
230524	824225	PP2960	0.92	15/11/2023
230527	824234	PP2961	0.82	15/11/2023
230531	824244	PP2962	1.3	15/11/2023
230535	824253	PP2963	1.66	15/11/2023
230538	824262	PP2964	2.8	15/11/2023
230542	824272	PP2965	2.24	15/11/2023
230545	824281	PP2966	2.32	15/11/2023
230549	824290	PP2967	2.4	15/11/2023
230553	824300	PP2968	1.74	15/11/2023
230556	824309	PP2969	1.98	15/11/2023
230560	824318	PP2970	1.8	15/11/2023
230563	824328	PP2971	0.35	15/11/2023
230567	824337	PP2972	0.41	15/11/2023
230570	824346	PP2973	0.36	15/11/2023
230574	824356	PP2974	0.34	15/11/2023
230578	824365	PP2975	0.22	23/11/2023
230581	824374	PP2976	0.11	23/11/2023
230585	824384	PP2977	0.21	23/11/2023
230588	824393	PP2978	1.84	23/11/2023
230592	824403	PP2979	2.43	23/11/2023
230596	824412	PP2980	2.64	23/11/2023
230599	824421	PP2981	2.43	23/11/2023
230603	824431	PP2982	2.18	23/11/2023
230606	824440	PP2983	2.12	23/11/2023
230610	824449	PP2984	0.07	23/11/2023
230613	824459	PP2985	0.07	23/11/2023
230617	824468	PP2986	0.06	23/11/2023
230621	824477	PP2987	0.02	23/11/2023
230624	824487	PP2988	0.28	23/11/2023
230628	824496	PP2989	0.36	23/11/2023
230631	824505	PP2990	0.15	23/11/2023
230635	824515	PP2991	0.09	23/11/2023
230639	824524	PP2992	0.19	23/11/2023
230642	824533	PP2993	0.25	23/11/2023
230646	824543	PP2994	0.28	23/11/2023
230649	824552	PP2995	0.27	23/11/2023
230653	824561	PP2996	0.58	23/11/2023
230656	824571	PP2997	0.37	23/11/2023
230660	824580	PP2998	0.32	23/11/2023
230664	824589	PP2999	0.73	23/11/2023
230667	824599	PP3000	0.56	23/11/2023
230671	824608	PP3001	0.48	23/11/2023
230674	824617	PP3002	0.32	23/11/2023
230678	824627	PP3003	0.35	23/11/2023
230682	824636	PP3004	0.33	23/11/2023
230685	824645	PP3005	0.19	23/11/2023
230689	824655	PP3006	0.4	23/11/2023
230692	824664	PP3007	0.24	23/11/2023
230696	824673	PP3008	0.53	23/11/2023
230700	824683	PP3009	0.36	23/11/2023
230703	824692	PP3010	0.12	23/11/2023
230707	824701	PP3011	0.13	23/11/2023
230710	824711	PP3012	0.66	23/11/2023
230714	824720	PP3013	0.27	23/11/2023
230717	824729	PP3014	0.41	23/11/2023
230721	824739	PP3015	0.8	23/11/2023
230725	824748	PP3016	0.72	23/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230728	824757	PP3017	beyond deer fence	23/11/2023
230732	824767	PP3018	beyond deer fence	23/11/2023
230735	824776	PP3019	beyond deer fence	23/11/2023
230739	824785	PP3020	beyond deer fence	23/11/2023
230743	824795	PP3021	beyond deer fence	23/11/2023
230746	824804	PP3022	beyond deer fence	23/11/2023
230750	824813	PP3023	beyond deer fence	23/11/2023
230753	824823	PP3024	beyond deer fence	23/11/2023
230757	824832	PP3025	beyond deer fence	23/11/2023
230760	824841	PP3026	beyond deer fence	23/11/2023
230398	823869	PP3027	0.62	14/11/2023
230401	823878	PP3028	0.58	14/11/2023
230405	823887	PP3029	0.7	14/11/2023
230408	823897	PP3030	0.96	14/11/2023
230412	823906	PP3031	1.13	14/11/2023
230416	823915	PP3032	0.62	14/11/2023
230419	823925	PP3033	0.56	14/11/2023
230423	823934	PP3034	0.63	14/11/2023
230426	823943	PP3035	1.01	14/11/2023
230430	823953	PP3036	1.7	15/11/2023
230433	823962	PP3037	0.22	15/11/2023
230437	823971	PP3038	0.18	15/11/2023
230441	823981	PP3039	0.28	15/11/2023
230444	823990	PP3040	0.42	15/11/2023
230448	823999	PP3041	0.33	15/11/2023
230451	824009	PP3042	0.58	15/11/2023
230455	824018	PP3043	0.22	15/11/2023
230459	824027	PP3044	0.39	15/11/2023
230462	824037	PP3045	0.3	15/11/2023
230466	824046	PP3046	0.43	15/11/2023
230469	824055	PP3047	0.18	15/11/2023
230473	824065	PP3048	0.5	15/11/2023
230476	824074	PP3049	0.5	15/11/2023
230480	824083	PP3050	0.63	15/11/2023
230484	824093	PP3051	0.54	15/11/2023
230487	824102	PP3052	0.57	15/11/2023
230491	824111	PP3053	0.27	15/11/2023
230494	824121	PP3054	0.2	15/11/2023
230498	824130	PP3055	0.38	15/11/2023
230502	824139	PP3056	0.19	15/11/2023
230505	824149	PP3057	0.28	15/11/2023
230509	824158	PP3058	0.33	15/11/2023
230512	824167	PP3059	0.34	15/11/2023
230516	824177	PP3060	0.53	15/11/2023
230519	824186	PP3061	0.38	15/11/2023
230523	824195	PP3062	0.64	15/11/2023
230527	824205	PP3063	0.77	15/11/2023
230530	824214	PP3064	1.08	15/11/2023
230534	824223	PP3065	1.09	15/11/2023
230537	824233	PP3066	0.98	15/11/2023
230541	824242	PP3067	0.37	15/11/2023
230545	824251	PP3068	0.33	15/11/2023
230548	824261	PP3069	1.42	15/11/2023
230552	824270	PP3070	1.59	15/11/2023
230555	824279	PP3071	2.65	15/11/2023
230559	824289	PP3072	1.49	15/11/2023
230562	824298	PP3073	2.41	15/11/2023
230566	824307	PP3074	2.01	15/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230570	824317	PP3075	1.87	15/11/2023
230573	824326	PP3076	0.48	15/11/2023
230577	824335	PP3077	0.14	15/11/2023
230580	824345	PP3078	0.29	15/11/2023
230584	824354	PP3079	0.36	15/11/2023
230588	824363	PP3080	0.31	25/11/2023
230591	824373	PP3081	0.31	25/11/2023
230595	824382	PP3082	0.88	25/11/2023
230598	824392	PP3083	0.99	25/11/2023
230602	824401	PP3084	2	25/11/2023
230605	824410	PP3085	2.24	25/11/2023
230609	824420	PP3086	3.34	25/11/2023
230613	824429	PP3087	3.34	25/11/2023
230616	824438	PP3088	3.37	25/11/2023
230620	824448	PP3089	3.58	25/11/2023
230623	824457	PP3090	3.46	25/11/2023
230627	824466	PP3091	0.53	25/11/2023
230631	824476	PP3092	0.34	25/11/2023
230634	824485	PP3093	0.33	25/11/2023
230638	824494	PP3094	0.52	25/11/2023
230641	824504	PP3095	0.28	25/11/2023
230645	824513	PP3096	0.33	25/11/2023
230648	824522	PP3097	0.2	25/11/2023
230652	824532	PP3098	0.26	25/11/2023
230656	824541	PP3099	0.33	25/11/2023
230659	824550	PP3100	0.22	25/11/2023
230663	824560	PP3101	0.39	25/11/2023
230666	824569	PP3102	0.25	25/11/2023
230670	824578	PP3103	0.6	25/11/2023
230674	824588	PP3104	0.63	25/11/2023
230677	824597	PP3105	0.94	25/11/2023
230681	824606	PP3106	1.07	25/11/2023
230684	824616	PP3107	0.57	25/11/2023
230688	824625	PP3108	0.37	25/11/2023
230691	824634	PP3109	0.4	25/11/2023
230695	824644	PP3110	0.32	25/11/2023
230699	824653	PP3111	0.24	25/11/2023
230702	824662	PP3112	0.38	25/11/2023
230706	824672	PP3113	0.46	25/11/2023
230709	824681	PP3114	0.5	25/11/2023
230713	824690	PP3115	0.38	25/11/2023
230717	824700	PP3116	0.5	25/11/2023
230720	824709	PP3117	0.5	25/11/2023
230724	824718	PP3118	0.67	25/11/2023
230727	824728	PP3119	0.39	25/11/2023
230731	824737	PP3120	0.39	25/11/2023
230734	824746	PP3121	0.82	25/11/2023
230738	824756	PP3122	beyond deer fence	25/11/2023
230742	824765	PP3123	beyond deer fence	25/11/2023
230745	824774	PP3124	beyond deer fence	25/11/2023
230749	824784	PP3125	beyond deer fence	25/11/2023
230752	824793	PP3126	beyond deer fence	25/11/2023
230756	824802	PP3127	beyond deer fence	25/11/2023
230760	824812	PP3128	beyond deer fence	25/11/2023
230763	824821	PP3129	beyond deer fence	25/11/2023
230767	824830	PP3130	beyond deer fence	25/11/2023
230770	824840	PP3131	beyond deer fence	25/11/2023
230774	824849	PP3132	beyond deer fence	25/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230407	823867	PP3133	0.3	14/11/2023
230411	823876	PP3134	0.48	14/11/2023
230415	823886	PP3135	0.85	14/11/2023
230418	823895	PP3136	1	14/11/2023
230422	823904	PP3137	0.83	14/11/2023
230425	823914	PP3138	1.51	14/11/2023
230429	823923	PP3139	1.54	14/11/2023
230433	823932	PP3140	1.78	14/11/2023
230436	823942	PP3141	1.68	14/11/2023
230440	823951	PP3142	0.89	15/11/2023
230443	823960	PP3143	0.34	15/11/2023
230447	823970	PP3144	0.35	15/11/2023
230450	823979	PP3145	0.17	15/11/2023
230454	823988	PP3146	0.33	15/11/2023
230458	823998	PP3147	0.55	15/11/2023
230461	824007	PP3148	0.39	15/11/2023
230465	824016	PP3149	0.37	15/11/2023
230468	824026	PP3150	0.85	15/11/2023
230472	824035	PP3151	0.8	15/11/2023
230476	824044	PP3152	0.54	15/11/2023
230479	824054	PP3153	0.34	15/11/2023
230483	824063	PP3154	0.49	15/11/2023
230486	824072	PP3155	0.5	15/11/2023
230490	824082	PP3156	0.51	15/11/2023
230493	824091	PP3157	0.52	15/11/2023
230497	824100	PP3158	0.46	15/11/2023
230501	824110	PP3159	0.36	15/11/2023
230504	824119	PP3160	0.35	15/11/2023
230508	824128	PP3161	0.29	15/11/2023
230511	824138	PP3162	0.44	15/11/2023
230515	824147	PP3163	0.18	15/11/2023
230519	824156	PP3164	0.37	15/11/2023
230522	824166	PP3165	0.56	15/11/2023
230526	824175	PP3166	0.37	15/11/2023
230529	824184	PP3167	0.28	15/11/2023
230533	824194	PP3168	0.55	15/11/2023
230536	824203	PP3169	0.84	15/11/2023
230540	824212	PP3170	1.12	15/11/2023
230544	824222	PP3171	0.79	15/11/2023
230547	824231	PP3172	0.53	15/11/2023
230551	824240	PP3173	0.35	15/11/2023
230554	824250	PP3174	1.14	15/11/2023
230558	824259	PP3175	2.68	15/11/2023
230562	824268	PP3176	2.04	15/11/2023
230565	824278	PP3177	2.7	15/11/2023
230569	824287	PP3178	1.6	15/11/2023
230572	824296	PP3179	1.3	15/11/2023
230576	824306	PP3180	2.2	15/11/2023
230579	824315	PP3181	1.86	15/11/2023
230583	824324	PP3182	0.45	15/11/2023
230587	824334	PP3183	0.5	15/11/2023
230590	824343	PP3184	0.27	15/11/2023
230594	824352	PP3185	0.26	15/11/2023
230597	824362	PP3186	0.27	25/11/2023
230601	824371	PP3187	0.6	25/11/2023
230605	824381	PP3188	0.25	25/11/2023
230608	824390	PP3189	0.61	25/11/2023
230612	824399	PP3190	0.28	25/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230615	824409	PP3191	1.46	25/11/2023
230619	824418	PP3192	1.36	25/11/2023
230622	824427	PP3193	1.3	25/11/2023
230626	824437	PP3194	2.42	25/11/2023
230630	824446	PP3195	3.43	25/11/2023
230633	824455	PP3196	3.9	25/11/2023
230637	824465	PP3197	3.43	25/11/2023
230640	824474	PP3198	1.36	25/11/2023
230644	824483	PP3199	0.31	25/11/2023
230648	824493	PP3200	0.28	25/11/2023
230651	824502	PP3201	0.35	25/11/2023
230655	824511	PP3202	0.6	25/11/2023
230658	824521	PP3203	0.28	25/11/2023
230662	824530	PP3204	0.31	25/11/2023
230665	824539	PP3205	0.38	25/11/2023
230669	824549	PP3206	0.25	25/11/2023
230673	824558	PP3207	0.6	25/11/2023
230676	824567	PP3208	0.33	25/11/2023
230680	824577	PP3209	0.5	25/11/2023
230683	824586	PP3210	0.7	25/11/2023
230687	824595	PP3211	1.07	25/11/2023
230691	824605	PP3212	1.44	25/11/2023
230694	824614	PP3213	1.56	25/11/2023
230698	824623	PP3214	1.8	25/11/2023
230701	824633	PP3215	1.63	25/11/2023
230705	824642	PP3216	0.49	25/11/2023
230708	824651	PP3217	0.32	25/11/2023
230712	824661	PP3218	0.5	25/11/2023
230716	824670	PP3219	0.39	25/11/2023
230719	824679	PP3220	0.33	25/11/2023
230723	824689	PP3221	0.55	25/11/2023
230726	824698	PP3222	0.77	25/11/2023
230730	824707	PP3223	0.3	25/11/2023
230734	824717	PP3224	0.31	25/11/2023
230737	824726	PP3225	0.46	25/11/2023
230741	824735	PP3226	0.91	25/11/2023
230744	824745	PP3227	1.64	25/11/2023
230748	824754	PP3228	1.94	25/11/2023
230751	824763	PP3229	1.94	25/11/2023
230755	824773	PP3230	beyond deer fence	25/11/2023
230759	824782	PP3231	beyond deer fence	25/11/2023
230762	824791	PP3232	beyond deer fence	25/11/2023
230766	824801	PP3233	beyond deer fence	25/11/2023
230769	824810	PP3234	beyond deer fence	25/11/2023
230773	824819	PP3235	beyond deer fence	25/11/2023
230777	824829	PP3236	beyond deer fence	25/11/2023
230780	824838	PP3237	beyond deer fence	25/11/2023
230784	824847	PP3238	beyond deer fence	25/11/2023
230787	824857	PP3239	beyond deer fence	25/11/2023
230417	823865	PP3240	0.18	14/11/2023
230421	823875	PP3241	0.34	14/11/2023
230424	823884	PP3242	0.49	14/11/2023
230428	823893	PP3243	0.49	14/11/2023
230432	823903	PP3244	0.61	14/11/2023
230435	823912	PP3245	1.09	14/11/2023
230439	823921	PP3246	0.72	14/11/2023
230442	823931	PP3247	0.98	14/11/2023
230446	823940	PP3248	0.96	14/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230450	823949	PP3249	0.38	15/11/2023
230453	823959	PP3250	0.29	15/11/2023
230457	823968	PP3251	0.28	15/11/2023
230460	823977	PP3252	0.33	15/11/2023
230464	823987	PP3253	0.4	15/11/2023
230467	823996	PP3254	0.49	15/11/2023
230471	824005	PP3255	0.39	15/11/2023
230475	824015	PP3256	0.43	15/11/2023
230478	824024	PP3257	0.46	15/11/2023
230482	824033	PP3258	0.55	15/11/2023
230485	824043	PP3259	0.53	15/11/2023
230489	824052	PP3260	0.58	15/11/2023
230493	824061	PP3261	0.45	15/11/2023
230496	824071	PP3262	0.42	15/11/2023
230500	824080	PP3263	0.63	15/11/2023
230503	824089	PP3264	0.37	15/11/2023
230507	824099	PP3265	0.55	15/11/2023
230510	824108	PP3266	0.77	15/11/2023
230514	824117	PP3267	0.18	15/11/2023
230518	824127	PP3268	0.45	15/11/2023
230521	824136	PP3269	0.43	15/11/2023
230525	824145	PP3270	0.24	15/11/2023
230528	824155	PP3271	0.68	15/11/2023
230532	824164	PP3272	0.46	15/11/2023
230536	824173	PP3273	0.47	15/11/2023
230539	824183	PP3274	0.4	15/11/2023
230543	824192	PP3275	0.46	15/11/2023
230546	824201	PP3276	0.32	15/11/2023
230550	824211	PP3277	0.4	15/11/2023
230553	824220	PP3278	0.4	15/11/2023
230557	824229	PP3279	0.36	15/11/2023
230561	824239	PP3280	0.43	15/11/2023
230564	824248	PP3281	0.2	15/11/2023
230568	824257	PP3282	0.49	15/11/2023
230571	824267	PP3283	0.98	15/11/2023
230575	824276	PP3284	0.89	15/11/2023
230579	824285	PP3285	2.15	15/11/2023
230582	824295	PP3286	2.36	15/11/2023
230586	824304	PP3287	2.5	15/11/2023
230589	824313	PP3288	1.8	15/11/2023
230593	824323	PP3289	1.46	15/11/2023
230596	824332	PP3290	0.56	15/11/2023
230600	824341	PP3291	0.3	15/11/2023
230604	824351	PP3292	0.26	15/11/2023
230607	824360	PP3293	0.37	25/11/2023
230611	824370	PP3294	0.38	25/11/2023
230614	824379	PP3295	0.35	25/11/2023
230618	824388	PP3296	0.18	25/11/2023
230622	824398	PP3297	0.63	25/11/2023
230625	824407	PP3298	0.69	25/11/2023
230629	824416	PP3299	0.55	25/11/2023
230632	824426	PP3300	0.54	25/11/2023
230636	824435	PP3301	0.37	25/11/2023
230639	824444	PP3302	0.69	25/11/2023
230643	824454	PP3303	1.09	25/11/2023
230647	824463	PP3304	3.66	25/11/2023
230650	824472	PP3305	3.6	25/11/2023
230654	824482	PP3306	2.03	25/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230657	824491	PP3307	1.01	25/11/2023
230661	824500	PP3308	0.68	25/11/2023
230665	824510	PP3309	0.9	25/11/2023
230668	824519	PP3310	0.68	25/11/2023
230672	824528	PP3311	0.55	25/11/2023
230675	824538	PP3312	0.67	25/11/2023
230679	824547	PP3313	0.41	25/11/2023
230682	824556	PP3314	0.71	25/11/2023
230686	824566	PP3315	0.39	25/11/2023
230690	824575	PP3316	0.63	25/11/2023
230693	824584	PP3317	0.51	25/11/2023
230697	824594	PP3318	0.67	25/11/2023
230700	824603	PP3319	1.17	25/11/2023
230704	824612	PP3320	2.17	25/11/2023
230708	824622	PP3321	2.17	25/11/2023
230711	824631	PP3322	1.27	25/11/2023
230715	824640	PP3323	0.86	25/11/2023
230718	824650	PP3324	0.68	25/11/2023
230722	824659	PP3325	0.6	25/11/2023
230726	824668	PP3326	0.18	25/11/2023
230729	824678	PP3327	0.83	25/11/2023
230733	824687	PP3328	0.26	25/11/2023
230736	824696	PP3329	0.62	25/11/2023
230740	824706	PP3330	0.67	25/11/2023
230743	824715	PP3331	0.46	25/11/2023
230747	824724	PP3332	0.51	25/11/2023
230751	824734	PP3333	1.2	25/11/2023
230754	824743	PP3334	0.66	25/11/2023
230758	824752	PP3335	1.18	25/11/2023
230761	824762	PP3336	2.67	25/11/2023
230765	824771	PP3337	2.18	25/11/2023
230769	824780	PP3338	2.11	25/11/2023
230772	824790	PP3339	2.24	25/11/2023
230776	824799	PP3340	2.57	25/11/2023
230779	824808	PP3341	2.29	25/11/2023
230783	824818	PP3342	1.49	25/11/2023
230786	824827	PP3343	1.24	25/11/2023
230790	824836	PP3344	beyond deer fence	25/11/2023
230794	824846	PP3345	beyond deer fence	25/11/2023
230797	824855	PP3346	beyond deer fence	25/11/2023
230801	824864	PP3347	beyond deer fence	25/11/2023
230427	823864	PP3348	0.46	14/11/2023
230431	823873	PP3349	0.39	14/11/2023
230434	823882	PP3350	0.33	14/11/2023
230438	823892	PP3351	0.35	14/11/2023
230441	823901	PP3352	0.22	14/11/2023
230445	823910	PP3353	0.27	14/11/2023
230449	823920	PP3354	0.18	14/11/2023
230452	823929	PP3355	0.38	14/11/2023
230456	823938	PP3356	0.28	14/11/2023
230459	823948	PP3357	0.3	16/11/2023
230463	823957	PP3358	0.25	16/11/2023
230467	823966	PP3359	0.32	16/11/2023
230470	823976	PP3360	0.36	16/11/2023
230474	823985	PP3361	0.43	16/11/2023
230477	823994	PP3362	0.44	16/11/2023
230481	824004	PP3363	0.33	16/11/2023
230485	824013	PP3364	0.41	16/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230488	824022	PP3365	0.51	16/11/2023
230492	824032	PP3366	0.35	16/11/2023
230495	824041	PP3367	0.47	16/11/2023
230499	824050	PP3368	0.82	16/11/2023
230502	824060	PP3369	0.45	16/11/2023
230506	824069	PP3370	0.52	16/11/2023
230510	824078	PP3371	0.71	16/11/2023
230513	824088	PP3372	1.24	16/11/2023
230517	824097	PP3373	0.43	16/11/2023
230520	824106	PP3374	0.29	16/11/2023
230524	824116	PP3375	0.42	16/11/2023
230528	824125	PP3376	0.46	16/11/2023
230531	824134	PP3377	0.45	16/11/2023
230535	824144	PP3378	0.63	16/11/2023
230538	824153	PP3379	0.45	16/11/2023
230542	824162	PP3380	0.43	16/11/2023
230545	824172	PP3381	0.39	16/11/2023
230549	824181	PP3382	0.5	16/11/2023
230553	824190	PP3383	0.56	16/11/2023
230556	824200	PP3384	0.41	16/11/2023
230560	824209	PP3385	0.48	16/11/2023
230563	824218	PP3386	0.38	16/11/2023
230567	824228	PP3387	0.34	16/11/2023
230571	824237	PP3388	0.43	16/11/2023
230574	824246	PP3389	0.82	16/11/2023
230578	824256	PP3390	0.64	16/11/2023
230581	824265	PP3391	0.82	16/11/2023
230585	824274	PP3392	1.47	16/11/2023
230588	824284	PP3393	2.45	16/11/2023
230592	824293	PP3394	2.36	16/11/2023
230596	824302	PP3395	2.52	16/11/2023
230599	824312	PP3396	1.84	16/11/2023
230603	824321	PP3397	0.83	16/11/2023
230606	824330	PP3398	0.38	16/11/2023
230610	824340	PP3399	0.32	16/11/2023
230614	824349	PP3400	0.43	25/11/2023
230617	824359	PP3401	0.22	25/11/2023
230621	824368	PP3402	0.26	25/11/2023
230624	824377	PP3403	0.24	25/11/2023
230628	824387	PP3404	0.5	25/11/2023
230631	824396	PP3405	0.2	25/11/2023
230635	824405	PP3406	0.5	25/11/2023
230639	824415	PP3407	0.41	25/11/2023
230642	824424	PP3408	1.29	25/11/2023
230646	824433	PP3409	0.27	25/11/2023
230649	824443	PP3410	0.27	25/11/2023
230653	824452	PP3411	0.2	25/11/2023
230657	824461	PP3412	0.56	25/11/2023
230660	824471	PP3413	0.85	25/11/2023
230664	824480	PP3414	1.6	25/11/2023
230667	824489	PP3415	0.89	25/11/2023
230671	824499	PP3416	0.97	25/11/2023
230674	824508	PP3417	0.75	25/11/2023
230678	824517	PP3418	0.63	25/11/2023
230682	824527	PP3419	0.42	25/11/2023
230685	824536	PP3420	0.81	25/11/2023
230689	824545	PP3421	0.77	25/11/2023
230692	824555	PP3422	0.7	25/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230696	824564	PP3423	0.21	25/11/2023
230700	824573	PP3424	0.14	25/11/2023
230703	824583	PP3425	0.76	25/11/2023
230707	824592	PP3426	0.65	25/11/2023
230710	824601	PP3427	1.38	25/11/2023
230714	824611	PP3428	1.9	26/11/2023
230717	824620	PP3429	2.44	26/11/2023
230721	824629	PP3430	2.07	26/11/2023
230725	824639	PP3431	2.5	26/11/2023
230728	824648	PP3432	1.25	26/11/2023
230732	824657	PP3433	0.78	26/11/2023
230735	824667	PP3434	0.39	26/11/2023
230739	824676	PP3435	0.5	26/11/2023
230743	824685	PP3436	0.32	26/11/2023
230746	824695	PP3437	0.4	26/11/2023
230750	824704	PP3438	1.32	26/11/2023
230753	824713	PP3439	1.37	26/11/2023
230757	824723	PP3440	1.38	26/11/2023
230760	824732	PP3441	0.96	26/11/2023
230764	824741	PP3442	1.74	26/11/2023
230768	824751	PP3443	3.44	26/11/2023
230771	824760	PP3444	3.11	26/11/2023
230775	824769	PP3445	2.7	26/11/2023
230778	824779	PP3446	1.84	26/11/2023
230782	824788	PP3447	1.87	26/11/2023
230786	824797	PP3448	2.9	26/11/2023
230789	824807	PP3449	2.61	26/11/2023
230793	824816	PP3450	2.56	26/11/2023
230796	824825	PP3451	1.64	26/11/2023
230800	824835	PP3452	1.04	26/11/2023
230803	824844	PP3453	beyond deer fence	26/11/2023
230807	824853	PP3454	beyond deer fence	26/11/2023
230811	824863	PP3455	beyond deer fence	26/11/2023
230814	824872	PP3456	beyond deer fence	26/11/2023
230441	823871	PP3457	0.49	14/11/2023
230444	823881	PP3458	0.34	14/11/2023
230448	823890	PP3459	0.28	14/11/2023
230451	823899	PP3460	0.3	14/11/2023
230455	823909	PP3461	0.35	14/11/2023
230459	823918	PP3462	0.2	14/11/2023
230462	823927	PP3463	0.49	14/11/2023
230466	823937	PP3464	0.39	14/11/2023
230469	823946	PP3465	0.28	21/11/2023
230473	823955	PP3466	0.51	21/11/2023
230476	823965	PP3467	0.25	21/11/2023
230480	823974	PP3468	0.42	21/11/2023
230484	823983	PP3469	0.42	21/11/2023
230487	823993	PP3470	0.62	21/11/2023
230491	824002	PP3471	0.48	21/11/2023
230494	824011	PP3472	0.56	21/11/2023
230498	824021	PP3473	0.56	21/11/2023
230502	824030	PP3474	0.4	21/11/2023
230505	824039	PP3475	0.45	16/11/2023
230509	824049	PP3476	0.72	16/11/2023
230512	824058	PP3477	0.51	16/11/2023
230516	824067	PP3478	0.82	16/11/2023
230519	824077	PP3479	0.9	16/11/2023
230523	824086	PP3480	0.67	16/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230527	824095	PP3481	0.47	16/11/2023
230530	824105	PP3482	0.39	16/11/2023
230534	824114	PP3483	0.29	16/11/2023
230537	824123	PP3484	0.94	16/11/2023
230541	824133	PP3485	0.65	16/11/2023
230545	824142	PP3486	0.47	16/11/2023
230548	824151	PP3487	0.35	16/11/2023
230552	824161	PP3488	0.64	16/11/2023
230555	824170	PP3489	0.21	16/11/2023
230559	824179	PP3490	0.64	16/11/2023
230562	824189	PP3491	0.48	16/11/2023
230566	824198	PP3492	0.47	16/11/2023
230570	824207	PP3493	0.33	16/11/2023
230573	824217	PP3494	0.22	16/11/2023
230577	824226	PP3495	0.38	16/11/2023
230580	824235	PP3496	0.32	16/11/2023
230584	824245	PP3497	0.45	16/11/2023
230588	824254	PP3498	0.19	16/11/2023
230591	824263	PP3499	0.53	16/11/2023
230595	824273	PP3500	1.32	16/11/2023
230598	824282	PP3501	1.94	16/11/2023
230602	824291	PP3502	0.61	16/11/2023
230605	824301	PP3503	1.79	16/11/2023
230609	824310	PP3504	2.04	16/11/2023
230613	824319	PP3505	1.65	16/11/2023
230616	824329	PP3506	1.41	16/11/2023
230620	824338	PP3507	0.65	16/11/2023
230623	824347	PP3508	0.54	26/11/2023
230627	824357	PP3509	0.39	26/11/2023
230631	824366	PP3510	0.35	26/11/2023
230634	824376	PP3511	0.42	26/11/2023
230638	824385	PP3512	0.56	26/11/2023
230641	824394	PP3513	0.5	26/11/2023
230645	824404	PP3514	0.31	26/11/2023
230648	824413	PP3515	0.77	26/11/2023
230652	824422	PP3516	0.81	26/11/2023
230656	824432	PP3517	0.2	26/11/2023
230659	824441	PP3518	0.38	26/11/2023
230663	824450	PP3519	0.33	26/11/2023
230666	824460	PP3520	0.39	26/11/2023
230670	824469	PP3521	0.34	26/11/2023
230674	824478	PP3522	0.31	26/11/2023
230677	824488	PP3523	0.25	26/11/2023
230681	824497	PP3524	0.14	26/11/2023
230684	824506	PP3525	0.33	26/11/2023
230688	824516	PP3526	0.38	26/11/2023
230691	824525	PP3527	0.57	26/11/2023
230695	824534	PP3528	0.4	26/11/2023
230699	824544	PP3529	0.79	26/11/2023
230702	824553	PP3530	1.41	26/11/2023
230706	824562	PP3531	0.98	26/11/2023
230709	824572	PP3532	0.43	26/11/2023
230713	824581	PP3533	0.48	26/11/2023
230717	824590	PP3534	0.66	26/11/2023
230720	824600	PP3535	1.34	26/11/2023
230724	824609	PP3536	1.17	26/11/2023
230727	824618	PP3537	2.01	26/11/2023
230731	824628	PP3538	2.3	26/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230734	824637	PP3539	2.57	26/11/2023
230738	824646	PP3540	1.5	26/11/2023
230742	824656	PP3541	0.64	26/11/2023
230745	824665	PP3542	0.9	26/11/2023
230749	824674	PP3543	0.32	26/11/2023
230752	824684	PP3544	0.38	26/11/2023
230756	824693	PP3545	0.38	26/11/2023
230760	824702	PP3546	0.52	26/11/2023
230763	824712	PP3547	2	26/11/2023
230767	824721	PP3548	2.59	26/11/2023
230770	824730	PP3549	1.99	26/11/2023
230774	824740	PP3550	2.95	26/11/2023
230777	824749	PP3551	3.98	26/11/2023
230781	824758	PP3552	4.26	26/11/2023
230785	824768	PP3553	4.01	26/11/2023
230788	824777	PP3554	2.79	26/11/2023
230792	824786	PP3555	2.28	26/11/2023
230795	824796	PP3556	2.79	26/11/2023
230799	824805	PP3557	2.97	26/11/2023
230803	824814	PP3558	3.52	26/11/2023
230806	824824	PP3559	3.01	26/11/2023
230810	824833	PP3560	2.68	26/11/2023
230813	824842	PP3561	1.55	26/11/2023
230817	824852	PP3562	on road	26/11/2023
230820	824861	PP3563	on road	26/11/2023
230824	824870	PP3564	on road	26/11/2023
230828	824880	PP3565	on road	26/11/2023
230454	823879	PP3566	on road	14/11/2023
230458	823888	PP3567	0.48	14/11/2023
230461	823898	PP3568	0.25	14/11/2023
230465	823907	PP3569	0.3	14/11/2023
230468	823916	PP3570	0.25	14/11/2023
230472	823926	PP3571	0.42	14/11/2023
230476	823935	PP3572	0.29	14/11/2023
230479	823944	PP3573	0.52	16/11/2023
230483	823954	PP3574	0.29	16/11/2023
230486	823963	PP3575	0.25	16/11/2023
230490	823972	PP3576	0.19	16/11/2023
230493	823982	PP3577	0.17	16/11/2023
230497	823991	PP3578	0.49	16/11/2023
230501	824000	PP3579	0.34	16/11/2023
230504	824010	PP3580	0.29	16/11/2023
230508	824019	PP3581	0.26	16/11/2023
230511	824028	PP3582	0.43	16/11/2023
230515	824038	PP3583	0.43	16/11/2023
230519	824047	PP3584	0.67	16/11/2023
230522	824056	PP3585	0.49	16/11/2023
230526	824066	PP3586	0.86	16/11/2023
230529	824075	PP3587	0.35	16/11/2023
230533	824084	PP3588	0.51	16/11/2023
230536	824094	PP3589	0.33	16/11/2023
230540	824103	PP3590	0.74	16/11/2023
230544	824112	PP3591	0.68	16/11/2023
230547	824122	PP3592	0.59	16/11/2023
230551	824131	PP3593	0.33	16/11/2023
230554	824140	PP3594	0.74	16/11/2023
230558	824150	PP3595	0.32	16/11/2023
230562	824159	PP3596	0.18	16/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230565	824168	PP3597	0.54	16/11/2023
230569	824178	PP3598	0.64	16/11/2023
230572	824187	PP3599	0.54	16/11/2023
230576	824196	PP3600	0.44	16/11/2023
230579	824206	PP3601	0.59	16/11/2023
230583	824215	PP3602	0.3	16/11/2023
230587	824224	PP3603	0.32	16/11/2023
230590	824234	PP3604	0.44	16/11/2023
230594	824243	PP3605	0.43	16/11/2023
230597	824252	PP3606	1.51	16/11/2023
230601	824262	PP3607	1.09	16/11/2023
230605	824271	PP3608	1.02	16/11/2023
230608	824280	PP3609	1.04	16/11/2023
230612	824290	PP3610	1.32	16/11/2023
230615	824299	PP3611	0.82	16/11/2023
230619	824308	PP3612	1.55	16/11/2023
230622	824318	PP3613	1.64	16/11/2023
230626	824327	PP3614	1.55	16/11/2023
230630	824336	PP3615	0.95	16/11/2023
230633	824346	PP3616	0.54	26/11/2023
230637	824355	PP3617	0.48	26/11/2023
230640	824365	PP3618	0.43	26/11/2023
230644	824374	PP3619	0.41	26/11/2023
230648	824383	PP3620	0.38	26/11/2023
230651	824393	PP3621	0.26	26/11/2023
230655	824402	PP3622	0.3	26/11/2023
230658	824411	PP3623	0.4	26/11/2023
230662	824421	PP3624	1.81	26/11/2023
230665	824430	PP3625	0.57	26/11/2023
230669	824439	PP3626	0.36	26/11/2023
230673	824449	PP3627	0.47	26/11/2023
230676	824458	PP3628	0.33	26/11/2023
230680	824467	PP3629	0.3	26/11/2023
230683	824477	PP3630	0.16	26/11/2023
230687	824486	PP3631	0.1	26/11/2023
230691	824495	PP3632	0.15	26/11/2023
230694	824505	PP3633	0.39	26/11/2023
230698	824514	PP3634	0.37	26/11/2023
230701	824523	PP3635	0.67	26/11/2023
230705	824533	PP3636	0.77	26/11/2023
230708	824542	PP3637	1.08	26/11/2023
230712	824551	PP3638	1.42	26/11/2023
230716	824561	PP3639	2.1	26/11/2023
230719	824570	PP3640	1.33	26/11/2023
230723	824579	PP3641	0.96	26/11/2023
230726	824589	PP3642	0.8	26/11/2023
230730	824598	PP3643	1.47	26/11/2023
230734	824607	PP3644	1.47	26/11/2023
230737	824617	PP3645	1.57	26/11/2023
230741	824626	PP3646	2.04	26/11/2023
230744	824635	PP3647	2.05	26/11/2023
230748	824645	PP3648	1.92	26/11/2023
230751	824654	PP3649	2.01	26/11/2023
230755	824663	PP3650	2.08	26/11/2023
230759	824673	PP3651	1.2	26/11/2023
230762	824682	PP3652	0.74	26/11/2023
230766	824691	PP3653	1.26	26/11/2023
230769	824701	PP3654	1.56	26/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230773	824710	PP3655	1.53	26/11/2023
230777	824719	PP3656	1.95	26/11/2023
230780	824729	PP3657	4.56	26/11/2023
230784	824738	PP3658	3.89	26/11/2023
230787	824747	PP3659	4.45	26/11/2023
230791	824757	PP3660	4.37	26/11/2023
230795	824766	PP3661	2.74	26/11/2023
230798	824775	PP3662	4.13	26/11/2023
230802	824785	PP3663	3.2	26/11/2023
230805	824794	PP3664	2.63	26/11/2023
230809	824803	PP3665	3.05	26/11/2023
230812	824813	PP3666	2.08	26/11/2023
230816	824822	PP3667	2	26/11/2023
230820	824831	PP3668	0.74	26/11/2023
230823	824841	PP3669	1.5	26/11/2023
230827	824850	PP3670	0.83	26/11/2023
230830	824859	PP3671	beyond deer fence	26/11/2023
230834	824869	PP3672	beyond deer fence	26/11/2023
230838	824878	PP3673	beyond deer fence	26/11/2023
230841	824887	PP3674	beyond deer fence	26/11/2023
230467	823887	PP3675	0.21	14/11/2023
230471	823896	PP3676	0.45	14/11/2023
230475	823905	PP3677	0.26	14/11/2023
230478	823915	PP3678	0.23	14/11/2023
230482	823924	PP3679	0.36	14/11/2023
230485	823933	PP3680	0.4	14/11/2023
230489	823943	PP3681	0.34	16/11/2023
230493	823952	PP3682	0.32	16/11/2023
230496	823961	PP3683	0.24	16/11/2023
230500	823971	PP3684	0.24	16/11/2023
230503	823980	PP3685	0.13	16/11/2023
230507	823989	PP3686	0.278	16/11/2023
230510	823999	PP3687	0.54	16/11/2023
230514	824008	PP3688	0.28	16/11/2023
230518	824017	PP3689	0.57	16/11/2023
230521	824027	PP3690	0.65	16/11/2023
230525	824036	PP3691	0.59	16/11/2023
230528	824045	PP3692	0.51	16/11/2023
230532	824055	PP3693	0.45	16/11/2023
230536	824064	PP3694	0.49	16/11/2023
230539	824073	PP3695	0.54	16/11/2023
230543	824083	PP3696	0.44	16/11/2023
230546	824092	PP3697	0.73	16/11/2023
230550	824101	PP3698	0.92	16/11/2023
230554	824111	PP3699	0.43	16/11/2023
230557	824120	PP3700	0.83	16/11/2023
230561	824129	PP3701	0.4	16/11/2023
230564	824139	PP3702	0.54	16/11/2023
230568	824148	PP3703	0.46	16/11/2023
230571	824157	PP3704	0.4	16/11/2023
230575	824167	PP3705	0.6	16/11/2023
230579	824176	PP3706	0.47	16/11/2023
230582	824185	PP3707	0.14	16/11/2023
230586	824195	PP3708	0.12	16/11/2023
230589	824204	PP3709	0.6	16/11/2023
230593	824213	PP3710	0.25	16/11/2023
230597	824223	PP3711	0.6	16/11/2023
230600	824232	PP3712	0.47	16/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230604	824241	PP3713	0.45	16/11/2023
230607	824251	PP3714	0.34	16/11/2023
230611	824260	PP3715	0.3	16/11/2023
230614	824269	PP3716	0.46	16/11/2023
230618	824279	PP3717	0.99	16/11/2023
230622	824288	PP3718	1.42	16/11/2023
230625	824297	PP3719	1.64	16/11/2023
230629	824307	PP3720	1.39	16/11/2023
230632	824316	PP3721	1.27	16/11/2023
230636	824325	PP3722	1.43	16/11/2023
230640	824335	PP3723	1.12	16/11/2023
230643	824344	PP3724	0.43	27/11/2023
230647	824354	PP3725	0.59	27/11/2023
230650	824363	PP3726	0.29	27/11/2023
230654	824372	PP3727	0.43	27/11/2023
230657	824382	PP3728	0.33	27/11/2023
230661	824391	PP3729	0.42	27/11/2023
230665	824400	PP3730	0.57	27/11/2023
230668	824410	PP3731	0.36	27/11/2023
230672	824419	PP3732	2.35	27/11/2023
230675	824428	PP3733	1.04	27/11/2023
230679	824438	PP3734	0.82	27/11/2023
230683	824447	PP3735	0.63	27/11/2023
230686	824456	PP3736	0.7	27/11/2023
230690	824466	PP3737	0.45	27/11/2023
230693	824475	PP3738	0.26	27/11/2023
230697	824484	PP3739	0.27	27/11/2023
230700	824494	PP3740	0.36	27/11/2023
230704	824503	PP3741	0.37	27/11/2023
230708	824512	PP3742	0.69	27/11/2023
230711	824522	PP3743	0.43	27/11/2023
230715	824531	PP3744	0.94	27/11/2023
230718	824540	PP3745	1.51	27/11/2023
230722	824550	PP3746	1.63	27/11/2023
230726	824559	PP3747	1.75	27/11/2023
230729	824568	PP3748	2.05	27/11/2023
230733	824578	PP3749	2.15	27/11/2023
230736	824587	PP3750	1.43	27/11/2023
230740	824596	PP3751	1.72	27/11/2023
230743	824606	PP3752	1.63	27/11/2023
230747	824615	PP3753	1.52	27/11/2023
230751	824624	PP3754	1.57	27/11/2023
230754	824634	PP3755	1.58	27/11/2023
230758	824643	PP3756	1.42	27/11/2023
230761	824652	PP3757	1.26	27/11/2023
230765	824662	PP3758	1.39	27/11/2023
230769	824671	PP3759	2.66	27/11/2023
230772	824680	PP3760	2.2	27/11/2023
230776	824690	PP3761	2.08	27/11/2023
230779	824699	PP3762	2.19	27/11/2023
230783	824708	PP3763	2.14	27/11/2023
230786	824718	PP3764	2.98	27/11/2023
230790	824727	PP3765	3.75	27/11/2023
230794	824736	PP3766	3.82	27/11/2023
230797	824746	PP3767	4.46	27/11/2023
230801	824755	PP3768	3.76	27/11/2023
230804	824764	PP3769	5.07	27/11/2023
230808	824774	PP3770	4.62	27/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230812	824783	PP3771	3.85	26/11/2023
230815	824792	PP3772	2.39	26/11/2023
230819	824802	PP3773	2.78	26/11/2023
230822	824811	PP3774	1.98	26/11/2023
230826	824820	PP3775	0.21	26/11/2023
230829	824830	PP3776	0.23	26/11/2023
230833	824839	PP3777	0.58	26/11/2023
230837	824848	PP3778	0.59	26/11/2023
230840	824858	PP3779	0.74	26/11/2023
230844	824867	PP3780	beyond deer fence	26/11/2023
230847	824876	PP3781	beyond deer fence	26/11/2023
230851	824886	PP3782	beyond deer fence	26/11/2023
230855	824895	PP3783	beyond deer fence	26/11/2023
230477	823885	PP3784	0.28	14/11/2023
230481	823894	PP3785	0.47	14/11/2023
230485	823904	PP3786	0.34	14/11/2023
230488	823913	PP3787	0.34	14/11/2023
230492	823922	PP3788	0.23	14/11/2023
230495	823932	PP3789	0.33	14/11/2023
230499	823941	PP3790	0.23	17/11/2023
230502	823950	PP3791	0.2	17/11/2023
230506	823960	PP3792	0.24	17/11/2023
230510	823969	PP3793	0.24	17/11/2023
230513	823978	PP3794	0.35	17/11/2023
230517	823988	PP3795	0.21	17/11/2023
230520	823997	PP3796	0.15	17/11/2023
230524	824006	PP3797	0.38	17/11/2023
230528	824016	PP3798	0.59	17/11/2023
230531	824025	PP3799	0.76	17/11/2023
230535	824034	PP3800	0.63	17/11/2023
230538	824044	PP3801	0.44	17/11/2023
230542	824053	PP3802	0.46	17/11/2023
230545	824062	PP3803	0.47	17/11/2023
230549	824072	PP3804	0.42	17/11/2023
230553	824081	PP3805	0.8	17/11/2023
230556	824090	PP3806	0.48	17/11/2023
230560	824100	PP3807	0.73	17/11/2023
230563	824109	PP3808	0.44	17/11/2023
230567	824118	PP3809	0.49	17/11/2023
230571	824128	PP3810	0.69	17/11/2023
230574	824137	PP3811	0.6	17/11/2023
230578	824146	PP3812	0.43	17/11/2023
230581	824156	PP3813	0.44	17/11/2023
230585	824165	PP3814	0.52	17/11/2023
230588	824174	PP3815	0.48	17/11/2023
230592	824184	PP3816	0.58	17/11/2023
230596	824193	PP3817	0.14	17/11/2023
230599	824202	PP3818	0.48	17/11/2023
230603	824212	PP3819	0.25	17/11/2023
230606	824221	PP3820	0.22	17/11/2023
230610	824230	PP3821	0.08	17/11/2023
230614	824240	PP3822	0.48	17/11/2023
230617	824249	PP3823	0.36	17/11/2023
230621	824258	PP3824	0.28	17/11/2023
230624	824268	PP3825	0.42	17/11/2023
230628	824277	PP3826	0.69	17/11/2023
230631	824286	PP3827	1.45	17/11/2023
230635	824296	PP3828	2.7	17/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230639	824305	PP3829	1.83	17/11/2023
230642	824314	PP3830	1.42	17/11/2023
230646	824324	PP3831	1.64	17/11/2023
230649	824333	PP3832	1.42	17/11/2023
230653	824343	PP3833	0.99	28/11/2023
230657	824352	PP3834	0.49	28/11/2023
230660	824361	PP3835	0.42	28/11/2023
230664	824371	PP3836	0.55	28/11/2023
230667	824380	PP3837	0.59	28/11/2023
230671	824389	PP3838	0.81	28/11/2023
230674	824399	PP3839	0.62	28/11/2023
230678	824408	PP3840	0.6	28/11/2023
230682	824417	PP3841	1	28/11/2023
230685	824427	PP3842	1.27	28/11/2023
230689	824436	PP3843	1.12	28/11/2023
230692	824445	PP3844	0.71	28/11/2023
230696	824455	PP3845	0.78	28/11/2023
230700	824464	PP3846	0.19	28/11/2023
230703	824473	PP3847	0.23	28/11/2023
230707	824483	PP3848	0.38	28/11/2023
230710	824492	PP3849	0.33	28/11/2023
230714	824501	PP3850	0.34	28/11/2023
230717	824511	PP3851	0.37	28/11/2023
230721	824520	PP3852	0.38	28/11/2023
230725	824529	PP3853	0.38	28/11/2023
230728	824539	PP3854	0.46	28/11/2023
230732	824548	PP3855	0.79	28/11/2023
230735	824557	PP3856	1.05	28/11/2023
230739	824567	PP3857	1.96	28/11/2023
230743	824576	PP3858	1.27	28/11/2023
230746	824585	PP3859	1.31	28/11/2023
230750	824595	PP3860	1.71	28/11/2023
230753	824604	PP3861	1.33	28/11/2023
230757	824613	PP3862	1.19	28/11/2023
230760	824623	PP3863	1.27	28/11/2023
230764	824632	PP3864	1.62	28/11/2023
230768	824641	PP3865	1.62	28/11/2023
230771	824651	PP3866	1.64	28/11/2023
230775	824660	PP3867	1.58	28/11/2023
230778	824669	PP3868	2.92	28/11/2023
230782	824679	PP3869	2.66	28/11/2023
230786	824688	PP3870	2.85	28/11/2023
230789	824697	PP3871	2.06	28/11/2023
230793	824707	PP3872	2.74	28/11/2023
230796	824716	PP3873	2.48	28/11/2023
230800	824725	PP3874	3.43	28/11/2023
230803	824735	PP3875	3.73	28/11/2023
230807	824744	PP3876	4.21	28/11/2023
230811	824753	PP3877	4.37	28/11/2023
230814	824763	PP3878	4.78	28/11/2023
230818	824772	PP3879	5.06	28/11/2023
230821	824781	PP3880	5.01	28/11/2023
230825	824791	PP3881	4.32	28/11/2023
230829	824800	PP3882	2.72	28/11/2023
230832	824809	PP3883	1.58	28/11/2023
230836	824819	PP3884	0.38	28/11/2023
230839	824828	PP3885	0.26	28/11/2023
230843	824837	PP3886	0.27	28/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230846	824847	PP3887	0.2	28/11/2023
230850	824856	PP3888	0.59	28/11/2023
230854	824865	PP3889	0.72	28/11/2023
230857	824875	PP3890	beyond deer fence	28/11/2023
230861	824884	PP3891	beyond deer fence	28/11/2023
230864	824893	PP3892	beyond deer fence	28/11/2023
230491	823893	PP3893	0.65	14/11/2023
230494	823902	PP3894	0.44	14/11/2023
230498	823911	PP3895	0.23	14/11/2023
230502	823921	PP3896	0.25	17/11/2023
230505	823930	PP3897	0.29	17/11/2023
230509	823939	PP3898	0.65	17/11/2023
230512	823949	PP3899	0.2	17/11/2023
230516	823958	PP3900	0.37	17/11/2023
230519	823967	PP3901	0.34	17/11/2023
230523	823977	PP3902	0.36	17/11/2023
230527	823986	PP3903	0.28	17/11/2023
230530	823995	PP3904	0.45	17/11/2023
230534	824005	PP3905	0.64	17/11/2023
230537	824014	PP3906	0.71	17/11/2023
230541	824023	PP3907	0.53	17/11/2023
230545	824033	PP3908	0.69	17/11/2023
230548	824042	PP3909	0.61	17/11/2023
230552	824051	PP3910	0.42	17/11/2023
230555	824061	PP3911	0.58	17/11/2023
230559	824070	PP3912	0.44	17/11/2023
230562	824079	PP3913	0.48	17/11/2023
230566	824089	PP3914	0.56	17/11/2023
230570	824098	PP3915	0.49	17/11/2023
230573	824107	PP3916	0.43	17/11/2023
230577	824117	PP3917	0.41	17/11/2023
230580	824126	PP3918	0.56	17/11/2023
230584	824135	PP3919	0.36	17/11/2023
230588	824145	PP3920	0.45	17/11/2023
230591	824154	PP3921	0.64	17/11/2023
230595	824163	PP3922	0.47	17/11/2023
230598	824173	PP3923	0.46	17/11/2023
230602	824182	PP3924	0.37	17/11/2023
230605	824191	PP3925	0.42	17/11/2023
230609	824201	PP3926	0.26	17/11/2023
230613	824210	PP3927	0.25	17/11/2023
230616	824219	PP3928	0.09	17/11/2023
230620	824229	PP3929	0.33	17/11/2023
230623	824238	PP3930	0.4	17/11/2023
230627	824247	PP3931	0.26	17/11/2023
230631	824257	PP3932	0.29	17/11/2023
230634	824266	PP3933	0.37	17/11/2023
230638	824275	PP3934	0.47	17/11/2023
230641	824285	PP3935	0.49	17/11/2023
230645	824294	PP3936	1.89	17/11/2023
230648	824303	PP3937	1.86	17/11/2023
230652	824313	PP3938	1.77	17/11/2023
230656	824322	PP3939	1.52	17/11/2023
230659	824331	PP3940	1.19	28/11/2023
230663	824341	PP3941	0.62	28/11/2023
230666	824350	PP3942	0.86	28/11/2023
230670	824360	PP3943	0.63	28/11/2023
230674	824369	PP3944	0.71	28/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230677	824378	PP3945	0.35	28/11/2023
230681	824388	PP3946	0.31	28/11/2023
230684	824397	PP3947	0.66	28/11/2023
230688	824406	PP3948	0.84	28/11/2023
230691	824416	PP3949	1.13	28/11/2023
230695	824425	PP3950	1.49	28/11/2023
230699	824434	PP3951	1.42	28/11/2023
230702	824444	PP3952	1.36	28/11/2023
230706	824453	PP3953	0.79	28/11/2023
230709	824462	PP3954	0.34	28/11/2023
230713	824472	PP3955	0.37	28/11/2023
230717	824481	PP3956	0.49	28/11/2023
230720	824490	PP3957	0.77	28/11/2023
230724	824500	PP3958	0.66	28/11/2023
230727	824509	PP3959	0.47	28/11/2023
230731	824518	PP3960	0.36	28/11/2023
230734	824528	PP3961	0.4	28/11/2023
230738	824537	PP3962	0.89	28/11/2023
230742	824546	PP3963	1.04	28/11/2023
230745	824556	PP3964	1.75	28/11/2023
230749	824565	PP3965	2.21	28/11/2023
230752	824574	PP3966	1.9	28/11/2023
230756	824584	PP3967	1.89	28/11/2023
230760	824593	PP3968	1.28	28/11/2023
230763	824602	PP3969	0.78	28/11/2023
230767	824612	PP3970	0.69	28/11/2023
230770	824621	PP3971	0.85	28/11/2023
230774	824630	PP3972	0.87	28/11/2023
230777	824640	PP3973	1.06	28/11/2023
230781	824649	PP3974	1.62	28/11/2023
230785	824658	PP3975	2.5	28/11/2023
230788	824668	PP3976	2.88	28/11/2023
230792	824677	PP3977	3.48	28/11/2023
230795	824686	PP3978	3.41	28/11/2023
230799	824696	PP3979	3.23	28/11/2023
230803	824705	PP3980	3.41	28/11/2023
230806	824714	PP3981	4.13	28/11/2023
230810	824724	PP3982	4.27	28/11/2023
230813	824733	PP3983	3.94	28/11/2023
230817	824742	PP3984	4.96	28/11/2023
230820	824752	PP3985	4.83	28/11/2023
230824	824761	PP3986	5.02	28/11/2023
230828	824770	PP3987	4.71	28/11/2023
230831	824780	PP3988	4.96	28/11/2023
230835	824789	PP3989	4.22	28/11/2023
230838	824798	PP3990	1.38	28/11/2023
230842	824808	PP3991	0.53	28/11/2023
230846	824817	PP3992	0.21	28/11/2023
230849	824826	PP3993	0.41	28/11/2023
230853	824836	PP3994	0.26	28/11/2023
230856	824845	PP3995	0.26	28/11/2023
230860	824854	PP3996	0.57	28/11/2023
230864	824864	PP3997	0.39	28/11/2023
230867	824873	PP3998	0.55	28/11/2023
230871	824882	PP3999	1.11	28/11/2023
230874	824892	PP4000	beyond deer fence	28/11/2023
230878	824901	PP4001	beyond deer fence	28/11/2023
230504	823900	PP4002	0.95	14/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230508	823910	PP4003	0.49	14/11/2023
230511	823919	PP4004	0.68	14/11/2023
230515	823928	PP4005	0.28	14/11/2023
230519	823938	PP4006	0.24	14/11/2023
230522	823947	PP4007	0.22	14/11/2023
230526	823956	PP4008	0.23	14/11/2023
230529	823966	PP4009	0.16	14/11/2023
230533	823975	PP4010	0.25	14/11/2023
230536	823984	PP4011	0.48	14/11/2023
230540	823994	PP4012	0.52	14/11/2023
230544	824003	PP4013	0.45	14/11/2023
230547	824012	PP4014	0.62	14/11/2023
230551	824022	PP4015	0.76	14/11/2023
230554	824031	PP4016	0.7	14/11/2023
230558	824040	PP4017	0.65	14/11/2023
230562	824050	PP4018	0.68	14/11/2023
230565	824059	PP4019	0.53	14/11/2023
230569	824068	PP4020	0.99	14/11/2023
230572	824078	PP4021	0.68	14/11/2023
230576	824087	PP4022	0.6	14/11/2023
230580	824096	PP4023	0.58	14/11/2023
230583	824106	PP4024	0.65	14/11/2023
230587	824115	PP4025	0.5	14/11/2023
230590	824124	PP4026	0.52	14/11/2023
230594	824134	PP4027	0.49	14/11/2023
230597	824143	PP4028	0.5	14/11/2023
230601	824152	PP4029	0.69	14/11/2023
230605	824162	PP4030	0.85	14/11/2023
230608	824171	PP4031	0.57	14/11/2023
230612	824180	PP4032	0.57	14/11/2023
230615	824190	PP4033	0.6	14/11/2023
230619	824199	PP4034	0.27	14/11/2023
230623	824208	PP4035	0.26	14/11/2023
230626	824218	PP4036	0.27	14/11/2023
230630	824227	PP4037	0.75	14/11/2023
230633	824236	PP4038	0.44	14/11/2023
230637	824246	PP4039	0.43	14/11/2023
230640	824255	PP4040	0.43	14/11/2023
230644	824264	PP4041	0.57	14/11/2023
230648	824274	PP4042	0.53	14/11/2023
230651	824283	PP4043	0.47	14/11/2023
230655	824292	PP4044	0.76	14/11/2023
230658	824302	PP4045	2.85	14/11/2023
230662	824311	PP4046	2.54	14/11/2023
230666	824320	PP4047	1.62	14/11/2023
230669	824330	PP4048	0.64	28/11/2023
230673	824339	PP4049	0.7	28/11/2023
230676	824349	PP4050	0.72	28/11/2023
230680	824358	PP4051	1.06	28/11/2023
230683	824367	PP4052	0.54	28/11/2023
230687	824377	PP4053	0.31	28/11/2023
230691	824386	PP4054	0.35	28/11/2023
230694	824395	PP4055	0.48	28/11/2023
230698	824405	PP4056	1.27	28/11/2023
230701	824414	PP4057	1.59	28/11/2023
230705	824423	PP4058	1.76	28/11/2023
230709	824433	PP4059	1.53	28/11/2023
230712	824442	PP4060	0.87	28/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230716	824451	PP4061	0.39	28/11/2023
230719	824461	PP4062	0.33	28/11/2023
230723	824470	PP4063	0.32	28/11/2023
230726	824479	PP4064	0.15	28/11/2023
230730	824489	PP4065	0.72	28/11/2023
230734	824498	PP4066	0.35	28/11/2023
230737	824507	PP4067	0.43	28/11/2023
230741	824517	PP4068	0.31	28/11/2023
230744	824526	PP4069	0.66	28/11/2023
230748	824535	PP4070	0.77	28/11/2023
230752	824545	PP4071	0.7	28/11/2023
230755	824554	PP4072	0.36	28/11/2023
230759	824563	PP4073	1.02	28/11/2023
230762	824573	PP4074	0.14	28/11/2023
230766	824582	PP4075	1.33	28/11/2023
230769	824591	PP4076	0.9	28/11/2023
230773	824601	PP4077	0.78	28/11/2023
230777	824610	PP4078	0.45	28/11/2023
230780	824619	PP4079	0.67	28/11/2023
230784	824629	PP4080	0.9	28/11/2023
230787	824638	PP4081	1.23	28/11/2023
230791	824647	PP4082	2.01	28/11/2023
230795	824657	PP4083	2.35	28/11/2023
230798	824666	PP4084	2.93	28/11/2023
230802	824675	PP4085	2.94	28/11/2023
230805	824685	PP4086	3.13	28/11/2023
230809	824694	PP4087	2.97	28/11/2023
230812	824703	PP4088	3.24	28/11/2023
230816	824713	PP4089	3.66	28/11/2023
230820	824722	PP4090	3.88	28/11/2023
230823	824731	PP4091	4.57	28/11/2023
230827	824741	PP4092	4.83	28/11/2023
230830	824750	PP4093	5.02	28/11/2023
230834	824759	PP4094	4.77	28/11/2023
230838	824769	PP4095	4.81	28/11/2023
230841	824778	PP4096	4.41	28/11/2023
230845	824787	PP4097	4.07	28/11/2023
230848	824797	PP4098	3.43	28/11/2023
230852	824806	PP4099	0.2	28/11/2023
230855	824815	PP4100	0.19	28/11/2023
230859	824825	PP4101	0.47	28/11/2023
230863	824834	PP4102	0.42	28/11/2023
230866	824843	PP4103	0.34	28/11/2023
230870	824853	PP4104	0.47	28/11/2023
230873	824862	PP4105	0.34	28/11/2023
230877	824871	PP4106	0.31	28/11/2023
230881	824881	PP4107	0.39	28/11/2023
230884	824890	PP4108	0.32	28/11/2023
230888	824899	PP4109	0.79	28/11/2023
230891	824909	PP4110	1.29	28/11/2023
230514	823899	PP4111	0.25	15/11/2023
230518	823908	PP4112	0.37	15/11/2023
230521	823917	PP4113	0.28	15/11/2023
230525	823927	PP4114	0.47	15/11/2023
230528	823936	PP4115	0.31	15/11/2023
230532	823945	PP4116	0.29	15/11/2023
230536	823955	PP4117	0.37	15/11/2023
230539	823964	PP4118	0.21	15/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230543	823973	PP4119	0.34	15/11/2023
230546	823983	PP4120	0.28	15/11/2023
230550	823992	PP4121	0.35	15/11/2023
230554	824001	PP4122	0.46	15/11/2023
230557	824011	PP4123	0.59	15/11/2023
230561	824020	PP4124	0.7	15/11/2023
230564	824029	PP4125	0.59	15/11/2023
230568	824039	PP4126	1.02	15/11/2023
230571	824048	PP4127	1.47	15/11/2023
230575	824057	PP4128	0.82	15/11/2023
230579	824067	PP4129	0.44	15/11/2023
230582	824076	PP4130	0.36	15/11/2023
230586	824085	PP4131	0.6	15/11/2023
230589	824095	PP4132	0.29	15/11/2023
230593	824104	PP4133	0.43	15/11/2023
230597	824113	PP4134	0.33	15/11/2023
230600	824123	PP4135	0.47	15/11/2023
230604	824132	PP4136	0.49	15/11/2023
230607	824141	PP4137	0.32	15/11/2023
230611	824151	PP4138	0.42	15/11/2023
230614	824160	PP4139	0.64	15/11/2023
230618	824169	PP4140	0.76	15/11/2023
230622	824179	PP4141	0.86	15/11/2023
230625	824188	PP4142	0.54	15/11/2023
230629	824197	PP4143	0.53	15/11/2023
230632	824207	PP4144	0.23	15/11/2023
230636	824216	PP4145	0.49	15/11/2023
230640	824225	PP4146	0.41	15/11/2023
230643	824235	PP4147	0.35	15/11/2023
230647	824244	PP4148	0.49	15/11/2023
230650	824253	PP4149	0.29	15/11/2023
230654	824263	PP4150	0.37	15/11/2023
230657	824272	PP4151	0.69	15/11/2023
230661	824281	PP4152	0.56	15/11/2023
230665	824291	PP4153	0.38	15/11/2023
230668	824300	PP4154	1.71	15/11/2023
230672	824309	PP4155	1.78	15/11/2023
230675	824319	PP4156	0.82	15/11/2023
230679	824328	PP4157	0.51	28/11/2023
230683	824338	PP4158	0.34	28/11/2023
230686	824347	PP4159	0.63	28/11/2023
230690	824356	PP4160	0.83	28/11/2023
230693	824366	PP4161	0.47	28/11/2023
230697	824375	PP4162	0.07	28/11/2023
230700	824384	PP4163	0.33	29/11/2023
230704	824394	PP4164	0.31	29/11/2023
230708	824403	PP4165	0.92	29/11/2023
230711	824412	PP4166	1.24	29/11/2023
230715	824422	PP4167	1.67	29/11/2023
230718	824431	PP4168	1.23	29/11/2023
230722	824440	PP4169	0.79	29/11/2023
230726	824450	PP4170	0.58	29/11/2023
230729	824459	PP4171	0.61	29/11/2023
230733	824468	PP4172	0.31	29/11/2023
230736	824478	PP4173	0.38	29/11/2023
230740	824487	PP4174	0.58	29/11/2023
230743	824496	PP4175	0.28	29/11/2023
230747	824506	PP4176	0.28	29/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230751	824515	PP4177	0.37	29/11/2023
230754	824524	PP4178	0.59	29/11/2023
230758	824534	PP4179	0.85	29/11/2023
230761	824543	PP4180	1.07	29/11/2023
230765	824552	PP4181	0.34	29/11/2023
230769	824562	PP4182	0.35	29/11/2023
230772	824571	PP4183	0.31	29/11/2023
230776	824580	PP4184	0.24	29/11/2023
230779	824590	PP4185	0.43	29/11/2023
230783	824599	PP4186	0.87	29/11/2023
230786	824608	PP4187	1.32	29/11/2023
230790	824618	PP4188	0.59	29/11/2023
230794	824627	PP4189	0.85	29/11/2023
230797	824636	PP4190	1.25	29/11/2023
230801	824646	PP4191	2.11	29/11/2023
230804	824655	PP4192	2.09	29/11/2023
230808	824664	PP4193	2.46	29/11/2023
230812	824674	PP4194	2.61	29/11/2023
230815	824683	PP4195	3.44	29/11/2023
230819	824692	PP4196	3.63	29/11/2023
230822	824702	PP4197	3.7	29/11/2023
230826	824711	PP4198	4.57	29/11/2023
230829	824720	PP4199	5.01	29/11/2023
230833	824730	PP4200	4.76	29/11/2023
230837	824739	PP4201	3.89	29/11/2023
230840	824748	PP4202	4.11	29/11/2023
230844	824758	PP4203	4.58	29/11/2023
230847	824767	PP4204	4.87	29/11/2023
230851	824776	PP4205	3.88	29/11/2023
230855	824786	PP4206	3.61	29/11/2023
230858	824795	PP4207	2.81	29/11/2023
230862	824804	PP4208	0.37	29/11/2023
230865	824814	PP4209	0.22	29/11/2023
230869	824823	PP4210	0.38	29/11/2023
230872	824832	PP4211	0.39	29/11/2023
230876	824842	PP4212	0.18	29/11/2023
230880	824851	PP4213	0.37	29/11/2023
230883	824860	PP4214	0.53	29/11/2023
230887	824870	PP4215	0.35	29/11/2023
230890	824879	PP4216	0.38	29/11/2023
230894	824888	PP4217	0.37	29/11/2023
230898	824898	PP4218	0.48	29/11/2023
230901	824907	PP4219	0.87	29/11/2023
230905	824916	PP4220	1.29	29/11/2023
230528	823906	PP4221	0.23	15/11/2023
230531	823916	PP4222	0.17	15/11/2023
230535	823925	PP4223	0.33	15/11/2023
230538	823934	PP4224	0.22	15/11/2023
230542	823944	PP4225	0.22	15/11/2023
230545	823953	PP4226	0.16	15/11/2023
230549	823962	PP4227	0.17	15/11/2023
230553	823972	PP4228	0.14	15/11/2023
230556	823981	PP4229	0.29	15/11/2023
230560	823990	PP4230	0.69	15/11/2023
230563	824000	PP4231	0.57	15/11/2023
230567	824009	PP4232	0.7	15/11/2023
230571	824018	PP4233	0.73	15/11/2023
230574	824028	PP4234	0.75	15/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230578	824037	PP4235	0.86	15/11/2023
230581	824046	PP4236	1.21	15/11/2023
230585	824056	PP4237	1.04	15/11/2023
230588	824065	PP4238	0.62	15/11/2023
230592	824074	PP4239	0.47	15/11/2023
230596	824084	PP4240	0.31	15/11/2023
230599	824093	PP4241	0.39	15/11/2023
230603	824102	PP4242	0.52	15/11/2023
230606	824112	PP4243	0.51	15/11/2023
230610	824121	PP4244	0.52	15/11/2023
230614	824130	PP4245	0.79	15/11/2023
230617	824140	PP4246	0.78	15/11/2023
230621	824149	PP4247	0.96	15/11/2023
230624	824158	PP4248	0.9	15/11/2023
230628	824168	PP4249	1.06	15/11/2023
230631	824177	PP4250	1.14	15/11/2023
230635	824186	PP4251	1.51	15/11/2023
230639	824196	PP4252	0.74	15/11/2023
230642	824205	PP4253	0.22	15/11/2023
230646	824214	PP4254	0.49	15/11/2023
230649	824224	PP4255	0.37	15/11/2023
230653	824233	PP4256	0.41	15/11/2023
230657	824242	PP4257	0.46	15/11/2023
230660	824252	PP4258	0.21	15/11/2023
230664	824261	PP4259	0.61	15/11/2023
230667	824270	PP4260	0.54	15/11/2023
230671	824280	PP4261	0.62	15/11/2023
230674	824289	PP4262	0.8	15/11/2023
230678	824298	PP4263	0.9	15/11/2023
230682	824308	PP4264	1.1	15/11/2023
230685	824317	PP4265	1.07	15/11/2023
230689	824327	PP4266	1.11	24/11/2023
230692	824336	PP4267	1.33	24/11/2023
230696	824345	PP4268	1.91	24/11/2023
230700	824355	PP4269	1.54	24/11/2023
230703	824364	PP4270	0.67	24/11/2023
230707	824373	PP4271	0.38	24/11/2023
230710	824383	PP4272	0.57	24/11/2023
230714	824392	PP4273	0.84	24/11/2023
230717	824401	PP4274	1.31	24/11/2023
230721	824411	PP4275	1.1	24/11/2023
230725	824420	PP4276	1.2	24/11/2023
230728	824429	PP4277	1.01	24/11/2023
230732	824439	PP4278	0.77	24/11/2023
230735	824448	PP4279	0.33	24/11/2023
230739	824457	PP4280	0.57	24/11/2023
230743	824467	PP4281	0.69	24/11/2023
230746	824476	PP4282	0.55	24/11/2023
230750	824485	PP4283	0.56	24/11/2023
230753	824495	PP4284	0.6	24/11/2023
230757	824504	PP4285	0.64	24/11/2023
230760	824513	PP4286	0.5	24/11/2023
230764	824523	PP4287	0.67	24/11/2023
230768	824532	PP4288	0.58	24/11/2023
230771	824541	PP4289	0.69	24/11/2023
230775	824551	PP4290	0.49	24/11/2023
230778	824560	PP4291	0.06	24/11/2023
230782	824569	PP4292	0.48	24/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230786	824579	PP4293	0.73	24/11/2023
230789	824588	PP4294	0.31	24/11/2023
230793	824597	PP4295	0.41	24/11/2023
230796	824607	PP4296	0.31	24/11/2023
230800	824616	PP4297	0.38	24/11/2023
230803	824625	PP4298	0.59	24/11/2023
230807	824635	PP4299	1.31	24/11/2023
230811	824644	PP4300	1.09	24/11/2023
230814	824653	PP4301	1.62	24/11/2023
230818	824663	PP4302	1.41	24/11/2023
230821	824672	PP4303	2.69	24/11/2023
230825	824681	PP4304	3.15	24/11/2023
230829	824691	PP4305	4.11	24/11/2023
230832	824700	PP4306	3.67	24/11/2023
230836	824709	PP4307	3.78	24/11/2023
230839	824719	PP4308	3.86	24/11/2023
230843	824728	PP4309	3.91	24/11/2023
230846	824737	PP4310	3.94	24/11/2023
230850	824747	PP4311	4.07	24/11/2023
230854	824756	PP4312	4.3	24/11/2023
230857	824765	PP4313	3.82	24/11/2023
230861	824775	PP4314	3.74	24/11/2023
230864	824784	PP4315	3.72	24/11/2023
230868	824793	PP4316	3.29	24/11/2023
230872	824803	PP4317	0.42	24/11/2023
230875	824812	PP4318	0.47	24/11/2023
230879	824821	PP4319	0.43	24/11/2023
230882	824831	PP4320	0.44	24/11/2023
230886	824840	PP4321	0.54	24/11/2023
230889	824849	PP4322	0.4	24/11/2023
230893	824859	PP4323	0.41	24/11/2023
230897	824868	PP4324	0.51	24/11/2023
230900	824877	PP4325	0.52	24/11/2023
230904	824887	PP4326	0.53	24/11/2023
230907	824896	PP4327	0.83	24/11/2023
230911	824905	PP4328	0.74	24/11/2023
230915	824915	PP4329	0.44	24/11/2023
230918	824924	PP4330	1.62	24/11/2023
230537	823905	PP4331	0.09	15/11/2023
230541	823914	PP4332	0.45	15/11/2023
230545	823923	PP4333	0.75	15/11/2023
230548	823933	PP4334	0.33	15/11/2023
230552	823942	PP4335	0.09	15/11/2023
230555	823951	PP4336	0.39	15/11/2023
230559	823961	PP4337	0.25	15/11/2023
230562	823970	PP4338	0.45	15/11/2023
230566	823979	PP4339	0.3	15/11/2023
230570	823989	PP4340	0.38	15/11/2023
230573	823998	PP4341	0.18	15/11/2023
230577	824007	PP4342	0.48	15/11/2023
230580	824017	PP4343	0.23	15/11/2023
230584	824026	PP4344	1.15	15/11/2023
230588	824035	PP4345	0.2	15/11/2023
230591	824045	PP4346	1.06	15/11/2023
230595	824054	PP4347	0.7	15/11/2023
230598	824063	PP4348	0.51	15/11/2023
230602	824073	PP4349	0.39	15/11/2023
230605	824082	PP4350	0.32	15/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230609	824091	PP4351	0.67	15/11/2023
230613	824101	PP4352	0.33	15/11/2023
230616	824110	PP4353	0.17	15/11/2023
230620	824119	PP4354	0.47	15/11/2023
230623	824129	PP4355	0.55	15/11/2023
230627	824138	PP4356	0.22	15/11/2023
230631	824147	PP4357	1.02	15/11/2023
230634	824157	PP4358	1	15/11/2023
230638	824166	PP4359	0.92	15/11/2023
230641	824175	PP4360	1.14	15/11/2023
230645	824185	PP4361	1.66	15/11/2023
230649	824194	PP4362	1.05	15/11/2023
230652	824203	PP4363	1.02	15/11/2023
230656	824213	PP4364	0.39	15/11/2023
230659	824222	PP4365	0.55	15/11/2023
230663	824231	PP4366	0.48	15/11/2023
230666	824241	PP4367	0.37	15/11/2023
230670	824250	PP4368	0.29	15/11/2023
230674	824259	PP4369	0.34	15/11/2023
230677	824269	PP4370	0.44	15/11/2023
230681	824278	PP4371	0.43	15/11/2023
230684	824287	PP4372	0.58	15/11/2023
230688	824297	PP4373	1.7	15/11/2023
230692	824306	PP4374	1.04	15/11/2023
230695	824315	PP4375	1.21	24/11/2023
230699	824325	PP4376	1.19	24/11/2023
230702	824334	PP4377	1.13	24/11/2023
230706	824344	PP4378	1.21	24/11/2023
230709	824353	PP4379	1.25	24/11/2023
230713	824362	PP4380	0.5	24/11/2023
230717	824372	PP4381	0.38	24/11/2023
230720	824381	PP4382	0.25	24/11/2023
230724	824390	PP4383	0.5	24/11/2023
230727	824400	PP4384	0.4	24/11/2023
230731	824409	PP4385	0.34	24/11/2023
230735	824418	PP4386	0.23	24/11/2023
230738	824428	PP4387	0.26	24/11/2023
230742	824437	PP4388	0.54	24/11/2023
230745	824446	PP4389	0.46	24/11/2023
230749	824456	PP4390	0.24	24/11/2023
230752	824465	PP4391	0.16	24/11/2023
230756	824474	PP4392	0.45	24/11/2023
230760	824484	PP4393	0.37	24/11/2023
230763	824493	PP4394	0.39	24/11/2023
230767	824502	PP4395	0.54	24/11/2023
230770	824512	PP4396	0.24	24/11/2023
230774	824521	PP4397	0.38	24/11/2023
230778	824530	PP4398	0.34	24/11/2023
230781	824540	PP4399	0.4	24/11/2023
230785	824549	PP4400	0.59	24/11/2023
230788	824558	PP4401	0.49	24/11/2023
230792	824568	PP4402	0.7	24/11/2023
230795	824577	PP4403	1.04	24/11/2023
230799	824586	PP4404	1.38	24/11/2023
230803	824596	PP4405	0.23	24/11/2023
230806	824605	PP4406	0.37	24/11/2023
230810	824614	PP4407	0.41	24/11/2023
230813	824624	PP4408	1.02	24/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230817	824633	PP4409	0.54	24/11/2023
230821	824642	PP4410	0.27	24/11/2023
230824	824652	PP4411	0.26	24/11/2023
230828	824661	PP4412	0.48	24/11/2023
230831	824670	PP4413	1.05	24/11/2023
230835	824680	PP4414	2.32	24/11/2023
230838	824689	PP4415	3.12	24/11/2023
230842	824698	PP4416	4.4	24/11/2023
230846	824708	PP4417	5	24/11/2023
230849	824717	PP4418	5.1	24/11/2023
230853	824726	PP4419	5.7	24/11/2023
230856	824736	PP4420	5.5	24/11/2023
230860	824745	PP4421	5.64	24/11/2023
230864	824754	PP4422	6.2	24/11/2023
230867	824764	PP4423	5.82	24/11/2023
230871	824773	PP4424	6.25	24/11/2023
230874	824782	PP4425	5.6	24/11/2023
230878	824792	PP4426	4.33	24/11/2023
230881	824801	PP4427	0.16	24/11/2023
230885	824810	PP4428	0.22	24/11/2023
230889	824820	PP4429	0.26	24/11/2023
230892	824829	PP4430	0.53	24/11/2023
230896	824838	PP4431	0.19	24/11/2023
230899	824848	PP4432	0.15	24/11/2023
230903	824857	PP4433	0.32	24/11/2023
230907	824866	PP4434	0.13	24/11/2023
230910	824876	PP4435	0.14	24/11/2023
230914	824885	PP4436	0.31	24/11/2023
230917	824894	PP4437	0.29	24/11/2023
230921	824904	PP4438	0.5	24/11/2023
230924	824913	PP4439	0.65	24/11/2023
230928	824922	PP4440	0.45	24/11/2023
230932	824932	PP4441	0.87	24/11/2023
230547	823903	PP4442	0.21	15/11/2023
230551	823912	PP4443	0.37	15/11/2023
230554	823922	PP4444	0.37	15/11/2023
230558	823931	PP4445	0.62	15/11/2023
230562	823940	PP4446	0.51	15/11/2023
230565	823950	PP4447	0.75	15/11/2023
230569	823959	PP4448	0.62	15/11/2023
230572	823968	PP4449	0.58	15/11/2023
230576	823978	PP4450	0.4	15/11/2023
230580	823987	PP4451	0.46	15/11/2023
230583	823996	PP4452	0.43	15/11/2023
230587	824006	PP4453	0.46	15/11/2023
230590	824015	PP4454	0.57	15/11/2023
230594	824024	PP4455	0.6	15/11/2023
230597	824034	PP4456	0.66	15/11/2023
230601	824043	PP4457	0.69	15/11/2023
230605	824052	PP4458	0.55	15/11/2023
230608	824062	PP4459	0.33	15/11/2023
230612	824071	PP4460	0.29	15/11/2023
230615	824080	PP4461	0.24	15/11/2023
230619	824090	PP4462	0.34	15/11/2023
230623	824099	PP4463	0.29	15/11/2023
230626	824108	PP4464	0.59	15/11/2023
230630	824118	PP4465	0.59	15/11/2023
230633	824127	PP4466	0.57	15/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230637	824136	PP4467	0.74	15/11/2023
230640	824146	PP4468	0.88	15/11/2023
230644	824155	PP4469	0.88	15/11/2023
230648	824164	PP4470	0.98	15/11/2023
230651	824174	PP4471	1.63	15/11/2023
230655	824183	PP4472	0.96	15/11/2023
230658	824192	PP4473	1.97	15/11/2023
230662	824202	PP4474	2.38	15/11/2023
230666	824211	PP4475	1.65	15/11/2023
230669	824220	PP4476	0.95	15/11/2023
230673	824230	PP4477	0.6	15/11/2023
230676	824239	PP4478	0.57	15/11/2023
230680	824248	PP4479	1.34	15/11/2023
230683	824258	PP4480	1	15/11/2023
230687	824267	PP4481	0.98	15/11/2023
230691	824276	PP4482	0.76	15/11/2023
230694	824286	PP4483	0.76	15/11/2023
230698	824295	PP4484	0.38	15/11/2023
230701	824304	PP4485	0.87	15/11/2023
230705	824314	PP4486	1.39	25/11/2023
230709	824323	PP4487	1.2	25/11/2023
230712	824333	PP4488	1.65	25/11/2023
230716	824342	PP4489	2.15	25/11/2023
230719	824351	PP4490	1.3	25/11/2023
230723	824361	PP4491	1	25/11/2023
230726	824370	PP4492	0.35	25/11/2023
230730	824379	PP4493	0.5	25/11/2023
230734	824389	PP4494	0.3	25/11/2023
230737	824398	PP4495	0.25	25/11/2023
230741	824407	PP4496	0.27	25/11/2023
230744	824417	PP4497	0.32	25/11/2023
230748	824426	PP4498	0.26	25/11/2023
230752	824435	PP4499	0.21	25/11/2023
230755	824445	PP4500	0.58	25/11/2023
230759	824454	PP4501	0.24	25/11/2023
230762	824463	PP4502	0.35	25/11/2023
230766	824473	PP4503	0.29	25/11/2023
230769	824482	PP4504	0.29	25/11/2023
230773	824491	PP4505	0.4	25/11/2023
230777	824501	PP4506	0.26	25/11/2023
230780	824510	PP4507	0.3	25/11/2023
230784	824519	PP4508	0.31	25/11/2023
230787	824529	PP4509	0.35	25/11/2023
230791	824538	PP4510	0.39	25/11/2023
230795	824547	PP4511	0.13	25/11/2023
230798	824557	PP4512	0.25	25/11/2023
230802	824566	PP4513	0.29	25/11/2023
230805	824575	PP4514	0.99	25/11/2023
230809	824585	PP4515	1.4	25/11/2023
230812	824594	PP4516	1.39	25/11/2023
230816	824603	PP4517	1.02	25/11/2023
230820	824613	PP4518	0.73	25/11/2023
230823	824622	PP4519	0.4	25/11/2023
230827	824631	PP4520	0.22	25/11/2023
230830	824641	PP4521	0.37	25/11/2023
230834	824650	PP4522	0.36	25/11/2023
230838	824659	PP4523	0.24	25/11/2023
230841	824669	PP4524	1.26	25/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230845	824678	PP4525	1.86	25/11/2023
230848	824687	PP4526	2.86	25/11/2023
230852	824697	PP4527	1.96	25/11/2023
230855	824706	PP4528	3.5	25/11/2023
230859	824715	PP4529	4.87	25/11/2023
230863	824725	PP4530	5.32	25/11/2023
230866	824734	PP4531	5.42	25/11/2023
230870	824743	PP4532	5.58	25/11/2023
230873	824753	PP4533	5.34	25/11/2023
230877	824762	PP4534	5.35	25/11/2023
230881	824771	PP4535	5.8	25/11/2023
230884	824781	PP4536	5.18	25/11/2023
230888	824790	PP4537	5.5	25/11/2023
230891	824799	PP4538	1.34	25/11/2023
230895	824809	PP4539	0.71	25/11/2023
230898	824818	PP4540	0.29	25/11/2023
230902	824827	PP4541	0.28	25/11/2023
230906	824837	PP4542	0.42	25/11/2023
230909	824846	PP4543	0.28	25/11/2023
230913	824855	PP4544	0.47	25/11/2023
230916	824865	PP4545	0.31	25/11/2023
230920	824874	PP4546	0.29	25/11/2023
230924	824883	PP4547	0.25	25/11/2023
230927	824893	PP4548	0.74	25/11/2023
230931	824902	PP4549	0.28	25/11/2023
230934	824911	PP4550	0.66	25/11/2023
230938	824921	PP4551	0.53	25/11/2023
230941	824930	PP4552	0.96	25/11/2023
230945	824939	PP4553	0.74	25/11/2023
230561	823911	PP4554	0.29	15/11/2023
230564	823920	PP4555	0.58	15/11/2023
230568	823929	PP4556	0.9	15/11/2023
230571	823939	PP4557	0.81	15/11/2023
230575	823948	PP4558	0.95	15/11/2023
230579	823957	PP4559	0.99	15/11/2023
230582	823967	PP4560	1.14	15/11/2023
230586	823976	PP4561	0.89	15/11/2023
230589	823985	PP4562	0.5	15/11/2023
230593	823995	PP4563	0.57	15/11/2023
230597	824004	PP4564	0.46	15/11/2023
230600	824013	PP4565	0.56	15/11/2023
230604	824023	PP4566	0.57	15/11/2023
230607	824032	PP4567	0.53	15/11/2023
230611	824041	PP4568	0.62	15/11/2023
230614	824051	PP4569	0.57	15/11/2023
230618	824060	PP4570	0.29	15/11/2023
230622	824069	PP4571	0.38	15/11/2023
230625	824079	PP4572	0.38	15/11/2023
230629	824088	PP4573	0.54	15/11/2023
230632	824097	PP4574	0.42	15/11/2023
230636	824107	PP4575	0.32	15/11/2023
230640	824116	PP4576	0.42	15/11/2023
230643	824125	PP4577	0.46	15/11/2023
230647	824135	PP4578	0.47	15/11/2023
230650	824144	PP4579	0.4	15/11/2023
230654	824153	PP4580	0.51	15/11/2023
230657	824163	PP4581	0.98	15/11/2023
230661	824172	PP4582	1.31	15/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230665	824181	PP4583	1.47	15/11/2023
230668	824191	PP4584	1.39	15/11/2023
230672	824200	PP4585	1.41	15/11/2023
230675	824209	PP4586	1.85	15/11/2023
230679	824219	PP4587	1.96	15/11/2023
230683	824228	PP4588	1.32	15/11/2023
230686	824237	PP4589	1.62	15/11/2023
230690	824247	PP4590	1.67	15/11/2023
230693	824256	PP4591	0.51	15/11/2023
230697	824265	PP4592	1.09	15/11/2023
230700	824275	PP4593	0.34	15/11/2023
230704	824284	PP4594	0.44	15/11/2023
230708	824293	PP4595	0.26	15/11/2023
230711	824303	PP4596	0.91	15/11/2023
230715	824312	PP4597	1.2	25/11/2023
230718	824322	PP4598	1.29	25/11/2023
230722	824331	PP4599	2.15	25/11/2023
230726	824340	PP4600	2.14	25/11/2023
230729	824350	PP4601	1.56	25/11/2023
230733	824359	PP4602	0.9	25/11/2023
230736	824368	PP4603	0.98	25/11/2023
230740	824378	PP4604	0.28	25/11/2023
230743	824387	PP4605	0.31	25/11/2023
230747	824396	PP4606	0.34	25/11/2023
230751	824406	PP4607	0.4	25/11/2023
230754	824415	PP4608	0.4	25/11/2023
230758	824424	PP4609	0.32	25/11/2023
230761	824434	PP4610	0.73	25/11/2023
230765	824443	PP4611	0.49	25/11/2023
230769	824452	PP4612	0.27	25/11/2023
230772	824462	PP4613	0.38	25/11/2023
230776	824471	PP4614	0.29	25/11/2023
230779	824480	PP4615	0.36	25/11/2023
230783	824490	PP4616	0.28	25/11/2023
230786	824499	PP4617	0.47	25/11/2023
230790	824508	PP4618	0.49	25/11/2023
230794	824518	PP4619	0.31	25/11/2023
230797	824527	PP4620	0.52	25/11/2023
230801	824536	PP4621	0.57	25/11/2023
230804	824546	PP4622	0.47	25/11/2023
230808	824555	PP4623	0.51	25/11/2023
230812	824564	PP4624	0.61	25/11/2023
230815	824574	PP4625	0.9	25/11/2023
230819	824583	PP4626	0.73	25/11/2023
230822	824592	PP4627	0.37	25/11/2023
230826	824602	PP4628	0.36	25/11/2023
230829	824611	PP4629	0.57	25/11/2023
230833	824620	PP4630	0.36	25/11/2023
230837	824630	PP4631	0.26	25/11/2023
230840	824639	PP4632	0.24	25/11/2023
230844	824648	PP4633	0.59	25/11/2023
230847	824658	PP4634	0.52	25/11/2023
230851	824667	PP4635	1.21	25/11/2023
230855	824676	PP4636	1.85	25/11/2023
230858	824686	PP4637	1.84	25/11/2023
230862	824695	PP4638	2.34	25/11/2023
230865	824704	PP4639	3.7	25/11/2023
230869	824714	PP4640	6.3	25/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230872	824723	PP4641	5.86	25/11/2023
230876	824732	PP4642	6.37	25/11/2023
230880	824742	PP4643	6.35	25/11/2023
230883	824751	PP4644	6.44	25/11/2023
230887	824760	PP4645	6.23	25/11/2023
230890	824770	PP4646	6.39	25/11/2023
230894	824779	PP4647	6.18	25/11/2023
230898	824788	PP4648	5.67	25/11/2023
230901	824798	PP4649	3.24	25/11/2023
230905	824807	PP4650	1.34	25/11/2023
230908	824816	PP4651	0.26	25/11/2023
230912	824826	PP4652	0.25	25/11/2023
230915	824835	PP4653	0.23	25/11/2023
230919	824844	PP4654	0.15	25/11/2023
230923	824854	PP4655	0.29	25/11/2023
230926	824863	PP4656	0.36	25/11/2023
230930	824872	PP4657	0.18	25/11/2023
230933	824882	PP4658	0.49	25/11/2023
230937	824891	PP4659	0.39	25/11/2023
230941	824900	PP4660	0.39	25/11/2023
230944	824910	PP4661	0.3	25/11/2023
230948	824919	PP4662	0.27	25/11/2023
230951	824928	PP4663	0.21	25/11/2023
230955	824938	PP4664	0.51	25/11/2023
230571	823909	PP4665	0.24	15/11/2023
230574	823918	PP4666	0.42	15/11/2023
230578	823928	PP4667	0.96	15/11/2023
230581	823937	PP4668	1.63	15/11/2023
230585	823946	PP4669	1.72	15/11/2023
230588	823956	PP4670	1.81	15/11/2023
230592	823965	PP4671	1.74	15/11/2023
230596	823974	PP4672	0.88	15/11/2023
230599	823984	PP4673	0.68	15/11/2023
230603	823993	PP4674	0.51	15/11/2023
230606	824002	PP4675	0.4	15/11/2023
230610	824012	PP4676	0.26	15/11/2023
230614	824021	PP4677	0.47	15/11/2023
230617	824030	PP4678	0.51	15/11/2023
230621	824040	PP4679	0.67	15/11/2023
230624	824049	PP4680	0.8	15/11/2023
230628	824058	PP4681	0.48	15/11/2023
230631	824068	PP4682	0.38	15/11/2023
230635	824077	PP4683	0.51	15/11/2023
230639	824086	PP4684	0.51	15/11/2023
230642	824096	PP4685	0.42	15/11/2023
230646	824105	PP4686	0.31	15/11/2023
230649	824114	PP4687	0.38	15/11/2023
230653	824124	PP4688	0.48	15/11/2023
230657	824133	PP4689	0.66	15/11/2023
230660	824142	PP4690	0.37	15/11/2023
230664	824152	PP4691	0.47	15/11/2023
230667	824161	PP4692	1.04	15/11/2023
230671	824170	PP4693	1.32	15/11/2023
230674	824180	PP4694	1.06	15/11/2023
230678	824189	PP4695	1.51	15/11/2023
230682	824198	PP4696	1.99	15/11/2023
230685	824208	PP4697	1.1	15/11/2023
230689	824217	PP4698	2.1	15/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230692	824226	PP4699	2.47	15/11/2023
230696	824236	PP4700	1.88	15/11/2023
230700	824245	PP4701	1.84	15/11/2023
230703	824254	PP4702	1.71	15/11/2023
230707	824264	PP4703	1.11	15/11/2023
230710	824273	PP4704	0.49	15/11/2023
230714	824282	PP4705	0.39	15/11/2023
230718	824292	PP4706	0.58	15/11/2023
230721	824301	PP4707	0.94	15/11/2023
230725	824311	PP4708	1.22	25/11/2023
230728	824320	PP4709	1.37	25/11/2023
230732	824329	PP4710	1.62	25/11/2023
230735	824339	PP4711	1.23	25/11/2023
230739	824348	PP4712	1.25	25/11/2023
230743	824357	PP4713	1.23	25/11/2023
230746	824367	PP4714	1.11	25/11/2023
230750	824376	PP4715	0.91	25/11/2023
230753	824385	PP4716	0.73	25/11/2023
230757	824395	PP4717	0.34	25/11/2023
230761	824404	PP4718	0.37	25/11/2023
230764	824413	PP4719	0.49	25/11/2023
230768	824423	PP4720	0.11	25/11/2023
230771	824432	PP4721	0.31	25/11/2023
230775	824441	PP4722	0.32	25/11/2023
230778	824451	PP4723	0.51	25/11/2023
230782	824460	PP4724	0.59	25/11/2023
230786	824469	PP4725	0.35	25/11/2023
230789	824479	PP4726	0.34	25/11/2023
230793	824488	PP4727	0.37	25/11/2023
230796	824497	PP4728	0.42	25/11/2023
230800	824507	PP4729	0.39	25/11/2023
230804	824516	PP4730	0.3	25/11/2023
230807	824525	PP4731	0.33	25/11/2023
230811	824535	PP4732	0.31	25/11/2023
230814	824544	PP4733	0.37	25/11/2023
230818	824553	PP4734	0.31	25/11/2023
230821	824563	PP4735	0.1	25/11/2023
230825	824572	PP4736	0.2	25/11/2023
230829	824581	PP4737	0.89	25/11/2023
230832	824591	PP4738	0.47	25/11/2023
230836	824600	PP4739	0.37	25/11/2023
230839	824609	PP4740	0.22	25/11/2023
230843	824619	PP4741	0.39	25/11/2023
230847	824628	PP4742	0.19	25/11/2023
230850	824637	PP4743	0.54	25/11/2023
230854	824647	PP4744	0.5	25/11/2023
230857	824656	PP4745	0.17	25/11/2023
230861	824665	PP4746	0.23	25/11/2023
230864	824675	PP4747	0.64	25/11/2023
230868	824684	PP4748	2.3	25/11/2023
230872	824693	PP4749	2.07	25/11/2023
230875	824703	PP4750	3.03	25/11/2023
230879	824712	PP4751	4.92	25/11/2023
230882	824721	PP4752	6.06	25/11/2023
230886	824731	PP4753	6.2	25/11/2023
230890	824740	PP4754	6.58	25/11/2023
230893	824749	PP4755	6.4	25/11/2023
230897	824759	PP4756	6.3	25/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230900	824768	PP4757	6.15	25/11/2023
230904	824777	PP4758	5.8	25/11/2023
230907	824787	PP4759	4.1	25/11/2023
230911	824796	PP4760	1.4	25/11/2023
230915	824805	PP4761	1.35	25/11/2023
230918	824815	PP4762	1.13	25/11/2023
230922	824824	PP4763	0.25	25/11/2023
230925	824833	PP4764	0.27	25/11/2023
230929	824843	PP4765	0.37	25/11/2023
230933	824852	PP4766	0.4	25/11/2023
230936	824861	PP4767	0.34	25/11/2023
230940	824871	PP4768	0.19	25/11/2023
230943	824880	PP4769	0.34	25/11/2023
230947	824889	PP4770	0.48	25/11/2023
230950	824899	PP4771	0.29	25/11/2023
230954	824908	PP4772	0.55	25/11/2023
230958	824917	PP4773	0.49	25/11/2023
230961	824927	PP4774	0.53	25/11/2023
230580	823907	PP4775	0.34	16/11/2023
230584	823917	PP4776	0.26	16/11/2023
230588	823926	PP4777	1.21	16/11/2023
230591	823935	PP4778	1.46	16/11/2023
230595	823945	PP4779	1.96	16/11/2023
230598	823954	PP4780	1.96	16/11/2023
230602	823963	PP4781	1.87	16/11/2023
230606	823973	PP4782	1.57	16/11/2023
230609	823982	PP4783	0.68	16/11/2023
230613	823991	PP4784	0.68	16/11/2023
230616	824001	PP4785	0.48	16/11/2023
230620	824010	PP4786	0.48	16/11/2023
230623	824019	PP4787	0.7	16/11/2023
230627	824029	PP4788	0.52	16/11/2023
230631	824038	PP4789	0.79	16/11/2023
230634	824047	PP4790	0.68	16/11/2023
230638	824057	PP4791	0.64	16/11/2023
230641	824066	PP4792	0.32	16/11/2023
230645	824075	PP4793	0.46	16/11/2023
230649	824085	PP4794	0.58	16/11/2023
230652	824094	PP4795	0.31	16/11/2023
230656	824103	PP4796	0.39	16/11/2023
230659	824113	PP4797	0.52	16/11/2023
230663	824122	PP4798	0.49	16/11/2023
230666	824131	PP4799	0.44	16/11/2023
230670	824141	PP4800	0.49	16/11/2023
230674	824150	PP4801	0.76	16/11/2023
230677	824159	PP4802	0.57	16/11/2023
230681	824169	PP4803	0.85	16/11/2023
230684	824178	PP4804	0.85	16/11/2023
230688	824187	PP4805	0.92	16/11/2023
230692	824197	PP4806	1.21	16/11/2023
230695	824206	PP4807	1.79	16/11/2023
230699	824215	PP4808	2.17	16/11/2023
230702	824225	PP4809	2.32	16/11/2023
230706	824234	PP4810	1.87	16/11/2023
230709	824243	PP4811	1.71	16/11/2023
230713	824253	PP4812	1.48	16/11/2023
230717	824262	PP4813	2.24	16/11/2023
230720	824271	PP4814	1.27	16/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230724	824281	PP4815	2.06	16/11/2023
230727	824290	PP4816	2.36	16/11/2023
230731	824299	PP4817	0.58	16/11/2023
230735	824309	PP4818	0.7	26/11/2023
230738	824318	PP4819	0.58	26/11/2023
230742	824328	PP4820	1.62	26/11/2023
230745	824337	PP4821	1.32	26/11/2023
230749	824346	PP4822	1.68	26/11/2023
230752	824356	PP4823	1.1	26/11/2023
230756	824365	PP4824	0.67	26/11/2023
230760	824374	PP4825	0.24	26/11/2023
230763	824384	PP4826	0.39	26/11/2023
230767	824393	PP4827	0.44	26/11/2023
230770	824402	PP4828	0.33	26/11/2023
230774	824412	PP4829	0.53	26/11/2023
230778	824421	PP4830	0.62	26/11/2023
230781	824430	PP4831	0.31	26/11/2023
230785	824440	PP4832	0.47	26/11/2023
230788	824449	PP4833	0.43	26/11/2023
230792	824458	PP4834	0.59	26/11/2023
230795	824468	PP4835	0.51	26/11/2023
230799	824477	PP4836	0.37	26/11/2023
230803	824486	PP4837	0.35	26/11/2023
230806	824496	PP4838	0.43	26/11/2023
230810	824505	PP4839	0.34	26/11/2023
230813	824514	PP4840	0.29	26/11/2023
230817	824524	PP4841	0.24	26/11/2023
230821	824533	PP4842	0.21	26/11/2023
230824	824542	PP4843	0.36	26/11/2023
230828	824552	PP4844	0.28	26/11/2023
230831	824561	PP4845	0.14	26/11/2023
230835	824570	PP4846	0.14	26/11/2023
230838	824580	PP4847	0.19	26/11/2023
230842	824589	PP4848	0.61	26/11/2023
230846	824598	PP4849	0.19	26/11/2023
230849	824608	PP4850	0.37	26/11/2023
230853	824617	PP4851	1.07	26/11/2023
230856	824626	PP4852	1.13	26/11/2023
230860	824636	PP4853	0.54	26/11/2023
230864	824645	PP4854	0.34	26/11/2023
230867	824654	PP4855	0.31	26/11/2023
230871	824664	PP4856	0.24	26/11/2023
230874	824673	PP4857	0.42	26/11/2023
230878	824682	PP4858	1.93	26/11/2023
230881	824692	PP4859	2.32	26/11/2023
230885	824701	PP4860	3.79	26/11/2023
230889	824710	PP4861	5.42	26/11/2023
230892	824720	PP4862	5.9	26/11/2023
230896	824729	PP4863	6.1	26/11/2023
230899	824738	PP4864	6.04	26/11/2023
230903	824748	PP4865	6.72	26/11/2023
230907	824757	PP4866	7.14	26/11/2023
230910	824766	PP4867	6.13	26/11/2023
230914	824776	PP4868	4.8	26/11/2023
230917	824785	PP4869	5.8	26/11/2023
230921	824794	PP4870	0.84	26/11/2023
230924	824804	PP4871	0.17	26/11/2023
230928	824813	PP4872	0.51	26/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230932	824822	PP4873	0.22	26/11/2023
230935	824832	PP4874	0.52	26/11/2023
230939	824841	PP4875	0.29	26/11/2023
230942	824850	PP4876	0.21	26/11/2023
230946	824860	PP4877	0.21	26/11/2023
230950	824869	PP4878	0.39	26/11/2023
230953	824878	PP4879	0.2	26/11/2023
230957	824888	PP4880	0.6	26/11/2023
230960	824897	PP4881	0.49	26/11/2023
230964	824906	PP4882	0.54	26/11/2023
230594	823915	PP4883	0.12	16/11/2023
230597	823924	PP4884	1.11	16/11/2023
230601	823934	PP4885	1.21	16/11/2023
230605	823943	PP4886	1.12	16/11/2023
230608	823952	PP4887	1.72	16/11/2023
230612	823962	PP4888	1.95	16/11/2023
230615	823971	PP4889	1.39	16/11/2023
230619	823980	PP4890	1.3	16/11/2023
230623	823990	PP4891	0.66	16/11/2023
230626	823999	PP4892	0.54	16/11/2023
230630	824008	PP4893	0.43	16/11/2023
230633	824018	PP4894	0.59	16/11/2023
230637	824027	PP4895	0.72	16/11/2023
230640	824036	PP4896	0.41	16/11/2023
230644	824046	PP4897	0.43	16/11/2023
230648	824055	PP4898	0.27	16/11/2023
230651	824064	PP4899	0.39	16/11/2023
230655	824074	PP4900	0.39	16/11/2023
230658	824083	PP4901	0.48	16/11/2023
230662	824092	PP4902	0.37	16/11/2023
230666	824102	PP4903	0.32	16/11/2023
230669	824111	PP4904	0.38	16/11/2023
230673	824120	PP4905	0.31	16/11/2023
230676	824130	PP4906	0.48	16/11/2023
230680	824139	PP4907	0.65	16/11/2023
230683	824148	PP4908	0.34	16/11/2023
230687	824158	PP4909	0.44	16/11/2023
230691	824167	PP4910	0.63	16/11/2023
230694	824176	PP4911	0.89	16/11/2023
230698	824186	PP4912	0.94	16/11/2023
230701	824195	PP4913	1.24	16/11/2023
230705	824204	PP4914	1.55	16/11/2023
230709	824214	PP4915	1.99	16/11/2023
230712	824223	PP4916	1.28	16/11/2023
230716	824232	PP4917	1.02	16/11/2023
230719	824242	PP4918	0.78	16/11/2023
230723	824251	PP4919	0.52	16/11/2023
230726	824260	PP4920	0.58	16/11/2023
230730	824270	PP4921	0.91	16/11/2023
230734	824279	PP4922	0.89	16/11/2023
230737	824288	PP4923	0.33	16/11/2023
230741	824298	PP4924	0.48	26/11/2023
230744	824307	PP4925	0.46	26/11/2023
230748	824317	PP4926	0.94	26/11/2023
230752	824326	PP4927	1.38	26/11/2023
230755	824335	PP4928	1.42	26/11/2023
230759	824345	PP4929	0.89	26/11/2023
230762	824354	PP4930	0.92	26/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230766	824363	PP4931	1.2	26/11/2023
230769	824373	PP4932	0.81	26/11/2023
230773	824382	PP4933	0.34	26/11/2023
230777	824391	PP4934	0.49	26/11/2023
230780	824401	PP4935	0.29	26/11/2023
230784	824410	PP4936	0.37	26/11/2023
230787	824419	PP4937	0.41	26/11/2023
230791	824429	PP4938	0.28	26/11/2023
230795	824438	PP4939	0.41	26/11/2023
230798	824447	PP4940	0.59	26/11/2023
230802	824457	PP4941	0.47	26/11/2023
230805	824466	PP4942	0.61	26/11/2023
230809	824475	PP4943	0.98	26/11/2023
230812	824485	PP4944	0.95	26/11/2023
230816	824494	PP4945	0.73	26/11/2023
230820	824503	PP4946	0.72	26/11/2023
230823	824513	PP4947	0.62	26/11/2023
230827	824522	PP4948	0.75	26/11/2023
230830	824531	PP4949	0.72	26/11/2023
230834	824541	PP4950	0.7	26/11/2023
230838	824550	PP4951	0.56	26/11/2023
230841	824559	PP4952	0.63	26/11/2023
230845	824569	PP4953	0.52	26/11/2023
230848	824578	PP4954	0.43	26/11/2023
230852	824587	PP4955	0.53	26/11/2023
230855	824597	PP4956	0.93	26/11/2023
230859	824606	PP4957	0.48	26/11/2023
230863	824615	PP4958	0.89	26/11/2023
230866	824625	PP4959	1.2	26/11/2023
230870	824634	PP4960	0.64	26/11/2023
230873	824643	PP4961	0.65	26/11/2023
230877	824653	PP4962	0.64	26/11/2023
230881	824662	PP4963	0.23	26/11/2023
230884	824671	PP4964	0.4	26/11/2023
230888	824681	PP4965	1.86	26/11/2023
230891	824690	PP4966	2.88	26/11/2023
230895	824699	PP4967	3.83	26/11/2023
230898	824709	PP4968	3.89	26/11/2023
230902	824718	PP4969	5.15	26/11/2023
230906	824727	PP4970	6.03	26/11/2023
230909	824737	PP4971	6.54	26/11/2023
230913	824746	PP4972	6.91	26/11/2023
230916	824755	PP4973	7.05	26/11/2023
230920	824765	PP4974	5.93	26/11/2023
230924	824774	PP4975	4.72	26/11/2023
230927	824783	PP4976	4.3	26/11/2023
230931	824793	PP4977	1.32	26/11/2023
230934	824802	PP4978	0.25	26/11/2023
230938	824811	PP4979	0.38	26/11/2023
230941	824821	PP4980	0.37	26/11/2023
230945	824830	PP4981	0.26	26/11/2023
230949	824839	PP4982	0.31	26/11/2023
230952	824849	PP4983	0.06	26/11/2023
230956	824858	PP4984	0.22	26/11/2023
230959	824867	PP4985	0.24	26/11/2023
230963	824877	PP4986	0.08	26/11/2023
230967	824886	PP4987	0.19	26/11/2023
230970	824895	PP4988	0.71	26/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230604	823913	PP4989	0.23	16/11/2023
230607	823923	PP4990	1.01	16/11/2023
230611	823932	PP4991	1.09	16/11/2023
230614	823941	PP4992	1.89	16/11/2023
230618	823951	PP4993	1.94	16/11/2023
230622	823960	PP4994	2.02	16/11/2023
230625	823969	PP4995	1.53	16/11/2023
230629	823979	PP4996	0.91	16/11/2023
230632	823988	PP4997	0.71	16/11/2023
230636	823997	PP4998	0.53	16/11/2023
230640	824007	PP4999	0.37	16/11/2023
230643	824016	PP5000	0.42	16/11/2023
230647	824025	PP5001	0.51	16/11/2023
230650	824035	PP5002	0.57	16/11/2023
230654	824044	PP5003	0.39	16/11/2023
230657	824053	PP5004	0.41	16/11/2023
230661	824063	PP5005	0.4	16/11/2023
230665	824072	PP5006	0.48	16/11/2023
230668	824081	PP5007	0.47	16/11/2023
230672	824091	PP5008	0.42	16/11/2023
230675	824100	PP5009	0.49	16/11/2023
230679	824109	PP5010	0.32	16/11/2023
230683	824119	PP5011	0.43	16/11/2023
230686	824128	PP5012	0.46	16/11/2023
230690	824137	PP5013	0.58	16/11/2023
230693	824147	PP5014	0.41	16/11/2023
230697	824156	PP5015	0.39	16/11/2023
230700	824165	PP5016	0.71	16/11/2023
230704	824175	PP5017	0.57	16/11/2023
230708	824184	PP5018	1	16/11/2023
230711	824193	PP5019	1.37	16/11/2023
230715	824203	PP5020	1.67	16/11/2023
230718	824212	PP5021	1.87	16/11/2023
230722	824221	PP5022	1.14	16/11/2023
230726	824231	PP5023	0.82	16/11/2023
230729	824240	PP5024	0.41	16/11/2023
230733	824249	PP5025	0.19	16/11/2023
230736	824259	PP5026	0.47	16/11/2023
230740	824268	PP5027	0.76	16/11/2023
230744	824277	PP5028	0.35	16/11/2023
230747	824287	PP5029	0.26	16/11/2023
230751	824296	PP5030	0.6	30/11/2023
230754	824306	PP5031	0.21	30/11/2023
230758	824315	PP5032	0.37	30/11/2023
230761	824324	PP5033	0.59	30/11/2023
230765	824334	PP5034	1.06	30/11/2023
230769	824343	PP5035	0.59	30/11/2023
230772	824352	PP5036	1.32	30/11/2023
230776	824362	PP5037	0.61	30/11/2023
230779	824371	PP5038	0.3	30/11/2023
230783	824380	PP5039	0.5	30/11/2023
230787	824390	PP5040	0.39	30/11/2023
230790	824399	PP5041	0.51	30/11/2023
230794	824408	PP5042	0.43	30/11/2023
230797	824418	PP5043	0.47	30/11/2023
230801	824427	PP5044	0.53	30/11/2023
230804	824436	PP5045	0.3	30/11/2023
230808	824446	PP5046	0.52	30/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230812	824455	PP5047	0.32	30/11/2023
230815	824464	PP5048	0.38	30/11/2023
230819	824474	PP5049	0.41	30/11/2023
230822	824483	PP5050	0.82	30/11/2023
230826	824492	PP5051	0.49	30/11/2023
230830	824502	PP5052	1.16	30/11/2023
230833	824511	PP5053	1.28	30/11/2023
230837	824520	PP5054	1.75	30/11/2023
230840	824530	PP5055	1.2	30/11/2023
230844	824539	PP5056	1.11	30/11/2023
230847	824548	PP5057	0.8	30/11/2023
230851	824558	PP5058	0.7	30/11/2023
230855	824567	PP5059	0.87	30/11/2023
230858	824576	PP5060	0.95	30/11/2023
230862	824586	PP5061	0.91	30/11/2023
230865	824595	PP5062	0.89	30/11/2023
230869	824604	PP5063	0.62	30/11/2023
230873	824614	PP5064	0.42	30/11/2023
230876	824623	PP5065	0.31	30/11/2023
230880	824632	PP5066	0.53	30/11/2023
230883	824642	PP5067	0.57	30/11/2023
230887	824651	PP5068	0.77	30/11/2023
230890	824660	PP5069	0.69	30/11/2023
230894	824670	PP5070	0.6	30/11/2023
230898	824679	PP5071	1.6	30/11/2023
230901	824688	PP5072	2.26	30/11/2023
230905	824698	PP5073	4.13	30/11/2023
230908	824707	PP5074	5.27	30/11/2023
230912	824716	PP5075	5.61	30/11/2023
230916	824726	PP5076	6.22	30/11/2023
230919	824735	PP5077	6.52	30/11/2023
230923	824744	PP5078	7.82	30/11/2023
230926	824754	PP5079	7.63	30/11/2023
230930	824763	PP5080	5.47	30/11/2023
230933	824772	PP5081	5.3	30/11/2023
230937	824782	PP5082	4.23	30/11/2023
230941	824791	PP5083	1.86	30/11/2023
230944	824800	PP5084	0.33	26/11/2023
230948	824810	PP5085	0.22	26/11/2023
230951	824819	PP5086	0.09	26/11/2023
230955	824828	PP5087	0.29	26/11/2023
230959	824838	PP5088	0.41	26/11/2023
230962	824847	PP5089	0.33	26/11/2023
230966	824856	PP5090	0.12	26/11/2023
230969	824866	PP5091	0.31	26/11/2023
230973	824875	PP5092	0.23	26/11/2023
230976	824884	PP5093	0.21	26/11/2023
230614	823912	PP5094	0.31	16/11/2023
230617	823921	PP5095	0.84	16/11/2023
230621	823930	PP5096	0.74	16/11/2023
230624	823940	PP5097	1.34	16/11/2023
230628	823949	PP5098	1.26	16/11/2023
230632	823958	PP5099	1.12	16/11/2023
230635	823968	PP5100	1.24	16/11/2023
230639	823977	PP5101	0.58	16/11/2023
230642	823986	PP5102	0.46	16/11/2023
230646	823996	PP5103	0.53	16/11/2023
230649	824005	PP5104	0.41	16/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230653	824014	PP5105	0.42	16/11/2023
230657	824024	PP5106	0.56	16/11/2023
230660	824033	PP5107	0.58	16/11/2023
230664	824042	PP5108	0.55	16/11/2023
230667	824052	PP5109	0.38	16/11/2023
230671	824061	PP5110	0.28	16/11/2023
230675	824070	PP5111	0.42	16/11/2023
230678	824080	PP5112	0.52	16/11/2023
230682	824089	PP5113	0.54	16/11/2023
230685	824098	PP5114	0.66	16/11/2023
230689	824108	PP5115	0.39	16/11/2023
230692	824117	PP5116	0.38	16/11/2023
230696	824126	PP5117	0.3	16/11/2023
230700	824136	PP5118	0.37	16/11/2023
230703	824145	PP5119	0.34	16/11/2023
230707	824154	PP5120	0.29	16/11/2023
230710	824164	PP5121	0.39	16/11/2023
230714	824173	PP5122	0.51	16/11/2023
230718	824182	PP5123	1.38	16/11/2023
230721	824192	PP5124	0.89	16/11/2023
230725	824201	PP5125	1.77	16/11/2023
230728	824210	PP5126	1.94	16/11/2023
230732	824220	PP5127	0.94	16/11/2023
230735	824229	PP5128	0.71	16/11/2023
230739	824238	PP5129	0.42	16/11/2023
230743	824248	PP5130	0.44	16/11/2023
230746	824257	PP5131	0.56	16/11/2023
230750	824266	PP5132	0.3	16/11/2023
230753	824276	PP5133	0.35	16/11/2023
230757	824285	PP5134	0.37	16/11/2023
230761	824295	PP5135	0.4	30/11/2023
230764	824304	PP5136	0.3	30/11/2023
230768	824313	PP5137	0.32	30/11/2023
230771	824323	PP5138	0.49	30/11/2023
230775	824332	PP5139	0.49	30/11/2023
230778	824341	PP5140	0.58	30/11/2023
230782	824351	PP5141	1.29	30/11/2023
230786	824360	PP5142	0.92	30/11/2023
230789	824369	PP5143	0.3	30/11/2023
230793	824379	PP5144	0.42	30/11/2023
230796	824388	PP5145	0.23	30/11/2023
230800	824397	PP5146	0.23	30/11/2023
230804	824407	PP5147	0.47	30/11/2023
230807	824416	PP5148	0.77	30/11/2023
230811	824425	PP5149	0.64	30/11/2023
230814	824435	PP5150	0.89	30/11/2023
230818	824444	PP5151	0.26	30/11/2023
230821	824453	PP5152	0.42	30/11/2023
230825	824463	PP5153	0.22	30/11/2023
230829	824472	PP5154	0.27	30/11/2023
230832	824481	PP5155	0.39	30/11/2023
230836	824491	PP5156	0.46	30/11/2023
230839	824500	PP5157	0.59	30/11/2023
230843	824509	PP5158	1	30/11/2023
230847	824519	PP5159	1.26	30/11/2023
230850	824528	PP5160	1.19	30/11/2023
230854	824537	PP5161	1.28	30/11/2023
230857	824547	PP5162	1.47	30/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230861	824556	PP5163	1.42	30/11/2023
230864	824565	PP5164	1.28	30/11/2023
230868	824575	PP5165	1.18	30/11/2023
230872	824584	PP5166	1.04	30/11/2023
230875	824593	PP5167	1.19	30/11/2023
230879	824603	PP5168	0.67	30/11/2023
230882	824612	PP5169	0.79	30/11/2023
230886	824621	PP5170	0.42	30/11/2023
230890	824631	PP5171	0.94	30/11/2023
230893	824640	PP5172	1.3	30/11/2023
230897	824649	PP5173	1.23	30/11/2023
230900	824659	PP5174	1.2	30/11/2023
230904	824668	PP5175	0.85	30/11/2023
230907	824677	PP5176	1.77	30/11/2023
230911	824687	PP5177	2.62	30/11/2023
230915	824696	PP5178	3.33	30/11/2023
230918	824705	PP5179	5.02	30/11/2023
230922	824715	PP5180	6.1	30/11/2023
230925	824724	PP5181	5.83	30/11/2023
230929	824733	PP5182	5.64	30/11/2023
230933	824743	PP5183	7.07	30/11/2023
230936	824752	PP5184	7.42	30/11/2023
230940	824761	PP5185	5	30/11/2023
230943	824771	PP5186	3.62	30/11/2023
230947	824780	PP5187	3.43	30/11/2023
230950	824789	PP5188	0.92	30/11/2023
230954	824799	PP5189	0.2	30/11/2023
230958	824808	PP5190	0.2	30/11/2023
230961	824817	PP5191	0.1	30/11/2023
230965	824827	PP5192	0.05	30/11/2023
230968	824836	PP5193	0.5	30/11/2023
230972	824845	PP5194	0.59	30/11/2023
230976	824855	PP5195	0.24	30/11/2023
230979	824864	PP5196	0.34	30/11/2023
230627	823919	PP5197	0.18	17/11/2023
230631	823929	PP5198	0.57	17/11/2023
230634	823938	PP5199	0.54	17/11/2023
230638	823947	PP5200	1.03	17/11/2023
230641	823957	PP5201	1.11	17/11/2023
230645	823966	PP5202	0.77	17/11/2023
230649	823975	PP5203	0.9	17/11/2023
230652	823985	PP5204	0.62	17/11/2023
230656	823994	PP5205	0.71	17/11/2023
230659	824003	PP5206	0.42	17/11/2023
230663	824013	PP5207	0.44	17/11/2023
230666	824022	PP5208	0.58	17/11/2023
230670	824031	PP5209	0.51	17/11/2023
230674	824041	PP5210	0.43	17/11/2023
230677	824050	PP5211	0.44	17/11/2023
230681	824059	PP5212	0.64	17/11/2023
230684	824069	PP5213	0.54	17/11/2023
230688	824078	PP5214	0.64	17/11/2023
230692	824087	PP5215	0.45	17/11/2023
230695	824097	PP5216	0.55	17/11/2023
230699	824106	PP5217	0.39	17/11/2023
230702	824115	PP5218	0.49	17/11/2023
230706	824125	PP5219	0.54	17/11/2023
230709	824134	PP5220	0.33	17/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230713	824143	PP5221	0.48	17/11/2023
230717	824153	PP5222	0.6	17/11/2023
230720	824162	PP5223	0.75	17/11/2023
230724	824171	PP5224	1.54	17/11/2023
230727	824181	PP5225	1.88	17/11/2023
230731	824190	PP5226	1.94	17/11/2023
230735	824199	PP5227	2.07	17/11/2023
230738	824209	PP5228	1.88	17/11/2023
230742	824218	PP5229	1.77	17/11/2023
230745	824227	PP5230	1.54	17/11/2023
230749	824237	PP5231	0.55	17/11/2023
230752	824246	PP5232	0.48	17/11/2023
230756	824255	PP5233	0.51	17/11/2023
230760	824265	PP5234	0.48	17/11/2023
230763	824274	PP5235	0.4	17/11/2023
230767	824283	PP5236	0.46	17/11/2023
230770	824293	PP5237	0.6	30/11/2023
230774	824302	PP5238	0.61	30/11/2023
230778	824312	PP5239	0.5	30/11/2023
230781	824321	PP5240	0.66	30/11/2023
230785	824330	PP5241	0.53	30/11/2023
230788	824340	PP5242	0.94	30/11/2023
230792	824349	PP5243	1.22	30/11/2023
230795	824358	PP5244	1.34	30/11/2023
230799	824368	PP5245	0.67	30/11/2023
230803	824377	PP5246	0.54	30/11/2023
230806	824386	PP5247	0.32	30/11/2023
230810	824396	PP5248	0.59	30/11/2023
230813	824405	PP5249	0.38	30/11/2023
230817	824414	PP5250	0.84	30/11/2023
230821	824424	PP5251	1.18	30/11/2023
230824	824433	PP5252	1.19	30/11/2023
230828	824442	PP5253	1.16	30/11/2023
230831	824452	PP5254	0.56	30/11/2023
230835	824461	PP5255	0.42	30/11/2023
230838	824470	PP5256	0.49	30/11/2023
230842	824480	PP5257	0.51	30/11/2023
230846	824489	PP5258	0.35	30/11/2023
230849	824498	PP5259	0.45	30/11/2023
230853	824508	PP5260	0.45	30/11/2023
230856	824517	PP5261	0.42	30/11/2023
230860	824526	PP5262	0.75	30/11/2023
230864	824536	PP5263	0.36	30/11/2023
230867	824545	PP5264	0.71	30/11/2023
230871	824554	PP5265	1.22	30/11/2023
230874	824564	PP5266	1.42	30/11/2023
230878	824573	PP5267	1.19	30/11/2023
230881	824582	PP5268	0.9	30/11/2023
230885	824592	PP5269	0.34	30/11/2023
230889	824601	PP5270	0.54	30/11/2023
230892	824610	PP5271	0.29	30/11/2023
230896	824620	PP5272	0.42	30/11/2023
230899	824629	PP5273	0.66	30/11/2023
230903	824638	PP5274	0.62	30/11/2023
230907	824648	PP5275	0.96	30/11/2023
230910	824657	PP5276	0.24	30/11/2023
230914	824666	PP5277	0.93	30/11/2023
230917	824676	PP5278	1.83	30/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230921	824685	PP5279	3.71	30/11/2023
230924	824694	PP5280	4.39	30/11/2023
230928	824704	PP5281	5.68	30/11/2023
230932	824713	PP5282	5.24	30/11/2023
230935	824722	PP5283	5.42	30/11/2023
230939	824732	PP5284	5.51	30/11/2023
230942	824741	PP5285	6.94	30/11/2023
230946	824750	PP5286	7.64	30/11/2023
230950	824760	PP5287	7.47	30/11/2023
230953	824769	PP5288	5.82	30/11/2023
230957	824778	PP5289	4.74	30/11/2023
230960	824788	PP5290	1.4	30/11/2023
230964	824797	PP5291	0.5	30/11/2023
230967	824806	PP5292	0.41	30/11/2023
230971	824816	PP5293	0.62	30/11/2023
230975	824825	PP5294	0.5	30/11/2023
230978	824834	PP5295	0.25	30/11/2023
230982	824844	PP5296	0.19	30/11/2023
230985	824853	PP5297	0.27	30/11/2023
230637	823918	PP5298	0.87	17/11/2023
230640	823927	PP5299	0.66	17/11/2023
230644	823936	PP5300	0.72	17/11/2023
230648	823946	PP5301	0.58	17/11/2023
230651	823955	PP5302	0.73	17/11/2023
230655	823964	PP5303	1.13	17/11/2023
230658	823974	PP5304	0.99	17/11/2023
230662	823983	PP5305	0.84	17/11/2023
230666	823992	PP5306	0.64	17/11/2023
230669	824002	PP5307	0.37	17/11/2023
230673	824011	PP5308	0.48	17/11/2023
230676	824020	PP5309	0.47	17/11/2023
230680	824030	PP5310	0.52	17/11/2023
230683	824039	PP5311	0.49	17/11/2023
230687	824048	PP5312	0.42	17/11/2023
230691	824058	PP5313	0.57	17/11/2023
230694	824067	PP5314	0.49	17/11/2023
230698	824076	PP5315	0.47	17/11/2023
230701	824086	PP5316	0.66	17/11/2023
230705	824095	PP5317	0.55	17/11/2023
230709	824104	PP5318	0.47	17/11/2023
230712	824114	PP5319	0.56	17/11/2023
230716	824123	PP5320	0.57	17/11/2023
230719	824132	PP5321	0.5	17/11/2023
230723	824142	PP5322	0.74	17/11/2023
230726	824151	PP5323	0.77	17/11/2023
230730	824160	PP5324	1.31	17/11/2023
230734	824170	PP5325	1.63	17/11/2023
230737	824179	PP5326	1.87	17/11/2023
230741	824188	PP5327	2.23	17/11/2023
230744	824198	PP5328	2.11	17/11/2023
230748	824207	PP5329	2.19	17/11/2023
230752	824216	PP5330	1.95	17/11/2023
230755	824226	PP5331	1.74	17/11/2023
230759	824235	PP5332	0.77	17/11/2023
230762	824244	PP5333	0.55	17/11/2023
230766	824254	PP5334	0.73	17/11/2023
230769	824263	PP5335	0.46	17/11/2023
230773	824272	PP5336	0.41	17/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230777	824282	PP5337	0.4	28/11/2023
230780	824291	PP5338	0.31	28/11/2023
230784	824301	PP5339	0.33	28/11/2023
230787	824310	PP5340	0.73	28/11/2023
230791	824319	PP5341	0.37	28/11/2023
230795	824329	PP5342	0.52	28/11/2023
230798	824338	PP5343	0.95	28/11/2023
230802	824347	PP5344	1.23	28/11/2023
230805	824357	PP5345	1.34	28/11/2023
230809	824366	PP5346	0.77	28/11/2023
230813	824375	PP5347	0.62	28/11/2023
230816	824385	PP5348	0.16	28/11/2023
230820	824394	PP5349	0.4	28/11/2023
230823	824403	PP5350	0.36	28/11/2023
230827	824413	PP5351	0.43	28/11/2023
230830	824422	PP5352	1.47	28/11/2023
230834	824431	PP5353	1.52	28/11/2023
230838	824441	PP5354	1.25	28/11/2023
230841	824450	PP5355	1.46	28/11/2023
230845	824459	PP5356	1.05	28/11/2023
230848	824469	PP5357	0.25	28/11/2023
230852	824478	PP5358	0.48	28/11/2023
230856	824487	PP5359	0.51	28/11/2023
230859	824497	PP5360	0.34	28/11/2023
230863	824506	PP5361	0.3	28/11/2023
230866	824515	PP5362	0.18	28/11/2023
230870	824525	PP5363	0.25	28/11/2023
230873	824534	PP5364	0.1	28/11/2023
230877	824543	PP5365	0.49	28/11/2023
230881	824553	PP5366	1.08	28/11/2023
230884	824562	PP5367	1.24	28/11/2023
230888	824571	PP5368	0.55	28/11/2023
230891	824581	PP5369	0.91	28/11/2023
230895	824590	PP5370	0.33	28/11/2023
230899	824599	PP5371	0.43	28/11/2023
230902	824609	PP5372	0.48	28/11/2023
230906	824618	PP5373	0.27	28/11/2023
230909	824627	PP5374	0.09	28/11/2023
230913	824637	PP5375	0.77	28/11/2023
230916	824646	PP5376	0.24	28/11/2023
230920	824655	PP5377	0.11	28/11/2023
230924	824665	PP5378	0.28	28/11/2023
230927	824674	PP5379	0.74	28/11/2023
230931	824683	PP5380	1.66	28/11/2023
230934	824693	PP5381	3.3	28/11/2023
230938	824702	PP5382	5.05	28/11/2023
230942	824711	PP5383	6.33	28/11/2023
230945	824721	PP5384	6.3	28/11/2023
230949	824730	PP5385	6.17	28/11/2023
230952	824739	PP5386	6.34	28/11/2023
230956	824749	PP5387	6.72	28/11/2023
230959	824758	PP5388	6.66	28/11/2023
230963	824767	PP5389	6.42	28/11/2023
230967	824777	PP5390	4.92	28/11/2023
230970	824786	PP5391	2.53	28/11/2023
230974	824795	PP5392	1	28/11/2023
230977	824805	PP5393	0.45	28/11/2023
230981	824814	PP5394	0.69	28/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230985	824823	PP5395	0.76	28/11/2023
230988	824833	PP5396	0.5	28/11/2023
230647	823916	PP5397	0.25	20/11/2023
230650	823925	PP5398	0.49	20/11/2023
230654	823935	PP5399	0.32	20/11/2023
230658	823944	PP5400	0.46	20/11/2023
230661	823953	PP5401	0.83	20/11/2023
230665	823963	PP5402	0.95	20/11/2023
230668	823972	PP5403	1.33	20/11/2023
230672	823981	PP5404	1.12	20/11/2023
230675	823991	PP5405	0.48	20/11/2023
230679	824000	PP5406	0.17	20/11/2023
230683	824009	PP5407	0.05	20/11/2023
230686	824019	PP5408	0.21	20/11/2023
230690	824028	PP5409	0.67	20/11/2023
230693	824037	PP5410	0.57	20/11/2023
230697	824047	PP5411	0.37	20/11/2023
230701	824056	PP5412	0.23	20/11/2023
230704	824065	PP5413	0.38	20/11/2023
230708	824075	PP5414	0.72	20/11/2023
230711	824084	PP5415	0.5	20/11/2023
230715	824093	PP5416	0.43	20/11/2023
230718	824103	PP5417	0.48	20/11/2023
230722	824112	PP5418	0.56	20/11/2023
230726	824121	PP5419	0.44	20/11/2023
230729	824131	PP5420	0.36	20/11/2023
230733	824140	PP5421	0.41	20/11/2023
230736	824149	PP5422	0.14	20/11/2023
230740	824159	PP5423	0.69	20/11/2023
230744	824168	PP5424	1.09	20/11/2023
230747	824177	PP5425	2	20/11/2023
230751	824187	PP5426	2.66	20/11/2023
230754	824196	PP5427	1.2	20/11/2023
230758	824205	PP5428	2.39	20/11/2023
230761	824215	PP5429	2.44	20/11/2023
230765	824224	PP5430	1.47	20/11/2023
230769	824233	PP5431	0.76	20/11/2023
230772	824243	PP5432	0.11	20/11/2023
230776	824252	PP5433	0.36	20/11/2023
230779	824261	PP5434	0.28	20/11/2023
230783	824271	PP5435	0.31	20/11/2023
230787	824280	PP5436	0.37	28/11/2023
230790	824290	PP5437	0.35	28/11/2023
230794	824299	PP5438	0.21	28/11/2023
230797	824308	PP5439	0.5	28/11/2023
230801	824318	PP5440	0.48	28/11/2023
230804	824327	PP5441	0.29	28/11/2023
230808	824336	PP5442	0.77	28/11/2023
230812	824346	PP5443	1.06	28/11/2023
230815	824355	PP5444	2.74	28/11/2023
230819	824364	PP5445	1.49	28/11/2023
230822	824374	PP5446	0.95	28/11/2023
230826	824383	PP5447	0.66	28/11/2023
230830	824392	PP5448	0.58	28/11/2023
230833	824402	PP5449	0.46	28/11/2023
230837	824411	PP5450	0.62	28/11/2023
230840	824420	PP5451	1.24	28/11/2023
230844	824430	PP5452	1.56	28/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230847	824439	PP5453	1.5	28/11/2023
230851	824448	PP5454	1.43	28/11/2023
230855	824458	PP5455	1.28	28/11/2023
230858	824467	PP5456	1.37	28/11/2023
230862	824476	PP5457	0.22	28/11/2023
230865	824486	PP5458	0.13	28/11/2023
230869	824495	PP5459	0.4	28/11/2023
230873	824504	PP5460	0.44	28/11/2023
230876	824514	PP5461	0.35	28/11/2023
230880	824523	PP5462	0.29	28/11/2023
230883	824532	PP5463	0.4	28/11/2023
230887	824542	PP5464	0.38	28/11/2023
230890	824551	PP5465	0.21	28/11/2023
230894	824560	PP5466	0.34	28/11/2023
230898	824570	PP5467	0.77	28/11/2023
230901	824579	PP5468	1.32	28/11/2023
230905	824588	PP5469	1	28/11/2023
230908	824598	PP5470	0.95	28/11/2023
230912	824607	PP5471	0.59	28/11/2023
230916	824616	PP5472	0.39	28/11/2023
230919	824626	PP5473	0.3	28/11/2023
230923	824635	PP5474	0.25	28/11/2023
230926	824644	PP5475	0.3	28/11/2023
230930	824654	PP5476	0.46	28/11/2023
230933	824663	PP5477	0.52	28/11/2023
230937	824672	PP5478	0.15	28/11/2023
230941	824682	PP5479	0.08	28/11/2023
230944	824691	PP5480	0.15	28/11/2023
230948	824700	PP5481	1.91	28/11/2023
230951	824710	PP5482	6.19	28/11/2023
230955	824719	PP5483	6.23	28/11/2023
230959	824728	PP5484	6.26	28/11/2023
230962	824738	PP5485	6.97	28/11/2023
230966	824747	PP5486	7.39	28/11/2023
230969	824756	PP5487	6.5	28/11/2023
230973	824766	PP5488	6.73	28/11/2023
230976	824775	PP5489	6.62	28/11/2023
230980	824784	PP5490	5.7	28/11/2023
230984	824794	PP5491	1.92	28/11/2023
230987	824803	PP5492	0.06	28/11/2023
230991	824812	PP5493	0.11	28/11/2023
230994	824822	PP5494	0.16	28/11/2023
230660	823924	PP5495	0.11	20/11/2023
230664	823933	PP5496	0.51	20/11/2023
230667	823942	PP5497	0.43	20/11/2023
230671	823952	PP5498	0.68	20/11/2023
230675	823961	PP5499	1.49	20/11/2023
230678	823970	PP5500	1.84	20/11/2023
230682	823980	PP5501	1.83	20/11/2023
230685	823989	PP5502	1.14	20/11/2023
230689	823998	PP5503	1.05	20/11/2023
230692	824008	PP5504	0.45	20/11/2023
230696	824017	PP5505	0.4	20/11/2023
230700	824026	PP5506	0.12	20/11/2023
230703	824036	PP5507	0.53	20/11/2023
230707	824045	PP5508	0.16	20/11/2023
230710	824054	PP5509	0.65	20/11/2023
230714	824064	PP5510	0.62	20/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230718	824073	PP5511	0.33	20/11/2023
230721	824082	PP5512	0.44	20/11/2023
230725	824092	PP5513	0.56	20/11/2023
230728	824101	PP5514	0.18	20/11/2023
230732	824110	PP5515	0.5	20/11/2023
230735	824120	PP5516	0.48	20/11/2023
230739	824129	PP5517	0.77	20/11/2023
230743	824138	PP5518	0.61	20/11/2023
230746	824148	PP5519	0.86	20/11/2023
230750	824157	PP5520	0.73	20/11/2023
230753	824166	PP5521	1.72	20/11/2023
230757	824176	PP5522	2.54	20/11/2023
230761	824185	PP5523	2.72	20/11/2023
230764	824194	PP5524	2.69	20/11/2023
230768	824204	PP5525	2.47	20/11/2023
230771	824213	PP5526	2.45	20/11/2023
230775	824222	PP5527	1.94	20/11/2023
230778	824232	PP5528	1.15	20/11/2023
230782	824241	PP5529	0.91	20/11/2023
230786	824250	PP5530	0.17	20/11/2023
230789	824260	PP5531	0.11	20/11/2023
230793	824269	PP5532	0.05	20/11/2023
230796	824279	PP5533	0.52	28/11/2023
230800	824288	PP5534	0.61	28/11/2023
230804	824297	PP5535	0.32	28/11/2023
230807	824307	PP5536	0.15	28/11/2023
230811	824316	PP5537	0.24	28/11/2023
230814	824325	PP5538	0.34	28/11/2023
230818	824335	PP5539	0.45	28/11/2023
230821	824344	PP5540	0.98	28/11/2023
230825	824353	PP5541	1.26	28/11/2023
230829	824363	PP5542	1.63	28/11/2023
230832	824372	PP5543	1.3	28/11/2023
230836	824381	PP5544	0.95	28/11/2023
230839	824391	PP5545	0.83	28/11/2023
230843	824400	PP5546	0.78	28/11/2023
230847	824409	PP5547	0.7	28/11/2023
230850	824419	PP5548	0.51	28/11/2023
230854	824428	PP5549	0.36	28/11/2023
230857	824437	PP5550	0.29	28/11/2023
230861	824447	PP5551	1.24	28/11/2023
230864	824456	PP5552	1.67	28/11/2023
230868	824465	PP5553	1.42	28/11/2023
230872	824475	PP5554	1.3	28/11/2023
230875	824484	PP5555	1.1	28/11/2023
230879	824493	PP5556	0.84	28/11/2023
230882	824503	PP5557	0.6	28/11/2023
230886	824512	PP5558	0.31	28/11/2023
230890	824521	PP5559	0.28	28/11/2023
230893	824531	PP5560	0.38	28/11/2023
230897	824540	PP5561	0.42	28/11/2023
230900	824549	PP5562	0.45	28/11/2023
230904	824559	PP5563	0.5	28/11/2023
230907	824568	PP5564	0.36	28/11/2023
230911	824577	PP5565	0.25	28/11/2023
230915	824587	PP5566	0.66	28/11/2023
230918	824596	PP5567	0.95	28/11/2023
230922	824605	PP5568	0.87	28/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230925	824615	PP5569	0.35	28/11/2023
230929	824624	PP5570	0.49	28/11/2023
230933	824633	PP5571	0.46	28/11/2023
230936	824643	PP5572	0.29	28/11/2023
230940	824652	PP5573	0.73	28/11/2023
230943	824661	PP5574	0.41	28/11/2023
230947	824671	PP5575	0.32	28/11/2023
230950	824680	PP5576	0.27	28/11/2023
230954	824689	PP5577	0.4	28/11/2023
230958	824699	PP5578	1.89	28/11/2023
230961	824708	PP5579	4.45	28/11/2023
230965	824717	PP5580	6.2	28/11/2023
230968	824727	PP5581	7.03	28/11/2023
230972	824736	PP5582	7.12	28/11/2023
230976	824745	PP5583	6.96	28/11/2023
230979	824755	PP5584	7.05	28/11/2023
230983	824764	PP5585	6.28	28/11/2023
230986	824773	PP5586	6.33	28/11/2023
230990	824783	PP5587	5.12	28/11/2023
230993	824792	PP5588	2.85	28/11/2023
230997	824801	PP5589	1.85	28/11/2023
231001	824811	PP5590	0.47	28/11/2023
230670	823922	PP5591	on track	17/11/2023
230674	823931	PP5592	dense vegetation	17/11/2023
230677	823941	PP5593	0.42	17/11/2023
230681	823950	PP5594	0.77	17/11/2023
230684	823959	PP5595	0.63	17/11/2023
230688	823969	PP5596	1.85	17/11/2023
230692	823978	PP5597	1.96	17/11/2023
230695	823987	PP5598	1.92	17/11/2023
230699	823997	PP5599	1.28	17/11/2023
230702	824006	PP5600	1	17/11/2023
230706	824015	PP5601	0.83	17/11/2023
230709	824025	PP5602	0.26	17/11/2023
230713	824034	PP5603	0.05	17/11/2023
230717	824043	PP5604	0.48	17/11/2023
230720	824053	PP5605	0.41	17/11/2023
230724	824062	PP5606	0.39	17/11/2023
230727	824071	PP5607	0.6	17/11/2023
230731	824081	PP5608	0.45	17/11/2023
230735	824090	PP5609	0.94	17/11/2023
230738	824099	PP5610	0.69	17/11/2023
230742	824109	PP5611	0.52	17/11/2023
230745	824118	PP5612	0.37	17/11/2023
230749	824127	PP5613	0.29	17/11/2023
230752	824137	PP5614	0.71	17/11/2023
230756	824146	PP5615	0.91	17/11/2023
230760	824155	PP5616	1.22	17/11/2023
230763	824165	PP5617	1.91	17/11/2023
230767	824174	PP5618	2.74	17/11/2023
230770	824183	PP5619	2.23	17/11/2023
230774	824193	PP5620	2.02	17/11/2023
230778	824202	PP5621	2.87	17/11/2023
230781	824211	PP5622	2.81	17/11/2023
230785	824221	PP5623	2.68	21/11/2023
230788	824230	PP5624	1.43	21/11/2023
230792	824239	PP5625	0.75	21/11/2023
230795	824249	PP5626	0.39	21/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230799	824258	PP5627	0.33	21/11/2023
230803	824267	PP5628	0.26	21/11/2023
230806	824277	PP5629	0.55	28/11/2023
230810	824286	PP5630	0.41	28/11/2023
230813	824296	PP5631	0.49	28/11/2023
230817	824305	PP5632	0.43	28/11/2023
230821	824314	PP5633	0.78	28/11/2023
230824	824324	PP5634	0.65	28/11/2023
230828	824333	PP5635	0.65	28/11/2023
230831	824342	PP5636	0.8	28/11/2023
230835	824352	PP5637	1.24	28/11/2023
230838	824361	PP5638	1.9	28/11/2023
230842	824370	PP5639	1.37	28/11/2023
230846	824380	PP5640	1.49	28/11/2023
230849	824389	PP5641	0.74	28/11/2023
230853	824398	PP5642	0.46	28/11/2023
230856	824408	PP5643	0.5	28/11/2023
230860	824417	PP5644	0.67	28/11/2023
230864	824426	PP5645	0.56	28/11/2023
230867	824436	PP5646	0.27	28/11/2023
230871	824445	PP5647	0.83	28/11/2023
230874	824454	PP5648	1.03	28/11/2023
230878	824464	PP5649	1.26	28/11/2023
230882	824473	PP5650	1.43	28/11/2023
230885	824482	PP5651	1.38	28/11/2023
230889	824492	PP5652	1.4	28/11/2023
230892	824501	PP5653	1.16	28/11/2023
230896	824510	PP5654	1.02	28/11/2023
230899	824520	PP5655	0.69	28/11/2023
230903	824529	PP5656	0.53	28/11/2023
230907	824538	PP5657	0.45	28/11/2023
230910	824548	PP5658	0.56	28/11/2023
230914	824557	PP5659	0.6	28/11/2023
230917	824566	PP5660	0.65	28/11/2023
230921	824576	PP5661	0.53	28/11/2023
230925	824585	PP5662	0.39	28/11/2023
230928	824594	PP5663	0.42	28/11/2023
230932	824604	PP5664	0.5	28/11/2023
230935	824613	PP5665	0.34	28/11/2023
230939	824622	PP5666	0.06	28/11/2023
230942	824632	PP5667	0.16	28/11/2023
230946	824641	PP5668	0.23	28/11/2023
230950	824650	PP5669	0.21	28/11/2023
230953	824660	PP5670	0.12	28/11/2023
230957	824669	PP5671	0.22	28/11/2023
230960	824678	PP5672	0.31	28/11/2023
230964	824688	PP5673	0.27	28/11/2023
230968	824697	PP5674	0.1	28/11/2023
230971	824706	PP5675	1.02	28/11/2023
230975	824716	PP5676	3.81	28/11/2023
230978	824725	PP5677	6.11	28/11/2023
230982	824734	PP5678	6.78	28/11/2023
230985	824744	PP5679	6.94	28/11/2023
230989	824753	PP5680	6.5	28/11/2023
230993	824762	PP5681	6.62	28/11/2023
230996	824772	PP5682	6.41	28/11/2023
231000	824781	PP5683	5.8	28/11/2023
231003	824790	PP5684	3.23	28/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230816	824275	PP5685	0.44	04/12/2023
230820	824285	PP5686	0.47	04/12/2023
230823	824294	PP5687	0.44	04/12/2023
230827	824303	PP5688	0.42	04/12/2023
230830	824313	PP5689	0.46	04/12/2023
230834	824322	PP5690	0.4	04/12/2023
230838	824331	PP5691	0.55	04/12/2023
230841	824341	PP5692	0.32	04/12/2023
230845	824350	PP5693	1.83	04/12/2023
230848	824359	PP5694	0.27	04/12/2023
230852	824369	PP5695	0.76	04/12/2023
230856	824378	PP5696	1.56	04/12/2023
230859	824387	PP5697	1.33	04/12/2023
230863	824397	PP5698	0.56	04/12/2023
230866	824406	PP5699	0.42	04/12/2023
230870	824415	PP5700	0.43	04/12/2023
230873	824425	PP5701	0.68	04/12/2023
230877	824434	PP5702	0.37	04/12/2023
230881	824443	PP5703	0.29	04/12/2023
230884	824453	PP5704	0.37	04/12/2023
230888	824462	PP5705	0.84	04/12/2023
230891	824471	PP5706	0.73	04/12/2023
230895	824481	PP5707	1.58	04/12/2023
230899	824490	PP5708	1.9	04/12/2023
230902	824499	PP5709	1.74	04/12/2023
230906	824509	PP5710	1.76	04/12/2023
230909	824518	PP5711	1.52	04/12/2023
230913	824527	PP5712	1.36	04/12/2023
230916	824537	PP5713	0.97	04/12/2023
230920	824546	PP5714	0.26	04/12/2023
230924	824555	PP5715	0.83	04/12/2023
230927	824565	PP5716	0.42	04/12/2023
230931	824574	PP5717	0.31	04/12/2023
230934	824583	PP5718	0.11	04/12/2023
230938	824593	PP5719	0.12	04/12/2023
230942	824602	PP5720	0.16	04/12/2023
230945	824611	PP5721	0.38	04/12/2023
230949	824621	PP5722	0.22	04/12/2023
230952	824630	PP5723	0.17	04/12/2023
230956	824639	PP5724	0.24	04/12/2023
230959	824649	PP5725	0.31	04/12/2023
230963	824658	PP5726	0.33	04/12/2023
230967	824667	PP5727	0.48	04/12/2023
230970	824677	PP5728	0.31	04/12/2023
230974	824686	PP5729	0.33	04/12/2023
230977	824695	PP5730	0.13	04/12/2023
230981	824705	PP5731	0.82	04/12/2023
230985	824714	PP5732	2.31	04/12/2023
230988	824723	PP5733	4.11	04/12/2023
230992	824733	PP5734	4.62	04/12/2023
230995	824742	PP5735	4.71	04/12/2023
230999	824751	PP5736	4.93	04/12/2023
231002	824761	PP5737	5.19	04/12/2023
231006	824770	PP5738	5.22	04/12/2023
231010	824779	PP5739	5.83	04/12/2023
230830	824283	PP5740	0.36	05/12/2023
230833	824292	PP5741	0.53	05/12/2023
230837	824302	PP5742	0.39	05/12/2023



Easting	Northing	Point ID	Depth (m)	Date
230840	824311	PP5743	0.76	05/12/2023
230844	824320	PP5744	0.81	05/12/2023
230847	824330	PP5745	0.64	05/12/2023
230851	824339	PP5746	0.75	05/12/2023
230855	824348	PP5747	2.13	05/12/2023
230858	824358	PP5748	0.68	05/12/2023
230862	824367	PP5749	0.58	05/12/2023
230865	824376	PP5750	1.72	05/12/2023
230869	824386	PP5751	1.11	05/12/2023
230873	824395	PP5752	0.38	05/12/2023
230876	824404	PP5753	0.35	05/12/2023
230880	824414	PP5754	0.36	05/12/2023
230883	824423	PP5755	0.26	05/12/2023
230887	824432	PP5756	0.36	05/12/2023
230890	824442	PP5757	0.43	05/12/2023
230894	824451	PP5758	0.4	05/12/2023
230898	824460	PP5759	0.47	05/12/2023
230901	824470	PP5760	0.29	05/12/2023
230905	824479	PP5761	0.39	05/12/2023
230908	824488	PP5762	1.1	05/12/2023
230912	824498	PP5763	1.93	05/12/2023
230916	824507	PP5764	1.09	05/12/2023
230919	824516	PP5765	1.83	05/12/2023
230923	824526	PP5766	1.82	05/12/2023
230926	824535	PP5767	1.71	05/12/2023
230930	824544	PP5768	1.83	05/12/2023
230933	824554	PP5769	1.83	05/12/2023
230937	824563	PP5770	1.22	05/12/2023
230941	824572	PP5771	0.59	05/12/2023
230944	824582	PP5772	0.19	05/12/2023
230948	824591	PP5773	0.21	05/12/2023
230951	824600	PP5774	0.5	05/12/2023
230955	824610	PP5775	0.27	05/12/2023
230959	824619	PP5776	0.4	05/12/2023
230962	824628	PP5777	0.41	05/12/2023
230966	824638	PP5778	0.37	05/12/2023
230969	824647	PP5779	0.23	05/12/2023
230973	824656	PP5780	0.36	05/12/2023
230976	824666	PP5781	0.38	05/12/2023
230980	824675	PP5782	0.14	05/12/2023
230984	824684	PP5783	0.28	05/12/2023
230987	824694	PP5784	0.51	05/12/2023
230991	824703	PP5785	0.37	05/12/2023
230994	824712	PP5786	1.19	05/12/2023
230998	824722	PP5787	4.2	05/12/2023
231002	824731	PP5788	5.63	05/12/2023
231005	824740	PP5789	6.17	05/12/2023
231009	824750	PP5790	7.12	05/12/2023
231012	824759	PP5791	6.88	05/12/2023
231016	824768	PP5792	6.31	05/12/2023
230847	824300	PP5793	0.53	05/12/2023
230850	824309	PP5794	0.48	05/12/2023
230854	824319	PP5795	0.79	05/12/2023
230857	824328	PP5796	0.61	05/12/2023
230861	824337	PP5797	0.51	05/12/2023
230864	824347	PP5798	1.84	05/12/2023
230868	824356	PP5799	1.39	05/12/2023
230872	824365	PP5800	0.23	05/12/2023



Easting	Northing	Point ID	Depth (m)	Date
230875	824375	PP5801	2.07	05/12/2023
230879	824384	PP5802	0.19	05/12/2023
230882	824393	PP5803	0.31	05/12/2023
230886	824403	PP5804	0.23	05/12/2023
230890	824412	PP5805	0.18	05/12/2023
230893	824421	PP5806	0.33	05/12/2023
230897	824431	PP5807	0.45	05/12/2023
230900	824440	PP5808	0.42	05/12/2023
230904	824449	PP5809	0.35	05/12/2023
230908	824459	PP5810	0.42	05/12/2023
230911	824468	PP5811	0.5	05/12/2023
230915	824477	PP5812	0.36	05/12/2023
230918	824487	PP5813	0.41	05/12/2023
230922	824496	PP5814	0.29	05/12/2023
230925	824505	PP5815	0.54	05/12/2023
230929	824515	PP5816	0.87	05/12/2023
230933	824524	PP5817	0.54	05/12/2023
230936	824533	PP5818	0.72	05/12/2023
230940	824543	PP5819	0.76	05/12/2023
230943	824552	PP5820	1.79	05/12/2023
230947	824561	PP5821	1.85	05/12/2023
230951	824571	PP5822	1.91	05/12/2023
230954	824580	PP5823	0.33	05/12/2023
230958	824589	PP5824	0.77	05/12/2023
230961	824599	PP5825	0.18	05/12/2023
230965	824608	PP5826	0.28	05/12/2023
230968	824617	PP5827	0.27	05/12/2023
230972	824627	PP5828	0.31	05/12/2023
230976	824636	PP5829	0.37	05/12/2023
230979	824645	PP5830	0.41	05/12/2023
230983	824655	PP5831	0.49	05/12/2023
230986	824664	PP5832	0.37	05/12/2023
230990	824673	PP5833	0.46	05/12/2023
230994	824683	PP5834	0.11	05/12/2023
230997	824692	PP5835	0.36	05/12/2023
231001	824701	PP5836	0.66	05/12/2023
231004	824711	PP5837	0.71	05/12/2023
231008	824720	PP5838	1.43	05/12/2023
231011	824729	PP5839	2.66	05/12/2023
231015	824739	PP5840	6.03	05/12/2023
231019	824748	PP5841	6.13	05/12/2023
230860	824308	PP5842	0.53	08/12/2023
230864	824317	PP5843	1.01	08/12/2023
230867	824326	PP5844	0.89	08/12/2023
230871	824336	PP5845	1.02	08/12/2023
230874	824345	PP5846	1.35	08/12/2023
230878	824354	PP5847	0.68	08/12/2023
230882	824364	PP5848	0.82	08/12/2023
230885	824373	PP5849	2.01	08/12/2023
230889	824382	PP5850	0.8	08/12/2023
230892	824392	PP5851	0.35	08/12/2023
230896	824401	PP5852	0.36	08/12/2023
230899	824410	PP5853	0.33	08/12/2023
230903	824420	PP5854	0.48	08/12/2023
230907	824429	PP5855	0.42	08/12/2023
230910	824438	PP5856	0.52	08/12/2023
230914	824448	PP5857	0.6	08/12/2023
230917	824457	PP5858	0.43	08/12/2023



Easting	Northing	Point ID	Depth (m)	Date
230921	824466	PP5859	0.42	08/12/2023
230925	824476	PP5860	0.46	08/12/2023
230928	824485	PP5861	0.58	08/12/2023
230932	824494	PP5862	0.4	08/12/2023
230935	824504	PP5863	0.29	08/12/2023
230939	824513	PP5864	0.3	08/12/2023
230942	824522	PP5865	0.3	08/12/2023
230946	824532	PP5866	0.33	08/12/2023
230950	824541	PP5867	0.28	08/12/2023
230953	824550	PP5868	0.32	08/12/2023
230957	824560	PP5869	0.27	08/12/2023
230960	824569	PP5870	1.95	08/12/2023
230964	824578	PP5871	1.8	08/12/2023
230968	824588	PP5872	1.85	08/12/2023
230971	824597	PP5873	0.62	08/12/2023
230975	824606	PP5874	0.62	08/12/2023
230978	824616	PP5875	0.32	08/12/2023
230982	824625	PP5876	0.39	08/12/2023
230985	824634	PP5877	0.44	08/12/2023
230989	824644	PP5878	0.42	08/12/2023
230993	824653	PP5879	0.42	08/12/2023
230996	824662	PP5880	0.68	08/12/2023
231000	824672	PP5881	0.63	08/12/2023
231003	824681	PP5882	0.38	08/12/2023
231007	824690	PP5883	0.33	08/12/2023
231011	824700	PP5884	1.17	08/12/2023
231014	824709	PP5885	0.58	08/12/2023
231018	824718	PP5886	0.21	08/12/2023
231021	824728	PP5887	1.02	08/12/2023
231025	824737	PP5888	1.98	08/12/2023
230877	824325	PP5889	0.32	08/12/2023
230881	824334	PP5890	0.87	08/12/2023
230884	824343	PP5891	1.56	08/12/2023
230888	824353	PP5892	1.98	08/12/2023
230891	824362	PP5893	0.51	08/12/2023
230895	824371	PP5894	0.37	08/12/2023
230899	824381	PP5895	0.72	08/12/2023
230902	824390	PP5896	0.43	08/12/2023
230906	824399	PP5897	0.08	08/12/2023
230909	824409	PP5898	0.41	08/12/2023
230913	824418	PP5899	0.31	08/12/2023
230916	824427	PP5900	0.3	08/12/2023
230920	824437	PP5901	0.46	08/12/2023
230924	824446	PP5902	0.24	08/12/2023
230927	824455	PP5903	0.28	08/12/2023
230931	824465	PP5904	0.42	08/12/2023
230934	824474	PP5905	0.37	08/12/2023
230938	824483	PP5906	0.24	08/12/2023
230942	824493	PP5907	0.52	08/12/2023
230945	824502	PP5908	0.4	08/12/2023
230949	824511	PP5909	0.29	08/12/2023
230952	824521	PP5910	0.34	08/12/2023
230956	824530	PP5911	0.24	08/12/2023
230959	824539	PP5912	0.32	08/12/2023
230963	824549	PP5913	0.43	08/12/2023
230967	824558	PP5914	0.4	08/12/2023
230970	824567	PP5915	0.21	08/12/2023
230974	824577	PP5916	0.23	08/12/2023



Easting	Northing	Point ID	Depth (m)	Date
230977	824586	PP5917	1.23	08/12/2023
230981	824595	PP5918	1.93	08/12/2023
230985	824605	PP5919	0.87	08/12/2023
230988	824614	PP5920	1.8	08/12/2023
230992	824623	PP5921	0.63	08/12/2023
230995	824633	PP5922	0.41	08/12/2023
230999	824642	PP5923	0.32	08/12/2023
231002	824651	PP5924	0.37	08/12/2023
231006	824661	PP5925	0.58	08/12/2023
231010	824670	PP5926	0.41	08/12/2023
231013	824679	PP5927	0.48	08/12/2023
231017	824689	PP5928	0.61	08/12/2023
231020	824698	PP5929	0.59	08/12/2023
231024	824707	PP5930	0.5	08/12/2023
231028	824717	PP5931	0.4	08/12/2023
231031	824726	PP5932	0.32	08/12/2023
230890	824332	PP5933	1.08	11/12/2023
230894	824342	PP5934	1.3	11/12/2023
230898	824351	PP5935	1.32	11/12/2023
230901	824360	PP5936	0.44	11/12/2023
230905	824370	PP5937	0.44	11/12/2023
230908	824379	PP5938	1.43	11/12/2023
230912	824388	PP5939	0.82	11/12/2023
230916	824398	PP5940	0.42	11/12/2023
230919	824407	PP5941	0.15	11/12/2023
230923	824416	PP5942	0.38	11/12/2023
230926	824426	PP5943	0.26	11/12/2023
230930	824435	PP5944	0.31	11/12/2023
230933	824444	PP5945	0.28	11/12/2023
230937	824454	PP5946	0.4	11/12/2023
230941	824463	PP5947	0.48	11/12/2023
230944	824472	PP5948	0.44	11/12/2023
230948	824482	PP5949	0.33	11/12/2023
230951	824491	PP5950	0.34	11/12/2023
230955	824500	PP5951	0.41	11/12/2023
230959	824510	PP5952	0.23	11/12/2023
230962	824519	PP5953	0.37	11/12/2023
230966	824528	PP5954	0.23	11/12/2023
230969	824538	PP5955	0.09	11/12/2023
230973	824547	PP5956	0.23	11/12/2023
230977	824556	PP5957	0.14	11/12/2023
230980	824566	PP5958	0.63	11/12/2023
230984	824575	PP5959	0.41	11/12/2023
230987	824584	PP5960	0.6	11/12/2023
230991	824594	PP5961	1.14	11/12/2023
230994	824603	PP5962	1.82	11/12/2023
230998	824612	PP5963	1.74	11/12/2023
231002	824622	PP5964	1.04	11/12/2023
231005	824631	PP5965	0.98	11/12/2023
231009	824640	PP5966	0.8	11/12/2023
231012	824650	PP5967	0.75	11/12/2023
231016	824659	PP5968	0.3	11/12/2023
231020	824668	PP5969	0.39	11/12/2023
231023	824678	PP5970	0.39	11/12/2023
231027	824687	PP5971	0.49	11/12/2023
231030	824696	PP5972	0.49	11/12/2023
231034	824706	PP5973	0.53	11/12/2023
231037	824715	PP5974	0.44	11/12/2023



Easting	Northing	Point ID	Depth (m)	Date
230904	824340	PP5975	1.35	28/11/2023
230908	824349	PP5976	2.24	28/11/2023
230911	824359	PP5977	0.87	28/11/2023
230915	824368	PP5978	0.81	28/11/2023
230918	824377	PP5979	1.14	28/11/2023
230922	824387	PP5980	0.62	28/11/2023
230925	824396	PP5981	0.67	28/11/2023
230929	824405	PP5982	0.48	28/11/2023
230933	824415	PP5983	0.59	28/11/2023
230936	824424	PP5984	0.64	28/11/2023
230940	824433	PP5985	0.65	28/11/2023
230943	824443	PP5986	0.59	28/11/2023
230947	824452	PP5987	0.62	28/11/2023
230951	824461	PP5988	0.37	28/11/2023
230954	824471	PP5989	0.5	28/11/2023
230958	824480	PP5990	0.09	28/11/2023
230961	824489	PP5991	0.51	28/11/2023
230965	824499	PP5992	0.48	28/11/2023
230968	824508	PP5993	0.6	28/11/2023
230972	824517	PP5994	0.59	28/11/2023
230976	824527	PP5995	0.19	28/11/2023
230979	824536	PP5996	0.47	28/11/2023
230983	824545	PP5997	0.49	28/11/2023
230986	824555	PP5998	0.57	28/11/2023
230990	824564	PP5999	0.37	28/11/2023
230994	824573	PP6000	0.47	28/11/2023
230997	824583	PP6001	0.38	28/11/2023
231001	824592	PP6002	0.71	28/11/2023
231004	824601	PP6003	1.28	28/11/2023
231008	824611	PP6004	2.7	28/11/2023
231011	824620	PP6005	2.14	28/11/2023
231015	824629	PP6006	2.21	28/11/2023
231019	824639	PP6007	1.82	28/11/2023
231022	824648	PP6008	1.16	28/11/2023
231026	824657	PP6009	0.96	28/11/2023
231029	824667	PP6010	0.92	28/11/2023
231033	824676	PP6011	0.8	28/11/2023
231037	824685	PP6012	0.88	28/11/2023
231040	824695	PP6013	0.74	28/11/2023
230921	824357	PP6014	1.28	28/11/2023
230925	824366	PP6015	0.9	28/11/2023
230928	824376	PP6016	2.14	28/11/2023
230932	824385	PP6017	0.71	28/11/2023
230935	824394	PP6018	0.82	28/11/2023
230939	824404	PP6019	0.89	28/11/2023
230942	824413	PP6020	0.27	28/11/2023
230946	824422	PP6021	0.7	28/11/2023
230950	824432	PP6022	0.73	28/11/2023
230953	824441	PP6023	0.69	28/11/2023
230957	824450	PP6024	0.9	28/11/2023
230960	824460	PP6025	0.72	28/11/2023
230964	824469	PP6026	0.69	28/11/2023
230968	824478	PP6027	0.7	28/11/2023
230971	824488	PP6028	0.38	28/11/2023
230975	824497	PP6029	0.48	28/11/2023
230978	824506	PP6030	0.79	28/11/2023
230982	824516	PP6031	0.37	28/11/2023
230985	824525	PP6032	0.64	28/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230989	824534	PP6033	0.46	28/11/2023
230993	824544	PP6034	0.39	28/11/2023
230996	824553	PP6035	0.32	28/11/2023
231000	824562	PP6036	0.49	28/11/2023
231003	824572	PP6037	0.48	28/11/2023
231007	824581	PP6038	0.52	28/11/2023
231011	824590	PP6039	0.41	28/11/2023
231014	824600	PP6040	0.55	28/11/2023
231018	824609	PP6041	0.91	28/11/2023
231021	824618	PP6042	3.61	28/11/2023
231025	824628	PP6043	2.8	28/11/2023
231028	824637	PP6044	2.75	28/11/2023
231032	824646	PP6045	3.11	28/11/2023
231036	824656	PP6046	3.09	28/11/2023
231039	824665	PP6047	2.67	28/11/2023
231043	824674	PP6048	1.1	28/11/2023
231046	824684	PP6049	2.11	28/11/2023
230934	824365	PP6050	1.05	28/11/2023
230938	824374	PP6051	1.01	28/11/2023
230942	824383	PP6052	1.11	28/11/2023
230945	824393	PP6053	0.61	28/11/2023
230949	824402	PP6054	0.43	28/11/2023
230952	824411	PP6055	0.61	28/11/2023
230956	824421	PP6056	0.74	28/11/2023
230959	824430	PP6057	0.39	28/11/2023
230963	824439	PP6058	0.62	28/11/2023
230967	824449	PP6059	0.76	28/11/2023
230970	824458	PP6060	0.28	28/11/2023
230974	824467	PP6061	0.69	28/11/2023
230977	824477	PP6062	0.42	28/11/2023
230981	824486	PP6063	0.48	28/11/2023
230985	824495	PP6064	0.48	28/11/2023
230988	824505	PP6065	0.31	28/11/2023
230992	824514	PP6066	0.4	28/11/2023
230995	824523	PP6067	0.42	28/11/2023
230999	824533	PP6068	0.5	28/11/2023
231002	824542	PP6069	0.52	28/11/2023
231006	824551	PP6070	0.46	28/11/2023
231010	824561	PP6071	0.4	28/11/2023
231013	824570	PP6072	0.09	28/11/2023
231017	824579	PP6073	0.11	28/11/2023
231020	824589	PP6074	0.18	28/11/2023
231024	824598	PP6075	0.29	28/11/2023
231028	824607	PP6076	0.1	28/11/2023
231031	824617	PP6077	1.01	28/11/2023
231035	824626	PP6078	3.2	28/11/2023
231038	824635	PP6079	3.82	28/11/2023
231042	824645	PP6080	3.12	28/11/2023
231046	824654	PP6081	3.84	28/11/2023
231049	824663	PP6082	3.91	28/11/2023
230951	824382	PP6083	1.61	28/11/2023
230955	824391	PP6084	1.06	28/11/2023
230959	824400	PP6085	0.74	28/11/2023
230962	824410	PP6086	0.55	28/11/2023
230966	824419	PP6087	0.59	28/11/2023
230969	824428	PP6088	0.83	28/11/2023
230973	824438	PP6089	0.89	28/11/2023
230977	824447	PP6090	1.28	28/11/2023



Easting	Northing	Point ID	Depth (m)	Date
230980	824456	PP6091	1.15	28/11/2023
230984	824466	PP6092	1.24	28/11/2023
230987	824475	PP6093	0.34	28/11/2023
230991	824484	PP6094	0.38	28/11/2023
230994	824494	PP6095	0.43	28/11/2023
230998	824503	PP6096	0.44	28/11/2023
231002	824512	PP6097	0.39	28/11/2023
231005	824522	PP6098	0.69	28/11/2023
231009	824531	PP6099	0.51	28/11/2023
231012	824540	PP6100	0.33	28/11/2023
231016	824550	PP6101	0.53	28/11/2023
231020	824559	PP6102	0.54	28/11/2023
231023	824568	PP6103	0.5	28/11/2023
231027	824578	PP6104	0.57	28/11/2023
231030	824587	PP6105	0.36	28/11/2023
231034	824596	PP6106	0.46	28/11/2023
231037	824606	PP6107	0.58	28/11/2023
231041	824615	PP6108	0.55	28/11/2023
231045	824624	PP6109	0.35	28/11/2023
231048	824634	PP6110	1.93	28/11/2023
231052	824643	PP6111	1.49	28/11/2023
231055	824652	PP6112	2.74	28/11/2023
230965	824389	PP6113	1.11	28/11/2023
230968	824399	PP6114	0.75	28/11/2023
230972	824408	PP6115	0.72	28/11/2023
230976	824417	PP6116	0.91	28/11/2023
230979	824427	PP6117	0.98	28/11/2023
230983	824436	PP6118	4.11	28/11/2023
230986	824445	PP6119	1.65	28/11/2023
230990	824455	PP6120	1.2	28/11/2023
230994	824464	PP6121	1.06	28/11/2023
230997	824473	PP6122	0.38	28/11/2023
231001	824483	PP6123	0.32	28/11/2023
231004	824492	PP6124	0.33	28/11/2023
231008	824501	PP6125	0.31	28/11/2023
231011	824511	PP6126	0.45	28/11/2023
231015	824520	PP6127	0.45	28/11/2023
231019	824529	PP6128	0.49	28/11/2023
231022	824539	PP6129	0.45	28/11/2023
231026	824548	PP6130	0.32	28/11/2023
231029	824557	PP6131	0.38	28/11/2023
231033	824567	PP6132	0.38	28/11/2023
231037	824576	PP6133	0.51	28/11/2023
231040	824585	PP6134	0.36	28/11/2023
231044	824595	PP6135	0.64	28/11/2023
231047	824604	PP6136	0.47	28/11/2023
231051	824613	PP6137	0.55	28/11/2023
231054	824623	PP6138	0.61	28/11/2023
231058	824632	PP6139	0.64	28/11/2023
231062	824641	PP6140	0.39	28/11/2023
230978	824397	PP6141	0.96	29/11/2023
230982	824406	PP6142	1.11	29/11/2023
230985	824416	PP6143	1.08	29/11/2023
230989	824425	PP6144	1.18	29/11/2023
230993	824434	PP6145	1.02	29/11/2023
230996	824444	PP6146	1.22	29/11/2023
231000	824453	PP6147	1.27	29/11/2023
231003	824462	PP6148	1.14	29/11/2023



Easting	Northing	Point ID	Depth (m)	Date
231007	824472	PP6149	1.37	29/11/2023
231011	824481	PP6150	0.82	29/11/2023
231014	824490	PP6151	0.46	29/11/2023
231018	824500	PP6152	0.32	29/11/2023
231021	824509	PP6153	0.28	29/11/2023
231025	824518	PP6154	0.33	29/11/2023
231028	824528	PP6155	0.24	29/11/2023
231032	824537	PP6156	0.27	29/11/2023
231036	824546	PP6157	0.49	29/11/2023
231039	824556	PP6158	0.55	29/11/2023
231043	824565	PP6159	0.47	29/11/2023
231046	824574	PP6160	0.33	29/11/2023
231050	824584	PP6161	0.47	29/11/2023
231054	824593	PP6162	0.35	29/11/2023
231057	824602	PP6163	0.57	29/11/2023
231061	824612	PP6164	0.41	29/11/2023
231064	824621	PP6165	0.44	29/11/2023
231068	824630	PP6166	0.59	29/11/2023
230995	824414	PP6167	1.04	29/11/2023
230999	824423	PP6168	1.09	29/11/2023
231003	824433	PP6169	1.03	29/11/2023
231006	824442	PP6170	0.43	29/11/2023
231010	824451	PP6171	0.84	29/11/2023
231013	824461	PP6172	0.69	29/11/2023
231017	824470	PP6173	1.38	29/11/2023
231020	824479	PP6174	1.41	29/11/2023
231024	824489	PP6175	1.1	29/11/2023
231028	824498	PP6176	1.2	29/11/2023
231031	824507	PP6177	0.59	29/11/2023
231035	824517	PP6178	0.35	29/11/2023
231038	824526	PP6179	0.69	29/11/2023
231042	824535	PP6180	0.75	29/11/2023
231046	824545	PP6181	0.39	29/11/2023
231049	824554	PP6182	0.19	29/11/2023
231053	824563	PP6183	0.74	29/11/2023
231056	824573	PP6184	0.79	29/11/2023
231060	824582	PP6185	0.62	29/11/2023
231063	824591	PP6186	0.69	29/11/2023
231067	824601	PP6187	0.66	29/11/2023
231071	824610	PP6188	0.59	29/11/2023
231009	824422	PP6189	1.07	01/12/2023
231012	824431	PP6190	1.04	01/12/2023
231016	824440	PP6191	1.17	01/12/2023
231020	824450	PP6192	0.74	01/12/2023
231023	824459	PP6193	0.84	01/12/2023
231027	824468	PP6194	1.1	01/12/2023
231030	824478	PP6195	1.2	01/12/2023
231034	824487	PP6196	1.19	01/12/2023
231037	824496	PP6197	0.84	01/12/2023
231041	824506	PP6198	0.63	01/12/2023
231045	824515	PP6199	1.05	01/12/2023
231048	824524	PP6200	1.11	01/12/2023
231052	824534	PP6201	0.64	01/12/2023
231055	824543	PP6202	0.46	01/12/2023
231059	824552	PP6203	0.83	01/12/2023
231063	824562	PP6204	0.33	01/12/2023
231066	824571	PP6205	0.27	01/12/2023
231070	824580	PP6206	0.52	01/12/2023



Easting	Northing	Point ID	Depth (m)	Date
231073	824590	PP6207	0.92	01/12/2023
231077	824599	PP6208	0.39	01/12/2023
231026	824439	PP6209	1.17	01/12/2023
231029	824448	PP6210	1.17	01/12/2023
231033	824457	PP6211	1.37	01/12/2023
231037	824467	PP6212	1.25	01/12/2023
231040	824476	PP6213	1.13	01/12/2023
231044	824485	PP6214	1.13	01/12/2023
231047	824495	PP6215	0.72	01/12/2023
231051	824504	PP6216	1.32	01/12/2023
231054	824513	PP6217	1.12	01/12/2023
231058	824523	PP6218	0.45	01/12/2023
231062	824532	PP6219	0.87	01/12/2023
231065	824541	PP6220	1.11	01/12/2023
231069	824551	PP6221	0.78	01/12/2023
231072	824560	PP6222	0.25	01/12/2023
231076	824569	PP6223	0.37	01/12/2023
231080	824579	PP6224	0.33	01/12/2023
231083	824588	PP6225	0.46	01/12/2023
231039	824446	PP6226	1.2	01/12/2023
231043	824456	PP6227	1.3	01/12/2023
231046	824465	PP6228	1.13	01/12/2023
231050	824474	PP6229	0.67	01/12/2023
231054	824484	PP6230	0.97	01/12/2023
231057	824493	PP6231	0.94	01/12/2023
231061	824502	PP6232	0.95	01/12/2023
231064	824512	PP6233	1.32	01/12/2023
231068	824521	PP6234	1.16	01/12/2023
231072	824530	PP6235	1.19	01/12/2023
231075	824540	PP6236	1.2	01/12/2023
231079	824549	PP6237	0.85	01/12/2023
231082	824558	PP6238	0.5	01/12/2023
231086	824568	PP6239	0.47	01/12/2023
231053	824454	PP6240	1.16	01/12/2023
231056	824463	PP6241	0.99	01/12/2023
231060	824473	PP6242	1.1	01/12/2023
231063	824482	PP6243	0.89	01/12/2023
231067	824491	PP6244	0.72	01/12/2023
231071	824501	PP6245	0.68	01/12/2023
231074	824510	PP6246	0.43	01/12/2023
231078	824519	PP6247	0.65	01/12/2023
231081	824529	PP6248	0.59	01/12/2023
231085	824538	PP6249	0.6	01/12/2023
231089	824547	PP6250	1.03	01/12/2023
231092	824557	PP6251	0.27	01/12/2023
231070	824471	PP6252	0.9	01/12/2023
231073	824480	PP6253	0.93	01/12/2023
231077	824490	PP6254	0.8	01/12/2023
231080	824499	PP6255	0.54	01/12/2023
231084	824508	PP6256	0.39	01/12/2023
231088	824518	PP6257	0.38	01/12/2023
231091	824527	PP6258	0.39	01/12/2023
231095	824536	PP6259	0.39	01/12/2023
231098	824546	PP6260	0.33	01/12/2023
231083	824479	PP6261	0.41	01/12/2023
231087	824488	PP6262	0.07	01/12/2023
231090	824497	PP6263	0.5	01/12/2023
231094	824507	PP6264	0.66	01/12/2023





<b>Easting</b>	<b>Northing</b>	<b>Point ID</b>	<b>Depth (m)</b>	<b>Date</b>
231098	824516	PP6265	0.65	01/12/2023
231101	824525	PP6266	0.56	01/12/2023
231100	824496	PP6267	0.24	01/12/2023
231104	824505	PP6268	0.41	01/12/2023
231107	824514	PP6269	0.86	01/12/2023
231114	824503	PP6270	0.4	01/12/2023





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

APPENDIX C  
PHOTOS







Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission  
Engineer: Jacobs

Borehole No.  
BH02



Style: CORE PHOTOS File: P:\GINTWP\PROJECTS\26560.GPJ Printed: 07/03/2024 08:43:34 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

	Originator JM	Title:  PHOTOGRAPHS OF ROCK CORE		Fig No:  C1
Chk & App FMR	Status FINAL			





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission  
Engineer: Jacobs

Borehole No.  
BH03



Style: CORE PHOTOS File: P:\GINTWP\PROJECTS\26560.GPJ Printed: 07/03/2024 08:43:35 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

	Originator JM	Title:  PHOTOGRAPHS OF ROCK CORE		Fig No:  C2
Chk & App FMR	Status FINAL			





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission  
Engineer: Jacobs

Borehole No.  
BH04




Originator	JM
Chk & App	Status
FMR	FINAL


Title:	PHOTOGRAPHS OF ROCK CORE
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Fig No:	C3
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	Site: LT521 FASNAKYLE 400KV SUBSTATION	Contract No: 26560
	Client: SSEN Transmission Engineer: Jacobs	Borehole No. BH04



Originator JM	Title:  PHOTOGRAPHS OF ROCK CORE		Fig No:  C3
Chk & App FMR			





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission  
Engineer: Jacobs

Borehole No.  
BH08



Originator	JM
Chk & App	Status
FMR	FINAL

Title: PHOTOGRAPHS OF ROCK CORE



Fig No:  
C4





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

Borehole No.  
BH09



Originator

JM

Title:

PHOTOGRAPHS OF ROCK CORE

Fig No:

C5


Chk & App

Status

FMR

FINAL



	Site: LT521 FASNAKYLE 400KV SUBSTATION	Contract No: 26560
	Client: SSEN Transmission Engineer: Jacobs	Borehole No. BH11



Originator JM	Title:  PHOTOGRAPHS OF ROCK CORE		Fig No:  C6
Chk & App FMR			





Site: LT521 FASNAKYLE 400KV SUBSTATION Client: SSEN Transmission Engineer: Jacobs	Contract No: 26560
	Borehole No. BH12



Style: CORE PHOTOS File: P:\GINTWP\PROJECTS\26560.GPJ Printed: 07/03/2024 08:45:01 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com	Originator JM	Title:  PHOTOGRAPHS OF ROCK CORE		Fig No:  C7
	Chk & App FMR			





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission  
Engineer: Jacobs

Borehole No.  
BH13



Originator	JM	Title:  PHOTOGRAPHS OF ROCK CORE	Fig No:  C8
Chk & App	Status		
FMR	Final		





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560


Client: SSEN Transmission  
Engineer: Jacobs

Borehole No.  
BH13




Originator	JM	Title:  PHOTOGRAPHS OF ROCK CORE	Fig No:  C8
Chk & App	Status		
FMR	Final		



	Site: LT521 FASNAKYLE 400KV SUBSTATION	Contract No: 26560
	Client: SSEN Transmission Engineer: Jacobs	Borehole No. <b>BH14</b>



Originator JM	Title:  PHOTOGRAPHS OF ROCK CORE		Fig No:  C9
Chk & App FMR			





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission  
Engineer: Jacobs

Borehole No.  
BH15



Originator	JM
Chk & App	Status
FMR	FINAL


Title:

PHOTOGRAPHS OF ROCK CORE


Fig No:

C10



	Site: LT521 FASNAKYLE 400KV SUBSTATION	Contract No: 26560
	Client: SSEN Transmission Engineer: Jacobs	Borehole No. <b>BH15</b>



Originator JM	Title:  PHOTOGRAPHS OF ROCK CORE		Fig No:  C10
Chk & App FMR			





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560


Client: SSEN Transmission  
Engineer: Jacobs

Borehole No.  
BH16




Originator JM	Title:  PHOTOGRAPHS OF ROCK CORE	Fig No:  C11
Chk & App FMR		
Status FINAL		



	Site: LT521 FASNAKYLE 400KV SUBSTATION	Contract No: 26560
	Client: SSEN Transmission Engineer: Jacobs	Borehole No. BH16



	Originator JM	Title:  PHOTOGRAPHS OF ROCK CORE		Fig No:  C11
Chk & App FMR	Status FINAL			





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

Borehole No.  
BH17



Originator

JM

Title:

PHOTOGRAPHS OF ROCK CORE

Fig No:

C12

Chk & App

Status

FMR

FINAL





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

Borehole No.  
BH18



Originator

JM

Title:

PHOTOGRAPHS OF ROCK CORE

Fig No:

C13

Chk & App

Status

FMR

FINAL





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission  
Engineer: Jacobs

Borehole No.  
BH19



Originator	JM
Chk & App	Status
FMR	FINAL

Title: PHOTOGRAPHS OF ROCK CORE



Fig No:  
C14





Site: LT513 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission  
Engineer: Jacobs

Borehole No.  
BH20



	Originator	Title:  PHOTOGRAPHS OF ROCK CORE
	JM	
Chk & App	Status	
FMR	FINAL	



Fig No:  
C15





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission  
Engineer: Jacobs

Borehole No.  
BH21



Originator	JM
Chk & App	Status
FMR	FINAL

Title:	PHOTOGRAPHS OF ROCK CORE
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Fig No:	C16
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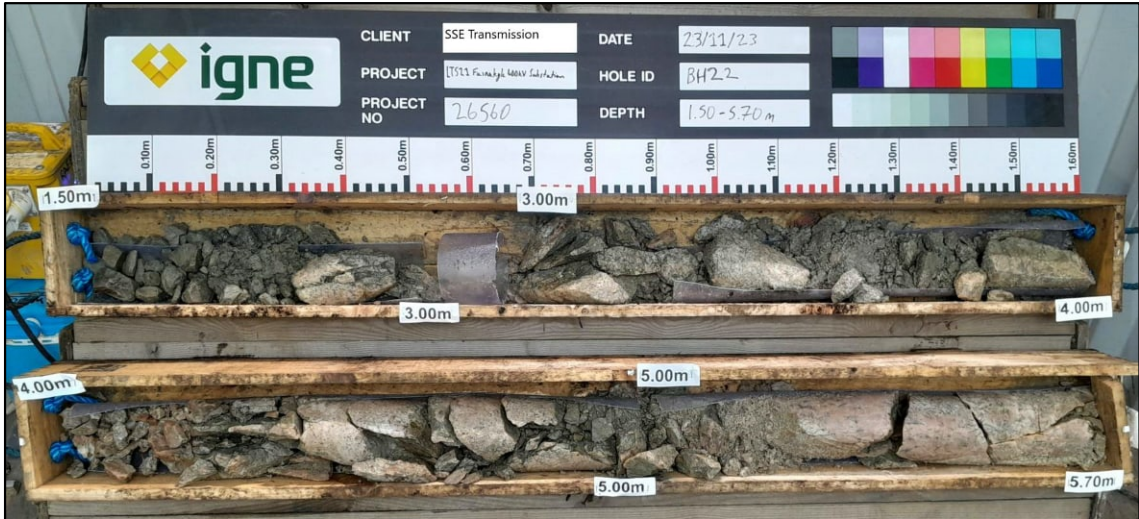


Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission  
Engineer: Jacobs

Borehole No.  
BH22



Originator JM	Title:  PHOTOGRAPHS OF ROCK CORE	Fig No:  C17
Chk & App FMR		
Status FINAL		





Site: LT521 FASNAKYLE 400KV SUBSTATION


Contract No: 26560

Client: SSEN Transmission  
Engineer: Jacobs

Borehole No.  
BH22



Style: CORE PHOTOS File: P:\GINTWP\PROJECTS\26560.GPJ Printed: 07/03/2024 08:45:46 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

	Originator JM	Title:  PHOTOGRAPHS OF ROCK CORE		Fig No:  C17
Chk & App FMR	Status FINAL			





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission  
Engineer: Jacobs

Borehole No.  
BH23



Originator	JM
Chk & App	Status
FMR	FINAL

Title: PHOTOGRAPHS OF ROCK CORE



Fig No:  
C18





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

Borehole No.  
BH23



CLIENT SSEN Transmission

DATE 20/11/23

PROJECT LT521 Fasnakyle 400KV Substation

HOLE ID BH23

PROJECT NO 26560

DEPTH 5.80-6.50m

5.80m

6.30m

6.50m

Originator

JM

Title:

PHOTOGRAPHS OF ROCK CORE



Fig No:

C18

Chk & App

FMR

Status

FINAL





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission  
Engineer: Jacobs

Borehole No.  
BH24



Originator	JM
Chk & App	Status
FMR	FINAL

Title:	PHOTOGRAPHS OF ROCK CORE
--------	--------------------------

Fig No:	C19
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Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

Borehole No.  
BH25



Originator	JM	Title:  PHOTOGRAPHS OF ROCK CORE	Fig No:  C20
Chk & App	Status		
FMR	FINAL		





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission  
Engineer: Jacobs

Borehole No.  
BH25



Style: CORE PHOTOS File: P:\GINTWP\PROJECTS\26560.GPJ Printed: 07/03/2024 08:46:23 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

Chk & App FMR	Originator JM	Title:  PHOTOGRAPHS OF ROCK CORE		Fig No:  C20
	Status FINAL			





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission  
Engineer: Jacobs

Borehole No.  
BH26



Originator	JM	Title:  PHOTOGRAPHS OF ROCK CORE	Fig No:  C21
Chk & App	Status		
FMR	FINAL		





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560


Client: SSEN Transmission  
Engineer: Jacobs

Borehole No.  
BH27




Originator JM	Title:  PHOTOGRAPHS OF ROCK CORE	Fig No:  C22
Chk & App FMR		
Status FINAL		



	Site: LT521 FASNAKYLE 400KV SUBSTATION	Contract No: 26560
	Client: SSEN Transmission Engineer: Jacobs	Borehole No. BH27



Originator JM	Title:  PHOTOGRAPHS OF ROCK CORE		Fig No:  C22
Chk & App FMR			





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission  
Engineer: Jacobs

Borehole No.  
BH28



Originator	JM
Chk & App	Status
FMR	FINAL

Title:	PHOTOGRAPHS OF ROCK CORE
--------	--------------------------

Fig No:	C23
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Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

Trial Pit No.  
TP01



Style: TP PHOTOS File: P:\GINTW\PROJECTS\26560.GPJ Printed: 07/03/2024 08:54:24 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

	Originator FP	Title:  PHOTOGRAPHS OF TRIAL PITS	Fig No:  C24
Chk & App FMR	Status FINAL		





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

Trial Pit No.  
TP01



Style: TP PHOTOS File: P:\GINTW\PROJECTS\26560.GPJ Printed: 07/03/2024 08:54:24 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

	Originator FP	Title:  PHOTOGRAPHS OF TRIAL PITS		Fig No:  C24
Chk & App FMR	Status FINAL			





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP02**



Style: TP PHOTOS File: P:\GINTWP\PROJECTS\26560.GPJ Printed: 07/03/2024 08:54:34 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:

**C25**

Chk & App

Status

FMR

FINAL





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

Trial Pit No.  
TP02



Style: TP PHOTOS File: P:\GINTW\PROJECTS\26560.GPJ Printed: 07/03/2024 08:54:34 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

	Originator FP	Title:  PHOTOGRAPHS OF TRIAL PITS		Fig No:  C25
Chk & App FMR	Status FINAL			





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP03**



Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:

**C26**

Chk & App

FMR

Status

FINAL







Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP03**



Style: TP PHOTOS File: P:\GINTW\PROJECTS\26560.GPJ Printed: 07/03/2024 08:54:45 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:

**C26**

Chk & App

Status

FMR

FINAL





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP04**



Style: TP PHOTOS File: P:\GINTW\PROJECTS\26560.GPJ Printed: 07/03/2024 08:54:57 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:

**C27**

Chk & App

Status

FMR

FINAL





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP04**



Style: TP PHOTOS File: P:\GINTW\PROJECTS\26560.GPJ Printed: 07/03/2024 08:54:58 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:

**C27**

Chk & App

Status

FMR

FINAL





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP05**



Style: TP PHOTOS File: P:\GINTW\PROJECTS\26560.GPJ Printed: 07/03/2024 08:55:10 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:



**C28**

Chk & App

FMR

Status

FINAL





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP05**



Style: TP PHOTOS File: P:\GINTW\PROJECTS\26560.GPJ Printed: 07/03/2024 08:55:10 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:



**C28**

Chk & App

Status

FMR

FINAL





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP06**



Style: TP PHOTOS File: P:\GINTW\PROJECTS\26560.GPJ Printed: 07/03/2024 08:55:24 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:

**C29**

Chk & App

Status

FMR

FINAL





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP06**



Style: TP PHOTOS File: P:\GINTWP\PROJECTS\26560.GPJ Printed: 07/03/2024 08:55:24 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:

**C29**

Chk & App

Status

FMR

FINAL





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP07**



Style: TP PHOTOS File: P:\GINTW\PROJECTS\26560.GPJ Printed: 07/03/2024 08:55:36 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:

**C30**

Chk & App

Status

FMR

FINAL





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP07**



Style: TP PHOTOS File: P:\GINTW\PROJECTS\26560.GPJ Printed: 07/03/2024 08:55:36 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:

**C30**

Chk & App

Status

FMR

FINAL





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP08**



Style: TP PHOTOS File: P:\GINTW\PROJECTS\26560.GPJ Printed: 07/03/2024 08:55:47 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:

**C31**

Chk & App

Status

FMR

FINAL





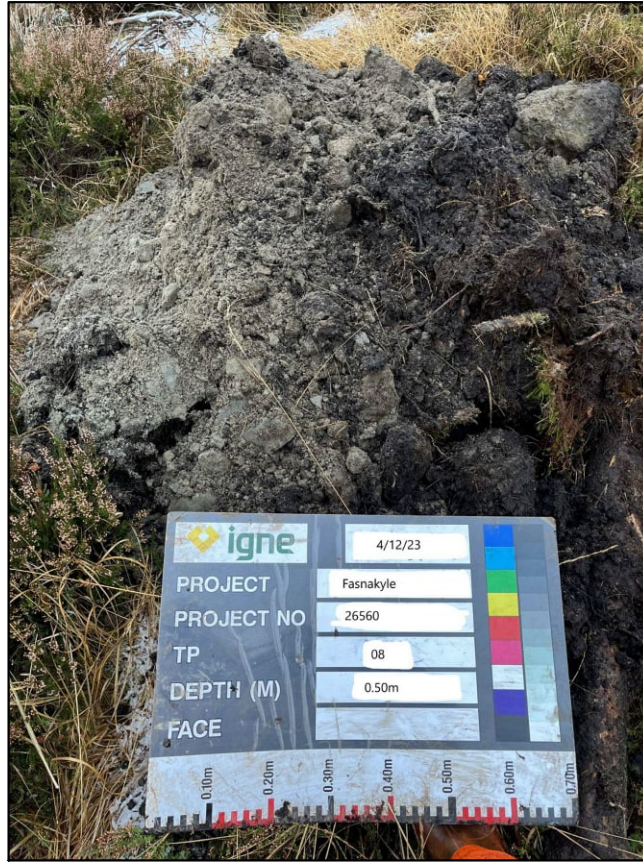
Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP08**



Style: TP PHOTOS File: P:\GINTW\PROJECTS\26560.GPJ Printed: 07/03/2024 08:55:47 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:

**C31**

Chk & App

FMR

Status

FINAL







Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP09**



Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:



**C32**

Chk & App

Status

FMR

FINAL





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP10**



Style: TP PHOTOS File: P:\GINTW\PROJECTS\26560.GPJ Printed: 07/03/2024 08:56:05 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:

**C33**

Chk & App

Status

FMR

FINAL





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP10**



Style: TP PHOTOS File: P:\GINTW\PROJECTS\26560.GPJ Printed: 07/03/2024 08:56:05 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:

**C33**

Chk & App

Status

FMR

FINAL





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP11**



Style: TP PHOTOS File: P:\GINTWP\PROJECTS\26560.GPJ Printed: 07/03/2024 08:57:22 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:

**C34**

Chk & App

Status

FMR

FINAL





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

Trial Pit No.  
TP11



Style: TP PHOTOS File: P:\GINTW\PROJECTS\26560.GPJ Printed: 07/03/2024 08:57:22 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

	Originator FP	Title:  PHOTOGRAPHS OF TRIAL PITS		Fig No:  C34
Chk & App FMR	Status FINAL			





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP12**



Style: TP PHOTOS File: P:\GINTWP\PROJECTS\26560.GPJ Printed: 07/03/2024 08:57:35 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:

**C35**

Chk & App

Status

FMR

FINAL





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP12**



Style: TP PHOTOS File: P:\GINTW\PROJECTS\26560.GPJ Printed: 07/03/2024 08:57:35 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:



**C35**

Chk & App

Status

FMR

FINAL





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP13**



Style: TP PHOTOS File: P:\GINTWP\PROJECTS\26560.GPJ Printed: 07/03/2024 08:57:49 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:



**C36**

Chk & App

Status

FMR

FINAL





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP13**



Style: TP PHOTOS File: P:\GINTW\PROJECTS\26560.GPJ Printed: 07/03/2024 08:57:49 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:

**C36**

Chk & App

Status

FMR

FINAL





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP14**



Style: TP PHOTOS File: P:\GINTW\PROJECTS\26560.GPJ Printed: 07/03/2024 08:58:04 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:

**C37**

Chk & App

Status

FMR

FINAL





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP14**



Style: TP PHOTOS File: P:\GINTW\PROJECTS\26560.GPJ Printed: 07/03/2024 08:58:04 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:

**C37**

Chk & App

Status

FMR

FINAL





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP15**



Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:



**C38**

Chk & App

Status

FMR

FINAL





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP15**



Style: TP PHOTOS File: P:\GINTW\PROJECTS\26560.GPJ Printed: 07/03/2024 08:58:18 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:

**C38**

Chk & App

FMR

Status

FINAL







Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP16**



Style: TP PHOTOS File: P:\GINTW\PROJECTS\26560.GPJ Printed: 07/03/2024 08:58:32 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:

**C39**

Chk & App

FMR

Status

FINAL







Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

Trial Pit No.  
**TP16**



Style: TP PHOTOS File: P:\GINTW\PROJECTS\26560.GPJ Printed: 07/03/2024 08:58:32 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

Originator

FP

Title:

PHOTOGRAPHS OF TRIAL PITS

Fig No:



C39

Chk & App

Status

FMR

FINAL





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP17**



Style: TP PHOTOS File: P:\GINTW\PROJECTS\26560.GPJ Printed: 07/03/2024 08:58:38 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:

**C40**

Chk & App

FMR

Status

FINAL







Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission  
Engineer: Jacobs

Trial Pit No.  
TP17



Style: TP PHOTOS File: P:\GINTW\PROJECTS\26560.GPJ Printed: 07/03/2024 08:58:38 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

	Originator FP	Title:  PHOTOGRAPHS OF TRIAL PITS		Fig No:  C40
Chk & App FMR	Status FINAL			





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission  
Engineer: Jacobs

Trial Pit No.  
TP18



Style: TP PHOTOS File: P:\GINTW\PROJECTS\26560.GPJ Printed: 07/03/2024 08:58:50 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

	Originator FP	Title:  PHOTOGRAPHS OF TRIAL PITS		Fig No:  C41
Chk & App FMR	Status FINAL			





Site: LT521 FASNAKYLE 400KV SUBSTATION  Client: SSEN Transmission Engineer: Jacobs	Contract No: 26560
	Trial Pit No. TP18



Style: TP PHOTOS	Originator	Title:  PHOTOGRAPHS OF TRIAL PITS	Fig No:  C41
	FP		
Chk & App	Status		
FMR	FINAL		





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP19**



Style: TP PHOTOS File: P:\GINTW\PROJECTS\26560.GPJ Printed: 07/03/2024 08:59:04 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:



**C42**

Chk & App

Status

FMR

FINAL





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP19**



Style: TP PHOTOS File: P:\GINTW\PROJECTS\26560.GPJ Printed: 07/03/2024 08:59:04 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:

**C42**

Chk & App

FMR

Status

FINAL





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP20**



Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:

**C43**

Chk & App

Status

FMR

FINAL





Site: LT521 FASNAKYLE 400KV SUBSTATION Client: SSEN Transmission Engineer: Jacobs	Contract No: 26560
	Trial Pit No. TP20



Style: TP PHOTOS File: P:\GINTW\PROJECTS\26560.GPJ Printed: 07/03/2024 08:59:18 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

Chk & App FMR	Originator FP	Title:  PHOTOGRAPHS OF TRIAL PITS		Fig No:  C43
	Status FINAL			





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

Trial Pit No.  
TP21



Style: TP PHOTOS File: P:\GINTWP\PROJECTS\26560.GPJ Printed: 07/03/2024 09:00:50 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

		Originator	Title:  PHOTOGRAPHS OF TRIAL PITS	Fig No:  C44
		FP		
Chk & App	Status			
FMR	FINAL			





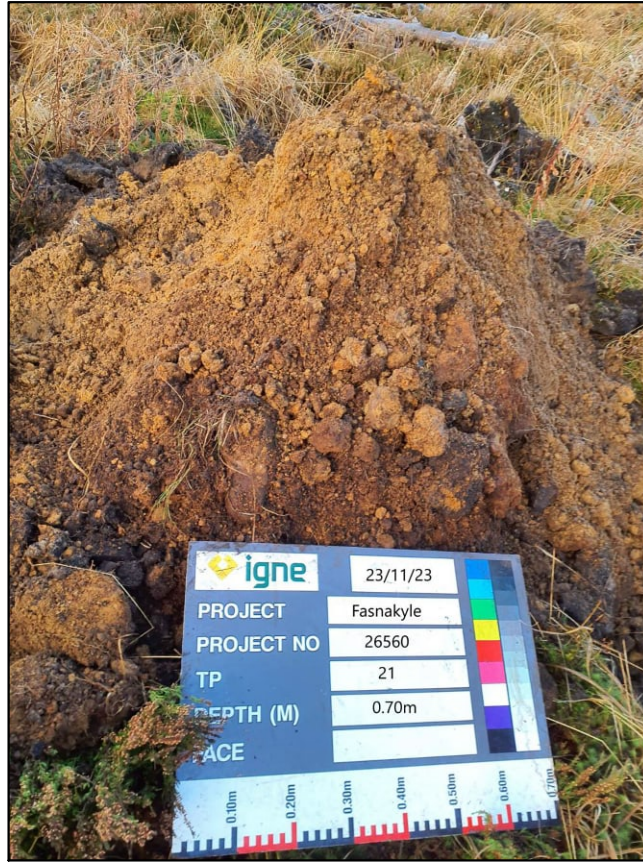
Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP21**



Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:

**C44**

Chk & App

FMR

Status

FINAL





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP22**



Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:

**C45**

Chk & App

Status

FMR

FINAL





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP22**



Style: TP PHOTOS File: P:\GINTW\PROJECTS\26560.GPJ Printed: 07/03/2024 09:01:04 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:



**C45**

Chk & App

Status

FMR

FINAL





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP23**



Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:



**C46**

Chk & App

Status

FMR

FINAL





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP23**



Style: TP PHOTOS File: P:\GINTW\PROJECTS\26560.GPJ Printed: 07/03/2024 09:01:19 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

Originator

FP

Title:

PHOTOGRAPHS OF TRIAL PITS

Fig No:



C46

Chk & App

Status

FMR

FINAL





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP24**



Style: TP PHOTOS File: P:\GINTW\PROJECTS\26560.GPJ Printed: 07/03/2024 09:01:33 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:



**C47**

Chk & App

Status

FMR

FINAL





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP24**



Style: TP PHOTOS File: P:\GINTW\PROJECTS\26560.GPJ Printed: 07/03/2024 09:01:33 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:

**C47**

Chk & App

FMR

Status

FINAL







Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP25**



Style: TP PHOTOS File: P:\GINTWP\PROJECTS\26560.GPJ Printed: 07/03/2024 09:01:45 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:



**C48**

Chk & App

Status

FMR

FINAL





Site: LT521 FASNAKYLE 400KV SUBSTATION  Client: SSEN Transmission Engineer: Jacobs	Contract No: 26560
	Trial Pit No. TP25



Style: TP PHOTOS	Originator FP	Title:  PHOTOGRAPHS OF TRIAL PITS		Fig No:  C48
	Chk & App FMR			





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP26**



Style: TP PHOTOS File: P:\GINTW\PROJECTS\26560.GPJ Printed: 07/03/2024 09:01:59 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:



**C49**

Chk & App

Status

FMR

FINAL





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP26**



Style: TP PHOTOS File: P:\GINTW\PROJECTS\26560.GPJ Printed: 07/03/2024 09:01:59 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:



**C49**

Chk & App

FMR

Status

FINAL





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP27**



Style: TP PHOTOS File: P:\GINTW\PROJECTS\26560.GPJ Printed: 07/03/2024 09:02:09 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:



**C50**

Chk & App

Status

FMR

FINAL





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP28**



Style: TP PHOTOS File: P:\GINTW\PROJECTS\26560.GPJ Printed: 07/03/2024 09:02:23 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:

**C51**

Chk & App

Status

FMR

FINAL





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission  
Engineer: Jacobs

Trial Pit No.  
TP28



Style: TP PHOTOS File: P:\GINTW\PROJECTS\26560.GPJ Printed: 07/03/2024 09:02:23 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

	Originator FP	Title:  PHOTOGRAPHS OF TRIAL PITS		Fig No:  C51
Chk & App FMR	Status FINAL			





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP29**



Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:

**C52**

Chk & App

Status

FMR

FINAL





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP29**



Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:

**C52**

Chk & App

Status

FMR

FINAL





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP30**



Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:

**C53**

Chk & App

FMR

Status

FINAL







Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP31**



Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:

**C54**

Chk & App

Status

FMR

FINAL





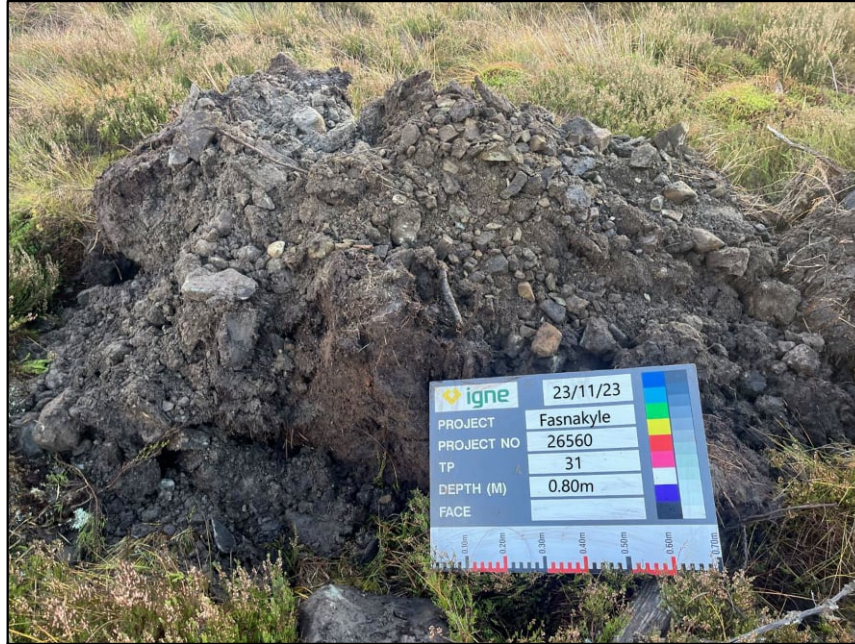
Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP31**



Style: TP PHOTOS File: P:\GINTW\PROJECTS\26560.GPJ Printed: 07/03/2024 09:03:30 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:

**C54**

Chk & App

Status

FMR

FINAL





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP32**



Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:

**C55**

Chk & App

Status

FMR

FINAL





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

Trial Pit No.  
TP32



Style: TP PHOTOS File: P:\GINTW\PROJECTS\26560.GPJ Printed: 07/03/2024 09:03:45 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

	Originator FP	Title:  PHOTOGRAPHS OF TRIAL PITS		Fig No:  C55
Chk & App FMR	Status FINAL			





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP33**



Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:



**C56**

Chk & App

Status

FMR

FINAL





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

Trial Pit No.  
TP33



Style: TP PHOTOS File: P:\GINTW\PROJECTS\26560.GPJ Printed: 07/03/2024 09:03:57 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

	Originator FP	Title:  PHOTOGRAPHS OF TRIAL PITS		Fig No:  C56
Chk & App FMR	Status FINAL			





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP34**



Style: TP PHOTOS File: P:\GINTW\PROJECTS\26560.GPJ Printed: 07/03/2024 09:04:10 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:

**C57**

Chk & App

FMR

Status

FINAL







Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP34**



Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:

**C57**

Chk & App

Status

FMR

FINAL





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP35**



Style: TP PHOTOS File: P:\GINTW\PROJECTS\26560.GPJ Printed: 07/03/2024 09:04:24 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:



**C58**

Chk & App

FMR

Status

FINAL





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP35**



Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:

**C58**

Chk & App

Status

FMR

FINAL





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP36**



Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:



**C59**

Chk & App

Status

FMR

FINAL





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP36**



Style: TP PHOTOS File: P:\GINTW\PROJECTS\26560.GPJ Printed: 07/03/2024 09:04:38 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Chk & App

FMR

Status

FINAL

Fig No:



**C59**





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP36A**



Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:

**C60**

Chk & App

Status

FMR

FINAL





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP36A**



Style: TP PHOTOS File: P:\GINTW\PROJECTS\26560.GPJ Printed: 07/03/2024 09:04:49 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:



**C60**

Chk & App

FMR

Status

FINAL





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP37**



Style: TP PHOTOS File: P:\GINTW\PROJECTS\26560.GPJ Printed: 07/03/2024 09:05:02 Raeburn Drilling and Geotechnical, Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:

**C61**

Chk & App

Status

FMR

FINAL





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

**Trial Pit No.  
TP37**



Originator

FP

Title:

**PHOTOGRAPHS OF TRIAL PITS**

Fig No:

**C61**

Chk & App

FMR

Status

FINAL





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

APPENDIX D  
IN-SITU TESTING





TP ID	Test Depth (m)	Date & Time of Test	Read Time	Ambient Soil Temperature (°C)	Strata Type	Ground-water Level (m)	NMC (%)	Thermal Conductivity (W/K m)	Thermal Resistivity (K m/W)	Remarks
TP01	1.1	29.11/23	150	6.9	SAND & GRAVEL	1.1		1.079	0.9267841	
TP08	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Unsuitable material
TP10	1.1	24.11.23	150	6.9	Gravelly SAND	1.75m	N/A	1.826	0.5476451	
TP12	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Unsuitable material
TP13	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Unsuitable material
TP14	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Unsuitable material
TP15	1.1	27.11.23	150	7.3	PEAT	1.75m		1.325	0.754717	
TP19	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Unsuitable material
TP20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Unsuitable material
TP26	1.1	24.11.23	150	7.03	PEAT	0.30m		1.251	0.7993605	
TP27	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Unsuitable material
TP28	1.1	21.11.23	150	7.1	SAND & GRAVEL	2.90m	6.4	5.232	0.1911315	
TP30	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Unsuitable material
TP34	1	21.11.23	150	7.05	SAND & GRAVEL	1.80m		0.717	1.3947001	
TP37	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Unsuitable material



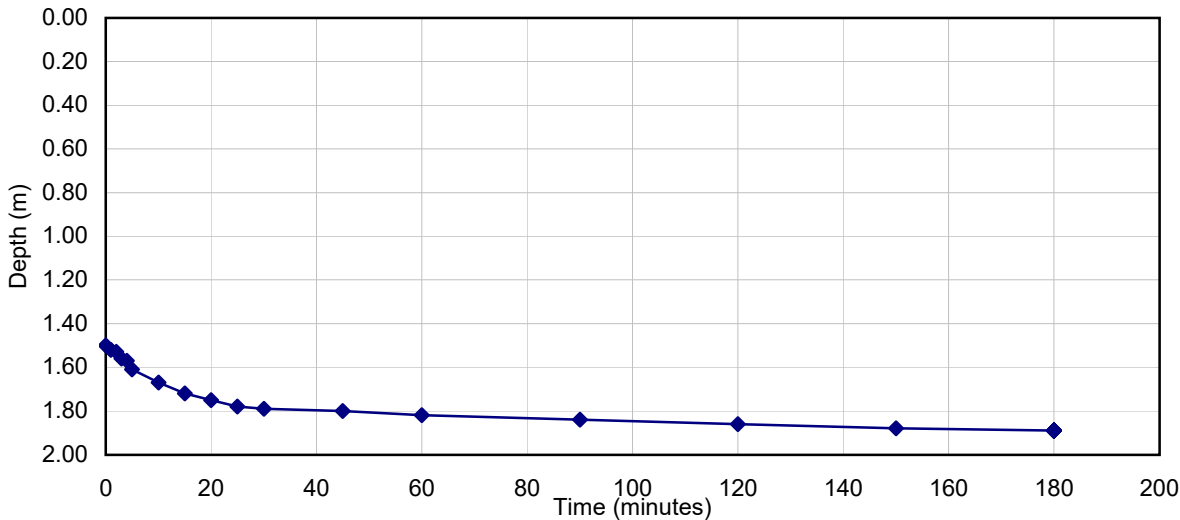
Version 007 - 04/10/2022  
1960 - Soakaway TP28 - A15075-1 13.12.23 01.xls  
62 Rochsolloch Road, Airdrie, ML6 9BG  
Lab Project No A15075-1 : 12/13/2023 16:27:24



Site	LT521 FASNAKYLE 400KV SUBSTATION	Contract No	26560
Client	SSEN Transmission	Test Pit No	TP28
Engineer	Jacobs	Test Run No	1
		Date of Test	13.12.23

Time (minute)	Depth to Water (m)
0	1.50
1	1.52
2	1.53
3	1.56
4	1.57
5	1.61
10	1.67
15	1.72
20	1.75
25	1.78
30	1.79
45	1.80
60	1.82
90	1.84
120	1.86
150	1.88
180	1.89

Weather Conditions		
Dry, cold, clear		
Non Engineering Strata Description		
0.00-0.40: PEAT 0.40-1.20: SAND & GRAVEL 1.20-2.50: Sandy GRAVEL with cobbles		
Test Pit Dimensions		
Length	m	2.40
Width	m	0.80
Depth	m	2.50
Test Parameters		
Maximum Effective Depth	m	1.50
75% Effective Depth	m	1.75
25 % Effective Depth	m	2.25
Effective Storage Volume	m <sup>3</sup>	0.96
Surface Area a <sub>p50</sub>	m <sup>2</sup>	5.12
Time for 75%	min	~
Time for 25%	min	~
t <sub>p75-25</sub>	min	~
Soil Infiltration Rate		
INDETERMINATE		
Comments		
Test abandoned due to slow water outflow		



Originator	Checked & Approved	<b>SOAKAWAY</b> BRE 365	 <b>D2</b>
FP	13/12/2023		

Fig No:





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560


Client: SSEN Transmission

Engineer: Jacobs



APPENDIX E  
MONITORING






<div></div>				Site: LT521 FASNAKYLE 400KV SUBSTATION								Contract No: 26560		
				Client: SSEN Transmission Engineer: Jacobs								Water level measurements taken from ground level.		
Borehole No.	Surveyed Level (m OD)	Depth to Base of Standpipe (m)	Date	Atmospheric Pressure (mBar)	Gas Composition					Differential Pressure (Pa)	Flow (l/hr)	Depth to Water (m) (mBGL)	Depth (mOD)	Remarks
					CH <sub>4</sub> (%vol)	CO <sub>2</sub> (%vol)	O <sub>2</sub> (%vol)	H <sub>2</sub> S (ppm)	CO (ppm)					
BH02	324.21		30/01/24 09:00	984	0.00	0.10	19.60	0.00	0.00	0.00	0.00	1.26	322.95	Dry, Overcast
	324.21		30/01/24 09:01		0.00	0.10	19.50	0.00	0.00					Dry, Overcast
	324.21		30/01/24 09:02		0.00	0.10	19.50	0.00	0.00					Dry, Overcast
	324.21		30/01/24 09:03		0.00	0.10	19.50	0.00	2.00					Dry, Overcast
	324.21		30/01/24 09:04		0.00	0.10	19.50	1.00	3.00					Dry, Overcast
	324.21		30/01/24 09:05		0.00	0.10	19.50	0.00	2.00					Dry, Overcast
	324.21		29/02/24 09:00	952	0.00	0.00	19.30	0.00	0.00	18.00	3.10	0.42	323.79	Overcast, raining
	324.21		29/02/24 09:01		0.00	0.00	19.00	0.00	1.00					Overcast, raining
	324.21		29/02/24 09:02		0.00	0.00	19.30	0.00	2.00					Overcast, raining
	324.21		29/02/24 09:03		0.00	0.00	19.20	0.00	1.00					Overcast, raining
	324.21		29/02/24 09:04		0.00	0.00	19.20	0.00	1.00					Overcast, raining
	324.21		29/02/24 09:05		0.00	0.00	19.10	0.00	0.00		2.90			Overcast, raining
	324.21		25/03/24 12:54	961	0.00	0.00	17.20	0.00	0.00	0.00	0.00	5.06	319.15	Overcast, occasional snow
	324.21		25/03/24 12:55		0.00	0.00	17.20	0.00	0.00					Overcast, occasional snow
	324.21		25/03/24 12:56		0.00	0.00	16.50	0.00	0.00					Overcast, occasional snow
	324.21		25/03/24 12:57		0.00	0.00	15.80	0.00	0.00					Overcast, occasional snow
	324.21		25/03/24 12:58		0.00	0.00	15.40	0.00	0.00					Overcast, occasional snow
	324.21		25/03/24 12:59		0.00	0.00	15.20	0.00	0.00					Overcast, occasional snow
	324.21		23/04/24 11:24	989	0.00	2.10	17.20	0.00	10.00	0.00	0.00	4.73	319.48	Dry, overcast and cool
	324.21		23/04/24 11:25		0.00	2.20	16.70	0.00	5.00					Dry, overcast and cool
	324.21		23/04/24 11:26		0.00	2.20	16.70	0.00	3.00					Dry, overcast and cool
	324.21		23/04/24 11:27		0.00	2.20	16.70	0.00	0.00					Dry, overcast and cool
	324.21		23/04/24 11:28		0.00	2.20	16.80	0.00	2.00					Dry, overcast and cool
	324.21		23/04/24 11:29		0.00	2.20	16.80	0.00	1.00					Dry, overcast and cool
BH04	325.02		01/02/24 09:00	987	0.00	0.00	19.20	0.00	0.00	0.00	0.40	0.43	324.59	Dry, Overcast
	325.02		01/02/24 09:01		0.00	0.00	19.30	0.00	0.00					Dry, Overcast
	325.02		01/02/24 09:02		0.00	0.00	19.20	0.00	0.00					Dry, Overcast
	325.02		01/02/24 09:03		0.00	0.00	19.20	0.00	0.00					Dry, Overcast
	325.02		01/02/24 09:04		0.00	0.00	19.20	0.00	0.00					Dry, Overcast
	325.02		01/02/24 09:05		0.00	0.00	19.20	0.00	0.00					Dry, Overcast
	325.02		29/02/24 09:00	952	0.00	0.00	19.30	0.00	0.00	0.00	0.00	0.42	324.60	Overcast, raining
	325.02		29/02/24 09:01		0.00	0.00	19.20	0.00	1.00					Overcast, raining
	325.02		29/02/24 09:02		0.00	0.00	19.30	0.00	0.00					Overcast, raining
	325.02		29/02/24 09:03		0.00	0.00	19.30	0.00	1.00					Overcast, raining
	325.02		29/02/24 09:04		0.00	0.00	19.20	0.00	0.00					Overcast, raining
	325.02		29/02/24 09:05		0.00	0.00	19.20	0.00	0.00		0.00			Overcast, raining
	325.02		25/03/24 13:49	961	0.00	0.00	18.10	0.00	0.00	-3.00	-0.40	0.54	324.48	Overcast, occasional snow
	325.02		25/03/24 13:50		0.00	0.00	17.80	0.00	0.00					Overcast, occasional snow
	325.02		25/03/24 13:51		0.00	0.00	17.80	0.00	0.00					Overcast, occasional snow
	325.02		25/03/24 13:52		0.00	0.00	17.80	0.00	0.00					Overcast, occasional snow
	325.02		25/03/24 13:53		0.00	0.00	17.70	0.00	0.00					Overcast, occasional snow
	325.02		25/03/24 13:54		0.00	0.00	17.70	0.00	0.00					Overcast, occasional snow
	325.02		23/04/24 12:14	988	0.00	1.40	19.00	0.00	0.00	0.00	0.00	0.58	324.44	Dry, overcast and cool
	325.02		23/04/24 12:15		0.00	2.00	17.10	0.00	0.00					Dry, overcast and cool
Originator		Title: RESULTS OF GAS AND WATER LEVEL MONITORING IN STANDPIPES												
JMcM														
Chk & App	Status													
FMR	Final													
												Fig No:		
												E2		
												Sheet 1 of 7		





<div></div>				Site: LT521 FASNAKYLE 400KV SUBSTATION									Contract No: 26560		
				Client: SSEN Transmission Engineer: Jacobs									* Water level measurements taken from ground level.		
Borehole No.	Surveyed Level (m OD)	Depth to Base of Standpipe (m)	Date	Atmospheric Pressure (mBar)	Gas Composition					Differential Pressure (Pa)	Flow (l/hr)	Depth to Water (m) (mBGL)	Depth (mOD)	Remarks	
					CH <sub>4</sub> (%vol)	CO <sub>2</sub> (%vol)	O <sub>2</sub> (%vol)	H <sub>2</sub> S (ppm)	CO (ppm)						
BH04	325.02		23/04/24 12:16		0.00	2.00	17.30	0.00	0.00					Dry, overcast and cool	
	325.02		23/04/24 12:17		0.00	2.00	17.30	0.00	0.00					Dry, overcast and cool	
	325.02		23/04/24 12:18		0.00	1.90	17.40	0.00	0.00					Dry, overcast and cool	
	325.02		23/04/24 12:19		0.00	1.90	17.50	0.00	0.00					Dry, overcast and cool	
BH08	334.07		12/01/23 00:00									0.00	334.07		
	334.07		15/12/23 00:00									0.00	334.07		
	334.07		19/12/23 00:00									0.00	334.07		
	334.07		30/01/24 00:00									0.30	333.77	Water level 0.30m above GL	
	334.07		29/02/24 09:00									0.30	333.77	Water level 0.30m above GL	
	334.07		25/03/24 12:40									0.20	333.87	Water level 0.20m above GL	
	334.07		23/04/24 11:09									0.30	333.77	Water level 0.30m above GL	
	BH11	330.59		19/12/23 00:00									4.02	326.57	
		330.59		11/01/24 00:00									4.51	326.08	
330.59			30/01/24 09:00	984	0.00	0.00	18.90	0.00	0.00	0.00	0.30	3.55	327.04	Dry, Overcast	
330.59			30/01/24 09:01		0.00	0.00	19.00	0.00	0.00					Dry, Overcast	
330.59			30/01/24 09:02		0.00	0.00	19.00	0.00	1.00					Dry, Overcast	
330.59			30/01/24 09:03		0.00	0.00	19.00	0.00	0.00					Dry, Overcast	
330.59			30/01/24 09:04		0.00	0.00	18.90	0.00	0.00					Dry, Overcast	
330.59			29/02/24 09:00	950	0.00	0.00	18.00	0.00	0.00	6.00	2.00	4.85	325.74	Overcast, raining	
330.59			29/02/24 09:01		0.00	0.00	19.20	1.00	0.00					Overcast, raining	
330.59			29/02/24 09:02		0.00	0.10	19.10	1.00	1.00					Overcast, raining	
330.59		29/02/24 09:03		0.00	0.00	19.20	1.00	0.00					Overcast, raining		
330.59		29/02/24 09:04		0.00	0.00	19.20	0.00	1.00					Overcast, raining		
330.59		29/02/24 09:05		0.00	0.00	19.10	0.00	0.00		1.30			Overcast, raining		
	330.59		25/03/24 13:18	960	0.00	0.00	17.70	0.00	0.00	-2.00	-0.40	4.81	325.78	Overcast, occasional snow	
	330.59		25/03/24 13:19		0.00	0.00	17.70	0.00	0.00					Overcast, occasional snow	
	330.59		25/03/24 13:20		0.00	0.00	17.70	0.00	0.00					Overcast, occasional snow	
	330.59		25/03/24 13:21		0.00	0.00	17.70	0.00	0.00					Overcast, occasional snow	
	330.59		25/03/24 13:22		0.00	0.00	17.70	0.00	0.00					Overcast, occasional snow	
	330.59		25/03/24 13:23		0.00	0.00	17.70	0.00	0.00					Overcast, occasional snow	
	330.59		23/04/24 11:46	988	0.00	1.60	18.20	0.00	0.00	0.00	0.00	4.44	326.15	Dry, overcast and cool	
	330.59		23/04/24 11:47		0.00	2.20	16.40	0.00	0.00					Dry, overcast and cool	
	330.59		23/04/24 11:48		0.00	2.10	16.40	0.00	0.00					Dry, overcast and cool	
	330.59		23/04/24 11:49		0.00	2.10	16.60	0.00	0.00					Dry, overcast and cool	
330.59		23/04/24 11:50		0.00	2.10	16.70	0.00	0.00					Dry, overcast and cool		
330.59		23/04/24 11:51		0.00	2.10	16.80	0.00	0.00					Dry, overcast and cool		
BH14	306.06		15/12/23 00:00									0.15	305.91		
	306.06		19/12/23 00:00									0.11	305.95		
	306.06		11/01/24 00:00									0.36	305.70		
	306.06		31/01/24 09:00	962	0.00	0.00	19.30	0.00	0.00	0.00	0.00	0.27	305.79	Overcast, raining	
	306.06		31/01/24 09:01		0.00	0.10	19.40	0.00	0.00					Overcast, raining	
	306.06		31/01/24 09:02		0.00	0.10	19.30	0.00	0.00					Overcast, raining	
	306.06		31/01/24 09:03		0.00	0.10	19.30	0.00	0.00					Overcast, raining	
306.06		31/01/24 09:04		0.00	0.10	19.30	0.00	1.00					Overcast, raining		
Originator		Title: RESULTS OF GAS AND WATER LEVEL MONITORING IN STANDPIPES													
JMcM															
Status															
Chk & App	FMR	Final													Fig No: E2 Sheet 2 of 7





<div></div>				Site: LT521 FASNAKYLE 400KV SUBSTATION								Contract No: 26560		
				Client: SSEN Transmission Engineer: Jacobs								* Water level measurements taken from ground level.		
Borehole No.	Surveyed Level (m OD)	Depth to Base of Standpipe (m)	Date	Atmospheric Pressure (mBar)	Gas Composition					Differential Pressure (Pa)	Flow (l/hr)	Depth to Water (m) (mBGL)	Depth (mOD)	Remarks
					CH <sub>4</sub> (%vol)	CO <sub>2</sub> (%vol)	O <sub>2</sub> (%vol)	H <sub>2</sub> S (ppm)	CO (ppm)					
BH14	306.06		31/01/24 09:05		0.00	0.10	19.30	0.00	0.00					Overcast, raining
	306.06		28/02/24 09:00	961	0.00	0.00	19.30	0.00	1.00	0.00	0.00	0.22	305.84	Overcast, raining
	306.06		28/02/24 09:01		0.00	0.10	19.50	0.00	0.00					Overcast, raining
	306.06		28/02/24 09:02		0.00	0.10	19.50	0.00	0.00					Overcast, raining
	306.06		28/02/24 09:03		0.00	0.10	19.50	0.00	1.00					Overcast, raining
	306.06		28/02/24 09:04		0.00	0.10	19.40	0.00	0.00					Overcast, raining
	306.06		28/02/24 09:05		0.00	0.10	19.40	0.00	0.00		0.00			Overcast, raining
	306.06		26/03/24 08:42	960	0.00	0.00	17.60	0.00	0.00	-2.00	-0.30	0.24	305.82	Overcast, occasional snow
	306.06		26/03/24 08:43		0.00	0.00	17.70	0.00	0.00					Overcast, occasional snow
	306.06		26/03/24 08:44		0.00	0.00	17.70	0.00	0.00					Overcast, occasional snow
	306.06		26/03/24 08:45		0.00	0.00	17.70	0.00	0.00					Overcast, occasional snow
	306.06		26/03/24 08:46		0.00	0.00	17.70	0.00	0.00					Overcast, occasional snow
	306.06		26/03/24 08:47		0.00	0.00	17.70	0.00	0.00					Overcast, occasional snow
	306.06		22/04/24 16:48	997	0.00	0.40	15.00	0.00	0.00	0.00	0.00	0.27	305.79	Dry, sunny and mild
	306.06		22/04/24 16:49		0.00	1.00	19.50	0.00	0.00					Dry, sunny and mild
	306.06		22/04/24 16:50			1.10								Test terminated due to water ingress
BH16	325.42		19/12/23 00:00									0.54	324.88	
	325.42		12/01/24 00:00									0.62	324.80	
	325.42		01/02/24 09:00	987	0.00	0.00	18.90	0.00	1.00	2.00	0.80	0.62	324.80	Dry, Overcast
	325.42		01/02/24 09:01		0.00	0.00	19.20	0.00	1.00					Dry, Overcast
	325.42		01/02/24 09:02		0.00	0.00	19.10	0.00	0.00					Dry, Overcast
	325.42		01/02/24 09:03		0.00	0.00	19.10	0.00	0.00					Dry, Overcast
	325.42		01/02/24 09:04		0.00	0.00	19.10	0.00	0.00					Dry, Overcast
	325.42		01/02/24 09:05		0.00	0.00	19.10	0.00	0.00					Dry, Overcast
	325.42		28/02/24 09:00	962	0.00	0.10	19.60	0.00	0.00	0.00	0.00	0.70	324.72	Overcast, raining
	325.42		28/02/24 09:01		0.00	0.10	19.50	0.00	1.00					Overcast, raining
	325.42		28/02/24 09:02		0.00	0.10	19.50	0.00	2.00					Overcast, raining
	325.42		28/02/24 09:03		0.00	0.10	19.50	0.00	1.00					Overcast, raining
	325.42		28/02/24 09:04		0.00	0.10	19.50	1.00	1.00					Overcast, raining
	325.42		28/02/24 09:05		0.00	0.10	19.40	0.00	1.00		0.00			Overcast, raining
	325.42		25/03/24 13:37	960	0.00	0.00	17.80	0.00	0.00	-4.00	-0.40	0.70	324.72	Overcast, occasional snow
	325.42		25/03/24 13:38		0.00	0.00	17.80	0.00	0.00					Overcast, occasional snow
	325.42		25/03/24 13:39		0.00	0.00	17.80	0.00	0.00					Overcast, occasional snow
	325.42		25/03/24 13:40		0.00	0.00	17.70	0.00	0.00					Overcast, occasional snow
	325.42		25/03/24 13:41		0.00	0.00	17.70	0.00	0.00					Overcast, occasional snow
	325.42		25/03/24 13:42		0.00	0.00	17.70	0.00	0.00					Overcast, occasional snow
	325.42		23/04/24 12:03	989	0.00	1.60	20.10	0.00	0.00	0.00	0.00	1.10	324.32	Dry, overcast and cool
	325.42		23/04/24 12:04		0.00	2.10	17.40	0.00	0.00					Dry, overcast and cool
	325.42		23/04/24 12:05		0.00	2.00	17.50	0.00	0.00					Dry, overcast and cool
	325.42		23/04/24 12:06		0.00	2.00	17.60	0.00	0.00					Dry, overcast and cool
	325.42		23/04/24 12:07		0.00	2.00	17.60	0.00	1.00					Dry, overcast and cool
	325.42		23/04/24 12:08		0.00	2.00	17.70	0.00	0.00					Dry, overcast and cool
BH18	316.75		08/12/23 00:00									1.95	314.80	
Originator		Title: RESULTS OF GAS AND WATER LEVEL MONITORING IN STANDPIPES												
JMcM														
Chk & App	Status													
FMR	Final													
												Fig No: E2		
												Sheet 3 of 7		





<div></div>				Site: LT521 FASNAKYLE 400KV SUBSTATION								Contract No: 26560				
				Client: SSEN Transmission Engineer: Jacobs								* Water level measurements taken from ground level.				
Borehole No.	Surveyed Level (m OD)	Depth to Base of Standpipe (m)	Date	Atmospheric Pressure (mBar)	Gas Composition					Differential Pressure (Pa)	Flow (l/hr)	Depth to Water (m) (mBGL)	Depth (mOD)	Remarks		
					CH <sub>4</sub> (%vol)	CO <sub>2</sub> (%vol)	O <sub>2</sub> (%vol)	H <sub>2</sub> S (ppm)	CO (ppm)							
BH18	316.75		15/12/23 00:00									1.98	314.77			
	316.75		19/12/23 00:00									1.96	314.79			
	316.75		11/01/24 00:00									2.00	314.75			
	316.75		31/01/24 09:00	962	0.00	0.10	19.40	0.00	1.00	0.00	0.00	0.50	316.25	Overcast, raining		
	316.75		31/01/24 09:01		0.00	0.10	19.30	0.00	0.00					Overcast, raining		
	316.75		31/01/24 09:02		0.00	0.10	19.30	0.00	0.00					Overcast, raining		
	316.75		31/01/24 09:03		0.00	0.10	19.30	0.00	1.00					Overcast, raining		
	316.75		31/01/24 09:04		0.00	0.10	19.30	0.00	1.00					Overcast, raining		
	316.75		31/01/24 09:05		0.00	0.10	19.30	0.00	1.00					Overcast, raining		
	316.75		28/02/24 09:00	966	0.00	0.10	18.20	0.00	0.00	5.00	1.30	1.84	314.91	Overcast, raining		
	316.75		28/02/24 09:01		0.00	0.10	19.40	0.00	0.00					Overcast, raining		
	316.75		28/02/24 09:02		0.00	0.10	19.40	0.00	0.00					Overcast, raining		
	316.75		28/02/24 09:03		0.00	0.10	19.40	0.00	0.00					Overcast, raining		
	316.75		28/02/24 09:04		0.00	0.10	19.30	0.00	0.00					Overcast, raining		
	316.75		28/02/24 09:05		0.00	0.10	19.30	0.00	0.00		1.30			Overcast, raining		
	316.75		26/03/24 08:59	958	0.00	0.00	17.80	0.00	0.00	-3.00	-0.40	1.87	314.88	Overcast, occasional snow		
	316.75		26/03/24 09:00		0.00	0.00	17.80	0.00	0.00					Overcast, occasional snow		
	316.75		26/03/24 09:01		0.00	0.00	17.80	0.00	0.00					Overcast, occasional snow		
	316.75		26/03/24 09:02		0.00	0.00	17.80	0.00	0.00					Overcast, occasional snow		
	316.75		26/03/24 09:03		0.00	0.00	17.80	0.00	0.00					Overcast, occasional snow		
316.75		26/03/24 09:04		0.00	0.00	17.70	0.00	0.00					Overcast, occasional snow			
	316.75		22/04/24 09:00	992	0.00	0.60	19.60	0.00	0.00	-8.00	-2.10	1.59	315.16	Dry, sunny and mild		
	316.75		22/04/24 09:01		0.00	0.00	8.80	0.00	0.00					Dry, sunny and mild		
	316.75		22/04/24 09:02		0.00	0.00	7.00	0.00	0.00					Dry, sunny and mild		
	316.75		22/04/24 09:03		0.00	0.00	0.40	0.00	0.00					Dry, sunny and mild		
	316.75		22/04/24 09:04		0.00	0.00	6.00	0.00	0.00					Dry, sunny and mild		
	316.75		22/04/24 09:05		0.00	0.00	6.20	0.00	0.00		-1.40			Dry, sunny and mild		
	BH21	326.49		01/12/23 00:00									0.25	326.24		
		326.49		08/12/23 00:00									0.33	326.16		
326.49			15/12/23 00:00									0.36	326.13			
326.49			19/12/23 00:00									0.30	326.19			
326.49			12/01/24 00:00									0.35	326.14			
326.49			31/01/24 09:00	961	0.00	0.10	19.10	0.00	1.00	0.00	0.00	0.28	326.21	Overcast, raining		
326.49			31/01/24 09:01		0.00	0.10	19.20	0.00	0.00					Overcast, raining		
326.49			31/01/24 09:02		0.00	0.10	19.20	0.00	1.00					Overcast, raining		
326.49			31/01/24 09:03		0.00	0.10	19.20	0.00	1.00					Overcast, raining		
326.49			31/01/24 09:04		0.00	0.10	19.20	0.00	0.00					Overcast, raining		
326.49			31/01/24 09:05		0.00	0.10	19.10	0.00	1.00					Overcast, raining		
326.49			28/02/24 09:00	962	0.00	0.10	19.10	0.00	0.00	0.00	0.00	0.27	326.22	Overcast, raining		
326.49			28/02/24 09:01		0.00	0.10	19.30	0.00	1.00					Overcast, raining		
326.49			28/02/24 09:02		0.00	0.10	19.40	0.00	1.00					Overcast, raining		
326.49			28/02/24 09:03		0.00	0.10	19.40	0.00	0.00					Overcast, raining		
326.49			28/02/24 09:04		0.00	0.10	19.40	0.00	0.00					Overcast, raining		
326.49		28/02/24 09:05		0.00	0.10	19.40	0.00	0.00		0.00			Overcast, raining			
Originator		Title: RESULTS OF GAS AND WATER LEVEL MONITORING IN STANDPIPES											<div></div>		Fig No: E2 Sheet 4 of 7	
Chk & App	Status															
FMR	Final															





<div></div>				Site: LT521 FASNAKYLE 400KV SUBSTATION									Contract No: 26560				
				Client: SSEN Transmission Engineer: Jacobs									* Water level measurements taken from ground level.				
Borehole No.	Surveyed Level (m OD)	Depth to Base of Standpipe (m)	Date	Atmospheric Pressure (mBar)	Gas Composition					Differential Pressure (Pa)	Flow (l/hr)	Depth to Water (m) (mBGL)	Depth (mOD)	Remarks			
					CH <sub>4</sub> (%vol)	CO <sub>2</sub> (%vol)	O <sub>2</sub> (%vol)	H <sub>2</sub> S (ppm)	CO (ppm)								
BH21	326.49		26/03/24 09:19	956	0.00	0.00	17.80	0.00	0.00	-0.30	-0.50	0.31	326.18	Overcast, occasional snow			
	326.49		26/03/24 09:20		0.00	0.00	17.80	0.00	0.00					Overcast, occasional snow			
	326.49		26/03/24 09:21		0.00	0.00	17.80	0.00	0.00					Overcast, occasional snow			
	326.49		26/03/24 09:22		0.00	0.00	17.80	0.00	0.00					Overcast, occasional snow			
	326.49		26/03/24 09:23		0.00	0.00	17.70	0.00	0.00					Overcast, occasional snow			
	326.49		26/03/24 09:24		0.00	0.00	17.70	0.00	0.00					Overcast, occasional snow			
	326.49		22/04/24 15:47	992	0.00	0.20	19.20	0.00	0.00	0.00	0.00	0.34	326.15	Dry, sunny and mild			
	326.49		22/04/24 15:48		0.00	1.00	17.50	0.00	0.00					Dry, sunny and mild			
	326.49		22/04/24 15:49		0.00	1.10	17.50	0.00	0.00					Dry, sunny and mild			
	326.49		22/04/24 15:50		0.00	1.20	17.40	0.00	0.00					Dry, sunny and mild			
	326.49		22/04/24 15:51		0.00	1.20	17.40	0.00	0.00					Dry, sunny and mild			
	326.49		22/04/24 15:52		0.00	1.10	17.60	0.00	0.00					Dry, sunny and mild			
BH22	333.84		31/01/24 09:00	966	0.00	0.00	19.00	0.00	0.00	0.00	0.00	0.69	333.15	Overcast, raining			
	333.84		31/01/24 09:01		0.00	0.10	19.10	0.00	0.00					Overcast, raining			
	333.84		31/01/24 09:02		0.00	0.10	19.10	0.00	0.00					Overcast, raining			
	333.84		31/01/24 09:03		0.00	0.10	19.10	0.00	0.00					Overcast, raining			
	333.84		31/01/24 09:04		0.00	0.10	19.00	0.00	0.00					Overcast, raining			
	333.84		31/01/24 09:05		0.00	0.10	19.00	0.00	0.00					Overcast, raining			
	333.84		28/02/24 09:00	960	0.00	0.00	19.60	0.00	0.00	0.00	0.00	0.83	333.01	Overcast, raining			
	333.84		28/02/24 09:01		0.00	0.10	19.50	0.00	1.00					Overcast, raining			
	333.84		28/02/24 09:02		0.00	0.10	19.50	0.00	0.00					Overcast, raining			
	333.84		28/02/24 09:03		0.00	0.10	19.50	1.00	0.00					Overcast, raining			
	333.84		28/02/24 09:04		0.00	0.10	19.50	0.00	1.00					Overcast, raining			
	333.84		28/02/24 09:05		0.00	0.10	19.50	0.00	0.00		0.00			Overcast, raining			
	333.84		25/03/24 14:22	960	0.00	0.00	17.80	0.00	0.00	-3.00	0.00	0.85	332.99	Overcast, occasional snow			
	333.84		25/03/24 14:23		0.00	0.00	17.80	0.00	0.00					Overcast, occasional snow			
	333.84		25/03/24 14:24		0.00	0.00	17.80	0.00	0.00					Overcast, occasional snow			
	333.84		25/03/24 14:25		0.00	0.00	17.80	0.00	0.00					Overcast, occasional snow			
	333.84		25/03/24 14:26		0.00	0.00	17.80	0.00	0.00					Overcast, occasional snow			
	333.84		25/03/24 14:27		0.00	0.00	17.80	0.00	0.00					Overcast, occasional snow			
BH23	333.84		23/04/24 12:45	988	0.00	1.30	18.70	0.00	0.00	0.00	0.00	1.90	331.94	Dry, overcast and cool			
	333.84		23/04/24 12:46		0.00	1.90	17.10	0.00	0.00					Dry, overcast and cool			
	333.84		23/04/24 12:47		0.00	1.90	17.10	0.00	0.00					Dry, overcast and cool			
	333.84		23/04/24 12:48		0.00	1.80	17.30	0.00	0.00					Dry, overcast and cool			
	333.84		23/04/24 12:49		0.00	1.80	17.50	0.00	0.00					Dry, overcast and cool			
	333.84		23/04/24 12:50		0.00	1.80	17.60	0.00	0.00					Dry, overcast and cool			
	316.00		12/01/23 00:00									0.30	315.70				
	316.00		08/12/23 00:00									0.25	315.75				
	316.00		15/12/23 00:00									0.00	316.00				
	316.00		19/12/23 00:00									0.06	315.94				
	316.00		01/02/24 09:00	984	0.00	0.00	19.20	0.00	0.00	0.00	0.00	0.00	316.00	Dry, Overcast			
	316.00		01/02/24 09:01		0.00	0.00	19.30	0.00	0.00					Dry, Overcast			
	316.00		01/02/24 09:02		0.00	0.00	19.20	0.00	0.00					Dry, Overcast			
	316.00		01/02/24 09:03		0.00	0.00	19.20	0.00	0.00					Dry, Overcast			
	Originator		Title: RESULTS OF GAS AND WATER LEVEL MONITORING IN STANDPIPES													Fig No:	
	JMcM															E2	
Chk & App	Status	Sheet 5 of 7															
FMR	Final																



<div></div>				Site: LT521 FASNAKYLE 400KV SUBSTATION								Contract No: 26560		
				Client: SSEN Transmission Engineer: Jacobs								Water level measurements taken from ground level.		
Borehole No.	Surveyed Level (m OD)	Depth to Base of Standpipe (m)	Date	Atmospheric Pressure (mBar)	Gas Composition					Differential Pressure (Pa)	Flow (l/hr)	Depth to Water (m) (mBGL)	Depth (mOD)	Remarks
					CH <sub>4</sub> (%vol)	CO <sub>2</sub> (%vol)	O <sub>2</sub> (%vol)	H <sub>2</sub> S (ppm)	CO (ppm)					
BH23	316.00		01/02/24 09:04		0.00	0.00	19.20	0.00	0.00					Dry, Overcast
	316.00		01/02/24 09:05		0.00	0.00	19.20	0.00	0.00					Dry, Overcast
	316.00		28/02/24 09:00	966	0.00	0.10	20.20	0.00	1.00	5.00	1.50	0.21	315.79	Overcast, raining
	316.00		28/02/24 09:01		0.00	0.10	19.70	0.00	2.00					Overcast, raining
	316.00		28/02/24 09:02		0.00	0.10	19.70	0.00	1.00					Overcast, raining
	316.00		28/02/24 09:03		0.00	0.10	19.70	1.00	2.00					Overcast, raining
	316.00		28/02/24 09:04		0.00	0.10	19.60	1.00	1.00					Overcast, raining
	316.00		28/02/24 09:05		0.00	0.10	19.60	0.00	3.00		1.10			Overcast, raining
	316.00		26/03/24 09:37	957	0.00	0.00	17.70	0.00	0.00	0.00	0.00	0.17	315.83	Overcast, occasional snow
	316.00		26/03/24 09:38		0.00	0.00	17.80	0.00	0.00					Overcast, occasional snow
	316.00		26/03/24 09:39		0.00	0.00	17.70	0.00	0.00					Overcast, occasional snow
	316.00		26/03/24 09:40		0.00	0.00	17.70	0.00	0.00					Overcast, occasional snow
	316.00		26/03/24 09:41		0.00	0.00	17.60	0.00	0.00					Overcast, occasional snow
	316.00		26/03/24 09:42		0.00	0.00	17.60	0.00	0.00					Overcast, occasional snow
	316.00		22/04/24 17:04	991	0.00	0.40	18.70	0.00	0.00	0.00	6.60	0.18	315.82	Dry, sunny and mild
	316.00		22/04/24 17:05		0.00	0.40	19.30	0.00	0.00					Dry, sunny and mild
	316.00		22/04/24 17:06		0.00	0.50	19.20	0.00	0.00					Dry, sunny and mild
	316.00		22/04/24 17:07		0.00	0.50	19.10	0.00	0.00					Dry, sunny and mild
	316.00		22/04/24 17:08		0.00	0.50	19.00	0.00	0.00					Dry, sunny and mild
	316.00		22/04/24 17:09		0.00	0.50	19.00	0.00	0.00		-0.10			Dry, sunny and mild
BH25	332.05		31/01/24 09:00	966	0.00	0.10	19.20	0.00	0.00	0.00	0.00	0.16	331.89	Overcast, raining
	332.05		31/01/24 09:01		0.00	0.10	19.30	0.00	1.00					Overcast, raining
	332.05		31/01/24 09:02		0.00	0.10	19.30	0.00	1.00					Overcast, raining
	332.05		31/01/24 09:03		0.00	0.10	19.30	0.00	0.00					Overcast, raining
	332.05		31/01/24 09:04		0.00	0.10	19.30	0.00	0.00					Overcast, raining
	332.05		31/01/24 09:05		0.00	0.10	19.20	0.00	0.00					Overcast, raining
	332.05		28/02/24 09:00	961	0.00	0.00	19.30	0.00	1.00	7.00	1.60	0.20	331.85	Overcast, raining
	332.05		28/02/24 09:01		0.00	0.10	19.50	0.00	0.00					Overcast, raining
	332.05		28/02/24 09:02		0.00	0.10	19.40	0.00	0.00					Overcast, raining
	332.05		28/02/24 09:03		0.00	0.10	19.40	0.00	0.00					Overcast, raining
	332.05		28/02/24 09:04		0.00	0.10	19.40	0.00	0.00					Overcast, raining
	332.05		28/02/24 09:05		0.00	0.10	19.40	0.00	1.00		1.60			Overcast, raining
	332.05		25/03/24 14:41	960	0.00	0.00	17.80	0.00	0.00	-3.00	-0.40	0.18	331.87	Overcast, occasional snow
	332.05		25/03/24 14:42		0.00	0.00	17.80	0.00	0.00					Overcast, occasional snow
	332.05		25/03/24 14:43		0.00	0.00	17.80	0.00	0.00					Overcast, occasional snow
	332.05		25/03/24 14:44		0.00	0.00	17.80	0.00	0.00					Overcast, occasional snow
	332.05		25/03/24 14:45		0.00	0.00	17.80	0.00	0.00					Overcast, occasional snow
	332.05		25/03/24 14:46		0.00	0.00	17.80	0.00	0.00					Overcast, occasional snow
	332.05		23/04/24 13:00	987	0.00	1.20	18.80	0.00	0.00	0.00	0.00	0.27	331.78	Dry, overcast and cool
	332.05		23/04/24 13:01		0.00	1.90	17.10	0.00	0.00					Dry, overcast and cool
	332.05		23/04/24 13:02		0.00	1.80	17.10	0.00	0.00					Dry, overcast and cool
	332.05		23/04/24 13:03		0.00	1.80	17.20	0.00	0.00					Dry, overcast and cool
	332.05		23/04/24 13:04		0.00	1.80	17.40	0.00	0.00					Dry, overcast and cool
	332.05		23/04/24 13:05		0.00	1.80	17.60	0.00	0.00					Dry, overcast and cool
Originator		Title: RESULTS OF GAS AND WATER LEVEL MONITORING IN STANDPIPES												
JMcM														
Chk & App	Status													
FMR	Final	<div></div> <div>Fig No: E2</div> <div>Sheet 6 of 7</div>												



<div></div>				Site: LT521 FASNAKYLE 400KV SUBSTATION								Contract No: 26560			
				Client: SSEN Transmission Engineer: Jacobs								Water level measurements taken from ground level.			
Borehole No.	Surveyed Level (m OD)	Depth to Base of Standpipe (m)	Date	Atmospheric Pressure (mBar)	Gas Composition					Differential Pressure (Pa)	Flow (l/hr)	Depth to Water (m) (mBGL)	Depth (mOD)	Remarks	
					CH <sub>4</sub> (%vol)	CO <sub>2</sub> (%vol)	O <sub>2</sub> (%vol)	H <sub>2</sub> S (ppm)	CO (ppm)						
BH26	315.06		24/11/23 00:00									0.30	314.76		
	315.06		01/12/23 00:00									0.33	314.73		
	315.06		08/12/23 00:00									0.51	314.55		
	315.06		15/12/23 00:00									0.80	314.26		
	315.06		19/12/23 00:00									0.75	314.31		
	315.06		12/01/24 00:00									0.47	314.59		
	315.06		01/02/24 00:00											Gas valve submerged	
	315.06		28/02/24 00:00											Gas valve submerged	
	315.06		25/03/24 00:00											Gas valve submerged	
	315.06		22/04/24 09:00	994	0.00	0.10	19.60	0.00	0.00	0.00	0.00			Dry, sunny and mild	
	315.06		22/04/24 09:01											Test terminated due to water	
														ingress	
BH27	331.69		12/01/23 00:00									0.16	331.53		
	331.69		19/12/23 00:00									0.34	331.35		
	331.69		09/01/24 00:00									0.43	331.26		
	331.69		01/02/24 09:00	986	0.00	0.00	18.90	0.00	0.00	0.00	0.40	0.17	331.52	Dry, Overcast	
	331.69		01/02/24 09:01		0.00	0.00	19.00	0.00	0.00					Dry, Overcast	
	331.69		01/02/24 09:02		0.00	0.00	19.20	0.00	1.00					Dry, Overcast	
	331.69		01/02/24 09:03		0.00	0.00	19.00	0.00	0.00					Dry, Overcast	
	331.69		01/02/24 09:04		0.00	0.00	19.10	0.00	0.00					Dry, Overcast	
	331.69		01/02/24 09:05		0.00	0.00	19.00	0.00	1.00					Dry, Overcast	
	331.69		28/02/24 09:00	962	0.00	0.00	19.60	0.00	0.00	0.00	0.00	0.19	331.50	Overcast, raining	
	331.69		28/02/24 09:01		0.00	0.00	19.50	0.00	0.00					Overcast, raining	
	331.69		28/02/24 09:02		0.00	0.00	19.50	0.00	0.00					Overcast, raining	
	331.69		28/02/24 09:03		0.00	0.00	19.50	0.00	1.00					Overcast, raining	
	331.69		28/02/24 09:04		0.00	0.10	19.50	0.00	0.00					Overcast, raining	
	331.69		28/02/24 09:05		0.00	0.10	19.50	0.00	0.00		0.00			Overcast, raining	
	331.69		25/03/24 14:05	960	0.00	0.00	17.80	0.00	0.00	-3.00	-0.40	0.24	331.45	Overcast, occasional snow	
	331.69		25/03/24 14:06		0.00	0.00	17.80	0.00	0.00					Overcast, occasional snow	
	331.69		25/03/24 14:07		0.00	0.00	17.80	0.00	0.00					Overcast, occasional snow	
	331.69		25/03/24 14:08		0.00	0.00	17.80	0.00	0.00					Overcast, occasional snow	
	331.69		25/03/24 14:09		0.00	0.00	17.80	0.00	0.00					Overcast, occasional snow	
	331.69		25/03/24 14:10		0.00	0.00	17.80	0.00	0.00					Overcast, occasional snow	
	331.69		23/04/24 12:30	989	0.00	1.30	18.60	0.00	0.00	0.00	-17.10	0.29	331.40	Dry, overcast and cool	
	331.69		23/04/24 12:31		0.00	2.00	17.00	0.00	0.00					Dry, overcast and cool	
	331.69		23/04/24 12:32		0.00	1.90	17.10	0.00	0.00					Dry, overcast and cool	
	331.69		23/04/24 12:33		0.00	1.90	17.20	0.00	0.00					Dry, overcast and cool	
	331.69		23/04/24 12:34		0.00	1.90	17.40	0.00	0.00					Dry, overcast and cool	
	331.69		23/04/24 12:35		0.00	1.80	17.50	0.00	0.00		0.00			Dry, overcast and cool	
	Originator	Title: RESULTS OF GAS AND WATER LEVEL MONITORING IN STANDPIPES													Fig No: E2 Sheet 7 of 7
Chk & App	Status														
FMR	Final														

Style: SPIPE MONITORING File: P:\GINTW\PROJECTS\26560.GPJ Printed: 23/05/2024 11:56:09 Raeburn Drilling and Geotechnical Whistleberry Rd, Hamilton ML3 0HP Tel: 01898-711177 E-mail: enquiries@raeburndrilling.com



Borehole ID	Date	Well Volume	Parameter					
			pH	T (°C)	EC (us/cm)	DO (mg/l)	DO (%)	REDOX (mV)
BH02	30/01/2024	0.5	6.02	6.10	198.00	1.45	12.30	83.90
		1	5.68	5.80	129.00	0.82	6.80	94.90
		2	PURGED DRY					
		3						
BH04	01/02/2024	0.5	6.76	5.80	148.00	1.67	13.70	-2.80
		1	6.62	5.80	157.00	2.34	19.90	14.10
		2	6.58	5.60	182.00	1.99	16.30	13.40
		3	6.52	5.60	246.00	4.93	40.70	7.10
BH08	30/01/2024	0.5	6.19	5.90	177.00	4.66	39.40	46.30
		1	6.22	6.20	149.00	2.40	20.20	39.10
		2	6.24	6.40	151.00	2.07	17.30	28.00
		3	6.24	6.50	134.00	2.23	18.80	22.20
BH11	30/01/2024	0.5	12.81	6.58	3413.00	3.71	31.70	-69.80
		1	12.79	6.20	2931.00	1.94	16.30	-96.60
		2	PURGED DRY					
		3						
BH14	15/01/2024	0.5	6.34	4.38	299.00	3.38	27.60	-156.40
		1	6.43	5.40	313.00	2.34	19.40	-160.20
		2	6.49	5.40	293.00	1.54	12.60	-178.40
		3	6.52	4.90	292.00	1.35	10.90	-184.80
BH16	01/02/2024	0.5	6.13	6.50	286.00	2.79	24.00	130.70
		1	6.20	6.90	310.00	2.82	23.90	133.40
		2	PURGED DRY					
		3						
BH18	13/12/2023	0.5	6.34	5.40	361.00	2.99	27.00	82.60
		1	6.46	5.85	316.00	2.00	16.60	91.40
		2	6.39	6.10	301.00	1.37	11.60	92.00
		3	6.08	6.30	277.00	2.01	17.00	114.00
BH21	13/12/2023	0.5	5.78	7.20	156.00	2.10	18.40	125.60
		1	5.73	7.40	143.00	1.09	9.50	82.60
		2	5.71	7.60	166.00	0.74	6.50	54.60
		3	5.74	7.40	164.00	1.46	12.70	46.20



Borehole ID	Date	Well Volume	Parameter					
			pH	T (°C)	EC (us/cm)	DO (mg/l)	DO (%)	REDOX (mV)
BH22	31/01/2024	0.5	6.22	4.88	135.00	1.49	12.4N	40.90
		1	6.14	5.00	111.00	1.06	8.70	33.60
		2	6.12	5.00	110.00	2.09	17.20	36.40
		3	6.11	4.70	97.00	1.51	12.30	32.40
BH23	15/01/2024	0.5	6.29	3.90	163.00	6.91	55.10	163.40
		1	6.16	4.90	139.00	5.73	46.70	163.90
		2	5.59	4.30	36.00	6.08	49.00	176.30
		3	5.40	5.20	38.00	5.43	44.60	177.50
BH25	31/01/2024	0.5	6.61	5.10	125.00	1.95	16.50	24.40
		1	6.30	5.10	104.00	1.99	16.60	10.80
		2	6.10	5.00	103.00	2.19	18.00	11.30
		3	6.05	4.80	97.00	2.56	20.80	2.70
BH26	13/12/2023	0.5	7.59	6.55	95.00	8.81	75.40	180.70
		1	6.92	6.50	66.00	7.79	66.10	211.10
		2	6.15	6.50	80.00	7.49	63.70	230.60
		3	5.86	6.20	67.00	7.55	63.80	238.80
BH27	01/02/2024	0.5	7.00	5.60	117.00	3.10	25.70	92.50
		1	6.44	5.70	57.00	2.31	19.10	97.90
		2	5.90	5.80	61.00	1.40	11.50	98.10
		3	5.82	5.80	58.00	3.25	26.90	101.60





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

Style: APPENDIX A File: P:\GINTWP\PROJECTS\26560.GPJ Printed: 05/02/2024 11:14:41 Raeburn Drilling and Geotechnical Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

APPENDIX F1  
GEOTECHNICAL TESTING - SOILS







Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

## TEST

### CLASSIFICATION TESTS

Determination of water content  
Determination of liquid limit  
Determination of liquid and plastic limits  
Determination of bulk density  
Determination of particle density  
Determination of particle size distribution

### CHEMICAL TESTS

Determination of organic matter content  
Determination of mass loss on ignition  
Determination of sulphate content of soil and groundwater  
Determination of chloride content  
Determination of pH value

### COMPACTION-RELATED TESTS

Determination of dry density/moisture content relationship  
Determination of moisture condition value (MCV)  
Determination of California Bearing Ratio (CBR)

### CONSOLIDATION AND STRENGTH TESTS

Incremental loading oedometer test  
Unconfined compression test  
Unconsolidated undrained triaxial test  
Consolidated triaxial compression tests on water saturated soils  
Lab Vane Tests  
Direct shear tests  
Permeability tests  
Fall cone test

### ROCK TESTS

Determination of point load strength  
Determination of unconfined compressive strength  
LA Abrasion Tests  
Magnesium Soundness Tests  
Slake durability  
Rock porosity / density

## STANDARD



BS EN ISO 17892-1:2014  
BS 1377 : 1990 : Part 2 : 4.3 and 4.4  
BS EN ISO 17892-12:2018  
BS EN ISO 17892-2:2014  
BS EN ISO 17892-3:2016  
BS EN ISO 17892-4:2016  
  
BS 1377 : 1990 : Part 3 : 3.4  
BS 1377 : 1990 : Part 3 : 4.3  
BS 1377 : 1990 : Part 3 : 5.2, 5.3 and 5.5  
BS 1377 : 1990 : Part 3 : 7.2 and 7.3  
BS 1377 : 1990 : Part 3 : 9.5  
  
BS 1377 : 1990 : Part 4 : 3.3 to 3.6  
SDD Tech Memo SH7/83; SDD Appls Guide No.1 Rev. 1989  
BS 1377 : 1990 : Part 4 : 7.4  
  
BS EN ISO 17892-5:2017  
BS EN ISO 17892-7:2018  
BS EN ISO 17892-8:2018  
BS EN ISO 17892-9:2018  
BS 1377 : 1990  
BS EN ISO 17892-10:2019  
BS EN ISO 17892-11:2019  
BS EN ISO 17892-6:2017  
  
ISRM Commission on Testing Methods, 1985  
ASTM D7012-14  
BS EN 1097-2:2010 and BS 818 : Part 2 : 1990  
BS EN 1367-2  
ISRM Suggested methods  
ISRM Suggested methods





[illegible]



<div></div>				SiteLT521 FASNAKYLE 400KV SUBSTATION		Contract No26560	
				ClientSSEN Transmission			
				EngineerJacobs			
Sample Identification							
Exploratory Hole	Depth m	Sample Ref	Sample Type				
				Lab Sample ID	Non Engineering Description	Water Content %	
BH02	0.10		B	2013667	Brown very gravelly very silty very sandy PEAT. Gravel is fine to medium	338.0	
BH12	0.50		B	2013669	Brown silty very gravelly SAND. Gravel is fine to coarse	39.5	
BH17	0.50		D	2013177	Brown silty SAND with organic material	38.2	
BH17	1.20-2.20		U	2013178	Dark brown fibrous PEAT	105.0	
BH28	0.50		B	2013353	Dark brown fibrous PEAT	918.0	
BH28	2.65		B	2013354	Dark brown fibrous PEAT	646.0	
TP01	0.50		D	2013181	Dark brown fibrous PEAT	875.0	
TP03	0.00-0.00		D	2013184	Dark brown fibrous PEAT	348.0	
TP06	0.00-0.00		D	2012881	Brown fibrous PEAT	292.0	
TP07	0.30		B	2013187	Brown slightly gravelly slightly sandy SILT. Gravel is fine to coarse	25.8	
TP09	0.00-0.00		D	2013190	Dark brown fibrous PEAT	239.0	
TP10	0.50		D	2012882	Brown fibrous PEAT	818.0	
TP11	1.00		D	2013192	Dark brown fibrous PEAT	1353.0	
TP13	0.30		D	2013196	Brown sandy SILT with organic material	102.0	
Notes							
Originator		Checked & Approved		<div>Determination of the Water Content</div> <div>BS EN ISO 17892-1:2014</div>			<div></div> <div>Figure F1</div>
TP		<div>CD</div> <div>05/03/2024</div>					
							Sheet 1 of 2









Site LT521 FASNAKYLE 400KV SUBSTATION

Client SSEN Transmission

Engineer Jacobs

Contract No. 26560

Hole ID BH12

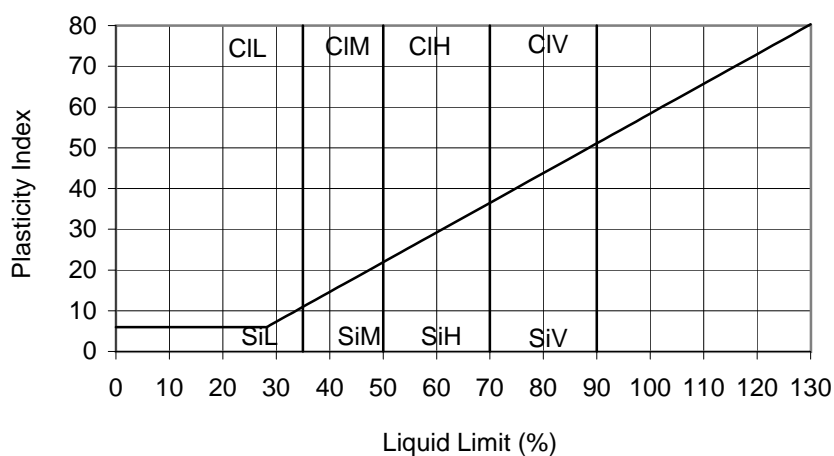
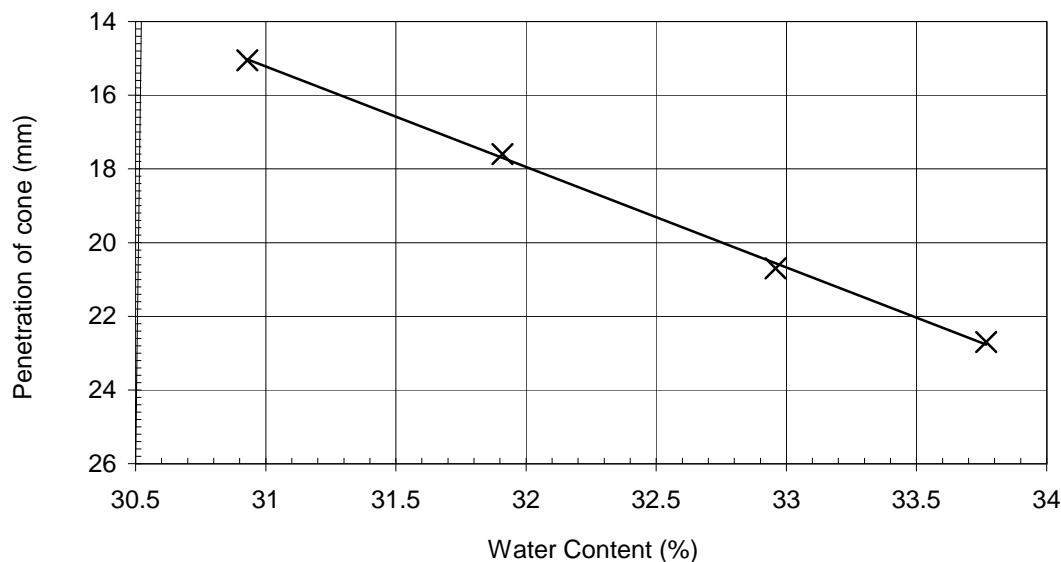
Sample Ref

Depth (m) 0.50

Sample Type B

Non Engineering Description : Brown silty very gravelly SAND. Gravel is fine to coarse

Preparation : Sample oven dried, Percentage retained on 425µm sieve measured by wet sieving



Sample was determined to be Non-Plastic after preparation

Liquid Limit was determined by mixing using increasing water content and 30° cone

**Results :**

As Received Water Content : (BS EN ISO 17892-1:2014)	39.5 %
Percentage retained on 425µm sieve :	37 %
Liquid Limit :	33 %
Plastic Limit :	Non-Plastic %

Equivalent water content of material passing 425µm sieve : 62.7 %

Originator

Checked & Approved

NW

CD  
05/03/2024

**Liquid Limit (Four Point Cone Penetrometer Method)  
Plastic Limit, Plasticity Index & Liquidity Index**

BS EN ISO 17892-12:2018 Clause 5.3

BS EN ISO 17892-12:2018 Clause 5.5



Figure F2

Sheet 1 of 1





Site LT521 FASNAKYLE 400KV SUBSTATION

Client SSEN Transmission

Engineer Jacobs

Contract No. 26560

Hole ID TP36A

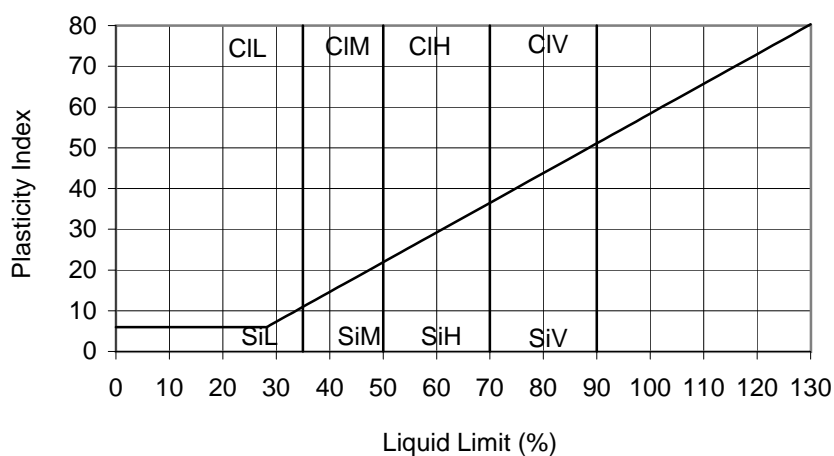
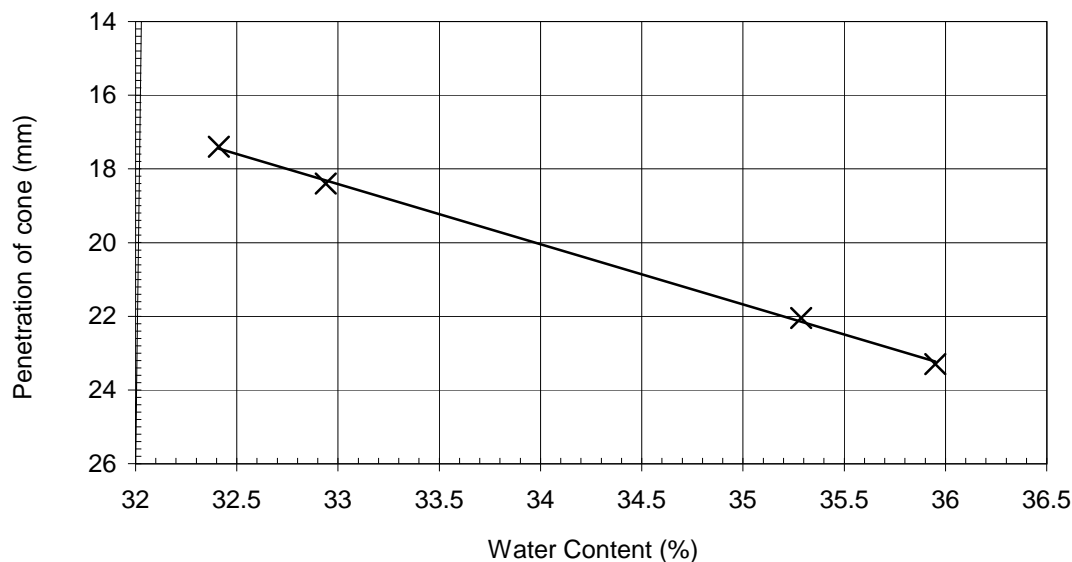
Sample Ref

Depth (m) 0.50

Sample Type D

Non Engineering Description : Brown silty SAND and GRAVEL with organic material. Gravel is fine to coarse

Preparation : Sample oven dried, Percentage retained on 425µm sieve measured by wet sieving



Sample was determined to be Non-Plastic after preparation

Liquid Limit was determined by mixing using increasing water content and 30° cone

**Results :**

As Received Water Content : (BS EN ISO 17892-1:2014)	27.2 %
Percentage retained on 425µm sieve :	60 %
Liquid Limit :	34 %
Plastic Limit :	Non-Plastic %

Equivalent water content of material passing 425µm sieve : 68.0 %

Originator

Checked & Approved

NW

CD  
05/03/2024

**Liquid Limit (Four Point Cone Penetrometer Method)  
Plastic Limit, Plasticity Index & Liquidity Index**

BS EN ISO 17892-12:2018 Clause 5.3


BS EN ISO 17892-12:2018 Clause 5.5



Figure F3

Sheet 1 of 1



	Site LT521 FASNAKYLE 400KV SUBSTATION		Contract No 26560	
	Client SSEN Transmission		Hole BH02	
	Engineer Jacobs		Sample Ref Depth (m) 0.10 Sample Type B	

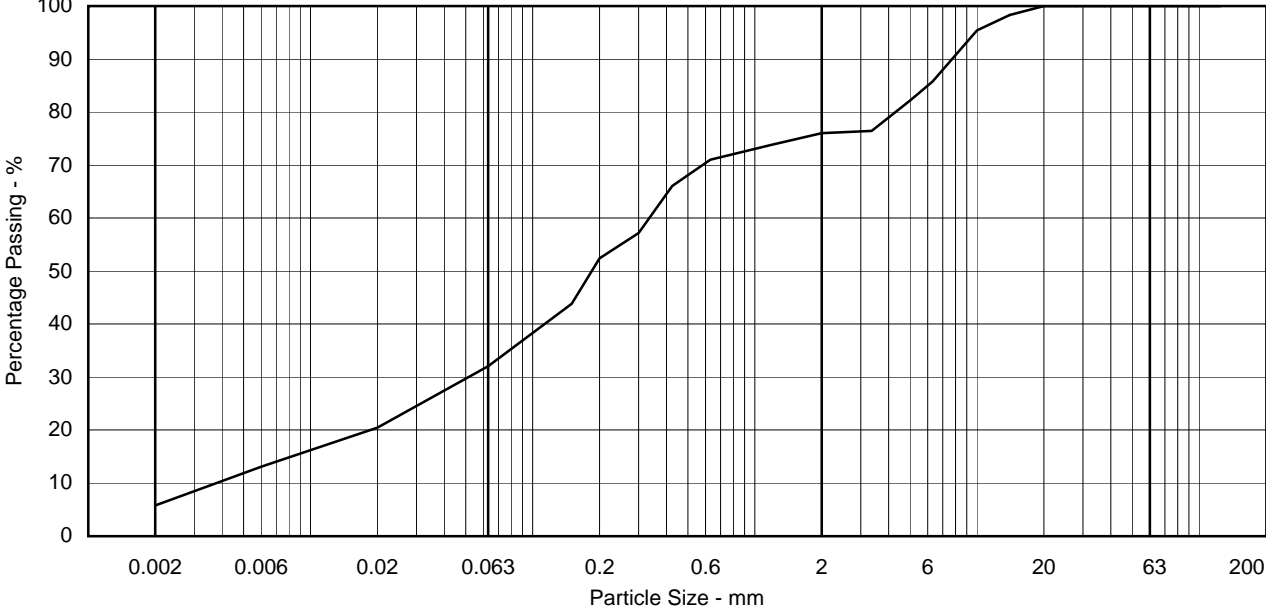
Particle Size	% Passing
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	98
10.0 mm	95
6.30 mm	86
5.00 mm	82
3.35 mm	76
2.00 mm	76
1.18 mm	74
630 µm	71
425 µm	66
300 µm	57
200 µm	52
150 µm	44
63 µm	32
20 µm	20
6 µm	13
2 µm	6


Non Engineering Description	
Brown very gravelly very silty very sandy PEAT. Gravel is fine to medium	

Sample Proportions - %	
Cobbles	0.0
Gravel	24.0
Sand	44.8
Silt	25.5
Clay	5.7
Particle Density - Assumed (Mg/m3) 2.65	
Particle Diameter - mm	
D100	20
D60	0.34
D10	0.0038
Uniformity Coefficient (SHW series 600, Table 6/1, footnote 5) 89.5	


Notes
Sedimentation sample not pre-treated

Clay	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles
Silt			Sand			Gravel				



Originator	Checked & Approved	<b>PARTICLE SIZE DISTRIBUTION</b> BS EN ISO 17892-4 2016 Clause 5.2 - Sieving Method BS EN ISO 17892-4 2016 Clause 5.4 - Pipette Method	 <b>Figure F4</b>  Sheet 1 of 1
RF	CD 05/03/2024		





SiteLT521 FASNAKYLE 400KV SUBSTATION

ClientSSEN Transmission

EngineerJacobs

Contract No26560

HoleBH03

Sample Ref

Depth (m)0.60

Sample TypeB

Particle Size	% Passing
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	89
37.5 mm	80
28.0 mm	70
20.0 mm	61
14.0 mm	59
10.0 mm	56
6.30 mm	51
5.00 mm	49
3.35 mm	47
2.00 mm	46
1.18 mm	44
630 µm	43
425 µm	40
300 µm	35
200 µm	30
150 µm	21
63 µm	11
20 µm	6
6 µm	3
2 µm	2

Non Engineering Description

Brown silty very sandy fine to coarse GRAVEL

Sample Proportions - %

Cobbles	0.0
Gravel	53.9
Sand	35.8
Silt	7.9
Clay	2.4

Particle Density - Assumed (Mg/m3)2.65

Particle Diameter - mm

D100	63
D60	17
D10	0.053

Uniformity Coefficient  
(SHW series 600, Table 6/1, footnote 5)320.8

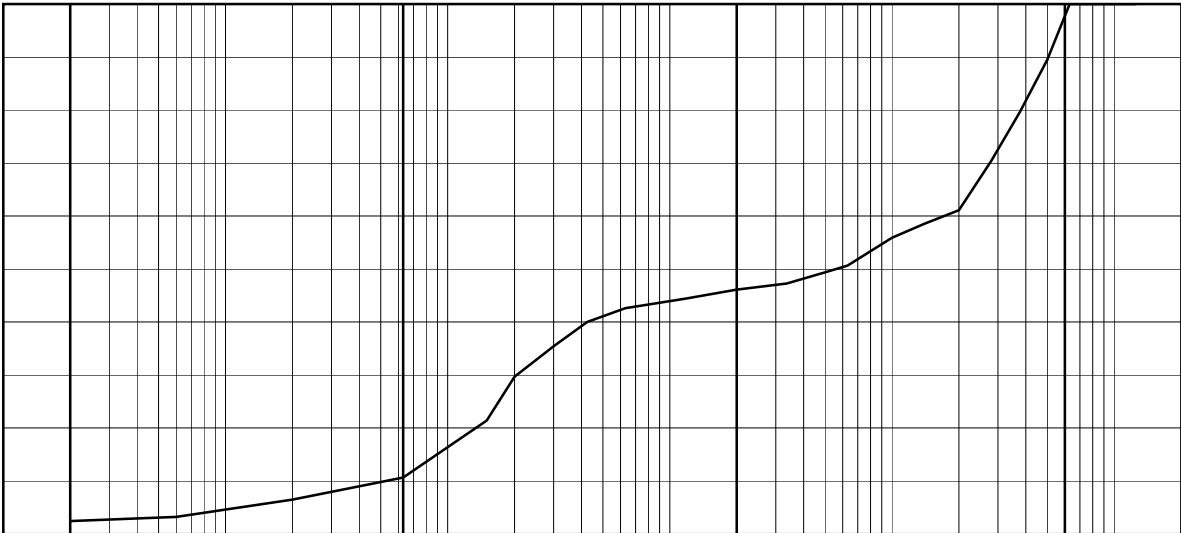
Notes

Sample does not comply with BS EN ISO 17892-4 minimum mass requirements

Sedimentation sample not pre-treated

Clay	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles
	Silt			Sand			Gravel			

Percentage Passing - %



Particle Size - mm

Originator

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PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4 2016 Clause 5.2 - Sieving Method

BS EN ISO 17892-4 2016 Clause 5.4 - Pipette Method





Figure F5

Sheet 1 of 1



<div></div>		SiteLT521 FASNAKYLE 400KV SUBSTATION		Contract No26560	
		ClientSSEN Transmission		HoleBH12	
		EngineerJacobs		Sample Ref	
				Depth (m)0.50	
				Sample TypeB	

Particle Size	% Passing
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	91
50.0 mm	91
37.5 mm	90
28.0 mm	85
20.0 mm	81
14.0 mm	79
10.0 mm	77
6.30 mm	74
5.00 mm	71
3.35 mm	68
2.00 mm	64
1.18 mm	58
630 µm	52
425 µm	48
300 µm	43
200 µm	32
150 µm	23
63 µm	12
20 µm	7
6 µm	5
2 µm	2

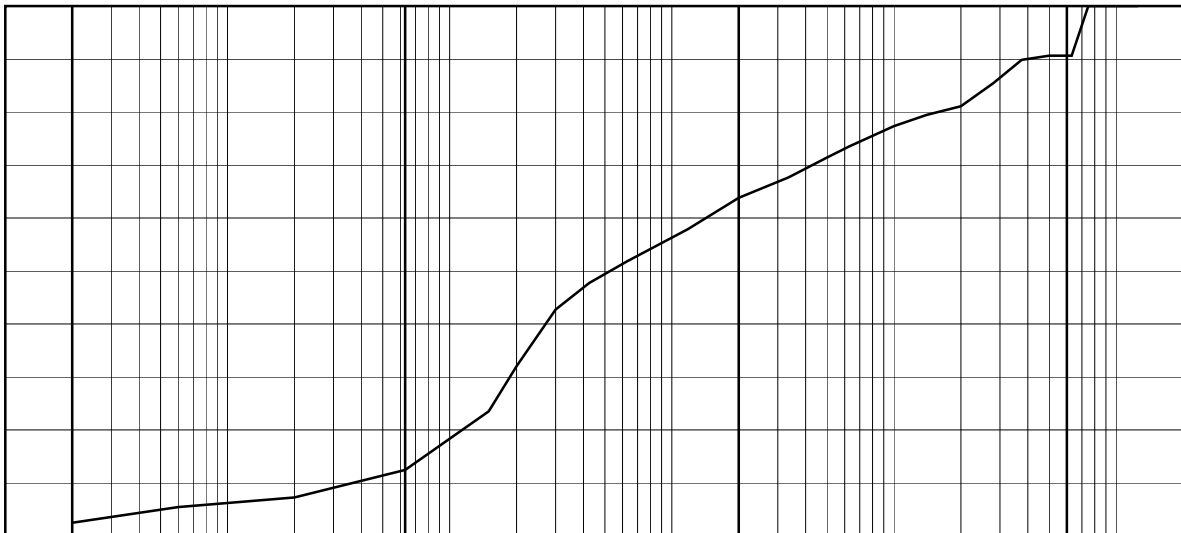
Non Engineering Description	
Brown silty very gravelly SAND. Gravel is fine to coarse	

Sample Proportions - %		
Cobbles	9.4	
Gravel	26.8	
Sand	51.7	
Silt	9.6	
Clay	2.5	
Particle Density - Assumed (Mg/m3)2.65		
Particle Diameter - mm		
D100	75	
D60	1.4	
D10	0.037	
Uniformity Coefficient <small>(SHW series 600, Table 6/1, footnote 5)</small>		37.8



Notes	
Sedimentation sample not pre-treated	

Clay	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles
	Silt			Sand			Gravel			


Percentage Passing - %



Particle Size - mm

Originator	Checked & Approved	<div><b>PARTICLE SIZE DISTRIBUTION</b> BS EN ISO 17892-4 2016 Clause 5.2 - Sieving Method BS EN ISO 17892-4 2016 Clause 5.4 - Pipette Method</div>	<div> <b>Figure F6</b>  Sheet 1 of 1</div>
RF	<div> 05/03/2024</div>		





SiteLT521 FASNAKYLE 400KV SUBSTATION

ClientSSEN Transmission

EngineerJacobs

Contract No26560

HoleBH14

Sample Ref

Depth (m)0.20

Sample TypeB

Particle Size	% Passing
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	86
37.5 mm	78
28.0 mm	77
20.0 mm	73
14.0 mm	73
10.0 mm	72
6.30 mm	70
5.00 mm	69
3.35 mm	68
2.00 mm	67
1.18 mm	65
630 µm	62
425 µm	60
300 µm	56
200 µm	42
150 µm	37
63 µm	26
20 µm	20
6 µm	14
2 µm	4

Non Engineering Description

Brown very silty SAND and GRAVEL with organic material. Gravel is fine to coarse

Sample Proportions - %

Cobbles	0.0
Gravel	33.2
Sand	40.9
Silt	21.6
Clay	4.3

Particle Density - Assumed (Mg/m3)2.65

Particle Diameter - mm

D100	63
D60	0.42
D10	0.0038

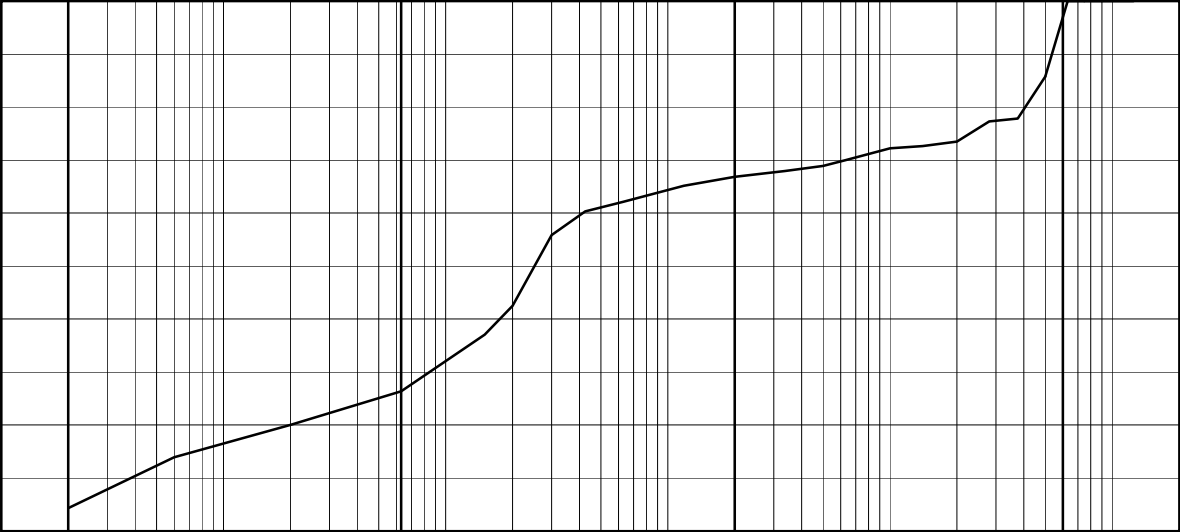
Uniformity Coefficient  
(SHW series 600, Table 6/1, footnote 5)110.5

Notes

Sample does not comply with BS EN ISO 17892-4 minimum mass requirements  
Sedimentation sample not pre-treated

Clay	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles
Silt				Sand			Gravel			

Percentage Passing - %



Particle Size - mm

Originator

JM

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CD  
05/03/2024

PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4 2016 Clause 5.2 - Sieving Method

BS EN ISO 17892-4 2016 Clause 5.4 - Pipette Method





Figure F7

Sheet 1 of 1



Originator	Checked & Approved	<div><div>PARTICLE SIZE DISTRIBUTION</div><div>BS EN ISO 17892-4 2016 Clause 5.2 - Sieving Method</div></div>	<div><div></div><div>Figure F8</div></div>
RF	<div><div>CD</div><div>05/03/2024</div></div>		



<div></div>		SiteLT521 FASNAKYLE 400KV SUBSTATION				Contract No26560	
		ClientSSEN Transmission				HoleBH18	
						Sample Ref	
		EngineerJacobs				Depth (m)0.60	
						Sample TypeB	

Particle Size	% Passing
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	96
50.0 mm	96
37.5 mm	92
28.0 mm	88
20.0 mm	84
14.0 mm	78
10.0 mm	75
6.30 mm	70
5.00 mm	67
3.35 mm	63
2.00 mm	60
1.18 mm	56
630 µm	51
425 µm	48
300 µm	45
200 µm	38
150 µm	30
63 µm	17
20 µm	10
6 µm	5
2 µm	2

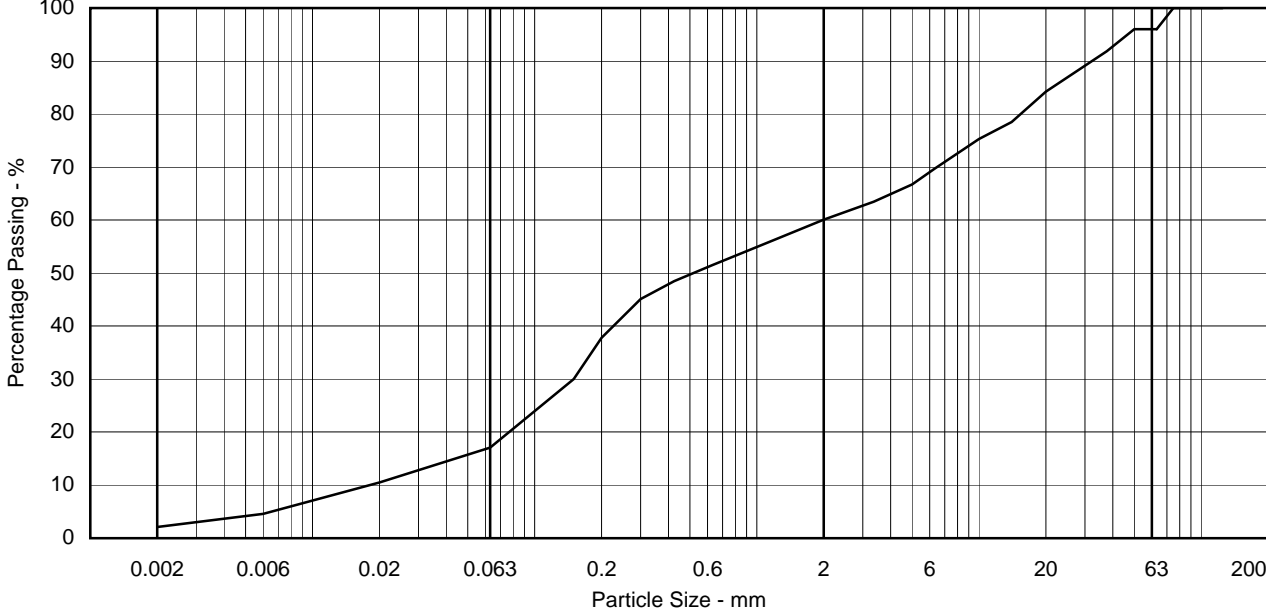
Non Engineering Description	
Brown silty SAND and GRAVEL with cobbles and pockets of clay. Gravel is fine to coarse	

Sample Proportions - %	
Cobbles	4.0
Gravel	35.9
Sand	43.5
Silt	14.5
Clay	2.1
Particle Density - Assumed (Mg/m3)2.65	
Particle Diameter - mm	
D100	75
D60	2.0
D10	0.018
Uniformity Coefficient <small>(SHW series 600, Table 6/1, footnote 5)</small>	111.1


Notes	
Sedimentation sample not pre-treated	

Clay	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles
	Silt			Sand			Gravel			

Percentage Passing - %




Particle Size - mm

Originator	Checked & Approved	<div><b>PARTICLE SIZE DISTRIBUTION</b> BS EN ISO 17892-4 2016 Clause 5.2 - Sieving Method BS EN ISO 17892-4 2016 Clause 5.4 - Pipette Method</div>	<div> <b>Figure F9</b></div>
MC	<div><div>CD</div><div>05/03/2024</div></div>		

Sheet 1 of 1



	Site LT521 FASNAKYLE 400KV SUBSTATION		Contract No 26560	
	Client SSEN Transmission		Hole BH18	
	Engineer Jacobs		Sample Ref Depth (m) 2.30 Sample Type B	

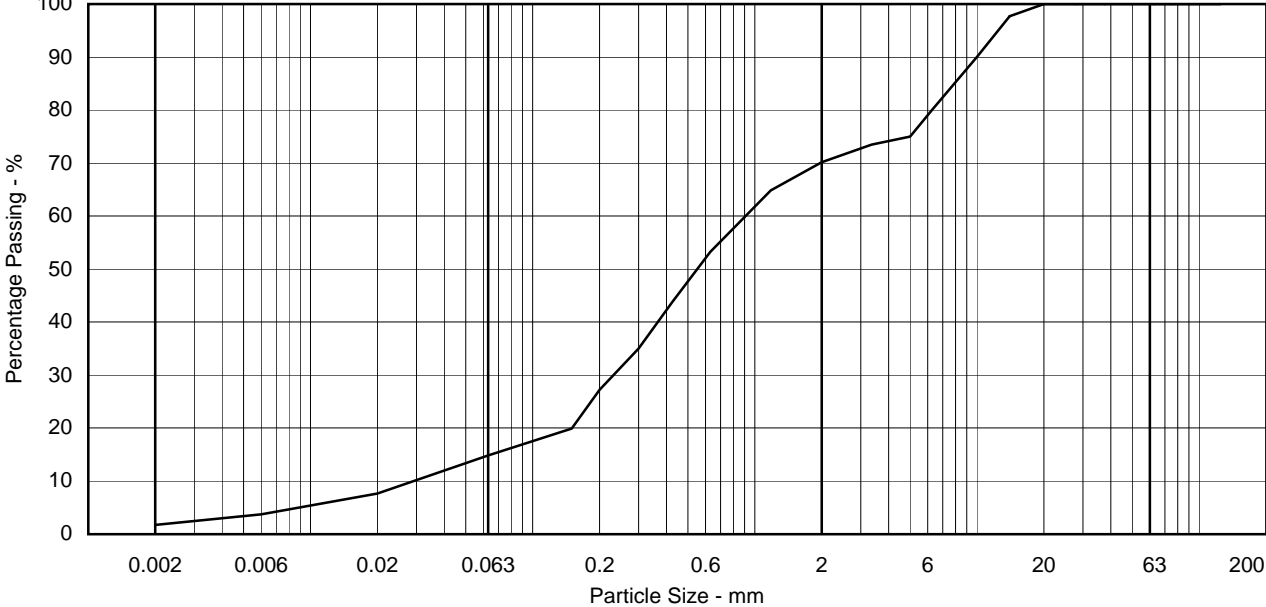
Particle Size	% Passing
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	98
10.0 mm	90
6.30 mm	80
5.00 mm	75
3.35 mm	73
2.00 mm	70
1.18 mm	65
630 µm	53
425 µm	44
300 µm	35
200 µm	27
150 µm	20
63 µm	15
20 µm	8
6 µm	4
2 µm	2

Non Engineering Description	
Brown silty very gravelly SAND. Gravel is fine to medium	

Sample Proportions - %	
Cobbles	0.0
Gravel	29.9
Sand	55.8
Silt	12.6
Clay	1.7
Particle Density - Assumed (Mg/m3) 2.65	
Particle Diameter - mm	
D100	20
D60	0.91
D10	0.029
Uniformity Coefficient (SHW series 600, Table 6/1, footnote 5) 31.4	


Notes
Sedimentation sample not pre-treated

Clay	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles
Silt				Sand			Gravel			




Percentage Passing - %

Particle Size - mm

Originator	Checked & Approved	<b>PARTICLE SIZE DISTRIBUTION</b> BS EN ISO 17892-4 2016 Clause 5.2 - Sieving Method BS EN ISO 17892-4 2016 Clause 5.4 - Pipette Method	 <b>Figure F10</b>  Sheet 1 of 1
RF	CD 05/03/2024		



	Site LT521 FASNAKYLE 400KV SUBSTATION		Contract No 26560	
	Client SSEN Transmission		Hole BH24A	
	Engineer Jacobs		Sample Ref Depth (m) 1.00 Sample Type B	

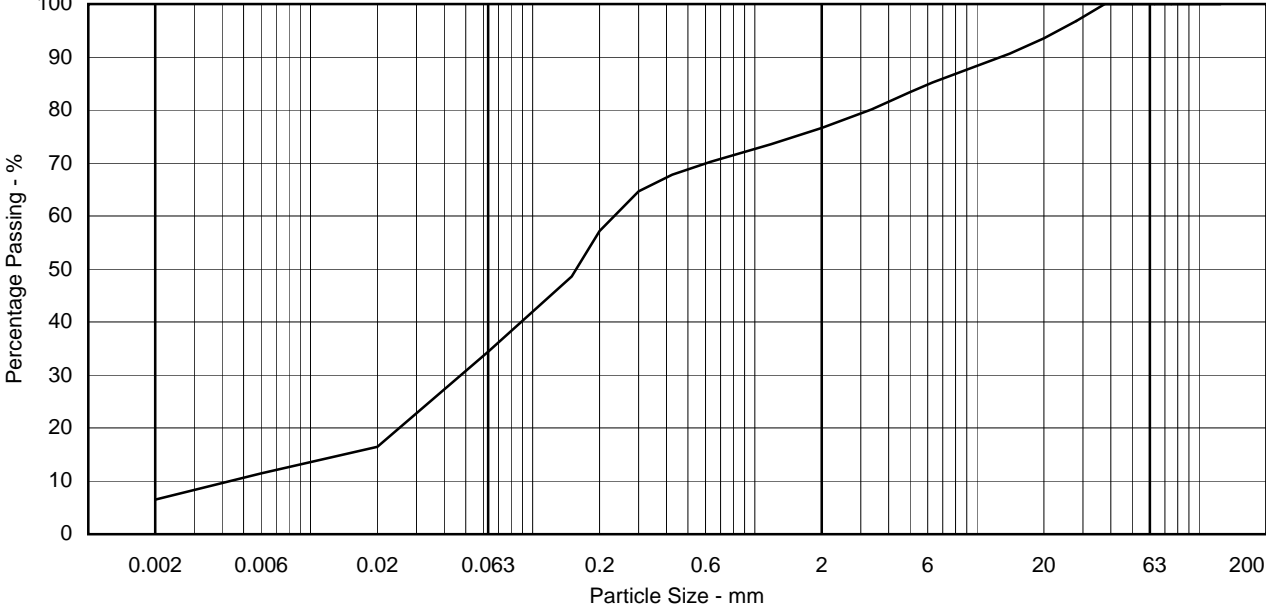
Particle Size	% Passing
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	97
20.0 mm	94
14.0 mm	91
10.0 mm	88
6.30 mm	85
5.00 mm	83
3.35 mm	80
2.00 mm	77
1.18 mm	74
630 µm	70
425 µm	68
300 µm	65
200 µm	57
150 µm	49
63 µm	34
20 µm	16
6 µm	11
2 µm	6


Non Engineering Description	
Brown very gravelly very silty SAND with cobbles and pockets of clay. Gravel is fine to coarse	

Sample Proportions - %	
Cobbles	0.0
Gravel	23.4
Sand	43.5
Silt	26.6
Clay	6.5
Particle Density - Assumed (Mg/m3) 2.65	
Particle Diameter - mm	
D100	38
D60	0.23
D10	0.0044
Uniformity Coefficient (SHW series 600, Table 6/1, footnote 5) 52.3	


Notes	
Sedimentation sample not pre-treated	

Clay	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles
	Silt			Sand			Gravel			



Originator	Checked & Approved	<b>PARTICLE SIZE DISTRIBUTION</b> BS EN ISO 17892-4 2016 Clause 5.2 - Sieving Method BS EN ISO 17892-4 2016 Clause 5.4 - Pipette Method	 <b>Figure F11</b>  Sheet 1 of 1
SG	CD 05/03/2024		



	Site LT521 FASNAKYLE 400KV SUBSTATION		Contract No 26560	
	Client SSEN Transmission		Hole BH27	
	Engineer Jacobs		Sample Ref Depth (m) 1.20 Sample Type B	

Particle Size	% Passing
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	98
14.0 mm	90
10.0 mm	71
6.30 mm	51
5.00 mm	41
3.35 mm	39
2.00 mm	36
1.18 mm	31
630 µm	27
425 µm	21
300 µm	15
200 µm	10
150 µm	8
63 µm	6

Non Engineering Description	
Brown silty very sandy fine to coarse GRAVEL	

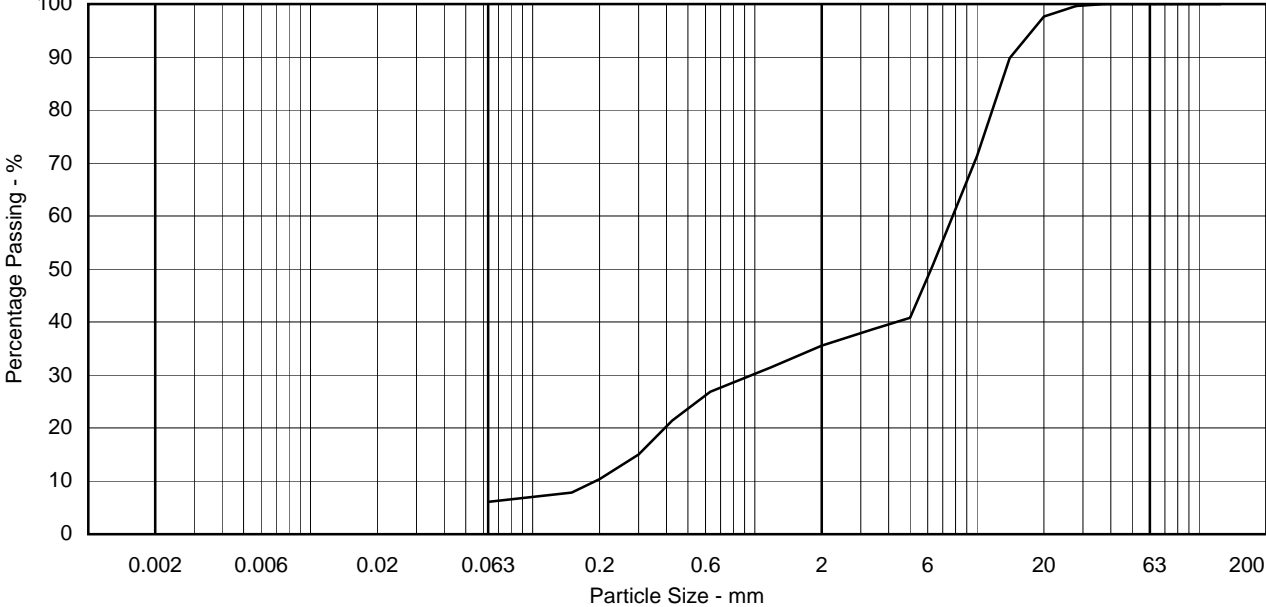
Sample Proportions - %	
Cobbles	0.0
Gravel	64.5
Sand	29.5
Silt & Clay	6.0

Particle Density - Assumed (Mg/m3)		2.65
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Particle Diameter - mm		
D100	38	
D60	7.8	
D10	0.19	
Uniformity Coefficient <small>(SHW series 600, Table 6/1, footnote 5)</small>		41.1

Notes	


Clay	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles
	Silt			Sand			Gravel			



Percentage Passing - %	0	10	20	30	40	50	60	70	80	90	100
Particle Size - mm	0.002	0.006	0.02	0.063	0.2	0.6	2	6	20	63	200

Originator	Checked & Approved	PARTICLE SIZE DISTRIBUTION BS EN ISO 17892-4 2016 Clause 5.2 - Sieving Method	 Figure F12
RF	CD 05/03/2024		



	Site LT521 FASNAKYLE 400KV SUBSTATION		Contract No 26560	
	Client SSEN Transmission		Hole BH28	
	Engineer Jacobs		Sample Ref Depth (m) 3.95 Sample Type B	

Particle Size	% Passing
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	100
28.0 mm	100
20.0 mm	100
14.0 mm	91
10.0 mm	70
6.30 mm	54
5.00 mm	49
3.35 mm	46
2.00 mm	42
1.18 mm	36
630 µm	30
425 µm	23
300 µm	14
200 µm	9
150 µm	4
63 µm	2

Non Engineering Description

Grey slightly silty very sandy fine to coarse GRAVEL

Sample Proportions - %

Cobbles	0.0
Gravel	58.2
Sand	40.0
Silt & Clay	1.8

Particle Density - Assumed (Mg/m3)2.65

Particle Diameter - mm

D100	20
D60	7.5
D10	0.22
Uniformity Coefficient <small>(SHW series 600, Table 6/1, footnote 5)</small>	34.1

Notes

Clay	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles
	Silt			Sand			Gravel			

Percentage Passing - %



Particle Size - mm

Originator	Checked & Approved	<div><div>PARTICLE SIZE DISTRIBUTION</div><div>BS EN ISO 17892-4 2016 Clause 5.2 - Sieving Method</div></div>	<div>Figure F13</div> <div>Sheet 1 of 1</div>
RF	<div>CD</div> <div>05/03/2024</div>		





Site LT521 FASNAKYLE 400KV SUBSTATION

Client	SSEN Transmission
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Engineer Jacobs

Contract No	26560
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Hole	TP05
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Sample Ref
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Depth (m)	0.50
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Sample Type	B
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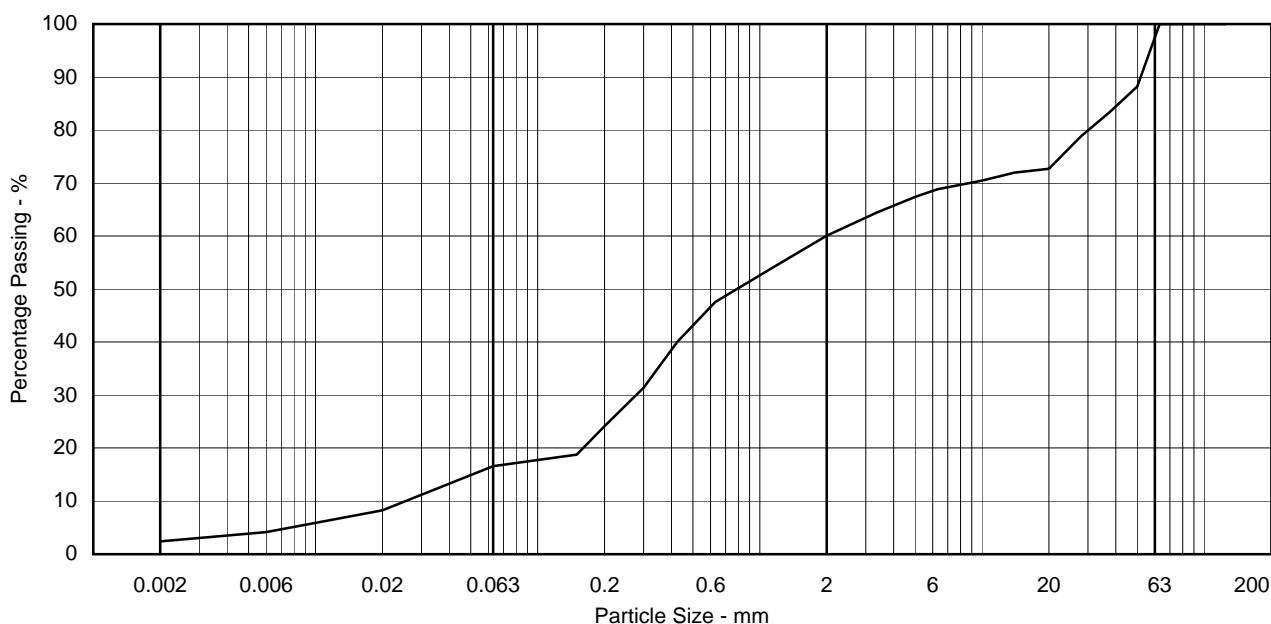
Particle Size	% Passing
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	88
37.5 mm	83
28.0 mm	79
20.0 mm	73
14.0 mm	72
10.0 mm	70
6.30 mm	69
5.00 mm	67
3.35 mm	64
2.00 mm	60
1.18 mm	54
630 µm	48
425 µm	40
300 µm	31
200 µm	24
150 µm	19
63 µm	17
20 µm	8
6 µm	4
2 µm	2


Non Engineering Description
Brown silty SAND and GRAVEL. Gravel is fine to coarse

Sample Proportions - %	
Cobbles	0.0
Gravel	39.9
Sand	44.1
Silt	13.6
Clay	2.3
Particle Density - Assumed (Mg/m3)	2.65
Particle Diameter - mm	
D100	63
D60	2.0
D10	0.026
Uniformity Coefficient	76.9


Notes	
Sample does not comply with BS EN ISO 17892-4 minimum mass requirements	Sedimentation sample not pre-treated

Clay	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles
	Silt			Sand			Gravel			



Originator	Checked & Approved	<div><div>PARTICLE SIZE DISTRIBUTION</div><div>BS EN ISO 17892-4 2016 Clause 5.2 - Sieving Method BS EN ISO 17892-4 2016 Clause 5.4 - Pipette Method</div></div>	<div><div></div><div>Figure F14</div></div>
JM	<div><div>CD</div><div>05/03/2024</div></div>		



	Site LT521 FASNAKYLE 400KV SUBSTATION		Contract No 26560	
	Client SSEN Transmission		Hole TP10	
	Engineer Jacobs		Sample Ref Depth (m) 1.50 Sample Type B	

Particle Size	% Passing
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	91
37.5 mm	84
28.0 mm	76
20.0 mm	64
14.0 mm	55
10.0 mm	49
6.30 mm	44
5.00 mm	42
3.35 mm	39
2.00 mm	37
1.18 mm	35
630 µm	33
425 µm	30
300 µm	27
200 µm	21
150 µm	15
63 µm	8

Non Engineering Description

Brown silty very sandy fine to coarse GRAVEL

Sample Proportions - %

Cobbles	0.0
Gravel	62.6
Sand	29.5
Silt & Clay	7.8

Particle Density - Assumed (Mg/m3)2.65

Particle Diameter - mm

D100	63
D60	17
D10	0.081

Uniformity Coefficient  
(SHW series 600, Table 6/1, footnote 5)209.9

Notes

Clay	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles
	Silt			Sand			Gravel			


Percentage Passing - %



Particle Size - mm

Originator	Checked & Approved	<div><div>PARTICLE SIZE DISTRIBUTION</div><div>BS EN ISO 17892-4 2016 Clause 5.2 - Sieving Method</div></div>	<div>Figure F15</div> <div>Sheet 1 of 1</div>
MC	<div>CD</div> <div>05/03/2024</div>		





SiteLT521 FASNAKYLE 400KV SUBSTATION

ClientSSEN Transmission

EngineerJacobs

Contract No26560

HoleTP12

Sample Ref

Depth (m)0.50

Sample TypeB

Particle Size	% Passing
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	96
28.0 mm	91
20.0 mm	87
14.0 mm	75
10.0 mm	68
6.30 mm	64
5.00 mm	61
3.35 mm	60
2.00 mm	58
1.18 mm	54
630 µm	49
425 µm	42
300 µm	28
200 µm	19
150 µm	10
63 µm	4

Non Engineering Description

Brown slightly silty SAND and GRAVEL. Gravel is fine to coarse

Sample Proportions - %

Cobbles	0.0
Gravel	42.5
Sand	53.4
Silt & Clay	4.1

Particle Density - Assumed (Mg/m3)2.65

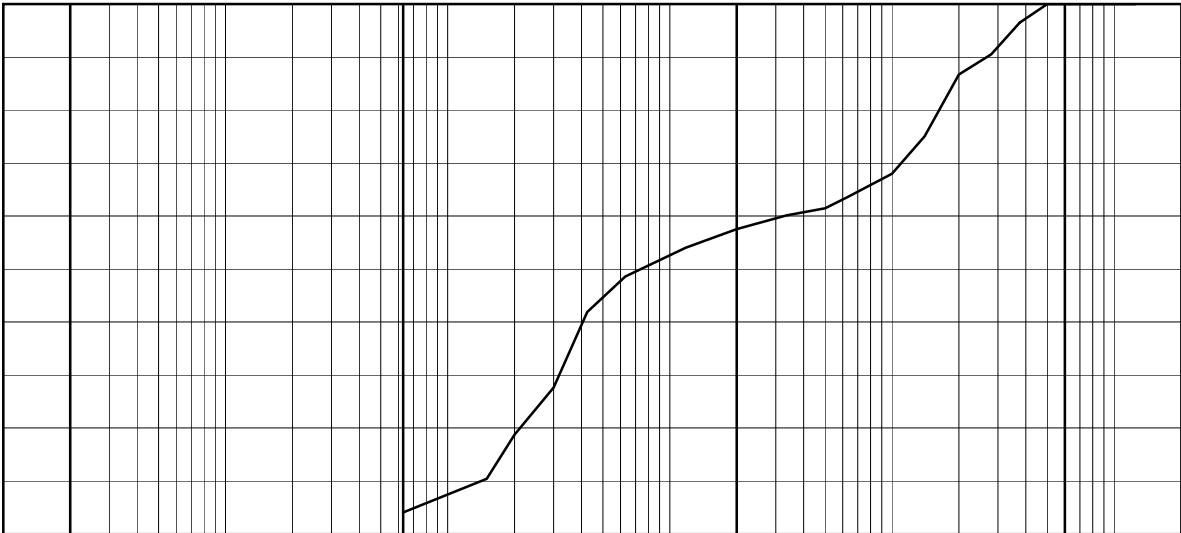
Particle Diameter - mm

D100	50
D60	3.3
D10	0.14
Uniformity Coefficient (SHW series 600, Table 6/1, footnote 5)	23.6

Notes

Clay	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles
Silt				Sand			Gravel			

Percentage Passing - %



Particle Size - mm

Originator

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PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4 2016 Clause 5.2 - Sieving Method





Figure F16

Sheet 1 of 1



	Site LT521 FASNAKYLE 400KV SUBSTATION		Contract No 26560	
	Client SSEN Transmission		Hole TP14	
	Engineer Jacobs		Sample Ref Depth (m) 0.50 Sample Type B	

Particle Size	% Passing
125.0 mm	100
90.0 mm	100
75.0 mm	85
63.0 mm	85
50.0 mm	79
37.5 mm	74
28.0 mm	67
20.0 mm	58
14.0 mm	56
10.0 mm	52
6.30 mm	47
5.00 mm	45
3.35 mm	42
2.00 mm	38
1.18 mm	33
630 µm	26
425 µm	19
300 µm	12
200 µm	7
150 µm	4
63 µm	3

Non Engineering Description

Briwn slightly silty SAND and GRAVEL with cobbles.  
Gravel is fine to coarse

Sample Proportions - %

Cobbles	15.1
Gravel	46.6
Sand	35.4
Silt & Clay	2.8

Particle Density - Assumed (Mg/m3)2.65

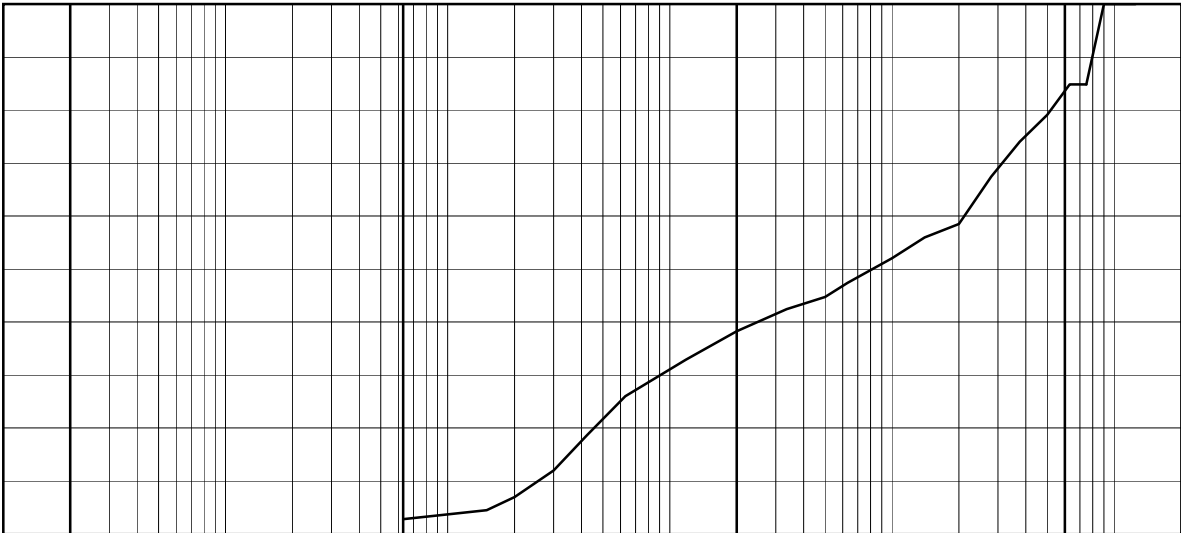
Particle Diameter - mm

D100	90
D60	21
D10	0.26
Uniformity Coefficient <small>(SHW series 600, Table 6/1, footnote 5)</small>	80.8


Notes

Clay	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles
	Silt			Sand			Gravel			


Percentage Passing - %



Particle Size - mm

Originator	Checked & Approved	<div><div>PARTICLE SIZE DISTRIBUTION</div><div>BS EN ISO 17892-4 2016 Clause 5.2 - Sieving Method</div></div>	<div>Figure F17</div> <div>Sheet 1 of 1</div>
JM	<div>CD</div> <div>05/03/2024</div>		



	Site	LT521 FASNAKYLE 400KV SUBSTATION	Contract No	26560
	Client	SSEN Transmission	Hole	TP16
	Engineer	Jacobs	Sample Ref	
			Depth (m)	0.50
			Sample Type	B

Particle Size	% Passing
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	94
50.0 mm	91
37.5 mm	90
28.0 mm	89
20.0 mm	87
14.0 mm	82
10.0 mm	73
6.30 mm	60
5.00 mm	55
3.35 mm	51
2.00 mm	47
1.18 mm	44
630 µm	37
425 µm	31
300 µm	23
200 µm	16
150 µm	10
63 µm	4

Non Engineering Description

Briwn slightly silty SAND and GRAVEL with cobbles.  
Gravel is fine to coarse

Sample Proportions - %

Cobbles	6.0
Gravel	46.5
Sand	43.5
Silt & Clay	4.0

Particle Density - Assumed (Mg/m3)

2.65

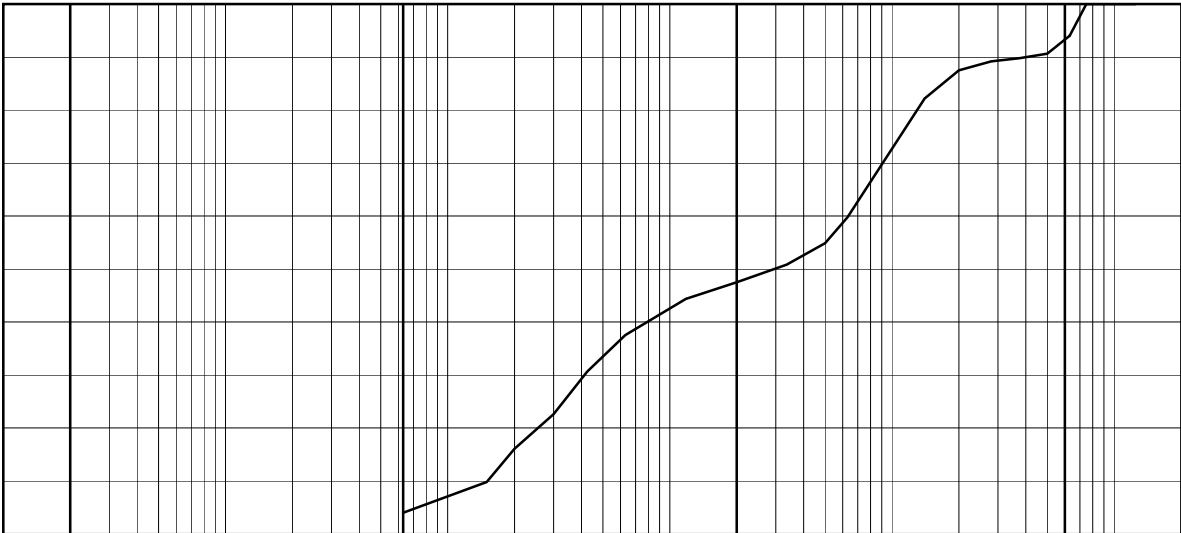
Particle Diameter - mm

D100	75
D60	6.4
D10	0.15
Uniformity Coefficient <small>(SHW series 600, Table 6/1, footnote 5)</small>	42.7


Notes

Clay	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles
	Silt			Sand			Gravel			

Percentage Passing - %




Particle Size - mm

Originator	Checked & Approved	<div><div>PARTICLE SIZE DISTRIBUTION</div><div>BS EN ISO 17892-4 2016 Clause 5.2 - Sieving Method</div></div>	<div> <b>Figure F18</b></div> <div>Sheet 1 of 1</div>
RF	<div>CD</div> <div>05/03/2024</div>		







	Site LT521 FASNAKYLE 400KV SUBSTATION		Contract No 26560	
	Client SSEN Transmission		Hole TP25	
	Engineer Jacobs		Sample Ref Depth (m) 0.50 Sample Type B	

Particle Size	% Passing
125.0 mm	100
90.0 mm	87
75.0 mm	87
63.0 mm	82
50.0 mm	78
37.5 mm	73
28.0 mm	69
20.0 mm	66
14.0 mm	57
10.0 mm	53
6.30 mm	51
5.00 mm	51
3.35 mm	50
2.00 mm	49
1.18 mm	48
630 µm	45
425 µm	42
300 µm	37
200 µm	28
150 µm	18
63 µm	6

Non Engineering Description

Brown silty SAND and GRAVEL with cobbles. Gravel is fine to coarse

Sample Proportions - %

Cobbles	17.9
Gravel	33.0
Sand	43.2
Silt & Clay	5.9

Particle Density - Assumed (Mg/m3)2.65

Particle Diameter - mm

D100	125
D60	16
D10	0.084
Uniformity Coefficient <small>(SHW series 600, Table 6/1, footnote 5)</small>	190.5

Notes

Clay	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles
	Silt			Sand			Gravel			


Percentage Passing - %



Particle Size - mm

Originator	Checked & Approved	<div><div>PARTICLE SIZE DISTRIBUTION</div><div>BS EN ISO 17892-4 2016 Clause 5.2 - Sieving Method</div></div>	<div>Figure F20</div> <div>Sheet 1 of 1</div>
SG	<div>CD</div> <div>05/03/2024</div>		



	Site LT521 FASNAKYLE 400KV SUBSTATION		Contract No 26560	
	Client SSEN Transmission		Hole TP28	
	Engineer Jacobs		Sample Ref Depth (m) 1.50 Sample Type B	

Particle Size	% Passing
125.0 mm	100
90.0 mm	100
75.0 mm	90
63.0 mm	87
50.0 mm	82
37.5 mm	75
28.0 mm	69
20.0 mm	64
14.0 mm	55
10.0 mm	51
6.30 mm	49
5.00 mm	47
3.35 mm	45
2.00 mm	43
1.18 mm	41
630 µm	39
425 µm	37
300 µm	33
200 µm	25
150 µm	18
63 µm	7

Non Engineering Description

Brown silty SAND and GRAVEL with cobbles. Gravel is fine to coarse

Sample Proportions - %

Cobbles	13.0
Gravel	43.8
Sand	36.2
Silt & Clay	7.0

Particle Density - Assumed (Mg/m3)2.65

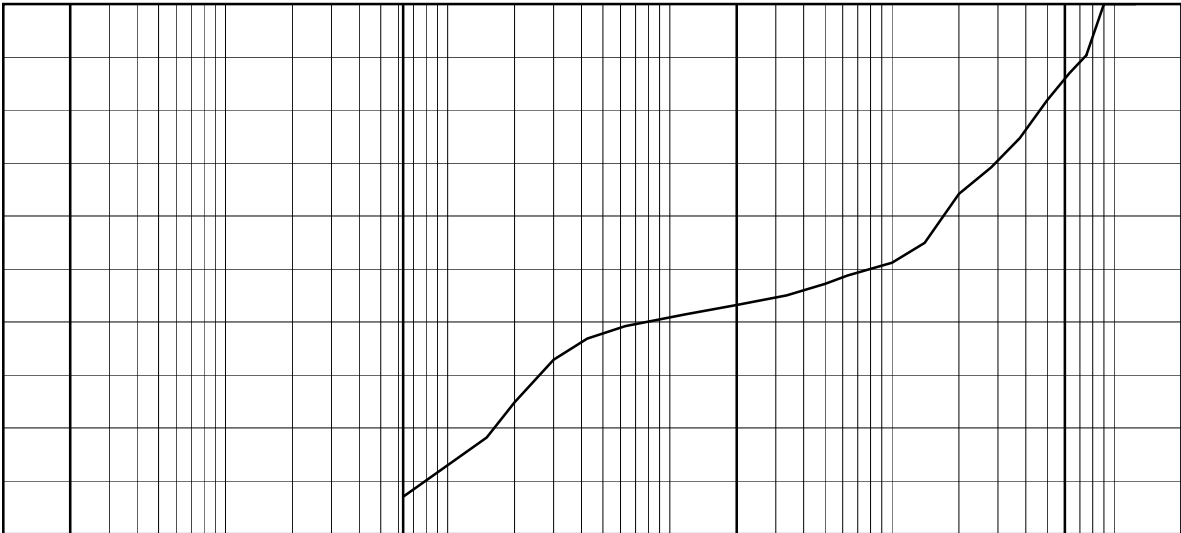
Particle Diameter - mm

D100	90
D60	17
D10	0.079
Uniformity Coefficient <small>(SHW series 600, Table 6/1, footnote 5)</small>	215.2


Notes

Clay	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles
	Silt			Sand			Gravel			


Percentage Passing - %



Particle Size - mm

Originator	Checked & Approved	<div><div>PARTICLE SIZE DISTRIBUTION</div><div>BS EN ISO 17892-4 2016 Clause 5.2 - Sieving Method</div></div>	<div>Figure F21</div> <div>Sheet 1 of 1</div>
MC	<div>CD</div> <div>05/03/2024</div>		



	Site LT521 FASNAKYLE 400KV SUBSTATION		Contract No 26560	
	Client SSEN Transmission		Hole TP29	
	Engineer Jacobs		Sample Ref Depth (m) 1.00 Sample Type B	

Particle Size	% Passing
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	96
37.5 mm	76
28.0 mm	66
20.0 mm	63
14.0 mm	51
10.0 mm	47
6.30 mm	43
5.00 mm	41
3.35 mm	40
2.00 mm	38
1.18 mm	36
630 µm	32
425 µm	28
300 µm	23
200 µm	18
150 µm	14
63 µm	8

Non Engineering Description	
Brown silty very sandy fine to coarse GRAVEL	

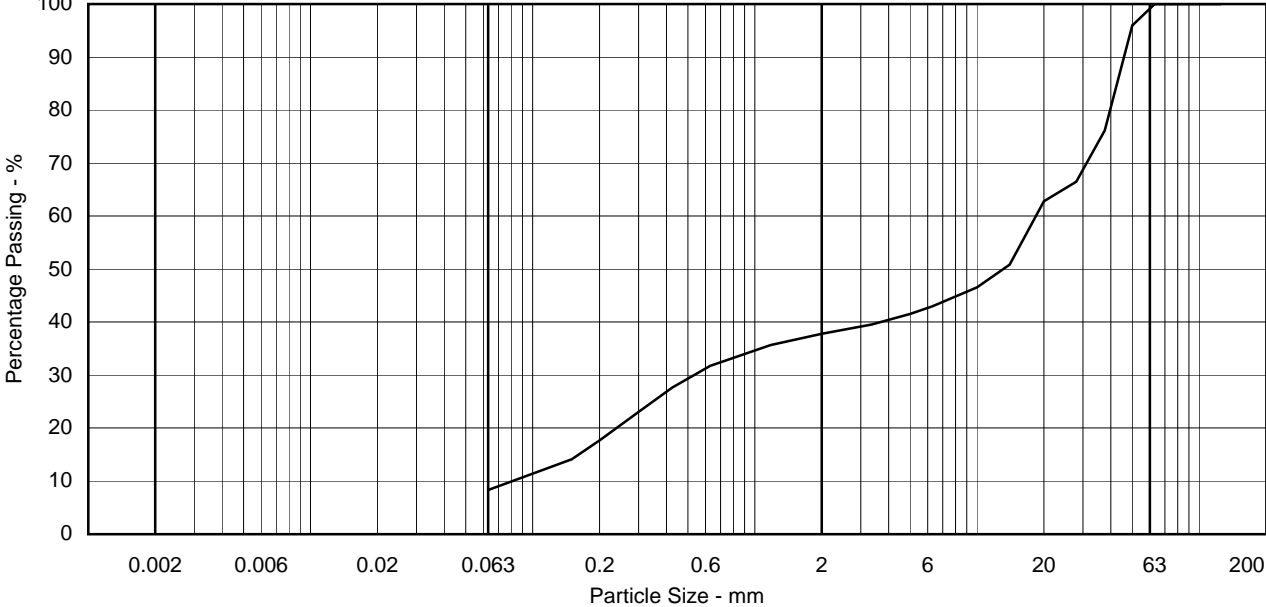
Sample Proportions - %	
Cobbles	0.0
Gravel	62.2
Sand	29.5
Silt & Clay	8.3


Particle Density - Assumed (Mg/m3)		2.65
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Particle Diameter - mm		
D100	63	
D60	18	
D10	0.082	
Uniformity Coefficient <small>(SHW series 600, Table 6/1, footnote 5)</small>		219.5


Notes
Sample does not comply with BS EN ISO 17892-4 minimum mass requirements

Clay	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles
	Silt			Sand			Gravel			



Originator	Checked & Approved	<b>PARTICLE SIZE DISTRIBUTION</b> BS EN ISO 17892-4 2016 Clause 5.2 - Sieving Method	 <b>Figure F22</b>  Sheet 1 of 1
MC	CD 05/03/2024		





SiteLT521 FASNAKYLE 400KV SUBSTATION

ClientSSEN Transmission

EngineerJacobs

Contract No26560

HoleTP32

Sample Ref

Depth (m)0.50

Sample TypeB

Particle Size	% Passing
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	94
28.0 mm	90
20.0 mm	86
14.0 mm	64
10.0 mm	58
6.30 mm	50
5.00 mm	48
3.35 mm	45
2.00 mm	43
1.18 mm	41
630 µm	37
425 µm	33
300 µm	28
200 µm	19
150 µm	12
63 µm	6

Non Engineering Description

Brown silty very sandy fine to coarse GRAVEL

Sample Proportions - %

Cobbles	0.0
Gravel	56.7
Sand	37.4
Silt & Clay	5.9

Particle Density - Assumed (Mg/m3)2.65

Particle Diameter - mm

D100	50
D60	11
D10	0.11

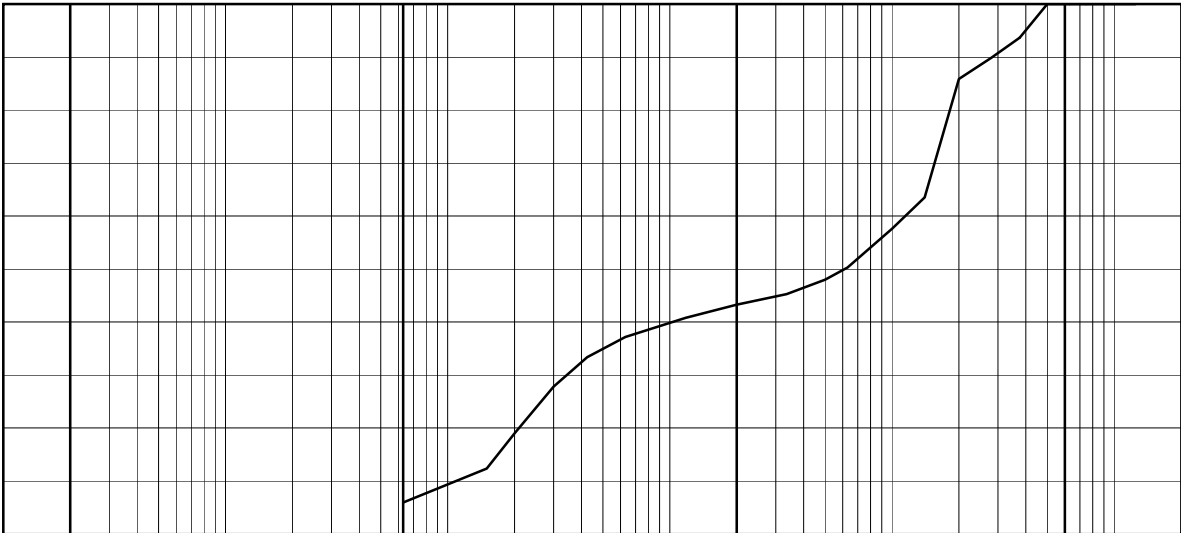
Uniformity Coefficient  
(SHW series 600, Table 6/1, footnote 5)

100.0

Notes

Clay	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles
	Silt			Sand			Gravel			

Percentage Passing - %



Particle Size - mm

Originator

MC

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PARTICLE SIZE DISTRIBUTION

BS EN ISO 17892-4 2016 Clause 5.2 - Sieving Method





Figure F23

Sheet 1 of 1



	Site LT521 FASNAKYLE 400KV SUBSTATION		Contract No 26560	
	Client SSEN Transmission		Hole TP33	
	Engineer Jacobs		Sample Ref Depth (m) 0.50 Sample Type B	

Particle Size	% Passing
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	79
37.5 mm	75
28.0 mm	66
20.0 mm	59
14.0 mm	58
10.0 mm	55
6.30 mm	51
5.00 mm	49
3.35 mm	47
2.00 mm	42
1.18 mm	37
630 µm	30
425 µm	23
300 µm	16
200 µm	11
150 µm	6
63 µm	2

Non Engineering Description

Brown slightly silty very sandy fine to coarse GRAVEL

Sample Proportions - %

Cobbles	0.0
Gravel	57.9
Sand	39.6
Silt & Clay	2.4

Particle Density - Assumed (Mg/m3)2.65

Particle Diameter - mm

D100	63
D60	21
D10	0.19
Uniformity Coefficient <small>(SHW series 600, Table 6/1, footnote 5)</small>	110.5

Notes

Sample does not comply with BS EN ISO 17892-4 minimum mass requirements

Clay	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles
	Silt			Sand			Gravel			


Percentage Passing - %



Particle Size - mm

Originator	Checked & Approved	<div><div>PARTICLE SIZE DISTRIBUTION</div><div>BS EN ISO 17892-4 2016 Clause 5.2 - Sieving Method</div></div>	<div>Figure F24</div> <div>Sheet 1 of 1</div>
JM	<div>CD</div> <div>05/03/2024</div>		



	Site LT521 FASNAKYLE 400KV SUBSTATION		Contract No 26560	
	Client SSEN Transmission		Hole TP34	
	Engineer Jacobs		Sample Ref Depth (m) 0.50 Sample Type B	

Particle Size	% Passing
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	100
37.5 mm	93
28.0 mm	87
20.0 mm	80
14.0 mm	66
10.0 mm	57
6.30 mm	51
5.00 mm	45
3.35 mm	43
2.00 mm	40
1.18 mm	38
630 µm	35
425 µm	31
300 µm	26
200 µm	20
150 µm	15
63 µm	9

Non Engineering Description	
Brown silty very sandy fine to coarse GRAVEL	

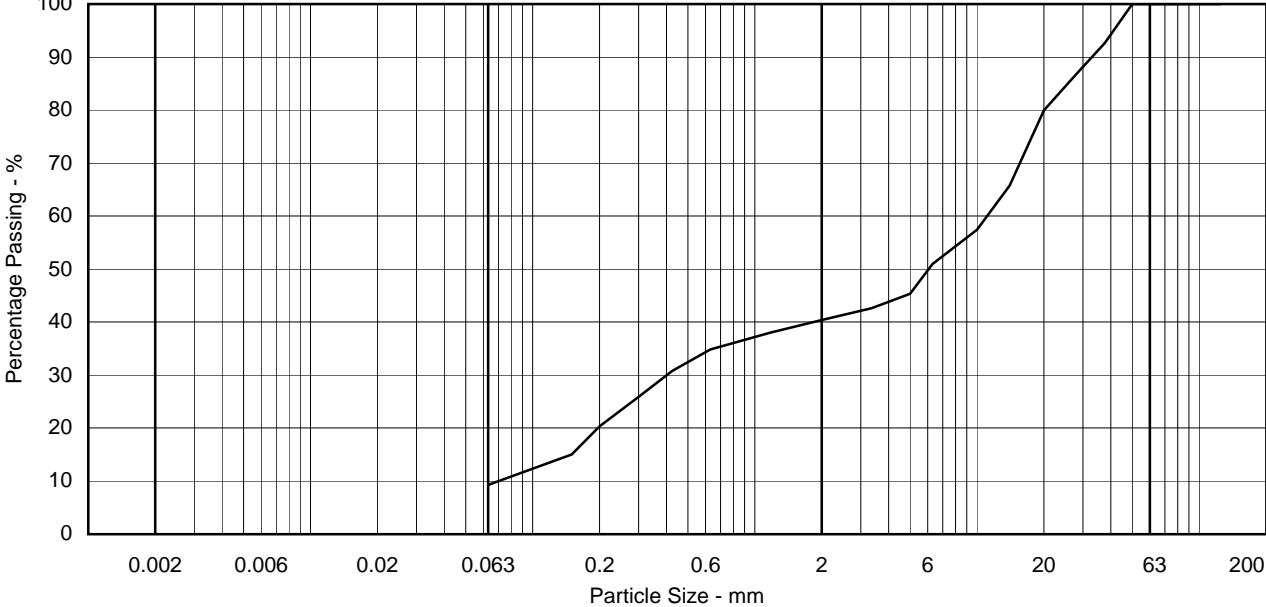
Sample Proportions - %	
Cobbles	0.0
Gravel	59.6
Sand	31.1
Silt & Clay	9.2

Particle Density - Assumed (Mg/m3)		2.65
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Particle Diameter - mm		
D100	50	
D60	11	
D10	0.071	
Uniformity Coefficient <small>(SHW series 600, Table 6/1, footnote 5)</small>		154.9


Notes	

Clay	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles
	Silt			Sand			Gravel			




Percentage Passing - %

Particle Size - mm

Originator	Checked & Approved	<b>PARTICLE SIZE DISTRIBUTION</b> BS EN ISO 17892-4 2016 Clause 5.2 - Sieving Method	 <b>Figure F25</b>
SM	CD 05/03/2024		

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	Site LT521 FASNAKYLE 400KV SUBSTATION		Contract No 26560	
	Client SSEN Transmission		Hole TP36A	
	Engineer Jacobs		Sample Ref Depth (m) 0.50 Sample Type B	

Particle Size	% Passing
125.0 mm	100
90.0 mm	100
75.0 mm	100
63.0 mm	100
50.0 mm	89
37.5 mm	86
28.0 mm	83
20.0 mm	80
14.0 mm	75
10.0 mm	70
6.30 mm	67
5.00 mm	65
3.35 mm	62
2.00 mm	59
1.18 mm	53
630 µm	48
425 µm	40
300 µm	29
200 µm	19
150 µm	12
63 µm	8

Non Engineering Description

Brown silty SAND and GRAVEL with organic material.  
Gravel is fine to coarse

Sample Proportions - %

Cobbles	0.0
Gravel	41.3
Sand	50.9
Silt & Clay	7.8

Particle Density - Assumed (Mg/m3)2.65

Particle Diameter - mm

D100	63
D60	2.4
D10	0.099
Uniformity Coefficient <small>(SHW series 600, Table 6/1, footnote 5)</small>	24.2

Notes

Sample does not comply with BS EN ISO 17892-4 minimum mass requirements

Clay	Fine	Medium	Coarse	Fine	Medium	Coarse	Fine	Medium	Coarse	Cobbles
	Silt			Sand			Gravel			

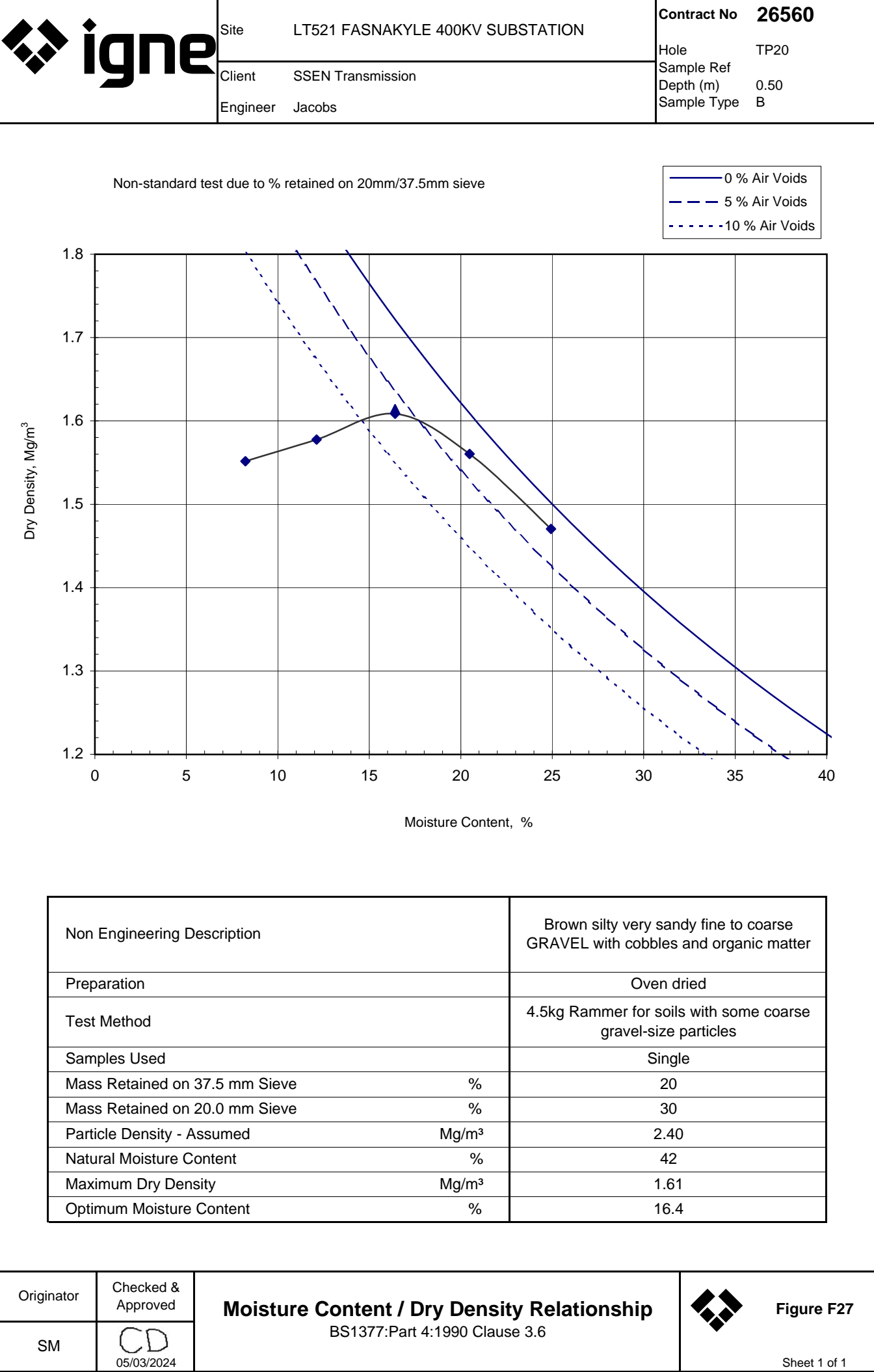
Percentage Passing - %




Particle Size - mm

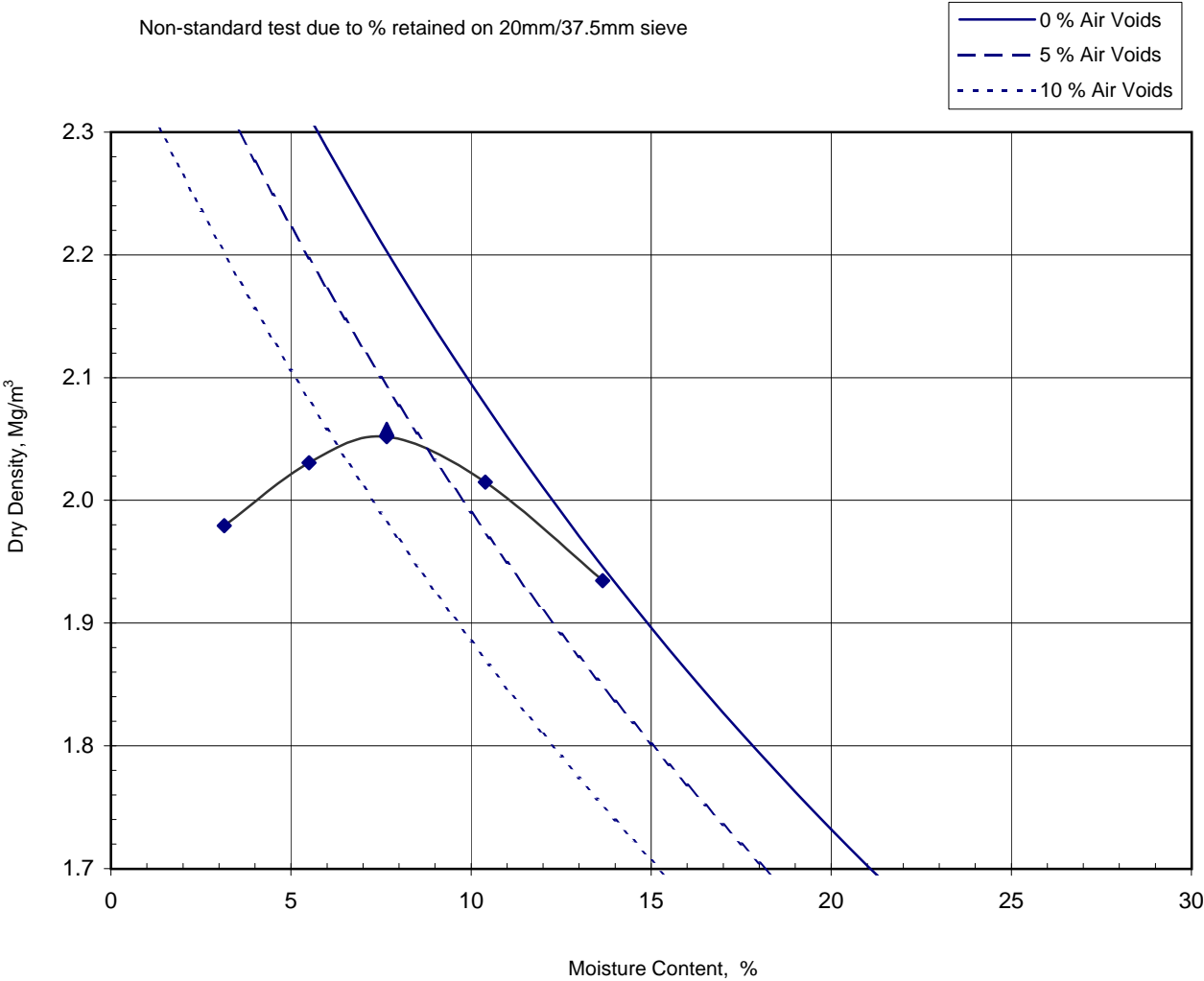
Originator	Checked & Approved	<div><div>PARTICLE SIZE DISTRIBUTION</div><div>BS EN ISO 17892-4 2016 Clause 5.2 - Sieving Method</div></div>	<div>Figure F26</div> <div>Sheet 1 of 1</div>
JM	<div>CD</div> <div>05/03/2024</div>		










	Site	LT521 FASNAKYLE 400KV SUBSTATION	Contract No	26560
	Client	SSEN Transmission	Hole	TP28
	Engineer	Jacobs	Sample Ref	
			Depth (m)	1.50
			Sample Type	B

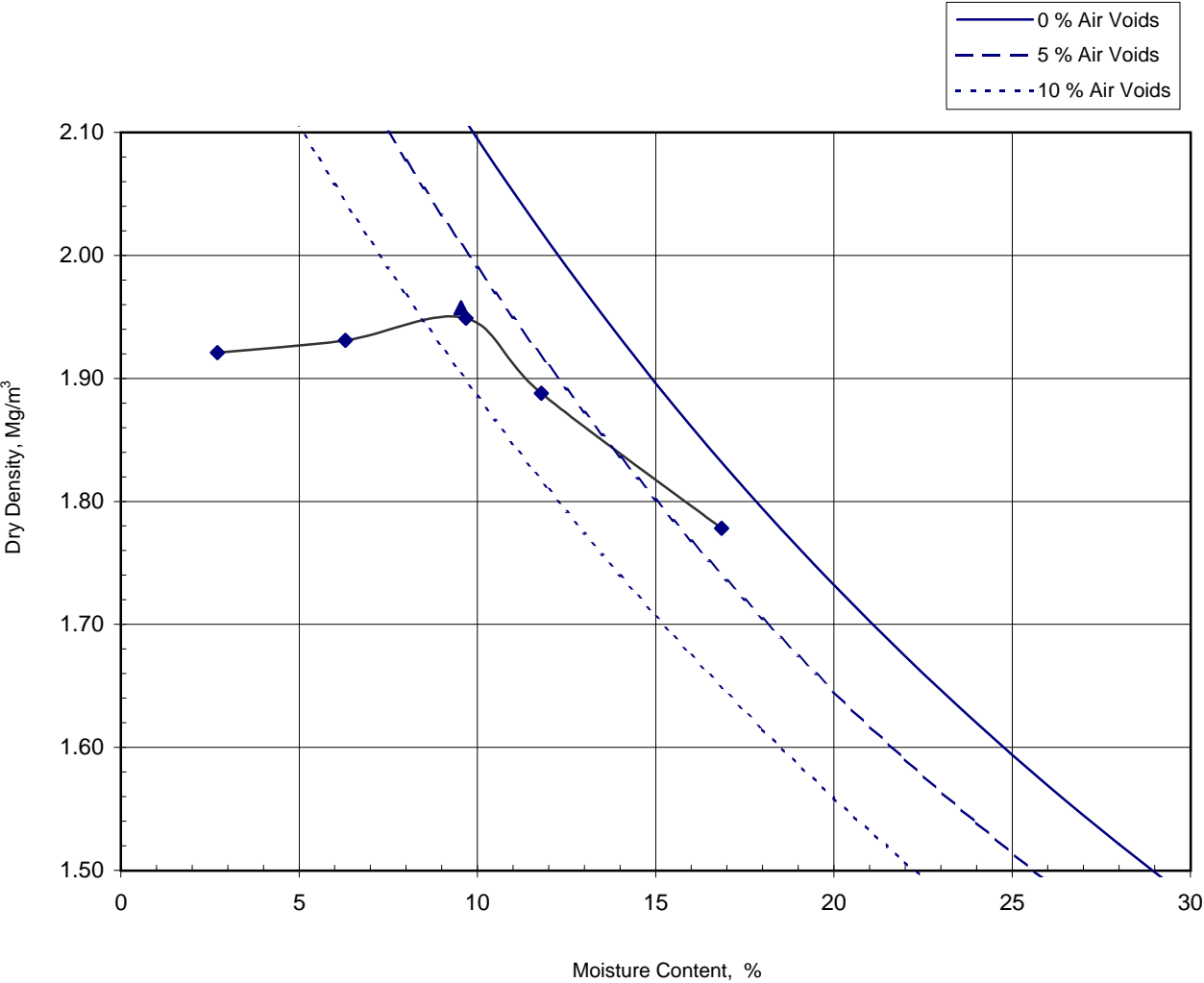


Non Engineering Description	Brown silty SAND and GRAVEL with cobbles. Gravel is fine to coarse	
Preparation	Oven dried	
Test Method	4.5kg Rammer for soils with some coarse gravel-size particles	
Samples Used	Single	
Mass Retained on 37.5 mm Sieve	%	25
Mass Retained on 20.0 mm Sieve	%	36
Particle Density - Assumed	Mg/m³	2.65
Natural Moisture Content	%	7.3
Maximum Dry Density	Mg/m³	2.06
Optimum Moisture Content	%	7.7



Originator	Checked & Approved	<b>Moisture Content / Dry Density Relationship</b> BS1377:Part 4:1990 Clause 3.6	 <b>Figure F28</b>
RF	 05/03/2024		
Sheet 1 of 1			




	Site	LT521 FASNAKYLE 400KV SUBSTATION	Contract No	26560
	Client	SSEN Transmission	Hole	TP32
	Engineer	Jacobs	Sample Ref	
			Depth (m)	0.50
			Sample Type	B

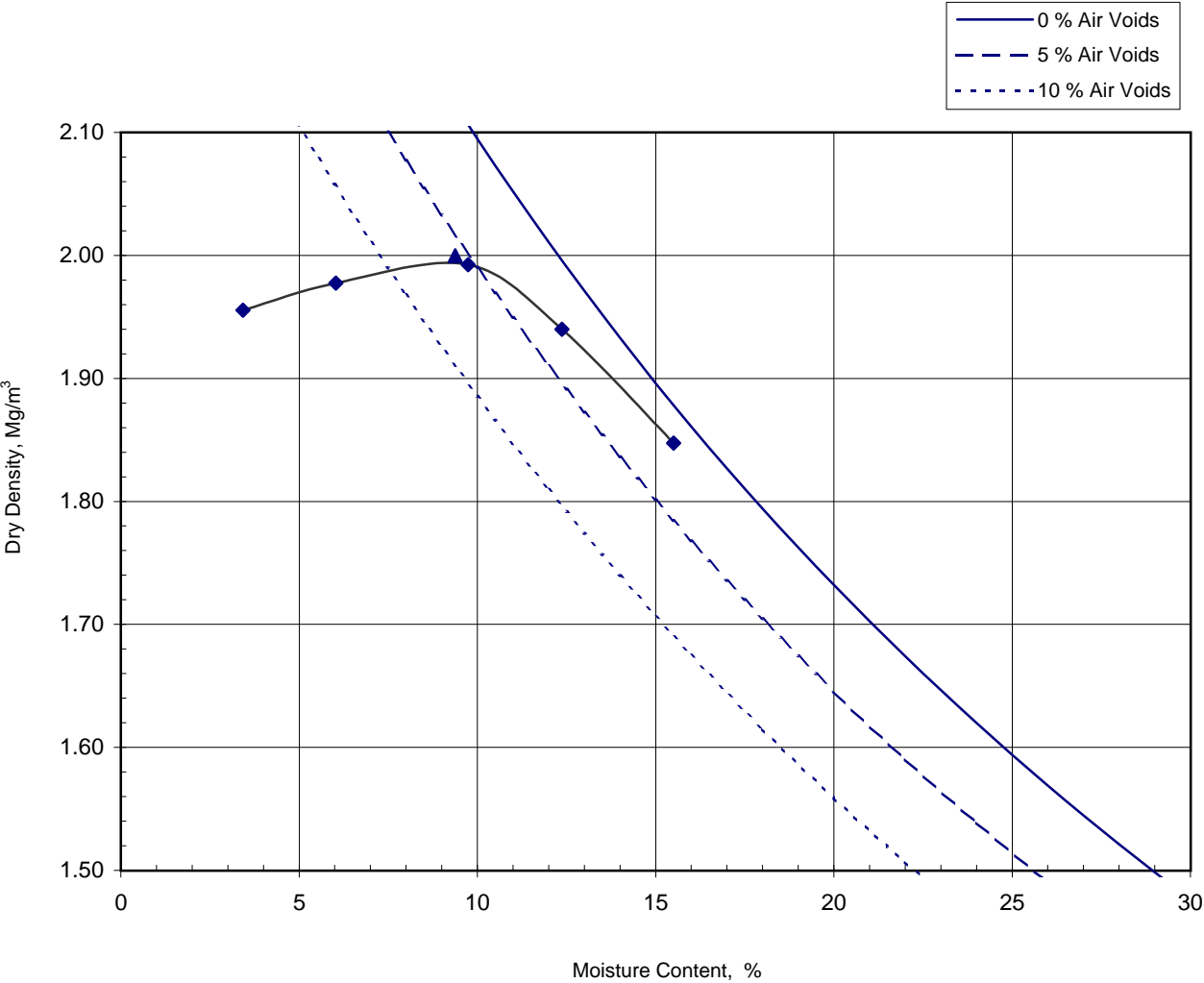


Non Engineering Description	Brown silty very sandy fine to coarse GRAVEL
Preparation	Oven dried
Test Method	4.5kg Rammer for soils with some coarse gravel-size particles
Samples Used	Single
Mass Retained on 37.5 mm Sieve	6
Mass Retained on 20.0 mm Sieve	14
Particle Density - Assumed	2.65
Natural Moisture Content	13
Maximum Dry Density	1.96
Optimum Moisture Content	9.5



Originator	Checked & Approved	<b>Moisture Content / Dry Density Relationship</b> BS1377:Part 4:1990 Clause 3.6	 <b>Figure F29</b>
RF	 05/03/2024		
Sheet 1 of 1			




	Site	LT521 FASNAKYLE 400KV SUBSTATION	Contract No	26560
	Client	SSEN Transmission	Hole	TP36A
	Engineer	Jacobs	Sample Ref	
			Depth (m)	0.50
			Sample Type	B



Non Engineering Description	Brown silty SAND and GRAVEL with organic material. Gravel is fine to coarse	
Preparation	Oven dried	
Test Method	4.5kg Rammer for soils with some coarse gravel-size particles	
Samples Used	Single	
Mass Retained on 37.5 mm Sieve	%	9
Mass Retained on 20.0 mm Sieve	%	19
Particle Density - Assumed	Mg/m³	2.65
Natural Moisture Content	%	24
Maximum Dry Density	Mg/m³	2.00
Optimum Moisture Content	%	9.4

Originator	Checked & Approved	<b>Moisture Content / Dry Density Relationship</b> BS1377:Part 4:1990 Clause 3.6	 <b>Figure F30</b>
RF	 05/03/2024		
Sheet 1 of 1			



	Site	LT521 FASNAKYLE 400KV SUBSTATION	Contract No	26560
	Client	SSEN Transmission	Hole ID	TP28
	Engineer	Jacobs	Sample No	
			Depth (m)	1.50
			Sample Type	B

**Non Engineering Description:** Brown silty SAND and GRAVEL with cobbles. Gravel is fine to coarse

**Preparation Details:**

Specimen was prepared at Natural Moisture Content

Compaction using 4.5kg compactive effort

Specimen Bulk Density 2.20 Mg/m<sup>3</sup>

Specimen Dry Density 2.01 Mg/m<sup>3</sup>

Mass of sample > 20 mm 36.0 %

Specimen Unsoaked

**Test Details:**

Surcharge: 2.0 kg

Seating Load: 250 N

Moisture Content: 9.4 %

**Base**

2.0 kg

250 N

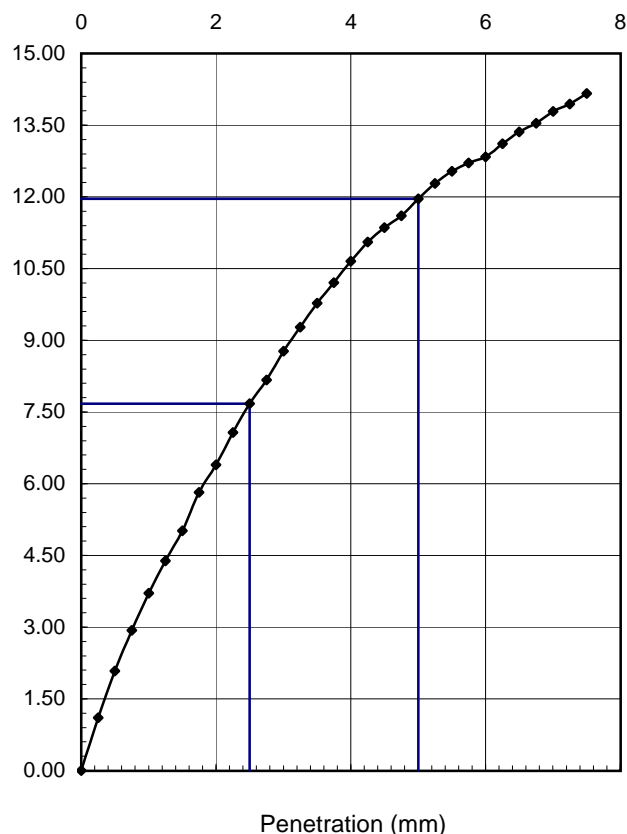
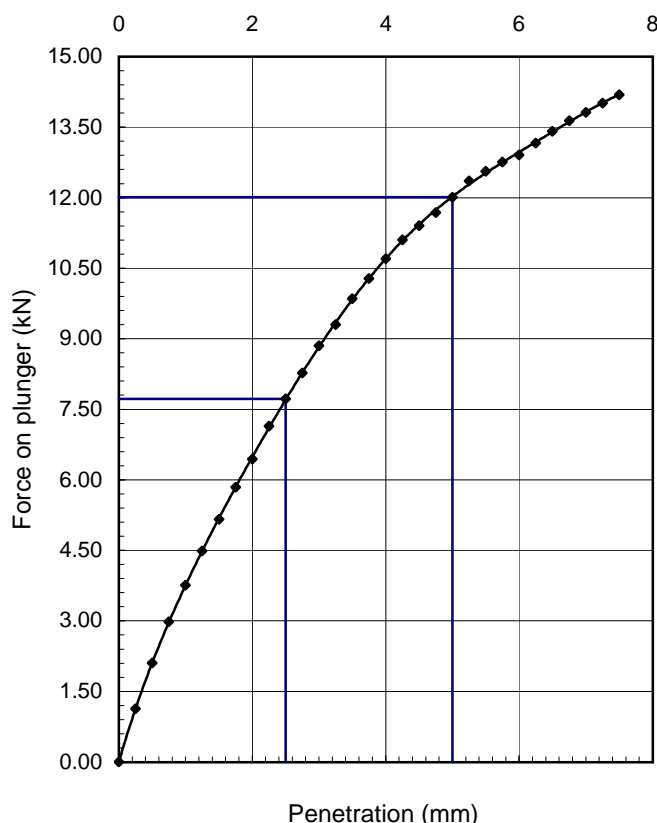
9.5 %

CBR Value: 60.0 %


59.8 %

Top of Specimen  
Penetration (mm)

Base of Specimen  
Penetration (mm)



**Non-standard test due to % retained on 20mm sieve**

Originator	Checked & Approved	<b>CALIFORNIA BEARING RATIO</b> BS1377 : Part 4 : Clause 7 : 1990	 <b>Figure No F31</b>
DW	CD 05/03/2024		





Site LT521 FASNAKYLE 400KV SUBSTATION

Client SSEN Transmission

Engineer Jacobs

Contract No 26560

Hole ID TP32

Sample No

Depth (m) 0.50

Sample Type B

**Non Engineering Description:**

Brown silty very sandy fine to coarse GRAVEL

**Preparation Details:**

Specimen was prepared at Natural Moisture Content

Compaction using 4.5kg compactive effort

Specimen Bulk Density 2.05 Mg/m<sup>3</sup>Specimen Dry Density 1.75 Mg/m<sup>3</sup>

Mass of sample &gt; 20 mm 13.6 %

Specimen Unsoaked

**Test Details:****Top**

Surcharge: 2.0 kg

Seating Load: 10 N

Moisture Content: 17 %

**Base**

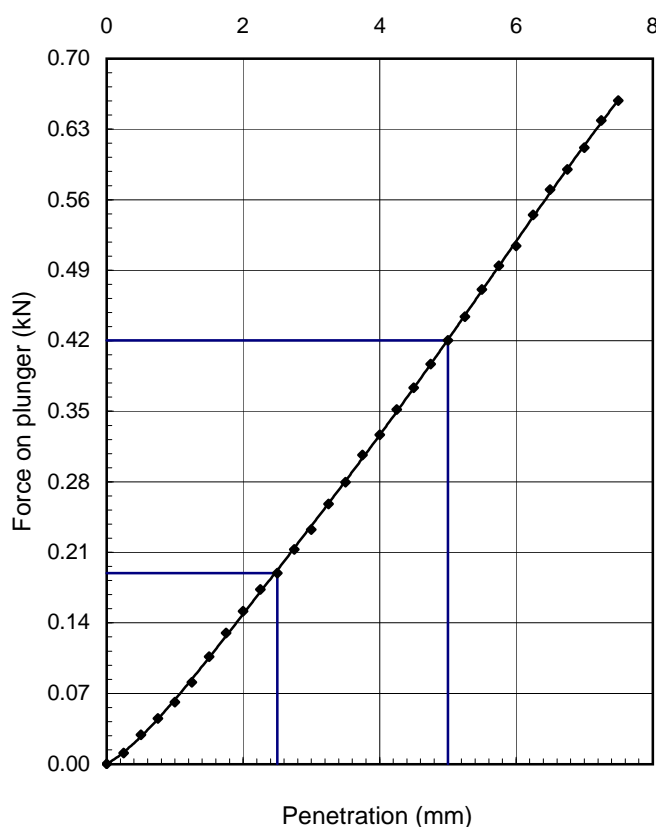
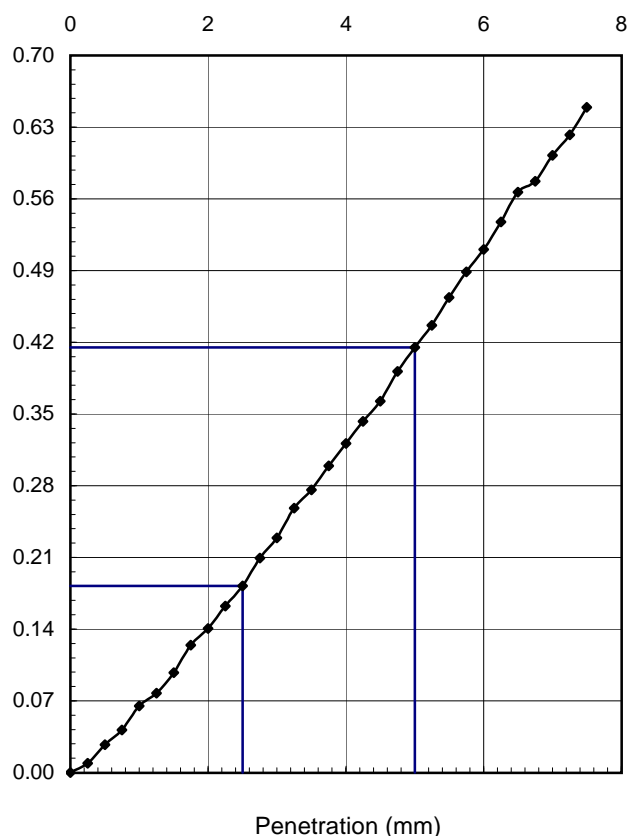
2.0 kg

10 N

17 %

CBR Value: 2.1 %

2.1 %

Top of Specimen  
Penetration (mm)Base of Specimen  
Penetration (mm)

Non-standard test due to % retained on 20mm sieve

Originator

Checked &  
Approved

DW

CD  
05/03/2024**CALIFORNIA BEARING RATIO**

BS1377 : Part 4 : Clause 7 : 1990



Figure No F32

Sheet 1 of 1





Site LT521 FASNAKYLE 400KV SUBSTATION

Client SSEN Transmission

Engineer Jacobs

Contract No 26560

Hole ID TP36A

Sample No

Depth (m) 0.50

Sample Type B

**Non Engineering Description:**

Brown silty SAND and GRAVEL with organic material. Gravel is fine to coarse

**Preparation Details:**

Specimen was prepared at Natural Moisture Content

Compaction using 4.5kg compactive effort

Specimen Bulk Density 2.20 Mg/m<sup>3</sup>Specimen Dry Density 1.79 Mg/m<sup>3</sup>

Mass of sample &gt; 20 mm 20.0 %

Specimen Unsoaked

**Test Details:****Top**

Surcharge: 2.0 kg

Seating Load: 50 N

Moisture Content: 23 %

**Base**

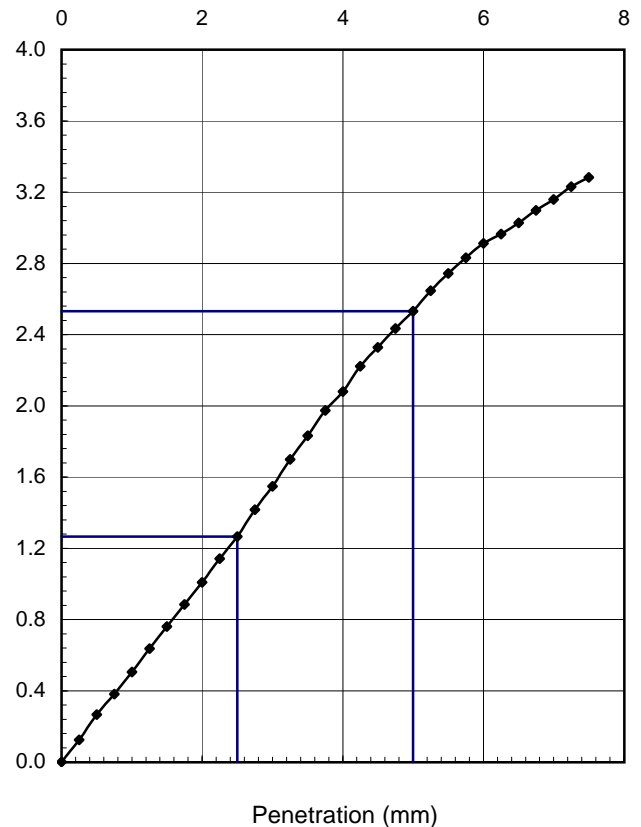
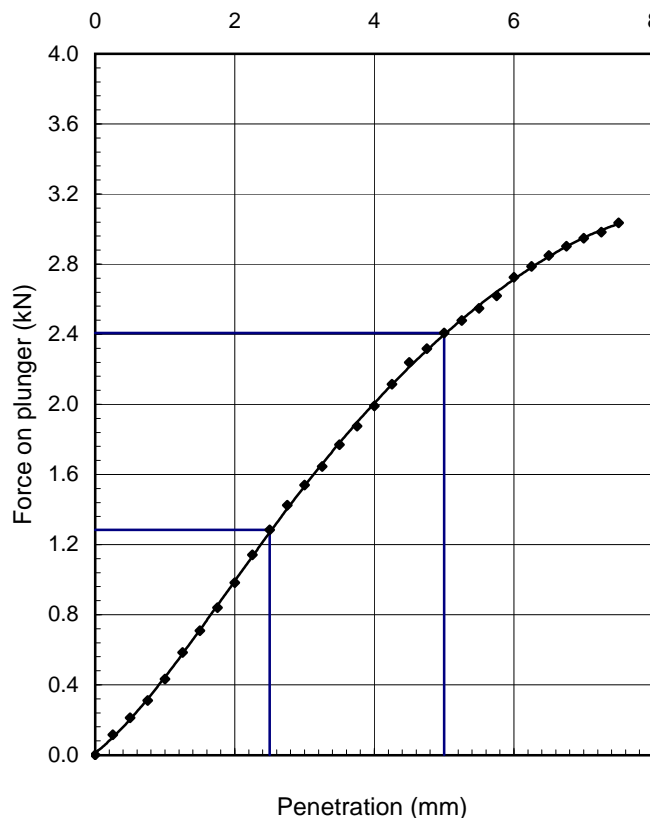
2.0 kg

50 N

24 %

CBR Value: 12.0 %

12.7 %

Top of Specimen  
Penetration (mm)Base of Specimen  
Penetration (mm)

Originator

Checked &  
Approved

SM

CD  
05/03/2024**CALIFORNIA BEARING RATIO**


BS1377 : Part 4 : Clause 7 : 1990



Figure No F33

Sheet 1 of 1

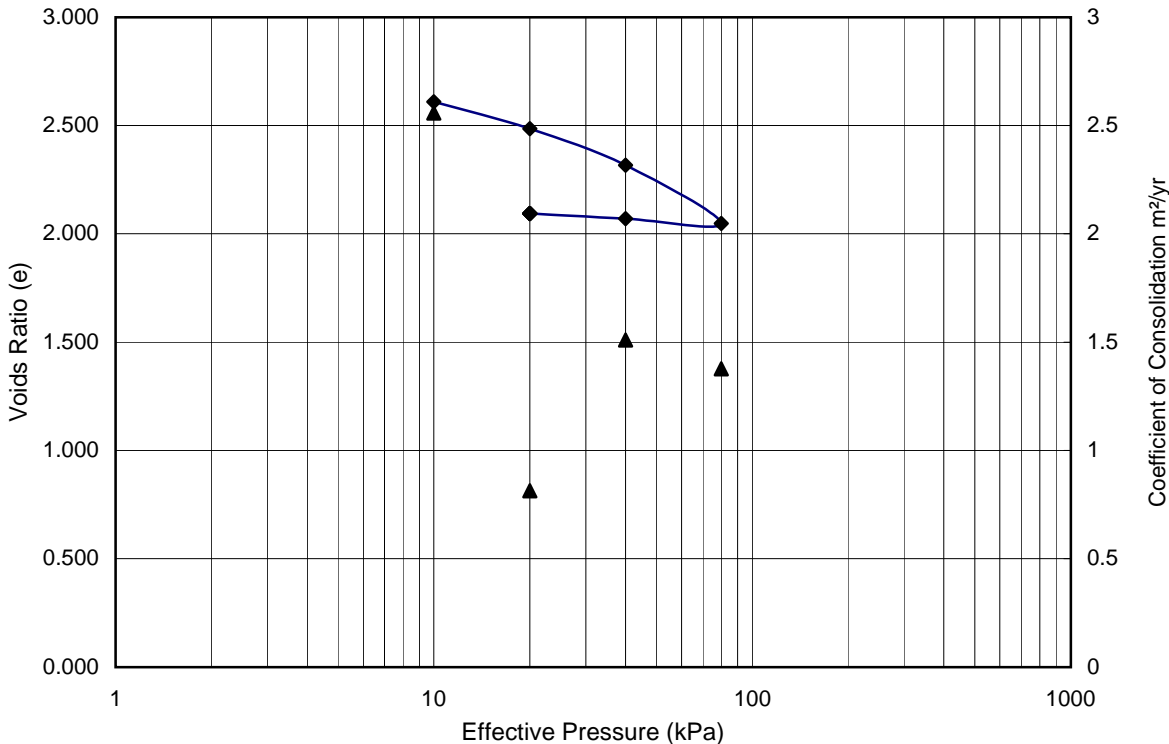



	Site	LT521 FASNAKYLE 400KV SUBSTATION	Contract No	26560
	Client	SSEN Transmission	Hole ID	BH17
	Engineer	Jacobs	Sample Ref	
			Depth	1.20-2.20
			Sample Type	U

Non Engineering Description: Dark brown fibrous PEAT

Initial Water Content	110 %	Final Water Content	88.6 %
Initial Voids Ratio	2.877	Final Voids Ratio	2.094
Initial Bulk Density	1.44 Mg/m <sup>3</sup>	Specific Gravity	2.65 (assumed)
Initial Dry Density	0.68 Mg/m <sup>3</sup>	Degree of saturation	102 %
Specimen Dimensions	20.07mm x 74.70mm dia		
Laboratory temperature	20±2°C		



Pressure Range kPa	M <sub>v</sub> m <sup>2</sup> /MN	C <sub>v</sub> (t90) m <sup>2</sup> /year	C <sub>v</sub> (t50) m <sup>2</sup> /year	Voids ratio (e)	C <sub>sec</sub>
0 - 10	6.886	2.56	2.44	2.610	
10 - 20	3.462	0.81	0.91	2.485	
20 - 40	2.411	1.51	1.58	2.317	
40 - 80	2.024	1.38	1.47	2.049	
80 - 40	0.179	swelled	swelled	2.070	
40 - 20	0.378	swelled	swelled	2.094	



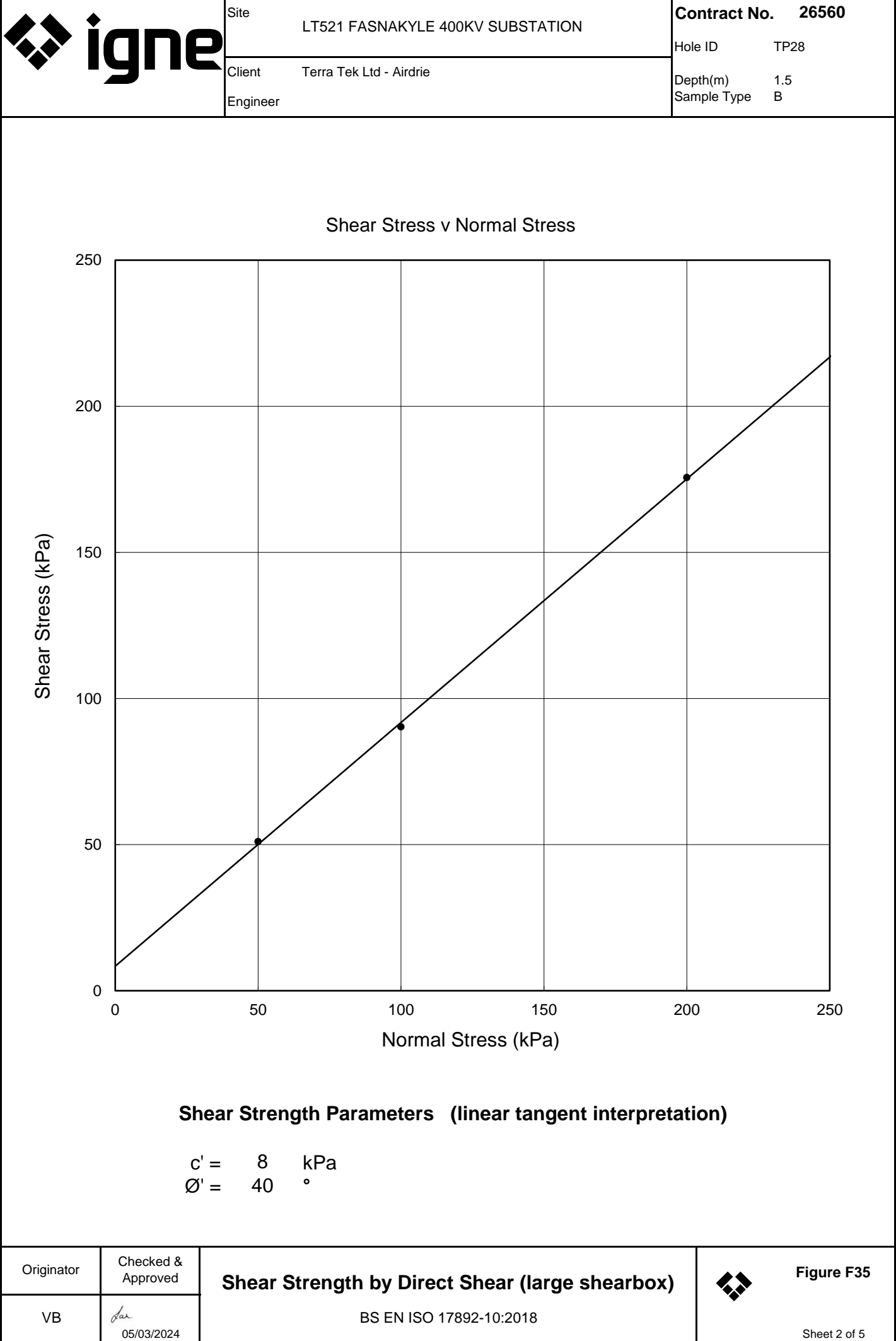
Originator	Checked & Approved	<b>INCREMENTAL LOADING OEDOMETER TEST</b> BS EN ISO 17892-5:2017, Root time curve fitting	 <b>Figure No F34</b>
SG	CD 05/03/2024		

Sheet 1 of 1



		Site LT521 FASNAKYLE 400KV SUBSTATION		Contract No. 26560	
		Client Terra Tek Ltd - Airdrie		Hole ID TP28	
		Engineer		Depth(m) 1.5	
				Sample Type B	
<b>Specimen Details</b>					
Depth within original sample		n/a			
Orientation within original sample		n/a			
Test condition		Non-Submerged			
Description		Brown slightly silty gravelly SAND. Gravel is fine to coarse.			
Preparation		Material >20mm removed (77% passing). Remoulded to 90% of the Maximum Dry Density (MDD = 2.06Mg/m³) at the Optimum Moisture Content (OMC = 7.7%)			
<b>Specimen Number</b>		1	2	3	
Length	mm	308.3	308.3	308.3	
Width	mm	308.0	308.0	308.0	
Height	mm	143.0	143.0	143.0	
Initial water content	%	8.1	8.1	8.1	
Initial bulk density	Mg/m³	2.00	2.00	2.00	
Initial dry density	Mg/m³	1.85	1.85	1.85	
Particle Density (assumed)	Mg/m³	2.65	2.65	2.65	
<b>Application Pressure Stage</b>					
Normal stress	kPa	50	100	200	
Height change	mm	-0.8	-2.8	-3.1	
Duration	day(s)	-	-	-	
<b>Shearing Stage</b>					
Normal stress	kPa	50	100	200	
<b>Peak Conditions:</b>					
Rate of horizontal displacement	mm/min	1.02	1.02	1.02	
Maximum shear stress	kPa	51	90	176	
Horizontal displacement	mm	19.0	42.6	24.0	
Height change	mm	0.8	-3.3	-0.6	
<b>Residual Conditions:</b>					
Rate of horizontal displacement	mm/min	n/a	n/a	n/a	
Residual shear stress	kPa	n/a	n/a	n/a	
Final cumulative displacement	mm	n/a	n/a	n/a	
Total traverses	No.	n/a	n/a	n/a	
Method of reversal		n/a	n/a	n/a	
Final water content	%	8.1	8.1	8.1	
Duration	day(s)	1	1	1	
<b>Shear Strength Parameters</b>					
Maximum Condition: (linear tangent interpretation)					
Effective Cohesion	kPa	8			
Effective Angle of Shearing Resistance	degrees	40			
Originator	Checked & Approved	<b>Shear Strength by Direct Shear (large shearbox)</b>		 <b>Figure F35</b>	
VB	<i>Jan</i> 05/03/2024				
		BS EN ISO 17892-10:2018		Sheet 1 of 5	







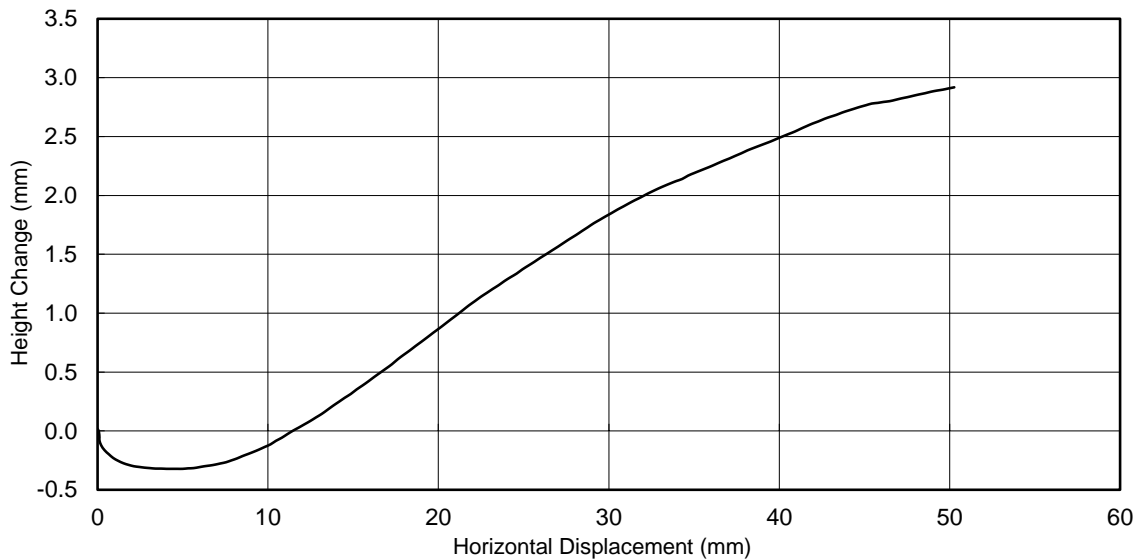


Site	LT521 FASNAKYLE 400KV SUBSTATION	Contract No.	26560
Client	Terra Tek Ltd - Airdrie	Hole ID	TP28
Engineer		Depth(m)	1.5
		Sample Type	B

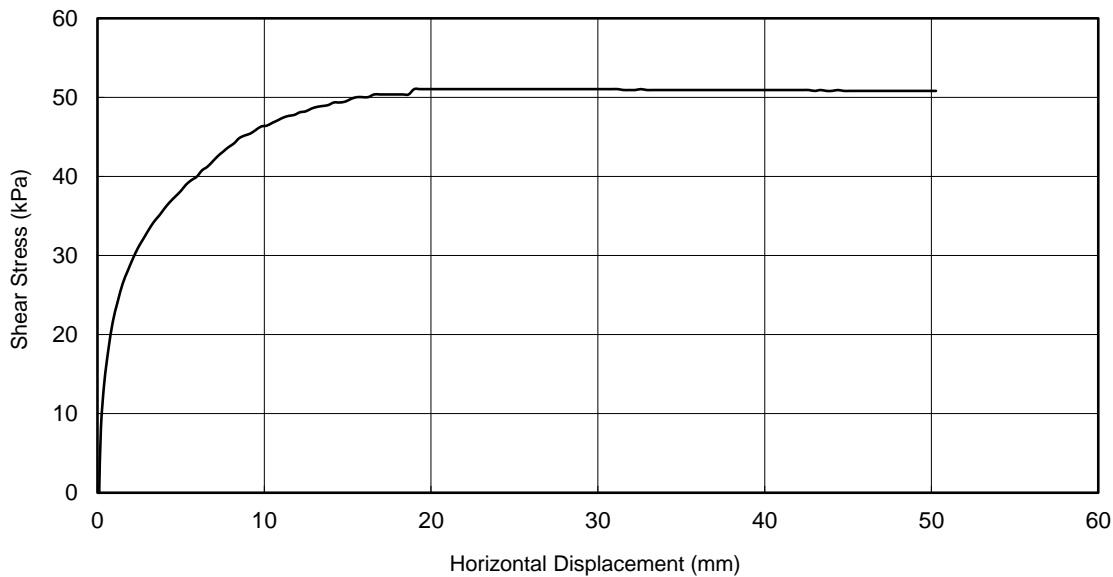
Specimen No. 1

Normal Pressure = 50 kPa

Height Change v Horizontal Displacement



Shear Stress v Horizontal Displacement



Originator	Checked & Approved	<b>Shear Strength by Direct Shear (large shearbox)</b>  BS EN ISO 17892-10:2018	<b>Figure F35</b>  Sheet 3 of 5
VB	 05/03/2024		



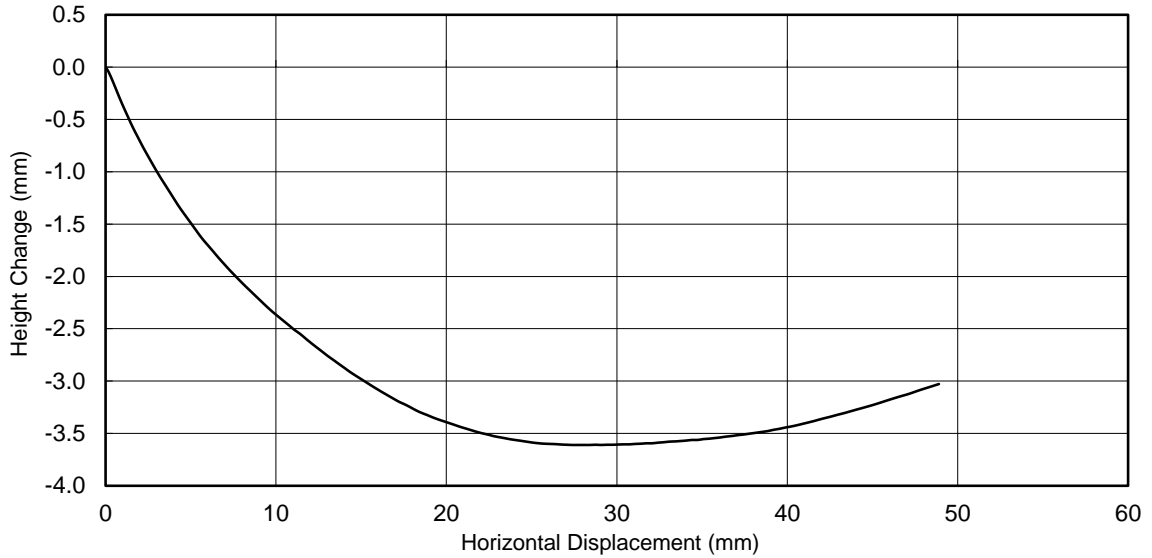


Site	LT521 FASNAKYLE 400KV SUBSTATION	Contract No.	26560
Client	Terra Tek Ltd - Airdrie	Hole ID	TP28
Engineer		Depth(m)	1.5
		Sample Type	B

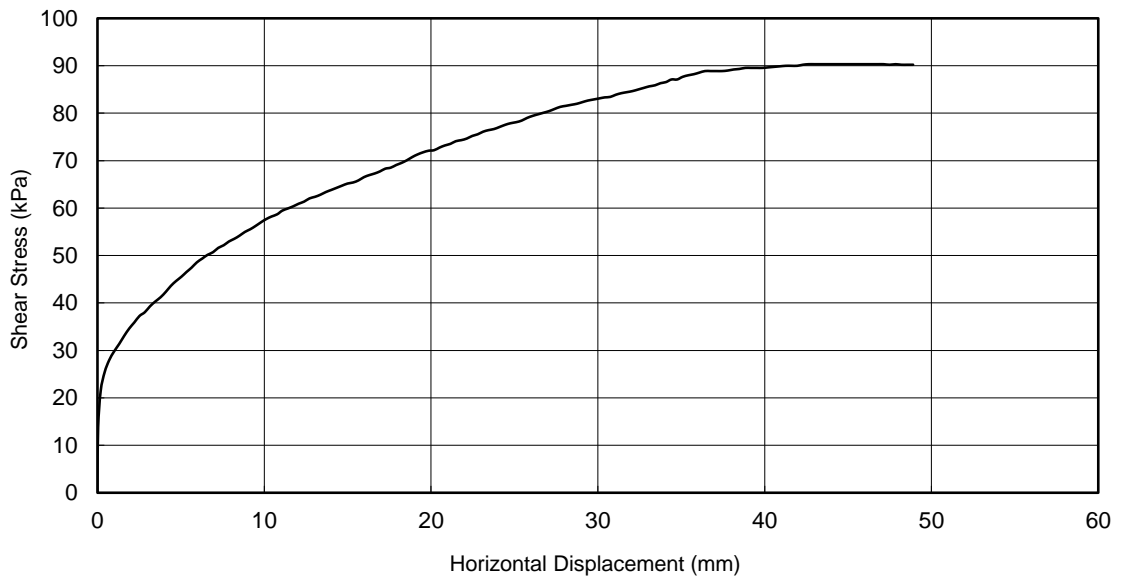
Specimen No. 2

Normal Pressure = 100 kPa

Height Change v Horizontal Displacement



Shear Stress v Horizontal Displacement



Originator	Checked & Approved	<b>Shear Strength by Direct Shear (large shearbox)</b>  BS EN ISO 17892-10:2018	 <b>Figure F35</b>  Sheet 4 of 5
VB	<i>dar</i> 05/03/2024		





Site	LT521 FASNAKYLE 400KV SUBSTATION	Contract No.	26560
Client	Terra Tek Ltd - Airdrie	Hole ID	TP28
Engineer		Depth(m)	1.5
		Sample Type	B

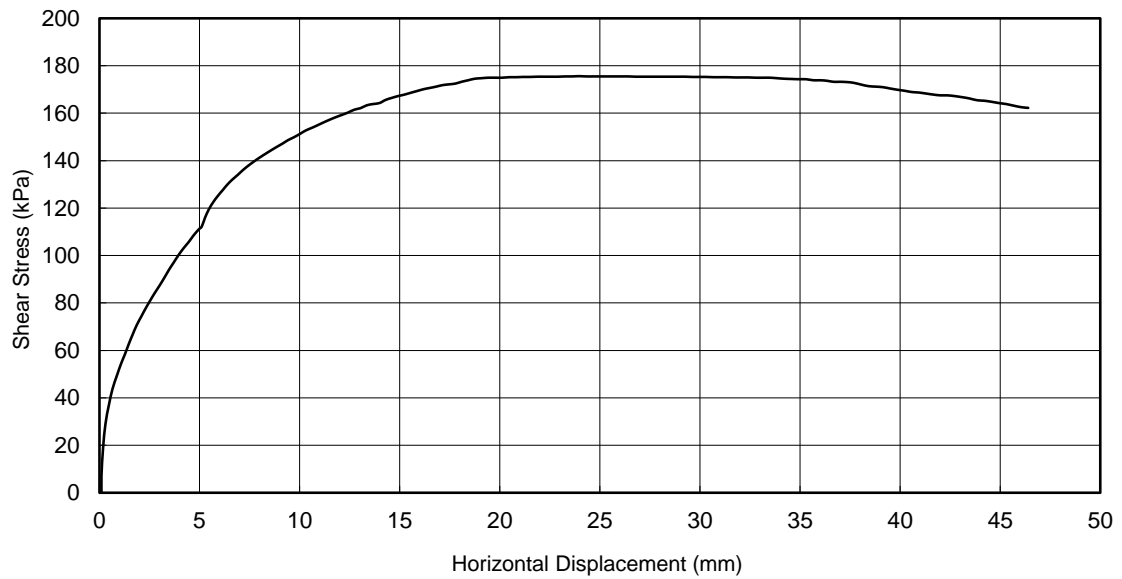
Specimen No. 3

Normal Pressure = 200 kPa

Height Change v Horizontal Displacement




Shear Stress v Horizontal Displacement


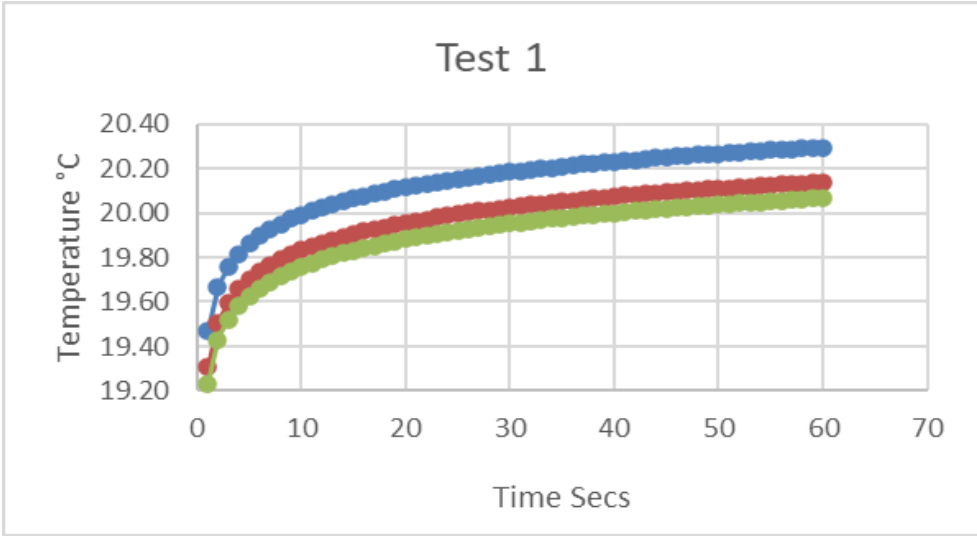
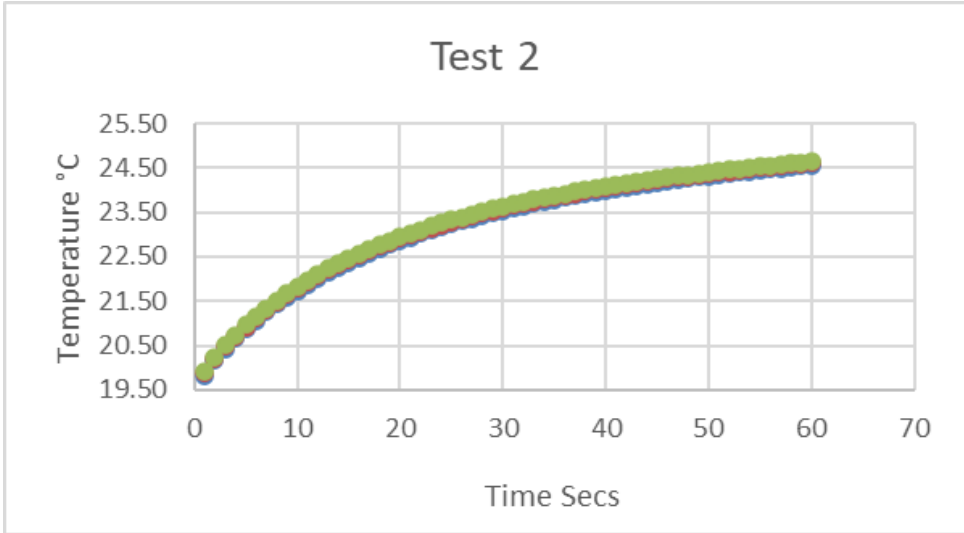



Originator	Checked & Approved	<b>Shear Strength by Direct Shear (large shearbox)</b>  BS EN ISO 17892-10:2018	 <b>Figure F35</b>  Sheet 5 of 5
VB	<i>dar</i> 05/03/2024		



				Site LT521 FASNAKYLE 400KV SUBSTATION																	Contract No 26560	
				Client SSEN Transmission																		
				Engineer Jacob's																		
Sample Identification				Lab Sample ID	Material Type	Material Condition	Percentage retained on 20mm sieve %	Water Content %	Specimen Height mm	Specimen Diameter mm	Specimen Mass g	Bulk Density Mg/m3	Dry Density Mg/m3	Soil Temperature °C	Method of Insertion	Heating Time s	Temperature Change During Heating °C	Calibration Factor	Thermal Conductivity W/mK	Thermal Resistivity mK/W	Description	
Hole	Depth m	Spec. Ref.	Sample Type																			
TP01	1.00		B	2013182	Soil	Recompacted	10	15.4	126.81	152.12	4929.77	2.14	1.85	18.68	Hand Pushed	60.0	0.83	1.01	1.81	0.55	Grey slightly sandy gravelly SILT/CLAY. Gravel is fine to coarse	
TP01	1.00		B	2013182	Soil	Recompacted	10	0.4	109.71	151.96	3640.82	1.83	1.82	19.20	Hand Pushed	60.0	4.72	1.02	0.23	4.32	Grey slightly sandy gravelly SILT/CLAY. Gravel is fine to coarse	
Accreditation M=Mcerts U=UKAS N=No accreditation							U	U	U	U	U	U	U	U	U	U	U	U	U	U		
Originator		Checked & Approved		<div>SUMMARY OF THERMAL CONDUCTIVITY / RESISTIVITY TESTS</div> <div>In accordance with ASTM D5334-14</div> <div>Water Content reported to BS EN ISO 17892-1:2014, Bulk Density reported to BS EN ISO 17892-2:2014/ BS 1377-2: 2022</div>																	Page 1 of 2	
MAB		05/03/2024																			Figure F36	




	Site	LT521 FASNAKYLE 400KV SUBSTATION	Contract No  26560
	Client	SSEN Transmission	
	Engineer	Jacob's	
<div><div><p>Test 1</p></div><div><p>Test 2</p></div></div>			
Originator	Checked & Approved	<b>SUMMARY OF THERMAL CONDUCTIVITY / RESISTIVITY TESTS</b>  In accordance with ASTM D5334-14 Water Content reported to BS EN ISO 17892-1:2014, Bulk Density reported to BS EN ISO 17892-2:2014/ BS 1377-2: 2022	
MAB	 05/03/2024		


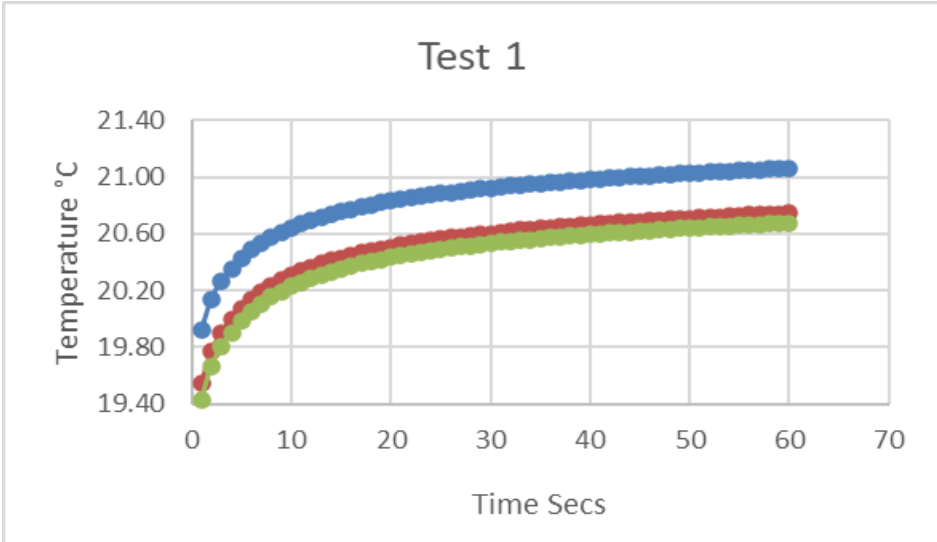
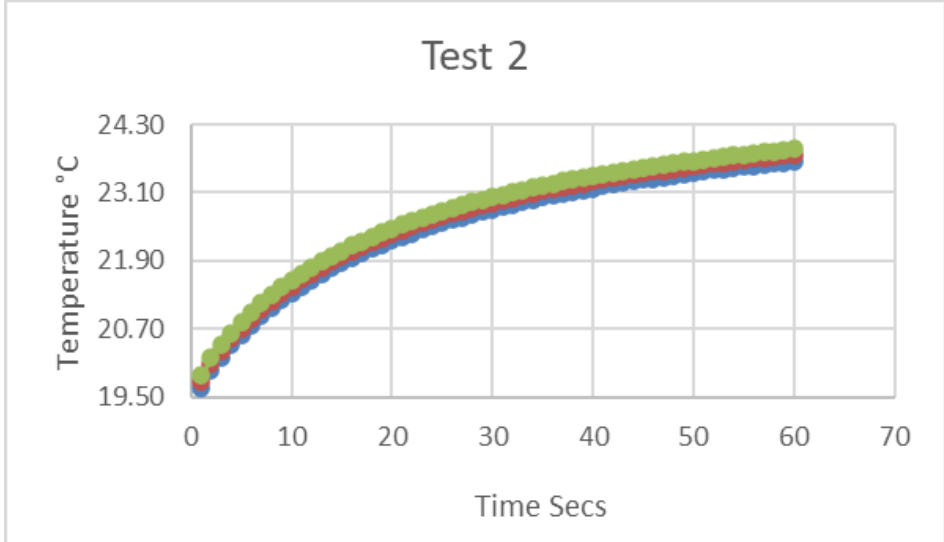



- A15075-2-2013189.xls


Lab Project No A15075-2 : 05/03/2024 16:18:15

				Site LT521 FASNAKYLE 400KV SUBSTATION																	Contract No 26560	
				Client SSEN Transmission																		
				Engineer Jacob's																		
Sample Identification				Lab Sample ID	Material Type	Material Condition	Percentage retained on 20mm sieve %	Water Content %	Specimen Height mm	Specimen Diameter mm	Specimen Mass g	Bulk Density Mg/m3	Dry Density Mg/m3	Soil Temperature °C	Method of Insertion	Heating Time s	Temperature Change During Heating °C	Calibration Factor	Thermal Conductivity W/mK	Thermal Resistivity mK/W	Description	
Hole	Depth m	Spec. Ref.	Sample Type																			
TP08	0.30		B	2013189	Soil	Recompacted	21	21.5	127.11	151.96	4528.63	1.96	1.61	18.97	Hand Pushed	60.0	1.20	1.01	1.68	0.59	Greyish brown sandy gravelly CLAY. Gravel is fine to coarse.	
TP08	0.30		B	2013189	Soil	Recompacted	21	0.1	127.55	152.19	4073.66	1.76	1.76	19.09	Hand Pushed	60.0	3.98	1.01	0.28	3.59	Greyish brown sandy gravelly CLAY. Gravel is fine to coarse.	
Accreditation M=Mcerts U=UKAS N=No accreditation							U	U	U	U	U	U	U	U	U	U	U	U	U	U		
Originator		Checked & Approved		<div>SUMMARY OF THERMAL CONDUCTIVITY / RESISTIVITY TESTS</div> <div>In accordance with ASTM D5334-14</div> <div>Water Content reported to BS EN ISO 17892-1:2014, Bulk Density reported to BS EN ISO 17892-2:2014/ BS 1377-2: 2022</div>																	Page 1 of 2	
MAB		05/03/2024																			Figure F37	



	Site	LT521 FASNAKYLE 400KV SUBSTATION	Contract No 26560
	Client	SSEN Transmission	
	Engineer	Jacob's	
<div><div><div>Test 1</div></div><div><div>Test 2</div></div></div>			
Originator	Checked & Approved	<div>SUMMARY OF THERMAL CONDUCTIVITY / RESISTIVITY TESTS</div> <div>In accordance with ASTM D5334-14</div> <div>Water Content reported to BS EN ISO 17892-1:2014, Bulk Density reported to BS EN ISO 17892-2:2014/ BS 1377-2: 2022</div>	Page 2 of 2
MAB	 05/03/2024		Figure F37

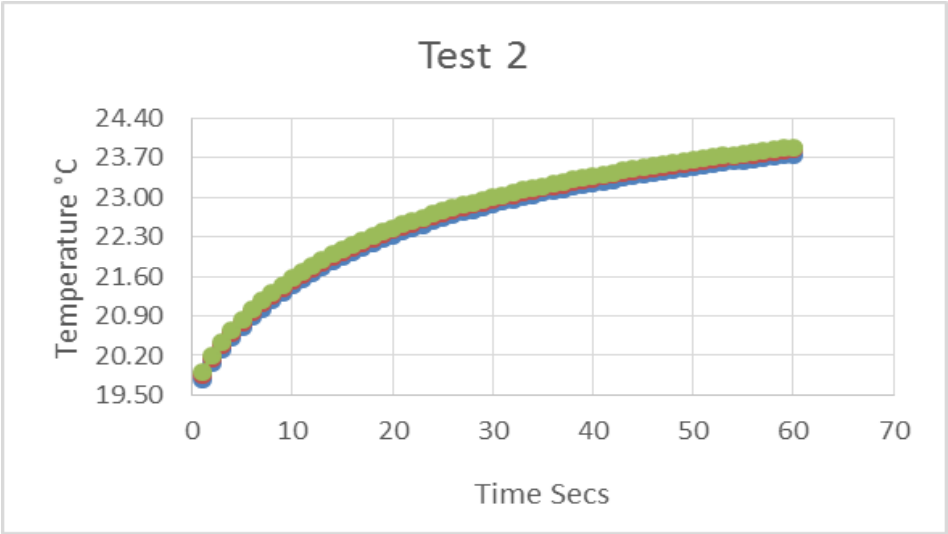
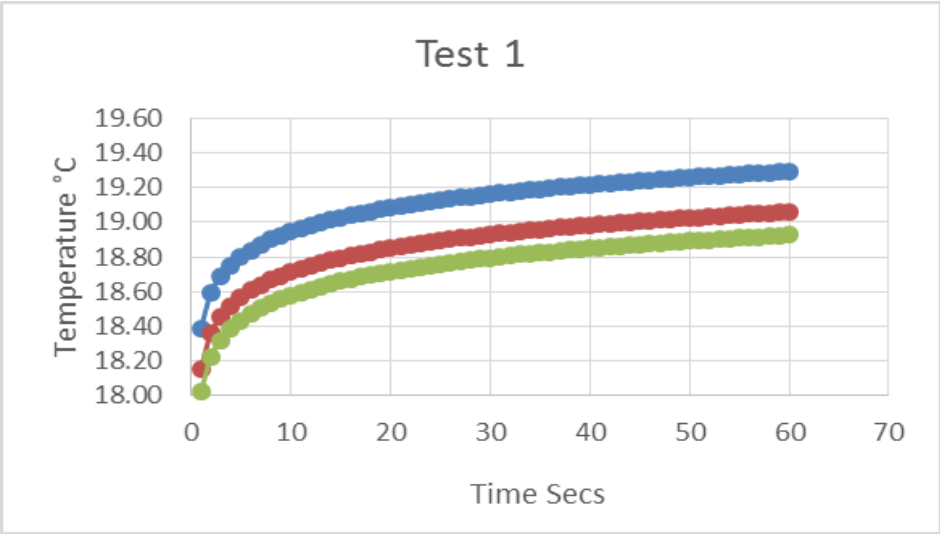


				Site LT521 FASNAKYLE 400KV SUBSTATION																Contract No 26560	
				Client SSEN Transmission																	
				Engineer Jacob's																	
Sample Identification				Lab Sample ID	Material Type	Material Condition	Percentage retained on 20mm sieve %	Water Content %	Specimen Height mm	Specimen Diameter mm	Specimen Mass g	Bulk Density Mg/m3	Dry Density Mg/m3	Soil Temperature °C	Method of Insertion	Heating Time s	Temperature Change During Heating °C	Calibration Factor	Thermal Conductivity W/mK	Thermal Resistivity mK/W	Description
Hole	Depth m	Spec. Ref.	Sample Type																		
TP10	1.00		B	2012883	Soil	Recompacted	7.5	27.7	126.78	152.32	4377.13	1.89	1.48	17.53	Hand Pushed	60.0	0.90	1.01	1.54	0.65	Dark grey sandy gravelly SILT. Gravel is fine to coarse.
TP10	1.00		B	2012883	Soil	Recompacted	7.5	0.7	126.81	152.12	3500.21	1.52	1.51	19.16	Hand Pushed	60.0	3.99	1.01	0.24	4.10	Dark grey sandy gravelly SILT. Gravel is fine to coarse.
Accreditation M=Mcerts U=UKAS N=No accreditation							U	U	U	U	U	U	U	U	U	U	U	U	U	U	
Originator		Checked & Approved		<b>SUMMARY OF THERMAL CONDUCTIVITY / RESISTIVITY TESTS</b>  In accordance with ASTM D5334-14 Water Content reported to BS EN ISO 17892-1:2014, Bulk Density reported to BS EN ISO 17892-2:2014/ BS 1377-2: 2022																Page 1 of 2	
MAB		05/03/2024																		Figure F38	






Site	LT521 FASNAKYLE 400KV SUBSTATION	Contract No  26560
Client	SSEN Transmission	
Engineer	Jacob's	



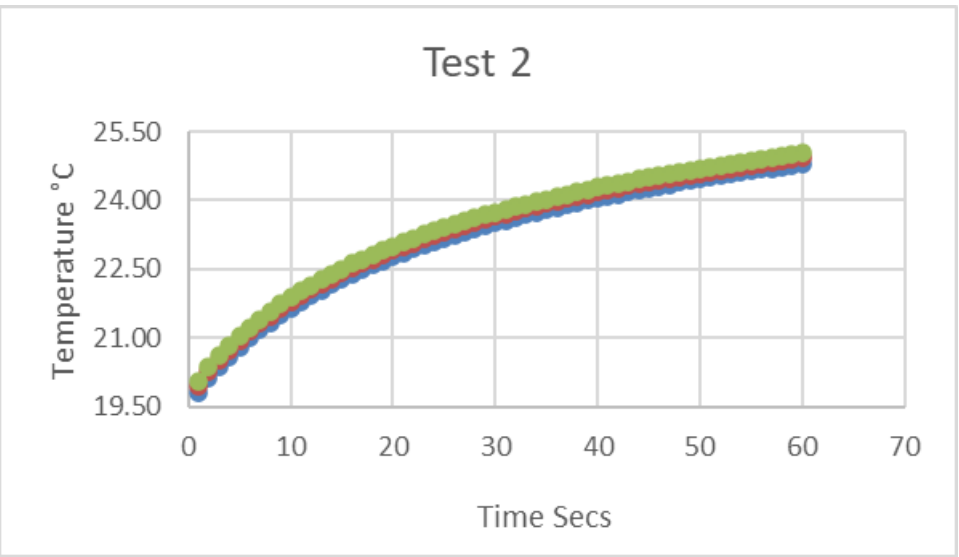
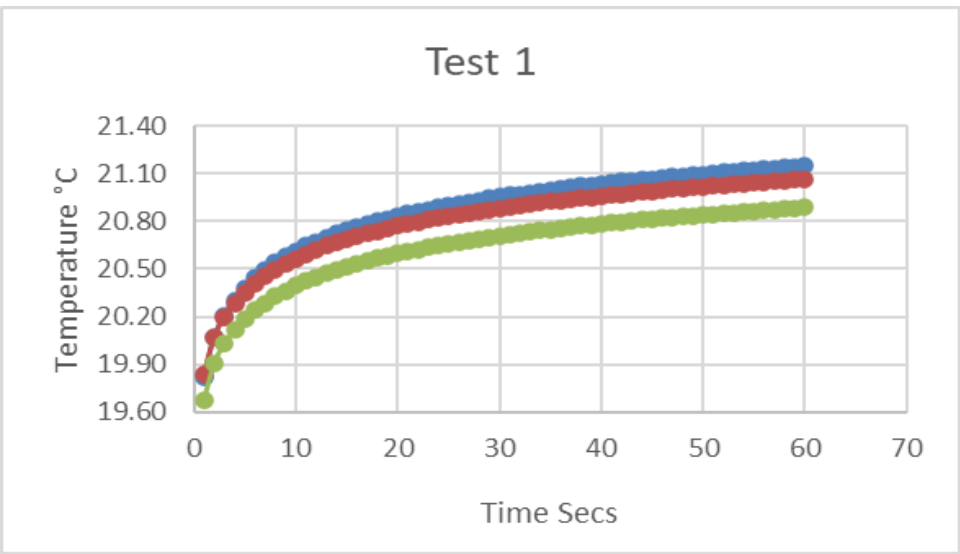
Originator	Checked & Approved	<b>SUMMARY OF THERMAL CONDUCTIVITY / RESISTIVITY TESTS</b>  In accordance with ASTM D5334-14 Water Content reported to BS EN ISO 17892-1:2014, Bulk Density reported to BS EN ISO 17892-2:2014/ BS 1377-2: 2022	Page 2 of 2
MAB	 05/03/2024		<b>Figure F38</b>




<div></div>				SiteLT521 FASNAKYLE 400KV SUBSTATION																	Contract No 26560	
				ClientSSEN Transmission																		
				EngineerJacob's																		
Sample Identification				Lab Sample ID	Material Type	Material Condition	Percentage retained on 20mm sieve %	Water Content %	Specimen Height mm	Specimen Diameter mm	Specimen Mass g	Bulk Density Mg/m3	Dry Density Mg/m3	Soil Temperature °C	Method of Insertion	Heating Time s	Temperature Change During Heating °C	Calibration Factor	Thermal Conductivity W/mK	Thermal Resistivity mK/W	Description	
Hole	Depth m	Spec. Ref.	Sample Type																			
TP12	0.50		B	2013194	Soil	Recompacted	19	39.2	127.26	151.66	4142.90	1.80	1.29	19.08	Hand Pushed	60.0	1.26	1.01	1.39	0.74	Brown slightly sandy gravelly CLAY. Gravel is fine to coarse.	
TP12	0.50		B	2013194	Soil	Recompacted	19	0.8	127.26	151.66	3219.08	1.40	1.39	19.25	Hand Pushed	60.0	4.98	1.02	0.16	6.37	Brown slightly sandy gravelly CLAY. Gravel is fine to coarse.	
Accreditation M=Mcerts U=UKAS N=No accreditation							U	U	U	U	U	U	U	U	U	U	U	U	U	U		
Originator		Checked & Approved		<div>SUMMARY OF THERMAL CONDUCTIVITY / RESISTIVITY TESTS</div> <div>In accordance with ASTM D5334-14</div> <div>Water Content reported to BS EN ISO 17892-1:2014, Bulk Density reported to BS EN ISO 17892-2:2014/ BS 1377-2: 2022</div>																	Page 1 of 2	
MAB		05/03/2024																			Figure F39	



	Site	LT521 FASNAKYLE 400KV SUBSTATION	Contract No  26560
	Client	SSEN Transmission	
	Engineer	Jacob's	




Originator	Checked & Approved	<b>SUMMARY OF THERMAL CONDUCTIVITY / RESISTIVITY TESTS</b>  In accordance with ASTM D5334-14 Water Content reported to BS EN ISO 17892-1:2014, Bulk Density reported to BS EN ISO 17892-2:2014/ BS 1377-2: 2022	Page 2 of 2
MAB	 05/03/2024		<b>Figure F39</b>



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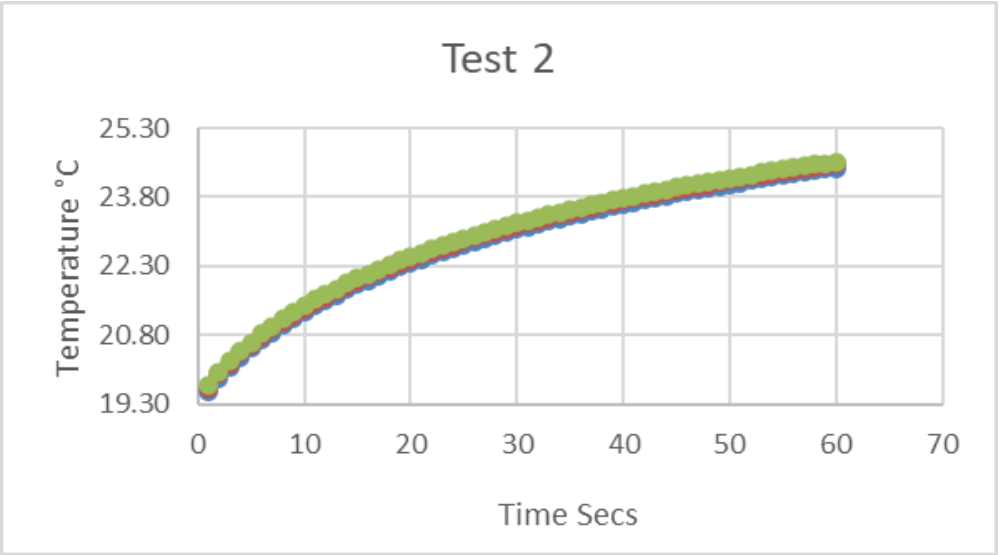
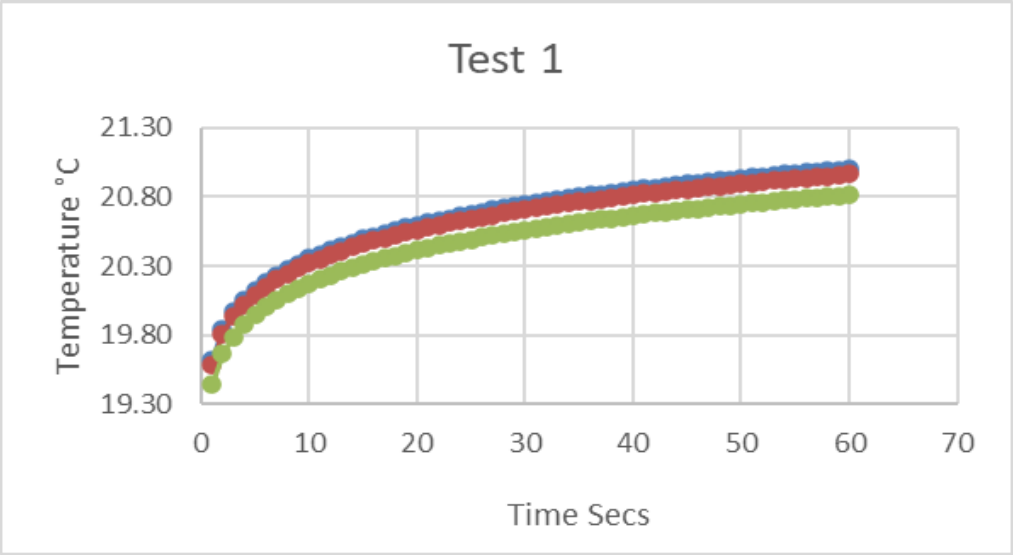
Lab Project No A15075-2 : 05/03/2024 16:18:15

				Site LT521 FASNAKYLE 400KV SUBSTATION																Contract No 26560			
				Client SSEN Transmission																			
				Engineer Jacob's																			
Sample Identification				Lab Sample ID	Material Type	Material Condition	Percentage retained on 20mm sieve %	Water Content %	Specimen Height mm	Specimen Diameter mm	Specimen Mass g	Bulk Density Mg/m3	Dry Density Mg/m3	Soil Temperature °C	Method of Insertion	Heating Time s	Temperature Change During Heating °C	Calibration Factor	Thermal Conductivity W/mK	Thermal Resistivity mK/W	Description		
Hole	Depth m	Spec. Ref.	Sample Type																				
TP13	0.40		B	2013197	Soil	Recompacted	1	145.8	127.55	152.19	2864.75	1.23	0.50	18.89	Hand Pushed	60.0	1.38	1.02	0.77	1.30	Brown ORGANIC MATERIAL with many rootlets.		
TP13	0.40		B	2013197	Soil	Recompacted	1	2.5	127.55	152.19	2369.27	1.02	1.00	18.96	Hand Pushed	60.0	4.87	1.01	0.14	7.20	Brown ORGANIC MATERIAL with many rootlets.		
Accreditation M=Mcerts U=UKAS N=No accreditation							U	U	U	U	U	U	U	U	U	U	U	U	U	U			
Originator		Checked & Approved		<div>SUMMARY OF THERMAL CONDUCTIVITY / RESISTIVITY TESTS</div> <div>In accordance with ASTM D5334-14</div> <div>Water Content reported to BS EN ISO 17892-1:2014, Bulk Density reported to BS EN ISO 17892-2:2014/ BS 1377-2: 2022</div>																	Page 1 of 2		
MAB		05/03/2024																			Figure F40		






Site	LT521 FASNAKYLE 400KV SUBSTATION	Contract No  26560
Client	SSEN Transmission	
Engineer	Jacob's	


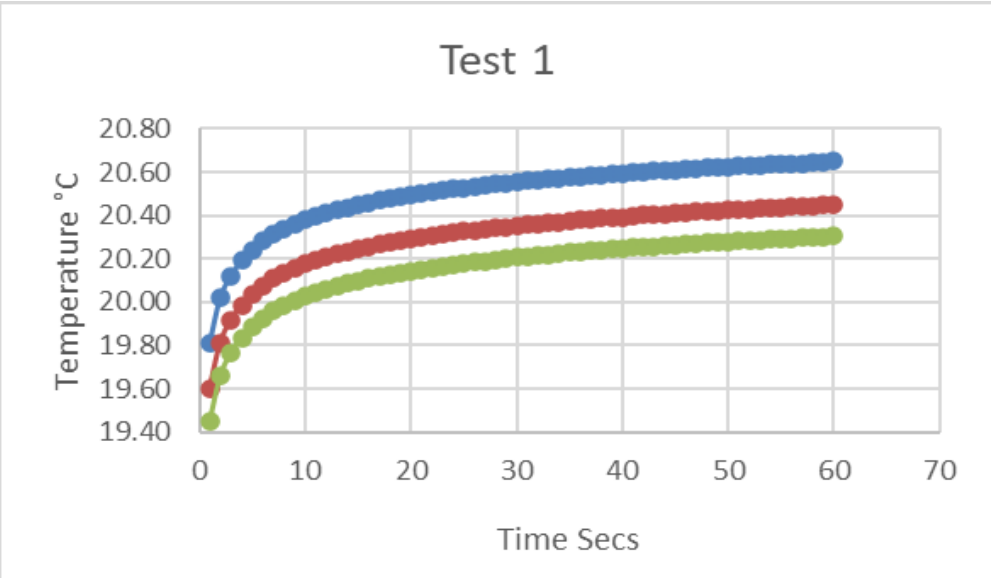
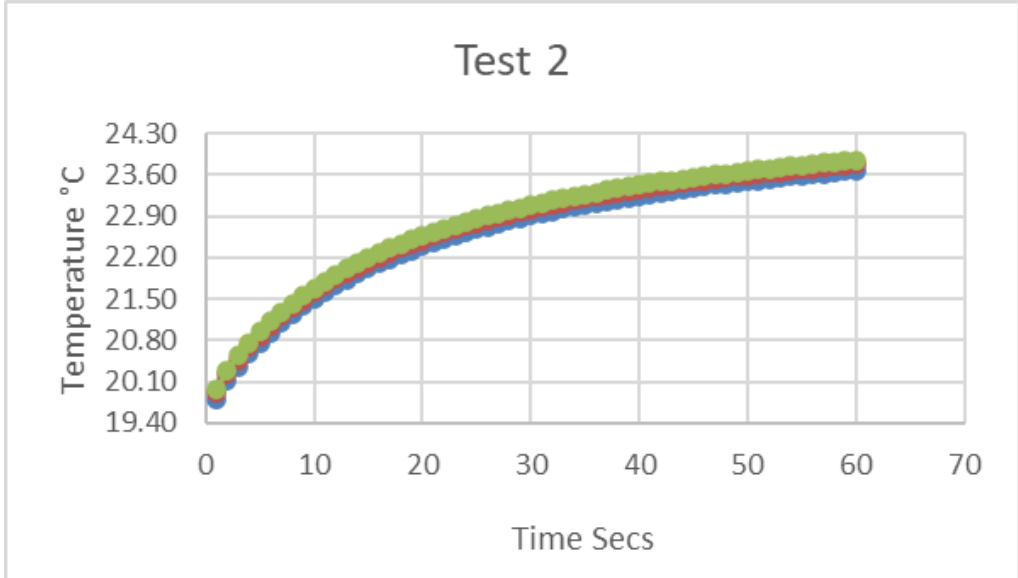



Originator	Checked & Approved	<b>SUMMARY OF THERMAL CONDUCTIVITY / RESISTIVITY TESTS</b>  In accordance with ASTM D5334-14 Water Content reported to BS EN ISO 17892-1:2014, Bulk Density reported to BS EN ISO 17892-2:2014/ BS 1377-2: 2022	Page 2 of 2
MAB	 05/03/2024		<b>Figure F40</b>



				Site LT521 FASNAKYLE 400KV SUBSTATION																Contract No  26560		
				Client SSEN Transmission																		
				Engineer Jacob's																		
Sample Identification				Lab Sample ID	Material Type	Material Condition	Percentage retained on 20mm sieve  %	Water Content  %	Specimen Height  mm	Specimen Diameter  mm	Specimen Mass  g	Bulk Density  Mg/m3	Dry Density  Mg/m3	Soil Temperature  °C	Method of Insertion	Heating Time  s	Temperature Change During Heating  °C	Calibration Factor	Thermal Conductivity  W/mK	Thermal Resistivity  mK/W	Description	
Hole	Depth m	Spec. Ref.	Sample Type																			
TP14	0.50		B	2013199	Soil	Recompacted	29	12.1	127.03	152.07	5072.08	2.20	1.96	18.96	Hand Pushed	60.0	0.85	1.01	2.16	0.46	Brown slightly clayey gravely SAND. Gravel is fine to coarse.	
TP14	0.50		B	2013199	Soil	Recompacted	29	0.2	127.26	151.66	4570.00	1.99	1.99	19.21	Hand Pushed	60.0	3.86	1.01	0.31	3.17	Brown slightly clayey gravely SAND. Gravel is fine to coarse.	
Accreditation M=Mcerts U=UKAS N=No accreditation							U	U	U	U	U	U	U	U	U	U	U	U	U	U		
Originator		Checked & Approved		<div>SUMMARY OF THERMAL CONDUCTIVITY / RESISTIVITY TESTS</div> <div>In accordance with ASTM D5334-14</div> <div>Water Content reported to BS EN ISO 17892-1:2014, Bulk Density reported to BS EN ISO 17892-2:2014/ BS 1377-2: 2022</div>																	Page 1 of 2	
MAB		05/03/2024																			Figure F41	




	Site		LT521 FASNAKYLE 400KV SUBSTATION	Contract No  26560
	Client		SSEN Transmission	
	Engineer		Jacob's	
<div><div><div>Test 1</div></div><div><div>Test 2</div></div></div>				
Originator	Checked & Approved	SUMMARY OF THERMAL CONDUCTIVITY / RESISTIVITY TESTS		Page 2 of 2
MAB	 05/03/2024	In accordance with ASTM D5334-14 Water Content reported to BS EN ISO 17892-1:2014, Bulk Density reported to BS EN ISO 17892-2:2014/ BS 1377-2: 2022		Figure F41


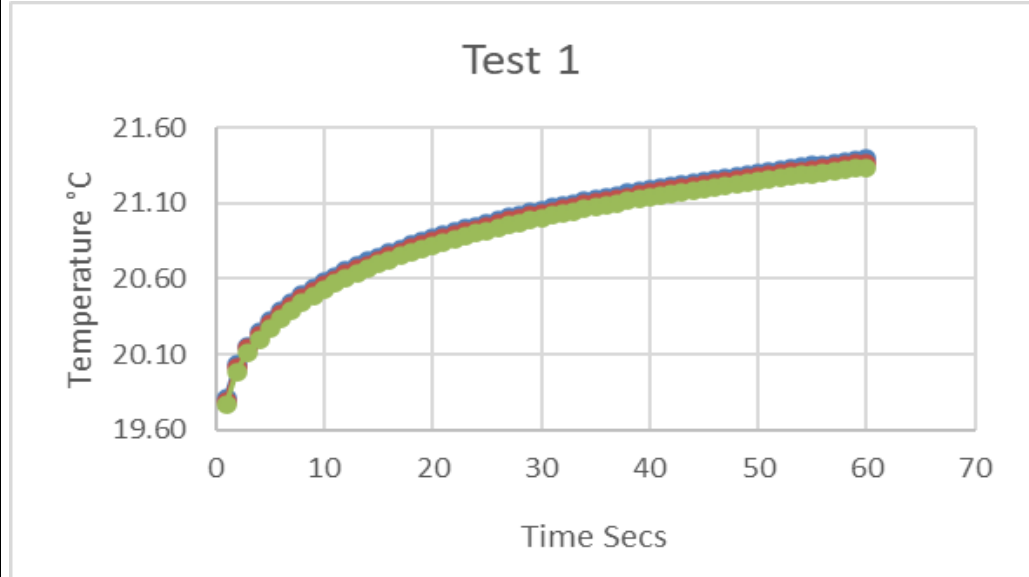
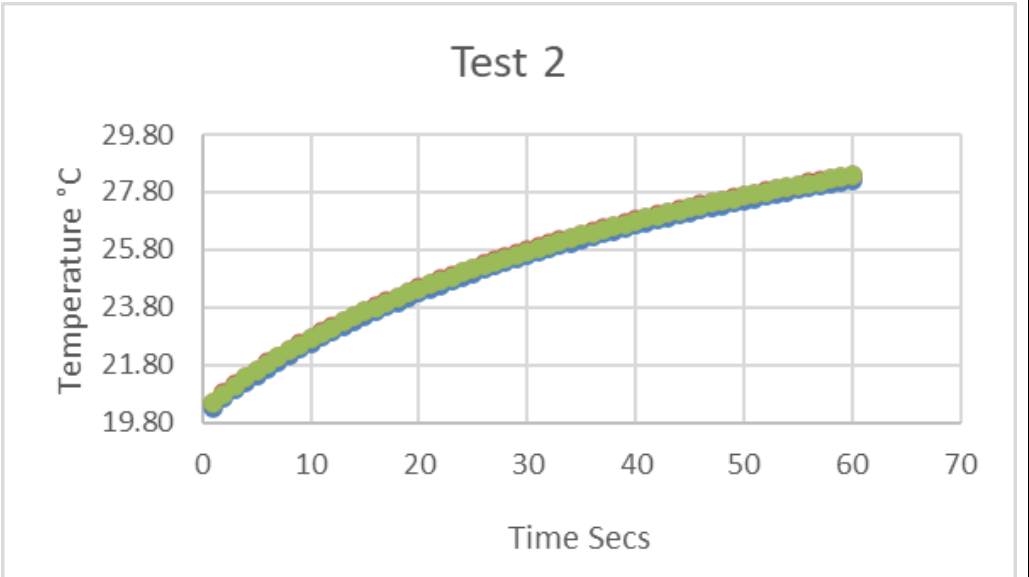



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Lab Project No A15075-2 : 05/03/2024 16:18:15

				Site LT521 FASNAKYLE 400KV SUBSTATION																Contract No 26560		
				Client SSEN Transmission																		
				Engineer Jacob's																		
Sample Identification				Lab Sample ID	Material Type	Material Condition	Percentage retained on 20mm sieve %	Water Content %	Specimen Height mm	Specimen Diameter mm	Specimen Mass g	Bulk Density Mg/m3	Dry Density Mg/m3	Soil Temperature °C	Method of Insertion	Heating Time s	Temperature Change During Heating °C	Calibration Factor	Thermal Conductivity W/mK	Thermal Resistivity mK/W	Description	
Hole	Depth m	Spec. Ref.	Sample Type																			
TP15	1.00		B	2013201	Soil	Recompacted	2	458.8	126.81	152.12	2276.86	0.99	0.18	19.13	Hand Pushed	60.0	1.58	1.01	0.55	1.77	Very dark brown organic matter	
TP15	1.00		B	2013201	Soil	Recompacted	2	5.8	127.11	151.96	1294.31	0.56	0.53	19.76	Hand Pushed	60.0	7.90	1.01	0.06	16.66	Very dark brown organic matter	
Accreditation M=Mcerts U=UKAS N=No accreditation							U	U	U	U	U	U	U	U	U	U	U	U	U	U		
Originator		Checked & Approved		<div>SUMMARY OF THERMAL CONDUCTIVITY / RESISTIVITY TESTS</div> <div>In accordance with ASTM D5334-14</div> <div>Water Content reported to BS EN ISO 17892-1:2014, Bulk Density reported to BS EN ISO 17892-2:2014/ BS 1377-2: 2022</div>																	Page 1 of 2	
MAB		05/03/2024																			Figure F42	




	Site	LT521 FASNAKYLE 400KV SUBSTATION	Contract No  26560	
	Client	SSEN Transmission		
	Engineer	Jacob's		
<div><div><div>Test 1</div></div><div><div>Test 2</div></div></div>				
Originator	Checked & Approved	<div><div>SUMMARY OF THERMAL CONDUCTIVITY / RESISTIVITY TESTS</div><div>In accordance with ASTM D5334-14</div><div>Water Content reported to BS EN ISO 17892-1:2014, Bulk Density reported to BS EN ISO 17892-2:2014/ BS 1377-2: 2022</div></div>		Page 2 of 2
MAB	 05/03/2024			Figure F42



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Lab Project No A15075-1 : 05/03/2024 16:18:15

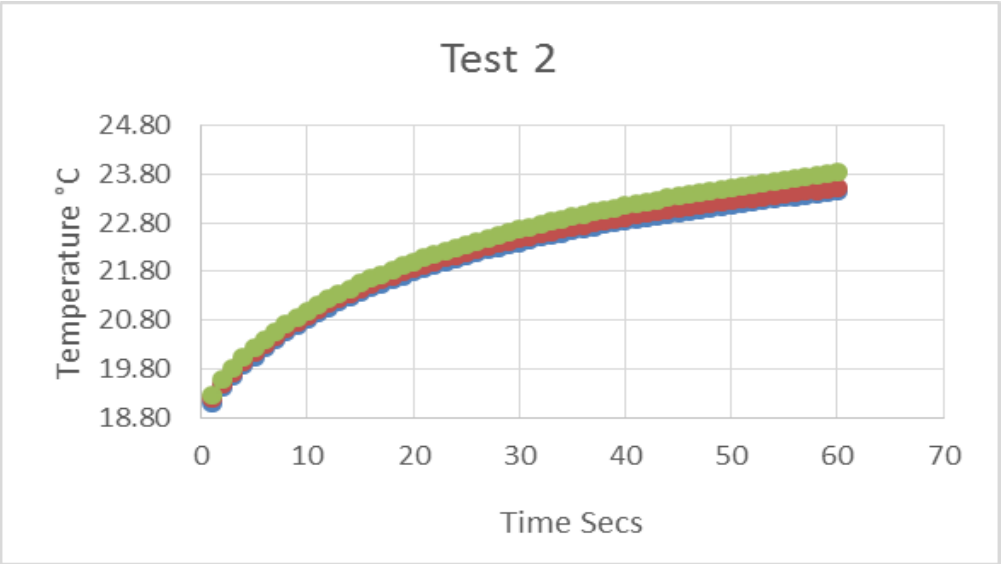
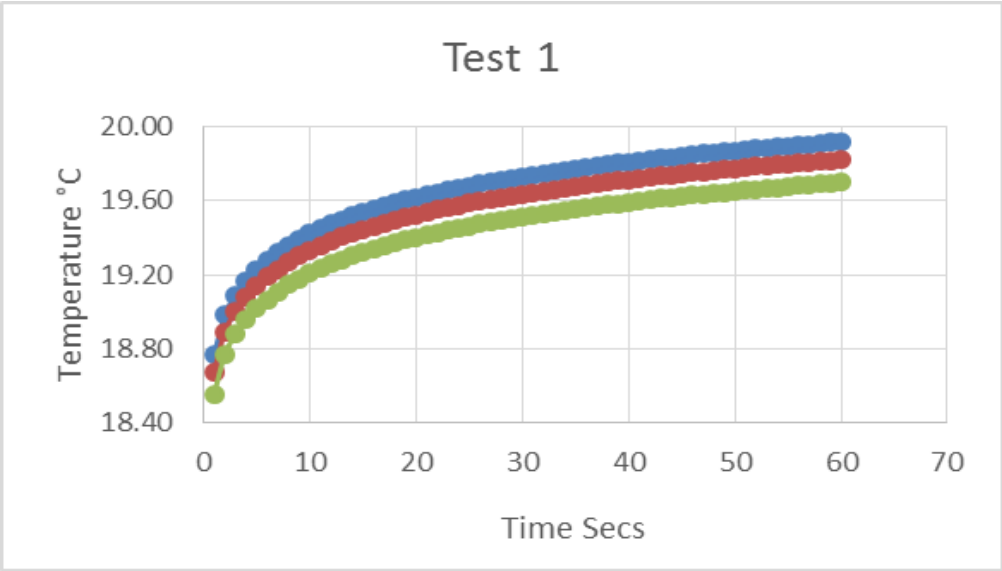
				Site LT521 FASNAKYLE 400KV SUBSTATION																	Contract No 26560	
				Client SSEN Transmission																		
				Engineer Jacob's																		
Sample Identification				Lab Sample ID	Material Type	Material Condition	Percentage retained on 20mm sieve %	Water Content %	Specimen Height mm	Specimen Diameter mm	Specimen Mass g	Bulk Density Mg/m3	Dry Density Mg/m3	Soil Temperature °C	Method of Insertion	Heating Time s	Temperature Change During Heating °C	Calibration Factor	Thermal Conductivity W/mK	Thermal Resistivity mK/W	Description	
Hole	Depth m	Spec. Ref.	Sample Type																			
TP20	0.50		B	2012888	Soil	Recompacted	44	52.1	127.18	151.94	3699.81	1.60	1.05	18.01	Hand Pushed	60.0	1.14	1.01	1.11	0.89	Very dark brown very organic slightly sandy fine to coarse GRAVEL.	
TP20	0.50		B	2012888	Soil	Recompacted	44	1.2	126.89	152.34	3239.41	1.40	1.38	18.51	Hand Pushed	60.0	4.40	1.02	0.19	5.22	Very dark brown very organic slightly sandy fine to coarse GRAVEL.	
Accreditation M=Mcerts U=UKAS N=No accreditation							U	U	U	U	U	U	U	U	U	U	U	U	U	U		
Originator		Checked & Approved		<div>SUMMARY OF THERMAL CONDUCTIVITY / RESISTIVITY TESTS</div> <div>In accordance with ASTM D5334-14</div> <div>Water Content reported to BS EN ISO 17892-1:2014, Bulk Density reported to BS EN ISO 17892-2:2014/ BS 1377-2: 2022</div>																	Page 1 of 2	
MAB		05/03/2024																			Figure F43	





Site	LT521 FASNAKYLE 400KV SUBSTATION
Client	SSEN Transmission
Engineer	Jacob's

Contract No
26560




Originator	Checked & Approved
MAB	 05/03/2024


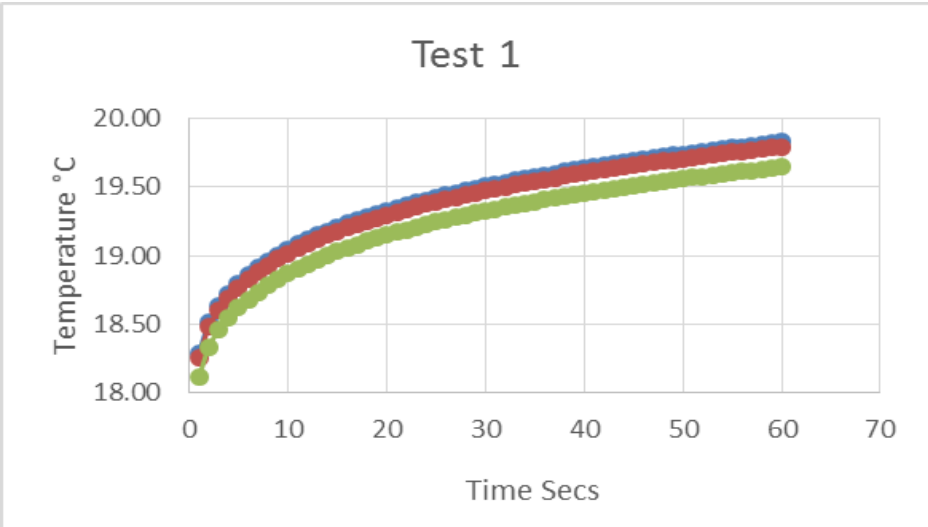
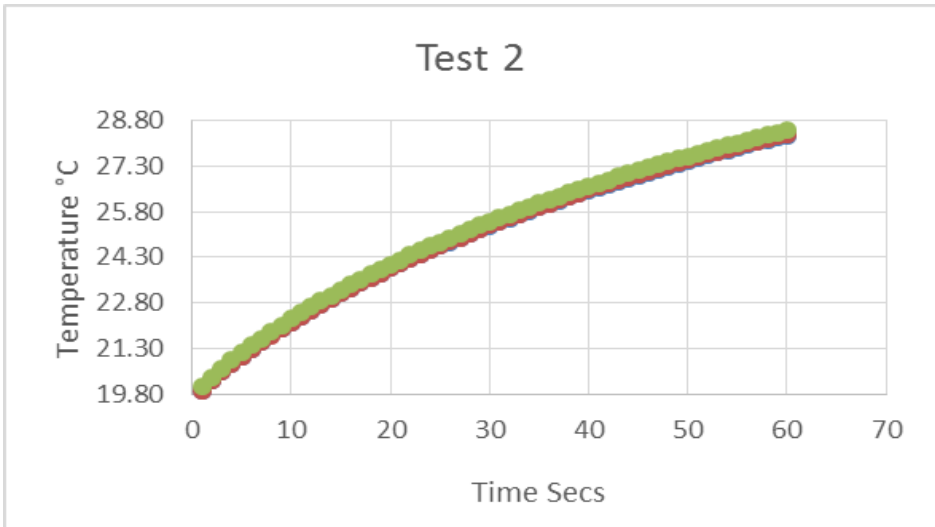

<b>SUMMARY OF THERMAL CONDUCTIVITY / RESISTIVITY TESTS</b>	
In accordance with ASTM D5334-14	
Water Content reported to BS EN ISO 17892-1:2014, Bulk Density reported to BS EN ISO 17892-2:2014/ BS 1377-2: 2022	

Page 2 of 2
<b>Figure F43</b>




				Site LT521 FASNAKYLE 400KV SUBSTATION																	Contract No 26560	
				Client SSEN Transmission																		
				Engineer Jacob's																		
Sample Identification				Lab Sample ID	Material Type	Material Condition	Percentage retained on 20mm sieve %	Water Content %	Specimen Height mm	Specimen Diameter mm	Specimen Mass g	Bulk Density Mg/m3	Dry Density Mg/m3	Soil Temperature °C	Method of Insertion	Heating Time s	Temperature Change During Heating °C	Calibration Factor	Thermal Conductivity W/mK	Thermal Resistivity mK/W	Description	
Hole	Depth m	Spec. Ref.	Sample Type																			
TP26	1.00		B	2012894	Soil	Recompacted	0	291.7	126.89	152.34	2388.27	1.03	0.26	17.56	Hand Pushed	60.0	1.53	1.01	0.59	1.68	Very dark brown organic material with rootlets.	
TP26	1.00		B	2012894	Soil	Recompacted	0	5.1	111.00	152.07	2016.04	0.51	0.49	19.30	Hand Pushed	60.0	8.42	1.01	0.04	22.25	Very dark brown organic material with rootlets.	
Accreditation M=Mcerts U=UKAS N=No accreditation							U	U	U	U	U	U	U	U	U	U	U	U	U	U		
Originator		Checked & Approved		<div>SUMMARY OF THERMAL CONDUCTIVITY / RESISTIVITY TESTS</div> <div>In accordance with ASTM D5334-14</div> <div>Water Content reported to BS EN ISO 17892-1:2014, Bulk Density reported to BS EN ISO 17892-2:2014/ BS 1377-2: 2022</div>																	Page 1 of 2	
MAB		05/03/2024																			Figure F44	


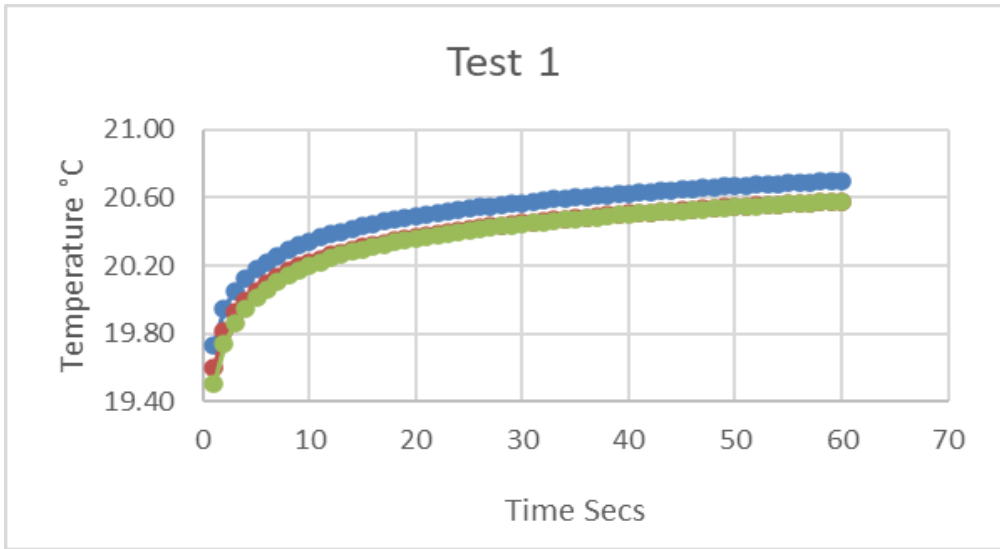
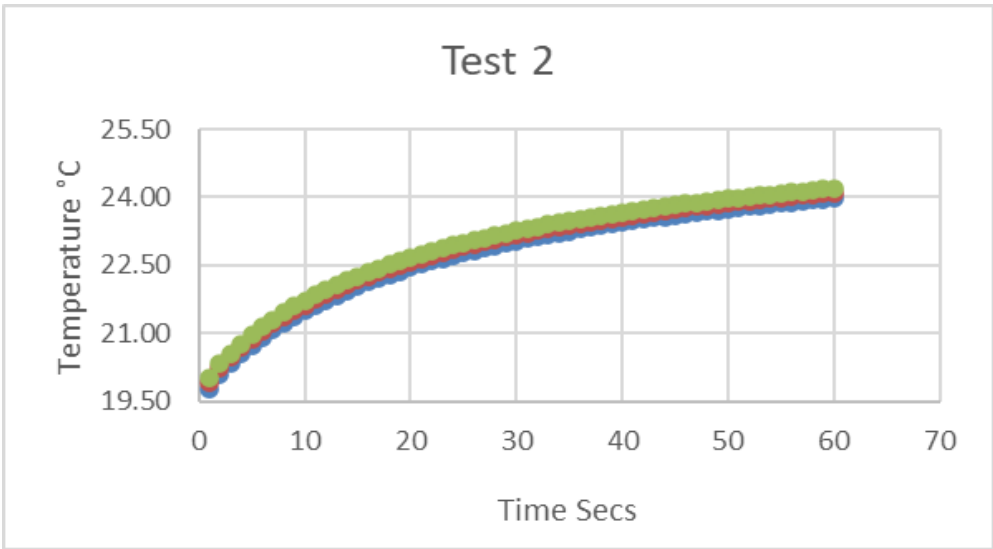



	Site	LT521 FASNAKYLE 400KV SUBSTATION	Contract No  26560
	Client	SSEN Transmission	
	Engineer	Jacob's	
<div><div><p>Test 1</p></div><div><p>Test 2</p></div></div>			
Originator	Checked & Approved	<b>SUMMARY OF THERMAL CONDUCTIVITY / RESISTIVITY TESTS</b>  In accordance with ASTM D5334-14 Water Content reported to BS EN ISO 17892-1:2014, Bulk Density reported to BS EN ISO 17892-2:2014/ BS 1377-2: 2022	Page 2 of 2
MAB	 05/03/2024		<b>Figure F44</b>




<div></div>				SiteLT521 FASNAKYLE 400KV SUBSTATION																	Contract No 26560	
				ClientSSEN Transmission																		
				EngineerJacob's																		
Sample Identification				Lab Sample ID	Material Type	Material Condition	Percentage retained on 20mm sieve %	Water Content %	Specimen Height mm	Specimen Diameter mm	Specimen Mass g	Bulk Density Mg/m3	Dry Density Mg/m3	Soil Temperature °C	Method of Insertion	Heating Time s	Temperature Change During Heating °C	Calibration Factor	Thermal Conductivity W/mK	Thermal Resistivity mK/W	Description	
Hole	Depth m	Spec. Ref.	Sample Type																			
TP27	0.20		B	2013208	Soil	Recompacted	20	26.1	126.89	152.34	4299.52	1.86	1.48	18.95	Hand Pushed	60.0	1.00	1.01	1.66	0.60	Brown gravelly sandy CLAY. Gravel is fine to coarse.	
TP27	0.20		B	2013208	Soil	Recompacted	20	0.1	127.03	152.07	3748.19	1.62	1.62	19.23	Hand Pushed	60.0	4.18	1.02	0.24	4.15	Brown gravelly sandy CLAY. Gravel is fine to coarse.	
Accreditation M=Mcerts U=UKAS N=No accreditation							U	U	U	U	U	U	U	U	U	U	U	U	U	U		
Originator		Checked & Approved		<div>SUMMARY OF THERMAL CONDUCTIVITY / RESISTIVITY TESTS</div> <div>In accordance with ASTM D5334-14</div> <div>Water Content reported to BS EN ISO 17892-1:2014, Bulk Density reported to BS EN ISO 17892-2:2014/ BS 1377-2: 2022</div>																	Page 1 of 2	
MAB		05/03/2024																			Figure F45	


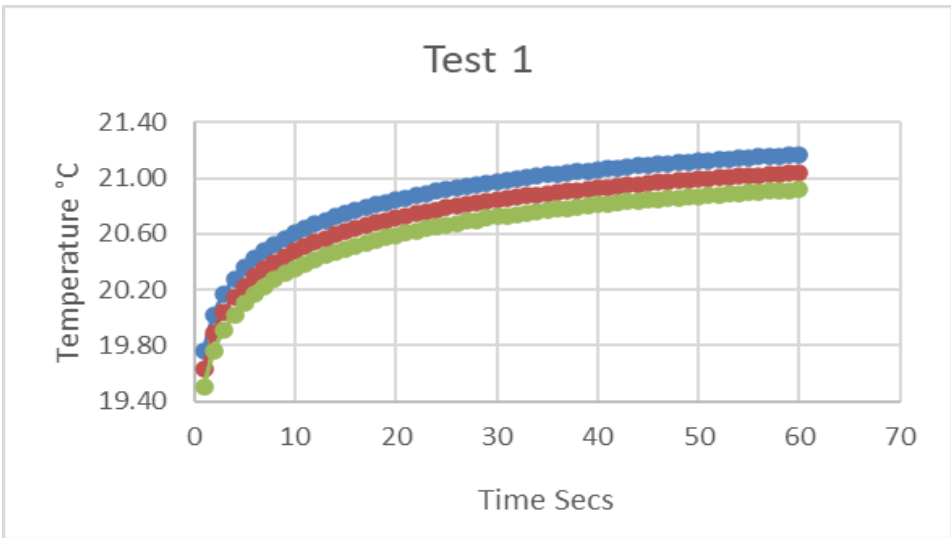
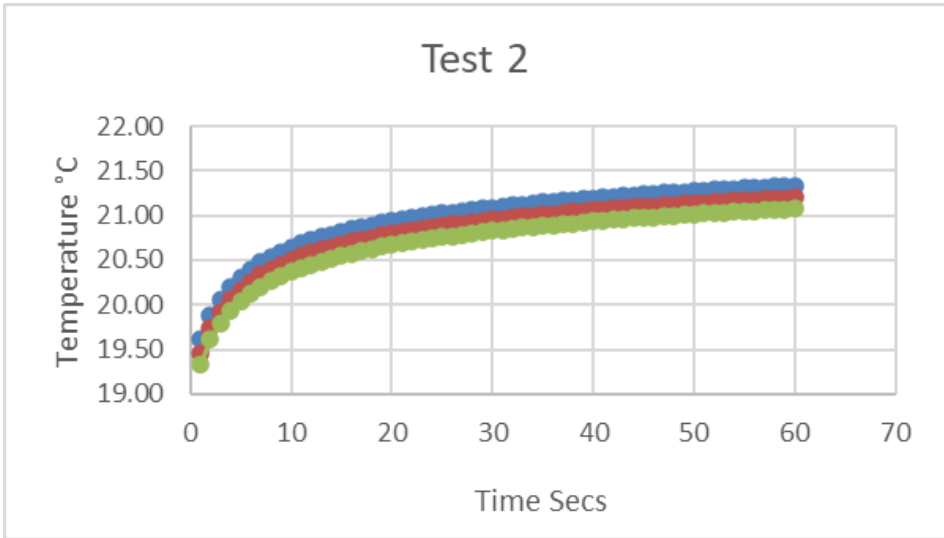



	Site	LT521 FASNAKYLE 400KV SUBSTATION	Contract No  26560
	Client	SSEN Transmission	
	Engineer	Jacob's	
<div><div><p>Test 1</p></div><div><p>Test 2</p></div></div>			
Originator	Checked & Approved	<b>SUMMARY OF THERMAL CONDUCTIVITY / RESISTIVITY TESTS</b>  In accordance with ASTM D5334-14 Water Content reported to BS EN ISO 17892-1:2014, Bulk Density reported to BS EN ISO 17892-2:2014/ BS 1377-2: 2022	Page 2 of 2
MAB	 05/03/2024		<b>Figure F45</b>




<div></div>				SiteLT521 FASNAKYLE 400KV SUBSTATION																	Contract No 26560	
				ClientSSEN Transmission																		
				EngineerJacob's																		
Sample Identification				Lab Sample ID	Material Type	Material Condition	Percentage retained on 20mm sieve %	Water Content %	Specimen Height mm	Specimen Diameter mm	Specimen Mass g	Bulk Density Mg/m3	Dry Density Mg/m3	Soil Temperature °C	Method of Insertion	Heating Time s	Temperature Change During Heating °C	Calibration Factor	Thermal Conductivity W/mK	Thermal Resistivity mK/W	Description	
Hole	Depth m	Spec. Ref.	Sample Type																			
TP28	1.00		B	2012896	Soil	Recompacted	33	18.2	126.89	152.34	4635.82	2.00	1.69	18.96	Hand Pushed	60.0	1.41	1.01	1.16	0.85	Brown silty very sandy fine to coarse GRAVEL.	
TP28	1.00		B	2012896	Soil	Recompacted	33	5.1	127.03	152.07	4239.66	1.84	1.75	18.79	Hand Pushed	60.0	1.73	1.01	0.88	1.13	Brown silty very sandy fine to coarse GRAVEL.	
Accreditation M=Mcerts U=UKAS N=No accreditation							U	U	U	U	U	U	U	U	U	U	U	U	U	U		
Originator		Checked & Approved		<div>SUMMARY OF THERMAL CONDUCTIVITY / RESISTIVITY TESTS</div> <div>In accordance with ASTM D5334-14</div> <div>Water Content reported to BS EN ISO 17892-1:2014, Bulk Density reported to BS EN ISO 17892-2:2014/ BS 1377-2: 2022</div>																	Page 1 of 2	
MAB		05/03/2024																			Figure F46	


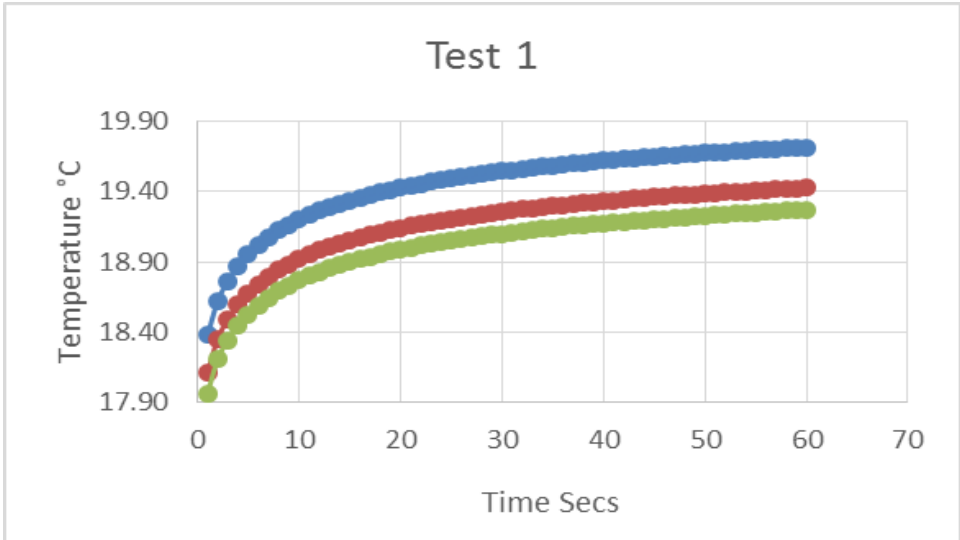
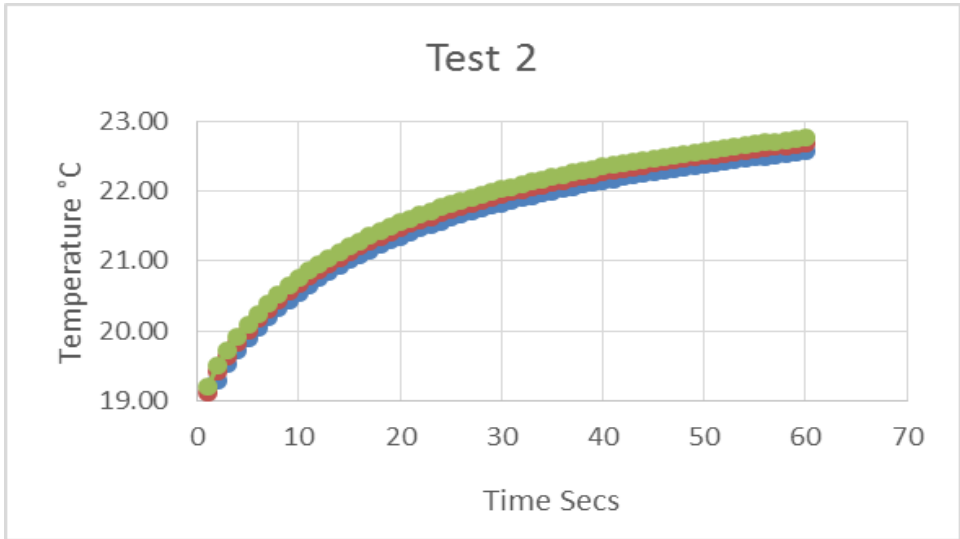



	Site	LT521 FASNAKYLE 400KV SUBSTATION	Contract No  26560
	Client	SSEN Transmission	
	Engineer	Jacob's	
<div><div><div>Test 1</div></div><div><div>Test 2</div></div></div>			
Originator	Checked & Approved	<div><div>SUMMARY OF THERMAL CONDUCTIVITY / RESISTIVITY TESTS</div><div>In accordance with ASTM D5334-14</div><div>Water Content reported to BS EN ISO 17892-1:2014, Bulk Density reported to BS EN ISO 17892-2:2014/ BS 1377-2: 2022</div></div>	Page 2 of 2
MAB	 05/03/2024		Figure F46



				Site LT521 FASNAKYLE 400KV SUBSTATION																	Contract No 26560	
				Client SSEN Transmission																		
				Engineer Jacob's																		
Sample Identification				Lab Sample ID	Material Type	Material Condition	Percentage retained on 20mm sieve %	Water Content %	Specimen Height mm	Specimen Diameter mm	Specimen Mass g	Bulk Density Mg/m3	Dry Density Mg/m3	Soil Temperature °C	Method of Insertion	Heating Time s	Temperature Change During Heating °C	Calibration Factor	Thermal Conductivity W/mK	Thermal Resistivity mK/W	Description	
Hole	Depth m	Spec. Ref.	Sample Type																			
TP30	1.00		B	2012901	Soil	Recompacted	21	17.9	127.26	151.66	4873.80	2.11	1.79	17.49	Hand Pushed	60.0	1.31	1.02	1.38	0.72	Dark brown sandy gravelly CLAY. Gravel is fine to coarse.	
TP30	1.00		B	2012901	Soil	Recompacted	21	0.1	127.11	151.96	4140.65	1.80	1.80	18.42	Hand Pushed	60.0	3.57	1.02	0.31	3.17	Dark brown sandy gravelly CLAY. Gravel is fine to coarse.	
Accreditation M=Mcerts U=UKAS N=No accreditation							U	U	U	U	U	U	U	U	U	U	U	U	U	U		
Originator		Checked & Approved		<div>SUMMARY OF THERMAL CONDUCTIVITY / RESISTIVITY TESTS</div> <div>In accordance with ASTM D5334-14</div> <div>Water Content reported to BS EN ISO 17892-1:2014, Bulk Density reported to BS EN ISO 17892-2:2014/ BS 1377-2: 2022</div>																	Page 1 of 2	
MAB		05/03/2024																			Figure F47	




	Site	LT521 FASNAKYLE 400KV SUBSTATION	Contract No  26560
	Client	SSEN Transmission	
	Engineer	Jacob's	
<div><div><p>Test 1</p></div><div><p>Test 2</p></div></div>			
Originator	Checked & Approved	<b>SUMMARY OF THERMAL CONDUCTIVITY / RESISTIVITY TESTS</b>  In accordance with ASTM D5334-14 Water Content reported to BS EN ISO 17892-1:2014, Bulk Density reported to BS EN ISO 17892-2:2014/ BS 1377-2: 2022	
MAB	 05/03/2024		



- A15075-1 2012904.xls

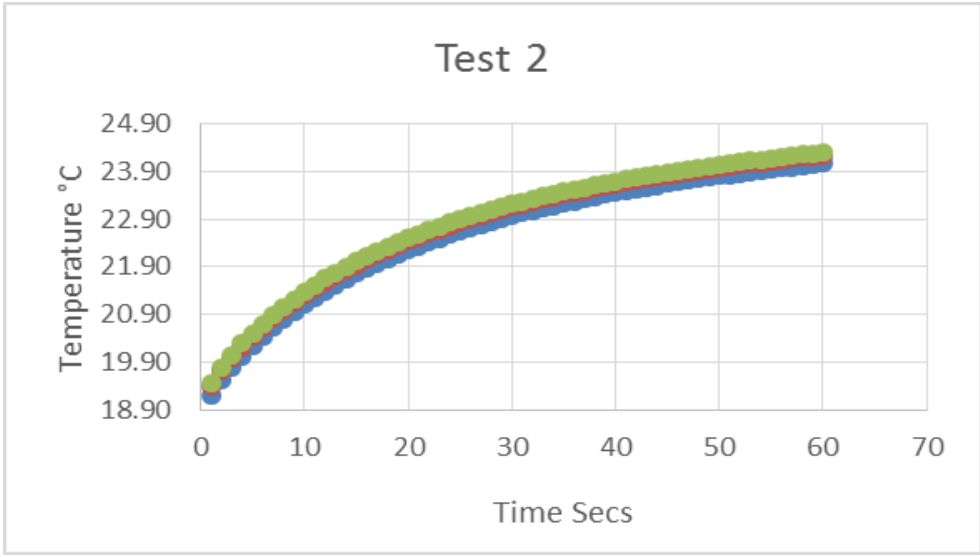
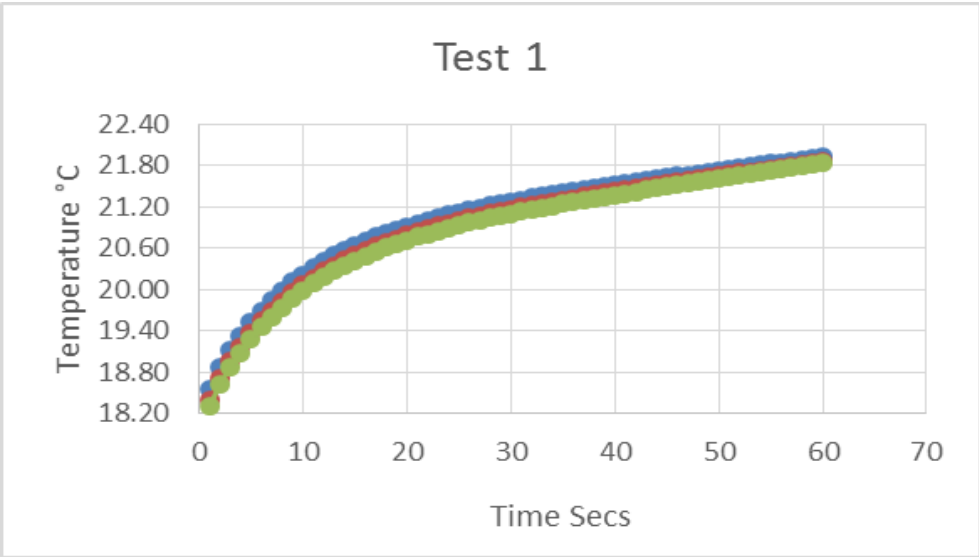
Lab Project No A15075-1 : 05/03/2024 16:18:15

				Site LT521 FASNAKYLE 400KV SUBSTATION																	Contract No 26560	
				Client SSEN Transmission																		
				Engineer Jacob's																		
Sample Identification				Lab Sample ID	Material Type	Material Condition	Percentage retained on 20mm sieve %	Water Content %	Specimen Height mm	Specimen Diameter mm	Specimen Mass g	Bulk Density Mg/m3	Dry Density Mg/m3	Soil Temperature °C	Method of Insertion	Heating Time s	Temperature Change During Heating °C	Calibration Factor	Thermal Conductivity W/mK	Thermal Resistivity mK/W	Description	
Hole	Depth m	Spec. Ref.	Sample Type																			
TP34	1.00		B	2012904	Soil	Recompacted	31	6.9	127.26	152.10	4815.36	2.08	1.95	17.73	Hand Pushed	60.0	3.45	1.01	0.27	3.71	Very dark grey very gravelly slightly clayey SAND. Gravel is fine to coarse.	
TP34	1.00		B	2012904	Soil	Recompacted	31	0.1	127.26	151.66	4077.44	1.77	1.77	18.67	Hand Pushed	60.0	4.84	1.02	0.21	4.67	Very dark grey very gravelly slightly clayey SAND. Gravel is fine to coarse.	
Accreditation M=Mcerts U=UKAS N=No accreditation							U	U	U	U	U	U	U	U	U	U	U	U	U	U		
Originator		Checked & Approved		<div>SUMMARY OF THERMAL CONDUCTIVITY / RESISTIVITY TESTS</div> <div>In accordance with ASTM D5334-14</div> <div>Water Content reported to BS EN ISO 17892-1:2014, Bulk Density reported to BS EN ISO 17892-2:2014/ BS 1377-2: 2022</div>																	Page 1 of 2	
MAB		05/03/2024																			Figure F48	






Site	LT521 FASNAKYLE 400KV SUBSTATION	Contract No  26560
Client	SSEN Transmission	
Engineer	Jacob's	



Originator	Checked & Approved	<b>SUMMARY OF THERMAL CONDUCTIVITY / RESISTIVITY TESTS</b>  In accordance with ASTM D5334-14 Water Content reported to BS EN ISO 17892-1:2014, Bulk Density reported to BS EN ISO 17892-2:2014/ BS 1377-2: 2022	Page 2 of 2
MAB	 05/03/2024		<b>Figure F48</b>



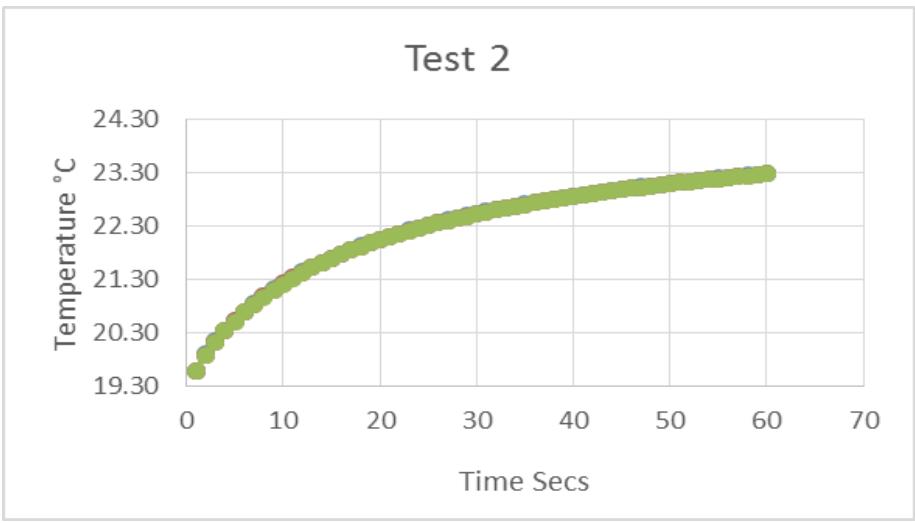
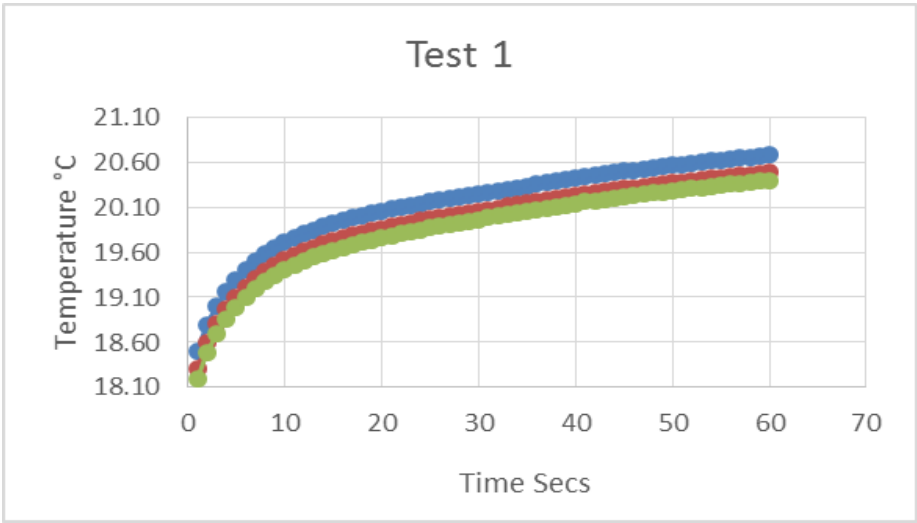
				Site LT521 FASNAKYLE 400KV SUBSTATION																	Contract No 26560	
				Client SSEN Transmission																		
				Engineer Jacob's																		
Sample Identification				Lab Sample ID	Material Type	Material Condition	Percentage retained on 20mm sieve %	Water Content %	Specimen Height mm	Specimen Diameter mm	Specimen Mass g	Bulk Density Mg/m3	Dry Density Mg/m3	Soil Temperature °C	Method of Insertion	Heating Time s	Temperature Change During Heating °C	Calibration Factor	Thermal Conductivity W/mK	Thermal Resistivity mK/W	Description	
Hole	Depth m	Spec. Ref.	Sample Type																			
TP37	0.50		B	2012905	Soil	Recompacted	43	7.5	126.78	152.32	4673.72	2.02	1.88	17.66	Hand Pushed	60.0	2.18	1.02	0.32	3.09	Dark brown slightly silty very sandy fine to coarse GRAVEL.	
TP37	0.50		B	2012905	Soil	Recompacted	43	1.0	127.55	152.19	4304.57	1.86	1.84	18.90	Hand Pushed	60.0	3.70	1.01	0.30	3.27	Dark brown slightly silty very sandy fine to coarse GRAVEL.	
Accreditation M=Mcerts U=UKAS N=No accreditation							U	U	U	U	U	U	U	U	U	U	U	U	U	U		
Originator		Checked & Approved		<div>SUMMARY OF THERMAL CONDUCTIVITY / RESISTIVITY TESTS</div> <div>In accordance with ASTM D5334-14</div> <div>Water Content reported to BS EN ISO 17892-1:2014, Bulk Density reported to BS EN ISO 17892-2:2014/ BS 1377-2: 2022</div>																	Page 1 of 2	
MAB		05/03/2024																			Figure F49	





Site	LT521 FASNAKYLE 400KV SUBSTATION
Client	SSEN Transmission
Engineer	Jacob's

Contract No
26560



Originator	Checked & Approved	<b>SUMMARY OF THERMAL CONDUCTIVITY / RESISTIVITY TESTS</b>  In accordance with ASTM D5334-14 Water Content reported to BS EN ISO 17892-1:2014, Bulk Density reported to BS EN ISO 17892-2:2014/ BS 1377-2: 2022	Page 2 of 2
MAB	 05/03/2024		<b>Figure F49</b>





## Certificate of Analysis

*Certificate Number* 23-29964-0

*Issued:* 18-Mar-24

*Client* Terra Tek  
62 Rochsolloch Road  
Airdrie  
ML6 9BG

*Our Reference* 23-29964-0

*Client Reference ~* A15075-1

*Order No ~* AL013848

*Contract Title ~* (not supplied)

*Description* 8 Soil samples.

*Date Received* 20-Dec-23

*Date Started* 20-Dec-23

*Date Completed* 18-Mar-24

*Test Procedures* Identified by prefix DETSn (details on request).

**Notes** This report supersedes 23-29964, amendments made

Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

*Approved By*

Kirk Bridgewood  
General Manager



Normec DETS Limited

Unit 2, Park Road Industrial Estate South, Consett, Co Durham, DH8 5PY

Symbol key at end of report Tel: 01207 582333 • email: [info@dets.co.uk](mailto:info@dets.co.uk) • [www.dets.co.uk](http://www.dets.co.uk)

Page 1 of 3



## Summary of Chemical Analysis

### Soil Samples

Our Ref 23-29964-0  
 Client Ref ~ A15075-1  
 Contract Title ~

Lab No	2280028	2280029	2280030	2280031	2280032	2280033	2280034	2280035
Sample ID ~	TP10	TP18	TP19	TP21	TP22	TP24	TP26	TP22
Depth ~	0.50	0.50	0.50	0.00	0.50	0.00	1.00	1.00
Other ID ~	2012882	2012885	2012886	2012889	2012890	2012892	2012895	2012891
Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date ~	24/11/2023	23/11/2023	23/11/2023	23/11/2023	24/11/2023	22/11/2023	22/11/2023	24/11/2023
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units								
<b>Inorganics</b>											
pH	DETSC 2008#		pH			4.5		3.9		4.2	
Organic matter	DETSC 2002#	0.1	%	19	17		23		24		19
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l			45		77		47	
Sulphur as S, Total	DETSC 2320	0.01	%			0.06		0.35		0.59	
Sulphate as SO4, Total	DETSC 2321#	0.01	%			0.12		0.26		0.27	



## Information in Support of the Analytical Results

Our Ref 23-29964-0

Client Ref ~ A15075-1

Contract ~

### Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2280028	TP10 0.50 SOIL	24/11/23	PT 500ml		
2280029	TP18 0.50 SOIL	23/11/23	PT 500ml		
2280030	TP19 0.50 SOIL	23/11/23	PT 500ml	Total Sulphur ICP (7 days), pH + Conductivity (7 days)	
2280031	TP21 0.00 SOIL	23/11/23	PT 500ml		
2280032	TP22 0.50 SOIL	24/11/23	PT 500ml	Total Sulphur ICP (7 days), pH + Conductivity (7 days)	
2280033	TP24 0.00 SOIL	22/11/23	PT 500ml		
2280034	TP26 1.00 SOIL	22/11/23	PT 500ml	Total Sulphur ICP (7 days), pH + Conductivity (7 days)	
2280035	TP22 1.00 SOIL	24/11/23	PT 500ml		

Key: P-Plastic T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

### Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

### Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

#### Key:

~ Sample details are provided by the client and can affect the validity of the results

\* -not accredited.

# -MCERTS (accreditation only applies if report carries the MCERTS logo).

\$ -subcontracted.

n/s -not supplied.

I/S -insufficient sample.

U/S -unsuitable sample.

t/f -to follow.

nd -not detected.

#### End of Report





## Certificate of Analysis

*Certificate Number* 24-00916-0-1

*Issued:* 18-Mar-24

*Client* Terra Tek  
62 Rochsolloch Road  
Airdrie  
ML6 9BG

*Our Reference* 24-00916-0-1

*Client Reference ~* A15075-2

*Order No ~* (not supplied)

*Contract Title ~* (not supplied)

*Description* 20 Soil samples.

*Date Received* 17-Jan-24

*Date Started* 17-Jan-24

*Date Completed* 18-Mar-24

*Test Procedures* Identified by prefix DETSn (details on request).

**Notes** This report supersedes 24-00916, amendments made

Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

*Approved By*

Kirk Bridgewood  
General Manager



Normec DETS Limited

Unit 2, Park Road Industrial Estate South, Consett, Co Durham, DH8 5PY

Symbol key at end of report Tel: 01207 582333 • email: [info@dets.co.uk](mailto:info@dets.co.uk) • [www.dets.co.uk](http://www.dets.co.uk)

Page 1 of 5



## Summary of Chemical Analysis

### Soil Samples

Our Ref 24-00916-0-1  
 Client Ref ~ A15075-2  
 Contract Title ~

<b>Lab No</b>	2287345	2287346	2287347	2287348	2287349	2287350	2287351	2287352	2287353	2287354	2287355
<b>Sample ID ~</b>	TP13	TP15	TP16	TP16	TP17	TP17	TP19	TP21	TP22	TP23	TP24
<b>Depth ~</b>	0.30	0.50	0.50	0.80	1.00	2.00	0.70	0.70	2.00	0.70	0.50
<b>Other ID ~</b>	2013196	2013200	2013203	2013205	2013206	2013207	2013210	2013211	2013212	2013213	2013214
<b>Sample Type ~</b>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
<b>Sampling Date ~</b>	29/11/2023	27/11/2023	27/11/2023	27/11/2023	27/11/2023	27/11/2023	23/11/2023	23/11/2023	24/11/2023	22/11/2023	22/11/2023
<b>Sampling Time ~</b>	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units											
<b>Inorganics</b>														
pH	DETSC 2008#		pH			6.3	7.0		5.5	5.6	5.5	5.5	6.5	5.4
Organic matter	DETSC 2002#	0.1	%	17	18			13						
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l			24	26		27	< 10	12	27	11	< 10
Sulphur as S, Total	DETSC 2320	0.01	%			0.02	0.03		0.30	0.03	0.01	0.05	< 0.01	0.01
Sulphate as SO4, Total	DETSC 2321#	0.01	%			0.03	0.03		0.51	0.04	0.02	0.04	0.02	0.02



## Summary of Chemical Analysis

### Soil Samples

Our Ref 24-00916-0-1  
 Client Ref ~ A15075-2  
 Contract Title ~

<b>Lab No</b>	2287356	2287357	2287358	2287359	2287360	2287361	2287362	2287363	2287364
<b>Sample ID ~</b>	BH17	TP01	TP02	TP03	TP07	TP08	TP09	TP11	TP12
<b>Depth ~</b>	0.50	0.50	0.00	0.00	0.00	0.00	0.20	1.00	0.00
<b>Other ID ~</b>	2013177	2013181	2013183	2013184	2013186	2013188	2013191	2013192	2013193
<b>Sample Type ~</b>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
<b>Sampling Date ~</b>	30/11/2023	29/11/2023	29/11/2023	04/12/2023	29/11/2023	04/12/2023	28/11/2023	04/12/2023	29/11/2023
<b>Sampling Time ~</b>	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units									
<b>Inorganics</b>												
pH	DETSC 2008#		pH			4.3		4.5	4.6	4.5		4.3
Organic matter	DETSC 2002#	0.1	%	13	14		21				22	
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l			47		22	37	13		15
Sulphur as S, Total	DETSC 2320	0.01	%									
Sulphate as SO4, Total	DETSC 2321#	0.01	%									



## Information in Support of the Analytical Results

Our Ref 24-00916-0-1

Client Ref ~ A15075-2

Contract ~

### Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2287345	TP13 0.30 SOIL	29/11/23	PT 500ml	Organic Matter (Manual) (28 days)	
2287346	TP15 0.50 SOIL	27/11/23	PT 500ml	Organic Matter (Manual) (28 days)	
2287347	TP16 0.50 SOIL	27/11/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2287348	TP16 0.80 SOIL	27/11/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2287349	TP17 1.00 SOIL	27/11/23	PT 500ml	Organic Matter (Manual) (28 days)	
2287350	TP17 2.00 SOIL	27/11/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2287351	TP19 0.70 SOIL	23/11/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2287352	TP21 0.70 SOIL	23/11/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2287353	TP22 2.00 SOIL	24/11/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2287354	TP23 0.70 SOIL	22/11/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2287355	TP24 0.50 SOIL	22/11/23	PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2287356	BH17 0.50 SOIL	30/11/23	PT 500ml	Organic Matter (Manual) (28 days)	
2287357	TP01 0.50 SOIL	29/11/23	PT 500ml	Organic Matter (Manual) (28 days)	
2287358	TP02 0.00 SOIL	29/11/23	PT 500ml	Anions 2:1 (30 days), pH + Conductivity (7 days)	
2287359	TP03 0.00 SOIL	04/12/23	PT 500ml	Organic Matter (Manual) (28 days)	
2287360	TP07 0.00 SOIL	29/11/23	PT 500ml	Anions 2:1 (30 days), pH + Conductivity (7 days)	
2287361	TP08 0.00 SOIL	04/12/23	PT 500ml	Anions 2:1 (30 days), pH + Conductivity (7 days)	
2287362	TP09 0.20 SOIL	28/11/23	PT 500ml	Anions 2:1 (30 days), pH + Conductivity (7 days)	
2287363	TP11 1.00 SOIL	04/12/23	PT 500ml	Organic Matter (Manual) (28 days)	
2287364	TP12 0.00 SOIL	29/11/23	PT 500ml	Anions 2:1 (30 days), pH + Conductivity (7 days)	

Key: P-Plastic T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.



## Information in Support of the Analytical Results

*Our Ref* 24-00916-0-1  
*Client Ref* ~ A15075-2  
*Contract* ~

### Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.  
Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.  
The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

### Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-  
Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

#### Key:

~ Sample details are provided by the client and can affect the validity of the results  
\* -not accredited.  
# -MCERTS (accreditation only applies if report carries the MCERTS logo).  
\$ -subcontracted.  
n/s -not supplied.  
I/S -insufficient sample.  
U/S -unsuitable sample.  
t/f -to follow.  
nd -not detected.

**End of Report**





## Certificate of Analysis

*Certificate Number* 24-00918-0

*Issued:* 04-Mar-24

*Client* Terra Tek  
62 Rochsolloch Road  
Airdrie  
ML6 9BG

*Our Reference* 24-00918-0

*Client Reference* A15075-3

*Order No* (not supplied)

*Contract Title* (not supplied)

*Description* 4 Soil samples.

*Date Received* 17-Jan-24

*Date Started* 17-Jan-24

*Date Completed* 04-Mar-24

*Test Procedures* Identified by prefix DETSn (details on request).

**Notes** This report supersedes 24-00918, amendments made

Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

*Approved By*

Kirk Bridgewood  
General Manager





# Summary of Chemical Analysis

## Soil Samples

Our Ref 24-00918-0

Client Ref A15075-3

Contract Title

Lab No	2287371	2287372	2287373	2287374
Sample ID	BH14	BH28	BH28	TP36A
Depth	0.80	0.50	2.65	0.50
Other ID	201352	2013353	2013354	2013356
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	14/12/2023	14/12/2023	14/12/2023	13/12/2023
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
<b>Inorganics</b>							
pH	DETSC 2008#		pH	5.9			
Organic matter	DETSC 2002#	0.1	%		21	23	4.6
Sulphate Aqueous Extract as SO <sub>4</sub> (2:1)	DETSC 2076#	10	mg/l	36			
Sulphur as S, Total	DETSC 2320	0.01	%	0.03			
Sulphate as SO <sub>4</sub> , Total	DETSC 2321#	0.01	%	0.05			



## Information in Support of the Analytical Results

Our Ref 24-00918-0

Client Ref A15075-3

Contract

### Containers Received & Deviating Samples

Lab No	Sample ID	Date		Containers Received	Holding time exceeded for tests	Inappropriate container for tests
		Sampled				
2287371	BH14 0.80 SOIL	14/12/23		PT 500ml	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2287372	BH28 0.50 SOIL	14/12/23		PG	Organic Matter (Manual) (28 days)	
2287373	BH28 2.65 SOIL	14/12/23		PG	Organic Matter (Manual) (28 days)	
2287374	TP36A 0.50 SOIL	13/12/23		PT 500ml	Organic Matter (Manual) (28 days)	

Key: P-Plastic T-Tub G-Bag

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

### Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

### Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report





## Certificate of Analysis

*Certificate Number* 24-01789-0

*Issued:* 04-Mar-24

*Client* Terra Tek  
62 Rochsolloch Road  
Airdrie  
ML6 9BG

*Our Reference* 24-01789-0

*Client Reference* A15075-4

*Order No* (not supplied)

*Contract Title* A15075-4

*Description* 3 Soil samples.

*Date Received* 26-Jan-24

*Date Started* 29-Jan-24

*Date Completed* 04-Mar-24

*Test Procedures* Identified by prefix DETSn (details on request).

**Notes** This report supersedes 24-01789, amendments made

Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

*Approved By*

Kirk Bridgewood  
General Manager





## Summary of Chemical Analysis

### Soil Samples

Our Ref 24-01789-0

Client Ref A15075-4

Contract Title A15075-4

Lab No	2292216	2292217	2292218
Sample ID	BH02	BH12	BH16
Depth	0.10	0.50	0.40
Other ID	2013667	2013669	2013670
Sample Type	SOIL	SOIL	SOIL
Sampling Date	09/01/2024	19/12/2023	18/12/2023
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
<b>Inorganics</b>						
Loss on Ignition at 440oC	DETSC 2003#	0.01	%	57		
Organic matter	DETSC 2002#	0.1	%	> 25	2.4	2.1



## Information in Support of the Analytical Results

Our Ref 24-01789-0

Client Ref A15075-4

Contract A15075-4

### Containers Received & Deviating Samples

Lab No	Sample ID	Date		Containers Received	Holding time exceeded for tests	Inappropriate container for tests
		Sampled				
2292216	BH02 0.10 SOIL	09/01/24	PG			
2292217	BH12 0.50 SOIL	19/12/23	PG		Organic Matter (Manual) (28 days)	
2292218	BH16 0.40 SOIL	18/12/23	PG		Organic Matter (Manual) (28 days)	

Key: P-Plastic G-Bag

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

### Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

### Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

Style: APPENDIX A File: P:\GINTWP\PROJECTS\26560.GPJ Printed: 05/02/2024 11:15:13 Raeburn Drilling and Geotechnical Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

APPENDIX F2  
GEOTECHNICAL TESTING - ROCK







Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

## TEST

### CLASSIFICATION TESTS

Determination of water content  
Determination of liquid limit  
Determination of liquid and plastic limits  
Determination of bulk density  
Determination of particle density  
Determination of particle size distribution

### CHEMICAL TESTS

Determination of organic matter content  
Determination of mass loss on ignition  
Determination of sulphate content of soil and groundwater  
Determination of chloride content  
Determination of pH value

### COMPACTION-RELATED TESTS

Determination of dry density/moisture content relationship  
Determination of moisture condition value (MCV)  
Determination of California Bearing Ratio (CBR)

### CONSOLIDATION AND STRENGTH TESTS

Incremental loading oedometer test  
Unconfined compression test  
Unconsolidated undrained triaxial test  
Consolidated triaxial compression tests on water saturated soils  
Lab Vane Tests  
Direct shear tests  
Permeability tests  
Fall cone test

### ROCK TESTS

Determination of point load strength  
Determination of unconfined compressive strength  
LA Abrasion Tests  
Magnesium Soundness Tests  
Slake durability  
Rock porosity / density

## STANDARD



BS EN ISO 17892-1:2014  
BS 1377 : 1990 : Part 2 : 4.3 and 4.4  
BS EN ISO 17892-12:2018  
BS EN ISO 17892-2:2014  
BS EN ISO 17892-3:2016  
BS EN ISO 17892-4:2016  
  
BS 1377 : 1990 : Part 3 : 3.4  
BS 1377 : 1990 : Part 3 : 4.3  
BS 1377 : 1990 : Part 3 : 5.2, 5.3 and 5.5  
BS 1377 : 1990 : Part 3 : 7.2 and 7.3  
BS 1377 : 1990 : Part 3 : 9.5  
  
BS 1377 : 1990 : Part 4 : 3.3 to 3.6  
SDD Tech Memo SH7/83; SDD Appls Guide No.1 Rev. 1989  
BS 1377 : 1990 : Part 4 : 7.4  
  
BS EN ISO 17892-5:2017  
BS EN ISO 17892-7:2018  
BS EN ISO 17892-8:2018  
BS EN ISO 17892-9:2018  
BS 1377 : 1990  
BS EN ISO 17892-10:2019  
BS EN ISO 17892-11:2019  
BS EN ISO 17892-6:2017  
  
ISRM Commission on Testing Methods, 1985  
ASTM D7012-14  
BS EN 1097-2:2010 and BS 818 : Part 2 : 1990  
BS EN 1367-2  
ISRM Suggested methods  
ISRM Suggested methods







[illegible]






				Site LT521 FASNAKYLE 400KV SUBSTATION				Contract No 26560		
				Client SSEN Transmission						
				Engineer Jacobs						
Sample Identification					Lab Sample ID	10-14mm Size Fraction Passing 11.2mm Sieve	Particle Density (8-12.5 mm)	Los Angeles Coefficient	Impact Value	Test Date
Hole ID	Depth m	Sample Ref	Sample Type							
BH13	4.00-4.55		C	2013658	35	~	21	~	~	
BH16	1.40-4.40		C	2013703	35	~	21	~	~	
BH22	7.50-10.00		C	2013218	35	~	37	~	~	
BH27	5.50-7.10		C	2013653	35	~	22	~	~	
UKAS accredited test							Yes	No		
Notes Opinions and interpretations are outside the scope of UKAS accreditation.										
Originator		Approved		RESISTANCE TO FRAGMENTATION BY LOS ANGELES AND IMPACT TEST METHODS BS EN 1097-2:2020				 Figure F1		
DW		CD 05/03/2024								
Sheet 1 of 1										





				Site LT521 FASNAKYLE 400KV SUBSTATION					Contract No 26560	
				Client SSEN Transmission						
				Engineer Jacobs						
Sample Identification				Lab Sample ID	Size Fraction of the Aggregate	Mass of Material Tested	Apparent Particle Density (Pa)	Particle Density-Oven-dried Basis (Prd)	Particle Density-Saturated and Surface-dried Basis (Pssd)	Water Absorption (WA <sub>24</sub> )
Hole ID	Depth m	Sample Ref	Test Date							
BH21	4.40-4.90		C	2013215	31.5mm-4mm	4182	2.75	2.69	2.71	0.8
UKAS accredited test							Yes			
Notes Opinions and interpretations are outside the scope of UKAS accreditation.										
Originator		Approved		DETERMINATION OF PARTICLE DENSITY AND WATER ABSORPTION BS EN 1097-6:2022 Clause 8					 Figure F2 Sheet 1 of 1	
DW		CD 05/03/2024								





				Site LT521 FASNAKYLE 400KV SUBSTATION				Contract No 26560	
				Client SSEN Transmission					
				Engineer Jacobs					
Sample Identification				Lab Sample ID	Slaking Fluid Type / Temp	Fragments Retained in Drum	Fragments Passing Drum	Slake-Durability Index (second cycle)	Comments
Hole ID	Depth m	Sample Ref	Sample Type						
BH15	2.80-4.40		C	2013644	Tap Water / 20oC	Virtually Unchanged	Fines	98.6	~
BH17	4.30-6.10		C	2013646	Tap Water / 20oC	Virtually Unchanged	Fines	98.2	~
BH25	7.60-9.10		C	2013220	Tap Water / 20oC	Large and Small Fragments	Fines	82.8	~
BH27	7.90-9.90		C	2013655	Tap Water / 20oC	Large and Small Fragments	Fines	97.5	~
UKAS accredited test								Yes	
Notes Opinions and interpretations are outside the scope of UKAS accreditation.									
Originator		Approved		<b>SLAKE-DURABILITY INDEX (SECOND CYCLE)</b> ISRM Suggested Methods				 <b>Figure F3</b>	
DW		 05/03/2024							
Sheet 1 of 1									





				SiteLT521 FASNAKYLE 400KV SUBSTATION				Contract No26560		
				ClientSSEN Transmission						
				EngineerJacobs						
Sample Identification				Lab Sample ID	Non Engineering Sample Description	Aggregate Size Fractions	Soundness Value (S) No.1	Soundness Value (S) No.2	Magnesium Sulphate Soundness Value (MS)	
Location / Origin	Depth m	Sample Ref	Sample Type							
BH18	2.90-4.40		C	2013648	Grey crushed gravel	14mm-10mm	9.2	7.3	8	
BH22	4.00-5.70		C	2013217	Grey Crushed Gravel	14mm-10mm	10.6	12.1	11	
BH24	5.00-6.90		C	2013219	Grey Crushed Gravel	14mm-10mm	12.5	10.7	12	
BH26	3.50-5.50		C	2013224	Grey Crushed Gravel	14mm-10mm	11.8	12.3	12	
Subcontracted Test						UKAS accredited test				
No						Yes				
NotesOpinions and interpretations are outside the scope of UKAS accreditation.										
Originator		Approved		DETERMINATION OF MAGNESIUM SULFATE SOUNDNESS BS EN 1367-2 : 2009					 Figure F4	
DW		CD 05/03/2024								
Sheet 1 of 1										






				Site LT521 FASNAKYLE 400KV SUBSTATION					Contract No 26560	
				Client SSEN Transmission						
				Engineer Jacobs						
Sample Identification				Lab Sample ID	Non Engineering Sample Description	Date Sample Received	Mass of Test Portion	Flakiness Index	Comments	
Location / Origin	Depth m	Sample Ref	Sample Type							
BH19	2.25-2.90		C	2013663	Grey Crushed Coarse to Fine Gravel	45310	11608g	22FI	~	
Subcontracted Test No						UKAS accredited test Yes				
Notes Opinions and interpretations are outside the scope of UKAS accreditation.										
Originator		Approved		DETERMINATION OF PARTICLE SHAPE - FLAKINESS INDEX BS EN 933-3 : 2012					 Figure F5	
DW		CD 05/03/2024								
Sheet 1 of 1										



				Site LT521 FASNAKYLE 400KV SUBSTATION				Contract No 26560	
				Client SSEN Transmission					
				Engineer Jacobs					
Sample Identification				Lab Sample ID	Non Engineering Sample Description	Sample Certificate Available  Yes / No	Test Condition Of Specimen  Dry / Soaked	Aggregate Crushing Value	Comments
Location / Origin	Depth m	Sample Ref	Sample Type						
BH11	3.70-6.10		C	2013702	Grey crushed gravel	No	Dry	18	~
BH20	2.90-3.50		C	2013650	Grey crushed gravel	No	Dry	15	~
BH25	9.50-13.10		C	2013221	Greys crushed GRAVEL	No	Dry	16	
BH28	6.95-9.95		C	2013706	Grey crushed gravel	No	Dry	16	~
Subcontracted Test						UKAS accredited test			
Notes						Opinions and interpretations are outside the scope of UKAS accreditation.			
Originator		Approved		DETERMINATION OF AGGREGATE CRUSHING VALUE (ACV) BS 812 : Part 110 : 1990				 Figure F6	
DW		CD 05/03/2024							
Sheet 1 of 1									



		SiteLT521 FASNAKYLE 400KV SUBSTATION						Contract No26560  ~ Indicates test not carried out
		ClientSSEN Transmission						
		EngineerJacobs						
Sample Identification		Orientation of Test	Dimension A	Dimension B	Load	Is	Corrected Is(50)	Comments
Exploratory Hole	Depth m							
			mm	mm	kN	MN/m²	MN/m²	
BH02	2.65	Axial	79.0	34.0	4.3	1.26	1.35	
BH02	2.65	Diametral	254.0	79.0	4.4	0.71	0.87	
BH02	2.90	Axial	80.0	95.0	19.8	2.05	2.77	
BH02	4.40	Axial	80.0	56.0	5.8	1.02	1.22	
BH02	4.40	Diametral	237.0	80.0	30.2	4.72	5.83	
BH03	2.30	Lump	64.0	44.0	30.2	8.42	9.13	
BH03	2.60	Axial	80.0	42.0	45.0	10.52	11.87	
BH03	3.65	Axial	80.0	38.0	40.9	10.57	11.66	
BH03	3.65	Diametral	298.0	80.0	45.0	7.03	8.69	
BH04	2.00	Axial	103.0	59.0	40.5	5.23	6.75	
<div>Notes</div> <div><div>1. Dimension A= Minimum Width for Lump Tests Dimension A=Length for Diametral Tests Dimension A=Diameter for Axial Tests Dimension B=Platen Separation</div><div>2. Moisture Content of sample : as-received 3. All preparation and testing carried out in accordance with ISRM Commission on Testing Methods 1985 4. Opinions and interpretations are outside the scope of UKAS accreditation 5. Carried out parallel/perpendicular to bedding planes where obvious otherwise core shape used to determine orientation</div></div>								
Originator	Approved	POINT LOAD INDEX TESTS						 Figure F7
DW	 05/03/2024							
Sheet 1 of 18								





Site LT521 FASNAKYLE 400KV SUBSTATION

Client SSEN Transmission

Engineer Jacobs

Contract No 26560

~ Indicates test not carried out

Sample Identification		Orientation of Test	Dimension A	Dimension B	Load	Is	Corrected Is(50)	Comments
Exploratory Hole	Depth m							
			mm	mm	kN	MN/m <sup>2</sup>	MN/m <sup>2</sup>	
BH04	2.00	Diametral	148.0	103.0	45.0	4.24	5.87	
BH04	4.65	Axial	102.0	69.0	28.0	3.12	4.16	
BH04	4.65	Diametral	179.0	102.0	12.7	1.22	1.68	
BH04	4.70	Lump	67.0	51.0	8.9	2.05	2.32	
BH04	5.70	Axial	102.0	88.0	25.7	2.25	3.17	
BH04	5.70	Diametral	299.0	103.0	39.8	3.75	5.19	
BH08	2.15	Axial	103.0	65.0	45.0	5.28	6.96	
BH08	2.15	Diametral	287.0	103.0	42.3	3.99	5.52	
BH08	3.50	Axial	103.0	59.0	35.4	4.58	5.90	
BH08	3.50	Diametral	226.0	103.0	30.2	2.85	3.94	

Notes

1. Dimension A= Minimum Width for Lump Tests  
Dimension A=Length for Diametral Tests  
Dimension A=Diameter for Axial Tests  
Dimension B=Platen Separation

2. Moisture Content of sample : as-received

3. All preparation and testing carried out in accordance with ISRM Commission on Testing Methods 1985

4. Opinions and interpretations are outside the scope of UKAS accreditation

5. Carried out parallel/perpendicular to bedding planes where obvious otherwise core shape used to determine orientation

Originator	Approved	POINT LOAD INDEX TESTS	Figure F7 Sheet 2 of 18
DW	CD 05/03/2024		





Site LT521 FASNAKYLE 400KV SUBSTATION

Client SSEN Transmission

Engineer Jacobs

Contract No 26560

~ Indicates test not carried out

Sample Identification		Orientation of Test	Dimension A	Dimension B	Load	Is	Corrected Is(50)	Comments
Exploratory Hole	Depth m							
			mm	mm	kN	MN/m <sup>2</sup>	MN/m <sup>2</sup>	
BH09	3.40	Axial	103.0	61.0	29.6	3.70	4.81	
BH09	3.40	Diametral	135.0	103.0	32.5	3.06	4.24	
BH09	3.50	Lump	58.0	42.0	12.9	4.16	4.37	
BH09	5.10	Axial	103.0	59.0	28.7	3.71	4.78	
BH09	5.10	Diametral	209.0	103.0	25.4	2.39	3.31	
BH09	5.40	Lump	65.0	32.0	18.7	7.06	7.15	
BH09	6.50	Axial	103.0	60.0	32.0	4.07	5.26	
BH09	6.50	Diametral	165.0	103.0	35.1	3.31	4.58	
BH11	1.50	Axial	80.0	34.0	12.4	3.58	3.85	
BH11	1.50	Diametral	197.0	80.0	4.3	0.67	0.83	

Notes

1. Dimension A= Minimum Width for Lump Tests  
Dimension A=Length for Diametral Tests  
Dimension A=Diameter for Axial Tests  
Dimension B=Platen Separation

2. Moisture Content of sample : as-received



3. All preparation and testing carried out in accordance with ISRM Commission on Testing Methods 1985

4. Opinions and interpretations are outside the scope of UKAS accreditation




5. Carried out parallel/perpendicular to bedding planes where obvious otherwise core shape used to determine orientation

Originator	Approved	POINT LOAD INDEX TESTS	Figure F7
DW	CD 05/03/2024		



		Site LT521 FASNAKYLE 400KV SUBSTATION						Contract No 26560  ~ Indicates test not carried out
		Client SSEN Transmission						
		Engineer Jacobs						
Sample Identification		Orientation of Test	Dimension A	Dimension B	Load	Is	Corrected Is(50)	Comments
Exploratory Hole	Depth m							
BH11	3.60	Lump	98.0	39.0	26.7	5.49	6.37	
BH11	3.90	Axial	80.0	45.0	40.7	8.88	10.18	
BH11	3.90	Diametral	149.0	80.0	37.6	5.88	7.26	
BH11	5.50	Axial	80.0	30.0	42.5	13.91	14.55	
BH12	3.95	Axial	80.0	45.0	35.8	7.81	8.95	
BH12	3.95	Diametral	1.0	80.0	40.2	6.28	7.76	
BH12	4.30	Axial	80.0	97.0	29.8	3.02	4.11	
BH12	5.85	Axial	79.0	48.0	30.6	6.34	7.35	
BH12	5.85	Diametral	265.0	80.0	35.4	5.53	6.83	
BH13	2.00	Lump	56.0	32.0	20.5	8.98	8.80	
<div>Notes</div> <div><div>1. Dimension A= Minimum Width for Lump Tests Dimension A=Length for Diametral Tests Dimension A=Diameter for Axial Tests Dimension B=Platen Separation</div><div>2. Moisture Content of sample : as-received 3. All preparation and testing carried out in accordance with ISRM Commission on Testing Methods 1985 4. Opinions and interpretations are outside the scope of UKAS accreditation 5. Carried out parallel/perpendicular to bedding planes where obvious otherwise core shape used to determine orientation</div></div>								
Originator	Approved	POINT LOAD INDEX TESTS						 Figure F7  Sheet 4 of 18
DW	CD 05/03/2024							



		SiteLT521 FASNAKYLE 400KV SUBSTATION						Contract No26560  ~ Indicates test not carried out
		ClientSSEN Transmission						
		EngineerJacobs						
Sample Identification		Orientation of Test	Dimension A	Dimension B	Load	Is	Corrected Is(50)	Comments
Exploratory Hole	Depth m							
			mm	mm	kN	MN/m²	MN/m²	
BH13	2.33	Axial	103.0	59.0	32.8	4.24	5.47	
BH13	2.75	Axial	103.0	62.0	39.8	4.89	6.38	
BH13	2.75	Diametral	198.0	103.0	40.7	3.84	5.31	
BH13	3.70	Axial	103.0	84.0	38.5	3.49	4.88	
BH13	3.70	Diametral	234.0	103.0	35.8	3.37	4.67	
BH13	5.15	Lump	115.0	39.0	18.7	3.27	3.94	
BH13	5.70	Axial	103.0	58.0	43.2	5.68	7.30	
BH13	6.20	Axial	103.0	50.0	41.5	6.33	7.86	
BH13	6.20	Diametral	165.0	103.0	45.0	4.24	5.87	
BH13	7.50	Axial	103.0	62.0	43.1	5.30	6.91	
<div>Notes</div> <div><div>1. Dimension A= Minimum Width for Lump Tests Dimension A=Length for Diametral Tests Dimension A=Diameter for Axial Tests Dimension B=Platen Separation</div><div>2. Moisture Content of sample : as-received 3. All preparation and testing carried out in accordance with ISRM Commission on Testing Methods 1985 4. Opinions and interpretations are outside the scope of UKAS accreditation 5. Carried out parallel/perpendicular to bedding planes where obvious otherwise core shape used to determine orientation</div></div>								
Originator	Approved	POINT LOAD INDEX TESTS						 Figure F7
DW	 05/03/2024							
Sheet 5 of 18								





Site LT521 FASNAKYLE 400KV SUBSTATION

Client SSEN Transmission

Engineer Jacobs

Contract No 26560

~ Indicates test not carried out

Sample Identification		Orientation of Test	Dimension A	Dimension B	Load	Is	Corrected Is(50)	Comments
Exploratory Hole	Depth m							
			mm	mm	kN	MN/m <sup>2</sup>	MN/m <sup>2</sup>	
BH13	7.58	Diametral	254.0	103.0	45.0	4.24	5.87	
BH13	7.65	Axial	103.0	44.0	45.0	7.80	9.41	
BH14	1.54	Axial	79.0	69.0	42.6	6.14	7.72	
BH14	1.54	Diametral	156.0	79.0	40.2	6.44	7.91	
BH14	2.77	Lump	65.0	49.0	19.5	4.81	5.36	
BH14	3.17	Axial	79.0	59.0	43.2	7.28	8.84	
BH14	4.40	Axial	79.0	50.0	45.0	8.95	10.47	
BH14	4.40	Diametral	198.0	79.0	45.0	7.21	8.86	
BH14	4.70	Lump	87.0	65.0	23.4	3.25	4.12	
BH14	5.55	Axial	79.0	65.0	40.2	6.15	7.63	

Notes

1. Dimension A= Minimum Width for Lump Tests  
Dimension A=Length for Diametral Tests  
Dimension A=Diameter for Axial Tests  
Dimension B=Platen Separation

2. Moisture Content of sample : as-received  
3. All preparation and testing carried out in accordance with ISRM Commission on Testing Methods 1985  
4. Opinions and interpretations are outside the scope of UKAS accreditation  
5. Carried out parallel/perpendicular to bedding planes where obvious otherwise core shape used to determine orientation

Originator	Approved	POINT LOAD INDEX TESTS	 Figure F7
DW	CD 05/03/2024		





Site LT521 FASNAKYLE 400KV SUBSTATION

Client SSEN Transmission

Engineer Jacobs

Contract No 26560

~ Indicates test not carried out

Sample Identification		Orientation of Test	Dimension A	Dimension B	Load	Is	Corrected Is(50)	Comments
Exploratory Hole	Depth m							
			mm	mm	kN	MN/m <sup>2</sup>	MN/m <sup>2</sup>	
BH14	6.52	Axial	79.0	54.0	43.2	7.95	9.47	
BH14	6.52	Diametral	123.0	79.0	38.4	6.15	7.56	
BH15	1.30	Axial	103.0	36.0	42.1	8.92	10.29	
BH15	1.65	Lump	87.0	40.0	19.2	4.33	4.93	
BH15	2.50	Axial	103.0	59.0	40.7	5.26	6.78	
BH15	2.50	Diametral	159.0	103.0	32.4	3.05	4.23	
BH15	3.40	Axial	102.0	30.0	45.0	11.55	12.76	
BH15	3.40	Diametral	235.0	102.0	45.0	4.33	5.96	
BH15	5.10	Lump	109.0	42.0	26.4	4.53	5.48	
BH15	5.45	Axial	103.0	50.0	30.1	4.59	5.70	

Notes

1. Dimension A= Minimum Width for Lump Tests  
Dimension A=Length for Diametral Tests  
Dimension A=Diameter for Axial Tests  
Dimension B=Platen Separation

2. Moisture Content of sample : as-received



3. All preparation and testing carried out in accordance with ISRM Commission on Testing Methods 1985

4. Opinions and interpretations are outside the scope of UKAS accreditation

5. Carried out parallel/perpendicular to bedding planes where obvious otherwise core shape used to determine orientation

Originator	Approved	POINT LOAD INDEX TESTS	Figure F7
DW	CD 05/03/2024		



		Site LT521 FASNAKYLE 400KV SUBSTATION						Contract No 26560  ~ Indicates test not carried out
		Client SSEN Transmission						
		Engineer Jacobs						
Sample Identification		Orientation of Test	Dimension A	Dimension B	Load	Is	Corrected Is(50)	Comments
Exploratory Hole	Depth m							
BH15	6.70	Axial	102.0	87.0	32.1	2.84	3.99	
BH15	6.70	Diametral	168.0	102.0	38.9	3.74	5.15	
BH16	5.25	Lump	112.0	35.0	18.9	3.79	4.42	
BH16	5.65	Axial	103.0	49.0	30.9	4.81	5.95	
BH16	5.75	Axial	102.0	80.0	35.8	3.45	4.75	
BH16	5.75	Diametral	214.0	103.0	28.7	2.71	3.74	
BH16	7.10	Axial	103.0	50.0	30.7	4.68	5.82	
BH16	7.10	Diametral	265.0	103.0	37.8	3.56	4.93	
BH16	7.25	Axial	103.0	56.0	40.7	5.54	7.06	
BH16	7.25	Diametral	168.0	103.0	31.4	2.96	4.10	
<div>Notes</div> <div><div>1. Dimension A= Minimum Width for Lump Tests Dimension A=Length for Diametral Tests Dimension A=Diameter for Axial Tests Dimension B=Platen Separation</div><div>2. Moisture Content of sample : as-received 3. All preparation and testing carried out in accordance with ISRM Commission on Testing Methods 1985 4. Opinions and interpretations are outside the scope of UKAS accreditation 5. Carried out parallel/perpendicular to bedding planes where obvious otherwise core shape used to determine orientation</div></div>								
Originator	Approved	POINT LOAD INDEX TESTS						 Figure F7  Sheet 8 of 18
DW	CD 05/03/2024							





Site LT521 FASNAKYLE 400KV SUBSTATION

Client SSEN Transmission

Engineer Jacobs

Contract No 26560

~ Indicates test not carried out

Sample Identification		Orientation of Test	Dimension A	Dimension B	Load	Is	Corrected Is(50)	Comments
Exploratory Hole	Depth m							
			mm	mm	kN	MN/m <sup>2</sup>	MN/m <sup>2</sup>	
BH17	3.50	Axial	103.0	64.0	45.0	5.36	7.04	
BH17	3.50	Diametral	312.0	103.0	40.2	3.79	5.25	
BH17	4.30	Axial	101.0	55.0	37.4	5.29	6.68	
BH17	4.60	Lump	141.0	33.0	15.4	2.60	3.16	
BH17	6.50	Axial	103.0	69.0	45.0	4.97	6.64	
BH17	6.80	Diametral	241.0	103.0	45.0	4.24	5.87	
BH17	8.00	Axial	103.0	58.0	45.0	5.92	7.60	
BH17	8.00	Diametral	177.0	103.0	39.8	3.75	5.19	
BH18	4.00	Axial	103.0	87.0	39.4	3.45	4.86	
BH18	4.00	Diametral	171.0	103.0	27.2	2.56	3.55	

Notes

1. Dimension A= Minimum Width for Lump Tests  
Dimension A=Length for Diametral Tests  
Dimension A=Diameter for Axial Tests  
Dimension B=Platen Separation

2. Moisture Content of sample : as-received




3. All preparation and testing carried out in accordance with ISRM Commission on Testing Methods 1985

4. Opinions and interpretations are outside the scope of UKAS accreditation

5. Carried out parallel/perpendicular to bedding planes where obvious otherwise core shape used to determine orientation

Originator	Approved	POINT LOAD INDEX TESTS	Figure F7 Sheet 9 of 18
DW	CD 05/03/2024		



		SiteLT521 FASNAKYLE 400KV SUBSTATION						Contract No26560  ~ Indicates test not carried out
		ClientSSEN Transmission						
		EngineerJacobs						
Sample Identification		Orientation of Test	Dimension A	Dimension B	Load	Is	Corrected Is(50)	Comments
Exploratory Hole	Depth m							
			mm	mm	kN	MN/m²	MN/m²	
BH18	5.10	Axial	103.0	56.0	35.4	4.82	6.14	
BH18	5.10	Diametral	193.0	103.0	4.5	0.42	0.59	
BH18	6.80	Axial	103.0	45.0	42.8	7.25	8.80	
BH18	6.80	Diametral	261.0	103.0	35.1	3.31	4.58	
BH19	3.33	Axial	103.0	64.0	42.9	5.11	6.71	
BH19	3.33	Diametral	153.0	103.0	40.1	3.78	5.23	
BH19	3.62	Lump	98.0	63.0	25.4	3.23	4.18	
BH19	4.03	Axial	103.0	58.0	36.5	4.80	6.16	
BH19	4.85	Lump	52.0	32.0	16.4	7.74	7.46	
BH19	5.15	Axial	103.0	52.0	38.7	5.67	7.11	
<div>Notes</div> <div><div>1. Dimension A= Minimum Width for Lump Tests Dimension A=Length for Diametral Tests Dimension A=Diameter for Axial Tests Dimension B=Platen Separation</div><div>2. Moisture Content of sample : as-received 3. All preparation and testing carried out in accordance with ISRM Commission on Testing Methods 1985 4. Opinions and interpretations are outside the scope of UKAS accreditation 5. Carried out parallel/perpendicular to bedding planes where obvious otherwise core shape used to determine orientation</div></div>								
Originator	Approved	POINT LOAD INDEX TESTS						 Figure F7
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Site LT521 FASNAKYLE 400KV SUBSTATION

Client SSEN Transmission

Engineer Jacobs

Contract No **26560**

~ Indicates test not carried out

Sample Identification		Orientation of Test	Dimension A	Dimension B	Load	Is	Corrected Is(50)	Comments
Exploratory Hole	Depth m							
			mm	mm	kN	MN/m <sup>2</sup>	MN/m <sup>2</sup>	
BH19	5.75	Axial	103.0	67.0	45.0	5.12	6.80	
BH19	5.75	Diametral	200.0	103.0	45.0	4.24	5.87	
BH20	1.10	Axial	103.0	45.0	19.8	3.36	4.07	
BH20	1.10	Diametral	205.0	103.0	13.2	1.24	1.72	
BH20	1.50	Lump	94.0	42.0	16.7	3.32	3.89	
BH20	2.30	Axial	102.0	86.0	42.5	3.81	5.33	
BH20	2.80	Axial	102.0	49.0	45.0	7.07	8.73	
BH20	2.80	Diametral	182.0	102.0	37.7	3.62	4.99	
BH20	5.10	Lump	84.0	55.0	23.1	3.93	4.76	
BH20	5.10	Lump	198.0	46.0	23.4	2.02	2.85	

**Notes**

1. Dimension A= Minimum Width for Lump Tests  
Dimension A=Length for Diametral Tests  
Dimension A=Diameter for Axial Tests  
Dimension B=Platen Separation

2. Moisture Content of sample : as-received

3. All preparation and testing carried out in accordance with ISRM Commission on Testing Methods 1985

4. Opinions and interpretations are outside the scope of UKAS accreditation

5. Carried out parallel/perpendicular to bedding planes where obvious otherwise core shape used to determine orientation

Originator	Approved	<b>POINT LOAD INDEX TESTS</b>	<b>Figure F7</b> Sheet 11 of 18
DW	CD 05/03/2024		





Site LT521 FASNAKYLE 400KV SUBSTATION

Client SSEN Transmission

Engineer Jacobs

Contract No 26560

~ Indicates test not carried out

Sample Identification		Orientation of Test	Dimension A	Dimension B	Load	Is	Corrected Is(50)	Comments
Exploratory Hole	Depth m							
			mm	mm	kN	MN/m <sup>2</sup>	MN/m <sup>2</sup>	
BH21	4.10	Axial	102.0	59.0	19.3	2.52	3.24	
BH21	4.15	Diametral	116.0	102.0	21.6	2.08	2.86	
BH21	5.30	Lump	103.0	95.0	10.6	0.85	1.22	
BH21	5.40	Diametral	131.0	103.0	11.9	1.12	1.55	
BH21	6.20	Lump	184.0	89.0	6.9	0.33	0.53	
BH21	7.00	Lump	109.0	54.0	7.8	1.04	1.33	
BH21	7.20	Axial	102.0	58.0	12.8	1.70	2.18	
BH21	7.30	Diametral	254.0	103.0	9.7	0.91	1.27	
BH21	7.40	Axial	103.0	78.0	11.5	1.12	1.54	
BH22	5.30	Diametral	241.0	103.0	1.4	0.13	0.18	

Notes

1. Dimension A= Minimum Width for Lump Tests  
Dimension A=Length for Diametral Tests  
Dimension A=Diameter for Axial Tests  
Dimension B=Platen Separation

2. Moisture Content of sample : as-received

3. All preparation and testing carried out in accordance with ISRM Commission on Testing Methods 1985

4. Opinions and interpretations are outside the scope of UKAS accreditation

5. Carried out parallel/perpendicular to bedding planes where obvious otherwise core shape used to determine orientation

Originator	Approved	POINT LOAD INDEX TESTS	Figure F7
DW	CD 05/03/2024		





Site LT521 FASNAKYLE 400KV SUBSTATION

Client SSEN Transmission

Engineer Jacobs

Contract No **26560**

~ Indicates test not carried out

Sample Identification		Orientation of Test	Dimension A	Dimension B	Load	Is	Corrected Is(50)	Comments
Exploratory Hole	Depth m							
			mm	mm	kN	MN/m <sup>2</sup>	MN/m <sup>2</sup>	
BH22	5.40	Axial	103.0	96.0	1.6	0.13	0.18	
BH22	5.90	Axial	103.0	82.0	0.3	0.03	0.04	
BH22	6.00	Diametral	178.0	102.0	1.7	0.16	0.23	
BH22	7.75	Diametral	240.0	102.0	4.7	0.45	0.62	
BH22	7.85	Axial	102.0	67.0	1.4	0.16	0.22	
BH22	9.20	Axial	102.0	54.0	3.0	0.43	0.54	
BH22	9.30	Diametral	271.0	102.0	7.2	0.69	0.95	
BH22	10.20	Axial	102.0	59.0	4.5	0.59	0.76	
BH22	10.30	Diametral	186.0	103.0	1.1	0.10	0.14	
BH22	11.10	Axial	103.0	43.0	3.2	0.57	0.68	

**Notes**

1. Dimension A= Minimum Width for Lump Tests  
Dimension A=Length for Diametral Tests  
Dimension A=Diameter for Axial Tests  
Dimension B=Platen Separation

2. Moisture Content of sample : as-received




3. All preparation and testing carried out in accordance with ISRM Commission on Testing Methods 1985

4. Opinions and interpretations are outside the scope of UKAS accreditation




5. Carried out parallel/perpendicular to bedding planes where obvious otherwise core shape used to determine orientation

Originator	Approved	POINT LOAD INDEX TESTS	<b>Figure F7</b> Sheet 13 of 18
DW	CD 05/03/2024		



		SiteLT521 FASNAKYLE 400KV SUBSTATION						Contract No26560  ~ Indicates test not carried out
		ClientSSEN Transmission						
		EngineerJacobs						
Sample Identification		Orientation of Test	Dimension A	Dimension B	Load	Is	Corrected Is(50)	Comments
Exploratory Hole	Depth m							
			mm	mm	kN	MN/m²	MN/m²	
BH22	11.20	Diametral	148.0	102.0	1.8	0.17	0.24	
BH23	2.16	Lump	124.0	42.0	5.9	0.89	1.11	
BH23	2.35	Axial	101.0	78.0	18.0	1.79	2.45	
BH23	3.55	Lump	175.0	60.0	13.7	1.02	1.49	
BH23	3.55	Lump	192.0	52.0	1.8	0.14	0.20	
BH23	5.00	Axial	103.0	47.0	8.7	1.41	1.73	
BH23	5.00	Diametral	202.0	103.0	16.1	1.52	2.10	
BH24	3.75	Lump	104.0	45.0	2.1	0.35	0.43	
BH24	3.80	Lump	135.0	45.0	4.8	0.62	0.80	
BH24	5.05	Axial	103.0	61.0	32.2	4.03	5.23	
<div>Notes</div> <div><div>1. Dimension A= Minimum Width for Lump Tests Dimension A=Length for Diametral Tests Dimension A=Diameter for Axial Tests Dimension B=Platen Separation</div><div>2. Moisture Content of sample : as-received 3. All preparation and testing carried out in accordance with ISRM Commission on Testing Methods 1985 4. Opinions and interpretations are outside the scope of UKAS accreditation 5. Carried out parallel/perpendicular to bedding planes where obvious otherwise core shape used to determine orientation</div></div>								
Originator	Approved	POINT LOAD INDEX TESTS						 Figure F7
DW	 05/03/2024							
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		SiteLT521 FASNAKYLE 400KV SUBSTATION						Contract No26560  ~ Indicates test not carried out
		ClientSSEN Transmission						
		EngineerJacobs						
Sample Identification		Orientation of Test	Dimension A	Dimension B	Load	Is	Corrected Is(50)	Comments
Exploratory Hole	Depth m							
			mm	mm	kN	MN/m²	MN/m²	
BH24	5.10	Diametral	70.0	102.0	4.6	0.44	0.61	
BH24	6.10	Axial	103.0	63.0	2.0	0.24	0.32	
BH24	6.20	Axial	103.0	70.0	0.9	0.10	0.13	
BH24	6.40	Diametral	102.0	103.0	1.0	0.09	0.13	
BH24	7.85	Axial	103.0	98.0	2.3	0.18	0.26	
BH24	7.95	Diametral	213.0	103.0	1.6	0.15	0.21	
BH25	7.60	Axial	102.0	70.0	1.8	0.20	0.26	
BH25	7.65	Diametral	141.0	102.0	2.6	0.25	0.34	
BH25	9.20	Axial	103.0	45.0	2.4	0.41	0.49	
BH25	10.80	Axial	104.0	66.0	1.6	0.18	0.24	
<div>Notes</div> <div><div>1. Dimension A= Minimum Width for Lump Tests Dimension A=Length for Diametral Tests Dimension A=Diameter for Axial Tests Dimension B=Platen Separation</div><div>2. Moisture Content of sample : as-received 3. All preparation and testing carried out in accordance with ISRM Commission on Testing Methods 1985 4. Opinions and interpretations are outside the scope of UKAS accreditation 5. Carried out parallel/perpendicular to bedding planes where obvious otherwise core shape used to determine orientation</div></div>								
Originator	Approved	POINT LOAD INDEX TESTS						 Figure F7
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Site LT521 FASNAKYLE 400KV SUBSTATION

Client SSEN Transmission

Engineer Jacobs

Contract No 26560

~ Indicates test not carried out

Sample Identification		Orientation of Test	Dimension A	Dimension B	Load	Is	Corrected Is(50)	Comments
Exploratory Hole	Depth m							
			mm	mm	kN	MN/m <sup>2</sup>	MN/m <sup>2</sup>	
BH25	11.70	Lump	97.0	65.0	1.9	0.24	0.31	
BH25	11.70	Lump	105.0	49.0	1.3	0.20	0.25	
BH25	12.80	Diametral	181.0	102.0	1.2	0.12	0.16	
BH25	13.00	Axial	104.0	72.0	0.4	0.04	0.06	
BH25	12.00	Axial	104.0	77.0	0.6	0.06	0.08	
BH26	4.20	Axial	103.0	70.0	8.3	0.90	1.21	
BH26	4.30	Diametral	90.0	103.0	0.4	0.04	0.05	
BH26	6.00	Lump	59.0	50.0	4.7	1.25	1.37	
BH26	6.60	Axial	10.0	74.0	8.0	8.49	6.82	
BH26	7.20	Axial	103.0	25.0	3.3	1.01	1.07	

Notes

1. Dimension A= Minimum Width for Lump Tests  
Dimension A=Length for Diametral Tests  
Dimension A=Diameter for Axial Tests  
Dimension B=Platen Separation

2. Moisture Content of sample : as-received



3. All preparation and testing carried out in accordance with ISRM Commission on Testing Methods 1985

4. Opinions and interpretations are outside the scope of UKAS accreditation

5. Carried out parallel/perpendicular to bedding planes where obvious otherwise core shape used to determine orientation

Originator	Approved	POINT LOAD INDEX TESTS	Figure F7
DW	CD 05/03/2024		



		Site LT521 FASNAKYLE 400KV SUBSTATION						Contract No 26560  ~ Indicates test not carried out
		Client SSEN Transmission						
		Engineer Jacobs						
Sample Identification		Orientation of Test	Dimension A	Dimension B	Load	Is	Corrected Is(50)	Comments
Exploratory Hole	Depth m							
BH26	7.25	Diametral	204.0	103.0	1.3	0.12	0.17	
BH26	7.90	Lump	79.0	45.0	3.4	0.75	0.86	
BH26	7.90	Axial	101.0	60.0	3.8	0.49	0.63	
BH27	2.80	Axial	103.0	47.0	41.2	6.68	8.19	
BH27	2.80	Diametral	167.0	103.0	35.4	3.34	4.62	
BH27	4.10	Axial	103.0	95.0	12.1	0.97	1.39	
BH27	4.10	Diametral	302.0	103.0	6.0	0.57	0.78	
BH27	4.45	Axial	103.0	65.0	45.0	5.28	6.96	
BH27	4.45	Diametral	187.0	103.0	32.1	3.03	4.19	
BH27	6.60	Lump	95.0	38.0	4.3	0.94	1.07	
<div>Notes</div> <div><div>1. Dimension A= Minimum Width for Lump Tests Dimension A=Length for Diametral Tests Dimension A=Diameter for Axial Tests Dimension B=Platen Separation</div><div>2. Moisture Content of sample : as-received 3. All preparation and testing carried out in accordance with ISRM Commission on Testing Methods 1985 4. Opinions and interpretations are outside the scope of UKAS accreditation 5. Carried out parallel/perpendicular to bedding planes where obvious otherwise core shape used to determine orientation</div></div>								
Originator	Approved	POINT LOAD INDEX TESTS						 Figure F7  Sheet 17 of 18
DW	CD 05/03/2024							





Site LT521 FASNAKYLE 400KV SUBSTATION

Client SSEN Transmission

Engineer Jacobs

Contract No 26560

~ Indicates test not carried out

Sample Identification		Orientation of Test	Dimension A	Dimension B	Load	Is	Corrected Is(50)	Comments
Exploratory Hole	Depth m							
			mm	mm	kN	MN/m <sup>2</sup>	MN/m <sup>2</sup>	
BH27	7.68	Axial	103.0	54.0	28.7	4.05	5.12	
BH27	7.80	Lump	69.0	30.0	12.9	4.89	4.95	
BH27	9.40	Axial	103.0	69.0	45.0	4.97	6.64	
BH27	9.40	Diametral	193.0	103.0	29.4	2.77	3.84	
BH28	5.30	Lump	69.0	50.0	6.8	1.55	1.76	
BH28	5.65	Axial	103.0	42.0	8.4	1.53	1.82	
BH28	6.40	Lump	54.0	36.0	6.0	2.42	2.42	
BH28	6.75	Axial	103.0	52.0	5.6	0.82	1.03	

Notes

1. Dimension A= Minimum Width for Lump Tests  
Dimension A=Length for Diametral Tests  
Dimension A=Diameter for Axial Tests  
Dimension B=Platen Separation

2. Moisture Content of sample : as-received  
3. All preparation and testing carried out in accordance with ISRM Commission on Testing Methods 1985  
4. Opinions and interpretations are outside the scope of UKAS accreditation  
5. Carried out parallel/perpendicular to bedding planes where obvious otherwise core shape used to determine orientation

Originator	Approved	POINT LOAD INDEX TESTS	 Figure F7
DW	CD 05/03/2024		



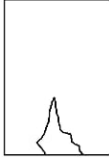





Site LT521 FASNAKYLE 400KV SUBSTATION

Client SSEN Transmission

Engineer Jacobs

Contract No 26560

Exploration Point		BH03	BH04	BH09	BH09
Depth	m	2.30-2.60	4.70-5.00	3.50-3.73	5.40-5.70
Date Received		19/01/2024	19/01/2024	19/01/2024	19/01/2024
Date Tested		26/01/2024	09/02/2024	26/01/2024	26/01/2024
Length	mm	173.7	195.5	116.1	208.1
Mean Diameter	mm	79.7	103.6	103.1	103.2
Length / Diameter Ratio		2.18	1.89	1.13	2.02
Straightness Compliance (see notes)	Y/N	Y	Y	Y	Y
Flatness Compliance (see notes)	Y/N	Y	Y	Y	Y
Perpendicularity	mm	0.0017	0.0015	0.0034	0.0012
Bulk Density	Mg/m <sup>3</sup>	2.67	2.45	2.73	2.6
Moisture Content	%	0.3	1.8	0.2	0.3
Degree of Saturation	%	As received	As received	As received	As received
Stress Rate	MPa/sec	0.60	0.50	0.60	0.60
Test Duration		6mins 50secs	1min 20secs	3mins 17secs	1mins 43secs
Failure Load	kN	490	98.1	352.9	220.5
Uniaxial Compressive Strength	MPa	98.2	11.6	42.3	26.4
Type of Failure		Explosive	Normal	Normal	Normal
Strength Classification		Strong	Weak	Med strong	Med strong
Associated Comment Numbers (see notes)			3,7	3	7
Failure Diagram					

**Notes:**

1. Prepared in accordance with ASTM D4543-08.
2. Tested in accordance with ASTM D7012-14: Method C
3. Height/diameter ratio outwith limits of 2.0 to 2.5. Best effort conformance accepted - tested as is.
4. Straightness of core more than 0.50mm over length. Best effort conformance accepted - tested as is.
5. Flatness of core ends more than 0.025mm. Best effort conformance accepted - tested as is.
6. Perpendicularity of core more than 0.0043mm. Best effort conformance accepted - tested as is.
7. Test duration not falling between 2 and 15 minutes. Best effort conformance accepted.
8. There are some rock types with physical characteristics which preclude preparing specimens to the desired tolerances. Where this is the case the specimen is evaluated to determine whether a best effort was achieved for the rock type involved. Based upon the evaluation and professional judgement a determination is made whether the specimen should be discarded, tested as is, use of capping compound or start over.
9. Preparation and conformance measuring equipment: surface plate, V-block, displacement gauge assembly, feeler gauge set, vernier calipers, surface grinder and masonry saw.

Originator

Checked &  
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CD  
05/03/2024**UNIAXIAL COMPRESSIVE STRENGTH**

ASTM Methods

**Figure F8**

Sheet 1 of 1









Site LT521 FASNAKYLE 400KV SUBSTATION

Client SSEN Transmission

Engineer Jacobs

Contract No 26560

Exploration Point		BH11	BH13	BH13	BH14
Depth	m	3.60-3.90	2.00-2.33	5.15-5.70	2.77-3.06
Date Received		19/01/2024	19/01/2024	19/01/2024	19/01/2024
Date Tested		26/01/2024	26/01/2024	26/01/2024	26/01/2024
Length	mm	166.3	127.6	211.7	167.5
Mean Diameter	mm	80	103.2	103.2	79.7
Length / Diameter Ratio		2.08	1.24	2.05	2.10
Straightness Compliance (see notes)	Y/N	Y	Y	Y	Y
Flatness Compliance (see notes)	Y/N	Y	Y	Y	Y
Perpendicularity	mm	0.0018	0.0024	0.0019	0.0018
Bulk Density	Mg/m <sup>3</sup>	2.69	2.72	2.7	2.7
Moisture Content	%	0.1	0.2	0.1	0.2
Degree of Saturation	%	As received	As received	As received	As received
Stress Rate	MPa/sec	0.60	0.60	0.60	0.60
Test Duration		2mins 34secs	3mins 12secs	3mins 37secs	4mins 34secs
Failure Load	kN	177.8	339	425	338.1
Uniaxial Compressive Strength	MPa	35.4	40.5	50.8	67.8
Type of Failure		Normal	Normal	Normal	Normal
Strength Classification		Med strong	Med strong	Strong	Strong
Associated Comment Numbers (see notes)			3		
Failure Diagram					

**Notes:**

1. Prepared in accordance with ASTM D4543-08.
2. Tested in accordance with ASTM D7012-14: Method C
3. Height/diameter ratio outwith limits of 2.0 to 2.5. Best effort conformance accepted - tested as is.
4. Straightness of core more than 0.50mm over length. Best effort conformance accepted - tested as is.
5. Flatness of core ends more than 0.025mm. Best effort conformance accepted - tested as is.
6. Perpendicularity of core more than 0.0043mm. Best effort conformance accepted - tested as is.
7. Test duration not falling between 2 and 15 minutes. Best effort conformance accepted.
8. There are some rock types with physical characteristics which preclude preparing specimens to the desired tolerances. Where this is the case the specimen is evaluated to determine whether a best effort was achieved for the rock type involved. Based upon the evaluation and professional judgement a determination is made whether the specimen should be discarded, tested as is, use of capping compound or start over.
9. Preparation and conformance measuring equipment: surface plate, V-block, displacement gauge assembly, feeler gauge set, vernier calipers, surface grinder and masonry saw.

Originator

Checked &  
Approved

DW

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05/03/2024**UNIAXIAL COMPRESSIVE STRENGTH**

ASTM Methods

**Figure F9**

Sheet 1 of 1





Site LT521 FASNAKYLE 400KV SUBSTATION

Client SSEN Transmission

Engineer Jacobs

Contract No 26560

Exploration Point		BH14	BH15	BH15	BH16
Depth	m	4.70-5.17	1.65-2.00	5.10-5.45	5.25-5.55
Date Received		19/01/2024	19/01/2024	19/01/2024	19/01/2024
Date Tested		26/01/2024	26/01/2024	26/01/2024	26/01/2024
Length	mm	169.7	198.5	165.2	212.3
Mean Diameter	mm	79.7	103.5	79.7	103.3
Length / Diameter Ratio		2.13	1.92	2.07	2.06
Straightness Compliance (see notes)	Y/N	Y	Y	Y	Y
Flatness Compliance (see notes)	Y/N	Y	Y	Y	Y
Perpendicularity	mm	0.0015	0.0015	0.0024	0.0014
Bulk Density	Mg/m <sup>3</sup>	2.68	2.73	2.61	2.69
Moisture Content	%	0.4	0.3	0.1	0.1
Degree of Saturation	%	As received	As Received	As Received	As received
Stress Rate	MPa/sec	0.60	0.60	0.60	0.60
Test Duration		3mins 45secs	3mins 47secs	5mins 6secs	2mins 38secs
Failure Load	kN	274.4	428	360.8	309.9
Uniaxial Compressive Strength	MPa	55.0	50.9	72.3	37.0
Type of Failure		Normal	Explosive	Explosive	Normal
Strength Classification		Strong	Strong	Strong	Med strong
Associated Comment Numbers (see notes)			3		
Failure Diagram					

**Notes:**

1. Prepared in accordance with ASTM D4543-08.
2. Tested in accordance with ASTM D7012-14: Method C
3. Height/diameter ratio outwith limits of 2.0 to 2.5. Best effort conformance accepted - tested as is.
4. Straightness of core more than 0.50mm over length. Best effort conformance accepted - tested as is.
5. Flatness of core ends more than 0.025mm. Best effort conformance accepted - tested as is.
6. Perpendicularity of core more than 0.0043mm. Best effort conformance accepted - tested as is.
7. Test duration not falling between 2 and 15 minutes. Best effort conformance accepted.
8. There are some rock types with physical characteristics which preclude preparing specimens to the desired tolerances. Where this is the case the specimen is evaluated to determine whether a best effort was achieved for the rock type involved. Based upon the evaluation and professional judgement a determination is made whether the specimen should be discarded, tested as is, use of capping compound or start over.
9. Preparation and conformance measuring equipment: surface plate, V-block, displacement gauge assembly, feeler gauge set, vernier calipers, surface grinder and masonry saw.

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05/03/2024**UNIAXIAL COMPRESSIVE STRENGTH**

ASTM Methods

**Figure F10**

Sheet 1 of 1




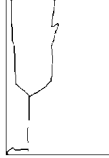




Site LT521 FASNAKYLE 400KV SUBSTATION

Client SSEN Transmission

Engineer Jacobs

Contract No 26560

Exploration Point		BH17	BH19	BH19	BH20
Depth	m	4.60-5.23	3.62-4.03	4.85-5.15	1.50-2.20
Date Received		19/01/2024	19/01/2024	19/01/2024	19/01/2024
Date Tested		26/01/2024	26/01/2024	26/01/2024	26/01/2024
Length	mm	162.8	212.2	179	146.6
Mean Diameter	mm	79.4	103.3	103.5	103.2
Length / Diameter Ratio		2.05	2.05	1.73	1.42
Straightness Compliance (see notes)	Y/N	Y	Y	Y	Y
Flatness Compliance (see notes)	Y/N	Y	Y	Y	Y
Perpendicularity	mm	0.0018	0.0014	0.0014	0.0014
Bulk Density	Mg/m <sup>3</sup>	2.69	2.64	2.77	2.73
Moisture Content	%	0.2	0.2	0.2	0.5
Degree of Saturation	%	As Received	As received	As received	As Received
Stress Rate	MPa/sec	0.60	0.60	0.60	0.60
Test Duration		5mins 20secs	4mins 45secs	5mins 24secs	1min 35secs
Failure Load	kN	405	530	605	135.2
Uniaxial Compressive Strength	MPa	81.8	63.2	71.9	16.2
Type of Failure		Explosive	Normal	Explosive	Normal
Strength Classification		Strong	Strong	Strong	Weak
Associated Comment Numbers (see notes)				3	3,7
Failure Diagram					

**Notes:**

1. Prepared in accordance with ASTM D4543-08.
2. Tested in accordance with ASTM D7012-14: Method C
3. Height/diameter ratio outwith limits of 2.0 to 2.5. Best effort conformance accepted - tested as is.
4. Straightness of core more than 0.50mm over length. Best effort conformance accepted - tested as is.
5. Flatness of core ends more than 0.025mm. Best effort conformance accepted - tested as is.
6. Perpendicularity of core more than 0.0043mm. Best effort conformance accepted - tested as is.
7. Test duration not falling between 2 and 15 minutes. Best effort conformance accepted.
8. There are some rock types with physical characteristics which preclude preparing specimens to the desired tolerances. Where this is the case the specimen is evaluated to determine whether a best effort was achieved for the rock type involved. Based upon the evaluation and professional judgement a determination is made whether the specimen should be discarded, tested as is, use of capping compound or start over.
9. Preparation and conformance measuring equipment: surface plate, V-block, displacement gauge assembly, feeler gauge set, vernier calipers, surface grinder and masonry saw.

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ASTM Methods

**Figure F11**

Sheet 1 of 1






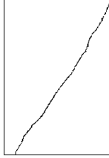


Site LT521 FASNAKYLE 400KV SUBSTATION

Client SSEN Transmission

Engineer Jacobs

Contract No 26560

Exploration Point		BH21	BH23	BH26	BH26
Depth	m	7.00-7.20	2.16-2.35	6.00-6.30	8.00-8.20
Date Received		15/12/2023	19/01/2024	15/12/2023	15/12/2023
Date Tested		21/12/2023	26/01/2024	21/12/2023	21/12/2023
Length	mm	235.3	133.5	238.6	157.7
Mean Diameter	mm	103.4	103.4	103.6	103.1
Length / Diameter Ratio		2.28	1.29	2.30	1.53
Straightness Compliance (see notes)	Y/N	Y	Y	Y	Y
Flatness Compliance (see notes)	Y/N	Y	Y	Y	Y
Perpendicularity	mm	0	0.0019	0	0
Bulk Density	Mg/m <sup>3</sup>	2.73	2.62	2.6	2.63
Moisture Content	%	0.3	0.4	0.2	0.1
Degree of Saturation	%	As Received	As received	As Received	As Received
Stress Rate	MPa/sec	0.70	0.60	0.70	0.70
Test Duration		2mins 8secs	2mins 47secs	4mins 50secs	2mins 26secs
Failure Load	kN	279.6	333.9	594	261
Uniaxial Compressive Strength	MPa	33.3	39.8	70.5	31.3
Type of Failure		Normal	Normal	Normal	Normal
Strength Classification		Medium Strong	Med strong	Strong	Weak
Associated Comment Numbers (see notes)			3		3
Failure Diagram					

**Notes:**

1. Prepared in accordance with ASTM D4543-08.
2. Tested in accordance with ASTM D7012-14: Method C
3. Height/diameter ratio outwith limits of 2.0 to 2.5. Best effort conformance accepted - tested as is.
4. Straightness of core more than 0.50mm over length. Best effort conformance accepted - tested as is.
5. Flatness of core ends more than 0.025mm. Best effort conformance accepted - tested as is.
6. Perpendicularity of core more than 0.0043mm. Best effort conformance accepted - tested as is.
7. Test duration not falling between 2 and 15 minutes. Best effort conformance accepted.
8. There are some rock types with physical characteristics which preclude preparing specimens to the desired tolerances. Where this is the case the specimen is evaluated to determine whether a best effort was achieved for the rock type involved. Based upon the evaluation and professional judgement a determination is made whether the specimen should be discarded, tested as is, use of capping compound or start over.
9. Preparation and conformance measuring equipment: surface plate, V-block, displacement gauge assembly, feeler gauge set, vernier calipers, surface grinder and masonry saw.

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ASTM Methods

**Figure F12**

Sheet 1 of 1



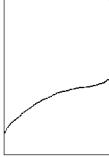
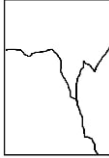



Site LT521 FASNAKYLE 400KV SUBSTATION

Client SSEN Transmission

Engineer Jacobs

Contract No 26560

Exploration Point		BH27	BH28	BH28	
Depth	m	7.80-8.35	5.30-5.60	6.40-6.70	
Date Received		19/01/2024	19/01/2024	19/01/2024	
Date Tested		26/01/2024	26/01/2024	26/01/2024	
Length	mm	205.5	215	189.1	
Mean Diameter	mm	103.1	103.3	103.4	
Length / Diameter Ratio		1.99	2.08	1.83	
Straightness Compliance (see notes)	Y/N	Y	Y	Y	
Flatness Compliance (see notes)	Y/N	Y	Y	Y	
Perpendicularity	mm	0.0019	0.0012	0.0016	
Bulk Density	Mg/m <sup>3</sup>	2.67	2.57	2.7	
Moisture Content	%	0.5	0.2	0.2	
Degree of Saturation	%	As received	As received	As received	
Stress Rate	MPa/sec	0.60	0.60	0.60	
Test Duration		4mins 2secs	1min 29secs	40secs	
Failure Load	kN	467	175.6	80.3	
Uniaxial Compressive Strength	MPa	55.9	21.0	9.6	
Type of Failure		Normal	Normal	Normal	
Strength Classification		Strong	Weak	Weak	
Associated Comment Numbers (see notes)		3	7	7	
Failure Diagram					

**Notes:**

1. Prepared in accordance with ASTM D4543-08.
2. Tested in accordance with ASTM D7012-14: Method C
3. Height/diameter ratio outwith limits of 2.0 to 2.5. Best effort conformance accepted - tested as is.
4. Straightness of core more than 0.50mm over length. Best effort conformance accepted - tested as is.
5. Flatness of core ends more than 0.025mm. Best effort conformance accepted - tested as is.
6. Perpendicularity of core more than 0.0043mm. Best effort conformance accepted - tested as is.
7. Test duration not falling between 2 and 15 minutes. Best effort conformance accepted.
8. There are some rock types with physical characteristics which preclude preparing specimens to the desired tolerances. Where this is the case the specimen is evaluated to determine whether a best effort was achieved for the rock type involved. Based upon the evaluation and professional judgement a determination is made whether the specimen should be discarded, tested as is, use of capping compound or start over.
9. Preparation and conformance measuring equipment: surface plate, V-block, displacement gauge assembly, feeler gauge set, vernier calipers, surface grinder and masonry saw.

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ASTM Methods

**Figure F13**

Sheet 1 of 1




	Site	LT521 FASNAKYLE 400KV SUBSTATION	Contract No	<b>26560</b>
	Client	SSEN Transmission	Hole ID	BH03
	Engineer	Jacobs	Sample Ref	
			Depth (m)	2.30
			Sample Type	C



Originator	Checked & Approved	PHOTOGRAPHS OF SPECIMEN FAILURE	 <b>Figure F14</b>
DW	 05/03/2024		




	Site	LT521 FASNAKYLE 400KV SUBSTATION	Contract No	<b>26560</b>
	Client	SSEN Transmission	Hole ID	BH04
	Engineer	Jacobs	Sample Ref	
			Depth (m)	4.70
			Sample Type	C



Originator	Checked & Approved	<b>PHOTOGRAPHS OF SPECIMEN FAILURE</b>	 <b>Figure F15</b>
DW	 05/03/2024		




	Site	LT521 FASNAKYLE 400KV SUBSTATION	Contract No	<b>26560</b>
	Client	SSEN Transmission	Hole ID	BH09
	Engineer	Jacobs	Sample Ref	
			Depth (m)	3.50
			Sample Type	C



Originator	Checked & Approved	<b>PHOTOGRAPHS OF SPECIMEN FAILURE</b>	 <b>Figure F16</b>
DW	 05/03/2024		
			Sheet 1 of 1




	Site	LT521 FASNAKYLE 400KV SUBSTATION	Contract No	26560
	Client	SSEN Transmission	Hole ID	BH09
	Engineer	Jacobs	Sample Ref	
			Depth (m)	5.40
			Sample Type	C



Originator	Checked & Approved	<b>PHOTOGRAPHS OF SPECIMEN FAILURE</b>	 <b>Figure F17</b>
DW	 05/03/2024		
			Sheet 1 of 1




	Site	LT521 FASNAKYLE 400KV SUBSTATION	Contract No	<b>26560</b>
	Client	SSEN Transmission	Hole ID	BH11
	Engineer	Jacobs	Sample Ref	
			Depth (m)	3.60
			Sample Type	C



Originator	Checked & Approved	<b>PHOTOGRAPHS OF SPECIMEN FAILURE</b>	 <b>Figure F18</b>
DW	 05/03/2024		
			Sheet 1 of 1




	Site	LT521 FASNAKYLE 400KV SUBSTATION	Contract No	<b>26560</b>
	Client	SSEN Transmission	Hole ID	BH13
	Engineer	Jacobs	Sample Ref	
			Depth (m)	2.00
			Sample Type	C



Originator	Checked & Approved	<b>PHOTOGRAPHS OF SPECIMEN FAILURE</b>	 <b>Figure F19</b>
DW	 05/03/2024		
			Sheet 1 of 1




	Site	LT521 FASNAKYLE 400KV SUBSTATION	Contract No	26560
	Client	SSEN Transmission	Hole ID	BH13
	Engineer	Jacobs	Sample Ref	
			Depth (m)	5.15
			Sample Type	C



Originator	Checked & Approved	<b>PHOTOGRAPHS OF SPECIMEN FAILURE</b>	 <b>Figure F20</b>
DW	 05/03/2024		
			Sheet 1 of 1




	Site	LT521 FASNAKYLE 400KV SUBSTATION	Contract No	<b>26560</b>
	Client	SSEN Transmission	Hole ID	BH14
	Engineer	Jacobs	Sample Ref	
			Depth (m)	2.77
			Sample Type	C



Originator	Checked & Approved	PHOTOGRAPHS OF SPECIMEN FAILURE	 <b>Figure F21</b>
DW	 05/03/2024		
			Sheet 1 of 1




	Site	LT521 FASNAKYLE 400KV SUBSTATION	Contract No	<b>26560</b>
	Client	SSEN Transmission	Hole ID	BH14
	Engineer	Jacobs	Sample Ref	
			Depth (m)	4.70
			Sample Type	C



Originator	Checked & Approved	<b>PHOTOGRAPHS OF SPECIMEN FAILURE</b>	 <b>Figure F22</b>
DW	 05/03/2024		
			Sheet 1 of 1




	Site	LT521 FASNAKYLE 400KV SUBSTATION	Contract No	<b>26560</b>
	Client	SSEN Transmission	Hole ID	BH15
	Engineer	Jacobs	Sample Ref	
			Depth (m)	1.65
			Sample Type	C



Originator	Checked & Approved	<b>PHOTOGRAPHS OF SPECIMEN FAILURE</b>	 <b>Figure F23</b>
DW	 05/03/2024		
			Sheet 1 of 1



	Site	LT521 FASNAKYLE 400KV SUBSTATION	Contract No	26560
	Client	SSEN Transmission	Hole ID	BH15
	Engineer	Jacobs	Sample Ref	
			Depth (m)	5.10
			Sample Type	C



Originator	Checked & Approved	<b>PHOTOGRAPHS OF SPECIMEN FAILURE</b>	 <b>Figure F24</b>
DW	 05/03/2024		
			Sheet 1 of 1





Site	LT521 FASNAKYLE 400KV SUBSTATION
Client	SSEN Transmission
Engineer	Jacobs

Contract No	<b>26560</b>
Hole ID	BH16
Sample Ref	
Depth (m)	5.25
Sample Type	C



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## PHOTOGRAPHS OF SPECIMEN FAILURE



Figure F25

Sheet 1 of 1




	Site	LT521 FASNAKYLE 400KV SUBSTATION	Contract No	26560
	Client	SSEN Transmission	Hole ID	BH17
	Engineer	Jacobs	Sample Ref	
			Depth (m)	4.60
			Sample Type	C



Originator	Checked & Approved	PHOTOGRAPHS OF SPECIMEN FAILURE	 <b>Figure F26</b>
DW	 05/03/2024		




	Site	LT521 FASNAKYLE 400KV SUBSTATION	Contract No	26560
	Client	SSEN Transmission	Hole ID	BH19
	Engineer	Jacobs	Sample Ref	
			Depth (m)	3.62
			Sample Type	C



Originator	Checked & Approved	<b>PHOTOGRAPHS OF SPECIMEN FAILURE</b>	 <b>Figure F27</b>
DW	 05/03/2024		
			Sheet 1 of 1




	Site	LT521 FASNAKYLE 400KV SUBSTATION	Contract No	<b>26560</b>
	Client	SSEN Transmission	Hole ID	BH19
	Engineer	Jacobs	Sample Ref	
			Depth (m)	4.85
			Sample Type	C



Originator	Checked & Approved	<b>PHOTOGRAPHS OF SPECIMEN FAILURE</b>	 <b>Figure F28</b>
DW	 05/03/2024		
			Sheet 1 of 1



	Site	LT521 FASNAKYLE 400KV SUBSTATION	Contract No	<b>26560</b>
	Client	SSEN Transmission	Hole ID	BH20
	Engineer	Jacobs	Sample Ref	
			Depth (m)	1.50
			Sample Type	C



Originator	Checked & Approved	<b>PHOTOGRAPHS OF SPECIMEN FAILURE</b>	 <b>Figure F29</b>
DW	 05/03/2024		
			Sheet 1 of 1





Site LT521 FASNAKYLE 400KV SUBSTATION

Client SSEN Transmission

Engineer Jacobs

Contract No **26560**

Hole ID BH21

Sample Ref

Depth (m) 7.00

Sample Type C



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## PHOTOGRAPHS OF SPECIMEN FAILURE



Figure F30

Sheet 1 of 1




	Site	LT521 FASNAKYLE 400KV SUBSTATION	Contract No	26560
	Client	SSEN Transmission	Hole ID	BH23
	Engineer	Jacobs	Sample Ref	
			Depth (m)	2.16
			Sample Type	C



Originator	Checked & Approved	<b>PHOTOGRAPHS OF SPECIMEN FAILURE</b>	 <b>Figure F31</b>
DW	 05/03/2024		
			Sheet 1 of 1



	Site	LT521 FASNAKYLE 400KV SUBSTATION	Contract No	26560
	Client	SSEN Transmission	Hole ID	BH26
	Engineer	Jacobs	Sample Ref	
			Depth (m)	6.00
			Sample Type	C



Originator	Checked & Approved	PHOTOGRAPHS OF SPECIMEN FAILURE	 Figure F32
DW	CD 05/03/2024		
			Sheet 1 of 1





Site LT521 FASNAKYLE 400KV SUBSTATION

Client SSEN Transmission

Engineer Jacobs

Contract No **26560**

Hole ID BH26

Sample Ref

Depth (m) 7.90

Sample Type C



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## PHOTOGRAPHS OF SPECIMEN FAILURE



Figure F33

Sheet 1 of 1




	Site	LT521 FASNAKYLE 400KV SUBSTATION	Contract No	26560
	Client	SSEN Transmission	Hole ID	BH27
	Engineer	Jacobs	Sample Ref	
			Depth (m)	7.80
			Sample Type	C



Originator	Checked & Approved	<b>PHOTOGRAPHS OF SPECIMEN FAILURE</b>	 <b>Figure F34</b>
DW	CD 05/03/2024		
			Sheet 1 of 1




	Site	LT521 FASNAKYLE 400KV SUBSTATION	Contract No	<b>26560</b>
	Client	SSEN Transmission	Hole ID	BH28
	Engineer	Jacobs	Sample Ref	
			Depth (m)	5.30
			Sample Type	C



Originator	Checked & Approved	<b>PHOTOGRAPHS OF SPECIMEN FAILURE</b>	 <b>Figure F35</b>
DW	 05/03/2024		



	Site	LT521 FASNAKYLE 400KV SUBSTATION	Contract No	26560
	Client	SSEN Transmission	Hole ID	BH28
	Engineer	Jacobs	Sample Ref	
			Depth (m)	6.40
			Sample Type	C



Originator	Checked & Approved	<b>PHOTOGRAPHS OF SPECIMEN FAILURE</b>	 <b>Figure F36</b>
DW	 05/03/2024		
			Sheet 1 of 1



# LABORATORY TEST CERTIFICATE



**Certificate No :** 24/025 - 01-1  
**To :** Stephen McDonagh  
**Client :** Igne  
62 Rochsolloch Road  
Airdrie  
North Lanarkshire  
ML6 9BG

10 Queenslie Point  
Queenslie Industrial Estate  
120 Stepps Road  
Glasgow  
G33 3NQ

Tel: 0141 774 4032

email: info@mattest.org  
Website: www.mattest.org

## DETERMINATION OF THE RESISTANCE TO WEAR (micro-Deval) - BS EN 1097-1 : 2011

### Introduction

We refer to a sample taken from LT521 Fasnakyle 400kV Substation and delivered to our laboratory on 09th January 2024.

### Material & Source

Sample Reference	:	2013222
Sampled By	:	Client
Sampling Certificate	:	Not Supplied
Location	:	BH25, C, 11.10-11.60m
Designation (d/D)	:	Not Supplied
Description	:	Pinkish brown CRUSHED ROCK
Date Sampled	:	Not Supplied
Date Tested	:	09th January 2024 Onwards
Source	:	A15075-R1 - LT521 Fasnakyle 400kV Substation
Size Fraction	:	10mm to 14mm
Test Condition	:	Wet

### Test Results

<b>Test Specimen 1</b>	<b>55.7</b>
<b>Test Specimen 2</b>	<b>57.6</b>
<b>micro-Deval coefficient, <math>M_{DE}</math></b>	<b>57</b>

### Comments

The results contained in this test certificate relate to the sample(s) as received  
Opinions and interpretations expressed herein are outside the scope of UKAS accreditation  
This test certificate should not be reproduced without the written approval of the laboratory  
All remaining samples for this project will be disposed of 7 days after issue of this test certificate

### Remarks

### Approved for Issue

T McLelland (Director)

Date 16/01/2024



2643





## Certificate of Analysis

*Certificate Number* 24-01641-0

*Issued:* 04-Mar-24

*Client* Terra Tek  
62 Rochsolloch Road  
Airdrie  
ML6 9BG

*Our Reference* 24-01641-0

*Client Reference* A15075-R2

*Order No* (not supplied)

*Contract Title* A15075-R2 / FASNAKYLE

*Description* 3 Aggregate samples.

*Date Received* 26-Jan-24

*Date Started* 26-Jan-24

*Date Completed* 04-Mar-24

*Test Procedures* Identified by prefix DETSn (details on request).

**Notes** This report supersedes 24-01641, amendments made

Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

*Approved By*

Kirk Bridgewood  
General Manager





## Summary of Chemical Analysis

### Aggregate Samples

Our Ref 24-01641-0

Client Ref A15075-R2

Contract Title A15075-R2 / FASNAKYLE

Lab No	2291430	2291431	2291432
Sample ID	BH18	BH21	BH24
Depth	3.10	3.30-3.60	3.50-3.70
Other ID	2013649	2013656	2013657
Sample Type	C	C	C
Sampling Date	23/11/2023	21/11/2023	16/11/2023
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
<b>Inorganics</b>						
pH	DETSC 2008#		pH	9.0	7.3	8.1
Sulphate Aqueous Extract as SO <sub>4</sub> (2:1)	DETSC 2076#	10	mg/l	18	27	< 10
Sulphur as S, Total	DETSC 2320	0.01	%	0.02	0.05	0.01
Sulphate as SO <sub>4</sub> , Total	DETSC 2321#	0.01	%	0.02	0.09	0.02



## Information in Support of the Analytical Results

Our Ref 24-01641-0  
 Client Ref A15075-R2  
 Contract A15075-R2 / FASNAKYLE

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2291430	BH18 3.10 AGGREGATE	23/11/23	PG	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2291431	BH21 3.30-3.60 AGGREGATE	21/11/23	PG	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	
2291432	BH24 3.50-3.70 AGGREGATE	16/11/23	PG	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	

Key: P-Plastic G-Bag

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

### Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

### Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report





## Certificate of Analysis

*Certificate Number* 24-01642-0

*Issued:* 04-Mar-24

*Client* Terra Tek  
62 Rochsolloch Road  
Airdrie  
ML6 9BG

*Our Reference* 24-01642-0

*Client Reference* A15075-R3

*Order No* (not supplied)

*Contract Title* A15075-R3 / FASNAKYLE

*Description* One Core sample.

*Date Received* 26-Jan-24

*Date Started* 26-Jan-24

*Date Completed* 04-Mar-24

*Test Procedures* Identified by prefix DETSn (details on request).

**Notes** This report supersedes 24-01642, amendments made

Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

*Approved By*

Kirk Bridgewood  
General Manager





## Summary of Chemical Analysis

### Core Samples

Our Ref 24-01642-0

Client Ref A15075-R3

Contract Title A15075-R3 / FASNAKYLE

Lab No	2291433
Sample ID	BH19
Depth	
Other ID	2013664
Sample Type	C
Sampling Date	08/12/2023
Sampling Time	n/s

Test	Method	LOD	Units	
<b>Inorganics</b>				
pH	DETSC 2008#		pH	8.9
Sulphate Aqueous Extract as SO <sub>4</sub> (2:1)	DETSC 2076#	10	mg/l	30
Sulphur as S, Total	DETSC 2320	0.01	%	0.43
Sulphate as SO <sub>4</sub> , Total	DETSC 2321#	0.01	%	1.1



## Information in Support of the Analytical Results

Our Ref 24-01642-0  
 Client Ref A15075-R3  
 Contract A15075-R3 / FASNAKYLE

### Containers Received & Deviating Samples

Lab No	Sample ID	Date		Containers Received	Holding time exceeded for tests	Inappropriate container for tests
		Sampled				
2291433	BH19 CORE	08/12/23		PG	Anions 2:1 (30 days), Total Sulphur ICP (7 days), Total Sulphate ICP (30 days), pH + Conductivity (7 days)	

Key: P-Plastic G-Bag

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

### Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.  
 Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.  
 The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

### Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-  
 Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

Style: APPENDIX A File: P:\GINTWP\PROJECTS\26560.GPJ Printed: 05/02/2024 11:16:20 Raeburn Drilling and Geotechnical Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

APPENDIX G  
GEOCHEMICAL TESTING







## Certificate of Analysis

*Certificate Number* 23-27909

*Issued:* 08-Dec-23

*Client* Raeburn Drilling  
East Avenue  
Blantyre  
Glasgow  
G72 0JB

*Our Reference* 23-27909

*Client Reference* 26560

*Order No* (not supplied)

*Contract Title* LT521 FASNAKYLE

*Description* 2 Soil samples.

*Date Received* 27-Nov-23

*Date Started* 27-Nov-23

*Date Completed* 08-Dec-23

*Test Procedures* Identified by prefix DETSn (details on request).

*Notes* Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

*Approved By*

Kirk Bridgewood  
General Manager



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# Summary of Chemical Analysis

## Soil Samples

Our Ref 23-27909

Client Ref 26560

Contract Title LT521 FASNAKYLE

Lab No	2268558	2268559
Sample ID	BH24A	BH26A
Depth	0.50	0.30
Other ID		
Sample Type	ES	ES
Sampling Date	20/11/2023	20/11/2023
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
<b>Metals</b>					
Arsenic	DETSC 2301#	0.2	mg/kg	2.0	0.9
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	< 0.2	< 0.2
Cadmium	DETSC 2301#	0.1	mg/kg	< 0.1	< 0.1
Chromium	DETSC 2301#	0.15	mg/kg	17	12
Copper	DETSC 2301#	0.2	mg/kg	11	5.6
Lead	DETSC 2301#	0.3	mg/kg	12	8.0
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	8.3	3.4
Zinc	DETSC 2301#	1	mg/kg	36	27
<b>Inorganics</b>					
pH	DETSC 2008#		pH	6.5	5.8
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.1	0.3
Organic matter	DETSC 2002#	0.1	%	1.2	2.1
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	13	17
<b>Petroleum Hydrocarbons</b>					
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
<b>PAHs</b>					
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1



## Summary of Chemical Analysis

### Soil Samples

Our Ref 23-27909

Client Ref 26560

Contract Title LT521 FASNAKYLE

Lab No	2268558	2268559
Sample ID	BH24A	BH26A
Depth	0.50	0.30
Other ID		
Sample Type	ES	ES
Sampling Date	20/11/2023	20/11/2023
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
PAH 16 Total	DETSC 3301	1.6	mg/kg	< 1.6	< 1.6
<b>Phenols</b>					
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3
<b>VOCs</b>					
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01



## Summary of Chemical Analysis Soil Samples

Our Ref 23-27909

Client Ref 26560

Contract Title LT521 FASNAKYLE

Lab No	2268558	2268559
Sample ID	BH24A	BH26A
Depth	0.50	0.30
Other ID		
Sample Type	ES	ES
Sampling Date	20/11/2023	20/11/2023
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01



## Summary of Asbestos Analysis Soil Samples

*Our Ref* 23-27909

*Client Ref* 26560

*Contract Title* LT521 FASNAKYLE

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2268558	BH24A 0.50	SOIL	NAD	none	Steven Lambert
2268559	BH26A 0.30	SOIL	NAD	none	Steven Lambert

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: \* - not included in laboratory scope of accreditation.



## Information in Support of the Analytical Results

Our Ref 23-27909  
 Client Ref 26560  
 Contract LT521 FASNAKYLE

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2268558	BH24A 0.50 SOIL	20/11/23	GJ 250ml, GJ 60ml, PT 1L x2		
2268559	BH26A 0.30 SOIL	20/11/23	GJ 250ml, GJ 60ml, PT 1L x2		

Key: G-Glass P-Plastic J-Jar T-Tub

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### Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

### Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report





## Certificate of Analysis

**Certificate Number** 23-27898

**Issued:** 08-Dec-23

**Client** Raeburn Drilling  
East Avenue  
Blantyre  
Glasgow  
G72 0JB

**Our Reference** 23-27898

**Client Reference** It521

**Order No** (not supplied)

**Contract Title** LT521 FASNAKYLE 400kV SUBSTATION

**Description** 2 Soil samples.

**Date Received** 27-Nov-23

**Date Started** 27-Nov-23

**Date Completed** 08-Dec-23

**Test Procedures** Identified by prefix DETSn (details on request).

**Notes** Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

**Approved By**

Kirk Bridgewood  
General Manager



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# Summary of Chemical Analysis

## Soil Samples

Our Ref 23-27898

Client Ref It521

Contract Title LT521 FASNAKYLE 400KV SUBSTATION

Lab No	2268485	2268486
Sample ID	TP29	TP30
Depth	0.50	0.90
Other ID		
Sample Type	ES	ES
Sampling Date	21/11/2023	21/11/2023
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
<b>Metals</b>					
Arsenic	DETSC 2301#	0.2	mg/kg	11	1.7
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	0.4	< 0.2
Cadmium	DETSC 2301#	0.1	mg/kg	0.3	< 0.1
Chromium	DETSC 2301#	0.15	mg/kg	13	19
Copper	DETSC 2301#	0.2	mg/kg	20	7.4
Lead	DETSC 2301#	0.3	mg/kg	100	6.8
Mercury	DETSC 2325#	0.05	mg/kg	0.28	< 0.05
Nickel	DETSC 2301#	1	mg/kg	6.5	8.5
Zinc	DETSC 2301#	1	mg/kg	24	26
<b>Inorganics</b>					
pH	DETSC 2008#		pH	5.5	6.2
Cyanide, Total	DETSC 2130#	0.1	mg/kg	1.7	0.2
Organic matter	DETSC 2002#	0.1	%	1.8	18
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	71	30
<b>Petroleum Hydrocarbons</b>					
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
<b>PAHs</b>					
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1



## Summary of Chemical Analysis

### Soil Samples

Our Ref 23-27898

Client Ref It521

Contract Title LT521 FASNAKYLE 400KV SUBSTATION

Lab No	2268485	2268486
Sample ID	TP29	TP30
Depth	0.50	0.90
Other ID		
Sample Type	ES	ES
Sampling Date	21/11/2023	21/11/2023
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
PAH 16 Total	DETSC 3301	1.6	mg/kg	< 1.6	< 1.6
<b>Phenols</b>					
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	2.7	< 0.3
<b>VOCs</b>					
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01



## Summary of Chemical Analysis Soil Samples

Our Ref 23-27898

Client Ref It521

Contract Title LT521 FASNAKYLE 400kV SUBSTATION

Lab No	2268485	2268486
Sample ID	TP29	TP30
Depth	0.50	0.90
Other ID		
Sample Type	ES	ES
Sampling Date	21/11/2023	21/11/2023
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01



## Summary of Asbestos Analysis Soil Samples

*Our Ref* 23-27898

*Client Ref* lt521

*Contract Title* LT521 FASNAKYLE 400kV SUBSTATION

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2268485	TP29 0.50	SOIL	NAD	none	Steven Lambert
2268486	TP30 0.90	SOIL	NAD	none	Steven Lambert

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: \* - not included in laboratory scope of accreditation.



## Information in Support of the Analytical Results

Our Ref 23-27898  
 Client Ref It521  
 Contract LT521 FASNAKYLE 400kV SUBSTATION

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2268485	TP29 0.50 SOIL	21/11/23	GJ 250ml, GJ 60ml, PT 1L x2		
2268486	TP30 0.90 SOIL	21/11/23	GJ 250ml, GJ 60ml, PT 1L x2		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

### Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

### Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report





## Certificate of Analysis

*Certificate Number* 23-28008

*Issued:* 08-Dec-23

*Client* Raeburn Drilling  
East Avenue  
Blantyre  
Glasgow  
G72 0JB

*Our Reference* 23-28008

*Client Reference* 26560

*Order No* (not supplied)

*Contract Title* LT521 FASNAKYLE 400kV SUBSTATION

*Description* 3 Soil samples.

*Date Received* 28-Nov-23

*Date Started* 28-Nov-23

*Date Completed* 08-Dec-23

*Test Procedures* Identified by prefix DETSn (details on request).

*Notes* Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

*Approved By*

Kirk Bridgewood  
General Manager



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# Summary of Chemical Analysis

## Soil Samples

Our Ref 23-28008

Client Ref 26560

Contract Title LT521 FASNAKYLE 400kV SUBSTATION

Lab No	2268940	2268941	2268942
Sample ID	TP32	TP35	TP20
Depth	0.50	1.00	1.00
Other ID			
Sample Type	ES	ES	ES
Sampling Date	22/11/2023	22/11/2023	22/11/2023
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
<b>Metals</b>						
Arsenic	DETSC 2301#	0.2	mg/kg	10	1.2	1.3
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	2.2	0.3	0.3
Cadmium	DETSC 2301#	0.1	mg/kg	0.2	< 0.1	< 0.1
Chromium	DETSC 2301#	0.15	mg/kg	28	18	17
Copper	DETSC 2301#	0.2	mg/kg	120	29	8.4
Lead	DETSC 2301#	0.3	mg/kg	89	11	6.8
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	0.06
Nickel	DETSC 2301#	1	mg/kg	13	7.5	8.1
Zinc	DETSC 2301#	1	mg/kg	620	140	63
<b>Inorganics</b>						
pH	DETSC 2008#		pH	9.1	6.2	6.3
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Organic matter	DETSC 2002#	0.1	%	3.6	1.8	1.1
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	450	36	57
<b>Petroleum Hydrocarbons</b>						
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10
<b>PAHs</b>						
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1



# Summary of Chemical Analysis

## Soil Samples

Our Ref 23-28008

Client Ref 26560

Contract Title LT521 FASNAKYLE 400kV SUBSTATION

Lab No	2268940	2268941	2268942
Sample ID	TP32	TP35	TP20
Depth	0.50	1.00	1.00
Other ID			
Sample Type	ES	ES	ES
Sampling Date	22/11/2023	22/11/2023	22/11/2023
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
PAH 16 Total	DETSC 3301	1.6	mg/kg	< 1.6	< 1.6	< 1.6
<b>Phenols</b>						
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3
<b>VOCs</b>						
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01



## Summary of Chemical Analysis Soil Samples

Our Ref 23-28008

Client Ref 26560

Contract Title LT521 FASNAKYLE 400kV SUBSTATION

Lab No	2268940	2268941	2268942
Sample ID	TP32	TP35	TP20
Depth	0.50	1.00	1.00
Other ID			
Sample Type	ES	ES	ES
Sampling Date	22/11/2023	22/11/2023	22/11/2023
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01



## Summary of Asbestos Analysis Soil Samples

*Our Ref* 23-28008

*Client Ref* 26560

*Contract Title* LT521 FASNAKYLE 400kV SUBSTATION

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2268940	TP32 0.50	SOIL	NAD	none	Michael Kay
2268941	TP35 1.00	SOIL	NAD	none	Michael Kay
2268942	TP20 1.00	SOIL	NAD	none	Michael Kay

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: \* - not included in laboratory scope of accreditation.



## Information in Support of the Analytical Results

Our Ref 23-28008  
 Client Ref 26560  
 Contract LT521 FASNAKYLE 400kV SUBSTATION

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2268940	TP32 0.50 SOIL	22/11/23	GJ 250ml, GJ 60ml, PT 1L x2		
2268941	TP35 1.00 SOIL	22/11/23	GJ 250ml, GJ 60ml, PT 1L x2		
2268942	TP20 1.00 SOIL	22/11/23	GJ 250ml, GJ 60ml, PT 1L x2		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

### Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

### Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report





## Certificate of Analysis

*Certificate Number* 23-28158-0

*Issued:* 26-Jan-24

*Client* Raeburn Drilling  
East Avenue  
Blantyre  
Glasgow  
G72 0JB

*Our Reference* 23-28158-0

*Client Reference* 26560

*Order No* (not supplied)

*Contract Title* LT521 FASNAKYLE 400kV SUBSTATION

*Description* 3 Soil samples.

*Date Received* 29-Nov-23

*Date Started* 29-Nov-23

*Date Completed* 26-Jan-24

*Test Procedures* Identified by prefix DETSn (details on request).

**Notes** This report supersedes 23-28158, amendments made

Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

*Approved By*

Kirk Bridgewood  
General Manager



2139



# Summary of Chemical Analysis

## Soil Samples

Our Ref 23-28158-0

Client Ref 26560

Contract Title LT521 FASNAKYLE 400kV SUBSTATION

Lab No	2269798	2269799	2269800
Sample ID	TP21	TP31	BH18
Depth	0.50	0.50	1.00
Other ID			
Sample Type	ES	ES	ES
Sampling Date	23/11/2023	23/11/2023	23/11/2023
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
<b>Metals</b>						
Arsenic	DETSC 2301#	0.2	mg/kg	1.8	0.7	0.7
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Cadmium	DETSC 2301#	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Chromium	DETSC 2301#	0.15	mg/kg	1.7	10	7.3
Copper	DETSC 2301#	0.2	mg/kg	6.2	12	4.2
Lead	DETSC 2301#	0.3	mg/kg	12	5.6	3.5
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	2.0	3.0	2.1
Zinc	DETSC 2301#	1	mg/kg	20	23	14
<b>Inorganics</b>						
pH	DETSC 2008#		pH	4.1	5.2	5.3
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.9	0.3	0.2
Organic matter	DETSC 2002#	0.1	%	13	3.0	4.4
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	14	< 10	< 10
<b>Petroleum Hydrocarbons</b>						
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10
<b>PAHs</b>						
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	1.2	< 0.1	< 0.1



# Summary of Chemical Analysis

## Soil Samples

Our Ref 23-28158-0

Client Ref 26560

Contract Title LT521 FASNAKYLE 400kV SUBSTATION

Lab No	2269798	2269799	2269800
Sample ID	TP21	TP31	BH18
Depth	0.50	0.50	1.00
Other ID			
Sample Type	ES	ES	ES
Sampling Date	23/11/2023	23/11/2023	23/11/2023
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	0.4	< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	0.1	< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	0.9	< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	11	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
PAH 16 Total	DETSC 3301	1.6	mg/kg	13	< 1.6	< 1.6
<b>Phenols</b>						
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	4.6	0.7	0.6
<b>VOCs</b>						
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01



## Summary of Chemical Analysis Soil Samples

Our Ref 23-28158-0

Client Ref 26560

Contract Title LT521 FASNAKYLE 400kV SUBSTATION

Lab No	2269798	2269799	2269800
Sample ID	TP21	TP31	BH18
Depth	0.50	0.50	1.00
Other ID			
Sample Type	ES	ES	ES
Sampling Date	23/11/2023	23/11/2023	23/11/2023
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01



## Summary of Asbestos Analysis Soil Samples

*Our Ref* 23-28158-0

*Client Ref* 26560

*Contract Title* LT521 FASNAKYLE 400kV SUBSTATION

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2269798	TP21 0.50	SOIL	NAD	none	D Wilkinson
2269799	TP31 0.50	SOIL	NAD	none	D Wilkinson
2269800	BH18 1.00	SOIL	NAD	none	D Wilkinson

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: \* - not included in laboratory scope of accreditation.



## Information in Support of the Analytical Results

Our Ref 23-28158-0  
 Client Ref 26560  
 Contract LT521 FASNAKYLE 400kV SUBSTATION

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2269798	TP21 0.50 SOIL	23/11/23	GJ 250ml, GJ 60ml, PT 1L x2		
2269799	TP31 0.50 SOIL	23/11/23	GJ 250ml, GJ 60ml, PT 1L x2		
2269800	BH18 1.00 SOIL	23/11/23	GJ 250ml, GJ 60ml, PT 1L x2		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

### Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

### Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report





## Certificate of Analysis

**Certificate Number** 23-28261

**Issued:** 15-Dec-23

**Client** Raeburn Drilling  
East Avenue  
Blantyre  
Glasgow  
G72 0JB

**Our Reference** 23-28261

**Client Reference** 26560

**Order No** (not supplied)

**Contract Title** LT521 FASNAKYLE 400kV SUBSTATION

**Description** 3 Soil samples.

**Date Received** 30-Nov-23

**Date Started** 30-Nov-23

**Date Completed** 15-Dec-23

**Test Procedures** Identified by prefix DETSn (details on request).

**Notes** Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

**Approved By**

Kirk Bridgewood  
General Manager



2139



# Summary of Chemical Analysis

## Soil Samples

Our Ref 23-28261

Client Ref 26560

Contract Title LT521 FASNAKYLE 400kV SUBSTATION

Lab No	2270382	2270383	2270384
Sample ID	TP37	TP10	TP06
Depth	0.50	1.00	0.50
Other ID			
Sample Type	SOIL	SOIL	SOIL
Sampling Date	24/11/2023	24/11/2023	24/11/2023
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
<b>Metals</b>						
Arsenic	DETSC 2301#	0.2	mg/kg	0.7	5.3	1.4
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Cadmium	DETSC 2301#	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Chromium	DETSC 2301#	0.15	mg/kg	7.4	24	13
Copper	DETSC 2301#	0.2	mg/kg	3.9	9.5	7.0
Lead	DETSC 2301#	0.3	mg/kg	4.5	55	4.8
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	2.9	12	4.7
Zinc	DETSC 2301#	1	mg/kg	16	56	19
<b>Inorganics</b>						
pH	DETSC 2008#		pH	5.8	5.5	5.7
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.2	0.2	0.1
Organic matter	DETSC 2002#	0.1	%	2.1	3.8	3.6
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	16	< 10	< 10
<b>Petroleum Hydrocarbons</b>						
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	0.07
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	0.08	< 0.01	0.08
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	0.10	< 0.01	0.09
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10
<b>PAHs</b>						
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1



# Summary of Chemical Analysis

## Soil Samples

Our Ref 23-28261

Client Ref 26560

Contract Title LT521 FASNAKYLE 400KV SUBSTATION

Lab No	2270382	2270383	2270384
Sample ID	TP37	TP10	TP06
Depth	0.50	1.00	0.50
Other ID			
Sample Type	SOIL	SOIL	SOIL
Sampling Date	24/11/2023	24/11/2023	24/11/2023
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
PAH 16 Total	DETSC 3301	1.6	mg/kg	< 1.6	< 1.6	< 1.6
<b>Phenols</b>						
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3
<b>VOCs</b>						
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01



## Summary of Chemical Analysis Soil Samples

Our Ref 23-28261

Client Ref 26560

Contract Title LT521 FASNAKYLE 400kV SUBSTATION

Lab No	2270382	2270383	2270384
Sample ID	TP37	TP10	TP06
Depth	0.50	1.00	0.50
Other ID			
Sample Type	SOIL	SOIL	SOIL
Sampling Date	24/11/2023	24/11/2023	24/11/2023
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01



## Summary of Asbestos Analysis Soil Samples

*Our Ref* 23-28261

*Client Ref* 26560

*Contract Title* LT521 FASNAKYLE 400kV SUBSTATION

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2270382	TP37 0.50	SOIL	NAD	none	Pierce Booth
2270383	TP10 1.00	SOIL	NAD	none	Pierce Booth
2270384	TP06 0.50	SOIL	NAD	none	Pierce Booth

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: \* - not included in laboratory scope of accreditation.



## Information in Support of the Analytical Results

Our Ref 23-28261  
 Client Ref 26560  
 Contract LT521 FASNAKYLE 400kV SUBSTATION

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2270382	TP37 0.50 SOIL	24/11/23	GJ 250ml, GJ 60ml, PT 1L x2		
2270383	TP10 1.00 SOIL	24/11/23	GJ 250ml, GJ 60ml, PT 1L x2		
2270384	TP06 0.50 SOIL	24/11/23	GJ 250ml, GJ 60ml, PT 1L x2		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

### Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

### Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report





## Certificate of Analysis

*Certificate Number* 23-28262-0

*Issued:* 26-Jan-24

*Client* Raeburn Drilling  
East Avenue  
Blantyre  
Glasgow  
G72 0JB

*Our Reference* 23-28262-0

*Client Reference* 26560

*Order No* (not supplied)

*Contract Title* LT521 FASNAKYLE 400kV SUBSTATION

*Description* 4 Soil samples.

*Date Received* 30-Nov-23

*Date Started* 30-Nov-23

*Date Completed* 26-Jan-24

*Test Procedures* Identified by prefix DETSn (details on request).

**Notes** This report supersedes 23-28262, amendments made

Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

*Approved By*

Kirk Bridgewood  
General Manager



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# Summary of Chemical Analysis

## Soil Samples

Our Ref 23-28262-0

Client Ref 26560

Contract Title LT521 FASNAKYLE 400kV SUBSTATION

Lab No	2270385	2270386	2270387	2270388
Sample ID	TP16	TP33	TP14	BH27
Depth	0.50	1.00	0.50	1.00
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	27/11/2023	27/11/2023	27/11/2023	27/11/2023
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
<b>Metals</b>							
Arsenic	DETSC 2301#	0.2	mg/kg	4.0	2.4	1.1	0.9
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	0.7	0.9	< 0.2	< 0.2
Cadmium	DETSC 2301#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Chromium	DETSC 2301#	0.15	mg/kg	17	13	37	17
Copper	DETSC 2301#	0.2	mg/kg	14	17	7.7	5.1
Lead	DETSC 2301#	0.3	mg/kg	4.1	7.1	1.9	2.1
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	8.3	6.4	11	6.6
Zinc	DETSC 2301#	1	mg/kg	41	38	25	30
<b>Inorganics</b>							
pH	DETSC 2008#		pH	6.9	8.5	7.3	7.5
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.2	< 0.1	< 0.1	0.1
Organic matter	DETSC 2002#	0.1	%	1.5	1.1	1.0	1.5
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	27	96	14	14
<b>Petroleum Hydrocarbons</b>							
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10
<b>PAHS</b>							
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1



# Summary of Chemical Analysis

## Soil Samples

Our Ref 23-28262-0

Client Ref 26560

Contract Title LT521 FASNAKYLE 400kV SUBSTATION

Lab No	2270385	2270386	2270387	2270388
Sample ID	TP16	TP33	TP14	BH27
Depth	0.50	1.00	0.50	1.00
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	27/11/2023	27/11/2023	27/11/2023	27/11/2023
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
PAH 16 Total	DETSC 3301	1.6	mg/kg	< 1.6	< 1.6	< 1.6	< 1.6
<b>Phenols</b>							
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	0.4	< 0.3	< 0.3	< 0.3
<b>VOCs</b>							
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01



# Summary of Chemical Analysis

## Soil Samples

Our Ref 23-28262-0

Client Ref 26560

Contract Title LT521 FASNAKYLE 400kV SUBSTATION

Lab No	2270385	2270386	2270387	2270388
Sample ID	TP16	TP33	TP14	BH27
Depth	0.50	1.00	0.50	1.00
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	27/11/2023	27/11/2023	27/11/2023	27/11/2023
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01



## Summary of Asbestos Analysis Soil Samples

*Our Ref* 23-28262-0

*Client Ref* 26560

*Contract Title* LT521 FASNAKYLE 400kV SUBSTATION

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2270385	TP16 0.50	SOIL	NAD	none	Pierce Booth
2270386	TP33 1.00	SOIL	NAD	none	Pierce Booth
2270387	TP14 0.50	SOIL	NAD	none	Pierce Booth
2270388	BH27 1.00	SOIL	NAD	none	Pierce Booth

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: \* - not included in laboratory scope of accreditation.



## Information in Support of the Analytical Results

Our Ref 23-28262-0  
 Client Ref 26560  
 Contract LT521 FASNAKYLE 400kV SUBSTATION

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2270385	TP16 0.50 SOIL	27/11/23	GJ 250ml, GJ 60ml, PT 1L x2		
2270386	TP33 1.00 SOIL	27/11/23	GJ 250ml, GJ 60ml, PT 1L x2		
2270387	TP14 0.50 SOIL	27/11/23	GJ 250ml, GJ 60ml, PT 1L x2		
2270388	BH27 1.00 SOIL	27/11/23	GJ 250ml, GJ 60ml, PT 1L x2		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

### Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

### Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report





## Certificate of Analysis

**Certificate Number** 23-28468

**Issued:** 18-Dec-23

**Client** Raeburn Drilling  
East Avenue  
Blantyre  
Glasgow  
G72 0JB

**Our Reference** 23-28468

**Client Reference** 26560

**Order No** (not supplied)

**Contract Title** LT521 FASNAKYLE 400kV SUBSTATION

**Description** 2 Soil samples.

**Date Received** 04-Dec-23

**Date Started** 04-Dec-23

**Date Completed** 18-Dec-23

**Test Procedures** Identified by prefix DETSn (details on request).

**Notes** Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

**Approved By**

A handwritten signature in black ink, appearing to read "K. Bridgewood".

Kirk Bridgewood  
General Manager



2139



# Summary of Chemical Analysis

## Soil Samples

Our Ref 23-28468

Client Ref 26560

Contract Title LT521 FASNAKYLE 400kV SUBSTATION

Lab No	2271575	2271576
Sample ID	TP05	BH15
Depth	0.50	0.50
Other ID		
Sample Type	SOIL	SOIL
Sampling Date	28/11/2023	28/11/2023
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
<b>Metals</b>					
Arsenic	DETSC 2301#	0.2	mg/kg	2.2	2.2
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	< 0.2	0.2
Cadmium	DETSC 2301#	0.1	mg/kg	< 0.1	0.5
Chromium	DETSC 2301#	0.15	mg/kg	17	2.7
Copper	DETSC 2301#	0.2	mg/kg	9.9	9.8
Lead	DETSC 2301#	0.3	mg/kg	6.0	24
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	8.2	2.9
Zinc	DETSC 2301#	1	mg/kg	37	91
<b>Inorganics</b>					
pH	DETSC 2008#		pH	6.6	6.1
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1
Organic matter	DETSC 2002#	0.1	%	0.4	0.7
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	32	26
<b>Petroleum Hydrocarbons</b>					
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10
<b>PAHs</b>					
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1



# Summary of Chemical Analysis

## Soil Samples

Our Ref 23-28468

Client Ref 26560

Contract Title LT521 FASNAKYLE 400kV SUBSTATION

Lab No	2271575	2271576
Sample ID	TP05	BH15
Depth	0.50	0.50
Other ID		
Sample Type	SOIL	SOIL
Sampling Date	28/11/2023	28/11/2023
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1
PAH 16 Total	DETSC 3301	1.6	mg/kg	< 1.6	< 1.6
<b>Phenols</b>					
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3
<b>VOCs</b>					
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01



## Summary of Chemical Analysis Soil Samples

Our Ref 23-28468

Client Ref 26560

Contract Title LT521 FASNAKYLE 400kV SUBSTATION

Lab No	2271575	2271576
Sample ID	TP05	BH15
Depth	0.50	0.50
Other ID		
Sample Type	SOIL	SOIL
Sampling Date	28/11/2023	28/11/2023
Sampling Time	n/s	n/s

Test	Method	LOD	Units		
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01



## Summary of Asbestos Analysis Soil Samples

*Our Ref* 23-28468

*Client Ref* 26560

*Contract Title* LT521 FASNAKYLE 400kV SUBSTATION

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2271575	TP05 0.50	SOIL	NAD	none	Lee Kerridge
2271576	BH15 0.50	SOIL	NAD	none	Lee Kerridge

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: \* - not included in laboratory scope of accreditation.



## Information in Support of the Analytical Results

Our Ref 23-28468  
 Client Ref 26560  
 Contract LT521 FASNAKYLE 400kV SUBSTATION

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Hold time exceeded for tests	Inappropriate container for tests
2271575	TP05 0.50 SOIL	28/11/23	GJ 250ml, GJ 60ml, PT 1L x2		
2271576	BH15 0.50 SOIL	28/11/23	GJ 250ml, GJ 60ml, PT 1L x2		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

### Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

### Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report





## Certificate of Analysis

**Certificate Number** 23-28626

**Issued:** 19-Dec-23

**Client** Raeburn Drilling  
East Avenue  
Blantyre  
Glasgow  
G72 0JB

**Our Reference** 23-28626

**Client Reference** 26560

**Order No** (not supplied)

**Contract Title** LT521 FASNAKYLE 400kV SUBSTATION

**Description** 3 Soil samples.

**Date Received** 05-Dec-23

**Date Started** 05-Dec-23

**Date Completed** 19-Dec-23

**Test Procedures** Identified by prefix DETSn (details on request).

**Notes** Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

**Approved By**

A handwritten signature in black ink, appearing to read "K. Bridgewood".

Kirk Bridgewood  
General Manager



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# Summary of Chemical Analysis

## Soil Samples

Our Ref 23-28626

Client Ref 26560

Contract Title LT521 FASNAKYLE 400kV SUBSTATION

Lab No	2272260	2272261	2272262
Sample ID	TP02	TP07	TP12
Depth	0.50	0.50	0.50
Other ID			
Sample Type	SOIL	SOIL	SOIL
Sampling Date	29/11/2023	29/11/2023	29/11/2023
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
<b>Metals</b>						
Arsenic	DETSC 2301#	0.2	mg/kg	1.4	1.9	1.2
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Cadmium	DETSC 2301#	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Chromium	DETSC 2301#	0.15	mg/kg	12	14	16
Copper	DETSC 2301#	0.2	mg/kg	4.2	7.0	2.9
Lead	DETSC 2301#	0.3	mg/kg	4.7	4.7	8.4
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	4.6	6.5	3.2
Zinc	DETSC 2301#	1	mg/kg	24	31	18
<b>Inorganics</b>						
pH	DETSC 2008#		pH	6.6	6.6	5.1
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.2	0.1	0.3
Organic matter	DETSC 2002#	0.1	%	2.7	2.6	6.6
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	16	< 10	18
<b>Petroleum Hydrocarbons</b>						
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	0.04	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	0.04	< 0.01	0.05
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	0.02
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10
<b>PAHs</b>						
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1



# Summary of Chemical Analysis

## Soil Samples

Our Ref 23-28626

Client Ref 26560

Contract Title LT521 FASNAKYLE 400kV SUBSTATION

Lab No	2272260	2272261	2272262
Sample ID	TP02	TP07	TP12
Depth	0.50	0.50	0.50
Other ID			
Sample Type	SOIL	SOIL	SOIL
Sampling Date	29/11/2023	29/11/2023	29/11/2023
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
PAH 16 Total	DETSC 3301	1.6	mg/kg	< 1.6	< 1.6	< 1.6
<b>Phenols</b>						
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	0.4	0.7
<b>VOCs</b>						
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01



## Summary of Chemical Analysis Soil Samples

Our Ref 23-28626

Client Ref 26560

Contract Title LT521 FASNAKYLE 400kV SUBSTATION

Lab No	2272260	2272261	2272262
Sample ID	TP02	TP07	TP12
Depth	0.50	0.50	0.50
Other ID			
Sample Type	SOIL	SOIL	SOIL
Sampling Date	29/11/2023	29/11/2023	29/11/2023
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01



## Summary of Asbestos Analysis Soil Samples

*Our Ref* 23-28626

*Client Ref* 26560

*Contract Title* LT521 FASNAKYLE 400kV SUBSTATION

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2272260	TP02 0.50	SOIL	NAD	none	Josh Best
2272261	TP07 0.50	SOIL	NAD	none	Josh Best
2272262	TP12 0.50	SOIL	NAD	none	Josh Best

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: \* - not included in laboratory scope of accreditation.



## Information in Support of the Analytical Results

Our Ref 23-28626  
 Client Ref 26560  
 Contract LT521 FASNAKYLE 400kV SUBSTATION

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Hold time exceeded for tests	Inappropriate container for tests
2272260	TP02 0.50 SOIL	29/11/23	GJ 250ml, GJ 60ml, PT 1L x2		
2272261	TP07 0.50 SOIL	29/11/23	GJ 250ml, GJ 60ml, PT 1L x2		
2272262	TP12 0.50 SOIL	29/11/23	GJ 250ml, GJ 60ml, PT 1L x2		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

### Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

### Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report





## Certificate of Analysis

**Certificate Number** 23-29162

**Issued:** 22-Dec-23

**Client** Raeburn Drilling  
East Avenue  
Blantyre  
Glasgow  
G72 0JB

**Our Reference** 23-29162

**Client Reference** 26500

**Order No** (not supplied)

**Contract Title** LT521 FASNAKYLE 400kV SUBSTATION

**Description** 3 Soil samples.

**Date Received** 11-Dec-23

**Date Started** 11-Dec-23

**Date Completed** 22-Dec-23

**Test Procedures** Identified by prefix DETSn (details on request).

**Notes** Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

**Approved By**

A handwritten signature in black ink, appearing to read "K. Bridgewood".

Kirk Bridgewood  
General Manager



2139



# Summary of Chemical Analysis Soil Samples

Our Ref 23-29162

Client Ref 26500

Contract Title LT521 FASNAKYLE 400kV SUBSTATION

Lab No	2275378	2275379	2275380
Sample ID	TP03	TP08	BH14
Depth	0.50	0.50	0.50
Other ID			
Sample Type	ES	ES	ES
Sampling Date	04/12/2023	04/12/2023	04/12/2023
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
<b>Metals</b>						
Arsenic	DETSC 2301#	0.2	mg/kg	2.6	4.0	1.5
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	1.0	2.2	0.3
Cadmium	DETSC 2301#	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Chromium	DETSC 2301#	0.15	mg/kg	17	18	22
Copper	DETSC 2301#	0.2	mg/kg	5.1	13	7.7
Lead	DETSC 2301#	0.3	mg/kg	5.8	12	3.9
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	7.6	11	6.3
Zinc	DETSC 2301#	1	mg/kg	34	68	28
<b>Inorganics</b>						
pH	DETSC 2008#		pH	6.5	7.2	6.2
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.2	< 0.1	0.1
Organic matter	DETSC 2002#	0.1	%	3.6	1.5	2.7
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l	40	90	30
<b>Petroleum Hydrocarbons</b>						
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10
<b>PAHs</b>						
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1



# Summary of Chemical Analysis Soil Samples

Our Ref 23-29162

Client Ref 26500

Contract Title LT521 FASNAKYLE 400kV SUBSTATION

Lab No	2275378	2275379	2275380
Sample ID	TP03	TP08	BH14
Depth	0.50	0.50	0.50
Other ID			
Sample Type	ES	ES	ES
Sampling Date	04/12/2023	04/12/2023	04/12/2023
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1
PAH 16 Total	DETSC 3301	1.6	mg/kg	< 1.6	< 1.6	< 1.6
<b>Phenols</b>						
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	0.4	< 0.3	< 0.3
<b>VOCs</b>						
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01



# Summary of Chemical Analysis Soil Samples

Our Ref 23-29162

Client Ref 26500

Contract Title LT521 FASNAKYLE 400kV SUBSTATION

Lab No	2275378	2275379	2275380
Sample ID	TP03	TP08	BH14
Depth	0.50	0.50	0.50
Other ID			
Sample Type	ES	ES	ES
Sampling Date	04/12/2023	04/12/2023	04/12/2023
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01	< 0.01	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01



## Summary of Asbestos Analysis Soil Samples

*Our Ref* 23-29162

*Client Ref* 26500

*Contract Title* LT521 FASNAKYLE 400kV SUBSTATION

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2275378	TP03 0.50	SOIL	NAD	none	Barry Kelly
2275379	TP08 0.50	SOIL	NAD	none	Barry Kelly
2275380	BH14 0.50	SOIL	NAD	none	Barry Kelly

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: \* - not included in laboratory scope of accreditation.



## Information in Support of the Analytical Results

Our Ref 23-29162  
 Client Ref 26500  
 Contract LT521 FASNAKYLE 400kV SUBSTATION

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Hold time exceeded for tests	Inappropriate container for tests
2275378	TP03 0.50 SOIL	04/12/23	GJ 250ml, GJ 60ml, PT 1L x2		
2275379	TP08 0.50 SOIL	04/12/23	GJ 250ml, GJ 60ml, PT 1L x2		
2275380	BH14 0.50 SOIL	04/12/23	GJ 250ml, GJ 60ml, PT 1L x2		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

### Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

### Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report





## Certificate of Analysis

*Certificate Number* 24-00791

*Issued:* 22-Jan-24

*Client* Raeburn Drilling  
East Avenue  
Blantyre  
Glasgow  
G72 0JB

*Our Reference* 24-00791

*Client Reference* 26560

*Order No* (not supplied)

*Contract Title* LT521 Fasnakyle 400kV Substation

*Description* 1 Soil sample, 2 Leachate prepared by DETS samples.

*Date Received* 15-Jan-24

*Date Started* 15-Jan-24

*Date Completed* 22-Jan-24

*Test Procedures* Identified by prefix DETSn (details on request).

*Notes* Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

*Approved By*

Kirk Bridgewood  
General Manager





# Summary of Chemical Analysis

## Soil Samples

Our Ref 24-00791

Client Ref 26560

Contract Title LT521 Fasnakyle 400kV Substation

Lab No	2286449
Sample ID	BH12
Depth	0.50
Other ID	
Sample Type	SOIL
Sampling Date	10/01/2024
Sampling Time	n/s

Test	Method	LOD	Units	
<b>Metals</b>				
Arsenic	DETSC 2301#	0.2	mg/kg	1.3
Boron, Water Soluble (2.5:1)	DETSC 2311#	0.2	mg/kg	0.3
Cadmium	DETSC 2301#	0.1	mg/kg	< 0.1
Chromium	DETSC 2301#	0.15	mg/kg	13
Copper	DETSC 2301#	0.2	mg/kg	7.8
Lead	DETSC 2301#	0.3	mg/kg	4.7
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05
Nickel	DETSC 2301#	1	mg/kg	6.9
Zinc	DETSC 2301#	1	mg/kg	30
<b>Inorganics</b>				
pH	DETSC 2008#		pH	6.5
Cyanide, Total	DETSC 2130#	0.1	mg/kg	< 0.1
Organic matter	DETSC 2002#	0.1	%	1.6
Sulphate Aqueous Extract as SO <sub>4</sub> (2:1)	DETSC 2076#	10	mg/l	2500
<b>Petroleum Hydrocarbons</b>				
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10
TPH Ali/Aro Total C5-C35	DETSC 3072*	10	mg/kg	< 10
<b>PAHs</b>				
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	< 0.1



# Summary of Chemical Analysis

## Soil Samples

Our Ref 24-00791

Client Ref 26560

Contract Title LT521 Fasnakyle 400kV Substation

Lab No	2286449
Sample ID	BH12
Depth	0.50
Other ID	
Sample Type	SOIL
Sampling Date	10/01/2024
Sampling Time	n/s

Test	Method	LOD	Units	
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1
PAH 16 Total	DETSC 3301	1.6	mg/kg	< 1.6
<b>Phenols</b>				
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3
<b>VOCs</b>				
Vinyl Chloride	DETSC 3431	0.01	mg/kg	< 0.01
1,1 Dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01
1,1-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01
2,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01
Bromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01
Chloroform	DETSC 3431	0.01	mg/kg	< 0.01
1,1,1-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01
1,1-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01
Carbon tetrachloride	DETSC 3431	0.01	mg/kg	< 0.01
Benzene	DETSC 3431	0.01	mg/kg	< 0.01
1,2-dichloroethane	DETSC 3431	0.01	mg/kg	< 0.01
Trichloroethylene	DETSC 3431	0.01	mg/kg	< 0.01
1,2-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01
Dibromomethane	DETSC 3431	0.01	mg/kg	< 0.01
Bromodichloromethane	DETSC 3431	0.01	mg/kg	< 0.01
cis-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01
Toluene	DETSC 3431	0.01	mg/kg	< 0.01
trans-1,3-dichloropropene	DETSC 3431	0.01	mg/kg	< 0.01
1,1,2-trichloroethane	DETSC 3431	0.01	mg/kg	< 0.01
Tetrachloroethylene	DETSC 3431	0.01	mg/kg	< 0.01
1,3-dichloropropane	DETSC 3431	0.01	mg/kg	< 0.01
Dibromochloromethane	DETSC 3431	0.01	mg/kg	< 0.01
1,2-dibromoethane	DETSC 3431	0.01	mg/kg	< 0.01
Chlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431	0.01	mg/kg	< 0.01
Ethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
m+p-Xylene	DETSC 3431	0.01	mg/kg	< 0.01



## Summary of Chemical Analysis

### Soil Samples

Our Ref 24-00791

Client Ref 26560

Contract Title LT521 Fasnakyle 400kV Substation

Lab No	2286449
Sample ID	BH12
Depth	0.50
Other ID	
Sample Type	SOIL
Sampling Date	10/01/2024
Sampling Time	n/s

Test	Method	LOD	Units	
o-Xylene	DETSC 3431	0.01	mg/kg	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01
Bromoform	DETSC 3431	0.01	mg/kg	< 0.01
Isopropylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
Bromobenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,2,3-trichloropropane	DETSC 3431	0.01	mg/kg	< 0.01
n-propylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
2-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01
1,3,5-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
4-chlorotoluene	DETSC 3431	0.01	mg/kg	< 0.01
Tert-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,2,4-trimethylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
sec-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
p-isopropyltoluene	DETSC 3431	0.01	mg/kg	< 0.01
1,3-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,4-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
n-butylbenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,2-dichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431	0.01	mg/kg	< 0.01
1,2,4-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
Hexachlorobutadiene	DETSC 3431	0.01	mg/kg	< 0.01
1,2,3-trichlorobenzene	DETSC 3431	0.01	mg/kg	< 0.01
MTBE	DETSC 3431*	0.01	mg/kg	< 0.01



## Summary of Chemical Analysis

### Leachate Samples

Our Ref 24-00791

Client Ref 26560

Contract Title LT521 Fasnakyle 400kV Substation

Lab No	2286450	2286451
Sample ID	BH12	BH12
Depth	0.50	0.50
Other ID		
Sample Type	LEACHATE	LEACHATE
Sampling Date	10/01/2024	10/01/2024
Sampling Time	n/s	n/s

Test	Method	LOD	Units
<b>Preparation</b>			
BS EN 12457 2:1 WAC	DETSC 1009*		Y
BS EN 12457 8:1 WAC	DETSC 1009*		Y



# WASTE ACCEPTANCE CRITERIA TESTING ANALYTICAL REPORT

Our Ref 24-00791

Client Ref 26560

Contract Title LT521 Fasnakyle 400kV Substation

Sample Id BH12 0.50

Sample Numbers 2286449 2286450 2286451

Date Analysed 19/01/2024

Test Results On Waste		
Determinand and Method Reference	Units	Result
DETSC 2084# Total Organic Carbon	%	< 0.5
DETSC2003# Loss On Ignition	%	
DETSC 3321# BTEX	mg/kg	< 0.04
DETSC 3401# PCBs (7 congeners)	mg/kg	< 0.01
DETSC 3311# TPH (C10 - C40)	mg/kg	< 10
DETSC 3301 PAHs	mg/kg	< 1.6
DETSC2008# pH	pH Units	
DETS073* Acid Neutralisation Capacity (pH4)	mol/kg	
DETS073* Acid Neutralisation Capacity (pH7)	mol/kg	

WAC Limit Values		
Inert Waste	SNRHW	Hazardous Waste
3	5	6
n/a	n/a	10
6	n/a	n/a
1	n/a	n/a
500	n/a	n/a
100	n/a	n/a
n/a	>6	n/a
n/a	TBE	TBE
n/a	TBE	TBE

Test Results On Leachate				
Determinand and Method Reference	Conc in Eluate ug/l		Amount Leached* mg/kg	
	2:1	8:1	LS2	LS10
DETSC 2306 Arsenic as As	0.31	0.19	< 0.002	< 0.01
DETSC 2306 Barium as Ba	3.6	4.5	< 0.02	< 0.1
DETSC 2306 Cadmium as Cd	< 0.030	< 0.030	< 0.004	< 0.02
DETSC 2306 Chromium as Cr	1	< 0.25	< 0.02	< 0.1
DETSC 2306 Copper as Cu	0.74	0.6	< 0.004	< 0.02
DETSC 2306 Mercury as Hg	0.013	< 0.010	< 0.0004	< 0.002
DETSC 2306 Molybdenum as Mo	< 1.1	< 1.1	< 0.02	< 0.1
DETSC 2306 Nickel as Ni	< 0.50	< 0.50	< 0.02	< 0.1
DETSC 2306 Lead as Pb	0.58	0.33	< 0.01	< 0.05
DETSC 2306 Antimony as Sb	< 0.17	< 0.17	< 0.01	< 0.05
DETSC 2306 Selenium as Se	0.28	< 0.25	< 0.006	< 0.03
DETSC 2306 Zinc as Zn	2.2	< 1.3	0.004	< 0.01
DETSC 2055 Chloride as Cl	2600	650	< 20	< 100
DETSC 2055* Fluoride as F	< 100	< 100	< 0.02	< 0.1
DETSC 2055 Sulphate as SO4	3800	2100	< 20	< 100
DETSC 2009* Total Dissolved Solids	16000	9200	32	103.5
DETSC 2130 Phenol Index	< 100	< 100	< 0.2	< 1
DETSC 2085 Dissolved Organic Carbon	160000	8800	320	344.3

WAC Limit Values		
Limit values for LS10 Leachate		
Inert Waste	SNRHW	Hazardous Waste
0.5	2	25
20	100	300
0.04	1	5
0.5	10	70
2	50	100
0.01	0.2	2
0.5	10	30
0.4	10	40
0.5	10	50
0.06	0.7	5
0.1	0.5	7
4	50	200
800	15,000	25,000
10	150	500
1000	20,000	50,000
4000	60,000	100,000
1	n/a	n/a
500	800	1000

## Additional Information

DETSC 2008 pH	7.3	6.9
DETSC 2009 Conductivity uS/cm	23.5	13.1
* Temperature*	17.0	17.0

Mass of Sample Kg*	0.130
Mass of dry Sample Kg*	0.118

## Stage 1

Volume of Leachant L2*	0.224
Volume of Eluate VE1*	0.2

## Stage 2

Volume of Leachant L8*	0.944
Volume of Eluate VE2*	0.89

TBE - To Be Evaluated  
SNRHW - Stable Non-Reactive  
Hazardous Waste

**Disclaimer:** The WAC limit values are provided for guidance only. DETS does not accept responsibility for errors or omissions. Values are correct at time of issue.

\* DETS are accredited for the testing of leachates and not the leachate preparation stage which is unaccredited.



## Summary of Asbestos Analysis Soil Samples

*Our Ref* 24-00791

*Client Ref* 26560

*Contract Title* LT521 Fasnakyle 400kV Substation

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2286449	BH12 0.50	SOIL	NAD	none	D Wilkinson

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: \* - not included in laboratory scope of accreditation.



## Information in Support of the Analytical Results

Our Ref 24-00791  
 Client Ref 26560  
 Contract LT521 Fasnakyle 400kV Substation

### Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Hold time exceeded for tests	Inappropriate container for tests
2286449	BH12 0.50 SOIL	10/01/24	GJ 250ml, GJ 60ml, PT 1L x2		
2286450	BH12 0.50 LEACHATE	10/01/24	GJ 250ml, GJ 60ml, PT 1L x2		
2286451	BH12 0.50 LEACHATE	10/01/24	GJ 250ml, GJ 60ml, PT 1L x2		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

### Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

### Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

End of Report





Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSEN Transmission

Engineer: Jacobs

Style: APPENDIX A File: P:\GINTWP\PROJECTS\26560.GPJ Printed: 05/02/2024 11:17:06 Raeburn Drilling and Geotechnical Whistleberry Rd, Hamilton ML3 0HP Tel: 01698-711177 E-mail: enquiries@raeburndrilling.com

APPENDIX H  
CALIBRATION CERTIFICATES





# RAEBURN

DRILLING & GEOTECHNICAL LTD

Raeburn Drilling & Geotechnical  
Whistleberry road  
Hamilton  
ML3 0HP

## SPT Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

SPT Hammer Ref: RD24 23  
Test Date: 20/06/2023  
Report Date: 20/06/2023  
File Name: RD24 23.spt  
Test Operator: K STEELE

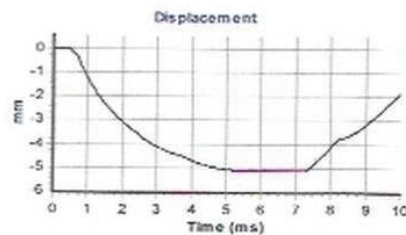
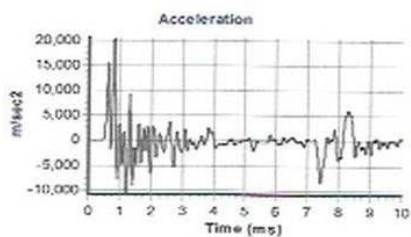
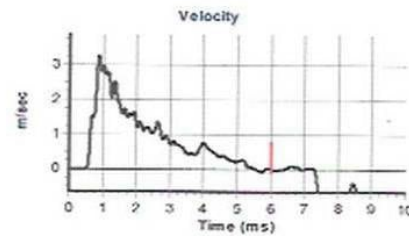
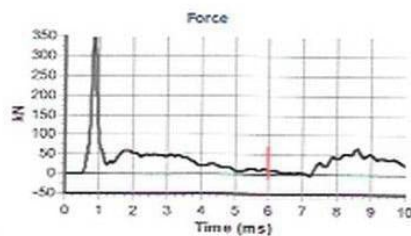
### Instrumented Rod Data

Diameter  $d_r$  (mm): 54  
Wall Thickness  $t_r$  (mm): 6.9  
Assumed Modulus  $E_s$  (GPa): 208  
Accelerometer No.1: 69559  
Accelerometer No.2: 69560

### SPT Hammer Information

Hammer Mass  $m$  (kg): 63.5  
Falling Height  $h$  (mm): 760  
SPT String Length  $L$  (m): 14.5

### Comments / Location



### Calculations

Area of Rod A ( $\text{mm}^2$ ): 1021  
Theoretical Energy  $E_{\text{theor}}$  (J): 473  
Measured Energy  $E_{\text{meas}}$  (J): 407

Energy Ratio  $E_r$  (%): **86**

Signed: Kevin Steele  
Title: Head Storeman

The recommended calibration interval is 12 months

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**Raeburn Drilling & Geotechnical**  
Whistleberry road  
Hamilton  
ML3 0HP

SPT Hammer Ref: RD51 2023  
Test Date: 26/06/2023  
Report Date: 26/06/2023  
File Name: RD51 2023.spt  
Test Operator: K STEELE

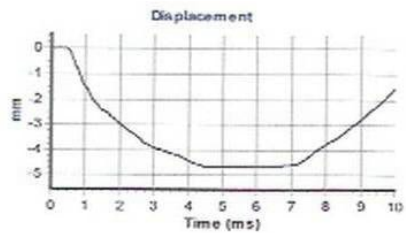
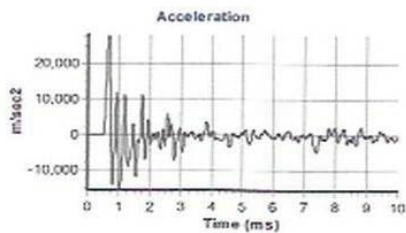
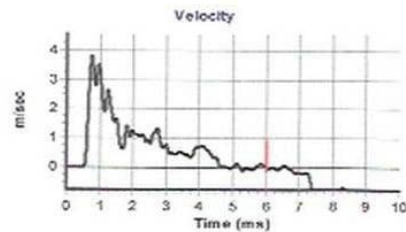
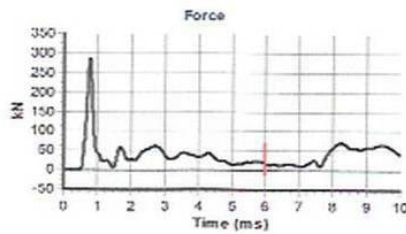
## Instrumented Rod Data

Diameter  $d_r$  (mm): 54  
Wall Thickness  $t_r$  (mm): 6.8  
Assumed Modulus  $E_0$  (GPa): 208  
Accelerometer No.1: 69559  
Accelerometer No.2: 69560

## SPT Hammer Information

Hammer Mass  $m$  (kg): 63.5  
Falling Height  $h$  (mm): 760  
SPT String Length  $L$  (m): 14.5

## Comments / Location



## Calculations

Area of Rod  $A$  (mm<sup>2</sup>): 1008  
Theoretical Energy  $E_{theor}$  (J): 473  
Measured Energy  $E_{meas}$  (J): 340

**Energy Ratio  $E_r$  (%):** 72

Signed: Kevin Steele  
Title: Head Storeman

The recommended calibration interval is 12 months

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**Raeburn Drilling & Geotechnical**  
Whistleberry road  
Hamilton  
ML3 0HP

SPT Hammer Ref: RD125 2023  
Test Date: 08/03/2023  
Report Date: 08/03/2023  
File Name: RD125 2023.spt  
Test Operator: KS

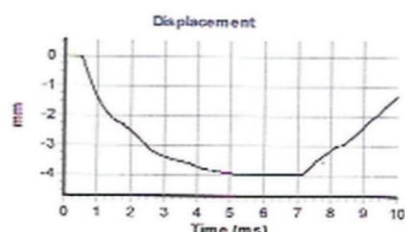
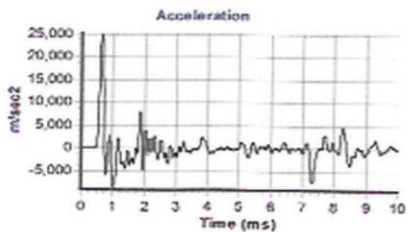
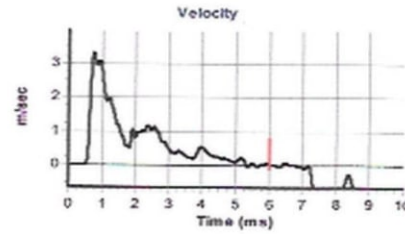
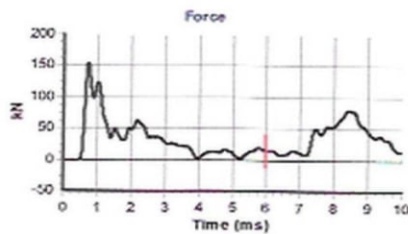
## Instrumented Rod Data

Diameter  $d_r$  (mm): 54  
Wall Thickness  $t_r$  (mm): 6.8  
Assumed Modulus  $E_a$  (GPa): 208  
Accelerometer No.1: 69559  
Accelerometer No.2: 69560

## SPT Hammer Information

Hammer Mass  $m$  (kg): 63.5  
Falling Height  $h$  (mm): 760  
SPT String Length  $L$  (m): 14.5

## Comments / Location



## Calculations

Area of Rod  $A$  (mm<sup>2</sup>): 1008  
Theoretical Energy  $E_{theor}$  (J): 473  
Measured Energy  $E_{meas}$  (J): 284

Energy Ratio  $E_r$  (%): **60**

  
Signed: Kevin Steele  
Title: Head Storeman

The recommended calibration interval is 12 months

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Site: LT521 FASNAKYLE 400KV SUBSTATION

Contract No: 26560

Client: SSSEN Transmission

Engineer: Jacobs

Certificate of calibration

Certificate number

CRU02-0120-20220906

Page 4 of 4

Certificate of calibration

Certificate number

CRU02-0120-20220906

Page 1 of 4

Manufacturer  
Location of calibration

Leidendorp Instruments  
Achthovenweg 19  
2351AX Leidendorp  
The Netherlands

Model

CRU02

Serial number

0120

Date of calibration

06/09/2022

Temperature (°C)

23±/5°C

Humidity (% RH)

60±/30%

AFTER ADJUSTMENT

Reference zero scale value	Measured zero scale value	Uncertainty of calibration	Allowed minimum	Allowed maximum	Range	PASS (P) FAIL (F)
909.1	909.1	0.2	908.7	909.5	R (ohm)	P
96.59	96.57	0.00015	96.09	97.09	I (mA)	P
1.00	1.00	7uV	0.99	1.01	U (V)	P

AFTER ADJUSTMENT

Reference full scale value	Measured full scale value	Uncertainty of calibration	Allowed minimum	Allowed maximum	Range	PASS (P) FAIL (F)
1299.8	1299.8	0.46	1298.8	1300.8	R (ohm)	P
386.12	386.08	1	385.12	387.12	I (mA)	P
4.00	4.00	0.34mV	3.96	4.04	U (V)	P
1.0000	1.0000	0.00014	0.9994	1.0006	f (Hz)	P

Serial number

0120

Date of calibration

06/09/2022

Performed by  
(calibration technician)  
Signature

Peter Chung

Title:

THERMAL RESISTIVITY CALIBRATION CERTIFICATE

Fig No:

H4

Originator

JM

Status

Final

Chk & App

FMR







# Appendix E Local Authority Consultation





## RESPONSE TO F0196906

### Request Timeline

Date	Status
19/03/2024	EIR Request received [statutory deadline 17/04/2024]
16/04/2024	Clarification Requested
18/04/2024	Clarification Received [statutory deadline 17/05/2024]
26/04/2024	EIR Response issued

### Requested Information

[...] near the existing Fasnakyle Substation. The approximate Grid Reference for the centre of the site is NH 32219 28423 and nearest postcode is IV4 7LZ. Please see image below for the Proposed Development (red line boundary). I have also attached Shapefiles, if that is easier.

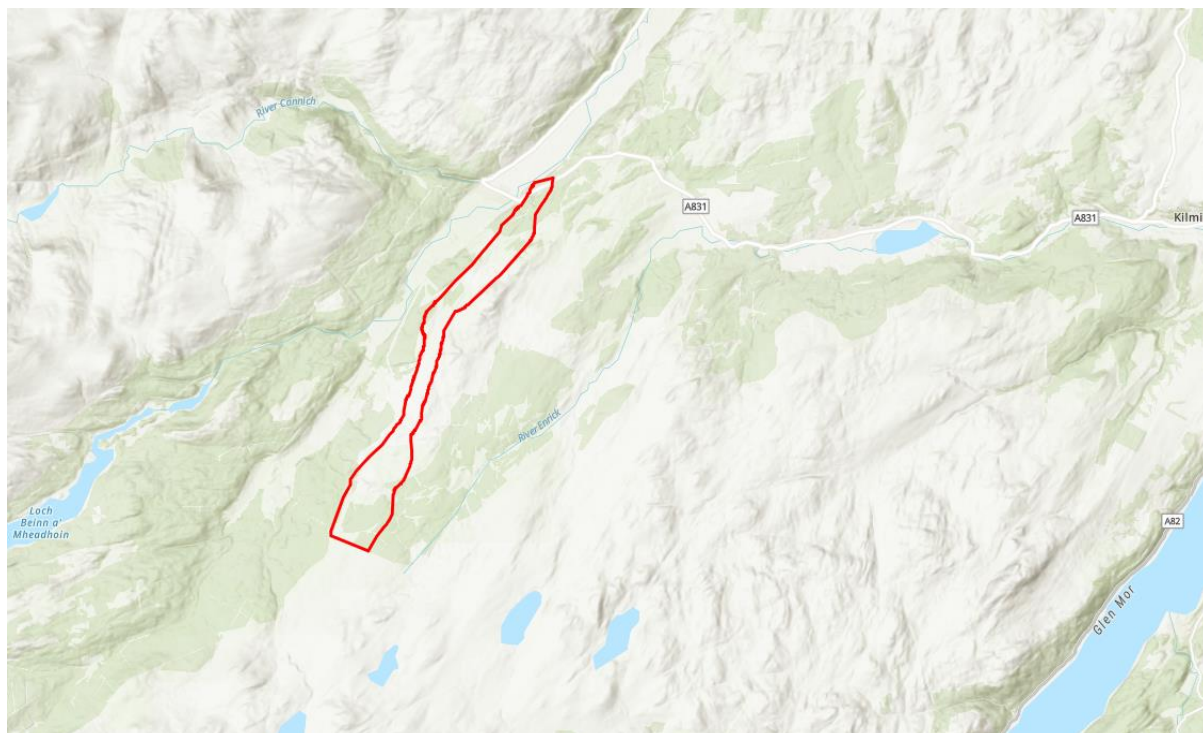
We would be grateful if you or someone in your team would examine your available records and inform us of any information relating to potentially contaminated land within the site within a radius of no greater than 1km from the site. Information we would be looking for includes the following:

1. Any information relating to historical land use within and surrounding the vicinity of the site;
2. Any relevant contaminated land information you may hold about the site, including pollution incidents;
3. Any particular areas of sensitivity in the vicinity of the site or nearby areas for which SEPA may have particular concern.



Please let us know if there is a cost for this service.

Looking forward to hearing from you/your team.



## Clarification Received

Yes please, we are interested in any permits and licenses granted by SEPA , in particular CAR activities, PPC authorisations and Waste Management licences.

## Response

SEPA has handled your request under the Environmental Information (Scotland) Regulations 2004 (EIRs).

- 1. Any information relating to historical land use within and surrounding the vicinity of the site;**

Please see attached: **F0196906 Licences.xlsx**

Personal information has been removed under Regulation 11(2) of the EIRs.



Please note that private drinking water supply abstractions of 10m<sup>3</sup> or less are covered by a General Binding Rule (GBR). As compliance with the GBR is mandatory and no formal SEPA authorisation or registration is required, we do not hold a record of these. It is the responsibility of the local authority to maintain a register of private drinking water supplies and we suggest you contact The Highland Council for this information. Contact details are provided in 'Application of Regulation and Exceptions' section below. Regulations 10(4)(a) and 14(1)(b) apply.

Please also note, in the interest of public safety, we cannot disclose the locations of public drinking water supply abstractions. Regulation 10(5)(a) applies.

The public register documentation which SEPA held prior to December 2020 continues to be impacted by the cyber attack. We are providing you with the best information we currently have available but cannot confirm it is complete or accurate. Any use you make of this information will be at your own risk.

Please note that the Site National Grid Reference (NGR) shown on the attached spreadsheet is not necessarily the location of an abstraction point. Instead, it refers to the registered site location only. Abstraction points are found in the licence documents and are not currently held on a central database.

We hold no other information on historical land use. Regulation 10(4)(a) applies.

**2. Any relevant contaminated land information you may hold about the site, including pollution incidents;**

We do not hold any contaminated land information on this particular site or surrounding area. Regulation 10(4)(a) applies.

Please note, SEPA does not routinely hold this type of information. The Local Authority is the lead regulator for contaminated land and as part of its duties it is required to keep an updated inspection strategy for its area. This may include



information on previous historic contaminative uses. The Local Authority is also the lead regulator for dealing with land contamination and its remediation through planning. Therefore, we recommended you contact the Highland Council on this matter. Contact details can be found in the 'Application of Regulations and Exceptions' section below. Regulation 14(1)(b) applies.

We have found no records of pollution incidents in the requested area. Regulation 10(4)(a) applies.

**3. Any particular areas of sensitivity in the vicinity of the site or nearby areas for which SEPA may have particular concern.**

This information can be found on the NatureScot website here:

[sitelink.nature.scot/home](https://www.nature.scot/home)

NatureScot can also be contacted directly for more information, contact details are given below. Regulation 9 applies.

Information Officer

**NatureScot**

Battleby

Redgorton

Perth

PH1 3EW

Email: [foi@nature.scot](mailto:foi@nature.scot)

[www.nature.scot/about-naturescot/access-information-and-services/access-information/freedom-information-requests](https://www.nature.scot/about-naturescot/access-information-and-services/access-information/freedom-information-requests)

You can also check waterbody status to identify any downgraded water bodies in the area that maybe of concern using the Water Classification Hub.

Waterbody specific information for surface waters and groundwaters can be found here: [www.sepa.org.uk/data-visualisation/water-classification-hub/](https://www.sepa.org.uk/data-visualisation/water-classification-hub/)



- Guide to using the hub: [www.sepa.org.uk/media/330145/classification-hub-quick-guide.pdf](http://www.sepa.org.uk/media/330145/classification-hub-quick-guide.pdf)
- Please note this is updated annually.

Regulation 6(1)(b) applies.

Further information regarding the regulations and any exceptions applied to this information can be found below.



## Application of Regulations and Exceptions

### Section 39(2)

The information you are requesting is environmental information. We have applied Section 39(2) of the Freedom of Information (Scotland) Act 2002 (FOISA). We are therefore handling your request under the Environmental Information (Scotland) Regulations 2004 (EIRs).

### Regulation 6(1)(b) Publicly Available and Easily Accessible

Where we have advised above that information is publicly available & easily accessible Regulation 6(1)(b) applies, the text of which is reproduced below:-

*6(1) Where an applicant requests that environmental information be made available in a particular form or format, a Scottish public authority shall comply with that request unless- (b) the information is already publicly available and easily accessible to the applicant in another form or format.*

### Regulation 9 – Advice and assistance

Where we have issued additional information or advice this is provided in line with SEPA's duty to advise and assist under Regulation 9 of The Environmental Information (Scotland) Regulations 2004.

### Regulation 10(4)(a) – Information not held

Where we have advised above that SEPA does not hold this information it is excepted under Regulation 10(4)(a) of the Environmental Information Regulations 2004. The text of which is reproduced below;

*(4) A Scottish public authority may refuse to make environmental information available to the extent that;- (a) it does not hold that information when an applicant's request is received.*



The exception in regulation 10(4)(a) is subject to the public interest test in regulation 10(1)(b) of the EIRs. As SEPA does not hold the information in question there is no conceivable public interest in requiring that the information be made available.

### **Regulation 10(5)(a) – International relations, national security, public safety**

The locations of public drinking water supply abstractions are withheld from release under the terms of Regulation 10(5)(a) of the EIRs. The text of which is reproduced below.

*10 (5) A Scottish public authority may refuse to make environmental information available to the extent that its disclosure would, or would be likely to, prejudice substantially, (a) international relations, defence, national security or public safety;*

The Public Interest Test was carried out in relation to the information which is to be withheld under Regulation 10(5)(a) of the EIRs. It is acknowledged that there are public interest arguments in favour of disclosure of the subject information. However, there is a stronger public interest in withholding information that if disclosed would likely to prejudice substantially public safety in providing the locations of the public's drinking water supplies.

### **Regulation 11(2) – Personal data**

Personal data relating to SEPA staff and private individuals has been redacted from the released documents in accordance with Regulation 11(2) of the EIRs and Data Protection Principles. SEPA has not withheld complete documents which contain such personal data and have released all other information within the document.

### **Regulation 14(1)(b) – Other authority**

As confirmed above SEPA does not hold this information. In accordance with the terms of the EIRs regulation 14(1)(b), The text of which is reproduced below.

*14(1) Where a Scottish public authority has received a request to make environmental information available and does not hold that information but believes*



*that another public authority holds the information requested then it shall (b) supply the applicant with the name and address of that other authority,*

We advise that you contact:

Freedom of Information Officer

**The Highland Council**

Headquarters

Glenurquhart Road

Inverness

IV3 5NX

[www.highland.gov.uk/info/704/data\\_protection\\_and\\_freedom\\_of\\_information/340/freedom\\_of\\_information](http://www.highland.gov.uk/info/704/data_protection_and_freedom_of_information/340/freedom_of_information)



### **What to expect when making a Request for Information**

Each request for information, under The Environmental Information (Scotland) Regulations 2004 or the Freedom of Information (Scotland) Act 2002, is formally logged by the authority. The request falls within a process that has two internal stages carried out by the authority; a right of appeal to the Scottish Information Commissioner followed by an appeal to the Court of Session on a point of law only.

- Stage 1 – Request for information
- Stage 2 – Formal Review
- Stage 3 – Appeal for decision by Scottish Information Commissioner (OSIC)
- Stage 4 – Appeal to the Court of Session on a point of law only.

Each enquiry will have a unique Reference Number which should be quoted when you contact us.

### **How you will be kept informed**

You will receive an acknowledgement for your request and Formal Review. We aim to reply to all enquiries promptly, within 20 working days. You will receive a response along with the requested information and/or an explanation regarding any withheld information. We may also contact you if we require clarification or if we are issuing a fees notice.

### **What happens once your enquiry has been responded to?**

If you are not happy with the response or have failed to receive a response, you have the right to request a Formal Review from SEPA.

Guidance on your rights and how to ask for a review is on the Scottish Information Commissioner's website; <http://itspublicknowledge.info/YourRights/Askingforareview.aspx>

We will ensure that all personal data is processed, recorded and retained in accordance with the requirements of the Data Protection Act 2018 throughout the handling of each request. You have a right to see information about yourself via submitting a Subject Access Request under the Data Protection Act 2018.

### **What to do if you are not happy with how your enquiry and review were handled**

If you are unsatisfied with our Formal Review response or have failed to receive a response, you can then appeal to the Scottish Information Commissioner via the links below.

[www.itspublicknowledge.info/appeal](http://www.itspublicknowledge.info/appeal)

<http://www.itspublicknowledge.info/home/ContactUs/ContactUs.aspx>

Should you wish to appeal against the Scottish Information Commissioner's decision, you have the right to appeal to the Court of Session on a point of law only. Any such appeal must be made within 42 days after the date of intimation of the decision.



Océane Mbaguta  
Graduate Environmental  
Scientist  
AECOM  
177 Bothwell Street  
GLASGOW  
G2 7ER

Please ask for:  
Email:  
Our Ref:  
Date:

Scott Barclay  
[scott.barclay@highland.gov.uk](mailto:scott.barclay@highland.gov.uk)  
24/07  
12 April 2024

Dear Océane

**FASNAKYLE SUBSTATION**  
**NATIONAL GRID REFERENCE: 230747: 824403**

Thank you for your Environmental Information Request for the above site received by this service on 19 March 2024. Having examined the following Ordnance Survey, Pre-War County Series maps and service records, I am now able to provide the following information in answer to your specific questions:

- **Any recorded current or historical environmental problems at the site and adjacent areas with regards to ground contamination or solid waste arisings;**

Having reviewed our collection of historical maps and database of potentially contaminative sources, I can confirm that we hold records of two potential sources of contaminated land within your study boundary – as detailed below:

- **Borrow Pit/ Workings** – Our Ref: 24-MIN-2003 centred at National Grid Reference 232365: 827693. Sourced from our current OS Maps and also from Planning Application 10/01752/FUL - Borrow pit for the extraction of crushed rock material for construction of new temporary and upgraded existing access tracks - Land 1.3KM E Of Lillieoak, Tomich, Cannich. Documents publicly available in support of this Planning Application can be viewed via the Council's WAM – link: <https://wam.highland.gov.uk/wam/> - you can enter the Planning Application Reference in the Search box and click 'Search'.

- **Quarry** – Our Ref: 24-MIN-2004 centred at National Grid Reference 230831: 823944. Sourced from our Historical Maps E5c Scale 1: 10560 and Epochm7 Scale 1: 10000 both dated 1971 and Current OS Mastermap. The feature is labelled as 'Quarry (dis)' on the 1971 maps but then labelled as 'Quarry' in the Current OS Mastermap.

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**Contaminated Land Unit, Environmental Health**

Communities and Place: The Highland Council, 38 Harbour Road, Inverness, IV1 1UF  
Tel: 01463 644570 e-mail: [land.contamination@highland.gov.uk](mailto:land.contamination@highland.gov.uk) [www.highland.gov.uk](http://www.highland.gov.uk)



We hold no details of any potentially contaminative sources within the immediate surrounding land to your study site. Furthermore, we hold no details of any current/former landfills offsite within 250m.

Other than the two potentially contaminative sources identified onsite within your study site, we are not aware of any recorded current or historical environmental problems at the site and adjacent areas with regards to ground contamination or solid waste arisings.

- **The presence and location of any historical landfills within 500m of the site boundary;**

Having consulted our records, we hold no details of any historical landfills within 500m of the site boundary.

- **Any particular areas of sensitivity in the vicinity of the site or nearby areas for which the council may have particular concern;**

Having consulted our Ecology GIS map layers, we hold details of the following ecologically sensitive areas within 250m of the site:

Special Protection Areas – 0 sites

Special Areas of Conservation – 0 sites

Sites of Special Scientific Interest - 0 sites

RAMSAR Wetlands of International Importance – 0 sites

- **Any other relevant environmental information you may hold about the site.**

We hold no further relevant environmental information about the site.

The Council cannot be held liable for any error or omission contained within this report, nor does the information represent or replace the requirement of a site investigation. Your Information Request has been quoted at an hourly rate of £81 plus VAT – please note that this charge has now increased to £87 plus VAT per hour as for any new Information Requests received after 1 April 2024 for the new financial year. Given that we received your Information Request prior to 1 April 2024, you will be charged at the hourly rate of £81 plus VAT. In this instance, one (1) hour was taken to prepare this information request. An Invoice for £81 plus VAT shall be raised by colleagues in Business Support. I hope the information presented is of interest.

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**Contaminated Land Unit, Environmental Health**

Communities and Place: The Highland Council, 38 Harbour Road, Inverness, IV1 1UF  
Tel: 01463 644570 e-mail: [land.contamination@highland.gov.uk](mailto:land.contamination@highland.gov.uk) [www.highland.gov.uk](http://www.highland.gov.uk)



Should you have any queries, please do not hesitate to contact me on 01463 644599.

Yours sincerely



Scott Barclay

Information Technician (Contaminated Land)

Environmental Health welcomes your feedback. Please help us improve our service by taking our short customer survey by clicking on this link

<https://www.surveymonkey.com/s/highlandeh>

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**Contaminated Land Unit, Environmental Health**

Communities and Place: The Highland Council, 38 Harbour Road, Inverness, IV1 1UF

Tel: 01463 644570 e-mail: [land.contamination@highland.gov.uk](mailto:land.contamination@highland.gov.uk) [www.highland.gov.uk](http://www.highland.gov.uk)



Authorisation No	Site	Authorisation Status	Authorisation Status Date	Legislation	Category	Authorisation Holder	Authorisation Activity	Site NGR
CAR/L/1002065	Cannich Village --- Cannich Village, Beauly	Granted	April 1, 2006	CAR	Licence	SCOTTISH WATER	Bed Reinforcement; Sewage (Public) Primary; Sewage (Public) Combined Sewer Overflow (CSO)	NH 34533 31522
CAR/L/1112022	Allt Currachan Hydro Scheme, near Tomich --- GUISACHAN ESTATE, NEAR TOMICH	Granted	October 10, 2013	CAR	Licence	PRIVATE CONTACT	Abstraction Hydropower; Impoundment Hydropower; Abstraction Return	NH 31200 27740
CAR/R/1013050	The Old Brewery, Tomich, Beauly --- THE OLD BREWERY, TOMICH, BEAULY IV4 7LY	Granted	September 13, 2006	CAR	Registration	PRIVATE CONTACT	Sewage (Private) Primary	NH 31068 27672
CAR/R/1015685	Riverside Cottage, Nr Kerrow House, Cannich --- RIVERSIDE COTTAGE, NR KERROW HOUSE, CANNICH, BEAULY IV4 7NA	Granted	December 12, 2006	CAR	Registration	PRIVATE CONTACT	Sewage (Private) Primary	NH 32827 30590
CAR/R/1015686	Fishermans Cottage & Kerrow House, Cannich --- FISHERMANS COTTAGE &, KERROW HOUSE, CANNICH, Beauly IV4 7NA	Granted	December 7, 2006	CAR	Registration	PRIVATE CONTACT	Sewage (Private) Primary	NH 32962 30633
CAR/R/1017987	Fasnakyle Power Station, Cannich --- FASNAYKYLE POWER STATION, CANNICH IV4 7NB	Granted	April 18, 2007	CAR	Registration	PRIVATE CONTACT	Sewage (Private) Primary	NH 31870 29596
CAR/R/1019882	The Keepers Cottage, Kerrow, Cannich --- the keepers cottage, KERROW, CANNICH, Beauly IV4 7NA	Granted	July 13, 2007	CAR	Registration	PRIVATE CONTACT	Sewage (Private) Primary	NH 33230 30410
CAR/R/1024228	Fasnakyle Water Supply, Fasnakyle Village --- FASNAYKYLE WATER SUPPLY, FASNAYKYLE VILLAGE, STRATHGLASS	Granted	February 11, 2008	CAR	Registration	GREGORY'S PLANT HIRE & CIVIL ENGINEERING	Pipeline / Cable Crossing	NH 31750 28860
CAR/R/1042450	Comar Lodge, Cannich IV4 7NB --- COMAR LODGE, CANNICH, BEAULY IV4 7NB	Granted	June 25, 2009	CAR	Registration	PRIVATE CONTACT	Sewage (Private) Primary	NH 33290 31310
CAR/R/1045883	Birchwood House, Kerrow, Beauly --- Birchwood House, Kerrow, Beauly IV4 7NA	Granted	June 12, 2009	CAR	Registration	PRIVATE CONTACT	Sewage (Private) Primary	NH 33854 30836
CAR/R/1047179	Invercannich House, by Beauly --- INVERCANNICH HOUSE, CANNICK, BY BEAULY, INVERNESS SHIRE IV4 7LS	Granted	May 29, 2009	CAR	Registration	PRIVATE CONTACT	Sewage (Private) Primary	NH 34536 32102
CAR/R/1064963	Balmore Cottage, Beauly --- BALMORE COTTAGE, BEAULY IV4 7LS	Granted	June 12, 2009	CAR	Registration	PRIVATE CONTACT	Sewage (Private) Primary	NH 35164 32733
CAR/R/1066062	Garage Flat, Birchwood House, Kerrow, Beauly --- GARAGE FLAT, BIRCHWOOD HOUSE, KERROW, BEAULY IV4 7NA	Granted	June 12, 2009	CAR	Registration	PRIVATE CONTACT	Sewage (Private) Primary	NH 33854 30824
CAR/R/1069119	Achnahaggleish, Guisachan Farm, Tomich, Beauly --- ACHNAHEGLEISH, GUISACHAN FARM, TOMICH, By Beauly IV4 7LY	Granted	October 21, 2009	CAR	Registration	PRIVATE CONTACT	Sewage (Private) Tertiary	NH 31325 26965
CAR/R/1087657	Crimmond, Cannich, Beauly --- Crimmond, Cannich, BEAULY IV4 7LT	Granted	September 20, 2010	CAR	Registration	MACANDREW AND JENKINS	Sewage (Public) Primary	NH 34184 31635
CAR/R/1093246	Mill Cottage, Cannich, Beauly --- Mill Cottage, Cannich, BEAULY IV4 7LT	Granted	May 18, 2011	CAR	Registration	PRIVATE CONTACT	Sewage (Private) Primary	NH 34165 31674
CAR/R/1093979	Proposed Dwelling, Plot 1 The Old Brewery --- Seasons View Tomich, Inverness-shire, Cannich IV4 7LY	Granted	June 13, 2011	CAR	Registration	PRIVATE CONTACT	Sewage (Private) Primary	NH 31230 26990
CAR/R/1102135	Eng Wks @ BF Access Track Spur 10N, Guisachan --- BF 76 Access Track Spur 10N, Guisachan Forest, Guisachan	Granted	April 25, 2012	CAR	Registration	PRIVATE CONTACT	Brdging Culvert	NH 30440 24730
CAR/R/1105326	The Brewers Cottage, Tomich, by Cannich --- THE BREWERS COTTAGE, TOMICH, CANNICH, BEAULY IV4 7LY	Granted	August 3, 2012	CAR	Registration	PRIVATE CONTACT	Sewage (Private) Primary	NH 31067 27685
CAR/R/1105400	Corrimony Wind Farm Grid Connection --- 299-301 Duke Street, Barrow in Furness LA14 5UL	Granted	August 14, 2012	CAR	Registration	FREEDOM AGRILEX	Pipeline / Cable Crossing	NH 32100 29490
CAR/R/1105401	Corrimony Wind Farm Grid Connection --- 299-301 Duke Street, Barrow in Furness LA14 5UL	Granted	August 14, 2012	CAR	Registration	FREEDOM AGRILEX	Pipeline / Cable Crossing	NH 32100 29490
CAR/R/1105402	Corrimony Wind Farm Grid Connection --- 299-301 Duke Street, Barrow in Furness LA14 5UL	Granted	August 14, 2012	CAR	Registration	FREEDOM AGRILEX	Pipeline / Cable Crossing	NH 32100 29490
CAR/R/1111539	The Bothy, Fasnakyle, Glen Affric Rd, Cannich --- The Bothy, Fasnakyle, Glenaffric Road, Cannich IV4 7NB	Granted	May 7, 2013	CAR	Registration	PRIVATE CONTACT	Sewage (Private) Primary	NH 31340 28900
CAR/R/1111966	Rivendell House, Fasnakyle, Beauly --- Rivendell, Fasnakyle, BEAULY IV4 7NB	Granted	May 24, 2013	CAR	Registration	PRIVATE CONTACT	Sewage (Private) Primary	NH 31660 29300
CAR/R/1125667	New House, E of Lodge Cot, Fasnakyle, Cannich --- East of Lodge Cottage, Fasnakyle, Cannich	Granted	September 11, 2014	CAR	Registration	PRIVATE CONTACT	Sewage (Private) Primary	NH 31630 29280
CAR/R/1142459	Kerrow Bum Eng Wks, Cannich, By Beauly --- A831, Cannich by Beauly IV4 7LJ	Granted	December 15, 2015	CAR	Registration	PRZEMYSŁAW WUWER	Bridging Culvert	NH 34510 31310
CAR/R/1147530	Blue Roan, Cannich, Beauly --- Blue Roan, Cannich, Beauly IV4 7LS	Granted	June 10, 2016	CAR	Registration	PRIVATE CONTACT	Sewage (Private) Primary	NH 34125 31985
CAR/R/1149047	Dunromin, Cannich --- Dunromin, Cannich IV4 7LS	Granted	July 27, 2016	CAR	Registration	PRIVATE CONTACT	Sewage (Private) Primary	NH 34230 32009
CAR/R/1159387	Conversion of Balcladach Sawmill, Cannich --- Conversion of Balcladach Sawmill, Tomich, Cannich IV4 7LY	Granted	July 17, 2017	CAR	Registration	PRIVATE CONTACT	Sewage (Private) Primary	NH 29904 26110
CAR/R/1161046	Lillieoak, Tomich, Beauly --- Lillieoak, Tomich, Strathglass, Beauly IV4 7LY	Granted	September 14, 2017	CAR	Registration	PRIVATE CONTACT	Sewage (Private) Primary	NH 31271 27944
CAR/R/1172253	Birchwood + Rowan Cottages, Cannich, Beauly --- Birchwood + Rowan Cottages, Kerrow House, Cannich, Beauly IV4 7NA	Granted	September 25, 2018	CAR	Registration	PRIVATE CONTACT	Sewage (Private) Primary	NH 32907 30611
CAR/R/1173101	Hillcrest, Tomich, Strathglass, Inverness --- Hillcrest, Tomich, Strathglass, Inverness IV4 7LY	Granted	October 12, 2018	CAR	Registration	PRIVATE CONTACT	Sewage (Private) Primary	NH 31271 27987
CAR/R/1175136	Kirkfield, Tomich --- Kirkfield, Tomich IV4 7LY	Granted	December 11, 2018	CAR	Registration	PRIVATE CONTACT	Sewage (Private) Primary	NH 31277 27155
CAR/R/1183138	New House at Fasnakyle, Cannich --- New House at Fasnakyle, Cannich IV4 7NB	Granted	June 24, 2019	CAR	Registration	PRIVATE CONTACT	Sewage (Private) Secondary	NH 31972 29438
CAR/R/3004358	POSTMANS COTTAGE CANNICH BEAULY IV4 7NE	Granted	April 21, 2022	CAR	Registration		Point Source - Existing Sewage Treatment System (PSTS)	NH 35809 32339
CAR/R/3011453	BALQUIDDER KERROW CANNICH BEAULY IV4 7NA	Granted	September 25, 2023	CAR	Registration		Point Source - Existing Sewage Treatment System (PSTS)	NH 33046 30385
CAR/R/5005367	Grey Bank Repairs at Fasnakyle Power Station, IV4 7NB	Granted	June 14, 2023	CAR	Registration	SSE Renewables	Engineering - Grey bank restoration / reprofiling	NH 3194 2962
CAR/R/5005839	Postman's Cottage, Cannich, Beauly, IV4 7NE	Granted	July 25, 2023	CAR	Registration		Point Source - New Sewage Treatment System to Water	NH 3581 3234
PPC/B/1102945	Gregory's Plant Hire - Mobile Plant --- Chairein Lodge, Cannich, By Beauly, Inverness-Shire IV4 7LT	Granted	August 17, 2012	PPC	Licence	GREGORYS PLANT HIRE	3.5(a)	NH 33894 31403
PSTS/cdb532	Challenger Lodge, Tomich, Cannich, Beauly, IV4 7LY	Granted	July 8, 2021	CAR	Registration		Point Source - Existing Sewage Treatment System (PSTS)	NH 29853 25981
WML/XS/2000306	CHAIREIN LODGE , CANNICH, BEAULY, IV4 7LT	Granted	July 2, 2021	Waste	Exemption	Gregory's Plant & Civils	Paragraph 30 - Buming plant tissue waste on land in the open	NH 33897 31405



# Appendix F BGS Borehole Records





# BOREHOLE LOG

Beauly - Denny 400kv OHL

Borehole No

BF74B-A  
Sheet 1 of 2

Status

Final  
29/11/2011

Client: Scottish & Southern Energy plc

Consultant: Balfour Beatty Utility Solutions

Job No: 4578

Date Started	14/10/2011	Initial Boring Diameter:	160mm	Coordinates:	E 230955.087 m National Grid
Date Complete:	15/10/2011	Initial Core Diameter	86mm		N 825428.836 m National Grid
Hole Type:	RC+RC	Rotary Casing Type	Robit	Ground Level:	280.20 m OD
Equipment:	DB520 Bort	Core Barrel:	T2-101	Plunge:	90 °
		Core Bit:	Diamond Impreg	Scale:	1:50

Description of Strata	Legend	Depth	Reduced Level	Sampling/ Core Run	U	In Situ Testing		TCR (SCR)	FI	Install ation
						Test	Result	RQD		
Very soft spongy dark brown pseudo-fibrous PEAT.										
SAND & GRAVEL. (Driller's description)		1.10	259.10							
Very strong grey fine to medium grained PSAMMITE, slightly weathered with some yellowish brown staining on fractures. Occasional micaceous bands. Bedding fractures are inclined between 20deg and 30deg and are very closely to closely spaced, planar, smooth, tight and frequently micaceous.		1.70	258.50	1.70-3.00				100 (94) 75	7	
From 3.00m to 4.30m, with frequent pinkish white crystalline quartz bands.				3.00-3.50				100 (0) 0		
				3.50-4.70				100 (16) 0	NI	
From 4.30m, locally more weathered with some weaker and broken bands and patches of orangish brown staining. Dark grey in colour. Sub vertical and sub horizontal fractures.				4.70-5.00				100 (0) 0		
				5.00-6.50				100 (70) 27	12	
From 6.00m to 6.50m, becomes medium strong to strong and micaceous.				6.50-7.70				100 (79) 63		
From 6.50m, with some occasional bands of crystalline quartz.				7.70-8.00				100 (100) 100	7	
Continued next sheet										

U	Undisturbed U100 / U86 Sample	TCR	Total Core Recovery	S	Standard Penetration Test	CP	Cable Percussion
P	Piston Sample	SCR	Solid Core Recovery	C	Cone Penetration Test	RC	Rotary Open Hole
TW	Thin Wall Sample	RQD	Rock Quality Designation	32	N for full 300mm penetration	RC	Rotary Cored
D	Small Disturbed Sample	FI	Fracture Index	175	For given penetration (mm)	SC	Sonic Open holes
B	Bulk Disturbed Sample	NI	Non Intact	25#	Seating blows only (mm)	CCNP	Continuous Percussion
LB	Large Bulk Disturbed Sample	U*	Blows to drive U100 / U86	PP	Pocket Penetrometer Test	WLS	Windowless Sampler
W	Water Sample	UT	Thin wall undisturbed sample	K	Permeability Test (m/s)	Installation	
G	Gas Sample	NA	Not Applicable	L	Packer Test (Lugeons)	Slotted Pipe	Sand Filter
C	Core	NR	No Recovery	IV	In situ Vane Test: Peak	Piezometer Tip	Bentonite Seal
J	Amber Jar Sample	NP	No Penetration	IVR	In situ Vane Test: Residual	Grout	Gravel Filter
V	Vial Sample			HV	Hand Vane Test: Peak	Concrete	
				HVR	Hand Vane Test: Residual		





## BOREHOLE LOG

Beauly - Denny 400kv OHL

Borehole No

BF74B-A  
Sheet 2 of 2

Status

Final  
29/11/2011

Client: Scottish & Southern Energy plc

Consultant: Balfour Beatty Utility Solutions

Job No: 4578

Date Started	14/10/2011	Initial Boring Diameter:	160mm	Coordinates:	E 230955.087 m National Grid
Date Complete:	15/10/2011	Initial Core Diameter:	86mm		N 825428.835 m National Grid
Hole Type:	RC+RC	Rotary Casing Type:	Robit	Ground Level:	280.20 m OD
Equipment:	DB520 Bort	Core Barrel:	T2-101	Plunge:	93 °
		Core Bit:	Diamond Impreg	Scale:	1:50

Description of Strata	Legend	Depth	Reduced Level	Sampling/ Core Run	U	In Situ Testing		TCR (SCR) RQD	FI	Installation
						Test	Result			
Very strong grey fine to medium grained PSAMMITE, slightly weathered with some yellowish brown staining on fractures. Occasional micaceous bands. Bedding fractures are inclined between 20deg and 30deg and are very closely to closely spaced, planar, smooth, tight and frequently micaceous.				8.00-9.50				100 (83) 77		
									5	
				9.50-10.20				100 (93) 71		
				10.20-10.70				100 (100) 100		
				10.70-11.70				100 (100) 85	6	
				11.70-12.70				100 (90) 75		
				12.70-13.70				100 (90) 60	9	
End of Borehole at 13.70 m		13.70	246.50							

U	Undisturbed U100 / U86 Sample	TCR	Total Core Recovery	S	Standard Penetration Test	CP	Cable Percussion
F	Piston Sample	SCR	Solid Core Recovery	C	Cone Penetration Test	RO	Rotary Open Hole
TW	Thin Wall Sample	RQD	Rock Quality Designation	32	N for full 300mm penetration	RC	Rotary Cored
D	Small Disturbed Sample	FI	Fracture Index	/175	For given penetration (mm)	SO	Sonic Open Holed
B	Bulk Disturbed Sample	NI	Non Intact	/25#	Seating blows only (mm)	CONP	Continuous Percussion
LB	Large Bulk Disturbed Sample	U*	Blows to drive U100 / U86	PP	Pocket Penetrometer Test	WLS	Windowless Sampler
W	Water Sample	UT	Thin wall undisturbed sample	K	Permeability Test (m/s)	Installation	
G	Gas Sample	NA	Not Applicable	L	Packer Test (Lugeons)		Slotting Pipe
C	Core	NR	No Recovery	IV	Insitu Vane Test: Peak		Pneumatic Tip
J	Amber Jar Sample	NP	No Penetration	IVR	Insitu Vane Test: Residual		Grout
V	Vial Sample			HV	Hand Vane Test: Peak		Gravel Filter
				HVR	Hand Vane Test: Residual		Concrete





## BOREHOLE LOG

Beauly - Denny 400kv OHL

Borehole No

BF74B-B

Sheet 1 of 1

Status

Final

29/11/2011

Client: Scottish & Southern Energy plc

Consultant: Balfour Beatty Utility Solutions

Job No: 4578

Date Started	15/10/2011	Initial Boring Diameter	165mm	Coordinates:	E 230962.005 m National Grid
Date Complete:	15/10/2011	Initial Core Diameter			N 825423.002 m National Grid
Hole Type:	RO	Rotary Casing Type	Robit	Ground Level:	260.57 m OD
Equipment:	DB520 Soart	Core Barrel:		Plunge:	90 °
		Core Bit:		Scale:	1:50

Description of Strata	Legend	Depth	Reduced Level	Sampling/ Core Run	U	In Situ Testing		TCR (SCR) ROD	F. Install ation
						Test	Result		
Very soft spongy dark brown pseudo-fibrous PEAT.									
SAND & GRAVEL. (Driller's description)		1.00	259.57						
PSAMMITE. (Driller's description) (Open holed)		2.80	257.77						
End of Borehole at 6.00 m		6.00	254.57						

U	Undisturbed U100 / U56 Sample	TCR	Total Core Recovery	S	Standard Penetration Test	CP	Cable Percussion
P	Piston Sample	SCR	Solid Core Recovery	C	Cone Penetration Test	RO	Rotary Open Hole
TW	Thin Wall Sample	RQD	Rock Quality Designation	N	N for full 300mm penetration	RC	Rotary Cored
D	Small Disturbed Sample	FI	Fracture Index	175	For given penetration (mm)	SO	Sonic Open Holed
B	Bulk Disturbed Sample	NI	Non Intact	25#	Seating blows only (mm)	CONP	Continuous Percussion
LB	Large Bulk Disturbed Sample	U*	Blows to drive U100 / U56	PP	Pocket Penetrometer Test	W.S	Windowless Sampler
W	Water Sample	UT	Thin wall undisturbed sample	K	Permeability Test (m/s)	Installation	
G	Gas Sample	NA	Not Applicable	L	Packer Test (Lugeons)		Slotted Pipe
C	Core	NR	No Recovery	IV	Insitu Vane Test, Peak		Piezometer Tip
J	Amber Jar Sample	NP	No Penetration	HR	Hand Vane Test, Peak		Grout
V	Vial Sample				Hand Vane Test, Residual		Bentonite Seal
							Gravel Filter
							Concrete





# BOREHOLE LOG

Beaulieu - Denny 400kv OHL

Borehole No

BF74B-C

Sheet 1 of 1

Status

Final

29/11/2011







Client: Scottish & Southern Energy plc

Consultant: Balfour Beatty Utility Solutions

Job No: 4578

Date Started:	15/10/2011	Initial Boring Diameter:	160mm	Coordinates:	E 230956.253 m National Grid
Date Complete:	15/10/2011	Initial Core Diameter:			N 825416.106 m National Grid
Hole Type:	RO	Rotary Casing Type:	Robit	Ground Level:	259.98 m OD
Equipment:	DB520 Boart	Core Barrel:		Plunge:	90 °
		Core Bit:		Scale:	1:50

[illegible]

U	Undisturbed U100 / U85 Sample	TCR	Total Core Recovery	S	Standard Penetration Test	CP	Cable Percussion
P	Piston Sample	SCR	Solid Core Recovery	C	Core Penetration Test:	RO	Rotary Open Hole
TW	Thin Wall Sample	RQD	Rock Quality Designation	32	N for full 300mm penetration	RC	Rotary Cored
D	Small Disturbed Sample	FI	Fracture Index	/175	For given penetration (mm)	SO	Sonic Open hole
B	Bulk Disturbed Sample	NI	Non Intact	/25#	Seating blows only (mm)	CONP	Continuous Percussion
LB	Large Bulk Disturbed Sample	U*	Blows to drive U100 / U86	PP	Pocket Penetrometer Test	WLS	Windowless Sampler
W	Water Sample	UT	Thin wall undisturbed sample	K	Permeability Test (m/s)	Installation	
G	Gas Sample	NA	Not Applicable	L	Packer Test (Lugeons)		Scotted Pipe
C	Core	NR	No Recovery	IV	Insitu Vane Test: Peak		Piezometer Tip
J	Amber Jar Sample	NP	No Penetration	IVR	Insitu Vane Test: Residual		Grout
V	Vial Sample			HV	Hard Vane Test: Peak		Sonic Seal
				HVR	Hard Vane Test: Residual		Gravel Filter
							Concrete





# BOREHOLE LOG

Beauly - Denny 400kv OHL

Borehole No

BF75-C  
Sheet 1 of 2

Status

Final

29/11/2011

Client: Scottish & Southern Energy plc

Consultant: Balfour Beatty Utility Solutions

Job No: 4578

Date Started: 24/10/2011

Date Complete: 25/10/2011

Hole Type: RC

Equipment: DB520 Bcart

Initial Boring Diameter:

160mm

Initial Core Diameter:

84mm

Rotary Casing Type:

Robit

Core Barrel:

T2-101

Core Bit:

Diamond Impreg

Coordinates:

E 230643.500 m National Grid

N 825052.000 m National Grid

Ground Level:

274.47 m OD

Plunge:

90 °

Scale:

1:50

Description of Strata	Legend	Depth	Reduced Level	Sampling/ Core Run	U	In Situ Testing		TCR (SCR)	FI	Installation
						Test	Result			
Very soft spongy dark brown pseudo-fibrous PEAT.										
SAND & GRAVEL. (Driller's description)		1.00	273.47							
Very strong locally extremely strong grey fine grained PSAMMITE, mostly fresh occasionally slightly weathered with some yellowish brown staining. Some bands of crystalline quartz and sub vertical mineral veins and occasional micaceous bands. Bedding fractures are inclined between 20deg and 30deg and are closely to medium spaced, planar, smooth, tight and clean.		1.30	273.17	1.30-2.80				100 (100) 100		
				2.80-4.30				100 (35) 67	3	
				4.30-5.80				100 (65) 65	7	
				5.80-7.30				100 (33) 20	3	
				7.30-8.80				100 (60) 30	12	
From 5.65m to 7.30m, becomes pinkish white crystalline quartz.									15	
From 7.30m to 7.80m, interbanded psammite and crystalline quartz with weathering along the fractures.										

Continued next sheet

U	Undisturbed U100 / U86 Sample	Core Run	S	Standard Penetration Test	CP	Cable Percussion
P	Piston Sample	TCR	C	Core Penetration Test	RO	Rotary Open Hole
TW	Thin Wall Sample	SCR	32	N for full 300mm penetration	RC	Rotary Cored
D	Small Disturbed Sample	RQD	/175	For given penetration (mm)	SO	Sonic Open hole
B	Bulk Disturbed Sample	FI	/25#	Sealing blows only (mm)	CONP	Continuous Percussion
LB	Large Bulk Disturbed Sample	NI	PP	Pocket Penetrometer Test	WLS	Windowless Sampler
W	Water Sample	JT	K	Permeability Test (m/s)	Installation	
G	Gas Sample	NA	L	Packer Test (Lugeons)		Slotted Pipe
C	Core	NR	IV	Insitu Vane Test, Peak		Piezometer Tip
J	Amber Jar Sample	NP	IVR	Insitu Vane Test, Residual		Grout
V	Vial Sample		HV	Hand Vane Test, Peak		Bentonite Seal
			HVR	Hand Vane Test, Residual		Gravel Filter
						Concrete





## BOREHOLE LOG

Beauly - Denny 400kv OHL

Borehole No

BF75-C  
Sheet 2 of 2

Status

Final  
29/11/2011

Client: Scottish & Southern Energy plc

Consultant: Balfour Beatty Utility Solutions

Job No: 4578

Date Started	24/10/2011	Initial Boring Diameter	160mm	Coordinates	E 230643.500 m National Grid
Date Complete	25/10/2011	Initial Core Diameter	84mm		N 825052.000 m National Grid
Hole Type	RC	Rotary Casing Type	Robit	Ground Level	274.47 m OD
Equipment	DB520 Boart	Core Barrel	T2-10f	Plunge	90 °
		Core Bit	Diamond Irrpreg	Scale	1:50

Description of Strata	Legend	Depth	Reduced Level	Sampling/ Core Run	U	In Situ Testing		TOR (SCR) RQD	FI	Installation
						Test	Result			
Very strong locally extremely strong grey fine grained PSAMMITE, mostly fresh occasionally slightly weathered with some yellowish brown staining. Some bands of crystalline quartz and sub vertical mineral veins and occasional micaceous bands. Bedding fractures are inclined between 20deg and 30deg and are closely to medium spaced, planar, smooth, tight and clean. From 8.80m, with some closed sub vertical undulating fractures and occasional sub vertical joints with altered mineral coatings.				8.80-10.30				100 (40) 17		14
				10.30-11.30				100 (62) 40	6	
				11.30-12.80				100 (80) 64		7
				12.80-13.30				100 (80) 62		
End of Borehole at 13.30 m		13.30	261.17							

U	Undisturbed U100 / U86 Sample	TCR	Core Run	S	Standard Penetration Test	CP	Cable Percussion
P	Piston Sample	SCR	Total Core Recovery	C	Cone Penetration Test	RO	Rotary Open Hole
TW	Thin Wall Sample	RQD	Solid Core Recovery	32	N for full 300mm penetration	RC	Rotary Cored
D	Small Disturbed Sample	FI	Rock Quality Designation	/175	For given penetration (mm)	SO	Sonic Open Holed
B	Bulk Disturbed Sample	NI	Fracture Index	/25#	Seating blows only (mm)	CONP	Continuous Percussion
LB	Large Bulk Disturbed Sample	UT	Non Intact	PP	Pocket Penetrometer Test	WLS	Windowless Sampler
W	Water Sample	U*	Blows to drive U100 / U86	K	Permeability Test (m/s)	Installation	
G	Gas Sample	NA	Thin wall Undisturbed sample	L	Packer Test (Lugeons)		Slot Pipe
C	Core	NR	Not Applicable	IV	Insitu Vane Test, Peak		Piezometer Tip
J	Amber Jar Sample	NP	No Recovery	IVR	Insitu Vane Test, Residual		Grout
V	Vial Sample		No Penetration	HV	Hand Vane Test, Peak		Bentonite Seal
				HVR	Hand Vane Test, Residual		Gravel Filter
							Concrete





		BOREHOLE LOG		Borehole No					
		Beauly - Denny 400kv OHL		BF78-A					
				Sheet 1 of 2					
				Status					
				Final					
				18/06/2012					
Client: Scottish & Southern Energy plc				Job No: 4578					
Consultant: Balfour Beatty Utility Solutions									
Date Started: 10/03/2012	Initial Boring Diameter: 150mm	Coordinates: E 230037.600 m National Grid							
Date Complete: 10/03/2012	Initial Core Diameter: 85mm	N 823930.400 m National Grid							
Hole Type: RC	Rotary Casing Type: Robot	Ground Level: 310.20 m OD							
Equipment: Beart DB520	Core Barrel: T2101	Plunge: 90 °							
	Core Bit: Diamond Impreg	Scale: 1:50							
Description of Strata	Legend	Depth	Reduced Level	Sampling/ Core Run	U	In Situ Testing	TCR (SCR)	FI	Installation
MADE GROUND: Dark grey sub angular to angular cobbles and boulders of psammite.		0.40	309.80						
Dark brown locally grey fine to coarse SAND and sub angular to angular fine to coarse GRAVEL of psammite with occasional sub angular to angular cobbles of psammite.		1.10	309.10	D D 1.00 1.00					
Badly broken PSAMMITE (Driller's Description) (open holed).		2.50	307.70	2.50-3.50			100 (25) 20	NI	
Very strong grey and locally dark grey fine to medium grained PSAMMITE, mostly fresh with some mineral infill and surface staining along joints and fractures. Occasional micaceous bands and thinly foliated mica schist bands throughout. 10-15mm crystalline quartz veins throughout. Joints are inclined between 74deg and 85deg, closely spaced, planar, smooth, light with dark green and dark grey surface staining and occasional crystalline quartz infill.				3.50-4.50			100 (0) 0	6	
				4.50-5.50			100 (20) 10	NI	10
				5.50-6.50			100 (75) 65	6	
				6.50-7.50			100 (60) 45	7	
				7.50-8.50			100 (35) 20		
Continued next sheet									
U Undisturbed U100 / U85 Sample	TCR Total Core Recovery	S Standard Penetration Test	CP Cable Percussion						
P Piston Sample	SCR Solid Core Recovery	C Cone Penetration Test	RO Rotary Open Hole						
TW Thin Wall Sample	RQD Rock Quality Designation	32 N for full 300mm penetration	RC Rotary Cored						
D Small Disturbed Sample	FI Fracture Index	For given penetration (mm)	SO Sonic Open Holed						
B Bulk Disturbed Sample	NI Non Intact	Seating blows only (mm)	CONP Continuous Percussion						
LB Large Bulk Disturbed Sample	U* Blows to drive U100 / U85	PP Pocket Penetrometer Test	WLS Windowless Sampler						
W Water Sample	UT Thin wall undisturbed sample	IPID In-situ Photo-Ionisation Detector (ppm)	Installation						
G Gas Sample	NA Not Applicable	L Packer Test (Lugeons)	Slot Pipe						
C Core	NR No Recovery	IV Insitu Vane Test, Peak	Piezometer Tip						
J Amber Jar Sample	NP No Penetration	IVR Insitu Vane Test, Residual	Grout						
V Vial Sample	OH Open Hole Drilling	HV Hand Vane Test, Peak	Bentonite Seal						
		HVR Hand Vane Test, Residual	Gravel Filter						
			Concrete						





		<h2 style="margin: 0;">BOREHOLE LOG</h2> <h3 style="margin: 0;">Beauly - Denny 400kv OHL</h3>			<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <b>Borehole No</b>              BF78-A              Sheet 2 of 2           </div> <div style="border: 1px solid black; padding: 5px;"> <b>Status</b>              Final              18/03/2012           </div>			
Client: Scottish & Southern Energy plc		Consultant: Balfour Beatty Utility Solutions		Job No: 4578				
Date Started: 10/03/2012 Date Complete: 10/03/2012 Hole Type: RC Equipment: Bort D6520		Initial Boring Diameter: 160mm Initial Core Diameter: 88mm Rotary Casing Type: Robit Core Barrel: T2101 Core Bit: Diamond Impreg		Coordinates: E 230037.600 m National Grid N 823930.400 m National Grid Ground Level: 310.20 m OD Plunge: 90° Scale: 1:50				
Description of Strata  Very strong grey and locally dark grey fine to medium grained PSAMMITE, mostly fresh with some mineral infill and surface staining along joints and fractures. Occasional micaceous bands and thinly foliated mica schist bands throughout. 10-15mm crystalline quartz veins throughout. Joints are inclined between 74deg and 85deg, closely spaced, planar, smooth, tight with dark green and dark grey surface staining and occasional crystalline quartz infill. At 8.50m to 10.80m, fractured bands.	Legend  	Depth  14.40	Reduced Level  295.80	Sampling/ Core Run  8.50-9.50  9.50-10.50  10.50-11.50  11.50-12.50  12.50-13.50  13.50-14.50	U  10  NI  NI  NI  NI  NI  NI	In Situ Testing Test Result  TCR (SCR) RQD 100 (10) 0 100 (5) 0 100 (35) 30 90 (35) 30 90 (25) 25 90 (35) 25	FI  10  NI  NI  NI  NI  NI  NI	Install- ation  10  NI  NI  NI  NI  NI  NI
End of Borehole at 14.40 m								
U Undisturbed U100 / U86 Sample P Piston Sample TW Thin Wall Sample D Small Disturbed Sample B Bulk Disturbed Sample LB Large Bulk Disturbed Sample W Water Sample G Gas Sample C Core J Amber Jar Sample V Vial Sample		TOR Total Core Recovery SCR Solid Core Recovery RQD Rock Quality Designation FI Fracture Index NI Non Intact UP Blows to drive U100 / U86 UT Thin wall undisturbed sample NA Not Applicable NR No Recovery NP No Penetration OH Open Hole Drilling		S Standard Penetration Test C Cone Penetration Test 32 N for full 300mm penetration /175 For given penetration (mm) /25# Sealing blows only (mm) PP Pocket Penetrometer Test IPID In-situ Photo-Ionisation Detector (ppm) L Packer Test (Lugons) IV Insitu Vane Test, Peak IVR Insitu Vane Test, Residual HV Hand Vane Test, Peak HVR Hand Vane Test, Residual		CP Cable Percussion RO Rotary Open Hole RC Rotary Cored SO Sonic Open Holed CONP Continuous Percussion WLS Windowless Sampler Installation Slotted Pipe Plazometer Tip Grout Concrete Sand Filter Bentonite Seal Gravel Filter		





# BOREHOLE LOG

Beauly - Denny 400kv OHL

Borehole No

BF79C-A  
Sheet 1 of 2

Status

Final

20/12/2011

Client: Scottish & Southern Energy plc

Consultant: Balfour Beatty Utility Solutions

Job No: 4578

Date Started: 28/10/2011  
Date Complete: 29/10/2011  
Hole Type: RO+RC  
Equipment: DB520 Bort

Initial Boring Diameter: 150mm  
Initial Core Diameter: 66mm  
Rotary Casing Type: Robit  
Core Barrel: T2-101  
Core Bit: Diamond Impreg

Coord nates: E 229893.075 m National Grid  
N 823547.940 m National Grid  
Ground Level: 311.06 m OD  
Plunge: 90 °  
Scale: 1:50

Description of Strata	Legend	Depth	Reduced Level	Sampling/ Core Run	U	In Situ Testing		TCR (SCR)	FI	Install ation
						Test	Result			
Very soft spongy dark brown pseudo-fibrous PEAT.										
Orangish brown silty gravelly fine to coarse SAND with occasional cobbles. Gravel is angular to sub rounded fine to coarse of psammite. Cobbles are angular to sub angular of psammite.		0.80	310.26							
Dense SAND & GRAVEL (Driller's description) (Open holed)		1.50	309.56			C	31			
Dense SAND (Driller's description) (Open holed).		2.00	309.06			C	30			
Weak brownish grey fine to medium grained PSAMMITE, recovered as silty sandy angular to sub angular fine to coarse gravel. Occasional patches of orange staining.		4.00	307.06	4.00-5.00				65 (0) 0	NI	
				5.00-6.00				70 (0) 0	NR	
				6.00-7.00				55 (0) 0	NR	
				7.00-8.00				75 (0) 0	NI	
Continued next sheet									NR	

U Undisturbed U100 / U86 Sample	TCR Core Run	S Standard Penetration Test	CP Cable Percussion
P Piston Sample	SCR Solid Core Recovery	C Cone Penetration Test	RO Rotary Open Hole
TW Thin Wall Sample	RQD Rock Quality Designation	32 N for full 300mm penetration	RC Rotary Cored
D Small Disturbed Sample	FI Fracture Index	/175 For given penetration (mm)	SO Sonic Open holed
B Bulk Disturbed Sample	NI Non Intact	/25# Seating blows only (mm)	CONP Continuous Percussion
LB Large Bulk Disturbed Sample	U* Blows to drive U100 / U86	PP Pocket Penetrometer Test	WLS Windowless Sampler
W Water Sample	UT Thin wall undisturbed sample	K Permeability Test (m/s)	Installation
G Gas Sample	NA Not Applicable	L Packer Test (Lugeons)	Slotted Pipe
C Core	NR No Recovery	IV Insitu Vane Test. Peak	Piezometer Tip
J Amber Jar Sample	NP No Penetration	IVR Insitu Vane Test. Residual	Grout
V Vial Sample		HV Hand Vane Test. Peak	Concrete
		HVR Hand Vane Test. Residual	





# BOREHOLE LOG

Beauly - Denny 400kv OHL

Borehole No

BF79C-A  
Sheet 2 of 2

Status

Final  
20/12/2011

Client: Scottish & Southern Energy plc

Consultant: Balfour Beatty Utility Solutions

Job No: 4578

Date Started	28/10/2011	Initial Boring Diameter	160mm	Coordinates	E 229893.075 m National Grid
Date Complete	29/10/2011	Initial Core Diameter	86mm		N 823547.940 m National Grid
Hole Type	RO+RC	Rotary Casing Type	Robit	Ground Level	311.06 m OD
Equipment	DB520 Boart	Core Barrel	T2-101	Plunge	90°
		Core Bit	Diamond Impreg	Scale	1:50

Description of Strata	Legend	Depth	Reduced Level	Sampling/ Core Run	U	In Situ Testing		TCR (SCR) RQD	FI	Installation
						Test	Result			
Weak brownish grey fine to medium grained PSAMMITE, recovered as silty sandy angular to sub angular fine to coarse gravel. Occasional patches of orange staining. Between 8.00m and 9.00m, becomes locally strong.				8.00-9.00				85 (18) 0	NI	
				9.00-10.00				65 (0) 0	NR	
				10.00-11.30				100 (28) 15		
				11.30-12.20				100 (0) 0		
				12.20-13.00				100 (21) 0	NI	
From 10.00m, rare intact sections with micaceous bands.				13.00-13.70				100 (0) 0		
				13.70-14.80				100 (30) 30		
				14.80-16.00				100 (0) 0		
From 13.40m to 13.85m, band of pink crystalline quartz.		13.85	297.21							
Strong to very strong pink fine to medium grained PSAMMITE with some micaceous bands. Mostly recovered non intact as angular to sub angular fine to coarse gravel with some intact sections. Bedding fractures are inclined at 35deg, planar, smooth, tight and clean.										
End of Borehole at 16.00 m		16.00								

U	Undisturbed U100 / U86 Sample	TCR	Total Core Recovery	S	Standard Penetration Test	CP	Cable Percussion
P	Piston Sample	SCR	Solid Core Recovery	C	Cone Penetration Test	RO	Rotary Open Hole
TW	Thin Wall Sample	RQD	Rock Quality Designation	32	N for full 300mm penetration	RC	Rotary Cored
D	Small Disturbed Sample	FI	Fracture Index	/175	For given penetration (mm)	SO	Sonic Open Holed
B	Bulk Disturbed Sample	NI	Non Intact	/25#	Seating blows only (mm)	CONP	Continuous Percussion
LB	Large Bulk Disturbed Sample	U*	Blows to drive U100 / U86	PP	Pocket Penetrometer Test	WLS	Windowless Sampler
W	Water Sample	UT	Thin wall undisturbed sample	K	Permeability Test (m/s)	Installation	
G	Gas Sample	NA	Not Applicable	L	Packer Test (Lugeons)	Slot Pipe	Sand Filter
C	Core	NR	No Recovery	IV	Insitu Vane Test, Peak	Piezometer Tip	Bentonite Seal
J	Amber Jar Sample	NP	No Penetration	IVR	Insitu Vane Test, Residual	Grout	Gravel Filter
V	Vial Sample			HV	Hand Vane Test, Peak	Concrete	
				HVR	Hand Vane Test, Residual		





		BOREHOLE LOG		Borehole No					
		Beauly - Denny 400kv OHL		BF79C-B					
				Sheet 1 of 1					
				Status					
				Final					
				20/12/2011					
Client: Scottish & Southern Energy plc				Job No: 4578					
Consultant: Balfour Beatty Utility Solutions									
Date Started: 29/10/2011	Initial Boring Diameter: 160mm	Coordinates: E 229901.400 m National Grid							
Date Complete: 29/10/2011	Initial Core Diameter:	N 823544.813 m National Grid							
Hole Type: RO	Rotary Casing Type: Robit	Ground Level: 311.51 m OD							
Equipment: DB520 Boart	Core Barrel:	Plunge: 90°							
	Core Bit:	Scale: 1:50							
Description of Strata	Legend	Depth	Reduced Level	Sampling/ Core Run	U	In Situ Testing	TCR (SCR)	FI	Installation
Very soft spongy dark brown pseudo-fibrous PEAT.									
SAND & GRAVEL (Driller's description)		0.70	310.81						
SAND (Driller's description) (Open holed).		2.00	309.51						
PSAMMITE, weathered and broken. (Driller's description) (Open holed)		3.90	307.61						
End of Borehole at 6.00 m		6.00	305.51						
U Undisturbed U100 / U86 Sample	TCR Core Run	S Standard Penetration Test	CP Cable Percussion						
P Piston Sample	SCR Solid Core Recovery	C Cone Penetration Test	RO Rotary Open Hole						
TV Thin Wall Sample	RQD Rock Quality Designation	N for full 300mm penetration	RC Rotary Cored						
D Small Disturbed Sample	FI Fracture Index	/175 For given penetration (mm)	SO Sonic Open holed						
B Bulk Disturbed Sample	NI Non Intact	Seating blows only (mm)	CONP Continuous Percussion						
LB Large Bulk Disturbed Sample	U* Blows to drive U100 / U86	Pocket Penetrometer Test	W.S Windowless Sampler						
W Water Sample	JT Thin wall undisturbed sample	K Permeability Test (m/s)	Installation						
G Gas Sample	NA Not Applicable	L Packer Test (Lugeons)	Slotted Pipe						
C Core	NR No Recovery	IV Insitu Vane Test. Peak	Piezometer Tip						
J Amber Jar Sample	NP No Penetration	IVR Insitu Vane Test. Residual	Grout						
V Vial Sample		HV Hand Vane Test. Peak	Concrete						
		HVR Hand Vane Test. Residual							





		BOREHOLE LOG		Borehole No					
		Beauly - Denny 400kv OHL		BF79C-C					
				Sheet 1 of 1					
				Status					
				Final					
				20/12/2011					
Client: Scottish & Southern Energy plc				Job No: 4578					
Consultant: Balfour Beatty Utility Solutions									
Date Started: 29/10/2011	Initial Boring Diameter: 150mm	Coordinates: E 229698.309 m National Grid							
Date Complete: 29/10/2011	Initial Core Diameter:	N 823536.423 m National Grid							
Hole Type: RO	Rotary Casing Type: Robit	Ground Level: 311.64 m OD							
Equipment: DB520 Boart	Core Barrel:	Plunge: 90 °							
	Core Bit:	Scale: 1:50							
Description of Strata	Legend	Depth	Reduced Level	Sampling/ Core Run	U	In Situ Testing	TCR (SCR)	FI	Installation
Very soft spongy dark brown pseudo-fibrous PEAT.									
SAND & GRAVEL (Driller's description)		0.60	311.04						
SAND (Driller's description) (Open holed).		1.80	309.84						
PSAMMITE, weathered. (Driller's description) (Open holed)		3.80	307.84						
End of Borehole at 6.00 m		6.00	305.64						
U Undisturbed U100 / U86 Sample	TCR Core Run	S Standard Penetration Test	CP Cable Percussion						
P Piston Sample	SCR Total Core Recovery	C Cone Penetration Test	RO Rotary Open Hole						
TVW Thin Wall Sample	QCR Solid Core Recovery	N for full 300mm penetration	RC Rotary Cored						
D Small Disturbed Sample	RQD Rock Quality Designation	For given penetration (mm)	SO Sonic Open holed						
B Bulk Disturbed Sample	FI Fracture Index	Seating blows only (mm)	CONP Continuous Percussion						
LB Large Bulk Disturbed Sample	NI Non Intact	Pocket Penetrometer Test	VLS Windowless Sampler						
W Water Sample	U* Blows to drive U100 / U86	K Permeability Test (m/s)	Installation						
G Gas Sample	UT Thin wall undisturbed sample	L Packer Test (Lugeons)	Slotted Pipe						
C Core	NA Not Applicable	IV Insitu Vane Test: Peak	Piezometer Tip						
J Amber Jar Sample	NR No Recovery	IVR Insitu Vane Test: Residual	Grout						
V Vial Sample	NP No Penetration	HV Hand Vane Test: Peak	Concrete						
		HVR Hand Vane Test: Residual							





# BOREHOLE LOG

Beauly - Denny 400kv OHL

Borehole No

BF79C-D  
Sheet 1 of 1

Status

Final  
20/12/2011

Client: Scottish & Southern Energy plc

Consultant: Balfour Beatty Utility Solutions

Job No: 4578

Date Started	29/10/2011	Initial Boring Diameter:	160mm	Coordinates:	E 229889.930 m National Grid
Date Complete:	29/10/2011	Initial Core Diameter			N 823539.621 m National Grid
Hole Type:	RO	Rotary Casing Type	Robit	Ground Level:	311.19 m OD
Equipment:	DB520 Boart	Core Barrel:		Plunge:	90 °
		Core Bit:		Scale:	1:50

Description of Strata	Legend	Depth	Reduced Level	Sampling/ Core Run	U	In Situ Testing		TCR (SCR)	FI	Install ation
						Test	Result			
Very soft spongy dark brown pseudo-fibrous PEAT.										
SAND & GRAVEL (Driller's description)		0.60	310.59							
SAND (Driller's description) (Open holed).		1.70	309.49							
PSAMMITE, weathered. (Driller's description) (Open holed)		3.60	307.59							
End of Borehole at 6.00 m		6.00	305.19							

U	Undisturbed U100 / U86 Sample	Core Run	S	Standard Penetration Test	CP	Cable Percussion
P	Piston Sample	TCR	C	Cone Penetration Test	RO	Rotary Open Hole
TW	Thin Wall Sample	SCR	32	N for full 300mm penetration	RC	Rotary Cored
D	Small Disturbed Sample	RQD	/175	For given penetration (mm)	SO	Sonic Open holed
B	Bulk Disturbed Sample	FI	/25#	Seating blows only (mm)	COHP	Continuous Percussion
LB	Large Bulk Disturbed Sample	NI	PP	Pocket Penetrometer Test	WLS	Windowless Sampler
W	Water Sample	U*	K	Permeability Test (m/s)	Installation	
G	Gas Sample	UT	L	Packer Test (Lugeons)	Slotted Pipe	Sand Filter
C	Core	NA	IV	Insitu Vane Test. Peak	Piezometer Tip	Bentonite Seal
J	Amber Jar Sample	NR	IVR	Insitu Vane Test. Residual	Grout	Gravel Filter
V	Vial Sample	NP	HV	Hand Vane Test. Peak	Concrete	
			HVR	Hand Vane Test. Residual		



# Appendix G Zetica Pre-Desk Study Assessment (PDSA)



## Pre-Desk Study Assessment

<b>Site:</b>	Fasnakyle Substation, Knochfin, Scotland
<b>Client:</b>	AECOM
<b>Contact:</b>	Oceane Mbaguta
<b>Date:</b>	4 <sup>th</sup> September 2024
Pre-WWI Military Activity on or Affecting the Site	None identified.
WWI Military Activity on or Affecting the Site	None identified.
WWI Strategic Targets (within 5km of Site)	The following strategic targets were located in the vicinity of the Site: ■ Transport infrastructure and public utilities.
WWI Bombing	None identified on the Site.
Interwar Military Activity on or Affecting the Site	None identified.
WWII Military Activity on or Affecting the Site	None identified on the Site.  Military training is known to have taken place in rural areas of Scotland during WWII, but no readily available records have identified any such training on the Site.
WWII Strategic Targets (within 5km of Site)	The following strategic targets were located in the vicinity of the Site: ■ Transport infrastructure and public utilities.
WWII Bombing Decoys (within 5km of Site)	None.
WWII Bombing	During WWII the Site was located in the Landward Area (LA) of Inverness-shire, which officially recorded 94No. High Explosive (HE) bombs with a bombing density of less than 0.1 bombs per 405 hectares (ha).  No readily available records have been found to indicate that the Site was bombed.
Post-WWII Military Activity on or Affecting the Site	None identified.
Recommendation	A detailed desk study, whilst always prudent, is not considered essential in this instance.
Further information	For information about Zetica's detailed UXO desk studies and other UXO services, please visit our website: <a href="http://www.zeticauxo.com">www.zeticauxo.com</a> .  Details and downloadable resources covering the most common sources of UXO hazard affecting sites in the UK can be found <a href="#">here</a> .  If you have any further queries, please don't hesitate to get in contact with us at <a href="mailto:uxo@zetica.com">uxo@zetica.com</a> or 01993 886 682.

This summary is based on a cursory review of readily available records. Caution is advised if you plan to action work based on this summary.

It should be noted that where a potentially significant source of UXO hazard has been identified on the Site, the requirement for a detailed desk study and risk assessment has been confirmed and no further research will be undertaken at this stage. It is possible that further in-depth research as part of a detailed UXO desk study and risk assessment may identify other potential sources of UXO hazard on the Site.



# Appendix H Approach to Risk Assessment

## H.1 Risk Assessment Principles

Current best practice recommends that the determination of hazards due to contaminated land is based on the principle of risk assessment, as outlined in the Environment Agency guidance on LCRM.

For a risk to be present, there must be a viable contaminant linkage; i.e. a mechanism whereby a source impacts on a sensitive receptor via a pathway.

Assessments of risks associated with each of these contaminant linkages are discussed in the following sections.

Using criteria broadly based on those presented in the CIRIA C552 guidance ("Contaminated land risk assessment, a guide to good practice"), the magnitude of the risk associated with potential contamination at the Site has been assessed. To do this an estimate is made of:

- The magnitude of the potential consequence (i.e. severity);
- The magnitude of probability (i.e. likelihood); and

The severity of the risk is classified according to the criteria in Table H-1.

## H.2 Risk Assessment Framework

**Table H-1 Description of Severity of Risk**

Severity	Definition	Examples (as defined by CIRIA C552)
Severe	Short-term (acute) risk to human health likely to result in "significant harm" as defined by the Environmental Protection Act 1990, Part IIA. Short-term risk of pollution (note: Water Resources Act contains no scope for considering significance of pollution) of sensitive water resource. Catastrophic damage to buildings/property. A short-term risk to a particular ecosystem, or organism forming part of such ecosystem (note: the definitions of ecological systems within the Draft Circular on Contaminated Land, DETR, 2000).	<ul style="list-style-type: none"> <li>• High concentrations of cyanide on the surface of an informal recreation area;</li> <li>• Major spillage of contaminants from site into controlled water; and</li> <li>• Explosion, causing building collapse (can also equate to a short-term human health risk if buildings are occupied).</li> </ul> <p>–</p>
Medium	Chronic damage to human health ("significant harm" as defined in DETR, 2000). Pollution of sensitive water resources (note: Water Resources Act contains no scope for considering significance of pollution) a significant change in a particular ecosystem, or organism forming part of such ecosystem (note: the definition of ecological systems within Draft Circular on Contaminated Land, DETR, 2000)	<ul style="list-style-type: none"> <li>• Concentration of a contaminant from site exceed the generic, or site-specific assessment criteria; and</li> <li>• Leaching of contaminants from a site to a major or minor aquifer.</li> </ul> <p>– Death of a species within a designated nature reserve</p>
Mild	Pollution of non-sensitive water resources. Significant damage to crops, buildings, structures and services ("significant harm" as defined in the Draft Circular on Contaminated Land, DETR, 2000). Damage to sensitive buildings / structures / services or the environment.	<ul style="list-style-type: none"> <li>• Pollution of non-classified groundwater; and</li> <li>• Damage to building rendering it unsafe to occupy (e.g. foundation damage resulting in instability)</li> </ul> <p>–</p>
Minor	Harm, although not necessarily significant harm, which may result in a financial loss, or expensive to resolve. Non-permanent health effects to human health (easily prevented by means such as personal protective clothing etc.) easily repairable effects of damage to buildings, structures and services	<ul style="list-style-type: none"> <li>• The presence of contaminants at such concentrations that protective equipment is required during site works; and</li> <li>• The loss of plants in a landscaping scheme</li> </ul> <p>– Discolouration of concrete</p>

The probability of the risk occurring is classified according to the criteria in Table H-2.



**Table H-2 Likelihood of Risk Occurrence**

<b>Likelihood</b>	<b>Definition</b>
High	There is a pollutant linkage and an event that either appears very likely in the short-term and almost inevitable over the long term, or there is evidence at the receptor of harm or pollution.
Likely	There is a pollution linkage and all the elements are present and in the right place, which means that it is probable that an event will occur; and Circumstances are such that an event is not inevitable, but possible in the short-term and likely over the long term.
Low	There is a pollution linkage and circumstances are possible under which an event could occur.
Unlikely	There is a pollution linkage but circumstances are such that it is improbable that an event would occur even in the very long term.

An overall evaluation of the level of risk is gained from a comparison of the severity and probability, as shown in Table H-3.

**Table H-3 Risk based on Comparison of Likelihood and Severity**

		<b>Severity</b>			
		<b>SEVERE</b>	<b>MEDIUM</b>	<b>MILD</b>	<b>MINOR</b>
<b>Likelihood</b>	<b>HIGH</b>	Very High	High	Moderate	Moderate / Low
	<b>LIKELY</b>	High	Moderate	Moderate / Low	Low
	<b>LOW</b>	Moderate	Moderate / Low	Low	Very Low
	<b>UNLIKELY</b>	Moderate / Low	Low	Very Low	Very Low

Further definitions of each risk category as well as potential action that might be required – as described within CIRIA C552 – are as follows:

**Very high risk**

There is a high probability that severe harm could arise to a designated receptor from an identified hazard, OR, there is evidence that severe harm to a designated receptor is currently happening;

This risk, if realised, is likely to result in a substantial liability; and

Urgent investigation (if not undertaken already) and remediation are likely to be required.

**High risk**

Harm is likely to arise to a designated receptor from an identified hazard;

Realisation of the risk is likely to present a substantial liability; and

Urgent investigation (if not undertaken already) is likely to be required and remedial works may be necessary in the short-term and are likely over the longer term.

**Moderate risk**

It is possible that harm could arise to a designated receptor from an identified hazard. However, it is either 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 to clarify the risk and to determine the potential liability; and

Some remediation works may be required in the longer term.

**Low risk**

It is possible that harm could arise to a designated receptor from an identified hazard, but it is likely that this harm, if realised, would at worst normally be mild.



**Very low risk**

There is a low possibility that harm could arise to a receptor. In the event of such harm being realised it is not likely to be severe.



