1.2 REPORT STRUCTURE

Desk-based information contained within this report has been compiled through environmental data review and mapping research (historical, geological and hydrogeological). The preparation of this report included the following specific tasks:

- Review the development history of the Site from available historical maps to identify previous uses which may have resulted in contamination issues.
- Review the local geology from the available geological plans and memoirs, together with surface watercourse and hydrogeology classifications.
- Undertake a qualitative risk assessment of potential contamination issues at the Site. The qualitative risk assessment includes the development of an Initial Conceptual Model for the Site and the identification of any Significant Pollutant Linkages.
- Assess potential geotechnical constraints.
- Determine whether additional investigation is necessary to provide further information on the contamination and geotechnical status of the Site.

2 DESK STUDY

2.1 SITE DESCRIPTION

The Site is situated approximately 1.5km south of the village of Beauly in the Highlands, Scotland, with the planning boundary encompassing an area of 18.51 ha.

The National Grid Reference for the approximate centre of the Site is 252417, 844410 and the Site location and layout are shown in Figure 1-1.

The Site is predominantly used as agricultural land, gently sloping to the west, with a roughly rectangular shaped boundary. There are three farm buildings present in the northern part of the Site, accessible via an access track from the A862 road to the north. The proposed BESS facility is planned to be constructed in the southern part of the site.

2.2 SITE WALKOVER

A Site walkover was undertaken by a GDG Engineer on 15th May 2024. A selection of representative photographs and associated comments are included in Appendix A. The following section includes observations collected from the walkover.

The site is a large field that at the time of the site visit was being used for sheep grazing. The field slopes gently to the west towards the River Beauly. Mature trees are found along the banks of the river. The Site is bounded by the following:

- The western boundary approximately follows a fence line to the north and the River Beauly to the south. The River Beauly is approximately 3m below the level of the field at the bottom of a steep vegetated slope. The boundary further north is a low-lying wet area, a former river bend.
- The northern boundary doesn't follow any fence or other visible boundary and is within the field. Beyond is the main road and farmland.
- The eastern boundary is either a fence line or a substantial stone wall with mature trees beyond. The stone wall appears to be old and likely marks an estate boundary.

The Site is crossed in the middle by two pylon lines which run in an east-west direction, they terminate in the Beauly Substation.

2.3 SITE HISTORY

The history of the Site has been reviewed using historical 1:10,000 and 1:2,500 scale Ordnance Survey (OS) maps dating from 1872 to the present day (included in Appendix B).

The earliest available historical map, dated 1872, shows the site as open farmland, likely for pasture. The southwestern boundary is delineated, as it is in the present day, by the River Beauly. The western boundary is adjacent to open marshland, the northern boundary is marked by the current road, and the eastern boundary is recorded as woodland/forestry plantation.

Three buildings in the northeastern corner of the Site are recorded as Offices in the 1872 map, these buildings remain to the present day, though the later mapping does not detail their use. During the Site walkover, the buildings were observed to be derelict farm structures. By 1903, a well is

documented within the site in the northeastern corner, south of the existing farm buildings. This well is not recorded after the 1969-1973 map, with its location moving outside the Site boundary, though it is unclear if this represents a new well or an inaccurate recording.

The 1872 map records seven wells within a 1km radius of the Site boundary. The Far North railway line is mapped 800m north of the site, where it remains today. The map also notes, that 350m west of the Site is the highest point at which the ordinary spring tide flows within the River Beauly. This is still recorded in the same location on the current OS map. Consequently, surface water and groundwater in the vicinity of the site may be tidally influenced.

Throughout the late 1800s and mid-1900s, quarrying activities were documented in the mapping. The 1872 map notes a sand pit 216m southwest of the Site. By 1903, a sand pit is recorded 480m to the north, and a gravel pit 1km to the northwest. Later the 1969-1973 map shows the gravel pit has expanded and is now recorded as Balblair Sand and Gravel Pit, it is still present today and is known as Beauly Quarry, which continues to supply aggregates and concrete. Another quarry, named Balcharaggan Quarry, is recorded on the 1903 map 1km southeast of the site. It remains present on the maps until 2010, after which it is no longer recorded.

The 1966-1973 map also notes an unspecified tank 155m north of the site, likely associated with Dunballoch farm buildings.

By 1955, the first pylons across the site were recorded, and some trees previously mapped to the south of the buildings on Site appear to have been cleared.

Since the 1955 map, there have been no further significant changes or developments within the Site or the surrounding area, other than some alteration to the power lines crossing the site.

2.4 GROUND INVESTIGATION DATA

This section provides a summary of available historical ground investigation logs relevant to the Site. There is no known ground investigation data available within the Site boundary, a review of the British Geological Society (BGS), found two boreholes undertaken in 1969 by Dredging Investigation Ltd, 156m and 183m south of the Site boundary. The boreholes were part of a wider ground investigation for the construction of the A9 road, the two locations are located on either side of the River Beauly riverbanks (Location Plan is included in the Groundsure Report, Appendix B). Table 2-1 summarises the available data.

Table 2-1: Summary of Available Ground Investigation Logs

BGS Ref.	Grid Reference	Strata Summary	Water Strike Summary
NH54SW3	252380, 843860	• Topsoil (0.0-0.45m) • Sand and Gravel (0.45-3.66) • Boulders (3.66-4.11m) • Clay and boulders (4.11-5.64m) • Gravel and Cobbles 5.64-6.10m) • Sand (6.10-6.55m) • Clay (6.55-7.01m) • Gravel, Cobbles and Boulders (7.01-10.36m)	7.30m “Groundwater was first encountered at a depth of 24 ft bgl under sub artesian head, probably from the river)”

BGS Ref.	Grid Reference	Strata Summary	Water Strike Summary
NH54SW4	252260, 843890	• Topsoil (0.0-0.30m) • Sand and Gravel (0.30-1.06m) • Cobbles and Boulders (1.06-2.44m) • Gravel (2.44-3.96m) • Clay (3.96-10.67m) • Sand (10.67-11.28m) • Silt and Gravel (11.28-11.89m) • Gravel, Cobbles and Boulders (11.89-13.72m)	3.30m "Groundwater first encountered at 11ft bgl as a strong flow probably from the river. On completion of the borehole, groundwater stood at 5ft bgl)"

2.5 ENVIRONMENTAL DESIGNATIONS

A review of the Scottish Natural Heritage data found 26 Designated Ancient Woodlands within 2km of the Site boundary, notably one Long-Established (of plantation origin) adjacent to the southern/south-eastern boundaries of the Site.

2.6 PRIVATE WATER SUPPLIES

A review of the Highland Council Open Map data and a freedom of information request regarding Private Water Supplies (PWS) identified two private water supplies within 600m of the Site boundary. The PWS are located 50m north of the Site boundary and 520m to the southeast of the Site, Table 2-2 summarises the details available records from the Highland Council.

Table 2-2: Private Water Supplies Summary

Name	Address	Distance and Direction from Site	Grid Reference	Premise Type	Premise Usage	Population
PWS Plot 2	Beauly, IV4 7AY	50m N	252517, 844763	Groundwater - Spring	PWS Commercial < 100m2	5
PWS Dunballoch	Meikle Phoineas, Beauly, Inverness-shire, IV4 7AY	520m SE	253023, 844117	Groundwater - Borehole	PWS Domestic < 50 Persons	0

2.7 ANTICIPATED GROUND CONDITIONS

2.7.1 ARTIFICIAL GEOLOGY

Available geological mapping shows no records or details of made, infilled or disturbed ground on the Site or within 500m of the Site. When considering the Site history and the observations gathered from the Site walkover, reworked or made ground may be encountered along the access track, around the farm buildings and the track and yard.

2.7.2 SUPERFICIAL GEOLOGY

The geological mapping records the Site to be underlain by Raised Marine Beach deposits of Holocene age comprising a mix of sands and gravels, in places referred to as Coastal Fluviatile Alluvium. The BGS records the deposits to be up to 10m thick, composed of gravels typically cobble grade, well sorted,

with the sand medium-grained and shelly. The historical boreholes, discussed in Section 2.4, encountered granular superficial deposits, which are likely to be the Raised Marine Beach deposits.

The BGS also notes that the eastern boundary of the Site is delineated by a north-south linear landform, which marks a former coastline.

2.7.3 SOLID GEOLOGY

Geological mapping shows the solid geology beneath the Site to solely comprise the Braemore Mudstone Formation. The BGS describes the formation as early Devonian Mudstone with subsidiary sandstone and siltstone, and trace conglomerate and limestone.

There do not appear to be any observed or inferred linear features within the bedrock.

2.7.4 GEOLOGICAL HAZARDS

The Groundsure report includes information from the BGS on potential hazards associated with ground conditions, which have been summarised for the Site, as shown in the following Table 2-3. This indicates generally very low or low risks. Full details are provided in the appended Groundsure report (Appendix B).

Table 2-3: Geological Hazard

Hazard	Highest Risk Rating	Details	Location
Shrink Swell Clays	Very Low	Ground conditions predominantly low plasticity.	Majority of the Site. Negligible in the southwest of the Site, ground conditions are predominantly non-plastic.
Natural Ground Subsidence – Running Sands	Very Low	Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless the water table rises rapidly.	Entire Site.
Natural Ground Subsidence – Compressible Deposits	Negligible	Compressible strata are not thought to occur.	Entire Site.
Natural Ground Subsidence – Collapsible Deposits	Very Low	Deposits with the potential to collapse when loaded and saturated are unlikely to be present.	Along the eastern boundary of the Site. The majority of the Site is recorded to be Negligible, deposits with the potential to collapse when loaded are believed not to be present.
Natural Ground Subsidence – Landslide	Low	Slope instability problems may be present or anticipated. Site investigation should consider specifically the slope stability of the site.	Along the eastern boundary of the Site. The majority of the Sire is recorded to be 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
Natural Ground Subsidence – Ground dissolution of soluble rocks	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.	Entire Site

2.7.5 MINING

The Site is not located within a Coal Mining Reporting Area, as outlined by the Coal Authority.

There is no evidence of mining within the Site. However, a review of the Site history identified localised sand and gravel pitting and quarrying in the surrounding area from the late 1880s to the mid-1900s.

A review of the BGS and Groundsure Report indicated that the site is within an area affected by non-coal mining, specifically for vein material. Despite this, underground mine workings are uncommon, although the geology is similar to that worked elsewhere. The potential for difficult ground conditions is unlikely and considered to be a low risk.

Mining is not considered to be a significant risk to the stability of the Site.

2.7.6 HYDROLOGY

A review of the OS MasterMap Water Network identified one watercourse within the northeastern corner of the Site, appearing to flow from south to north. During the Site walkover, this watercourse appeared to be an overgrown drainage ditch with no water present.

Outwith the Site boundary adjacent to the southern boundary is the River Beauly, which discharges to the Beauly Firth 5km northeast of the Site. Recorded on the most recent OS map, the Mean High Water Springs from the Beauly Firth influence the River Beauly upstream to a point 350m west of the Site boundary. Consequently, the surrounding surface water features may be tidally influenced. A review of the Scottish Environment Protection Agency (SEPA) Water Environment Hub found the River Beauly is designated as a heavily modified water body, with its overall status in 2022 classified as Good ecological potential.

2.7.7 HYDROGEOLOGY

The Hydrogeological Map of Scotland from the BGS indicates a concealed aquifer within the superficial deposits of the Quaternary coastal fluviatile alluvium, classified as having limited or local potential.

The Site is also underlain by the Lower Old Red Sandstone bedrock aquifer, which is described as moderately productive, with groundwater flow occurring entirely through fractures and discontinuities. This aquifer is considered a locally important multi-layered aquifer. As discussed above, the Mean High Water Spring tide is located 350m to the west of the Site, which may indicate local groundwater is influenced tidally.

The two historical ground investigation boreholes, detailed in Section 2.4, which are located 156m and 183m south of the Site, encountered groundwater at depths of 7.30m and 3.30m below ground level (bgl), respectively. The logs suggest these locations may be influenced by their proximity to the river and the granular strata encountered.

The SEPA Environment Hub classifies the Lower Old Red Sandstone bedrock aquifer, also known as the Muir of Ord groundwater body, as having an overall status of Poor in 2022.

2.7.8 RADON

A review of the Radon Map of Scotland, published by the UK Health Security Agency, indicates the eastern edge along the boundary of the site falls within a Radon Affected Area where radon levels range between 5% and 10%. This area may require basic radon protection measures and further assessment if buildings are to be located within the affected area. However, the majority of the Site is not located within a Radon Affected Area, as less than 1% of properties exceed the Action Level.

2.7.9 UNEXPLODED ORDNANCE

A preliminary assessment of Unexploded Ordnance (UXO) risk has been made on the Site history and a review of online maps supplied by Zetica UXO. The risks associated with unexploded ordnance are considered to be Low, no further risk assessment is required.

3 INITIAL CONCEPTUAL SITE MODEL

3.1 GENERAL

Central to the assessment of potentially Contaminated Land, as defined in the 1990 Environmental Protection Act, is the concept of a Significant Pollutant Linkage, i.e. a significant connection between the source of contamination and a sensitive receptor via an appropriate environmental pathway. The degree of significance of a pollutant linkage depends on several factors including the hazardous nature of the source, the type of pathway (such as dermal contact with contaminants in soils), and the sensitivity of the receptor. The first step towards understanding potential pollutant linkages at a site is through the development of an Initial Conceptual Model.

A conceptual model is defined in BS10175 as: *"characteristics of a site that are relevant to the occurrence and potential effects of ground contamination that describe the nature and sources of contamination; the ground, groundwater, surface water, ground gases and volatile organic compounds (VOC) that could be present; the environmental setting; potential migration pathways; and potential receptors...presented in a tabular, textual and/or diagrammatic form".*

3.2 SOURCES

Having reviewed and considered relevant historical features and environmental data, their proximity to the study Site, the local topography and likely surface and groundwater flow direction, the following source(s) of potential contamination will be considered within the Initial Conceptual Site Model.

Table 3-1: Potential Historical Contamination Sources

Source	Description	Distance
1	Localised reworked or made ground, associated with the farm buildings and previous uses	**On-Site** (northeastern corner, remote from proposed BESS development)
2	Ground gas associated with historical quarrying and pitting and the potential infilled ground.	**Off-Site** (within 1km of the Site boundary)

3.3 POTENTIAL CONTAMINATION RECEPTORS

'Receptors' as defined in BS10175 are "persons, living organisms, ecological systems, controlled waters, atmosphere, structures and utilities that could be adversely affected by the contaminant(s)". Potential receptors at the Site are discussed below.

3.3.1 HUMAN HEALTH

The study area comprises predominantly agricultural/pasture fields, and the Site is proposed for a BESS and associated infrastructure. The proposed development is of a low sensitivity; however, construction workers and future maintenance staff are considered to be potential receptors.

3.3.2 SURFACE WATER

Within the study area, there is one potential watercourse in the northeastern corner of the Site, and the larger River Beauly located adjacent to the south of the Site, which may be partly tidally influenced.

The watercourse features identified on the Site and in proximity are considered to be potential surface water receptors.

3.3.3 GROUNDWATER

The study area is underlain by two aquifers: a concealed aquifer within the superficial deposits of the Quaternary coastal fluviatile alluvium, characterised by local or limited potential, and the moderately productive Lower Old Red Sandstone bedrock aquifer, known as a locally significant multi-layered aquifer, which may be partly tidally influenced.

The desk study review also identified two private water supplies located 50m north and 520m southeast of the Site. These supplies abstract groundwater from a spring and a borehole, respectively.

Groundwater is considered to be a potential receptor.

3.3.4 FAUNA AND VEGETATION (ECOLOGY)

No ecological receptors of particular sensitivity likely to be affected by the Site were identified during the desk study research.

3.3.5 BUILT ENVIRONMENT

There are currently three buildings located within the Site boundary, and it is unknown whether they have associated services/utilities. The proposed development includes the construction of buildings and structures, and will likely require earthworks, the use of concrete and the installation of utility infrastructure. Therefore, the built environment is considered to be a potential receptor.

3.4 RISK ASSESSMENT

The following assessment is qualitative, in that professional value judgments have been applied to the available Site data to assess levels of risk. The framework for these assessments is set out in CIRIA C552, “Contaminated Land Risk Assessment, A Guide to Good Practice”. This guidance states that the assessment of risk should be based on both the likelihood of an event and the severity of its potential consequences.

One of the following six risk levels has been assigned to each potential pollutant linkage identified: Very Low, Low, Low/Moderate, Moderate, High and Very High. A risk of Low/Moderate or above indicates that further assessment, investigation or possibly remediation will be required to enable development. The following Table 3-2 summarises the potential pollutant linkages and respective qualitative risks.

Table 3-2: Initial Conceptual Site Model

Source	Receptors (with respective pathways)	Risk	
		Current Use	Future Use
1. Localised made ground, associated with the farming buildings and previous use (On-Site but remote from proposed BESS)	Human Health (dermal contact, soil/dust ingestion/inhalation)	**Low**	**Low**
	Human Health (inhalation of vapours and ground gases)	**Low**	**Low**
	Groundwater (leaching and migration)	**Low - Low/mod**	**Low - Low/mod**
	Surface Water (surface runoff, leaching and migration)	**Low- Low/mod**	**Low - Low/mod**
	Buildings and Structures (migration of ground gas/vapour)	**Low**	**Low**
	Buildings and Structures (direct contact, permeation)	**Low**	**Low**
2. Ground gas associated with historical quarrying and pitting and the potential infilled ground (Off Site within 1km of the Site boundary)	Human Health (inhalation of vapours and ground gases following accumulation within buildings)	**Very Low**	**Low**
	Buildings and Structures (migration and accumulation of ground gases and vapours)	**Low**	**Low**

In summary, the risk associated with contamination at the site is generally Low (or potentially locally Low/Moderate if significant made ground is present around the existing farm buildings), considering the low likelihood of significant contamination sources, and the low sensitivity of the proposed development.

4 CONCLUSIONS AND RECOMMENDATIONS

4.1 CONCLUSIONS

The purpose of this Geoenvironmental and Geotechnical Desk Study is to assess potential contamination and geotechnical constraints to the Site and provide outline recommendations for additional investigative works required to address any areas of uncertainty.

A review of the available data, detailed within this report, has identified a low likelihood of significant contamination associated with the historical use of the Site and the surrounding area, although there is the potential for contamination associated with the farm buildings in the north of the Site, which requires further investigation and assessment in the event of development in this area. Potential geotechnical constraints have also been identified.

4.1.1 ENVIRONMENTAL PROTECTION ACT (1990), PART IIA

Considering the current use of the Site and the historical use of the Site, the risk associated with the Site (planning boundary) is considered to be Low, or locally Low/Moderate due to potential for made ground associated with the farm buildings in the north of the Site beyond the development footprint. It is considered unlikely that the Site would constitute Contaminated Land, as defined in Part IIa of the Environmental Protection Act.

4.1.2 PROPOSED USE (PAN 33)

The proposed BESS development is considered to be of low sensitivity and the risk associated with the BESS development has been categorised as Low. The overall Site classification remains Low/Moderate as a result of the potential localised presence of made ground in the existing farm area in the North East. Consequently, investigation and further assessment of this potential source is recommended, particularly if construction is proposed in this area.

4.1.3 GEOTECHNICAL

The review of the desk study information indicates that the Site generally comprises an open field underlain by mudstones, sandstones and siltstone, natural soils and likely topsoil of unspecified thickness. Although details of the proposed development are not fully developed, the following potential geotechnical constraints have been identified that require further consideration and potentially intrusive Site investigation.

- Unconfirmed thickness and geotechnical properties of the superficial natural soils and bedrock.
- The potential presence of shallow groundwater beneath the Site within the shallow soils or bedrock aquifer.
- The potential for localised made ground soils to be chemically aggressive towards buried concrete or pipework.

4.1.4 OTHER CONSIDERATIONS

The eastern portion of the Site is located within a Radon Affected Area where radon levels range between 5% and 10%. Although the proposed BESS development is predominantly situated in an area

of the Site which is not within a Radon Affected Area (i.e. less than 1% of properties exceed the Action Level), the proximity to the higher-risk area in the east of the Site requires further consideration. Based on the development type and layout, radon is not expected to be a significant risk to this low-sensitivity end-use, however, further assessment should be undertaken as part of the detailed design, and appropriate radon mitigation measures should be implemented as necessary in any buildings to be constructed on site.

4.2 RECOMMENDATIONS

No ground investigation is understood to have been undertaken at the Site. It is considered that the risks associated with the Site are sufficiently understood for the current use, however, to inform the design and development of the Site for the proposed BESS site, it is recommended that intrusive works are undertaken to characterise the ground conditions for the following key purposes:

- To investigate the depth, nature, and extent of superficial soils, bedrock and made ground.
- To establish the depth of competent stratum across the Site.
- To assess the groundwater conditions beneath the Site.
- To confirm the chemical nature of the soils and groundwater across the Site (particularly if construction is proposed in the vicinity of the farm buildings in the north), with respect to potential human health and the water environment risks.

Subject to the design of a detailed Site investigation, it is considered that the following works will be required generally:

- ***Trial pitting*** across the Site to characterise any made ground and underlying drift deposits and permit recovery of soil samples for subsequent analysis.
- Drilling of ***boreholes*** across the Site targeting locations associated with infrastructure, to characterise the underlying superficial deposits and depth to a suitable founding stratum, permit recovery of soil samples and allow installation of combined gas/groundwater monitoring wells.
- ***Percolation/infiltration tests*** in areas proposed for attenuation/infiltration drainage features to characterise the drainage capabilities of the superficial soils.
- ***Geotechnical testing*** of the soils to obtain geotechnical design parameters (including the aggressivity of the underlying deposits toward buried concrete) for foundation/piling design, and for earthworks design.

If development in the vicinity of the existing farm buildings is proposed:

- ***Chemical analysis*** of the soils and groundwater to assess the potential risk to human health, water environment, and buildings/structures.
- ***Gas and groundwater level monitoring*** of borehole installations and possibly collection of groundwater samples, if present, for subsequent chemical analysis.

APPENDIX A – SITE WALKOVER 15/05/2024

APPENDIX B – GROUNDSURE REPORT

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Site Name	**Dunballoch Farm**
Site Location	**Beauly**
Client	**Gavin & Doherty Geosolutions**
Date	**29 July 2024**
Weather	**Dry**
Logged by	**ks**
Plant	**Jcb 8018**
Status	**Final**
Total Trial Pits	**3**

Highland Geotechnical Services

GROUND INVESTIGATION REPORT

Dunballoch Farm, Beauly

Site works occurred on - 29th July 2024

Produced by - Highland Geotechnical Services

Bayview , Westhill, Inverness, Highlands , IV2 5BP

Client - Gavin & Doherty Geosolutions

Scope of Work

Highland Geotechnical Services was appointed by Gavin & Doherty Geosolutions, to undertake intrusive site investigations at Dunballoch Farm, Beauly.

The scope of work was discussed with the Client prior to mobilisation and investigation points were provided by Gavin & Doherty Geosolutions when arriving on site. The purpose of the investigation was to provide geotechnical information for the Client's consideration and further reference, comprising of Trial pits with in situ, infiltration testing. A factual report was requested with no geotechnical interpretation commissioned.

Findings of Intrusive Investigation

The intrusive investigation comprised of 3 no Trial Pits with in situ infiltration testing.

The location of the Trial pits on site were determined by the Client prior to the works commencing. The logs of the Boreholes are enclosed and indicate –

• Topsoil to a maximum of 0.40mbgl.

• No Made ground encountered.

• Granular sub-soils predominantly SAND & GRAVEL with frequent cobbles and boulders.

• No Groundwater encountered.

The Trial pits were terminated due to proving natural granular strata and to allow for infiltration testing.

The Trial pits were backfilled with arisings upon completion. There was no discernible olfactory evidence of gross hydrocarbon contamination or otherwise during the exploratory works.

Infiltration Testing

In-situ testing for Infiltration rate to be used in surface water soakaway design was proposed and was undertaken within the 3 trial pits. The methodology for the infiltration testing was taken from but not bound to the advice in BRE 365 .The results of the infiltration testing are enclosed.

Conclusions

A total of 3 no. Trial pits with infiltration tests were undertaken at Dunballoch Farm, Beauly. The findings of the investigation are presented within this report and its attachments, with all strata logged to the methodology outlined in BS5930:2015. The strata encountered is generally Topsoil overlying granular subsoils. Upon completion the Trial Pits were backfilled and the locations left, level and tidy. I trust this is sufficient to your requirements, please do not hesitate to get in touch should you require any further information.

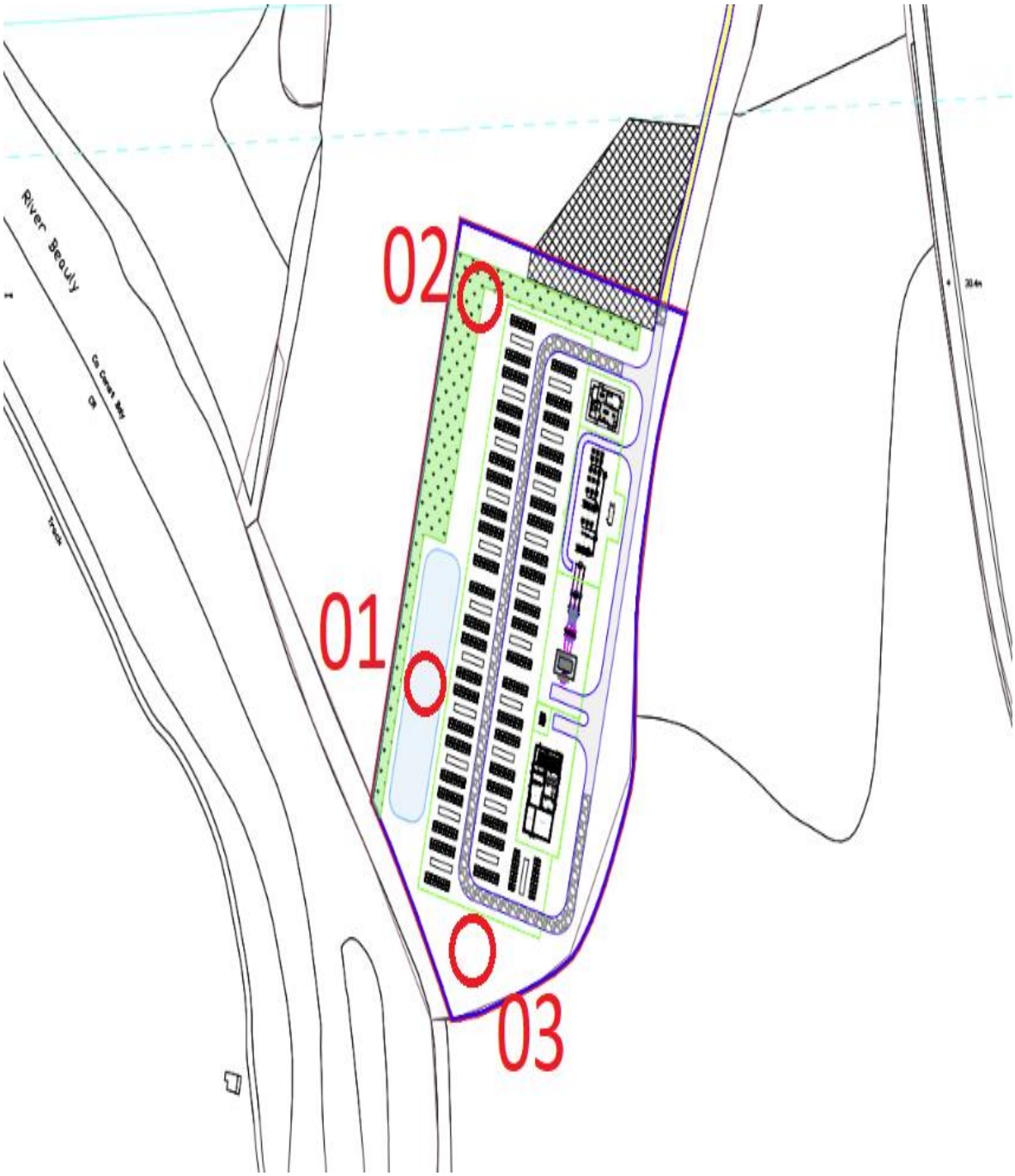
ICORNERSTONE PROJECTS LTD

Summary of your utility search details:

Site Name	Beauly 02	
Site Ref	BTGBBEA02	
Address	Dunballoch Farm, Beauly, Inverness, IV4	
Postcode	IV4	
Grid Ref	E 252370	N 844379

Area Covered

Options Selected		Options Selected	
Gas	✓	**Independent utilities search - inc non-chargeable searches**	✓
Water	✓	Harlaxton	X
Sewer	✓	UK Power Distribution	✓
Electric	✓		
BT	✓	**Coal Authority search**	X
3rd Party searches	✓		
		Other Options	
Cable / Fibre searches inc non-chargeable searches	✓	CAD Pack	✓
Virgin Media	✓	CAD OS mapping	X
Vodafone	✓	Smart pdf	X
		Instant Access Plans	X


River Beauly
02
01
03

Trial Pit Log

						Trial Pit No.	**1**
Client:	Gavin & Doherty Geosolutions	**Site:**	Dunballoch Farm	**Date(s):**	29/07/2024	**Sheet:**	1
Job No:		**Location:**	Beauly	**Weather:**	Dry	**Plant:**	Jcb 8018
Easting:		**Northing:**		**Elevation**			

PID Value (ppm)	Infiltration Test	Test Depth (mbgl)	Groundwater (mbgl)	Level (mOD)	Depth (mbgl)		Description of strata	Legend
					0.00		Long grass onto dark brown TOPSOIL,with rootlets	
						0.30	Light brown, slightly gravelly SAND Gravel is fine to coarse,sub rounded. Sand is slightly silty, fine to medium	
						0.60	Yellowish/Brown, SAND & GRAVEL Sand is coarse. Gravel is fine to coarse with frequent cobbles and occasional boulders, sub rounded	
					1.00			
					2.00			
		2.10				2.10	Pit terminated for Infiltration test	
					3.00			

Remarks & groundwater observations	**Dimensions**	**Logged by**	**Figure no/ status**
No Groundwater detected No Odours detected in trial pit or Arisings Cat Scanned prior to excavation	**1.4m x 0.85m**	**ks**	**Final**

Trial Pit Log						Trial Pit No.	1
Client:	Gavin & Doherty Geosolutions	**Site:**	Dunballoch Farm	**Date(s):**	29/07/2024	**Sheet:**	2 of 2
Job No:	0	**Location:**	Beauly	**Weather:**	Dry	**Plant:**	Jcb 8018
Easting:		**Northing:**		**Elevation (AOD) :**			

Trial Pit Log

						Trial Pit No.	**2**
Client:	Gavin & Doherty Geosolutions	**Site:**	Dunballoch Farm	**Date(s):**	29/07/2024	**Sheet:**	1
Job No:		**Location:**	Beauly	**Weather:**	Dry	**Plant:**	Jcb 8018
Easting:		**Northing:**		**Elevation**			

PID Value (ppm)	Infiltration Test	Test Depth (mbgl)	Groundwater (mbgl)	Level (mOD)	Depth (mbgl)	Description of strata	Legend
					0.00	Long grass onto dark brown TOPSOIL, with rootlets	
					0.40	Light Brown, Slightly gravelly, with patches of stiff Clay,SAND Gravel is fine to coarse,sub rounded, sub angular. Sand is slightly silty,fine	
					0.90	Yellowish/Brown, SAND & GRAVEL Sand is coarse. Gravel is fine to coarse, sub rounded, with frequent cobbles and occasional boulders	
					1.00		
		2.00			2.00	Pit Terminated for Infiltration test	
					3.00		

Remarks & groundwater observations	**Dimensions**	**Logged by**	**Figure no/ status**
No Groundwater detected No Odours detected in trial pit or Arisings Cat Scanned prior to excavation	**1.5m x 0.9m**	**ks**	**Final**

HGS		**Trial Pit Log**				**Trial Pit No.**	**2**
Client:	Gavin & Doherty Geosolutions	**Site:**	Dunballoch Farm	**Date:**	29/07/2024	**Sheet:**	2 of 2
Job No:		**Location:**	Beauly	**Weather:**	Dry	**Plant:**	Jcb 8018
Easting:		**Northing:**		**Elevation (AOD) :**			

Trial pit Log

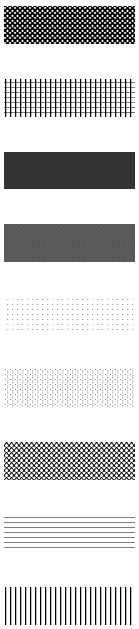
						Trial Pit No.	**3**
Client:	Gavin & Doherty Geosolutions	**Site:**	Dunballoch Farm	**Date(s):**	29/07/2024	**Sheet:**	1
Job No:		**Location:**	Beauly	**Weather:**	Dry	**Plant:**	Jcb 8018
Easting:		**Northing:**		**Elevation**			

PID Value (ppm)	Infiltration Test	Test Depth (mbgl)	Groundwater (mbgl)	Level (mOD)	Depth (mbgl)	Description of strata	Legend
					0.00	Long grass onto dark brown TOPSOIL, with rootlets	
					0.35	Light Brown, slightly silty,fine SAND	
					1.00	Yellowish/Brown SAND & GRAVEL Sand is coarse. Gravel is fine to coarse, with frequent cobbles,sub rounded, sub angular	
		2.00			2.00	Pit Terminated for Infiltration Test	
					3.00		

Remarks & groundwater observations	**Dimensions**	**Logged by**	**Figure no/ status**
No Groundwater detected No Odours detected in trial pit or Arisings Cat Scanned prior to excavation	**1.4M X 0.8M**	**ks**	**Final**

HGS	**Trial Pit Log**					**Trial Pit No.**	**3**
Client:	Gavin & Doherty Geosolutions	**Site:**	Dunballoch Farm	**Date:**	29/07/2024	**Sheet:**	2 of 2
Job No:		**Location:**	Beauly	**Weather:**	Dry	**Plant:**	Jcb 8018
Easting:		**Northing:**		**Elevation (AOD) :**			

legends



Topsoil or Peat

Made Ground or Fill

Tarmac

Concrete

Gravel

Sand

Silt

Clay

Cobbles

CALCULATION

Contract	Dunballoch Farm, Beauly
Part of Structure	Surface Water Soakaway Infiltration Testing

Sheet No.	1 of 2 Rev 1
Contract No.	
Date	29/07/2024
Designer	
Checker	KS

Trial Pit Length **1.40 m**
Width **0.85 m**
Depth **2.10 m**

V_{p75-25} 0.57 m³

ap_{50} 3.33 m³

Dips	Water Depth	Time (min)
	0.95 m	**0**
	0.75 m	**8**
	0.63 m	**18**
	0.57 m	**28**
	0.47 m	**60**
	0.27 m	**96**
	0.00 m	**114**

Notes: Trial Pit1, Test 1, No Groundwater, 1000 litres

CALCULATION

Contract	Dunballoch Farm, Beauly
Part of Structure	Surface Water Soakaway Infiltration Testing

Sheet No.	1 of 2 Rev 1
Contract No.	
Date	29/07/2024
Designer	
Checker	KS

Trial Pit Length **1.40 m**
Width **0.85 m**
Depth **2.10 m**

V_{p75-25} 0.58 m³

ap_{50} 3.37 m³

Dips	Water Depth	Time (min)
	0.97 m	**0**
	0.84 m	**8**
	0.67 m	**21**
	0.55 m	**42**
	0.43 m	**73**
	0.34 m	**103**
	0.25 m	**138**
	0.08 m	**171**
	0.00 m	**188**

Notes: Trial Pit1, Test 2, No Groundwater, 1000 litres

CALCULATION

Contract	Dunballoch Farm, Beauly
Part of Structure	Surface Water Soakaway Infiltration Testing

Sheet No.	1 of 2 Rev 1
Contract No.	
Date	29/07/2024
Designer	
Checker	KS

Trial Pit Length **1.50 m**
Width **0.90 m**
Depth **2.00 m**

V_{p75-25} 0.57 m³

ap_{50} 3.37 m³

Dips	Water Depth	Time (min)
	0.84 m	**0**
	0.58 m	**6**
	0.38 m	**15**
	0.18 m	**26**
	0.00 m	**38**

Notes: Trial Pit 2, Test 1, No Groundwater, 1000 litres

CALCULATION

Contract	Dunballoch Farm, Beauly
Part of Structure	Surface Water Soakaway Infiltration Testing

Sheet No.	1 of 2 Rev 1
Contract No.	
Date	29/07/2024
Designer	
Checker	KS

Trial Pit Length **1.50 m**
Width **0.90 m**
Depth **2.00 m**

V_{p75-25} 0.65 m³

ap_{50} 3.65 m³

Dips	Water Depth	Time (min)
	0.96 m	**0**
	0.64 m	**10**
	0.34 m	**45**
	0.00 m	**79**

Notes: Trial Pit 2, Test 2, No Groundwater, 1000 litres

CALCULATION

Contract	Dunballoch Farm, Beauly
Part of Structure	Surface Water Soakaway Infiltration Testing

Sheet No.	1 of 2 Rev 1
Contract No.	
Date	29/07/2024
Designer	
Checker	KS

Trial Pit Length **1.50 m**
Width **0.90 m**
Depth **2.00 m**

V_{p75-25} 0.70 m³

ap_{50} 3.82 m³

Dips	Water Depth	Time (min)
	1.03 m	**0**
	0.63 m	**26**
	0.39 m	**56**
	0.20 m	**79**
	0.14 m	**92**
	0.00 m	**112**

Notes: Trial Pit 2, Test 3, No Groundwater, 1000 litres

CALCULATION

Contract	Dunballoch Farm, Beauly
Part of Structure	Surface Water Soakaway Infiltration Testing

Sheet No.	1 of 2 Rev 1
Contract No.	
Date	29/07/2024
Designer	
Checker	KS

Trial Pit Length **1.40 m**
Width **0.80 m**
Depth **2.00 m**

V_{p75-25} 0.54 m³

ap_{50} 3.25 m³

Dips	Water Depth	Time (min)
	0.97 m	**0**
	0.52 m	**15**
	0.23 m	**45**
	0.00 m	**61**

Notes: Trial Pit 3, Test 1, No Groundwater, 1000 litres

CALCULATION

Contract	Dunballoch Farm, Beauly
Part of Structure	Surface Water Soakaway Infiltration Testing

Sheet No.	1 of 2 Rev 1
Contract No.	
Date	29/07/2024
Designer	
Checker	KS

Trial Pit Length **1.40 m**
Width **0.80 m**
Depth **2.00 m**

V_{p75-25} 0.57 m³

ap_{50} 3.36 m³

Dips	Water Depth	Time (min)
	1.02 m	**0**
	0.76 m	**10**
	0.43 m	**36**
	0.20 m	**76**
	0.10 m	**103**
	0.00 m	**116**

Notes: Trial Pit 3, Test 2, No Groundwater, 1000 litres

HAYDN
EVANS