



Cattle Market, Liskeard – Regeneration

Desk Study Report
Project No: 64570



Date 11/09/2019
Engineering Services Laboratory



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EXECUTIVE SUMMARY

A Desk Study report has been commissioned by Cornwall Council for the proposed Cattle Market, Liskeard Regeneration scheme. The Desk Study reviews available information regarding historical and current land uses; anticipated ground conditions and the findings of any previous investigations, and to make an assessment of potential geotechnical and contamination constraints within the study area.

The study area is located within an urban environment and current land use comprises mainly of car parking, office buildings, a community centre, children's centre and light commercial use. There is no main river networks within the vicinity of the site area.

The underlying geology is recorded as the Saltash Formation comprising of slate and siltstone, with an unnamed igneous intrusion of Microgabbro, Devonian to Carboniferous in age, situated at the northern part of the site.

No historic metalliferous mining activity is recorded.

The British Geological Survey does not have records of any historical boreholes drilled within the vicinity of the site. However, a separate scheme to the south of the site within the same geological unit was reviewed, encompassing the works for the A38(T) Liskeard by-pass, and recorded fragmented grey and grey-brown SLATY MUDSTONE at approximately 2.7m bgl. The Borehole was extended to 14.6m bgl. Adjacent boreholes show evidence of groundwater at approximately 6.5m bgl, but these were drilled at a lower elevation from the study site. Made Ground associated with historical development and re-profiling of the site is likely to be present.

Minimal historical contamination events have been recorded, but previous and current site uses have the potential to have caused contamination to site soils.

An unexploded ordnance report recorded the risk from World War II enemy munitions to be negligible, but recommended additional investigations for allied munitions.

The site is located in a Flood Zone 1 and the risk from flooding is extremely low with the only potential flood risk coming from groundwater. However, the site is located in a Critical Drainage Area.

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The site is not located within any nationally designated protected areas. Tree Preservation Orders are not present within the site boundary. Around the northern and eastern parts of the site there are eleven Category II listed buildings and a Grade II listed garden wall within the eastern side of the site encompassing historical settlements. The site is located within the Liskeard Conservation Area.

In order to confirm that absence of contamination and to determine the geology present at the site an intrusive ground investigation would be required.

1 Introduction

1.1 Scope and Objective of the Report

1. The Engineering Services Laboratory (ESL) of CORMAC Solutions Ltd (CSL) was commissioned by Inner Circle Ltd on behalf of Cornwall Council to produce a Desk Study for the proposed Cattle Market, Liskeard Regeneration scheme. The desk study is required to review the historical land use and ground conditions, together with completion of an assessment of potential geotechnical and contamination constraints that may be recorded at the site.
2. Information from this study may be used to prepare a scope of works for an intrusive ground investigation. The approach taken in preparing this report is based on the guidance with respect to the preparation of a Preliminary Sources Study Report as described in Highways England document, CD622 Managing Geotechnical Risk', August 2019.
3. A walkover survey was undertaken on 4th September 2019. This inspection covered all accessible areas of the study area. No buildings were accessed.
4. A review of historical mapping records, regulatory authority data and geotechnical information has been completed and sources of information are discussed further in Section 2.
5. An excerpt of the specification from the Cornwall Council is provided below.

Cornwall Council requires a desk study investigation and assessment to collect and collate information in order to understand the environmental setting of the site, and to identify potential geoenvironmental and geotechnical risks and constraints associated with the redevelopment of the site to include:

- Collect and review environmental information relating to the use and setting of the site and the surrounding area
- Review historical maps of the site and surrounding area
- Contact the Environmental Protection Team (Cornwall Council) to obtain any relevant environmental information for the site
- Obtain third party desk study assessments of the potential for mine workings to be present beneath the site
- Review any other relevant information provided by the Client
- Carry out a walk over visual inspection of the site to ascertain the current layout and status of the site and look for any observable evidence of potential sources of contamination.

1.2 Description of Project

1. Cornwall Council wishes to obtain site information to develop master planning and feasibility studies of the site. The objective of the Desk Study is to obtain relevant Geoenvironmental and Geotechnical information of the site, including a Historical Mining study and Flood Risk Assessment.
2. The extent of the study area is presented in Figure 1. below:

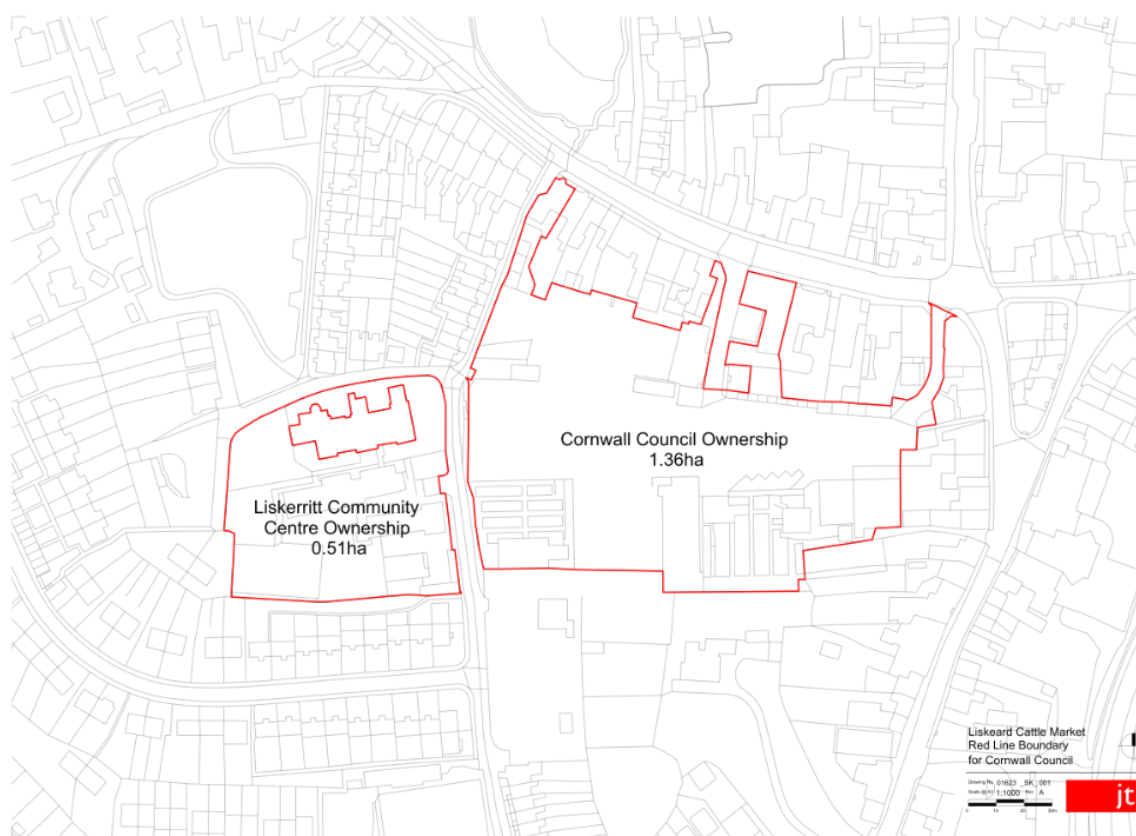


Figure 1. Study Area (provided by JTP for Cornwall Council)

2 Sources of Information, Desk Study, Site Reconnaissance, Site Description and Review of Findings

2.1 Existing/Relevant Geotechnical Information

1. Geological information for the site has been obtained from the following sources:
 - The BGS Geology of Britain website (<http://mapapps.bgs.ac.uk/geologyofbritain/home.html>)
2. An extract of the BGS map of the site and the surrounding area is presented within the Groundsure Report (Appendix C).
3. Relevant borehole logs are available on the BGS website and have been reviewed as part of this desk study
4. Geotechnical reports commissioned by Cornwall Council were not identified.

2.2 Unpublished Geological Information including Previous Geotechnical Studies and Intrusive Investigations

1. Previous desk or geotechnical studies within the study area were not identified and no historical borehole information within the study area has been determined. Ground investigations prior to the construction of the buildings will almost certainly have been conducted although these records are not available.
2. Borehole records are available immediately south of the site associated with the construction of the Liskeard bypass and are reviewed in Section 2.3.13 of this report.

2.3 Sources of Information

2.3.1 Topographical Maps

1. None reviewed. A topographical survey of the site is being conducted by 3DSMI Ltd but has not been completed at the time of this report.
2. Cornwall Council intranet mapping records the site elevation to be between 128m and 132m AOD.

2.3.2 Historical Maps

1. Historical maps of the area dated between 1880 and 2014 were obtained as part of a Groundsure Report and these are summarised in Table 2.1 below.
2. Historical aerial photographs have been consulted alongside the historical maps when assessing changes in land use across the site and surrounding area.
3. The Tythe map for the area is provided as Figure 2 below, and an aerial photograph circa. 1940 in Figure 3.

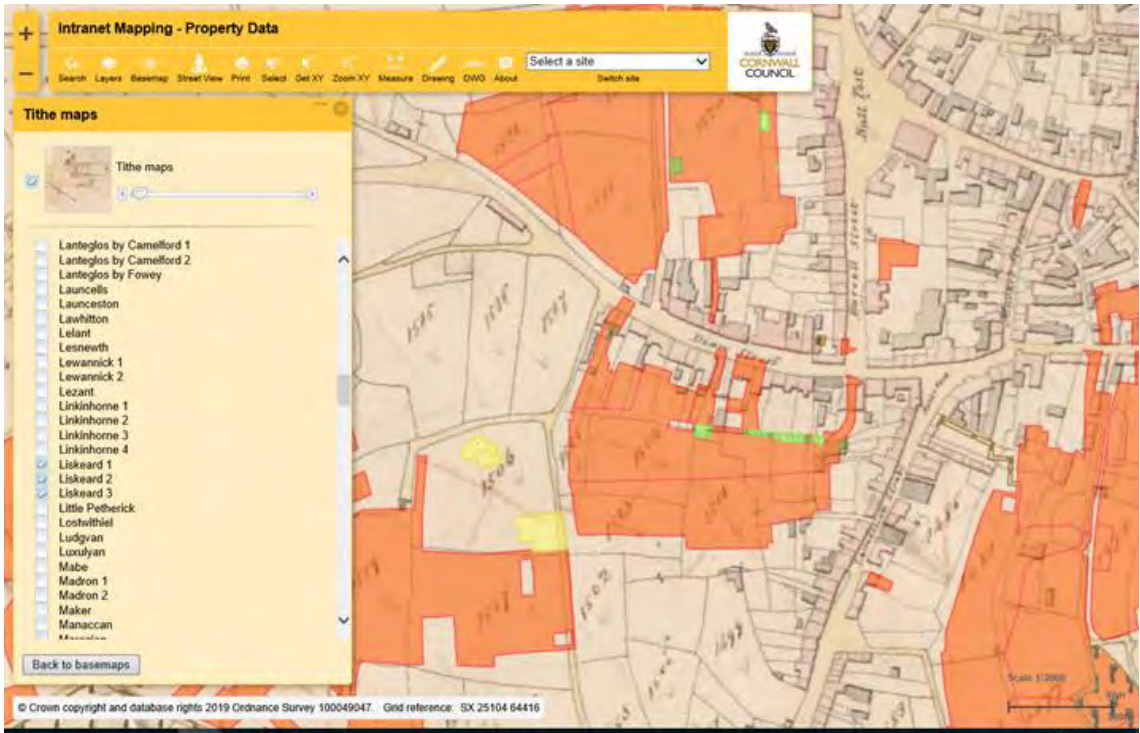


Figure 2. The Map (Cornwall Council Intranet Mapping)



Figure 3. Aerial Photograph circa 1940

Table 2.1: Summary of Historical Plans

Date	Scale	Historical activity within the site boundary	Historical activity in the surrounding area
Tythe Map (undated)		Fields across the southern part of the site, with building along the northern site boundary	Buildings to the north and east of the site.
1882	1:2,500	The northern and eastern areas of the site are occupied by residential cottages and associated gardens, with a bank occupying the north eastern area of the site. Windsor villa occupies the south of the site along with areas of vegetation, whilst a boys and girls school along with open land occupies the east of the site.	Large area of the north of the site is occupied by residential housing with buildings being occupied by banks, a Masonic hall and a hotel – all within the 100m boundary. Further residential properties are located to the north and east of the area with two chapels situated in the north east and an East Cornwall Brewery. To the south of the site boundary there is a chapel, cemetery, an old gas works and a Liskeard union workhouse.
1907	1:2,500	The area of open grassland to the north of the Windsor Villa is now occupied by a Cattle Market.	Further residential development and a free library is recorded. A monument is recorded beyond the northern site boundary adjacent to the Masonic Hall.
1908	1:10,560	No other significant change	A school and infant school is located to the eastern part of the surrounding area with a cottage hospital occupying the northern extent of the surrounding area.
1933	1:2,500	No other significant change	No other significant change
1938	1:10,560	No other significant change	No other significant change
1960	1:10,560	No other significant change	The Liskeard union workhouse has now been occupied by a Lamellion Hospital

Table 2.1: Summary of Historical Plans

Date	Scale	Historical activity within the site boundary	Historical activity in the surrounding area
1969	1:2,500	The majority of the area boundaries are now occupied by residential properties, with the eastern area of the site boundary being developed with a further education centre and bungalows. The centre of the site, within the cattle market, is now occupied by sheep pens, sub stations, ambulance station, fire engine station, a garage, a bank and a welfare centre.	The southern section of the surrounding area is occupied by Light and Agricultural engineering works, coal yard, service station, gardens and a bowling green. The northern section of the site is occupied by a car park, a garage, cinema and buildings associated with Westbourne Cornwall County Council offices. The eastern part of the surrounding area shows minimal changes with a few garages and a car park counting for the changes.
1970	1:2,500	No other significant change	No other significant change
1977	1:2,500	The further education centre towards the eastern area of the site is a Liskeard junior school. Rose Dean house in the northern section of the site is occupied by a surgery.	No other significant change
1980 – 1981	1:2,500	No other significant change	No other significant change
1984	1:2,500	No significant	A bowling green occupies the south eastern part of the surrounding area within the 100m boundary.
1985-1991	1:2,500	No other significant change	No other significant change
1994	1:2,500	Poor quality plan - no other significant change	The old works to the south eastern section of the surrounding area is now occupied by a Caradon Business Centre Poor quality plan - no other significant change noted
2003	1:1,250	No other significant change	No other significant change
2010-2019	1:10,000	No other significant change	No other significant change

2.3.3 Geological Maps (1:50,000)

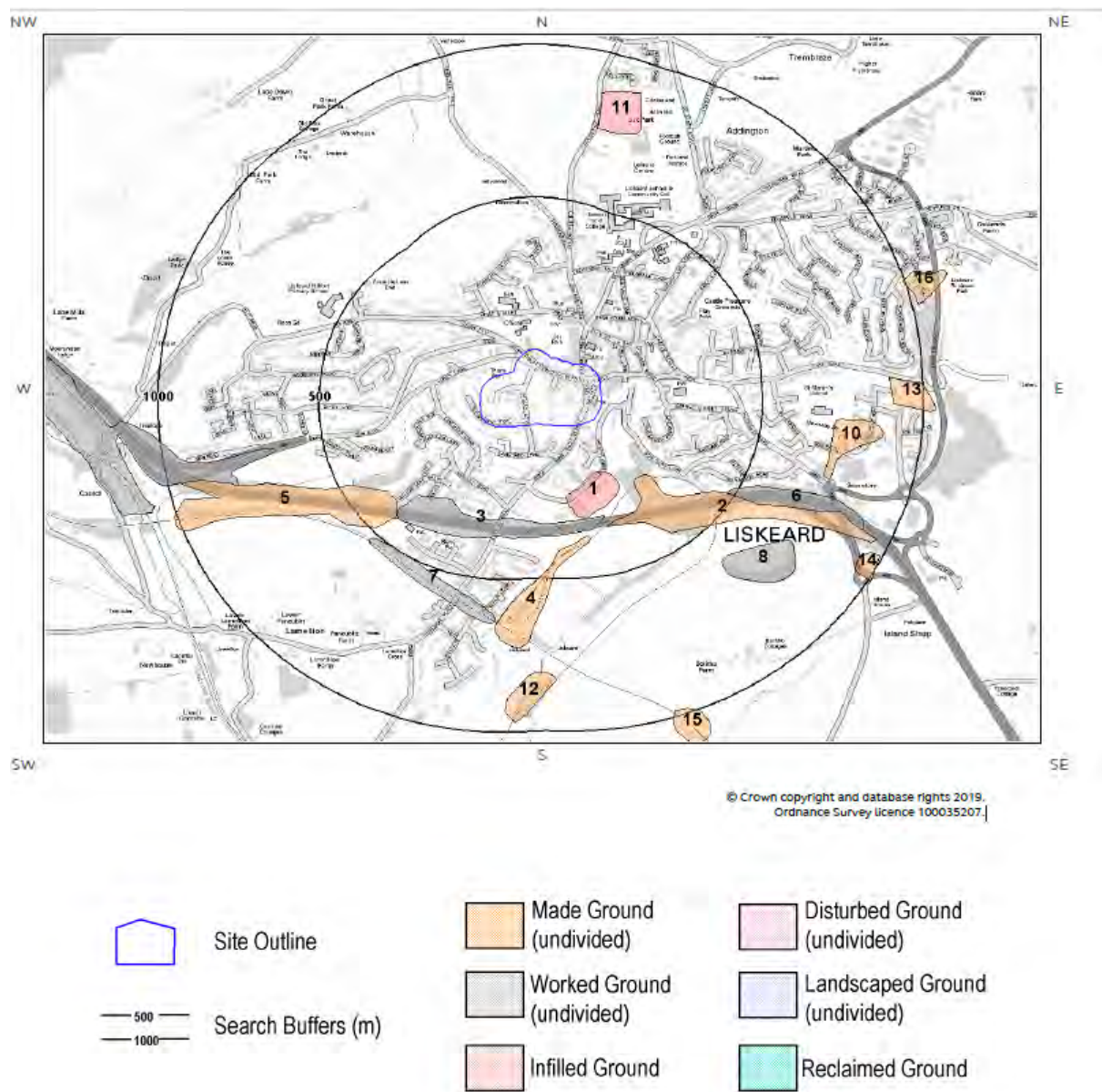


Figure 4: Geological Map showing records of artificial ground. There is one record of infilled ground (1), three records of made ground (2, 4, and 5) and three records of worked ground (3, 6, and 7). However these do not lie within the immediate site boundary (blue line)



Figure 5: Geological map showing records of bedrock and linear features map. The site is underlain by the Saltash Formation with an unnamed igneous intrusion.

2.3.4 Current Aerial Photograph

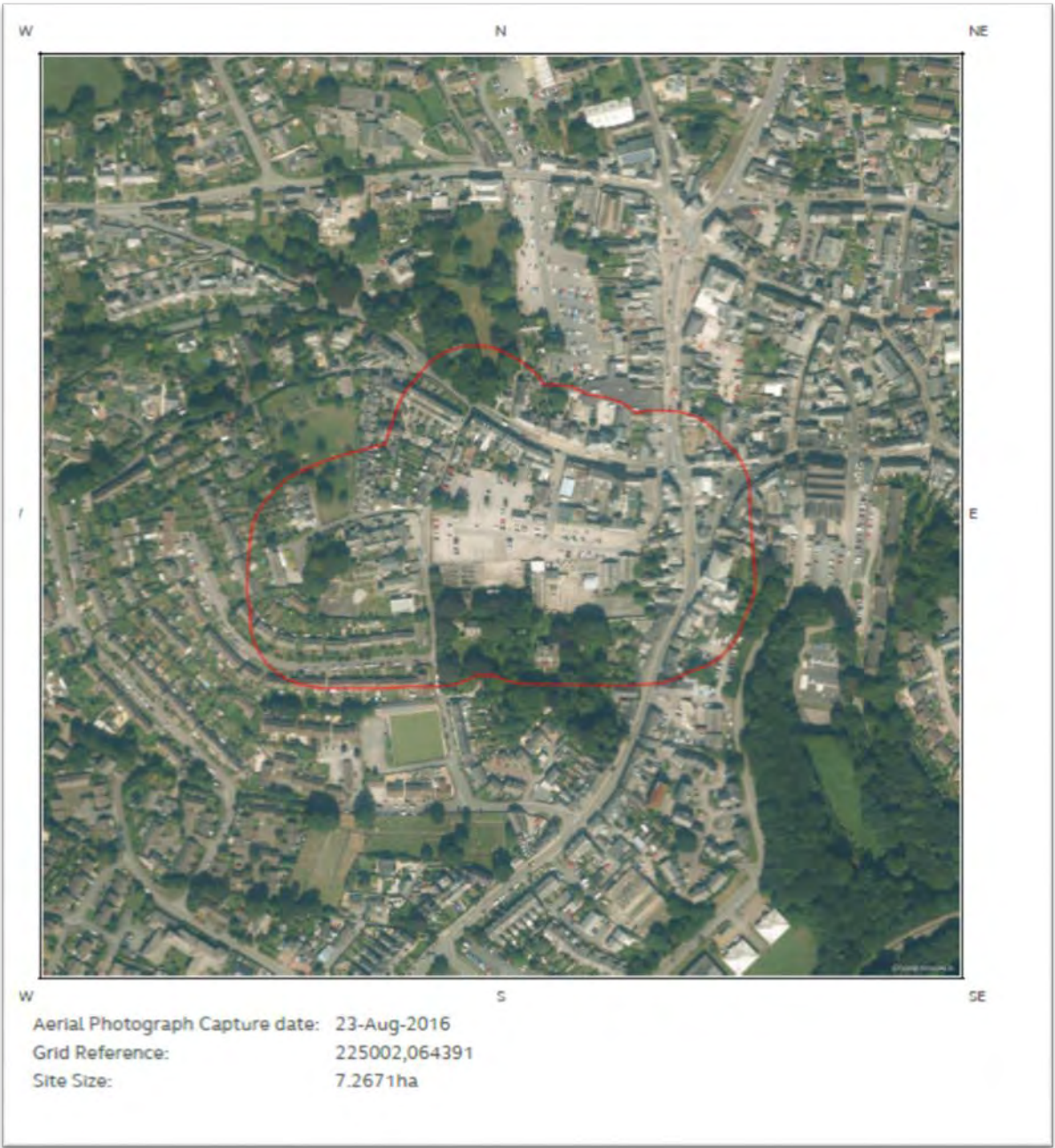


Figure 6: Aerial photograph of the site boundary (red line) and the surrounding area

2.3.5 *Records of Mine and mineral Deposits*

1. The Groundsure GeoInsight report summarises historic and current mining activities within the vicinity of the study area.
2. A site specific Mining Desk Study has been commissioned from Mining Searches UK Ltd and the report is presented in Appendix E. The report indicates that the risk posed by historical mining activities within the study area are acceptably free from mining related risk.
3. However, a pump is considered to lie within the property on historic Ordnance Survey plans. Mining Searches UK have no further information to confirm the precise location or nature of this pump.
4. Further action is therefore recommended with regards to the proposed development, this may take the form of a visual inspection carried out by a suitably qualified and experienced person.

2.3.6 *Remote Sensing Data from Third Parties*

1. None available.

2.3.7 *As built Drawings*

1. None available.

2.3.8 *Existing Monitoring Data*

1. None available.

2.3.9 *Services Drawings*

1. A utilities survey has been produced by 3DMSI Ltd.

2.3.10 *Land Use and Soil Survey information*

1. Historical and current land uses are summarised above.

2.3.11 *Archaeological and Historical investigations*

1. The locations of post medieval structures are recorded adjacent to the norther site boundary. An archaeological survey of the site is recommended.

2.3.12 *Existing Ground Investigations*

1. None available for review.

2.3.13 *Relevant Information Held on Asset Data Systems*

1. The following sources were utilised to collate environmental information for the scheme, discussion of which is presented in Section 4.
 - Groundsure Reports
 - Groundsure Data Viewer ([http:// http://groundsure.io/](http://http://groundsure.io/));

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- Department for Environment, Food and Rural Affairs (DEFRA), 'Multi-Agency Geographic Information for the Countryside (MAGIC)', <http://www.magic.gov.uk/>, 2017;
- Cornwall Council Intranet Mapping.

Reported Ground Conditions

2. Anticipated natural hazards are recorded in the Groundsure GeoInsight Report and are summarised in Table 2.2 below.

Table 2.2: Summary of the Natural Hazards

Potential Natural Hazard	Hazard Rating (from Groundsure)	Comments
Shrink Swell	Negligible	Ground conditions predominantly non-plastic. No special actions required to avoid problems due to shrink-swell clays.
Landslides	Negligible to Very Low	Slope instability problems are unlikely to be present.
Soluble Rocks	Negligible	Soluble rocks are present, but unlikely to cause problems except under exceptional conditions.
Compressible Ground	Negligible	No indicators for compressible deposits identified
Collapsible Deposits	Very Low	Deposits with potential to collapse when loaded and saturated are unlikely to be present.
Running Sand	Negligible	No indicators for running sand have been identified.

3. There are no geological faults which bisect the site. The area is composed of the Saltash Formation with no other contacts.

Soils Anticipated

1. Made Ground deposits associated with existing and historical development of the site should be anticipated. This will include demolition waste from removal of any residential properties and construction of community centre and children's centre.
2. The site is underlain by slate and siltstone of the Saltash Formation.
3. There are no logs available for boreholes drilled within the site boundary. However, there are numerous borehole records to the south of the site due to the construction of the Liskeard bypass. All boreholes were drilled within the Saltash

Formation. The closest borehole to the site drilled at 114m AOD recorded minimal made ground deposits overlying a stiff brown and grey CLAY with fragmented slaty mudstone, underlain by competent bedrock at approximately 3m bgl.

Significance of Geological Formations

1. The degree of weathering is difficult to assess at present with the available information. Intrusive investigations will be required for an accurate assessment.

Groundwater Conditions

1. Depth of groundwater is not known and is likely to be variable with geology and topography. Historical maps also record the nearest spring adjacent to the western side of the site boundary at approximately 274m.
2. Boreholes drilled to the south of the site to 9.4m bgl did not record the presence of groundwater.

Radon

1. The Radon Atlas of Great Britain published by Public Health England records the site to be located in an area where full radon protection measures will be required. The western part of the site has a maximum radon potential greater than 30%, whereas the eastern part of the site has a maximum radon potential of 10-30%.

Hydrology

1. Cornwall Council intranet mapping records the site to receive between approximately 1300mm and 1350mm of rainfall per year.
2. The study area is located within a Critical Drainage Area designated by the Environment Agency. Minimum drainage standards required on all new developments (including brownfield sites) should reduce current rainfall runoff rates by using infiltration as far as is practicable. All off-site surface water discharges from developments should mimic greenfield performance up to a maximum 1 in 10 year discharge rate. On site all surface water should be safely managed up to the 1 in 100 plus climate change conditions. This will require additional water storage areas to be created thereby contributing to a reduction in flooding downstream.
3. In this catchment Sustainable Drainage System (SuDS) design should include

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features to manage water quality.

Licensed Discharges

1. The active licensed discharge consents within 500m of the study area are summarised in Table 2.3 below.
2. One licence is situated to the north of the study area and the other is located towards the south east

Table 2.3: Active Licensed Discharge Consents Within 250m

Address	Distance (m) and Direction	Grid Ref	Effluent Type	Receiving Water	Date Issued
Sungirt lane, Liskeard, Cornwall	210 SE	225280 064160	Sewage discharges – STW storm Overflow/Storm Tank – Water Company	Tributary of the East Looe river	26/11/1986
Sungirt lane, Liskeard, Cornwall	233 SE	225280 064130	Sewage discharges – Sewer storm Overflow - Water Company	Tributary of the East Looe river	11/10/2007
2 Venslooe Hill, Barras Cross, Liskeard, Cornwall	418 N	224950 064960	Sewage discharges – Final/Treated Effluent – Not Water Company	Soakaway	25/10/1993
Sungirt lane, Liskeard, Cornwall	235 SE	225285 064131	Sewage discharges – STW storm Overflow/Storm Tank – Water Company	East Looe River (S)	01/10/2000

Flood Risk Assessment

1. The study area has been assessed for flooding risk using the following data sources:
 - Flood Map for Planning; and
 - Groundsure Enviroinsight Report
2. The risk posed by flooding is defined in the following terms:

Flood Zone	Definition
Zone 1 Low Probability	Land having a less than 1 in 1,000 annual probability of river or sea flooding. (Shown as 'clear' on the Flood Map – all land outside Zones 2 and 3)
Zone 2 Medium Probability	Land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding; or land having between a 1 in 200 and 1 in 1,000 annual probability of sea flooding. (Land shown in light blue on the Flood Map)
Zone 3a High Probability	Land having a 1 in 100 or greater annual probability of river flooding; or Land having a 1 in 200 or greater annual probability of sea flooding. (Land shown in dark blue on the Flood Map)
Zone 3b The Functional Floodplain	This zone comprises land where water has to flow or be stored in times of flood. Local planning authorities should identify in their Strategic Flood Risk Assessments areas of functional floodplain and its boundaries accordingly, in agreement with the Environment Agency. (Not separately distinguished from Zone 3a on the Flood Map)

3. A review of the available maps indicates the entirety of the site has a very low risk of flooding.
4. A Preliminary Flood Risk Assessment has been prepared and is presented in Appendix D.

Hydrogeology

1. The study area is underlain by the Saltash formation which is designated as Secondary-A aquifers (formerly 'minor aquifers') defined by the Environment Agency (EA) as "permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers".
2. An unnamed Igneous Intrusion is recorded at the northern section of the site and is noted as Microgabbro.
3. No superficial deposits are recorded on site but are recorded to the south east and are detailed below in Table 2.4.

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Table 2.4: Superficial Deposits within 500m of Site Boundary

Distance	Direction	Description	Rock Description
147.0	SE	Head	Clay, Silt, Sand and Gravel
442.0	SE	Head	Clay, Silt, Sand and Gravel

The following definitions relating to the types of aquifer from the EA apply:

Principal aquifers	Can provide significant quantities of water for people and may also sustain rivers, lakes and wetlands.
Secondary aquifers	Can provide modest amounts of water, but the nature of the rock or the aquifers structure limit their use. They remain important for rivers, wetlands and lakes and private supplies in rural areas.
Significant drift aquifers	Drift is sediment laid down during the most recent ice ages (usually clay, silt, sand and gravel). These are labelled as significant drift aquifers where good water supplies are available or they support surface water. This is generally where the drift is overlying unproductive strata.
Unproductive strata	These are rocks which are generally unable to provide usable water supplies and are unlikely to have surface water and wetland ecosystems dependent upon them.

Licensed Groundwater Abstractions

1. No Groundwater Abstraction Licenses are recorded within 1000m of the site. Full details of other locations within 2000m, four locations in total, of the study site can be found in the Groundsure Enviroinsight report.

Licensed Surface-water Abstraction

1. No abstractions are recorded within 1000m of the site. Full details of other locations within 2000m of the study site can be found in the Groundsure Enviroinsight report.

Source Protection Zones and Potable Water Abstraction

1. No Source Protection Zones are recorded within 500m of the site and no Potable Water Abstraction licenses are recorded within 2000m of the site.

Groundwater Vulnerability and Soil Leaching Potential

1. On site soils are assumed to be of high leaching potential, although this assumption is not quantified.

Ecology

1. An ecological assessment has been conducted by Cornwall Environmental Consultants and the findings of this report are published separately.

Historical Industry

1. The site and surrounding area has been subject to 21 potentially contaminative land uses within 200m of the site boundary, which are summarised in Table 2.5. For land uses which are potentially contaminative land uses within 500m, see Enviroinsight Groundsure report.

Table 2.5: Potentially Contaminative Former Land Uses (Within 200m)		
Distance (m) and Direction	Designation	Date
On Site	Unspecified Tank	1960
On Site	Unspecified Commercial/Industrial	1960
On site	Cattle Market	1905
On site	Unspecified Tank	1905
12 (south)	Unspecified Factory	1980
40 (south)	Unspecified Works	1980
48 (south)	Tannery	1882
87 (south)	Unspecified Works	1980
88 (south)	Cemetery	1980
97 (south)	Cemetery	1882, 1907
98 (south)	Unspecified Commercial/Industrial	1907
98 (south)	Gas Works and Gasometer	1882
99 (north west)	Unspecified Ground Workings	1978
101 (south)	Cemetery	1978
125 (south)	Smithy	1907
169 (south)	Unspecified Works	1980
181 (south east)	Unspecified Ground Workings	1980
197 (south)	Hospital	1980

Historical Petrol Stations

1. One historical petrol station is recorded on site.

Table 2.6: Historical Petrol and Fuel Site

Distance (m) and Direction	Designation
On site	Filling Station

Historic Military Sites

1. No historical military sites are recorded within 500m of the site.

Historical Garage and Motor Vehicle Repair Sites

1. A total of 98 historical garages and motor vehicle repair sites are recorded within 500m of the site boundary. Table 2.7 below shows all historical garages and motor vehicle repair sites within 200m. A full list of sites within 500m are listed in the Enviroinsight Groundsure Report.

Table 2.7: Historical Garage and Motor Vehicle Repair Sites

Distance (m)	Direction	Designation	Date
0	On site	Garage	1969, 1977, 1981, 1984, 1988, 1989, 1993, 1996, 1999
8	S	Garage	1981, 1984, 1993
15	S	Garage	1996, 1999
30	N	Garage	1984
31	N	Garage	1981, 1969, 1977
31	S	Auto Service Station	1969, 1977, 1985
71	N	Garage	1984
72	N	Garage	1969, 1977, 1981
95	S	Garage	1969, 1977, 1981, 1984, 1985, 1988, 1991, 1993
97	S	Garage	1999
132	N	Garage	1984, 1988, 1991, 1993, 1999
165	N	Garage	1969, 1977, 1984, 1985
174	N	Garage	1981, 1984, 1988, 1989

Table 2.7: Historical Garage and Motor Vehicle Repair Sites

Distance (m)	Direction	Designation	Date
185	N	Garage	1981
200	N	Garage	1988, 1989, 1996, 1999

Current Industrial Land Uses

1. Numerous industrial land uses are recorded and the details are provided in the EnviroInsight report. Land uses that are considered to be potentially contaminating are summarised in Table 2.8 below.

Table 2.8: Potentially Current Contaminative Land Uses Within 200m

Distance (m)	Direction	Company	Grid Reference	Address	Activity	Category
0	On Site	Cattle Market	224963 64386	Cornwall, PL14	Livestock Markets	Food, Drink and Multi Item Retail
0	On Site	Depot	225030 64450	Cornwall, PL14	Container and Storage	Transport, Storage and Delivery
0	On Site	Electricity sub-station	224927 64415	Cornwall, PL14	Electrical Features	Infrastructure and Facilities
0	On Site	Modern Grates Company	225089 64334.	Barn Street, Liskeard, Cornwall, PL14 4BJ	General Consumption Supplies	Industrial Products
6	S	Taylor's Motors Ltd	225093 64287.	Barn Street, Liskeard, Cornwall, PL14 4BL	Vehicle Repair, Testing and Servicing	Repair and Servicing
70	S	Merlin Glass	225078 64222.	Pavlova Mill, Barn Street, Liskeard, Cornwall, PL14 4BL	Glass	Industrial Products
89	N	Cornish Times	225140 64576.	The Tindle Suite Webbs House, The Parade, Liskeard, Cornwall, PL14 6AH	Published Goods	Industrial Products
94	E	Electricity Sub Station	225252 64438	Cornwall, PL14	Electrical Features	Infrastructure and Facilities

Table 2.8: Potentially Current Contaminative Land Uses Within 200m

Distance (m)	Direction	Company	Grid Reference	Address	Activity	Category
101	NE	Stove Shop	225181 64569.	7, Pike Street, Liskeard, Cornwall, PL14 3JE	Fireplaces and Mantelpieces	Consumer Products
105	SW	Electricity Sub Station	224745 64217	Cornwall, PL14	Electrical Features	Infrastructure and Facilities
108	N	Electricity Sub Station	225156 64591	Cornwall, PL14	Electrical Features	Infrastructure and Facilities
109	W	Electricity Sub Station	224681 64319	Cornwall, PL14	Electrical Features	Infrastructure and Facilities
114	N	Martin Perry Associates	225083 64613.	B F M House, The Parade, Liskeard, Cornwall, PL14	Structural Engineers	Engineering Services
132	NE	H E Goldsworthy	225222 64576.	1, Market Street, Liskeard, Cornwall, PL14 3JH	General Construction Supplies	Industrial Products
142	S	Station Body Repairs	225074 64149.	Unit 2 Liskeard Enterprise Centre, Station Road, Liskeard, Cornwall, PL14 4BT	Vehicle Repair, Testing and Servicing	Repair and Servicing
147	N	Precision Design and Print	225114 64640.	Flat 2 2, The Parade, Liskeard, Cornwall, PL14 6AH	Published Goods	Industrial Products
161	S	Caradon Business Centre	225077 64131	Cornwall, PL14	Business Parks and Industrial Estates	Industrial Features
170	NE	Annies	225275 64574.	3, Lower Lux Street, Liskeard, Cornwall, PL14 3JL	Clearance and Salvage Dealers	Recycling Services
190	N	Powerquip Ltd	225169 64673.	Greenbank Road, Liskeard, Cornwall, PL14 3DP	Construction and Tool Hire	Hire Services
194	NE	Warehouse	225056 64714	Cornwall, PL14	Container and Storage	Transport, Storage and Delivery

Recorded Pollution Incidents

1. The Groundsure report records five pollution incidents, details of which are provided in Table 2.9.
2. All recorded pollution incidents are considered to be of sufficiently low magnitude, age and distance from the study area to have no impact on the site. Full comprehensive details of these pollution incidents are given in the Groundsure Enviroinsight report.

Table 2.9: Recorded Pollution Incidents				
Distance	Grid Ref	Description	Date	Impact
182	225258.0 64177.0	Storm Sewage	27/11/2003	Water Impact: Category 3 (Minor) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
269	225287.0 64701.0	Smoke	23/07/2002	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
441	SW	224576.0 63926.0	10/07/2003	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)
457	SW	224391.0 64103.0	26/07/2003	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
467	S	224676.0 63850.0	07/07/2003	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)

Landfill Sites

1. The Groundsure report does not record any active Environment Agency (EA) Landfill within 1000m of the site. Four historical landfills are recorded within 1500m of the study area; the risk posed by these sites is considered to be negligible.

Waste Transfer Sites

1. There are no sites determined as Waste Transfer Sites within 500m of the study site.

Part 2A Sites

1. There are no sites determined as Contaminated Land under Part 2A (EPA 1990) within 500m of the study area.

Petrol and Fuel Sites and Underground High Pressure Oil and Gas Pipelines

1. Records from Groundsure show that there is two obsolete fuel sites of unknown date are recorded within 500m of the site, the closest being on site and the other being 28m north west of the study area.
2. No National Grid high voltage underground electricity transmission cables or high pressure gas transmission pipelines are recorded within 500m of the study area.

Environmental Sensitive Areas

1. Designated Environmentally Sensitive Sites within 2000m of the site are summarised in Table 2.10 below.

Table 2.10: Designated Environmentally Sensitive Sites			
Distance (m) and Direction	Designation	Name	Source
1362 SW	Ancient Woodland	Unknown	Ancient and Semi-Natural Woodland
1446 SW	Ancient Woodland	Unknown	Ancient Replanted Woodland
1472 NW	Ancient Woodland	High Wood	Ancient Replanted Woodland
1562 SW	Ancient Woodland	Jaspers/Moorwell Woods	Ancient Replanted Woodland
1799 SW	Ancient Woodland	Slip/Highland Woods	Ancient Replanted Woodland
1838 S	Ancient Woodland	Unknown	Ancient and Semi-Natural Woodland
1884 S	Ancient Woodland	Unknown	Ancient Replanted Woodland
1890 S	Ancient Woodland	Housey Wood	Ancient Replanted Woodland
1952 NW	Ancient Woodland	Unknown	Ancient and Semi-Natural Woodland
1956 SE	Ancient Woodland	Unknown	Ancient Replanted Woodland
1478 W	World Heritage Site	Cornwall and West Devon Mining Landscape	Historic England

2. The Groundsure report does not record the following designations within 2000m of the site:

- Site of Special Scientific Interest (SSSI)
- National Nature Reserve (NNR)
- Special Areas of Conservation (SAC)
- Special Protection Areas (SPA)
- Ramsar Sites (wetlands of natural importance)
- Local Nature Reserves (LNR)
- Environmentally Sensitive Areas
- Areas of Outstanding Natural Beauty (AONB)
- National Parks
- Nitrate Sensitive Areas
- Nitrate Vulnerable Zones
- Green Belt Land

Japanese Knotweed/Invasive Species

1. Japanese Knotweed is not recorded as 'reported' within the study area by Cornwall Council. Other 'reported' areas of Japanese Knotweed are shown adjacent the northern boundary of the study area opposite Hurlers Court at NGR 225074: 064463. No further details are available. None was recorded during the site walkover, which was conducted in early September. The presence of invasive plants will be assessed in the ecological survey of the study area conducted by CEC Ltd.

Groundwater Conditions

1. The depth of groundwater is not known, but it is considered likely that it will be present at shallower depths at the western and eastern areas of the site at lower topographic elevations. No historical borehole records are available for the study area.

Other Designations

1. There are no Tree Preservation Orders within the study area.
2. There are no historic listed buildings within the study area. However, around the northern and eastern site boundary is eleven grade II historic listed buildings with five by the northern boundary and six by the eastern boundary.
3. The Liskeard Historical Settlement area covers the eastern section of the study area, and the site is located within the Liskeard Conservation Area.

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Unexploded Ordnance (UXO)

1. A site specific UXO report (appendix F) records the risks from enemy munitions as Negligible, but recommended further research into the presence of allied munitions.

3 Site Reconnaissance

1. A site walkover was undertaken on Wednesday 4th September 2019.
2. All areas outside of occupied premises were accessed and visually inspected.
3. For ease of reference, the site walkover information has been separated for the two distinct site areas.

3.1 Liskeritt Community Centre

1. Liskeritt Community Centre at NGR 224890, 064402 consists of a Victorian stone school building constructed from locally derived, quarried slate stone and a number of separate outbuildings representing later additions to the school. These are situated on a 0.51 hectare (ha) site. Measured from east to west the building is approximately 45m in length and is surrounded by a continuous slate stone boundary wall that varies between 1.5-2.5m in height.
2. Vehicular access to the site can be gained from NGR 224914, 064410.
3. The gradient of the site falls away moderately steeply to the south-east with benched retaining/bund walls and concrete steps used to accommodate the change in elevation.
4. East of the school building at NGR 224852,064392 is a children's play area. A large, mature oak tree approximately one metre in diameter was observed in this area at approximate NGR 224846,064382. The tree is situated immediately above a benched retaining wall that accommodates the south-easterly fall in elevation characteristic of the site. The designer should take into account the potential presence of a mature root network which may have a destabilising effect on the current retaining wall. Signs of ongoing instability in this area were not observed.
5. Suspected asbestos roofing was observed at a number of locations across this area these included the school outbuilding at NGR 224880, 064378 and the water tower at NGR 224894, 064366.

6. A 6-10ft capacity steel shipping container of unknown contents was observed at approximate NGR 224906, 064385. An empty water tank was reportedly present in the water tower at NGR 224894,064366 whilst a gas fuelled boiler was reportedly located in the main school building at NGR 224890, 064402, neither tank was observed during the site walkover.
7. The southern boundary of the site was characterised by the presence of a flat, asphalt surface covering an area approximately 15m x 20m and previously used as an additional children's play area. The presence of asphalt products should be taken into account by the designer and may warrant geochemical testing to explore disposal options and the level hazard exposed to site workers. The Liskeard Children's Centre at NGR 224901:064350 is located further to the east.
8. A retaining wall separating the southern boundary of the Liskeritt Community Centre premises and housing within a local authority housing estate was observed at NGR 224916, 064341. Permission was not obtained for inspection of the retaining wall therefore a detailed inspection was not completed during the walkover. The implications of additional loading of the current retaining wall should be taken into account by the designer.
9. Services observed during the walkover included water main covers, gas mains covers, overhead telegraph lines as well as electricity mains.

3.2 Cattle Market

1. The cattle market consists of a 1.36 ha site under Cornwall Council Ownership that is located at the crest of the hill immediately east of the Liskerritt Community Centre. The site is currently used as a car park operated by Cornwall Council and encompasses a number of active business premises and disused buildings. The majority of the site however, consists of disused cattle and sheep market infrastructure.
2. The main vehicular access point to the site is by means of Fairpark Road at NGR 225015, 064432 which connects the Cattle Market with Dean Street and "Market Approach", a single lane carriageway at NGR 225083, 064406 that due to its narrowness is deemed insufficiently wide for large plant access.

3. Pedestrian access points comprise a set of concrete steps off Varley Lane (NGR 224923, 064408) and a pedestrian access path running west-east between the Cattle Market and B3245 at NGR 225084, 064400.
4. Between NGR 224922, 064417 and NGR 224924, 064377 the western site boundary is demarcated by a low north-south trending retaining wall that varies between 0.25m and 0.85m in height which was observed to be in good condition. From NGR 224924, 064377 and 224930, 064350 the boundary retaining wall increases in height to a maximum height of 2.20m. This section of wall was observed to be leaning off-vertical (approximately 5 degrees), locally heavily vegetated with ivy and with local cracking of rendering. A detailed inspection is recommended.
5. Between NGR 224925, 064424 and 224950, 064485 Varley Lane narrows into a single lane. Residential properties are located immediately to the west whilst a semi-continuous stone boundary wall was observed to the east. The proximity of residential properties may have implications with regards to potential working hours and noise restrictions and should be considered by the designer. Localised cracking of wall rendering was also observed at this location.
6. An electricity substation was observed at NGR 224925, 064420.
7. The surface of the cattle market site is gently undulating and consists of asphalt with frequent service reinstatement surface scarring, occasional scouring and localised depressions. The presence of asphalt products should be taken into account by the designer and may warrant geochemical testing to explore disposal options should the material contain tar, and the level hazard exposed to site workers.
8. Utilities observed during the walkover survey included overhead telegraph lines, utility covers corresponding with mains water, gas and electricity. The exact location of utilities should be confirmed by a full utility survey.
9. Three shallow depressions approximately measuring 0.50 x 0.50m were observed in the asphalt surface in the western portion of the car park (approximate NGR 224941, 064397) and may represent localised weaker ground conditions which warrant further investigation.
10. The sheep yard situated on the western boundary of the site at NGR 224943,

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064359 consists of a shed approximately 10m x 25m and 5 to 6m high with suspected asbestos roof and concrete slab floor. To the east, a historical vehicle and livestock container washing facility was observed comprising a raised, sloping concrete slab area with an observed thickness of approximately 0.1-0.25m in addition to rusted steel water hose columns, approximately 10m in height. The founding depth of the concrete slab is unknown and should be investigated further.

11. Continuing east the cattle yard complex at NGR 225026, 064363 covers an area approximately 70m x 40m and currently consists of five shed structures that are considered unstable. Shed structures are open walled, steel framed with suspected roof asbestos and have concrete slab floors. Steel shed frames were observed to be largely corroded, considerably reducing structural strength, this should be taken into account during the dismantling process. Given the presence of historical concrete and asbestos, appropriate disposal measures should also be taken into account by the designer.
12. Between NGR 225075, 064406 and NGR 225016, 064412 small, disused retail units were observed of unknown historical use.
13. The St John's Ambulance station was observed at NGR 225004, 064411 at the exit of the cattle market site on Fairpark Road. The impact of site works and the access requirements of the ambulance station should be taken into consideration by the designer.
14. A disused workshop was observed at NGR 225032, 064452 running from Dean Street to the Cattle Market. Suspected asbestos roofing as well as warning signs advising the possible presence of oxygen cylinders were observed.
15. Along the north-west boundary of the site, between NGR 224999, 064440 and NGR 224954, 064451, the ground level slopes gently northwards. At this location a number of business premises and residential properties back on to the car park and are connected by means of steep paths. Obvious drainage measures were not observed in this area with high levels of surface run-off during seasonally high levels of precipitation likely to contribute towards localised flooding events. Additional drainage measures should be considered by the designer at this location.

4 Ground Conditions

4.1 Review of Ground Conditions

1. The published geological maps record the study site to be underlain by the geological units summarised in Table 4.1.

Table 4.1: Published Geological Units for the Study Area		
Description	Rock Type	Location
Bedrock		
Saltash Formation	Slate and Siltstone	Formed during the Carboniferous and Devonian periods. Underlies the entirety of the site.
Unnamed Igneous Intrusion	Microgabbro	Underlies the northern section of the site.
Superficial Deposits		
None Identified	None Identified	None Identified

4.2 Identified Soils and Rocks

4.2.1 Description

1. The Saltash Formation is described in the BGS Lexicon as:
 - Dark grey and grey silty mudstone with variable but very subordinate amounts of laminae and thin beds of siltstone and sandstone.
2. The Unnamed Igneous Intrusion is recorded by the BGS as Microgabbro.
3. No other soil or rock descriptions have been located during this desk study, however Made Ground is almost certainly present associated with changes to site levels and historical developments.

4.4 Contaminated Land and Ground-Gas Assessment

1. The former potentially historical land uses determined by the reviewed data comprise:

Table 4.2: Potentially Historical Contaminating Land Uses	
On-Site	Within 100m of Site
<ul style="list-style-type: none"> • Unspecified Tanks • Cattle Market • Petrol Station • Garage • Radon • Metalliferous Mining 	<ul style="list-style-type: none"> • Unspecified Works • Tannery • Cemetery • Gas Works • Garage

2. Current potentially contamination land uses are summarised in Table 4.3:

Table 4.3: Potentially Current Contaminating Land Uses	
On-Site	Within 100m of Site
<ul style="list-style-type: none"> • Cattle Market • Electricity Sub-Station • Japanese Knotweed (reported) • Radon 	

3. A site specific mining study has been commissioned and is presented in Appendix E. The report indicates the risk from historic metalliferous mining to be Low, and recommends that no further action is required.
4. An intrusive ground investigation will be required, design to BS10175⁽⁶⁾, to investigate potential sources of contamination, to determine risks to human health and the presence of any hazardous materials and to assess the presence and composition of anticipated Made Ground deposits.
5. It is likely that naturally elevated concentrations of heavy metals are present with natural soils underlying the site, and this should be assessed during ground investigations.

5 Preliminary Engineering Assessment

1. The engineering assessment is based on the anticipated geology recorded to underlie the site. Confirmation of ground conditions and engineering properties will require intrusive investigation and testing. Estimations are based on engineering judgement and experience of previous analysis of similar soils/rock.
2. Development proposals are not currently known
3. Several retaining walls of varying height are located within the study area and assessment of these structures should be made by a structural engineer
4. The presence of contaminated soils and soils aggressive to buried concrete and steel should be assessed as part of a ground investigation.
5. Suggested geotechnical parameters for site soils and rock are provided in Table 5.1 below.

Table 5.1: Summary of Predicted Engineering Parameters of Expected Strata to be Encountered.

Material	Undrained shear strength, c_u k (kPa)	Effective angle of shearing resistance, $\phi' k$ (degrees)	Effective cohesion $c' k$ (kPa)	Bulk Density γ_k (kN/m ³)	Anticipated Earthwork Classification *	CBR (%)	Reasoning
Saltash Formation Residual Soils	20	29-33	0-5	17-20	1A/2C	>3	Empirical knowledge/ Engineering Judgement
Weathered Saltash Formation	N/A	30 - 35	0	20-24	1A	>5	Empirical knowledge/ Engineering Judgement
Unnamed Igneous Intrusion	N/A	30 - 35	0	22-24	1A	>5	Empirical knowledge/ Engineering Judgement

*In accordance with MCHW Series 600⁽⁷⁾.

6 Comparison of Project Options and Risks

6.1 Geotechnical Risk Register

1. The geotechnical risks envisaged for all options are detailed below. The scoring system used in the register is as follows.
2. This list is preliminary given the given the final route/design is not yet finalised. The register should be updated when more detail is provided.

Table 6.1: Risk Matrix Terminology - Impact

Impact			Cost	Time	Reputation	H&S	Environment
1	Very low	Negligible	Negligible	Negligible effect on programme	Negligible	Negligible	Negligible
2	Low	Significant	>1% Budget	>5% effect on programme	Minor effect on local company image/business relationship mildly affected	Minor injury	Minor environmental incident
3	Medium	Serious	>10% Budget	>12% effect on programme	Local media exposure/business relationship affected	Major injury	Environmental incident requiring management input
4	High	Threat to future work and client relations	>20% Budget	>25% effect on programme	Nationwide media exposure/business relationship greatly affected	Fatality	Environmental incident leading to prosecution or protester action
5	Very high	Threat to business survival and credibility	>50% Budget	>50% effect on programme	Permanent nationwide affect on company image/significant impact on business relationship	Multiple fatalities	Major environmental incident with irreversible effects and threat to public health or protected natural resources

Table 6.2: Risk Matrix Key									
Impact							Key		
		1	2	3	4	5		Severe	S
Likelihood	1	N	N	N	A	A		High	H
	2	N	A	A	H	H		Acceptable	A
	3	A	H	H	S	S		Negligible	N
	4	H	H	S	S	S			
	5	H	H	S	S	S			

Table 6.3: Designers Actions		
Risk Level	Description	Action by Designer
N	Negligible	None
A	Acceptable	Check that risks cannot be further reduced by simple design changes
H	High	Amend design to reduce risk, or seek alternative option. Only accept option if justifiable on other grounds
S	Severe	

Table 6.4: Geotechnical Risk Register

Ref	Hazard	Consequences	Impact	Likelihood	Current Risk	Risk Type	Potential Risk Control Measures/Actions	Impact	Likelihood	Residual Risk (if Risk Control Measures are employed)	Owner	Action
1	Unknown archaeological finds made during works causing delays to the programme.	Increased costs due to works delays.	4	2	8	C, T, R	<ul style="list-style-type: none"> Contact with the environment and archaeology sections from Cornwall Council as part of the design process 	3	2	6	Designer	Designer and Contractor
2	Unidentified utility services causing delays and/or obstructions during the ground investigation works.	Injury/ death to personnel. Increased costs due to works delays.	4	3	12	C, T R, H&S	<ul style="list-style-type: none"> Early contact with utility providers and undertake a service scan of the site and immediate vicinity in order to provide all information in the area 	5	1	5	Designer	Designer and Contractor
3	Damage to existing services during the ground investigation works.	Reparation costs and delay costs.	4	3	12	C, T R, H&S	<ul style="list-style-type: none"> Scan, hand pitting exploratory holes 	5	1	5	Designer/Contractor	Contractor
4	Contaminated materials encountered during ground investigation and future construction works causing delays and associated disposal or treatment costs.	Delays and associated disposal or treatment costs	3	3	9	C, T, R, E, H&S	<ul style="list-style-type: none"> Ensure suitable ground investigation and contamination testing of samples in order to determine the level of contamination, if any, within the ground. Appropriate remedial measures to be identified. 	4	1	4	Designer/Contractor	Designer and Contractor
5	Unexpected ground conditions encountered during ground investigation and future works.	Increased costs due to works delays.	4	2	8	C, T R, H&S	<ul style="list-style-type: none"> Unexpected ground conditions is possible and if encountered must prove by investigation and reported immediately to client/designer. 	3	1	3	Designer/Contractor	Designer and Contractor
6	Extent of historic industries (e.g. mining and quarries) in relation to the route corridor creating underground instability.	Ground instability.	2	2	4	C, T R, H&S	<ul style="list-style-type: none"> Review mining desk study and if appropriate conduct intrusive/geophysical investigations to understand extent. Watching brief by mining professional in areas of highest risk 	2	1	2	Designer	Designer and Contractor

Table 6.4: Geotechnical Risk Register

Ref	Hazard	Consequences	Impact	Likelihood	Current Risk	Risk Type	Potential Risk Control Measures/Actions	Impact	Likelihood	Residual Risk (if Risk Control Measures are employed)	Owner	Action
7	Unrecorded buried obstructions/voids.	Collapse of ground, during and following contract phase.	4	2	8	C, T R, H&S	<ul style="list-style-type: none"> Unexpected ground conditions to be reported immediately to client/designer. Watching brief by mining professional in areas of highest risk 	3	2	6	Designer	Designer & Contractor
8	Excessive total or differential settlement of the highway/ earthworks.	Delays and associated disposal or treatment costs	3	2	6	C, T, R, H&S	<ul style="list-style-type: none"> Suitable ground investigation and geotechnical testing of samples to determine the design of the road and earthworks. Appropriate geotechnical foundation design. 	3	1	3	Designer	Designer and Contractor
9	Shallow groundwater destabilising or flooding shallow excavations.	Increased drainage requirements Groundwater control measures Support of temporary slopes/excavations	4	1	4	C, T, R, H&S	<ul style="list-style-type: none"> Shallow groundwater not anticipated Suitable ground investigation including standpipes to determine the level and fluctuations of groundwater. 	2	1	2	Designer	Designer
10	Aggressive soil chemistry requiring acid resistant concrete specification.	Damage to structures, reduced design life. Difficulty in buildability.	4	1	4	C, T, R, H&S, E	<ul style="list-style-type: none"> Design sulphate and Aggressive Chemical Environment to Concrete to be established by ground investigation. 	2	1	2	Designer	Designer
11	Instability of cut slopes.	Damage to structures, reduced design life.	3	1	3	C, T, R, H&S, E	<ul style="list-style-type: none"> No cut slopes indicated on scheme proposals 	1	1	1	Designer	Designer
12	Presence of organic/compressible material.	Pavement deformation Increased excavation/disposal costs	4	2	8	C, T R, E	<ul style="list-style-type: none"> Ground investigation to determine the presence of organic/compressible material, frost susceptibility and swelling clays 	2	2	4	Designer	Designer & Contractor
13	Contamination of soils from historical site uses.	Increased excavation/disposal costs	3	3	9	C, T, R, H&S, E	<ul style="list-style-type: none"> Targeted and background ground investigation to determine the presence of 	3	2	6	Designer	Designer & Contractor

Table 6.4: Geotechnical Risk Register

Ref	Hazard	Consequences	Impact	Likelihood	Current Risk	Risk Type	Potential Risk Control Measures/Actions	Impact	Likelihood	Residual Risk (if Risk Control Measures are employed)	Owner	Action
							any contaminated soils.					
14	Hard rock encountered above founding level – hard to excavate/rip (design proposals/levels unknown)	Increased construction costs	3	3	9	C, T, R	<ul style="list-style-type: none"> Targeted and background ground investigation to determine ground profile/excavatability 	2	2	4	Designer	Designer & Contractor
15	Unfavourable structural geology causing rock/slope failure	Slope instability	4	1	4	C, T, R, H&S	<ul style="list-style-type: none"> No rock slopes existing or anticipated 	1	1	1	Designer	Designer & Contractor
16	Presence of unforeseen soil/rock units requiring slacker cut slope angles	Slope instability. Increased construction costs. Increased land take	4	2	8	C, T R, H&S	<ul style="list-style-type: none"> Site specific GI to confirm geotechnical properties of all strata. 	2	1	2	Designer	Designer & Contractor
17	Presence of unsuitable site won material for earthworks construction	Increased construction costs.	3	3	9	C, T, R, E	<ul style="list-style-type: none"> Site specific GI to confirm suitability of materials for reuse or disposal for unacceptable materials 	3	2	6	Designer	Designer & Contractor
18	Inadequate CBR of natural/fill materials at formation level	Differential settlement/rutting	3	3	9	C, T, R	<ul style="list-style-type: none"> Site specific GI to confirm CBR and advise remedial measures if required 	2	3	6	Designer	Designer & Contractor
19	Unrecorded mine features (shafts/adits)	Delays and associated disposal or treatment costs	4	4	16	C, T R, H&S, E	<ul style="list-style-type: none"> Site specific mining desk study recorded risk from mining to be Low with no further action recommended 	3	1	3	Designer	Designer & Contractor
20	Low permeability soils – SUDS design inadequate	Increased construction costs.	4	2	8	C, T R	<ul style="list-style-type: none"> Soakaway testing as part of investigation 	4	1	4	Designer	Designer & Contractor
21	Runoff from impermeable areas	Flooding of site./adjacent sites	4	2	8	C, T, R, E	<ul style="list-style-type: none"> Appropriate drainage design when construction proposals are known. 	3	2	6	Designer	Designer & Contractor
22	Unexploded ordnance	Risk to construction workers	4	4	16	H&S	<ul style="list-style-type: none"> Site specific UXO report concluded low risk 	1	4	4	Designer	Designer & Contractor

7 Drawings and Photographs

1. The following plans are included in the Groundsure Reports presented in Appendix C:
 - Geological Plans
 - Hydrological and Hydrogeological Plans
 - Historical Plans
2. The following information is provided in the report appendices:
 - Site Location Plan (Appendix A)
 - Site Walkover Photographs (Appendix B)

8 References

1. Cornwall Council Intranet
2. Groundsure GeoInsight Report GS-6275621
3. Groundsure Enviro-Insight Report GS-6275620
4. Groundsure Data Viewer ([http:// http://groundsure.io/](http://http://groundsure.io/))
5. British Geological Survey maps and historical borehole logs (<http://mapapps.bgs.ac.uk/geologyofbritain/home.html>)
6. BS10175 Investigation of Contaminated Sites
7. Manual Contract Documents for Highways Works. Series 600. 2016

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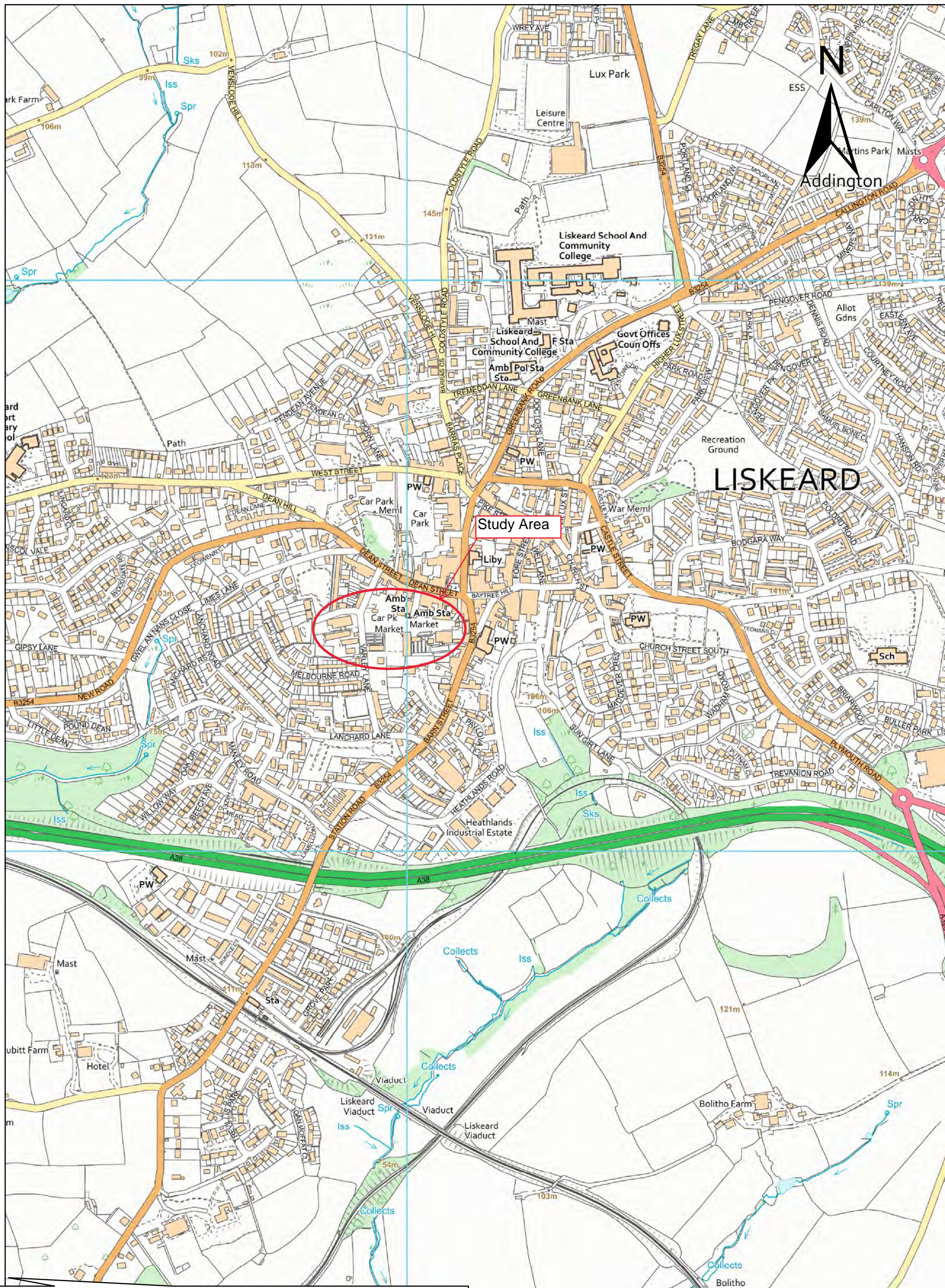
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Appendix A:

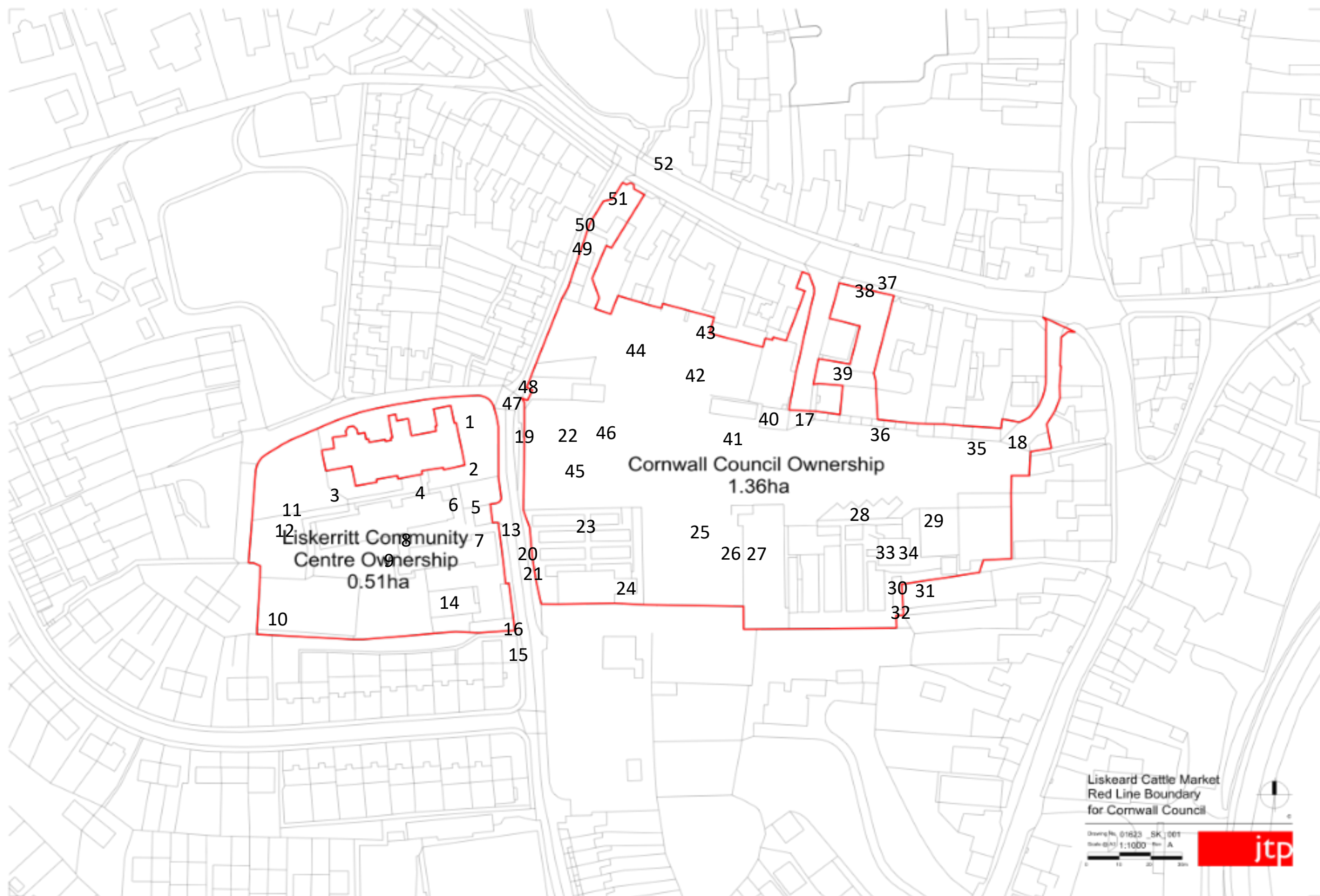
- Site Location Plan

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Drawing: Site Location Plan
Scheme: Liskeard Cattle Market
Scheme Ref: 64570
Scale 1:6,000



- Appendix B:
 - Site Walkover Photographs



Liskeard Cattle Market
Red Line Boundary
for Cornwall Council

Drawing No. 01623_SK_001
Scale (B/A) 1:1000 Rev A






Photograph 17: Fairpark Road, main access route into the Cattle Market (NGR 225015, 064408).



Photograph 18: Market Approach, secondary access route (NGR 225083, 064406).


 <p>CORMAC SOLUTIONS</p>	<p>Engineering Services Laboratory, Radnor Road, Scorrier, Redruth TR16 5EH</p>	<p>Project Title: Liskeard Cattle Market</p> <p>Site Walkover Photographs</p>	<p>Project No.:</p> <p>64570</p>
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Photograph 19: Pedestrian access from Varley Lane (NGR 224923, 064408).



Photograph 20: Western boundary wall between NGR 224924, 064377 and NGR 224930, 064350.


 <p>CORMAC SOLUTIONS</p>	<p>Engineering Services Laboratory, Radnor Road, Scorrier, Redruth TR16 5EH</p>	<p>Project Title: Liskeard Cattle Market</p> <p>Site Walkover Photographs</p>	<p>Project No.:</p> <p>64570</p>
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Photograph 21: Cracking of rendering observed in western boundary retaining wall.



Photograph 22: Localised shallow depressions, western car park surface.

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Photograph 23: Sheep yard (NGR 224943, 064359), suspected asbestos roof.



Photograph 24: Sheep yard (NGR 224943, 064359), note concrete floor and steel frame.



Photograph 25: Vehicle and stock container washing facility, note raised concrete platform, underground services and oxidised metal wash posts.




Photograph 26: Stock container washing facility, raised concrete platform.



Photograph 27: Sign at washing facility.



Photograph 28: Cattle yard, NGR 225026, 064363.

 <p>CORMAC SOLUTIONS</p>	<p>Engineering Services Laboratory, Radnor Road, Scorrier, Redruth TR16 5EH</p>	<p>Project Title: Liskeard Cattle Market</p> <p>Site Walkover Photographs</p>	<p>Project No.:</p> <p>64570</p>
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Photograph 29: Cattle yard barn, note suspected asbestos roof (NGR 225055, 064377).




Photograph 30: Cattle pens, Cattle yard NGR 225029, 064359.



Photograph 31: Car parking area to the rear of cattle yard, NGR 225053, 064354.



Photograph 32: Overhead services, NGR 225041, 064350.


	<p>Engineering Services Laboratory, Radnor Road, Scorrier, Redruth TR16 5EH</p>	<p>Project Title: Liskeard Cattle Market</p> <p>Site Walkover Photographs</p>	<p>Project No.:</p> <p>64570</p>
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Photograph 33: Outbuilding, cattle yard. Note corroded steel supporting beam and suspected asbestos roof.



Photograph 34: Cattle yard. Note corroded steel frame. NGR 225040, 064368.

 <p>CORMAC SOLUTIONS</p>	<p>Engineering Services Laboratory, Radnor Road, Scorrier, Redruth TR16 5EH</p>	<p>Project Title: Liskeard Cattle Market</p> <p>Site Walkover Photographs</p>	<p>Project No.:</p> <p>64570</p>
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Photograph 35: Retail units NGR 225075, 064406 to NGR 225016, 064412.




Photograph 36: Retail units NGR 225075, 064406 to NGR 225016, 064412.



Photograph 37: Disused workshop on Dean Street, NGR 225032, 064411.



Photograph 38: Disused workshop on Dean Street, oxygen cylinder warning sign.


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Photograph 39: Suspected asbestos roof at the rear of disused workshop at NGR 225032, 064432.



Photograph 40: St Johns Ambulance Station at the entrance to the cattle market.


 <p>CORMAC SOLUTIONS</p>	<p>Engineering Services Laboratory, Radnor Road, Scorrier, Redruth TR16 5EH</p>	<p>Project Title: Liskeard Cattle Market</p> <p>Site Walkover Photographs</p>	<p>Project No.:</p> <p>64570</p>
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Photograph 41: Western part of the current car park.



Photograph 42: Suspected asbestos roof at NGR 225003, 064430.

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Photograph 43: North-west car park boundary, note small drain and sloping concrete ramp giving rise to potential localised flooding events.




Photograph 44: North-west car park, note proximity of residential properties.



Photograph 45: Reinstatement scar illustrating abundance of buried services.

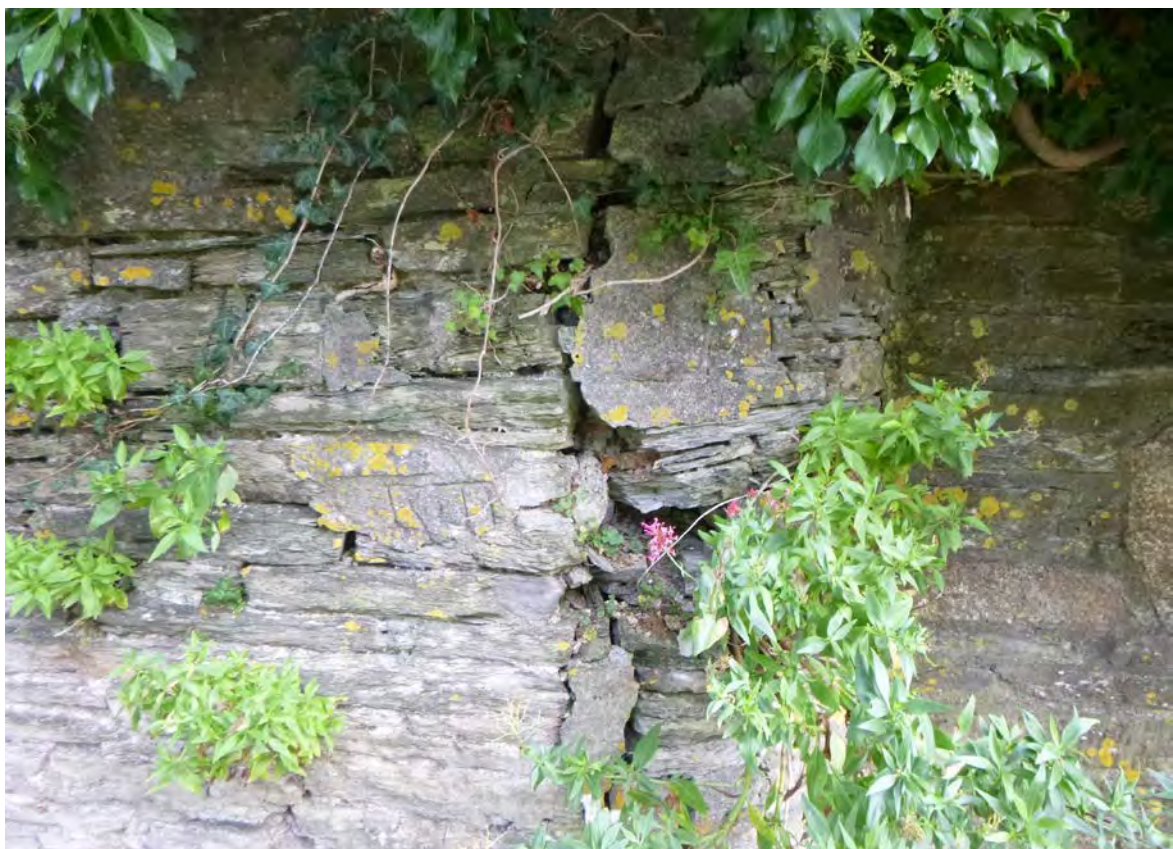


Photograph 46: Car park looking east.


	<p>Engineering Services Laboratory, Radnor Road, Scorrier, Redruth TR16 5EH</p>	<p>Project Title: Liskeard Cattle Market</p> <p>Site Walkover Photographs</p>	<p>Project No.:</p> <p>64570</p>
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Photograph 47: Electricity substation NGR 224925, 064420.



Photograph 48: Wall render cracking along Varley lane approximate NGR 224925, 064426.


 <p>CORMAC SOLUTIONS</p>	<p>Engineering Services Laboratory, Radnor Road, Scorrier, Redruth TR16 5EH</p>	<p>Project Title: Liskeard Cattle Market</p> <p>Site Walkover Photographs</p>	<p>Project No.:</p> <p>64570</p>
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Photograph 49: Unstable boundary wall along Varley Lane approximate NGR 224943, 064470.



Photograph 50: Looking north to Dean Street from Varley Lane, note reinstatement road scarring.


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Photograph 51: Existing damage to wall of property at NGR 224955, 064491.



Photograph 52: Looking south along Varley Lane from Dean Street.


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Photograph 1: Liskerritt Community Centre (NGR 224914, 064402).



Photograph 2: Rear entry, Liskerritt Community Centre (NGR 224914, 064402).


 <p>CORMAC SOLUTIONS</p>	<p>Engineering Services Laboratory, Radnor Road, Scorrier, Redruth TR16 5EH</p>	<p>Project Title: Liskeard Cattle Market</p> <p>Site Walkover Photographs: Liskerritt Building</p>	<p>Project No.: 64570</p>
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Photograph 3: Rear play area, Liskerritt Community Centre.



Photograph 4: Outbuilding, Liskerritt Community Centre. NGR 224893, 064384.


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Photograph 5: Steel container of unknown contents, NGR 224904, 064388.



Photograph 6: Ramp accomodating southwards decrease in elevation, note mains.


 <p>CORMAC SOLUTIONS</p>	<p>Engineering Services Laboratory, Radnor Road, Scorrier, Redruth TR16 5EH</p>	<p>Project Title: Liskeard Cattle Market</p> <p>Site Walkover Photographs: Liskerritt Building</p>	<p>Project No.: 64570</p>
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Photograph 7: Outbuilding (NGR 224910, 064370), note suspected asbestos roof.



Photograph 8: Looking south-east, note ramp and mature trees to the east.


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Photograph 9: Water tower (NGR 224894, 064366), suspected asbestos roof and anecdotal evidence of gas powered boiler inside.



Photograph 10: Looking north-east. Note terracing, ramp and level asphalt surface.


 <p>CORMAC SOLUTIONS</p>	<p>Engineering Services Laboratory, Radnor Road, Scorrier, Redruth TR16 5EH</p>	<p>Project Title: Liskeard Cattle Market</p> <p>Site Walkover Photographs: Liskerritt Building</p>	<p>Project No.:</p> <p>64570</p>
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Photograph 11: Benched terrace and mature oak tree, NGR 224846, 064382.



Photograph 12: Looking south from NGR 224854, 064378.


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Photograph 13: Historical granite wall, note outbuilding with suspected asbestos roofing (NGR 224912, 064368).



Photograph 14: Liskeard Childrens Centre (NGR 224903, 064352).


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Photograph 15: Southern stone retaining wall bordering local authority housing (NGR 224918, 064341).



Photograph 16: Southern stone retaining wall (NGR 224918, 064341).

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Appendix C:

- Groundsure GeoInsight Report
- Groundsure EnviroInsight Report
- Historical Plans



Cormac Solutions Ltd

CORMAC Head Office, Higher Tenant Road,
Wadebridge, PL27 6TW

Groundsure
Reference:

GS-6275620

Your Reference:

Cattle_Market_Liskeard_

Report Date

29 Aug 2019

Report Delivery
Method:

Email - pdf

Enviro Insight

Address: CATTLE MARKET ENTRY, FAIRPARK ROAD, LISKEARD, PL14 4BA

Dear Sir/ Madam,

Thank you for placing your order with Groundsure. Please find enclosed the **Groundsure Enviro Insight** as requested.

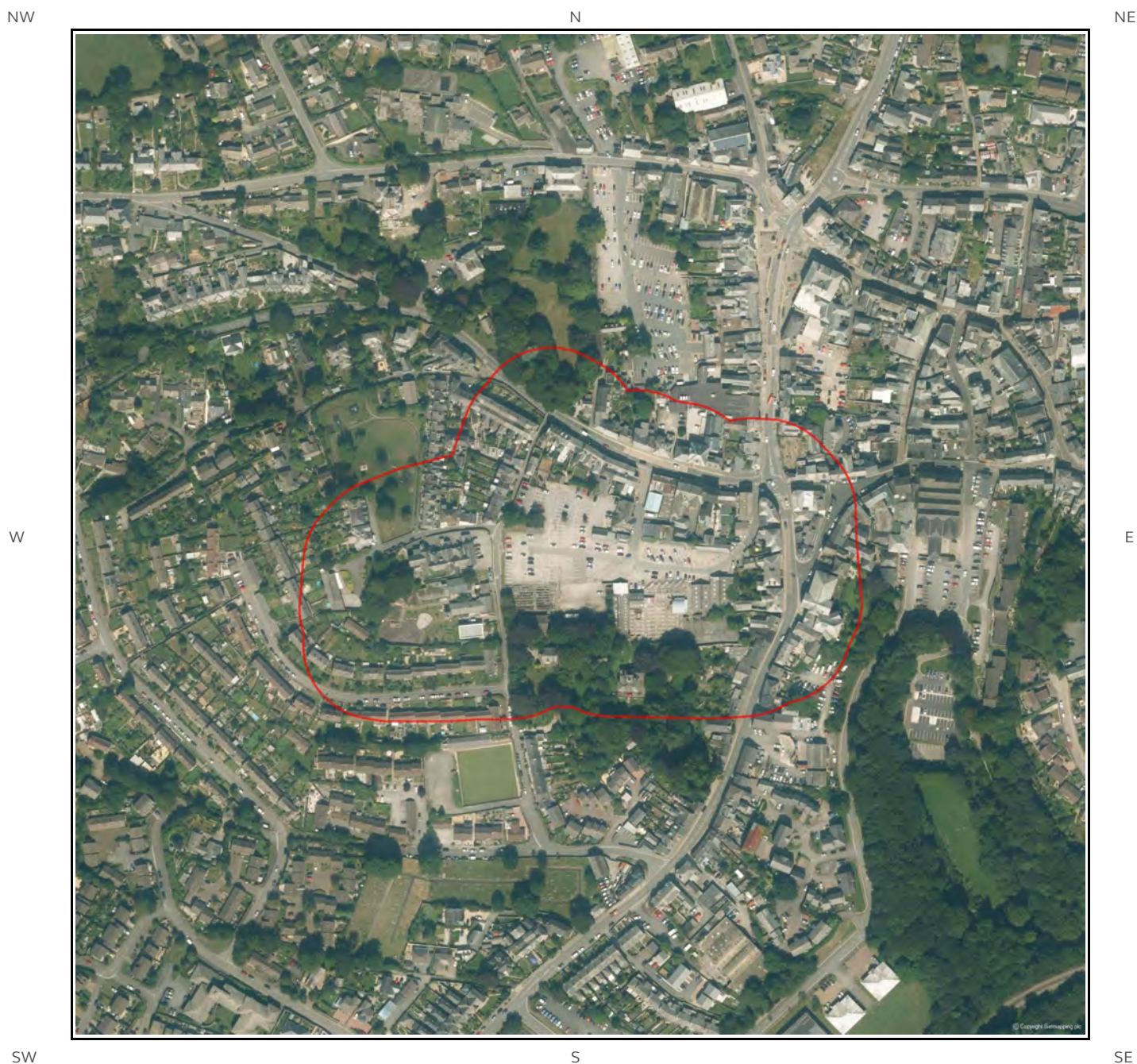
If you need any further assistance, please do not hesitate to contact our helpline on 08444 159000 quoting the above Groundsure reference number.

Yours faithfully,

Managing Director
Groundsure Limited

Enc.
Groundsure Enviroinsight

Address: CATTLE MARKET ENTRY, FAIRPARK ROAD, LISKEARD, PL14 4BA
Date: 29 Aug 2019
Reference: GS-6275620
Client: Cormac Solutions Ltd



Aerial Photograph Capture date: 23-Aug-2016
Grid Reference: 225002,064391
Site Size: 7.2671ha

Report Reference: GS-6275620
Client Reference: Cattle_Market_Liskeard_

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Overview of Findings

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

Section 1: Historical Industrial Sites	On-site	0-50	51-250	251-500
1.1 Potentially Contaminative Uses identified from 1:10,000 scale mapping	5	3	24	15
1.2 Additional Information – Historical Tank Database	6	2	31	35
1.3 Additional Information – Historical Energy Features Database	5	1	59	67
1.4 Additional Information – Historical Petrol and Fuel Site Database	1	0	0	0
1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database	22	12	49	15
1.6 Historical military sites	0	0	0	0
1.7 Potentially Infilled Land	0	4	7	10
Section 2: Environmental Permits, Incidents and Registers	On-site	0-50m	51-250	251-500
2.1 Industrial Sites Holding Environmental Permits and/or Authorisations				
2.1.1 Records of historic IPC Authorisations	0	0	0	0
2.1.2 Records of Part A(1) and IPPC Authorised Activities	0	0	0	0
2.1.3 Records of Red List Discharge Consents	0	0	0	0
2.1.4 Records of List 1 Dangerous Substances Inventory sites	0	0	0	0
2.1.5 Records of List 2 Dangerous Substances Inventory sites	0	0	0	0
2.1.6 Records of Part A(2) and Part B Activities and Enforcements	0	1	0	0
2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations	0	0	0	0
2.1.8 Records of Licensed Discharge Consents	0	0	5	1
2.1.9 Records of Water Industry Referrals	0	0	0	0
2.1.10 Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site	0	0	0	0
2.2 Records of COMAH and NIHHS sites	0	0	0	0
2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents				
2.3.1 National Incidents Recording System, List 2	0	0	1	5
2.3.2 National Incidents Recording System, List 1	0	0	0	0
2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990	0	0	0	0

Section 3: Landfill and Other Waste Sites	On-site	0-50m	51-250	251-500	501-1000	1000-1500
3.1 Landfill Sites						
3.1.1 Environment Agency/Natural Resources Wales Registered Landfill Sites	0	0	0	0	0	Not searched
3.1.2 Environment Agency/Natural Resources Wales Historic Landfill Sites	0	0	1	0	1	2
3.1.3 BGS/DoE Landfill Site Survey	0	0	0	0	0	0
3.1.4 Records of Landfills in Local Authority and Historical Mapping Records	0	0	0	0	0	0
3.2 Landfill and Other Waste Sites Findings						
3.2.1 Operational and Non-Operational Waste Treatment, Transfer and Disposal Sites	0	0	0	0	Not searched	Not searched
3.2.2 Environment Agency/Natural Resources Wales Licensed Waste Sites	0	0	0	0	0	0

Section 4: Current Land Use	On-site	0-50m	51-250	251-500
4.1 Current Industrial Sites Data	6	2	24	Not searched
4.2 Records of Petrol and Fuel Sites	1	1	0	0
4.3 National Grid Underground Electricity Cables	0	0	0	0
4.4 National Grid Gas Transmission Pipelines	0	0	0	0

Section 5: Geology						
5.1 Records of Artificial Ground and Made Ground present beneath the study site	None identified					
5.2 Records of Superficial Ground and Drift Geology present beneath the study site	None identified					
5.3 For records of Bedrock and Solid Geology beneath the study site see the detailed findings section.						

Section 6: Hydrogeology and Hydrology	0-500m					
6.1 Records of Strata Classification in the Superficial Geology within 500m of the study site	Identified					
6.2 Records of Strata Classification in the Bedrock Geology within 500m of the study site	Identified					
	On-site	0-50m	51-250	251-500	501-1000	1000-2000
6.3 Groundwater Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	4
6.4 Surface Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	3
6.5 Potable Water Abstraction Licences (within 2000m of the study site)	0	0	0	0	0	0
6.6 Source Protection Zones (within 500m of the study site)	0	0	0	0	Not searched	Not searched
6.7 Source Protection Zones within Confined Aquifer	0	0	0	0	Not searched	Not searched
6.8 Groundwater Vulnerability and Soil Leaching Potential (within 500m of the study site)	1	0	0	1	Not searched	Not searched

Section 6: Hydrogeology and Hydrology

0-500m

	On-site	0-50m	51-250	251-500	501-1000	1000-1500
6.9 Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site	No	No	No	No	No	Yes
6.10 Ordnance Survey MasterMap Water Network entries within 500m of the site	0	0	6	28	Not searched	Not searched
6.11 Surface water features within 250m of the study site	No	No	Yes	Not searched	Not searched	Not searched

Section 7: Flooding

7.1 Environment Agency Zone 2 floodplains within 250m of the study site	None identified					
7.2 Environment Agency/Natural Resources Wales Zone 3 floodplains within 250m of the study site	None identified					
7.3 Risk of flooding from Rivers and the Sea (RoFRaS) rating for the study site	Very Low					
7.4 Flood Defences within 250m of the study site	None identified					
7.5 Areas benefiting from Flood Defences within 250m of the study site	None identified					
7.6 Areas used for Flood Storage within 250m of the study site	None identified					
7.7 Maximum BGS Groundwater Flooding susceptibility within 50m of the study site	Not Prone					
7.8 BGS confidence rating for the Groundwater Flooding susceptibility areas	Not Applicable					

Section 8: Designated Environmentally Sensitive Sites

	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.1 Records of Sites of Special Scientific Interest (SSSI)	0	0	0	0	0	0
8.2 Records of National Nature Reserves (NNR)	0	0	0	0	0	0
8.3 Records of Special Areas of Conservation (SAC)	0	0	0	0	0	0
8.4 Records of Special Protection Areas (SPA)	0	0	0	0	0	0
8.5 Records of Ramsar sites	0	0	0	0	0	0
8.6 Records of Ancient Woodlands	0	0	0	0	0	10
8.7 Records of Local Nature Reserves (LNR)	0	0	0	0	0	0
8.8 Records of World Heritage Sites	0	0	0	0	0	1
8.9 Records of Environmentally Sensitive Areas	0	0	0	0	0	0

Section 8: Designated Environmentally Sensitive Sites	On-site	0-50m	51-250	251-500	501-1000	1000-2000
8.10 Records of Areas of Outstanding Natural Beauty (AONB)	0	0	0	0	0	0
8.11 Records of National Parks	0	0	0	0	0	0
8.12 Records of Nitrate Sensitive Areas	0	0	0	0	0	0
8.13 Records of Nitrate Vulnerable Zones	0	0	0	0	0	0
8.14 Records of Green Belt land	0	0	0	0	0	0

Section 9: Natural Hazards	
9.1 Maximum risk of natural ground subsidence	Very Low
9.1.1 Maximum Shrink-Swell hazard rating identified on the study site	Negligible
9.1.2 Maximum Landslides hazard rating identified on the study site	Very Low
9.1.3 Maximum Soluble Rocks hazard rating identified on the study site	Negligible
9.1.4 Maximum Compressible Ground hazard rating identified on the study site	Negligible
9.1.5 Maximum Collapsible Rocks hazard rating identified on the study site	Very Low
9.1.6 Maximum Running Sand hazard rating identified on the study site	Negligible
9.2 Radon	
9.2.1 Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?	The site is in a Radon Affected Area, as between 10 and 30% of properties are above the Action Level.
9.2.2 Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment?	Full radon protective measures are necessary.

Section 10: Mining	
10.1 Coal mining areas within 75m of the study site	None identified
10.2 Non-Coal Mining areas within 50m of the study site boundary	Identified
10.3 Brine affected areas within 75m of the study site	None identified

Using this report

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

1. Historical Industrial Sites

Provides information on past land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. Potentially Infilled Land features are also included. This search is conducted using radii of up to 500m.

2. Environmental Permits, Incidents and Registers

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

3. Landfills and Other Waste Sites

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

4. Current Land Uses

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

5. Geology

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

6. Hydrogeology and Hydrology

Provides information on productive strata within the bedrock and superficial geological layers, abstraction licences, Source Protection Zones (SPZs) and river quality. These searches are conducted using radii of up to 2000m.

7. Flooding

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

8. Designated Environmentally Sensitive Sites

Provides information on the Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR), Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar sites, Local Nature Reserves (LNR), Areas of Outstanding Natural Beauty (AONB), National Parks (NP), Environmentally Sensitive Areas, Nitrate Sensitive Areas, Nitrate Vulnerable Zones and World Heritage Sites and Scheduled Ancient Woodland. These searches are conducted using radii of up to 2000m.

9. Natural Hazards

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

10. Mining

Provides information on areas of coal and non-coal mining and brine affected areas.

11. Contacts

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

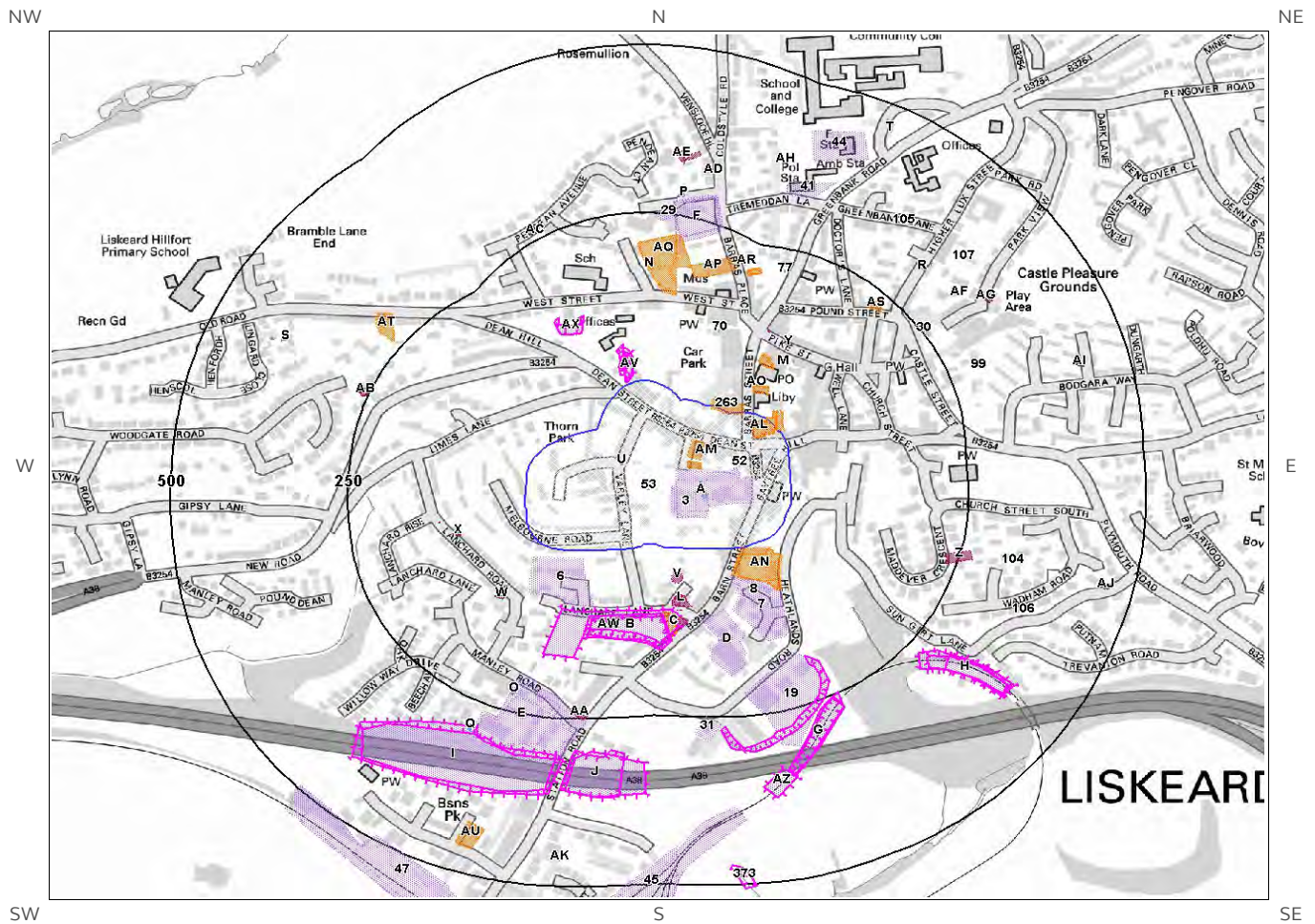
Note: Maps

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

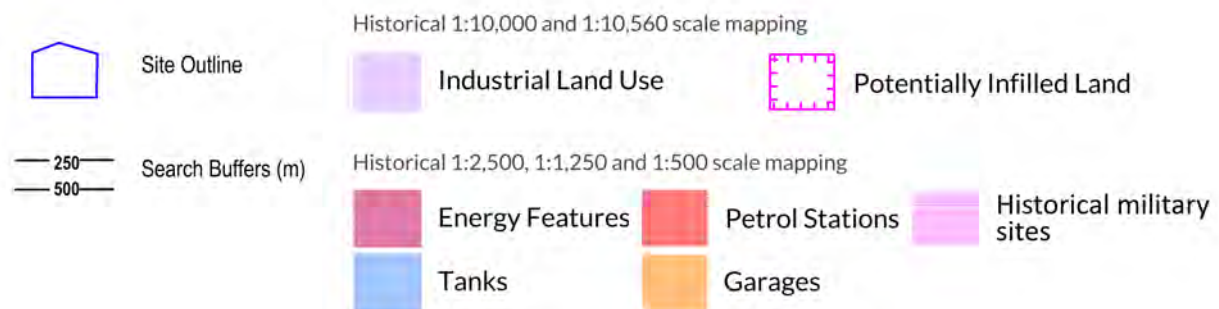
Where a feature is reported in the data tables to a distance greater than the map area, it is noted in the data table as "Not Shown".

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

1. Historical Land Use



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1. Historical Industrial Sites

1.1 Potentially Contaminative Uses identified from 1:10,000 scale Mapping

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

Records of sites with a potentially contaminative past land use within 500m of the search boundary: 47

ID	Distance [m]	Direction	Use	Date
1A	0	On Site	Unspecified Tank	1960
2A	0	On Site	Unspecified Commercial/Industrial	1960
3	0	On Site	Railway Sidings	1960
4A	0	On Site	Cattle Mart	1905
5A	0	On Site	Unspecified Tank	1905
6	12	S	Unspecified Factory	1980
7	40	S	Unspecified Works	1980
8	48	S	Tannery	1882
9D	87	S	Unspecified Works	1980
10AW	88	S	Cemetery	1980
11B	97	S	Cemetery	1907
12B	97	S	Cemetery	1882
13C	98	S	Unspecified Commercial/Industrial	1907
14C	98	S	Gas Works	1882
15C	99	S	Gasometer	1882
16AX	99	NW	Unspecified Ground Workings	1978
17B	101	S	Cemetery	1978
18D	125	S	Smithy	1907
19	169	S	Unspecified Works	1980
20AY	181	SE	Unspecified Ground Workings	1980
21E	197	S	Hospital	1980
22E	204	S	Unspecified Workhouse	1907
23F	207	N	Hospital	1960
24E	208	S	Hospital	1978
25F	217	N	Hospital	1980
26F	220	N	Hospital	1905
27F	220	N	Hospital	1905
28E	225	S	Unspecified Workhouse	1882
29	239	N	Hospital	1980
30	247	NE	Police Station	1882
31	249	S	Mortuary	1980
32G	249	SE	Cuttings	1907

33G	252	SE	Cuttings	1960
34H	270	SE	Cuttings	1980
35H	282	SE	Cuttings	1960
36I	288	S	Cuttings	1980
37J	297	S	Cuttings	1980
38I	297	S	Cuttings	1978
39J	300	S	Cuttings	1978
40H	305	SE	Cuttings	1907
41	330	N	Police Station	1980
42AZ	334	S	Cuttings	1980
43K	385	S	Railway Sidings	1907
44	387	N	Fire Station	1980
45	443	S	Railway Sidings	1980
46K	456	S	Railway Sidings	1978
47	493	SW	Railway Sidings	1882

1.2 Additional Information – Historical Tank Database

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

Records of historical tanks within 500m of the search boundary:

74

ID	Distance (m)	Direction	Use	Date
48A	0	On Site	Unspecified Tank	1882
49A	0	On Site	Unspecified Tank	1907
50A	0	On Site	Unspecified Tank	1907
51AM	0	On Site	Unspecified Tank	1882
52	0	On Site	Unspecified Tank	1882
53	0	On Site	Unspecified Tank	1882
54V	35	S	Gasholder	1969
55AO	43	N	Tank or Trough	1882
56L	68	S	Gas Works	1882
57L	69	S	Gas Works	1907
58L	71	S	Gasometer	1907
59L	71	S	Gasometer	1882
60M	82	NE	Tank or Trough	1882
61M	91	NE	Tank or Trough	1882
62C	91	S	Gasometer	1882
63C	91	S	Gasometer	1882
64C	96	S	Gas Works	1907
65C	97	S	Gas Works	1882
66C	97	S	Gas Works	1882
67C	97	S	Gasometer	1907

68C	98	S	Gasometer	1882
69C	98	S	Gasometer	1882
70	110	N	Unspecified Tank	1882
71N	167	N	Unspecified Tank	1988
72N	167	N	Unspecified Tank	1988
73N	167	N	Unspecified Tank	1991
74N	168	N	Unspecified Tank	1985
75N	169	N	Unspecified Tank	1999
76AR	214	NE	Tank or Trough	1882
77	216	N	Tank or Trough	1882
78O	218	S	Unspecified Tank	1985
79O	218	S	Unspecified Tank	1981
80O	218	S	Unspecified Tank	1988
81O	218	S	Unspecified Tank	1991
82O	218	S	Unspecified Tank	1984
83O	218	S	Unspecified Tank	1993
84O	218	S	Unspecified Tank	1988
85O	219	S	Unspecified Tank	1977
86O	221	S	Unspecified Tank	1999
87P	278	N	Unspecified Tank	1985
88P	279	N	Unspecified Tank	1988
89P	279	N	Unspecified Tank	1989
90Q	287	SW	Unspecified Tank	1985
91Q	288	SW	Unspecified Tank	1977
92Q	288	SW	Unspecified Tank	1981
93Q	288	SW	Unspecified Tank	1984
94Q	288	SW	Unspecified Tank	1991
95Q	288	SW	Unspecified Tank	1988
96Q	288	SW	Unspecified Tank	1993
97Q	288	SW	Unspecified Tank	1988
98Q	289	SW	Unspecified Tank	1999
99	292	E	Unspecified Tank	1907
100R	312	NE	Tank or Trough	1882
101AD	320	N	Tank or Trough	1882
102AF	323	NE	Tank or Trough	1882
103R	324	NE	Tank or Trough	1882
104	325	E	Tank or Trough	1882
105	350	NE	Tank or Trough	1882
106	363	E	Tank or Trough	1882
107	364	NE	Tank or Trough	1882
108S	389	NW	Unspecified Tank	1985
109S	390	NW	Unspecified Tank	1991
110S	390	NW	Unspecified Tank	1988
111S	390	NW	Unspecified Tank	1988
112S	390	NW	Unspecified Tank	1999
113S	391	NW	Unspecified Tank	1993

114S	407	NW	Unspecified Tank	1985
115S	408	NW	Unspecified Tank	1999
116S	409	NW	Unspecified Tank	1988
117S	409	NW	Unspecified Tank	1988
118S	409	NW	Unspecified Tank	1991
119S	409	NW	Unspecified Tank	1993
120T	461	NE	Tank or Trough	1882
121T	475	N	Tank or Trough	1882

1.3 Additional Information – Historical Energy Features Database

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

Records of historical energy features within 500m of the search boundary:

132

ID	Distance (m)	Direction	Use	Date
122U	0	On Site	Electricity Substation	1981
123U	0	On Site	Electricity Substation	1984
124U	0	On Site	Electricity Substation	1977
125U	0	On Site	Electricity Substation	1969
126U	0	On Site	Electricity Substation	1999
127V	35	S	Gasholder	1969
128L	68	S	Gas Works	1882
129L	69	S	Gas Works	1907
130L	71	S	Gasometer	1882
131L	71	S	Gasometer	1907
132C	91	S	Gasometer	1882
133C	91	S	Gasometer	1882
134W	92	SW	Electricity Substation	1985
135W	92	SW	Electricity Substation	1969
136W	92	SW	Electricity Substation	1977
137W	93	SW	Electricity Substation	1984
138W	93	SW	Electricity Substation	1988
139W	93	SW	Electricity Substation	1991
140W	93	SW	Electricity Substation	1988
141W	93	SW	Electricity Substation	1981
142W	93	SW	Electricity Substation	1993
143W	93	SW	Electricity Substation	1999
144X	95	W	Electricity Substation	1985
145X	95	W	Electricity Substation	1999
146C	96	S	Gas Works	1907
147X	96	W	Electricity Substation	1988
148X	96	W	Electricity Substation	1991

149X	96	W	Electricity Substation	1988
150C	97	S	Gas Works	1882
151C	97	S	Gas Works	1882
152C	97	S	Gasometer	1907
153C	98	S	Gasometer	1882
154C	98	S	Gasometer	1882
155Y	112	NE	Electricity Substation	1985
156Y	112	NE	Electricity Substation	1969
157Y	112	NE	Electricity Substation	1977
158Y	113	NE	Electricity Substation	1996
159Y	113	NE	Electricity Substation	1999
160X	121	W	Electricity Substation	1993
161Y	122	N	Electricity Substation	1984
162Y	122	N	Electricity Substation	1989
163Y	122	N	Electricity Substation	1988
164Y	122	N	Electricity Substation	1981
165Y	122	N	Electricity Substation	1993
166Z	230	E	Electricity Substation	1985
167Z	231	E	Electricity Substation	1996
168Z	231	E	Electricity Substation	1999
169Z	233	E	Electricity Substation	1989
170Z	233	E	Electricity Substation	1988
171Z	233	E	Electricity Substation	1981
172Z	233	E	Electricity Substation	1984
173Z	233	E	Electricity Substation	1993
174Z	235	E	Electricity Substation	1977
175AA	241	S	Electricity Substation	1985
176AA	241	S	Electricity Substation	1977
177AA	241	S	Electricity Substation	1969
178AA	241	S	Electricity Substation	1988
179AA	241	S	Electricity Substation	1984
180AA	241	S	Electricity Substation	1991
181AA	241	S	Electricity Substation	1988
182AA	241	S	Electricity Substation	1981
183AA	241	S	Electricity Substation	1993
184AA	242	S	Electricity Substation	1999
185AB	250	NW	Electricity Substation	1985
186AB	250	NW	Electricity Substation	1999
187AB	251	NW	Electricity Substation	1988
188AB	251	NW	Electricity Substation	1988
189AB	251	NW	Electricity Substation	1991
190AB	252	NW	Electricity Substation	1993
191AC	259	NW	Electricity Substation	1985
192AC	260	NW	Electricity Substation	1977
193AC	260	NW	Electricity Substation	1999
194AC	260	NW	Electricity Substation	1984

195AC	260	NW	Electricity Substation	1988
196AC	260	NW	Electricity Substation	1991
197AC	260	NW	Electricity Substation	1988
198AC	260	NW	Electricity Substation	1993
199AC	260	NW	Electricity Substation	1981
200AE	326	N	Electricity Substation	1977
201AD	331	N	Electricity Substation	1988
202AE	331	N	Electricity Substation	1984
203AE	331	N	Electricity Substation	1981
204AE	331	N	Electricity Substation	1993
205AE	331	N	Electricity Substation	1989
206AE	332	N	Electricity Substation	1996
207AE	332	N	Electricity Substation	1999
208AE	332	N	Electricity Substation	1985
209AF	349	NE	Electricity Substation	1981
210AG	349	NE	Electricity Substation	1984
211AG	349	NE	Electricity Substation	1988
212AG	349	NE	Electricity Substation	1989
213AG	349	NE	Electricity Substation	1993
214AG	350	NE	Electricity Substation	1996
215AG	350	NE	Electricity Substation	1999
216AG	351	NE	Electricity Substation	1977
217AG	351	NE	Electricity Substation	1969
218AG	351	NE	Electricity Substation	1985
219AH	371	NE	Electricity Substation	1984
220AH	371	NE	Electricity Substation	1981
221AH	371	NE	Electricity Substation	1993
222AH	371	NE	Electricity Substation	1988
223AH	371	NE	Electricity Substation	1989
224AH	372	NE	Electricity Substation	1977
225AH	372	NE	Electricity Substation	1969
226AH	372	NE	Electricity Substation	1985
227AH	373	NE	Electricity Substation	1999
228AH	373	NE	Electricity Substation	1996
229AI	423	E	Electricity Substation	1981
230AI	423	E	Electricity Substation	1984
231AI	423	E	Electricity Substation	1988
232AI	423	E	Electricity Substation	1989
233AI	423	E	Electricity Substation	1993
234AI	424	E	Electricity Substation	1977
235AI	424	E	Electricity Substation	1969
236AI	424	E	Electricity Substation	1985
237AI	425	E	Electricity Substation	1996
238AI	425	E	Electricity Substation	1999
239AJ	457	E	Electricity Substation	1988
240AJ	457	E	Electricity Substation	1981

241AJ	457	E	Electricity Substation	1989
242AJ	457	E	Electricity Substation	1984
243AJ	457	E	Electricity Substation	1993
244AK	457	S	Electricity Substation	1995
245AK	457	S	Electricity Substation	1977
246AK	458	S	Electricity Substation	1991
247AK	458	S	Electricity Substation	1991
248AK	458	S	Electricity Substation	1989
249AJ	459	E	Electricity Substation	1996
250AJ	459	E	Electricity Substation	1999
251AJ	460	E	Electricity Substation	1977
252AJ	460	E	Electricity Substation	1985
253AJ	460	E	Electricity Substation	1969

1.4 Additional Information – Historical Petrol and Fuel Site Database

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

Records of historical petrol stations and fuel sites within 500m of the search boundary:

1

ID	Distance (m)	Direction	Use	Date
254AL	0	On Site	Filling Station	1993

1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database

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

Records of historical garage and motor vehicle repair sites within 500m of the search boundary:

98

ID	Distance (m)	Direction	Use	Date
255AL	0	On Site	Garage	1989
256AL	0	On Site	Garage	1988
257AL	0	On Site	Garage	1993
258AL	0	On Site	Garage	1969
259AL	0	On Site	Garage	1985
260AL	0	On Site	Garage	1984
261AL	0	On Site	Garage	1981
262AL	0	On Site	Garage	1984
263	0	On Site	Garage	1969
264AM	0	On Site	Garage	1969
265AN	0	On Site	Garage	1989

266AN	0	On Site	Garage	1988
267AM	0	On Site	Garage	1984
268AM	0	On Site	Garage	1981
269AL	0	On Site	Garage	1981
270AL	0	On Site	Garage	1985
271AL	0	On Site	Garage	1969
272AL	0	On Site	Garage	1977
273AL	0	On Site	Garage	1977
274AM	0	On Site	Garage	1977
275AL	0	On Site	Garage	1996
276AL	0	On Site	Garage	1999
277AN	8	S	Garage	1993
278AN	9	S	Garage	1984
279AN	10	S	Garage	1981
280AN	15	S	Garage	1996
281AN	15	S	Garage	1999
282AO	30	N	Garage	1984
283AO	31	N	Garage	1981
284AO	31	N	Garage	1969
285AO	31	N	Garage	1977
286AN	31	S	Auto Service Station	1969
287AN	31	S	Garage	1985
288AN	31	S	Garage	1977
289M	71	N	Garage	1984
290M	72	N	Garage	1981
291M	72	N	Garage	1969
292M	72	N	Garage	1977
293C	95	S	Garage	1985
294C	95	S	Garage	1969
295C	95	S	Garage	1977
296C	95	S	Garage	1993
297C	95	S	Garage	1991
298C	95	S	Garage	1981
299C	95	S	Garage	1988
300C	95	S	Garage	1988
301C	95	S	Garage	1984
302C	97	S	Garage	1999
303N	132	N	Garage	1993
304N	132	N	Garage	1988
305N	132	N	Garage	1988
306N	132	N	Garage	1991
307N	132	N	Garage	1984
308N	134	N	Garage	1999
309N	165	N	Garage	1977
310AP	165	N	Garage	1969
311AP	165	N	Garage	1977

312AP	165	N	Garage	1984
313AP	165	N	Garage	1981
314AQ	167	N	Garage	1985
315AQ	174	N	Garage	1989
316AQ	174	N	Garage	1984
317AQ	174	N	Garage	1988
318AQ	174	N	Garage	1981
319AQ	185	N	Garage	1981
320AR	200	N	Garage	1996
321AR	200	N	Garage	1999
322AR	200	N	Garage	1989
323AR	200	N	Garage	1988
324AR	201	N	Garage	1993
325AR	201	N	Garage	1985
326AR	202	N	Garage	1984
327AR	202	N	Garage	1977
328AR	202	N	Garage	1969
329AR	202	N	Garage	1981
330AS	218	NE	Garage	1977
331AS	218	NE	Garage	1969
332AS	218	NE	Garage	1985
333AS	219	NE	Garage	1989
334AS	219	NE	Garage	1984
335AS	219	NE	Garage	1993
336AS	219	NE	Garage	1981
337AS	219	NE	Garage	1988
338AT	263	NW	Garage	1993
339AT	263	NW	Garage	1981
340AT	263	NW	Garage	1988
341AT	263	NW	Garage	1988
342AT	263	NW	Garage	1991
343AT	263	NW	Garage	1984
344AT	264	NW	Garage	1999
345AT	284	NW	Garage	1969
346AT	284	NW	Garage	1985
347AT	284	NW	Garage	1977
348AU	424	S	Garage	1995
349AU	424	S	Garage	1989
350AU	424	S	Garage	1991
351AU	424	S	Garage	1991
352AU	424	S	Garage	1995

1.6 Historical military sites

Certain military installations were not noted on historic mapping for security reasons. Whilst not all military land is necessarily of concern, Groundsure has researched and digitised a number of Ordnance Factories and other military industrial features (e.g. Ordnance Depots, Munitions Testing Grounds) which may be of contaminative concern. This research was drawn from a number of different sources, and should not be regarded as a definitive or exhaustive database of potentially contaminative military installations. The boundaries of sites within this database have been estimated from the best evidence available to Groundsure at the time of compilation.

Records of historical military sites within 500m of the search boundary: 0

Database searched and no data found.

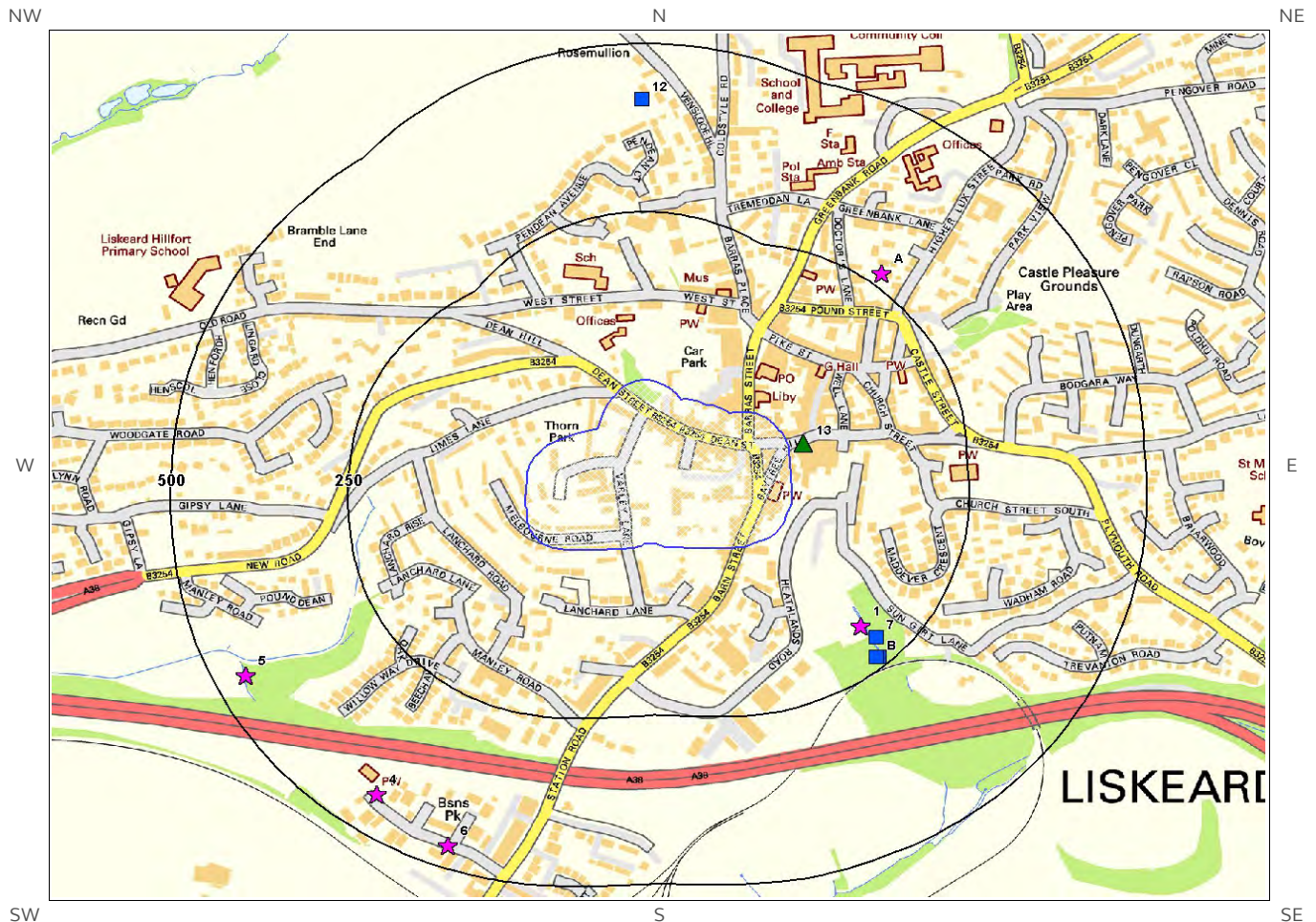
1.7 Potentially Infilled Land

Records of Potentially Infilled Features from 1:10,000 scale mapping within 500m of the study site: 21

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

ID	Distance(m)	Direction	Use	Date
353AV	3	NW	Pond	1978
354AV	9	N	Pond	1905
355AV	15	NW	Pond	1882
356AV	15	NW	Pond	1905
357AW	88	S	Cemetery	1980
358AW	97	S	Cemetery	1907
359AW	97	S	Cemetery	1882
360AX	99	NW	Unspecified Ground Workings	1978
361AW	101	S	Cemetery	1978
362AY	181	SE	Unspecified Ground Workings	1980
363G	249	SE	Cuttings	1907
364G	252	SE	Cuttings	1960
365H	270	SE	Cuttings	1980
366H	282	SE	Cuttings	1960
367I	288	S	Cuttings	1980
368J	297	S	Cuttings	1980
369I	297	S	Cuttings	1978
370J	300	S	Cuttings	1978
371H	305	SE	Cuttings	1907
372AZ	334	S	Cuttings	1980
373	471	S	Pond	1960

2. Environmental Permits, Incidents and Registers Map



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2. Environmental Permits, Incidents and Registers

2.1 Industrial Sites Holding Licences and/or Authorisations

Searches of information provided by the Environment Agency/Natural Resources Wales and Local Authorities reveal the following information:

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

0

Database searched and no data found.

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

1

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

ID	Distance (m)	Direction	NGR	Details
13	21	E	225178 64446	Address: Johnsons Cleaners UK Ltd, 23 Bay Tree Hill, Liskeard, PL14 4BG Process: Dry Cleaning Status: Historical Permit Permit Type: Part B Enforcement: No Enforcements Date of Enforcement: No Enforcements Comment: No Enforcements

2.1.7 Records of Category 3 or 4 Radioactive Substances Authorisations:

0

Database searched and no data found.

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

6

The following Licensed Discharge Consents records are represented as points on the Environmental Permits, Incidents and Registers Map:

ID	Distance (m)	Direction	NGR	Details
7	210	SE	225280 064160	Address: SUNGIRT LANE, LISKEARD, CORNWALL Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: SWWA 765 Permit Version: 1 Receiving Water: TRIB OF EAST LOOE RIVER Status: REVOKED (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 26/11/1986 Effective Date: 26-Nov-1986 Revocation Date: 01/10/2000
8B	233	SE	225280 064130	Address: SUNGIRT LANE CSO, LISKEARD, CORNWALL, PL14 3PA Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 303471 Permit Version: 1 Receiving Water: TRIBUTARY OF EAST LOOE RIVER Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 11/10/2007 Effective Date: 11-Oct-2007 Revocation Date: 28/05/2015
9B	233	SE	225280 064130	Address: SUNGIRT LANE CSO, LISKEARD, CORNWALL, PL14 3PA Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - WATER COMPANY Permit Number: 303471 Permit Version: 2 Receiving Water: TRIBUTARY OF EAST LOOE RIVER Status: VARIED UNDER EPR 2010 Issue date: 29/05/2015 Effective Date: 29-May-2015 Revocation Date: -
10B	235	SE	225285 064131	Address: SUNGIRT LANE CSO, LISKEARD, CORNWALL, PL14 3PA Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Receiving Water: EAST LOOE RIVER (S) Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 01/10/2000

ID	Distance (m)	Direction	NGR	Details	
11B	235	SE	225285 064131	Permit Number: 301855 Permit Version: 1	Effective Date: 01-Oct-2000 Revocation Date: 31/03/2006
				Address: SUNGIRT LANE CSO, LISKEARD, CORNWALL, PL14 3PA Effluent Type: SEWAGE DISCHARGES - STW STORM OVERFLOW/STORM TANK - WATER COMPANY Permit Number: 301855 Permit Version: 2	Receiving Water: EAST LOOE RIVER (S) Status: REVOKED (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 01/10/2000 Effective Date: 01-Apr-2006 Revocation Date: 10/10/2007
12	418	N	224950 064960	Address: 2 VENSLOOE HILL, BARRAS CROSS, LISKEARD, CORNWALL Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY Permit Number: NRA-SW-6176 Permit Version: 1	Receiving Water: SOAKAWAY Status: NEW CONSENT (WRA 91, S88 & SCHED 10 AS AMENDED BY ENV ACT 1995) Issue date: 25/10/1993 Effective Date: 25-Oct-1993 Revocation Date: -

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

0

Database searched and no data found.

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

0

Database searched and no data found.

2.2 Dangerous or Hazardous Sites

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

0

Database searched and no data found.

2.3 Environment Agency/Natural Resources Wales Recorded Pollution Incidents

2.3.1 Records of National Incidents Recording System, List 2 within 500m of the study site:

6

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

ID	Distance (m)	Direction	NGR	Details
1	182	SE	225258.0 64177.0	Incident Date: 27-Nov-2003 Incident Identification: 203897.0 Pollutant: Sewage Materials Pollutant Description: Storm Sewage Water Impact: Category 3 (Minor) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
2A	269	NE	225287.0 64701.0	Incident Date: 23-Jul-2002 Incident Identification: 93716.0 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
3A	269	NE	225287.0 64701.0	Incident Date: 23-Jul-2002 Incident Identification: 93716.0 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
4	441	SW	224576.0 63926.0	Incident Date: 10-Jul-2003 Incident Identification: 172627.0 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)
5	457	SW	224391.0 64103.0	Incident Date: 26-Jul-2003 Incident Identification: 176850.0 Pollutant: Oils and Fuel Pollutant Description: Unidentified Oil Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
6	467	S	224676.0 63850.0	Incident Date: 07-Jul-2003 Incident Identification: 171487.0 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)

2.3.2 Records of National Incidents Recording System, List 1 within 500m of the study site:

0

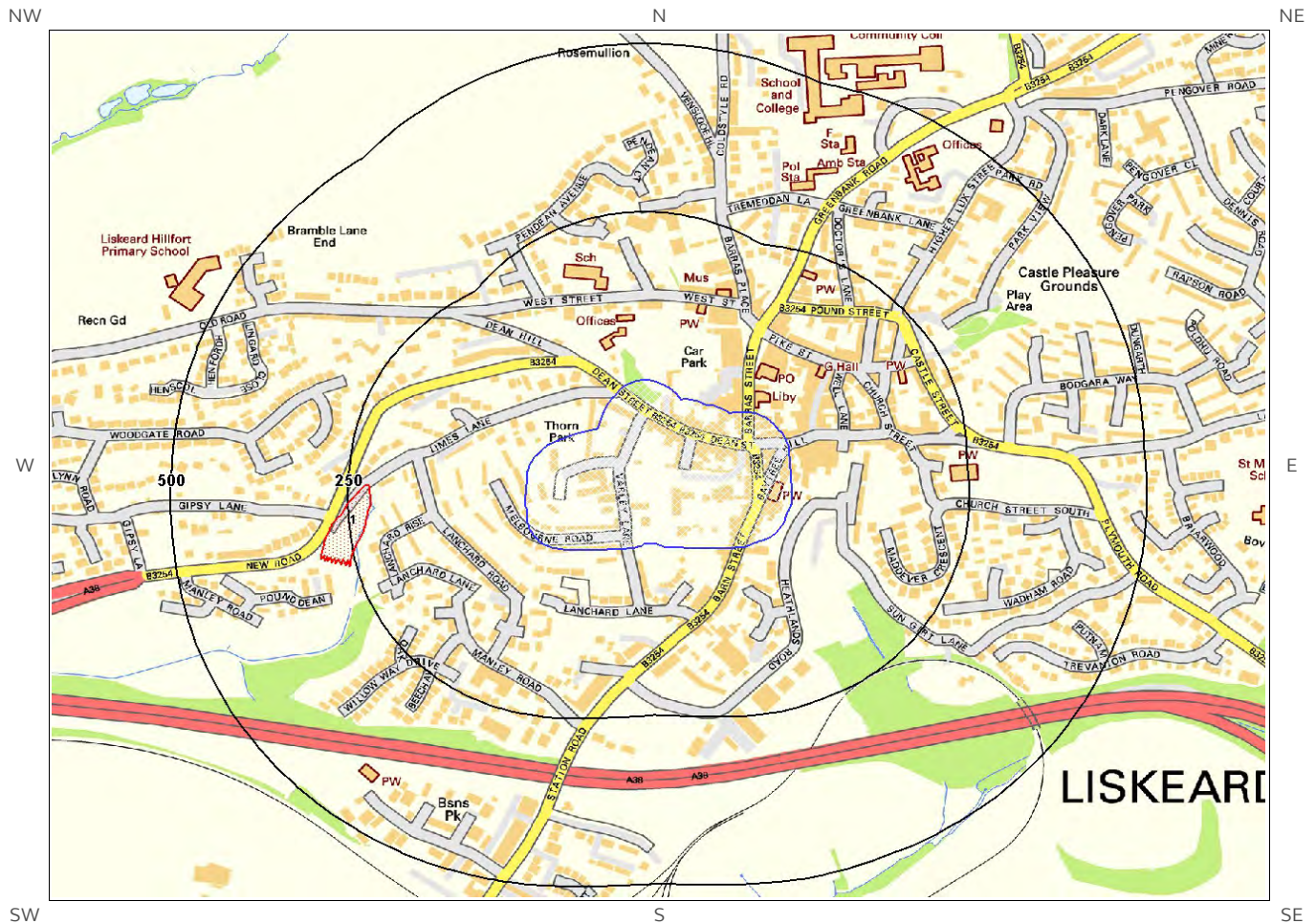
Database searched and no data found.

2.4 Sites Determined as Contaminated Land under Part 2A EPA 1990

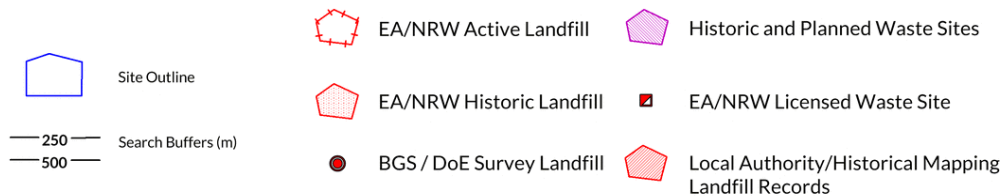
Records of sites determined as contaminated land under Section 78R of the Environmental Protection Act 1990 are there within 500m of the study site 0

Database searched and no data found.

3. Landfill and Other Waste Sites Map



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3. Landfill and Other Waste Sites

3.1 Landfill Sites

3.1.1 Records from Environment Agency/Natural Resources Wales landfill data within 1000m of the study site:

0

Database searched and no data found.

3.1.2 Records of Environment Agency/Natural Resources Wales historic landfill sites within 1500m of the study site:

4

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

ID	Distance (m)	Direction	NGR	Details
1	218	W		Site Address: Limes Lane, Limes Lane, Liskeard Waste Licence: - Site Reference: 6/04 Waste Type: Commercial, Household Environmental Permitting Regulations (Waste) Reference: - Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: - First Recorded: - Last Recorded: -
Not shown	941	E		Site Address: Liskeard East Relief Road, Liskeard, Cornwall Waste Licence: - Site Reference: 6/56 Waste Type: Waste Unknown Environmental Permitting Regulations (Waste) Reference: - Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: - First Recorded: - Last Recorded: -
Not shown	1087	NW		Site Address: Woodlands, Liskeard, Cornwall Waste Licence: - Site Reference: 6/34 Waste Type: Inert, Industrial, Commercial, Household Environmental Permitting Regulations (Waste) Reference: - Licence Issue: Licence Surrendered: Licence Holder Address: - Operator: - Licence Holder: Major Caryton First Recorded: - Last Recorded: 31-Dec-1972
Not shown	1352	SE		Site Address: All Creatures Great and Small Pet Cemetery, Keyes, Cartuther, Liskeard, Cornwall Waste Licence: Yes Site Reference: 2/195 Waste Type: Industrial, Commercial, Household Environmental Permitting Regulations (Waste) Reference: EL1/L/SHA003 Licence Issue: 08-Jun-2001 Licence Surrendered: 24-Jul-2002 Licence Holder Address: 5, Church Street South, Liskeard, Cornwall Operator: All Creatures Great and Small Licence Holder: Diane Shaw First Recorded: - Last Recorded: -

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

0

Database searched and no data found.

3.1.4 Records of Landfills from Local Authority and Historical Mapping Records within 1500m of the study site:

0

Database searched and no data found.

3.2 Other Waste Sites

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

0

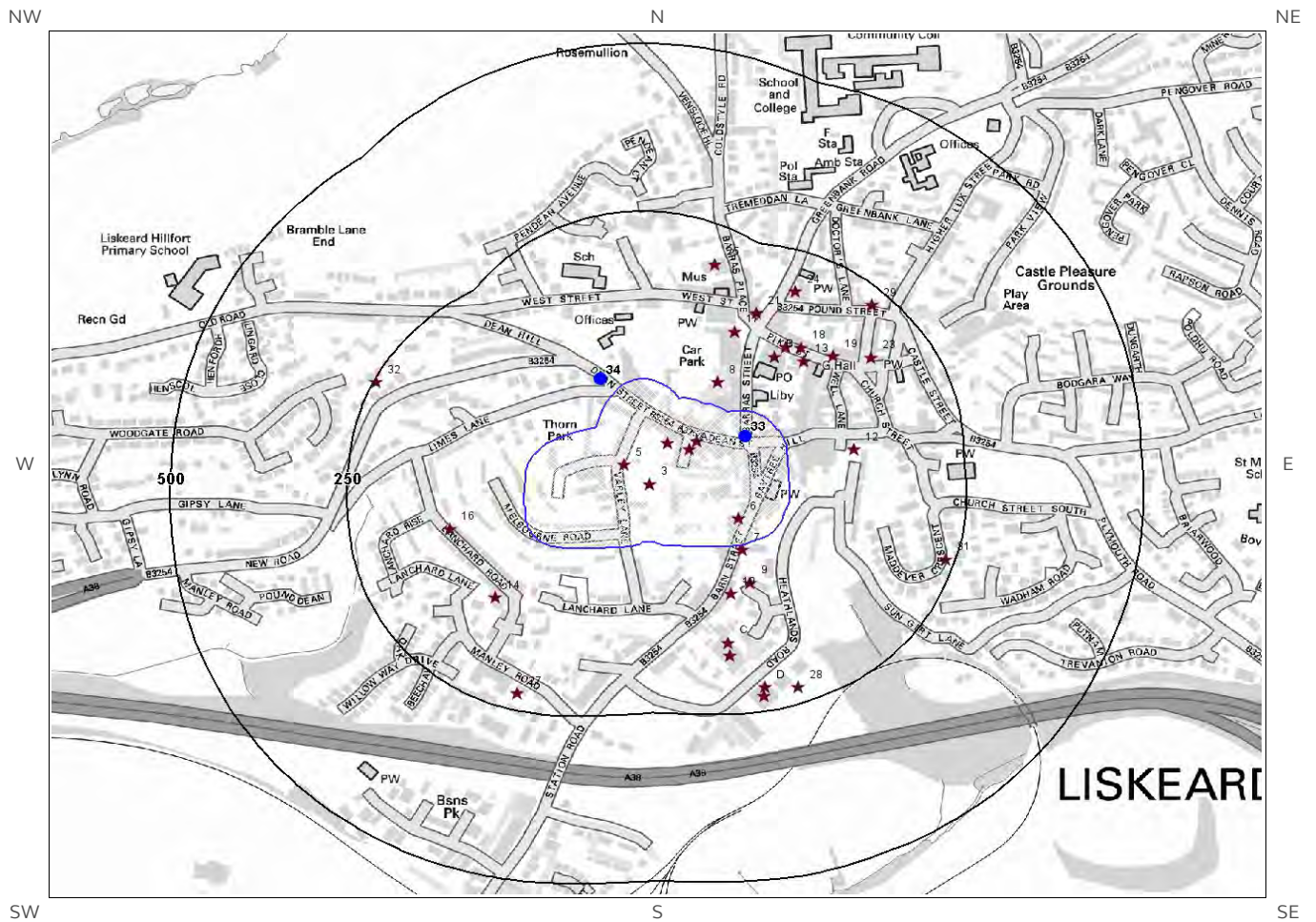
Database searched and no data found.

3.2.2 Records of Environment Agency/Natural Resources Wales licensed waste sites within 1500m of the study site:

0

Database searched and no data found.

4. Current Land Use Map



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4. Current Land Uses

4.1 Current Industrial Data

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

32

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

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
1	0	On Site	Hidden Hearing	224989 64448	18, Dean Street, Liskeard, Cornwall, PL14 4AA	Disability and Mobility Equipment	Consumer Products
2A	0	On Site	Vardo	225019 64438	1-2, Fair Park Road, Liskeard, Cornwall, PL14 4BA	Furniture	Consumer Products
3	0	On Site	Cattle Market	224963 64386	Cornwall, PL14	Livestock Markets	Food, Drink and Multi Item Retail
4A	0	On Site	Depot	225030 64450	Cornwall, PL14	Container and Storage	Transport, Storage and Delivery
5	0	On Site	Electricity Sub Station	224927 64415	Cornwall, PL14	Electrical Features	Infrastructure and Facilities
6	0	On Site	Modern Grates Company	225089 64334	Barn Street, Liskeard, Cornwall, PL14 4BJ	General Construction Supplies	Industrial Products
7	6	S	Taylors Motors Ltd	225093 64287	Barn Street, Liskeard, Cornwall, PL14 4BL	Vehicle Repair, Testing and Servicing	Repair and Servicing
8	35	N	Bloom Hearing Specialists	225060 64538	Pigmeadow Lane, Liskeard, Cornwall, PL14 6AT	Disability and Mobility Equipment	Consumer Products
9	56	S	Bdazzled	225104 64238	28, Pavlova Court, Liskeard, Cornwall, PL14 4NY	Vehicle Cleaning Services	Personal, Consumer and Other Services
10	70	S	Merlin Glass	225078 64222	Pavlova Mill, Barn Street, Liskeard, Cornwall, PL14 4BL	Glass	Industrial Products
11B	89	N	Cornish Times	225140 64576	The Tindle Suite Webbs House, The Parade, Liskeard, Cornwall, PL14 6AH	Published Goods	Industrial Products
12	94	E	Electricity Sub Station	225252 64438	Cornwall, PL14	Electrical Features	Infrastructure and Facilities
13	101	NE	Stove Shop	225181 64569	7, Pike Street, Liskeard, Cornwall, PL14 3JE	Fireplaces and Mantelpieces	Consumer Products
14	105	SW	Electricity Sub Station	224745 64217	Cornwall, PL14	Electrical Features	Infrastructure and Facilities
15B	108	N	Electricity Sub Station	225156 64591	Cornwall, PL14	Electrical Features	Infrastructure and Facilities
16	109	W	Electricity Sub Station	224681 64319	Cornwall, PL14	Electrical Features	Infrastructure and Facilities
17	114	N	Martin Perry Associates	225083 64613	B F M House, The Parade, Liskeard, Cornwall, PL14	Structural Engineers	Engineering Services

ID	Distance (m)	Direction	Company	NGR	Address	Activity	Category
			Ltd		6AF		
18	116	NE	Liskeard Trophies	225177 64589.	8, Pike Street, Liskeard, Cornwall, PL14 3JE	Medals, Trophies, Ceremonial and Religious Goods	Consumer Products
19	132	NE	H E Goldsworthy	225222 64576.	1, Market Street, Liskeard, Cornwall, PL14 3JH	General Construction Supplies	Industrial Products
20C	142	S	Station Body Repairs	225074 64149.	Unit 2 Liskeard Enterprise Centre, Station Road, Liskeard, Cornwall, PL14 4BT	Vehicle Repair, Testing and Servicing	Repair and Servicing
21	147	N	Precision Design & Print	225114 64640.	Flat 2 2, The Parade, Liskeard, Cornwall, PL14 6AH	Published Goods	Industrial Products
22C	161	S	Caradon Business Centre	225077 64131	Cornwall, PL14	Business Parks and Industrial Estates	Industrial Features
23	170	NE	Annies	225275 64574.	3, Lower Lux Street, Liskeard, Cornwall, PL14 3JL	Clearance and Salvage Dealers	Recycling Services
24	190	N	Powerquip Ltd	225169 64673.	Greenbank Road, Liskeard, Cornwall, PL14 3DP	Construction and Tool Hire	Hire Services
25	194	NE	Warehouse	225056 64714	Cornwall, PL14	Container and Storage	Transport, Storage and Delivery
26D	214	S	Guy Cotten UK Ltd	225126 64083.	Unit 1, Heathlands Industrial Estate, Liskeard, Cornwall, PL14 4DH	Clothing, Components and Accessories	Consumer Products
27	224	S	Tank	224776 64074	Cornwall, PL14	Tanks (Generic)	Industrial Features
28	225	S	Heathlands Business Park	225173 64083	Cornwall, PL14	Business Parks and Industrial Estates	Industrial Features
29	226	NE	Andrew's Garage	225278 64652.	46, Pound Street, Liskeard, Cornwall, PL14 3JT	Vehicle Repair, Testing and Servicing	Repair and Servicing
30D	226	S	Works	225125 64070	Cornwall, PL14	Unspecified Works Or Factories	Industrial Features
31	236	E	Electricity Sub Station	225382 64274	Cornwall, PL14	Electrical Features	Infrastructure and Facilities
32	247	NW	Electricity Sub Station	224577 64538	Cornwall, PL14	Electrical Features	Infrastructure and Facilities

4.2 Petrol and Fuel Sites

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

2

The following petrol or fuel site records provided by Catalist are represented as points on the Current Land Use map:

ID	Distance (m)	Direction	NGR	Company	Address	LPG	Status
33	0	On Site	225098 64457	ESSO	Barras Street, Liskeard, Cornwall, PL14 6AD	Not Applicable	Obsolete
34	28	NW	224894 64542	OBSOLETE	West Street, Barras Place, Liskeard, Cornwall, PL14 6BW	Not Applicable	Obsolete

4.3 National Grid High Voltage Underground Electricity Transmission Cables

This dataset identifies the high voltage electricity transmission lines running between generating power plants and electricity substations. The dataset does not include the electricity distribution network (smaller, lower voltage cables distributing power from substations to the local user network). This information has been extracted from databases held by National Grid and is provided for information only with no guarantee as to its completeness or accuracy. National Grid do not offer any warranty as to the accuracy of the available data and are excluded from any liability for any such inaccuracies or errors.

Records of National Grid high voltage underground electricity transmission cables within 500m of the study site:

0

Database searched and no data found.

4.4 National Grid High Pressure Gas Transmission Pipelines

This dataset identifies high-pressure, large diameter pipelines which carry gas between gas terminals, power stations, compressors and storage facilities. The dataset does not include the Local Transmission System (LTS) which supplies gas directly into homes and businesses. This information has been extracted from databases held by National Grid and is provided for information only with no guarantee as to its completeness or accuracy. National Grid do not offer any warranty as to the accuracy of the available data and are excluded from any liability for any such inaccuracies or errors.

Records of National Grid high pressure gas transmission pipelines within 500m of the study site:

0

Database searched and no data found.

5. Geology

5.1 Artificial Ground and Made Ground

Database searched and no data found.

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

5.2 Superficial Ground and Drift Geology

Database searched and no data found.

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

5.3 Bedrock and Solid Geology

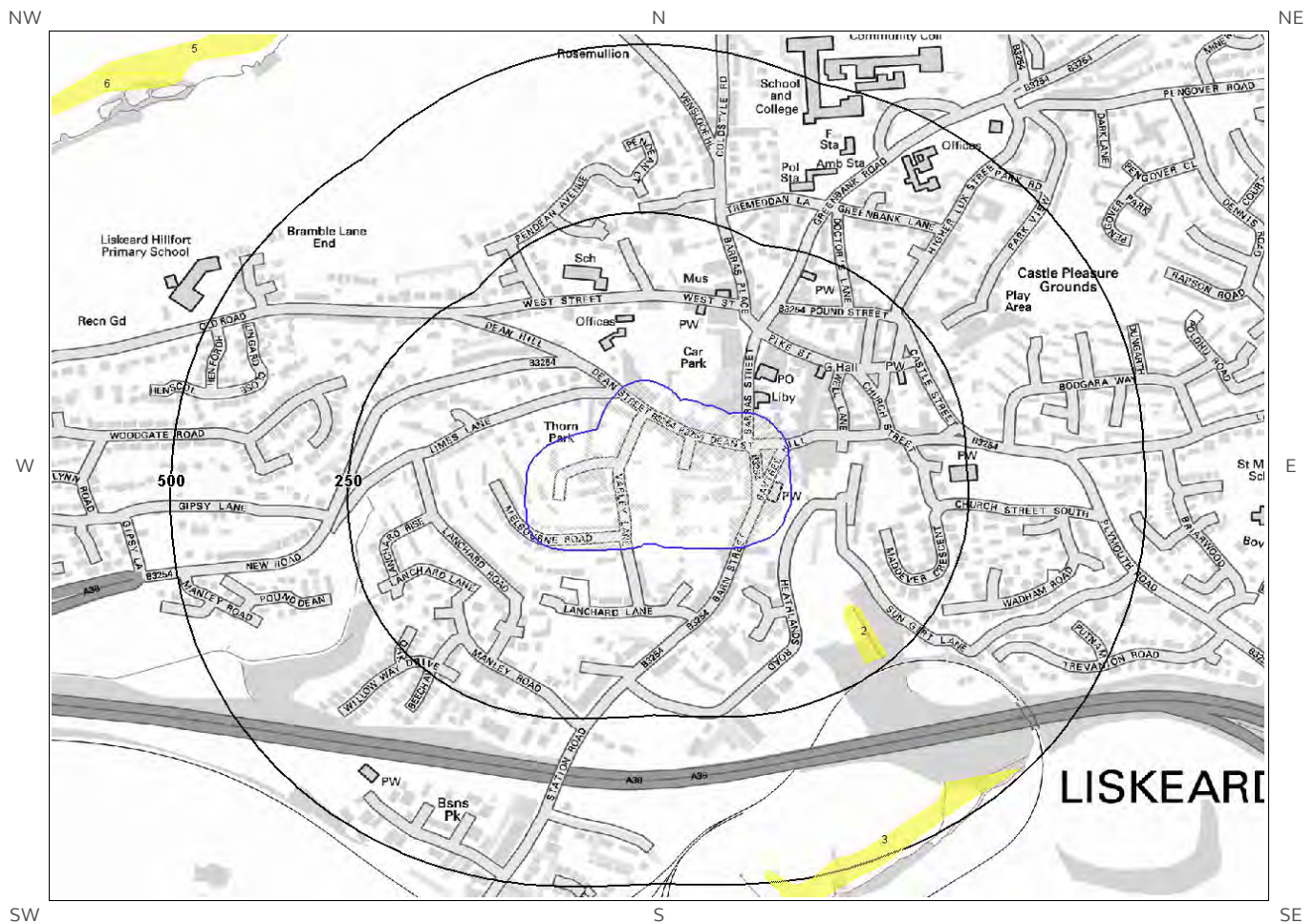
The database has been searched on site, including a 50m buffer.

Lex Code	Description	Rock Type
UIIDC-MCGB	UNNAMED IGNEOUS INTRUSION, DEVONIAN TO CARBONIFEROUS	MICROGABBRO
SAH-SLAS	SALTASH FORMATION	SLATE AND SILTSTONE

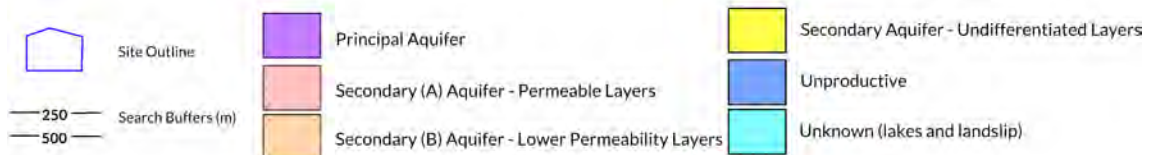
(Derived from the BGS 1:50,000 Digital Geological Map of Great Britain)

6 Hydrogeology and Hydrology

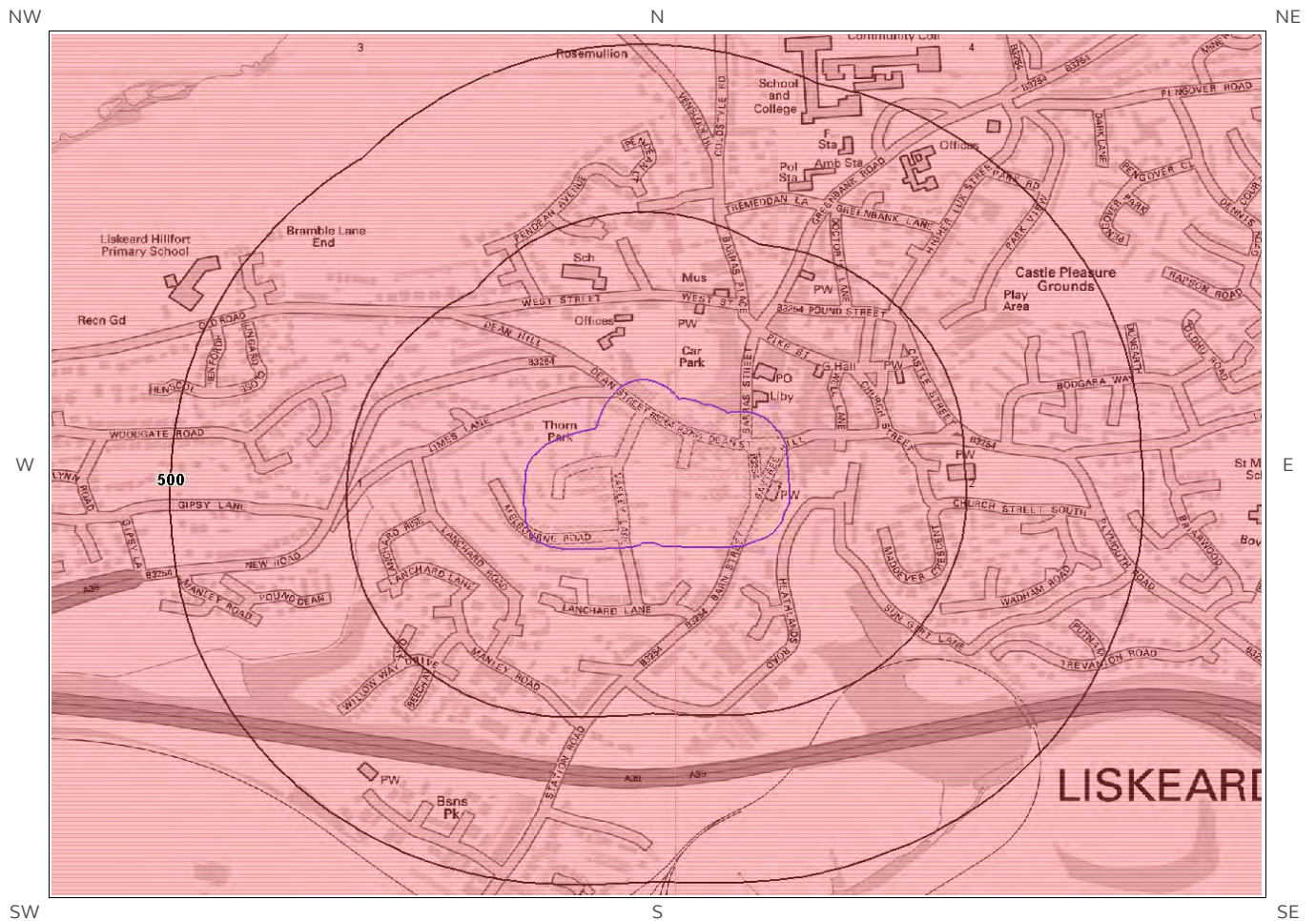
6a. Aquifer Within Superficial Geology



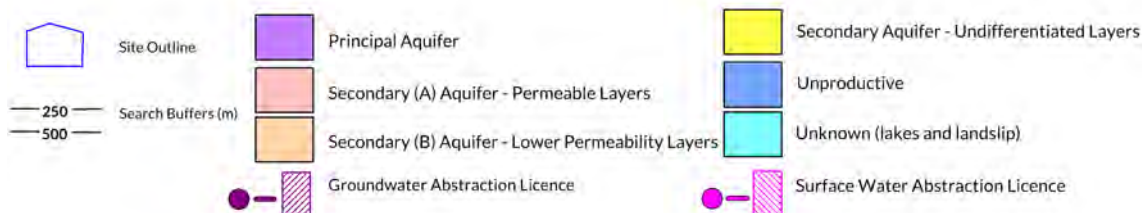
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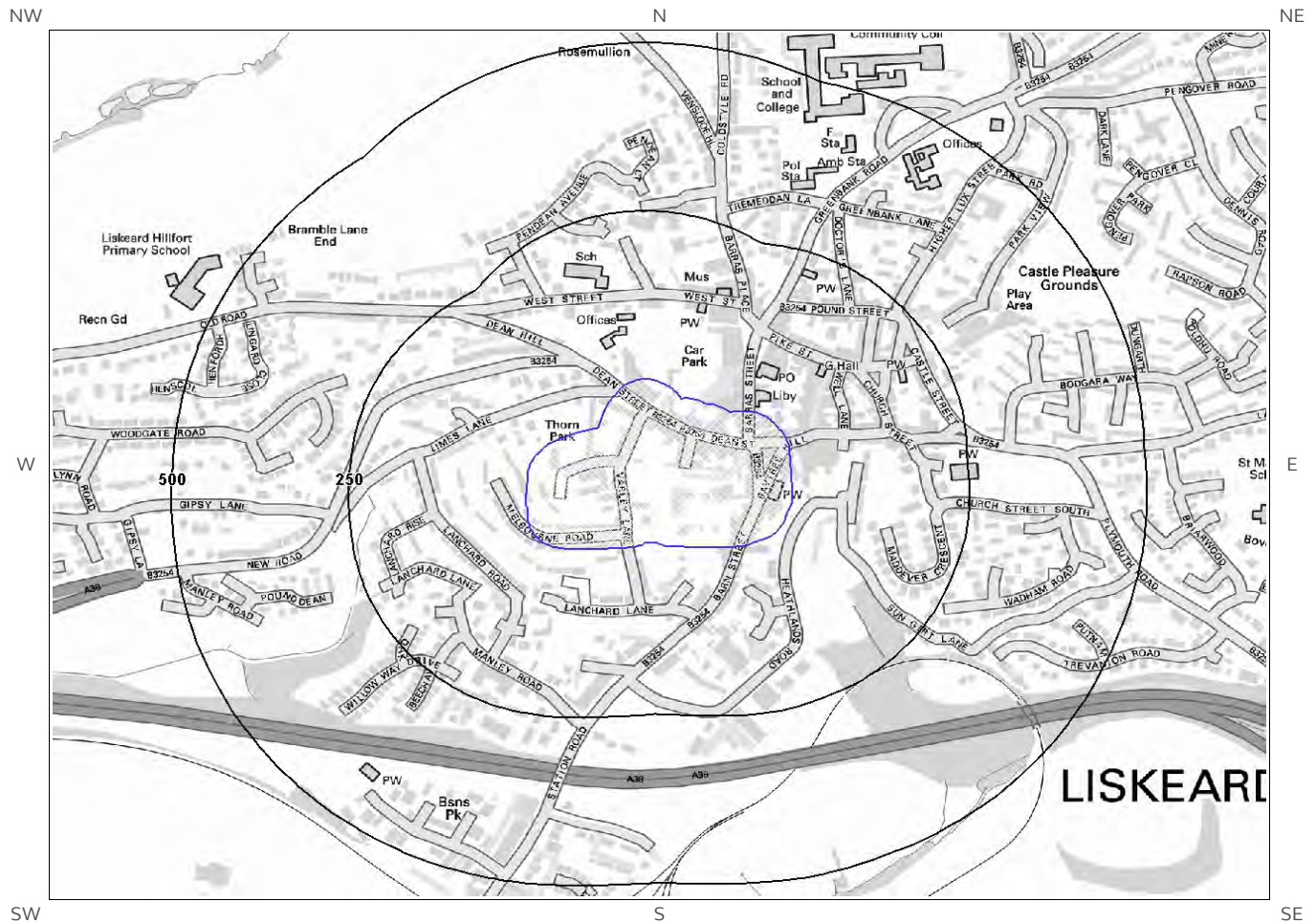
6b. Aquifer Within Bedrock Geology and Abstraction Licences



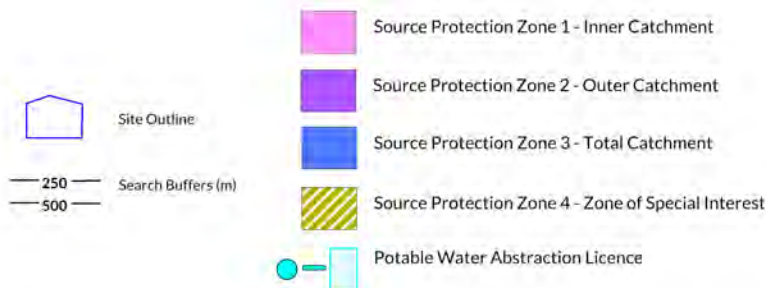
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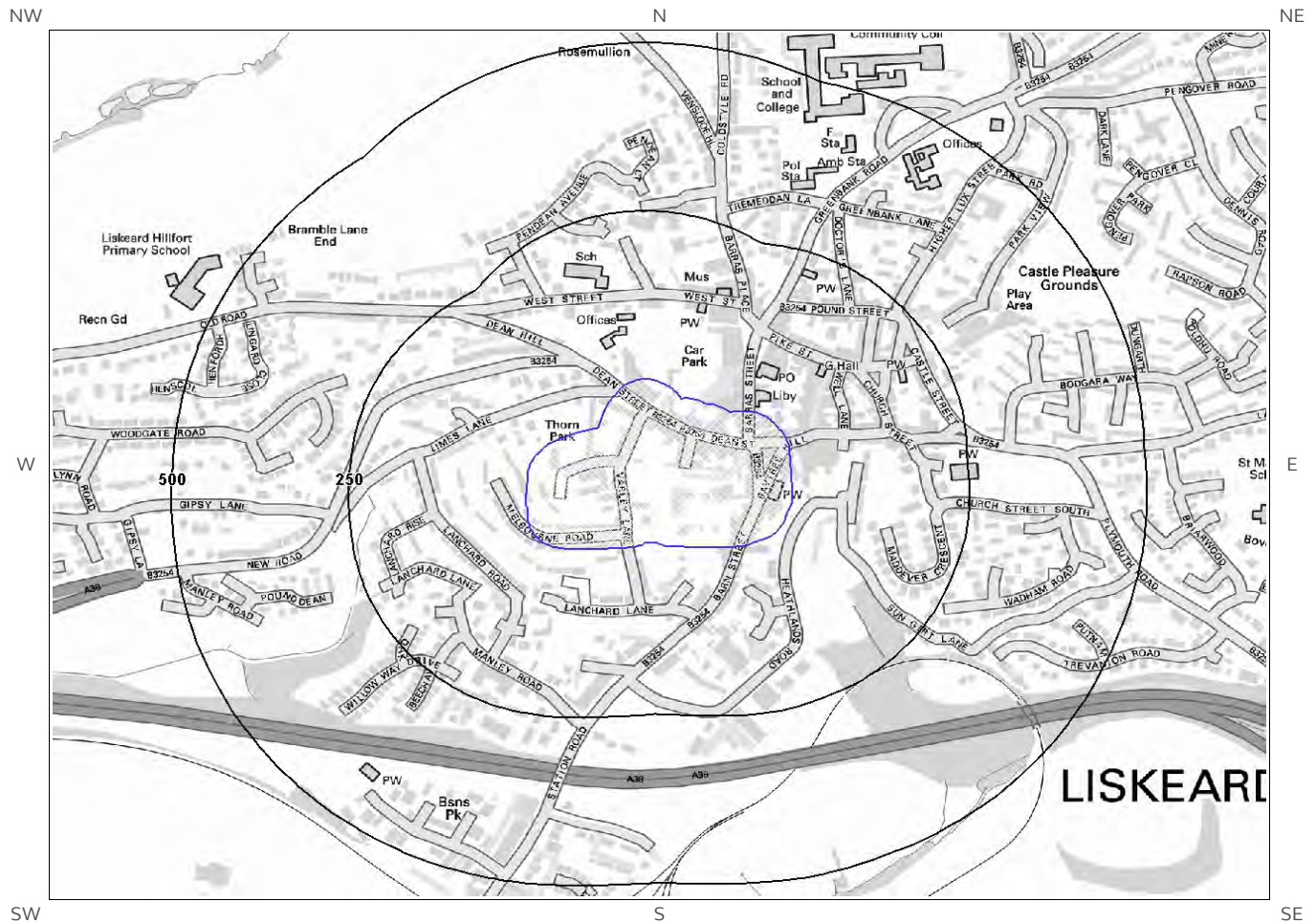
6c. Hydrogeology – Source Protection Zones and Potable Water Abstraction Licences



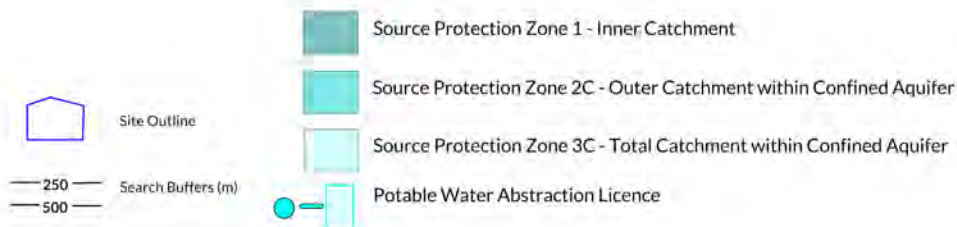
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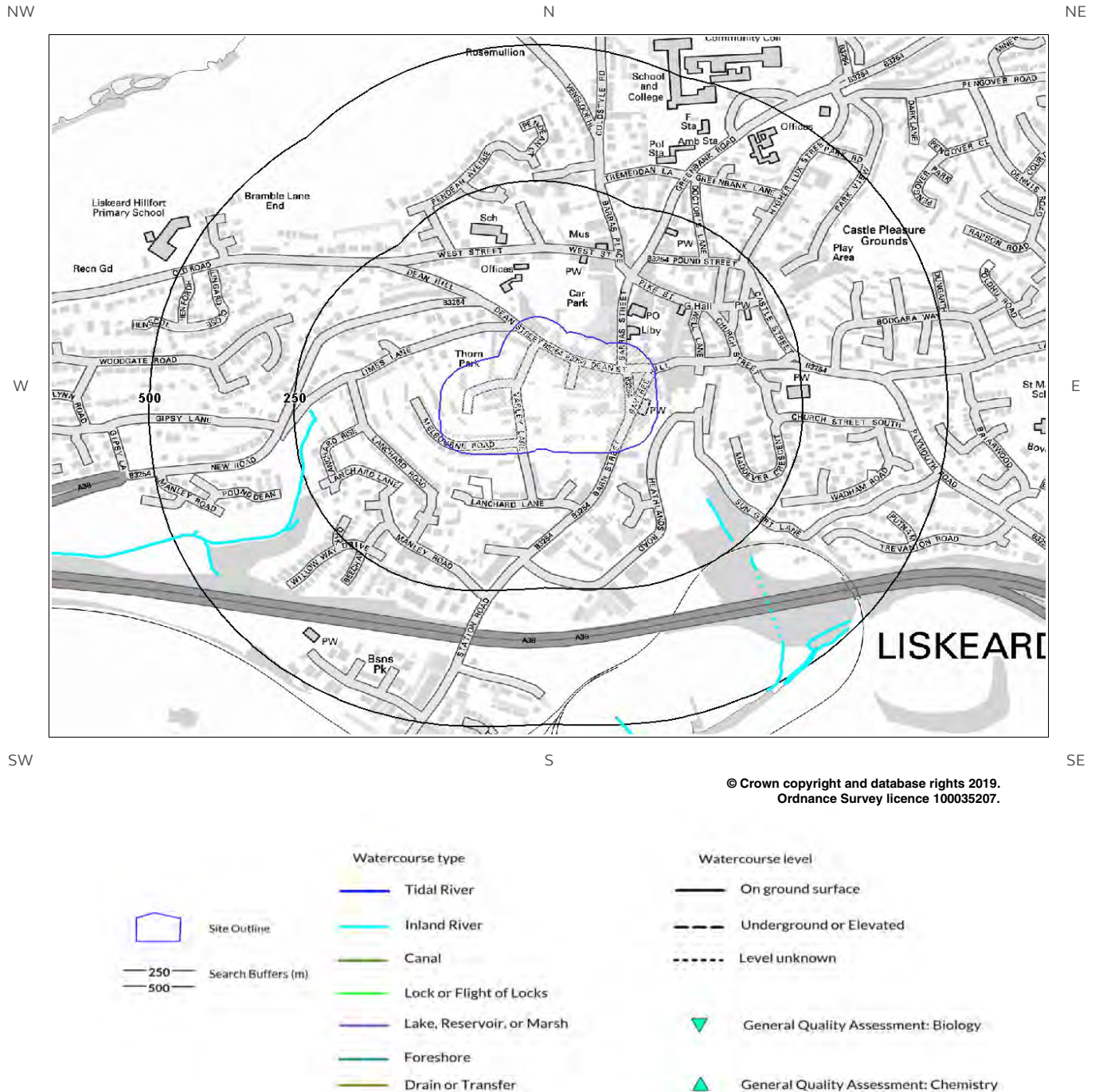
6d. Hydrogeology – Source Protection Zones within confined aquifer



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6e. Hydrology – Watercourse Network and River Quality



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6. Hydrogeology and Hydrology

6.1 Aquifer within Superficial Deposits

Records of strata classification within the superficial geology at or in proximity to the property Yes

From 1 April 2010, the Environment Agency/Natural Resources Wales's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the Groundsure Enviro Insight User Guide.

The following aquifer records are shown on the Aquifer within Superficial Geology Map (6a):

ID	Distance (m)	Direction	Designation	Description
2	147	SE	Secondary (undifferentiated)	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
3	442	SE	Secondary (undifferentiated)	Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type

6.2 Aquifer within Bedrock Deposits

Records of strata classification within the bedrock geology at or in proximity to the property Yes

From 1 April 2010, the Environment Agency/Natural Resources Wales's Groundwater Protection Policy has been using aquifer designations consistent with the Water Framework Directive. For further details on the designation and interpretation of this information, please refer to the Groundsure Enviro Insight User Guide.

The following aquifer records are shown on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	Designation	Description
1	0	On Site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
2	0	On Site	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
3	458	N	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers
4	460	N	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

6.3 Groundwater Abstraction Licences

Groundwater Abstraction Licences within 2000m of the study site

Identified

The following Abstraction Licences records are represented as points, lines and regions on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	NGR	Details
Not shown	1398	S	225200 62900	Status: Historical Licence No: 15/48/172/G/013 Details: General Farming & Domestic Direct Source: Ground Water - Fresh Point: "BRIMBOYTE FARM, LISKEARD - WELL" Data Type: Point Name: Rundle Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: - Original Start Date: Expiry Date: Issue No: Version Start Date: 31/03/1966 Version End Date:
Not shown	1398	S	225200 62900	Status: Historical Licence No: 15/48/172/G/013 Details: General Farming & Domestic Direct Source: Ground Water - Fresh Point: BRIMBOYTE FARM, LISKEARD - WELL Data Type: Point Name: Rundle Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: - Original Start Date: Expiry Date: Issue No: Version Start Date: 31/03/1966 Version End Date:
Not shown	1401	N	224600 65900	Status: Historical Licence No: 15/48/172/G/026 Details: General Farming & Domestic Direct Source: Ground Water - Fresh Point: "WOODHILL MANOR FARM, LISKEARD - BOREHOLE" Data Type: Point Name: Sanders Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: - Original Start Date: Expiry Date: Issue No: Version Start Date: 26/10/2001 Version End Date:
Not shown	1401	N	224600 65900	Status: Historical Licence No: 15/48/172/G/026 Details: General Farming & Domestic Direct Source: Ground Water - Fresh Point: WOODHILL MANOR FARM, LISKEARD - BOREHOLE Data Type: Point Name: Sanders Annual Volume (m³): - Max Daily Volume (m³): - Original Application No: - Original Start Date: Expiry Date: Issue No: Version Start Date: 26/10/2001 Version End Date:

6.4 Surface Water Abstraction Licences

Surface Water Abstraction Licences within 2000m of the study site

Identified

The following Surface Water Abstraction Licences records are represented as points, lines and regions on the Aquifer within Bedrock Geology Map (6b):

ID	Distance (m)	Direction	NGR	Details
Not shown	1734	NW	223300 65300	Status: Historical Licence No: 15/48/172/S/008 Details: Supply To A Leat For Throughflow Direct Source: Surface Water - Fresh Point: THE MILL, LOOE MILLS, LISKEARD Data Type: Point Name: Highways Agency Annual Volume (m³): 1,892,160 Max Daily Volume (m³): 5,184 Application No: - Original Start Date: 26/10/1992 Expiry Date: - Issue No: 100 Version Start Date: 06/09/2004 Version End Date:
Not	1734	NW	223300	Status: Historical Annual Volume (m³): -

ID	Distance (m)	Direction	NGR	Details
shown			65300	Licence No: 15/48/172/S/008 Details: Supply to a Leat for Throughflow Direct Source: Surface Water - Fresh Point: "THE MILL, LOOE MILLS, LISKEARD" Data Type: Point Name: Highways Agency Max Daily Volume (m³): - Application No: - Original Start Date: 26/10/1992 Expiry Date: - Issue No: 100 Version Start Date: 05/06/1995 Version End Date:
Not shown	1734	NW	223308 65314	Status: Active Licence No: 15/48/172/S/008 Details: Supply To A Leat For Throughflow Direct Source: Surface Water - Fresh Point: THE MILL, LOOE MILLS, LISKEARD Data Type: Point Name: Morris Annual Volume (m³): 1,892,160 Max Daily Volume (m³): 5,184 Application No: - Original Start Date: 26/10/1992 Expiry Date: - Issue No: 101 Version Start Date: 14/11/2017 Version End Date:

6.5 Potable Water Abstraction Licences

Potable Water Abstraction Licences within 2000m of the study site

None identified

Database searched and no data found.

6.6 Source Protection Zones

Source Protection Zones within 500m of the study site

None identified

Database searched and no data found.

6.7 Source Protection Zones within Confined Aquifer

Source Protection Zones within the Confined Aquifer within 500m of the study site

None identified

Historically, Source Protection Zone maps have been focused on regulation of activities which occur at or near the ground surface, such as prevention of point source pollution and bacterial contamination of water supplies. Sources in confined aquifers were often considered to be protected from these surface pressures due to the presence of a low permeability confining layer (e.g. glacial till, clay). The increased interest in subsurface activities such as onshore oil and gas exploration, ground source heating and cooling requires protection zones for confined sources to be marked on SPZ maps where this has not already been done.

Database searched and no data found.

6.8 Groundwater Vulnerability and Soil Leaching Potential

Environment Agency/Natural Resources Wales information on groundwater vulnerability and soil leaching potential within 500m of the study site Identified

Distance (m)	Direction	Classification	Soil Vulnerability Category	Description
0	On Site	Minor Aquifer/High Leaching Potential	HU	Soil information for urban areas and restored mineral workings. These soils are therefore assumed to be highly permeable in the absence of site-specific information.
385	SW	Minor Aquifer/Intermediate Leaching Potential	I1	Soils which can possibly transmit a wide range of pollutants.

6.9 River Quality

Environment Agency/Natural Resources Wales information on river quality within 1500m of the study site Identified

6.9.1 Biological Quality:

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

The following Biological Quality records are shown on the Hydrology Map (6e):

ID	Distance (m)	Direction	NGR	River Quality Grade	Biological Quality Grade				
					2005	2006	2007	2008	2009
Not shown	1168	SW	223880 63590	River Name: East Looe River Reach: Lamellion Mill-below Liskeard Stw End/Start of Stretch: Start of Stretch NGR	B	B	B	B	B

6.9.2 Chemical Quality:

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

The following Chemical Quality records are shown on the Hydrology Map (6e):

ID	Distance (m)	Direction	NGR	River Quality Grade	Chemical Quality Grade				
					2005	2006	2007	2008	2009
Not shown	1168	SW	223880 63590	River Name: East Looe River Reach: Lamellion Mill-below Liskeard Stw End/Start of Stretch: Start of Stretch NGR	A	A	A	A	A

6.10 Ordnance Survey MasterMap Water Network

Ordnance Survey MasterMap Water Network entries within 500m of the study site

This watercourse information is provided by Ordnance Survey MasterMap Water Network. The data provides a detailed centre line following the curve of the waterway precisely, so all distances provided in the report should be understood as measurements to the centreline rather than a measurement to the nearest point of the watercourse. Underground watercourses are inferred from entry and exit points so caution is advised in using these to indicate precise locations of underground watercourses when planning site investigation and development.

The following Ordnance Survey MasterMap Water Network records are represented on the Hydrology Map (6e):

ID	Distance/Direction	Name	Type of Watercourse	Additional Details
1	154 SE	-	Inland river not influenced by normal tidal action.	Catchment Area: Seaton Looe and Polperro Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.7
3	154 SE	-	Inland river not influenced by normal tidal action.	Catchment Area: Seaton Looe and Polperro Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): 1.7
2	213 W	-	Inland river not influenced by normal tidal action.	Catchment Area: Seaton Looe and Polperro Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
4	213 W	-	Inland river not influenced by normal tidal action.	Catchment Area: Seaton Looe and Polperro Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
3	239 W	-	Inland river not influenced by normal tidal action.	Catchment Area: Seaton Looe and Polperro Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions)

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
				conditions) Average Width in Watercourse Section (m): Not Provided
5	239 W	-	Inland river not influenced by normal tidal action.	Catchment Area: Seaton Looe and Polperro Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
4	281 SE	-	Inland river not influenced by normal tidal action.	Catchment Area: Seaton Looe and Polperro Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
6	281 SE	-	Inland river not influenced by normal tidal action.	Catchment Area: Seaton Looe and Polperro Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
5	291 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: Seaton Looe and Polperro Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
7	291 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: Seaton Looe and Polperro Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
6	303 SE	-	Inland river not influenced by normal tidal action.	Catchment Area: Seaton Looe and Polperro Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
8	303 SE	-	Inland river not influenced by normal tidal action.	Catchment Area: Seaton Looe and Polperro Relationship to Ground Level: Not provided Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
7	321 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: Seaton Looe and Polperro Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
9	321 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: Seaton Looe and Polperro Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
8	437 SE	-	Inland river not influenced by normal tidal action.	Catchment Area: Seaton Looe and Polperro Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	437 SE	-	Inland river not influenced by normal tidal action.	Catchment Area: Seaton Looe and Polperro Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
9	451 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: Seaton Looe and Polperro Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
10	451 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: Seaton Looe and Polperro Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	451 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: Seaton Looe and Polperro Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	451 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: Seaton Looe and Polperro Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
11	457 W	-	Inland river not influenced by normal tidal action.	Catchment Area: Seaton Looe and Polperro Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	457 W	-	Inland river not influenced by normal tidal action.	Catchment Area: Seaton Looe and Polperro Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
12	464 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: Seaton Looe and Polperro Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	464 SW	-	Inland river not influenced by normal tidal action.	Catchment Area: Seaton Looe and Polperro Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
13	466 SE	-	Inland river not influenced by normal tidal action.	Catchment Area: Seaton Looe and Polperro Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	466 SE	-	Inland river not influenced by normal tidal action.	Catchment Area: Seaton Looe and Polperro Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
14	482 SE	-	Inland river not influenced by normal tidal action.	Catchment Area: Seaton Looe and Polperro Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	482 SE	-	Inland river not influenced by normal tidal action.	Catchment Area: Seaton Looe and Polperro Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
15	483 SE	-	Inland river not influenced by normal tidal action.	Catchment Area: Seaton Looe and Polperro Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	483	-	Inland river not influenced by normal tidal action.	Catchment Area: Seaton Looe and Polperro Relationship to Ground Level: On ground surface

ID	Distance/ Direction	Name	Type of Watercourse	Additional Details
	SE			Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
16	486 SE	-	Inland river not influenced by normal tidal action.	Catchment Area: Seaton Looe and Polperro Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	486 SE	-	Inland river not influenced by normal tidal action.	Catchment Area: Seaton Looe and Polperro Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
17	488 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Seaton Looe and Polperro Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided
Not shown	488 S	-	Inland river not influenced by normal tidal action.	Catchment Area: Seaton Looe and Polperro Relationship to Ground Level: On ground surface Permanence: Watercourse contains water year round (in normal conditions) Average Width in Watercourse Section (m): Not Provided

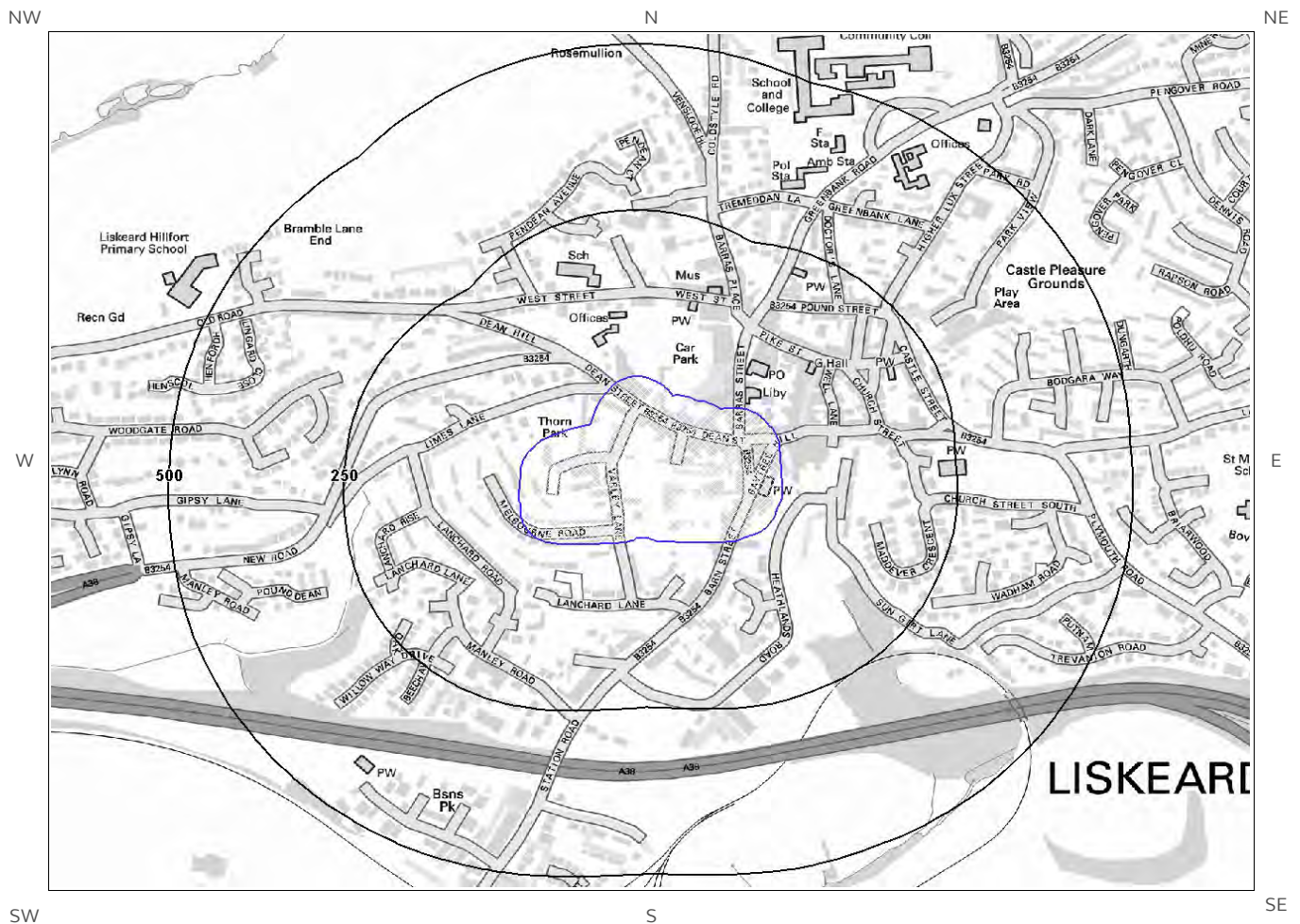
6.11 Surface Water Features

Surface water features within 250m of the study site Identified

The following surface water records are not represented on mapping:

Distance (m)	Direction
213	W

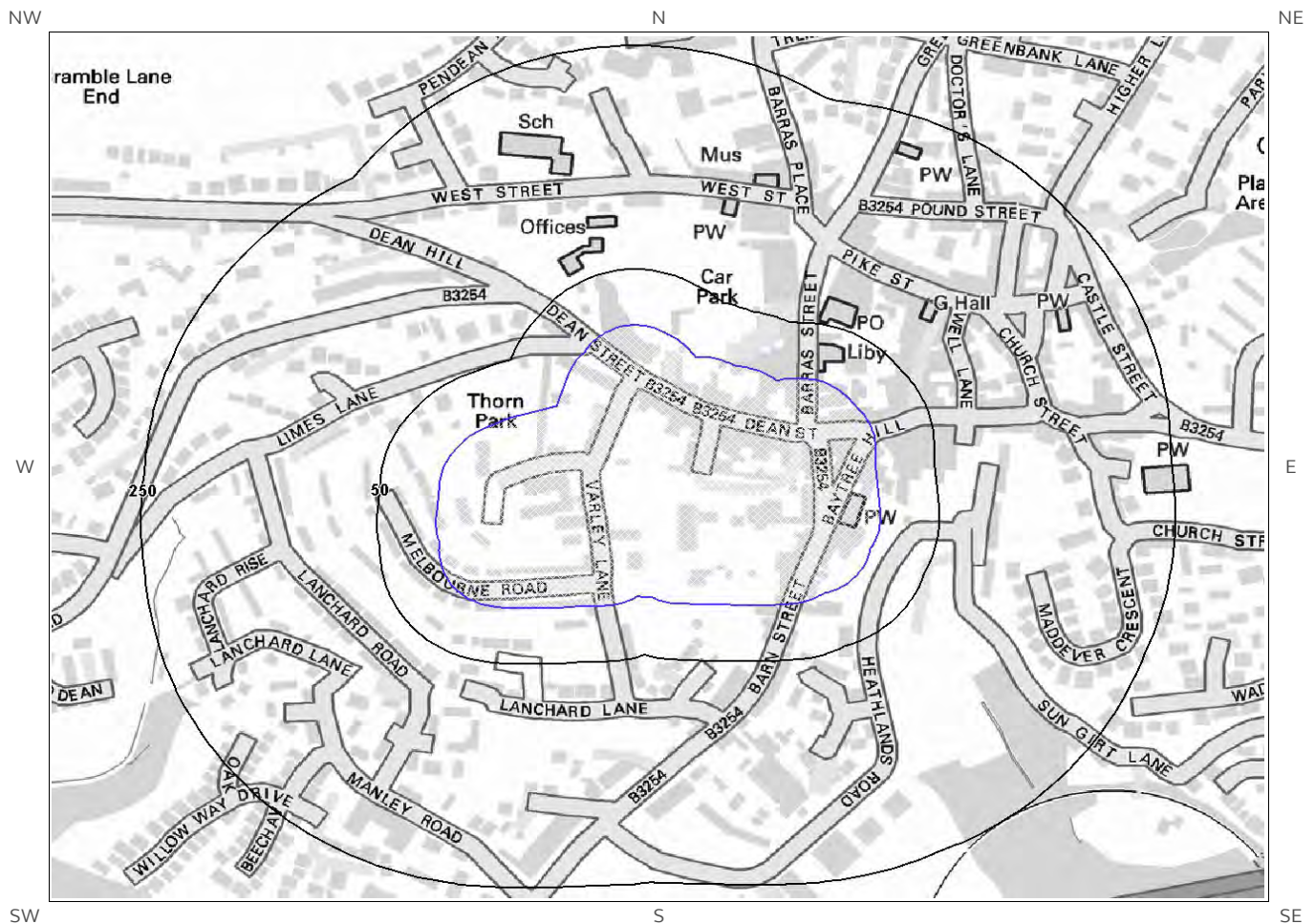
7a. Environment Agency/Natural Resources Wales Flood Map for Planning (from rivers and the sea)



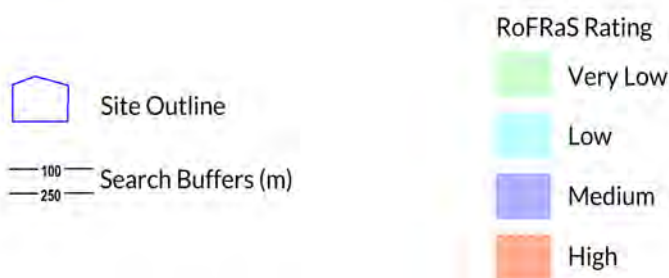
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7b. Environment Agency/Natural Resources Wales Risk of Flooding from Rivers and the Sea (RoFRaS) Map



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7 Flooding

7.1 River and Coastal Zone 2 Flooding

Environment Agency/Natural Resources Wales Zone 2 floodplain within 250m None identified

Environment Agency/Natural Resources Wales Zone 2 floodplains estimate the annual probability of flooding as between 1 in 1000 (0.1%) and 1 in 100 (1%) from rivers and between 1 in 1000 (0.1%) and 1 in 200 (0.5%) from the sea. Any relevant data is represented on Map 7a – Flood Map for Planning:

Database searched and no data found.

7.2 River and Coastal Zone 3 Flooding

Environment Agency/Natural Resources Wales Zone 3 floodplain within 250m None identified

Zone 3 shows the extent of a river flood with a 1 in 100 (1%) or greater chance of occurring in any year or a sea flood with a 1 in 200 (0.5%) or greater chance of occurring in any year. Any relevant data is represented on Map 7a – Flood Map for Planning.

Database searched and no data found.

7.3 Risk of Flooding from Rivers and the Sea (RoFRaS) Flood Rating

Highest risk of flooding onsite Very Low

The Environment Agency/Natural Resources Wales RoFRaS database provides an indication of river and coastal flood risk at a national level on a 50m grid with the flood rating at the centre of the grid calculated and given above. The data considers the probability that the flood defences will overtop or breach by considering their location, type, condition and standard of protection.

RoFRaS data for the study site indicates the property is in an area with a Very Low (less than 1 in 1000) chance of flooding in any given year.

7.4 Flood Defences

Flood Defences within 250m of the study site None identified
Database searched and no data found.

7.5 Areas benefiting from Flood Defences

Areas benefiting from Flood Defences within 250m of the study site None identified

7.6 Areas benefiting from Flood Storage

Areas used for Flood Storage within 250m of the study site

None identified

7.7 Groundwater Flooding Susceptibility Areas

7.7.1 British Geological Survey groundwater flooding susceptibility areas within 50m of the boundary of the study site

None identified

Notes: Groundwater flooding may either be associated with shallow unconsolidated sedimentary aquifers which overlie unproductive aquifers (Superficial Deposits Flooding), or with unconfined aquifers (Clearwater Flooding).

7.7.2 Highest susceptibility to groundwater flooding in the search area based on the underlying geological conditions

Not Prone

The area is not considered to be prone to groundwater flooding based on rock type.

7.8 Groundwater Flooding Confidence Areas

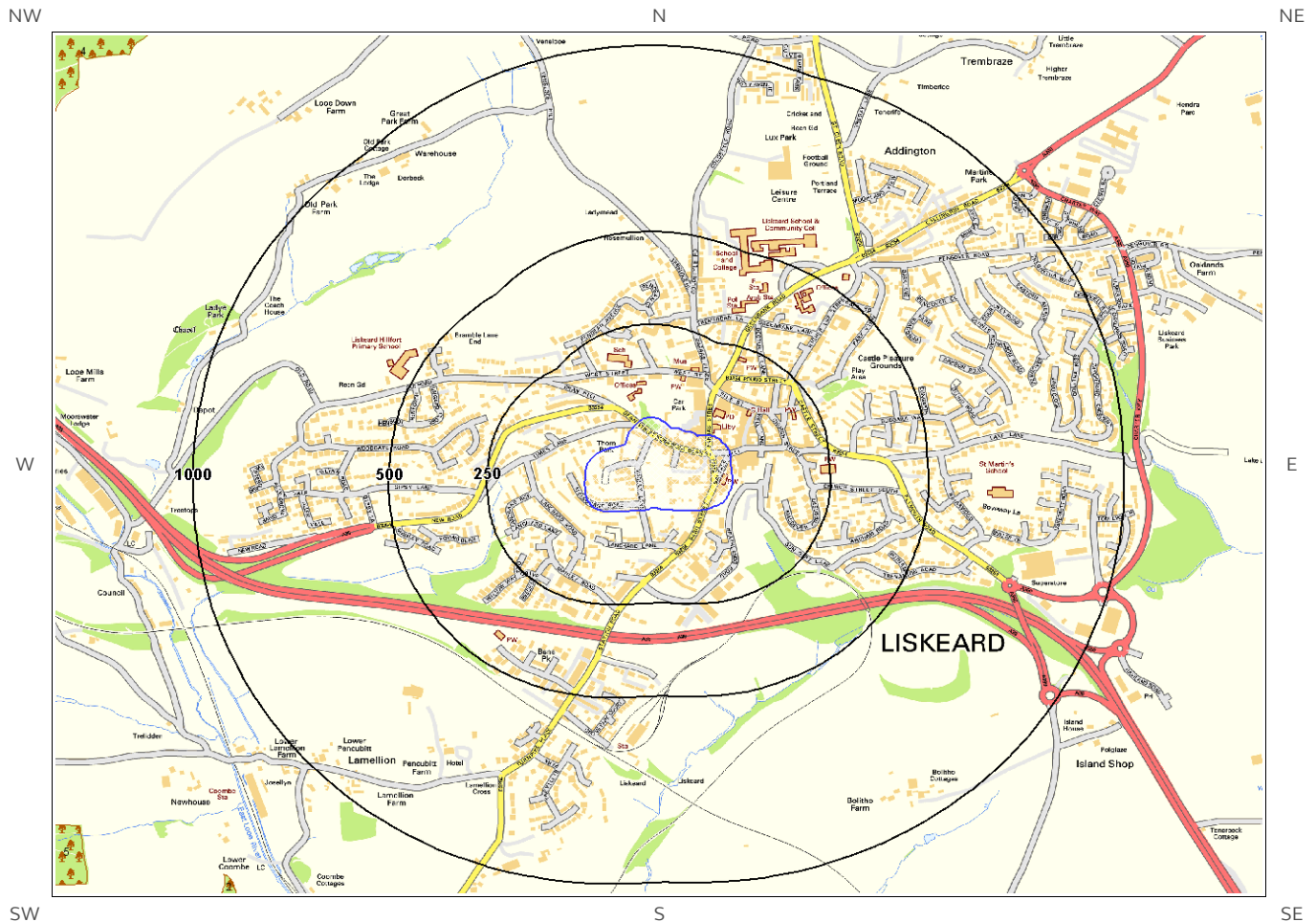
British Geological Survey confidence rating in this result

Not Applicable

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

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

8. Designated Environmentally Sensitive Sites Map



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8. Designated Environmentally Sensitive Sites

Designated Environmentally Sensitive Sites within 2000m of the study site	Identified
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8.1 Records of Sites of Special Scientific Interest (SSSI) within 2000m of the study site:

0

Database searched and no data found.

8.2 Records of National Nature Reserves (NNR) within 2000m of the study site:

0

Database searched and no data found.

8.3 Records of Special Areas of Conservation (SAC) within 2000m of the study site:

0

Database searched and no data found.

8.4 Records of Special Protection Areas (SPA) within 2000m of the study site:

0

Database searched and no data found.

8.5 Records of Ramsar sites within 2000m of the study site:

0

Database searched and no data found.

8.6 Records of Ancient Woodland within 2000m of the study site:

10

The following records of Designated Ancient Woodland provided by Natural England/Natural Resources Wales are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	Ancient Woodland Name	Data Source
2	1362	SW	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1446	SW	UNKNOWN	Ancient Replanted Woodland
4	1472	NW	HIGH WOOD	Ancient Replanted Woodland
5	1562	SW	JASPERS/MOORWELL WOODS	Ancient Replanted Woodland
Not shown	1799	SW	SLIP/HIGHLAND WOODS	Ancient Replanted Woodland
Not shown	1838	S	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1884	S	UNKNOWN	Ancient Replanted Woodland
Not shown	1890	S	HOUSEY WOOD	Ancient Replanted Woodland
Not shown	1952	NW	UNKNOWN	Ancient and Semi-Natural Woodland
Not shown	1956	SE	UNKNOWN	Ancient Replanted Woodland

8.7 Records of Local Nature Reserves (LNR) within 2000m of the study site:

0

Database searched and no data found.

8.8 Records of World Heritage Sites within 2000m of the study site:

1

The following World Heritage Site records provided by English Heritage and Cadw are represented as polygons on the Designated Environmentally Sensitive Sites Map:

ID	Distance (m)	Direction	World Heritage Site Name	Data Source
Not shown	1478	W	Cornwall and West Devon Mining Landscape	Historic England

8.9 Records of Environmentally Sensitive Areas within 2000m of the study site:

0

Database searched and no data found.

8.10 Records of Areas of Outstanding Natural Beauty (AONB) within 2000m of the study site:

0

Database searched and no data found.

8.11 Records of National Parks (NP) within 2000m of the study site:

0

Database searched and no data found.

8.12 Records of Nitrate Sensitive Areas within 2000m of the study site:

0

Database searched and no data found.

8.13 Records of Nitrate Vulnerable Zones within 2000m of the study site:

0

Database searched and no data found.

8.14 Records of Green Belt land within 2000m of the study site:

0

Database searched and no data found.

9. Natural Hazards Findings

9.1 Detailed BGS GeoSure Data

BGS GeoSure Data has been searched to 50m. The data is included in tabular format. If you require further information on geology and ground stability, please obtain a **Groundsure Geo Insight**, available from our **website**. The following information has been found:

9.1.1 Shrink Swell

Maximum Shrink-Swell** hazard rating identified on the study site Negligible

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

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

9.1.2 Landslides

Maximum Landslide* hazard rating identified on the study site Very Low

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

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

9.1.3 Soluble Rocks

Maximum Soluble Rocks* hazard rating identified on the study site Negligible

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

Hazard
Soluble rocks are present, but unlikely to cause problems except under exceptional conditions. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.

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