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

Site Outline

Search buffers in metres (m)

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

15.2 Artificial and made ground (50k)

Records within 500m	1

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

Features are displayed on the Geology 1:50,000 scale - Artificial and made ground map on **page 68**

ID	Location	LEX Code	Description	Rock description
1	21m NE	WMGR-ARTDP	INFILLED GROUND	ARTIFICIAL DEPOSIT

This data is sourced from the British Geological Survey.

15.3 Artificial ground permeability (50k)

Records within 50m	2

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

Location	Flow type	Maximum permeability	Minimum permeability
21m N	Mixed	Very High	Low
21m N	Mixed	Very High	Low

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Superficial

Site Outline

Search buffers in metres (m)

Landslip (50k)

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

15.4 Superficial geology (50k)

Records within 500m	1

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

Features are displayed on the Geology 1:50,000 scale - Superficial map on **page 70**

ID	Location	LEX Code	Description	Rock description
1	475m NE	ALV-XCZSV	ALLUVIUM	CLAY, SILT, SAND AND GRAVEL

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m	0

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

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

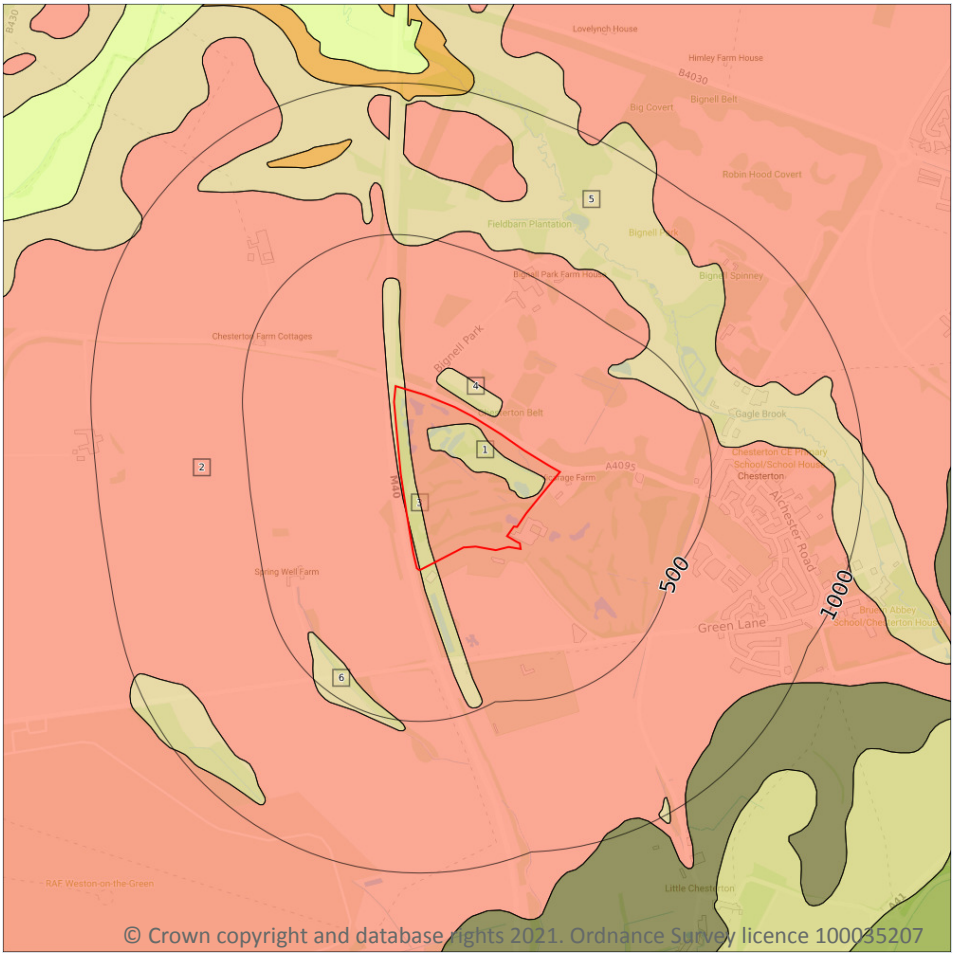
15.7 Landslip permeability (50k)

Records within 50m	0

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

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (50k)

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

15.8 Bedrock geology (50k)

Records within 500m	6

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

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 72**

ID	Location	LEX Code	Description	Rock age
1	On site	FMB-LSMD	FOREST MARBLE FORMATION - LIMESTONE AND MUDSTONE, INTERBEDDED	BATHONIAN
2	On site	CB-LMST	CORNBRASH FORMATION - LIMESTONE	BATHONIAN
3	On site	FMB-LSMD	FOREST MARBLE FORMATION - LIMESTONE AND MUDSTONE, INTERBEDDED	BATHONIAN

ID	Location	LEX Code	Description	Rock age
4	29m NE	FMB-LSMD	FOREST MARBLE FORMATION - LIMESTONE AND MUDSTONE, INTERBEDDED	BATHONIAN
5	361m NE	FMB-LSMD	FOREST MARBLE FORMATION - LIMESTONE AND MUDSTONE, INTERBEDDED	BATHONIAN
6	392m SW	FMB-LSMD	FOREST MARBLE FORMATION - LIMESTONE AND MUDSTONE, INTERBEDDED	BATHONIAN

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m	7

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

Location	Flow type	Maximum permeability	Minimum permeability
On site	**Fracture**	**Very High**	**Low**
On site	**Fracture**	**Very High**	**Low**
On site	**Fracture**	**Very High**	**Low**
On site	**Fracture**	**Very High**	**High**
On site	**Fracture**	**Very High**	**High**
29m N	Fracture	Very High	Low
29m N	Fracture	Very High	Low

This data is sourced from the British Geological Survey.

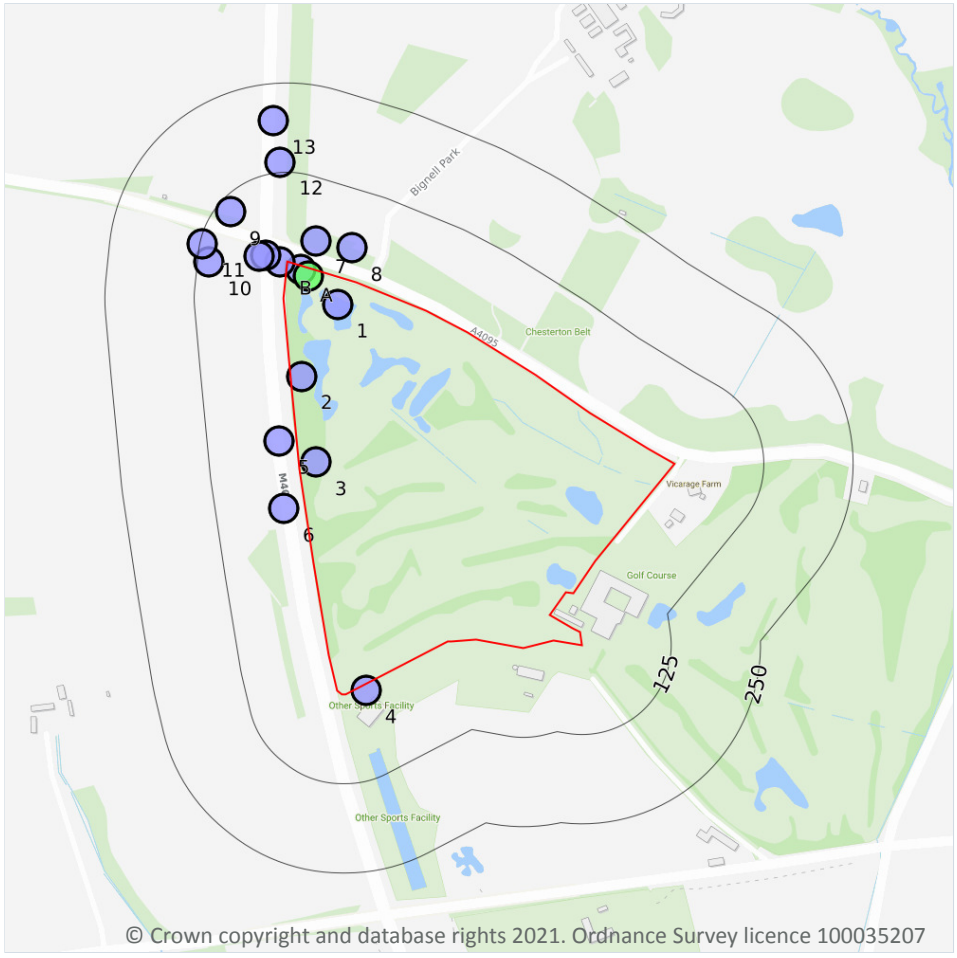
15.10 Bedrock faults and other linear features (50k)

Records within 500m	0

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

This data is sourced from the British Geological Survey.

16 Boreholes



Site Outline

Search buffers in metres (m)

Confidential

0 - 10m

10 - 30m

30m+

Unknown

16.1 BGS Boreholes

Records within 250m **18**

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

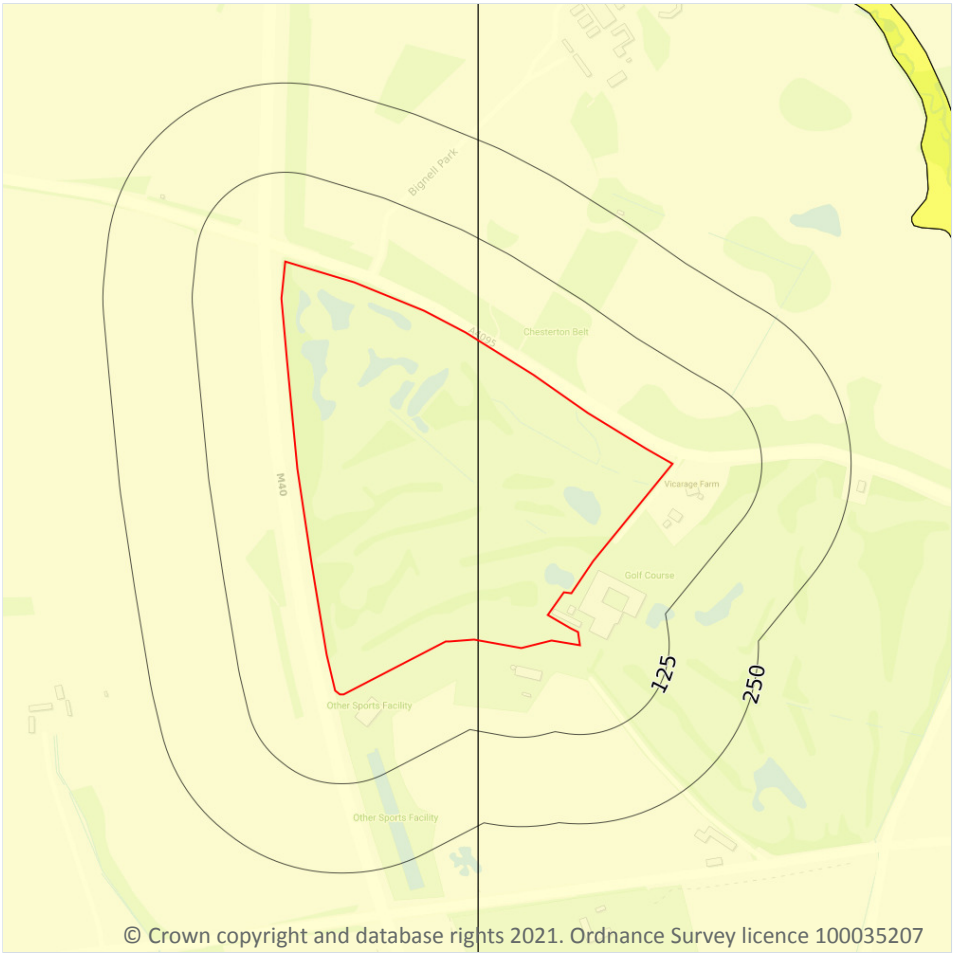
Features are displayed on the Boreholes map on **page 74**

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	On site	454800 221920	CHESTERTON CUTTING C7 AKEMAN ST TP487	3.0	N	336912
2	On site	454750 221820	CHESTERTON CUTTING C7 AKEMAN ST TP487A	1.0	N	336911
3	On site	454770 221700	CHESTERTON CUTTING C7 AKEMAN ST TP486	2.0	N	336910

ID	Location	Grid reference	Name	Length	Confidential	Web link
A	**On site**	**454749 221970**	**M40 BANBURY BYPASS BH821T**	**1.0**	**N**	**336971**
A	**On site**	**454760 221960**	**CHESTERTON CUTTING C7 AKEMAN ST BH062**	**25.0**	**N**	**336915**
4	8m SE	454840 221380	CHESTERTON CUTTING C7 AKEMAN ST TP485	2.0	N	336909
B	10m W	454720 221980	M40 BANBURY BYPASS BH212T	10.0	N	336962
5	25m W	454718 221730	M40 BANBURY BYPASS BH820T	1.0	N	336970
6	30m W	454725 221635	M40 BANBURY BYPASS BH819T	1.0	N	336969
B	31m W	454700 221990	CHESTERTON CUTTING C7 AKEMAN ST BH060	10.0	N	336914
7	40m N	454770 222010	M40 BUCKNELL LODGE 222	10.0	N	336893
B	41m W	454690 221988	M40 BANBURY BYPASS BH213T	10.0	N	336963
8	45m N	454820 222000	CHESTERTON CUTTING C7 AKEMAN ST TP490	1.0	N	336917
9	106m NW	454650 222050	CHESTERTON CUTTING C7 AKEMAN ST TP489	0.0	N	336916
10	109m W	454620 221980	CHESTERTON CUTTING C7 AKEMAN ST TP488	2.0	N	336913
11	121m W	454611 222005	M40 BANBURY BYPASS BH822T	1.0	N	336972
12	140m N	454720 222120	CHESTERTON CUTTING C7 AKEMAN ST TP491	2.0	N	336918
13	198m N	454710 222178	M40 BANBURY BYPASS BH823T	1.0	N	336973

This data is sourced from the British Geological Survey.

17 Natural ground subsidence - Shrink swell clays



Site Outline

Search buffers in metres (m)

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

17.1 Shrink swell clays

Records within 50m	1

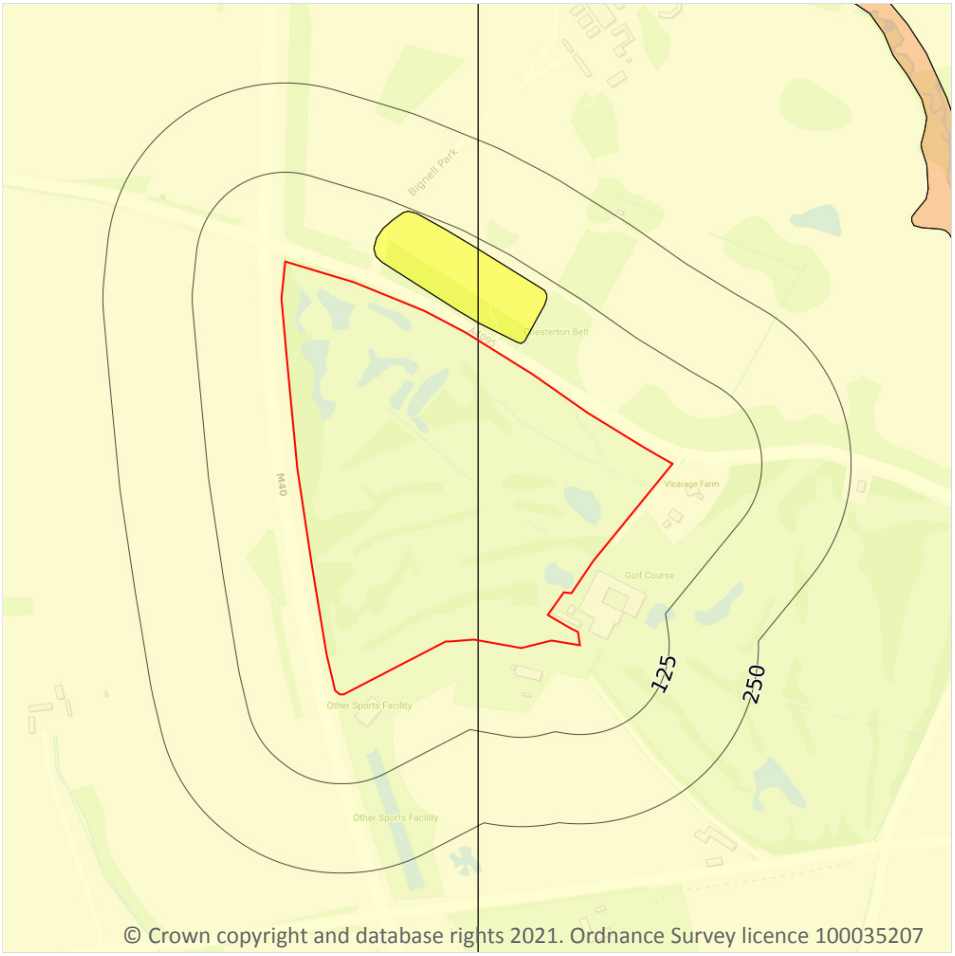
The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and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

Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 76**

Location	Hazard rating	Details
On site	**Negligible**	**Ground conditions predominantly non-plastic.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Running sands



Site Outline

Search buffers in metres (m)

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

17.2 Running sands

Records within 50m	3

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

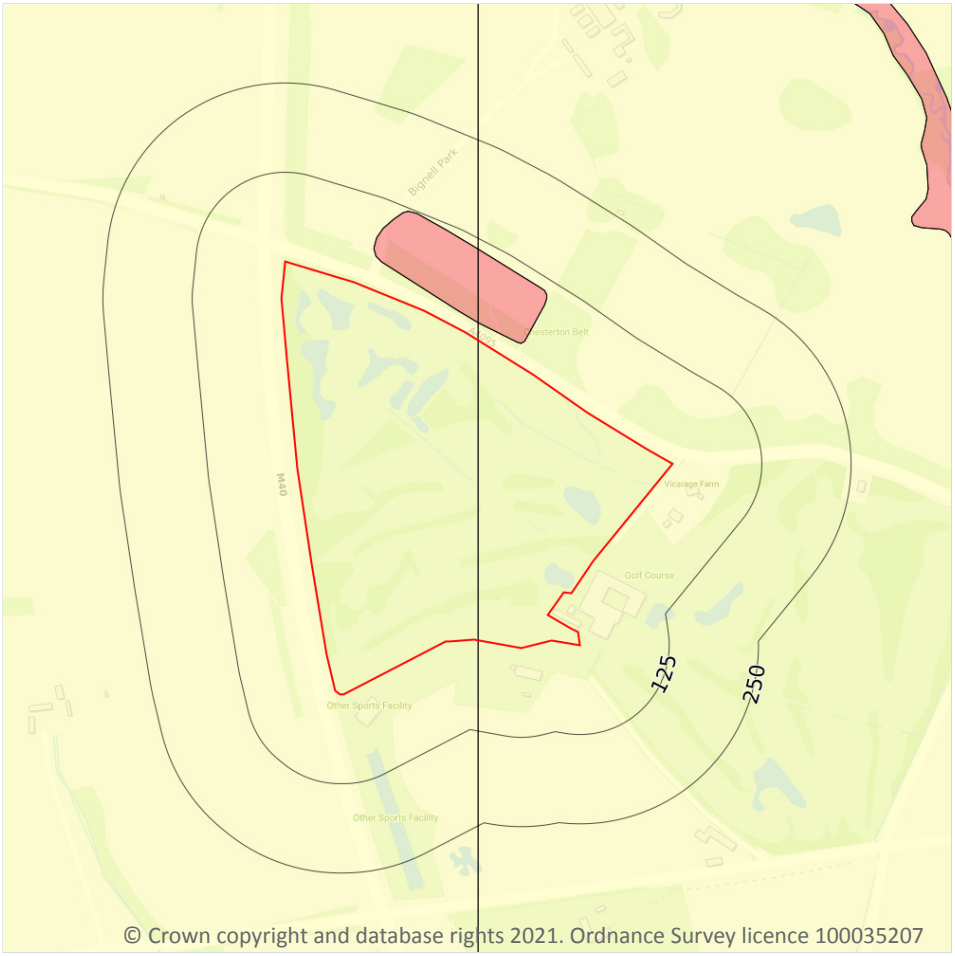
Features are displayed on the Natural ground subsidence - Running sands map on **page 77**

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

Location	Hazard rating	Details
21m NE	Very low	Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless water table rises rapidly.
21m NE	Very low	Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless water table rises rapidly.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Compressible deposits



Site Outline

Search buffers in metres (m)

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

17.3 Compressible deposits

Records within 50m	3

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

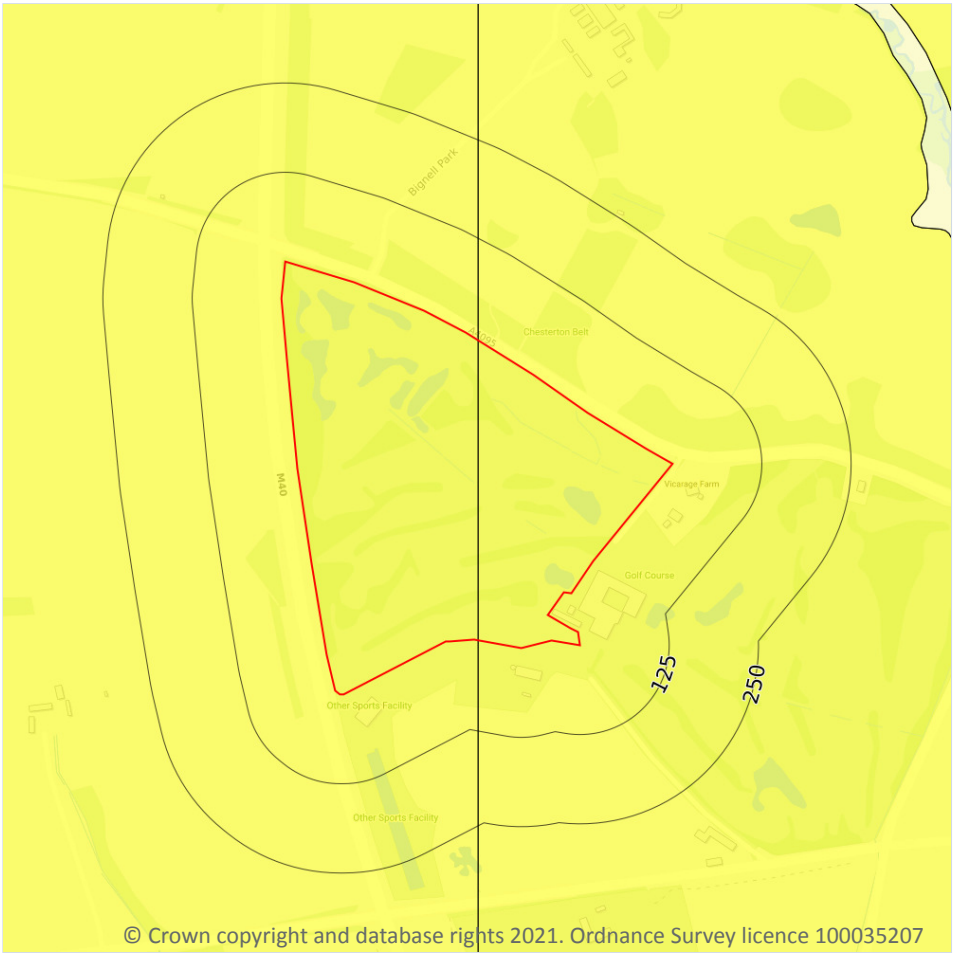
Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 79**

Location	Hazard rating	Details
On site	**Negligible**	**Compressible strata are not thought to occur.**
21m NE	Moderate	Compressibility and uneven settlement hazards are probably present. Land use should consider specifically the compressibility and variability of the site.

Location	Hazard rating	Details
21m NE	Moderate	Compressibility and uneven settlement hazards are probably present. Land use should consider specifically the compressibility and variability of the site.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Collapsible deposits



Site Outline

Search buffers in metres (m)

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

17.4 Collapsible deposits

Records within 50m	1

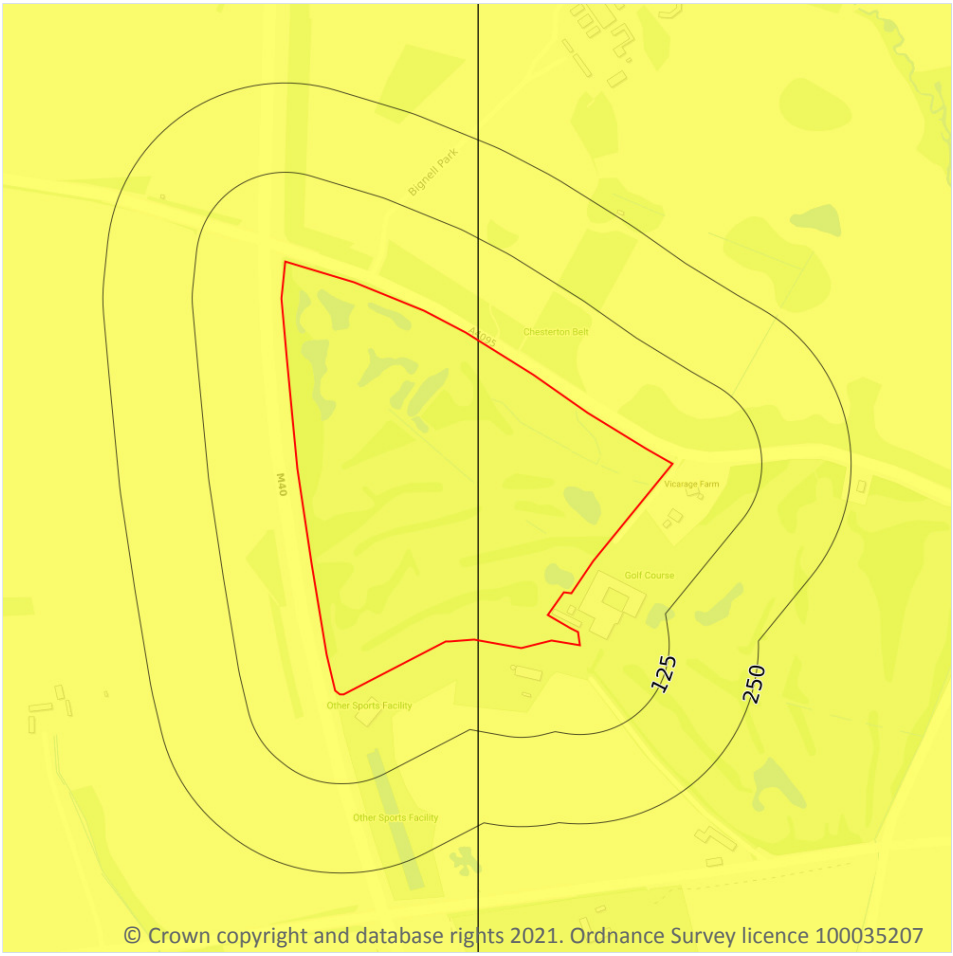
The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 81**

Location	Hazard rating	Details
On site	**Very low**	**Deposits with potential to collapse when loaded and saturated are unlikely to be present.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Landslides



Site Outline

Search buffers in metres (m)

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

17.5 Landslides

Records within 50m	1

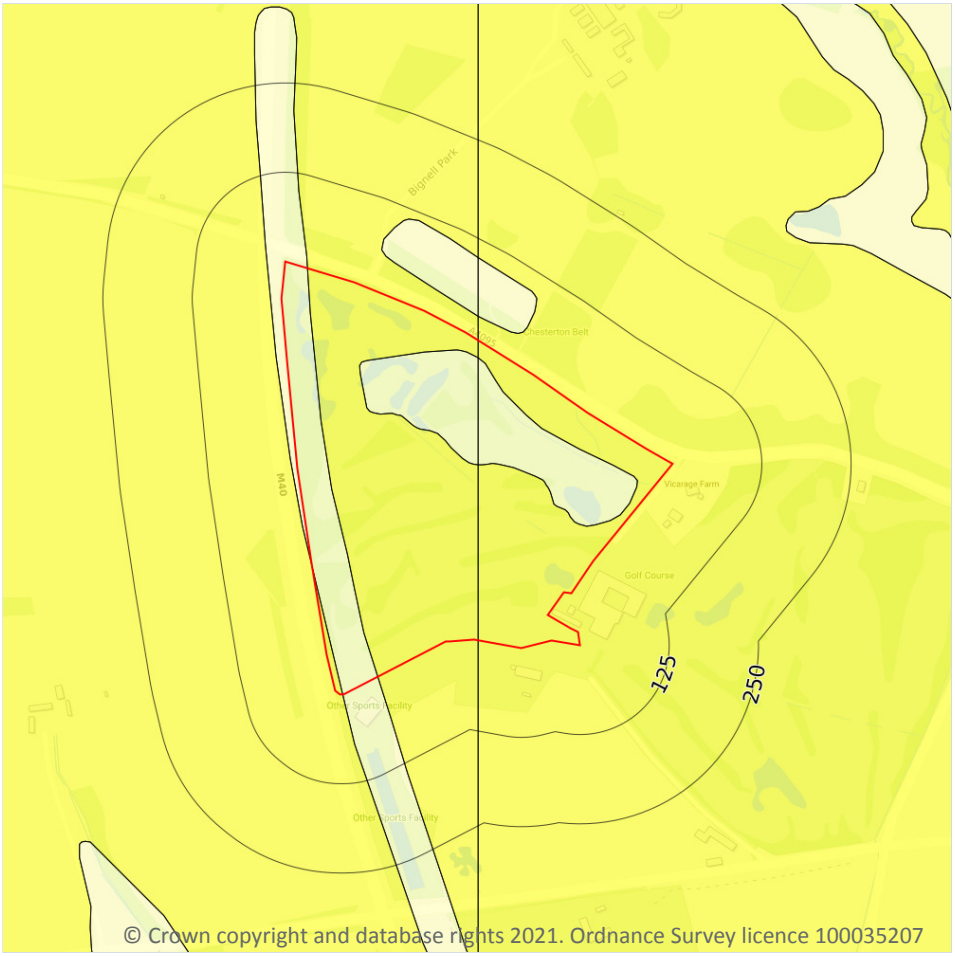
The potential for landsliding (slope instability) to be a hazard assessed using 1:50,000 scale digital maps of superficial and bedrock deposits, combined with information from the BGS National Landslide Database and scientific and engineering reports.

Features are displayed on the Natural ground subsidence - Landslides map on **page 82**

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

This data is sourced from the British Geological Survey.

Natural ground subsidence - Ground dissolution of soluble rocks



Site Outline

Search buffers in metres (m)

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

17.6 Ground dissolution of soluble rocks

Records within 50m	3

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

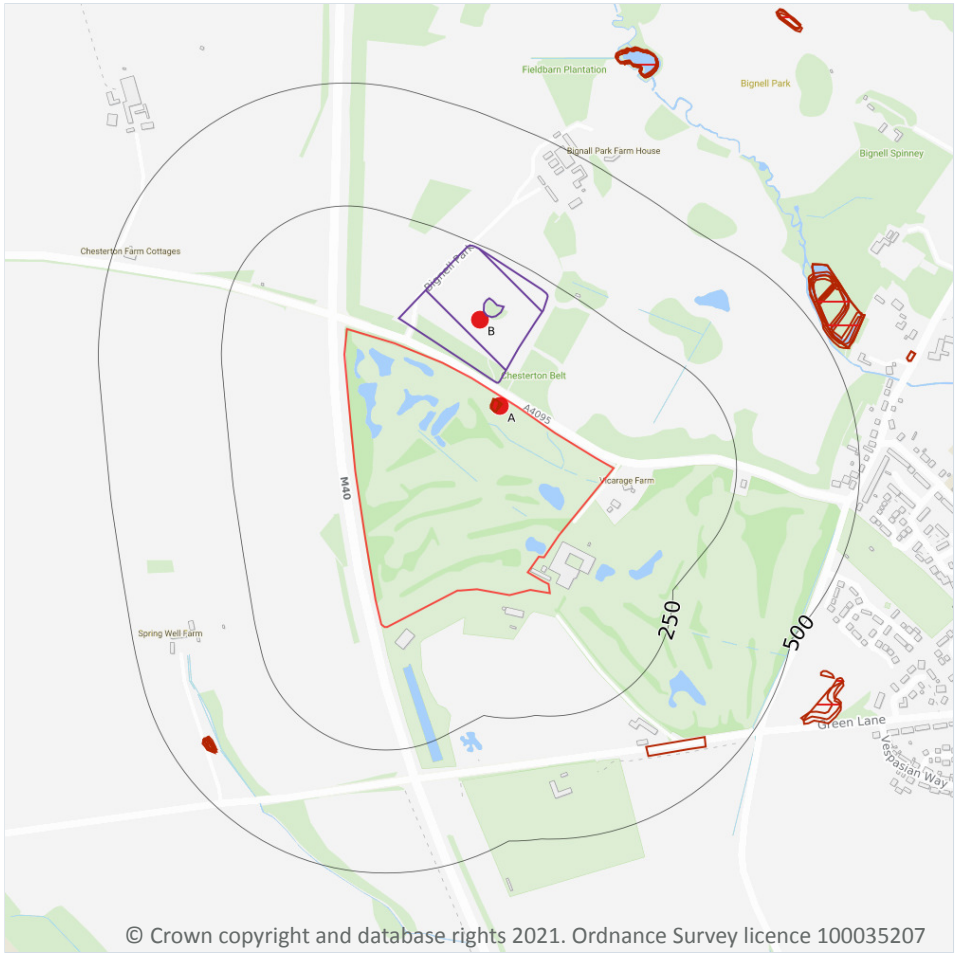
Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 83**

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

Location	Hazard rating	Details
On site	**Very low**	**Soluble rocks are present within the ground. Few dissolution features are likely to be present. Potential for difficult ground conditions or localised subsidence are at a level where they need not be considered.**
29m NE	Negligible	Soluble rocks are either not thought to be present within the ground, or not prone to dissolution. Dissolution features are unlikely to be present.

This data is sourced from the British Geological Survey.

18 Mining, ground workings and natural cavities



Site Outline

Search buffers in metres (m)

Natural cavities (Area)

Natural cavities (Point)

BritPits

Surface ground workings

Underground workings

Historical Mineral Planning Areas

Mining Cavities

Non Coal Mining

Sporadic underground mining of restricted extent possible

Localised small scale underground mining possible

Small scale mining possible

Underground mining known or likely within or in close proximity

Underground mining known within or in very close proximity

18.1 Natural cavities

Records within 500m	0

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

This data is sourced from Stantec UK Ltd.

18.2 BritPits

Records within 500m	2

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 85**

ID	Location	Details	Description
A	**On site**	**Name: Chesterton Belt** **Address: Chesterton, OXFORD, Oxfordshire** **Commodity: Limestone** **Status: Ceased**	**Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site** **Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority**
B	113m NE	Name: Chesterton Quarry Address: Chesterton, BICESTER, Oxfordshire Commodity: Limestone Status: Ceased	Type: A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site Status description: Site which, at date of entry, has ceased to extract minerals. May be considered as Closed by operator. May be considered to have Active, Dormant or Expired planning permissions by Mineral Planning Authority

This data is sourced from the British Geological Survey.

18.3 Surface ground workings

Records within 250m	3

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 85**

ID	Location	Land Use	Year of mapping	Mapping scale
A	**On site**	**Unspecified Quarry**	**1923**	**1:10560**
A	**On site**	**Unspecified Quarry**	**1923**	**1:10560**
A	**On site**	**Unspecified Quarry**	**1966**	**1:10560**

This is data is sourced from Ordnance Survey/Groundsure.

18.4 Underground workings

Records within 1000m	0

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

This is data is sourced from Ordnance Survey/Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m	1

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

Features are displayed on the Mining, ground workings and natural cavities map on **page 85**

ID	Location	Site Name	Mineral	Type	Planning Status	Planning Status Date
B	19m NE	Chesterton	Limestone	Surface mineral working	Valid	21/7/51

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m	0

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

This data is sourced from the British Geological Survey.

18.7 Mining cavities

Records within 1000m	0

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

This data is sourced from Stantec UK Ltd.

18.8 JPB mining areas

Records on site	0

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

This data is sourced from Johnson Poole and Bloomer.

18.9 Coal mining

Records on site	0

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

This data is sourced from the Coal Authority.

18.10 Brine areas

Records on site	0

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

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

18.11 Gypsum areas

Records on site	0

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.12 Tin mining

Records on site	0

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

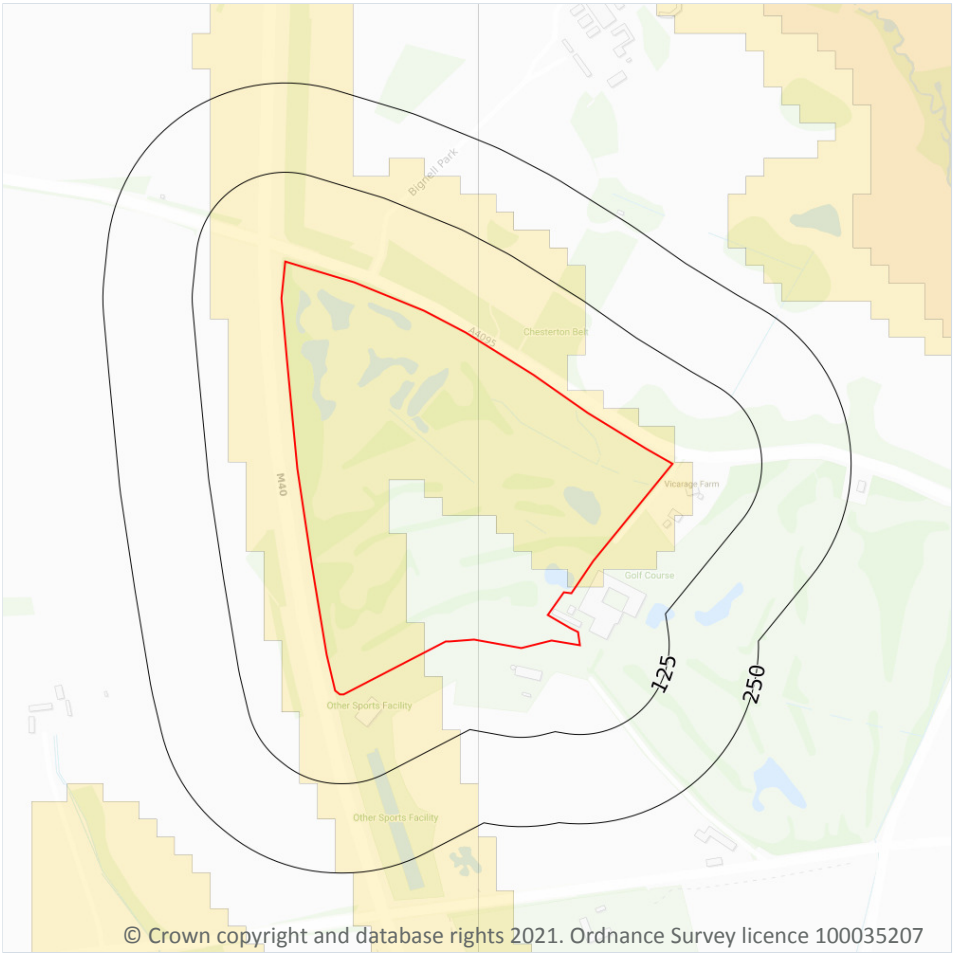
18.13 Clay mining

Records on site	0

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

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

19 Radon



19.1 Radon

Records on site	2

Estimated percentage of dwellings exceeding the Radon Action Level. This data is the highest resolution radon dataset available for the UK and is produced to a 75m level of accuracy to allow for geological data accuracy and a 'residential property' buffer. The findings of this section should supersede any estimations derived from the Indicative Atlas of Radon in Great Britain. The data was derived from both geological assessments and long term measurements of radon in more than 479,000 households.

Features are displayed on the Radon map on **page 90**

Location	Estimated properties affected	Radon Protection Measures required
On site	**Between 1% and 3%**	**None**
On site	**Less than 1%**	**None****

This data is sourced from the British Geological Survey and Public Health England.

20 Soil chemistry

20.1 BGS Estimated Background Soil Chemistry

Records within 50m	14

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

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**15 - 30 mg/kg**
On site	**15 - 25 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**60 - 90 mg/kg**	**30 - 45 mg/kg**
19m NW	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg
27m N	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
29m N	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg
29m N	15 - 25 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	60 - 90 mg/kg	30 - 45 mg/kg

This data is sourced from the British Geological Survey.

20.2 BGS Estimated Urban Soil Chemistry

Records within 50m	0

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

This data is sourced from the British Geological Survey.

20.3 BGS Measured Urban Soil Chemistry

Records within 50m	0

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

This data is sourced from the British Geological Survey.

21 Railway infrastructure and projects

21.1 Underground railways (London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

21.2 Underground railways (Non-London)

Records within 250m	0

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

This data is sourced from publicly available information by Groundsure.

21.3 Railway tunnels

Records within 250m	0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

21.4 Historical railway and tunnel features

Records within 250m	0

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

This data is sourced from Ordnance Survey/Groundsure.

21.5 Royal Mail tunnels

Records within 250m	0

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

This data is sourced from Groundsure/the Postal Museum.

21.6 Historical railways

Records within 250m	0

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

This data is sourced from OpenStreetMap.

21.7 Railways

Records within 250m	0

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

This data is sourced from Ordnance Survey and OpenStreetMap.

21.8 Crossrail 1

Records within 500m	0

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

This data is sourced from publicly available information by Groundsure.

21.9 Crossrail 2

Records within 500m	0

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

This data is sourced from publicly available information by Groundsure.

21.10 HS2

Records within 500m	0

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

This data is sourced from HS2 ltd.

Data providers

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APPENDIX D

BGS Borehole Records from Previous Desk Study

Table 1
Great Wolf Lodge Bicester - BGS borehole schedule

BGS Borehole ID	Easting	Northing	Date drilled	Ground level (mAOD)	Borehole depth (m)	Geological sequence	Base of unit depth (m)	Base of unit level (mAOD)	Unit thickness (m)	Water strikes (mbgl)
SP52SW6	454810	221020	1972	78.365	20.18	Cornbrash	2.6	75.765	2.6	-
						Forest Marble	6.1	72.265	3.5	
						White Limestone: Bladon Member	9.61	68.755	3.51	
						White Limestone: Ardley Member	17.05	61.315	7.44	
						White Limestone: Shipton Member	NDE	<58.185	>3.13	
SP52SW7	454770	222010	1972	87.327	10.51	Cornbrash	0.1	87.227	0.1	-
						Forest Marble	5.34	81.987	5.24	
						White Limestone	7.03	80.297	1.69	
						Hampen Marly Beds	NDE	<76.817	>3.48	
SP52SW8	453190	220640	13/09/1918	83.29	42.67	Topsoil	0.3	82.99	0.3	10.97
						Cornbrash	6.1	77.19	5.8	
						Forest Marble	14.3	68.99	8.2	
						White Limestone	24.5	58.79	10.2	
						Hampen Marly Beds	28.9	54.39	4.4	
						Taynton Limestone	33	50.29	4.1	
						Swerford and Hook Norton Beds	NDE	<40.62	>9.67	
SP52SW9	454300	222420	01/09/1938	91.44	36.58	Topsoil	0.15	91.29	0.15	9.14
						Cornbrash	3.35	88.09	3.2	
						Forest Marble	9.3	82.14	5.95	
						Great Oolite and Estuarine Series	31.39	60.05	22.09	
						Northampton Sands	NDE	<54.86	>5.19	
SP52SW17	454940	221000	28/03/1979	76.37	1.8	Topsoil	0.25	76.12	0.25	0.85
						Colluvium	0.85	75.52	0.6	
						Cornbrash	NDE	<74.57	>0.95	
SP52SW18	454910	221060	21/06/1979	77.84	20	Topsoil	0.4	77.44	0.4	1.5
						Cornbrash	2	75.84	1.6	
						Forest Marble	4.95	72.89	2.95	
						White Limestone: Bladon Member	9.35	68.49	4.4	
						White Limestone: Ardley Member	16.3	61.54	6.95	
						White Limestone: Shipton Member	NDE	<57.84	>3.7	
SP52SW19	454940	221070	15/06/1979	77.98	6	Topsoil	0.2	77.78	0.2	5.6
						Colluvium	1.35	76.63	1.15	
						Cornbrash	2.3	75.68	0.95	
						Forest Marble	NDE	<71.98	>3.7	
SP52SW20	454970	221070	20/06/1979	78.03	19.6	Topsoil	0.2	77.83	0.2	4.8
						Colluvium	1.3	76.73	1.1	
						Cornbrash	2.65	75.38	1.35	
						Forest Marble	5.15	72.88	2.5	
						White Limestone: Bladon Member	10.15	67.88	5	
						White Limestone: Ardley Member	17.2	60.83	7.05	
						White Limestone: Shipton Member	NDE	<58.43	>2.6	

BGS Borehole ID	Easting	Northing	Date drilled	Ground level (mAOD)	Borehole depth (m)	Geological sequence	Base of unit depth (m)	Base of unit level (mAOD)	Unit thickness (m)	Water strikes (mbgl)
SP52SW21	454980	221070	21/05/1979	77.38	4.3	Topsoil	0.5	76.88	0.5	1.2
						Cornbrash	1.25	76.13	0.75	
						Forest Marble	NDE	<73.08	>3.05	
SP52SW22	454980	221130	23/05/1979	77.42	0.8	Topsoil	0.3	77.12	0.3	0.4
						Colluvium	0.6	76.82	0.3	
						Cornbrash	NDE	<76.62	>0.2	
SP52SW23	454840	221380	13/06/1979	80.67	2.2	Topsoil	0.25	80.42	0.25	1.1
						Colluvium	1.55	79.12	1.3	
						Forest Marble	NDE	<78.47	>0.65	
SP52SW24	454770	221700	28/03/1979	84.5	2.1	Topsoil	0.2	84.3	0.2	0.2
						Colluvium	0.6	83.9	0.4	
						Forest Marble	NDE	<82.4	>1.5	
SP52SW25	454750	221820	12/06/1979	85.49	1.8	Topsoil	0.55	84.94	0.55	0.55
						Forest Marble	NDE	<83.69	>1.25	
SP52SW26	454800	221920	28/03/1979	85.93	3	Topsoil	0.35	85.58	0.35	0.35
						Forest Marble	NDE	<82.93	>2.65	
SP52SW27	454620	221980	28/03/1979	87.84	2.6	Topsoil	0.4	87.44	0.4	0.6
						Colluvium	0.7	87.14	0.3	2
						Forest Marble	NDE	<85.24	>1.9	
SP52SW28	454700	221990	04/07/1979	87.02	10	Topsoil	0.4	86.62	0.4	1.7
						Colluvium	0.75	86.27	0.35	
						Forest Marble	4.05	82.97	3.3	
						White Limestone: Bladon Member	7.75	79.27	3.7	
						White Limestone: Ardley Member	NDE	<77.02	>2.25	
SP52SW29	454760	221960	11/07/1979	86.41	25	Topsoil	0.2	86.21	0.2	1
						Forest Marble	4.5	81.91	4.3	
						White Limestone: Bladon Member	8.5	77.91	4	
						White Limestone: Ardley Member	15.25	71.16	6.75	
						White Limestone: Shipton Member	21.5	64.91	6.25	
						Hampen Marly Beds	NDE	<61.41	>3.5	
SP52SW30	454650	222050	11/06/1979	88.47	0.55	Topsoil	0.25	88.22	0.25	-
						Forest Marble	NDE	<87.92	>0.3	
SP52SW31	454820	222000	11/06/1979	87.43	1.05	Topsoil	0.25	87.18	0.25	1.05
						Colluvium	0.7	86.73	0.45	
						Forest Marble	NDE	<86.38	>0.35	
SP52SW32	454720	222120	11/06/1979	88.33	2	Topsoil	0.3	88.03	0.3	1.9
						Forest Marble	NDE	<86.33	>1.7	
SP52SW33	454720	222470	12/06/1979	87.09	2.6	Topsoil	0.2	86.89	0.2	-
						Colluvium	0.95	86.14	0.75	
						White Limestone	NDE	<84.49	>1.65	
SP52SW72	454890	221060	31/01/1987	78.6	7.5	Topsoil	1.1	77.5	1.1	1
						Cornbrash	1.8	76.8	0.7	
						Forest Marble	6.9	71.7	5.1	
						White Limestone	NDE	<71.1	>0.6	

BGS Borehole ID	Easting	Northing	Date drilled	Ground level (mAOD)	Borehole depth (m)	Geological sequence	Base of unit depth (m)	Base of unit level (mAOD)	Unit thickness (m)	Water strikes (mbgl)
SP52SW73	454875	221060	08/01/1987	78.6	10.4	Topsoil	1.1	77.5	1.1	1.1
						Cornbrash	2.15	76.45	1.05	
						Forest Marble	7.15	71.45	5	
						Fimbriata:Waltoni Clay	9.2	69.4	2.05	
						White Limestone	NDE	<68.2	>1.2	
SP52SW74	454875	221060	18/12/1986	78.6	3.55	Topsoil	0.3	78.3	0.3	1.2
						Cornbrash	NDE	<75.05	>3.25	
SP52SW75	454859	221058	09/11/1986	78.5	9.2	Topsoil	1.4	77.1	1.4	1.4
						Cornbrash	2.5	76	1.1	
						Forest Marble	7.1	71.4	4.6	
						White Limestone	7.8	70.7	0.7	
						Fimbriata:Waltoni Clay	NDE	<69.3	>1.4	
SP52SW76	454720	221980	13/11/1986	86.6	10	Topsoil	0.5	86.1	0.5	5.15
						Cornbrash	2.75	83.85	2.25	
						Forest Marble	6.5	80.1	3.75	
						Fimbriata:Waltoni Clay	8.05	78.55	1.55	
						White Limestone	NDE	<76.6	>1.95	
SP52SW77	454690	221988	03/11/1986	86.7	10	Topsoil	0.4	86.3	0.4	5.15
						Cornbrash	2.2	84.5	1.8	
						Forest Marble	5.95	80.75	3.75	
						Fimbriata:Waltoni Clay	8.1	78.6	2.15	
						White Limestone	NDE	<76.7	>1.95	
SP52SW78	454990	220730	16/01/1987	73.2	20	Cornbrash	2.5	70.7	2.5	0.6
						Forest Marble	6.1	67.1	3.6	
						Fimbriata:Waltoni Clay	7.1	66.1	1	
						White Limestone	NDE	<53.2	>12.9	
SP52SW79	454913	220960	27/11/1986	76.5	1.8	Topsoil	0.3	76.2	0.3	0.3
						River Gravels	0.5	76	0.2	
						Kellaways Formation: Kellaways Clay	1.5	75	1	
						Cornbrash	NDE	<74.7	>0.3	
SP52SW80	454905	221060	27/11/1986	78.6	1.1	Topsoil	0.8	77.8	0.8	1
						Alluvium	1	77.6	0.2	
						Cornbrash	NDE	<77.5	>0.1	
SP52SW81	454839	221055	17/11/1986	78.6	1.4	Topsoil	0.2	78.4	0.2	-
						Made ground	0.6	78	0.4	
						Alluvium	1.3	77.3	0.7	
						Cornbrash	NDE	<77.2	>0.1	
SP52SW82	454759	221040	27/11/1986	78.8	1	Topsoil	0.2	78.6	0.2	0.7
						Alluvium	0.6	78.2	0.4	
						Cornbrash	NDE	<77.8	>0.4	
SP52SW83	454725	221635	28/11/1986	83.8	1	Topsoil	0.3	83.5	0.3	0.5
						Colluvium	0.5	83.3	0.2	
						Cornbrash	NDE	<82.8	>0.5	
SP52SW84	454718	221730	28/11/1986	82.3	1.1	Topsoil	0.3	82	0.3	-
						Colluvium	0.8	81.5	0.5	

BGS Borehole ID	Easting	Northing	Date drilled	Ground level (mAOD)	Borehole depth (m)	Geological sequence	Base of unit depth (m)	Base of unit level (mAOD)	Unit thickness (m)	Water strikes (mbgl)
						Cornbrash	NDE	<81.2	>0.3	
SP52SW85	454749	221970	28/11/1986	86.6	1.4	Topsoil	0.2	86.4	0.2	0.8
						Colluvium	0.7	85.9	0.5	
						Cornbrash	NDE	<85.2	>0.7	
SP52SW86	454611	222005	28/11/1986	88.3	1	Topsoil	0.3	88	0.3	0.9
						Cornbrash	NDE	<87.3	>0.7	
SP52SW87	454710	222178	28/11/1986	89	0.9	Topsoil	0.2	88.8	0.2	-
						Colluvium	0.7	88.3	0.5	
						Cornbrash	NDE	<88.1	>0.2	
SP52SW90	453700	221600	06/11/1998	90	38.1	Cornbrash	2.9	87.1	2.9	11
						Forest Marble	19	71	16.1	
						Great Oolite	NDE	<51.9	>19.1	
SP52SW96	453000	220600	12/07/2005	83 (est.)	55	Topsoil	1.5	81.5	1.5	2.5
						Cornbrash	9	74	7.5	32
						Forest Marble	19	64	10	33
						Great Oolite and Estuarine Series	NDE	<28	>36	
SP52SE2	455720	221600	01/10/1955	78.63	39.62	Cornbrash	3.96	74.67	3.96	3.05
						Forest Marble	7.01	71.62	3.05	
						White Limestone: Bladon Member	8.53	70.1	1.52	
						White Limestone: Ardley Member	19.05	59.58	10.52	
						White Limestone: Shipton Member	25.6	53.03	6.55	
						Rutland Formation	30.78	47.85	5.18	
						Taynton Limestone	35.97	42.66	5.19	
						Sharp's Hill Formation and 'White Sands'	NDE	<39.01	>3.66	
SP52SE4	455810	221720	-	77.4	39.62	None recorded	-	-	-	8.52
SP52SE24	455046	220809	29/03/1979	74.27	1	Topsoil	0.2	74.07	0.2	0.5
						Colluvium	0.4	73.87	0.2	
						Cornbrash	NDE	<73.27	>0.6	
SP52SE25	455042	220817	14/06/1979	74.34	19.4	Cornbrash	1.8	72.54	1.8	0.3
						Forest Marble	7.2	67.14	5.4	
						White Limestone: Bladon Member	8.2	66.14	1	
						White Limestone: Ardley Member	16.85	57.49	8.65	
						White Limestone: Shipton Member	NDE	<54.94	>2.55	
SP52SE26	455000	220857	29/03/1979	74.82	0.85	Topsoil	0.2	74.62	0.2	0.5
						Colluvium	0.45	74.37	0.25	
						Cornbrash	NDE	<73.97	>0.4	
SP52SE28	457450	220860	01/03/1983	65	15.24	Alluvium	1.37	63.63	1.37	0.83
						Kellaways Formation: Kellaways Clay	5.49	59.51	4.12	
						Great Oolite	NDE	<49.76	>9.75	
SP52SE50	455010	220740	22/01/1987	73.2	20.2	Cornbrash	2.65	70.55	2.65	0.6
						Forest Marble	7.35	65.85	4.7	
						White Limestone: Bladon Member	10.45	62.75	3.1	
						White Limestone: Ardley Member	19.7	53.5	9.25	
						White Limestone: Shipton Member	NDE	<53	>0.5	
SP52SE181	456320	221200	1889	70.1	12.19	None recorded	-	-	-	7.3

APPENDIX E

Risk Assessment Methodology

CGL Risk Assessment Methodology

The following risk Assessment methodology is based on CIRIA C552 (2001) Contaminated Land Risk Assessment – A Guide to Good Practice[1], in order to quantify potential risk via risk estimation and risk evaluation, which can be adopted at the Phase I stage. This will then determine an overall risk category which can be used to identify likely actions. This methodology uses qualitative descriptors and therefore is a qualitative approach and is undertaken for each potential pollution linkage (source-pathway-receptor) identified for the site in accordance with Land Condition Risk Management[3].

The methodology requires the classification of:

- The magnitude of the consequence (severity) of a risk occurring, and
- The magnitude of the probability (likelihood) of a risk occurring.

The potential consequences of contamination risks occurring at this site are classified in accordance with Table 1 below, which is adapted from the CIRIA guidance[1].

Table 1. Classifications of Consequence ratings

Classification	*Definition of Consequence*	*Examples*
Severe	Short-term (acute) risks to human health.	High concentration of cyanide on the surface of an informal recreation area
	Short-term (acute) risk of pollution of sensitive water resource or ecosystem.	Major spillage of contaminants from site into controlled waters
	Catastrophic damage to crops/buildings/property/infrastructure, including off-site soils.	Explosion causing building collapse
Medium	Long-term (chronic) risks to human health	Concentrations of a contaminant from site exceeding the generic or site specific assessment criteria
	Long-term (chronic) pollution of sensitive water resource	Leaching of contaminants from a site into a major or minor aquifer
	Significant change in an ecosystem/contamination of off-site soils	Death of a species within a designated nature reserve
Mild	Pollution of non-sensitive water resource	Pollution of a non-classified groundwater
	Significant damage to crops/ buildings/property/infrastructure	Damage to a building rendering it unsafe to occupy (e.g. foundation damage resulting in instability)
	Damage to an ecosystem or sensitive buildings/structures/services	
Minor	Easily preventable non-permanent health effects	Presence of contamination at concentrations which require the use of personal protective equipment during site work
	Harm, although not necessarily significant harm, which may result in financial loss or expenditure to resolve	Loss of plants in a landscaping scheme/discolouration of concrete
	Easily repairable effects of damage to buildings/structures/services	

[1] CIRIA, (2001). *Contaminated Land Risk Assessment. A Guide to Good Practice*. CIRIA C552.

[2] M.J. Carter Associates, (1995*). Prioritisation and Categorisation Procedure for Sites Which May Be Contaminated*. Contaminated Land Report 6. Department of the Environment. C

[3] Land Condition Risk Management - https://www.gov.uk/government/publications/land-contamination-risk-management-lcrm

The potential probability of the risks being realised are classified in accordance with the ratings set out in Table 2 which are adapted from the CIRIA guidance[1]. It should be noted that where a pollutant linkage has not been identified the likelihood is considered to be zero.

Table 2. Classifications of probability ratings

Classification	*Definition*
High likelihood	There is a pollution linkage and an event that either appears very likely in the short term and almost inevitable in the long term, or there is evidence at the receptor that an event has occurred
Likely	There is a pollution linkage and all the elements are present and in the right place which means that it is probable that an event will occur. Circumstances are such that an event is not inevitable, but possible in the short term and likely over the long term
Low likelihood	There is a pollution linkage and circumstances are possible under which an event could occur. However, it is by no means certain that even over a longer period such an event would take place and is less likely in the short term.
Unlikely	There is a pollutant linkage but circumstances are such that it is improbable that an event would occur even in the very long term

In accordance with C552 the risk classification for each pollution linkage are classified in accordance with the matrix for consequence and probability set out in Table 3. The definitions for the risk classifications are presented in Table 4.

Table 3. Risk classification matrix

		Consequence			
		Severe	***Medium***	***Mild***	***Minor***
Probability	**High likelihood**	Very High	High	Moderate	Moderate / Low
	Likely	High	Moderate	Moderate / Low	Low
	Low likelihood	Moderate	Moderate / Low	Low	Very Low
	Unlikely	Moderate / Low	Low	Very Low	Very Low

Table 4. Risk classification definitions

Classification	*Definition*
Very High	There is a high probability that severe harm could arise to a designated receptor from the identified hazard or there is evidence that severe harm is currently happening. This risk, if realised, is likely to result in substantial liability. Urgent investigation (if not already undertaken) and remediation are likely to be required.
High	Harm is likely to arise to a designated receptor from the identified hazard. Realisation of the risk is likely to result in substantial liability. Urgent investigation (if not already undertaken) and remediation are likely to be required.
Moderate	It is possible that harm could arise to a designated receptor from the identified hazard. However, it is either relatively unlikely that such harm would be severe or if any harm were to occur it is more likely that the harm would be relatively mild. Urgent investigation (if not already undertaken) is normally required to clarify the potential risk and to determine the potential liability. Some remedial works may be required in the longer term.
Low	It is possible that harm could arise to a designated receptor from the identified hazard, but it is considered likely that this harm, if realised, would at worse normally be mild.
Very Low	There is a low possibility that harm could arise to a designated receptor from the identified hazard. In the event of such harm being realised it is not likely to be severe.

APPENDIX F

CGL Exploratory Hole Records

Project Title: Bicester Golf Club

Client: Elliott Wood Partnership Ltd

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	1.20	IP	Hand Tools			
1.20	1.70	WLS	Comacchio 305			
1.70	5.26	RC	Comacchio 305			

Status: **DRAFT**

Location ID: **BH01**

Location Type: Rotary cored

Coords: 454854.630E/221796.740N Level: 84.830m

Ordnance Survey Great Britain National Grid

Final Depth: **5.00 m**

Orientation: 0° Inclination: 90°

Date Start: 21/10/2021 Date End: 21/10/2021

Card Geotechnics Limited,
4 Godalming Business Centre,
Woolsack Way,
Godalming,
Surrey,
GU7 1XW
www.cgl-uk.com

Samples & Tests			Water Level (m)	Legend /Cover	Strata Depth (m)	Level (m)	Strata Description	Rotary Coring				Fract (mm)	Inst/ Backfill	Depth (m)
Sample Depth (m)	Type/ Ref	Tests/Results						Core Run	TCR (%)	SCR (%)	RQD (%)	min avg max		
0.20	ES 1				0.25	84.58	Grass over soft dark brown CLAY with rootlets throughout. [TOPSOIL]							
0.40 - 0.60	B 1				0.60	84.23	Soft dark brown slightly sandy gravelly CLAY. Gravel is fine to coarse sub-angular limestone. Sand is fine to medium. [WEATHERED CORNBRASH FORMATION]							
0.60 - 0.70	B 2				1.00	83.83	Firm light brown mottled grey slightly sandy gravelly CLAY. Gravel is fine to coarse sub-angular limestone. Sand is coarse. [WEATHERED CORNBRASH FORMATION]							
1.00 - 1.10	B 3													1
1.20 - 1.55	D 1	SPT(S) 1.20m N=50 (1,6/50 for 270mm)			1.70	83.13	Firm to stiff light brown mottled grey and orange brown slightly gravelly slightly sandy CLAY. Gravel is fine sub-angular limestone. Sand is coarse. [WEATHERED CORNBRASH FORMATION]	1.20 1.60	100	0	0			
								1.60 1.70	100	0	0			
					2.00	82.83	Light brown and grey slightly clayey fine to coarse sub-angular to sub-rounded limestone GRAVEL. [WEATHERED CORNBRASH FORMATION]							
					3.20	81.63	Stiff becoming very stiff dark grey CLAY. [FOREST MARBLE FORMATION]	1.70 3.20	100	0	0			2
		SPT(C) 3.20m N=30 (5,3/4,4,7,15)			3.60	81.23	Weak mudstone recovered as gravel of stiff dark grey CLAY. [FOREST MARBLE FORMATION]							3
							Weak (?) dark grey MUDSTONE. [FOREST MARBLE FORMATION]	3.20 4.70	67	40	40			
														4

Strata continues onto next page

Notes:

1. Borehole location was scanned with a CAT scanner by a CGL Engineer prior to drilling commencing.
2. Prior to drilling, a hand pit was dug to a depth of 1.2 m bgl, and the base of the pit was CAT scanned.
3. Borehole was terminated at the target depth of 5.00 m bgl.
4. Groundwater was not encountered during drilling.
5. After completion the borehole was installed with a monitoring standpipe.
6. SPT = Standard Penetration Test. ES = Environmental sample. D = Disturbed sample. B = Bulk sample.

Hole Diameter		Casing	
Depth (m)	Diam (mm)	Depth (m)	Diam (mm)
1.60	128	1.70	138
1.70	113		

Hammer Information	
Energy Ratio	Serial No.
64%	ar2570

Install Response Zones		
Ref	From (m)	To (m)
Pipe1	1.00	5.00

Scale: 1:20

Logged By: KBD

Checked By:

Approved By:

Section ID:

CGL Reference **CG/39017**

Project Title: Bicester Golf Club

Client: Elliott Wood Partnership Ltd

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	1.20	IP	Hand Tools			
1.20	1.70	WLS	Comacchio 305			
1.70	5.26	RC	Comacchio 305			

Status: **DRAFT**

Location ID: **BH01**

Location Type: Rotary cored

Coords: 454854.630E/221796.740N Level: 84.830m

Ordnance Survey Great Britain National Grid

Final Depth: **5.00 m**

Orientation: 0° Inclination: 90°

Date Start: 21/10/2021 Date End: 21/10/2021

Card Geotechnics Limited,
4 Godalming Business Centre,
Woolsack Way,
Godalming,
Surrey,
GU7 1XW
www.cgl-uk.com

Samples & Tests			Water Level (m)	Legend /Cover	Strata Depth (m)	Level (m)	Strata Description	Rotary Coring				Fract (mm)	Inst/ Backfill	Depth (m)
Sample Depth (m)	Type/ Ref	Tests/Results						Core Run	TCR (%)	SCR (%)	RQD (%)	min avg max		
					4.35	80.48	Weak (?) dark grey MUDSTONE. [FOREST MARBLE FORMATION]							
		SPT(C) 4.70m N=6 (1,/1,0,2,3)			4.70	80.13	Strong (?) light grey medium grained LIMESTONE. [FOREST MARBLE FORMATION]							
		SPT(S) 5.00m 50 (8,11/50 for 110mm)			5.00	79.83	Stiff dark grey CLAY. [FOREST MARBLE FORMATION]	4.70 5.00	100	0	0			
							EOH at 5.00m - Achieved target depth							

Notes:

1. Borehole location was scanned with a CAT scanner by a CGL Engineer prior to drilling commencing.
2. Prior to drilling, a hand pit was dug to a depth of 1.2 m bgl, and the base of the pit was CAT scanned.
3. Borehole was terminated at the target depth of 5.00 m bgl.
4. Groundwater was not encountered during drilling.
5. After completion the borehole was installed with a monitoring standpipe.
6. SPT = Standard Penetration Test. ES = Environmental sample. D = Disturbed sample. B = Bulk sample.

Hole Diameter		Casing	
Depth (m)	Diam (mm)	Depth (m)	Diam (mm)
5.00	116		

Hammer Information	
Energy Ratio	Serial No.
64%	ar2570

Install Response Zones		
Ref	From (m)	To (m)
Pipe1	1.00	5.00

Scale: 1:20

Logged By: KBD

Checked By:

Approved By:

Section ID:

CGL Reference **CG/39017**

Project Title: Bicester Golf Club

Client: Elliott Wood Partnership Ltd

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	0.60	IP	Hand Dug	3.50	20	0.60
0.60	5.00	RC	Tracked Drilling Rig			
0.60	2.00	RC	Comacchio 305			
2.00	5.24	RC	Comacchio 305			

Status: **DRAFT**

Location ID: **BH02**

Location Type: Rotary cored

Coords: 454804.240E/221684.950N Level: 84.750m

Ordnance Survey Great Britain National Grid

Final Depth: **5.00 m**

Orientation: 0° Inclination: 90°

Date Start: 22/10/2021 Date End: 22/10/2021

Card Geotechnics Limited,
4 Godalming Business Centre,
Woolsack Way,
Godalming,
Surrey,
GU7 1XW
www.cgl-uk.com

Samples & Tests			Water Level (m)	Legend /Cover	Strata Depth (m)	Level (m)	Strata Description	Rotary Coring				Fract (mm)	Inst/ Backfill	Depth (m)
Sample Depth (m)	Type/ Ref	Tests/Results						Core Run	TCR (%)	SCR (%)	RQD (%)	min avg max		
					0.10	84.65	Grass over soft dark brown CLAY with rootlets throughout. [TOPSOIL]							
0.30 - 0.40	B 1						Brown clayey fine to coarse sub-angular to angular limestone GRAVEL. [WEATHERED CORNBRASH FORMATION]							
0.40	ES 1				0.50	84.25								
0.55 - 0.65	B 2						Brown slightly sandy slightly clayey fine to coarse angular limestone GRAVEL. Sand is coarse. [WEATHERED CORNBRASH FORMATION]							
0.60 - 2.00	C 1	SPT(C) 0.60m 50 (25 for 70mm/50 for 110mm) Recovery=43%			0.60	84.15	No recovery							
					1.34	83.41		0.60 2.00	43	6	0			
							LIMESTONE recovered as grey medium sub-angular limestone gravel. [WEATHERED CORNBRASH FORMATION]							
					1.92	82.83								
2.00 - 3.50	C 2	SPT(C) 2.00m 50 (25 for 65mm/50 for 10mm) Recovery=67%			2.00	82.75	Strong (?) light brown and light grey medium grained LIMESTONE. Some white fossils of shells. [CORNBRASH FORMATION] *1.92m bgl Top of the limestone core has a slight orange stain and is rough.* No recovery							
					2.55	82.20								
							Strong (?) light brown medium grained thinly bedded LIMESTONE. Fractures are slightly to moderately weathered with some orange staining, horizontal, rough, partly open to open. [CORNBRASH FORMATION] *2.62m bgl Fracture - slightly weathered, slight orange stain, horizontal, rough, open.* *2.69m bgl Fracture - slightly weathered, no stain, horizontal, rough, open.* *2.73m bgl Fracture - moderatley weathered, no stain, infilled with pieces of broken rock, horizontal, rough, open. Potentially drilling induced.* *2.77m bgl Fracture - moderatley weathered, no stain, infilled with sand and fine gravel, horizontal, rough, partly open. Potentially drilling induced.* *2.82m bgl Fracture - slightly weathered, orange stain, horizontal, rough, open.* *2.89m bgl Fracture - horiztonal, rough, open to clayey gravel beneath.*	2.00 3.50	67	63	0			
					2.90	81.85								
					2.95	81.80								
					3.05	81.70								
3.50 - 5.00	C 3	SPT(C) 3.50m N=23 (1,1/2,5,9,7) Recovery=100%			3.50	81.25								
							LIMESTONE recovered as sandy clayey fine to medium sub-angular gravel. [CORNBRASH FORMATION]							
					3.90	80.85	Extremely weak (?) light brown LIMESTONE. (Can be broken by hand - sandy clay?) [CORNBRASH FORMATION]							

Strata continues onto next page

Notes:

1. Borehole location was scanned with a CAT scanner by a CGL Engineer prior to drilling commencing.
2. Prior to drilling, a hand pit was dug to a depth of 0.6 m bgl, and the base of the pit was CAT scanned.
3. Borehole was terminated at the target depth of 5.00 m bgl.
4. Groundwater was encountered during drilling. at 3.5 m bgl.
5. After completion the borehole was installed with a monitoring standpipe.
6. SPT = Standard Penetration Test. ES = Environmental sample. D = Disturbed sample. B = Bulk sample.

Hole Diameter		Casing	
Depth (m)	Diam (mm)	Depth (m)	Diam (mm)
		2.00	138

Hammer Information	
Energy Ratio	Serial No.
64%	ar2570

Install Response Zones		
Ref	From (m)	To (m)
Pipe1	1.00	5.00

Scale: 1:20

Logged By: KBD

Checked By:

Approved By:

Section ID:

CGL Reference **CG/39017**

Project Title: Bicester Golf Club

Client: Elliott Wood Partnership Ltd

Status:	Location ID
DRAFT	**BH02**

Location Type: Rotary cored

Coords: 454804.240E/221684.950N Level: 84.750m

Ordnance Survey Great Britain National Grid

Final Depth: **5.00 m**

Orientation: 0° Inclination: 90°

Date Start: 22/10/2021 Date End: 22/10/2021

Card Geotechnics Limited,
4 Godalming Business Centre,
Woolsack Way,
Godalming,
Surrey,
GU7 1XW
www.cgl-uk.com

Method and Plant Used

From (m)	To (m)	Type	Plant Used
0.00	0.60	IP	Hand Dug
0.60	5.00	RC	Tracked Drilling Rig
0.60	2.00	RC	Comacchio 305
2.00	5.24	RC	Comacchio 305

Groundwater

Strike (m)	Time (min)	Rose To

Samples & Tests			Water Level (m)	Legend /Cover	Strata Depth (m)	Level (m)	Strata Description	Rotary Coring				Fract (mm)	Inst/ Backfill	Depth (m)
Sample Depth (m)	Type/ Ref	Tests/Results						Core Run	TCR (%)	SCR (%)	RQD (%)	min avg max		
					4.10	80.65	Weak (?) grey MUDSTONE. Fractures are slightly weathered horizontal, partly open. [FOREST MARBLE FORMATION] *3.20m bgl Fracture - lightly weathered, brown staining, horiztonal, rough, partly open.* *3.30m bgl Fracture - slightly weathered, slight brown staining, horiztonal, undulating, partly open.*							
					4.80	79.95	Stiff dark grey slightly silty CLAY. [FOREST MARBLE FORMATION]	3.50 5.00	100	73	61			
					5.00	79.75	Weak (?) grey MUDSTONE. Fractured by SPT? Broken up into fine to medium gravel. [FOREST MARBLE FORMATION]							
		SPT(C) 5.00m 50 (25 for 115mm/50 for 120mm)					Strong (?) light grey with green staining, thinly bedded fine grained LIMESTONE, with fossils. [FOREST MARBLE FORMATION] *4.54m bgl Fracture - sub-horizontal, not weathered, open. Potentially drilling induced.* *4.60m bgl Fracture - slightly weathered, no stain, horizontal, rough, open.*							
							Weak (?) dark grey slightly silty fine grained MUDSTONE. [FOREST MARBLE FORMATION] *4.81m bgl Fracture - horizontal, rough, partly opem. Boundary between limestone and mudstone.*							
							EOH at 5.00m - Achieved target depth							

Notes:

1. Borehole location was scanned with a CAT scanner by a CGL Engineer prior to drilling commencing.
2. Prior to drilling, a hand pit was dug to a depth of 0.6 m bgl, and the base of the pit was CAT scanned.
3. Borehole was terminated at the target depth of 5.00 m bgl.
4. Groundwater was encountered during drilling. at 3.5 m bgl.
5. After completion the borehole was installed with a monitoring standpipe.
6. SPT = Standard Penetration Test. ES = Environmental sample. D = Disturbed sample. B = Bulk sample.

Hole Diameter

Depth (m)	Diam (mm)
5.00	116

Casing

Depth (m)	Diam (mm)

Hammer Information

Energy Ratio	Serial No.
64%	ar2570

Install Response Zones

Ref	From (m)	To (m)
Pipe1	1.00	5.00

Scale: 1:20

Logged By: KBD

Checked By:

Approved By:

Section ID:

CGL Reference
CG/39017

Project Title: Bicester Golf Club

Client: Elliott Wood Partnership Ltd

Status:	Location ID
DRAFT	**BH03**

Location Type: Rotary cored

Coords: 454918.030E/221726.240N Level: 83.740m

Ordnance Survey Great Britain National Grid

Final Depth: **5.00 m**

Orientation: 0° Inclination: 90°

Date Start: 25/10/2021 Date End: 25/10/2021

Card Geotechnics Limited,
4 Godalming Business Centre,
Woolsack Way,
Godalming,
Surrey,
GU7 1XW
www.cgl-uk.com

Method and Plant Used

From (m)	To (m)	Type	Plant Used
0.00	1.20	IP	Hand Dug
1.20	5.00	RC	Tracked Drilling Rig
1.20	1.70	WLS	Comacchio 305
1.70	5.19	RC	Comacchio 305

Groundwater

Strike (m)	Time (min)	Rose To
1.65	20	1.20
3.50	-	1.20

Sample Depth (m)	Type/ Ref	Tests/Results	Water Level (m)	Legend /Cover	Strata Depth (m)	Level (m)	Strata Description	Core Run	TCR (%)	SCR (%)	RQD (%)	Fract (mm) min	Fract (mm) avg	Fract (mm) max	Inst/ Backfill	Depth (m)
					0.20	83.54	Grass over soft dark brown CLAY with rootlets throughout. [TOPSOIL]									
0.20	B 1															
0.30	ES 1															
0.30 - 0.40	B 1				0.40	83.34	Soft dark brown sandy gravelly CLAY. Gravel is fine to coarse angular to sub-angular LIMESTONE. Sand is coarse. Some rootlets [WEATHERED CORNBRASH FORMATION]									
0.40	ES 1															
0.50	B 2															
0.55 - 0.65	B 2				0.75	82.99	Soft dark brown mottled light brown sandy gravelly CLAY with some cobbles of sub-angular limestone. Sand is coarse. Gravel is fine to coarse angular to sub-angular limestone. [WEATHERED CORNBRASH FORMATION]									
					1.20	82.54	Firm to stiff light brown mottled grey sandy gravelly CLAY. Sand is coarse. Gravel is fine to coarse sub-angular to angular pale grey limestone. [WEATHERED CORNBRASH FORMATION]									
1.20 - 1.65	D 1	SPT(S) 1.20m N=21 (1,2/4,7,5,5)														
					1.70	82.04	Stiff light brown mottled grey sandy slightly gravelly CLAY. Sand is coarse. Gravel is fine to medium sub-angular limestone. [WEATHERED CORNBRASH FORMATION]	1.20 1.70	100	16	0					
1.70 - 1.78	D 3	SPT(S) 1.70m 50 (25 for 35mm/50 for 40mm) Recovery=93%														
1.70 - 3.20	C 4				1.85	81.89	Weak (?) LIMESTONE recovered as light brown and light grey clayey fine to coarse sub-angular limestone gravel. [CORNBRASH FORMATION]									
					1.95	81.79	Weak (?) light brown thinly bedded medium grained LIMESTONE. No fractures. [CORNBRASH FORMATION]									
							Extremely weak (?) blue grey slightly silty MUDSTONE. [FOREST MARBLE FORMATION]	1.70 3.20	93	80	67					
3.20 - 3.58	D 5	SPT(S) 3.20m 50 (1,2/50 for 225mm) Recovery=87%														
3.20 - 4.70	C 6				3.20	80.54	No recovery									
					3.45	80.29	Extremely weak (?) dark grey MUDSTONE. [FOREST MARBLE FORMATION]	3.20 4.70	87	77	77					
3.70	C 6				3.78	79.96	Strong (?) light grey thinly bedded LIMESTONE with green staining. [FOREST MARBLE FORMATION]									

Strata continues onto next page

Notes:

1. Borehole location was scanned with a CAT scanner by a CGL Engineer prior to drilling commencing.
2. Prior to drilling, a hand pit was dug to a depth of 1.2 m bgl, and the base of the pit was CAT scanned.
3. Borehole was terminated at the target depth of 5.00 m bgl.
4. Groundwater was encountered during drilling at 1.65 m and 3.50 m bgl.
5. After completion the borehole was installed with a monitoring standpipe.
6. SPT = Standard Penetration Test. ES = Environmental sample. D = Disturbed sample. B = Bulk sample.

Hole Diameter

Depth (m)	Diam (mm)
1.70	128

Casing

Depth (m)	Diam (mm)
1.70	138

Hammer Information

Energy Ratio	Serial No.
64%	ar2570

Install Response Zones

Ref	From (m)	To (m)
Pipe1	1.00	3.50
Pipe2	4.00	5.00

Scale: 1:20

Logged By: KBD

Checked By:

Approved By:

Section ID:

CGL Reference

CG/39017

Project Title: Bicester Golf Club

Client: Elliott Wood Partnership Ltd

Status:	Location ID
DRAFT	**BH03**

Location Type: Rotary cored

Coords: 454918.030E/221726.240N Level: 83.740m

Ordnance Survey Great Britain National Grid

Final Depth: **5.00 m**

Orientation: 0° Inclination: 90°

Date Start: 25/10/2021 Date End: 25/10/2021

Card Geotechnics Limited,
4 Godalming Business Centre,
Woolsack Way,
Godalming,
Surrey,
GU7 1XW
www.cgl-uk.com

Method and Plant Used

From (m)	To (m)	Type	Plant Used
0.00	1.20	IP	Hand Dug
1.20	5.00	RC	Tracked Drilling Rig
1.20	1.70	WLS	Comacchio 305
1.70	5.19	RC	Comacchio 305

Groundwater

Strike (m)	Time (min)	Rose To

Sample Depth (m)	Type/ Ref	Tests/Results	Water Level (m)	Legend /Cover	Strata Depth (m)	Level (m)	Strata Description	Rotary Coring Core Run	TCR (%)	SCR (%)	RQD (%)	Fract (mm) min avg max	Inst/ Backfill	Depth (m)
					4.60	79.14	Strong (?) light grey thinly bedded LIMESTONE with green staining. [FOREST MARBLE FORMATION]							
4.70 - 5.00	C 7	SPT(C) 4.70m N=50 (1,2/50 for 250mm) Recovery=133%					Weak (?) dark grey MUDSTONE. [FOREST MARBLE FORMATION]	4.70 5.00	133	100	100			
5.00 - 5.19	D 8	SPT(S) 5.00m 50 (25 for 145mm/50 for 40mm)			5.00	78.74	EOH at 5.00m - Achieved target depth							

Notes:

1. Borehole location was scanned with a CAT scanner by a CGL Engineer prior to drilling commencing.
2. Prior to drilling, a hand pit was dug to a depth of 1.2 m bgl, and the base of the pit was CAT scanned.
3. Borehole was terminated at the target depth of 5.00 m bgl.
4. Groundwater was encountered during drilling at 1.65 m and 3.50 m bgl.
5. After completion the borehole was installed with a monitoring standpipe.
6. SPT = Standard Penetration Test. ES = Environmental sample. D = Disturbed sample. B = Bulk sample.

Hole Diameter

Depth (m)	Diam (mm)
5.00	116

Casing

Depth (m)	Diam (mm)

Hammer Information

Energy Ratio	Serial No.
64%	ar2570

Install Response Zones

Ref	From (m)	To (m)
Pipe1	1.00	3.50
Pipe2	4.00	5.00

Scale: 1:20

Logged By: KBD

Checked By:

Approved By:

Section ID:

CGL Reference
CG/39017

Project Title: Bicester Golf Club

Client: Elliott Wood Partnership Ltd

Status:	Location ID
DRAFT	**BH04**

Location Type: Rotary cored

Coords: 454833.110E/221561.800N Level: 83.520m

Ordnance Survey Great Britain National Grid

Final Depth: **20.00 m**

Orientation: 0° Inclination: 90°

Date Start: 27/10/2021 Date End: 28/10/2021

Card Geotechnics Limited,
4 Godalming Business Centre,
Woolsack Way,
Godalming,
Surrey,
GU7 1XW
www.cgl-uk.com

Method and Plant Used

From (m)	To (m)	Type	Plant Used
0.00	0.70	IP	Hand Dug
0.70	20.00	RC	Tracked Drilling Rig
1.20	1.50	WLS	Comacchio 305
1.50	3.50	RC	Comacchio 305
3.50	13.14	RC	Comacchio 305
3.50	13.00	RC	Comacchio 305

Groundwater

Strike (m)	Time (min)	Rose To

Sample Depth (m)	Type/ Ref	Tests/Results	Water Level (m)	Legend /Cover	Strata Depth (m)	Level (m)	Strata Description	Rotary Coring: Core Run	TCR (%)	SCR (%)	RQD (%)	Fract (mm) min avg max	Inst/ Backfill	Depth (m)
0.15	ES 1				0.20	83.32	Grass over soft dark brown gravelly sandy CLAY with roots and rootlets throughout. Sand is medium to coarse. Gravel is fine to coarse sub-angular to sub-rounded limestone. [TOPSOIL]							
0.30 - 0.40	B 1				0.50	83.02	Soft brown sandy gravelly CLAY. Gravel is fine to coarse sub-angular to angular limestone. Sand is coarse. [WEATHERED CORNBRASH FORMATION]							
0.50	ES 2													
0.50 - 0.60	B 2				0.70	82.82	Brown to orange brown sandy clayey fine to coarse sub-angular to angular grey limestone GRAVEL. Sand is coarse. Some cobbles of limestone. [WEATHERED CORNBRASH FORMATION]							
							Firm to stiff orange brown mottled yellow sandy gravelly CLAY. Gravel of fine to coarse sub-angular to angular grey limestone. Oolitic limestone? [WEATHERED CORNBRASH FORMATION]							
1.20 - 1.65	D 1	SPT(S) 1.20m N=29 (5,7/7,5,6,11)						0.70 2.00	100	0	0			
1.50	C 1	Recovery=110%												
1.50 - 2.50	C 3				1.95	81.57		1.50 2.10	110 100	0 0	0			
2.10	C 3				2.10	81.42	As above recovered as clayey sandy GRAVEL of fine to coarse sub-angular to angular limestone [CORNBRASH FORMATION]							
							Medium strong (?) light brown to pinkish orange mottled grey thinly bedded medium grained LIMESTONE. Fractures are horizontal, open and infilled with gravel. [CORNBRASH FORMATION]	2.10 2.50	100	70	0			
2.50 - 3.50	C 4	SPT(C) 2.50m N=20 (3,5/5,5,5,5) Recovery=25%			2.55	80.97								
							Stiff dark grey CLAY. [FOREST MARBLE FORMATION]	2.50 3.50	25					
								2.50 4.00	97	10	10			
3.50 - 3.95	D 2	SPT(S) 3.50m N=16 (1,1/2,2,5,7) Recovery=100%												
3.50 - 3.95	D 5													
3.50 - 4.50	C 6				3.70	79.82								
							Weak (?) light grey very fine grained MUDSTONE. No fractures. [FOREST MARBLE FORMATION]							
					4.00	79.52								

Strata continues onto next page

Notes:

1. Borehole location was scanned with a CAT scanner by a CGL Engineer prior to drilling commencing.2. Prior to drilling, a hand pit was dug to a depth of 0.7 m bgl, and the base of the pit was CAT scanned. 3. Borehole was terminated at the target depth of 20.00 m bgl.4. Groundwater was not encountered during drilling. 5. After completion the borehole was installed with a monitoring standpipe. 6. SPT = Standard Penetration Test. ES = Environmental sample. D = Disturbed sample. B = Bulk sample.

Hole Diameter

Depth (m)	Diam (mm)
1.50	128

Casing

Depth (m)	Diam (mm)

Hammer Information

Energy Ratio	Serial No.
64%	ar2570

Install Response Zones

Ref	From (m)	To (m)
Pipe1	1.50	4.00
Pipe2	5.50	10.00

Scale: 1:20

Logged By: KBD/IKL

Checked By:

Approved By:

Section ID:

CGL Reference

CG/39017

Project Title: Bicester Golf Club

Client: Elliott Wood Partnership Ltd

Status:	Location ID
DRAFT	**BH04**

Location Type: Rotary cored

Coords: 454833.110E/221561.800N Level: 83.520m

Ordnance Survey Great Britain National Grid

Final Depth: **20.00 m**

Orientation: 0° Inclination: 90°

Date Start: 27/10/2021 Date End: 28/10/2021

Card Geotechnics Limited,
4 Godalming Business Centre,
Woolsack Way,
Godalming,
Surrey,
GU7 1XW
www.cgl-uk.com

Method and Plant Used

From (m)	To (m)	Type	Plant Used
0.00	0.70	IP	Hand Dug
0.70	20.00	RC	Tracked Drilling Rig
1.20	1.50	WLS	Comacchio 305
1.50	3.50	RC	Comacchio 305
3.50	13.14	RC	Comacchio 305
3.50	13.00	RC	Comacchio 305

Groundwater

Strike (m)	Time (min)	Rose To
7.00	20	1.40

Samples & Tests: Sample Depth (m)	Type/ Ref	Tests/Results	Water Level (m)	Legend /Cover	Strata Depth (m)	Level (m)	Strata Description	Rotary Coring: Core Run	TCR (%)	SCR (%)	RQD (%)	Fract (mm) min avg max	Inst/ Backfill	Depth (m)
					4.30	79.22	Soft to firm dark grey slightly sandy slightly gravelly CLAY. Gravel is fine to coarse, sub-rounded limestone. [FOREST MARBLE FORMATION]	3.50 4.50	100					
					4.50	79.02	Stiff to very stiff dark grey sandy CLAY [FOREST MARBLE FORMATION] *4.43m bgl Fracture - sub-horizontal, undulating, rough, closed.*							
4.50 - 4.75 4.50 - 4.95 4.50 - 5.50	D 3 D 7 C 8	SPT(S) 4.50m N=36 (3,4/10,12,8,6) Recovery=70%			4.90	78.62	Weak (?) greenish grey slightly fractured very thinly bedded fine grained MUDSTONE. [FOREST MARBLE FORMATION]	4.00 5.50						
					5.10	78.42	Light grey clayey slightly sandy fine to coarse sub-angular mudstone GRAVEL. [FOREST MARBLE FORMATION] *between 4.90 and 5.10m bgl Mudstone lithorelics*	4.50 5.50	70					5
5.50 - 5.83 5.50 - 7.00	D 9 C 10	SPT(S) 5.50m 50 (6,8/50 for 175mm) Recovery=100%			5.70	77.82	Weak light grey very fine grained MUDSTONE. No fractures. [FOREST MARBLE FORMATION] *between 5.50 and 5.70m bgl SPT induced fracturing - causing mudstone to be recovered as fine to coarse sub-angular to angular gravel.*							
					6.05	77.47	Strong light grey thinly bedded medium grained LIMESTONE with some white fossils. No fractures. [FOREST MARBLE FORMATION]							6
					6.15	77.37	Weak light brown fine grained MUDSTONE. No fractures. [FOREST MARBLE FORMATION]							
					6.25	77.27	Weak dark brown/black fine grained MUDSTONE. No fractures. [FOREST MARBLE FORMATION]	5.50 7.00	100	84	84			
					6.30	77.22	Weak light brown fine grained MUDSTONE. No fractures. [FOREST MARBLE FORMATION]							
6.50	C 6						Weak light greenish grey very thinly bedded fine grained MUDSTONE. Fractures are drilling induced along bedding planes. [FOREST MARBLE FORMATION] *6.40m bgl Fracture - horizontal, open and infilled with gravel of weak grey mudstone - potentially drilling induced.* *6.75m bgl Fracture - planar, partly open - drilling induced.*							
					7.00	76.52								7
7.00 - 7.26 7.00 - 8.50	D 11 C 12	SPT(S) 7.00m 50 (8,8/50 for 110mm) Recovery=100%			7.05	76.47	Light grey MUDSTONE recovered as fine to medium angular to sub-angular gravel. [FOREST MARBLE FORMATION]							
					7.35	76.17	Stiff dark blue CLAY. [FOREST MARBLE FORMATION]							
					7.50	76.02	Stiff green slightly gravelly CLAY. Gravel is fine to medium sub-angular grey mudstone. [FOREST MARBLE FORMATION]	7.00 8.50	100	40	34			
					7.90	75.62	Extremely weak (?) green slightly silty MUDSTONE. [FOREST MARBLE FORMATION]							
					7.98	75.54	Strong light brown and dark grey medium grained LIMESTONE.							8

Strata continues onto next page

Notes:

1. Borehole location was scanned with a CAT scanner by a CGL Engineer prior to drilling commencing.2. Prior to drilling, a hand pit was dug to a depth of 0.7 m bgl, and the base of the pit was CAT scanned. 3. Borehole was terminated at the target depth of 20.00 m bgl.4. Groundwater was not encountered during drilling. 5. After completion the borehole was installed with a monitoring standpipe. 6. SPT = Standard Penetration Test. ES = Environmental sample. D = Disturbed sample. B = Bulk sample.

Hole Diameter: Depth (m)	Diam (mm)

Casing: Depth (m)	Diam (mm)
4.20	138

Hammer Information: Energy Ratio	Serial No.
64%	ar2570

Install Response Zones

Ref	From (m)	To (m)
Pipe1	1.50	4.00
Pipe2	5.50	10.00

Scale: 1:20

Logged By: KBD/IKL

Checked By:

Approved By:

Section ID:

CGL Reference
CG/39017

Project Title: Bicester Golf Club

Client: Elliott Wood Partnership Ltd

Status: **DRAFT**

Location ID: **BH04**

Location Type: Rotary cored

Coords: 454833.110E/221561.800N Level: 83.520m

Ordnance Survey Great Britain National Grid

Final Depth: **20.00 m**

Orientation: 0° Inclination: 90°

Date Start: 27/10/2021 Date End: 28/10/2021

Card Geotechnics Limited,
4 Godalming Business Centre,
Woolsack Way,
Godalming,
Surrey,
GU7 1XW
www.cgl-uk.com

Method and Plant Used

From (m)	To (m)	Type	Plant Used
0.00	0.70	IP	Hand Dug
0.70	20.00	RC	Tracked Drilling Rig
1.20	1.50	WLS	Comacchio 305
1.50	3.50	RC	Comacchio 305
3.50	13.14	RC	Comacchio 305
3.50	13.00	RC	Comacchio 305

Groundwater

Strike (m)	Time (min)	Rose To

Sample Depth (m)	Type/ Ref	Tests/Results	Water Level (m)	Legend /Cover	Strata Depth (m)	Level (m)	Strata Description	Rotary Coring: Core Run	TCR (%)	SCR (%)	RQD (%)	Fract (mm) min avg max	Inst/ Backfill	Depth (m)
					8.10	75.42	Strong light brown and dark grey medium grained LIMESTONE. [FOREST MARBLE FORMATION]							
							Weak dark grey thinly bedded fine grained slightly silty MUDSTONE. [FOREST MARBLE FORMATION] *8.00m bgl Fracture - slightly weathered, horizontal, planar, rough, open.*							
					8.50	75.02	Strong light grey thinly bedded medium grained LIMESTONE with some small (<1 cm)white fossils. No fractures. [FOREST MARBLE FORMATION]							
8.50 - 10.00	C 13	SPT(C) 8.50m 50 (25 for 70mm/50 for 5mm) Recovery=100%			8.65	74.87	Firm dark green silty CLAY. [FOREST MARBLE FORMATION] *between 8.50 and 8.65m bgl Fractured by SPT.*	8.50 10.00	107	93	83			9
							Strong light grey LIMESTONE. Moderate white bivalve fossils. Fractures are straight, planar, rough, potentially drilling induced. Rare pockets of quartz. [FOREST MARBLE FORMATION] *between 8.80 and 8.90m bgl Broken up into gravel*							
					9.75	73.77								
					9.85	73.67	Medium strong dark grey to brown fine to medium grained weathered silty LIMESTONE, with rare bivalve fossils. [FOREST MARBLE FORMATION]							
					10.00	73.52	Strong light grey fine grained LIMESTONE with occasional fossils and quartz inclusions. [FOREST MARBLE FORMATION]							
10.00 - 11.50	C 14	SPT(C) 10.00m 50 (25 for 45mm/50 for 5mm) Recovery=100%			10.15	73.37	Firm dark grey silty gravelly CLAY. Gravel is fine to coarse angular limestone. [FOREST MARBLE FORMATION] *between 10.00 and 10.15m bgl Fractured by SPT.*							10
							Strong light grey fine grained LIMESTONE with rare bivalve fossils. [FOREST MARBLE FORMATION]	10.00 11.50	100	87	84			
					10.85	72.67								
					11.00	72.52	Medium strong light grey LIMESTONE with cross hatched fracturing. Small dark green reduction spots (<0.5 mm). [FOREST MARBLE FORMATION]							11
							Strong to very strong light grey to light blue medium grained LIMESTONE with sub-horizontal undulating fractures. Large reduction spots (1-2cm) [FOREST MARBLE FORMATION]							
					11.50	72.02								
11.50 - 13.00	C 15	SPT(C) 11.50m 50 (25 for 75mm/50 for 15mm) Recovery=100%			11.65	71.87	Firm dark grey silty gravelly CLAY. Gravel is fine to coarse angular limestone. [FOREST MARBLE FORMATION] *between 11.50 and 11.65m bgl Fractured by SPT.*							
							Strong to very strong light grey to grey fine to medium grained LIMESTONE with occasional horizontal fractures. [FOREST MARBLE FORMATION]							12

Strata continues onto next page

Notes:

1. Borehole location was scanned with a CAT scanner by a CGL Engineer prior to drilling commencing.2. Prior to drilling, a hand pit was dug to a depth of 0.7 m bgl, and the base of the pit was CAT scanned. 3. Borehole was terminated at the target depth of 20.00 m bgl.4. Groundwater was not encountered during drilling. 5. After completion the borehole was installed with a monitoring standpipe. 6. SPT = Standard Penetration Test. ES = Environmental sample. D = Disturbed sample. B = Bulk sample.

Hole Diameter

Depth (m)	Diam (mm)

Casing

Depth (m)	Diam (mm)

Hammer Information

Energy Ratio	Serial No.
64%	ar2570

Install Response Zones

Ref	From (m)	To (m)
Pipe1	1.50	4.00
Pipe2	5.50	10.00

Scale: 1:20

Logged By: KBD/IKL

Checked By:

Approved By:

Section ID:

CGL Reference **CG/39017**

Project Title: Bicester Golf Club

Client: Elliott Wood Partnership Ltd

Status: **DRAFT**

Location ID: **BH04**

Location Type: Rotary cored

Coords: 454833.110E/221561.800N Level: 83.520m

Ordnance Survey Great Britain National Grid

Final Depth: **20.00 m**

Orientation: 0° Inclination: 90°

Date Start: 27/10/2021 Date End: 28/10/2021

Card Geotechnics Limited,
4 Godalming Business Centre,
Woolsack Way,
Godalming,
Surrey,
GU7 1XW
www.cgl-uk.com

Method and Plant Used

From (m)	To (m)	Type	Plant Used
0.00	0.70	IP	Hand Dug
0.70	20.00	RC	Tracked Drilling Rig
1.20	1.50	WLS	Comacchio 305
1.50	3.50	RC	Comacchio 305
3.50	13.14	RC	Comacchio 305
3.50	13.00	RC	Comacchio 305

Groundwater

Strike (m)	Time (min)	Rose To

Sample Depth (m)	Type/ Ref	Tests/Results	Water Level (m)	Legend /Cover	Strata Depth (m)	Level (m)	Strata Description	Rotary Coring: Core Run	TCR (%)	SCR (%)	RQD (%)	Fract (mm) min avg max	Inst/ Backfill	Depth (m)
							Strong to very strong light grey to grey fine to medium grained LIMESTONE with occasional horizontal fractures. [FOREST MARBLE FORMATION]	11.50 13.00	80	71	70			
					12.70	70.82								
							No recovery.							
		SPT(C) 13.00m 50 (25 for 65mm/50 for 75mm)			13.00	70.52								13
							LIMESTONE recovered as dark grey slightly clayey sandy gravelly sub-angular to angular limestone COBBLES. Gravel is fine to coarse sub-angular to angular limestone. [FOREST MARBLE FORMATION]							
					13.25	70.27								
							Strong to very strong fine grained LIMESTONE with moderate fossils. Faint horizontal bedding and banding. [FOREST MARBLE FORMATION]	13.00 14.50	103	87	87			
														14
					14.50	69.02								
					14.60	68.92	Light grey LIMESTONE recovered as fine to coarse sub-angular gravel. [FOREST MARBLE FORMATION]							
							Strong to very strong light grey fine grained LIMESTONE with frequent bivalve fossils (1-3 cm) and quartz inclusions. [FOREST MARBLE FORMATION]							
					15.05	68.47								15
							Medium strong dark grey fine grained LIMESTONE. Fractures are horizontal, planar, smooth, closed - potentially drilling induced. [FOREST MARBLE FORMATION]	14.50 16.00	100	84	79			
					15.30	68.22								
							Strong to very strong light grey fine grained LIMESTONE with moderate bivalve fossils (1-3 cm) and quartz inclusions. [FOREST MARBLE FORMATION]							
					15.65	67.87								
							Dark grey weakly cemented thinly bedded MUDSTONE [FOREST MARBLE FORMATION]							
					15.90	67.62								
					16.00	67.52	Strong light grey fine grained LIMESTONE with occasional shell fossils.							16

Strata continues onto next page

Notes:

1. Borehole location was scanned with a CAT scanner by a CGL Engineer prior to drilling commencing.2. Prior to drilling, a hand pit was dug to a depth of 0.7 m bgl, and the base of the pit was CAT scanned. 3. Borehole was terminated at the target depth of 20.00 m bgl.4. Groundwater was not encountered during drilling. 5. After completion the borehole was installed with a monitoring standpipe. 6. SPT = Standard Penetration Test. ES = Environmental sample. D = Disturbed sample. B = Bulk sample.

Hole Diameter

Depth (m)	Diam (mm)
13.00	116

Casing

Depth (m)	Diam (mm)

Hammer Information

Energy Ratio	Serial No.
64%	ar2570

Install Response Zones

Ref	From (m)	To (m)
Pipe1	1.50	4.00
Pipe2	5.50	10.00

Scale: 1:20

Logged By: KBD/IKL

Checked By:

Approved By:

Section ID:

CGL Reference **CG/39017**

Project Title: Bicester Golf Club

Client: Elliott Wood Partnership Ltd

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	0.70	IP	Hand Dug			
0.70	20.00	RC	Tracked Drilling Rig			
1.20	1.50	WLS	Comacchio 305			
1.50	3.50	RC	Comacchio 305			
3.50	13.14	RC	Comacchio 305			
3.50	13.00	RC	Comacchio 305			

Status: **DRAFT**

Location ID: **BH04**

Location Type: Rotary cored

Coords: 454833.110E/221561.800N Level: 83.520m

Ordnance Survey Great Britain National Grid

Final Depth: **20.00 m**

Orientation: 0° Inclination: 90°

Date Start: 27/10/2021 Date End: 28/10/2021

Card Geotechnics Limited,
4 Godalming Business Centre,
Woolsack Way,
Godalming,
Surrey,
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www.cgl-uk.com

Samples & Tests			Water Level (m)	Legend /Cover	Strata Depth (m)	Level (m)	Strata Description	Rotary Coring				Fract (mm)	Inst/ Backfill	Depth (m)
Sample Depth (m)	Type/ Ref	Tests/Results						Core Run	TCR (%)	SCR (%)	RQD (%)	min avg max		
					16.10	67.42	Strong light grey fine grained LIMESTONE with occasional shell fossils. [FOREST MARBLE FORMATION]							
					16.35	67.17	Light grey LIMESTONE recovered as fine to coarse sub-angular gravel. [FOREST MARBLE FORMATION]							
					16.77	66.75	Strong to very strong light grey LIMESTONE with occasional shells. [FOREST MARBLE FORMATION] Medium strong to strong dark grey fine grained MUDSTONE. [FOREST MARBLE FORMATION] *between 16.35 and 16.77m bgl Some lighter bands of bioturbation and burrows.* *16.36m bgl Fracture - planar, smooth, closed.*	16.00 17.50	105	71	71			
					17.07	66.45	Stiff to very stiff dark grey CLAY. [FOREST MARBLE FORMATION]							
					17.50	66.02	Strong to very strong light grey LIMESTONE with occasional shells and quartzite. [FOREST MARBLE FORMATION] *17.20m bgl Fracture - planar, smooth, closed.* *17.45m bgl Fracture - slightly weathered, undulating, smooth.*							17
					17.60	65.92	Light grey LIMESTONE recovered as fine to coarse sub-angular gravel - fractured by SPT. [FOREST MARBLE FORMATION]							
					17.88	65.64	Strong to very strong light grey fine grained LIMESTONE with occasional fossils. No fractures. [FOREST MARBLE FORMATION]							
					18.42	65.10	Weak dark grey thinly bedded fine grained MUDSTONE. [FOREST MARBLE FORMATION] *between 17.96 and 18.42m bgl Fractures are sub-horizontal, planar, smooth and potentially drilling induced along bedding planes at 17.96, 18.05, 18.42, 18.26, and 18.42*	17.50 19.00	98	95	83			18
					19.00	64.52	Strong to very strong light grey LIMESTONE with light brown patches - possible reduction spots. [FOREST MARBLE FORMATION] *18.88m bgl Fracture - slightly weathered, slightly undulating, smooth, partly open.*							
					19.16	64.36	Weak dark grey MUDSTONE - fractured by SPT [FOREST MARBLE FORMATION]							19
					20.00	63.52	Strong to very strong light grey LIMESTONE with light brown patches - possible reduction spots. [FOREST MARBLE FORMATION] *19.40m bgl Fracture - planar, smooth, closed. Potentially drilling induced.*	19.00 20.00	100	100	100			

EOH at 20.00m - Achieved target depth

Notes:

1. Borehole location was scanned with a CAT scanner by a CGL Engineer prior to drilling commencing.2. Prior to drilling, a hand pit was dug to a depth of 0.7 m bgl, and the base of the pit was CAT scanned. 3. Borehole was terminated at the target depth of 20.00 m bgl.4. Groundwater was not encountered during drilling. 5. After completion the borehole was installed with a monitoring standpipe. 6. SPT = Standard Penetration Test. ES = Environmental sample. D = Disturbed sample. B = Bulk sample.

Hole Diameter		Casing	
Depth (m)	Diam (mm)	Depth (m)	Diam (mm)

Hammer Information	
Energy Ratio	Serial No.
64%	ar2570

Install Response Zones		
Ref	From (m)	To (m)
Pipe1	1.50	4.00
Pipe2	5.50	10.00

Scale: 1:20

Logged By: KBD/IKL

Checked By:

Approved By:

Section ID:

CGL Reference **CG/39017**

Project Title: Bicester Golf Club	Status:	Location ID
Client: Elliott Wood Partnership Ltd	**DRAFT**	**BH05**

Location Type: Rotary cored

Coords: 454945.450E/221610.860N Level: 82.300m

Ordnance Survey Great Britain National Grid | Final Depth: **13.00 m**

Orientation: 0° Inclination: 90°

Date Start: 26/10/2021 Date End: 27/10/2021

Card Geotechnics Limited,
4 Godalming Business Centre,
Woolsack Way,
Godalming,
Surrey,
GU7 1XW
www.cgl-uk.com

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	1.20	IP	Hand Dug			
1.20	13.00	RC	Tracked Drilling Rig			

Sample Depth (m)	Type/ Ref	Tests/Results	Water Level (m)	Legend /Cover	Strata Depth (m)	Level (m)	Strata Description	Rotary Coring Core Run	TCR (%)	SCR (%)	RQD (%)	Fract (mm) min avg max	Inst/ Backfill	Depth (m)
0.10	ES 1						Grass over soft dark brown sandy CLAY with roots and rootlets throughout. [TOPSOIL]							
0.20 - 0.30	B 1				0.20	82.10								
							Soft brown mottled light brown sandy gravelly CLAY. Gravel is fine to coarse sub-angular LIMESTONE. Sand is medium to coarse. [WEATHERED CORNBRASH FORMATION] *0.25m bgl Cobble of sub-angular LIMESTONE*							
0.55 - 0.65	B 2				0.50	81.80								
							Stiff light brown mottled orange brown sandy gravelly CLAY. Sand is coarse. Gravel is fine to coarse sub-angular limestone. [WEATHERED CORNBRASH FORMATION]							
0.80 - 0.90	B 3				0.70	81.60								
							Brown to light brown sandy clayey fine to coarse sub-angular grey and light brown limestone GRAVEL. [WEATHERED CORNBRASH FORMATION]							
1.20 - 1.65	D 1				1.20	81.10								
							Weak grey mottled orangish brown fine to medium grained LIMESTONE with 30 mm spherical nodules/concretions and frequent calcite. Sand sized grains are predominantly oolites with frequent calcite crystals. [CORNBRASH FORMATION]	1.20 1.50	100	67	67			
					1.40	80.90								
					1.50	80.80	Light brown and yellow sandy fine to medium sub-angular GRAVEL. (As above but recovered as gravel). [CORNBRASH FORMATION]							
							Strong (?) orange brown mottled white and grey medium grained LIMESTONE. Fractures are slightly weathered rough to undulating, open to close with some orange staining. [CORNBRASH FORMATION] *1.55m bgl Fracture - slightly weathered with orange staining, horizontal, rough, open.* *1.60m bgl Fracture - no staining, horizontal, rough, undulating. between 1.60 and 1.62m bgl Fractured limestone as fine to coarse angular to sub-angular gravel.* *1.62m bgl Fracture - slightly weathered with orange, black and yellow staining, horizontal, rough, closed.* *1.64m bgl Fracture - slightly weathered with orange, black and yellow staining, horizontal, rough, open.* *1.73m bgl Fracture - orange staining, rough, horizontal, closed.* *1.75m bgl Fracture - orange staining, rough, horizontal, open.*	1.50 2.50	110	75	42			
					2.10	80.20								
					2.30	80.00								
					2.45	79.85								
					2.50	79.80								
							Stiff dark grey CLAY. [CORNBRASH FORMATION]							
							Weak (?) to medium strong grey MUDSTONE. [FOREST MARBLE FORMATION]							
							Very stiff dark grey CLAY. [FOREST MARBLE FORMATION]							
							No recovery [FOREST MARBLE FORMATION]	2.50 3.50	25	0	0			
					3.25	79.05								
							Stiff grey slightly silty CLAY [FOREST MARBLE FORMATION]							
					3.50	78.80								
							Stiff grey CLAY becoming very stiff from 4.0 m [FOREST MARBLE FORMATION]							
4.00	C 5													

Strata continues onto next page

Notes:

1. Borehole location was scanned with a CAT scanner by a CGL Engineer prior to drilling commencing.2. Prior to drilling, a hand pit was dug to a depth of 1.2 m bgl, and the base of the pit was CAT scanned. 3. Borehole was terminated at the target depth of 5.00 m bgl.4. Groundwater was encountered during drilling at 3.50 m bgl. 5. After completion the borehole was installed with a monitoring standpipe. 6. SPT = Standard Penetration Test. ES = Environmental sample. D = Disturbed sample. B = Bulk sample.

Hole Diameter		Casing	
Depth (m)	Diam (mm)	Depth (m)	Diam (mm)

Hammer Information	
Energy Ratio %	Serial No.

Install Response Zones		
Ref	From (m)	To (m)
Pipe2	1.00	2.50
Pipe1	4.20	10.00

Scale: 1:20

Logged By: KBD

Checked By:

Approved By:

Section ID:

CGL Reference **CG/39017**

Project Title: Bicester Golf Club	Status:	Location ID
Client: Elliott Wood Partnership Ltd	**DRAFT**	**BH05**

Location Type: Rotary cored

Coords: 454945.450E/221610.860N Level: 82.300m

Ordnance Survey Great Britain National Grid | Final Depth: **13.00 m**

Orientation: 0° Inclination: 90°

Date Start: 26/10/2021 Date End: 27/10/2021

Card Geotechnics Limited,
4 Godalming Business Centre,
Woolsack Way,
Godalming,
Surrey,
GU7 1XW
www.cgl-uk.com

Method and Plant Used

From (m)	To (m)	Type	Plant Used
0.00	1.20	IP	Hand Dug
1.20	13.00	RC	Tracked Drilling Rig

Groundwater

Strike (m)	Time (min)	Rose To

Sample Depth (m)	Type/ Ref	Tests/Results	Water Level (m)	Legend /Cover	Strata Depth (m)	Level (m)	Strata Description	Rotary Coring: Core Run	TCR (%)	SCR (%)	RQD (%)	Fract (mm) min avg max	Inst/ Backfill	Depth (m)
					4.10	78.20	Stiff grey CLAY becoming very stiff from 4.0 m [FOREST MARBLE FORMATION]							
					4.50	77.80	Strong (?) light grey thinly bedded fine grained LIMESTONE. No fractures. [FOREST MARBLE FORMATION]	3.50 4.50	100	40	40			
					4.80	77.50	No recovery [FOREST MARBLE FORMATION]							
					4.90	77.40	Very stiff dark grey gravelly sandy CLAY. Sand is coarse. Gravel is orange brown fine to medium sub-angular to sub-rounded limestone. [FOREST MARBLE FORMATION]							
					5.80	76.50	Weak (?) dark grey mottled light grey fine grained MUDSTONE. No fractures. [FOREST MARBLE FORMATION]	4.50 5.50	70	60	60			5
					5.90	76.40	MUDSTONE recovered as light grey clayey slightly sandy fine to medium sub-angular mudstone gravel. [FOREST MARBLE FORMATION]							
					6.55	75.75	Weak (?) light grey fine grained MUDSTONE. Fracture is slightly weathered, close, rough, horizontal. [FOREST MARBLE FORMATION] *6.05m bgl Fracture - slightly weathered, rough, horizontal, open.*	5.50 7.00	100	63	57			6
					6.65	75.65	Weak (?) dark grey fine grained MUDSTONE. [FOREST MARBLE FORMATION]							
					7.00	75.30	Very stiff dark blue occasionally mottled grey CLAY. [FOREST MARBLE FORMATION]							
					7.25	75.05	Very stiff green gravelly CLAY. Gravel is fine to medium sub-angular to sub-rounded grey mudstone. [FOREST MARBLE FORMATION]							7
					7.77	74.53	Strong (?) light grey mottled dark grey thinly bedded fine grained LIMESTONE with some white fossils of shells. Fractures are horizontal, open, rough. [FOREST MARBLE FORMATION] *7.25m bgl Fracture - slightly weathered, green staining, rough, horizontal, open. Boundary between clay and limestone.* *7.40m bgl Fracture - not weathered, no staining, horiztonal, rough, jagged, open. Potentially drilling induced.*	7.00 8.50	93	77	70			
					7.90	74.40	Weak (?) dark grey fine grained MUDSTONE with brown fossils. [FOREST MARBLE FORMATION]							
							Weak (?) light grey fine grained MUDSTONE.							8

Strata continues onto next page

Notes:

1. Borehole location was scanned with a CAT scanner by a CGL Engineer prior to drilling commencing.2. Prior to drilling, a hand pit was dug to a depth of 1.2 m bgl, and the base of the pit was CAT scanned. 3. Borehole was terminated at the target depth of 5.00 m bgl.4. Groundwater was encountered during drilling at 3.50 m bgl. 5. After completion the borehole was installed with a monitoring standpipe. 6. SPT = Standard Penetration Test. ES = Environmental sample. D = Disturbed sample. B = Bulk sample.

Hole Diameter		Casing	
Depth (m)	Diam (mm)	Depth (m)	Diam (mm)

Hammer Information	
Energy Ratio %	Serial No.

Install Response Zones

Ref	From (m)	To (m)
Pipe2	1.00	2.50
Pipe1	4.20	10.00

Scale: 1:20

Logged By: KBD

Checked By:

Approved By:

Section ID:

CGL Reference
CG/39017

Project Title: Bicester Golf Club	Status:	Location ID
Client: Elliott Wood Partnership Ltd	**DRAFT**	**BH05**

Location Type: Rotary cored

Coords: 454945.450E/221610.860N Level: 82.300m

Ordnance Survey Great Britain National Grid | Final Depth: **13.00 m**

Orientation: 0° Inclination: 90°

Date Start: 26/10/2021 Date End: 27/10/2021

Card Geotechnics Limited,
4 Godalming Business Centre,
Woolsack Way,
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GU7 1XW
www.cgl-uk.com

Method and Plant Used

From (m)	To (m)	Type	Plant Used
0.00	1.20	IP	Hand Dug
1.20	13.00	RC	Tracked Drilling Rig

Groundwater

Strike (m)	Time (min)	Rose To

Sample Depth (m)	Type/ Ref	Tests/Results	Water Level (m)	Legend /Cover	Strata Depth (m)	Level (m)	Strata Description	Rotary Coring: Core Run	TCR (%)	SCR (%)	RQD (%)	Fract (mm) min avg max	Inst/ Backfill	Depth (m)
					8.20	74.10	Weak (?) light grey fine grained MUDSTONE. [FOREST MARBLE FORMATION]							
					8.25	74.05	*8.17m bgl Fracture - no staining, horizontal, rough, open. 8.19m bgl Fracture - sub-horizontal, undulating, rough, open. Rock is fracture into small pieces - potentially drilling induced.*							
					8.50	73.80	Weak (?) dark grey fine grained MUDSTONE. [FOREST MARBLE FORMATION]							
					8.55	73.75	Strong (?) light grey fine grained LIMESTONE with abundant white fossils. [FOREST MARBLE FORMATION]							
					8.75	73.55	LIMESTONE recovered as fine to coarse sub-angular light grey limestone gravel. Drilling induced fracturing? [FOREST MARBLE FORMATION]							
					8.90	73.40	Strong (?) light grey fine grained LIMESTONE with abundant white fossils. [FOREST MARBLE FORMATION] *8.55m bgl Fracture - slightly weathered, rough, horizontal, open.*							
							Strong light grey and dark grey thinly bedded fine to medium grained LIMESTONE with abundant white quartz (?) fossils. [FOREST MARBLE FORMATION] *8.75m bgl Fracture - slightly weathered, horizontal, undulating, rough, open. Abundant fossils. Some grey fine sand infilling the fracture.*	8.50 10.00	103	100	100			9
					9.57	72.73	Strong grey thinly bedded medium grained LIMESTONE with abundant white quartz (?) fossils. [FOREST MARBLE FORMATION] *between 9.15 and 9.40m bgl Becoming mottled light grey and fine grained. 9.55m bgl Fracture - horizontal, rough, open.*							
					9.70	72.60	Weak (?) green brown mottled grey and occasionally black slightly sandy MUDSTONE. [FOREST MARBLE FORMATION]							
					10.05	72.25	Very strong light grey mottled grey medium grained LIMESTONE with abundant white fossils. No fractures. [FOREST MARBLE FORMATION]							10
					10.19	72.11	Very strong grey medium grained LIMESTONE. [FOREST MARBLE FORMATION]							
					10.58	71.72	Strong light grey thinly laminated? fine grained LIMESTONE with abundant fossils. Fractures are sub-vertical, tight, closed. [FOREST MARBLE FORMATION] *10.49m bgl Fracture - slightly weathered, rough, horizontal, partly open. Boundary between two types of limestone.*							
					10.65	71.65	Strong blue grey medium grained LIMESTONE [FOREST MARBLE FORMATION] *10.58m bgl Fracture - slightly weathered, undulating, sub-horizontal, closed.*	10.00 11.50	97	97	84			
					10.85	71.45	Strong grey and light grey medium bedded? With a banded appearance fine grained LIMESTONE with abundant fossils. [FOREST MARBLE FORMATION] *between 10.65 and 10.65m bgl Fracture - slightly weathered, sub-horizontal, undulating, rough, closed. Infilled with dark grey/blue clay.*							11
					11.15	71.15	Strong light grey thinly bedded fine grained LIMESTONE with abundant white fossils. [FOREST MARBLE FORMATION] *10.98m bgl Fracture - Slightly weathered with green staining, sub-horizontal, rough, closed. Infilled with clay.*							
					11.50	70.80	Grey mottled light grey and light brown medium grained LIMESTONE with green staining within the rock. [FOREST MARBLE FORMATION] *11.15m bgl Fracture - undulating, rough, fully closed. 11.28m bgl Fracture - drilling induced - no staining, sharp edges, horizontal, open.*							
					11.64	70.66	LIMESTONE recovered as fine to coarse angular light grey limestone gravel. Fractured by SPT.							12

Strata continues onto next page

Notes:

1. Borehole location was scanned with a CAT scanner by a CGL Engineer prior to drilling commencing.2. Prior to drilling, a hand pit was dug to a depth of 1.2 m bgl, and the base of the pit was CAT scanned. 3. Borehole was terminated at the target depth of 5.00 m bgl.4. Groundwater was encountered during drilling at 3.50 m bgl. 5. After completion the borehole was installed with a monitoring standpipe. 6. SPT = Standard Penetration Test. ES = Environmental sample. D = Disturbed sample. B = Bulk sample.

Hole Diameter		Casing	
Depth (m)	Diam (mm)	Depth (m)	Diam (mm)

Hammer Information	
Energy Ratio %	Serial No.

Install Response Zones

Ref	From (m)	To (m)
Pipe2	1.00	2.50
Pipe1	4.20	10.00

Scale: 1:20

Logged By: KBD
Checked By:
Approved By:
Section ID:

CGL Reference
CG/39017

Project Title: Bicester Golf Club	Status:	Location ID
Client: Elliott Wood Partnership Ltd	**DRAFT**	**BH05**

Location Type: Rotary cored

Coords: 454945.450E/221610.860N Level: 82.300m

Ordnance Survey Great Britain National Grid | Final Depth: **13.00 m**

Orientation: 0° Inclination: 90°

Date Start: 26/10/2021 Date End: 27/10/2021

Card Geotechnics Limited,
4 Godalming Business Centre,
Woolsack Way,
Godalming,
Surrey,
GU7 1XW
www.cgl-uk.com

Method and Plant Used

From (m)	To (m)	Type	Plant Used
0.00	1.20	IP	Hand Dug
1.20	13.00	RC	Tracked Drilling Rig

Groundwater

Strike (m)	Time (min)	Rose To

Samples & Tests: Sample Depth (m)	Type/ Ref	Tests/Results	Water Level (m)	Legend /Cover	Strata Depth (m)	Level (m)	Strata Description	Rotary Coring: Core Run	TCR (%)	SCR (%)	RQD (%)	Fract (mm) min avg max	Inst/ Backfill	Depth (m)
					12.30	70.00	LIMESTONE recovered as fine to coarse angular light grey limestone gravel. Fractured by SPT. [FOREST MARBLE FORMATION]							
							Medium strong - strong (?) grey fine to medium grained (black medium grains) LIMESTONE. Becoming more medium grained and darker with depth. [FOREST MARBLE FORMATION] *11.82m bgl Fracture - horizontal, rough, planar, open.* *12.10m bgl Fracture - sligtly weathered, horizontal, undulating, closed.*	11.50 13.00	100	93	87			
					12.78	69.52	Strong (?) light grey mottled dark grey thinly bedded fine to medium grained LIMESTONE. [FOREST MARBLE FORMATION] *12.31m bgl Fracture - horizontal, rough, open but infilled with dark grey slightly sandy clay and fine gravel.* *12.54m bgl Fracture - undulating, rough, partly closed - infilled with dark grey sandy clay.*							13
					12.83	69.47								
					13.00	69.30	Weak very dark grey to black MUDSTONE. Fractures are horizontal, rough, partly open. [FOREST MARBLE FORMATION]							14
							Strong dark grey becoming light grey from 12.90 LIMESTONE with white fossils of shells. [FOREST MARBLE FORMATION]							15
							EOH at 13.00m - Terminated upon client instruction							16

Notes:

1. Borehole location was scanned with a CAT scanner by a CGL Engineer prior to drilling commencing.2. Prior to drilling, a hand pit was dug to a depth of 1.2 m bgl, and the base of the pit was CAT scanned. 3. Borehole was terminated at the target depth of 5.00 m bgl.4. Groundwater was encountered during drilling at 3.50 m bgl. 5. After completion the borehole was installed with a monitoring standpipe. 6. SPT = Standard Penetration Test. ES = Environmental sample. D = Disturbed sample. B = Bulk sample.

Hole Diameter: Depth (m)	Diam (mm)

Casing: Depth (m)	Diam (mm)

Hammer Information: Energy Ratio % | Serial No.

Install Response Zones

Ref	From (m)	To (m)
Pipe2	1.00	2.50
Pipe1	4.20	10.00

Scale: 1:20

Logged By: KBD
Checked By:
Approved By:
Section ID:

CGL Reference
CG/39017

Project Title: Bicester Golf Club	Status:	Location ID
Client: Elliott Wood Partnership Ltd	**DRAFT**	**BH06**

Location Type: Rotary cored

Coords: 455036.770E/221630.660N Level: 82.190m

Ordnance Survey Great Britain National Grid | Final Depth: **5.00 m**

Orientation: 0° Inclination: 90°

Date Start: 20/10/2021 Date End: 20/10/2021

Card Geotechnics Limited,
4 Godalming Business Centre,
Woolsack Way,
Godalming,
Surrey,
GU7 1XW
www.cgl-uk.com

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	0.90	IP	Hand Tools			
0.90	2.00	WLS	Comacchio 305			
2.00	5.35	RC	Comacchio 305			

Samples & Tests			Water Level (m)	Legend /Cover	Strata Depth (m)	Level (m)	Strata Description	Rotary Coring				Fract (mm)	Inst/ Backfill	Depth (m)
Sample Depth (m)	Type/ Ref	Tests/Results						Core Run	TCR (%)	SCR (%)	RQD (%)	min avg max		
0.20	ES 1						Grass over soft dark brown slight sandy CLAY with rootlets throughout. Sand is fine to medium. [TOPSOIL]							
0.40 - 0.60	B 1				0.40	81.79								
0.60 - 0.80	B 2						Soft orangish brown sandy gravelly CLAY. Gravel is fine to coarse sub-angular to angular limestone. Sand is fine to medium. [WEATHERED CORNBRASH FORMATION]							
		SPT(C) 0.90m N=30 (25 for 110mm/14,6,3,7)			0.60	81.59	Brown and orange sandy clayey fine to coarse sub-angular to angular limestone GRAVEL. Sand is fine to medium. [WEATHERED CORNBRASH FORMATION] *between 0.80 and 0.90m bgl Becoming very gravelly, hand pit very hard to dig.*							
					0.90	81.29	Light brown and grey slightly sandy slightly clayey fine to coarse sub-angular to angular limestone GRAVEL. Sand is fine to medium. [WEATHERED CORNBRASH FORMATION]							
1.70	C 1				1.15	81.04	Stiff light brown mottled orange and grey slightly gravelly slightly sandy CLAY. Sand is fine to medium. Gravel is fine to medium sub-angular limestone. [WEATHERED CORNBRASH FORMATION] *between 1.50 and 1.60m bgl Pocket of orange gravelly medium to coarse SAND. Gravel is fine sub-angular limestone.*	0.90 2.00	100	0	0			
		SPT(S) 2.00m 50 (25 for 75mm/50 for 45mm)			2.00	80.19	Brown slightly clayey slightly sandy fine to coarse sub-angular to angular limestone GRAVEL [CORNBRASH FORMATION]							
					2.60	79.59	Strong (?) light grey medium grained LIMESTONE. Fractures are slightly weathered, rough, open. [CORNBRASH FORMATION] *2.65m bgl Fracture - slightly weathered, no staining, horiztonal, rough, open.* *2.67m bgl Fracture - slightly weathered, sub-horiztonal, undualting, partly open.* *2.75m bgl Fracture - slightly weathered, no staining, horiztonal, rough, open.* *between 2.77 and 2.78m bgl Band of dark grey LIMESTONE.* *2.82m bgl Fracture - slightly weathered, infilled with brown clay, horiztonal to sub-horiztonal, undulating to rough, partly open.*	2.00 3.50	87	15	0			
		SPT(S) 3.50m 50 (25 for 120mm/50 for 15mm)			2.90	79.29	Stiff light brown becoming brown slightly gravelly sandy CLAY. Sand is medium to coarse. Gravel is fine to medium sub-angular limestone. [CORNBRASH FORMATION]							
					3.00	79.19	Very stiff grey CLAY/Extremely weak MUDSTONE. [FOREST MARBLE FORMATION]							
					3.70	78.49	Strong (?) dark grey medium to coarse grained LIMESTONE. Fractures are slightly weathered, undulating, partly open. [FOREST MARBLE FORMATION] *between 3.85 and 3.95m bgl Fracture - vertical, open. Likely*							

Strata continues onto next page

Notes:

1. Borehole location was scanned with a CAT scanner by a CGL Engineer prior to drilling commencing.
2. Prior to drilling, a hand pit was dug to a depth of 0.9 m bgl, and the base of the pit was CAT scanned.
3. Borehole was terminated at the target depth of 5.00 m bgl.
4. Groundwater was not encountered during drilling.
5. After completion the borehole was installed with a monitoring standpipe.
6. SPT = Standard Penetration Test. ES = Environmental sample. D = Disturbed sample. B = Bulk sample.

Hole Diameter		Casing	
Depth (m)	Diam (mm)	Depth (m)	Diam (mm)
2.00	128	1.90	138

Hammer Information	
Energy Ratio	Serial No.
64%	ar2570

Install Response Zones		
Ref	From (m)	To (m)
Pipe1	1.00	5.00

Scale: 1:20

Logged By: KBD
Checked By:
Approved By:
Section ID:

CGL Reference
CG/39017

Project Title: Bicester Golf Club	Status:	Location ID
Client: Elliott Wood Partnership Ltd	**DRAFT**	**BH06**

Location Type: Rotary cored

Coords: 455036.770E/221630.660N Level: 82.190m

Ordnance Survey Great Britain National Grid | Final Depth: **5.00 m**

Orientation: 0° Inclination: 90°

Date Start: 20/10/2021 Date End: 20/10/2021

Card Geotechnics Limited,
4 Godalming Business Centre,
Woolsack Way,
Godalming,
Surrey,
GU7 1XW
www.cgl-uk.com

Method and Plant Used

From (m)	To (m)	Type	Plant Used
0.00	0.90	IP	Hand Tools
0.90	2.00	WLS	Comacchio 305
2.00	5.35	RC	Comacchio 305

Groundwater

Strike (m)	Time (min)	Rose To

Sample Depth (m)	Type/ Ref	Tests/Results	Water Level (m)	Legend /Cover	Strata Depth (m)	Level (m)	Strata Description	Rotary Coring Core Run	TCR (%)	SCR (%)	RQD (%)	Fract (mm) min avg max	Inst/ Backfill	Depth (m)
					4.10	78.09	Strong (?) dark grey medium to coarse grained LIMESTONE. Fractures are slightly weathered, undulating, partly open. [FOREST MARBLE FORMATION] *between 3.85 and 3.95m bgl Fracture - vertical, open. Likely drilling induced.* *4.05m bgl Fracture - sub-horizontal, rough, stepped, open. Likely drilling induced.*							
4.50	C 3						Weak (?) grey to light grey MUDSTONE. Fractures are horizontal, closed. Some drilling induced fractures. [FOREST MARBLE FORMATION] *4.66m bgl Fracture - horizontal, rough, closed to partly open.* *4.70m bgl Fracture - horizontal, closed.*	3.50 5.00	87	62	7			
		SPT(C) 5.00m 50 (11,9/50 for 195mm)			5.00	77.19	*4.86m bgl Fracture - horizontal, rough, open. Likely drilling induced.* *4.92m bgl Fracture - horizontal, rough, open. Likely drilling induced.*							
							EOH at 5.00m - Achieved target depth							

Notes:

1. Borehole location was scanned with a CAT scanner by a CGL Engineer prior to drilling commencing.
2. Prior to drilling, a hand pit was dug to a depth of 0.9 m bgl, and the base of the pit was CAT scanned.
3. Borehole was terminated at the target depth of 5.00 m bgl.
4. Groundwater was not encountered during drilling.
5. After completion the borehole was installed with a monitoring standpipe.
6. SPT = Standard Penetration Test. ES = Environmental sample. D = Disturbed sample. B = Bulk sample.

Hole Diameter

Depth (m)	Diam (mm)
5.00	116

Casing

Depth (m)	Diam (mm)

Hammer Information

Energy Ratio	Serial No.
64%	ar2570

Install Response Zones

Ref	From (m)	To (m)
Pipe1	1.00	5.00

Scale: 1:20

Logged By: KBD
Checked By:
Approved By:
Section ID:

CGL Reference
CG/39017

Project Title: Bicester Golf Club

Client: Elliott Wood Partnership Ltd

Status: **DRAFT**

Location ID: **BH07**

Location Type: Rotary cored

Coords: 454836.030E/221483.970N Level: 81.830m

Ordnance Survey Great Britain National Grid

Final Depth: **5.00 m**

Orientation: 0° Inclination: 90°

Date Start: 29/10/2021 Date End: 29/10/2021

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4 Godalming Business Centre,
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GU7 1XW
www.cgl-uk.com

Method and Plant Used

From (m)	To (m)	Type	Plant Used
0.00	0.60	IP	Hand Dug
0.60	1.60	WLS	Comacchio 305
0.60	5.00	RC	Tracked Drilling Rig
1.60	5.22	RC	Comacchio 305

Groundwater

Strike (m)	Time (min)	Rose To

Sample Depth (m)	Type/ Ref	Tests/Results	Water Level (m)	Strata Depth (m)	Level (m)	Strata Description	Core Run	TCR (%)	SCR (%)	RQD (%)	Fract (mm) min	Fract (mm) avg	Fract (mm) max
0.00 - 0.20	B 1			0.10	81.73	Grass over soft dark brown slightly sandy slightly gravelly CLAY with rootlets throughout. Gravel is fine to coarse sub-angular to sub-rounded limestone. [TOPSOIL]							
0.15	ES 1												
0.20 - 0.30	B 2			0.27	81.56	Light brown to brown slightly silty slightly gravelly fine to coarse SAND. Gravel is fine to medium sub-rounded flint and mudstone. Rare rootlets. [WEATHERED CORNBRASH FORMATION]							
0.30	ES 2												
0.40 - 0.60	B 3					Brown gravelly fine to coarse SAND with low cobble content. Gravel is fine to coarse sub-angular mudstone. Cobbles are weak sub-angular grey mudstone.							
0.60	D 1	SPT(C) 0.60m N=6 (7,3/2,1,2,1)		0.60	81.23	[WEATHERED CORNBRASH FORMATION]							
						Light brown to orange slightly sandy slightly gravelly CLAY. Gravel is fine to medium angular to sub-angular flint (?). [WEATHERED CORNBRASH FORMATION]	0.60 1.60	100	0	0			
				1.30	80.53								
				1.40	80.43	Light brown to beige dense clayey slightly gravelly SAND. Sand is fine to coarse. Gravel is oolitic limestone lithorelics. [CORNBRASH FORMATION]							
1.50 - 1.60	D 2	SPT(S) 1.50m 50 (25 for 75mm/50 for 25mm)											
1.60 - 2.60	C 4	Recovery=100%		1.60	80.23	Light brown to beige dense gravelly SAND. Gravel is oolitic limestone lithorelics. [CORNBRASH FORMATION]							
				1.90	79.93	Light brown slightly clayey slightly sandy fine to coarse sub-angular GRAVEL of oolitic limestone lithorelics. [CORNBRASH FORMATION]							
				2.05	79.78	Medium strong to strong light brown fine grained slightly fractured LIMESTONE. [CORNBRASH FORMATION] *1.95m bgl Fracture - horiztonal, smooth, planar, closed. Potentially drilling induced.* *2.01m bgl Fracture - horizontal, slightly undulating, smooth, closed.*	1.60 2.60	100	64	0			
				2.35	79.48	Medium strong to strong light brownish orange fine to medium grained LIMESTONE. [CORNBRASH FORMATION] *between 2.26 and 2.33m bgl Occasional bands of gravel at 2.26, 2.28, and 2.33 m.*							
				2.55	79.28								
2.60 - 3.60	C 5	SPT(C) 2.60m N=29 (6,9/9,7,6,7) Recovery=110%		2.60	79.23	Medium strong to strong light brown fine grained slightly fractured LIMESTONE. [CORNBRASH FORMATION] *between 2.38 and 2.50m bgl Fractures at 2.38, 2.44 and 2.50 - horizontal, slightly weathered, smooth, slightly undulating.* *between 2.47 and 2.53m bgl Dark grey banding.*							
				3.10	78.73	Firm to stiff light brown CLAY [CORNBRASH FORMATION]	2.60 3.60	110	0	0			
						Firm to very stiff dark grey CLAY with rare fracturing?? MUDSTONE??? [FOREST MARBLE FORMATION] *between 2.70 and 2.90m bgl Band of weak mudstone.* Firm to stiff dark grey CLAY. [FOREST MARBLE FORMATION]							
				3.60	78.23								
3.60 - 4.60	C 6	SPT(C) 3.60m N=24 (10,15/8,6,4,6) Recovery=80%		3.78	78.05	Grey slightly clayey slightly sandy fine to coarse angular to sub-angular weak mudstone GRAVEL. [FOREST MARBLE FORMATION]							
				3.95	77.88	Firm to very stiff dark grey slightly gravelly CLAY. Gravel is fine angular mudstone. [FOREST MARBLE FORMATION]							

Strata continues onto next page

Notes:

1. Borehole location was scanned with a CAT scanner by a CGL Engineer prior to drilling commencing.
2. Prior to drilling, a hand pit was dug to a depth of 0.6 m bgl, and the base of the pit was CAT scanned.
3. Borehole was terminated at the target depth of 5.00 m bgl.
4. Groundwater was encountered at 4.4 m bgl during drilling.
5. After completion the borehole was installed with a monitoring standpipe.
6. SPT = Standard Penetration Test. ES = Environmental sample. D = Disturbed sample. B = Bulk sample.

Hole Diameter

Depth (m)	Diam (mm)
1.50	128
1.60	113

Casing

Depth (m)	Diam (mm)
1.60	138

Hammer Information

Energy Ratio	Serial No.
64%	ar2570

Install Response Zones

Ref	From (m)	To (m)
Pipe1	1.00	5.00

Scale: 1:20

Logged By: IKL

Checked By:

Approved By:

Section ID:

CGL Reference **CG/39017**

Project Title: Bicester Golf Club

Client: Elliott Wood Partnership Ltd

Status:	Location ID
DRAFT	**BH07**

Location Type: Rotary cored

Coords: 454836.030E/221483.970N Level: 81.830m

Ordnance Survey Great Britain National Grid

Final Depth: **5.00 m**

Orientation: 0° Inclination: 90°

Date Start: 29/10/2021 Date End: 29/10/2021

Card Geotechnics Limited,
4 Godalming Business Centre,
Woolsack Way,
Godalming,
Surrey,
GU7 1XW
www.cgl-uk.com

Method and Plant Used

From (m)	To (m)	Type	Plant Used
0.00	0.60	IP	Hand Dug
0.60	1.60	WLS	Comacchio 305
0.60	5.00	RC	Tracked Drilling Rig
1.60	5.22	RC	Comacchio 305

Groundwater

Strike (m)	Time (min)	Rose To
4.40	-	-
4.60	20	2.05

Sample Depth (m)	Type/ Ref	Tests/Results	Water Level (m)	Legend /Cover	Strata Depth (m)	Level (m)	Strata Description	Rotary Coring: Core Run	TCR (%)	SCR (%)	RQD (%)	Fract (mm) min avg max	Inst/ Backfill	Depth (m)
					4.27	77.56	Stiff to very stiff dark grey slightly sandy slightly gravelly CLAY. Sand is coarse. Gravel is fine angular mudstone. [FOREST MARBLE FORMATION]	3.60 4.40	100	16	16			
					4.40	77.43	Medium strong to strong light grey thinly bedded fine grained MUDSTONE. [FOREST MARBLE FORMATION]	3.60 4.60	80					
4.60 - 5.00	C 7	SPT(C) 4.60m N=47 (3,7/10,8,13,16) Recovery=100%			4.76	77.07	Stiff to very stiff grey CLAY. [FOREST MARBLE FORMATION]	4.40 5.00	82	40	40			
					5.00	76.83	Strong greenish grey weathered MUDSTONE. [FOREST MARBLE FORMATION]	4.60 5.00	100					
		SPT(C) 5.00m 50 (25 for 145mm/50 for 77mm)					EOH at 5.00m - Achieved target depth							

Notes:

1. Borehole location was scanned with a CAT scanner by a CGL Engineer prior to drilling commencing.
2. Prior to drilling, a hand pit was dug to a depth of 0.6 m bgl, and the base of the pit was CAT scanned.
3. Borehole was terminated at the target depth of 5.00 m bgl.
4. Groundwater was encountered at 4.4 m bgl during drilling.
5. After completion the borehole was installed with a monitoring standpipe.
6. SPT = Standard Penetration Test. ES = Environmental sample. D = Disturbed sample. B = Bulk sample.

Hole Diameter		Casing	
Depth (m)	Diam (mm)	Depth (m)	Diam (mm)
5.00	116		

Hammer Information	
Energy Ratio	Serial No.
64%	ar2570

Install Response Zones

Ref	From (m)	To (m)
Pipe1	1.00	5.00

Scale: 1:20

Logged By: IKL

Checked By:

Approved By:

Section ID:

CGL Reference
CG/39017

Project Title: Bicester Golf Club	Status:	Location ID
Client: Elliott Wood Partnership Ltd	**DRAFT**	**BH08**

Location Type: Rotary cored

Coords: 455034.000E/221569.560N Level: 81.270m

Ordnance Survey Great Britain National Grid | Final Depth: **3.10 m**

Orientation: 0° Inclination: 90°

Date Start: 19/10/2021 Date End: 20/10/2021

Card Geotechnics Limited,
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www.cgl-uk.com

Sheet 1 of 1

Method and Plant Used

From (m)	To (m)	Type	Plant Used
0.00	1.20	IP	Hand Tools
1.20	1.60	WLS	Comacchio 305
1.60	3.21	RC	Comacchio 305

Groundwater

Strike (m)	Time (min)	Rose To

Sample Depth (m)	Type/ Ref	Tests/Results	Water Level (m)	Legend /Cover	Strata Depth (m)	Level (m)	Strata Description	Rotary Coring Core Run	TCR (%)	SCR (%)	RQD (%)	Fract (mm) min avg max	Inst/ Backfill	Depth (m)
					0.20	81.07	Grass over soft dark brown slightly sandy CLAY with rootlets throughout. Sand is fine to medium. [TOPSOIL]							
0.30	ES 1						Dark brown clayey slightly cobbly fine to coarse sub-angular limestone GRAVEL. Cobble of sub-angular grey limestone. [WEATHERED CORNBRASH FORMATION]							
0.40 - 0.60	B 1													
					0.70	80.57								
0.70 - 0.90	B 2						Dark brown slightly clayey fine to coarse sub-angular to angular grey limestone GRAVEL. [WEATHERED CORNBRASH FORMATION]							
0.90 - 1.10	B 3				0.90	80.37	Light brown mottled orange sandy clayey sine to coarse sub-angular to angular limestone GRAVEL. Sand is medium to coarse. [WEATHERED CORNBRASH FORMATION]							
1.20 - 1.60	D 1	SPT(S) 1.20m N=43 (8,9/4,7,12,20)			1.20	80.07								
					1.25	80.02	Soft brown gravelly slightly clayey coarse SAND. Gravel is fine to medium sub-angular limestone. [WEATHERED CORNBRASH FORMATION]							
					1.35	79.92		1.20 1.60	100	0	0			
					1.55	79.72	Light brown and grey sandy fine to medium sub-angular to angular limestone GRAVEL. Sand is coarse. [WEATHERED CORNBRASH FORMATION]							
					1.60	79.67	Very stiff light brown slightly gravelly CLAY. Gravel is fine to medium sub-angular limestone. [WEATHERED CORNBRASH FORMATION]							
1.70	C 1						Light brown sandy slightly clayey fine to medium sub-angular to angular GRAVEL. Sand is coarse. [WEATHERED CORNBRASH FORMATION]							
							Grey fine to coarse sub-angular limestone GRAVEL. [WEATHERED CORNBRASH FORMATION]							
					2.25	79.02								
					2.35	78.92	Stiff light brown gravelly CLAY. Gravel is fine to medium sub-angular to angular limestone. [CORNBRASH FORMATION]	1.60 3.00	93	0	0			
2.40	C 2						Stiff dark grey CLAY. [FOREST MARBLE FORMATION] *between 2.55 and 2.70m bgl Band of very stiff light grey CLAY.*							
3.00	C 2													
3.00 - 3.10	D 2	SPT(S) 3.10m 50 (25 for 70mm/50 for 40mm)			3.10	78.17								
							EOH at 3.10m - Achieved target depth							

Notes:

1. Borehole location was scanned with a CAT scanner by a CGL Engineer prior to drilling commencing
2. Prior to drilling, a hand pit was dug to a depth of 1.2 m bgl
3. Borehole was terminated at the targer depth of 3.00 m bgl.
4. Groundwater was not encountered during drilling.
5. After completion the borehole was installed with a monitoring standpipe.
6. SPT = Standard Penetration Test. ES = Environmental sample. D = Disturbed sample. B = Bulk sample.

Hole Diameter

Depth (m)	Diam (mm)
1.60	128
3.10	116

Casing

Depth (m)	Diam (mm)
1.60	138

Hammer Information

Energy Ratio	Serial No.
64%	ar2570

Install Response Zones

Ref	From (m)	To (m)
Pipe1	1.00	3.00

Scale: 1:20

Logged By: KBD

Checked By:

Approved By:

Section ID:

CGL Reference
CG/39017

Project Title: Bicester Golf Club

Client: Elliott Wood Partnership Ltd

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	1.20	IP	Hand Tools			
1.20	2.70	WLS	Comacchio 305			
2.70	3.16	RC	Comacchio 305			

Status: **DRAFT**

Location ID: **BH09**

Location Type: Rotary cored

Coords: 455190.450E/221612.430N Level: 81.410m

Ordnance Survey Great Britain National Grid

Final Depth: **3.00 m**

Orientation: 0° Inclination: 90°

Date Start: 19/10/2021 Date End: 19/10/2021

Card Geotechnics Limited,
4 Godalming Business Centre,
Woolsack Way,
Godalming,
Surrey,
GU7 1XW
www.cgl-uk.com

Samples & Tests			Water Level (m)	Legend /Cover	Strata Depth (m)	Level (m)	Strata Description	Rotary Coring				Fract (mm)	Inst/ Backfill	Depth (m)
Sample Depth (m)	Type/ Ref	Tests/Results						Core Run	TCR (%)	SCR (%)	RQD (%)	min avg max		
					0.40	81.01	Grass over soft dark brown slightly gravelly CLAY with rootlets throughout. Gravel is fine to medium sub-angular to sub-rounded limestone. [TOPSOIL]							
0.40	ES 1													
0.40 - 0.60	B 1				0.70	80.71	Light brown slightly clayey sandy GRAVEL. Sand is medium to coarse. Gravel is fine to coarse sub-angular to sub-rounded limestone. [WEATHERED CORNBRASH FORMATION]							
0.70 - 0.90	B 2													
1.00 - 1.20	B 3				1.20	80.21	Soft brown gravelly slightly sandy CLAY. Sand is medium to coarse. Gravel is fine to coarse sub-angular to sub-rounded limestone. [WEATHERED CORNBRASH FORMATION]							
		SPT(S) 1.20m N=17 (1,2/3,2,5,7)			1.35	80.06	Soft brown mottled orange brown gravelly slightly sandy CLAY. Sand is coarse. Gravel is fine to coarse sub-angular limestone. [WEATHERED CORNBRASH FORMATION]							
					1.70	79.71	Firm light brown sandy gravelly CLAY. Sand is coarse. Gravel is fine to coarse sub-angular limestone. [WEATHERED CORNBRASH FORMATION]	1.20 2.00	100	0	0			
					2.00	79.41	Stiff light brown to grey sandy slightly gravelly CLAY. Sand is coarse. Gravel is fine to medium sub-angular limestone. [WEATHERED CORNBRASH FORMATION]							
		SPT(S) 2.00m N=15 (8,8/2,3,2,8)			2.15	79.26	Soft brown mottled grey gravelly CLAY. Gravel is fine to medium sub-angular limestone. [CORNBRASH FORMATION]							
					2.30	79.11	Stiff grey gravelly CLAY - recovered as a gravel (fine to medium, sub-angular). Gravel is fine to medium sub-angular limestone. [FOREST MARBLE FORMATION]							
					2.70	78.71	Stiff grey gravelly CLAY. Gravel is fine to medium sub-angular limestone. [FOREST MARBLE FORMATION]	2.00 3.00	100	22	0			
		SPT(S) 3.00m 50 (5,18/50 for 10mm)			3.00	78.41	Medium strong to strong (?) light grey medium grained LIMESTONE. Fractures are slightly weathered with some orange staining, rough to undulating, open to partly open. [FOREST MARBLE FORMATION] *2.79m bgl Fracture - moderately weathered, no staining, horizontal, rough, open.* *2.87m bgl Fracture - slightly weathered with orange staining, horizontal, rough, open.* *2.94m bgl Fracture - slightly weathered, slight orange staining, sub-horizontal, undulating, partly open.*							
							EOH at 3.00m - Achieved target depth							

Notes:

1. Borehole location was scanned with a CAT scanner by a CGL Engineer prior to drilling commencing
2. Prior to drilling, a hand pit was dug to a depth of 1.2 m bgl
3. Borehole was terminated at the targer depth of 3.00 m bgl.
4. Groundwater was not encountered during drilling.
5. After completion the borehole was installed with a monitoring standpipe.
6. SPT = Standard Penetration Test. ES = Environmental sample. D = Disturbed sample. B = Bulk sample.

Hole Diameter		Casing	
Depth (m)	Diam (mm)	Depth (m)	Diam (mm)
2.60	128	2.60	168
2.70	113		
3.00	116		

Hammer Information	
Energy Ratio	Serial No.
0%	ar2570

Install Response Zones		
Ref	From (m)	To (m)
Pipe1	1.00	3.00

Scale: 1:20

Logged By: KBD

Checked By:

Approved By:

Section ID:

CGL Reference **CG/39017**

Project Title: Bicester Golf Club

Client: Elliott Wood Partnership Ltd

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	1.20	IP	Hand Tools			
1.20	1.30	WLS	Comacchio 305			
1.30	2.30	RC	Comacchio 305			
2.30	3.45	RC	Comacchio 305			

Status: **DRAFT**

Location ID: **BH10**

Location Type: Rotary cored

Coords: 455233.900E/221667.420N Level: 81.080m

Ordnance Survey Great Britain National Grid

Final Depth: **3.00 m**

Orientation: 0° Inclination: 90°

Date Start: 18/10/2021 Date End: 19/10/2021

Card Geotechnics Limited,
4 Godalming Business Centre,
Woolsack Way,
Godalming,
Surrey,
GU7 1XW
www.cgl-uk.com

Samples & Tests			Water Level (m)	Legend /Cover	Strata Depth (m)	Level (m)	Strata Description	Rotary Coring				Fract (mm)	Inst/ Backfill	Depth (m)
Sample Depth (m)	Type/ Ref	Tests/Results						Core Run	TCR (%)	SCR (%)	RQD (%)	min avg max		
					0.30	80.78	Grass over soft brown CLAY with rootlets throughout. [TOPSOIL]							
0.30 - 0.50	B 1													
0.50	ES 1						Soft brown to light brown gravelly CLAY. Gravel is fine to coarse sub-angular limestone. [WEATHERED CORNBRASH FORMATION]							
0.70 - 0.90	B 2													
0.90 - 1.10	B 3				0.90	80.18								
					1.20	79.88	Light brown sandy clayey GRAVEL. Gravel is fine to coarse sub-angular limestone. Sand is fine to medium. [WEATHERED CORNBRASH FORMATION]							
1.20 - 1.50	D 1	SPT(S) 1.20m 50 (1,2/50 for 165mm)												
					2.10	78.98	Firm light brown sandy slightly gravelly CLAY. Sand is fine to medium. Gravel is fine to coarse sub-angular limestone. [WEATHERED CORNBRASH FORMATION]	1.20 2.30	86	0	0			
		SPT(C) 2.30m 50 (25 for 75mm/50 for 130mm)												
					3.00	78.08	Strong (?) thinly bedded light grey and light brown medium grained LIMESTONE. Fractures are closely spaced, slightly weathered and orange stained, horizontal, irregular, rough to undulating, partly open to open. [CORNBRASH FORMATION] *2.18m bgl Fracture - slightly weathered, no staining, horizontal, rough, open.* *2.23m bgl Fracture - slightly weathered, slight orange staining, horizontal, rough, open.* *2.29m bgl Fracture - moderately weathered, slight orange staining, horizontal to sub-horizontal, rough, open.* *2.33m bgl Fracture - moderately weathered, grey sandy clay infilling the fracture, horiztonal, open.* *2.45m bgl Fracture - slightly weathered, no staining, horizontal, undulating, open.* *2.55m bgl Fracture - slightly weathered, orange staining, horizontal, undulating, open.* *2.63m bgl Fracture - slightly weathered, orange staining, horizontal, undulating, rough, open.* *2.70m bgl Fracture - slightly weathered, no staining, horizontal, rough, open.*	2.30 3.00	100	86	14			
		SPT(C) 3.00m N=28 (1,2/5,9,7,7)												
							EOH at 3.00m - Achieved target depth							

Notes:

1. Borehole location was scanned with a CAT scanner by a CGL Engineer prior to drilling commencing
2. Prior to drilling, a hand pit was dug to a depth of 1.2 m bgl
3. Borehole was terminated at the targer depth of 3.00 m bgl.
4. Groundwater was not encountered during drilling.
5. After completion the borehole was installed with a monitoring standpipe.
6. SPT = Standard Penetration Test. ES = Environmental sample. D = Disturbed sample. B = Bulk sample.

Hole Diameter		Casing	
Depth (m)	Diam (mm)	Depth (m)	Diam (mm)
1.30	128	1.30	168
2.30	116		

Hammer Information	
Energy Ratio	Serial No.
0%	ar2570

Install Response Zones		
Ref	From (m)	To (m)
Pipe1	1.00	3.00

Scale: 1:20

Logged By: KBD

Checked By:

Approved By:

Section ID:

CGL Reference **CG/39017**

Project Title: Bicester Golf Club	Status:	Location ID
Client: Elliott Wood Partnership Ltd	**DRAFT**	**BH11**

Location Type: Rotary cored

Coords: 454862.390E/221401.940N Level: 81.310m

Ordnance Survey Great Britain National Grid | Final Depth: **3.00 m**

Orientation: 0° Inclination: 90°

Date Start: 01/11/2021 Date End: 01/11/2021

Card Geotechnics Limited,
4 Godalming Business Centre,
Woolsack Way,
Godalming,
Surrey,
GU7 1XW
www.cgl-uk.com

Sheet 1 of 1

Method and Plant Used

From (m)	To (m)	Type	Plant Used
0.00	1.20	IP	Hand Dug
0.00	0.80	IP	Hand Dug
0.80	3.00	RC	Tracked Drilling Rig
1.20	3.00	RC	Tracked Drilling Rig
1.20	2.00	WLS	Comacchio 305
2.00	3.45	RC	Comacchio 305

Groundwater

Strike (m)	Time (min)	Rose To

Sample Depth (m)	Type/ Ref	Tests/Results	Water Level (m)	Legend /Cover	Strata Depth (m)	Level (m)	Strata Description	Core Run	TCR (%)	SCR (%)	RQD (%)	Fract (mm) min avg max	Inst/ Backfill	Depth (m)
					0.20	81.11	Grass over soft brown slightly silty gravelly CLAY with rootlets throughout. Gravel is angular and subangular fine to coarse limestone. [TOPSOIL]							
0.20 - 0.40	B 1						*between 0.00 and 0.20m bgl Rare gravels.*							
0.20 - 0.40	ES 1						Soft brown slightly silty gravelly CLAY with rare rootlets. Gravel is angular and subangular fine to coarse limestone. [WEATHERED CORNBRASH FORMATION]							
0.60 - 0.80	B 2				0.70	80.61								
0.70 - 0.90	B 2						Firm light yellowish brown rarely mottled off white gravelly silty CLAY. Gravel is angular and subangular fine rarely coarse limestone. [WEATHERED CORNBRASH FORMATION]							
0.70 - 0.90	ES 2						*between 0.80 and 0.90m bgl Limestone cobble.*							
1.10 - 1.20	B 3						*between 1.10 and 1.40m bgl Abundant angular and sub-angular coarse limestone gravels.*							
1.20 - 1.65	D 1	SPT(S) 1.20m N=6 (2,2/1,1,2,2)						0.80 2.00	100					
1.60 - 1.80	ES 2				1.80	79.51		1.20 2.30	86	0	0			
					2.00	79.31	Soft pale yellowish brown gravelly SILT. Gravel is angular and subangular fine and medium weak limestone. [WEATHERED CORNBRASH FORMATION]							
2.00 - 3.00	C 3	SPT(S) 2.00m 50 (25 for 120mm/50 for 55mm) Recovery=80%												
					2.20	79.11	Medium strong light yellowish brown fossiliferous LIMESTONE. [CORNBRASH FORMATION]							
							Extremely weak light grey MUDSTONE. [FOREST MARBLE FORMATION]							
							between 2.40 and 2.55m bgl Medium strong grey fossilierous limestone.	2.00 3.00	80					
								2.30 3.00	100	86	14			
		SPT(C) 3.00m N=32 (1,2/2,12,8,10)			3.00	78.31								
							EOH at 3.00m - Achieved target depth							

Notes:

1. Borehole location was scanned with a CAT scanner by a GEL Engineer prior to drilling commencing2. Prior to drilling, a hand pit was dug to a depth of 1.2 m bgl 3. Borehole was terminated at the targer depth of 3.00 m bgl.4. Groundwater was not encountered during drilling. 5. After completion the borehole was installed with a monitoring standpipe.6. SPT = Standard Penetration Test. ES = Environmental sample. D = Disturbed sample. B = Bulk sample.

Hole Diameter

Depth (m)	Diam (mm)
2.00	128
3.00	116

Casing

Depth (m)	Diam (mm)
1.60	138

Hammer Information

Energy Ratio	Serial No.
64%	ar2570

Install Response Zones

Ref	From (m)	To (m)
Pipe1	1.00	3.00

Scale: 1:20

Logged By: KBD

Checked By:

Approved By:

Section ID:

CGL Reference
CG/39017

Project Title: Bicester Golf Club

Client: Elliott Wood Partnership Ltd

Method and Plant Used				Groundwater		
From (m)	To (m)	Type	Plant Used	Strike (m)	Time (min)	Rose To
0.00	0.80	IP	Hand Dug			
0.80	3.00	WLS	Comacchio 305			
0.80	3.00	RC	Tracked Drilling Rig			

Status: **DRAFT**

Location ID: **BH12**

Location Type: Rotary cored

Coords: 454955.450E/221451.910N Level: 80.590m

Ordnance Survey Great Britain National Grid

Final Depth: **3.00 m**

Orientation: 0° Inclination: 90°

Date Start: 01/11/2021 Date End: 01/11/2021

Card Geotechnics Limited,
4 Godalming Business Centre,
Woolsack Way,
Godalming,
Surrey,
GU7 1XW
www.cgl-uk.com

Samples & Tests			Water Level (m)	Legend /Cover	Strata Depth (m)	Level (m)	Strata Description	Rotary Coring				Fract (mm)	Inst/ Backfill	Depth (m)
Sample Depth (m)	Type/ Ref	Tests/Results						Core Run	TCR (%)	SCR (%)	RQD (%)	min avg max		
0.20 - 0.40	B 1				0.20	80.39	Grass over soft brown slightly silty gravelly CLAY with moderate rootlets. Gravel is angular and subangular fine to coarse limestone. [TOPSOIL]							
0.20 - 0.40	ES 1						Soft brown slightly silty gravelly CLAY with rare rootlets. Gravel is angular and subangular fine to coarse limestone. [WEATHERED CORNBRASH FORMATION]							
0.60 - 0.80	B 2													
		SPT(C) 0.80m N=12 (6,2/1,3,3,5)			0.80	79.79	Very stiff grey occasionally mottled orangish brown slightly gravelly CLAY with rare remnant rootlets. Gravel is subangular fine to coarse limestone. [CORNBRASH FORMATION] *between 0.80 and 0.90m bgl Limestone cobble.* *between 1.10 and 1.40m bgl Abundant angular and sub-angular coarse limestone gravels.*	0.80 2.00	100					1
1.60 - 1.80	ES 2													
		SPT(C) 2.00m N=26 (2,4/4,6,7,9)			2.00	78.59	Very stiff grey mottled bluish grey rarely orangish brown CLAY with abundant mudstone lithorelics. [FOREST MARBLE FORMATION]	2.00 3.00	100					2
		SPT(C) 3.00m N=45 (2,3/7,7,16,15)			3.00	77.59	EOH at 3.00m - Achieved target depth							3
														4

Notes:

1. Borehole location was scanned with a CAT scanner by a GEL Engineer prior to drilling commencing
2. Prior to drilling, a hand pit was dug to a depth of 1.2 m bgl
3. Borehole was terminated at the targer depth of 3.00 m bgl.
4. Groundwater was not encountered during drilling.
5. After completion the borehole was installed with a monitoring standpipe.
6. SPT = Standard Penetration Test. ES = Environmental sample. D = Disturbed sample. B = Bulk sample.

Hole Diameter		Casing	
Depth (m)	Diam (mm)	Depth (m)	Diam (mm)
2.00	128		
3.00	113		

Hammer Information	
Energy Ratio	Serial No.
64%	ar2570

Install Response Zones		
Ref	From (m)	To (m)
Pipe1	1.00	3.00

Scale: 1:20

Logged By: KBD

Checked By:

Approved By:

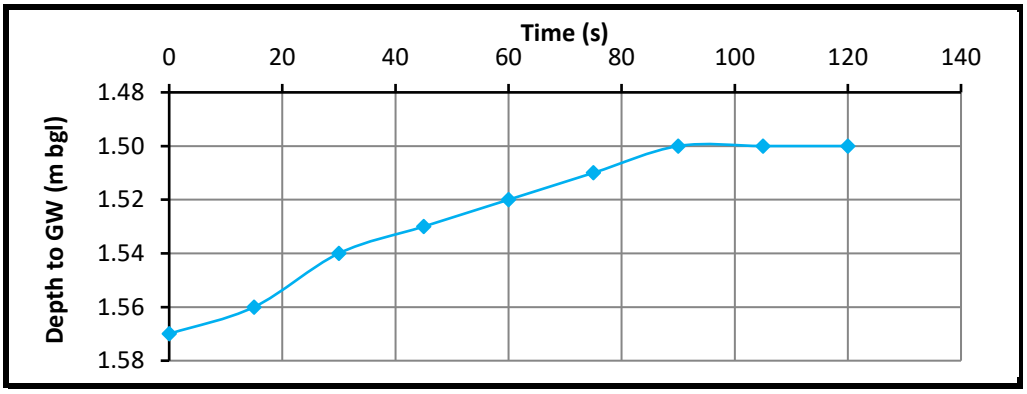
Section ID:

CGL Reference
CG/39017

Rising Head Test - BH04

Bicester Golf Club
CG/39017
07/02/2022

Time (mins)	Time(s)	Depth (m)	H (m)	H/Ho
0.00	0.00	1.57	2.41	-
0.25	15.00	1.56	2.42	0.432691921
0.50	30.00	1.54	2.44	0.44092242
0.75	45.00	1.53	2.45	0.445012405
1.00	60.00	1.52	2.46	0.449085731
1.25	75.00	1.51	2.47	0.453142531
1.50	90.00	1.5	2.48	0.457182941
1.75	105.00	1.5	2.48	0.457182941
2.00	120.00	1.5	2.48	0.457182941



General Approach (After Horvslev 1951)

Initial GW depth	1.39	mbgl
Well depth	3.98	mbgl
Well pipe diameter	63	mm

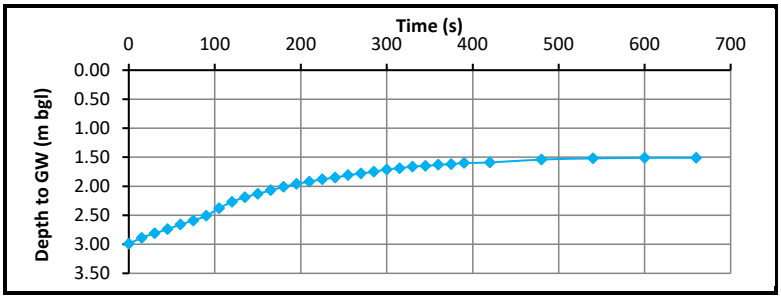
F	0.374996243	intake Factor - Fig 6 BS5930:1999
D	0.063	m - Diameter of standpipe
H1	1.56	m
H2	1.5	m
t1	15	s
t2	120.00	s
A	0.003117245	m2

$$k = \frac{A}{F(t_2 - t_1)} \ln \frac{H_1}{H_2}$$

k = **3.10506E-06** **m/s**

Rising Head Test - BH07
Bicester Golf Club
CG/39017
07/02/2022

Time (mins)	Time(s)	Depth (m)	H (m)	H/Ho
0.00	0.00	2.99	1.31	-
0.25	15.00	2.89	1.41	-0.751683683
0.50	30.00	2.81	1.49	-0.696497267
0.75	45.00	2.74	1.56	-0.650587566
1.00	60.00	2.66	1.64	-0.600577146
1.25	75.00	2.59	1.71	-0.558780017
1.50	90.00	2.51	1.79	-0.513057768
1.75	105.00	2.38	1.92	-0.442948201
2.00	120.00	2.27	2.03	-0.387237594
2.25	135.00	2.19	2.11	-0.34858544
2.50	150.00	2.13	2.17	-0.32054622
2.75	165.00	2.07	2.23	-0.293271802
3.00	180.00	2.01	2.29	-0.26672157
3.25	195.00	1.96	2.34	-0.245122458
3.50	210.00	1.92	2.38	-0.2281729
3.75	225.00	1.88	2.42	-0.211505847
4.00	240.00	1.85	2.45	-0.199185363
4.25	255.00	1.81	2.49	-0.182990677
4.50	270.00	1.78	2.52	-0.171014486
4.75	285.00	1.75	2.55	-0.159180028
5.00	300.00	1.71	2.59	-0.143615512
5.25	315.00	1.69	2.61	-0.135923166
5.50	330.00	1.66	2.64	-0.12449447
5.75	345.00	1.65	2.65	-0.120713747
6.00	360.00	1.63	2.67	-0.113194915
6.25	375.00	1.62	2.68	-0.109456593
6.50	390.00	1.6	2.70	-0.102021614
7.00	420.00	1.59	2.71	-0.098324753
8.00	480.00	1.54	2.76	-0.080042708
9.00	540.00	1.52	2.78	-0.07282246
10.00	600.00	1.51	2.79	-0.069231792
11.00	660.00	1.51	2.79	-0.069231792



General Approach (After Horvslev 1951)

Initial GW depth	1.32	mbgl
Well depth	4.3	mbgl
Well pipe diameter	63	mm
F	0.374996243	intake Factor - Fig 6 BS5930:1999
D	0.063	m - Diameter of standpipe
H1	2.89	m
H2	1.51	m
t1	15	s
t2	660.00	s
A	0.003117245	m2

$$k = \frac{A}{F(t_2 - t_1)} \ln \frac{H_1}{H_2}$$

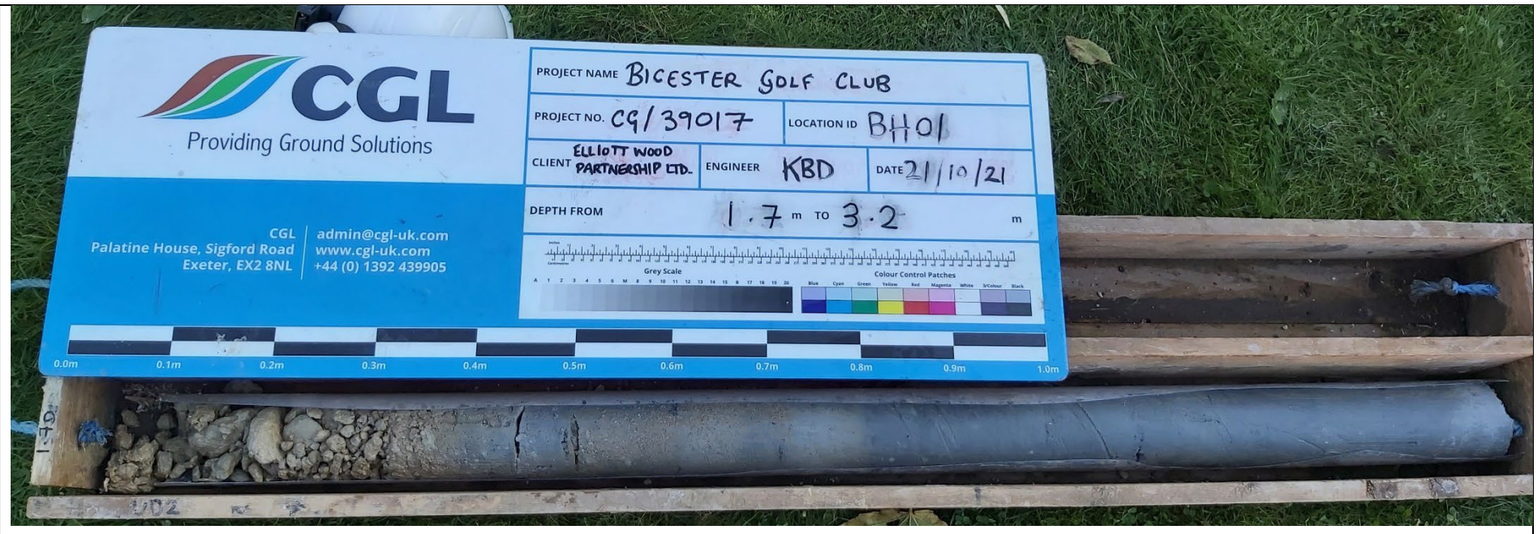
k = **8.36618E-06** **m/s**

APPENDIX G

Borehole Core Photographs

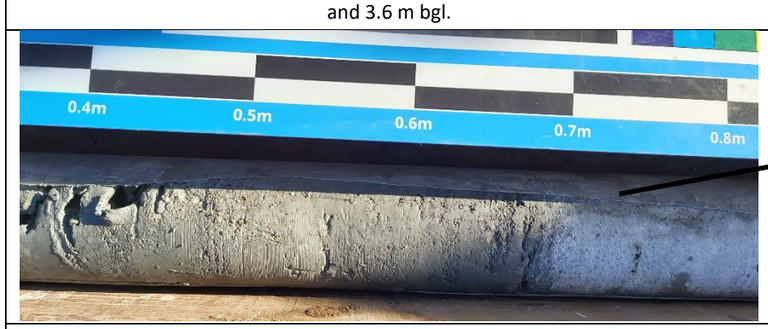
PHOTO SHEET

Photograph 1: Core run of sandy gravelly clay between 1.2 – 1.7 m bgl in BH01.



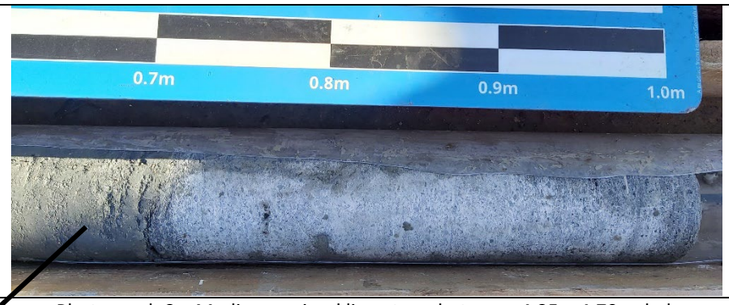
Photograph 2: Core run between 1.7 -3.2 m bgl. Clayey limestone gravel between 1.7 and 2.0, and stiff becoming very stiff dark grey clay between 2.0 and 3.2 m bgl in BH01.

Photograph 3a: Weak mudstone recovered as gravel of stiff grey clay between 3.2 and 3.6 m bgl.



Photograph 3b: Weak mudstone between 3.6 and 4.35 m bgl.

Photograph 3: Core runs between 3.2 – 4.7 and 4.7 – 5.0 in BH01



Photograph 3c: Medium grained limestone between 4.35 – 4.70 m bgl.

Photograph 3d: Stiff dark grey clay between 4.7 – 5.0 m bgl.

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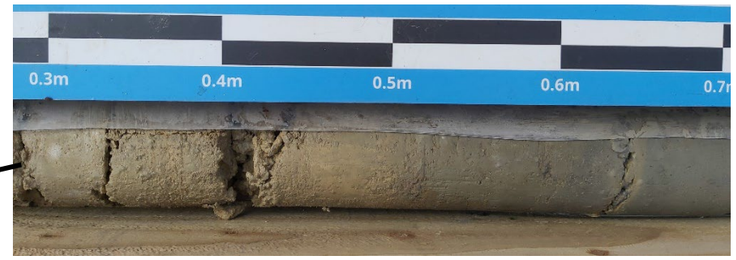
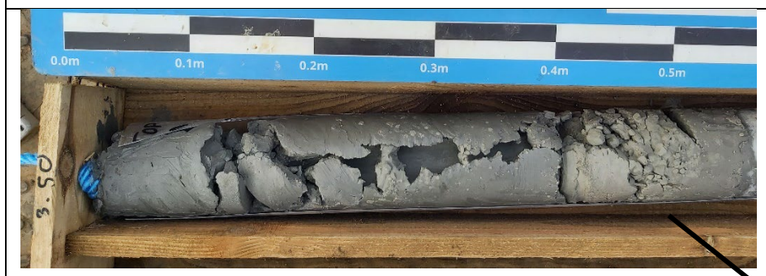
PHOTO SHEET

Photograph 4: Limestone gravel between 1.34 and 2.00 m bgl in BH02.

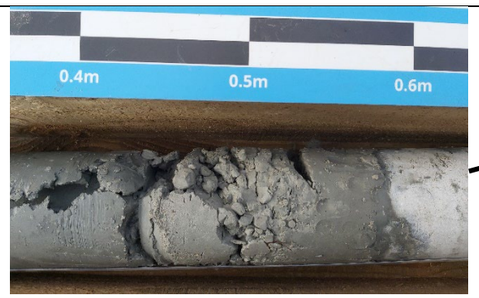
Photograph 5: Core run between 2.0 -3.5 m bgl. No recovery between 2.0 and 2.55. Limestone between 2.55 m and 3.05. Mudstone from 3.05 to 3.50 m bgl.



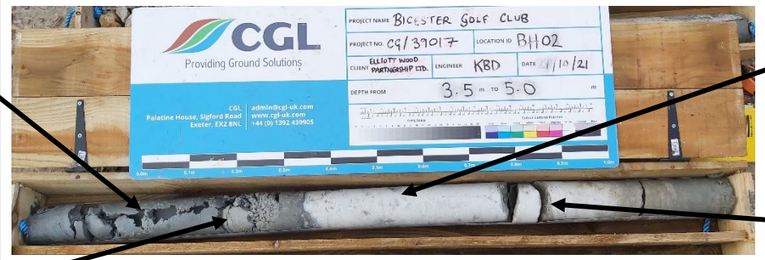
Photograph 5a: boundary between the limestone and the mudstone at ~3.00 m bgl.



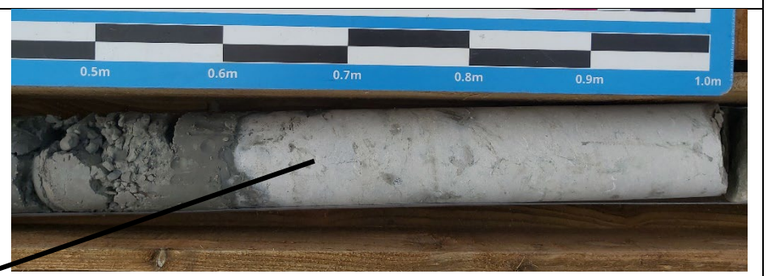
Photograph 6a: Stiff dark grey clay between 3.5 and 3.9 m bgl.



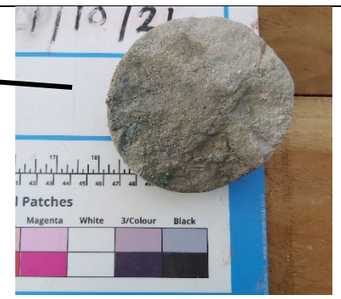
Photograph 6b: Weak mudstone recovered as gravel between 3.9 and 4.1 m bgl.



Photograph 6: Core run between 3.5 – 5.0.



Photograph 6c: Fine grained limestone between 4.1 – 4.8 m bgl.



Photograph 6d: Fracture surface at 4.54 m bgl.

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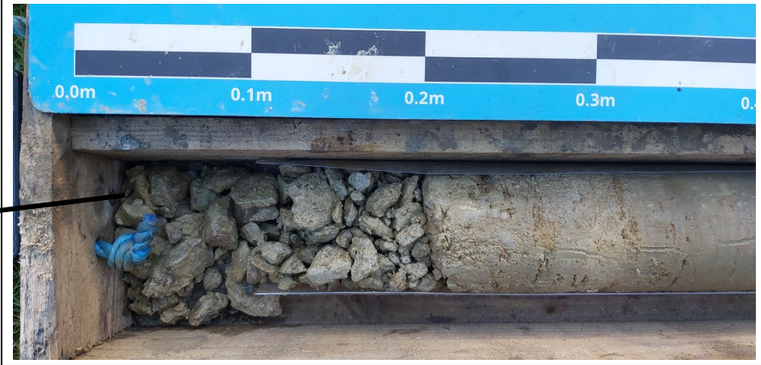
CGL	Title: **Core runs from BH02**	**Appendix G**

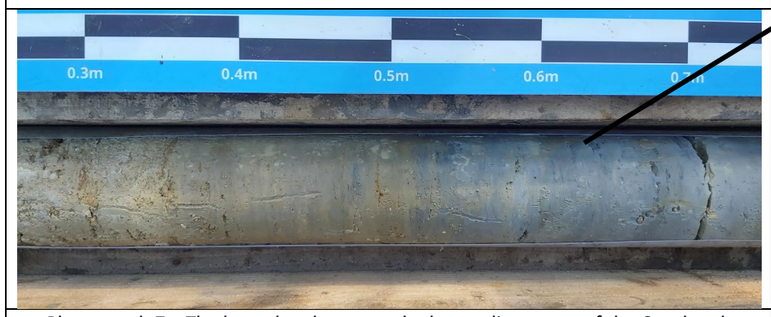
PHOTO SHEET

Photograph 7a: Core run between 1.2 and 1.70 m bgl of stiff slightly gravelly clay.

Photograph 7: Core runs between 1.20 m and 3.20 m bgl in BH03.

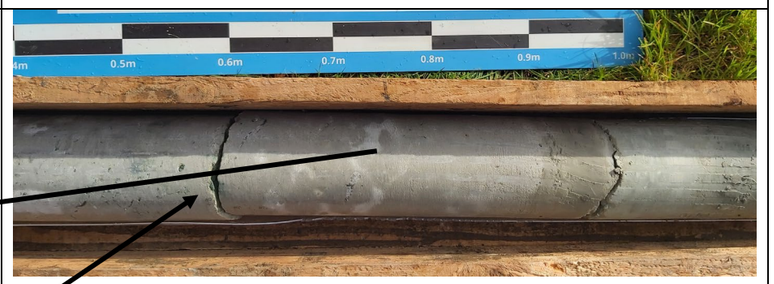


Photograph 7b: limestone recovered as gravel between 1.70 and 1.85 m bgl.



Photograph 7c: The boundary between the brown limestone of the Cornbrash Formation and the grey mudstone of the Forest Marble Formation, at ~2.0 m bgl.

Photograph 8: Core run between 3.20 and 4.70 m bgl in BH03.



Photograph 8b: Light grey ine grained limestone between 3.8 – 4.7 m bgl.

Photograph 8a: Weak dark grey mudstone between 3.9 and 4.1 m bgl.

Photograph 8c: Green staining on the limestone

Photograph 9: Core run of dark grey mudstone between 4.70 m and 5.00 bgl.

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PHOTO SHEET

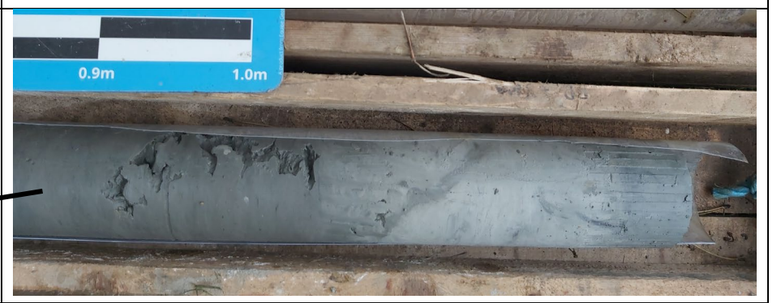
Photograph 10: Core runs between 0.70 and 2.50 m bgl of marl and limestone of the Cornbrash Formation in BH04.

Photograph 10a: Marl as recovered - described as firm to stiff sandy gravelly clay between 0.70 and 1.5 m bgl.

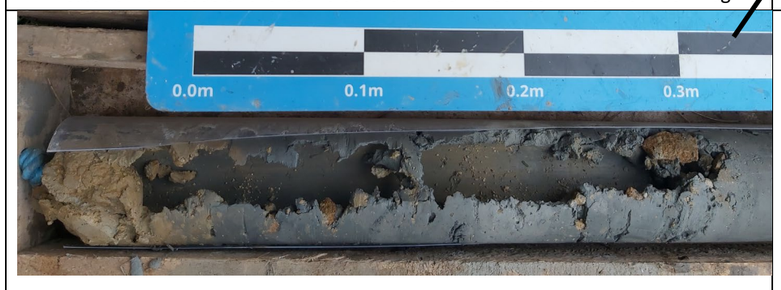
Photograph 10b: Marl when broken open. Gravel is fine to coarse sub-angular to angular grey limestone.

Photograph 10c: Intact light brown to pinkish orange mottled grey medium grained limestone – the base of the Cornbrash Formation. Between 2.10 and 2.55 m bgl.

Photograph 11: Core run between 3.20 and 4.70 m bgl in BH04.

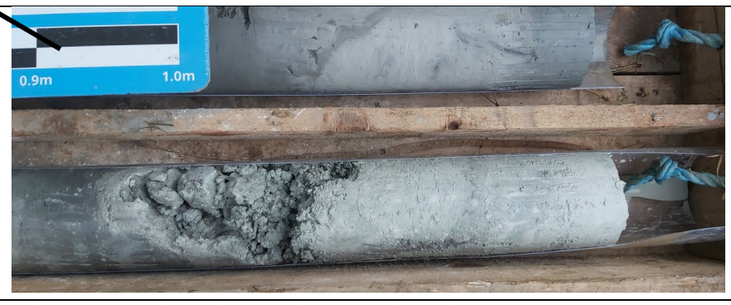


Photograph 11b: Weak light grey mudstone between 3.70 and 4.00 m bgl.



Photograph 11a: Stiff dark grey clay of the Forest Marble Formation between 2.55 and 3.70 m. Top section disturbed by SPT.

Photograph 11c: Firm slightly sandy slightly gravelly clay between 4.00 and 4.30 m bgl.



Photograph 11d: Weak greenish grey mudstone between 4.90 and 5.50 m bgl, recovered as gravel between 4.90 and 5.10 m bgl.

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CGL	Title: **Core runs from BH04**	**Appendix G**

PHOTO SHEET

Photograph 12: Core run between 5.5 and 7.0 m bgl of mudstone of the Forest Marble Formation in BH04.

Photograph 13: Core run between 7.0 and 8.5 m bgl of mudstone, clay, and limestone of the Forest Marble Formation in BH04.

Photograph 14: Core run between 8.5 and 10.0 m bgl of mudstone of the Forest Marble Formation in BH04.

Photograph 15: Core run between 10.0 and 11.5 m bgl of mudstone of the Forest Marble Formation in BH04.

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