

6 Natural Ground Subsidence

The National Ground Subsidence rating is obtained through the 6 natural ground stability hazard datasets, which are supplied by the British Geological Survey (BGS).

The following GeoSure data represented on the mapping is derived from the BGS Digital Geological map of Great Britain at 1:50,000 scale.

What is the maximum hazard rating of natural subsidence within the study site* boundary? High

6.1 Shrink-Swell Clays

The following Shrink Swell information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Ground conditions predominantly low plasticity. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with shrink-swell clays.
2	0.0	On Site	Negligible	Ground conditions predominantly non-plastic. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely likely due to potential problems with shrink-swell clays.
3	0.0	On Site	Negligible	Ground conditions predominantly non-plastic. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely likely due to potential problems with shrink-swell clays.
4	0.0	On Site	Very Low	Ground conditions predominantly low plasticity. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with shrink-swell clays.
5	0.0	On Site	Negligible	Ground conditions predominantly non-plastic. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely likely due to potential problems with shrink-swell clays.

* This includes an automatically generated 50m buffer zone around the site

ID	Distance (m)	Direction	Hazard Rating	Details
6	0.0	On Site	Low	Ground conditions predominantly medium plasticity. Do not plant trees with high soil moisture demands near to buildings. For new build, consideration should be given to advice published by the National House Building Council (NHBC) and the Building Research Establishment (BRE). There is a possible increase in construction cost to reduce potential shrink-swell problems. For existing property, there is a possible increase in insurance risk, especially during droughts or where vegetation with high moisture demands is present.
7	0.0	On Site	Low	Ground conditions predominantly medium plasticity. Do not plant trees with high soil moisture demands near to buildings. For new build, consideration should be given to advice published by the National House Building Council (NHBC) and the Building Research Establishment (BRE). There is a possible increase in construction cost to reduce potential shrink-swell problems. For existing property, there is a possible increase in insurance risk, especially during droughts or where vegetation with high moisture demands is present.
8	16.0	W	Negligible	Ground conditions predominantly non-plastic. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely likely due to potential problems with shrink-swell clays.

6.2 Landslides

The following Landslides information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.
2	0.0	On Site	Negligible	No indicators for slope instability identified. No special actions required to avoid problems due to landslides. No special ground investigation required and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.
3	0.0	On Site	Very Low	Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.

ID	Distance (m)	Direction	Hazard Rating	Details
4	0.0	On Site	Very Low	Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.
5	0.0	On Site	Low	Possibility of slope instability problems after major changes in ground conditions. Consideration should be given to stability if changes to drainage or excavations take place. Possible increase in construction cost to reduce potential slope stability problems. Existing property - no significant increase in insurance risk due to natural slope instability problems.
6	0.0	On Site	Low	Possibility of slope instability problems after major changes in ground conditions. Consideration should be given to stability if changes to drainage or excavations take place. Possible increase in construction cost to reduce potential slope stability problems. Existing property - no significant increase in insurance risk due to natural slope instability problems.
7	0.0	On Site	Negligible	No indicators for slope instability identified. No special actions required to avoid problems due to landslides. No special ground investigation required and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.
8	0.0	On Site	Very Low	Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.
9E	0.0	On Site	Negligible	No indicators for slope instability identified. No special actions required to avoid problems due to landslides. No special ground investigation required and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.
10A	0.0	On Site	Low	Possibility of slope instability problems after major changes in ground conditions. Consideration should be given to stability if changes to drainage or excavations take place. Possible increase in construction cost to reduce potential slope stability problems. Existing property - no significant increase in insurance risk due to natural slope instability problems.
11	0.0	On Site	Very Low	Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.
12B	0.0	On Site	Low	Possibility of slope instability problems after major changes in ground conditions. Consideration should be given to stability if changes to drainage or excavations take place. Possible increase in construction cost to reduce potential slope stability problems. Existing property - no significant increase in insurance risk due to natural slope instability problems.

ID	Distance (m)	Direction	Hazard Rating	Details
13	0.0	On Site	Moderate	<p>Significant potential for slope instability with relatively small changes in ground conditions. Avoid large amounts of water entering the ground through pipe leakage or soak-aways. Do not undercut or place large amounts of material on slopes without technical advice. For new build - consider the potential and consequences of ground movement during excavations, or consequence of changes to loading or drainage. For existing property - probable increase in insurance risk is likely due to potential natural slope instability after changes to ground conditions such as a very long, excessively wet winter.</p>
14A	9.0	S	Very Low	<p>Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.</p>
15	16.0	W	Negligible	<p>No indicators for slope instability identified. No special actions required to avoid problems due to landslides. No special ground investigation required and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.</p>
16B	28.0	NE	Very Low	<p>Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.</p>
17	45.0	E	Low	<p>Possibility of slope instability problems after major changes in ground conditions. Consideration should be given to stability if changes to drainage or excavations take place. Possible increase in construction cost to reduce potential slope stability problems. Existing property - no significant increase in insurance risk due to natural slope instability problems.</p>
18	48.0	E	Low	<p>Possibility of slope instability problems after major changes in ground conditions. Consideration should be given to stability if changes to drainage or excavations take place. Possible increase in construction cost to reduce potential slope stability problems. Existing property - no significant increase in insurance risk due to natural slope instability problems.</p>

6.3 Ground Dissolution of Soluble Rocks

The following Ground Dissolution information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Significant soluble rocks are present. Problems unlikely except with considerable surface or subsurface water flow. No special actions required to avoid problems due to soluble rocks. No special ground investigation required or increased construction costs are likely. An increase in financial risk due to potential problems with soluble rocks is unlikely.
2	0.0	On Site	Low	Significant soluble rocks are present. Low possibility of subsidence occurring naturally, but may be possible in adverse conditions such as high surface or subsurface water flow. Consider implications for stability when changes to drainage or new construction are planned. For new build - site investigation should consider potential for dissolution problems on the site and its surroundings. Care should be taken with local drainage into the bedrock. Some possibility groundwater pollution. For existing property - possible increase in insurance risk due to soluble rocks.
3	0.0	On Site	Moderate	Very significant soluble rocks are present, with a moderate possibility of local natural subsidence due to high surface or subsurface water flow. Do not load the land or undertake building work before obtaining specialist advice. Do not dispose of drainage to the ground. Some possibility groundwater pollution. Maintain drainage infrastructure. For new build - specialist site investigation and stability assessment may be necessary before construction. Construction work may cause subsidence. Increased construction costs are likely. For existing property - probable increase in insurance risk due to soluble rocks.
4	0.0	On Site	Low	Significant soluble rocks are present. Low possibility of subsidence occurring naturally, but may be possible in adverse conditions such as high surface or subsurface water flow. Consider implications for stability when changes to drainage or new construction are planned. For new build - site investigation should consider potential for dissolution problems on the site and its surroundings. Care should be taken with local drainage into the bedrock. Some possibility groundwater pollution. For existing property - possible increase in insurance risk due to soluble rocks.
5	0.0	On Site	High	Very significant soluble rocks are present, with a high possibility of localised subsidence occurring naturally or in adverse conditions such as high surface or subsurface water flow. Obtain specialist advice to advise on need for stabilisation work and/or land management plan to maintain stability. Do not dispose of drainage into the ground. For new build - a specialist land stability assessment is necessary. Investigation, remediation and/or mitigation works may be necessary to stabilise the area. Construction work may cause subsidence. Surface drainage must not affect the karst system or groundwater. Increased construction costs are likely. For existing property - increase in insurance risk due to potential soluble rocks hazards. Potential of groundwater pollution.
6	0.0	On Site	Low	Significant soluble rocks are present. Low possibility of subsidence occurring naturally, but may be possible in adverse conditions such as high surface or subsurface water flow. Consider implications for stability when changes to drainage or new construction are planned. For new build - site investigation should consider potential for dissolution problems on the site and its surroundings. Care should be taken with local drainage into the bedrock. Some possibility groundwater pollution. For existing property - possible increase in insurance risk due to soluble rocks.
7	0.0	On Site	Very Low	Significant soluble rocks are present. Problems unlikely except with considerable surface or subsurface water flow. No special actions required to avoid problems due to soluble rocks. No special ground investigation required or increased construction costs are likely. An increase in financial risk due to potential problems with soluble rocks is unlikely.
8	0.0	On Site	Moderate	Very significant soluble rocks are present, with a moderate possibility of local natural subsidence due to high surface or subsurface water flow. Do not load the land or undertake building work before obtaining specialist advice. Do not dispose of drainage to the ground. Some possibility groundwater pollution. Maintain drainage infrastructure. For new build - specialist site investigation and stability assessment may be necessary before construction. Construction work may cause subsidence. Increased construction costs are likely. For existing property - probable increase in insurance risk due to soluble rocks.

ID	Distance (m)	Direction	Hazard Rating	Details
9	0.0	On Site	High	Very significant soluble rocks are present, with a high possibility of localised subsidence occurring naturally or in adverse conditions such as high surface or subsurface water flow. Obtain specialist advice to advise on need for stabilisation work and/or land management plan to maintain stability. Do not dispose of drainage into the ground. For new build - a specialist land stability assessment is necessary. Investigation, remediation and/or mitigation works may be necessary to stabilise the area. Construction work may cause subsidence. Surface drainage must not affect the karst system or groundwater. Increased construction costs are likely. For existing property - increase in insurance risk due to potential soluble rocks hazards. Potential of groundwater pollution.
10	9.0	S	Low	Significant soluble rocks are present. Low possibility of subsidence occurring naturally, but may be possible in adverse conditions such as high surface or subsurface water flow. Consider implications for stability when changes to drainage or new construction are planned. For new build - site investigation should consider potential for dissolution problems on the site and its surroundings. Care should be taken with local drainage into the bedrock. Some possibility groundwater pollution. For existing property - possible increase in insurance risk due to soluble rocks.
11	16.0	W	Very Low	Significant soluble rocks are present. Problems unlikely except with considerable surface or subsurface water flow. No special actions required to avoid problems due to soluble rocks. No special ground investigation required or increased construction costs are likely. An increase in financial risk due to potential problems with soluble rocks is unlikely.
12	28.0	NE	Low	Significant soluble rocks are present. Low possibility of subsidence occurring naturally, but may be possible in adverse conditions such as high surface or subsurface water flow. Consider implications for stability when changes to drainage or new construction are planned. For new build - site investigation should consider potential for dissolution problems on the site and its surroundings. Care should be taken with local drainage into the bedrock. Some possibility groundwater pollution. For existing property - possible increase in insurance risk due to soluble rocks.

6.4 Compressible Deposits

The following Compressible Deposits information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	No indicators for compressible deposits identified. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.
2	0.0	On Site	Negligible	No indicators for compressible deposits identified. No special actions required to avoid problems due to compressible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with compressible deposits.

6.5 Collapsible Deposits

The following Collapsible Rocks information provided by the British Geological Survey:

ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Very Low	Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.

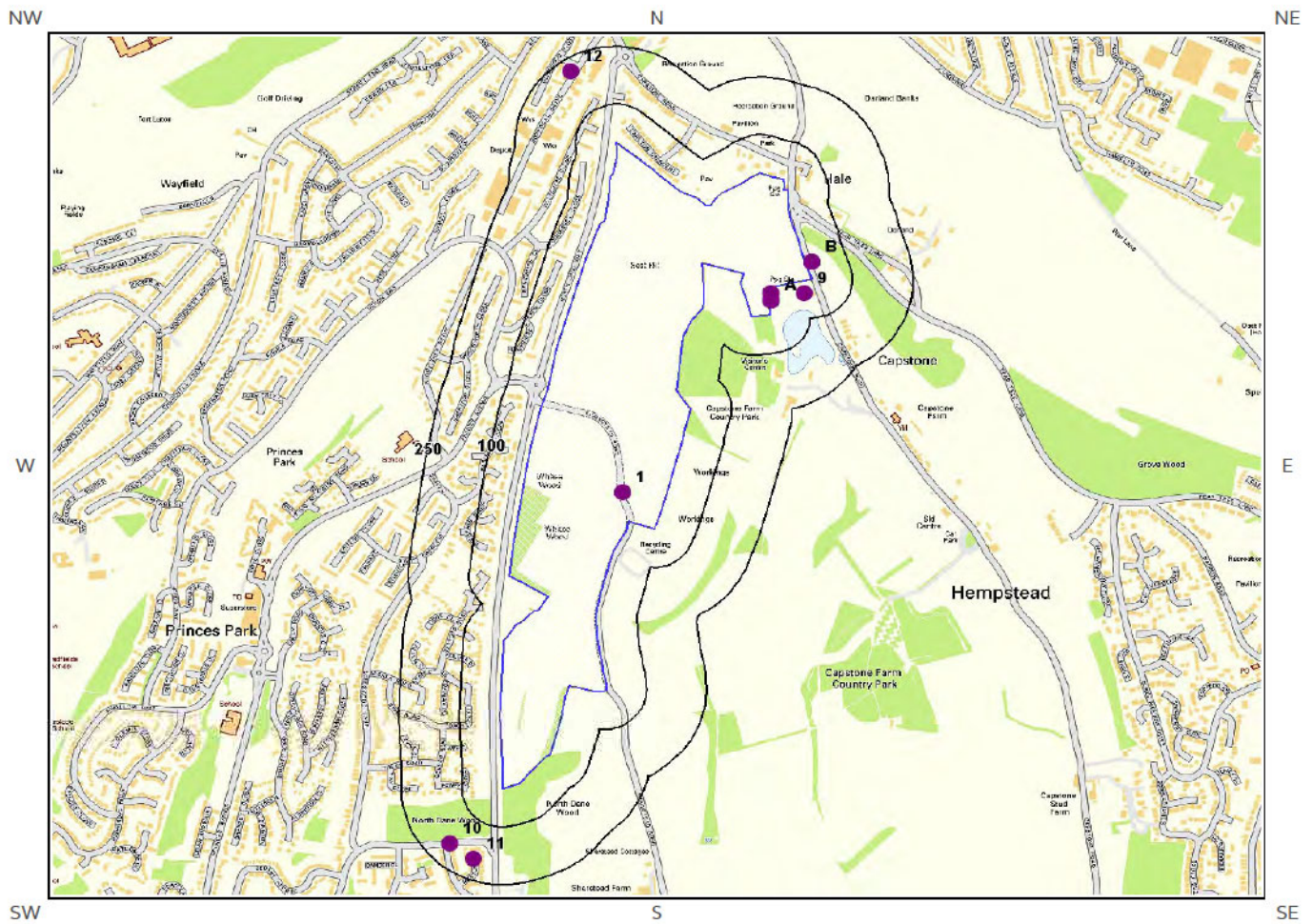
ID	Distance (m)	Direction	Hazard Rating	Details
2	0.0	On Site	Very Low	Deposits with potential to collapse when loaded and saturated are unlikely to be present. No special ground investigation required or increased construction costs or increased financial risk due to potential problems with collapsible deposits.

6.6 Running Sands

The following Running Sands information provided by the British Geological Survey:

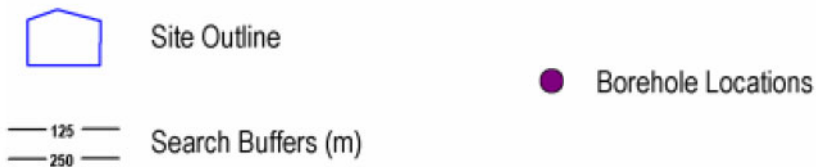
ID	Distance (m)	Direction	Hazard Rating	Details
1	0.0	On Site	Negligible	No indicators for running sand identified. No special actions required to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.
2	0.0	On Site	Very Low	Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required, to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.
3	0.0	On Site	Negligible	No indicators for running sand identified. No special actions required to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.
4	0.0	On Site	Very Low	Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required, to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.
5	0.0	On Site	Negligible	No indicators for running sand identified. No special actions required to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.

7 Borehole Records map



Borehole Records Legend

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7 Borehole Records

The systematic analysis of data extracted from the BGS Borehole Records database provides the following information.

Records of boreholes within 250m of the study site boundary:

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ID	Distance (m)	Direction	NGR	BGS Reference	Drilled Length	Borehole Name
1	0.0	On Site	577530 165000	TQ76NE52	88.0	MAUNDERS HOUSE, WEST OF CAPSTON, CHATHAM
2A	9.0	E	577900 165500	TQ76NE15/B	-1.0	CAPSTONE PUMPING STATION CHATHAM
3A	9.0	E	577900 165500	TQ76NE15/C	-1.0	CAPSTONE PUMPING STATION CHATHAM
4A	9.0	E	577900 165500	TQ76NE15/A	-1.0	CAPSTONE PUMPING STATION CHATHAM
5B	14.0	E	578000 165600	TQ76NE187	46.0	DARLAND BRICK WORKS
6B	14.0	E	578000 165600	TQ76NE51	46.0	DARLAND BRICK WORKS, GILLINGHAM
7B	14.0	E	578000 165600	TQ76NE186	46.0	DARLAND BRICK WORKS
8A	14.0	E	577900 165520	TQ76NE63	-1.0	SOUTHERN WATER AUTHORITY, CAPSTONE
9	32.0	S	577980 165520	TQ76NE189	75.0	NUMBER NOT USED
10	195.0	SW	577100 164080	TQ76SE22	6.0	NORTH DANE WOOD, CHATHAM 5
11	197.0	S	577160 164040	TQ76SE28	10.0	NORTH DANE WOOD, CHATHAM 11
12	216.0	NW	577400 166100	TQ76NE16/J	43.0	LUTON PUMPING STATION, CHATHAM

The borehole records are available using the hyperlinks below: Please note that if the donor of the borehole record has requested the information be held as commercial-in-confidence, the additional data will be held separately by the BGS and a formal request must be made for its release.

#1: scans.bgs.ac.uk/sobi_scans/boreholes/771843
 #5B: scans.bgs.ac.uk/sobi_scans/boreholes/771978
 #6B: scans.bgs.ac.uk/sobi_scans/boreholes/771842
 #7B: scans.bgs.ac.uk/sobi_scans/boreholes/771977
 #9: scans.bgs.ac.uk/sobi_scans/boreholes/771980
 #10: scans.bgs.ac.uk/sobi_scans/boreholes/773766
 #11: scans.bgs.ac.uk/sobi_scans/boreholes/773772
 #12: scans.bgs.ac.uk/sobi_scans/boreholes/771736

8 Estimated Background Soil Chemistry

Records of background estimated soil chemistry within 250m of the study site boundary:

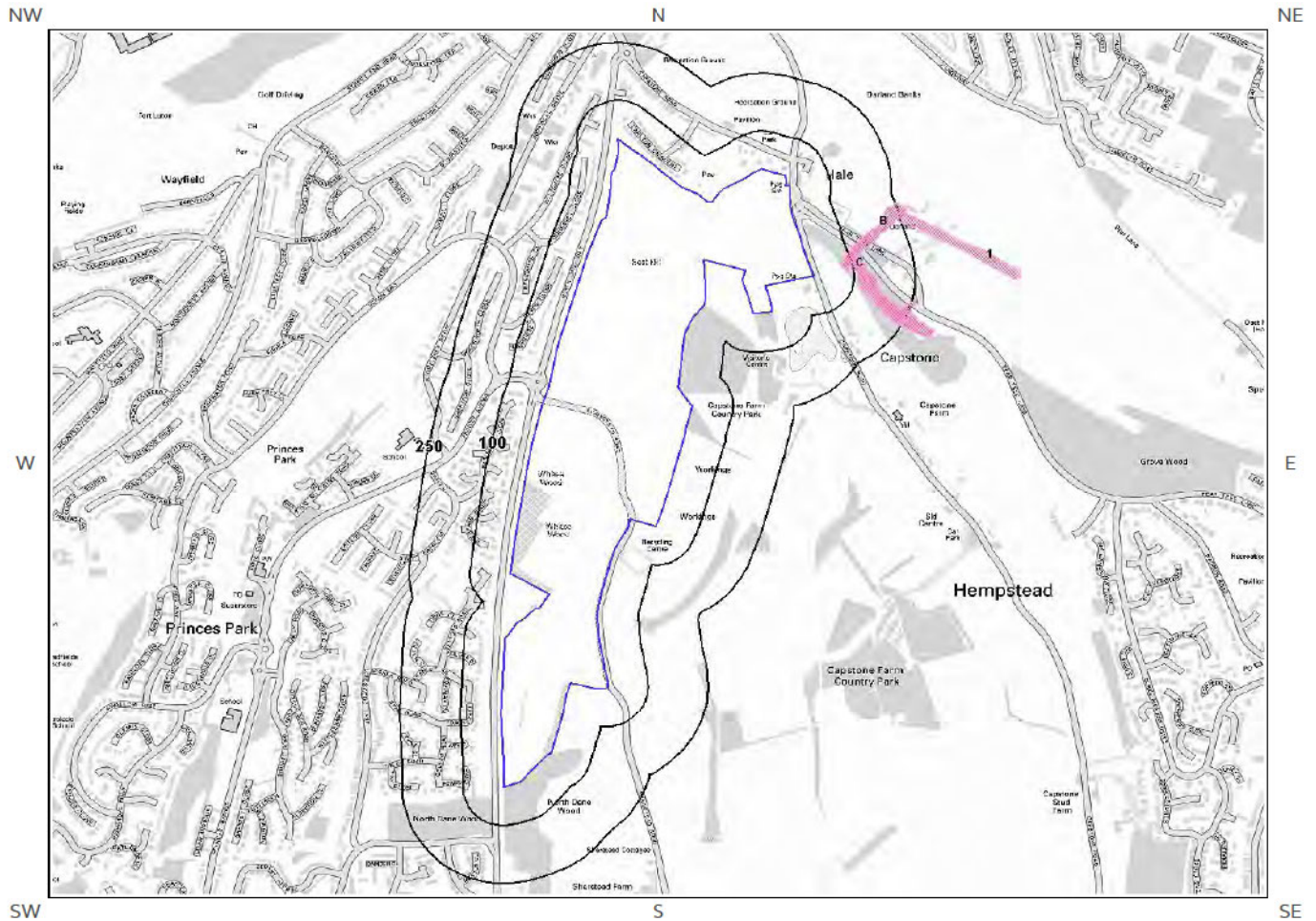
38

For further information on how this data is calculated and limitations upon its use, please see the Groundsure Geo Insight User Guide, available on request.

Distance (m)	Direction	Sample Type	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Nickel (Ni)	Lead (Pb)
0.0	On Site	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	<15 mg/kg	<100 mg/kg
0.0	On Site	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	<15 mg/kg	<100 mg/kg
0.0	On Site	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	<15 mg/kg	<100 mg/kg
0.0	On Site	Sediment	<15 mg/kg	<1.8 mg/kg	40 - 60 mg/kg	<15 mg/kg	<100 mg/kg
0.0	On Site	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	<15 mg/kg	<100 mg/kg
0.0	On Site	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	<15 mg/kg	<1.8 mg/kg	40 - 60 mg/kg	<15 mg/kg	<100 mg/kg
0.0	On Site	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	<15 mg/kg	<100 mg/kg
0.0	On Site	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	<15 mg/kg	<100 mg/kg
0.0	On Site	Sediment	<15 mg/kg	<1.8 mg/kg	40 - 60 mg/kg	<15 mg/kg	<100 mg/kg
0.0	On Site	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	<15 mg/kg	<100 mg/kg
0.0	On Site	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	<15 mg/kg	<100 mg/kg
0.0	On Site	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	<15 mg/kg	<100 mg/kg
0.0	On Site	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	<15 mg/kg	<100 mg/kg
0.0	On Site	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	<15 mg/kg	<100 mg/kg
0.0	On Site	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	<15 mg/kg	<1.8 mg/kg	40 - 60 mg/kg	<15 mg/kg	<100 mg/kg
0.0	On Site	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
0.0	On Site	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
1.0	S	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
1.0	S	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
2.0	E	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
10.0	E	Sediment	<15 mg/kg	<1.8 mg/kg	40 - 60 mg/kg	<15 mg/kg	<100 mg/kg
11.0	E	Sediment	<15 mg/kg	<1.8 mg/kg	40 - 60 mg/kg	<15 mg/kg	<100 mg/kg
16.0	W	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	<15 mg/kg	<100 mg/kg
16.0	W	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	<15 mg/kg	<100 mg/kg
42.0	E	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
42.0	E	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	15 - 30 mg/kg	<100 mg/kg
44.0	E	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	<15 mg/kg	<100 mg/kg
48.0	E	Sediment	<15 mg/kg	<1.8 mg/kg	60 - 90 mg/kg	<15 mg/kg	<100 mg/kg













*As this data is based upon underlying 1:50,000 scale geological information, a 50m buffer has been added to the search radius.

9 Railways and Tunnels map



Railways and Tunnels Legend

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- | | | | |
|---|--|---|---|
|  | Underground or Partially Underground Railway / Subway System |  | Railway Track (OpenStreetMap) |
|  | Railway Tunnel (OS Mapping) |  | High Speed 2 |
|  | Abandoned or Dismantled Railway (OpenStreetMap) |  | High Speed 2 Revised Proposed Route |
|  | Railway Track (OS Mapping) |  | Crossrail 1 |
|  | Site Outline |  | Railway and/or Tunnel Feature from Historical Mapping |
|  | 250 Search Buffers (m) | | |
|  | 500 Search Buffers (m) | | |

9 Railways and Tunnels

9.1 Tunnels

This data is derived from OpenStreetMap and provides information on the possible locations of underground railway systems in the UK - the London Underground, the Tyne & Wear Metro and the Glasgow Subway.

Have any underground railway lines been identified within the study site boundary? No

Have any underground railway lines been identified within 250m of the study site boundary? No

Database searched and no data found.

Any records that have been identified are represented on the Railways and Tunnels map.

This data is derived from Ordnance Survey mapping and provides information on the possible locations of railway tunnels forming part of the UK overground railway network.

Have any other railway tunnels been identified within the site boundary? No

Have any other railway tunnels been identified within 250m of the site boundary? No

Database searched and no data found.

Any records that have been identified are represented on the Railways and Tunnels map.

9.2 Historical Railway and Tunnel Features

This data is derived from Groundsure's unique Historical Land-use Database and contains features relating to tunnels, railway tracks or associated works that have been identified from historical Ordnance Survey mapping.

Have any historical railway or tunnel features been identified within the study site boundary? No

Have any historical railway or tunnel features been identified within 250m of the study site boundary? Yes

ID	Distance (m)	Direction	NGR	Details	Date
1	71	E	578093 165584	Railway Sidings	1907
6	82	E	578106 165633	Tramway Sidings	1909
2A	95	E	578204 165482	Tramway Sidings	1932
7B	105	E	578154 165676	Railway Sidings	1897
8C	106	E	578116 165584	Tramway Sidings	1938
9C	107	E	578110 165590	Tramway Sidings	1932

ID	Distance (m)	Direction	NGR	Details	Date
3A	115	E	578176 165482	Tramway Sidings	1938
4B	116	E	578165 165681	Railway Sidings	1896
5D	117	E	578172 165485	Tramway Sidings	1939
10D	131	E	578183 165476	Tramway Sidings	1939
11D	131	E	578183 165476	Tramway Sidings	1931
12A	132	E	578175 165493	Tramway Sidings	1909

Any records that have been identified are represented on the Railways and Tunnels map.

9.3 Historical Railways

This data is derived from OpenStreetMap and provides information on the possible alignments of abandoned or dismantled railway lines in proximity to the study site.

Have any historical railway lines been identified within the study site boundary? No

Have any historical railway lines been identified within 250m of the study site boundary? No

Database searched and no data found.

Multiple sections of the same track may be listed in the detail above

Any records that have been identified are represented on the Railways and Tunnels map.

9.4 Active Railways

These datasets are derived from Ordnance Survey mapping and OpenStreetMap and provide information on the possible locations of active railway lines in proximity to the study site.

Have any active railway lines been identified within the study site boundary? No

Have any active railway lines been identified within 250m of the study site boundary? No

Database searched and no data found.

Multiple sections of the same track may be listed in the detail above

Any records that have been identified are represented on the Railways and Tunnels map.

9.5 Railway Projects

These datasets provide information on the location of large scale railway projects High Speed 2 and Crossrail 1 .

Is the study site within 5km of the route of the High Speed 2 rail project? No

Is the study site within 500m of the route of the Crossrail 1 rail project? No

Further information on proximity to these routes, the project construction status and associated works can be obtained through the purchase of a Groundsure HS2 and Crossrail 1 Report.

The route data has been digitised from publicly available maps by Groundsure. The route as provided relates to the Crossrail 1 project only, and does not include any details of the Crossrail 2 project, as final details of the route for Crossrail 2 are still under consultation.

Please note that this assessment takes account of both the original Phase 2b proposed route and the amended route proposed in 2016. As the Phase 2b route is still under consultation, Groundsure are providing information on both options until the final route is formally confirmed. Practitioners should take account of this uncertainty when advising clients.

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<https://www.groundsure.com/terms-and-conditions-may25-2018>

APPENDIX G

Preliminary UXO Risk Assessment

Pre-Desk Study Assessment

Site:	Land south of Hale, Kent
Client:	Southern Testing
Contact:	James Whibberley
Date:	31 st August 2018
Pre-WWI Military Activity on or Affecting the Site	None identified.
WWI Military Activity on or Affecting the Site	None identified.
WWI Strategic Targets (within 5km of Site)	<p>The following strategic targets were located in the vicinity of the Site:</p> <ul style="list-style-type: none"> ■ Transport infrastructure and public utilities. ■ Military camps and barracks. ■ Chatham Dockyard. ■ Light industry, including brick works. ■ Anti-aircraft (AA) guns.
WWI Bombing	<p>None identified on the Site.</p> <p>Readily available records have been found to indicate that 1No. HE bomb fell approximately 0.8km north of the Site on the 3rd September 1917.</p>
Interwar Military Activity on or Affecting the Site	None identified.
WWII Military Activity on or Affecting the Site	None identified.
WWII Strategic Targets (within 5km of Site)	<p>The following strategic targets were located in the vicinity of the Site:</p> <ul style="list-style-type: none"> ■ Transport infrastructure and public utilities. ■ Military camps and barracks. ■ Chatham Dockyard. ■ Light industry, including brick works. ■ AA and anti-invasion defences.
WWII Bombing Decoys (within 5km of Site)	3No. The nearest was located approximately 0.8km south of the Site.
WWII Bombing	During WWII the Site was located in the Municipal Borough (MB) of Chatham,

	<p>close to the boundary of Gillingham MB.</p> <p>Chatham MB officially recorded 264No. High Explosive (HE) bombs with a regional bombing density of 60.6 bombs per 405 hectares (ha).</p> <p>Gillingham MB officially recorded 280No. HE bombs with a regional bombing density of 33.5 bombs per 405 ha.</p> <p>Readily available records have been found to indicate that at least 2No. HE bombs fell on the Site.</p>
Post-WWII Military Activity on or Affecting the Site	None identified.
Recommendation	It is recommended that a detailed desk study is commissioned to assess, and potentially zone, the Unexploded Ordnance (UXO) hazard level on the Site.
<p>This summary is based on a cursory review of readily available records. Caution is advised if you plan to action work based on this summary.</p> <p>It should be noted that where a potentially significant source of UXO hazard has been identified on the Site, the requirement for a detailed desk study and risk assessment has been confirmed and no further research will be undertaken at this stage. It is possible that further in-depth research as part of a detailed UXO desk study and risk assessment may identify other potential sources of UXO hazard on the Site.</p>	