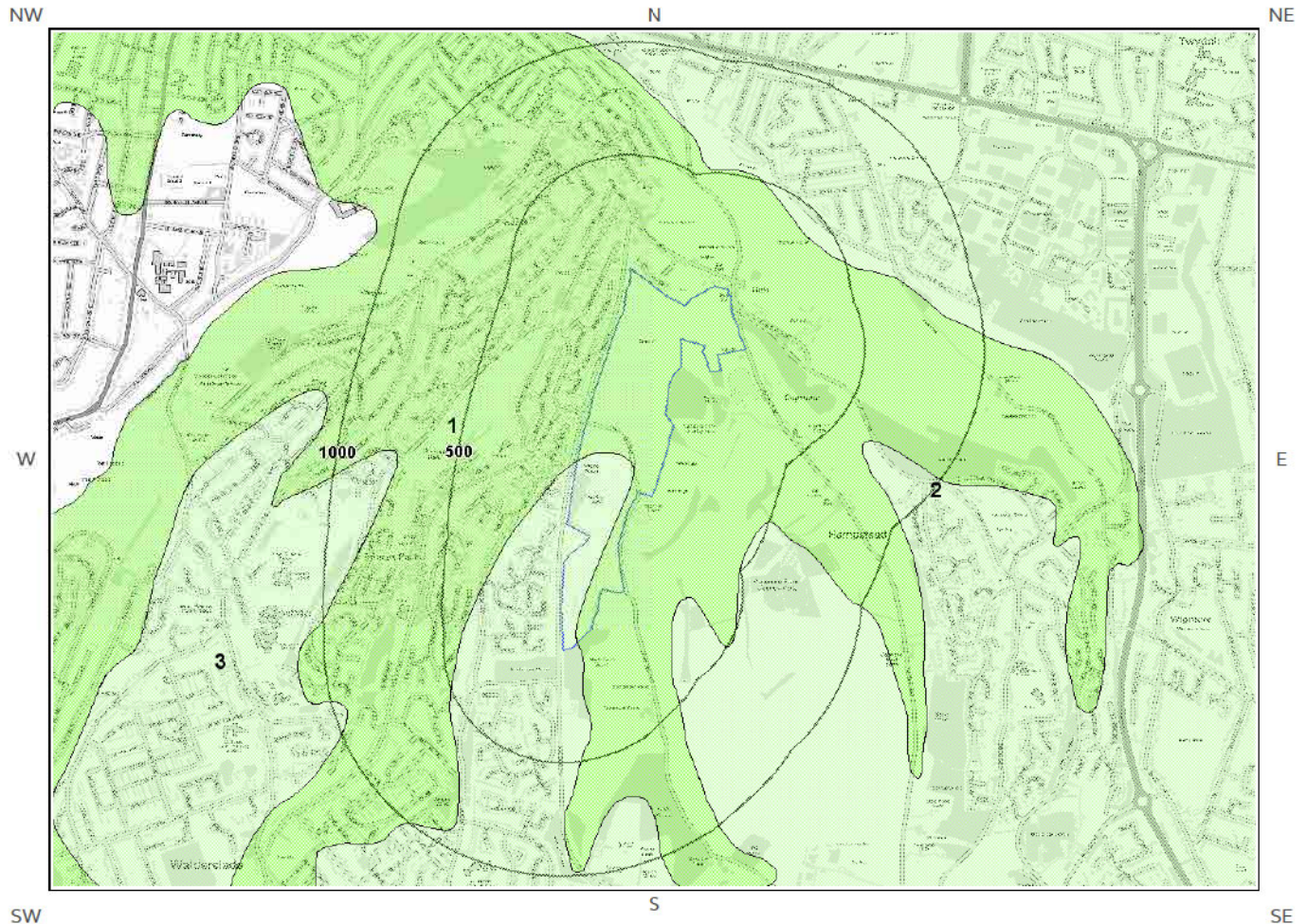
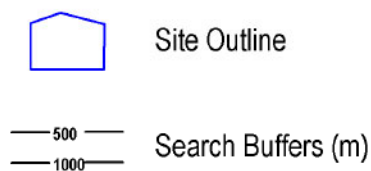


2.3 Bedrock and linear features map (1:50,000 scale)



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2.3 Bedrock, Solid Geology & linear features

The following geological information represented on the mapping is derived from 1:50,000 scale BGS Geological mapping, Sheet No: 272

2.3.1 Bedrock/Solid Geology

Records of Bedrock/Solid Geology within 500m of the study site boundary:

ID	Distance	Direction	LEX Code	Rock Description	Rock Age
1	0.0	On Site	LECH-CHLK	LEWES NODULAR CHALK FORMATION - CHALK	TURONIAN
2	0.0	On Site	SECK-CHLK	SEAFORD CHALK FORMATION - CHALK	CONIACIAN

2.3.2 Permeability of Bedrock Ground

Are there any records relating to permeability of bedrock ground within the study site boundary? Yes

Distance	Direction	Flow Type	Maximum Permeability	Minimum Permeability
0.0	On Site	Fracture	Very High	Very High
0.0	On Site	Fracture	Very High	Very High
0.0	On Site	Fracture	Very High	Very High
0.0	On Site	Fracture	Very High	Very High

2.3.3 Linear features

Are there any records of linear features within 500m of the study site boundary? No

Database searched and no data found.

The geology map for the site and surrounding area are extracted from the BGS Digital Geological Map of Great Britain at 1:50,000 scale.

This Geology shows the main components as discrete layers, these are: Bedrock/Solid Geology and linear features such as faults. These are all displayed with the BGS Lexicon code for the rock unit and BGS sheet number. Not all of the main geological components have nation wide coverage.

3 Radon Data

3.1 Radon Affected Areas

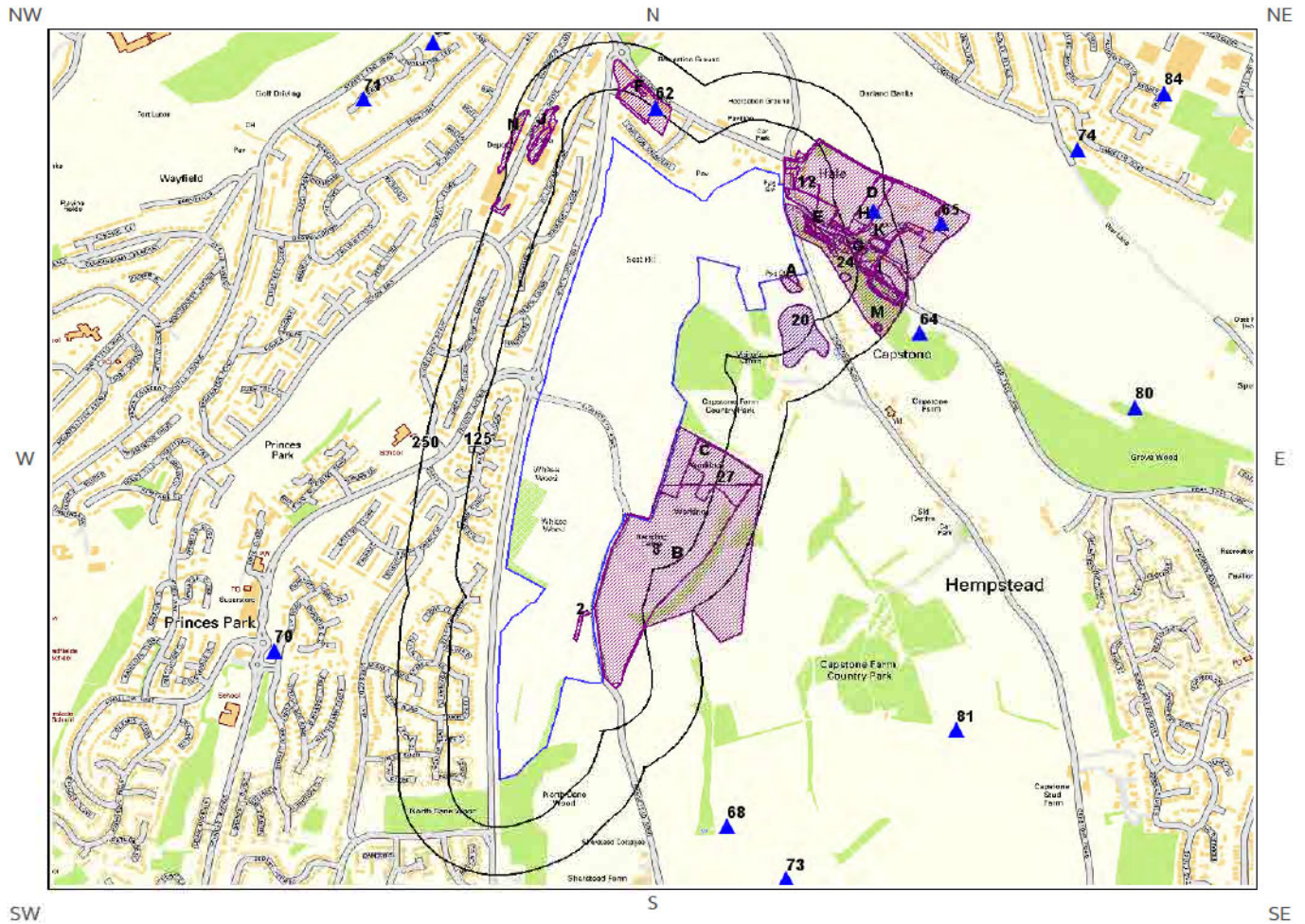
Is the property in a Radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level? The property is in a Radon Affected Area, as between 1 and 3% of properties are above the Action Level.

The radon data in this report is supplied by the BGS/Public Health England and is the definitive map of Radon Affected Areas in Great Britain and Northern Ireland. The dataset was created using long-term radon measurements in over 479,000 homes across Great Britain and 23,000 homes across Northern Ireland, combined with geological data. The dataset is considered accurate to 50m to allow for the margin of error in geological lines, and the findings of this report supercede any answer given in the less accurate Indicative Atlas of Radon in Great Britain, which simplifies the data to give the highest risk within any given 1km grid square. As such, the radon atlas is considered indicative, whereas the data given in this report is considered definitive.

3.2 Radon Protection



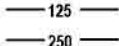


Is the property in an area where Radon Protection are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment? No radon protective measures are necessary.

4 Ground Workings map



Ground Workings Legend

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-  Site Outline
-  Historic Surface Ground Workings
-  Search Buffers (m)
-  Historic Underground Workings
-  Current Ground Workings

4 Ground Workings

4.1 Historical Surface Ground Working Features derived from Historical Mapping

This dataset is based on Groundsure's unique Historical Land Use Database derived from 1:10,560 and 1:10,000 scale historical mapping

Are there any Historical Surface Ground Working Features within 250m of the study site boundary? Yes

ID	Distance (m)	Direction	NGR	Use	Date
1A	0.0	On Site	577950 165529	Unspecified Heap	1860
2	0.0	On Site	577430 164631	Unspecified Ground Workings	1907
3A	0.0	On Site	577949 165528	Unspecified Heap	1955
4C	0.0	On Site	577764 165078	Refuse Heap	1979
5B	0.0	On Site	577679 164735	Refuse Heap	1979
6B	0.0	On Site	577679 164735	Refuse Heap	1989
7B	0.0	On Site	577679 164735	Refuse Heap	1985
8	0.0	On Site	577667 164741	Refuse Heap	1974
9C	0.0	On Site	577764 165078	Unspecified Disused Workings	1990
10H	1.0	E	578150 165647	Brick Works	1907
11D	3.0	E	578175 165724	Brick Works	1932
12	8.0	E	577990 165758	Brick Field	1865
13D	15.0	E	578142 165762	Brick Works	1860
14E	26.0	E	578031 165671	Unspecified Pit	1955
15G	29.0	E	578143 165568	Unspecified Ground Workings	1860
16E	32.0	E	578039 165652	Unspecified Pit	1907
17E	36.0	E	578036 165657	Unspecified Ground Workings	1967
18E	37.0	E	578012 165678	Unspecified Pit	1973
19C	40.0	E	577785 165062	Refuse Heap	1973
20	41.0	SE	577993 165392	Pond	1990
21C	46.0	E	577795 165061	Refuse Heap	1967

ID	Distance (m)	Direction	NGR	Use	Date
22E	69.0	E	578056 165636	Unspecified Heap	1973
23F	79.0	NE	577572 166036	Brick Works	1907
24	81.0	E	578095 165546	Unspecified Pit	1955
25F	82.0	NE	577592 166021	Brick Works	1896
26G	84.0	E	578099 165547	Unspecified Pit	1860
27	85.0	E	577738 164973	Refuse Heap	1970
28H	98.0	E	578088 165678	Unspecified Ground Workings	1955
29G	103.0	E	578119 165624	Unspecified Heap	1955
30I	120.0	E	578179 165533	Unspecified Pit	1907
31I	126.0	E	578182 165529	Unspecified Pit	1955
32I	129.0	E	578185 165526	Unspecified Pit	1932
33F	131.0	NE	577579 166041	Unspecified Pit	1907
34D	132.0	E	578159 165737	Unspecified Pits	1907
35D	132.0	E	578159 165737	Unspecified Pits	1932
36J	145.0	W	577342 165924	Gravel Pit	1860
37J	148.0	W	577335 165893	Refuse Heap	1907
38J	148.0	W	577335 165893	Refuse Heap	1932
39D	154.0	E	578165 165747	Unspecified Heaps	1860
40J	156.0	W	577340 165926	Refuse Heap	1955
41I	160.0	E	578202 165520	Unspecified Pit	1973
42I	160.0	E	578202 165520	Unspecified Pit	1967
43I	160.0	E	578202 165520	Unspecified Pit	1979
44H	171.0	E	578179 165636	Unspecified Ground Workings	1860
45H	171.0	E	578177 165637	Unspecified Pits	1955
46K	173.0	E	578181 165631	Unspecified Pits	1907
47K	173.0	E	578181 165631	Unspecified Pits	1932
48K	184.0	E	578225 165657	Unspecified Ground Workings	1907
49K	205.0	E	578215 165655	Unspecified Ground Workings	1955
50M	213.0	SE	578176 165415	Unspecified Heap	1955

ID	Distance (m)	Direction	NGR	Use	Date
51L	214.0	W	577218 165734	Refuse Heap	1907
52L	214.0	W	577218 165734	Refuse Heap	1932
53M	219.0	SE	578180 165413	Unspecified Heap	1860
54N	221.0	W	577267 165905	Refuse Heap	1932
55N	221.0	W	577267 165905	Refuse Heap	1907

4.2 Historical Underground Working Features derived from Historical Mapping

This data is derived from the Groundsure unique Historical Land Use Database. It contains data derived from 1:10,000 and 1:10,560 historical Ordnance Survey Mapping and includes some natural topographical features (Shake Holes for example) as well as manmade features that may have implications for ground stability. Underground and mining features have been identified from surface features such as shafts. The distance that these extend underground is not shown.

Are there any Historical Underground Working Features within 1000m of the study site boundary? Yes

The following Historical Underground Working Features are provided by Groundsure:

ID	Distance (m)	Direction	NGR	Use	Date
Not shown	803.0	SW	576836 163520	Unspecified Old Shaft	1955
Not shown	804.0	SW	576846 163511	Unspecified Disused Shaft	1970
Not shown	808.0	SW	576838 163514	Unspecified Old Shaft	1864
Not shown	808.0	S	577372 163423	Unspecified Old Shaft	1955
Not shown	810.0	S	577374 163424	Unspecified Old Shaft	1864
Not shown	810.0	S	577374 163424	Unspecified Old Shaft	1932

4.3 Current Ground Workings

This dataset is derived from the BGS BRITPITS database covering active; inactive mines; quarries; oil wells; gas wells and mineral wharves; and rail deposits throughout the British Isles.

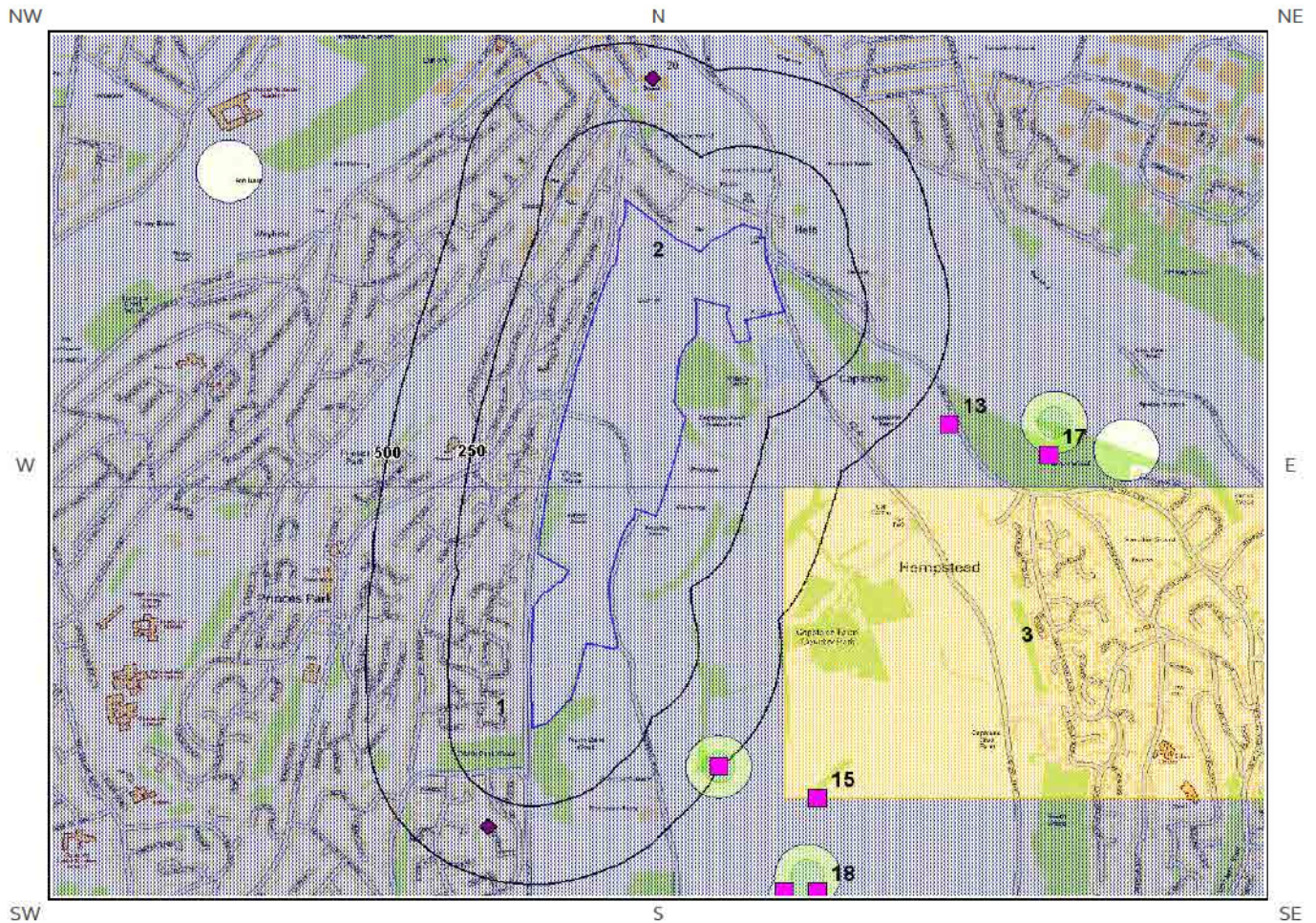
Are there any BGS Current Ground Workings within 1000m of the study site boundary? Yes

The following Current Ground Workings information is provided by British Geological Survey:

ID	Distance (m)	Direction	NGR	Commodity Produced	Pit Name	Type of working	Status
62	128.0	NE	577624 165993	Clay & Shale	Upper Luton Brick Works	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
63D	207.0	E	578166 165721	Clay & Shale	Darland Brick Works	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
64	320.0	SE	578280 165399	Chalk	Capstone	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
65	358.0	E	578335 165687	Sand & Gravel	Garland Gravel Pit	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	382.0	NE	577743 166222	Sand & Gravel	Upper Luton Gravel Pit	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	416.0	NW	577237 166227	Sand & Gravel	Upper Luton Gravel Pit	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
68	494.0	SE	577800 164100	Chalk	Sharsted Farm Chalkwell	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
69	512.0	NW	577065 166162	Clay & Shale	Upper Luton Brick Works	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
70	562.0	W	576670 164565	Chalk	Settington Chalk Pit	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
71	630.0	W	576892 166015	Clay & Shale	Upper Luton Brick Works	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	645.0	NW	577148 166447	Sand & Gravel	Upper Luton Gravel Pit	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
73	694.0	SE	577949 163962	Chalk	Upper Shawsted Chalk Pit	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
74	738.0	E	578675 165883	Chalk	Darland Hill Chalk Pit	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	762.0	NW	577179 166601	Clay & Shale	Luton Brick Field	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	810.0	SW	576840 163515	Chalk	Dargets Wood Denehole	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased

ID	Distance (m)	Direction	NGR	Commodity Produced	Pit Name	Type of working	Status
Not shown	817.0	S	577380 163420	Chalk	Hook Wood Denehole	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
Not shown	839.0	N	577600 166751	Chalk	Beacon Hill Chalk Pit	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
Not shown	862.0	NW	576874 166493	Chalk	Luton Clay Pits	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased
80	889.0	SE	578817 165204	Chalk	Grove Wood Denehole	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
81	891.0	E	578371 164355	Chalk	Capstone Denehole	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
Not shown	911.0	SE	578069 163753	Chalk	Sharsted Farm Chalkwell	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
Not shown	944.0	SE	578051 163680	Chalk	Sharsted Farm Chalkwell	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
84	977.0	E	578890 166030	Chalk	Star Lane Shaft	Working is wholly underground, access by shaft, adit or drift. Working may be termed Colliery, Mine, Drift Mine, Slant, Level, Adit or Ingoing Eye (Ingaun Ee - Scots)	Ceased
Not shown	977.0	NW	576792 166575	Chalk	Luton Clay Pits	A surface mineral working. It may be termed Quarry, Sand Pit, Clay Pit or Opencast Coal Site	Ceased

5 Mining, Extraction & Natural Cavities map



Mining, Extraction and Natural Cavities Legend

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5 Mining, Extraction & Natural Cavities

5.1 Historical Mining

This dataset is derived from Groundsure unique Historical Land-use Database that are indicative of mining or extraction activities.

Are there any Historical Mining areas within 1000m of the study site boundary? Yes

The following Historical Mining information is provided by Groundsure:

ID	Distance (m)	Direction	NGR	Details	Date
Not shown	803.0	SW	576836 163520	Unspecified Old Shaft	1955
Not shown	804.0	SW	576846 163511	Unspecified Disused Shaft	1970
Not shown	808.0	SW	576838 163514	Unspecified Old Shaft	1864
Not shown	808.0	S	577372 163423	Unspecified Old Shaft	1955
Not shown	810.0	S	577374 163424	Unspecified Old Shaft	1932
Not shown	810.0	S	577374 163424	Unspecified Old Shaft	1864

5.2 Coal Mining

This dataset provides information as to whether the study site lies within a known coal mining affected area as defined by the coal authority.

Are there any Coal Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

5.3 Johnson Poole and Bloomer

This dataset provides information as to whether the study site lies within an area where JPB hold information relating to mining.

Are there any JPB Mining areas within 1000m of the study site boundary? No

The following information provided by JPB is not represented on mapping: Database searched and no data found.

5.4 Non-Coal Mining

This dataset provides information as to whether the study site lies within an area which may have been subject to non-coal historic mining.

Are there any Non-Coal Mining areas within 1000m of the study site boundary? Yes

The following non-coal mining information is provided by the BGS:

ID	Distance (m)	Direction	Name	Commodity	Assessment of likelihood
1	0.0	On Site	Not available	Chalk	Sporadic underground mining of restricted extent may have occurred. Potential for difficult ground conditions are unlikely and localised and are at a level where they need not be considered
2	0.0	On Site	Not available	Chalk	Sporadic underground mining of restricted extent may have occurred. Potential for difficult ground conditions are unlikely and localised and are at a level where they need not be considered
3	344.0	E	Not available	Chalk	Small scale underground mining may have occurred; mine adits, shafts and tunnels may be present. Potential for localised difficult ground conditions are at a level where they should be considered
4A	394.0	SE	Not available	Chalk	Underground mining is known or considered likely to have occurred within or close to the area. Potential for difficult ground conditions are at a level where they should be considered
5A	444.0	SE	Not available	Chalk	Underground mining is known to have occurred within or very close to the area. Potential for difficult ground conditions should be investigated. Potential for localised subsidence is at a level where it should be considered
Not shown	717.0	S	Hook Wood	Chalk	Underground mining is known or considered likely to have occurred within or close to the area. Potential for difficult ground conditions are at a level where they should be considered
Not shown	767.0	S	Hook Wood	Chalk	Underground mining is known to have occurred within or very close to the area. Potential for difficult ground conditions should be investigated. Potential for localised subsidence is at a level where it should be considered
8B	789.0	SE	Grove Wood	Chalk	Underground mining is known or considered likely to have occurred within or close to the area. Potential for difficult ground conditions are at a level where they should be considered
9C	812.0	SE	Not available	Chalk	Underground mining is known or considered likely to have occurred within or close to the area. Potential for difficult ground conditions are at a level where they should be considered
10B	839.0	SE	Grove Wood	Chalk	Underground mining is known to have occurred within or very close to the area. Potential for difficult ground conditions should be investigated. Potential for localised subsidence is at a level where it should be considered
11C	862.0	SE	Not available	Chalk	Underground mining is known to have occurred within or very close to the area. Potential for difficult ground conditions should be investigated. Potential for localised subsidence is at a level where it should be considered

5.5 Non-Coal Mining Cavities

This dataset provides information from the Peter Brett Associates (PBA) mining cavities database (compiled for the national study entitled “Review of mining instability in Great Britain, 1990” PBA has also continued adding to this database) on mineral extraction by mining.

Are there any Non-Coal Mining cavities within 1000m of the study site boundary? Yes

The following Non-Coal Mining Cavities information provided by Peter Brett Associates:

ID	Distance (m)	Direction	NGR	Address	Superficial Deposits	Bedrock Deposits	Extracted Mineral
12A	494.0	SE	577800 164100	Gillingham, Kent	Clay-with-Flints	Chalk Group	Chalk
13	613.0	SE	578500 165200	Gillingham, Kent	Head, Clay-with Flints	Chalk Group	Chalk
Not shown	663.0	NW	577200 166500	Luton Brick Field, Gillingham, Kent	Head Brickearth	Chalk Group	Chalk
15	780.0	SE	578100 164000	Gillingham, Kent	Clay-with-Flints	Chalk Group	Unknown
16C	893.0	SE	578000 163700	Gillingham, Kent	Clay-with-Flints	Chalk Group	Chalk
17	920.0	SE	578800 165100	Gillingham, Kent	Head	Chalk Group	Chalk
18	969.0	SE	578100 163700	Gillingham, Kent	Clay-with-Flints	Chalk Group	Chalk

5.6 Natural Cavities

This dataset provides information based on the Peter Brett Associates natural cavities database. The dataset is made up of points and polygons. Where polygons are used these represent an area in which it is expected the cavities could be found. It does not indicate that cavities are present everywhere within the polygon, and caution should be used in the interpretation of this data.

Are there any Natural Cavities within 1000m of the study site boundary? Yes

The following Natural Cavities information provided by Peter Brett Associates:

ID	Distance (m)	Direction	NGR	Superficial Deposits	Bedrock Deposits	Cavity Type and Number
19	349.0	S	577100 163900	Clay-with-Flints	Chalk Group	Solution Pipe x 1
20	393.0	N	577600 166300	Brickearth/head, Head	Chalk Group	Vadose Cave x 1

5.7 Brine Extraction

This data provides information from the Coal Authority issued on behalf of the Cheshire Brine Subsidence Compensation Board.

Are there any Brine Extraction areas within 1000m of the study site boundary? No

Database searched and no data found.

5.8 Gypsum Extraction

This dataset provides information on Gypsum extraction from British Gypsum records.

Are there any Gypsum Extraction areas within 1000m of the study site boundary? No

Database searched and no data found.

5.9 Tin Mining

This dataset provides information on tin mining areas and is derived from tin mining records. This search is based upon postcode information to a sector level..

Are there any Tin Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

5.10 Clay Mining

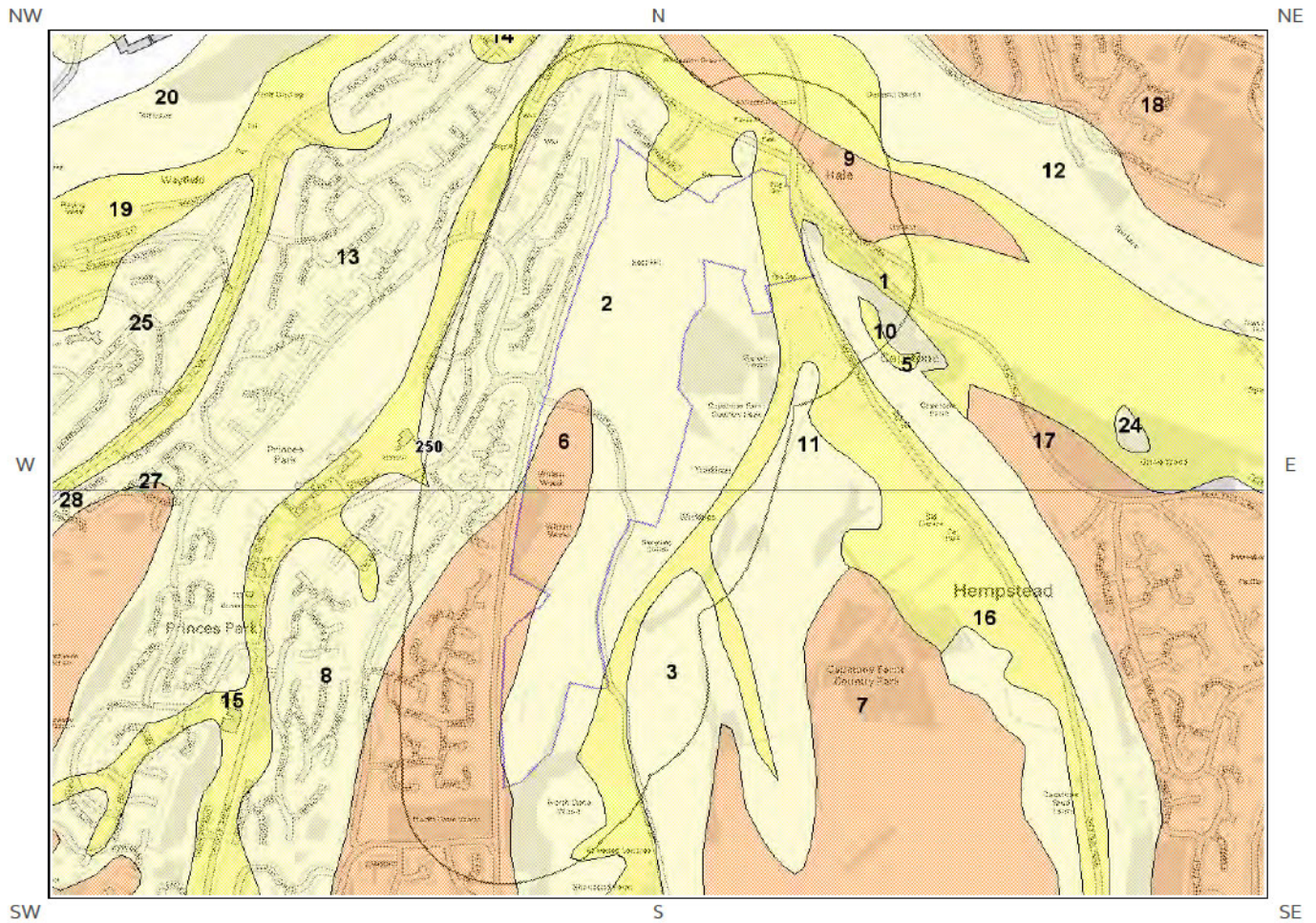
This dataset provides information on Kaolin and Ball Clay mining from relevant mining records.

Are there any Clay Mining areas within 1000m of the study site boundary? No

Database searched and no data found.

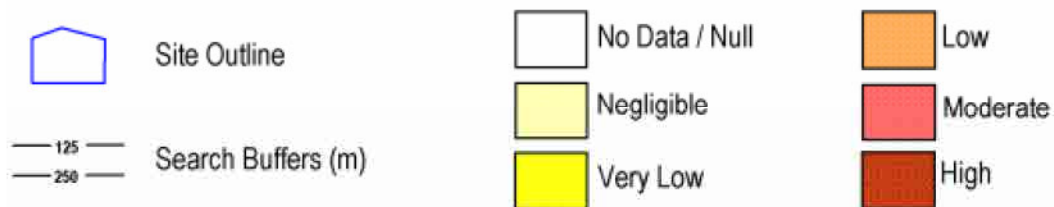
6 Natural Ground Subsidence

6.1 Shrink-Swell Clay map

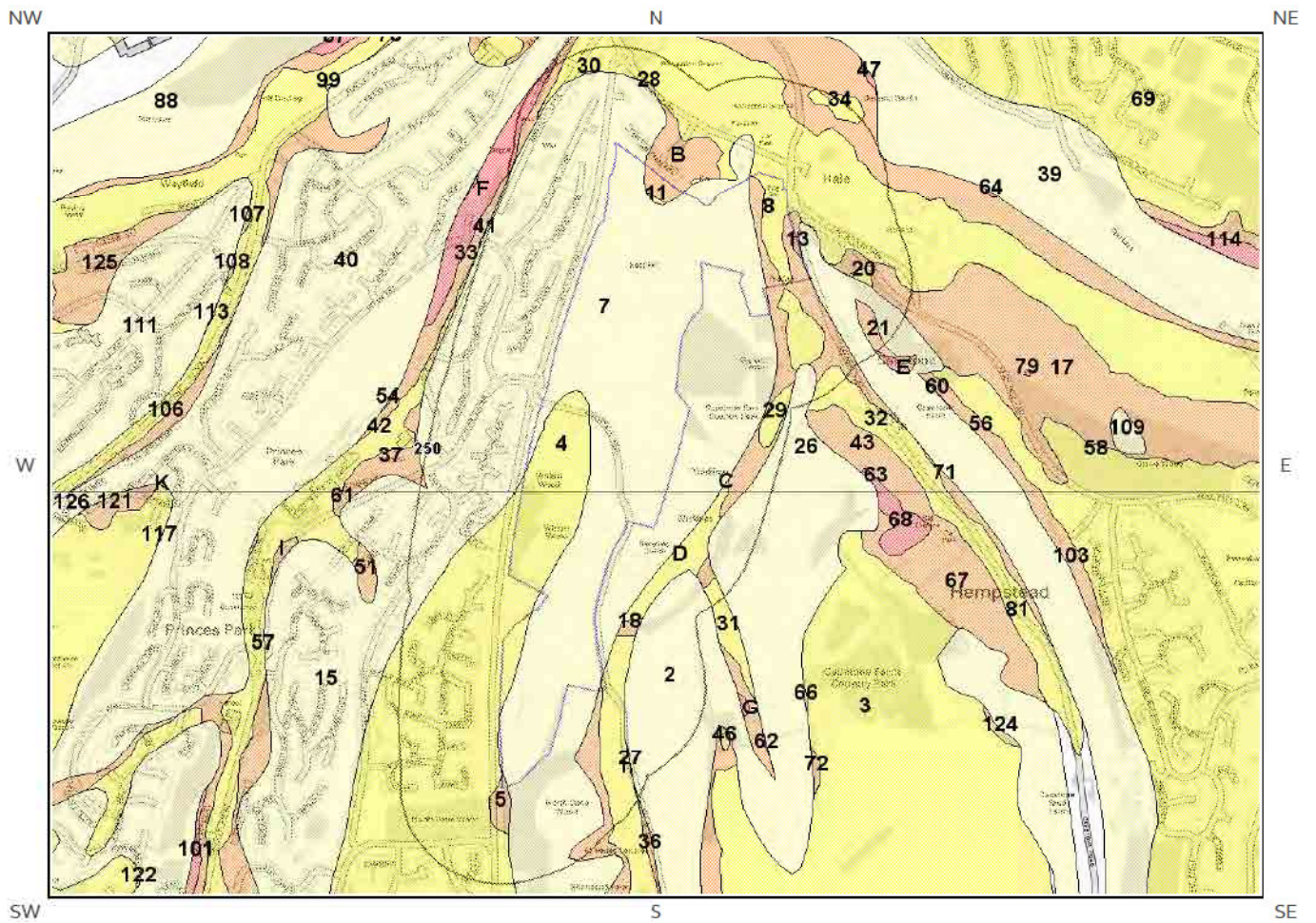


Shrink Swell Clay Legend

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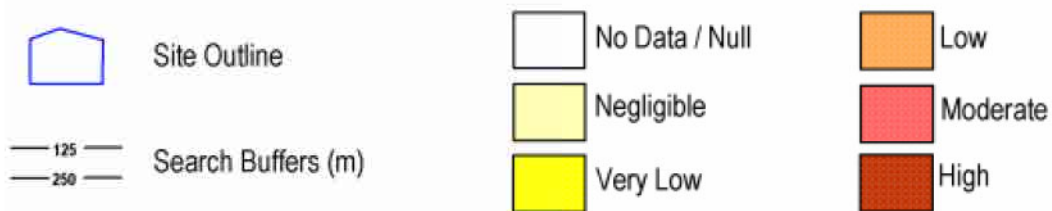


6.2 Landslides map

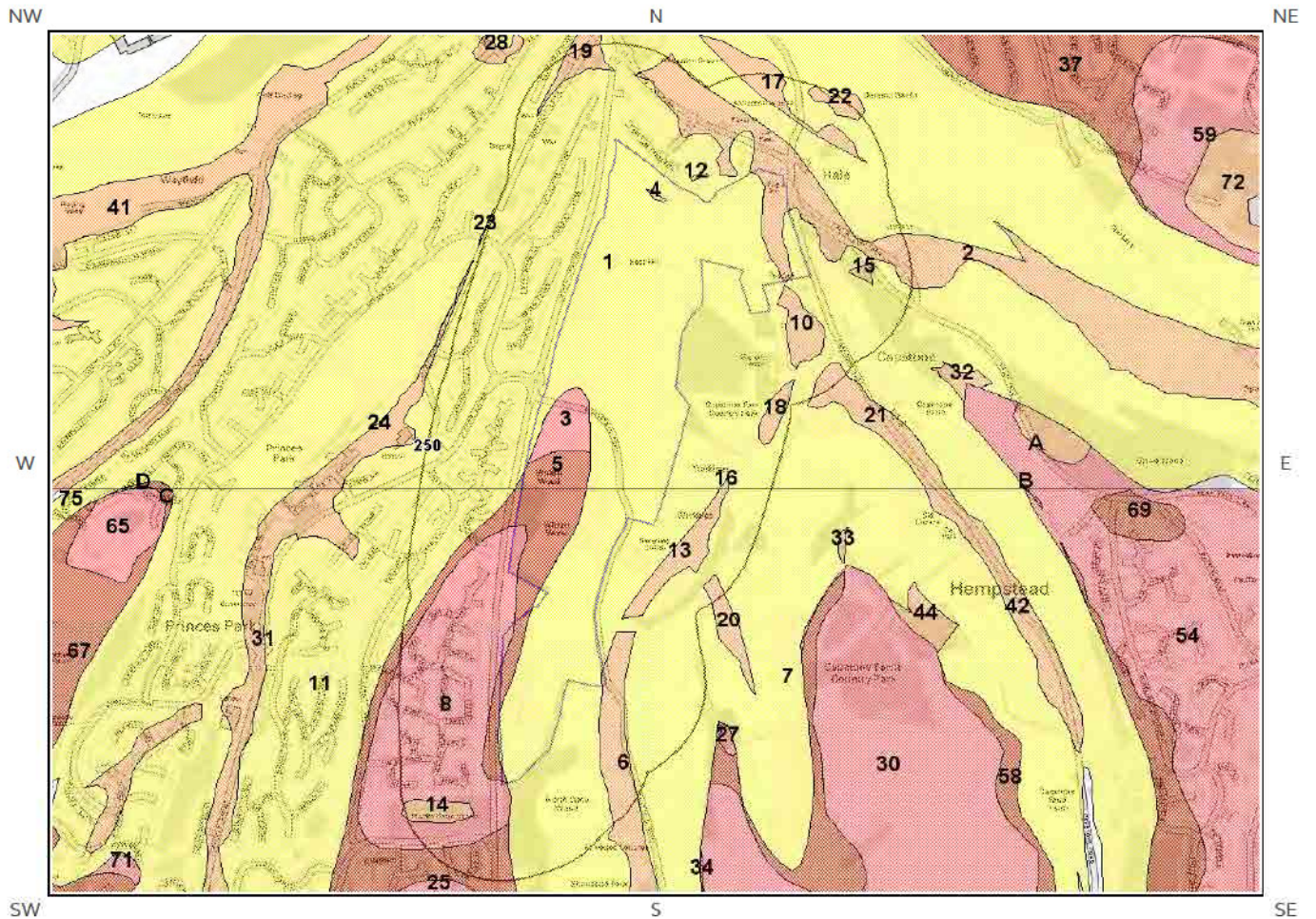


Landslides Legend

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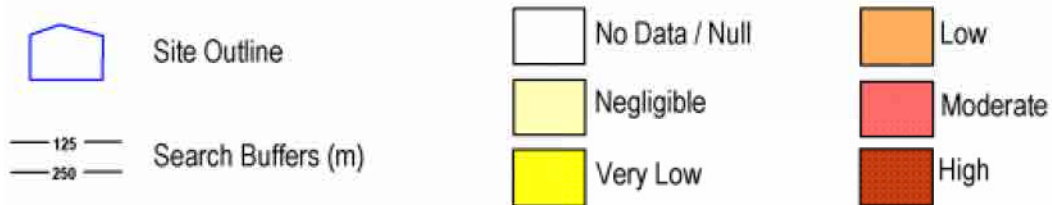


6.3 Ground Dissolution of Soluble Rocks map

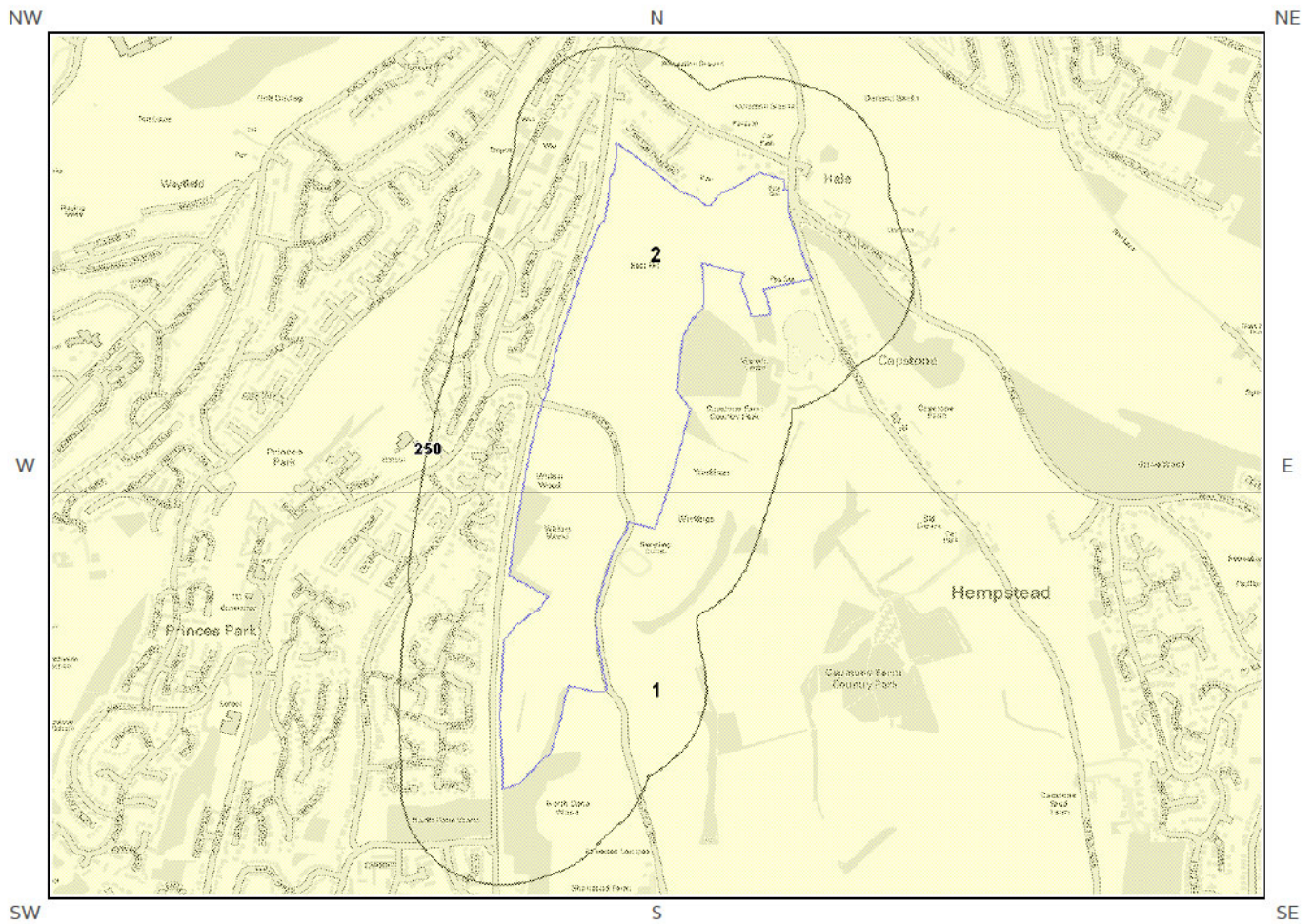


**Ground Dissolution
Soluble Rocks Legend**

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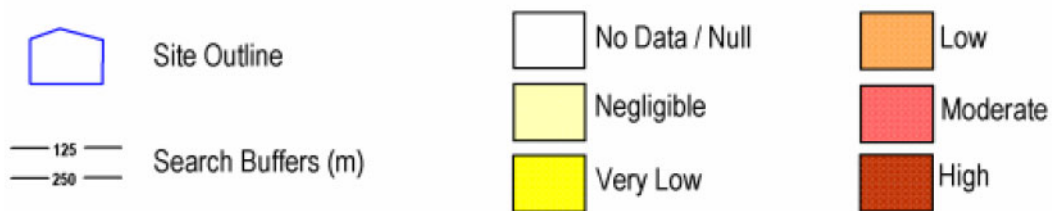


6.4 Compressible Deposits map

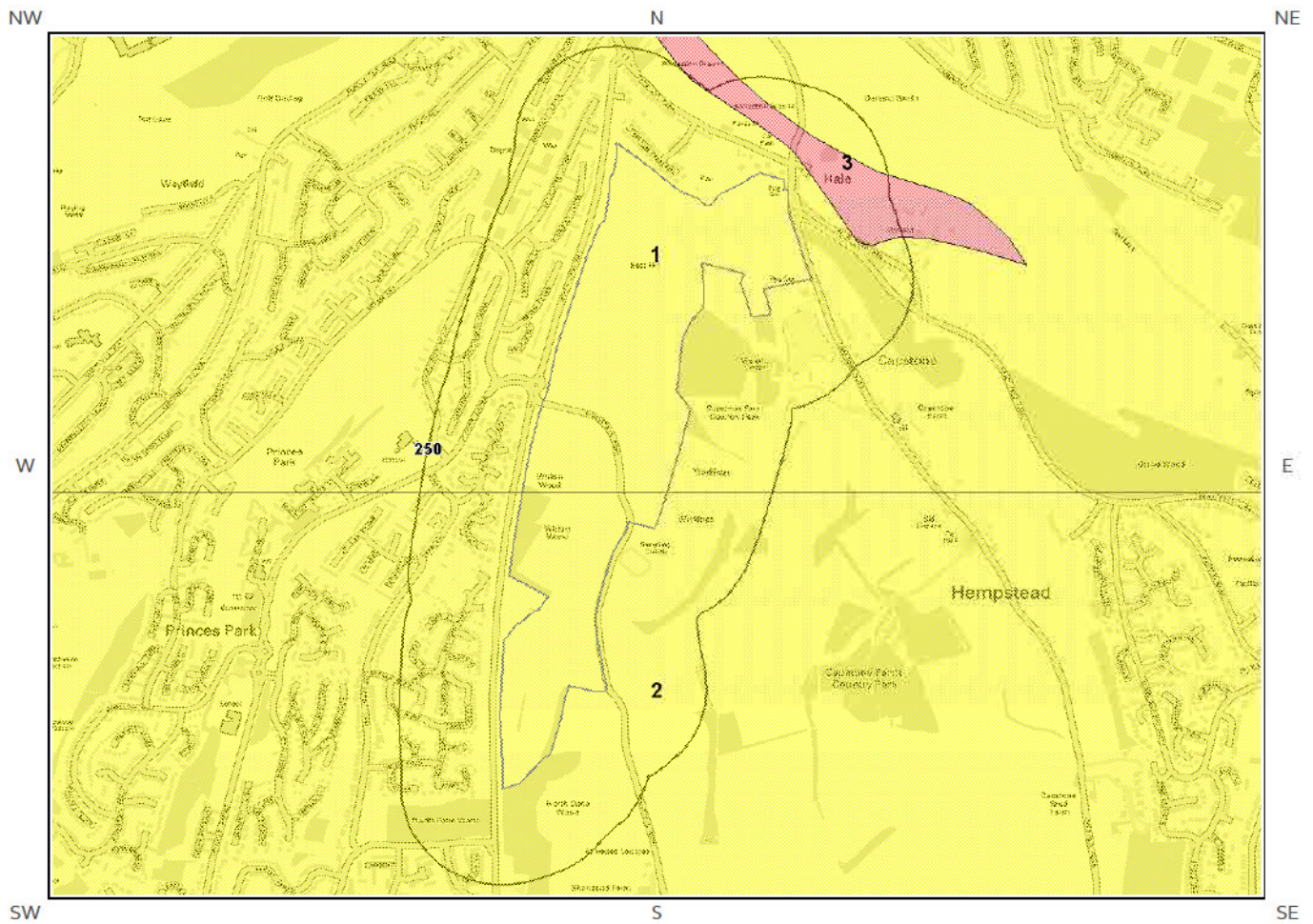


Compressible Deposits Legend

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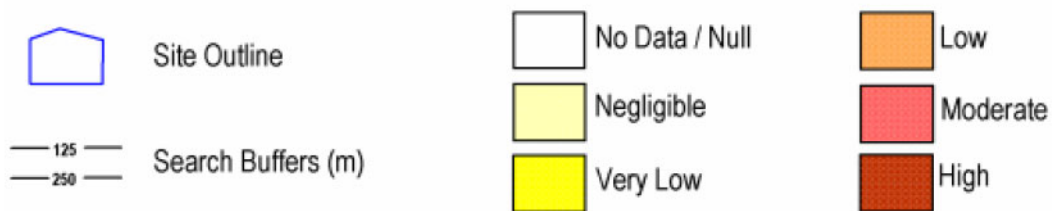


6.5 Collapsible Deposits map

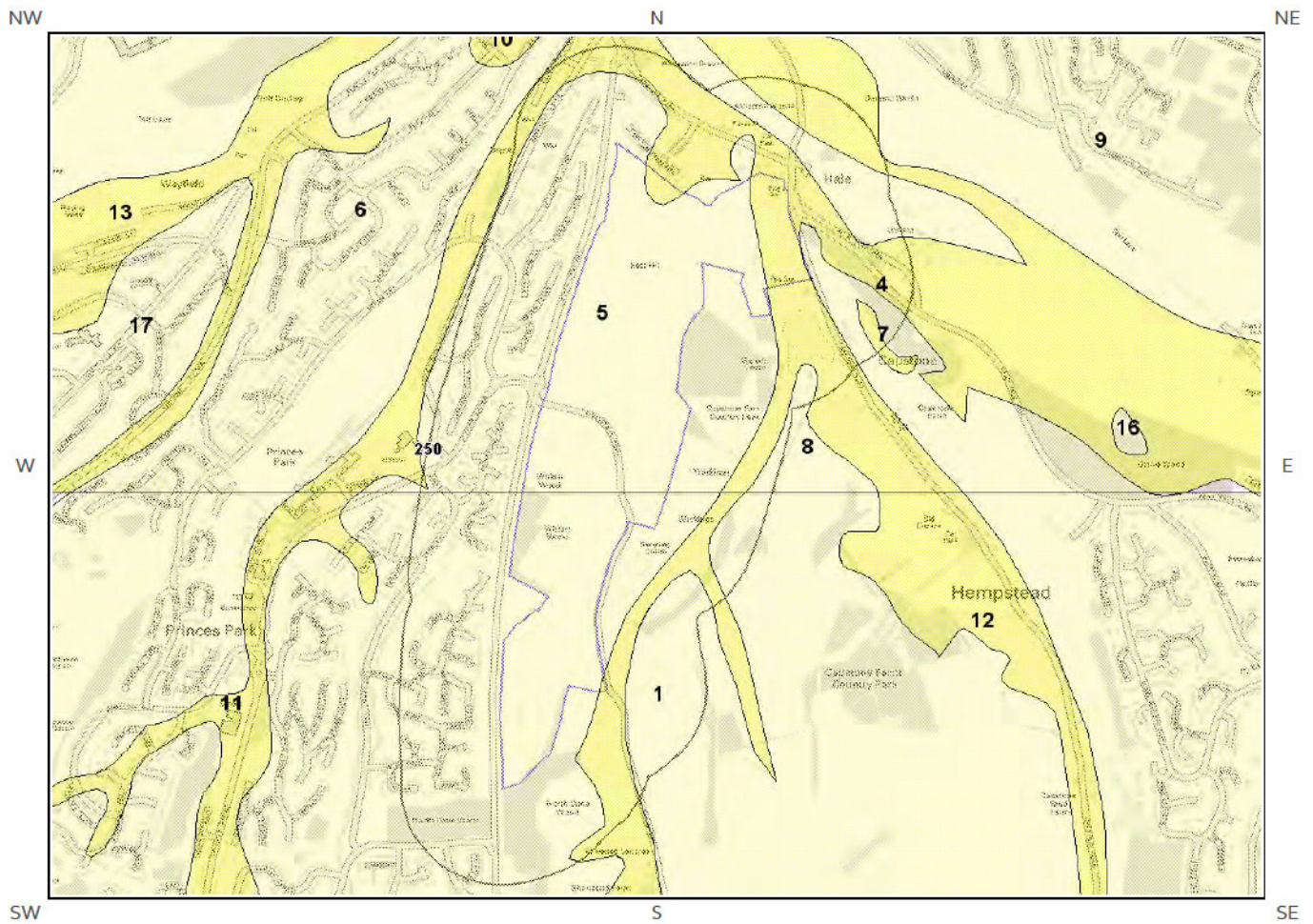


Collapsible Deposits Legend

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6.6 Running Sand map



Running Sand Legend

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