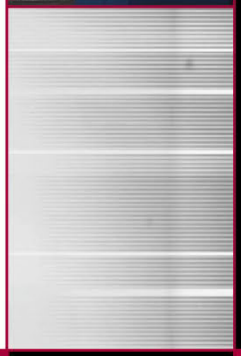
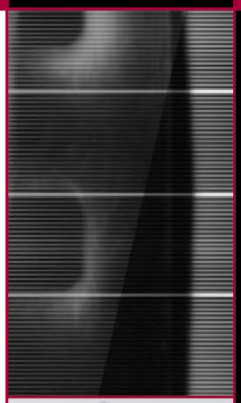
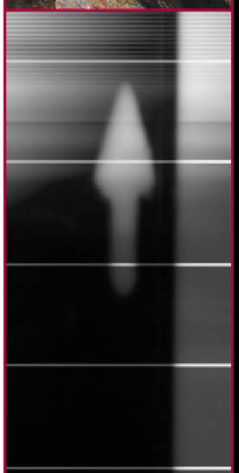
geo risk
MANAGEMENT



Innovative Land Development Solutions

MINERAL ASSESSMENT REPORT

LAND TO THE SOUTH OF ASHBY ROAD
MARKFIELD, LEICESTERSHIRE

Report No: 21166/1
Date: June 2021

Prepared for

GLENALMOND DEVELOPMENTS LIMITED

PROJECT QUALITY ASSURANCE
INFORMATION SHEET

MINERAL ASSESSMENT REPORT

LAND TO THE SOUTH OF ASHBY ROAD
MARKFIELD, LEICESTERSHIRE

Report Status:	**Final**
Report No:	**21166/1**
Issue Date:	**June 2021**
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Title:	**Director**
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TABLE OF CONTENTS

FOREWORD

This report has been prepared for the sole internal use and reliance of the Client(s) named on the Project Quality Assurance Information Sheet. This report shall not be relied upon or transferred to any other parties without the express written authorisation of Georisk Management Ltd (Georisk). If an unauthorised third party comes into possession of this report, they rely on it at their peril and the authors owe them no duty of care and skill.

The report should be read in its entirety, including all associated drawings and appendices. Georisk cannot be held responsible for any misinterpretations arising from the use of extracts that are taken out of context.

The findings and opinions conveyed in this report are based on information obtained from a variety of sources as detailed within this report and which Georisk believes is reliable. All reasonable care and skill has been applied in examining the information obtained, nevertheless, Georisk cannot and does not guarantee the authenticity or reliability of the information it has relied upon.

The report represents the findings and opinions of experienced geoenvironmental consultants. Georisk does not provide legal advice and the advice of lawyers may also be required.

Any recommendations made or opinions expressed in the Report are based on the exploratory hole records, an examination of samples and the results of the site and laboratory tests. No liability can be accepted for conditions not revealed by the exploratory holes particularly between positions. Whilst every effort is made to ensure accuracy of data supplied any opinion expressed as to the possible configuration of strata between or below investigation locations is for guidance only and no responsibility is accepted as to its accuracy.

Unless otherwise specifically stated, this report assumes that ground levels will not change significantly from those existing at present and that the proposed development will be of two to three storey construction. If this is not to be the case, some modifications to this report may be required.

The groundwater conditions entered on the borehole records and from any monitoring programme are those observed at the time of the investigation. Groundwater levels are susceptible to seasonal fluctuations and may be higher during wetter periods than those encountered during this investigation.

Where the report refers to the potential presence of invasive plant species, such as Japanese Knotweed, or the presence of possible asbestos containing materials, it should be noted that the observations are for information purposes only and should be verified by a suitably qualified expert.

Georisk reserves the right to amend the conclusions and recommendations made in this report in the light of any further or more detailed information that may become available.

MINERAL ASSESSMENT REPORT

LAND TO THE SOUTH OF ASHBY ROAD
MARKFIELD, LEICESTERSHIRE

1. INTRODUCTION

1.1 Georisk Management Limited (Georisk) has been instructed by Cerda Planning Limited (CPL), acting on behalf Glenalmond Developments Limited (GDL), to prepare a Mineral Assessment Report for a parcel of land located to the south of Ashby Road in Markfield, Leicestershire. The work was carried out in accordance with Georisk's email dated 25 May 2021, which was accepted by CPL in their email dated 2 June 2021.

1.2 It is understood that the site is being considered for future development; however, it forms part of a wider Mineral Consulting Area (MCA) and as such; a Mineral Safeguarding Assessment is considered necessary.

1.3 In light of the established principle of mineral safeguarding within national planning policy, it is considered necessary to determine the extent and quality of any mineral resource and the likelihood of this being worked in the future.

1.4 The purpose of this report is to assess if the mineral resource is likely to ever achieve planning permission to be worked (both on and adjacent to the site), given the site setting and prevailing circumstances, so as to prevent unnecessary sterilisation of mineral resources.

2. INFORMATION SOURCES

2.1 The information sources used in the production of this report were as follows:

- review of British Geological Survey (BGS) maps and publications;
- review of 1:10,000 geological mapping information provided in an Envirocheck report by Landmark Information Group dated June 2021;
- site location plan as shown on drawing entitled '*Location Plan'* by Ophir Architecture Limited reference GDA05 dated March 2021.

3. REFERENCE SOURCES

3.1 This report has been prepared with regard to the following sources of reference, advice and guidance, supplemented with experience of similar sites:

- *National Planning Policy Framework: Chapters 11, 15 and 17. Ministry of Housing, Communities and Local Government (2019);*
- *Leicestershire Minerals and Waste Local Plan – up to 2031. Leicestershire County Council (2019);*
- *Minerals and Waste Safeguarding – Charnwood Borough. Leicestershire County Council (2015);*
- *Provision of Geological Information and Updating of Mineral Consultation Areas for Leicestershire County Council. British Geological Survey (2005).*

4. THE SITE

4.1 The site is situated to the south of Ashby Road in Markfield, Leicestershire and can be located approximately by National Grid Reference 448700, 310530.

4.2 It is an irregular shaped parcel of undeveloped land covering an area of approximately 3.0 hectares with mature trees and hedgerows along field boundaries.

4.3 Residential properties associated with Ashby Road, The Elms and Upland Drive form the northern, eastern and south-eastern site boundaries respectively. Hill Lane forms the western site boundary with an industrial estate present beyond. Undeveloped land is present to the south.

5. GEOLOGY AND MINERALS

Geology

5.1 The geology of the site has been appraised from information published by the BGS, which is included on 1:10,000 geological mapping information provided in an Envirocheck Report.

5.2 The superficial/drift geology is shown to comprise Head Deposits (clay, silt, sand and gravel) across much of the site with the Oadby Member (clay) beneath the eastern portion of the site.

5.3 The bedrock geology is mapped as the Gunthorpe Member (mudstone) with the Cotgrave Sandstone Member and Edwalton Member (mudstone) encroaching on the south-western boundary. All bedrock is of the Sidmouth Mudstone Formation of the Mercia Mudstone Group of Triassic age.

5.4 South Charnwood Diorites of Precambrian age are mapped in close proximity to the southern site boundary.

5.5 Although not mapped on site, localised areas of Made Ground, Worked Ground and Infilled Ground are mapped in the surrounding area, with the nearest feature mapped approximately 20 m beyond the western site boundary.

Minerals

5.6 Making reference to the BGS publication '*Provision of Geological Information and Updating of Mineral Consultation Areas for Leicestershire County Council',* the site is located within a Mineral Consultation Area (MCA) for igneous rock, which covers an extensive area from Bardon Hill in the west to Anstey in the east, with a narrow area wrapping around the southern edge of Markfield.

5.7 The site is also underlain by a brick clay resource (Mercia Mudstone Group); however, the BGS publication states that *'the resource is nevertheless extensive, and it was felt that there was no justification for safeguarding large areas of the outcrop. In consultation with the brick clay producers; therefore, MCAs were drawn around existing sites taking account of the resource and existing infrastructure and using clear physical boundaries wherever possible*'. As such, the site is not mapped within an MCA for brick clay.

6. CONSTRAINTS ON MINERAL DEVELOPMENT

6.1 Ground Conditions

6.1.1 The geology of the site is mapped as Head Deposits and the Oadby Member overlying various members of the Sidmouth Mudstone Formation of Triassic age. The South Charnwood Diorites are mapped off site to the south.

6.1.2 On this basis, it is considered highly unlikely that the site is underlain by an igneous rock resource. Any possible future quarrying activities would require site investigation works to determine whether or not the South Charnwood Diorites exist beneath the site. In the unlikely event that an igneous rock resource is present beneath the site, any future quarrying would require the removal of the overburden (Head Deposits and Oadby Member) which would result in large excavations and high initial costs to dispose of the unsuitable overburden material off-site to a suitably licensed waste disposal facility. Given the excavation depths required, a significant easement would be required to protect the adjacent road infrastructure (Hill Lane) and residential properties from slope instability.

6.2 Residential Amenities

6.2.1 The site is bound to the north, east and south-east by existing residential properties which front onto Ashby Road, The Elms and Upland Drive respectively. Although there is currently no statutory guidance on minimum working distances of mineral sites from houses, the proximity to housing would present a significant consideration for any future mineral working proposal in terms of resultant impacts arising from noise, dust, air quality, traffic and visual intrusion.

7. CONCLUSIONS

7.1 The application site is within an MCA for igneous rock. Based on geological mapping information and BGS publications, there is no evidence of a commercially viable mineral resource for igneous rock beneath the site.

7.2 Even if extraction were viable, residential properties form the northern, eastern and south-eastern site boundaries and the environmental impacts of opencast extraction in close proximity to residential properties would be unacceptable.

7.3 On this basis, it is considered that any proposed development would not lead to the needless sterilisation of mineral resources.

APPENDIX A
1:10,000 GEOLOGICAL MAPPING EXTRACTS

Geology 1:10,000 Maps Legends

Artificial Ground and Landslip

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	MGR	Made Ground (Undivided)	Artificial Deposit	Holocene - Holocene
	WGR	Worked Ground (Undivided)	Void	Holocene - Holocene
	WMGR	Infilled Ground	Artificial Deposit	Holocene - Holocene

Superficial Geology

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	ALV	Alluvium	Clay, Silt, Sand and Gravel	Flandrian - Pleistocene
	ODT	Oadby Member	Diamicton	Anglian - Flandrian
	GFDMP	GLACIOFLUVIAL DEPOSITS, MID PLEISTOCENE	Sand and Gravel	Ipswichian - Cromerian
	HEAD	Head	Clay, Silt, Sand and Gravel	Quaternary - Ryazanian
	TILL	Till	Diamicton	Quaternary - Ryazanian

Bedrock and Faults

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	EDW	Edwalton Member	Mudstone	Carnian - Carnian
	COT	Cotgrave Sandstone Member	Sandstone	Carnian - Carnian
	GUN	Gunthorpe Member	Mudstone	Ladinian - Anisian
	MMG	Mercia Mudstone Group	Mudstone	Rhaetian - Early Triassic
	SWSL	Swithland Formation	Mudstone	Comley - Comley
	SCHD	South Charnwood Diorites	Diorite	Ediacaran - Ediacaran
	CMBT	Bradgate Formation	Volcaniclastic-siltstone	Ediacaran - Ediacaran
	CMSS	Sliding Stone Slump Breccia Member	Breccia	Ediacaran - Ediacaran
	CMBH	Beacon Hill Formation	Volcaniclastic-siltstone	Ediacaran - Ediacaran
	CMBA	Benscliffe Breccia Member	Volcaniclastic-breccia	Ediacaran - Ediacaran
	CMBT	Bradgate Formation	Metavolcaniclastic-igneous-rock	Ediacaran - Ediacaran
	BLK	Blackbrook Reservoir Formation	Volcaniclastic Rocks (Both Pyroclastic & Reworked Volcanic Rocks)	Ediacaran - Ediacaran
	CBK	Blackbrook Group	Volcaniclastic-siltstone	Ediacaran - Ediacaran
	Fault			

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Geology 1:10,000 Maps

This report contains geological map extracts taken from the BGS Digital Geological map of Great Britain at 1:10,000 scale and is designed for users carrying out preliminary site assessments who require geological maps for the area around a site. This mapping may be more up to date than previously published paper maps.

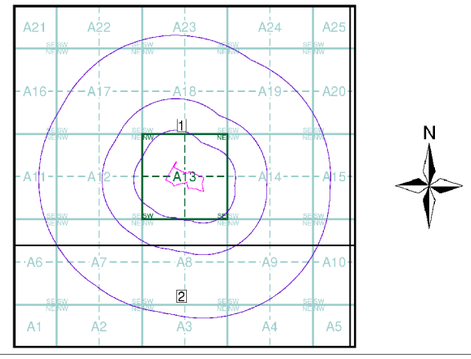
The various geological layers - artificial and landslip deposits, superficial geology and solid (bedrock) geology are displayed in separate maps, but superimposed on the final 'Combined Surface Geology' map. All map legends feature on this page.

Please Note: Not all of the layers have complete nationwide coverage, so availability of data for relevant map sheets is indicated below.

Geology 1:10,000 Maps Coverage

Map ID:		**Map ID:**	
Map Name:	SK51SW	**Map Name:**	SK50NW
Map Date:	2006	**Map Date:**	2006
Bedrock Geology:	Available	**Bedrock Geology:**	Available
Superficial Geology:	Available	**Superficial Geology:**	Available
Artificial Geology:	Available	**Artificial Geology:**	Available
Faults:	Available	**Faults:**	Available
Landslip:	Not Available	**Landslip:**	Not Available
Rock Segments:	Not Available	**Rock Segments:**	Not Available
Map ID:	2	**Map ID:**	1
Map Name:	SK40NE	**Map Name:**	SK41SE
Map Date:	1983	**Map Date:**	2006
Bedrock Geology:	Available	**Bedrock Geology:**	Available
Superficial Geology:	Available	**Superficial Geology:**	Available
Artificial Geology:	Available	**Artificial Geology:**	Available
Faults:	Not Available	**Faults:**	Available
Landslip:	Not Available	**Landslip:**	Not Available
Rock Segments:	Not Available	**Rock Segments:**	Not Available

Geology 1:10,000 Maps - Slice A



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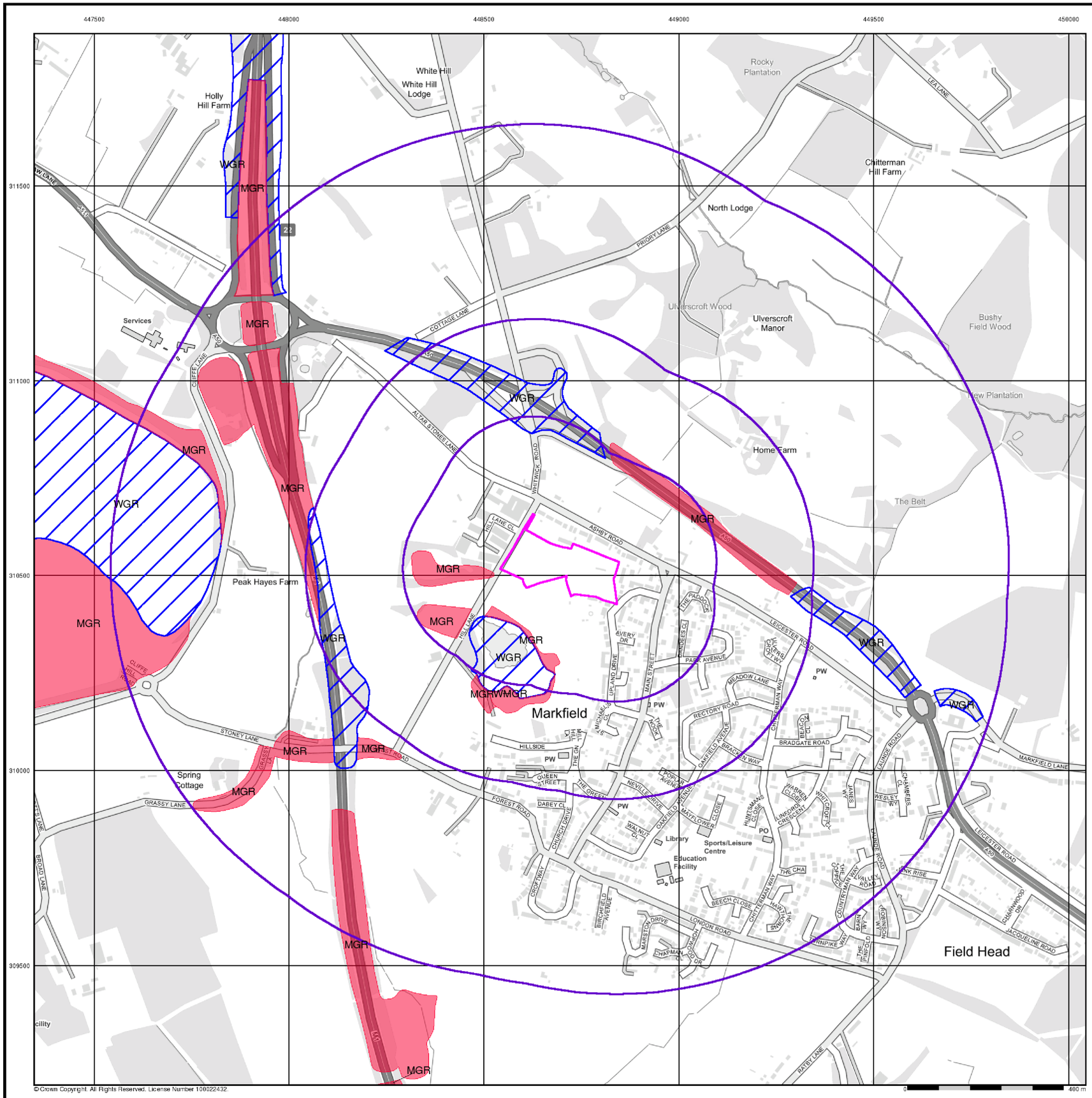
Ashby Road, MARKFIELD, LE67 9UB



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Artificial Ground and Landslip

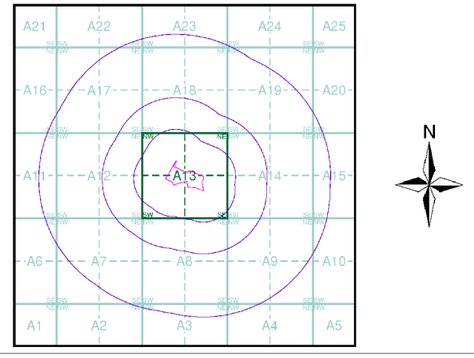
Artificial ground is a term used by BGS for those areas where the ground surface has been significantly modified by human activity. Information about previously developed ground is especially important, as it is often associated with potentially contaminated material, unpredictable engineering conditions and unstable ground.

Artificial ground includes:

- Made ground - man-made deposits such as embankments and spoil heaps on the natural ground surface.
- Worked ground - areas where the ground has been cut away such as quarries and road cuttings.
- Infilled ground - areas where the ground has been cut away then wholly or partially backfilled.
- Landscaped ground - areas where the surface has been reshaped.
- Disturbed ground - areas of ill-defined shallow or near surface mineral workings where it is impracticable to map made and worked ground separately.

Mass movement (landslip) deposits on BGS geological maps are primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground. The dataset also includes foundered strata, where the ground has collapsed due to subsidence.

Artificial Ground and Landslip Map - Slice A



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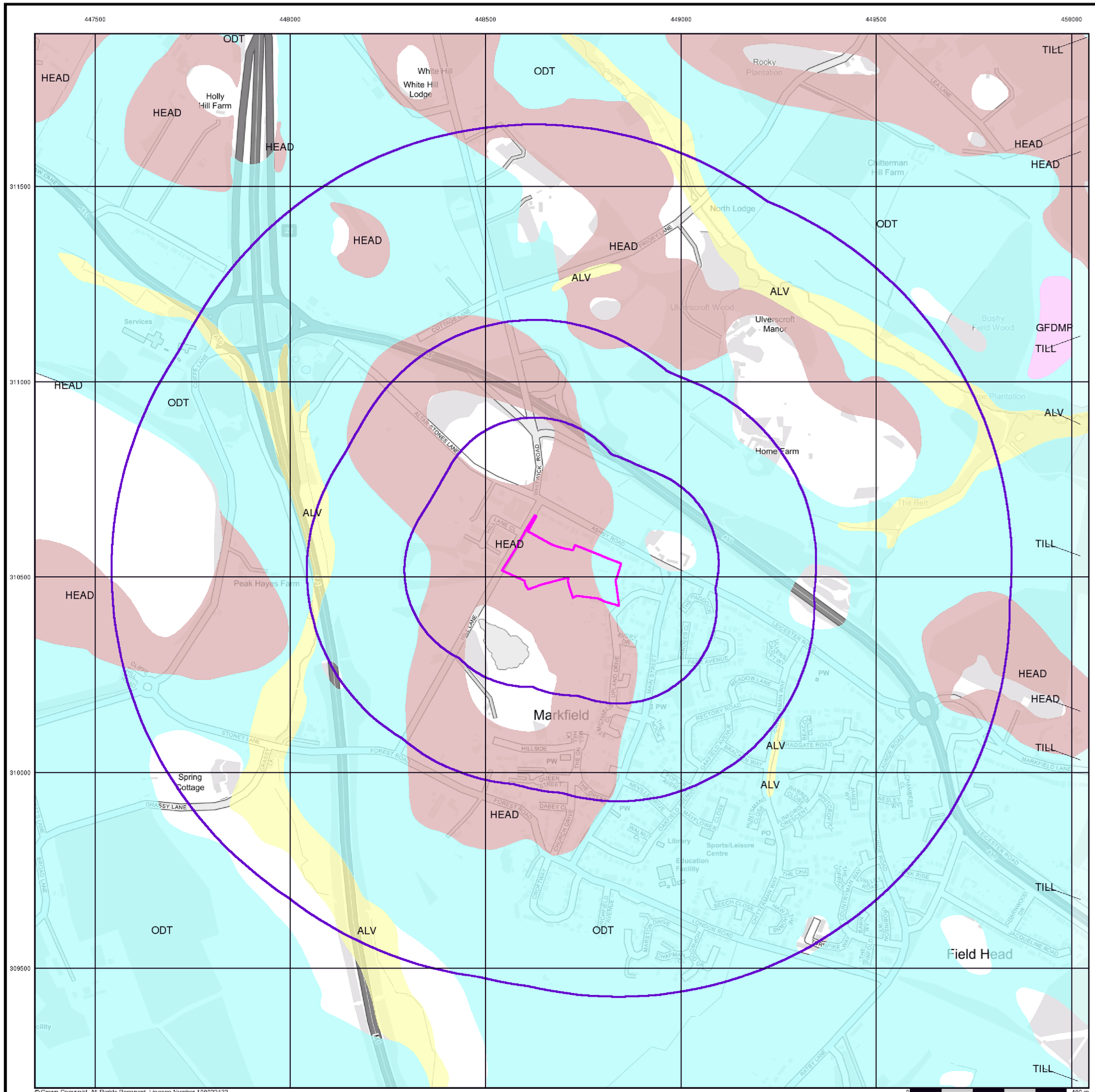

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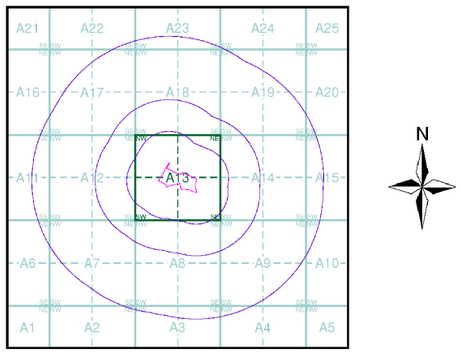
Superficial Geology

BGS 1:10,000 Superficial Deposits are the youngest geological deposits formed during the most recent period of geological time, which extends back about 1.8 million years from the present.

They rest on older deposits or rocks referred to as Bedrock. This dataset contains Superficial deposits that are of natural origin and 'in place'. Other superficial strata may be held in the Mass Movement dataset where they have been moved, or in the Artificial Ground dataset where they are of man-made origin.

Most of these Superficial deposits are unconsolidated sediments such as gravel, sand, silt and clay, and onshore they form relatively thin, often discontinuous patches or larger spreads.

Superficial Geology Map - Slice A



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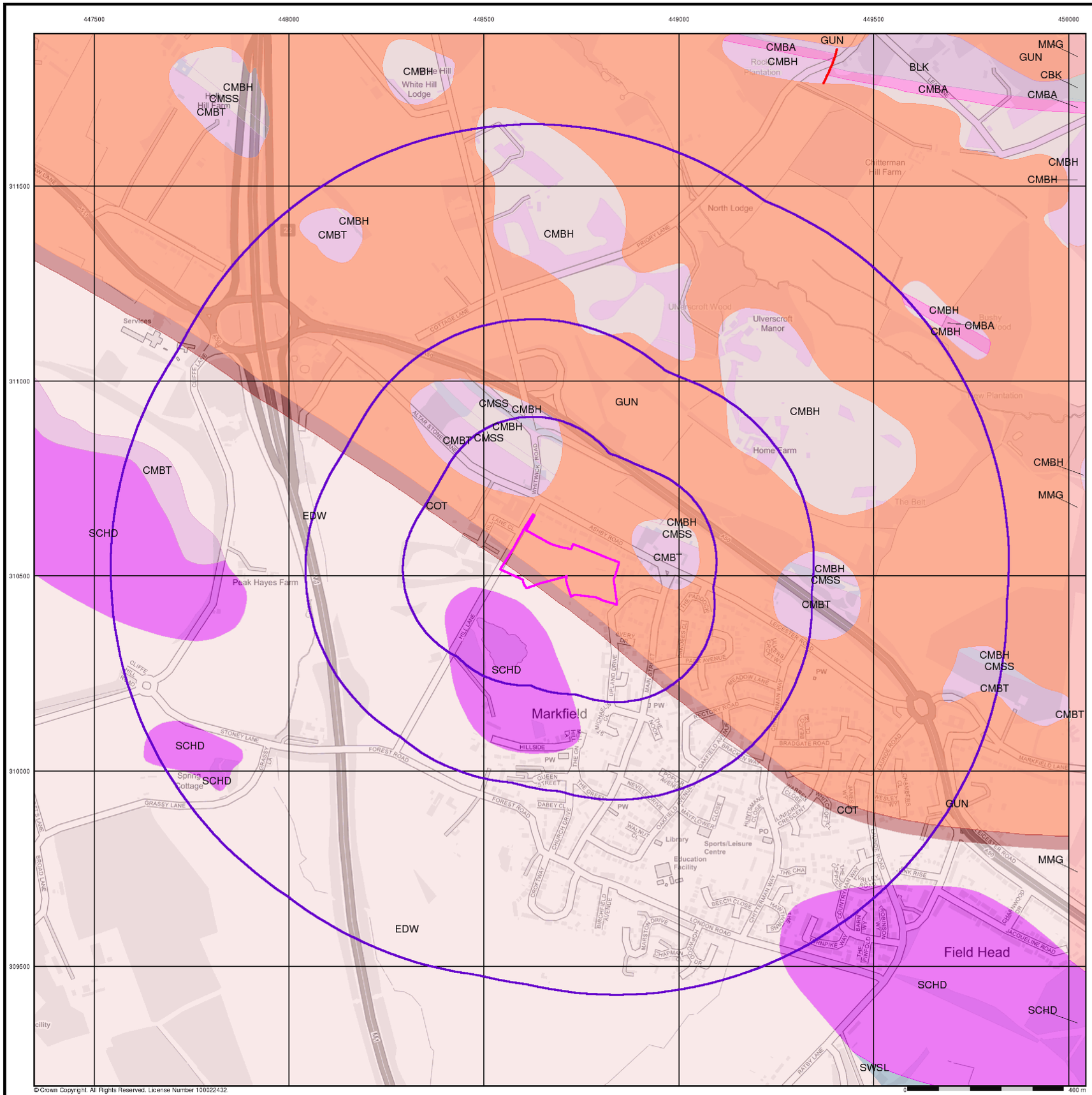

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Bedrock and Faults

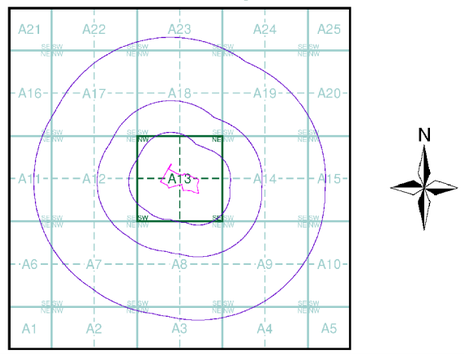
Bedrock geology is a term used for the main mass of rocks forming the Earth and are present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

The bedrock has formed over vast lengths of geological time ranging from ancient and highly altered rocks of the Proterozoic, some 2500 million years ago, or older, up to the relatively young Pliocene, 1.8 million years ago.

The bedrock geology includes many lithologies, often classified into three types based on origin: igneous, metamorphic and sedimentary.

The BGS Faults and Rock Segments dataset includes geological faults and thin beds mapped as lines such as coal seams and mineral veins. These are not restricted by age and could relate to features of any of the 1:10,000 geology datasets.

Bedrock and Faults Map - Slice A



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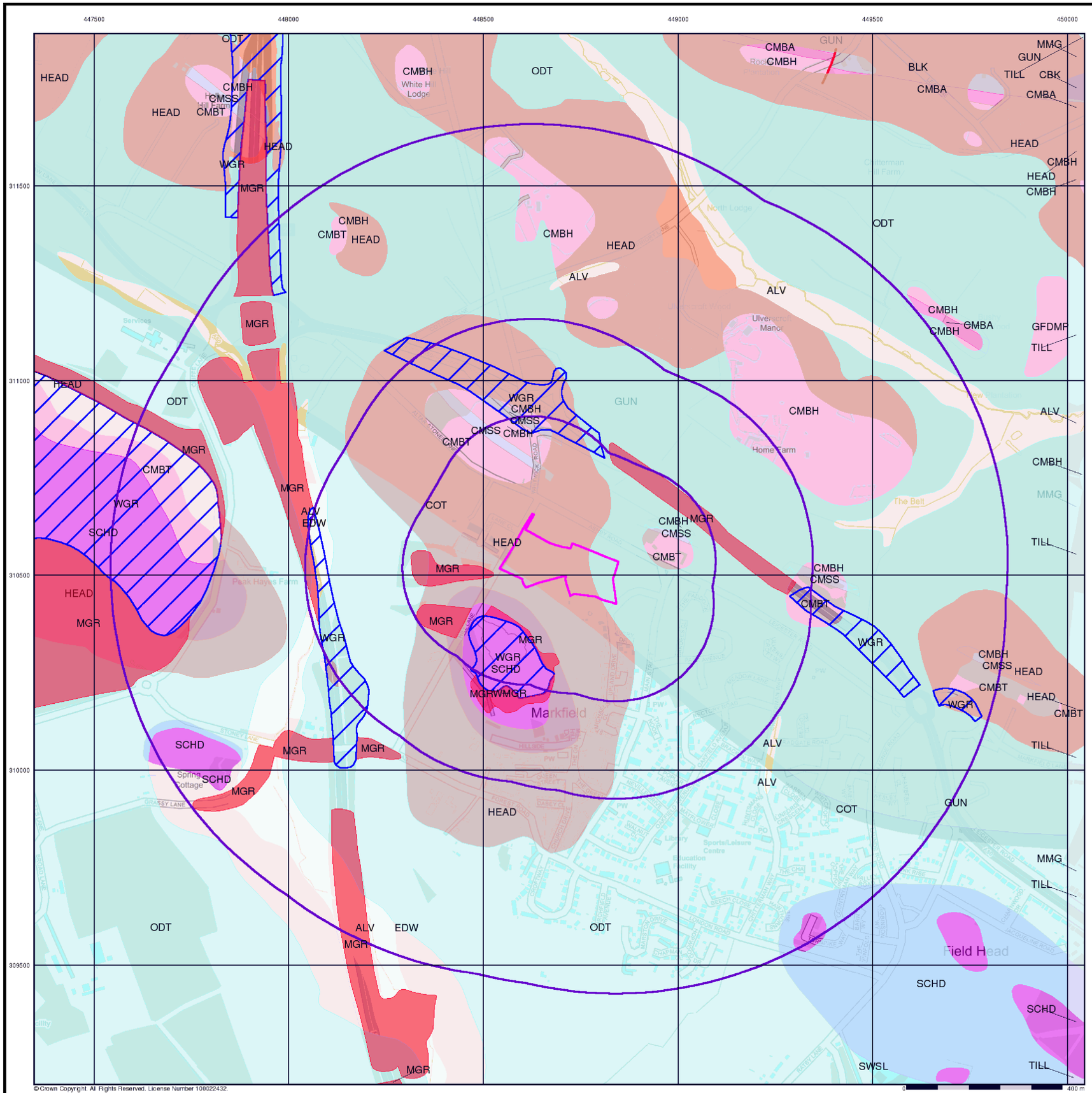

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Combined Surface Geology

The Combined Surface Geology map combines all the previous maps into one combined geological overview of your site.

Please consult the legends to the previous maps to interpret the Combined "Surface Geology" map.

Additional Information

More information on 1:10,000 Geological mapping and explanations of rock classifications can be found on the BGS website. Using the LEX Codes in this report, further descriptions of rock types can be obtained by interrogating the 'BGS Lexicon of Named Rock Units'. This database can be accessed by following the 'Information and Data' link on the BGS website.

Contact

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Fax: 0115 936 3276
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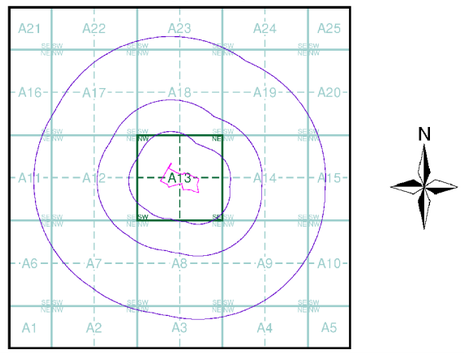
Combined Geology Map - Slice A



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