



Land off Cunnery Close, Barlestone

Mineral Resource Assessment

Gladman Developments Limited

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Basis of Report

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Executive Summary

This Mineral Resource Assessment (MRA) has been prepared by SLR Consulting Ltd on behalf of Gladman Developments Limited for the proposed residential development on land off Cunnery Close, Barlestone, Leicestershire. The assessment has been undertaken to satisfy the requirements of Policy M11 of the Leicestershire Minerals and Waste Local Plan, as the proposed development lies within a Mineral Safeguarding Area (MSA) for sand and gravel.

Review of British Geological Survey (BGS) mapping indicates that the study area is predominantly underlain by Oadby Till, with a small area of glaciofluvial sand and gravel mapped in the north-western corner of the study area and a narrow band of alluvium along the southern boundary. The underlying bedrock comprises the Gunthorpe Member Mudstone. Of these deposits, only the glaciofluvial sand and gravel in the north-west is safeguarded within the adopted MSA.

The safeguarded sand and gravel deposit extends across approximately 0.58ha of the study area. The wider MSA coverage of the study area results largely from the application of a 200m safeguarding buffer around adjacent mineral resources located outside the boundary. Consequently, the majority of the study area lies within the MSA despite the absence of safeguarded mineral resources beneath most of the area.

Assessment of the safeguarded resource indicates that the limited extent of sand and gravel present within the study area is unlikely to constitute a viable mineral resource. Furthermore, existing residential properties adjoining the northern boundary represent environmentally sensitive receptors that would constrain any future mineral extraction. Application of appropriate amenity stand-offs effectively removes the potential for a viable extraction operation within the study area.

The proposed development would not result in the sterilisation of an economically important mineral resource, nor would it prejudice the extraction of safeguarded mineral resources in the surrounding area. The mineral present within the proposed non-mineral development boundary is considered to be of insufficient extent and value to support a viable mineral operation.

Notwithstanding the above, opportunities may exist to utilise limited quantities of excavated material within the development through an appropriate Materials Management Plan, thereby supporting sustainable construction practices and reducing the need for imported fill material.

The assessment concludes that the proposed residential development is compliant with Policy M11 of the Leicestershire Minerals and Waste Local Plan. It has been demonstrated that the safeguarded mineral resource within the study area is no longer of sufficient value or potential value to warrant safeguarding, and that the development would not result in the unnecessary sterilisation of a mineral resource of economic importance.



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1.0 Introduction

- 1.1 This report has been prepared in accordance with instructions from Gladman Developments Limited to prepare a Mineral Resource Assessment (MRA) to support a planning application for residential development on land off Cunnery Close, Barlestone (the study area). The nearest approximate post code is CV13 0HH.
- 1.2 The study area comprises approximately 6.53 hectares (ha) of agricultural (arable) land to the south-west of Barlestone and west of the city of Leicester. The study area is bounded by residential housing on Cunnery Close to the north, Bosworth Road Park to the east. The western and southern boundaries of the study area are defined by a watercourse with agricultural land beyond. The study area boundary is shown edged purple on Figure 1 drawing attached at Appendix A.
- 1.3 The study area is located within the administrative area of Leicestershire County Council (LCC), which is the Mineral Planning Authority (MPA) for the region. The boundaries of the proposed Mineral Safeguarding Areas (MSA) within the County are shown in the Mineral and Waste Safeguarding documents produced for each district/borough, which in this case is Hinckley and Bosworth Borough Council (HBBC).
- 1.4 The study area is located in a Mineral Safeguarding Area (MSA) for sand and gravel. Consequently, Policy M11 of the Leicestershire Minerals and Waste Local Plan (2019 – 2031) applies. This report will assess the site specific geology and the relevant mineral safeguarding policies in the context of the proposed development.



2.0 Site Geology

- 2.1 Geologically, a distinction is made between “Superficial Deposits” and “Bedrock Geology”. Superficial deposits are generally unconsolidated deposits (such as sand and gravel) which are found at, or close to, the surface. The solid bedrock beneath the superficial deposits is referred to as the “Bedrock Geology”. ‘Artificial ground’ refers to any man-made ground, for example worked voids or infilled ground.

Superficial deposits

- 2.2 The British Geological Survey (BGS) 1:50,000 mapping indicates that superficial deposits are largely covered by the Oadby Till Member described as subordinate lenses of sand and gravel, clay and silt, with the exception of a narrow band of glaciofluvial sand and gravel deposit mapped in the north-west of the study area. A thin band of alluvium is mapped along the southern boundary of the study area described as clay, silt, sand and gravel.
- 2.3 The HBBC Minerals Safeguarding document S4/2015, Figure HK1 shows that the glaciofluvial deposits are safeguarded as it has potential as a sand and gravel deposit. The Mineral Safeguarding Area (MSA) includes a 200m buffer from mapped glaciofluvial sand and gravel deposits, and consequently all of the study area is located in this MSA.
- 2.4 Given that the sand and gravel is only mapped in a small corner in the north-west of the study area, it appears that the buffer zone for the safeguarded sand and gravel deposits to the north, south and west, extends on to the study area.
- 2.5 The Superficial Geology is shown on Figure 1 drawing attached at **Appendix A**.

Bedrock geology

- 2.6 The BGS 1:50,000 mapping indicates that the entire study area is underlain by the Gunthorpe Member Mudstone. The general lithological description provided by the BGS is as follows: “Mudstone, red-brown, with subordinate dolomitic siltstone and fine grained sandstone, common gypsum veins and nodules”. The HBBC Mineral and Waste Safeguarding document S4/2015, Figure HK1 does not indicate that the study area is located within a MSA for the bedrock strata.



Borehole records

- 2.7 A search of the online BGS borehole database has shown that there are no publicly available borehole records located within the study area. However, there are two boreholes located in the local vicinity which are relevant to the study area, these are SK40NW18, and SK40NW24.
- 2.8 Borehole SK40NW18 is located approximately 400m north of the study area on farmland and was drilled to a total depth of 110m. Drift deposits described as fine grained sand, gravels with brown marl were encountered for the first 12m followed by red-brown marl mudstone and siltstone (assumed Gunthorpe Member Mudstone) to c.60m below ground level. Below this the New Red sandstone was encountered to c.68m, followed by Lower Coal Measures to the base of the borehole at 110m.
- 2.9 Borehole SK40NW24 is located approximately 190m east of the study area on farmland and was drilled to a total depth of 121m. Drift deposits described as quartz sand was encountered for the first 12m followed by weathered red-brown silty marl to c.60m below ground level. The bedrock Gunthorpe Mudstone Member is recorded at c.53m to 57m below ground level. Below this the New Red sandstone was encountered to c.64m, followed by Lower Coal Measures to the base of the borehole at approximately 121m.
- 2.10 The available borehole logs in the local area generally record the glaciofluvial superficial deposits described as sand and gravels with marls to approximately 12m below ground level, with mudstones and siltstones of the Gunthorpe Member Mudstone below.
- 2.11 The borehole locations are shown on the Figure 1 drawing which is attached at **Appendix A**. A copy of the relevant borehole logs is attached at **Appendix C**.



3.0 Mineral Safeguarding Policy

- 3.1 The National Planning Policy Framework (NPPF) requires Mineral Planning Authorities to safeguard potentially important mineral resources in their area through their Minerals Local Plan (MLP). This ensures there is a sufficient and steady supply of mineral resources to meet future requirements for infrastructure, energy and new construction.
- 3.2 Non-mineral development of a significant nature within MSAs will have to demonstrate that the sterilisation of proven mineral resources of economic importance will not occur as a result of the development, and that the development would not pose a serious hindrance to future extraction in the vicinity. If this cannot be demonstrated, prior extraction will be sought where practicable.
- 3.3 The Leicestershire Minerals and Waste Local Plan (LMWLP) was adopted in 2019 and covers the period to 2031. The LMWLP provides a clear vision of how the county intends to achieve sustainable economic development of minerals in Leicestershire.
- 3.4 The relevant mineral safeguarding policy is “*Policy M11 Safeguarding of Mineral Resources*”, a copy of which is attached at **Appendix B** states:
- “Sand and gravel, limestone, igneous rock, surface coal, fireclay, brickclay and gypsum resources within the Minerals Safeguarding Areas shown on the figures contained within the Mineral and Waste Safeguarding documents, will be protected from permanent sterilisation by other development.*
- Planning permission will be granted for development that is incompatible with safeguarding mineral within a Mineral Safeguarding Area if:*
- (i) The applicant can demonstrate that the mineral concerned is no longer of any value or potential value; or*
 - (ii) The mineral can be extracted satisfactory prior to the incompatible development taking place; or*
 - (iii) The incompatible development is of a temporary nature and can be completed and the site restored to a condition that does not inhibit extraction within the timescale that the mineral is likely to be needed; or*
 - (iv) There is an overriding need for the incompatible development; or*



- (v) *The development comprises one of the types of development listed in Table 4 (which includes applicants for householder development).*

Planning applications for non-mineral development within a Mineral Safeguarding area should be accompanied by a Mineral Assessment of the effect of the proposed development on the mineral resources beneath or adjacent to it.

Planning permission for mineral extraction that is in advance of approved surface development will be granted where the reserves would otherwise be permanently sterilised provided that operations are only for a temporary period. Where planning permission is granted, conditions will be imposed to ensure that the site can be adequately restored to a satisfactory after-use should the main development be delayed or not implemented”.

- 3.5 The LMWLP is accompanied by the Mineral and Waste Safeguarding documents produced for each district/borough which show the boundaries of the proposed MSAs. The relevant document for this study area is Hinckley and Bosworth Borough Council reference S4/2015, Figure HK1 which is attached at **Appendix B**.
- 3.6 The study area is located within a MSA for sand and gravel.



4.0 Compliance with Mineral Planning Policy M11

- 4.1 The assessment of the study area has been undertaken in accordance with Policy M11 (Safeguarding of Mineral Resources) of the adopted LMWLP.

Sand and Gravel

- 4.2 The study area is identified on the Policies Map as falling within a MSA for sand and gravel. The designation reflects the presence of glaciofluvial sand and gravel deposits mapped by the BGS in the north-west of the study area. The total area of these deposits is circa 0.58ha which is too small to be economically viable.
- 4.3 The study area designated in a MSA is also the result of a safeguarding buffer applied to mapped sand and gravel resources that also fall outside of the study area, which due to the 200m safeguarding buffer extend into the south and east boundary, essentially blanketing the whole study area in the MSA. The extent of the superficial deposits is presented on Figure 1, **Appendix A**.
- 4.4 There are no glaciofluvial sand and gravel mapped by the BGS anywhere else within the boundary. The majority of the study area is mapped as Oadby Till and alluvium in the south which are not designated MSAs as they are unlikely to be suitable quality and therefore not considered commercially viable.
- 4.5 It is also noted that pre-existing residential housing adjacent to the northern boundary would introduce an environmentally sensitive receptor (ESR) which would in practice constrain the feasibility of any future mineral extraction activities within the boundary of the study area. The residential properties border the northern boundary and a stand-off of 100m from the facade of a property was used as a starting point when assessing impacts on possible sand and gravel allocations. This amenity standoff from residential properties completely covers the mapped glaciofluvial sand and gravel mineral inside the study area sterilising the mineral and removing any viable potential for removal. This is reflected on Figure 1, **Appendix A**.
- 4.6 There is no potential for indirect sterilisation of adjacent safeguarded resources by the proposed non-mineral development. Even when applying an amenity buffer of 100m from the proposed residential development in the study area, this does not



- sterilise any potentially other important sand and gravel mineral reserves that are mapped off-site in the local area.
- 4.7 On this basis, it is considered unlikely that sand and gravel resources are present beneath the study area in sufficient quantity or quality to represent a viable mineral resource. Accordingly, the proposed development would not result in the sterilisation of economically important sand and gravel reserves.
- 4.8 However, there is the potential for opportunities to arise for incidental extraction, to use limited quantities as an as-dug fill material for use in site grading or landscaping works to reduce inbound material costs. The incorporation of incidental extraction into the design of the proposed development would make sense with regard to sustainable development where possible. This could be addressed through a Materials Management Plan for the development.
- 4.9 In view of the above, the proposed development is therefore compliant with Policy M11 specifically criteria (i) – *the applicant can demonstrate that the mineral concerned is no longer of any value or potential value.*



5.0 Conclusion and Recommendations

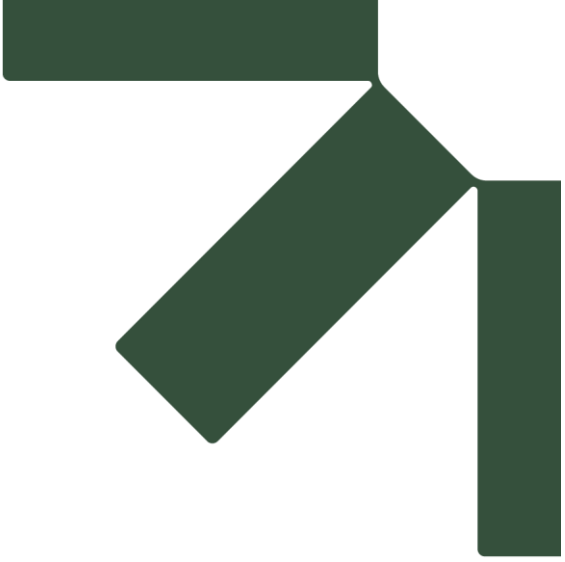
- 5.1 This MRA has been prepared in support of a planning application for residential development on land off Cunners Close, Barlestone. The study area lies within a MSA for sand and gravel under Policy 11 of the Leicestershire Minerals and Waste Local Plan (2019 – 2031). This assessment has considered whether the proposed development would sterilise mineral resources.
- 5.2 The BGS mapping indicates there are superficial deposits recorded in the study area. There are glaciofluvial deposits mapped in the north-west. The majority of the study area is mapped for Oadby Till with a small band of alluvium mapped in the south. The bedrock beneath is entirely underlain by the Gunthorpe Member Mudstone which comprises mudstone with interbedded siltstone and sandstone. The Oadby Till, alluvium and bedrock strata is not recorded as an MSA.
- 5.3 The north-west of the study area is mapped by a small area (c.0.58ha) of glaciofluvial sand and gravel recorded as a MSA. Given that the glaciofluvial sand and gravel is not mapped as present anywhere else in the study area, it appears that the buffer zone for the safeguarded sand and gravel deposit to the west and south of the study area, extends onto the proposed development area and that there is no safeguarded sand and gravel present anywhere but the north-west corner of the study area.
- 5.4 Overall, it is considered that there would be no significant sterilisation of sand and gravel resources as a result of the proposed non-minerals development, due to the small volume of glaciofluvial sand and gravel material inside the boundary of the proposed development area itself.
- 5.5 Once appropriate buffers to environmentally sensitive receptors (i.e. residential housing to the north) have been applied, the area available for mineral extraction is eliminated with no viable operation.
- 5.6 On this basis, it is considered unlikely that the safeguarded sand and gravel resources potentially present beneath the study area are of sufficient quantity or quality to represent a viable mineral resource. Accordingly, the proposed



development would not result in the sterilisation of economically important sand and gravel reserves in the local area.

- 5.7 On the basis of the available evidence, the requirements to demonstrate the presence, extent and value of mineral resources have been satisfied, and it has been demonstrated that the proposed residential development would not result in sterilisation of a proven mineral resource of economic importance. It is therefore considered to be compliant with Policy M11 of the Leicestershire Minerals and Waste Local Plan.





Appendix A Figure 1 – Superficial Geology

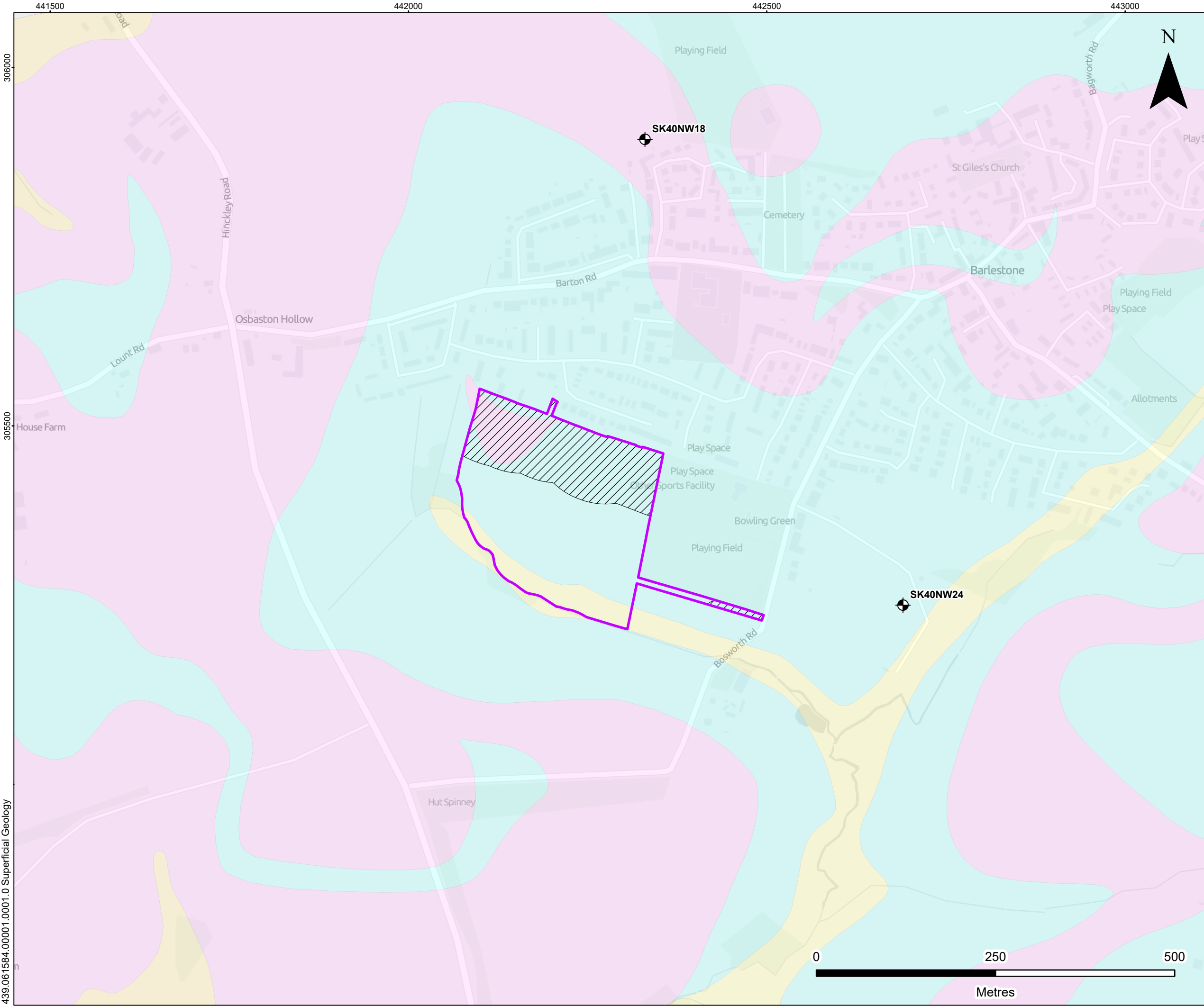
Land off Cunnery Close, Barlestone

Mineral Resource Assessment

Gladman Developments Limited

SLR Project No.: 439.061584.00001

2 July 2026



LEGEND

Site Boundary

BGS Historic Boreholes

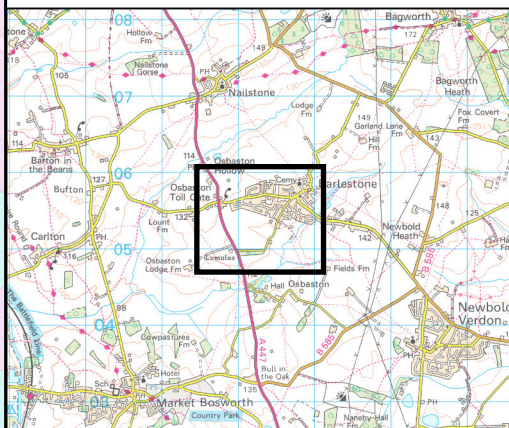
100 m Residential Standoff

Superficial Geology

Alluvium-Clay, silt, sand and gravel

Glaciofluvial deposits, Mid Pleistocene-Sand and gravel

Oadby Till Member-Diamicton



LAND OFF CUNNERY CLOSE,
BARLESTONE

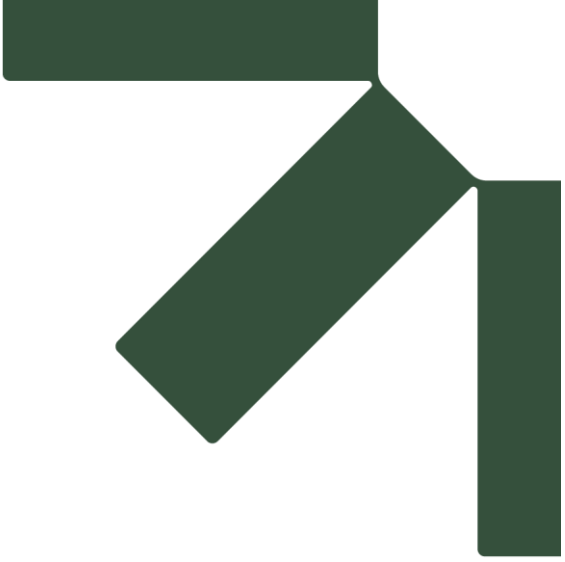
MINERAL RESOURCE ASSESSMENT

SUPERFICIAL GEOLOGY

FIGURE 1

Scale 1:5,000 @ A3

Date JUNE 2026



Appendix B Leicestershire Minerals & Waste Local Plan Policy M11 & HBBC Mineral Safeguarding Document S4.2015, Figure HK1

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Minerals Safeguarding

Safeguarding Mineral Resources

- 3.87 Mineral resources of local and national importance should not be needlessly sterilised by non-mineral development. The main purpose of Mineral Safeguarding Areas (MSA) is to protect a mineral resource for the long term for future generations. An MSA is not a proposed area of extraction and does not mean that mineral extraction proposals will be permitted within the area. It should also be borne in mind that just because there may be no economic need for the minerals now that may not be the case in the future.
- 3.88 The County Council has used work carried out by the British Geological Survey (BGS) for the County Council in 2004 to assess which mineral deposits are of economic importance and where they are located. This work provided broad geological resource information for mineral resources within Leicestershire based on a combination of expert geological opinion and knowledge on the extent of mineral resources, and consultation with the minerals industry.
- 3.89 The County Council has concluded that deposits of sand and gravel, limestone, igneous rock, shallow coal, fireclay, brickclay and gypsum in Leicestershire are of current or future economic importance. The boundaries of the proposed Mineral Safeguarding Areas within the County are shown on figures B1, C1, H1, HK1, M1, M2, N1 and O1 contained within the Mineral and Waste Safeguarding documents produced for each district/borough (references S1/2015 to S7/2015).
- 3.90 Brickclay resources in Leicestershire are extensive and it is not considered that it is justified to safeguard large areas of the outcrop. MSAs have therefore been drawn around existing sites taking account of the resource and existing infrastructure and using clear physical boundaries wherever possible.
- 3.91 The County Council does not have sufficient detailed knowledge of the nature and extent of suitable building stone resources to identify potentially workable materials. The quality of stone and suitability for working as building stone is very variable. The Strategic Stone Study mentioned in paragraph 3.65 above did not assess the extent of potential future building resources within the County. It would therefore be difficult to identify potentially workable building stone resources for safeguarding. In any event, building stone resources mainly occur in countryside locations where the risk of sterilisation by other development is low.
- 3.92 Ironstone deposits in the county are not considered to have any future economic significance as a source of iron, given the decline of the steel industry in the UK and their low grade quality. Whilst they could be

worked as a source of building stone or low quality aggregate, they are not considered to be of current or future economic importance.

- 3.93 It is not proposed to define MSAs for hydrocarbons as prospects can only be identified after extensive exploration activity. In any event, oil and gas deposits are found at much greater depths than other minerals exploited within the County and are therefore less threatened by surface development.
- 3.94 Incompatible development close to a MSA may lead to sterilisation of part of the resource. The County Council proposes to extend the boundary of MSAs beyond the area of the resource to prevent residential development encroaching on a mineral extraction site or future extraction area to the extent that the amenity of residents could be affected by noise, visual intrusion or blast vibration. The proposed MSAs include a buffer zone of 200 metres around sand and gravel resources and 500 metres around limestone resources to ensure an adequate safeguarding margin. Site specific margins are provided for brickclay and igneous rock based on consultation with the minerals industry. The MSA for coal is based on plans produced by the Coal Authority in 2008 showing surface mining potential areas. The MSAs for gypsum cover the existing underground mining permission at the Barrow Mine together with the potential area for an extension to the Nottinghamshire Marblaegis Mine.
- 3.95 The prior extraction of minerals will be supported where it is necessary for non-mineral development to take place and where it can be done in an environmentally acceptable manner. In Leicestershire, such opportunities are probably limited to surface mined coal provided that operations can be completed relatively quickly and extraction and restoration are completed within a reasonable timescale, although the amount of coal that is ever likely to be won under these circumstances will probably be small scale. Other mineral resources that are present do not generally lend themselves to prior extraction in built-up areas because of the nature of their extraction methods, and the possibility of such circumstances arising seems too slim to warrant safeguarding. The proposed MSAs consequently exclude mineral deposits other than surface coal within settlements with a population in excess of 1000 and a minimum area of 20 hectares.
- 3.96 In two-tier planning areas such as Leicestershire, safeguarding of mineral resources can be achieved only through county and district planning authorities co-operating in the exercise of their respective planning functions over land with potential for mineral extraction. This can be facilitated by defining Minerals Consultation Areas (MCA). This will provide the mechanism for district planning authorities to consult the County Council before granting planning permission, on any planning applications they receive for non-mineral developments which fall within the boundary of an MCA, and which would be likely to affect the winning and working of minerals.

- 3.97 The County will therefore define Minerals Consultation Areas (MCA) covering the resources within the Mineral Safeguarding Areas. The MCA will also cover the safeguarding of mineral sites and associated infrastructure (Policy M11). District Planning Authorities within the County will be supplied with a copy of the MCA along with the development criteria that the County Council wish to be consulted on. It will be the responsibility of the District Planning Authorities to ensure that the MCA is used when considering planning applications or proposed developments in a development plan and that the County Council is consulted on developments located within the MCA.
- 3.98 The County Council may advise the District Planning Authority that any development on or near mineral reserves should not proceed before the mineral is extracted, or that steps are taken to avoid sterilisation of the deposit. A realistic judgment about the likelihood of the mineral being worked in an environmentally acceptable manner will be made, and the County Council will not seek to prevent development where it is unlikely that extraction of the mineral would occur in the future. Where mineral deposits are believed to exist but detailed geological information is not available, the existence or otherwise of potentially workable reserves may need to be established by the developer before any application for development that might sterilise the potential deposit is determined.

Table 4: Types of development exempt from safeguarding

Types of development exempt from safeguarding	
(a)	applications for householder development;
(b)	applications for alterations and extensions to existing buildings and for change of use of existing development, unless intensifying activity on site;
(c)	applications that are in accordance with the development plan where the plan took account of the prevention of unnecessary mineral sterilisation and determined that prior extraction should not be considered when development applications came forward;
(d)	applications for advertisement or listed building consent;
(e)	applications for reserved matters including subsequent applications after outline consent has been granted;
(f)	prior notifications (telecoms, forestry, agriculture, demolition);
(g)	Certificates of Lawfulness of Existing Use or Development (CLEUD) and Certificates of Lawfulness of Proposed Use or Development (CLOPUD);
(h)	applications for works to trees; or

- (i) development types already specified in a DPD (Development Plan Document) as exempt from the need for consideration on safeguarding grounds.

Policy M11: Safeguarding of Mineral Resources

Sand and gravel, limestone, igneous rock, surface coal, fireclay, brickclay and gypsum resources within the Minerals Safeguarding Areas shown on the figures contained within the Mineral and Waste Safeguarding documents, will be protected from permanent sterilisation by other development.

Planning permission will be granted for development that is incompatible with safeguarding mineral within a Mineral Safeguarding Area if:

- (i) the applicant can demonstrate that the mineral concerned is no longer of any value or potential value; or
- (ii) the mineral can be extracted satisfactorily prior to the incompatible development taking place; or
- (iii) the incompatible development is of a temporary nature and can be completed and the site restored to a condition that does not inhibit extraction within the timescale that the mineral is likely to be needed; or
- (iv) there is an overriding need for the incompatible development; or
- (v) the development comprises one of the types of development listed in Table 4.

Planning applications for non-mineral development within a Mineral Safeguarding Area should be accompanied by a Mineral Assessment of the effect of the proposed development on the mineral resource beneath or adjacent to it.

Planning permission for mineral extraction that is in advance of approved surface development will be granted where the reserves would otherwise be permanently sterilised provided that operations are only for a temporary period. Where planning permission is granted, conditions will be imposed to ensure that the site can be adequately restored to a satisfactory after-use should the main development be delayed or not implemented.

Safeguarding of Existing Mineral Sites and Associated Minerals Infrastructure

- 3.99 The future use of mineral sites and associated infrastructure could be constrained if sensitive developments such as housing are permitted nearby. In order to ensure that the supply of minerals is not interrupted,

the County Council therefore considers that mineral sites and their associated infrastructure should be safeguarded.

- 3.100 The work carried out for the County Council by the BGS adopted a different approach to the identification of safeguarding areas for each mineral, reflecting not only their different geology but also associated infrastructure. In particular, account has been taken of the extensive infrastructure, including rail links, associated with the County's igneous rock quarries and the existing infrastructure associated with the County's brickclay operations. However, hydrocarbon developments and freestanding concrete batching plants were not included.
- 3.101 The sites and facilities to be safeguarded are identified in the Mineral and Waste Safeguarding documents produced for each district/borough (references S1/2015 to S7/2015). This includes hydrocarbon developments. Most of the concrete batching plants and other associated minerals infrastructure are co-located at quarries or producers of recycled aggregates. The safeguarded list includes those sites which carry out these activities.
- 3.102 The MCA to be issued by the County Council (see paragraph 3.97 above) will include the mineral sites and associated infrastructure safeguarded by Policy M12. Local planning authorities will be expected to consult the County Council on proposals for non-minerals development which could affect the use of such sites and facilities. The County Council may advise that development should not be permitted if it would constrain the effective operation of existing sites, or future use of land or associated infrastructure identified for mineral use.

Policy M12: Safeguarding of Existing Mineral Sites and Associated Minerals Infrastructure

Significant infrastructure that supports the supply of minerals in the County will be safeguarded against development that would adversely affect operations at an existing mineral site and the use of associated mineral infrastructure by creating incompatible land uses nearby.

Mineral and Waste Safeguarding

[Hinckley & Bosworth Borough]
Document S4/2015

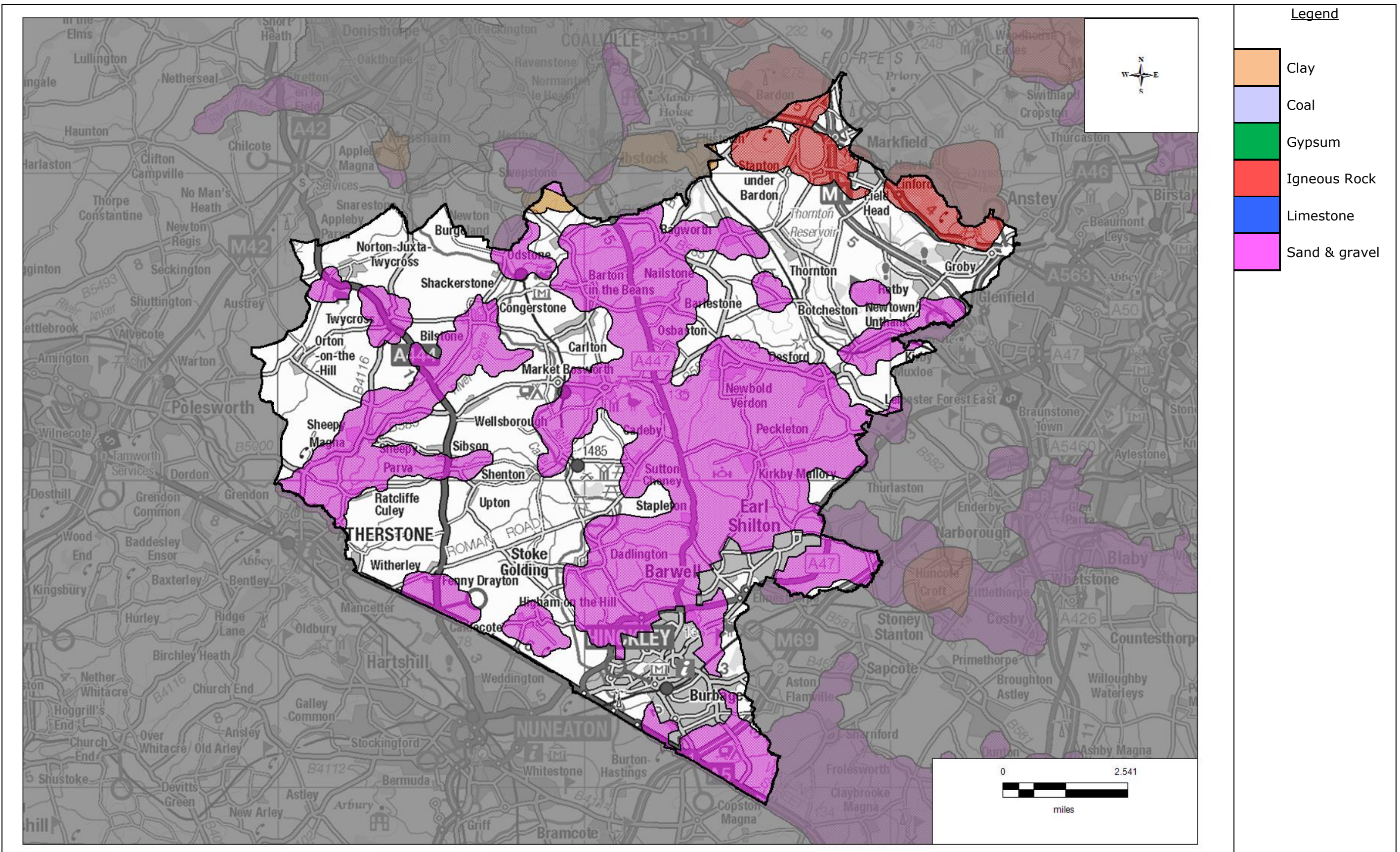
SUB5 Hinckley Safeguarding 2015

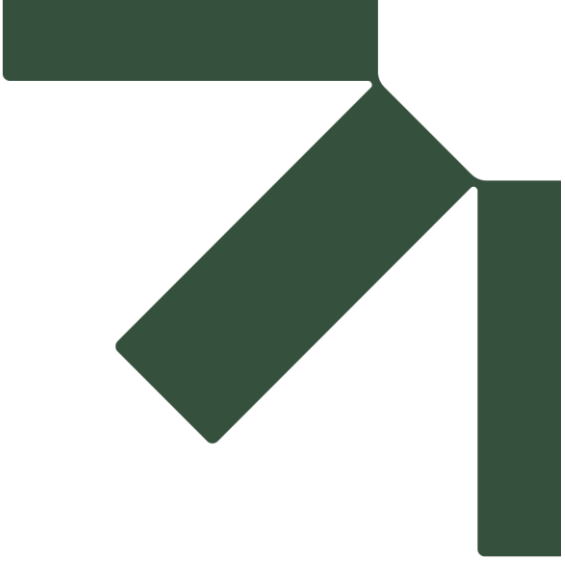
December 2015

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<i>Breach Lane SPS, Earl Shilton</i>	6
<i>Brindley Road Hinckley & Jacknell Road Hinckley</i>	7
<i>Cliffe Hill Quarry</i>	8
<i>Earl Shilton STW</i>	9
<i>Glebe Farm Sibson, Sibson & Shenton STW, & Stubble Hill Farm, Shenton</i>	10
<i>Hinckley STW, Logix Park Hinckley, Sketchley Meadows Hinckley, Watling Street – Augean & Watling Street - Veolia</i>	11
<i>Kirkby Mallory STW</i>	12
<i>Lynden Lea, Hinckley</i>	13
<i>Market Bosworth STW</i>	14
<i>Newbold Verdon STW</i>	15
<i>Norton Juxta Twycross STW</i>	16
<i>Orton on the Hill STW</i>	17
<i>Sapcote Road SPS, Aston Firs</i>	18
<i>Station Road, Market Bosworth</i>	19
<i>Watling Street, Red Lion Farm</i>	20
<i>Neville Arms STW & Wiggs Farm, Ellistown</i>	21

Figure HK1: Areas of borough/district for mineral safeguarding, categorised by mineral type





Appendix C BGS Borehole Records

Land off Cunnery Close, Barlestone

Mineral Resource Assessment

Gladman Developments Limited

SLR Project No.: 439.061584.00001

2 July 2026



1063 Wt. 22438/0384 10m 7/45 (51) F.&S.

RECORD OF SHAFT OR BORE FOR MINERALS

by B.A. Hains, H.M. Geological Survey.

Name and Number of Shaft or Bore. Osbaston Gate (1960) B.H.
S.M. 6068.

For Messrs. National Coal Board.

Town or Village Barlstone

County Leicestershire

Six-inch quarter sheet 29 NE/E

Exact site 540 yd at 274° from the west end of Barlstone Church.

N.Grd. Reference: 4233.0590.

Purpose for which made To prove the base of the New Red Sandstone and the sequence of the underlying Coal Measures.

Level at which ~~shaft~~ ^{bore} commenced relative to O.D. +429.46 ft

State if ~~shaft~~ ^{bore} is up, down, horizontal or

inclined; in latter cases give angle of inclination and direction Down

Made by Boyles Bros.

Information from Examination of samples and cores

Date of Sinking April 1960 - May 1960

Specimens

Additional Notes in Space Overleaf

(For Survey use only) GEOLOGICAL CLASSIFICATION	NATURE OF STRATA	THICKNESS		DEPTH	
		ft	in	ft	in
DRIFT	<u>Rock-bit samples (taken at varying intervals)</u> <u>Sand, fine-grained, yellow-brown; angular</u> <u>grains; less well sorted and with some</u> <u>brown mud from 30 ft</u> <u>Mud, red-brown, mixed with a considerable</u> <u>proportion of fine sand; little sand from</u> <u>50 to 74 ft and from 105 ft 7 in to 115 ft</u> <u>7 in; sand absent below 115 ft 7 in; (no</u> <u>samples below 175 ft)</u>	20	0	40	0
Keeper Mud	<u>Cores start (continuous from this depth)</u> <u>Mud, red-brown, very sandy; fragment rounded</u> <u>quartz grains; locally marly sandstone;</u> <u>occasional small green spots;</u>	160	0	200	0
Keeper Sandstone	<u>Sandstone, red-brown, fine, very micaceous; very</u> <u>irregular bedding for 1 ft 2 in at 208 ft; occasional</u> <u>small quartz pebbles for 1 in at 209 ft 10 in;</u> <u>coarse-grained sandstone below; locally</u> <u>gray; coarse from 211 ft; fine and gray</u> <u>for 1 in at 211 ft 8 in; coarse sandstone with</u> <u>occasional mud flakes below; becoming</u> <u>marly from 212 ft 10 in, locally with small</u> <u>pebbles; gray and very pebbly below fine mud</u> <u>for 1 in at 214 ft 7 in, with coarse-grained</u> <u>gray medium sandstone below; gray-green</u> <u>fine mud for 2 in at 215 ft 7 in; very coarse</u> <u>sandstone from 216 ft 2 in, with pebbles of</u> <u>green mud; medium-grained for 1 ft at</u> <u>218 ft 3 in; coarse below to base;</u>	6	2	206	2
		12	8	218	10
		Continued		Overleaf	

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1" O.S. Map
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Site marked (use symbol)
on 1" Map on 6" Map

(7) (For Survey use only) GEOLOGICAL CLASSIFICATION	NATURE OF STRATA (Continued)	THICKNESS		DEPTH	
		ft	in.	ft	in.
	straight forward.			218	10
Mowla Breccia	Marl, red , red-brown, very poorly sorted; frequent large quartz grains and small pebbles; blocky; grey-green and red-brown from 223 ft 1 in., with irregular fine marl layers; very irregular base, channelled into siltstone below;	6	2	225	0
Base of New Red Sandstone	Siltstone, grey, laminated; irregularly yellow-brown stained; gradually becoming less stained; occasional sandy layers; abundant sandy wisps from 228 ft 6 in.; passing to Sandstone, grey, fine, many silty wisps; yellow-brown stained, especially along silty wisps; local pink-stained patches; frequent silty wisps from 231 ft 7 in., locally siltstone;	c. 4	0	c. 229	0
TARD	COAL (core) (dip < 5°)	3	5	236	5
	Seakoth, grey-brown; silty; passing very gradually to Siltstone, grey, laminated; occasional ironstone nodules; occasional plant straps; 2 in. ironstone nodule at 242 ft 4 in.; occasional leaflets and other plant debris below;	c. 5	1	c. 241	6
LCM	passing to Seakoth, grey; (core broken from 244 ft 9 in. to c. 252 ft); frequent lentic and slickensided surfaces and occasional ironstone nodules; 4 in. ironstone nodule at c. 249 ft 6 in.; locally completely slickensided; black and carbonaceous with many coal streaks for 6 in. at 254 ft; grey-brown and completely slickensided below to 256 ft 4 in.; frequent lentic and slickensided surfaces and occasional plant straps below to base; dark grey in basal 4 in.	c. 3	6	c. 244	0
LOWER MAIN	COAL (core 6 in., broken core 3 in., core 9 in., fragments, core 20 in., fragments, core 45 in.) (drilled thickness)	c. 14	4	258	4
		7	4	265	8

ADDITIONAL NOTES

3

Name of Shaft or Bore given by Geological Survey:

Oshaston Galt (1969) B.H.

6-inch Map
Registered
No.

155 SK 40/69
282

GEOLOGICAL CLASSIFICATION	DESCRIPTION OF STRATA	THICKNESS		DEPTH	
		FT	IN.	FT	IN.
Un-named Seam	Brought forward Sealith, dark grey, completely slickensided; grey- brown from c. 266 ft 9 in, but containing completely slickensided; very dark grey from c. 270 ft; occasional ironstone nodules from 271 ft; less slickensided from 273 ft 8 in, shaly and with occasional pyrite streaks;	9	9	265	8
	COAL (core) (dip 10°)		5	275	5
	Sealith, pale grey sandstone in top 5 in, black and carbonaceous for 5 in below; sandstone below, with many carbonaceous layers to 277 ft 6 in, fragment Stigmaria; continuing in fine sandstone sealith, with occasional slight ferruginous impregnations; passing to	4	10	275	10
	Sandstone, grey, fine; occasional carbonaceous layers from 283 ft 6 in; carbonaceous layers abundant for 7 in at 287 ft 1 in, and locally frequent below;	10	2	280	8
L C M	Mudstone, grey, laminated; frequent polished bedding planes and other distinct surfaces; locally broken and slickensided; occasional diffuse ferruginous bands; slickensided for 4 in at 295 ft 11 in; 2 in ironstone at 295 ft 11 in, 5 in at 297 ft 1 in; broken and slickensided in basal 6 in;	8	9	290	10
	Shale, black; rare fish remains and occasional pyrite streaks;	2	0	299	7
	COAL (core 3 in, broken core 5 in, fragments, broken core 1 in; core 27 in.) (dip 5°) (driller's thickness)	3	3	301	7
	Sealith, grey, very many distinct and slickensided surfaces; carbonaceous in top inch; Stigmaria at 305 ft 7 in; silty with occasional sandy wisps below; less sandy from 308 ft;	6	6	304	10
CLOD	Sandstone, grey, fine; patchy conds; layers of communal plant debris for 3 in at 312 ft 9 in; passing to	3	5	311	4
	Siltstone, grey, poorly laminated; occasional sandy wisps;	2	6	314	9
	Mudstone, grey, silty; occasional silty layers; laminated; gradually becoming finer; 3 in ironstone band at 322 ft 9 in, locally silty below; 6 in ironstone band at 328 ft 9 in; finer, and with better lamination below; 2 in ironstone band at 330 ft; occasional worm marks below; 4 in ironstone band at 331 ft 6 in; locally darker; broken from 334 ft, dark grey, and with many distinct and slickensided surfaces; becoming very dark grey, with			317	3



(4)

Name of Shaft or Bore given by Geological Survey:

Osherton Gate (1960) B.H.

6-inch Map
Registered
No.

155/282⁴
SK 40 NW 18
SK40/69

GEOLOGICAL CLASSIFICATION	DESCRIPTION OF STRATA	THICKNESS			
		Ft	in.	Ft	in.
KILBURN	Brought forward			317	3
	occasional ironstone nodules; black from 335 ft; 2 in. ironstone band at 335 ft 7 in; grey from c. 336 ft 6 in; passing to	c. 20	0	c. 337	3
	Shale, very dark grey; rare fish remains;		4	337	7
	COAL (c. 1 ft, fragments, c. 9 in; 1 in. ironstone at 337 ft 10 in) (dip low) (driller's reckoning)	2	0	339	7
	Sealworth, grey brown, silty; frequent lentic and slickensided surfaces for 6 in. at 342 ft 1 in; grey, sandy and micaceous below;				
	pebbly sphaerulitic from 342 ft 7 in; ironstone for 6 in. at base;	4	10	344	5
	Siltstone, grey, laminated; micaceous, with bands of dark mica in the top 3 in; sandy wings locally;	1	3	345	8
	Mudstone, dark grey, rather poorly laminated; occasional silty layers; lentic and slickensided surfaces for 7 in. at 347 ft 3 in;	1	7	347	3
	Shale, black; fish remains at 347 ft 4 in; many double tubes and pyritic streaks; abundant minute trace at 347 ft 6 in;		11	348	2
	Mudstone, grey, laminated; locally silty, locally dark grey; pyritized minute at 348 ft 8 in; mainly very dark grey below with occasional double tubes; passing to	1	3	349	5
L C M	Shale, very dark grey; local lighter patches, especially around double tubes; frequent lentic and slickensided surfaces; 2 in. ironstone band at 349 ft 10 in, with much calcite veining; completely slickensided for 4 in. below; locally grey below; 3 in. ironstone band at 350 ft 8 in, with much calcite veining; fish remains at 351 ft 6 in, and locally below; vertical joints;				
	silty layers from 351 ft 8 in, with abundant fish remains; grey from 352 ft 4 in; completely slickensided in the basal 7 in;	4	1	353	6
	Sandstone, grey, fine; abundant nodules; frequent silty wings from 355 ft 6 in, with abundant worm marks and nodules for 6 in; slump-bedding for 1 ft at 358 ft				
	Siltstone, grey, micaceous; passing to	5	4	358	10
	Siltstone, grey, micaceous; seen	1	4	360	2
	Bottom of borehole (3 ft 6 in left in hole)	8		363	7
M G Smith 1/3/77					



1063 Wt. 22438/0384 10x 7/45 (51) F.&S.

RECORD OF SHAFT OR BORE FOR MINERALS

Name and Number of Shaft or Bore HOUSE
MANOR (1960) B.H.
S.N. 6070.

For Messrs. National Coal Board
Town or Village Barlaston
County Lancashire Six-inch quarter sheet 29 SE/E
Exact site 2400 yd at 312° from the west end of Newbold Vernon
church. National Grid Ref. No. — SK/4269.0525

Purpose for which made To prove the base of the New Red Sandstone and the sequence of the Coal Measures.
Level at which ^{shaft}bore commenced relative to O.D. + 397.05 ft State if ^{shaft}bore is up, down, horizontal or
inclined; in latter cases give angle of inclination and direction Down

Made by Bryles Bros.

Information from Examination of samples and cores Date of Sinking November 1960 — February 1961

Specimens

Additional Notes in Space Overleaf

(For Survey use only)		29 Sept. 1961		2.4.62.				
GEOLOGICAL CLASSIFICATION		NATURE OF STRATA		THICKNESS		DEPTH		
				ft in.		ft in.		
Dry L40ft	Rock-hill samples (at 10ft intervals)							
	Quartz sand, brown, medium-grained; subrounded grains; finer and with subangular grains for 20ft at 30ft;	40	0	40	0			
	Marl, brown and fine-grained quartz sand; Marl, red-brown, silty; less silty for 10ft at 100ft;	10	0	50	0			
	Quartz sand, fine-grained, marly; angular grains; more marly from 130ft;	60	0	110	0			
Keuper Marl	Cores start	62	7	172	7			
	No recovery			172	7			
	Marl, red-brown, silty, micaceous, laminated; locally sandy; green for 4in. at c. 182ft 8in.; finer below, with some lentic and shear-slicked surfaces; core fragmentary for 1ft at 185ft 8in., with some coarse sandstone bands; core pulverized below to base	3	1	175	8			
	Sandstone, grey, fine-grained, micaceous; coarse from 188ft 5in.;	11	11	187	7			
Keuper Sand- stone	Marl, red-brown, micaceous, fine-grained in top 3in., sandy below; very sandy and with small pebbles from 189ft 10in.; [c. 8ft 6in. missing between 190ft and 200ft 2in.]	1	6	189	1			
	Sandstone, grey, fine; fragmentary and largely missing;	c.	11	c.	190	0		
	Marl, green, sandy; small quartz pebbles (½ inch diam), grey sandstone for 2in. at 200ft 2in.; green for 2in. below, then red-brown, fine; silty locally; broken from c. 202ft; ½ in band	c.	9	c.	199	0		
		Continued	Overleaf					

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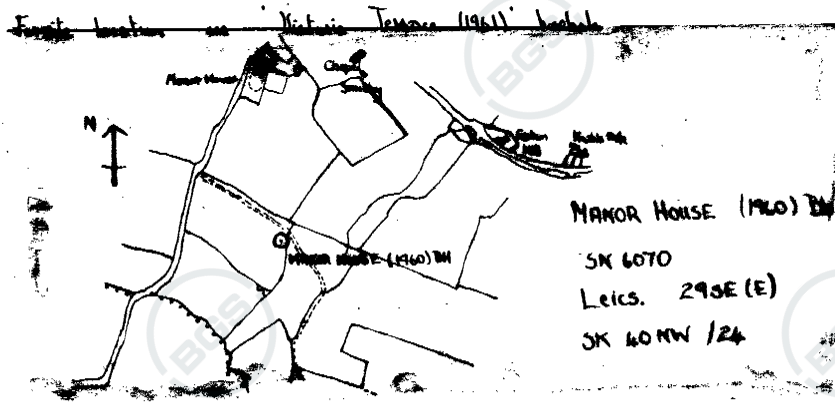
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Site marked (use symbol)
on 1" Map on 6" Map



(For Survey use only) GEOLOGICAL CLASSIFICATION	NATURE OF STRATA (Continued)	THICKNESS		DEPTH	
		ft	in	ft	in
Keuper Sandstone	Brought forward of small quartz pebbles at 202 ft 7 in; Missing (including base of New Red Sandstone)	c. 5	2	199	0
Coal Measures	Sealeath, grey, silty, micaceous; abundant mottles and cleflets; <i>Stegania</i> at 213 ft 6 in; sandy layers below; local slight yellow-brown staining along bedding planes; fine from 214 ft 10 in, with frequent listric and slickensided surfaces; purple-stained mottles; [completely broken from 216 ft 10 in to 221 ft 10 in, with c. 2 ft missing]; debris appears to be black shaly sealeath from 216 ft 10 in to c. 219 ft, and pale grey sealeath from 219 ft to 221 ft 10 in;] grey laminated fine sealeath below, with frequent listric and slickensided surfaces;	8	4	204	2
				212	6
LOWER MAIN	COAL (fragments c. 55 in, core rather broken 18 in.) (driller's thickness)	11	6	224	0
		6	6	230	6
lower coal measures	Sealeath, dark grey and shaly in top foot with many listric surfaces; grey silty sealeath below with abundant mottles; becoming stronger and more massive at c. 238 ft; occasional small ironstone nodules; softer, broken, and with many listric surfaces below c. ²³⁵ ft; dark, with many listric surfaces and locally with much sphaerulite for 1 ft at 238 ft 8 in; massive silty sealeath below, still with mottles, to 240 ft 4 in; soft broken dark shaly sealeath below; dark grey ? finely sphaerulitic ironstone for c. 4 in. at 242 ft 8 in, black shaly sealeath below to base;	13	5	243	11
	COAL (core)		1	244	0
	Sealeath, massive, sandstone; abundant carbonaceous				

ADDITIONAL NOTES



3

Name of Shaft or Bore given by Geological Survey:

MANGR HOUSE (1962) B.M.

6-inch Map
Registered
No.

155 SK40/70
299

GEOLOGICAL CLASSIFICATION	DESCRIPTION OF STRATA	THICKNESS		DEPTH	
		FT	in.	FT	in.
	Brought forward			294	0
	rosetts; passing to	c. 1	0	c. 245	0
	Sandstone, massive, fine; occasional rosetts and some plant fragments;	c.	9	245	9
	Seakoth, dark grey, sandy; much conchoidal debris and small invertebrate nodules in the top 2 in, passing into grey silty seakoth with abundant rosetts; becoming sandy, laminated and micaceous with abundant rosetts at c. 247 ft; passing to	c. 4	0	c. 249	9
	Sandstone, rather massive with carbonaceous and micaceous laminae; occasional rosetts near top; becoming silty in basal 1 ft; passing to	c. 2	3	c. 252	0
	Mudstone, grey, very silty at top; less silty downwards; occasional rosetts and plant fragments; many silty and some sandy layers from 253 ft 8 in; frequent polished bedding planes; (dip low); Sandstone for 6 in at 258 ft, with many carbonaceous layers; fine from 258 ft 6 in; occasional sandy layers from 258 ft to 259 ft 8 in; 2 in foraminifera impregnation at 260 ft 2 in; [core missing 261 ft 8 in - 264 ft] shalesided for 2 in at 266 ft 6 in; (dip low); becoming darker from 267 ft 6 in with scattered plant fragments; 7 in ironstone band at 268 ft, with carbonate veining;	c. 16	7	268	7
	Shale, black; scattered fish remains from 268 ft 9 in;	1	5	270	0
	COAL (core 3 in, broken core 4 in) (drilled thickness)	3	0 1/2	273	0 1/2
	Seakoth, grey; ironstone nodules at 274 ft 1 in; occasional lenticular outcrops; abundant rosetts including <i>Strophomena</i> ; ironstone nodules for 6 in at 276 ft 3 in; coal streak at 276 ft 6 in; becoming silty with occasional small ironstone nodules from 277 ft; 2 in ironstone nodules at 277 ft 6 in;	4	7 1/2	277	8
	Sandstone, pale grey, with fine-grained laminations; frequent silty layers from 278 ft 1 in; passing to	c. 1	0	c. 278	8
	Siltstone, grey, argillaceous; passing to	c. 1	6	280	2
	Mudstone, grey, silty; scattered plant fragments and worm marks; sandstone for 1 in at 282 ft 7 in, with sandy wisps for 2 in below; sandy and carbonaceous layers from 282 ft 5 in; 3 in foraminifera sandstone at 284 ft 10 in; passing to	c. 5	0	c. 285	2

NCM

CLOP

(4)

Name of Shaft or Bore given by Geological Survey:

MANOR HOUSE (1960) BH.

6-inch Map
Registered
No.

155 SK 40 70
299

GEOLOGICAL CLASSIFICATION	DESCRIPTION OF STRATA	THICKNESS		DEPTH	
		FT	in.	FT	in.
	Brought forward			c. 285	2
	Sandstone, grey, fine-grained; many carbonaceous layers; small scale false bedding; 1in ironstone band at base;	c.	7	285	9
	Mudstone, grey, laminated, silty for top 6in; some polished bedding planes; occasional worm marks from 286 ft 8 in 286 ft 8 in; 1 1/2 in ferruginous impregnation at 287 ft 11 in; silty below; fine from 288 ft 8 in to 290 ft 4 in; passing to	c. 6	9	c. 292	6
	Siltstone, grey, rather massive; 1in ironstone nodule at 294 ft 1 in; passing to	c. 2	0	c. 294	6
	Mudstone, grey, laminated; massive and rather silty from 295 ft, with some worm marks; 2in ironstone band at 297 ft; generally soft and broken for 1 ft at 299 ft 10 in; 2in ironstone band at 300 ft; passing to	c. 6	6	c. 301	0
HCN	Siltstone, grey; sandy with thin sandy laminae; some layers with abundant carbonized plant fragments; passing to	c. 2	6	c. 303	6
	Mudstone, grey, silty, with thin silty laminae; occasional sandy and micaceous layers with much carbonized plant debris; some worm marks; 3 1/2 in ironstone at 305 ft, 3in at 305 ft 9 in; black shale with small conchy fragments and ? fish for 2 in at base;	c. 4	8	308	2
KILBURN	COAL (core)	2	0	310	2
	Seatearth, strong, ferruginous, silty, with abundant carbonaceous rootlets; some listric surfaces; rather more fine below c. 310 ft 8 in; stronger, sandy and micaceous for c. 3 ft at 316 ft; grey muddy seatearth below; becoming black, shaly and with many listric surfaces at c. 318 ft 6 in; abundant rootlets locally; large ironstone nodules for c. 9 in at 320 ft, broken above and below; continuing in black shaly seatearth with rootlets; poorly preserved <u>murels</u> at 320 ft 10 in; rather more massive with fewer listric surfaces below c. 322 ft, but still with some rootlets; passing to	c. 13	1	c. 323	3
	Mudstone, dark grey; becoming paler and silty downwards;	c. 1	9	c. 325	0
	Siltstone, coarse, with abundant plant fragments;	c.	9	325	9
	Mudstone, grey, silty, laminated; thin siltstone layers; some current-beding, occasional worm marks; passing to	c. 4	3	c. 330	0



5

Name of Shaft or Bore given by Geological Survey:

MANGER HOUSE (1960) BH.

6-inch Map
Registered
No.

155 SK 40 NW 70
399

GEOLOGICAL CLASSIFICATION	DESCRIPTION OF STRATA	THICKNESS		DEPTH	
		FT	in.	FT	in.
	Brought forward			c. 330	0
	Siltstone, grey, sandy, laminated; some current bedding; thin sandstone bands; Soft and broken core for c. 1 ft. at 332 ft 6 in; massive grey siltstone below;				
	passing to	c. 3	3	c. 333	3
	Mudstone, grey, silty; 3 in sandstone with plant stems at 333 ft 7 in; massive grey silty mudstone below, locally micaceous; worm marks locally; siltstone for c. 4 in at 334 ft 10 in; grey silty mudstone below, locally micaceous; micaceous siltstone bands locally;	seen	c. 3	9	337
	Bottom of borehole (2 ft left in hole)			339	0
	Deflection for Lower Main coal. (driller's record)				
	From			193	0
	Red marls and cement (5 ft recovered)	10	0	203	0
	Soft sandstone (1 ft 6 in recovered)	2	0	205	0
	Sandy marls (4 ft recovered)	5	0	210	0
	Sandy shale (2 ft recovered)	2	0	212	0
	Soft shale (3 ft recovered)	12	0	224	0
	CoAL (6 ft recovered)	6	6	230	6
	Seakentle (1 ft 6 in recovered)	1	6	232	0
	End of deflection			232	0

WCM.

LOWER MAIN.

P.P.

N.G. Summer

1877.



Making Sustainability Happen