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REDROW HOMES LIMITED

LAND AT BULLFURLONG LANE, BURBAGE, LEICESTERSHIRE

MINERAL RESOURCE ASSESSMENT

MARCH 2024

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REDROW HOMES LIMITED

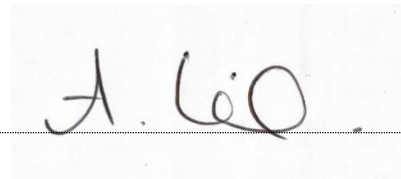
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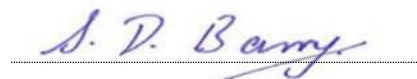
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DRAWINGS TITLE

ST20911 – 001 Superficial Geology and BGS Borehole Location Plan

EXECUTIVE SUMMARY

This report has been prepared in accordance with instructions from Redrow Homes Limited (the Client) to prepare a Mineral Resource Assessment report in support of a hybrid planning application for proposed development (residential and care home) on land at Bullfurlong Lane, Burbage, Leicestershire. The site has been reviewed in relation to the adopted mineral safeguarding policies of Leicestershire County Council Minerals and Waste Local Plan (MWLP) which covers the period 2019-2031 and was adopted in September 2019.

The site is an approximately 27.5 Ha parcel of land located on the southern edge of Burbage at postcode LE10 2HS, some 15 km northeast of Coventry, in south west Leicestershire.

Published geological maps for the area indicate that the majority of the site is underlain by superficial deposits of diamicton (formerly called boulder clay). A small band of alluvium (clay, silt, sand and gravel) overlies the diamicton across the east of the site. Wolston Sand and Gravel (sand and gravel) is shown overlying the diamicton in the central north portion of the site. The published geological map includes a cross-section which indicates that the Bosworth Clay may lie beneath the diamicton. The Superficial Deposits are all Quaternary in age. The site is underlain by solid geology of the Mercia Mudstone Group (mudstone).

Intrusive site investigation on the site confirms the mapped geology, although diamicton was found to overlie the Wolston Sand and Gravel rather than being beneath the sand and gravel.

The proposed development site is in a Mineral Safeguarding Area (MSA) for sand and gravel associated with the superficial Wolston Sand and Gravel deposit. Available geological information indicates that patches of mineral are present beneath a clay overburden across the 27.5 Ha site. The sand and gravel deposits are not laterally continuous, and on average are approximately 0.5m in thickness. The overburden is approximately 1.5m thick. The ratio of mineral to overburden is therefore approximately 1:3 which is far too high to be commercially viable.

Any future extraction proposals should allow for buffer zones of 100 m to existing housing, at least 25 m to the minor roads and motorway and easements to overground and underground services that run across the southeast of the site, approximately parallel with the M69 motorway. The buffers will therefore lead to loss of available mineral in any resource calculations which will affect the viability of any proposal.

Should the characteristics of any mineral be suitable for use as a product, the total resource available, assuming a 0.5m thickness and surface area of 130,750 m³ which approximates to

half the site would be in the order of 110,000 tonnes. This quantity is far too small for a viable extraction operation, even before considering the ratio of 1:3 ratio of mineral to overburden.

As a consequence of the natural geology underlying the site it is extremely unlikely that the mineral would ever be worked, so it is considered to be of no economic value.

That said, there may be an opportunity to utilise limited quantities as an as-dug fill material for use in site grading or landscaping works. The incorporation of incidental extraction into the design of the site would make sense with regard to sustainable development where possible.

It therefore follows that the proposed development is compatible with Policy M11: Safeguarding of Mineral Resources item (i), where 'the mineral concerned is no longer of any value or potential value' due to its sparse occurrence and viability.

The proposed development is therefore compatible with local mineral safeguarding policy.

1 INTRODUCTION

- 1.1 This report has been prepared in accordance with instructions from Redrow Homes Limited (the Client) to prepare a Mineral Resource Assessment report in support of a hybrid planning application for proposed development (residential and care home) on land at Bullfurlong Lane, Burbage, Leicestershire. The site is located on the southern edge of Burbage at postcode LE10 2HS, some 15 km northeast of Coventry, in south west Leicestershire. The site is approximately 27.5 Ha in size and the boundary is shown edged red on the site location plan attached at **Appendix 1**. The proposed development layout is included at **Appendix 6**.
- 1.2 Available imagery shows the irregularly shaped site to comprise of agricultural land, primarily grazing paddocks at Burbage Fields Farm. Ordnance Survey mapping shows a watercourse (tributary to the Soar Brook) running across the site from north to east. Two feeder streams to this are shown on mapping, one starting at a Spring located just off-site on the eastern edge of the central portion of the site. The site is generally flat, at an elevation of 105-115 m AOD.
- 1.3 The site is bounded by fields and residential housing to the northeast, the M69 motorway and its embankments to the southeast, the track/road Bullfurlong Lane and fields beyond to the west and to the north are more grass fields and residential gardens of houses along Burford Lane and Coventry Road. Above-ground and below-ground services are present in the south of the site, running approximately parallel with the M69.
- 1.4 The proposed development site is located in a Mineral Safeguarding Area (MSA) for sand and gravel, so any application for development must include a mineral resource assessment to determine whether the proposed development would be compatible with the relevant mineral safeguarding policies.

2 GEOLOGY

- 2.1 Geologically, a distinction is made between “superficial deposits” and “solid 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 called the “solid geology”.

Superficial Deposits

- 2.2 The British Geological Survey (BGS) online geological map shows that the superficial deposit on most of the site is a superficial deposit of diamicton. Diamicton was formerly called “boulder clay” or “till” and it is a poorly sorted mixture of clay, silt, sand, gravel and boulders. It is not a commercially worked mineral. A small band of Alluvium (clay, silt, sand and gravel) overlies the diamicton across the east of the site. Wolston Sand and Gravel is the safeguarded mineral (sand and gravel) is shown overlying the diamicton in the central north portion of the site but the site investigation records show that in fact the Wolston sand and gravel lies **beneath** the diamicton. The geological map includes a cross-section which indicates that the Bosworth Clay Member may lie beneath the diamicton. The Superficial Deposits are all Quaternary in age.

Solid Geology

- 2.3 The BGS online geological map shows that the solid geology beneath the superficial deposits is the Mercia Mudstone Group.

3 SITE INVESTIGATION

- 3.1 A search of the British Geological Survey (BGS) borehole database has identified four boreholes on site along the side of the M69. Additionally, a Ground Investigation report provided by the Client for intrusive works on the site itself, ref. 23046 rev. GA02a Geo-environmental Assessment Report by Travis Baker Geo-environmental Ltd., dated 26 August 2023, comprised exploratory trial pits, soakaway pits, loading-test pits, dynamic window sampler probes and cable percussive boreholes.

Borehole summary

- 3.2 The generalised stratigraphy encountered comprised a thin layer of topsoil of some 0.30 m thickness overlying silty sandy clays of diamicton to an approximate depth of 1.30 m bgl, below which the Wolston Sand and Gravel was encountered in the northern portion of the site. Below these strata were clays of the Bosworth Clay Member. The bedrock Mercia Mudstone was encountered in two of the deeper cable percussive boreholes in the north of the site. Generally, groundwater was encountered in the sand and gravel at around 1.80 m bgl.

- 3.3 Alluvium was recorded in exploratory holes TP38 and TP39, in the centre north of the site, corresponding to the area of mapped Alluvium.
- 3.4 Made ground was present overlying the natural strata in exploratory holes located in the farmyard and some former pond areas.
- 3.5 Where intersected, the Wolston Sand and Gravel was found to comprise very loose to medium dense brown and grey slightly gravelly to gravelly sand with variable proportions of clay and silt. The gravel was of chalk, sandstone, limestone, mudstone and quartzite. The layer was generally 0.20 – 1.30 m in thickness, with four intersections of >2.00 m thickness in BH11, TP06, BH03 and CP04. Laboratory testing of Particle Size Distributions (PSD) was carried out on three samples, and the results are attached in **Appendix 3**. This data indicated silt contents of 50% which indicates that it is not suitable for use as an aggregate.
- 3.6 Interestingly, site investigation work found that a surface layer of diamicton was laterally continuous across the whole site, although BGS geological mapping indicated that the Wolston Sand and Gravel was present on part of the surface of the site. Consequently we conclude that the mapped area of sand and gravel shown on drawing no. ST20911-001 is actually below the diamicton on the site rather than above as shown on the drawing.
- 3.7 A selection of relevant exploratory logs are attached at **Appendix 2** and BGS borehole locations are shown on **Drawing ST20911 – 001**. The exploratory hole location plan for the Ground Investigation is also attached on page 1 of **Appendix 3**.

4 CONSTRAINTS

- 4.1 Residential housing is present adjacent to the site in the west and northeast of the northernmost section, to the northeast of the central section and to the north of the easternmost section. A farm with farmhouse is incorporated into the site. A buffer zone of 100 m is normally applied to such dwellings, to protect the amenity of the houses during mineral extraction.
- 4.2 Minor roads form part of the western and northeastern site boundaries. A motorway (M69) is located at the southeastern site boundary. Any mining activities should allow for a minimum 25m buffer zone to this infrastructure for extraction planning purposes.

- 4.3 Above and below ground services are present in the south of the site, running approximately parallel with the M69. A safety buffer zone should be also applied to this infrastructure, the width of which should be confirmed with the relevant service provider.
- 4.4 Once appropriate buffer zones have been applied, the area available for mineral extraction is reduced.

5 MINERAL PLANNING POLICY

- 5.1 The Leicestershire County Council Minerals and Waste Local Plan (MWLP) covers the period 2019-2031 and was adopted in September 2019. The MWLP identifies and sets out the long-term Spatial Vision and Strategic Objectives for Leicestershire's minerals, and the delivery strategy for minerals planning that identifies how the objectives will be achieved in the plan period.
- 5.2 The adopted MWLP states in Section 3 Minerals Safeguarding, that:

'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.'

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 of the extent of mineral resources, and consultation with the minerals industry.

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 SI/2015 to S7/2015).'

- 5.3 The subject site is on Figure 'HK1' showing the location of safeguarded mineral which is attached at **Appendix 4**.
- 5.4 The MWLP also states in section 3.94 that a buffer of 200m has been applied to all MSA's identified in the policy.

Adopted Minerals Local Plan

- 5.5 The MWLP identifies areas for Mineral Safeguarding in the County and plans showing these areas are included in District/Borough Mineral and Waste Safeguarding documents. The relevant document for the Burbage area is Mineral and Waste Safeguarding ref. S4/2015 for Hinckley and Bosworth Borough, in particular the Mineral Safeguarding plan HK1 which is included at **Appendix 4**. The site is shown within the mineral safeguarding area for sand and gravel.
- 5.6 The County defines Mineral Consultation Areas (MCAs) as those areas covering the resources within the Mineral Safeguarding Areas.
- 5.7 Policy M11: Safeguarding of Mineral Resources, which is attached in full at **Appendix 5**, states that:

'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.'

- 5.8 The table 4 referred to at (v) above can be found in Section 3.98 of the MWLP which is attached at **Appendix 5**.

Compliance with the adopted safeguarding policy SMP9

- 5.9 The proposed development site is in a Mineral Safeguarding Area (MSA) for sand and gravel associated with the superficial Wolston Sand and Gravel deposit. The entire site is 27.5 ha in area, and the development proposal is for c. 422 residential units, open public space, residential care home, self-build plots and associated infrastructure.
- 5.10 Available geological information indicates that patches of mineral are present beneath a clay overburden. The sand and gravel deposits are not laterally continuous, and on average are <1.00 m in thickness. The overburden is in the order of 1.50 m in thickness.
- 5.11 Any future extraction proposals should allow for safety buffer zones of 100 m to existing housing, at least 25 m to the minor roads and motorway and easements to over- and underground services that run across the southeast of the site, approximately parallel with the M69 motorway. The buffers will therefore lead to loss of available mineral in any resource calculations which will affect the viability of any proposal.
- 5.12 Should the characteristics of any mineral be suitable for use as a product, the total resource available, assuming a 0.5 m thickness, density of 1.6t/cu m and a surface area of 130,750 m² which approximates to half the site, would be in the order of 110,000 tonnes. This does not allow for batters, dilution losses, interburden etc. This quantity is far too small for a viable extraction operation, even without any consideration of the cost of overburden removal, the volume of which is 3 times the volume of mineral.
- 5.13 It therefore follows that the proposed development is compatible with Policy M11: Safeguarding of Mineral Resources item (i), where '*the mineral concerned is no longer of any value or potential value*' due to its sparse occurrence and viability.
- 5.14 As a consequence of the natural geology underlying the site it is highly unlikely that the mineral would ever be worked, so it is considered to be of no economic value.

- 5.15 However, during the construction phase of the development there may be an opportunity to utilise limited quantities of sand and gravel as an as-dug fill material for use in site grading or landscaping works. The incorporation of incidental extraction into the design of the site would make sense with regard to sustainable development where possible - for example, when designing a SUDS within the site.

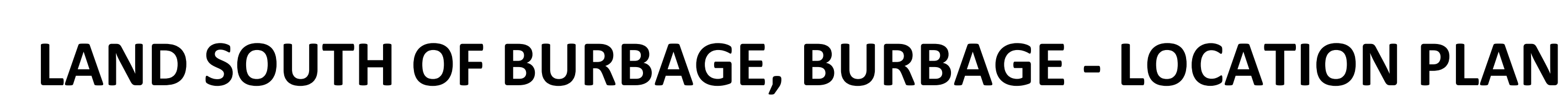
6 CONCLUSION

- 6.1 The proposed development site is in a Mineral Safeguarding Area (MSA) for sand and gravel associated with the superficial Wolston Sand and Gravel deposit. Available geological information indicates that patches of mineral are present beneath a clay overburden across the 27.5 Ha site. The sand and gravel deposits are not laterally continuous, and are on average <0.50 m in thickness. The overburden is in the order of 1.50 m in thickness.
- 6.2 Any future extraction proposals should allow for safety buffer zones of 100 m to existing housing, at least 25 m to the minor roads and motorway and easements to over- and underground services that run across the southeast of the site, approximately parallel with the M69 motorway. The buffers will therefore lead to loss of available mineral in any resource calculations which will affect the viability of any proposal.
- 6.3 Should the characteristics of any mineral be suitable for use as a product, the total resource available, assuming a 0.5 m thickness and surface area of 137,500 m³ which approximates to half the site would be in the order of 110,000 tonnes. It is considered that this quantity is too small for a viable extraction operation, and in any event it is beneath a 1.5m thick layer of overburden so the ratio of overburden to mineral thickness makes it uneconomic to work the mineral.
- 6.4 As a consequence of the natural geology underlying the site it is highly unlikely that the mineral would ever be worked, so it is considered to be of no economic value.
- 6.5 That said, there may be an opportunity to utilise limited quantities as an as-dug fill material for use in site grading or landscaping works. The incorporation of incidental extraction into the design of the site would make sense with regard to sustainable development where possible.

- 6.6 It therefore follows that the proposed development is compatible with Policy M11: Safeguarding of Mineral Resources item (i), where ‘the mineral concerned is no longer of any value or potential value’ due to its sparse occurrence and viability.
- 6.7 The proposed development is therefore compatible with local mineral safeguarding policy.

APPENDICES

Appendix 1: Site Location Plan



Appendix 2: Selection of BGS Borehole Logs



soil mechanics department		BOREHOLE No. 214	
CONTRACT Coventry-Leicester Motorway Stage II.		REPORT No. 8640/JD	
Client	Midland R.C.U.	Ground Level 112.61 m.O.D.	
Site Address	Ansty to Enderby.	Boring Commenced 29.6.71 Boring Completed 29.6.71	
Type and Dia. of Boring Shell and Auger 0.2 m. diameter.			
Water Levels Recorded During Boring			
Water Strikes	Hole Depth	4.7	9.0
1. 2.4	Casing Depth	4.7	9.0
2. 6.0	Water Level	None	8.5
3. seepage			
Remarks			
Description		Scale 20mm = 1 m.	Samples
		Depth	Ref. No. Type
Topsoil.		0.35	6472 J 0.20
Brown silty clayey sand and sandy clay with stones. (sf)			6473 U 0.50- 0.95
			6474 J 1.30
			6475 U 2.00- 2.45
Gravel and brown silty clayey sand. (sf)		2.40	6476 D 2.80 12
			6477 J 3.30
			6478 D 4.30 13
Soft grey sandy boulder clay with traces of marl and chalk. (ci)		4.60	6479 U 4.70- 5.15
			6480 J 5.40
Firm grey sandy very silty clay with bands of silty calcareous sand, small stones and traces of chalk. (CL)		6.00	6481 U 6.00- 6.45
			6482 J 6.80
			6483 U 7.50- 7.95
			6484 J 8.20
			6485 U 8.55- 9.00
			6486 J 9.00
		9.00	6487 W (2.40)

Code: U—Undisturbed Sample

D—Large Disturbed Sample

J—Jar Sample

W—Water Sample



soil mechanics department		TEST & TRIAL PIT 215Z				
CONTRACT Coventry - Leicester Motorway Stage II SP-49SW/33		REPORT No. 8640/JD				
Client Midland R.C.U. 1:169		Ground Level 108.12 m.O.D.				
Site Address Ansty to Enderby. 44252 91410		Boring Commenced 21.7.71 Boring Completed 21.7.71				
Type and Dia. of Boring Mechanical Excavator						
Water Strikes						
Water Levels Recorded During Boring						
1. None	Hole Depth					
2.	Casing Depth					
3.	Water Level					
Remarks Test & Trial Pit. C.B.R. and Density at 1.00 m. Pit extended to 4.00 m. and logged.						
Description	Scale 20mm = 1 m.		Samples		Depth	S.P.T. N blows/ft
	Depth	Legend	Ref. No.	Type		
Topsoil.	0.20					
Stiff brown clay with occasional stones, root fibres and pockets of sand. (cl)			7010	D	1.00	
			7026	J	1.20	
Stiff brown boulder clay with chalk fragments. (ci)	1.50					
			7027	J	1.90	
	4.00					

Code: U—Undisturbed Sample

D—Large Disturbed Sample

J—Jar Sample

W—Water Sample



soil mechanics department		TEST PIT II				
CONTRACT Coventry - Leicester Motorway Stage II SP 49 SW/34		REPORT No. 8640/JD				
Client Midland R.C.U. 44380 91512		Ground Level 105.17 m.O.D.				
Site Address Ansty to Enderby.		Boring Commenced 21.7.71 Boring Completed 21.7.71				
Type and Dia. of Boring Mechanical Excavator						
Water Strikes		Water Levels Recorded During Boring				
1. None	Hole Depth					
2.	Casing Depth					
3.	Water Level					
Remarks Test Pit. Density at 1.00 m. Pit extended to 2.00 m. and logged.						
Description	Scale 20mm = 1 m.		Samples		Depth	S.P.T. N blows/ft
	Depth	Legend	Ref. No.	Type		
Topsoil.						
Soft brown mottled silty sandy clay with occasional root fibres and carbonaceous traces. (cl)	0.40		7012	J	0.30	
Brown sandy clay with stones and occasional root fibres. (cl)	0.90		7013	J	1.10	
	1.20		7014	J	1.40	
Soft grey silty sandy clay with grey veins. (cl)	2.00					

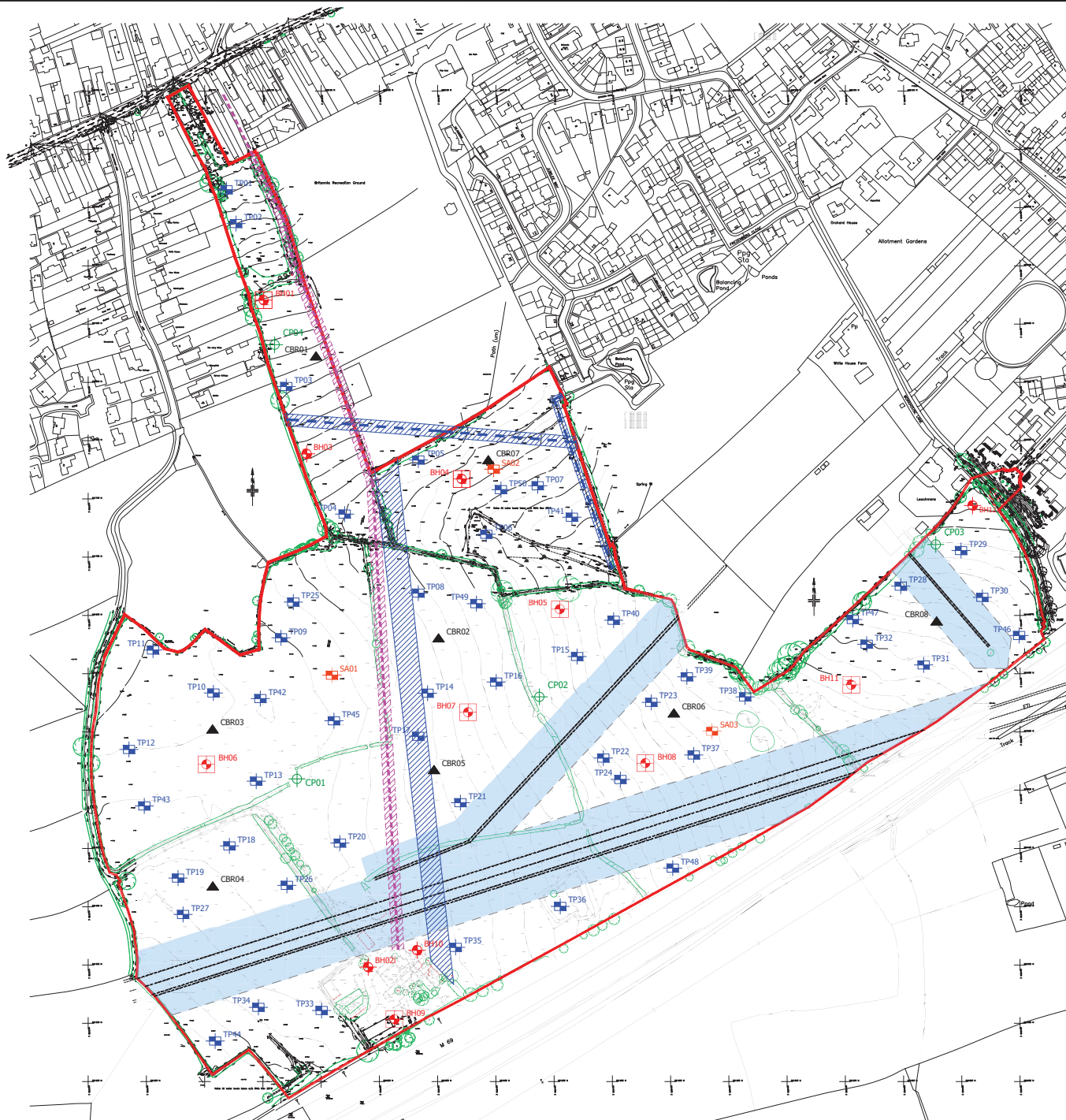
Code: U—Undisturbed Sample

D—Large Disturbed Sample

J—Jar Sample

W—Water Sample

Appendix 3: Selection of Exploratory hole logs and data



KEY:

- SITE BOUNDARY
- INDICATIVE EXTENT OF EASEMENT - EXISTING SEWER/ DRAINAGE (5m)
- OVERHEAD SERVICES AND INDICATIVE EXTENT OF EASEMENT (20m)
- INDICATIVE LOCATION OF BURIED SERVICES (BT) AND INDICATIVE EXTENT OF EASEMENT (5m)
- POTENTIAL LOCATION OF BURIED SERVICES (WATER) LOCATION AS DETERMINED BY LANDSCAPE OBSERVATION IN TRAIL PIT AND STOP TAP LOCATIONS
- TP50 TRAVIS BAKER TRIAL PIT LOCATION (2023)
- BH12 TRAVIS BAKER BORE HOLE LOCATION (2023)
- BH08 TRAVIS BAKER BORE HOLE WITH STANDPIPE LOCATION (2023)
- CBR08 CBR TESTING LOCATION (2023)
- CP04 CABLE PERCUSSIVE LOCATION (2023)

NOTE: As of 7 July 2023 cable percussive boreholes CP01 and CP04 are outstanding.

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A. CLIENT NAME ADDED		PROJECT	DATE	BY	APP'D
BULLFURLONG LANE, BURBAGE					

Travis Baker
Site Investigation Ltd
Unit 10, The Mill
Bullfurlong Lane, Burbage
Leicestershire LE19 1JH
Tel: 01532 858 987
Email: info@travisbaker.co.uk
www.travisbaker.co.uk

REDROW HOMES LIMITED & MR FARMER			
BULLFURLONG LANE, BURBAGE			
EXPLORATORY HOLE LOCATION PLAN			
Drawn	Approved	Scale	Date
DP	LG	1:1250@A0	07/07/23
Revised No	23046	GE05	A
REVISIONS			
-			



4041

TEST CERTIFICATE**DETERMINATION OF PARTICLE SIZE DISTRIBUTION**

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



Environmental Science

Client: Travis Baker Geo-Environmental Limited
Client Address: Trinity Point, New Road,
Halesowen, West Midlands,
B63 3HY
Contact: Daniel Potts
Site Address: Bullfurlong Lane, Burbage

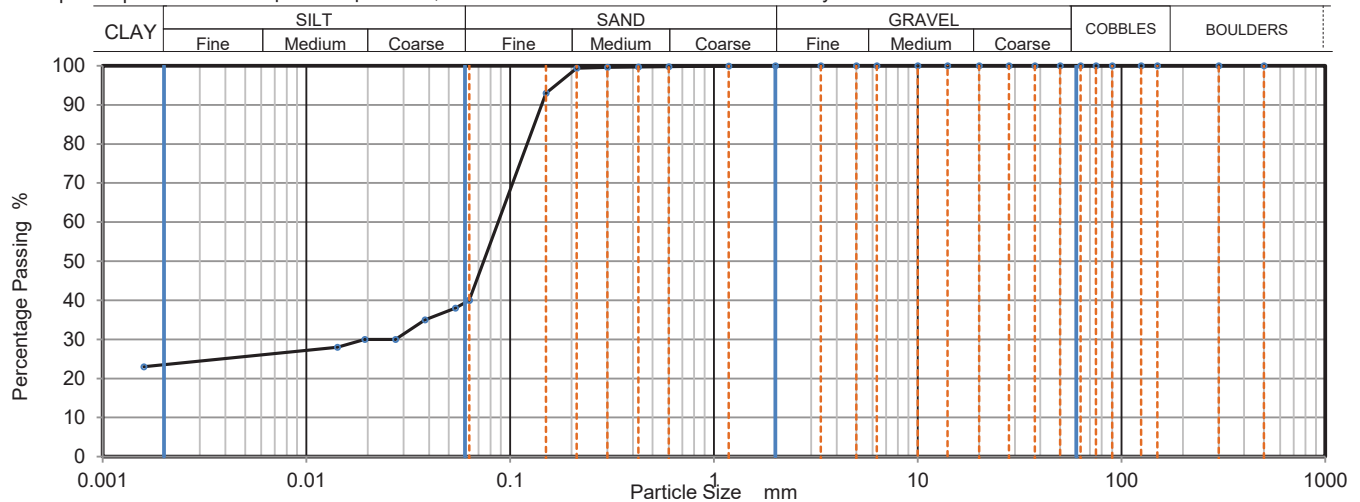
Client Reference: 23046
Job Number: 23-37834-1
Date Sampled: 24/05/2023
Date Received: 01/06/2002
Date Tested: 16/06/2023
Sampled By: Client - DP

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 2704503
Hole No.: BH11
Sample Reference: Not Given
Sample Description: Yellowish brown clayey SAND
Sample Preparation: Sample was quartered, oven dried at 107.4 °C and broken down by hand.

Depth Top [m]: 1.40
Depth Base [m]: 1.80
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100	0.0630	40
300	100	0.0537	38
150	100	0.0382	35
125	100	0.0273	30
90	100	0.0193	30
75	100	0.0142	28
63	100	0.0016	23
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100	Particle density (assumed) 2.65 Mg/m3	
2	100		
1.18	100		
0.6	100		
0.425	100		
0.3	100		
0.212	99		
0.15	93		
0.063	40		

Sample Proportions	% dry mass
Very coarse	0
Gravel	0
Sand	60
Silt	17
Clay	23

Grading Analysis	
D100	mm
D60	mm
D30	mm
D10	mm
Uniformity Coefficient	> 55
Curvature Coefficient	

Uniformity and Curvature Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Note: Tested in Accordance with BS1377:Part 2:1990, clauses 9.2 and 9.5

Remarks:

Signed:

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB



Environmental Science

Client: Travis Baker Geo-Environmental Limited
Client Address: Trinity Point, New Road,
Halesowen, West Midlands,
B63 3HY
Contact: Daniel Potts
Site Address: Bullfurlong Lane, Burbage

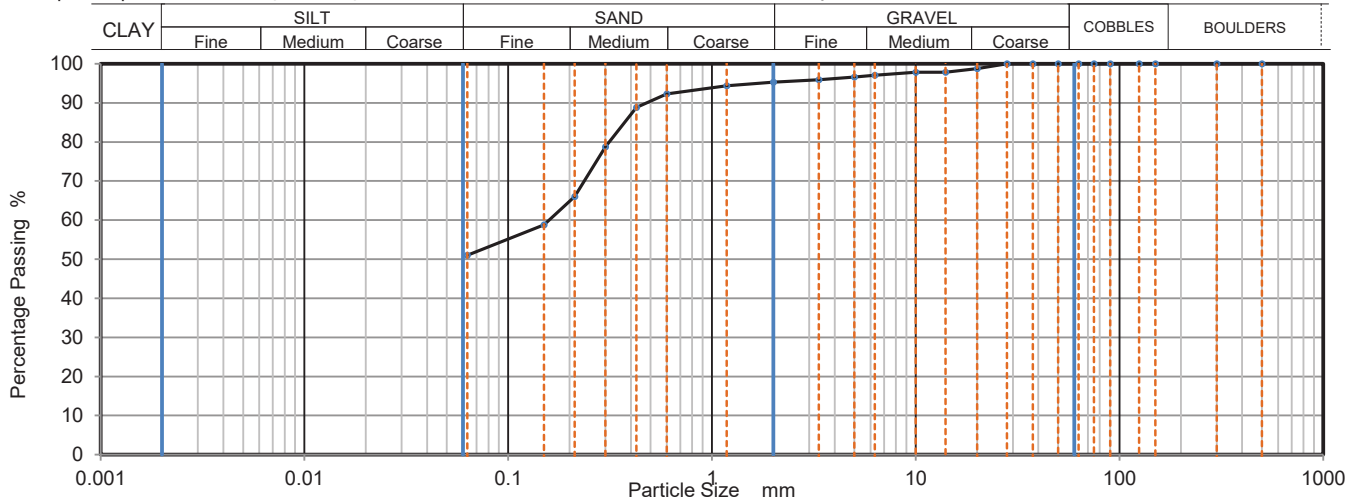
Client Reference: 23046
Job Number: 23-37834-1
Date Sampled: 31/05/2023
Date Received: 01/06/2002
Date Tested: 12/06/2023
Sampled By: Client - DP

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 2704505
Hole No.: TP09
Sample Reference: Not Given
Sample Description: Brown sandy CLAY
Sample Preparation: Sample was quartered, oven dried at 109.0 °C and broken down by hand.

Depth Top [m]: 1.00
Depth Base [m]: Not Given
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	99		
14	98		
10	98		
6.3	97		
5	97		
3.35	96		
2	95		
1.18	94		
0.6	92		
0.425	89		
0.3	79		
0.212	66		
0.15	59		
0.063	52		

Sample Proportions	% dry mass
Very coarse	0
Gravel	5
Sand	44
Fines <0.063mm	51

Grading Analysis		
D100	mm	28
D60	mm	0.159
D30	mm	
D10	mm	
Uniformity Coefficient		> 2.5
Curvature Coefficient		

Uniformity and Curvature Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Note: Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Remarks:

Signed:

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report relate only to the sample(s) submitted for testing.



4041

TEST CERTIFICATE**DETERMINATION OF PARTICLE SIZE DISTRIBUTION**

Tested in Accordance with: BS 1377-2: 1990

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Northampton NN4 7EB



Environmental Science

Client: Travis Baker Geo-Environmental Limited
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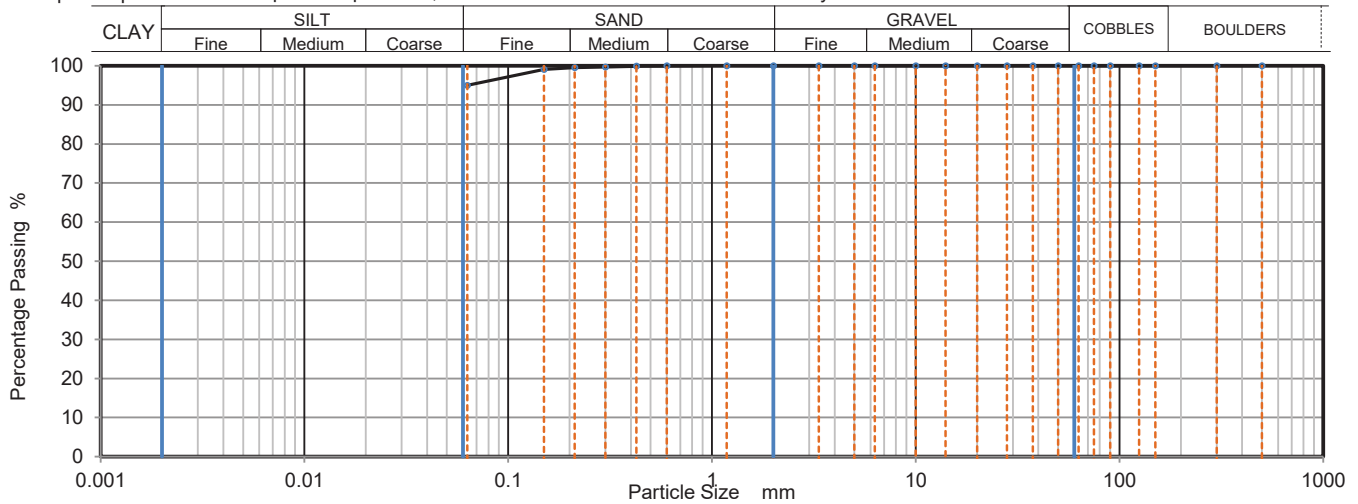
Client Reference: 23046
Job Number: 23-37834-1
Date Sampled: 25/05/2023
Date Received: 01/06/2002
Date Tested: 12/06/2023
Sampled By: Client - DP

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference: 2704506
Hole No.: TP31
Sample Reference: Not Given
Sample Description: Brownish grey CLAY
Sample Preparation: Sample was quartered, oven dried at 109.0 °C and broken down by hand.

Depth Top [m]: 3.10
Depth Base [m]: Not Given
Sample Type: B



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	100		
0.425	100		
0.3	100		
0.212	100		
0.15	99		
0.063	95		

Sample Proportions	% dry mass
Very coarse	0
Gravel	0
Sand	5
Fines <0.063mm	95

Grading Analysis		
D100	mm	1.18
D60	mm	
D30	mm	
D10	mm	
Uniformity Coefficient		N/A
Curvature Coefficient		

Uniformity and Curvature Coefficient calculated in accordance with BS EN ISO 14688-2:2018

Note: Tested in Accordance with BS1377:Part 2:1990, clause 9.2

Remarks:

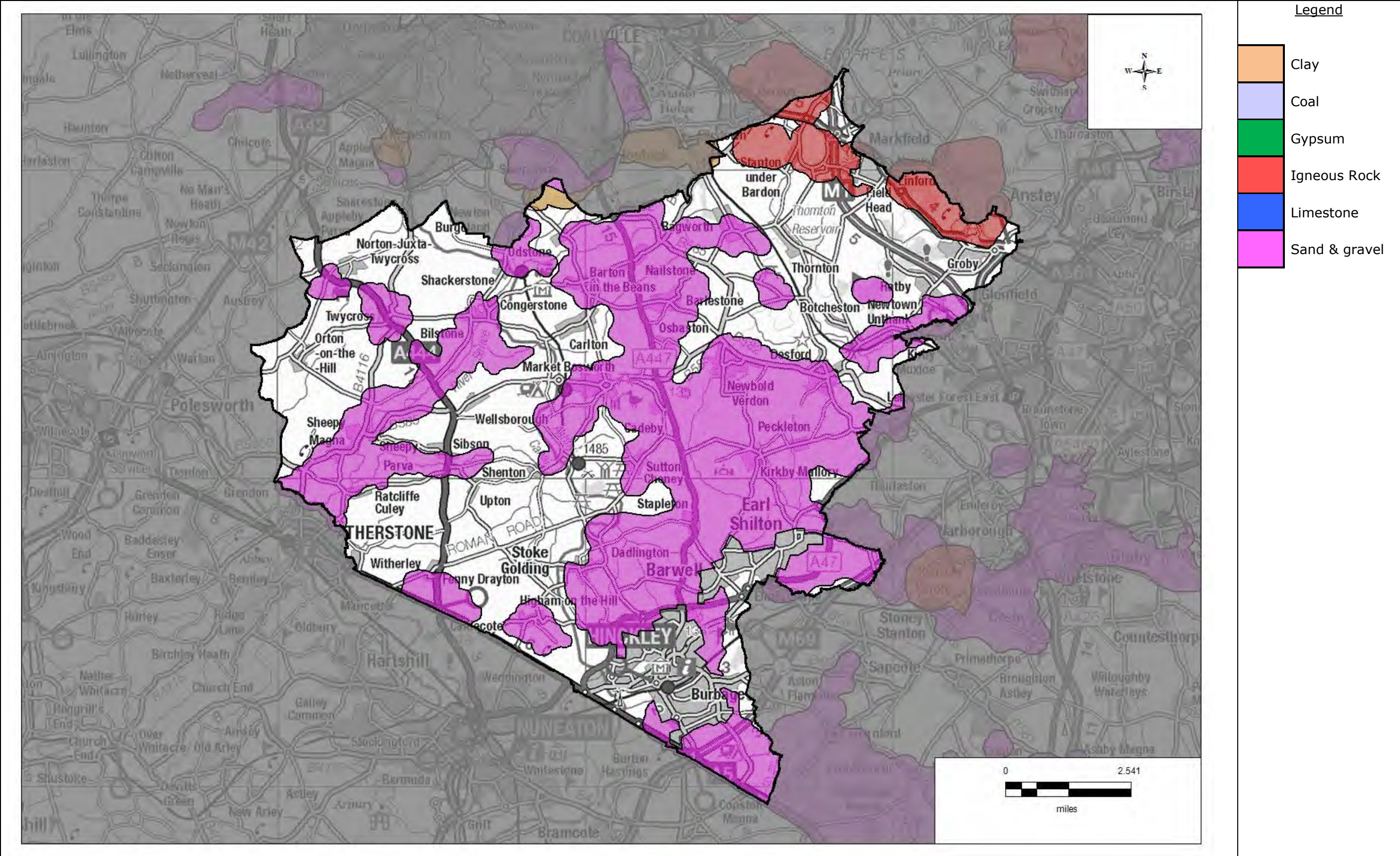
Signed:

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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Appendix 4: Mineral & Waste Safeguarding ref. S4/2015 for Hinkley and Bosworth Borough
– Plan HK1

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



Appendix 5: Leicestershire County Council Minerals and Waste Local Plan - Section 3
Minerals Safeguarding

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.

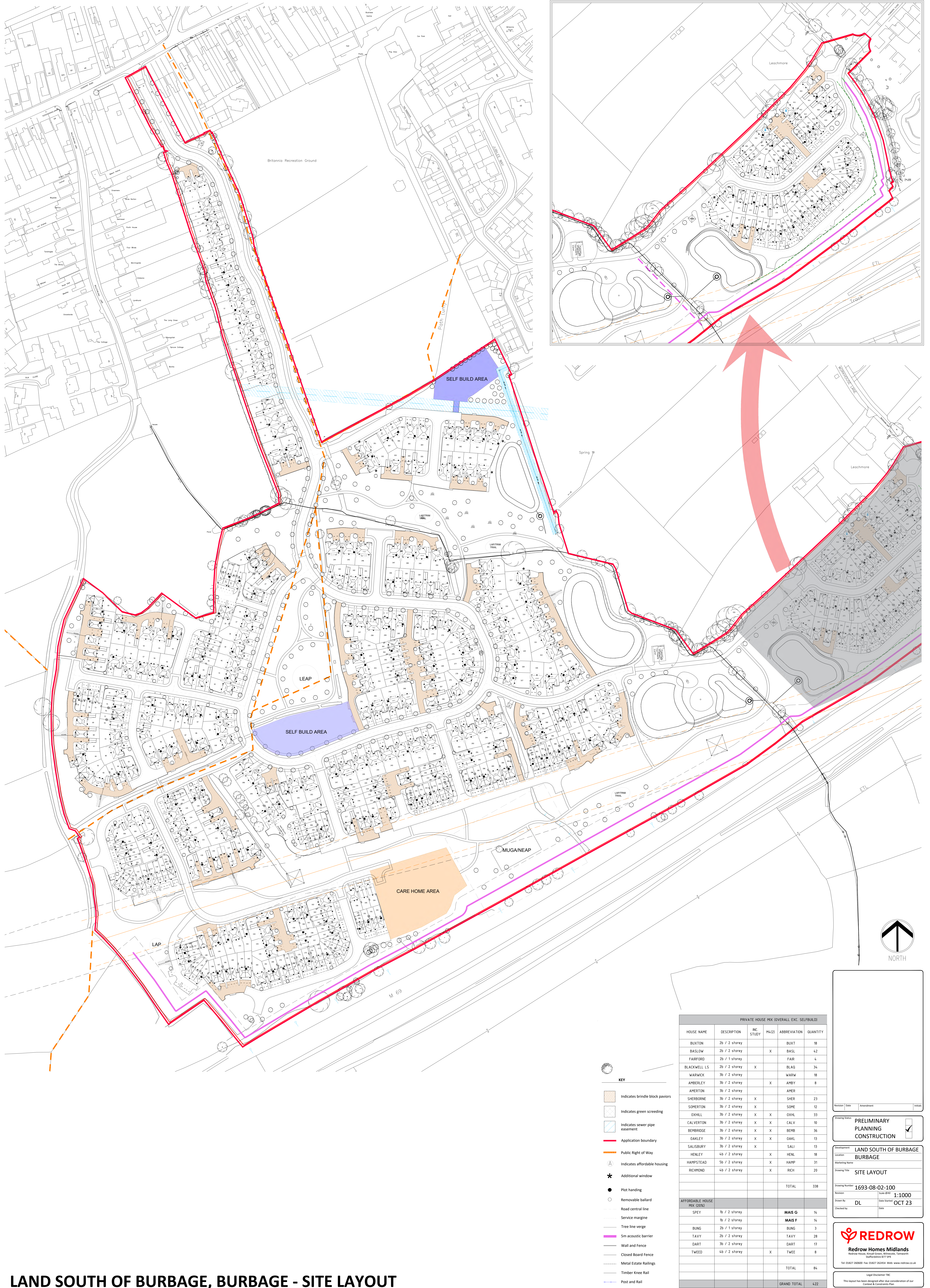
Planning applications for non-mineral development within a Mineral Safeguarding Area should be accompanied by a Mineral Assessment of the effect of the proposed development on the mineral resource beneath or adjacent to it.

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,

Appendix 6: Proposed Development Layout



LAND SOUTH OF BURBAGE, BURBAGE - SITE LAYOUT

- KEY**
- Indicates brindle block paviors
 - Indicates green screeding
 - Indicates sewer pipe easement
 - Application boundary
 - Public Right of Way
 - Indicates affordable housing
 - Additional window
 - Plot handing
 - Removable ballard
 - Road central line
 - Service margin
 - Tree line verge
 - 5m acoustic barrier
 - Wall and Fence
 - Closed Board Fence
 - Metal Estate Railings
 - Timber Knee Rail
 - Post and Rail

PRIVATE HOUSE MIX (OVERALL EXC. SELFBUILD)					
HOUSE NAME	DESCRIPTION	INC STUDY	ML(2)	ABBREVIATION	QUANTITY
BUXTON	2b / 2 storey			BUXT	18
BASLOW	2b / 2 storey		X	BASL	42
FAIRFORD	2b / 1 storey			FAIR	4
BLACKWELL LS	2b / 2 storey	X		BLAQ	34
WARWICK	3b / 2 storey			WARW	18
AMBERLEY	3b / 2 storey		X	AMBY	8
AMERTON	3b / 2 storey			AMER	.
SHERBORNE	3b / 2 storey	X		SHER	23
SOMERTON	3b / 2 storey	X		SOME	12
OXHILL	3b / 2 storey	X	X	OXHL	33
CALVERTON	3b / 2 storey	X	X	CALV	10
BEMBRIDGE	3b / 2 storey	X	X	BEMB	36
OAKLEY	3b / 2 storey	X	X	OAKL	13
SALISBURY	3b / 2 storey	X		SALI	13
HENLEY	4b / 2 storey		X	HENL	18
HAMPSTEAD	5b / 2 storey		X	HAMP	31
RICHMOND	4b / 2 storey	X		RICH	20
				TOTAL	338
AFFORDABLE HOUSE MIX (20%)					
SPEY	1b / 2 storey			MAIS G	14
	1b / 2 storey			MAIS F	14
BUNG	2b / 1 storey			BUNG	3
TAVY	2b / 2 storey			TAVY	28
DART	3b / 2 storey			DART	17
TWEED	4b / 2 storey	X		TWEE	8
				TOTAL	84
				GRAND TOTAL	422

Revision / Date / Amendment / Initials

Drawing Status

PRELIMINARY
PLANNING
CONSTRUCTION

☒

Development

LAND SOUTH OF BURBAGE

Location

BURBAGE

Marking Name

SITE LAYOUT

Drawing Number

1693-08-02-100

Scale 0% 1:1000

Drawn by

DL

Date

OCT 23

Checked by

Date

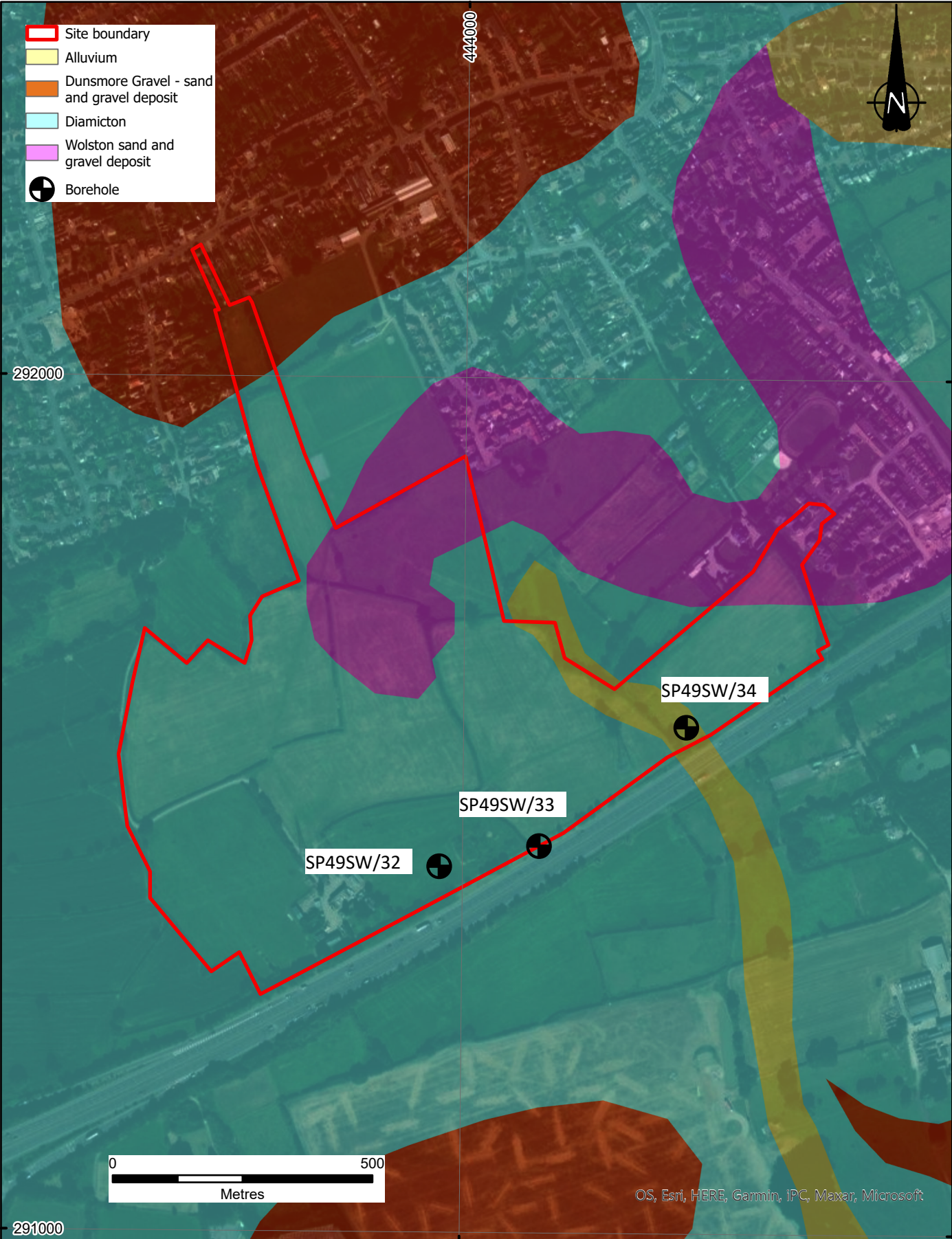
REDROW

Redrow Homes Midlands
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Legal Disclaimer Text

This layout has been designed after due consideration of our Context & Constraints Plan

DRAWINGS



CLIENT	REDROW HOMES LTD	DRG No		ST20911-001		REV	A	SUIT. CODE	--
		SIZE	A4	SCALE	1:10,000	DATE	11/03/2024		
PROJECT	LAND SOUTH OF BURBAGE, HINCKLEY	DRAWN BY		BVC					
CHECKED BY		AL							
DRAWING TITLE		APPROVED BY		SDB					

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