



INVESTIGATE



REMEDiate



REGENERATE



GEOLOGICAL AND MINING RISK ASSESSMENT

**FOR
PHEONIX PARK,
THURNSCOE,
ROTHERHAM,
S63 0BD,**

**PREPARED FOR
GROUNDWORK YORKSHIRE**

**REPORT NO. NE4303
OCTOBER 2023**

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**GEOLOGICAL & MINING RISK ASSESSMENT FOR PHOENIX PARK,
THURNSCOE, ROTHERHAM, S63 0BD**

CLIENT: GROUNDWORK YORKSHIRE

1. INTRODUCTION

This report has been prepared in accordance with Purchase Order No. 1103/23, dated 29th September 2023 and an email, dated 29th September 2023, from the Client.

The brief for a coal mining risk assessment was set out in our estimate, ref. E8051A and dated 24th June 2023, and comprises a geological and mining risk assessment together with our conclusions and recommendations.

1.1 Site Location and Description

The site is located in Phoenix Park, accessed via Barrowfield Road, Thurnscoe, as indicated on Figure 1. The approximate National Grid Reference of the centre of the site is E446174m N405237m.

As shown on Figure 2, the about 1.35 hectare rectangular shaped site is bounded to the north by Barrowfield Road and a Balfour Beatty site depot. To the east, vegetation bounds the site, separating it from a depot. To the south, by Phoenix Park and a commercial estate. To the west, by a park and Barrowfield Road and the railway connecting to Thurnscoe train station beyond.

1.2 Proposed Development and Purpose of the Desk Study

We understand that it is proposed to install a modular building, forming a community hub/café, a play area and associated car parking, comprising a mixture of geo grid surfacing and bituminous macadam hardstanding, as shown on Figure 3.

The purpose of the desk study is to determine the geological structure, including the depth and thickness of coal and other mineral seam horizons, to determine the potential for mineworkings in these horizons based upon the available information and to provide our conclusions and recommendations.

2. DESK STUDY

2.1 Detailed Geological Appraisal

The British Geological Survey (BGS) have published sheet, ref. SE40NE, solid and drift edition at 1:10,000 scale dated 2005, an extract of which is given as Figure 4.

The geological survey indicates that the site is underlain by Made Ground, the depth of which is unknown. It is anticipated to be deep, due to being labelled as a disused tip on the geological map, which is assumed to be open cast colliery spoil.

Due to the close proximity to the site, there may be Alluvium deposits underlying the Made Ground, normally comprising interbedded or interleaved silty clays, clayey silts, silty sands and/ or sandy gravels and may have pockets of peat and/ or organic debris.

Underlying the Made Ground and possible Alluvium is indicated to be the Pennine Upper Coal Measures Formation. Coal Measures strata in this area normally comprise interbedded mudstones, siltstones and subordinate sandstones with occasional economically important mineral seams of coal and ironstone. It should be noted that where found at near surface level Coal Measures strata are normally completely weathered to a soil. Unnamed sandstone beds are indicated to be present within close proximity of the site. They appear to be interbedded within the Pennine Upper Coal Measures Formation according to the vertical section, indicating they may be present on the site.

The bedded rock strata on the geological map show two dip arrows, one at 600m to the north west, with a dip of 3° to the north and one at 650m to the north east, with a dip of 10° to the north north east. However, according to the Consultants Coal Mining Report, the bedded rock strata beneath the site is estimated to down dip 2.8° to the north east.

The bedded rock strata are anticipated to be unaffected by geological faults. It should be noted that the rock strata in the vicinity of the site might be affected by minor parallel sympathetic geological faults. The nearest fault is located approximately 410 metres to the south west of the site boundary.

The BGS sheet shows the Brierley Coal (0.2 to 1.5m thick) outcropping some 650m to the north east and indications of the underlying Elmsall Coal (0.3 to 0.6m thick) outcropping some 230m to the north east. Both of these seams will dip away from the site and will therefore not be present. From the generalised vertical section, it is anticipated that the first coal seam beneath the site would be the Highgate Coal (0.5m thick) at an approximate depth of 62m, underlain by the Shafton Coal (1.4 to 2.0m thick), at approximately 94m.

There is one borehole record available on the British Geological Survey Onshore GeolIndex.

Borehole ref: SE40NE16 is located approximately 370 metres to the north east of the site boundary and records the Parkgate Coal seam at 721.36 metres depth.

According to the Consultants Coal Mining Report, an historic opencast mine is indicated to be adjacent to the site, to the east.

An abandoned mine shaft is located approximately 280 metres to the east of the site boundary.

The anticipated succession of strata at the centre of the site is as tabulated below. The approximate thicknesses and depths given are the best that can be determined from the above information.

TABLE 1 STRATIGRAPHICAL SUCCESSION

Strata	Maximum Unworked Thickness (m approx.)	Vertical Interval (m approx.)	Depth of Base below Bedrock (m approx.)
MADE GROUND	#		
ALLUVIUM	#		
CARBONIFEROUS COAL MEASURES:			
Highgate Coal	0.5	32	62
Shafton Coal	2.0	66	94
Sharlston Top Coal	1.9		160

Not recorded.

2.2 Detailed Mining Appraisal

The presence of mineral seams, including coal, which might have been mined beneath the site has been determined from the published geological sheet and the Coal Authorities Consultants Coal Mining Report, ref. 51003380919001 and dated 29th September 2023, a copy of which is appended.

The Coal Authority indicates that they have records of mineworkings from colliery abandonment plans. The locations of these collieries are not given, however the coal seams associated with them are detailed below:

The Hickleton Colliery has records of; the 1.60 metres thick Shafton Coal seam at depths between 94 metres beneath the site and 97 metres south west of the site, dipping between 2.8° and 1.7° to the north east and last worked in 1949, the 1.19-1.27 metres thick Meltonfield Coal seam at depths between 353-354 metres west and north west of the site, dipping between 2.6° and 3.0° to the north and last worked in 1949, the 2.18-2.27 metres thick Top Hard Barnsley Coal seam at depths between 443-492 metres south, north west and west of the site, dipping between 1.1° and 3.9° to the north west, north and north east and last worked in 1922, the 1.57-1.98 metres thick Parkgate Coal seam at depths between 679-726 metres beneath, south west, south, west and north of the site, dipping between 2.5° and 5° north, north west and north east and last worked in 1983.

The Wath/Hickleton Colliery has a record of the 2.18 metres thick Top Hard Barnsley coal seam at a depth of 443 metres south of the site, dipping 3.7° north east and last worked in 1902.

The Houghton Main Colliery has a record of the 1.83 metres thick Top Hard Barnsley Coal seam at a depth of 450 metres south west of the site, dipping 4° to the north west and last worked in 1912.

It should be noted that it did not become a statutory requirement to maintain and preserve plans of abandoned mines until the Mines (Coal) Regulations Act of 1872, by which date much unrecorded mining had taken place and of those plans which were

NE4303 – Pheonix Park

made it is likely that not all will have survived. In this respect the Coal Authority consider that there are no probable unrecorded shallow workings beneath the site that could affect the site.

The Coal Authority are not aware of any recorded abandoned mine entries within the site or within 100 metres of the site. It should be noted that the Coal Authority records may be incomplete and hence mine entries may be present for which the Coal Authority has no knowledge.

The Coal Authority indicate that they have multiple mine abandonment plans which are for all or part of the site area.

The Coal Authority indicate that they have no records of outcropping coal seams in the vicinity of the site.

The Coal Authority indicate that they are not aware of any geological faults, fissures or break lines affecting the site.

According to the Consultants Coal Mining Report, there is an historical open cast mine located adjacent to the site, to the east.

The Coal Authority have:

No records of managed tips

One record of mine gas located approximately 153.8 metres to the north east of the site boundary.

No records of mine water treatment schemes within 500 metres of the site boundary.

The Coal Authority have:

No records of site investigations

No records of remediated sites

No records of property damage claims since 31 October 1994 within 50 metres of the site boundary.

The Coal Authority indicate that they have no plans to mine coal beneath the site and there are no coal mining licences within 200 metres of the site.

2.3 Conclusions and Recommendations

Surface instability arises when the collapse of mineworkings migrates upwards through the roof strata and back to the surface or near surface level. There is considered to be a potential for this if there is less than ten times the unworked thickness of the coal seam in intact rock strata above the mined coal seam. In addition residual settlement of abandoned mineworkings is not possible to predict, and although the risk may be increased by the stresses imposed by a surface load, settlement can and does occur irrespective of ground surface loads.

Given the findings of the geological and mining appraisal we do not consider there to be a potential for unrecorded shallow mine workings beneath the site which could affect the proposed development, as the shallowest coal seam beneath the site is estimated to be at a depth of 62 metres.

Due to the site being situated on colliery spoil from historical open cast mining, there may be a possibility of coal traces within the made ground, which may pose a potential risk of combustion.

Consideration should be given to the extensive depths of Made Ground that could be present on the site. In addition, mine gas remedial works have been recorded close to the site boundary. In light of this, we recommend the installation of gas standpipes to be monitored over an extended period of time for potential gas migration.

3.0 GENERAL

Where mineworkings are found at shallow depth there is a potential for accumulated mine gas migrating to the surface or near surface level. Given this scenario consideration should be given to installing standpipes and undertaking ground gas monitoring followed by a ground gas risk assessment.

In preparation of this report no consideration has been given to:

- the foundations and excavations, the possibility of deep made ground should be noted.
- the possible presence of contamination
- the possible presence of ground gas
- flora and fauna

as this was outside our brief. The above should be addressed prior to development.

We trust that this report fulfils your present requirements but if you have any queries or we can be of further assistance please contact the undersigned or Mr David Simpson at our Ossett office.

SUB SURFACE CONSULTANTS LIMITED
REPORT No. NE4303
OCTOBER 2023



D. M. Bennett B.Sc.(Hons.)
Geotechnical Engineer
For and on behalf of
Sub Surface Consultants Limited



C. A. Marsden B.Sc.(Hons.), C.Eng., M.I.C.E.
Director
For and on behalf of
Sub Surface Consultants Limited.

COAL AUTHORITY MINING REPORT

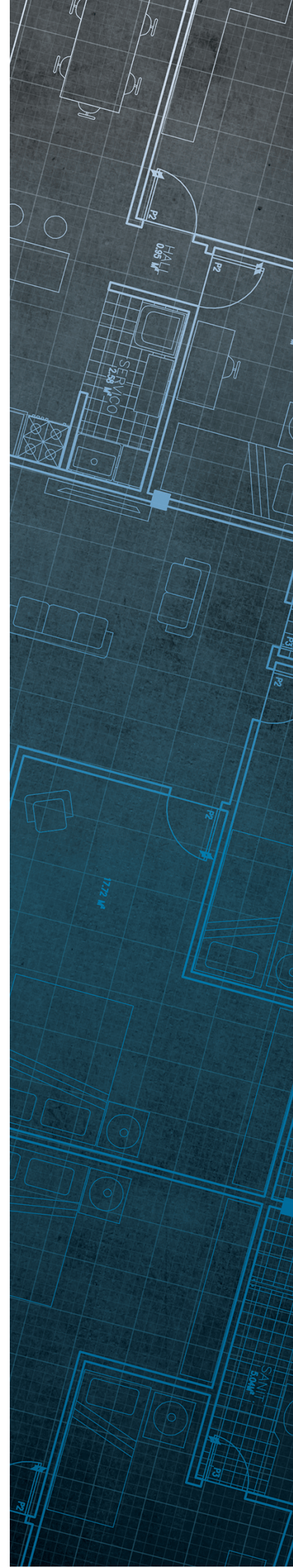


The Coal
Authority

Consultants Coal Mining Report

Phoenix Park
Barrowfield Road
Thurnscoe
Rotherham
South Yorkshire
S63 0BD

Date of enquiry:	29 September 2023
Date enquiry received:	29 September 2023
Issue date:	29 September 2023
Our reference:	51003380919001
Your reference:	NE4303



Consultants

Coal Mining Report

This report is based on and limited to the records held by the Coal Authority at the time the report was produced.

Client name

SUB SURFACE NORTH EAST LIMITED

Enquiry address

Phoenix Park
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Approximate position of property



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Section 1 – Mining activity and geology

Past underground mining

Colliery	Seam	Mineral	Coal Authority reference	Depth (m)	Direction to working	Dipping rate of seam worked (degrees)	Dipped direction of seam worked	Extraction thickness (cm)	Year last mined
HICKLETON	SHAFTON	Coal	4IUO	94	Beneath Property	2.8	North-East	160	1949
HICKLETON	SHAFTON	Coal	4IUP	97	South-West	1.7	North-East	160	1942
BARNSBURGH	NEWHILL	Coal	4Q50	295	South	2.7	North-East	150	1977
HICKLETON	MELTONFIELD	Coal	5TYN	353	West	3.0	North	119	1949
HICKLETON	MELTONFIELD	Coal	4IUU	354	North-West	2.6	North	127	1946
WATH / HICKLETON	TOP HARD BARNSLEY	Coal	4Q53	443	South	3.7	North-East	218	1902
HOUGHTON MAIN	TOP HARD BARNSLEY	Coal	5R4H	450	South-West	4.0	North-West	183	1912
HICKLETON	TOP HARD BARNSLEY	Coal	4IV4	455	North-West	1.1	North-West	227	1908
HICKLETON	TOP HARD BARNSLEY	Coal	5TYW	456	West	3.9	North-West	203	1920
HICKLETON	TOP HARD BARNSLEY	Coal	5TYX	484	West	3.8	North-West	203	1902
HICKLETON	TOP HARD BARNSLEY	Coal	4IV5	492	North-West	3.1	North	227	1922
HICKLETON	PARKGATE	Coal	P80	679	South-West	2.5	North-West	178	1983
HICKLETON	PARKGATE	Coal	P81	681	South-West	3.3	North-West	198	1983
HICKLETON	PARKGATE	Coal	5OS7	686	West	5.0	North-West	198	1938
HICKLETON	PARKGATE	Coal	4MR8	688	South	3.6	North-East	157	1943
HICKLETON	PARKGATE	Coal	4RRJ	693	Beneath Property	4.5	North-East	180	1936
HOUGHTON	PARKGATE	Coal	5R5H	694	South-West	4.2	North-West	198	1943
HICKLETON	PARKGATE	Coal	5OS5	701	West	4.9	North	170	1936
HICKLETON	PARKGATE	Coal	5OS4	726	North	2.5	North-West	167	1936

Probable unrecorded shallow workings

None.

Spine roadways at shallow depth

No spine roadway recorded at shallow depth.

Mine entries

None recorded within 100 metres of the enquiry boundary.

Abandoned mine plan catalogue numbers

The following abandoned mine plan catalogue numbers intersect with some, or all, of the enquiry boundary:

18309	NE1031	NE1003
16528	NE1030	NE942
NE957	M130	16530

Our records show we have more plans than those shown above which could affect the enquiry boundary.

Please contact us on 0345 762 6848 to determine the exact abandoned mine plans you require based on your needs.

Outcrops

No outcrops recorded.

Geological faults, fissures and breaklines

No faults, fissures or breaklines recorded.

Opencast mines

Please refer to the "Summary of findings" map (on separate sheet) for details of any opencast areas within 500 metres of the enquiry boundary.

Coal Authority managed tips

None recorded within 500 metres of the enquiry boundary.

Section 2 – Investigative or remedial activity

Please refer to the 'Summary of findings' map (on separate sheet) for details of any activity within the area of the site boundary.

Site investigations

None recorded within 50 metres of the enquiry boundary.

Remediated sites

None recorded within 50 metres of the enquiry boundary.

Coal mining subsidence

The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50 metres of the enquiry boundary, since 31 October 1994.

There is no current Stop Notice delaying the start of remedial works or repairs to the property.

The Coal Authority is not aware of any request having been made to carry out preventive works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991.

Mine gas

Distance to gas incident/remediation (m)	Direction
153.8	North-East

See Section 4 for further information.

Mine water treatment schemes

None recorded within 500 metres of the enquiry boundary.

Section 3 – Licensing and future mining activity

Future underground mining

None recorded.

Coal mining licensing

None recorded within 200 metres of the enquiry boundary.

Court orders

None recorded.

Section 46 notices

No notices have been given, under section 46 of the Coal Mining Subsidence Act 1991, stating that the land is at risk of subsidence.

Withdrawal of support notices

The property is in an area where a notice to withdraw support was given in 1946.

The property is not in an area where a notice has been given under section 41 of the Coal Industry Act 1994, cancelling the entitlement to withdraw support.

Payments to owners of former copyhold land

The property is not in an area where a relevant notice has been published under the Coal Industry Act 1975/Coal Industry Act 1994.

Section 4 – Further information

The following potential risks have been identified and as part of your risk assessment should be investigated further.

Future development

If development proposals are being considered, technical advice relating to both the investigation of coal and former coal mines and their treatment should be obtained before beginning work on site. All proposals should apply specialist engineering practice required for former mining areas. No development should be undertaken that intersects, disturbs or interferes with any coal or coal mines without first obtaining the permission of the Coal Authority.

MINE GAS: Please note, if there are no recorded instances of mine gas within 500m of the enquiry boundary, this does not mean that mine gas is not present within the vicinity. The Coal Authority Mine Gas data is limited to only those sites where a Mine Gas incident has been recorded. Developers should be aware that the investigation of coal seams, mine workings or mine entries may have the potential to generate and/or displace underground gases. Associated risks both to the development site and any neighbouring land or properties should be fully considered when undertaking any ground works. The need for effective measures to prevent gases migrating onto any land or into any properties, either during investigation or remediation work, or after development must also be assessed and properly addressed. In these instances, the Coal Authority recommends that a more detailed Gas Risk Assessment is undertaken by a competent assessor.

Development advice

The site is within an area of historical coal mining activity. Should you require advice and/or support on understanding the mining legacy, its risks to your development or what next steps you need to take, please contact us.

Mine gas remedial works

The site is within an area of previous interest. It is close to where the Coal Authority has investigated and subsequently remediated the effects of mine or ground gas emissions following specific reported hazards.

The site requires further investigation and may influence your risk assessment. We recommend that you order the **Coal Authority Mine Gas Emission Report**, which will include more information about the hazard.

For further information on specific site or ground investigations in relation to any issues raised in Section 4, please call us on 0345 762 6848 or email us at groundstability@coal.gov.uk.

Section 5 – Data definitions

The datasets used in this report have limitations and assumptions within their results. For more guidance on the data and the results specific to the enquiry boundary, please **call us on 0345 762 6848** or **email us at groundstability@coal.gov.uk**.

Past underground coal mining

Details of all recorded underground mining relative to the enquiry boundary. Only past underground workings where the enquiry boundary is within 0.7 times the depth of the workings (zone of likely physical influence) allowing for seam inclination, will be included.

Probable unrecorded shallow workings

Areas where the Coal Authority believes there to be unrecorded coal workings that exist at or close to the surface (less than 30 metres deep).

Spine roadways at shallow depth

Connecting roadways either, working to working, or, surface to working, both in-seam and cross measures that exist at or close to the surface (less than 30 metres deep), either within or within 10 metres of the enquiry boundary.

Mine entries

Details of any shaft or adit either within, or within 100 metres of the enquiry boundary including approximate location, brief treatment details where known, the mineral worked from the mine entry and conveyance details where the mine entry has previously been sold by the Authority or its predecessors British Coal or the National Coal Board.

Abandoned mine plan catalogue numbers

Plan numbers extracted from the abandoned mines catalogue containing details of coal and other mineral abandonment plans deposited via the Mines Inspectorate in accordance with the Coal Mines Regulation Act and Metalliferous Mines Regulation Act 1872. A maximum of 9 plan extents that intersect with the enquiry boundary will be included. This does not infer that the workings and/or mine entries shown on the abandonment plan will be relevant to the site/property boundary.

Outcrops

Details of seam outcrops will be included where the enquiry boundary intersects with a conjectured or actual seam outcrop location (derived by either the British Geological Survey or the Coal Authority) or intersects with a defined 50 metres buffer on the coal (dip) side of the outcrop. An indication of whether the Coal Authority believes the seam to be of sufficient thickness and/or quality to have been worked will also be included.

Geological faults, fissures and breaklines

Geological disturbances or fractures in the bedrock. Surface fault lines (British Geological Survey derived data) and fissures and breaklines (Coal Authority derived data) intersecting with the enquiry boundary will be included. In some circumstances faults, fissures or breaklines have been known to contribute to surface subsidence damage as a consequence of underground coal mining.

Opencast mines

Opencast coal sites from which coal has been removed in the past by opencast (surface) methods and where the enquiry boundary is within 500 metres of either the licence area, site boundary, excavation area (high wall) or coaling area.

Coal Authority managed tips

Locations of disused colliery tip sites owned and managed by the Coal Authority, located within 500 metres of the enquiry boundary.

Site investigations

Details of site investigations within 50 metres of the enquiry boundary where the Coal Authority has received information relating to coal mining risk investigation and/or remediation by third parties.

Remediated sites

Sites where the Coal Authority has undertaken remedial works either within or within 50 metres of the enquiry boundary following report of a hazard relating to coal mining under the Coal Authority's Emergency Surface Hazard Call Out procedures.

Coal mining subsidence

Details of alleged coal mining subsidence claims made since 31 October 1994 either within or within 50 metres of the enquiry boundary. Where the claim relates to the enquiry boundary confirmation of whether the claim was accepted, rejected or whether liability is still being determined will be given. Where the claim has been discharged, whether this was by repair, payment of compensation or a combination of both, the value of the claim, where known, will also be given.

Details of any current 'Stop Notice' deferring remedial works or repairs affecting the property/site, and if so the date of the notice.

Details of any request made to execute preventative works before coal is worked under section 33 of the Coal Mining Subsidence Act 1991. If yes, whether any person withheld consent or failed to comply with any request to execute preventative works.

Mine gas

Reports of alleged mine gas emissions received by the Coal Authority, either within or within 500 metres of the enquiry boundary that subsequently required investigation and action by the Coal Authority to mitigate the effects of the mine gas emission. Please note, if there are no recorded instances of mine gas reported, this does not mean that mine gas is not present within the vicinity. The Coal Authority Mine Gas data is limited to only those sites where a Mine Gas incident has been recorded.

Mine water treatment schemes

Locations where the Coal Authority has constructed or operates assets that remove pollutants from mine water prior to the treated mine water being discharged into the receiving water body.

These schemes are part of the UK's strategy to meet the requirements of the Water Framework Directive. Schemes fall into 2 basic categories: Remedial – mitigating the impact of existing pollution or Preventative – preventing a future pollution incident.

Mine water treatment schemes generally consist of one or more primary settlement lagoons and one or more reed beds for secondary treatment. A small number are more specialised process treatment plants.

Future underground mining

Details of all planned underground mining relative to the enquiry boundary. Only those future workings where the enquiry boundary is within 0.7 times the depth of the workings (zone of likely physical influence) allowing for seam inclination will be included.

Coal mining licensing

Details of all licenses issued by the Coal Authority either within or within 200 metres of the enquiry boundary in relation to the under taking of surface coal mining, underground coal mining or underground coal gasification.

Court orders

Orders in respect of the working of coal under the Mines (Working Facilities and Support) Acts of 1923 and 1966 or any statutory modification or amendment thereof.

Section 46 notices

Notice of proposals relating to underground coal mining operations that have been given under section 46 of the Coal Mining Subsidence Act 1991.

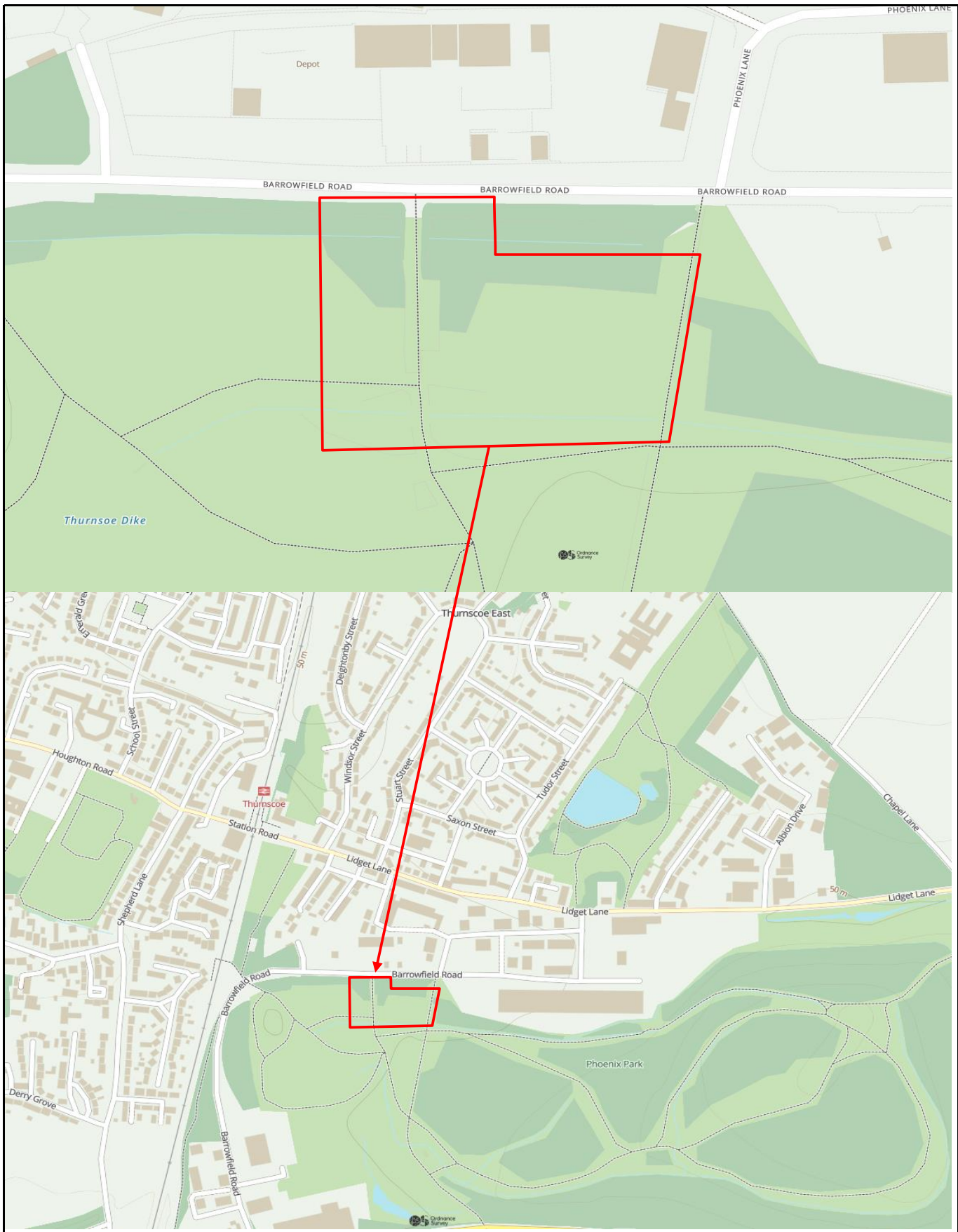
Withdrawal of support notices

Published notices of entitlement to withdraw support and the date of the notice. Details of any revocation notice withdrawing the entitlement to withdraw support given under Section 41 of the Coal Industry Act 1994.

Payment to owners of former copyhold land

Relevant notices which may affect the property and any subsequent notice of retained interests in coal and coal mines, acceptance or rejection notices and whether any compensation has been paid to a claimant.

FIGURES



S SUB SURFACE SITE INVESTIGATION SPECIALISTS, GEOTECHNICAL & ENVIRONMENTAL CONSULTANTS 3 Peel Street, Preston, Lancashire, PR2 2QS. Tel: (01772) 561135 Fax: (01772) 204907	Site Location Plan			
Site: PHOENIX PARK, THURNSCOE, ROTHERHAM SOUTH YORKSHIRE, S63 0BD	Date Drawn: 19-Oct-23	Date Checked:	Orientation: 	Job Number: NE4303
Client: GROUNDWORK YORKSHIRE	Drawn By: DB	Checked By:	Scale: —	Figure Number: 1



Phoenix Park, Barnsley Red Line Boundary Plan



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Ordnance Survey

- Notes:
- 1) Figured dimensions to be taken. Do not scale dimensions. Contractors must verify all dimensions on site before preparing shop drawings or commencing any work.
 - 2) Copyright ©. This drawing must not be reproduced without the permission of Groundwork Yorkshire.

ADDRESS:
Phoenix Park
Barrowfield
Rd, Thurnscoe,
Rotherham,
S63 0BD

GRID REF:
SE 46130 05288

Rev	Revision Notes	Drawn	Check	Date
1				

GROUNDWORK YORKSHIRE
Groundwork Yorkshire
Environment and Business Centre
Mortyn House, Rotherham
Wadsworth, Leicestershire, LE12 0BS
Telephone: 0113 238 0801
Fax: 0113 238 0807
<http://www.groundwork.org.uk/thurston/rotherham-and-yorkshire/>



Site: Phoenix Park, Barnsley	File: Red Line Boundary Plan
Date: 23.08.22	Scale: -
Revision: 001	Drawn: TM
	Check: MK
	Date: 23.08.22



SUB SURFACE

SITE INVESTIGATION SPECIALISTS, GEOTECHNICAL & ENVIRONMENTAL CONSULTANTS
3 Peel Street, Preston, Lancashire, PR2 2QS. Tel: (01772) 561135 Fax: (01772) 204907

Site Plan

Site:	PHOENIX PARK, THURNSCOE, ROTHERHAM SOUTH YORKSHIRE, S63 0BD	Date Drawn:	19-Oct-23	Date Checked:		Orientation:		Job Number:	NE4303
Client:	GROUNDWORK YORKSHIRE	Drawn By:	DB	Checked By:		Scale:	-	Figure Number:	2

- KEY**
- Vehicular paving
 - Pedestrian paving
 - Geo Grid Surfacing
 - Community Hub building
 - Trial hole location (8no.)

Client: THE LAND TRUST

Project: PHOENIX PARK, GOLDTHORPE

Location: BARNWICKFIELD ROAD, THURNSCOPE, ROTHERHAM, S63 0BD

Drawing title: PROPOSED SITE PLAN

Drawing no: 002

Scale: 1:250@A3

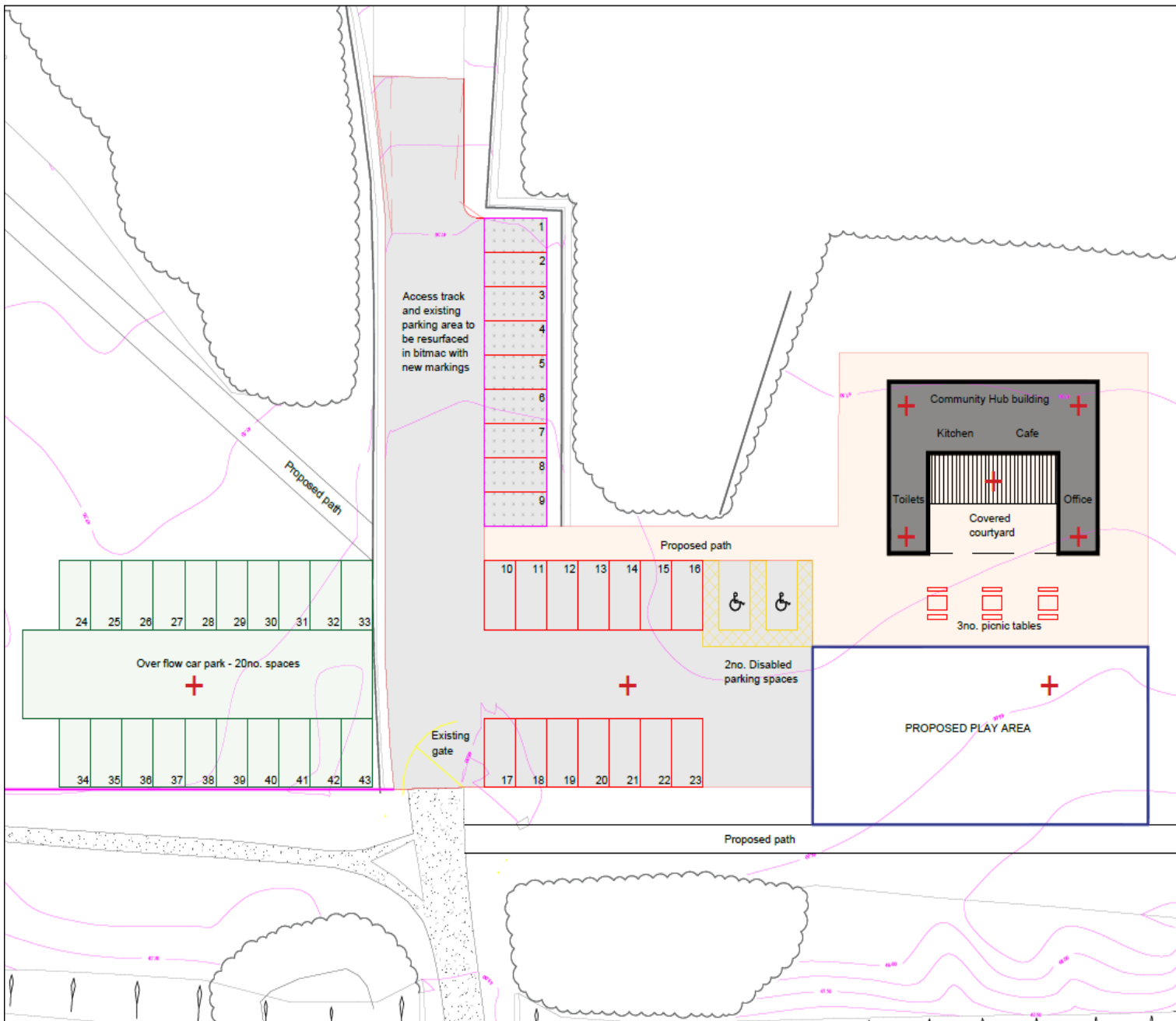
Date: 20.06.23

Drawn by: TM

Checked by: MK



Groundwork Yorkshire
Environment and Business Centre
Waterloo House, Farnley, Wakefield
Leeds, LS27 9PL
www.groundwork.org.uk
Creative Regeneration
Community Regeneration 2008

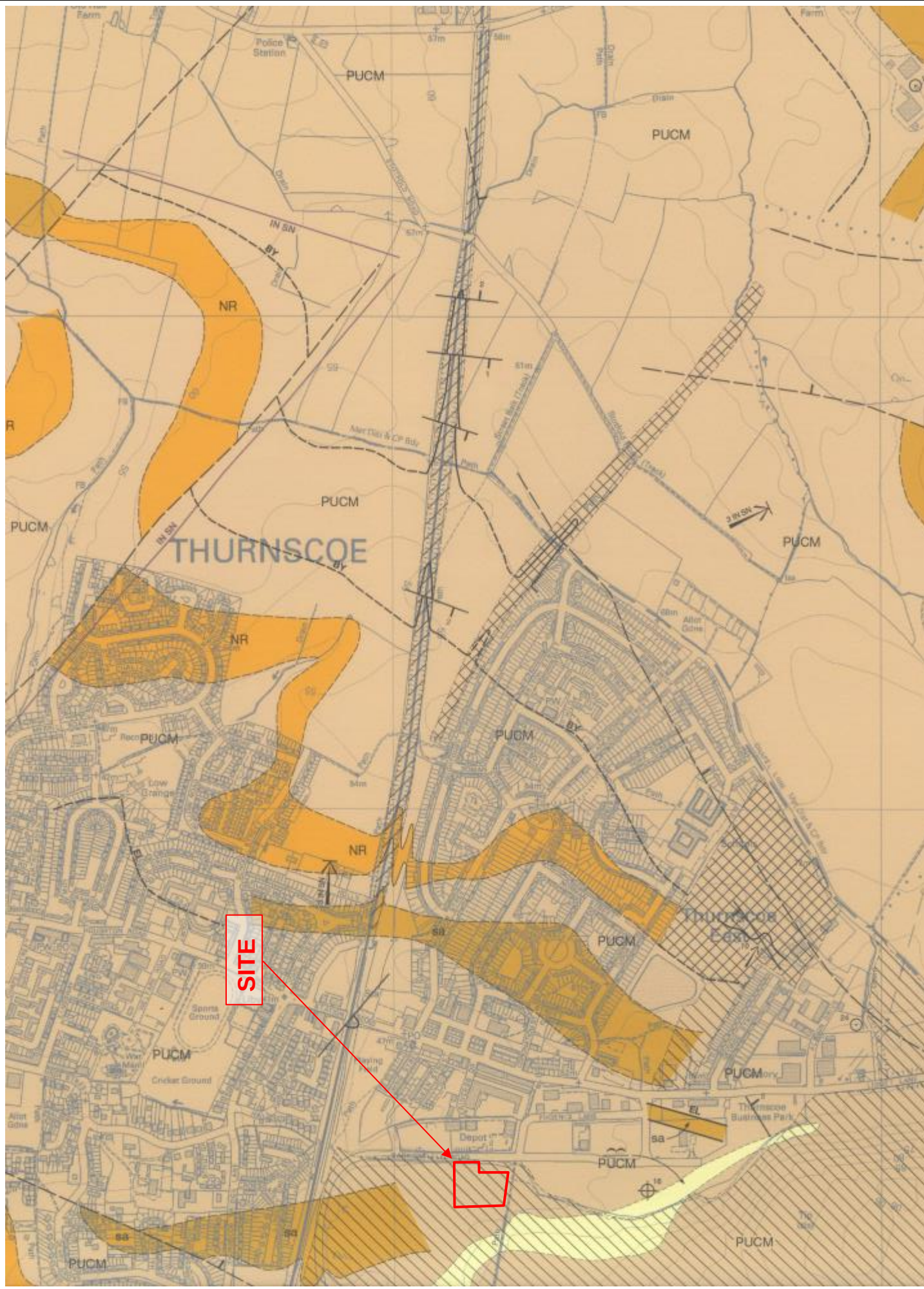


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SUB SURFACE
SITE INVESTIGATION SPECIALISTS, GEOTECHNICAL & ENVIRONMENTAL CONSULTANTS
3 Peel Street, Preston, Lancashire, PR2 2QS. Tel: (01772) 561135 Fax: (01772) 204907

Proposed Development

Site:	PHOENIX PARK, THURNSCOPE, ROTHERHAM SOUTH YORKSHIRE, S63 0BD	Date Drawn:	19-Oct-23	Date Checked:		Orientation:	NE4303
Client:	GROUNDWORK YORKSHIRE	Drawn By:	DB	Checked By:		Scale:	3



KEY

SUPERFICIAL DEPOSITS
ARTIFICIALLY MODIFIED GROUND

- Worked Ground: Mainly quarries, pits, road and rail cuttings
- Made Ground: Mainly landfill silt and other areas of extensive spoil
- Infilled Ground: Mainly backfilled brick pits, limestone quarries and rail cuttings

Within urban areas, much of the surface may have been disturbed by human activity, but not all areas of artificial made, worked, infilled and landscaped ground have been shown.

QUATERNARY DEPOSITS

- Alluvium: Soft to firm silt and clay, locally overlying gravel

The Quaternary Deposits listed above are not necessarily shown in order of superposition.

FOR BEDROCK GEOLOGY SEE GENERALIZED VERTICAL SECTION

- Geological boundary, Artificial and Quaternary Deposits
- Geological boundary, Bedrock
- Fault at rockhead, trace/mark on downthrow side, throw in metres
- Fault underground in seam indicated, crossmark on downthrow side, the note on the side from which the fault was proved
- Coal outcrop, name on the younging-direction side of the outcrop
- Marine band
- Estuarine band
- Muscle band

Broken lines denote inferred boundaries.

- Inclined strata, dip in degrees
- Generalized dip of inclined strata underground, in named seam, dip in degrees
- Borehole
- Waterwell or borehole
- Borehole, exact site uncertain
- Pit or mine shaft, abandoned
- Swallow hole

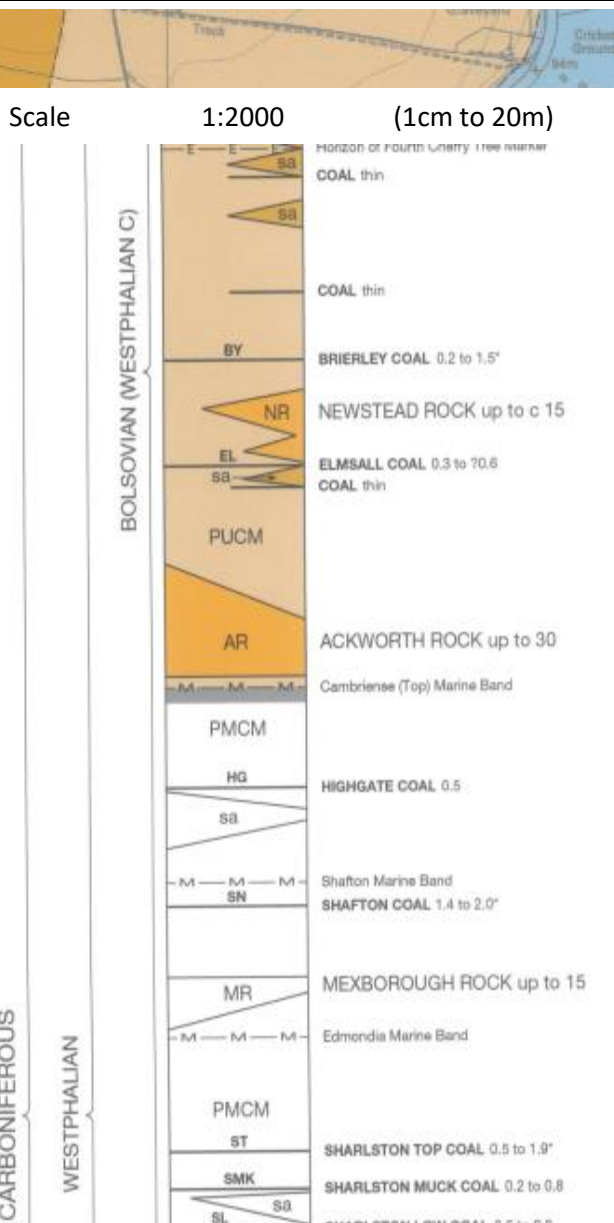
Only selected shafts, and geologically more significant boreholes are shown. The true location of some boreholes and shafts is uncertain. Other shafts may exist. Whilst efforts have been made to trace the axes of mine shafts and adits, it is not claimed that all have been shown on the map.

Numbers are those of the BGS record system, in which they are preceded by the sheet number.

For detailed information on old workings, information on present and future coal mining (underground or open-pit), and information on exact positions and locations of mine shafts, you should apply to The Coal Authority.

Depths and thicknesses are given in metres.

This map gives an interpretation of the data available at the last date of survey or time of map compilation. Additional information and manuscript field-maps are available in BGS files. Any questions about access to such additional information should be directed to the BGS Enquiry Service.



SUB SURFACE

SITE INVESTIGATION AND SPECIALIST GEOTECHNICAL CONSULTANTS

3 Peel Street, Preston, PR2 2QS. Tel. (01772) 561135 Fax (01772) 204907

Geological Map

Date Drawn 19-Oct-23

Date Checked

Orientation

Job No. NE4303

Figure No. 4

Scale 1:10,000 at A3

Checked By DB

Drawn By

Site

PHOENIX PARK, THURNSCOE, ROTHERHAM

Client

SOUTH YORKSHIRE, SC3 0BD

GROUNDWORK YORKSHIRE

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