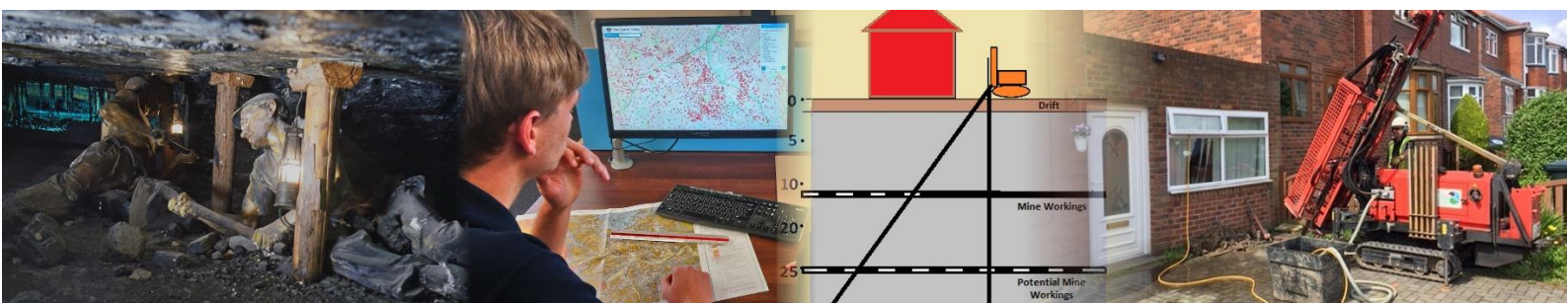




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GEOENVIRONMENTAL
CONSULTANCY
DRILLING & DATA ACQUISITION



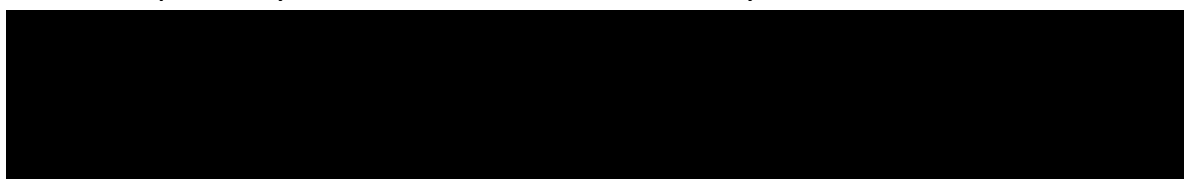
GEOINVESTIGATE LIMITED

Coal Mining Risk Assessment (CMRA)

LOCATION	Proposed Unit Developments, Woodhouse Business Centre, Woodhouse Street, Woodville, Swadlincote DE11 8ED
ISSUE DATE	18 th October 2019
FOR	Mr. William Whitaker – S Whitaker Ltd. c/o Dan Briscoe
CLIENT REF.	
OUR REF.	G19380

Prepared by

Checked by



Findley Mostyn BSc(Hons) MSc FGS
Engineering Geologist

Ross Nicolson BSc(Hons) MSc(Eng) CEng MIMMM
Principal Geotechnical Engineer

SUMMARY FINDINGS

OUTCOME (MITIGATION REQUIRED)

Exploratory drilling is required to investigate possible underground coal/fireclay mine workings within very shallow or shallow depth beneath this site. In addition, a **Coal Authority Mine Gas Emission Report** should be obtained from the CA regarding hazardous mine gas. Appropriate gas protection measures will also be required. A **shallow geo-environmental site investigation (SI)** may be required to establish whether ground contamination is present within the site.

WHAT TO DO NEXT

Obtain quotes for the intrusive site investigation works. The cost of the SI works should be a **"lump sum" fixed price**. Geoinvestigate can provide advice and assistance with helping you find suitable site investigation & drilling contractors. Call us on 01642 713779 or email enquiries@geoinvestigate.co.uk. Geoinvestigate can also provide a quote for a local specialist mining report.

1. CMRA INTRODUCTION

1.1 SITE LOCATION AND DESCRIPTION

The approximate centre of this site is at National Grid Reference E 430600, N 319070 with an elevation of about 130m AOD. The boundary shown RED on the Coal Authority (CA) report provided in Appendix A corresponds with the planning application area. Google Satellite imagery shows the site is located to the north of Woodhouse Street within an industrial area. Some semi-detached residential dwellings are located to the northeast of the site. A small wooded hillock is present to the north of the development possibly associated with historical mining legacy. The surface of the site falls to the southeast and rises to the northwest. The development currently comprises a concrete hardstanding yard area within an established small industrial site comprising units 1 to 6a and Woodhouse business Centre to the northeast. The site is bordered by a brick wall with gate access from Woodhouse Street. Site images are presented in Appendix B.

The OS map record dating back to 1883 shows the site located within 'Granville Colliery' comprising works buildings and mineral railway. Several collieries, brickworks and clay pits are recorded in the close by and surrounding area. A 'Shaft' is recorded some 20m northeast of the development area at this date. An 'Air Shaft' and 'Old Shaft' are also recorded some 100m further northwest. Several unnamed pits are shown surrounding the colliery, although none are recorded within the site area. By 1901, 'Granville Colliery (No 2)' was erected southeast of site and 'Hill Top' brickworks was expanded. A tramway linking the two collieries was installed circa 1923. By 1977 Granville Colliery had been demolished and a 'Factory' was erected onsite. A heap is shown to the north of the proposed development, perhaps discarded spoil from mine working produced by Granville Colliery.

Description & Layout of Proposed Development: It is proposed to construct two new industrial units, Nos. 7 & 8, on the site with vehicle loading and turning space. The proposed development plan is included in Appendix C.

Risk Methodology Applied: This document and the risk assessment methodology adopted herein is based on CA publication RISK BASED APPROACH TO DEVELOPMENT MANAGEMENT - GUIDANCE FOR DEVELOPERS Version 3, 2014 and Version 4 - 2017. The template contained therein is adopted with amendments made by Geoinvestigate Limited.

2. ASSESSMENT OF SITE-SPECIFIC COAL MINING ISSUES

The table overleaf summarises the potential risks associated with coal mining legacy for the proposed development site identified from the CA report in Appendix A:

Coal Mining Issues	Yes	No	Risk Assessment/Remarks
Past underground coal mining	Yes		2.1.1 (refer below)
Probable unrecorded shallow workings	Yes		2.1.2
Spine roadways at shallow depth		No	
Mine entries	Yes		2.1.3
Outcrop		No	2.1.4
Geological faults, fissures and breaklines		No	
Unlicensed Opencast Mines		No	
Site Investigation	Yes		2.1.5
Coal Mining Subsidence		No	
Mine Gas	Yes		2.1.6

Note: For those coal mining issues above identified as “Yes” or highlighted “YELLOW” a more detailed discussion and assessment are made of the risks to the application site and the proposed development. Additional historical mining issues have also been discussed where appropriate.

2.1 DETAILED DISCUSSION & ASSESSMENT RESPONSE

2.1.1 Past Underground Mining

The CA identify two levels of past underground mining at 197m and 258m beneath the property in the LITTLE coal seam and the MAIN COAL seam. The seams have extraction thicknesses of 1.37m and 1.83m both last mined in 1859 and 1897, respectively. The CA report identifies these coal seams to be dipping between 2.4° and 3.4° to the west.

In our opinion, these underground workings both lie too deep to significantly affect the surface ground stability of the development area.

2.1.2 Probable unrecorded shallow workings

According to the CA the site falls within an area of probable shallow unrecorded workings. The CA define Probable Unrecorded Shallow Workings as “Areas where the Coal Authority believes there to be unrecorded coal working that exist at or close to the surface” (i.e. less than 30m). It is our opinion that the probable presence of unrecorded shallow mine workings beneath the site could pose a significant surface ground stability risk to this development and therefore requires further investigation.

2.1.3 Mine Entries

The CA report identified seven (7) coal shafts and one (1) fireclay shaft within 100m of the site.

Coal shaft (ref. 430319-009) is located closest to the site and shown on the CA’s ‘Summary of findings’ map some 13m northwest of the proposed development. The shaft is identified within the CA report to have been “filled in 1965 and capped in 1971 by the National Coal Board’. In addition, mine gas remedial works have taken place within this shaft. No information relating to this investigation is available. According to the CA interactive map the entry has an assumed diameter of 3m. The position of the shaft is approximate only and may be liable to vary up to several metres.

In our opinion, coal shaft 430319-009 could pose a significant risk to the site area and may influence the foundation design of the proposed development.

2.1.4 Outcrop

The location of the site is shown on the extract of BGS geology map included in Appendix D. The tentative elevation of the site relative to the vertical geology column is shown below the map. According to the BGS geology map the site is underlain by the Pennine Middle Coal Measures Formation comprising interbedded grey mudstone, siltstone, pale grey sandstone and commonly coal seams. The map also records made ground within the site and infilled ground within the surrounding area.

The BGS geology map records the P39/40 coal seam approximately 145m northeast of the site and is anticipated to dip 2.4° to 3.4° southwest or west. Therefore, the P39/40 coal seam and any workings may be expected to underlie the site at shallow depth.

BGS borehole log SK31NW/1 (Granville Colliery No. 2) some 60m southeast of the site identifies 7 coal seams and 3 fireclay horizons at shallow depth (up to 30m) within Granville Colliery No. 2 at 131m AOD. The shallowest coal seam is recorded at 2.6m depth with a workable thickness of 1.0m. Furthermore, 0.7m of workable 'Grey pot clay and fireclay' is recorded directly below the coal seam. Three deeper coal seams are recorded at 5.9m, 7.6m and 8.5m with workable thicknesses of 1.34m, 2.2m and 1.1m respectively. Fireclay is also recorded below the middle and latter coal seams which could have been extracted alongside the above coal. Two thinner coal seams are recorded at 10.7m and 13.5m depth both with workable thicknesses of some 0.4m. A thicker coal seam is recorded at 19.2m depth with a thickness of 1.0m with fireclay directly beneath of 0.6m thickness. A 12cm coal seam is recorded at 30.2m depth which may be too thin to have been worked. An extract of the log of SK31NW/1 is included in Appendix E.

In our opinion, potential working in seven coal seams, three possibly in addition to fireclay, at very shallow and shallow depth beneath the site could pose a significant risk to the proposed development. Therefore, further intrusive investigation will be required to establish the presence, depth and nature of mine working beneath this site.

2.1.5 Site Investigation

According to the CA report a site investigation has previously taken place 40m northeast of the site. Although no information relating to this investigation is available, it does raise further concern regarding the impact from historical mining legacy within the area generally and within the new development area.

2.1.6 Mine Gas

According to the CA there have been two instances where mine gas remedial works have taken place in coal shafts 67.5m and 12.6m northwest of the site (refs. 430319-009 & 430319-010).

In our opinion, the occurrence of mine gas remedial works close to the site raises concern from the risk of hazardous mine gas within the development area. It is recommended that a Coal Authority Mine Gas Emission Report is obtained from the CA for more information on the remedial works. Furthermore, installation of gas wells and monitoring exercise may be required to quantify the risk of mine gas to the site.

2.1.7 Expected Drift/Bedrock Depth

The BGS geology map does not record any drift deposits beneath the site. According to BGS borehole log SK31NW/1 (Granville Colliery No. 2) some 60m southeast records drift comprising 'yellow clay and made ground' to 2.6m continuing into coal. A similar drift depth or perhaps more is expected onsite, owing to the heap recorded to the north.

In our opinion, because of the importance of drift/bedrock depth in assessing mining related ground stability further investigation is required to accurately establish drift/bedrock depth within the development area.

3. SUMMARY AND OUTCOME

This CMRA has shown the new development could be underlain by working in seven coal seams, three possibly in addition to fireclay, at very shallow and shallow depth. In our opinion the occurrence of very shallow mine workings and the possible occurrence of shallow mine workings beneath the site could pose a significant risk to surface ground stability within the development area.

Therefore, given the forgoing outcome it is our opinion that drilling is required to reliably establish drift/bedrock depth and the presence, depth and nature of mine workings beneath this site.

It is recommended that a Coal Authority Mine Gas Emission Report is obtained from the CA for more information on the remedial works that have taken place closer to the site. Furthermore, installation of gas wells and monitoring exercise may be required to quantify the risk of hazardous mine gas to the new development.

Additionally, a shallow geo-environmental site investigation (SI) may be required to establish whether ground contamination is present within the site.

Mine gas risk is expected to be **HIGH** given the presence of a nearby mineshaft, coal mine working within it and the very serious nature of mine gas it is our opinion that this risk remains as **HIGH until proven otherwise by drilling or perhaps gas monitoring**

4. MITIGATION STRATEGY PROPOSED AND CONCLUSION

To properly determine the coal mining risk at this site it is proposed to drill 2 or 3 boreholes to target depths up to 30m (but not necessarily reaching 30m) to locate possible coal seams below the new development as well as drift and bedrock depth.

Risks for Different Drilling Scenarios					
Air flush	Mist flush	Foam flush	Water flush	Mud flush	Additional controls
HIGH	HIGH / MED'M	HIGH / MED'M	LOW	LOW	- Monitoring at rig and other open holes. - Seal boreholes

A Coal Authority Permit needs to be obtained (ahead of) further intrusive exploratory drilling. Water Drill Flush to be used when drilling. Permit application must state **WATER ONLY DRILL FLUSH** for the safety of the public and drill crew.

On the basis of the CMRA work to date, we are of the opinion that the mining stability and mine gas risks posed by the strata beneath this site from coal mining legacy can be mitigated by routinely adopted measures and should not preclude the planning permission being registered.

Appendices:

- CA dated 7 October ref 51002183596001
- Site images
- Proposed development plan
- Extracts of BGS Geology Map, Sheet 141 – Loughborough at 1:50000 scale
- BGS borehole log SK31NW/1

Other sources of information include historic Ordnance Survey maps and BGS borehole data nearby the site.

APPENDIX A
COAL AUTHORITY REPORT



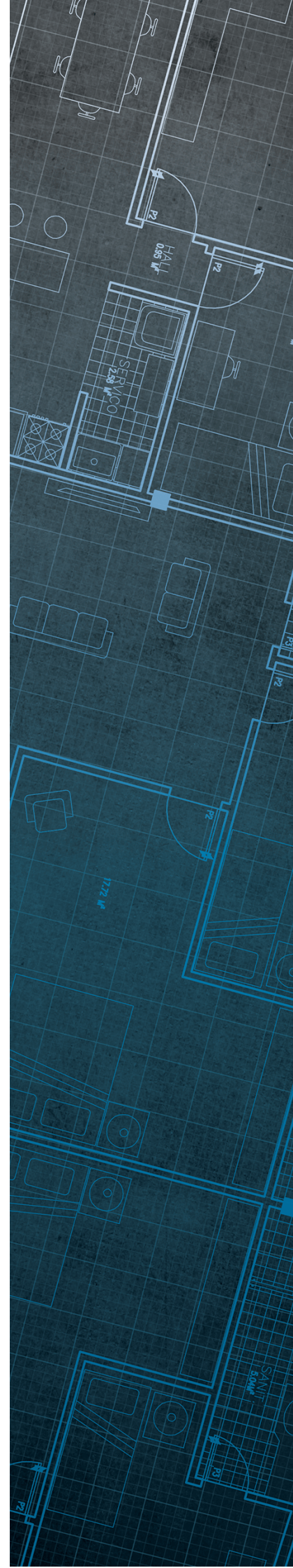
The Coal
Authority

Consultants Coal Mining Report

Woodhouse Busness Centre
Woodhouse Street
Woodville
Swadlincote
Derbyshire
DE11 8ED

Date of enquiry:	7 October 2019
Date enquiry received:	7 October 2019
Issue date:	7 October 2019

Our reference:	51002183596001
Your reference:	G19380



Consultants

Coal Mining Report

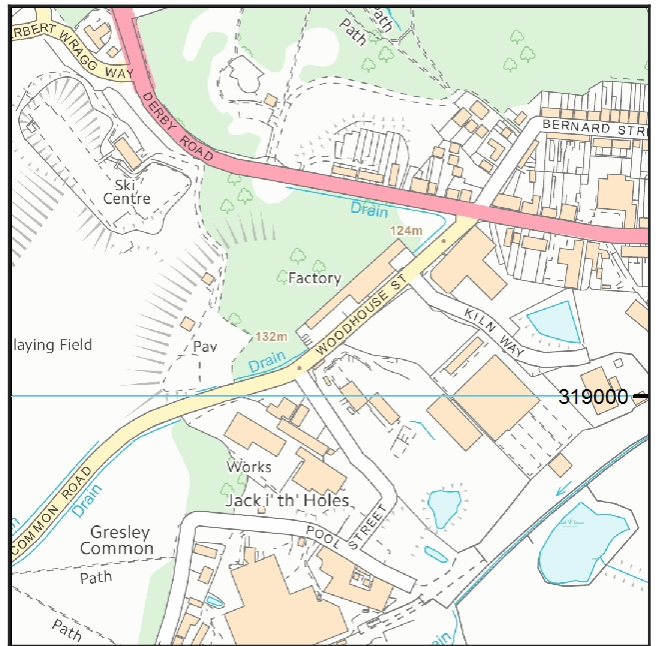
This report is based on and limited to the records held by the Coal Authority at the time the report was produced.

Client name

GEOINVESTIGATE

Enquiry address

Woodhouse Business Centre
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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
GRANVILLE	UPPER KILBURN	Coal	4NXD	82	North	5.0	South-West	113	1924
GRANVILLE	YARD	Coal	4NXM	134	North-West	4.3	South-West	80	1925
GRANVILLE	BLOCK	Coal	4NXH	143	North	3.4	South-East	122	1915
GRANVILLE	YARD	Coal	4NFD	150	South-East	0.0	East	80	1944
GRANVILLE	LITTLE	Coal	4NXP	197	Beneath Property	2.4	West	137	1859
GRANVILLE	LITTLE	Coal	4NFJ	207	South-West	2.0	South-West	137	1914
GRANVILLE	LITTLE KILBURN	Coal	4NXV	210	South-East	2.3	West	85	1920
GRANVILLE	LITTLE KILBURN	Coal	4NXW	211	North	2.3	West	85	1905
GRANVILLE	LITTLE KILBURN	Coal	4NXY	221	West	2.3	West	85	1926
GRANVILLE	LITTLE	Coal	4NFI	222	South	11.3	South-West	137	1844
GRANVILLE	LITTLE KILBURN	Coal	4NFO	223	South-West	3.2	South-West	85	1908
GRANVILLE	MAIN COAL	Coal	4NY5	258	Beneath Property	3.4	West	183	1897
GRANVILLE	MAIN COAL	Coal	4NFY	265	South	1.8	South-West	183	1860
GRANVILLE	MAIN COAL	Coal	4NFW	270	South	7.8	South-West	183	1866
GRANVILLE	WOODFIEL D	Coal	4NYI	275	North	5.9	North-West	135	1930
GRANVILLE	WOODFIEL D	Coal	4NYH	290	North	5.8	West	135	1897
GRANVILLE	STOCKINGS	Coal	4NYP	295	North	4.2	North-West	150	1932
GRANVILLE	WOODFIEL D	Coal	4NYG	300	South-East	7.1	South-West	135	1931
GRANVILLE	WOODFIEL D	Coal	4NG5	304	South-East	8.4	South-West	135	1931
GRANVILLE	EUREKA	Coal	4NYW	317	North	4.2	North-West	120	1911
GRANVILLE	WOODFIEL D	Coal	4NG6	321	South-West	1.1	South-West	135	1931
GRANVILLE	STOCKINGS	Coal	4NGH	324	South-East	11.4	South-West	150	1946

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
GRANVILLE	STOCKINGS	Coal	4NYQ	328	West	4.9	South-West	150	1926
GRANVILLE	STOCKINGS	Coal	4NGL	334	South-West	1.8	West	150	1920
GRANVILLE	STOCKINGS	Coal	4NGK	334	South-West	1.9	West	150	1920
GRANVILLE	EUREKA	Coal	4NYU	335	North	4.3	South-West	120	1910
GRANVILLE	STANHOPE	Coal	4NZ4	338	North-East	8.3	South	90	1912
GRANVILLE	STANHOPE	Coal	4NGZ	341	South-East	6.3	South-West	90	1913
GRANVILLE	EUREKA	Coal	4NYV	342	South	4.3	South-West	120	1910
GRANVILLE	EUREKA	Coal	4NGV	342	South	9.1	South-West	120	1910
GRANVILLE	EUREKA	Coal	4NYT	348	East	13.7	West	120	1901
CARTWRIGHT	STANHOPE	Coal	4NZ7	355	North	6.3	South-West	107	1889
GRANVILLE	EUREKA	Coal	4NGW	356	South-West	1.7	West	120	1890
GRANVILLE	STANHOPE	Coal	4NZ5	360	North	3.9	South-West	90	1927
GRANVILLE	STANHOPE	Coal	4NMO	368	South-West	6.3	South-West	90	1945
GRANVILLE	STANHOPE	Coal	4NH1	374	South-West	6.3	South-West	90	1892
GRANVILLE	EUREKA	Coal	4NGT	377	South-East	11.3	West	120	1901
GRANVILLE	KILBURN	Coal	4NZF	407	East	6.3	South-West	137	1900
GRANVILLE	KILBURN	Coal	4NH5	413	South-East	6.3	South-West	137	1907
GRANVILLE	KILBURN	Coal	4NZD	422	North	7.0	South-West	137	1927
GRANVILLE	STANHOPE	Coal	4NZ6	424	North	6.3	South-West	90	1914
GRANVILLE	KILBURN	Coal	4NZG	424	South-East	6.3	South-West	137	1907
GRANVILLE	KILBURN	Coal	4NH6	454	South-West	2.6	North-West	137	1928

Probable unrecorded shallow workings

Yes.

Spine roadways at shallow depth

No spine roadway recorded at shallow depth.

Mine entries

Entry type	Reference	Grid reference	Treatment description	Mineral	Conveyancing details
Shaft	430319-007	430497 319114	was filled in 1969 and capped in 1971 by the National Coal Board	Coal	Urban District Council of Swadlincote 30/10/1972
Shaft	430319-008	430536 319095	was filled in 1965 and capped in 1971 by the National Coal Board	Coal	Urban District Council of Swadlincote 30/10/1972
Shaft	430319-009	430558 319078	was filled in 1965 and capped in 1971 by the National Coal Board	Coal	Urban District Council of Swadlincote 30/10/1972
Shaft	430319-010	430711 319064	was filled in 1969 and capped in 1971 by the National Coal Board	Coal	Derby Incineration Limited 20/06/1973
Shaft	430319-018	430484 319096		Coal	
Shaft	430319-020	430512 319039		Fireclay	
Shaft	430319-035	430528 319129		Coal	
Shaft	430319-036	430565 319180		Coal	

Abandoned mine plan catalogue numbers

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

11973	2788	EM60
14208	14273	17770
9445	14272	3640

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

Distance to site investigation (m)	Direction
26.5	North-East
14.2	North-East

See Section 4 for further information.

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
67.5	South-East
12.6	North-West

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.

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.

Site investigations

The site is within an area of previous interest. It is close to where the Coal Authority has received information relating to past site investigations.

The site requires further investigation and may influence how you approach your risk assessment.

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.

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

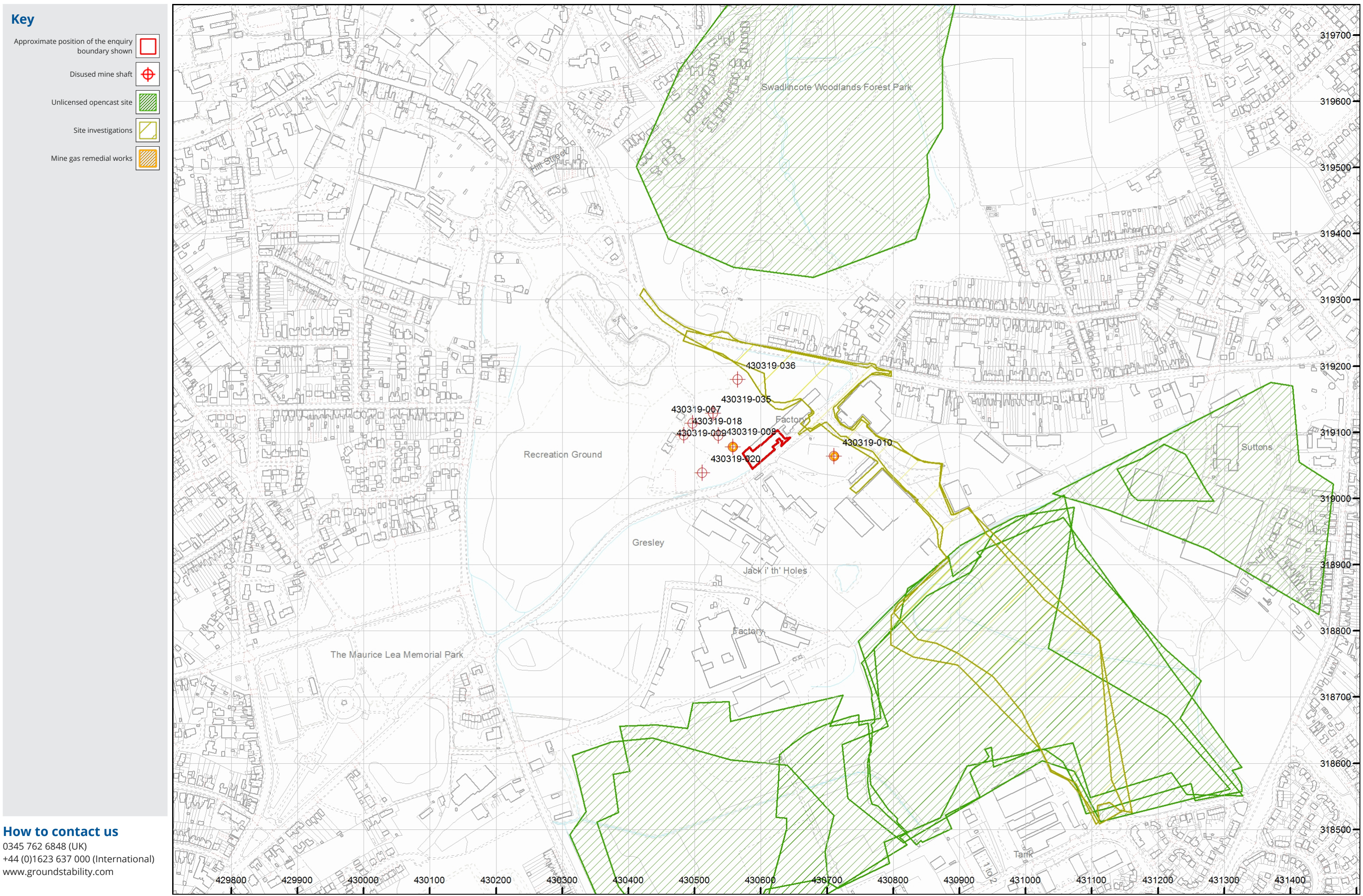
Relevant notices which may affect the property and any subsequent notice of retained interests in coal and coal mines, acceptance or rejection notices and whether any compensation has been paid to a claimant.

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VAT receipt

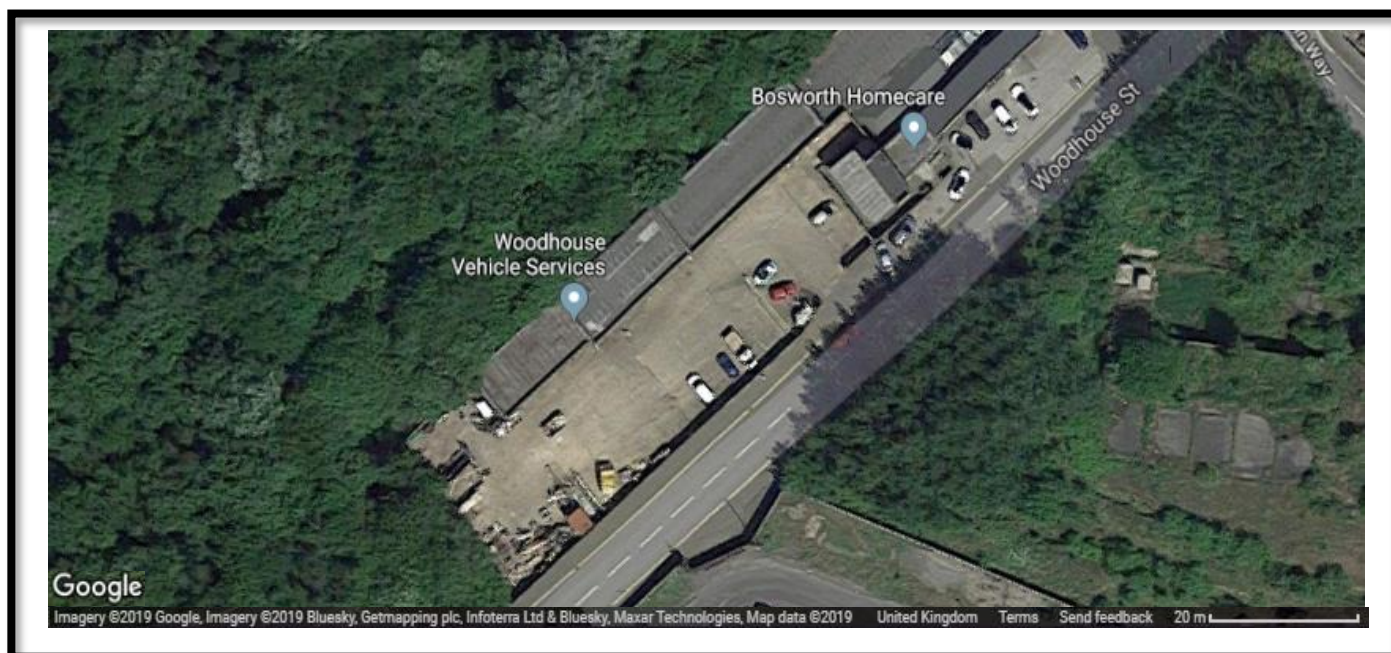
Issued by	The Coal Authority 200 Lichfield Lane Mansfield Nottinghamshire NG18 4RG
Tax point date	07 October 2019
Issued to	GEOINVESTIGATE TERRY DICKEN INDUSTRIAL ESTATE TERRY DICKEN INDUSTRIAL ESTATE, ELLERBECK WAY STOKESLEY NORTH YORKSHIRE TS9 7AE
Property search for	WOODHOUSE BUSINESS CENTRE WOODHOUSE STREET WOODVILLE SWADLINCOTE DERBYSHIRE DE11 8ED
Reference number	51002183596001
Date of issue	07 October 2019
Cost	£112.13
VAT @ 20%	£22.43
Total received	£134.56
VAT registration	598 5850 68

The map highlights any specific surface or subsurface features within or near to the boundary of the site.

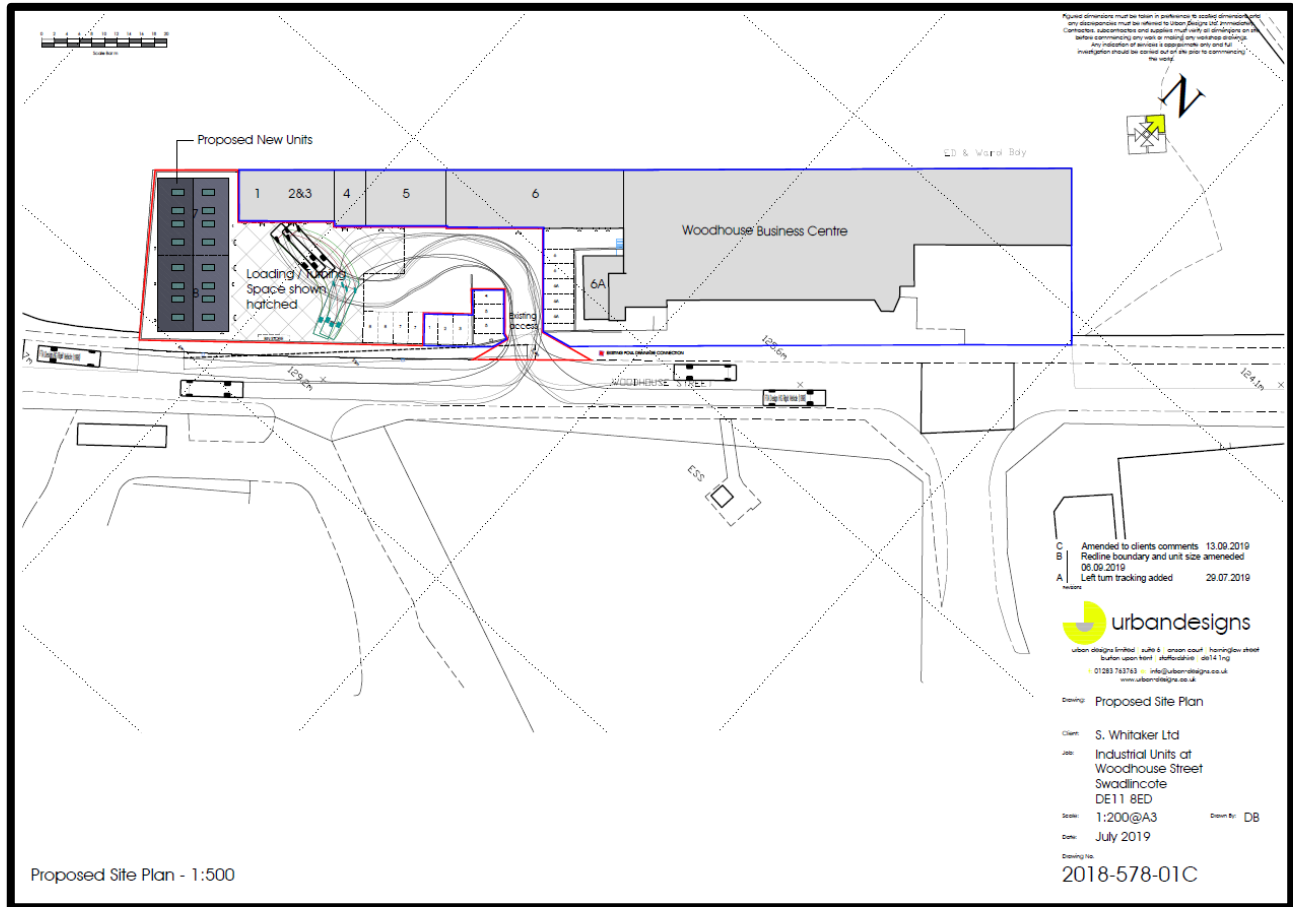


APPENDIX B

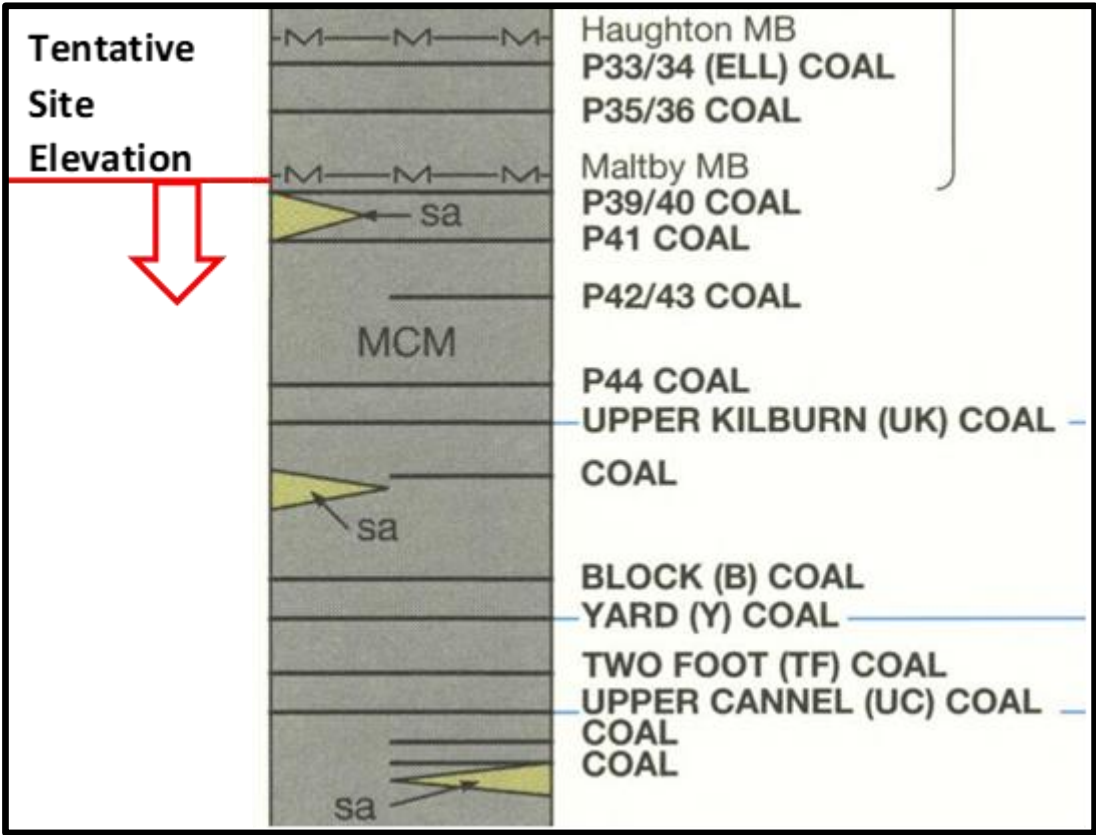
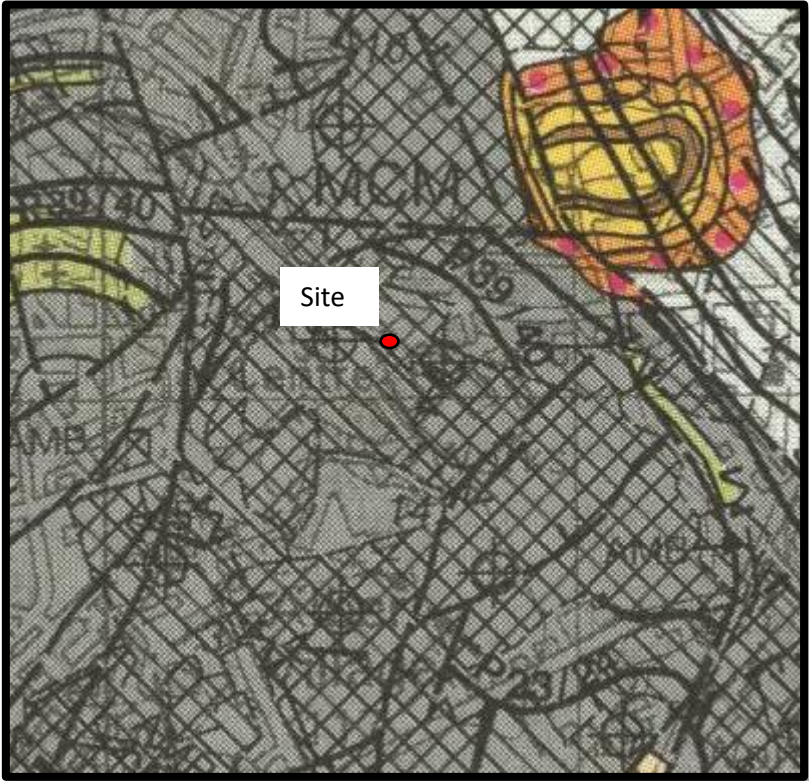
SITE IMAGES



APPENDIX C PROPOSED DEVELOPMENT PLAN



APPENDIX D
EXTRACTS OF BGS GEOLOGY MAP



APPENDIX E

BGS LOG

1063 Wt. 22438/0384 10x 7/45 (51) F.&S. RECORD OF SHAFT OR BORE FOR MINERALS		(For Survey use only) 1-inch Map Registered No. SK31NW/1	
Name and Number of Shaft or Bore <i>Granville Colliery</i> <i>no. 2</i>		6-inch Map Registered No. <i>141</i>	
For Messrs. _____ Town or Village <i>Swadlincote</i> County _____ Six-inch quarter sheet Exact site <i>30701907</i>		Attach a tracing from a map, or a sketch-map, if possible.	
Purpose for which made <i>Coal</i>			
Level at which shaft bore commenced relative to O.D. _____ State if shaft bore is up, down, horizontal or inclined; in latter cases give angle of inclination and direction _____			
Made by _____			
Information from _____ Date of Sinking <i>1887</i>			
Specimens _____			
<i>Additional Notes in Space Overleaf</i>			
(For Survey use only) GEOLOGICAL CLASSIFICATION	NATURE OF STRATA Granville Colliery, SK 31 NW/1 No. 2. PIT SUNK 1887. About 430 feet above Ordnance Datum. From Mr. G. S. Bragge.	THICKNESS	DEPTH
Yellow clay and made ground COAL Grey pot clay and fireclay Dark clunch Grey marl or fireclay COAL Dark clunch COAL Fireclay COAL Fireclay Very dark clunch COAL Light clunch Cank Dark clunch COAL Light clunch Blue bind COAL Fireclay Dark shale with layers of coal Strong hard clunch Grey cank Stony bind Grey cank Strong blue bind Stony bind Blue bind with ironstone balls Grey clunch with many ironstone balls Blue bind COAL Clunch with ironstone Strong blue bind with ironstone in bands and balls Soft black bind COAL Dark sloom Strong grey clunch Strong blue bind Dark blue bind with ironstone Black shale Blue bind with ironstone Black shale Soft clunch COAL Clunch, very large with many ironstone balls Soft bind, rather soapy Black shale Strong clunch with much ironstone Dark blue bind, very hard with thick ironstone bands Blue bind with ironstone balls Cank, very hard Blue bind with ironstone	Thickness. Ft. Ins. 8 0 3 3 2 3 1 2 4 4 4 4 0 10 2 2 0 10 3 6 0 8 3 4 3 10 0 6 3 6 1 3 2 6 15 4 3 2 2 0 3 0 5 4 0 6 2 0 0 9 1 5 6 8 5 9 2 6 3 6 0 4 8 4 6 0 1 2 0 2 12 10 14 10 12 1 1 8 5 9 1 8 0 2 0 8 4 0 3 10 2 0 3 10 0 4 18 3 2 0 13 5	Depth. Ft. Ins. 8 6 2 11 3 14 4 15 5 19 6 23 7 24 8 20 9 27 10 31 11 31 12 35 13 36 14 40 15 40 16 44 17 45 18 47 19 03 20 06 21 08 22 11 23 76 24 77 25 79 26 80 27 81 28 88 29 93 30 96 31 99 32 100 33 108 34 114 35 115 36 117 37 117 38 130 39 145 40 157 41 158 42 164 43 166 44 166 45 167 46 171 47 175 48 177 49 180 50 190 51 208 52 210 53 223	Continued Overleaf
GEOLOGICAL SURVEY AND MUSEUM, SOUTH KENSINGTON, LONDON, S.W.7.			
Date received	Correspondence File No.	1' N.S. Map No.	1' O.S. Map No.
Site marked (use symbol) on 1" Map		Site marked (use symbol) on 6" Map	

SK 31 NW 11

VERTICAL SECTION OF GRANVILLE COLLIERY NO. 2 ~~SHAFT~~ PIT

Surface level: +2.430 ft. a.d.

Information from:

Total depth: 1340 ft. 11 in.

Fox-Strangways pp. 188-192

Date of sinking: 1887

Six-Inch Map:

One-Inch Map: 141/70A

Scale: 40 feet to One Inch

