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CIVIL • STRUCTURAL
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**PROPOSED COMMERCIAL DEVELOPMENT
STAKEHILL LANE,
MIDDLETON
FOR
J P MILNE TRUSTEES**

JULY 2018

MINERAL ASSESSMENT REPORT

18061/MAR

ROBERT E FRY & ASSOCIATES LTD.
45, Bridgeman Terrace
Wigan, WN1 1TT

Telephone: 01942 826020
Fax: 01942 230816
Email: mail@refa.co.uk
Company Registration No. 2436911



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MINERAL ASSESSMENT REPORT
PROPOSED COMMERCIAL DEVELOPMENT,
STAKEHILL LANE, MIDDLETON.

1.0 INTRODUCTION

1.1 Instructions

1.1.1 We are instructed by Milson Associates, Byron House, 10 – 12 Kennedy Street, Manchester, M2 4BY to prepare a Mineral Assessment Report to supplement a detailed planning application for a proposed commercial development at land located north of Stakehill Lane, Middleton on behalf of the client J P Milne Trustees.

1.1.2 As part of the pre application validation the local planning authority has requested a Mineral Assessment Report to identify any potential minerals that may have future economic importance and may require safeguarding. In light of the established principal of mineral safeguarding within the National Planning Policy, it is necessary to determine the extent and quality of any mineral resources and the likelihood of these being suitable for extraction in an environmentally friendly way.

1.2 Object

1.2.1 This mineral assessment report has been prepared to assess the likely presence of mineral resources lying within and immediately adjacent to the site. Having assessed the presence of suitable minerals, the report is to present a basic assessment of the importance and viability of these minerals being extracted. This information is then to be collated into an overall assessment of the impact of the development of this site upon the mineral resources within this area.

1.3 Sources Of Information

1.3.1 This report has been prepared using information from the following sources:-

- Groundsure Geo-Insight report dated 10th April 2018;
- All available old Ordnance Survey maps;
- REFA Geo-Environmental Investigation Report 18061/GEDS
- BGS Mineral Resources Map for Greater Manchester;
- Greater Manchester Joint Minerals Development Plans;

1.4 Limitations Of Report

1.4.1 This report is a mineral assessment report which has been prepared using readily available information in accordance with the project stage requirements, budget and time scales. The opinions expressed in this report and the comments and recommendations given are based upon the information obtained from the previous REFA desk study and other available sources.

1.4.2 The information, views and conclusions drawn concerning the site are based in part on information supplied to Robert E Fry & Associates Ltd (REFA) by other parties. REFA has proceeded in good faith on the assumption that this information is accurate. REFA accepts no liability for any inaccurate conclusions, assumptions or actions taken resulting from any inaccurate information supplied to REFA from others.

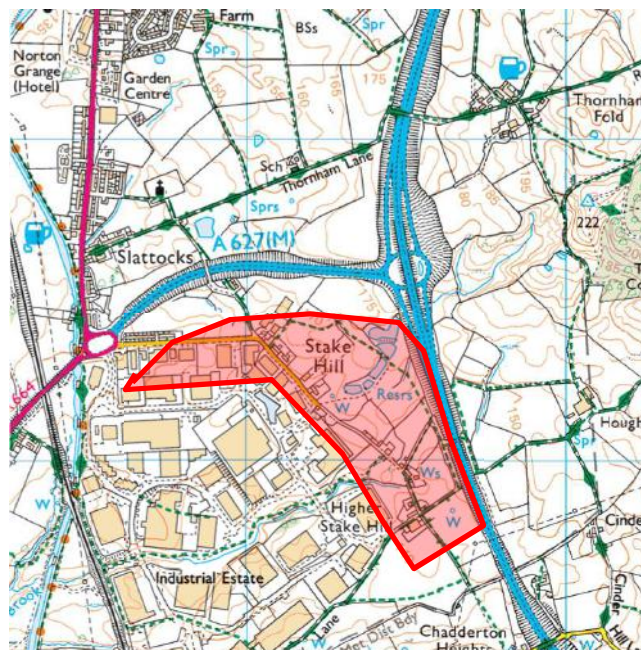
- 1.4.3 This report has been prepared by REFA for the sole and exclusive use of J P Milne Trustees., in response to particular instructions. Any other parties using the information contained within this report do so at their own risk and any Duty of Care to those parties is excluded. This document has been prepared for the title project only and should any third party wish to use or rely upon the contents of the report, written approval from REFA must be sought.
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2.0 THE SITE

2.1 Location

- 2.1.1 The site is irregular in shape and is located upon the northern and northern eastern side of Stakehill Lane, Middleton near Manchester and extends to an area of approximately 34.89 hectares. The site is located approximately 3.5km north east of Middleton town centre. The centre of the site is situated at approximate National Grid Reference SD 89321 08436 within an industrial/rural area. Its location is shown in figure 1 below.

Figure 1 Site Location



2.2 Walkover Survey

- 2.2.1 *A site walkover was undertaken on the 10th April 2018 in an order to determine the condition and overall environmental setting of the site to inform the desk study. At the time of the walkover survey, the weather conditions were overcast and windy following a period of inclement weather.*
- 2.2.2 *The walkover survey has revealed that the majority of the site is used as agricultural land for grazing purposes and the conditions underfoot were noted to be extremely soft across the majority of the site with numerous areas of standing water. The walkover survey has also identified a series of fishing ponds located within the central area of the site.*
- 2.2.3 *The general topography of the site slopes generally towards Stakehill Lane however the topography of the site is much more complex and contains numerous undulations and variations in topography. The average gradient across the site varies at approximately 1: 30 to 1: 15. The site contains numerous hedgerows, trees and shrubs and it is recommended that all trees, hedgerows and shrubs, regardless as to whether they are to be retained or removed as part of the development process, should be included within the arboriculturist report prior to any further works taking place.*
- 2.2.4 *Within the northern area of the site numerous stockpiles of demolition material, road planings and gravels were identified within a small yard area. Located closely to this area is another area where the surface soil and vegetation appear to be inconsistent with the surrounding areas and evidence of demolition rubble was present at surface. Therefore it is anticipated that this area has been infilled previously and will require targeted investigation.*
- 2.2.5 *A manhole cover was identified adjacent to the eastern boundary which may indicate the potential for an underground culvert or drainage system within this site. A telecommunication mast is present within the northern area of the site.*

2.3 Proposed Development

- 2.3.1 *At the time of preparation of this report a proposed zoning plan which indicates that the site would be of mixed land use from commercial to industrial land while retaining areas for designated open/amenity space. The proposed zoning layout is appended to this report for reference (drawing reference 2299-PL-700-01).*
- 2.3.2 *It is acknowledged that the development proposals for this site are likely to be amended as a result of local planning requirements. It is however anticipated that the current proposals will be representative of the final development approval. However, if the final development proposals are radically different from the current proposals, then recommendations made within this report may become inappropriate.*

3.0 GEOLOGY

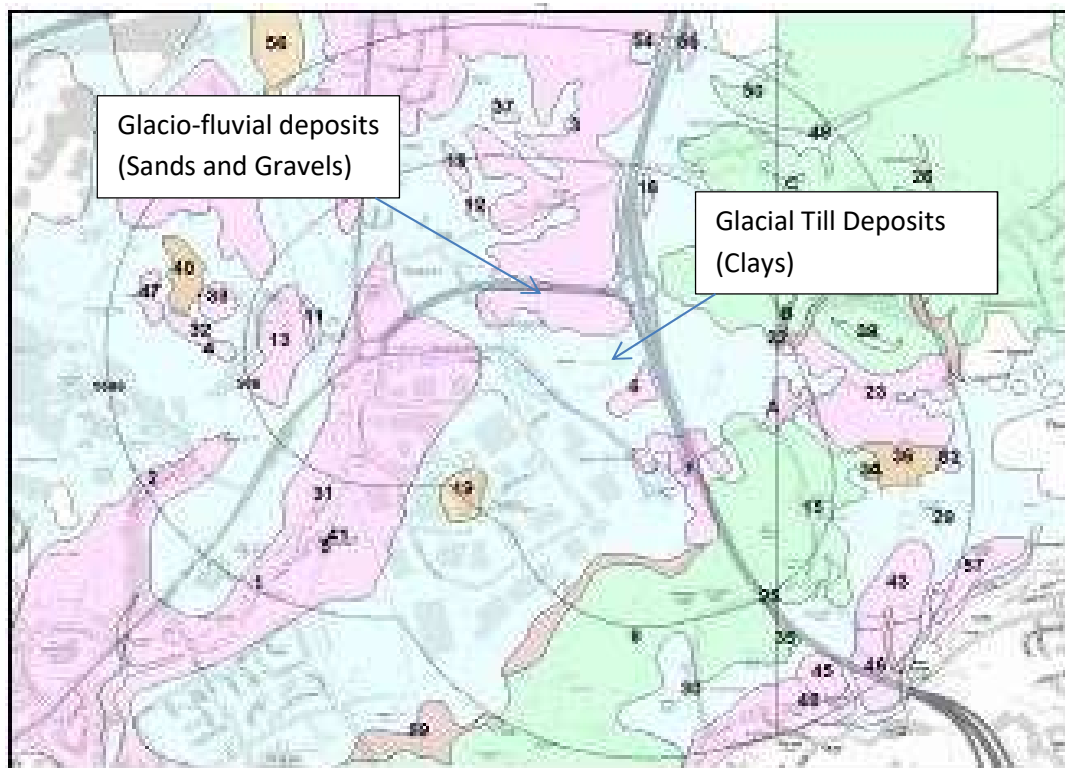
3.1 Superficial Deposits

- 3.1.1 *The Geo-Insight report has indicated that the majority of the site comprises of glacial till deposits which are likely to consist of firm to stiff clays with no economic value. However localised deposits of glacial fluvial deposits also present primarily within the northern part of the site and are considered to comprise more of granular sand and gravel deposits.*

The BGS Mineral Resources map indicates that the site lies within an area of glacial fluvial deposits which are associated with glacial melt waters and therefore the sequence of these deposits are complex units commonly exhibiting intricate relationships. BGS maps have identified localised deposits present within the site but are not widespread throughout the site. These glacial fluvial deposits are considered to have a low economic value due to being minimal and localised deposits being present within the site.

- 3.1.2 *An intrusive investigation has not been conducted within this site however the Geo Insight report presented BGS boreholes in close proximity to the site which have identified varying sand and clay deposits potentially indicating discontinuous deposits of the sands and clays within the area.*

Figure 2 Superficial Geology



3.2 Solid Geology

- 3.2.1 *The solid geology below the site predominantly comprises of the Pennine Lower Coal measures which are anticipated to comprise of varying mudstone, siltstones, sandstones and coal seams. Minor units of the Royley sandstone formation are present mainly within the northern and northern eastern areas of the site. Reviewing the BGS Mineral Resources map the site is not located with areas where sandstone are considered to be present and therefore the underlying sandstone is not considered to be of economic value. The geology of the area is shown in figure 3.*

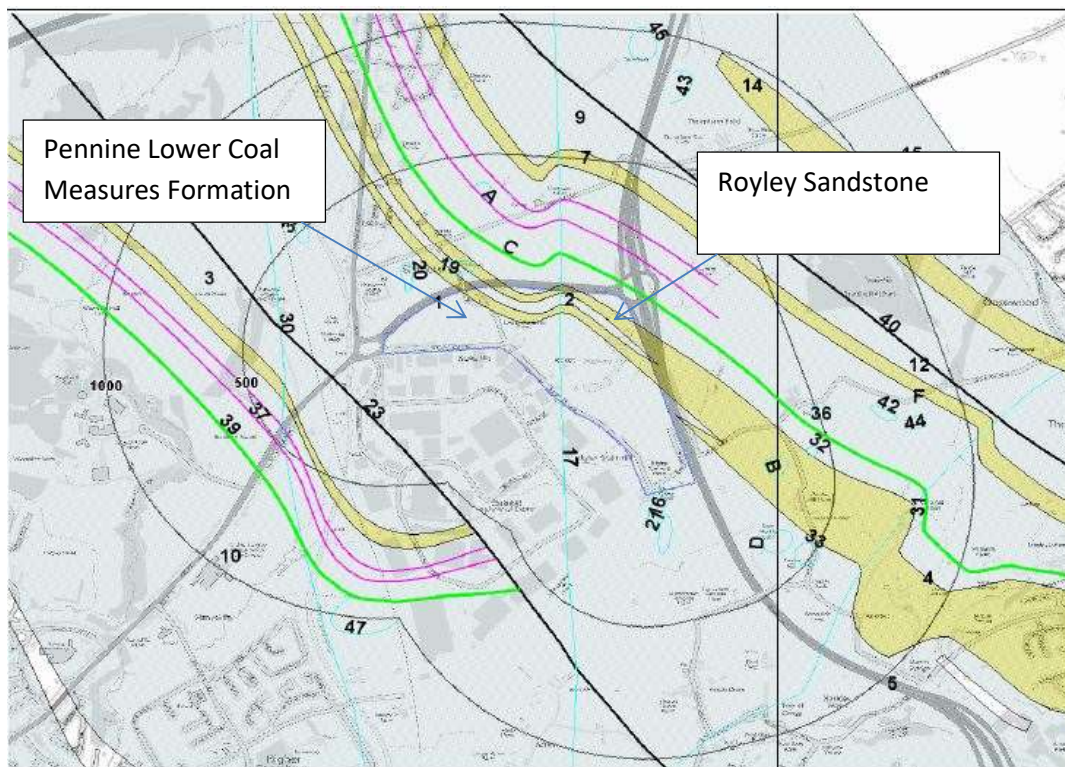


Figure 3 Solid Geology

3.2.2 The geological report not has identified any geological faults below the site, although it has identified approximate margin of buried superficial deposits (filled channel or valley) that trends in a north to south direction through the central area of the site and may indicate deep superficial deposits within this location on the site. This would also indicate that bedrock is located at a significant depth below the site.

3.3 Ground Workings

3.3.1 The geological report has identified numerous historical surface ground working features within the site itself. These ground workings are mainly associated with the existing fishing ponds and the motorway embankments. A small pond is also identified within the western area of the site that appears to have now been backfilled therefore there is potential for made ground deposits to be present within localised areas of the site and will require targeted investigation.

3.3.2 The Geo-Insight report has not identified any historical underground working features located within 1000m of the study site.

3.3.3 The geological report has identified four (4 No.) records of current ground working features however these are all located in excess of 415m from the study site boundary and relate to sand and gravel pits which are all noted to have ceased operation.

3.4 Mining

3.4.1 The site is located within a Coal Authority reporting area and a separate coal mining risk assessment has been completed by The Arley Consulting Company Ltd in April 2018 which is appended to this report for reference.

This risk assessment identified that the presence of any unrecorded shallow coal mine workings at the site is very unlikely based upon the available evidence. They have identified that the Arley Coal Mine Seam is present beneath the site at unknown depth. Therefore they have recommended that given the lack of data within the site it was be prudent to undertake an investigation in the vicinity of the coal seam in order to confirm the depth of drift and depth to rock head to ensure sufficient cover of the Arley Coal Mine Seam.

- 3.4.2 *Although coal seams are present below the site the coal mining risk assessment has indicated that these are potentially located at depths in excess of 90m below the site and are therefore at depths unsuitable for open cast mining. It would have to have be extracted using underground mining purposes. Even though coal has economic value, it is anticipated that due to the depth it is located at below the site the work required to extract the coal would far outweigh the economic value of the coal deposits itself. Therefore the coal seams below the site are considered uneconomical.*

4.0 MINERAL PLANNING

4.1 Safeguarding

- 4.1.1 *The safeguarding of non-renewable resources such as mineral for the benefit of future generations is considered to be an aspect of sustainable development. The National Planning Policy Framework (DCLG 2012) requires mineral planning authorities to define mineral safeguarding areas when preparing local plans in order that known locations of specific mineral resources of local or national importance are not needlessly sterilised by non-mineral development, albeit that these carry no presumption that the resource will be worked. Where it is deemed necessary for non-mineral development to take, place prior extraction is to be encouraged where practical and environmentally feasible.*
- 4.1.2 *It is important to note that the purpose of designating Mineral Safeguarding Area (MSA) is not to restrict the rights of the landowner but to ensure that due consideration is given to the potential sterilisation of the mineral resource if an application for alternative development is brought forward. Furthermore, a MSA does not imply any presumption that mineral working will ever be permitted.*
- 4.1.3 *The Greater Manchester Joint Minerals Development Plan Documents (GMJMDDP) has identified areas of mineral safe guarding which need further consideration so that economic resources are not sterilised. The site is located within a mineral safeguarding area (MSA) for sands and gravels. The geological maps have indicated that the majority of the site comprises of glacial till material which is considered to comprise of firm to stiff clays. Localised areas of glacio-fluvial deposits are present within the sites which are anticipated to comprise of granular strata but geologcla maps show these deposits to only minimal and discontinuous and not to have significant economic value. Map 4 'Mineral Safeguarding Area for Glacio-fluvial Sand and Gravels' is appended to this report for reference.*
- 4.1.4 *The site is also located within a MSA for brick clays. The geological maps have indicated that the majority of the site is underlain by glacial till deposits comprising of firm to stiff clays. 'The Mineral Safeguarding Area for Brick Clays' map 6 is appended to this report for reference.*

- 4.1.5 *Map 3 'Coal Resource and Petroleum Exploration Development Licenses in Greater Manchester' identifies that the site is located within an area where workable surface coal resources are present below the site. The coal mining risk assessment conducted by Arley consulting has identified coal seams to be present at depths in excess of 90m below the site, however considering the significant depth of the coal seams below the site will make the deposits uneconomical for extraction. No further MSA's have been identified within the site.*

5.0 POSSIBILITY OF FUTURE ECONOMIC MINERAL RESERVES

5.1 *Designation*

- 5.1.1 *A review of the GMJMDDPD has highlighted that the site is located within MSA's for sand and gravels and brick clays. It has also within an area of workable surface coal resources.*
- 5.1.2 *The glacio-fluvial sand and gravel deposits are indicated to be present within the northern portion of the site immediately abutting Rochdale Road. Reference to the BGS information regarding these deposits suggest that they are fine grain and largely devoid of any gravel deposits. The sands and gravels have been derived from the erosion of local bedrock by the action of ice and water and as such mudstones and coal fragments can be common and make the working of a deposit difficult. It is therefore likely that these deposits will have minimal economic merit. However the presence of the slattocks link to the A627M trunk road effectively sterilise this area of the site for any future potential mineral workings. The highway situated within this proximity are of strategic importance and the quality of the sands and gravels is likely to be of low economic importance.*
- 5.1.3 *The majority of the site is indicated to be underlain by glacial till deposits though there are suggestions that these materials may be used for potential brickmaking operations. The name brick clay is misleading as in fact this resource relates to clay and shale used in the manufacture of structural clay products. Glacial till materials are unsuitable for use as a brick making material due to its significant variability in terms of its clay, silt, sand and gravel contents. Brick clays therefore relate to the underlying rock deposits with the surface glacial till deposits having no effective economic merit.*
- 5.1.4 *In terms of the possible mudstone deposits which may be representative of brick clays there is a lack of direct data specifically relating to the site area. However reference to BGS borehole records of boreholes which lie within the general proximity of the site suggest that the glacial till deposits extend to thicknesses substantially in excess of 30m. Accordingly it is anticipated that the depth to rock head within the proposed development site is substantially greater than 30m and it is considered extremely unlikely that any underlying brick clay deposits would represent an economically viable proposition particularly in this location which is bounded by existing strategic highways and commercial development.*
- 5.1.5 *The coal mining risk assessment has identified coal seams to be present at depths greater than 90m below the site. At this depth the coal would need to be extracted by underground techniques and could not be economically extracted from surface workings.*

5.2 Assessment of the Merit of Extraction

- 5.2.1 *Information presented by the BGS has indicated that the majority of the site is underlain by glacial till deposits with localised areas of glacial fluvial deposits.*
- 5.2.2 *The development site is located immediately north of Stakehill Industrial Estate and is bounded to the north east and north west by the A627 motorway and associated slip road. Residential properties are also located along the southern boundary of the site and the site is currently used as agricultural land and also contains fisheries. These all pose constraints on any potential extraction of any sands or clay deposits.*
- 5.2.3 *The desk study information has identified that the site is currently signalled as green belt with the development of any quarrying operations in the site would have a substantial impact upon the aesthetic and environmental merits of the area.*
- 5.2.4 *The desk study has also identified that the site is in close proximity (117m) to the west to areas designated as sites of special scientific interest (SSSI) and special areas of conservation (SAC). Any mineral extraction works may impact the nearby SSSI and SAC.*
- 5.2.5 *The site also contains two culverts for surface water and a telecommunications mas which also pose further constraints on its development.*

6.0 CONCLUSIONS

6.1 Factors Limiting the Merit of the Resource

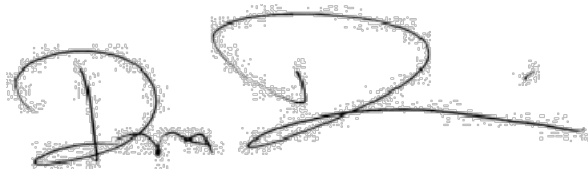
- 6.1.1 *After careful consideration and assessment of all publically available policy document statements, maps and other resources we have drawn the following conclusions:-*
- *The site is bounded by existing infrastructure in the form of A627 motorway, Stakehill Industrial Estate to the south and residential properties along the southern boundary of Stakehill Lane. Commercial properties are also present along the southern boundary in the form of farm, fishery and a garden nursery. These all pose constraints to the extraction of potential sand and clay deposits;*
 - *The site contains two culverts that run through the centre of the site that require consultation and agreement with the Environment Agency. The site also contains a telecommunications mast would also pose a constraint on any extraction works;*
 - *The site is located within an area designated as green belt land and the development of the site will affect the surrounding aesthetics and have a large impact upon the surrounding residential developments;*
 - *Whilst the site does contain possible deposits of glacio-fluvial materials which are likely to comprise of sands and gravels these are considered to be of a sporadic nature and limited to a small portion of the site. It is considered extremely unlikely that these deposits will be economically viable and any extraction processes would have a significant effect upon the strategic highways located immediately adjacent to this part of the site;*

- *With regard to brick clays which may be present within the area these refer to mudstones within the bedrock material. Information currently available suggests that the depth of superficial deposits within this location is substantially greater than 30m and indeed records indicating superficial deposits in excess of 60m in thickness have been identified within the general vicinity. Accordingly it is considered to be extremely unlikely that brick clays will represent an economic proposition in this location where thicknesses of superficial deposits to be removed to access the minerals would be considerable.*
- *Coal mining assessment has identified that coal deposits are present below the site at depths in excess of 90m. It is considered that coal deposits at this depth would be uneconomical for extraction;*
- *A SSSI and SAC are also in close proximity to the site and will need further consideration before any mineral extraction.*

6.2 Overall Probability of Extraction

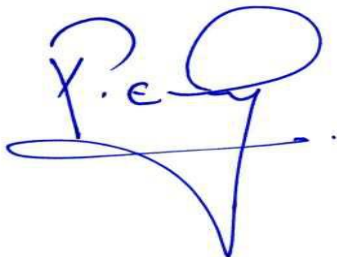
- 6.2.1 *The site is located in mineral safeguarding areas for brick clay and sands and gravels. It is considered that the extraction of sands and gravels and clays would be severely restricted by numerous constraints identified within and in close proximity to the site.*
- 6.2.2 *We consider that coal deposits are located at significant depths below the site and therefore uneconomical for extraction.*
- 6.2.3 *It is our opinion that the site does not contain any minerals of economic importance that require safeguarding.*

Signed for and on behalf of
R. E. FRY & ASSOCIATES LIMITED



Mark Davies B.Sc(Hons)

Signed for and on behalf of
R E FRY & ASSOCIATES LIMITED



R E FRY B Sc (Hons), C Eng., MI Struct.E.

Site Development Zones

- Existing Agricultural
- Large Industrial
- Mixed Commercial / Leisure Use
- Office
- Open Space
- Small Industrial
- Upgrade To Existing Residential

Development Area Schedule			
Name	Area (m²)	Area (ha)	Area (ac)

Existing Agricultural			
Poultry Farm	7629.12	0.76	1.89

Large Industrial			
Proposed Zone 3	98536.37	9.85	24.35
Proposed Zone 6	59444.40	5.94	14.69

Mixed Commercial / Leisure Use			
Proposed Zone 1	16730.24	1.67	4.13

Office			
Proposed Zone 4	9058.10	0.91	2.24
Proposed Zone 5	15499.68	1.55	3.83

Open Space			
Amenity Space	26665.52	2.67	6.59

Small Industrial			
Proposed Zone 2	26014.22	2.60	6.43

Upgrade To Existing Residential			
New Garage Access	1863.88	0.19	0.46

 Proposed Site Development Areas
1 : 2000



Drawing Information:
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1

Proposed zones amended to include office zones

LS

19/04/18

Rev

Revision History

By

Date

Drawing:
Proposed Zoning Plan

Client:
Stakehill

Drawing Number:
2299-PL-700-01

Drawn:
LS

Approved:
PJM

Status:
PRELIMINARY

Scale:
1 : 2000

Size:
A1

Date:
02/13/18

Rev:
1

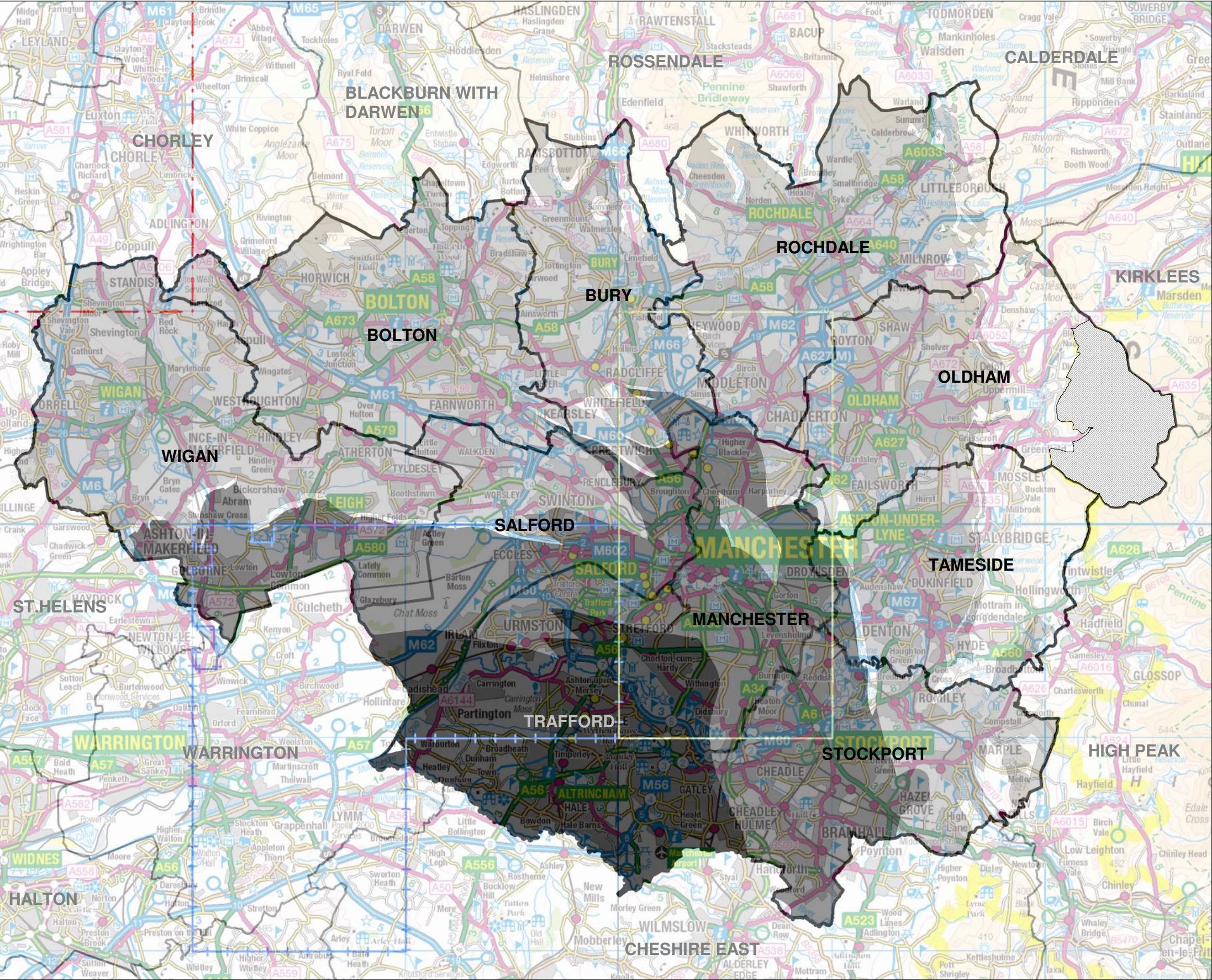


Millson Associates

Byron House
10-12 Kennedy St
Manchester M2 4BY

0161 228 0558
www.millsonassociates.co.uk
info@millsonassociates.co.uk

2299 - Project Name



Greater Manchester Districts

Neighbouring District Boundaries

PEDL 165

PEDL 166

PEDL 193

Deep Coal Resource (1,200m +)
- potential for Coal Bed Methane
and other unconventional gas resource

Shallow Coal Resource (50 - 1,200m)
- potential for Coal Bed Methane and
other unconventional gas resource

Workable Surface Coal Resource

Peak District National Park - although located within
Oldham it is not part of the Minerals Plan area

The extent of the coalfield with reserves at depths of 200 - 1,500m have potential for Coal Bed Mathane Extraction

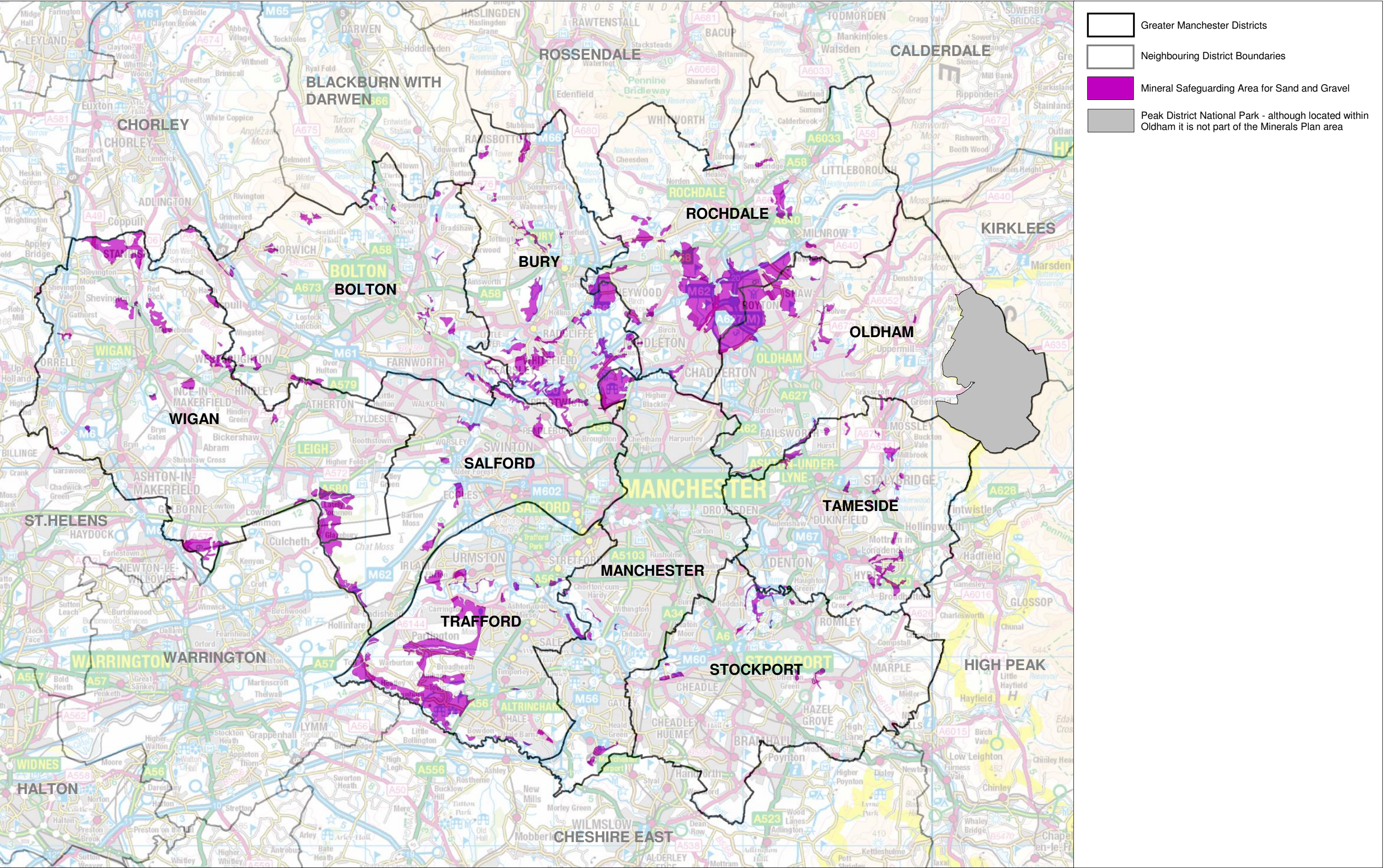
Information on PEDLs was up to date at time of Publication. For up to date PEDL information please refer to the Department of Energy and Climate Change (DECC)

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Scale @ A3
1cm = 1.85km

Map 3 - Coal Resource and Petroleum Exploration Development Licenses (PEDLs) in Greater Manchester

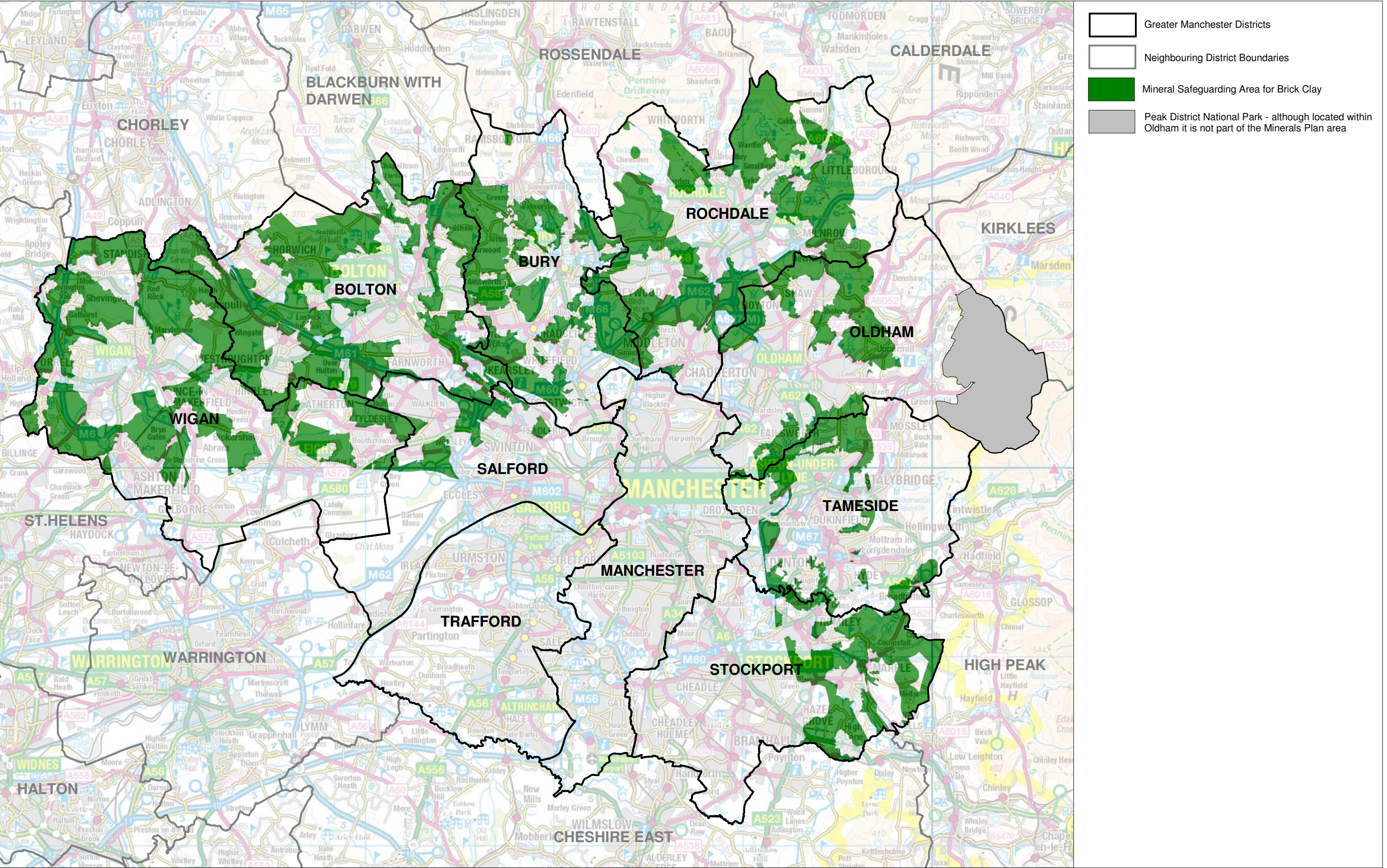


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Scale @ A3
1cm = 1.85km

Map 4 - Mineral Safeguarding Area for Glaciofluvial Sand and Gravel



THE ARLEY CONSULTING COMPANY LIMITED

Chorleian House
49-51 St Thomas's Road
Chorley, Lancs
PR7 1JE



Tel: 01257 278300
Fax: 01257 268063
E-mail: mailbox@taccl.co.uk
www.taccl.co.uk

Our Ref: AB/18846/180410

10 April 2018

FAO Jason Dugdale
Millson Associates
Byron House
10 Kennedy Street
Manchester
M2 4BY

By e-mail

jd@wiplow.co.uk

Dear Jason

Stakehill Business Park, Middleton

TACCL has been instructed by Jason Dugdale on behalf of Milson Associates to prepare a coal mining risk assessment for the above site.

The coal mining risk assessment is required to support a planning application for the proposed redevelopment of the site with the construction of a mixed use industrial and commercial development which will form an extension to the existing Stakehill Business Park. A proposed site layout plan is presented as Millson Associates Drawing No 2299-PL-700-01 in Annex 5.

TACCL has been provided with some specific information for the site and the proposed development and has accessed other data via web based searches.

TACCL has produced this assessment using the Coal Authority's model report template.

1. INTRODUCTION

1.1 Site Location and Description

The site comprises an area of 26 Hectares and is located to the north of Bentley Avenue and the north-east of Stakehill Lane in Middleton, Greater Manchester. The centre of the site is approximately located at NGR SD 89247 08413.

The site is currently largely comprised of undeveloped agricultural land with a number of reservoirs located in the east of the site (to be retained). An existing nursery and part of a poultry farm are located off Stakehill Lane in the east of the site and these also form part of the development area.

A site location plan is presented in Annex 5 with the proposed development area outlined in red.



1.2 Description and Layout of Proposed Development

The application is for outline planning permission for the development of the site with industrial, commercial, leisure and open space use as an extension to the existing Stakehill Business Park which is located immediately to the south of the site.

An indicative site layout is presented in Annex 5.

1.3 Scope

The purpose of this Coal Mining Risk Assessment Report is to:

- Present a desk-based review of all available information on the coal mining issues which are relevant to the application site;
- Use that information to identify and assess the risks to the proposed development from coal mining legacy, including the cumulative impact of issues;
- Set out appropriate mitigation measures to address the coal mining legacy issues affecting the site, including any necessary remedial works and/or demonstrate how coal mining issues have influenced the proposed development; and
- Demonstrate to the Local Planning Authority that the application site is, or can be made, safe and stable to meet the requirements of national planning policy with regard to development on unstable land.

2. SOURCES OF INFORMATION

TACCL has been supplied with the following information:

- (a) A Coal Mining Report (Ref 51001811208001, dated 26 March 2018).
- (b) 1:10,560 scale geological map for the area (Lancs 88 SE)

In addition TACCL has accessed information contained on the Coal Authority and British Geological Survey (BGS) websites in preparation of this assessment.

From the available information TACCL makes the following observations:

2.1 The Coal Authority Website

From the Coal Authority's interactive web viewer it can be seen that:

- (i) The site is in a defined '*coal mining reporting area*'.



- (ii) A '*development high risk area*' is located trending roughly north to south across the eastern part of the site (associated with a coal seam which subcrops beneath the site). However the remainder of the site is not located in a '*development high risk area*'.
- (iii) There are no mine entries within influencing distance of the development site.
- (iv) There is no record of '*past surface mining*' in the vicinity of the site.
- (v) There are no '*past shallow coal mine workings*' at the site.
- (vi) There are no '*probable shallow coal mine workings*' at the site.
- (vii) A '*coal seam*' subcrops beneath the site running north-south beneath the eastern part of the site.

Copies of the Coal Authority images are presented in Annex 1.

2.2 BGS Website

From BGS records, available via the web viewer, it can be seen that the geological conditions at the site include thick superficial deposits, mainly comprising glacial till (Boulder Clay) with glacial sand and gravel on the northern edge, south-eastern corner and western corner of the site.

Solid strata comprise mudstone, siltstone and sandstone of the Pennine Lower Coal Measures formation. The Royley Sandstone is located in the north of the site splitting into two outcrops.

No specific coal seams are shown on the interactive map.

The BGS website includes records of boreholes drilled in the vicinity of the site.

The nearest historical borehole (Ref SD80 NE4) is located approximately 150 m to the west and encountered drift comprising clay and sand to a depth of 95 m bgl with bedrock not proven.

Borehole (Ref SD80 NE5) is located approximately 300 m to the south-west and records clay, sand and gravel to a depth of approximately 55 m where 'hard sandy bind' was encountered. Black shale was encountered at a depth of 59 m bgl.

An historic borehole (Ref SD80 NE3) is located approximately 300 m to the north-west of the site and records boulder clay, sand and clay to a depth of 80 m bgl where 'broken shale with coal was encountered to 81 m bgl. The Arley Mine seam was recorded from 120.3 to 122.0 m bgl.

Copies of the BGS website images are presented at Annex 2.



2.3 Coal Mining Report

The Coal Authority (CA) reports that:

- The property *'is not within a surface area that could be affected by past underground mining'*.
- The property *'is not with a surface area that could be affected by present (or future) underground mining. However, reserves of coal exist in the local area which could be worked at some time in the future'*.
- *'There are no known coal mine entries within, or within 20 m of, the boundary of the property'*.
- *'The property is not within the boundary of an opencast site from which coal has been removed by opencast methods'*.
- *'The Coal Authority has no record of a mine gas emission requiring action'*.
- *'The Coal Authority has not received a damage notice or claim for the subject property or any property within 50 metres since 31 October 1994'*.

A copy of the Coal Mining Report is presented in Annex 4.

2.4 Geological Maps

The 1:10,560 scale geological map for the area (Lancs 88 SE) shows that the western part of the site is underlain by glacial sand and gravel with clay to the north.

Solid strata comprise sandstone and shale of the Pennine Lower and Middle Coal Measures. The Arley Mine Seam is shown to subcrop beneath the east of the site running north to south.

The solid strata in the local area are indicated to dip to the south-west at an angle of approximately 13 °.

2.5 Other Information

Reference to the Rochdale BC planning portal did not identify any intrusive ground investigations that have been conducted as part of planning applications for the site or within the surrounding area.

3. IDENTIFICATION AND ASSESSMENT OF SITE SPECIFIC COAL MINING RISKS

A summary of the potential risks associated with coal mining legacy at the proposed development site, identified from *the available information* is presented in the following table:



Coal Mining Issue	Yes/No	Risk Assessment
Underground coal mining (recorded at shallow depths)	No	No evidence of shallow underground coal mining (<30 m) beneath the site, however 1 seam of coal (Arley Mine) is indicated to be present beneath the site at unknown depth. Boreholes drilled close to the site prove thick superficial soils in the area to depths ranging from 55 to 95 m. However none of the available boreholes are located on the actual development site. One borehole drilled 300 m to the north-west records the Arley Mine seam at a depth of 120 to 122 m bgl which is not within influencing distance of the ground surface.
Underground coal mining (probable at shallow depths)	No	No evidence of probable shallow coal mining. Although a coal seam (Arley Mine) is indicated to subcrop beneath the eastern part of the site which may have been worked, this is believed to be at a depth far in excess of shallow coal mining depth (>30 m).
Mine entries (shafts and adits)	No	
Coal mining geology (fissures)	No	
Record of past mine gas emissions	No	
Recorded coal mining surface hazard	No	
Surface mining (opencast workings)	No	

Based on the information obtained and reviewed as part of this assessment TACCL considers that shallow underground coal and/or coal mine workings are not likely to be present beneath the site and therefore the risk to the stability of the proposed development is low.

4. CONCLUSIONS

TACCL considers that the presence of any unrecorded shallow coal mine workings at the site is very unlikely based on the available evidence. However given the lack of data within the site it may be prudent to undertake an investigation in the vicinity of the coal seam in order to confirm the depth of drift and depth to rockhead.



We trust that this is acceptable, however if you have any queries or want to discuss these findings please contact me.

Yours sincerely

ANDREW BAIN
Senior Engineer

Enc

Annex 1

Coal Authority Web Images



The Coal Authority

Interactive Map

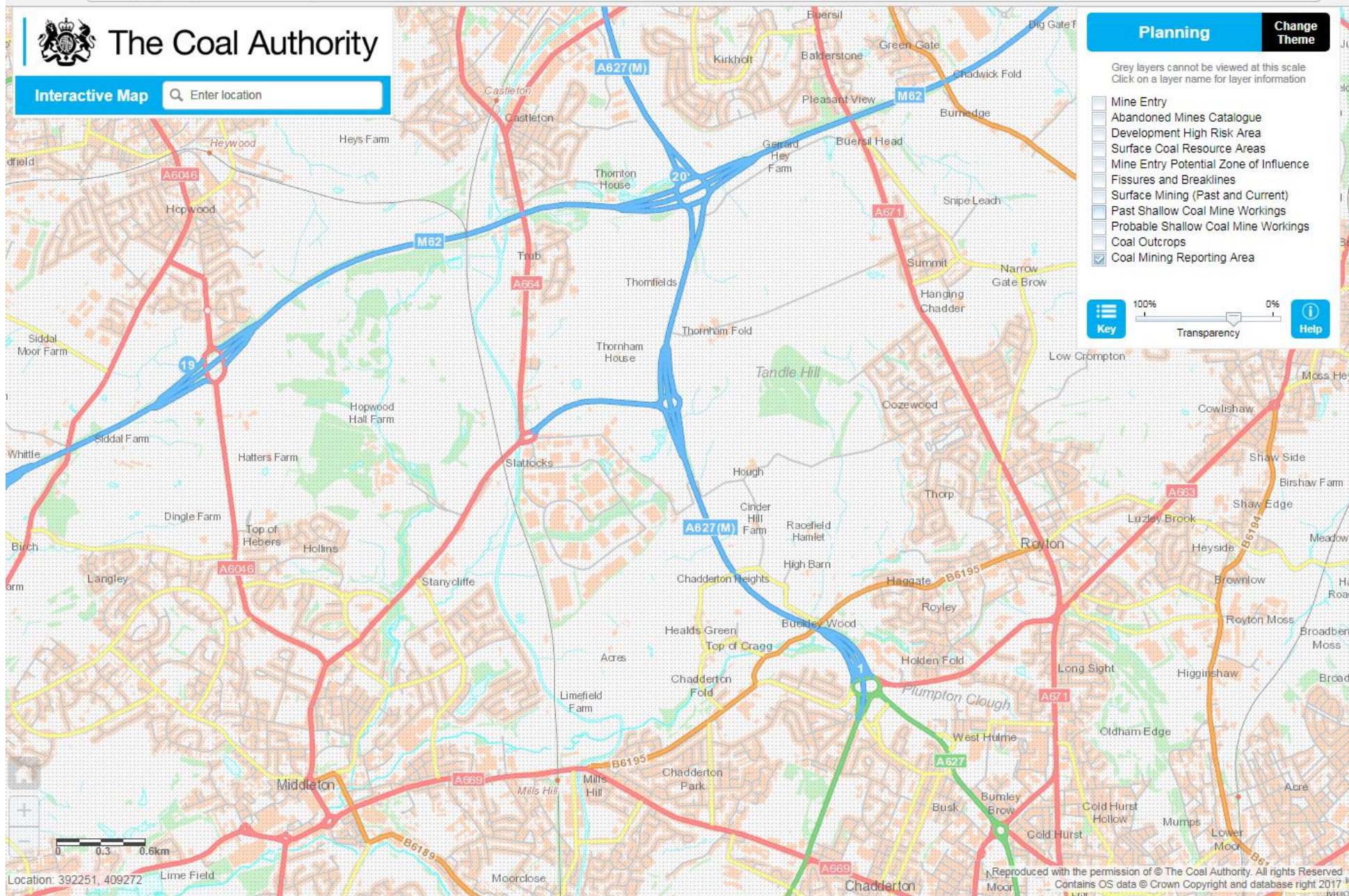
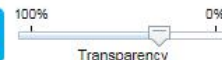
Q Enter location

Planning

Change Theme

Grey layers cannot be viewed at this scale
Click on a layer name for layer information

- ☐ Mine Entry
- ☐ Abandoned Mines Catalogue
- ☐ Development High Risk Area
- ☐ Surface Coal Resource Areas
- ☐ Mine Entry Potential Zone of Influence
- ☐ Fissures and Breaklines
- ☐ Surface Mining (Past and Current)
- ☐ Past Shallow Coal Mine Workings
- ☐ Probable Shallow Coal Mine Workings
- ☐ Coal Outcrops
- ☒ Coal Mining Reporting Area

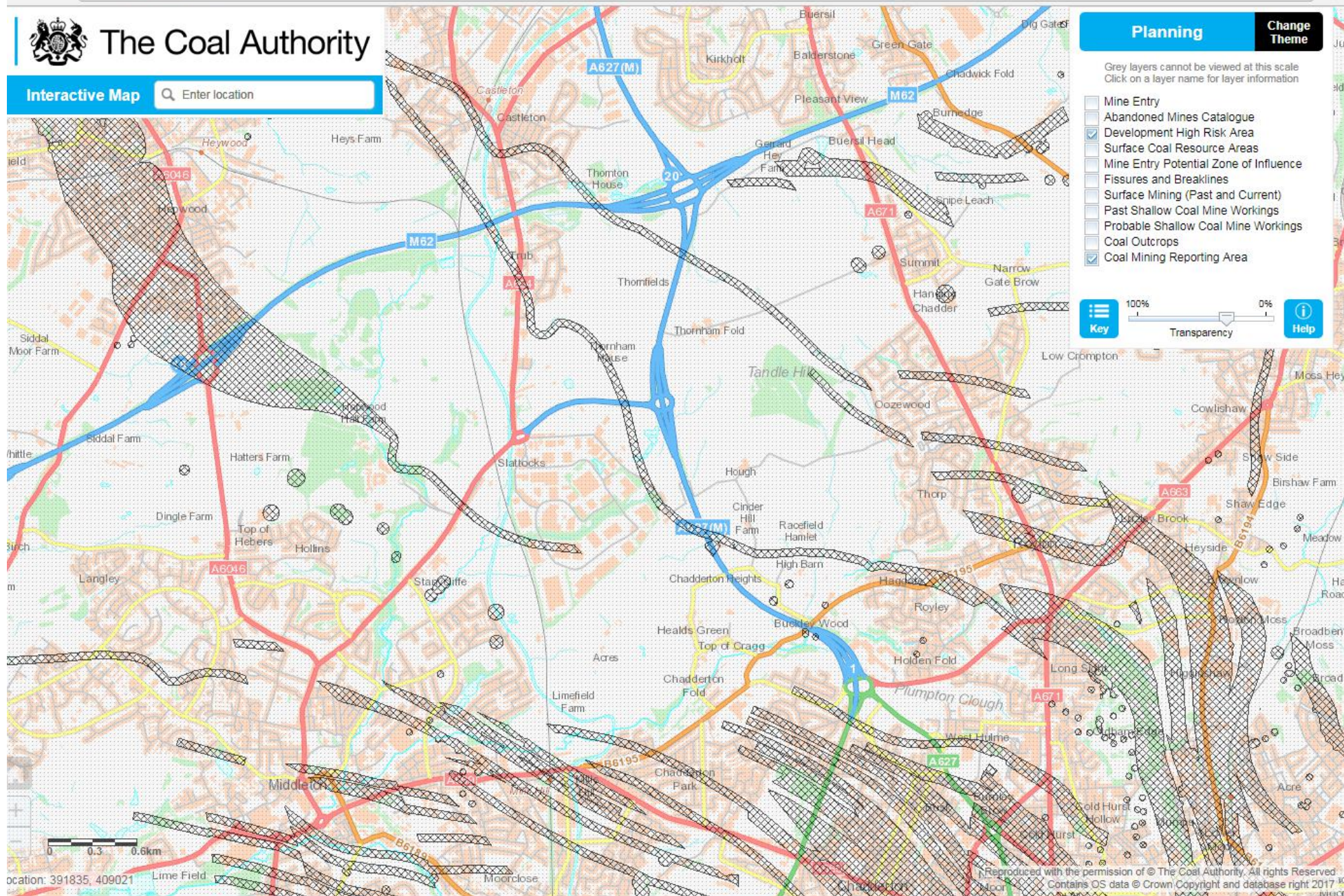




The Coal Authority

Interactive Map

Enter location

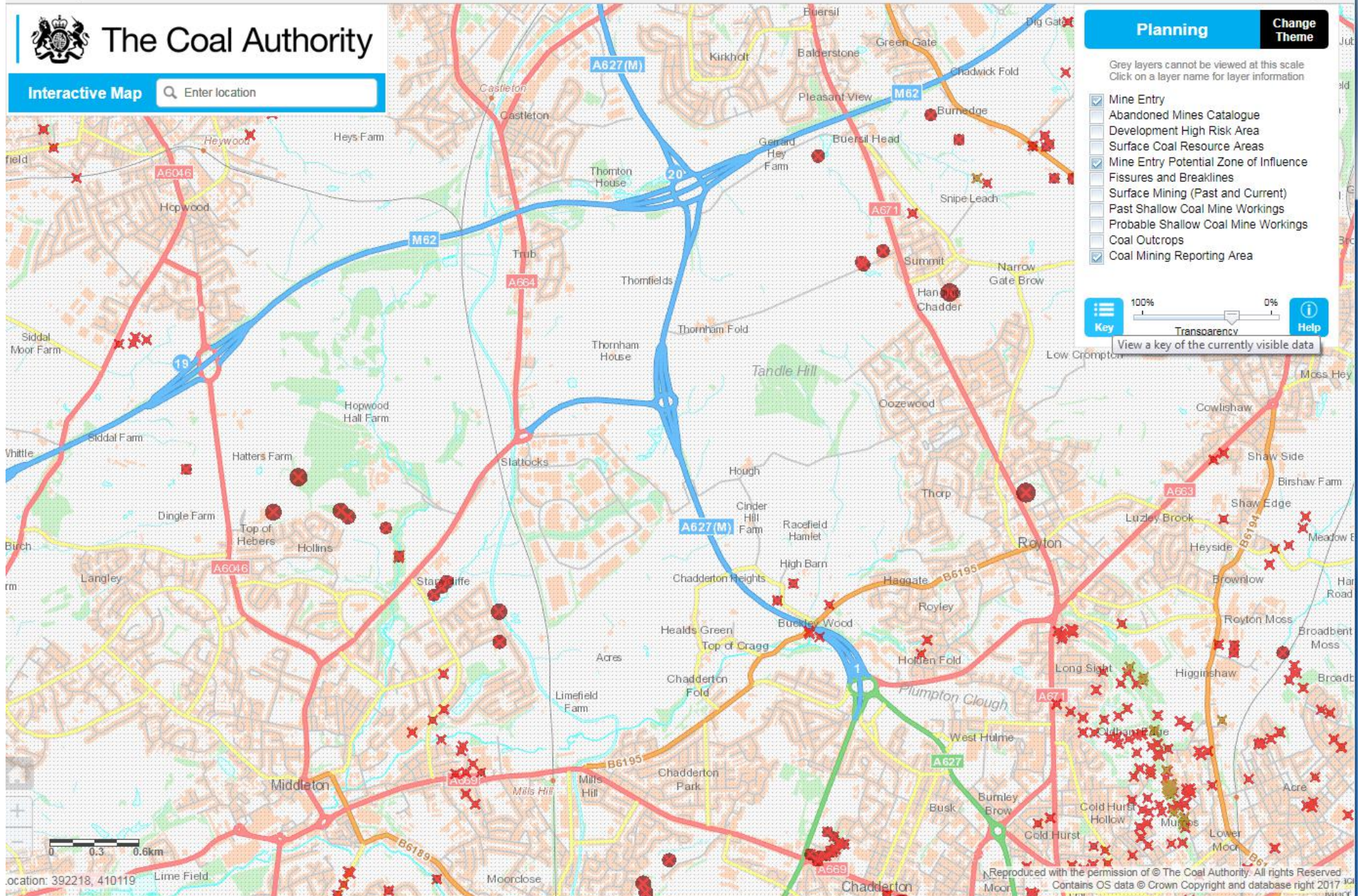




The Coal Authority

Interactive Map

Enter location

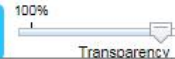


Planning

Change Theme

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Click on a layer name for layer information

- ☒ Mine Entry
- ☐ Abandoned Mines Catalogue
- ☐ Development High Risk Area
- ☐ Surface Coal Resource Areas
- ☒ Mine Entry Potential Zone of Influence
- ☐ Fissures and Breaklines
- ☐ Surface Mining (Past and Current)
- ☐ Past Shallow Coal Mine Workings
- ☐ Probable Shallow Coal Mine Workings
- ☐ Coal Outcrops
- ☒ Coal Mining Reporting Area



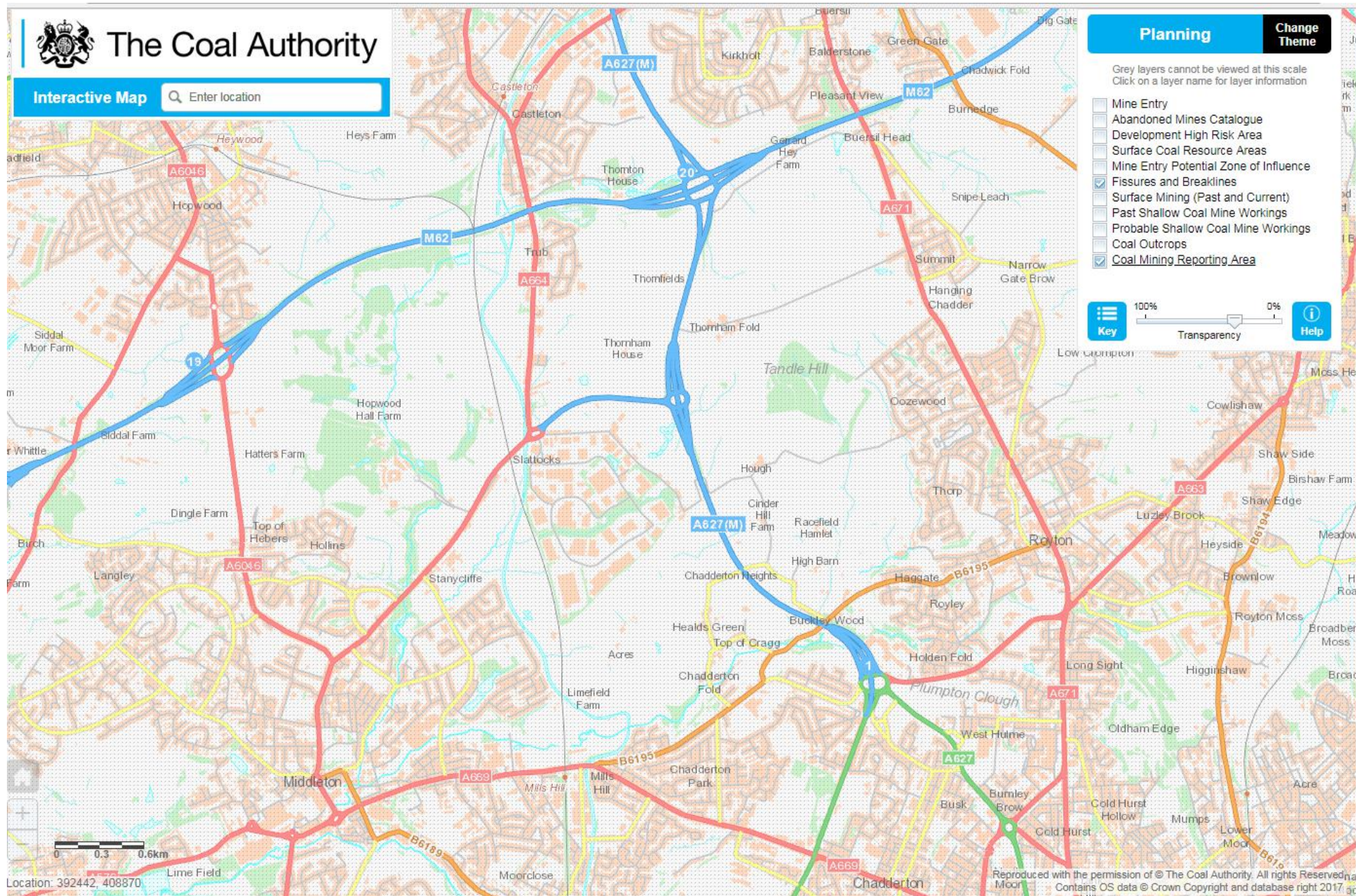
View a key of the currently visible data



The Coal Authority

Interactive Map

Enter location

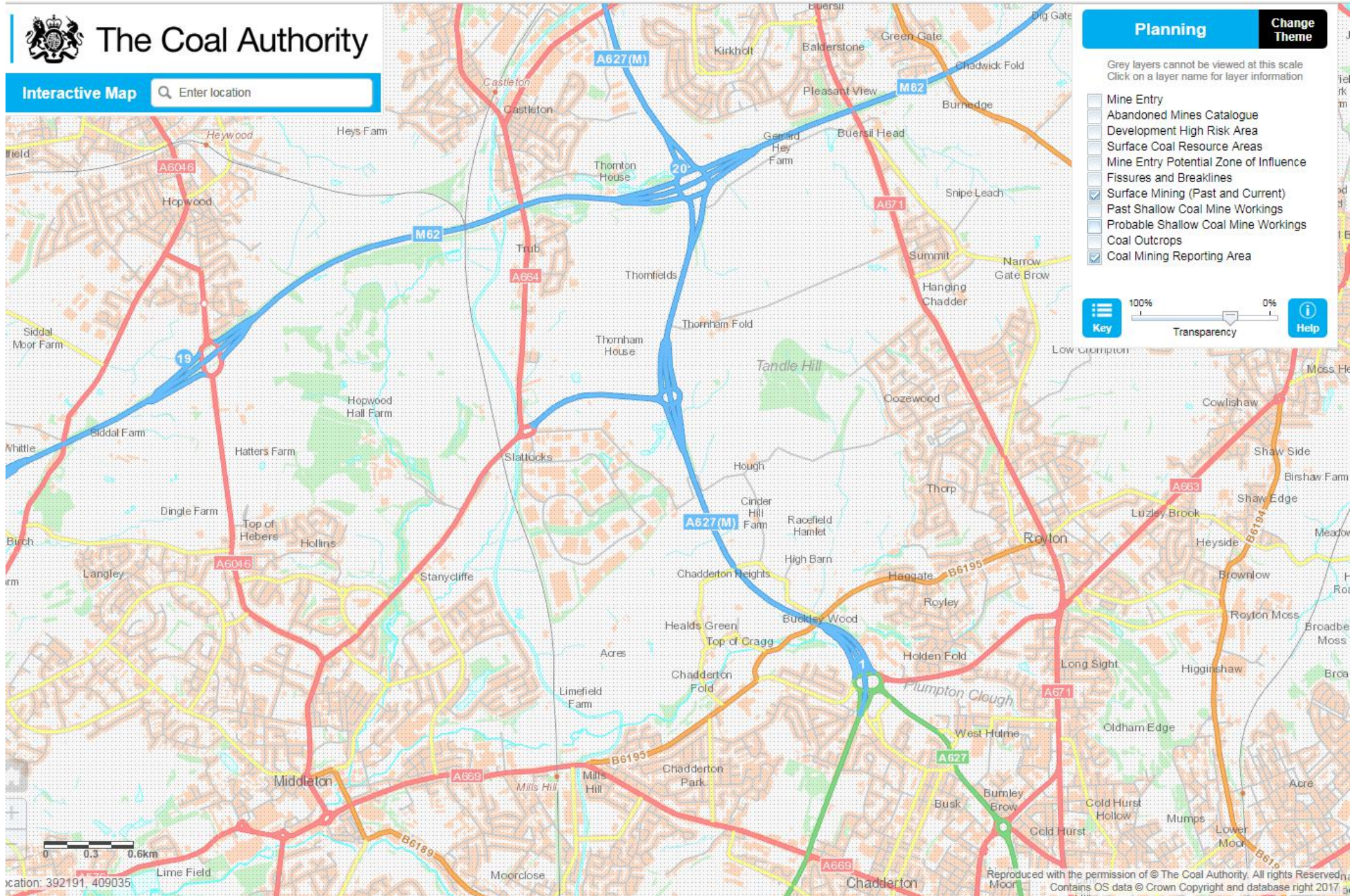




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Interactive Map

Enter location



Planning

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Click on a layer name for layer information

- ☐ Mine Entry
- ☐ Abandoned Mines Catalogue
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- ☐ Past Shallow Coal Mine Workings
- ☐ Probable Shallow Coal Mine Workings
- ☐ Coal Outcrops
- ☒ Coal Mining Reporting Area



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Transparency



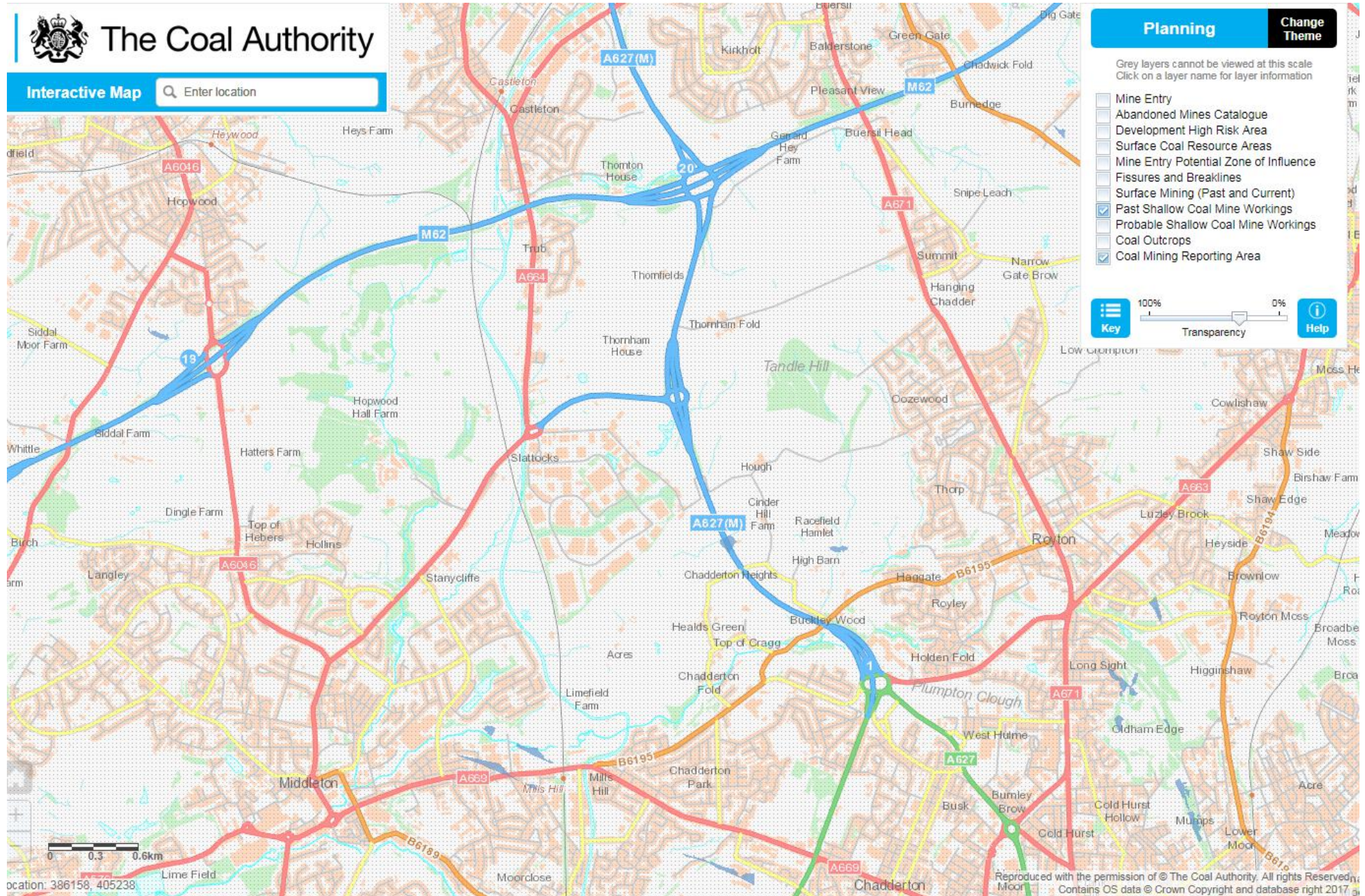
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Interactive Map

Enter location



Planning

Change Theme

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Click on a layer name for layer information

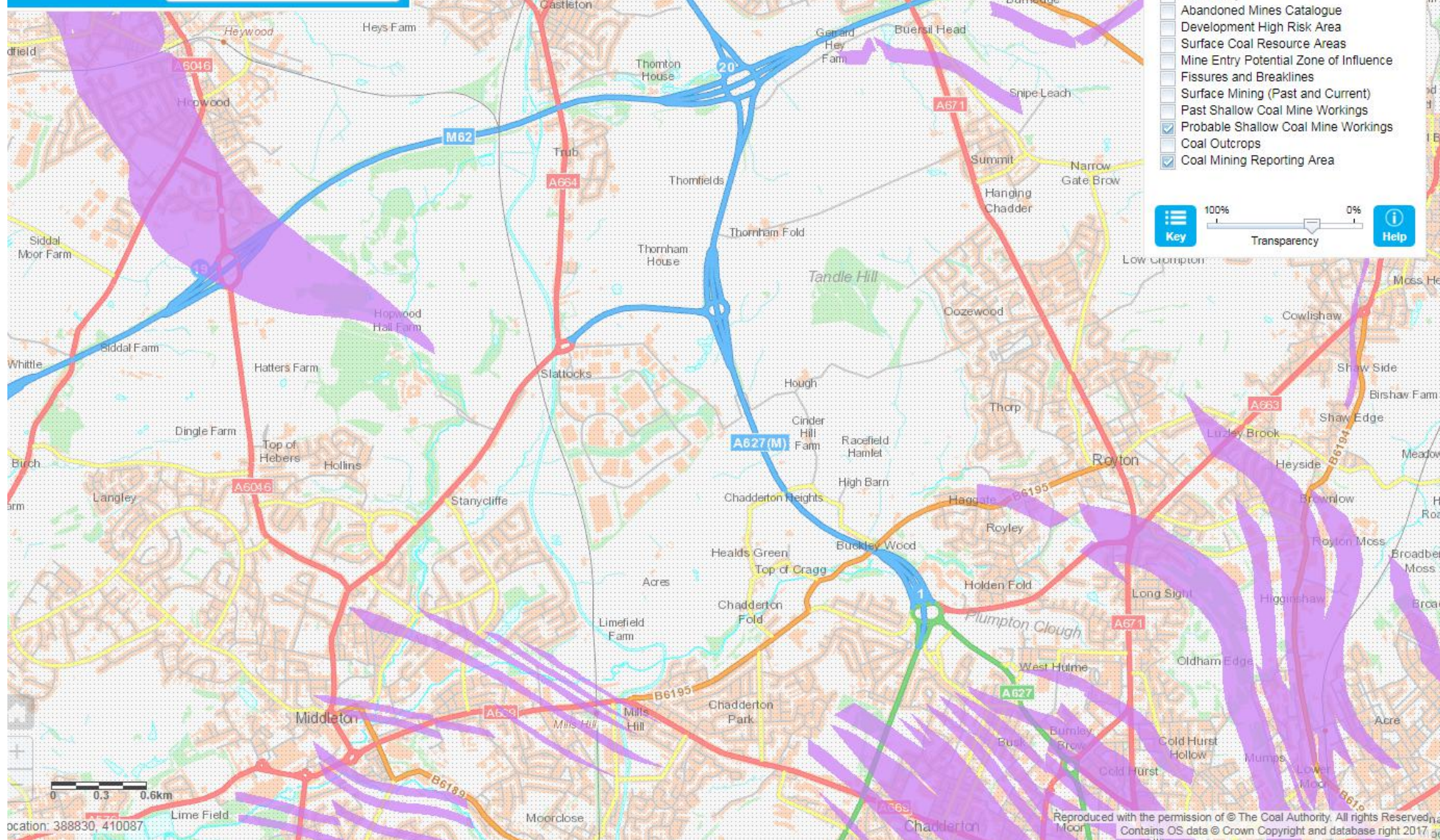
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- ☐ Abandoned Mines Catalogue
- ☐ Development High Risk Area
- ☐ Surface Coal Resource Areas
- ☐ Mine Entry Potential Zone of Influence
- ☐ Fissures and Breaklines
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- ☒ Coal Mining Reporting Area



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Interactive Map



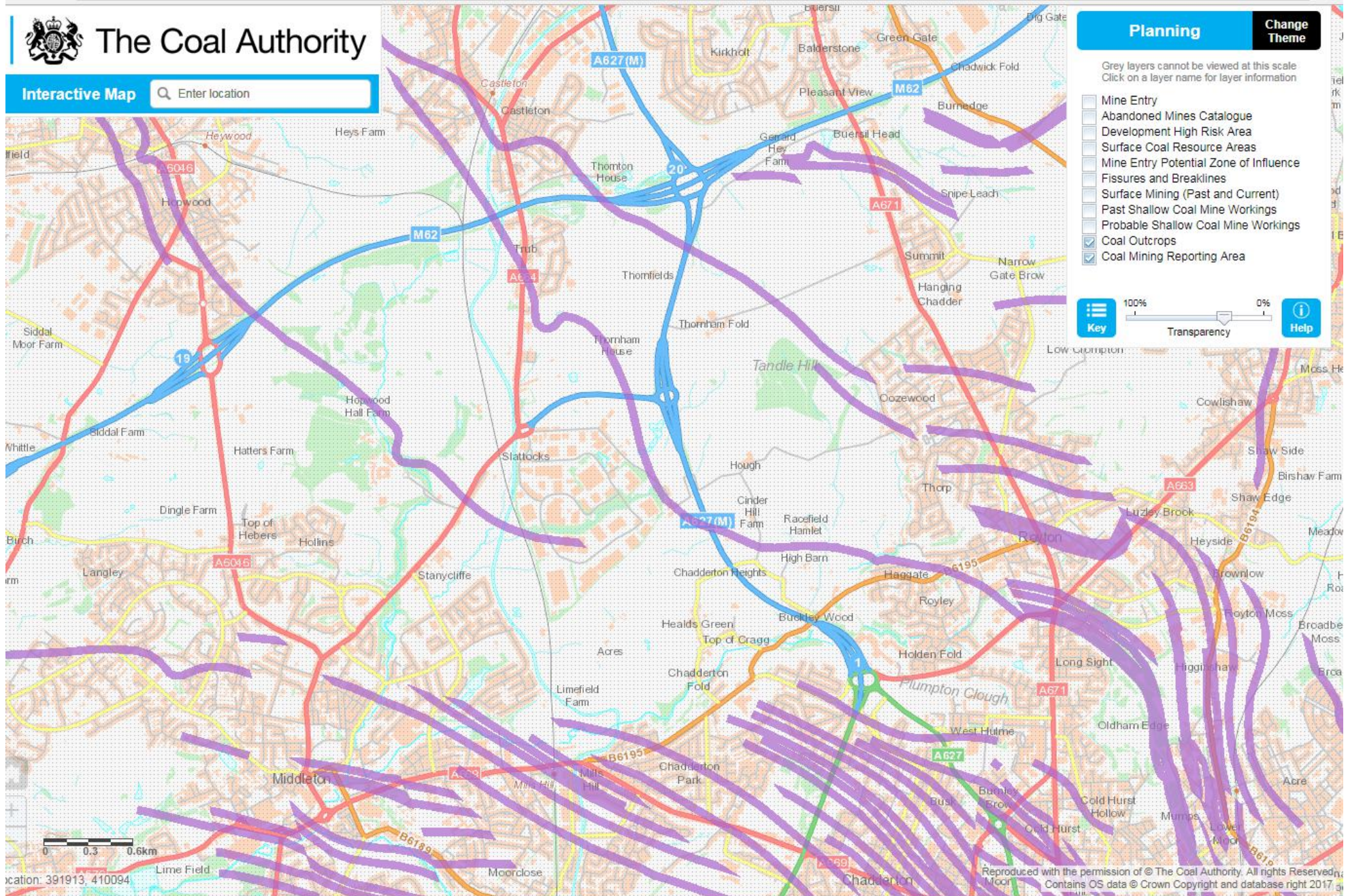
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The Coal Authority

Interactive Map

Enter location



Annex 2

Geological Maps



Borehole Scans

Click on a borehole to view scan.

Borehole depth

- 0 - 10m
- 10 - 30m
- 30m+
- Unknown
- Confidential or Restricted

[More on boreholes](#)



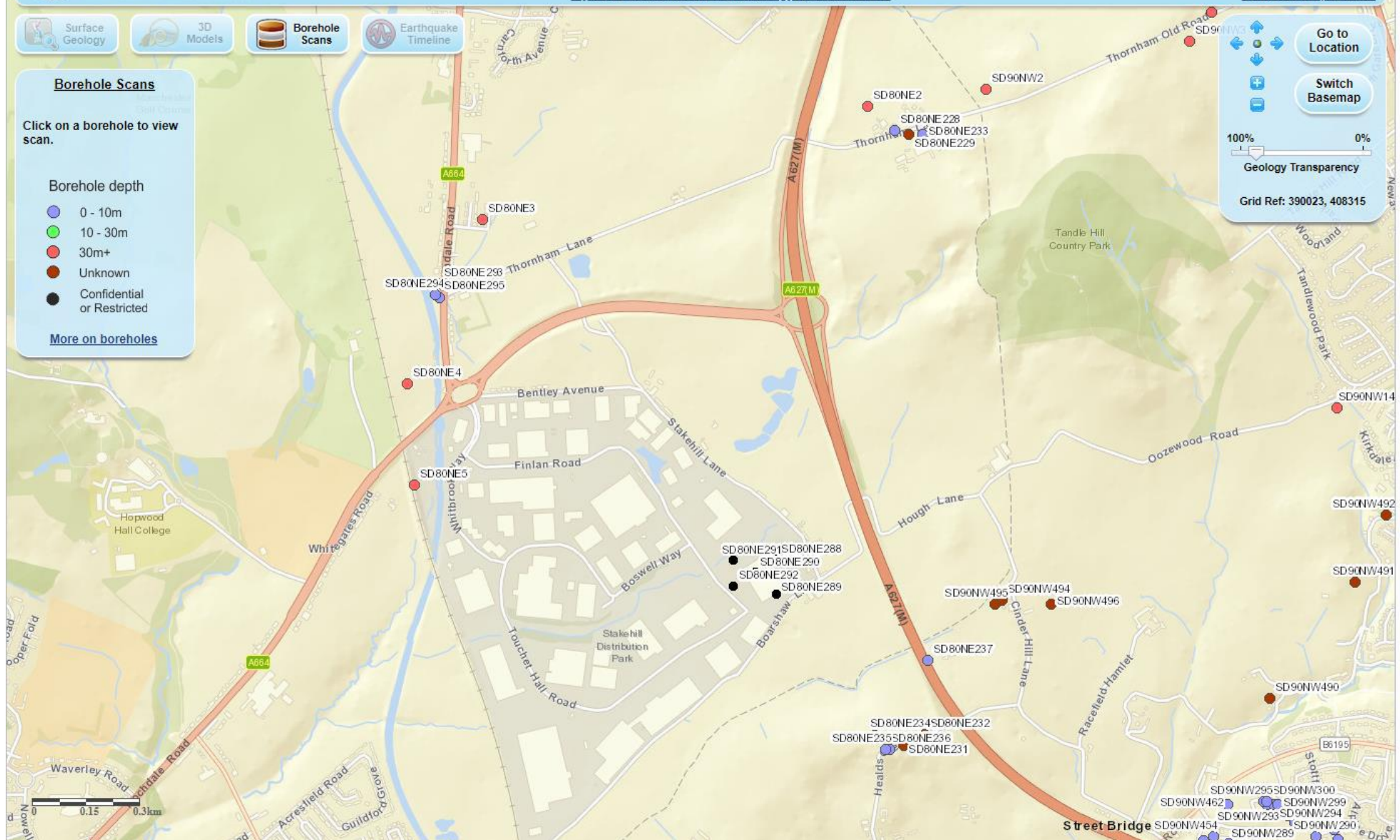
Go to Location

Switch
Basemap

100% 0%

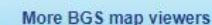
Geology Transparency

Grid Ref: 390023, 408315





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Surface Geology.

- ☒ Superficial only
- ☐ Bedrock only
- ☐ Bedrock and Superficial

Visible geology:
1:50 000 scale

Geology Key

[More on digital geology.](#)

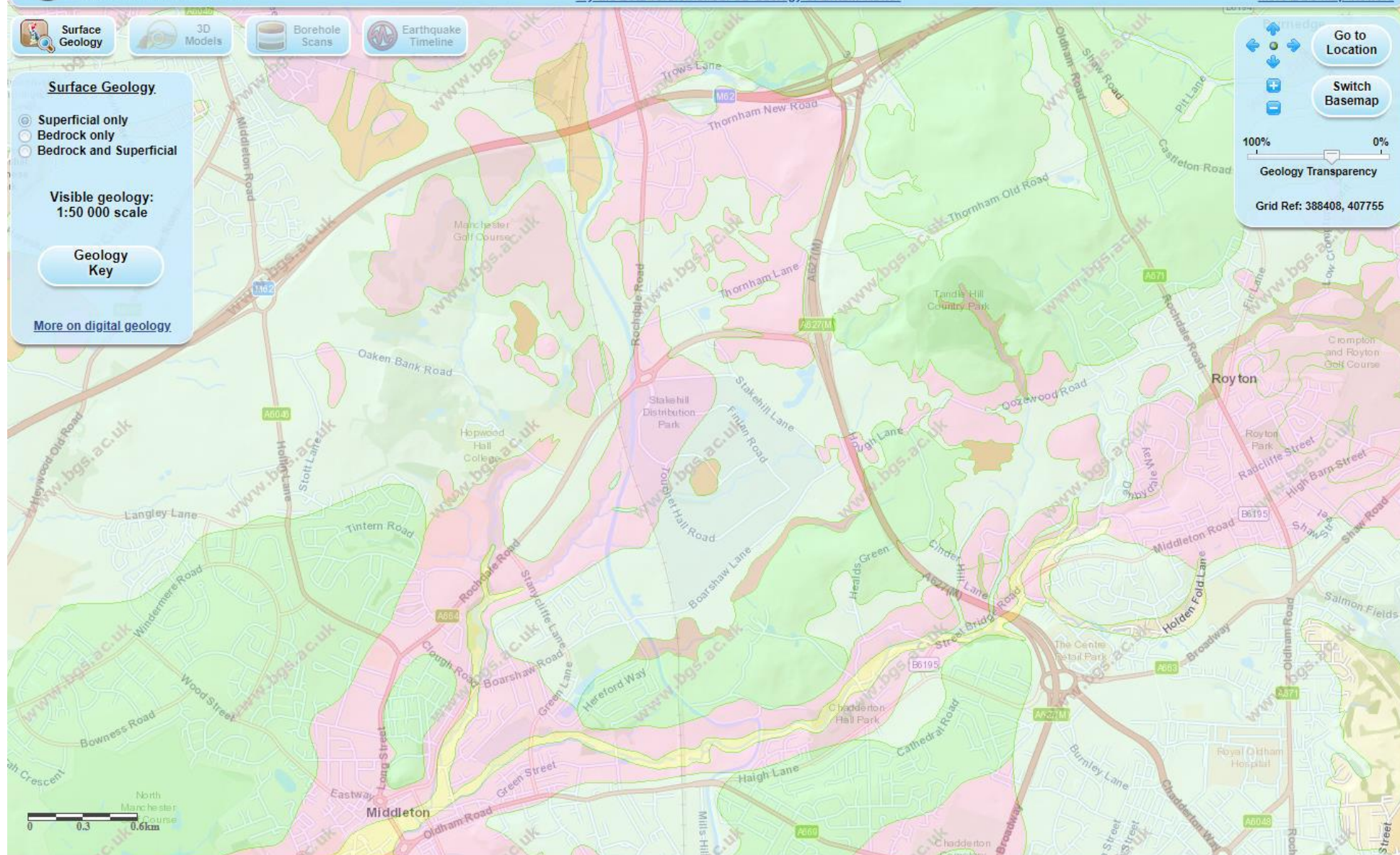


Switch
Basemap

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Geology Transparency

Grid Ref: 388408, 407755





British
Geological Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

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[More BGS map viewers](#)



Surface
Geology



3D
Models



Borehole
Scans



Earthquake
Timeline

Surface Geology

- ☐ Superficial only
- ☒ Bedrock only
- ☐ Bedrock and Superficial

Visible geology:
1:50 000 scale

Geology
Key

[More on digital geology.](#)



Go to
Location

Switch
Basemap

100% 0%
Geology Transparency

Grid Ref: 391576, 408695

Bedrock geology

1:50 000 scale bedrock geology description:
Royley Sandstone - Sandstone. Sedimentary Bedrock formed approximately 318 to 319 million years ago in the Carboniferous Period. Local environment previously dominated by swamps, estuaries and deltas.

Setting: swamps, estuaries and deltas. These sedimentary rocks are fluvial, palustrine and shallow-marine in origin. They are detrital, forming deposits reflecting the channels, floodplains and deltas of a river in a coastal setting (with periodic inundation from the sea).

[Further details](#)

[What is Bedrock Geology?](#)

[To purchase detailed geological reports for this area, try our GeoReports service](#)

0 0.3 0.6km
North
Manchester
Course

Annex 3

BGS Historical Borehole Records



**British
Geological Survey**

NATURAL ENVIRONMENT RESEARCH COUNCIL

BGS ID: 26958 : BGS Reference: SD80NE3

British National Grid (27700) : 388591,408861

[Report an issue with this borehole](#)

<<

< Prev

Page 1 of 6

Next >

>>

SD 80 NE 3 10

RECORD OF WELL (SHAFT OR BORE)

Atch. Ge. Slattocks No.1 Borehole. British Geological Survey

Town or Village Middleton County Lancs. Six-inch quarter sheet 88 SE.E.

Exact site _____ (A rough sketch-map or a tracing from a map is very desirable)

Level of ground surface above sea-level (O.D.) _____ ft. If well starts below ground surface, state how far _____ ft.

Shaft _____ ft., diameter _____ ft. Bore _____ ft. Diameter of bore: at top _____ ins.; at bottom _____ ins.

Details of permanent lining tubes (internal diameters preferred) _____

Water struck at depths of (feet) _____

Rest-level of water below top of well _____ feet. Suction at _____ feet. Yield on _____ hours' test _____ days' _____

gallons per _____ (with pump of capacity _____ g.p.h.); depressing water level to _____ feet below top. Time of recovery _____ hrs. Amount normally pumped daily _____ g.p.h. for _____ hours.

Quality (attach copy of analysis if available) _____

Sunk by _____ for Mr. _____ Date of well 1913

Information from Chamber Colliery Co. Ltd.

GEOLOGICAL CLASSIFICATION.	NATURE OF STRATA (and any additional remarks).	THICKNESS		DEPTH		T/m	p/c
		Feet.	Inches	Feet.	Inches		
Soil		1	6	1	6		0 45
Boulder Clay		38	6	40	-		12 19
Sand		12	-	52	-		15 84
Iron clay		11	-	63	-		19 20
Sand		192	-	255	-		77 72
Blue clay with pebbles (base of drift)		9	6	264	9		80 69
Broken shale with COAL		-	6	265	-		80 77
Blue shale		4	-	269	-		81 99
Grey sandstone		23	-	292	-		89 00
Blue shale		6	-	298	-		90 83
Blue shale with ironstone balls		18	10	316	10		96 58
Soft blue shale		6	6	323	4		98 55
Grey sandstone		11	-	334	4		101 40
Broken blue shale with ironstone balls		9	-	343	4		104 64
Dark blue shale		12	4	355	8		108 40
Blue shale		12	-	367	8		112 06
Blue shale with broken bands		7	-	374	8		114 19
Dark blue shale with iron bands		9	-	383	8		116 94
Black shale		1	6	385	2		117 39
Soft black shale		-	6	385	8		117 55
Black shale		8	9	394	5		120 21
COAL		-	6	394	11		120 37
Parting) ARLEY MINE: 5 ft. 10 1/2 ins.		-	3	394	11 1/2		120 38
COAL		1	11 1/2	396	11		120 98
Parting) et 400 ft. 3 1/2 ins.		-	3	396	11 1/2		120 99
COAL		3	4	400	3 1/2		120 00
Fireclay		2	2 1/2	402	6		122 68
Blue and grey shale with iron bands		5	6	408	-		124 35
Broken black shale		2	3	411	6		125 42
Fireclay		2	3	413	9		126 11
COAL Inferior		7	-	414	4		126 28
Fireclay with iron nodules		1	6	415	10		126 74
Strong grey bind with iron balls		5	2	421	-		128 32
Blue and grey sandstone		3	-	424	-		129 23
Strong grey bind		11	6	435	6		132 74
Broken shale & spar		5	-	440	6		134 26
Blue sandy shale with MUSSELS		17	6	458	-		139 59
Blue shale with iron bands		10	6	468	6		142 19
Bottom of hole							

GEOLOGICAL SURVEY AND MUSEUM.
British Geological Survey, SOUTH KENSINGTON,
LONDON, S.W.7.

For Survey use only

Date received	G.S.M. Office File No.	Site marked on 1" map (use symbol)
---------------	------------------------	------------------------------------

Survey (*1919) W129051/0,369 10,000 9/39
A.C. E.W.Ltd. Cp-486

transferred to SD80 Ref 29.2.00

SD81/49B+C

RECORD OF WELL (SHAFT OR BORE)

SD80/115 + 116

At Thornham Estate Boreholes Nos. 2 & 3, Slattons. 1" N.S. 85

Town or Village _____ County Leeds Six-inch quarter sheet 88 SE.E. 1" O.S. Gold Ref. 11-12

Exact site _____ in parish of _____ (A rough sketch-map or a tracing from a map is very desirable)

Level of ground surface above sea-level (O.D.) 425 ft. If well starts below ground surface, state how far _____ ft.

Shaft _____ ft., diameter _____ ft. Bore _____ ft. Diameter of bore: at top _____ ins.; at bottom _____ ins.

Details of permanent lining tubes (internal diameters preferred) _____

Water struck at depths of (feet) _____

Rest-level of water below top of well _____ feet. Suction at _____ feet. Yield on _____ hours' test above _____ days' test

_____ gallons per _____ (with pump of capacity _____ g.p.h.); depressing water level to _____ feet below top. Time of recovery _____ hrs. Amount normally pumped daily _____ g.p.h. for _____ hours.

Quality (attach copy of analysis if available) _____

Sunk by Messrs. John Thom for Mr. _____ Date of well 1913

Information from Messrs. Winstanley & Ashworth.

(For Survey use only). GEOLOGICAL CLASSIFICATION.	NATURE OF STRATA (and any additional remarks).	THICKNESS		DEPTH	
		Feet.	Inches	Feet.	Inches.
<u>SD80/115</u> <u>No.2. 425 ft.</u> <u>SD 8637 0839</u> <u>SD 80 NE/4</u>					
Sandy clay		4	-	4	-
Sand		6	6	10	6
Boulder clay		62	-	62	6
Sand		22	6	85	-
Loamy sand		25	-	110	-
Clay		10	-	120	-
Sand		90	-	210	-
<u>SD80/116</u> <u>No.3. 400 ft.</u> <u>SD 8839 0811</u> <u>SD 80 NE/5</u>					
Soil		1	6	1	6
Sharp sand		2	-	3	6
Soft loamy clay		3	-	6	6
Boulder clay		18	6	25	-
Sand & gravel		7	9	32	9
Sand		6	-	38	9
Sand & gravel		7	3	46	-
Soft clay with stones in it		2	6	48	6
Loamy sand		15	6	64	-
Soft sandy clay		23	6	87	6
Strong clay		6	-	93	6
Hard sandy clay		11	6	105	-
Loamy sand		60	-	165	-
Sharp sand		5	-	170	-
Clay & broken shale		3	-	173	-
Hard sandy bind		7	-	180	-
Gray bind		9	-	189	-
Black shale with rock bands		4	-	193	-

GEOLOGICAL SURVEY AND MUSEUM.
SOUTH KENSINGTON.
LONDON, S.W.7.

For Survey use only

Date received	G.S.M. Office File No.	Site marked on 1" map (use symbol)
---------------	------------------------	------------------------------------

(*11815) Wt 29051/0.509 10,000 9/89
A.E.B.W.Ltd. Gp. 695

Annex 4

Coal Mining Report



The Coal
Authority

Resolving the **impacts** of mining

CON29M Non-Residential Mining Report

SITE AT 385000, 400000
GREATER MANCHESTER



Date of enquiry: 26 March 2018
Date enquiry received: 26 March 2018
Issue date: 26 March 2018

Our reference: 51001811208001
Your reference: 160643010_1 |



CON29M Non-Residential Mining Report

This report is based on, and limited to, the records held by the Coal Authority and the Cheshire Brine Subsidence Compensation Board's records, at the time we answer the search.

Client name

LANDMARK INFORMATION GROUP LIMITED

Enquiry address

SITE AT 385000, 400000, GREATER MANCHESTER

How to contact us

0345 762 6848 (UK)
+44 (0)1623 637 000 (International)

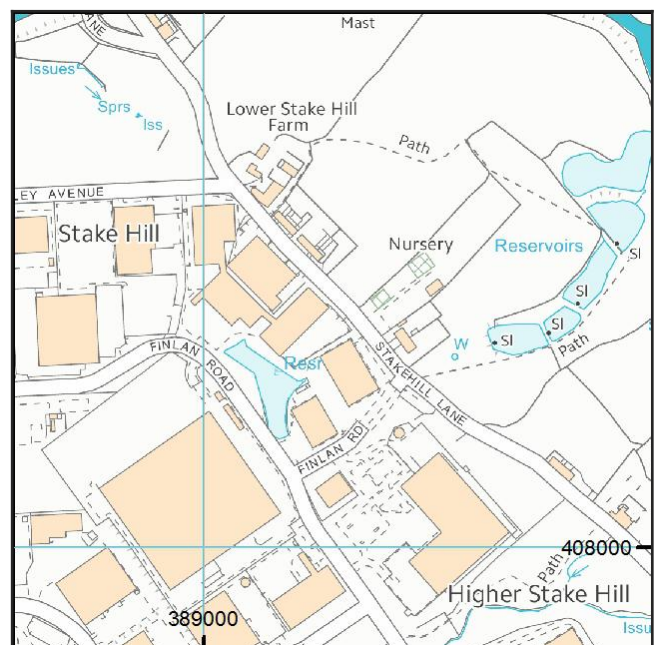
200 Lichfield Lane
Mansfield
Nottinghamshire
NG18 4RG

www.groundstability.com

[in](#) /company/the-coal-authority

 /thecoalauthority

 /coalauthority



Approximate position of property



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Summary

Has the search report highlighted evidence or potential of		
1	Past underground coal mining	No
2	Present underground coal mining	No
3	Future underground coal mining	Yes
4	Mine entries	No
5	Coal mining geology	No
6	Past opencast coal mining	No
7	Present opencast coal mining	No
8	Future opencast coal mining	No
9	Coal mining subsidence	No
10	Mine gas	No
11	Hazards related to coal mining	No
12	Withdrawal of support	No
13	Working facilities order	No
14	Payments to owners of former copyhold land	No
15	Information from the Cheshire Brine Subsidence Compensation Board	No

For detailed findings, please go to page 4.

Detailed findings

1. Past underground coal mining

The property is not within a surface area that could be affected by past underground mining.

2. Present underground coal mining

The property is not within a surface area that could be affected by present underground mining.

3. Future underground coal mining

The property is not in an area where the Coal Authority has plans to grant a licence to remove coal using underground methods.

The property is not in an area where a licence has been granted to remove or otherwise work coal using underground methods.

The property is not in an area likely to be affected from any planned future underground coal mining.

However, reserves of coal exist in the local area which could be worked at some time in the future.

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

4. Mine entries

There are no known coal mine entries within, or within 20 metres of, the boundary of the property.

5. Coal mining geology

The Coal Authority is not aware of any damage due to geological faults or other lines of weakness that have been affected by coal mining.

6. Past opencast coal mining

The property is not within the boundary of an opencast site from which coal has been removed by opencast methods.

7. Present opencast coal mining

The property does not lie within 200 metres of the boundary of an opencast site from which coal is being removed by opencast methods.

8. Future opencast coal mining

There are no licence requests outstanding to remove coal by opencast methods within 800 metres of the boundary.

The property is not within 800 metres of the boundary of an opencast site for which a licence to remove coal by opencast methods has been granted.

9. 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 31st 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.

10. Mine gas

The Coal Authority has no record of a mine gas emission requiring action.

11. Hazards related to coal mining

The property has not been subject to remedial works, by or on behalf of the Authority, under its Emergency Surface Hazard Call Out procedures.

12. Withdrawal of support

The property is not in an area where a notice to withdraw support has been given.

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.

13. Working facilities order

The property is not in an area where an order has been made, under the provisions of the Mines (Working Facilities and Support) Acts 1923 and 1966 or any statutory modification or amendment thereof.

14. 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.

15. Information from the Cheshire Brine Subsidence Compensation Board

The property lies outside the Cheshire Brine Compensation District.

Additional remarks

Information provided by the Coal Authority in this report is compiled in response to the Law Society's Con29M Coal Mining and Brine Subsidence Claim enquiries. The said enquiries are protected by copyright owned by the Law Society of 113 Chancery Lane, London WC2A 1PL. Please note that Brine Subsidence Claim enquiries are only relevant for England and Wales. This report is prepared in accordance with the Law Society's Guidance Notes 2006, the User Guide 2006 and the Coal Authority and Cheshire Brine Board's Terms and Conditions applicable at the time the report was produced.

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Alternative formats

If you would like this report in an alternative format, please contact our communications team.

Enquiry boundary

The map image is too large for this page and will be sent in a separate document

How to contact us

0345 762 6848 (UK)
+44 (0)1623 637 000 (International)

200 Lichfield Lane
Mansfield
Nottinghamshire
NG18 4RG

www.groundstability.com

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 [/thecoalauthority](#)

 [/coalauthority](#)

Enquiry boundary

Key

Approximate position of enquiry boundary shown



How to contact us

0345 762 6848 (UK)
+44 (0)1623 637 000 (International)

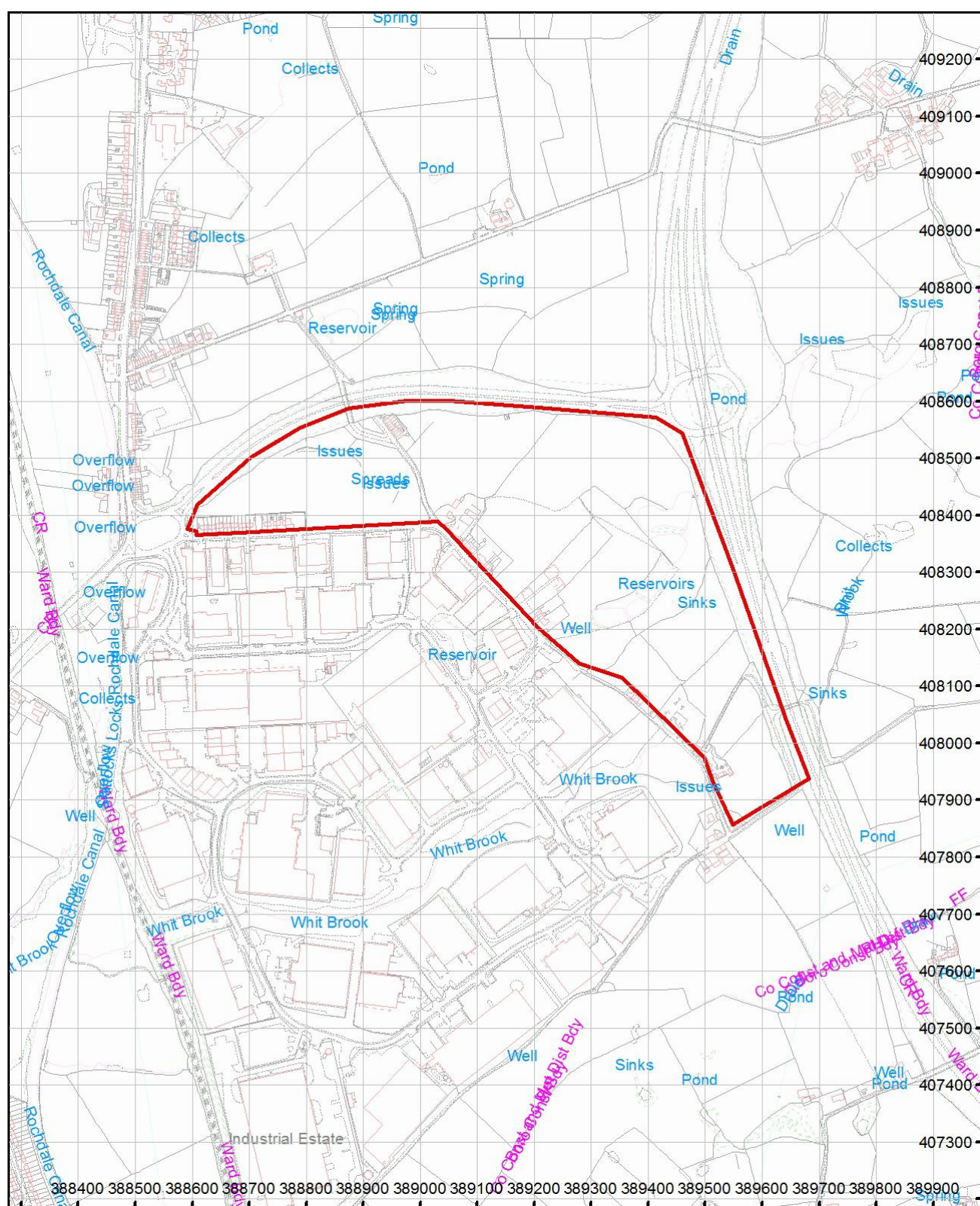
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NG18 4RG

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Annex 5

Drawings

Enquiry boundary

Key

Approximate position of enquiry boundary shown



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+44 (0)1623 637 000 (International)

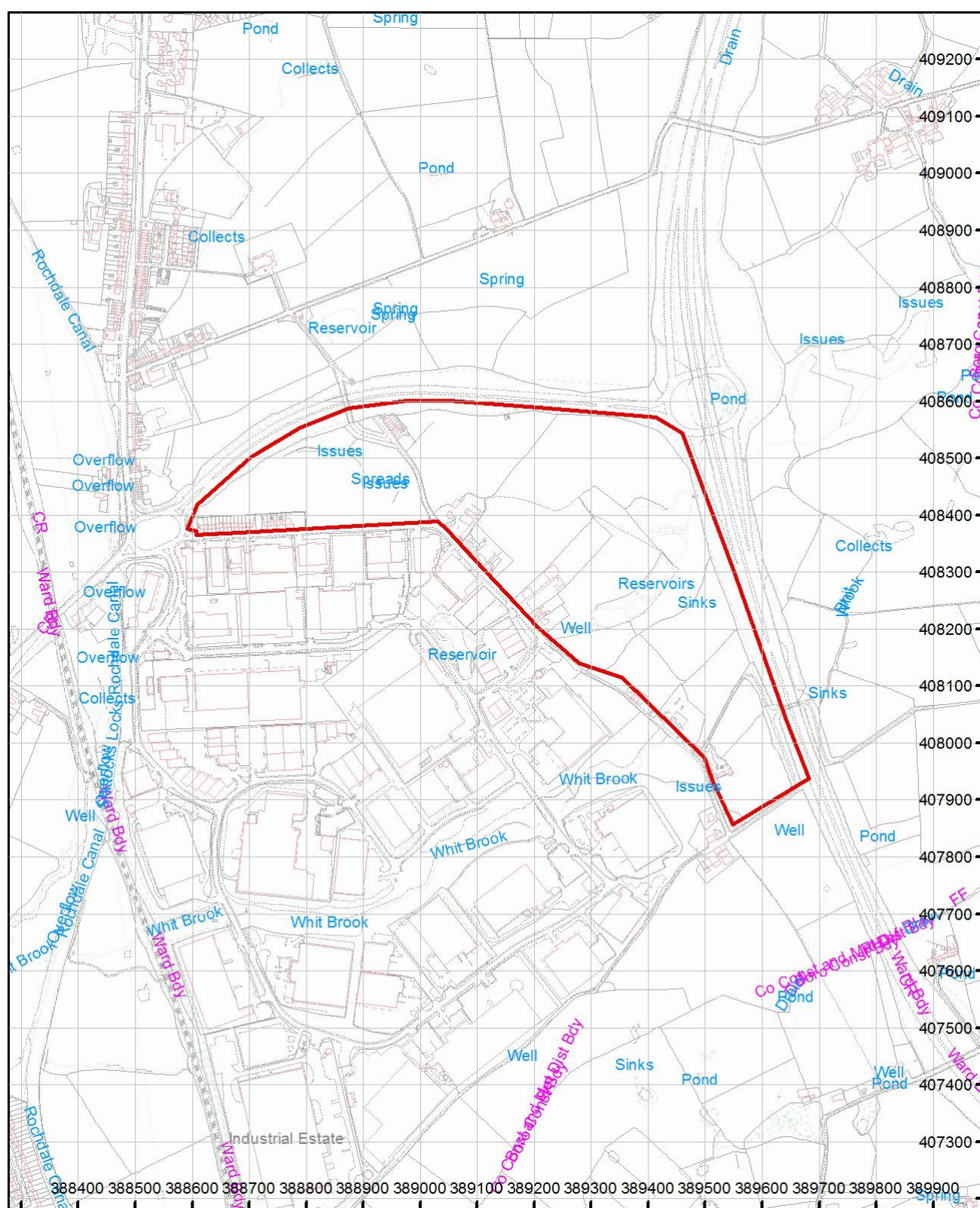
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Site Development Zones

- Existing Agricultural
- Large Industrial
- Mixed Commercial / Leisure Use
- Open Space
- Small Industrial
- Upgrade To Existing Residential

Development Area Schedule			
Name	Area (m²)	Area (ha)	Area (ac)

Open Space			
Amenity Space	26207.40	2.62	6.48

Upgrade To Existing Residential			
New Garage Access	1863.88	0.19	0.46

Existing Agricultural			
Poultry Farm	7629.12	0.76	1.89

Mixed Commercial / Leisure Use			
Proposed Zone 1	16730.24	1.67	4.13

Small Industrial			
Proposed Zone 2	26014.22	2.60	6.43

Large Industrial			
Proposed Zone 3	109977.21	11.00	27.18

Large Industrial			
Proposed Zone 4	73019.22	7.30	18.04

 Proposed Site Development Areas
1 : 2000



Drawing Information:
All levels and dimensions must be checked onsite by the contractor prior to commencement of works. Any variations must be reported to Millson Associates Ltd. All information herein is in the copyright of Millson Associates Ltd. Copying in full or part is forbidden without written permission from Millson Associates Ltd.

Drawings: Proposed Zoning Plan		Drawing Number: 2299-PL-700-01	
Client: Stakehill	Drawn: LS	Scale: 1 : 2000	Date: 02/13/18
	Approved: PJM	Size: A1	Rev: PRELIMINARY
Status: PRELIMINARY			



Byron House
10-12 Kennedy St
Manchester M2 4BY

0161 228 0558
www.millsonassociates.co.uk
info@millsonassociates.co.uk

2299 - Project Name