BCP Heath Lane Hospital, West Bromwich

Coal Mining Risk Assessment

Curtins Ref: 072904-CUR-00-XX-RP-GE-00002-V01

Revision: V01

Issue Date: 13 March 2020

Client Name: Kier Midlands

Client Addresses: Kier Regional Building, Central Tungsten Building, Central Boulevard, Blythe Valley Park Solihull, West Midlands, B90 8AU

Site Address: Heath Lane Hospital, Health West Bromwich, B71 2BW

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Rev	Description	Issued by	Checked	Date

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Table of Content

Appendices

1.0 Introduction

In February 2020, Curtins Ltd were instructed by Kier Midlands to undertake a Coal Mining Risk Assessment of a proposed development site off Heath Lane Hospital, West Bromwich.

1.1 Purpose of this Report

The Coal Mining Risk Assessment has been undertaken principally to provide an overview of the geological setting of the site of interest, specifically in relation to past, present and future mining activities (including non-coal mining). The report provides an assessment of the risks that could be presented to site users and the built environment.

More specifically, the Coal Mining Risk Assessment provides a review of the site with respect to the potential hazards associated with mining or mineral extraction activities including features including but not limited to; quarries, bell pits, abandoned worked seams, adits and shafts.

This Coal Mining Risk Assessment has been undertaken on the overall Heath Lane Hospital Site as show on Figure 1. It is understood that separate planning applications will be submitted for phrases development of this area. Figure 2 shows the know phrases development to date, these include the development of single storey energy centre located within the central section of the site as shown in Figure 2a and the development of the site includes the refurbishment of MacArthur within the southwestern section of the site in Figure 2b

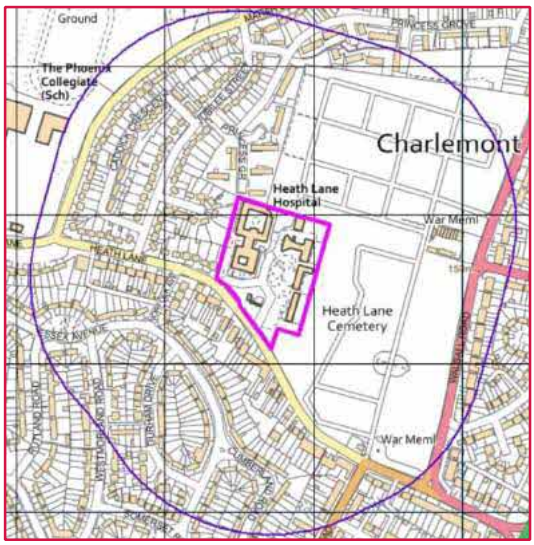

Figure 1 shows the site overall boundary for Heath Lane Hospital, West Bromwich.

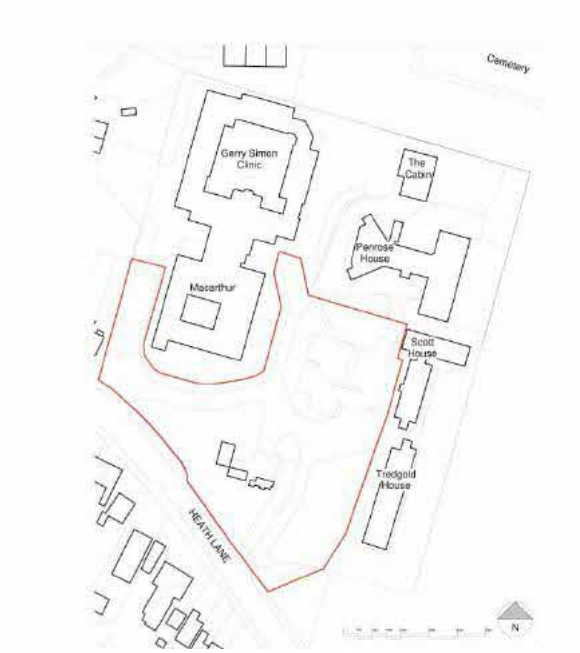

Figure 2a: shows the red line boundary for the site wide infrastructure boundary.

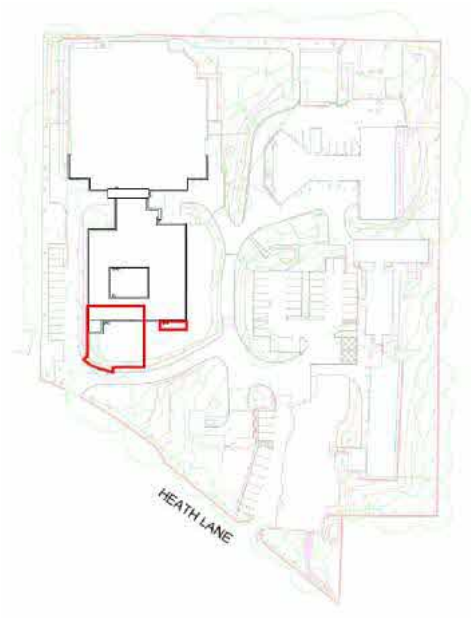

Figure 2b: shows the red line boundary for the MacArthur Extension.

Additionally, the Coal Mining Risk Assessment makes recommendations for the extent and nature of any additional work required to the risk.

1.2 References

The Coal Mining Risk Assessment has been prepared with reference to the following information sources:

- Curtins (2020) Phase 1 Preliminary Site Assessment, BCP Heath Lane Hospital (report no 072904-CUR-00-XX-RP-GE-00001-V01_Phase 1 PSA) (Ref.1)
- British Geological Society (BGS) 1:50,000 mapping (Ref.2).
- BGS Borehole Records (opensource website) (Ref.3).
- Coal Authority Interactive Mapping (opensource website) (Ref.4).
- Coal Authority Coal Mining Consultants Report (appended) (Ref.5).

2.0 Phase 1 Preliminary Site Assessment Summary

This section presents a summary of the current site setting, history, geology and hydrogeology/hydrology, as presented in the Curtins Phase 1 report (Ref. 1). It is not the intention of this report to duplicate the Phase 1.

2.1 Site Location and Existing Use

The site is located at Heath Lane Hospital off Heath Lane in West Bromwich and is currently an active hospital. Several buildings are present on site with associated parking and soft landscaping. The topography of the site slopes towards the north west, with even surface areas present.

The development site boundary is illustrated in *Figure 2.1* below and is approximately centred on NGR 400750, 293330.

The site is bounded to the north and east by Heath Lane Cemetery, to the south by Heath Lane followed residential properties and to the west by residential properties followed by Phoenix Collegiate.

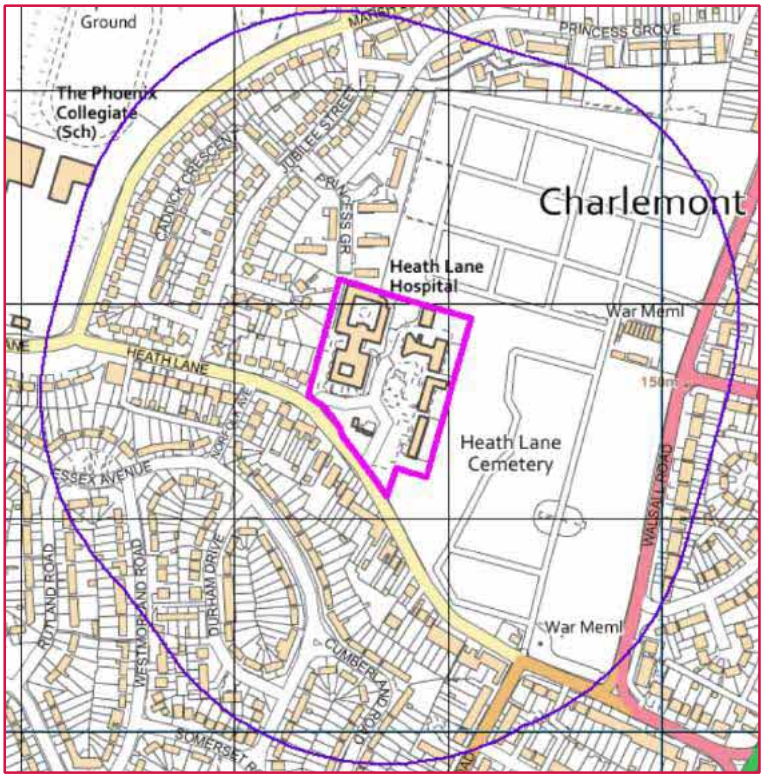

Fig 2.1 – Site Location Plan, site boundary shown in pink with 250m buffer shown in purple. Crown Copyright. License Number 100022432.

2.2 Historical Mapping Records

A review of the available historical mapping information for the site has been undertaken with specific reference to potential historic mining.

The earliest available historical mapping (1886) recorded the site as an infectious diseases hospital with sand/gravel pits encroaching onto the western boundary by 1920. The hospital goes through several phases of development throughout the years with the site being recorded as Heath Lane Hospital in the 1960s with a final building constructed within south-western corner in 2020.

2.3 Geological Setting & Mining Geology

A study of the BGS mapping records (Sheet 168), indicates the following geological succession underlying the site:

- Superficial Deposits: *Glaciofluvial Deposits*
- Glacial Fill: Till
- Bedrock: *Pennine Middle Coal Measures*

Made Ground deposits are not indicated to be present onsite, however given the site has undergone several of redevelopment it is likely that Made Ground will be present.

Superficial deposits are recorded as Glaciofluvial Deposits underlain by Glacial Till???, deposited by meltwater streams of mostly coarse-grained sediments characterised of sand and gravel, with occasional finer grained layers of silty clay.

Bedrock deposits are recorded as Pennine Middle Coal Measure characterised by interbedded grey mudstone, siltstone and pale grey sandstone and coal seams.

Several BGS boreholes around the local area have identified the coal seam named ‘Thick Coal’ with a thickness ranging from 6-8m, encountered at depths ranging between 27-46m bgl, these are reported to have been worked.

The bedrocks structural geology locally to the site is complex with eight recorded faults within 1 km of the site boundary, however, none are shown within the site boundary.

As illustrated in Figure 2.3, the Thick Coal seam is shown to be located along the sites western boundary , orientated north east to south west, with no dip recorded. Hall End Fault is recorded approximately 1.1km to the south of the site traversing east to west, with a downthrow to the south. The New Mine / Fireclay Coal seam is noted to be some 1.4km to the east of the site running approximately north east to south west, no dip is recorded.

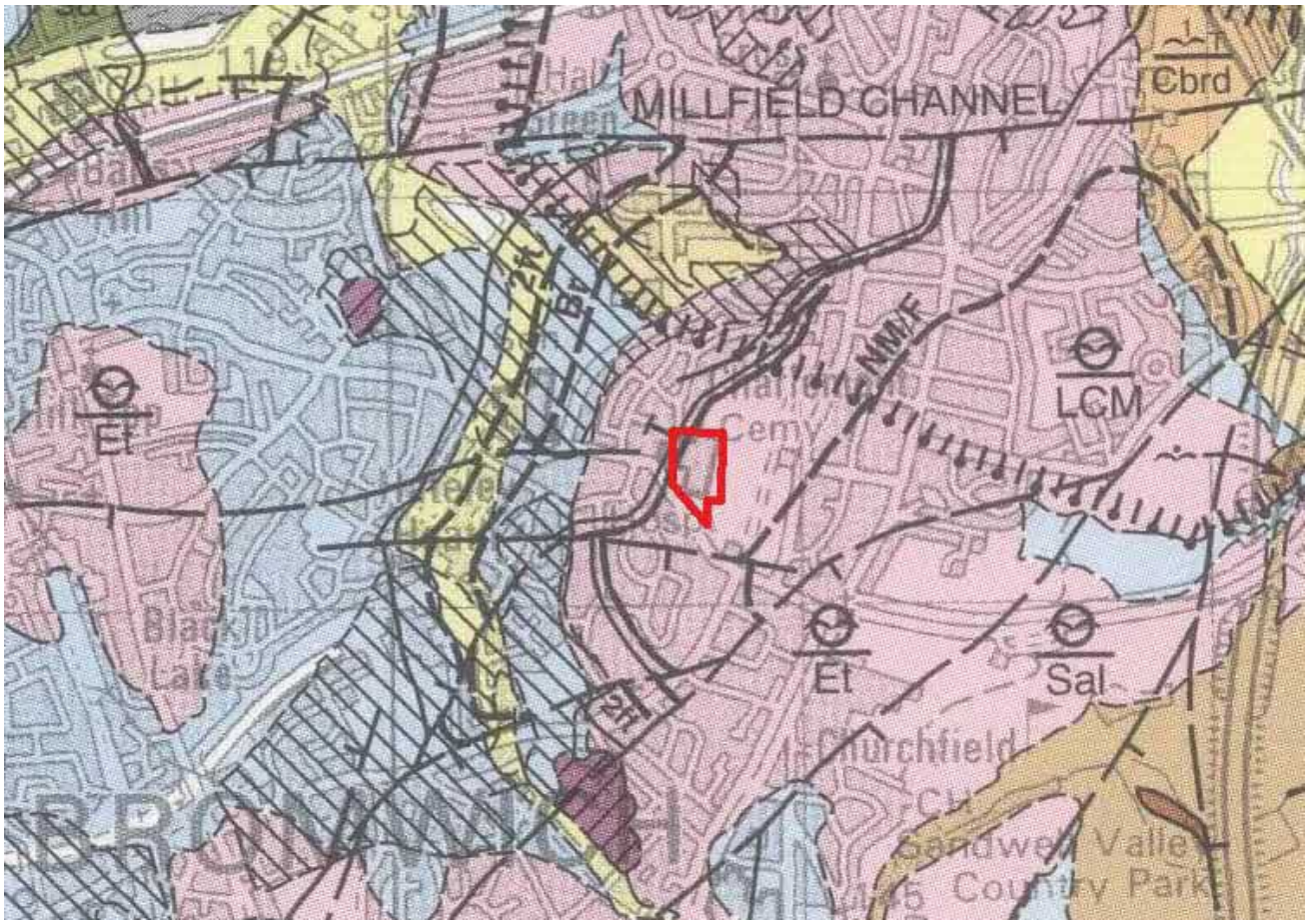

Figure 2.3 *BGS geological mapping extract, 1:50,000 Birmingham (1996) Sheet 168*

(Site boundary in red) pink = Glaciofluvial Deposits, thick dashed /solid line = coal seams, wide dash line = fault, T= Thick Coal Seam, NM/F = New mine/ Fireclay

2.4 Borehole Records (Historical)

A review of British Geological Survey (BGS) online opensource borehole records (Ref. 3) several boreholes records within close proximately to the site (<500m).

The four closest boreholes have been detailed below, the boreholes logs do not give any indication of the shallow soil deposits and only detail the depth at which coal seams were found.

Table 2.4 – Summary of Nearby BGS Borehole Records

Ref.	BGS Ref.	Distance & Direction from Site	National Grid Ref.	Summarised Strata (depth to top, m bgl)
1	SP09SW14	250m NW	400640, 293510	- Thick Coal (43.89)

2	SP09SW15	100m W	400640, 293410	- Thick Coal (27.43)
3	SP09SW16	300m W	400520, 293330	- Thick Coal (43.89)
4	SP09SW238	150m SW	400580, 293270	- Thick Coal (23.77)

To the west of the site Borehole 1 and Borehole 3 recorded the Thick Coal Seam at 43.89m bgl whereas Borehole 2 records the Thick Coal Seam at a depth of 27.43m bgl. Inferring that Coal is dipping to the west and is likely to be found at shallower depths onsite.

2.5 Mining Records

Mining records were obtained have been reviewed hereafter.

The Coal Authority interactive mapping (Ref.4) indicates the site is situated within a Coal Mining Reporting Area and as such a Coal Mining Consultants Report (Ref.5, *Appendix B*) has been obtained. A summary of the data is presented in *Table 2.5*.

Table 2.5 – Summary of Coal Authority Interactive Mapping and Consultants Report

Feature	Comment
Mine Entries/ Mine Entry Potential Zone of Influence	Three mine entries have been identified on site and listed as follows: Reference 400293-060 (NGR: 400739 293283) Reference 400293-061 (NGR: 400783 293280) Reference 400293-062 (NGR: 400783 293280) A further five mine entries have been identified within the surrounding area: Reference 400293-049 (NGR: 400635 293489) approximately 100m north west. Reference 400293-054 (NGR: 400587 293372) approximately 100m west. Reference 400293-055 (NGR: 400639 293398) approximately 70m west. Reference 400293-056 (NGR: 400647 293382) approximately 50m west Reference 400293-059 (NGR: 400587 293272) approximately 100m south west Per the report (ref.5) all shafts identified have no information on treatment of shafts or final depth. No other mine entries are recorded within 500m of the site.

Feature	Comment
Development High Risk Area/ Probable Shallow Coal Mine Workings	Site is in a Development High Risk Area/ Probable Shallow Coal Mine Workings.
Surface Coal Resource Area	Onsite and surrounding the site.
Coal Outcrops	Two outcrops recorded on site: New Mine Coal with a bearing of 32 conjectured to outcrop within the site's eastern boundary. Staffordshire Thick Coal with a bearing of 22 conjectured to outcrop along the site's western boundary.
Probable Unrecorded Shallow Workings	Yes.
Coal Mining Subsidence	The Coal Authority has not received a damage notice or claim for the subject property, or any property within 50m of the 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 and Water Treatment Schemes	None recorded within 500 metres of the site boundary

The interactive mapping (Ref.4) recorded a Coal Outcrops within the western section of the site orientated northeast to southwest. A total of 12 Abandoned Mines Catalogue plans have been identified for the site.

The interactive mapping did not record any Geological Fissures and Breaklines, Surface Mining (past & current) or Past Shallow Coal Mine Workings on or within 250m of the site boundary.

The Consultants Report (Ref.5) recorded past underground mining within the surrounding area associated seams are named, Thick, Heathen, New Mine Coal, Mealy Grey and Blue Flat Ironstone.

The report recorded no spine roadways at shallow depth, future underground mining, Section 46 notices, Court Orders, worked or opencast sites or coal mining related hazards.

Below *Figure 2.5* shows locations of coal mining related activity identified from the interactive mapping (Ref.4) and Consultant Report (Ref.5).

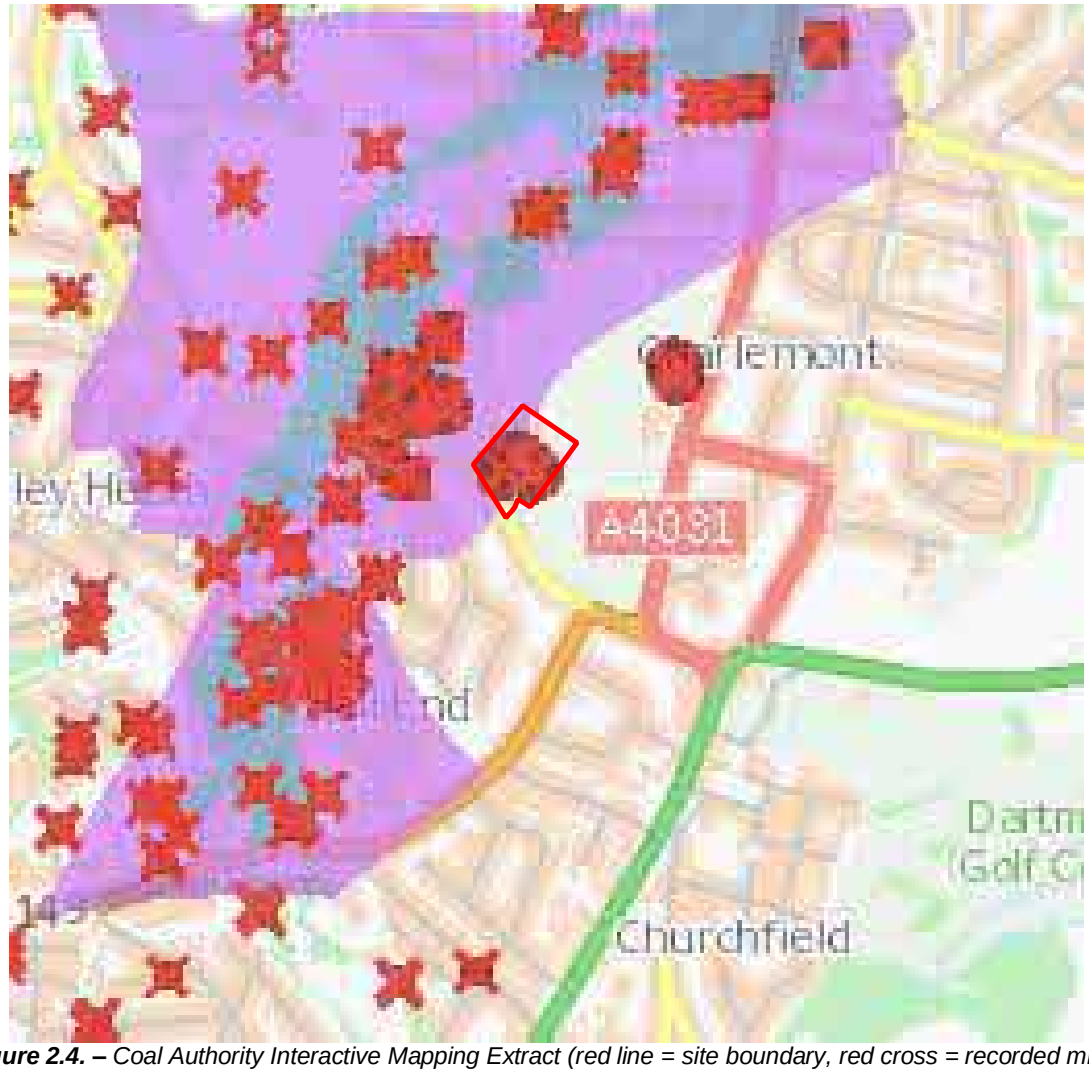

Figure 2.4. – *Coal Authority Interactive Mapping Extract (red line = site boundary, red cross = recorded mine entries, purple = development high risk areas/ probable shallow coal mine workings).*

The earliest historical maps (1886) does not show any mine entries or signs of mining within the site area, the site is shown to occupied by an infectious disease hospital. Therefore, to accurately position the mine shafts on site the Coal Authority were contracted to identify the source maps for the positions of 400293-060, 400293-061 and 400293-062. The source map for shaft 400293-60 was on the Jervoise Colliery, West Bromwich maps (catalogue No: 4371) and mine shafts 400293-061 and 400293-062 are identified on the Plan of the Jervoise Colliery, West Bromwich (catalogue No: 307), with departure values of 8m and no further records held by the Coal Authority on these shafts. A Geographical Information System (GIS) was used to provide georeferenced co-ordinates from both source maps compared with the co-ordinates provided by the Coal authority. The research suggested that the Coal Authority co-ordinates provided for Shaft 400293-60 to be approximately 7-9m from the georeferenced co-ordinates.

3.0 Discussion & Risk Assessment

As noted in *Section 1.1*, the aim of the Coal Mining Risk Assessment is to inform the requirement for further works and or risk mitigation, e.g. stabilisation or shallow mine-workings.

Risks associated by coal mining can be broadly characterised by the following scenarios: deep coal mining, shallow coal mining, mine entries, opencast coal mining, mine gases, spontaneous combustion, expansive material and aggressive ground.

Modern coal mining risk relates to mine workings present or recently closed (within last 50 years). In general, the risk presented by these workings is very low as the cessation of modern mining in the UK (longwall) tends to induce surface subsidence immediately or, at most, around 4 years once support is removed from the cutting face. No evidence of modern coal mining is present onsite or the immediate surrounding area. The lack of evidence of this potential hazard means the risk can be assessed as Low.

Deep coal mining risk relates to mine workings present at depths greater than 30m below rockhead level. In general, the risk present by these workings is very low as a results of either the depth at which historic workings (pillar and stall) lie resulting in any collapse self-arresting through bulking of the overburden or, the cessation of modern mining in the UK (longwall) that tends to induce surface subsidence immediately or, at most around 4 years once support is removed from the cutting face.

Coal Authority records suggests that the Thick Coal Seam was worked to the west of the site at a of depth 47m with both Heathen and New Mine Coal Seams mined below the site at depths of 67m and 73m respectively. The abandonment plans for the Jervoise Colliery shows that the Heath Coal Seam was worked within the southern section of the site. With a number of roadways identified below the site associated with New Mine Coal seam. Due to the presence of deep coaling beneath the site the potential hazard has been assessed as Moderate.

Shallow coal mining and Development High Risk Area risk relates to mine workings present at depths of around 30m below rockhead level where collapses within relic workings stand to more likely result in propagation of voids to the surface of the site, e.g. crown holes. Collapses within relic mine workings can occur immediately following abandonment but tend to be delayed for decades and controlled by numerous factors including; strength of roof material, groundwater regime, structural geology and surface loading. Most shallow workings tend to be in a state of stasis, be that; partially, fully collapsed or fully open, with changes to surface loading or groundwater regimes the typical stimulus for inducing collapses. Collapses can include widespread loss of support that can result in propagation of a 'subsidence wave' at the surface similar to the effect of modern mining methods but generally, collapses tend to be localised, e.g. crown-holes. For the purposes of most Coal Mining Risk Assessments, including this one, the risk of this more widespread loss of support is unable to be meaningfully evaluated and therefore not considered. It is noted that where treatment is recommended for

localised mining hazards this will result in a reduced risk profile for widespread loss of support within the treated coal seam(s).

Coal Authority records suggest that the whole site is at risk of shallow workings. This 'risk area' is generally confirmed by the available BGS boreholes and based on this assessment, it is considered likely that the mine entries recorded on site and within the surrounding area permitted entry into a local, coal mine that was mining the Thick Coal seam. Given the shallow depth at which this seam and workings is present (<30.00m bgl) the likelihood of surface instability is increased, and the risk assessed as High.

Mine entry risk relates to the potential for abandoned and untreated mine shafts to be present onsite that are prone to collapse due to various factors including; the passage of time, changes in drainage and increased loading.

There are three recorded mine entries onsite located within the southern and central section of the site. However, the correlation between the Coal Authority co-ordinates and source mapping indicates that these may positioned incorrectly. Given the presence of the mine shaft on site and the age of which these mines closed the risk of instability is increased, and the risk assessed as High.

Opencast coal mining risk is assessed as Low given there are none recorded onsite nor any evidence of opencast operations on historic borehole logs.

Structural coal mining geology risk is assessed as Low across the site as there are no faults recorded onsite or within close proximity to the site which would be prone to reactivation.

Mine gas risk relates to the potential of explosive, toxic and asphyxiant to affect the development site or affect neighboring properties because of development works. The presence of shallow and deep recorded coal workings beneath the site, and the presence of three mine shafts on site indicates this to be a potential hazard particularly where these workings are disturbed, e.g. through the action of drilling or grouting In general, the likelihood of significant quantities of gas being present in the workings is assessed to be High.

However, where boreholes are drilled through coal workings (and grouting operations) this can provide migration pathways for mine gas to the surface that were previously not present, resulting in mine gases being released. As noted, the likelihood of significant quantities of gas being present in the workings is assessed to be Moderate.

Spontaneous combustion risk relates to the potential for underground fires to be started through the action of developing the site. The Consultants Report (Ref.5) has not listed any seams prone to spontaneous combustion, and as such considered to present a Low risk.

Expansive material and **aggressive ground** (specific to coal) risks are generally associated with former colliery or industries directly associated with coal, e.g. steel works, iron works or coking plants, that are not recorded onsite and as such considered to present a Low risk.

The potential consequence of **non-coal mining** onsite is comparable to the various coal mining risk assessments listed previously with co-extraction of fireclay (seatearth) and ironstone the most likely non-coal resources considered for extraction. No evidence of non-coal mineral extraction is recorded onsite and therefore the likelihood of non-coal mining activities affecting the proposed development site is deemed unlikely.

4.0 Conclusions & Recommendations

This Coal Mining Risk Assessment has been prepared with reference to the proposed development of the site. Curtins have not received plans of the proposed development however, two potential locations have been suggested, Penrose House, located within the north eastern section of the site or Treadgold House located within the south eastern section of the site.

As no finalised development plans are available the conclusions for the site as a whole have been summarised below:

- The risk from most coal mining related hazards is assessed as High due to the presence, both shallow and deep coal mine workings below the site and within the surrounding area and due to the presence of three mine shafts located on site.
- Mine shafts are associated with Heathen Coal and New Coal Mine seams which are located at depths of 67m and 73m bgl respectively, review of the abandonment plans shows that below the site these seams were worked.

4.1 Recommended Investigation Works

With reference of the conclusions made in the previous section it is recommended that further work is undertaken in advance of the development works commencing on site.

The recommended further work includes:

1. Proposed development area of Penrose House (north eastern section of site) – Advancement of 2 no. rotary open holes to a minimum depth of 70m below ground level in order to confirm the risk presented by deep/shallow coal workings through:
    - Confirmation of the depth to rockhead
    - To assess the depth of any potential workings

As part of this work it is critical that the boreholes are advanced using water or mud flush and empty at-rig monitoring as a result of the potential spontaneous combustion risk present by the coal seams below the site.

In the usual manner, permission to enter or disturb the coal seam should be sought from the Coal Authority in advance of drilling workings commencing on site.

2. Proposed development area of Treadgold House (south eastern section of site) – A phrased ground investigation is recommended at this stage as the risks associated in identifying the locations of the mine shafts cannot be assessed accordingly.

In first instance a general ground investigation away from proposed locations of the mine shafts should be undertaken to confirm the depth to bedrock. Whilst this is being undertaken an non-intrusive Ground Penetrating Radar Survey across the site to determine whether the locations of the mine shafts can be narrowed down. Once the initial phase of investigation is completed review of the information can determine what the best course of action will be in regard to the mine shaft investigation and treatment.

5.0 References

1. Curtins (2020) Phase 1 Preliminary Site Assessment, BCP Heath Lane Hospital (report no 072904-CUR-00-XX-RP-GE-00001-V01_Phase 1 PSA)
2. British Geological Society (BGS) Solid and Drift Editions (2013) 1:50,000 mapping, Sheet No. 168 (Birmingham).
3. BGS, Geology of Britain Viewer http://mapapps.bgs.ac.uk/geologyofbritain/home.html (accessed February 2020).
4. Coal Authority, Interactive Map Viewer, http://mapapps2.bgs.ac.uk/coalauthority/home.html (accessed February 2020).
5. Coal Authority (2020) Consultants Coal Mining Report (ref. 51002254105001)

Appendix A – Drawing

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Rev	By	Description	Date
P03	MRW	Scale altered to meet Planners requirements	18/01/24
P02	MRW	Updated to reflect Planners comments (10/01/24)	12/01/24
P01	MRW	Issued for Planning	22/11/23

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Client Name:
Black Country Healthcare NHS Foundation Trust

Site Name:
Heath Lane Hospital

Project Name:
Heath Lane Site Infrastructure Works

Drawing Title:
Site Location Plan Site Infrastructure Works

Project No:	Sheet Size:	Scale:	
8343-001	A3		
Drawn by: MRW	Checked by: MEW	Approved by: RG	Revision: P03

Drawing Number:
Project Code / Originator / Volume / Level / Type / Discipline / System-Number
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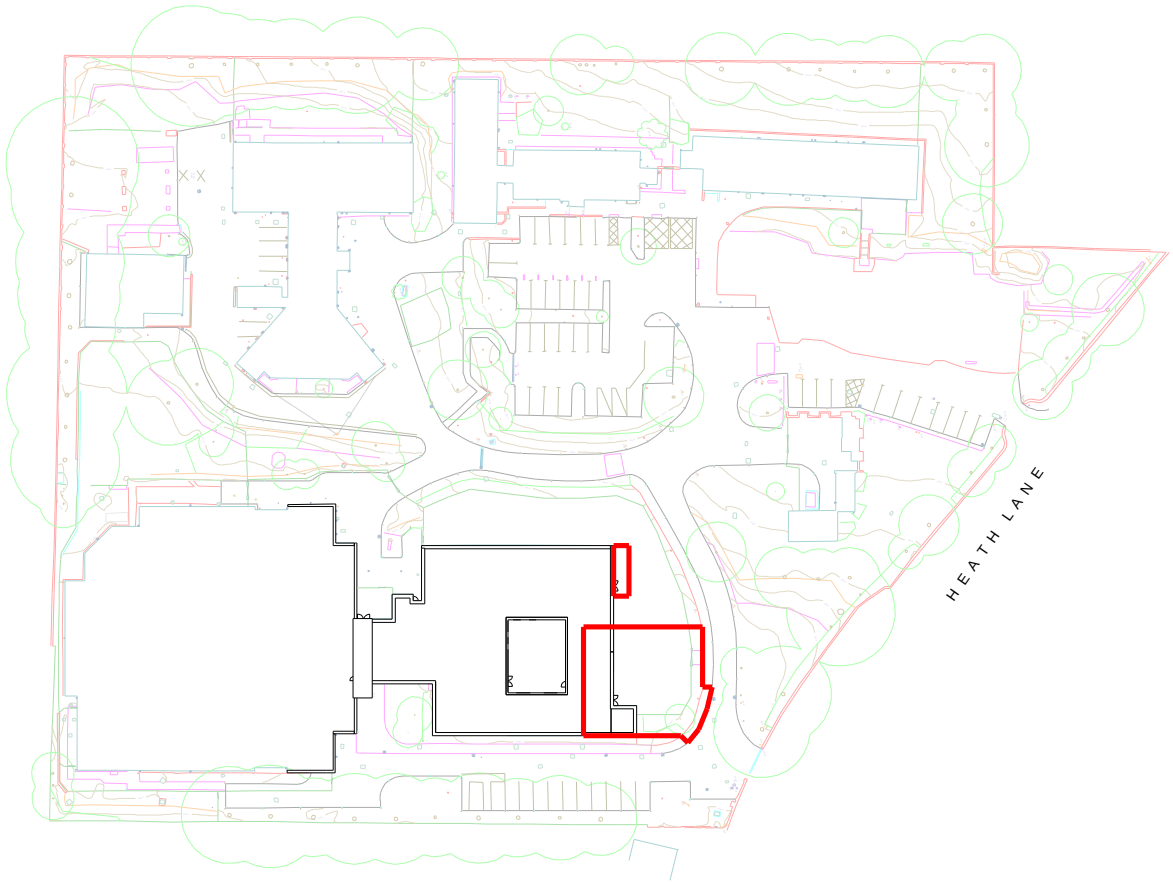

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Rev	By	Description	Date
P01	MEW	Planning Issue	03/08/23

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The Cruck Barn, Duxbury Park, Chorley, Lancashire. PR7 4AT
t: 01257 260070 *f:* 01257 260071

Client Name:
Black Country Healthcare NHS Foundation Trust

Site Name:
Heath Lane Hospital

Project Name:
Macarthur PICU Refurbishment

Drawing Title:
Site Location Plan

Project No:	Sheet Size:	Scale:	
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Drawn by:	Checked by:	Approved by:	Revision:
NB	MEW	MEW	P01
Suitability:			Status:
For Stage Approval			S4

Drawing Number:
HLHMP-GDA-V2-00-DR-A-1027

Appendix B – Coal Authority Abandoned Mine Plans

The Coal Authority

Consultants

Coal Mining Report

Heath Lane Hospital
Penrose House
Heath Lane
West Bromwich
Sandwell
B71 2BW

Date of enquiry:	5 January 2021
Date enquiry received:	5 January 2021
Issue date:	5 January 2021
Our reference:	51002352927001
Your reference:	B072904.301

Consultants

Coal Mining Report

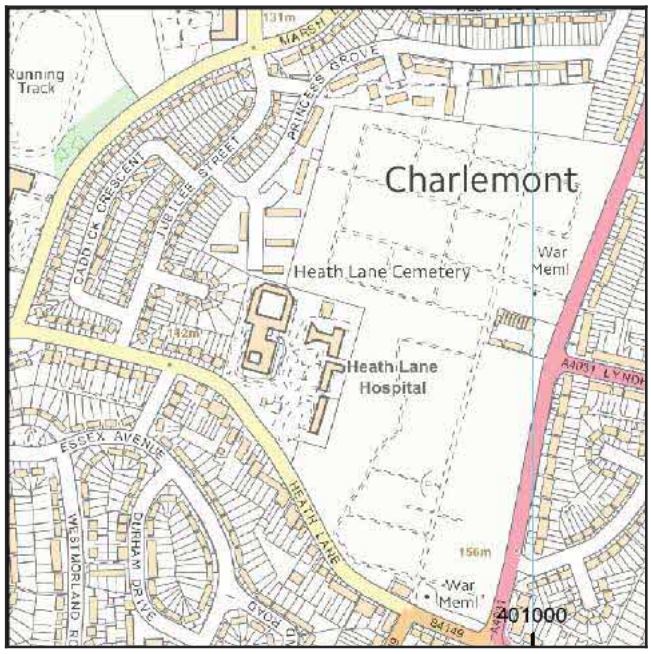
This report is based on and limited to the records held by the Coal Authority at the time the report was produced.

Client name

Curtins

Enquiry address

Heath Lane Hospital
Penrose House
Heath Lane
West Bromwich
Sandwell
B71 2BW



Approximate position of property

How to contact us

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Mansfield
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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
unnamed	NEW MINE COAL	Coal	23BA	72	North	5.2	North-West	228	1866
unnamed	HEATHEN	Coal	23B0	78	West	3.3	North-West	100	1867
unnamed	MEALY GREY	Coal	23CO	137	North	4.0	North-West	135	1912
unnamed	BLUE FLATS IRONSTONE	Ironstone	23BK	139	North	4.4	North-West	180	1876

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	400293-056	400647 293382		Coal	
Shaft	400293-060	400739 293283		Coal	
Shaft	400293-061	400758 293303		Coal	
Shaft	400293-062	400783 293280		Coal	

Abandoned mine plan catalogue numbers

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

WM698	WM646	6420
17319	307	558
4371	3762	4680

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

Seam name	Mineral	Seam workable	Distance to outcrop (m)	Direction to outcrop	Bearing of outcrop
NEW MINE COAL	Coal	Yes	Within	N/A	13

Geological faults, fissures and breaklines

No faults, fissures or breaklines recorded.

Opencast mines

None recorded 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

None recorded within 500 metres of the enquiry boundary.

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 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.

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.

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.

The Coal Authority

Summary of findings

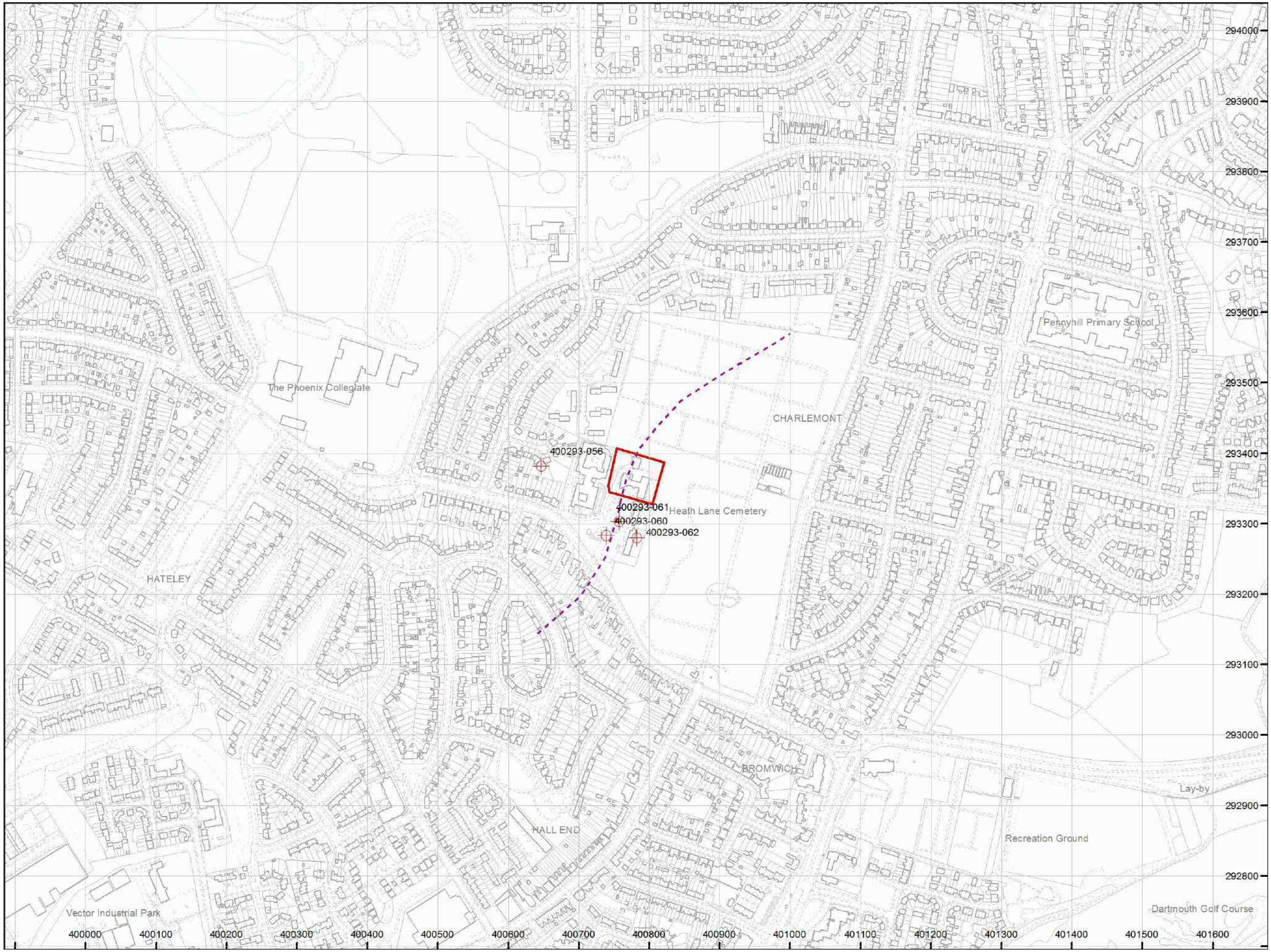
The map highlights any specific surface or subsurface features within or near to the boundary of the site.

Key

Approximate position of the enquiry boundary shown

Disused mine shaft

Outcrop (Conjectured)



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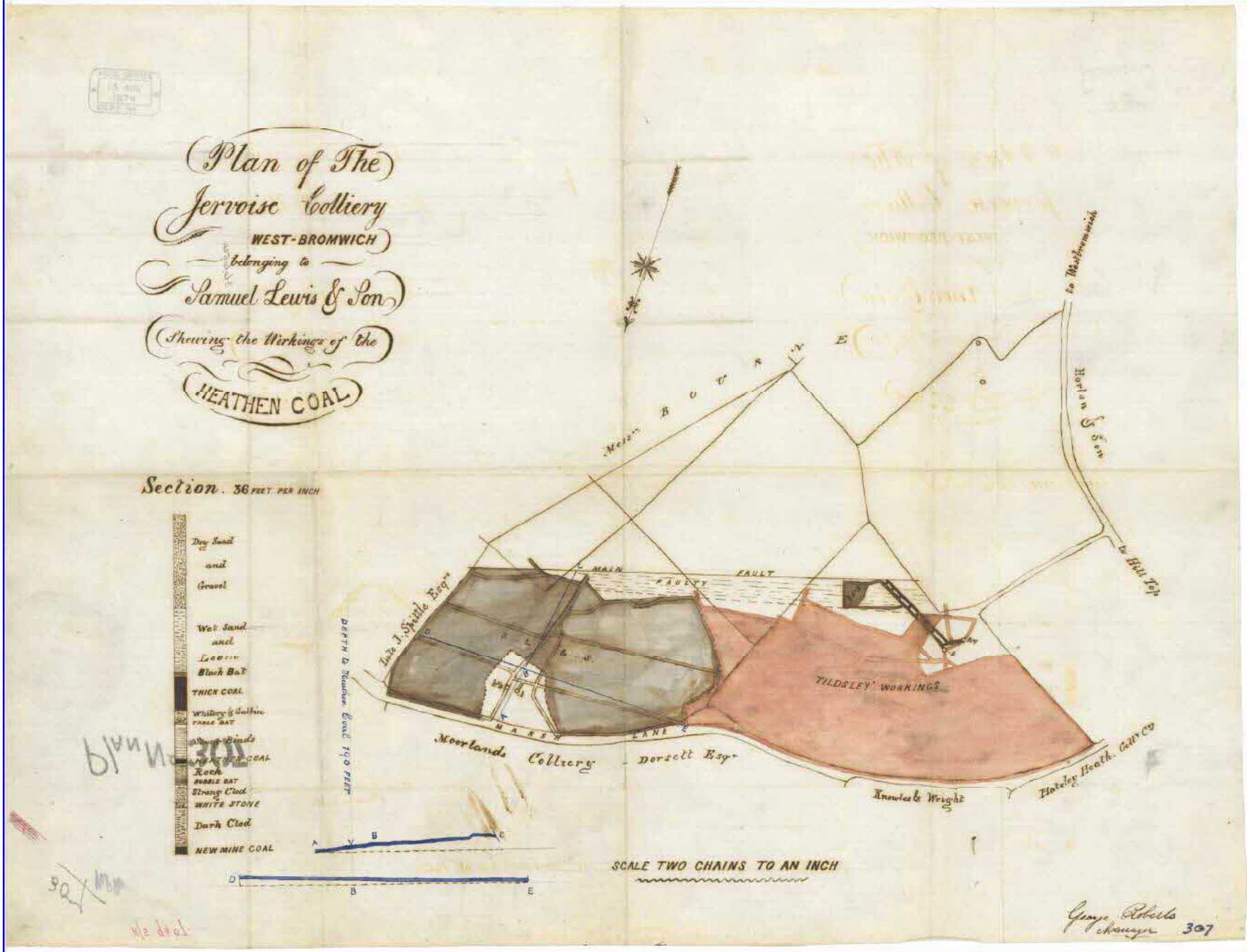
Appendix C – Coal Authority Abandoned Mine Plans

Plan of The Jervoise Colliery WEST-BROMWICH belonging to Samuel Lewis & Son Shewing the Workings of the HEATHEN COAL



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Catalogue No.: 307 Sheet Info:

Date: 27/02/2020

Scale: 2 CHAINS TO 1 INCH (1 TO 1584)

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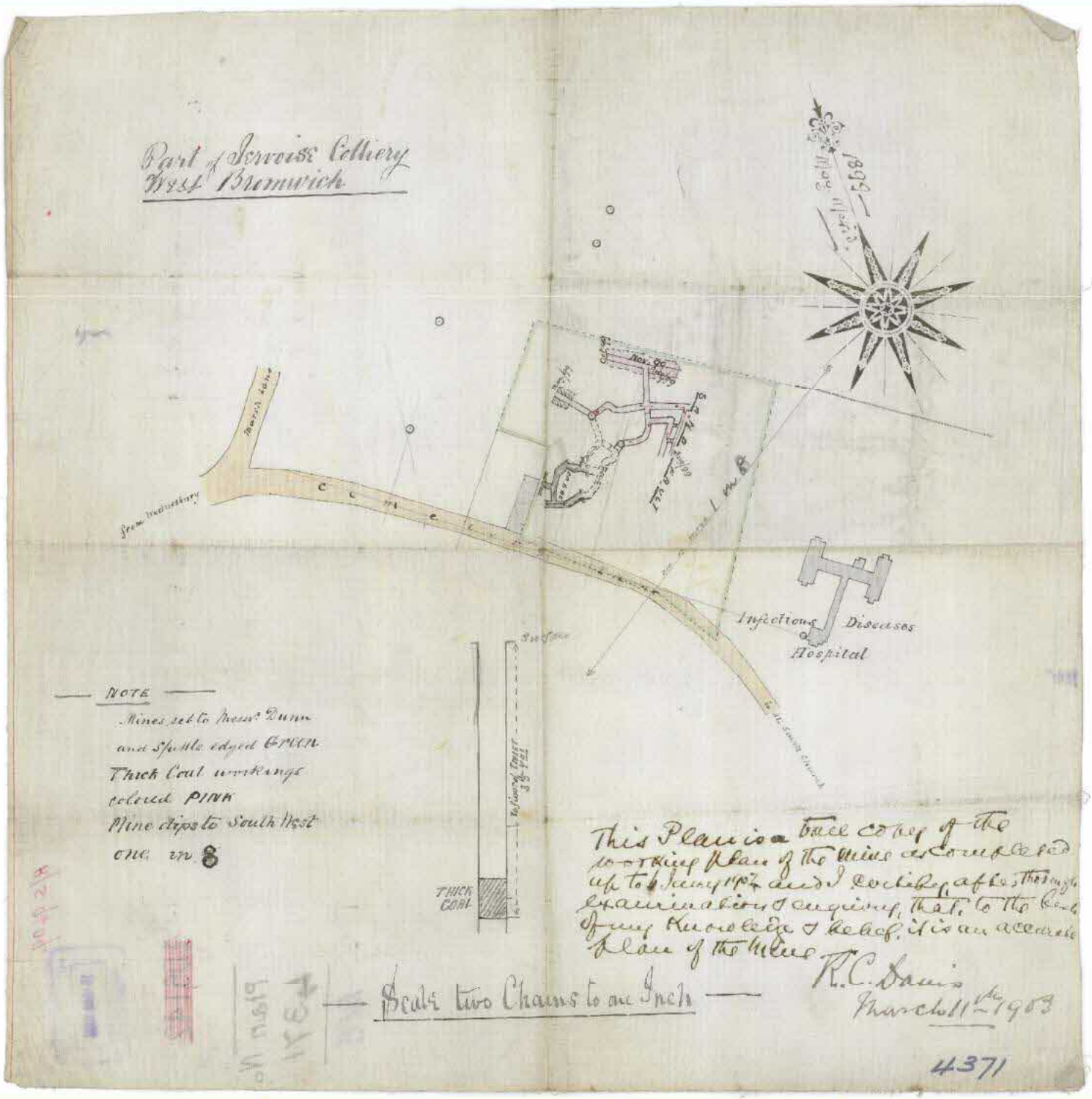

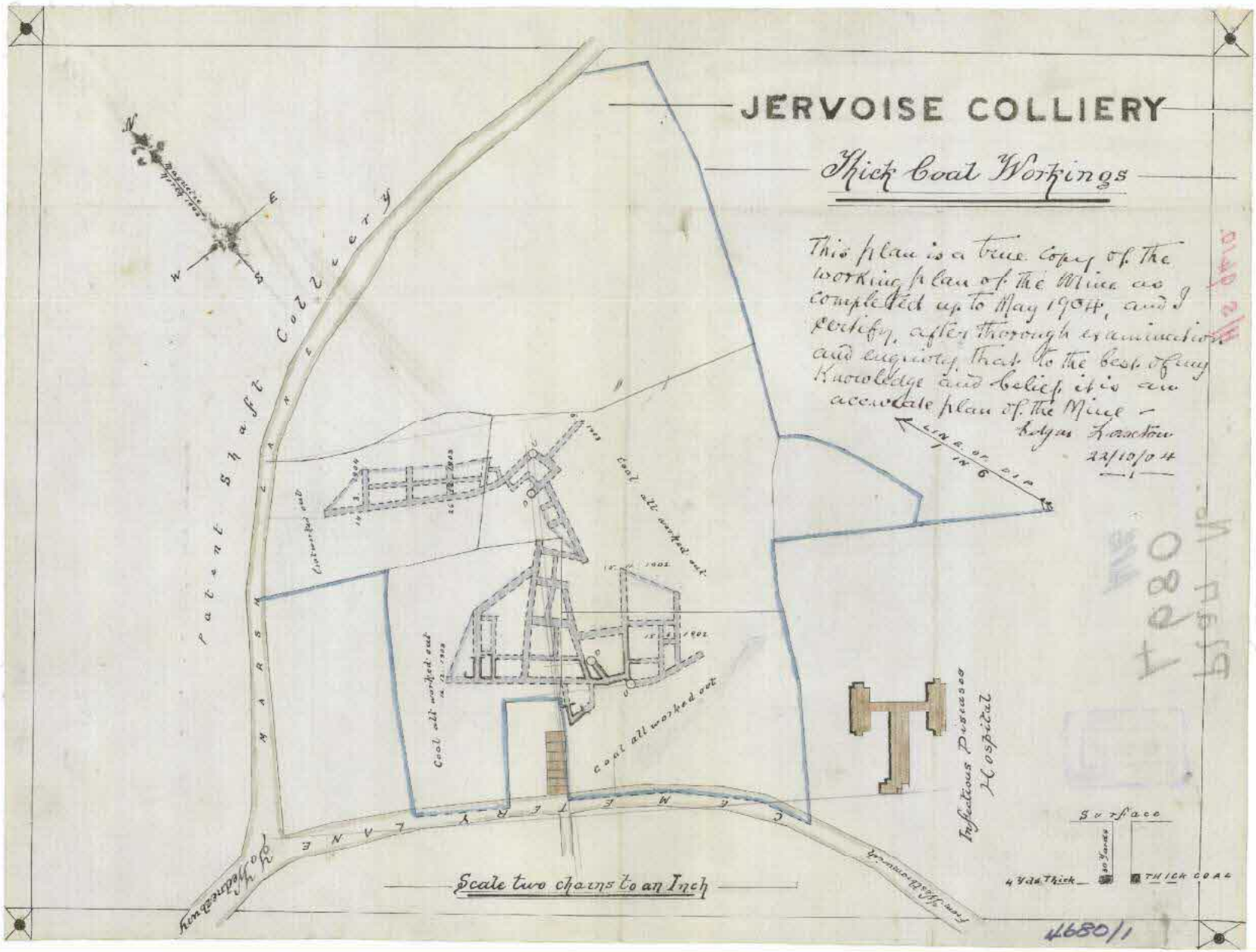

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Catalogue No.: 4680 Sheet Info: 1 OF 2

Date: 21/02/2020

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Catalogue No.: WM698 Sheet Info:

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