SLADEN ASSOCIATES

COAL MINING RISK ASSESSMENT
Proposed Residential Development
121 and 123 Tunstall Road
Knypersley, Biddulph
Stoke-on-Trent
Staffordshire

Prepared for

Aspin Consulting Ltd

Date : December 2015 **Job No : 15 1579**

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Proposed Residential Development
121 and 123 Tunstall Road
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Stoke-on-Trent
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Prepared for: **Aspin Consulting Ltd**

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1 INTRODUCTION

1.1 GENERAL

Aspin Consulting Ltd has instructed Sladen Associates to carry out a Coal Mining Risk Assessment for the site of a proposed residential development at 121 and 123 Tunstall Road in Knypersley, Staffordshire.

The assessment included a study of publicly available documentary sources concerning site history, geology and mining activities in the area but included no intrusive investigation. This report presents the results of the assessment together with recommendations for precautions that should be undertaken as part of the site re-development.

The present report is concerned only with precautions related to potential mining subsidence issues. Other geotechnical issues, such as assessment of bearing capacity of near surface soils and potential geo-environmental issues, are not considered.

1.2 LOCATION AND PROPOSED DEVELOPMENT

The study site is located immediately to the east of Tunstall Road, just south of its intersection with St John's Street, some 1 km south of Biddulph Town Centre at National Grid Reference 3881 3569, see Figures 1 and 2. The site is currently occupied by two buildings and surrounding garden areas. It is proposed to refurbish one of the existing buildings, to remove the second and to construct eight new residences. The proposed development layout is shown in Figure 3.

2 SOURCES OF INFORMATION

Sources of information consulted for the present study included the following:

- Coal Authority Report
- Coal Authority Mine Entry Reports
- Mine Plans
- Historical Ordnance Survey Mapping
- Geological Mapping published by the British Geological Survey
- The Geology of the North Staffordshire Coalfields. Memoirs of the Geological Survey. 1905.
- Geology of the country around Stoke-on-Trent. British Geological Survey. 1998.
- Existing and proposed development layouts.

3 THE SITE

3.1 HISTORY

Copies of relevant early Ordnance Survey (OS) maps are included in Appendix A, for reference. At the time of the first Ordnance Survey in 1876, the route of Tunstall Road was already an established thoroughfare to the west of the site and there was a chapel to the south. The southern site area was undeveloped agricultural land, part of a field that extended further to the east. The northern site area included two shafts and the spoil heap of a small colliery. There were further signs of mining activity in the surrounding areas, including another colliery to the south east and shafts to the east and south west of the site. The shafts and spoil heap on site are no longer shown on the 1899 map edition and by that time the colliery to the south east had become disused. The site itself was vacant apart from what appears to have been a small shed near the eastern site boundary.

The site remained vacant until some time between 1938 and 1945, when a house was constructed near the centre. The building in the northern site area was constructed more recently.

3.2 GEOLOGY

The site is shown on maps published by the British Geological Survey to be underlain by solid strata of the Pennine Lower (Productive) Coal Measures of Carboniferous Age. Drift Deposits comprising glacial till are shown to be present in the area. There is likely to be some made ground on site as a result of the mining history.

The solid strata dip to the west. The subcrop of the Cockshead Coal is shown to pass a little way to the west of the site and as such would not be expected to be present below the site area

The anticipated depths to the main coal seams that may be present in the area would be as follows:

Seam	Approximate Depth below Rockhead in Central Site Area	Approximate Thickness (m)
Bullhurst Coal	60	1.2 to 1.8
Winpenny Coal	80	0.7 to 1.0
Diamond Coal	140	0.6 to 0.9
Silver Coal	160	0.7

There are further deeper seams.

3.3 MINING

The site is in an area where underground mineral abstraction has occurred in the past. The Coal Authority (Appendix B) has records of mining in two seams of coal at 50 to 90 m depth below the site, the last date of working being 1879. Any ground movements from these coal workings should have stopped by now. Mine plan information shows that these workings likely relate to the Bullhurst and Winpenny Coals (Appendix D). Based on the geological stratigraphy outlined above there are unlikely to be shallower unrecorded workings.

The Coal Authority report shows record of three mine entries on or within 20 m of the site. Two of these are the shafts shown on site in the northern site area on the early mapping. The other is shown to be a little way to the north of the northern site boundary.

However, the Coal Authority has now confirmed that this record is a database error and that there is in fact no evidence for the third shaft (Appendix E).

4 SITE SPECIFIC RISK ASSESSMENT

4.1 KNOWN AND POTENTIAL HAZARDS

There are no known underground coal workings at shallow depth below the site. The site geology suggests that it is unlikely that there would be any shallow unrecorded mine workings.

There are known workings in two coal seams at 50 to 90 m depth.

There are two known mine entries (shafts) within 20 m of the overall site area. Both of these are within the northern site area, relatively close to the existing building that is to be retained on site. There are no records of any treatment of either of these shafts. Given the absence of seams of potential economic interest at shallow depth at the site, the possibility of old unrecorded mine entries in the general area is considered to be very low.

The site does not lie within 200 m of any active opencast mine sites and does not lie within any former opencast sites.

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

There are no records of claims for subsidence damage within 50 m of the site.

There is no record of mine gas emissions requiring action by the Coal Authority within the boundary of the property.

There is likely to be some made ground on site, which is likely to be largely colliery spoil.

4.2 ASSOCIATED RISKS

With regard to known workings below site, deeper than about 30 m, it is not likely that voids of significant size could remain in abandoned workings. Roof support during mining would have been the minimum necessary to maintain access for the mining period and collapse of workings would occur shortly after termination of mining. The risk that any remaining voids in deep seams could pose any significant risk of future surface ground movement, sufficient to cause significant structural damage is judged to be very low.

Differential movements associated with faults or lines of weakness are unlikely to be a significant risk as such movements tend to occur shortly after deep mining activity occurs.

The future risks associated with mine gas are also considered to be very low as the solid strata in the area are expected to be overlain by glacial clay till.

Untreated mine shafts can potentially include large voids, for example where timber staging within the shaft has prevented fill materials from falling to the base of the shaft. Subsequent collapse of any overlying fill can lead to a void at the surface, which could be a significant hazard to users of the immediate area. Alternatively, collapse of shaft lining materials can potentially result in subsidence over an area significantly larger than the original shaft diameter and which could potentially cause damage to nearby structures.

The mine shafts in the northern site area are relatively close to an existing structure, which is to be retained. The locations of these features are considered to be known with reasonable accuracy as they are shown on an early large scale OS plan. As there is no

record of treatment, it is considered that these shafts would pose a moderate to high risk of damage to the existing building, a low risk to the most northerly of the proposed new houses and a moderate risk that any open void that may develop would pose a significant risk to site personnel.

Deep made ground can be associated with some potential for differential surface subsidence. That issue should be addressed as part of a geotechnical investigation and is beyond the scope of the present report.

Based on a consideration of the anticipated depths, thicknesses and potential age of workings associated with the main mineral seams below the site, the following presents a summary of assessed risks related to potential former underground workings:

Hazard	Potential Consequence	Resultant Risk of Future Surface Ground Movements/Gas Emissions Sufficient to Cause Damage or of Explosion or Significant Hazard to Site Users
Unrecorded workings in shallow seams at less than about 30m depth	Differential subsidence due to void migration or collapse/consolidation of old workings	Negligible
Workings in deeper seams	Void migration or collapse of old workings	Very Low
Recorded shafts in northern site area	Shaft collapse causing structural damage to the existing structure	Moderate to high.
	Shaft collapse causing structural damage to proposed new residential structure	Low
	Open hole presenting hazard to site users	Moderate
Unrecorded Mine Entries	Shaft collapse	Negligible
Faults and fissures	Local differential subsidence	Negligible
Mine Gas	Emissions to structures	Very Low

4.3 POTENTIAL IMPACT ON DEVELOPMENT

The suspected untreated mine shafts in the northern site area, could potentially present a significant hazard to site users and to the existing building to be retained.

Based on this assessment, some precautions are recommended to mitigate risks associated with the two suspected mine entries in the northern site area.

5 PROPOSED MITIGATION STRATEGY

A programme of probe drilling should be undertaken to locate the suspected mine shafts in the northern site area. If found the shafts should be treated and capped. These shafts

are likely to be up to 90 m deep. Following treatment a stand-off of 5 m should be maintained to any new built structural foundations unless more detailed assessment is undertaken.

The specification for any shaft locating and treatment works should be designed by a suitably qualified engineer agreed with the Coal Authority.

In view of the assessed very low risk associated with the presence of deep mine workings, it is also recommended that foundations for new structures be re-inforced such that they can span 3 m or cantilever 1.5 m, without support.

An appropriate ground investigation will also be required to address other geotechnical issues such as potential deep made ground

6 CONCLUSIONS

There are no known shallow mine workings below the site and there is unlikely to be any shallow unrecorded workings.

The suspected mine shafts in the northern site area should be located, treated and capped. A stand-off of five metres should be adopted from the treated shaft to new structures, unless more detailed risk assessment justifies a lesser stand-off.

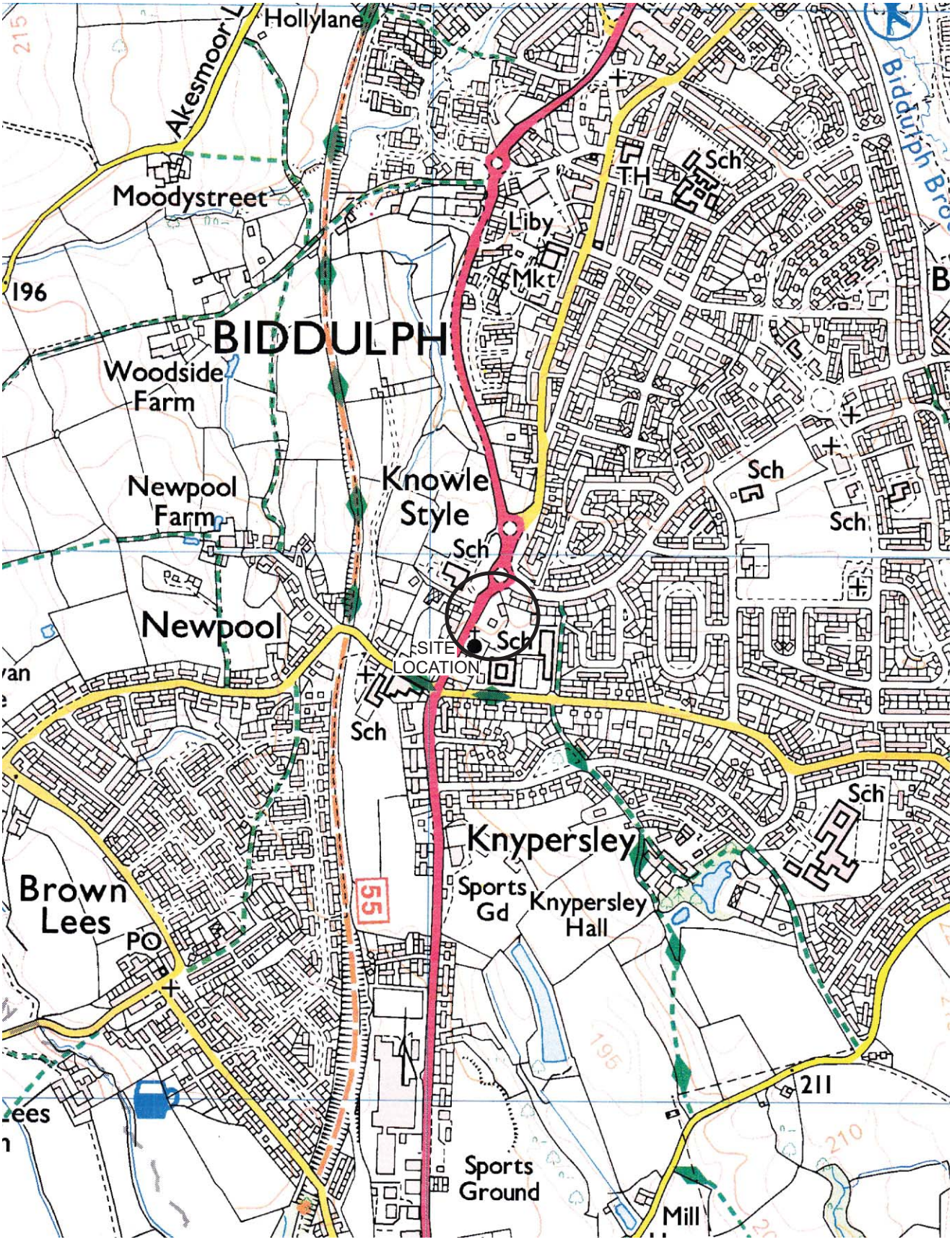
Record of a third suspected shaft previously thought to be present a little way to the north of the site has been shown to be the result of a database error and there is no evidence that such a shaft was present.

Subject to the potential need for the precautions identified above, the present study has shown no reason why mining conditions would preclude safe development of the site for the proposed usage.

Report Prepared by:

J A Sladen BSc, MSc, CEng, CEnv, MICE, FGS

FIGURES



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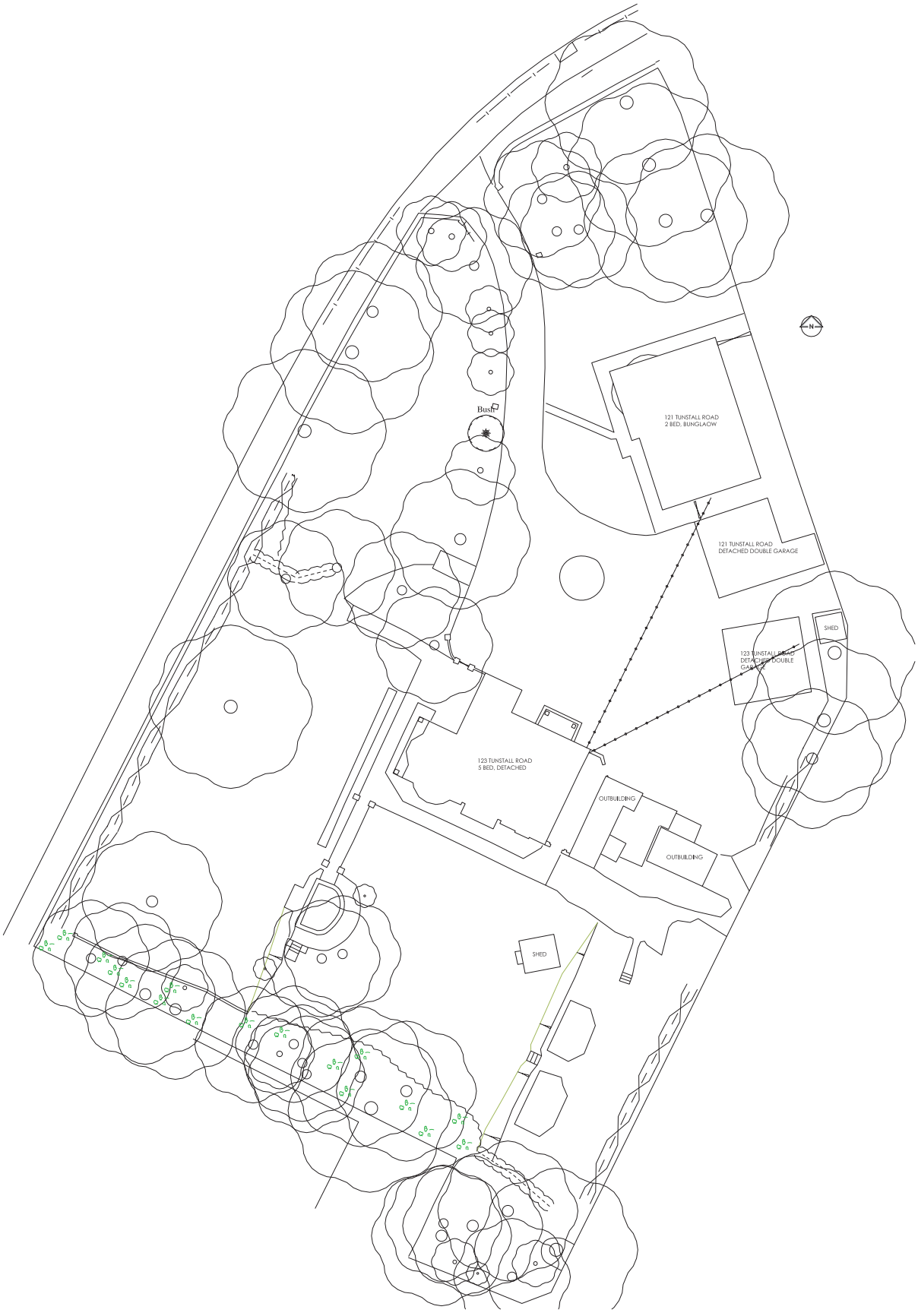
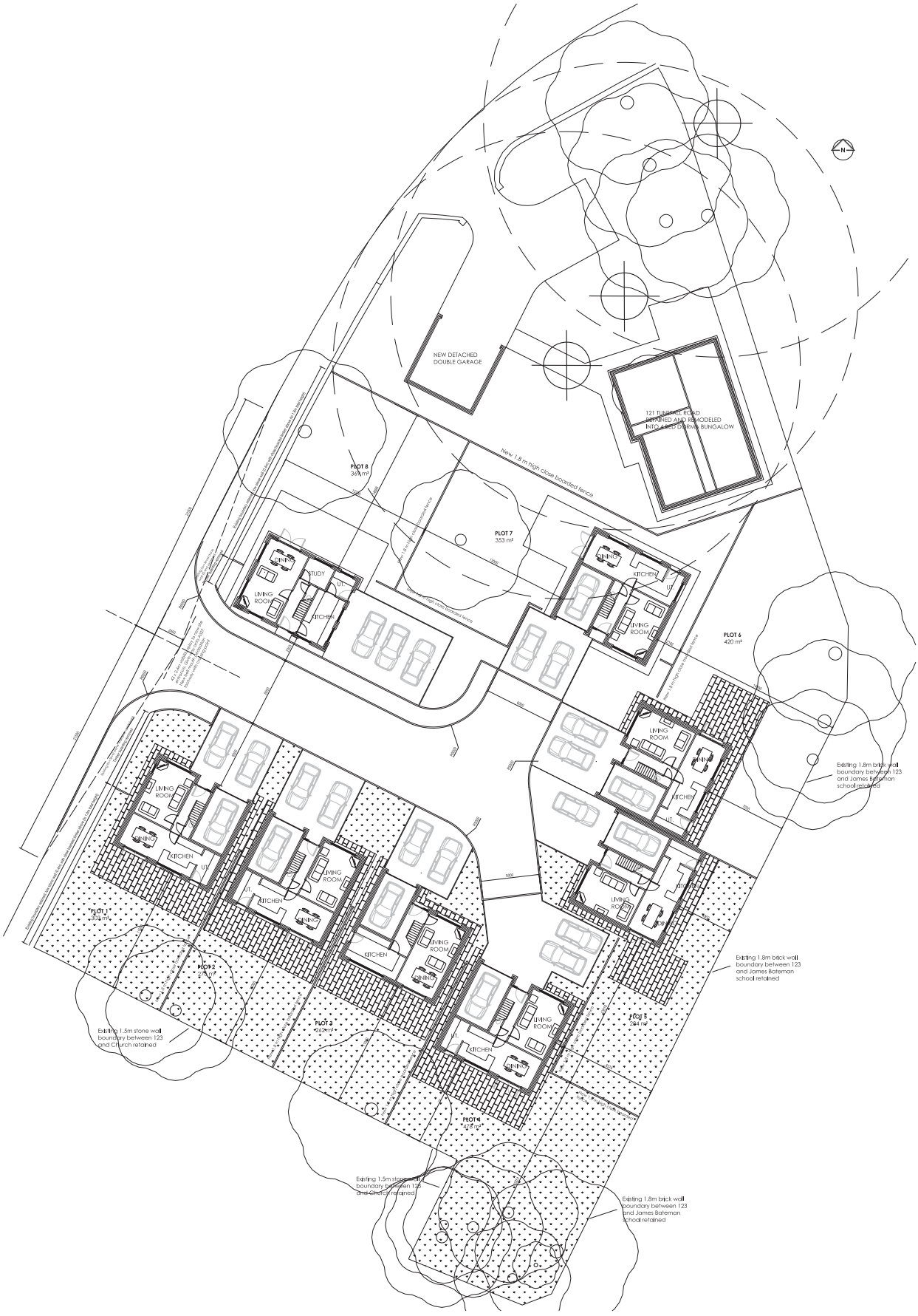
SITE LOCATION PLAN

SLADEN ASSOCIATES	Report No 15-1579	Project 121 & 123 Tunstall Road Knypersley Stoke on Trent	Figure **1**



SITE LAYOUT PLAN

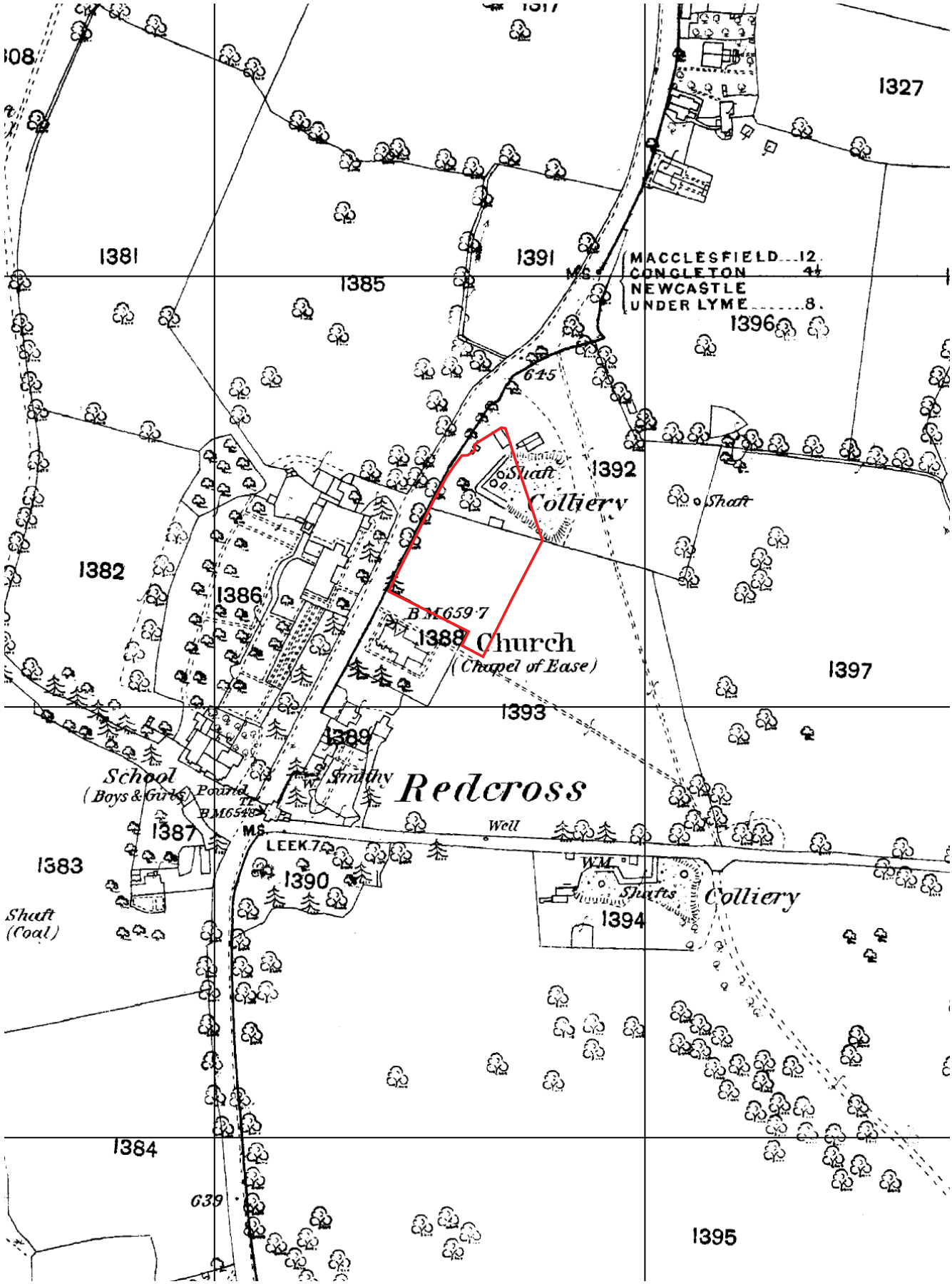
SLADEN ASSOCIATES	Report No 15-1579	Project 121 & 123 Tunstall Road Knypersley Stoke on Trent	Figure **2**



PROPOSED SITE LAYOUT PLAN

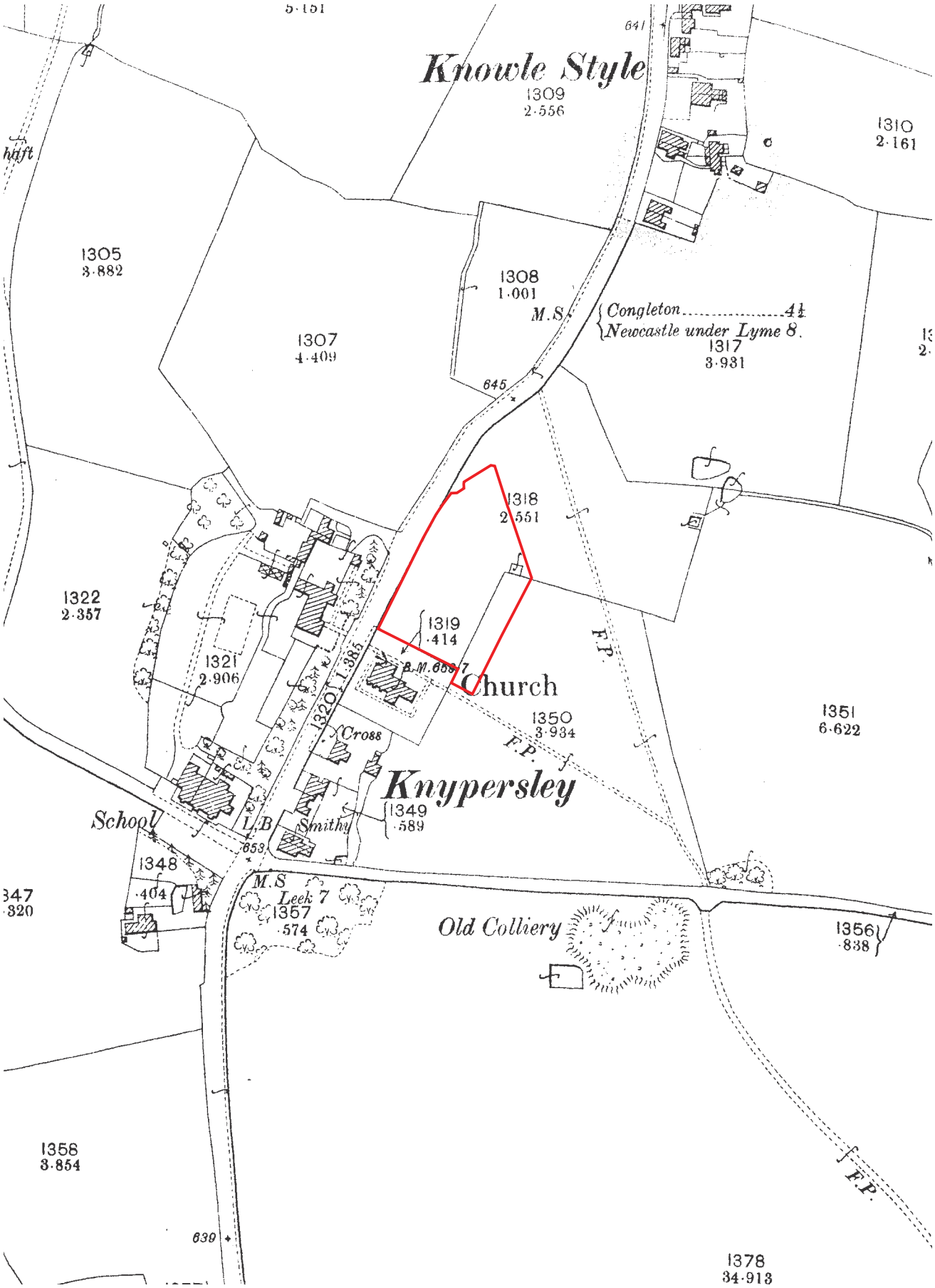
SLADEN ASSOCIATES	Report No 15-1579	Project 121 & 123 Tunstall Road Knypersley Stoke on Trent	Figure **3**

APPENDIX A
HISTORICAL MAPS



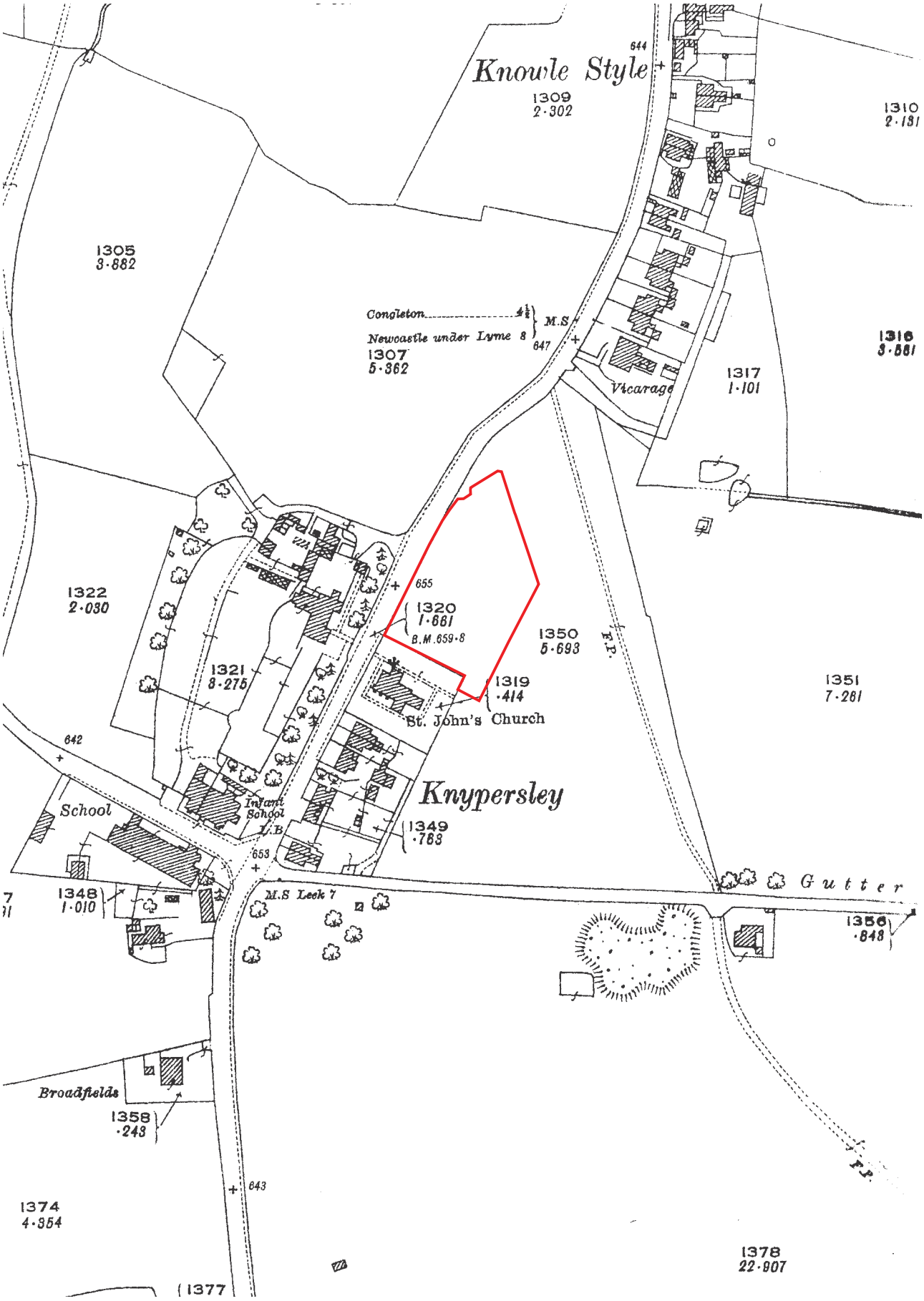
THE SITE AREA IN 1876

SLADEN ASSOCIATES	Report No 15-1579	Project 121 & 123 Tunstall Road Knypersley Stoke on Trent	Figure **A1**



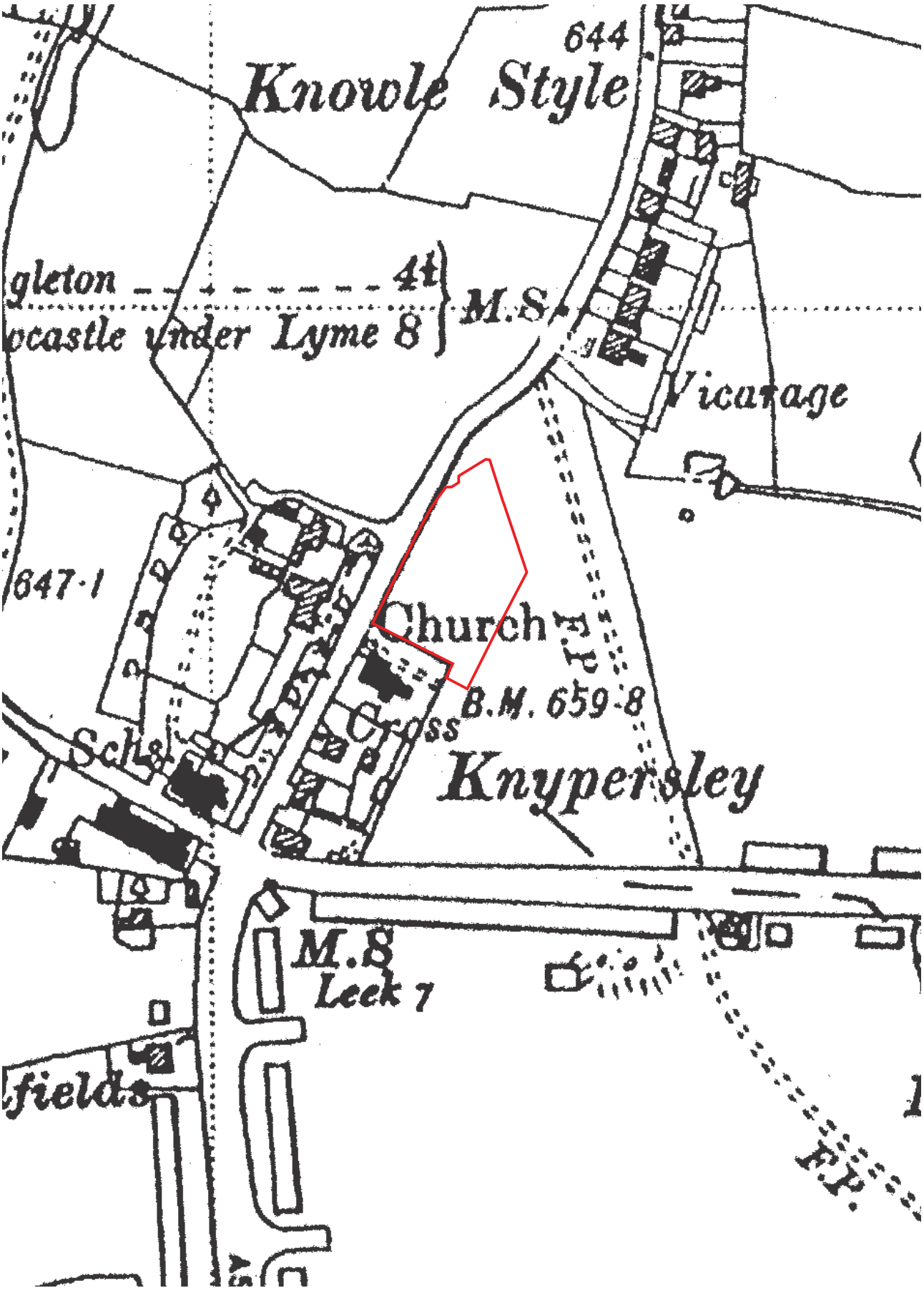
THE SITE AREA IN 1899

SLADEN ASSOCIATES	Report No 15-1579	Project 121 & 123 Tunstall Road Knypersley Stoke on Trent	Figure **A2**



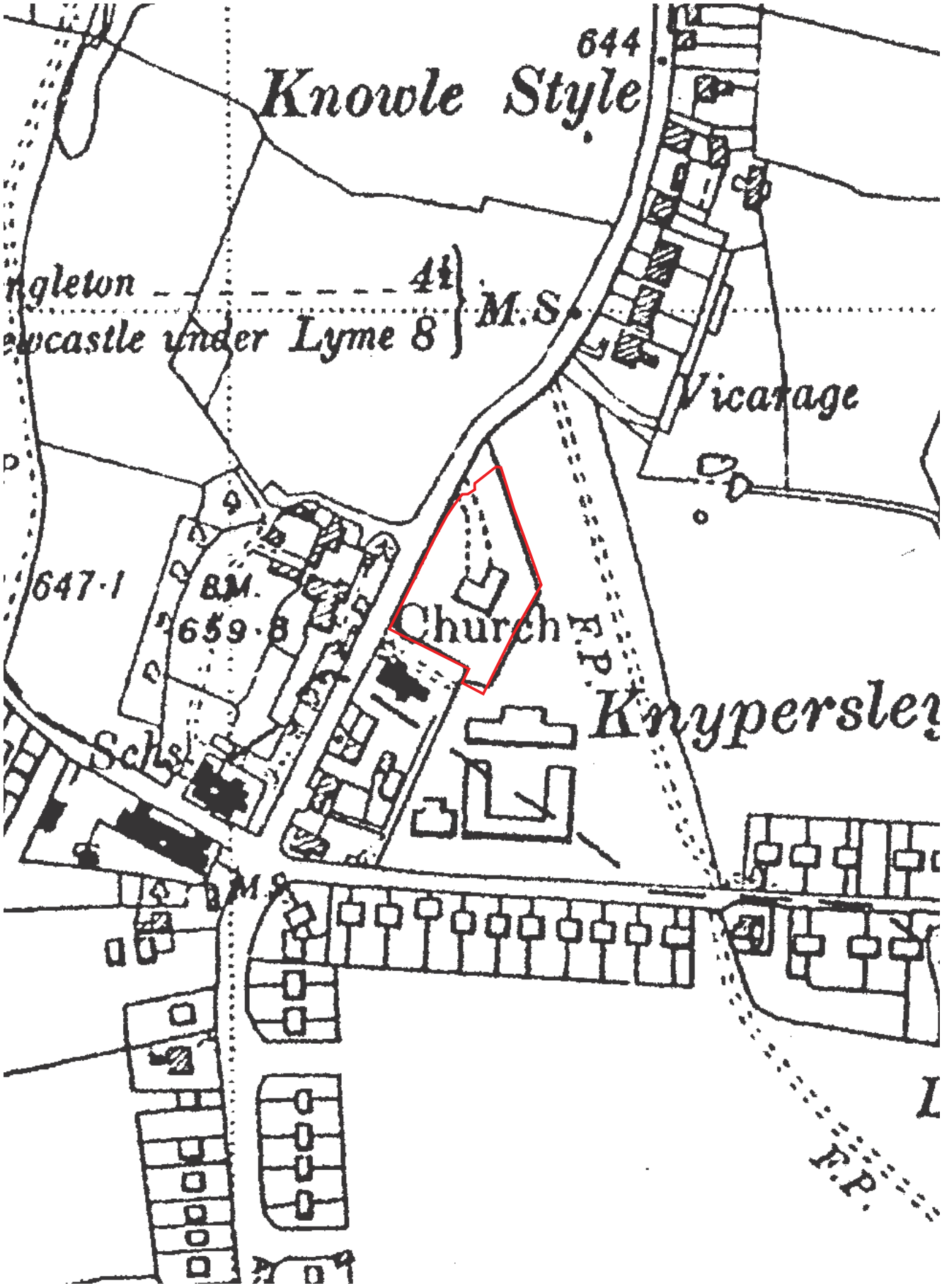
THE SITE AREA IN 1925

SLADEN ASSOCIATES	Report No 15-1579	Project 121 & 123 Tunstall Road Knypersley Stoke on Trent	Figure **A3**



THE SITE AREA IN 1938

SLADEN ASSOCIATES	Report No 15-1579	Project 121 & 123 Tunstall Road Knypersley Stoke on Trent	Figure **A4**



THE SITE AREA IN 1945

SLADEN ASSOCIATES	Report No 15-1579	Project 121 & 123 Tunstall Road Knypersley Stoke on Trent	Figure **A5**

APPENDIX B
COAL AUTHORITY REPORT

The Coal Authority

Issued by:
The Coal Authority, Property Search Services, 200 Lichfield Lane, Berry Hill, Mansfield, Nottinghamshire, NG18 4RG
Website: www.groundstability.com Phone: 0345 762 6848 DX 716176 MANSFIELD 5

LYNN CRITCHLOW
123 TUNSTALL ROAD
KNYPERSLEY
STOKE-ON-TRENT
ST8 7AA

Our reference:	**51000970132001**
Your reference:	
Date of your enquiry:	**12 August 2015**
Date we received your enquiry:	**12 August 2015**
Date of issue:	**12 August 2015**

This report is for the property described in the address below and the attached plan.

Non-Residential Coal Authority Mining Report

121 AND 123, TUNSTALL ROAD, KNYPERSLEY, STOKE-ON-TRENT, STAFFORDSHIRE, ST8 7AA

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.

Coal mining	See comments below
Brine Compensation District	No

Information from the Coal Authority

Underground coal mining

Past

The property is in the likely zone of influence from workings in 2 seams of coal at 50m to 90m depth, and last worked in 1879.

Any ground movement from these coal workings should have stopped by now.

Present

The property is not in the likely zone of influence of any present underground coal workings.

Future

The property is not in an area for which the Coal Authority is determining whether to grant a licence to remove coal using underground methods.

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

The property is not in an area that is likely to be affected at the surface from any planned future workings.

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

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No notice of the risk of the land being affected by subsidence has been given under section 46 of the Coal Mining Subsidence Act 1991.

Mine entries

Within, or within 20 metres of, the boundary of the property there are 3 mine entries, the approximate positions of which are shown on the attached plan.

There is no record of what steps, if any, have been taken to treat the mine entries.

Records may be incomplete. Consequently, there may exist in the local area mine entries of which the Coal Authority has no knowledge.

For an additional fee, the Coal Authority will provide a supplementary Mine Entry Interpretive Report. The report will provide a separate assessment for the mine entry (entries) referred to in this report. It will give details based on information in the Coal Authority's possession, together with an opinion on the likelihood of mining subsidence damage arising from ground movement as a consequence of the existence of the mine entry/entries. It will also give details of the remedies available for subsidence damage where the mine entry was sunk in connection with coal mining.

Please note that it may not be possible to produce a report if the main building to the property cannot be identified from Coal Authority plans (ie. for development sites and new build).

For further advice on how to order this additional information visit www.groundstability.com or telephone 0345 7626 848.

Coal mining geology

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

Opencast coal mining

Past

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

Present

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

Future

The property is not within 800 metres of the boundary of an opencast site for which the Coal Authority is determining whether to grant a licence to remove coal by opencast methods.

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.

Coal mining subsidence

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

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

The 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

There is no record of a mine gas emission requiring action by the Coal Authority within the boundary of the property.

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.

Withdrawal of support

The property is in an area for which a notice of entitlement to withdraw support was published in 1945.

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

Working facilities orders

The property is not in an area for which 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.

Payments to owners of former copyhold land

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

Comments on Coal Authority information

The attached plan shows the approximate location of the disused mine entry/entries referred to in this report. For reasons of clarity, mine entry symbols may not be drawn to the same scale as the plan.

Property owners have the benefit of statutory protection (under the Coal Mining Subsidence act 1991*). This contains provision for the making good, to the reasonable satisfaction of the owner, of physical damage from disused coal mine workings including disused coal mine entries. A leaflet setting out the rights and the obligations of either the Coal Authority or other responsible persons under the 1991 Act can be obtained by telephoning 0345 762 6848.

If you wish to discuss the relevance of any of the information contained in this report you should seek the advice of a qualified mining engineer or surveyor. If you or your adviser wish to examine the source plans from which the information has been taken these are normally available at our Mansfield office, free of charge, by prior appointment, telephone 01623 637225. Should you or your adviser wish to carry out any physical investigations that may enter, disturb or interfere with any disused mine entry the prior permission of the owner must be sought. For coal mine entries the owner will normally be the Coal Authority.

The Coal Authority, regardless of responsibility and in conjunction with other public bodies, provide an emergency call out facility in coalfield areas to assess the public safety implications of mining features (including disused mine entries). Our emergency telephone number at all times is 01623 646333.

*Note, this Act does not apply where coal was worked or gotten by virtue of the grant of a gale in the Forest of Dean, or any other part of the Hundred of St. Briavels in the county of Gloucester.

In view of the mining circumstances a prudent developer would seek appropriate technical advice before any works are undertaken.

Therefore if development proposals are being considered, technical advice relating to both the investigation of coal and former coal mines and their treatment should be obtained before beginning work on site. All proposals should apply good engineering practice developed for mining areas. No development should be undertaken that intersects, disturbs or interferes with any coal or mines of coal without the permission of the Coal Authority. Developers should be aware that the investigation of coal seams/former mines of coal may have the potential to generate and/or displace underground gases and these risks both under and adjacent to the development should be fully considered in developing any proposals. The need for effective measures to prevent gases entering into public properties either during investigation or after development also needs to be assessed and properly addressed. This is necessary due to the public safety implications of any development in these circumstances.

Information from the Cheshire Brine Subsidence Compensation Board

The property lies outside the Cheshire Brine Compensation District.

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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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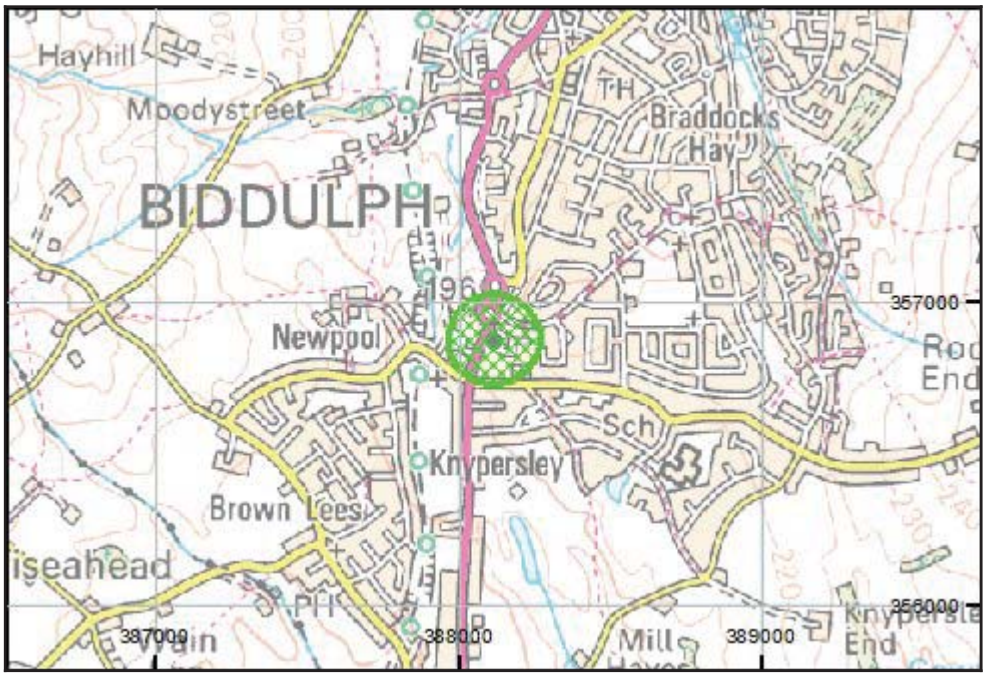
Issued by:	The Coal Authority, 200 Lichfield Lane, Mansfield, Nottinghamshire, NG18 4RG
Tax Point Date:	12 August 2015
Issued to:	LYNN CRITCHLOW 123 TUNSTALL ROAD KNYPERSLEY STOKE-ON-TRENT ST8 7AA
Property Search for:	121 AND 123, TUNSTALL ROAD, KNYPERSLEY, STOKE-ON-TRENT, STAFFORDSHIRE, ST8 7AA
Reference Number:	51000970132001
Date of Issue:	12 August 2015
Cost:	£69.00
VAT @ 20%:	£13.80
Total Received:	£82.80
VAT Registration	598 5850 68

Location map

Approximate position of property



Enquiry boundary

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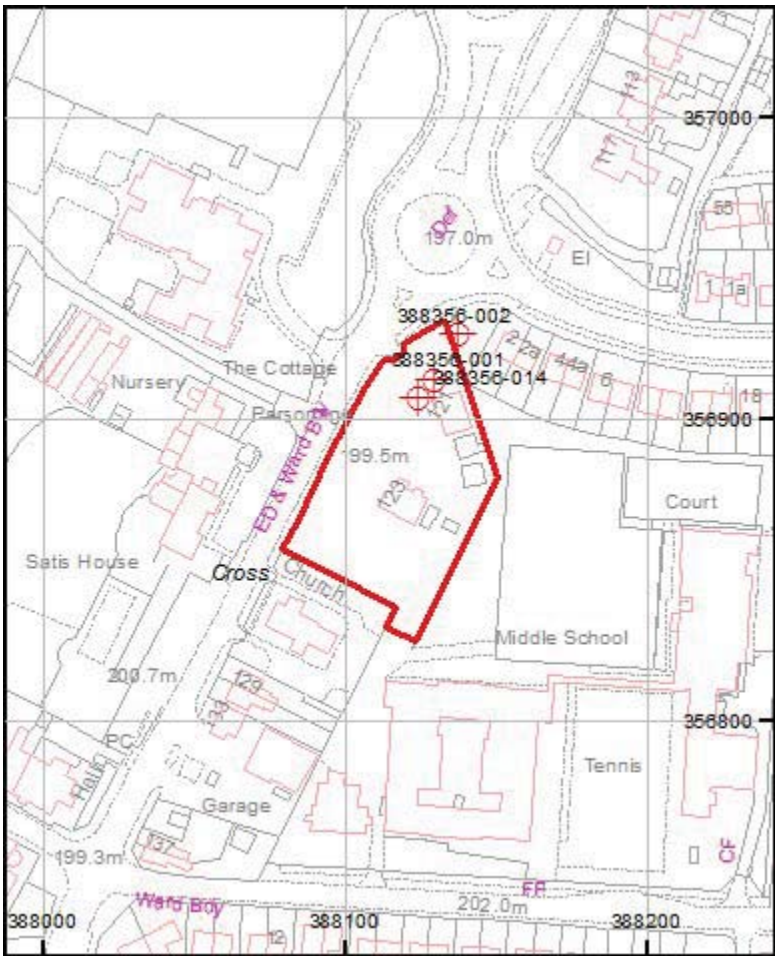

Key

Approximate position of enquiry boundary shown

Disused Adit or Mineshaft

Mapping sourced from Ordnance Survey

APPENDIX C
COAL AUTHORITY MINE ENTRY REPORTS

The Coal Authority

Issued by:
The Coal Authority, Property Search Services, 200 Lichfield Lane, Berry Hill, Mansfield, Nottinghamshire, NG18 4RG
Website: www.groundstability.com Phone: 0345 762 6848 DX 716176 MANSFIELD 5

LYNN CRITCHLOW
121 TUNSTALL ROAD
KNYPERSLEY
STOKE-ON-TRENT
STAFFORDSHIRE
ST8 7AA

Our reference:	**51000975397001**
Your reference:	
Date of your enquiry:	**14 August 2015**
Date we received your enquiry:	**14 August 2015**
Date of issue:	**14 August 2015**

This report is for the property described in the address below and the attached plan.

Mine Entry Interpretive Report

121 TUNSTALL ROAD, KNYPERSLEY, STOKE-ON-TRENT, ST8 7AA

I refer to the enquiry dated 14 August 2015, received 14 August 2015, in connection with the above.

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MINE ENTRY INFORMATION

Interpretive Reports Reference: 51000975397001

121 TUNSTALL ROAD, KNYPERSLEY, STOKE-ON-TRENT, ST8 7AA

Shaft or adit:	Shaft
Mineral worked:	Coal
Mine entry reference:	388356-001
Source:	O.S. 1/2500 1st edition - Ab plans WM315, WM976, WM1077, WM1078, WM1096
Colliery name:	Unknown
Entry name:	Red Cross
Date abandoned:	Unknown
Depth of superficial deposits (m):	3.3000000000000003
Depth of shaft (m):	Unknown
Diameter/Maximum width (m):	2.0
Probable adit azimuth:	Not Applicable
Treatment details:	Unknown
Conveyance:	Not Applicable
Other information:	None

STABILITY REPORT

Risk of instability

If coal mining subsidence was to occur as a consequence of ground movement attributable to the subject mine entry, then taking into account the thickness of superficial deposits, the potential for any difference between the actual and plotted positions of the mine entry and its diameter/maximum width, in the Authority's opinion, the subject building (as shown on the attached plan) is within the zone of possible ground movement. The possibility of future coal mining subsidence damage cannot be discounted completely but statistically the risk of damage to the subject building is very small.

Remedies

In the unlikely event that coal mining subsidence damage does occur which relates to the subject mine entry, the property owner can, under the provisions of the Coal Mining Subsidence Act 1991 require the responsible person to take remedial action. The responsible person is either the Coal Authority or a licensed mining operator. For details of how to make a claim please see the documentation at www.gov.uk/claim-for-subsidence-damage-caused-by-coal-mining. If you need any further advice, you can call the Coal Authority helpline:- 0345 762 6848.

Conclusion

In the Authority's opinion, the subject building (as shown on the attached plan) is within the zone of possible ground movement if coal mining subsidence attributable to the mine entry was to occur. The statistical risk of such subsidence occurring is small and the likelihood of the subject building being damaged as a consequence of that subsidence, is very small.

In the unlikely event that coal mining subsidence damage does occur, the property owner can rely on the provisions of the Coal Mining Subsidence Act 1991 to have that damage remedied.

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MINE ENTRY INFORMATION

Interpretive Reports Reference: 51000975397001

121 TUNSTALL ROAD, KNYPERSLEY, STOKE-ON-TRENT, ST8 7AA

Shaft or adit:	Shaft
Mineral worked:	Coal
Mine entry reference:	388356-002
Source:	O.S. 1/2500 1st edition - Ab plan WM1078
Colliery name:	Unknown
Entry name:	Unknown
Date abandoned:	Unknown
Depth of superficial deposits (m):	2.9
Depth of shaft (m):	Unknown
Diameter/Maximum width (m):	2.0
Probable adit azimuth:	Not Applicable
Treatment details:	Unknown
Conveyance:	Not Applicable
Other information:	None

STABILITY REPORT

Risk of instability

If coal mining subsidence was to occur as a consequence of ground movement attributable to the subject mine entry, then taking into account the thickness of superficial deposits, the potential for any difference between the actual and plotted positions of the mine entry and its diameter/maximum width, in the Authority's opinion, the subject building (as shown on the attached plan) is outside the zone of possible ground movement.

The possibility of coal mining subsidence damage to the garden areas/other buildings cannot be discounted completely, but statistically the risk of this is small.

Remedies

In the unlikely event that coal mining subsidence damage does occur which relates to the subject mine entry, the property owner can, under the provisions of the Coal Mining Subsidence Act 1991 require the responsible person to take remedial action. The responsible person is either the Coal Authority or a licensed mining operator. For details of how to make a claim please see the documentation at www.gov.uk/claim-for-subsidence-damage-caused-by-coal-mining. If you need any further advice, you can call the Coal Authority helpline:- 0345 762 6848.

Conclusion

In the Authority's opinion, the subject building (as shown on the attached plan) is not in the zone of possible ground movement of the subject mine entry and is not at risk of coal mining subsidence damage from its presence.

In the unlikely event of coal mining subsidence damage to the other parts of the property ie. land or outbuildings, the property owner can rely on the provisions of the Coal Mining Subsidence Act 1991 to have that damage remedied.

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MINE ENTRY INFORMATION

Interpretive Reports Reference: 51000975397001

121 TUNSTALL ROAD, KNYPERSLEY, STOKE-ON-TRENT, ST8 7AA

Shaft or adit:	Shaft
Mineral worked:	Coal
Mine entry reference:	388356-014
Source:	O.S. 1/2500 1st edition - Ab plans WM315, WM976, WM1077, WM1078, WM1096
Colliery name:	Unknown
Entry name:	Red Cross
Date abandoned:	Unknown
Depth of superficial deposits (m):	3.4
Depth of shaft (m):	Unknown
Diameter/Maximum width (m):	2.0
Probable adit azimuth:	Not Applicable
Treatment details:	Unknown
Conveyance:	Not Applicable
Other information:	None

STABILITY REPORT

Risk of instability

If coal mining subsidence was to occur as a consequence of ground movement attributable to the subject mine entry, then taking into account the thickness of superficial deposits, the potential for any difference between the actual and plotted positions of the mine entry and its diameter/maximum width, in the Authority's opinion, the subject building (as shown on the attached plan) is within the zone of possible ground movement. The possibility of future coal mining subsidence damage cannot be discounted completely but statistically the risk of damage to the subject building is very small.

Remedies

In the unlikely event that coal mining subsidence damage does occur which relates to the subject mine entry, the property owner can, under the provisions of the Coal Mining Subsidence Act 1991 require the responsible person to take remedial action. The responsible person is either the Coal Authority or a licensed mining operator. For details of how to make a claim please see the documentation at www.gov.uk/claim-for-subsidence-damage-caused-by-coal-mining. If you need any further advice, you can call the Coal Authority helpline:- 0345 762 6848.

Conclusion

In the Authority's opinion, the subject building (as shown on the attached plan) is within the zone of possible ground movement if coal mining subsidence attributable to the mine entry was to occur. The statistical risk of such subsidence occurring is small and the likelihood of the subject building being damaged as a consequence of that subsidence, is very small.

In the unlikely event that coal mining subsidence damage does occur, the property owner can rely on the provisions of the Coal Mining Subsidence Act 1991 to have that damage remedied.

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Issued by:	The Coal Authority, 200 Lichfield Lane, Mansfield, Nottinghamshire, NG18 4RG
Tax Point Date:	14 August 2015
Issued to:	LYNN CRITCHLOW 121 TUNSTALL ROAD KNYPERSLEY STOKE-ON-TRENT STAFFORDSHIRE ST8 7AA
Property Search for:	121 TUNSTALL ROAD, KNYPERSLEY, STOKE-ON-TRENT, ST8 7AA
Reference Number:	51000975397001
Date of Issue:	14 August 2015
Cost:	£75.00
VAT @ 20%:	£15.00
Total Received:	£90.00
VAT Registration	598 5850 68

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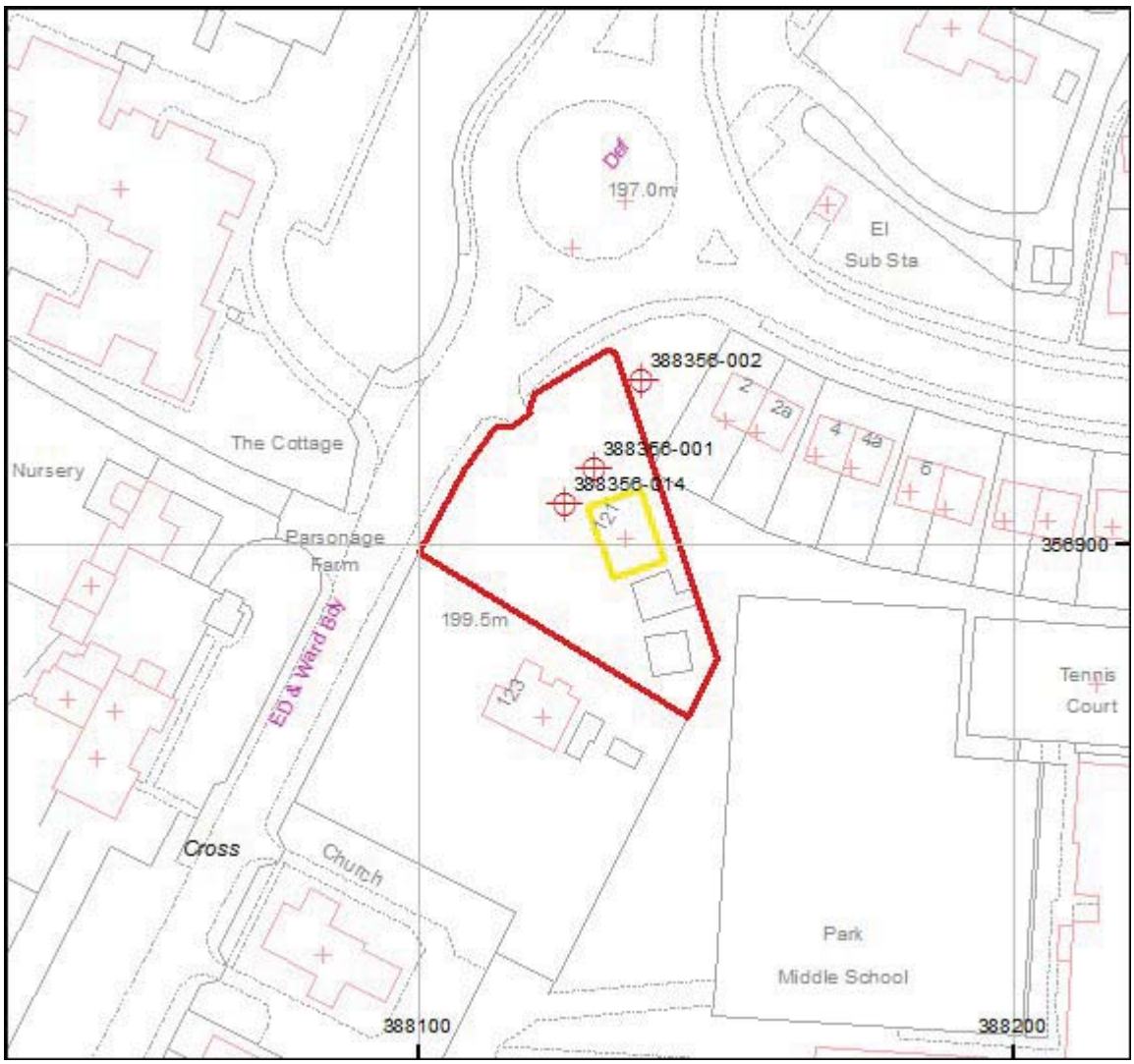

Not to scale.

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This is a plan of the boundaries of the property in respect of which this report has been prepared. It is the responsibility of the user to ensure that the boundaries shown correspond with those of the property.

APPROXIMATE POSITION OF PROPERTY BOUNDARY SHOWN

APPROXIMATE POSITION OF SUBJECT BUILDING SHOWN

APPROXIMATE POSITION OF DISUSED MINE SHAFTS SHOWN

This plan shows the approximate location of the disused mine entry / entries referred to in the attached mining report. For reasons of clarity, mine entry symbols may not be drawn to the same scale as the plan.

Property owners have the benefit of statutory protection (under the Coal Mining Subsidence Act 1991). This contains provision for the making good, to the reasonable satisfaction of the owner, of physical damage from disused coal mine workings including disused coal mine entries. A leaflet setting out the rights and obligations of either the Coal Authority or other responsible persons under the 1991 Act can be obtained by telephoning 0345 762 6848.

If you wish to discuss the relevance of any of the information contained in the attached report you should seek the advice of a qualified mining engineer or surveyor. If you or your advisor wish to examine the source plans from which the information has been taken these are available at our Mansfield office, free of charge by prior appointment, telephone 01623 637225. Should you or your advisor wish to carry out any physical investigations that may enter, disturb or interfere with any disused mine entry the prior permission of the owner must be sought. For coal mine entries the owner will normally be the Coal Authority.

The Coal Authority, regardless of responsibility and in conjunction with other public bodies, provide an emergency call out facility in coalfield areas to assess the public safety implications of mining features (including disused mine entries).

Our emergency telephone number at all times is 01623 646333.

Mapping sourced from Ordnance Survey

EXPLANATORY NOTES

1. The Authority has made assumptions about mining information and its application. Where this has happened, the assumptions are explained in these notes.

2. There can be several source documents for the same mining information and in many instances these documents are very old. As a general principle, older sources are not as accurate as more recent records. Furthermore, the different types of plans can have varying standards of accuracy.

As a consequence, the plotted positions of mine entries can be different, to varying degrees, to their actual positions on site. The assumptions made for these variances are explained in 10 below.

3. The thickness of superficial deposits has been taken from the records of the Authority and/or those of the British Geological Survey. © NERC All rights reserved.

Where the Authority has information about activities such as infill operations or excavation, which may have affected the thickness of deposits above rockhead, this will also be taken into account.

4. The Authority will only provide the depth of a mine entry where this is known.

5. Where information about the diameter of a shaft is not known, it will be assumed. The assumption will be based upon comparison with other shafts in the vicinity, the likely date it was sunk and any other relevant information, e.g. the depth of seams the shaft is thought to have accessed.

Where a shaft is not circular, the maximum diagonal dimension will be used.

6. The zone of possible ground movement of an adit will be calculated for the conjectured position of the mouth of the adit. It will not apply to the underground length of the adit. The approximate adit direction, where applicable, will be quoted in degrees from North.

7. Where treatment details are recorded, this information will be given. Where records are not available, “Unknown” will be reported.

8. The issue of ownership of mine entries is extremely complicated. Where details of the sale of a mine entry by the Coal Authority, or its predecessors in title, are known these will be provided. Where no sale details are available, in most instances, ownership will rest in the Coal Authority. Whatever the position with ownership, if coal mining subsidence damage does occur, statute provides for the “responsible person” to provide a remedy. The “responsible person” is either the Coal Authority or a licensed mining operator.

9. If the Authority holds other relevant information about the mine entry which is not referred to elsewhere, it will be provided as additional information in the report.

10. The zone of possible ground movement of a mine entry is that area of ground which might be affected by coal mining subsidence if the mine entry becomes unstable.

The calculated zone of possible ground movement is a circle whose centre point is the centre of the plotted position of the mine entry and which has a radius equivalent to the aggregate of:-

a. the radius or assumed radius of the mine entry (for non circular mine entries the maximum distance from the centre of the opening to its edge will be taken as the radius)

b. the thickness of the deposits overlying rockhead (i.e. an assumed angle of draw of 45°)

c. an assumed distance representing the potential difference between a mine entry’s plotted position and its true position. This assumed distance will be between 0-10m and will depend, inter alia, on the age, scale, condition and status of the source plan from which the position of the mine entry is taken.

The above criteria will be applied also where the mine entry is an adit.

There will be some instances where the variances will be greater than the assumed distances but the Authority consider that the range applied is a reasonable and representative basis for its reports.

Where special circumstances apply in calculating the zone of possible ground movement, e.g. where the plotted position of a mine entry lies within an area where opencast mining has taken place and the mine entry no longer exists, the opinion in the Stability Report will take this into account.

11. The Authority’s records demonstrate that the statistical risk of a house suffering physical damage as a consequence of coal mining subsidence from ground movement associated with a coal mine entry is very small. This includes houses which are within a zone of possible ground movement related to a mine entry. Typically only one or two houses are so affected each year, out of the tens of thousands of houses which have mine entries within 20m of their property boundaries.

On those rare occasions where physical damage to a house does occur, the Authority will attend quickly to deal with any matters of an urgent or emergency nature. Thereafter, the responsible person, usually the Coal Authority, will treat the mine entry and arrange for property repairs to be carried out. It is important that any evidence of ground movement around a mine entry or any physical damage is reported to the Coal Authority immediately it is observed. The 24 hour call out number is 01623 646333.

12. The statutory remedies for coal mining subsidence damage available to property owners are powerful. The nature of remedies provided by statute includes:-

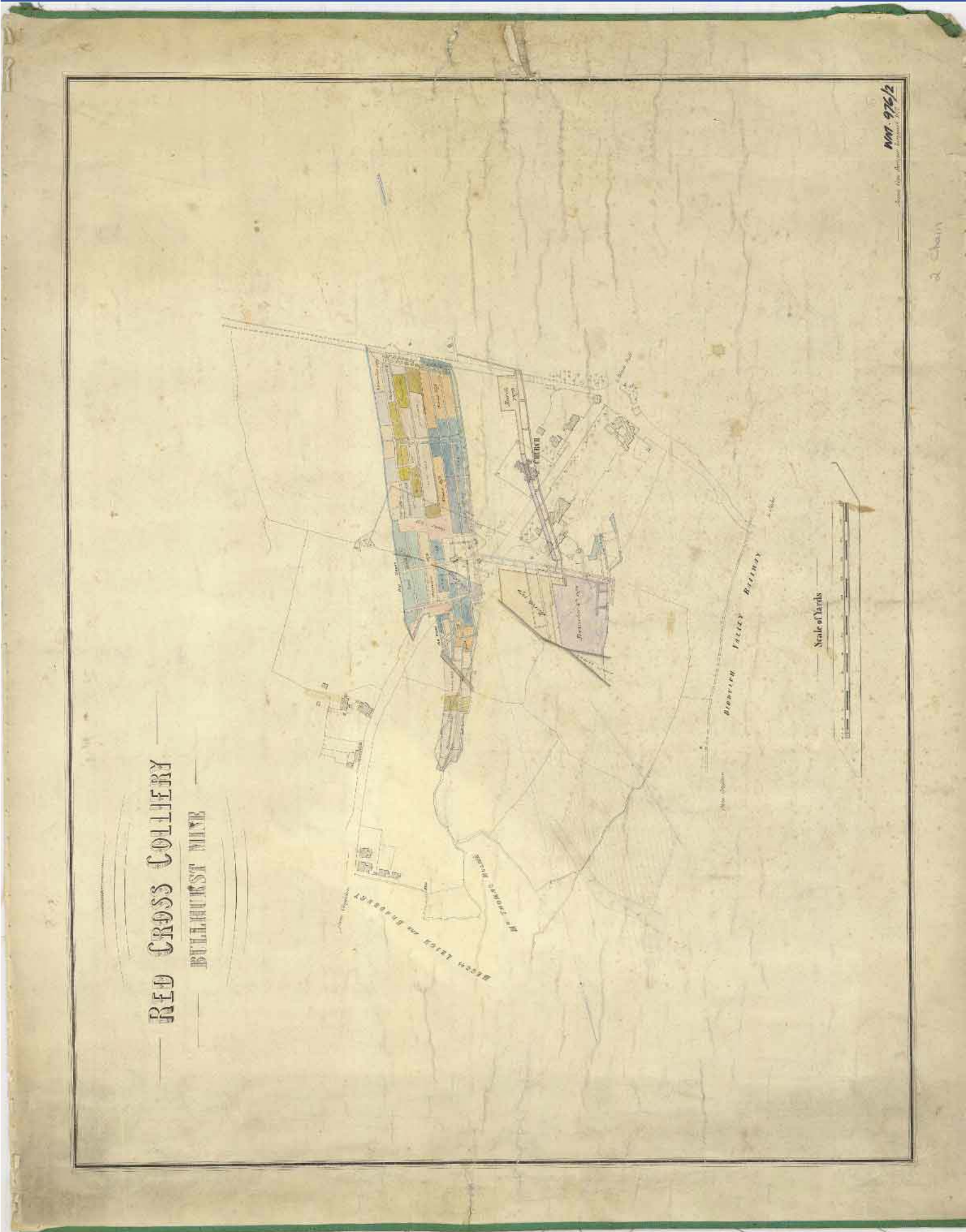
i) a right to have property repaired
ii) payments in lieu of repairs
iii) depreciation payments for residual physical damage
iv) home loss payments where a house is purchased by the responsible person
v) payments for inconvenience (in certain circumstances)
vi) compensation for loss of chattels or moveable property.

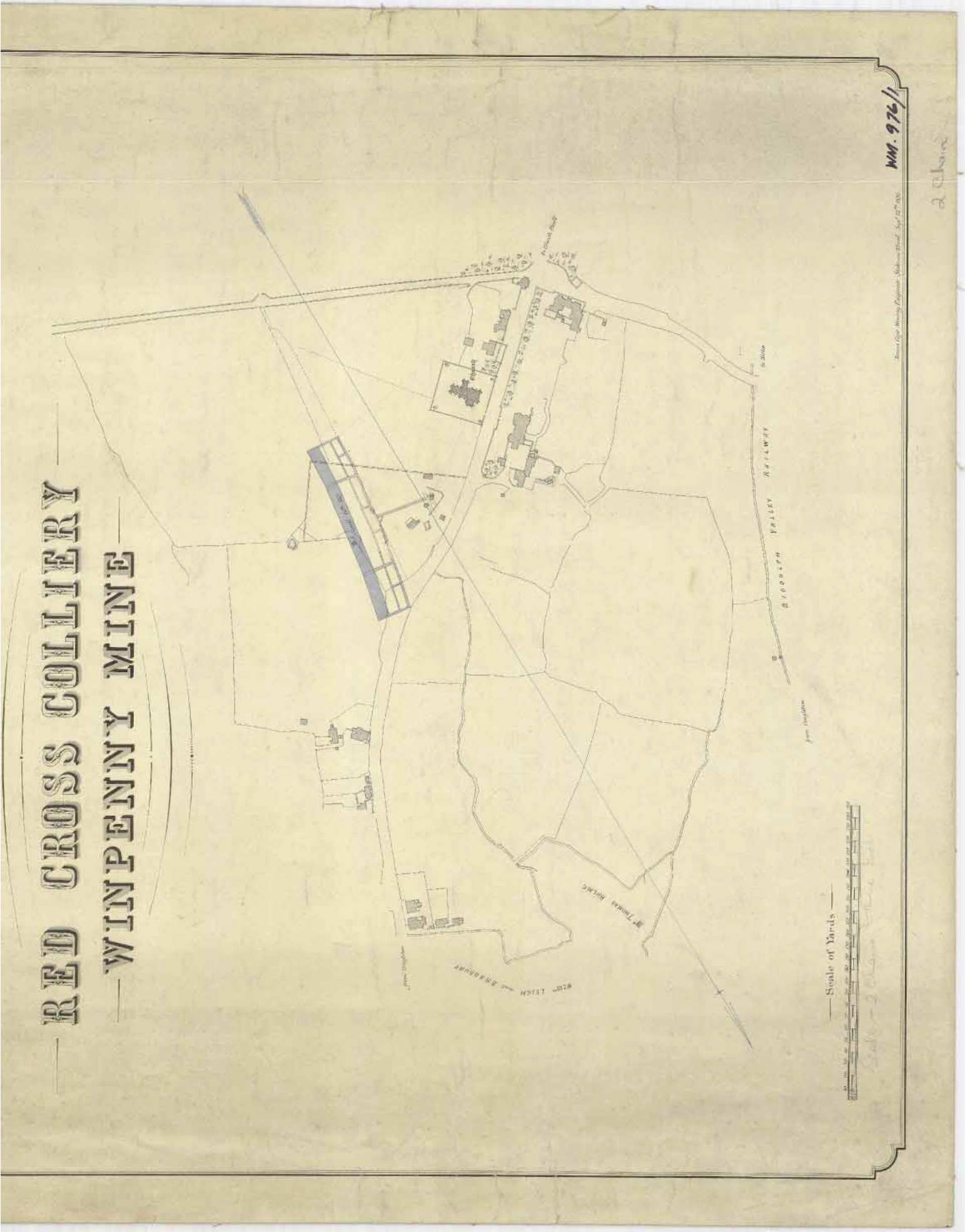
Note: The statutory remedies provided by the Coal Mining Subsidence Act 1991 are not available in respect of subsidence damage caused by extraction of minerals other than coal.

General note

The Authority’s opinion and advice is based upon its interpretation of the facts in its possession at the date of the report and on the Ordnance Survey’s (O.S) improved data (OSPA). A site inspection has not been carried out. The report has been prepared by experienced mining surveyors with knowledge in the management and interpretation of coal mining information. Notwithstanding this, because of the nature of old mining records and the uncertainties about their preparation and accuracy, it is possible that others might apply different assumptions or interpretations to the facts. Please note that any insurance given with earlier standard mining reports does not extend to cover this Mine Entry Interpretive Report.

APPENDIX D
MINE PLAN EXTRACTS


RED CROSS COLLIERY
BILLHURST MINE
Scale of Yards
Brook
Railway
Basin
Pond
Sidings
Engine House
Boiler House
Blacksmiths Shop
Stables
Weigh Bridge
Office
Pit
Pit
Pit


RED CROSS COLLERY
WINPENNY MINE
WM. 976/1
2 Chains
Scale of Yards
Blyth Valley Railway
Rising Sun
Engine
Engine
Shaft
Old Shaft
Pond
Pond
Pond

APPENDIX E
CORRESPONDENCE FROM COAL AUTHORITY

Subject: Mine Entry Interpretive Report 51000975397001
From: David Parry <DavidParry@coal.gov.uk>
Date: 26/11/2015 09:52
To: "graham.dorrell@sladenassociates.com" <graham.dorrell@sladenassociates.com>

Dear Sirs

Further to your request for mine abandonment plans in connection with the subject site of the above report, we have further investigated the source information for the three mine entries mentioned in the report, also as requested. With regard to mine entry reference 388356-002, it transpires that the reference to mine abandonment plan WM1078 in the 'source' attribute field is an error. The sole remaining source for the feature is therefore the 1st edition OS plan. After inspection of this plan we have reached the conclusion that the feature depicted thereon is not a mine shaft and we are therefore in the process of removing mine entry reference 388356-002 from our database. It will therefore not appear on any subsequent reports.

Please also note that the reference to WM1078 in the 'source' attribute field for mine entries 388356-001 and 388356-014 is also an error.

Kind regards

41x256logonew_coal

David Parry
Mining Information Manager
T : **(01623) 637 184**
W : **coal.decc.gov.uk**

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