An Archaeological Desk-Based Assessment for Broadoak Quarry, Northumberland



Speed's 1610 Map of Northumberland

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Contents

	List of Figures	3
	Executive summary	4
1.	Introduction	5
	1.1. Location and scope of work	5
	1.2. Geology and soils	5
2.	Methodology	6
3.	Historical background	7
4.	Results	9
5	Conclusion	19

Appendix I: Sites and Monuments Register

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List of Figures

1.	Location of site	5
2.	Location of Sites and Monuments close to the study area	10
3.	Location of Sites and Monuments around the study area	11
4.	Speed's 1610 Map of Northumberland	14
5.	Greenwood's 1818 Map of County Durham	14
6.	Cary's 1827 Map of Northumberland	15
7.	First edition Ordnance Survey Map of 1864	16
8.	Second edition Ordnance Survey Map of 1899	17
9.	Third edition Ordnance survey Map of 1921	18

EXECUTIVE SUMMARY

In October 2007 Archaeological Research Services Ltd were commissioned by Tarmac to undertake an archaeological desk-based assessment for Broadaak Quarry, Northumberland. The work was to be undertaken prior to the extension of the quarry, in order to assess the archaeological and historic importance of the site. The relevant archives were consulted and documentary, pictoral and cartographic evidence was studied in order to gain knowledge about the history of the site.

No archaeological sites are currently known within the proposed quarry extension area although finds of prehistoric material (Mesolithic and possibly Neolithic and Iron Age) have been found in other parts of the quarry on the same spur of land. There is evidence for prehistoric activity in the surrounding areas and the site is located to the north of Vindomora, the Roman fort at Ebchester and to the east of Dere Street, the main Roman road running north into Scotland. The area of the proposed quarry extension remained rural until the late 1980's when the quarry was first opened.

There is potential for archaeology dating back as far as the beginning of the Holocene c.12,000 years ago (early Mesolithic) to exist within the proposed extension area. The proposed extension area encompasses the headwater area of a, now dry, small tributary valley that runs off the glacial drift deposits towards the Derwent valley to the south. It occupies a localised high point and the ground is very varied consisting of areas of steep and moderate slope, as well as a very steep-sided knoll and a distinctive area of plateau, the latter being clearly the most attractive location for past settlement. A part of the proposed extension area is covered by soil bunds making evaluation in this area practically difficult. Consequently, a range of evaluation techniques that take into account the varying potential of the different areas of the site is required.

1. INTRODUCTION

1.1. Location and scope of work

1.1.1. In July 2007 Archaeological Research Services Ltd were commissioned by Tarmac Northern to undertake a desk-based assessment for Broad Oak Quarry, Northumberland (Fig. 1). The work was carried out prior to proposed coal extraction.

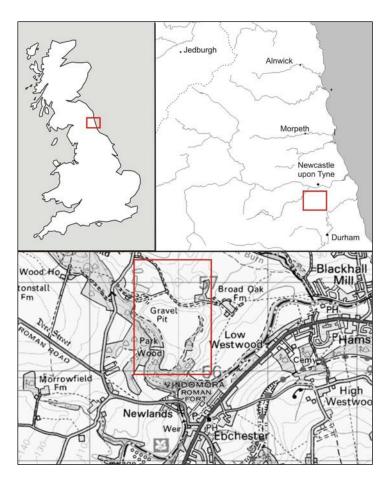


Fig. 1 Site location
Ordnance Survey data copyright OS, reproduced by permission,
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1.1.2. The site is centred at NZ 10085657 and lies to the north of the River Derwent,. The site sits on land at approximately 130m AOD and the proposed quarry extension encompasses an area of 9.4 ha.

1.2. Geology and soils

1.2.1. The solid geology of the area consists of Westphallian Coal Measures and the drift geology is made up of undifferentiated glacial drift derived from sub-glacial deposits comprising sand and gravels (British Geological Survey 2007 and personal inspection).

2. METHODOLOGY

2.1. Archive sources

- 2.1.1. A number of sources were consulted in order to gain documentary, pictoral and cartographic evidence relating to the study area. They are as follows:
 - Sites and Monuments Record (SMR), County Hall, Morpeth, Northumberland
 - National Monuments Record, Kemble Drive, Swindon
 - Northumberland Collections Service, Woodhorn, Queen Elizabeth II Country Park, Ashington, Northumberland
 - Tyne and Wear Archive Services, Discovery Museum, Blandford Square, Newcastle upon Tyne
 - Publications held in the Cowan Library, University of Newcastle
 - Publications held in the Robinson Library, University of Newcastle
 - Museum of Antiquities, University of Newcastle
- 2.1.2. The archive sources that provided results for the study area are discussed in section 4.

2.2. Consultation of historic mapping

- 2.2.1. A number of historic maps were consulted in order to document how the study area and its surrounds have changed over time. Maps of a suitable scale have been included in a map regression exercise. They were as follows:
 - Ordnance Survey Revised edition 2004
 - Ordnance Survey Revised edition 1967
 - Ordnance Survey Revised edition 1956
 - Fourth edition Ordnance Survey Map of 1937
 - Third edition Ordnance Survey Map of 1921
 - Second edition Ordnance Survey Map of 1899
 - First edition Ordnance Survey Map of 1864
- 2.2.2. The maps which were at a scale too large or too small to be included in the map regression exercise are listed below:
 - Cary's 1828 Map of Northumberland
 - Cary's 1827 Map of County Durham
 - Greenwood's 1818 Map of County Durham
 - Speed's 1610 Map of Northumberland

2.3. Aerial photography

2.3.1. The aerial photograph collection at the Museum of Antiquities was consulted as well as that of the National Monuments Record in Swindon.

3. HISTORICAL AND ARCHAEOLOGICAL BACKGROUND

3.1. Prehistoric period

- 3.1.1. There is evidence for human activity in the area of previous quarrying dating as far back as the Mesolithic period. Two lithic scatters (SMR 10842 and 10843) dating from this period were discovered to the immediate south of the study area (Wymer 1977, 220; Davies 1983).
- 3.1.2. There are few finds from the Neolithic period known in the Derwent Valley although some of the lithic scatters mentioned above are thought to have Neolithic material in them. The only Bronze Age find to have been recovered in the vicinity of the site is the segment of a flint dagger (NZ 112 569), a type of artefact typically associated with Beaker burials, found during the laying of a sewerage pipeline (Weyman 1993 in Reed 199?).
- 3.1.3. A possible Iron Age promontory fort (SMR 9851) was thought to have existed at the south end of the quarry site, however this area has since been removed in its entirety by earlier quarrying (Featherstonehaugh 1891; Reed 1993). It was not certain at the time whether the bank separating off the spur of land from the ridge behind was a natural or man-made feature, but looking at the current topography and geological make-up of the site it is unlikely that a linear bank in this situation could have been of natural origin. The site is naturally defensible and after ploughings of the site pottery and flint tools were regularly picked up (Featherstonehaugh 1891). Indeed a 'British sword' was apparently found within the vicinity of Ebchester (Featherstonehaugh 1891; Ebchester Village Trust 1984).

3.2. Romano-British period

- 3.2.1. There is no known evidence of human activity dating from the Romano-British period within the boundary of the quarry area but there is a lot of evidence for activity just beyond. Ebchester, to the immediate south of the study area is the site of the Roman fort of Vindomora. The square fort has been almost completely destroyed by modern buildings but a small section of remains can still be seen. These include stretches of a grass-covered rampart on each of the forts four sides, although the north corner has been damaged by a fence.

 Archaeological investigations have revealed that the fort had several phases of construction four in timber and three in stone (Wright 1940; Jarrett 1960; Reed et al. 1964; Maxfield and Reed 1975). There has been relatively little research on this fort, though it is known that a simple mosaic was found here in the 1957, this was never properly recorded. A horned stone head was recovered from the Fort in 1965, although it was though to be a religious statue dating from the Iron Age (Keys to the Past 2007).
- 3.2.2. Several Roman altars and other carved stones are known from the site of the church including one dedicated to the local native British war god 'Cocidius' (Wright 1940). The remains of Roman baths were discovered during an evaluation at Mains Farm in Ebchester in the 1960's (Keys to the Past 2007).

3.3. Early-Medieval period

- 3.3.1. There is little evidence from the immediate area which dates from the Early-Medieval period and there is no evidence from within the study area. Although the fort went out of use by the end of the fourth century, settlement may have continued close by as the site appears to have been in use again by the early seventh century.
- 3.3.2. Ebchester was the site of a seventh century monestary founded by Aebba, a nun from Coldingham who was the daughter of Aethelfrith, the first king of Northumbria. The Church of St Ebba still exists today and stands over the south corner of the Roman fort of Vindomora. There are no remains of the original seventh century church and the present church was mainly built in the early eleventh century, with stone re-used from the Roman fort. The bell gable was added to the building in the thirteenth century and the south porch was added in 1876 (Keys to the Past 2007). According to tradition the nunnery was destroyed by the Saxons and Danes.

3.4. Medieval period

3.4.1. There is no obvious evidence for Medieval archaeological remains within the area of the quarry site although there is a hint of ridge and furrow cultivation ridges that can be noted under low sun conditions but it is by no means clear whether these slight undulations are definitely ridge and furrow remains. There is some more certain ridge and furrow on the steeply sloping ground of the quarry extension area but this is narrow and very straight and is therefore thought to have resulted from steam ploughing and is therefore unlikely to be medieval or post-medieval in date. Little is known of the events which occurred at Vindomora for the next five centuries. It is thought to have lain desolate, the refuge of only a solitary hermit. Bishop Pudsey who granted it to his foundation at Sherburn, speaks of it as "Ebchester, the place of anchorets on the Darwent" and gave it "for the pasture of animals for the use of the sick brethren, and for the maintenance of the shepherds in the same place" (Fordyce 1857, 704).

3.5. Post-Medieval period

- 3.5.1. A narrow bridge was recorded at Ebchester in 1664 and in 1785 the remains of two bridge piers in the river at Ebchester were mentioned (Surtees 1820, 27-8). Fordyce (1857, 705) describes the current bridge across the River Derwent in 1857 as formed by a wooden platform, laid upon piers. He also mentions the remains of two stone piers a short distance away which are supposed to be part of a Roman bridge.
- 3.5.2 By the eighteenth and nineteenth centuries the River Derwent played an important role in the history of Ebchester. Several water-powered mills are recorded and a corn mill stood at Mill Lane. This was a former water mill which has since been converted into a house. The mill was used for grinding corn and also for powering a smithy. Parts of the mill race can still be traced from a dam on the River Derwent to this building. A fulling mill had been built at Ebchester by at least 1759 but was in ruins by 1898 and was totally demolished in 1945.

There are no remains visible today. The remains of a nineteenth century stick mill can also be found at Ebchester. It was used for cutting up timber and was demolished in 1959. Today only the foundations survive (Keys to the Past 2007).

- 3.5.3 Fordyce, writing in 1857, states that there were '101 inhabited houses, 4 uninhabited and 1 building' in Ebchester at this time.
- 3.5.4 The rural nature of the village continued throughout the Post-Medieval period and through to the present day. The remains of several Post-Medieval buildings still survive today, such as Demesne Farm (SMR 11704), West Law (SMR 2349) and the large Ebchester Hall.
- 3.5.5 Broad Oak Quarry became operational in the late 1980's but by 2002 the quarry was no longer in use and the area was used for the tipping of inert waste.

4. **RESULTS**

4.1. Historic Environment Record

4.1.1. A study of the Northumberland Historic Environment Record revealed a total of four sites within or just beyond the boundary of the proposed development area (Fig. 2). They are as follows:

4.1.2. SMR 9851 Possible Iron Age promontory fort (NZ 09805604)

A large fosse protecting a natural promontory is visible and many earlier worked flint tools have also been found at the site. Only a few earthworks remain visible today but a large ditch runs along the north side. The south, east and west sides are protected by natural slopes (Featherstonehaugh 1891).

4.1.3. **SMR 9873 Hedley Mill** (NZ 09495682)

This was the site of Hedley Mill, a Post-Medieval water mill, however, no remains can are visible today.

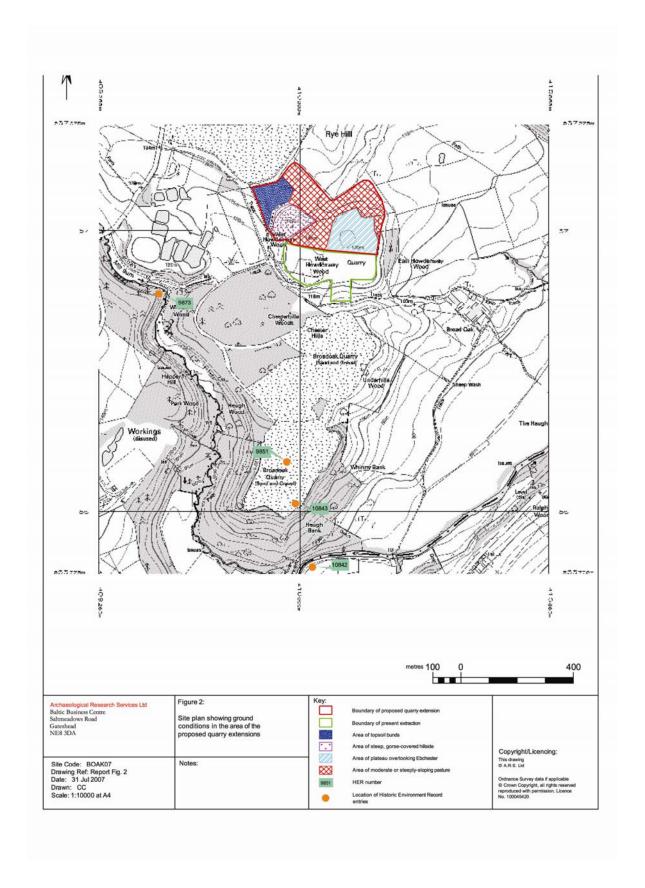
4.1.4. SMR 10842 Mesolithic lithic scatter (NZ 100558)

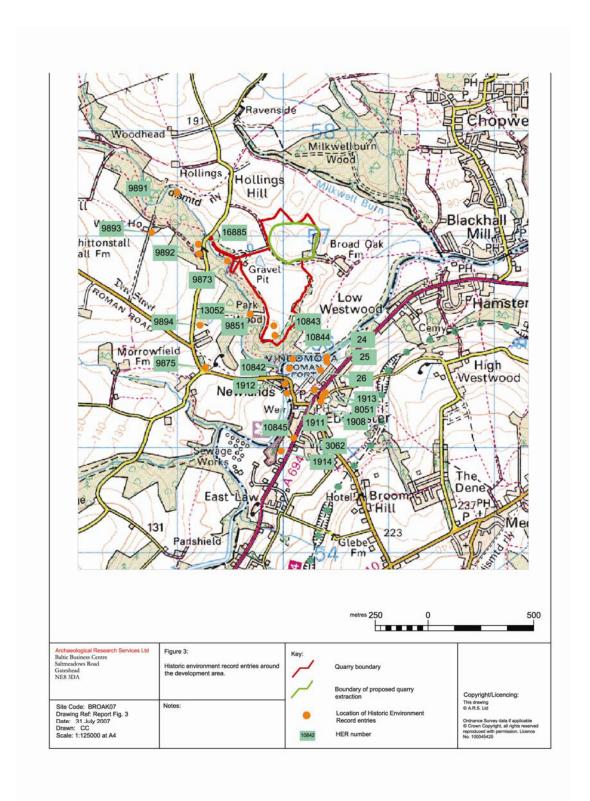
A Mesolithic lithic scatter was discovered at Ebchester Heugh. The surface collection of lithic material recovered one microlith (arrowhead), two cores, one scraper and 25 blades/flakes (Wymer 1977, Davies 1983).

4.1.5. SMR 10843 Mesolithic lithic scatter (NZ 100560)

A further lithic scatter was discovered at Ebchester Heugh. This included microliths, scrappers, cores, blades and flakes (Keys to the Past 2007).

4.1.6. Further sites have been found to exist within a 500m radius of the quarry area (Fig. 3). A full list is included in the table in Appendix I.





Woodhorn Colliery Archives

4.2.1. Woodhorn Colliery archives held no information about the study area and very little information about Ebchester, with most of it concerning its church. Historic mapping can also be found at Woodhorn Colliery.

4.3. Tyne and Wear Archives

- 4.3.1. The Tyne and Wear Archives were consulted and were found to hold a number of historic maps covering the quarry area. They are discussed below in the historic mapping section (4.4.). There were no tithe or estate maps available for the area.
- 4.3.2. The building control indexes were consulted in order to access any building plans available for the development area but as the site remained rural until its use as a quarry in the 1980's there were no documents listed.
- 4.3.3. A number of County Histories were available although there was virtually no information about the development area or Broad Oak Farm.

4.4. Investigation of historic mapping

- 4.4.1. The development area is well covered by early mapping, although many are illustrated at too small or too large a scale to show detail of the development area. The earliest map found during this study that covered the development area was Speed's 1610 Map of Northumberland (Fig. 4). It shows Ebchester represented by a village/town symbol but shows no detail of the development area. Greenwood's 1818 Map of County Durham (Fig. 5) shows Ebchester but does not cover the area to the north of the River Derwent and therefore the development area is not represented. Greenwood's Map for Northumberland was not available but it is unlikely that any detail of the development area would have been represented. Cary's 1827 Map of Northumberland (Fig. 6) does cover the development area but shows no details that indicate any archaeological or historical significance attached to the development area.
- 4.4.2. The Ordnance Survey mapping from the first edition of 1864 up to the most recent survey shows the area in more detail and the maps have been included in a map regression exercise (Figures 7 to 9).
- 4.4.3. The first edition Ordnance Survey Map of 1864 (Fig. 7) labels the development area as 'Broadoak Hills' and it appears to be open fields. Most of the field boundaries that exist today have been laid out by the time of the 1864 survey and the plantations to the west of the study area were also in existence. The plantation boundaries are similar to those at present, although 'Heugh Wood' appears to stretch further north encompassing today's 'Whitehill Wood' to the east of the Mill Burn and 'Chesterhills Wood'. Hedley Mill can be seen on the north bank of the Mill Burn just north of Park Wood. To the east of Hedley Mill a 'Coal Level' is noted. Broad Oak Farm has been established by the time this survey was completed and is shown to the east of the study area with a road and

- trackway leading from the farm through the north of the development area. The areas surrounding the development area are shown as open fields.
- 4.4.4. The second edition Ordnance Survey Map of 1899 (Fig. 8) illustrates the development area as open fields which area still labelled as 'Broadoak Hills'. There appears to have been no changes within the proposed development area but Broad Oak Farm has seen major development to its main building and a new building has been erected to the south. An 'Old Sand Pit' is located to the southwest of the study area at Brooms Hill providing the first evidence for the organised quarrying of sand deposits in this area. There is no mention of the sand pit on the earlier survey of 1864 so it use must have been shortlived during the latter half of the 19th century.
- 4.4.5. The third edition Ordnance Survey Map of 1921 (Fig. 9) shows that the development area is now labelled 'Chester Hills' and is shown as open fields. The northern area of Heugh Wood has now been divided into 'Whitehill Wood' and 'Chesterhill Wood'. There is an 'Old Coal Drift' to the west of the Mill Burn where its route changes from an east-west to north-south direction to the north of Park Wood. There is no mention of the drift on the second edition of 1899 but an 'Old Shaft' is noted further to the west in Meirs Wood. The plantations in the north of the study area have been in place at least since the first edition Ordnance Survey Map of 1864 but have not been named until the survey of 1921 where they are called 'West Howdenway Wood' and 'East Howdenway Wood'. There appears to have been no changes to Broad Oak Farm.
- 4.4.6. The fourth edition Ordnance Survey Map of 1937 was consulted but was identical to the third edition of 1921 and it is likely that the same survey was used due to demands on the OS during the build up to WWII.
- 4.4.7. The revised edition Ordnance Survey Map of 1956 was not available to reproduce for the map regression exercise but can be viewed at the Durham Records Office website (http://www.durham.gov.uk/recordoffice). The map shows a sand and gravel quarry located in the Whitehill Wood and Chesterhill Wood. The 'old' sand pit at Broom Hill to the south-west of the study area appears to be back in use and has expanded. There appear to have been no further changes to the development area.
- 4.4.7. The revised edition Ordnance Survey Map of 1967 was not available to reproduce for the map regression exercise but can be viewed at the Durham Records Office website (http://www.durham.gov.uk/recordoffice). The map shows the sand and gravel quarry in the Whitehill Wood and Chesterhill Wood now labelled as 'Broadoak Quarry'. There appear to have been no further changes within the development area. This map shows the area much the same as it exists today.

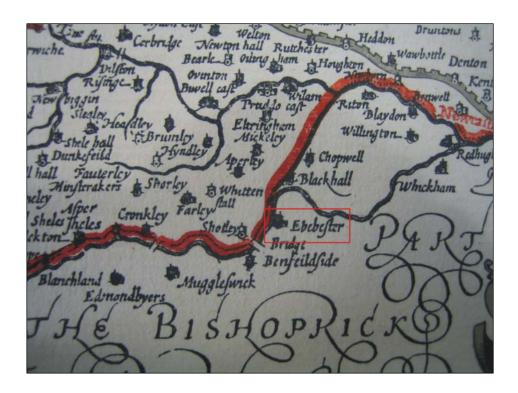


Fig. 4 Speed's 1610 Map of Northumberland

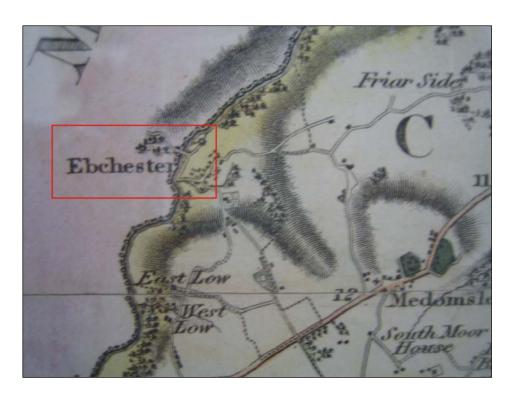


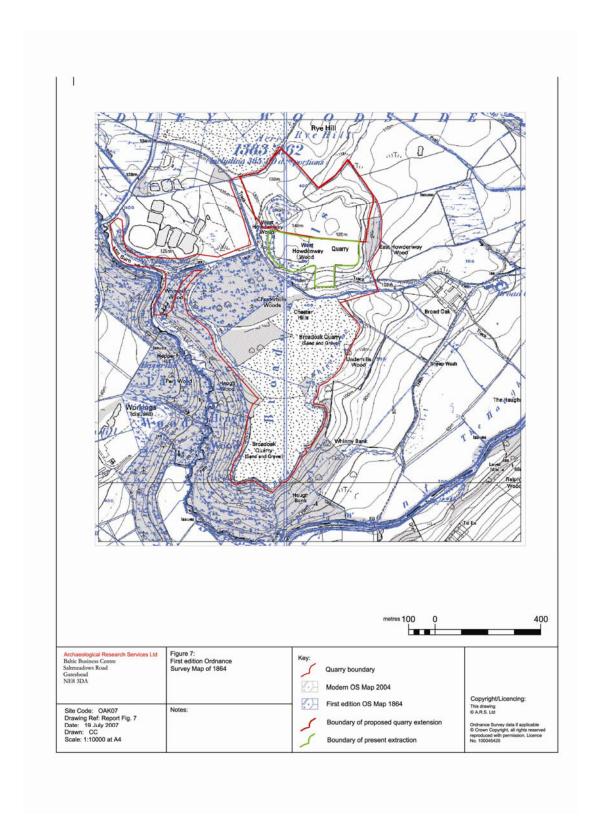
Fig. 5 Greenwood's 1818 Map of County Durham

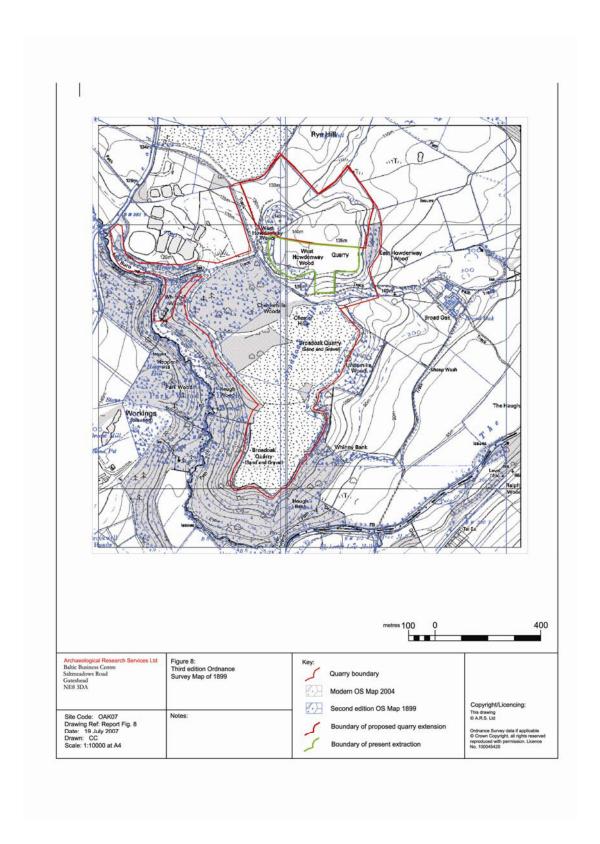


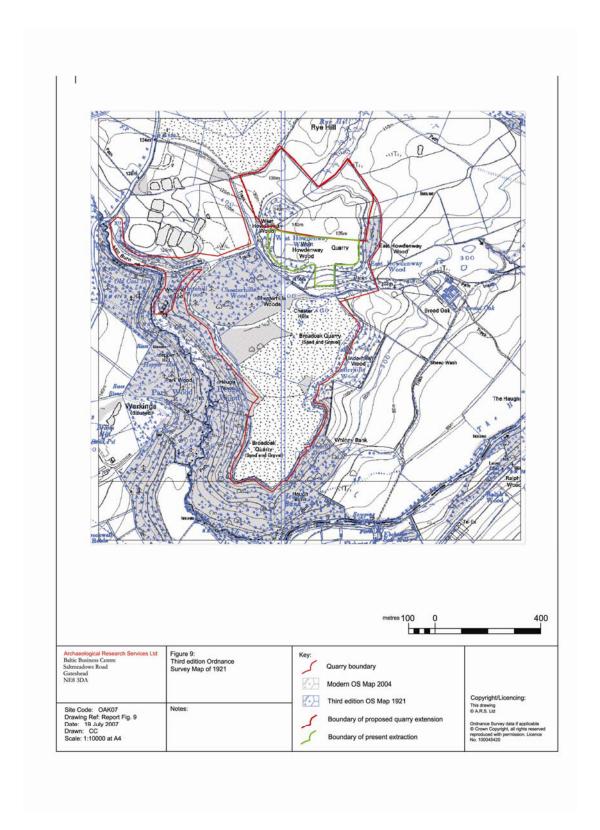
Fig. 6 Cary's 1827 Map of Northumberland.

4.5. Aerial photography

The aerial photography collection held at the Museum of Antiquities at Newcastle University was consulted but held only two photographs (NZ 0857 A-B) which were taken in 1982 and show fields close to the study area but not the area of the quarry. They covered the area to the west of the study area and held no relevant information. The NMR collection was also queried and a cover search undertaken but no archaeological features were identified.







5. CONCLUSION

5.1. Following a thorough study of the proposed development area it appears that there is potential for archaeological remains to exist within the site. Remains have been discovered from within, and on the outskirts, of the quarry dating as far back as the Mesolithic period and there is evidence of Later Prehistoric and Roman activity from the surrounding areas. No archaeological remains are currently known from within the development area but the likelihood of encountering remains on the attractive, level, parts of the site are considered moderate to high. Conversely it is thought highly unlikely that remains will exist on the sloping areas of ground.

6. PUBLICITY, CONFIDENTIALITY AND COPYRIGHT

- 6.1. Any publicity will be handled by the client.
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8. ACKNOWLEDGEMENTS

8.1. Archaeological Research Services Ltd would like to thank Tarmac Northern for commissioning this work and to the various organisations consulted and supplying information as part of this study.

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The British Geological Survey (BGS) www.bgs.ac.uk

Keys to the Past www.keystothepast.info

APPENDIX I: SITES AND MONUMENTS REGISTER

SMR No.	NGR	Description	Date
D24	NZ 1203 5913	Stick Mill	Post- Medieval
D25	NZ 1201 5902	Woolen Mill	Post- Medieval
D26	NZ 1165 5866	Corn Mill	Post- Medieval
1908	NZ 1102 5709	Church of St Ebba	Anglo-Saxon
D3062	NZ 1025 5563	Roman mosaic	Roman
D8051	NZ 1208 5774	Roman baths	Roman
N9875	NZ 0927 5571	The Smithy, a blacksmith's workshop known from documentary evidence	Post Medieval
N9891	NZ 0899 5743	A coal mine known from documentary evidence	Post Medieval
N9892	NZ 0919 5688	A mine Shaft known from documentary evidence	Post Medieval
N9893	NZ 0878 5704	A saw Mill known from documentary evidence	Post Medieval
N9894	NZ 0920 5617	A sand pit known from documentary evidence	Post Medieval
N10844	NZ 101 558	A crossing point for Dere Street across the River Derwent based upon personal recommendation of R. Selkirk	Roman
N10845	NZ 1004 5553	Ebchester Old Bridge constructed in 1862	Post Medieval
N13052	NZ 09704 56311	A boundary stone located in Park Wood believed to be late 18 th Century and carved with an N (Newlands and Whittonstall) and an H (Hedley).	Post Medieval
N16885	NZ 092 569	A milepost in Horsley village	Post medieval
D1911	NZ 1032 5561	Vindomora (Ebchester Roman Fort)	Roman
D1912	NZ 1009 5767	Medieval bridge	Medieval
D1913	NZ 1208 5774	Neolithic stone axe	Neolithic
D1914	NZ 1011 5521	Ebchester Medieval village	Medieval