

KIRTON QUARRY

Archaeological Watching Brief

NETWORK ARCHAEOLOGY LTD

for

HANSON HEIDELBERG CEMENT GROUP



Report no. 613

December 2014

KIRTON QUARRY

NGR: 469750 368900

Archaeological watching brief

New Best Red Quarry extension

May 2014

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<p>Network Archaeology Northern Office 15 Beaumont Fee Lincoln LN1 1UH Tel: 01522 532621 Email: enquiries@netarch.co.uk</p>	<p>Network Archaeology Southern Office 22 High Street Buckingham MK18 1NU Tel: 01280 816174 Email: enquiries@netarch.co.uk</p>
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NON-TECHNICAL SUMMARY

Monitoring of topsoil stripping on a westward extension to the New Best Red Quarry at Kirton Brickworks, Nottinghamshire, was undertaken by Network Archaeology Ltd in May 2014.

This watching brief forms the latest of a series of archaeological works undertaken since 2004. These investigations have found limited preserved archaeological remains associated with the land at Kirton Quarry.

No cut features were noted, apart from land drains and recent plough scores. The watching brief confirmed the observation from the previous work in 2013 that the ridge and furrow visible in the area to the north of Golden Hill Lane did not extend south of the lane. This provides evidence that the lane is on the line of a boundary that was in existence at the time that ridge and furrow agriculture was still in use.

Unstratified finds included pieces of possibly worked flint and shale, a small assemblage of pottery. The pottery was mostly post-medieval, but included single sherds dated to the thirteenth to fourteenth and fifteenth to sixteenth centuries.

1. INTRODUCTION

This report presents the results of an archaeological watching brief undertaken by Network Archaeology Ltd for Hanson Heidelberg Cement Group. The extraction quarry is within the parish of Kirton, north Nottinghamshire, located 1km east of the centre of the village, and approximately 15km to the north-east of Mansfield (NGR: 470000 368900).

1.1 Work undertaken

Further extension to the western side of the New Best Red Quarry entailed the removal of topsoil from two adjacent areas: firstly, as small triangular grassed area, bounded by the temporary haul road to the east, a drainage ditch to the west, and the active quarry to the north. This was followed by stripping of the eastern part of the field to the west of the drainage ditch, between Golden Hill Lane and the road (Fig. 1). Most of this area was ploughed and harrowed, but its north-eastern corner was unploughed stubble. The division between the stubble and ploughed areas may correspond with a boundary shown on the 1887 OS map (Burton 2004, fig 3, no. 60)



Plate 1: Topsoil stripping of the smaller area east of the drainage ditch, looking south

The topsoil removal was carried out over a period of six working days, from Wednesday 7th May to Wednesday 14th May 2014. It was carried out by a tracked 360° excavator fitted with a smooth-faced ditching bucket. Removal of topsoil was monitored throughout by an experienced archaeologist. Dumper lorries removing the spoil were kept off the stripped surface until it had been carefully examined for any archaeological features and the monitoring archaeologist was satisfied that all significant archaeological evidence had been retrieved and recorded.

All unstratified artefacts, with the exception of undiagnostic brick or tile, and finds that were clearly modern, were collected and their locations recorded using a Garmin eTrex handheld GPS unit.

1.2 Legislation, guidance and reporting

The work was carried out as part-fulfilment of Condition 10 of the planning consent granted by Nottinghamshire County Council for extensions to the existing brickearth quarry, and which requires

the implementation of an agreed programme of archaeological investigation, treatment and recording. The procedures to be followed were detailed in a Written Scheme of Investigation produced by Network Archaeology Ltd prior to the start of work (Moore 2014).



Plate 2: Topsoil stripping of the main area, to the west of the drainage ditch, looking north

This report has been produced for Hanson Heidelberg Cement Group. Copies will also be submitted for approval to Ursilla Spence, the Senior Archaeological Officer for Nottinghamshire County Council, and subsequently deposited with the Nottinghamshire Historic Environment Record, for public access.

1.3 Geology, topography, soils and land use

The bedrocks underlying the Best Red Quarry are described on the BGS website as Triassic siltstones, mudstones and sandstones of the Tarporey Siltstone Formation (BGS geologyofbritain). The sandstones of this group form the exposure at Rice Hill, where the A6975 Tuxford road descends into Kirton village. To the west of Main Street, the land is underlain by the slightly older rocks of the Retford Member of the Triassic sandstone. To the east, the higher ground that forms the southern part of the quarry, lies over mudstones of the Mercia Mudstone Group. Either side of the small River Maun, to the east of Kirton village, there are alluvial deposits, but no superficial deposits are recorded in the area of the quarry.

The immediate landscape is one of undulating hills. The Best Red Quarry lies on a slight northeast facing slope, with an original land surface at its current western extent at a height of 53m and 55m OD. Soils are reddish loam, grouped in the Hodnet Association (572c) in the Soil Survey of England and Wales classification (SSEW 1983), described as reddish fine and coarse loamy soils with slight seasonal waterlogging, and used for cereals, some sugar beet and potatoes, and some grassland.

The field to the south of Golden Hill Lane was under a maize crop at the time of the monitoring, while the area to the north was set aside, with regenerating wheat among the weedy vegetation indicating its recent arable use.

1.4 Summary of previous archaeological investigations

John Samuels Archaeological Consultants conducted an archaeological desk-based assessment, and field reconnaissance and fieldwalking surveys at Kirton Quarry (Young 1999). The study area lay to the south of the New Best Red Quarry and was investigated in order to quantify and assess the known and potential archaeological resource. One sherd of Roman pottery was recovered from within the development area. No further work in this area was recommended.

Network Archaeology Ltd carried out a desk-based assessment to determine the potential of the northern extension to the New Best Red Quarry (Burton 2004). A number of post-medieval and modern features were identified nearby. This report concluded that the study area had a fairly low archaeological potential with the known sites nearby of no more than local importance. However, because in recent years there have been sites on similar geologies elsewhere in the county that have confounded expectations by producing significant archaeological results, it was considered that a watching brief on stripping of topsoil was a proportionate response to the perceived archaeological risk.

Since 2004, Network Archaeology Ltd has monitored several extensions to the quarry. Topsoil stripping in 2004 revealed the remains of a modern field boundary oriented north-west to south-east in the area of the Best Red Quarry (Sleap 2004). This boundary had been removed in the very recent past, and parts of its hedge were still extant. An eastern extension to this area was monitored in 2005 and revealed the remains of another modern hedged field boundary, also on a north-east to south-west orientation (Sleap 2006).

A haul road for the northern extension to the quarry was stripped of topsoil in 2006 (Sleap 2006), and stripping of the eastern section of the northern extension was carried out the following year, when an infilled pond and a possible palaeochannel were recorded (Casswell 2008).

In 2010, two shallow, modern ditches were found during topsoil stripping of two hectares of the New Best Red Quarry immediately to the south-east of the northern extension (Casswell 2010). The following year a watching brief was conducted on land extending the quarry further to the northwest, but no archaeological deposits were recorded (Casswell 2011). Monitoring in 2012 (Casswell 2013) produced evidence of ridge and furrow cultivation and more recent ploughing, as well as retrieving a small assemblage of post-medieval pottery. An extension to the Cream Quarry area, on the high ground to the south, revealed fragments of a relict field boundary, one sherd of late Iron Age or early Roman pottery, and a horse burial.

The Best Red Quarry was further extended in 2013. Infilled ditches from the pre-existing pattern of field boundaries and traces of medieval or post-medieval furrows were noted, along with unstratified pieces of worked flint and a small assemblage of pottery: mostly post-medieval, but including single sherds dated to the thirteenth to fourteenth and fifteenth to sixteenth centuries (Moore 2013).

2. PROJECT AIMS AND METHODS

2.1 Objectives

The stated objectives of the archaeological works were to:

- allow the preservation by record and the interpretation of archaeological deposits, the presence and nature of which could not be established in advance of development;
- compare the archaeological remains with existing data from the immediate area;
- produce recommendations for future work as part of the region's ongoing research agenda;

- produce a project archive for deposition at Nottingham museum;
- provide information for accession to the county Historic Environment Record (HER)

2.2 Principles, standards and conduct

All works conformed to the Institute for Archaeologists (IfA) Code of conduct (1985, revised April 2010); Code of approved practice for the regulation of contractual arrangements in field archaeology (1990, revised October 2008); Standard and guidance for an archaeological watching brief (1994, revised October 2008); and Standard and guidance for archaeological excavation (1995, Revised October 2008). The work was managed in accordance with the methods and practice described in the Management of Archaeological Projects, second edition (English Heritage, 1991) and subsequently updated in Management of Research Projects in the Historic Environment (English Heritage, 2006).

The work was conducted in accordance with the Health and Safety at Work Act 1974, the Management of Health and Safety at Work Regulations 1999, and other relevant health and safety legislation/guidance.

2.3 Fieldwork procedures

A qualified and experienced field archaeologist was present during topsoil removal to carefully monitor machine removal of deposits down to the first archaeological horizon. The attending archaeologist visually searched the exposed subsoil surface for any significant archaeological remains. Had archaeological remains been located that could not be adequately investigated and recorded by the attending archaeologist, provision had been made to report them and to have the area around them barricaded off to allow for appropriate mitigation strategies to be agreed and implemented.

Excavation and recording methods following standard practice, were detailed in the Written Scheme of Investigation (Moore 2014).

2.4 Field records

The project code for the 2014 Kirton Quarry watching brief, KIQ96, appears on all records to be included in the site archive, including documentary record sheets, drawings and retained artefacts. Network Archaeology Ltd uses pro forma record sheets for on-site recording. These are consistent with IfA guidance. All records will be included in the site archive.

Colour slide and black and white film cameras were available for use as needed. Digital photographs were taken, including working shots.

2.5 Finds

The finds were quantified and sent to appropriate specialists for assessment. The medieval and post-medieval pottery was assessed by Jane Young and the flint by David Bonner.

2.6 Limitations

Visibility of archaeological remains is dependent on many factors including machine type, depth of stripping, weather and geology. In this instance, the character of the area monitored and the machining methods used revealed a clean surface to the clay deposits beneath the topsoil, and it is considered that there was a high probability that archaeological remains, if present, would have been visible.

2.7 Archive and archive deposition

The archive has been consolidated in accordance with the standards set out in Appendix 3 of the Management of Archaeological Projects, second edition (English Heritage, 1991, Stage 2). It is currently housed at the Lincolnshire office of Network Archaeology Ltd. Nottinghamshire Historic Environment Record will receive the document archive. A digital copy of this report will be uploaded to the OASIS (Online Access to the Index of archaeological investigations) online library of unpublished fieldwork reports (Appendix 3).

3. RESULTS

In the smaller area, between the haul road and the drainage ditch, there was a very clear interface between the topsoil and subsoil, and surface visibility was very good.



Plate 3: The area to the east of the ditch, after topsoil stripping, showing clean subsoil surface

In the main area, to the west of the drainage ditch, the underlying clay had a greater tendency to stick to topsoil, so that the stripped subsoil surface had a more ragged patchy appearance. Because of the need to avoid too much contamination of topsoil by clay, it was not possible to machine down to a clear horizon. Surface visibility in this area was therefore partially compromised.

The very changeable weather during the period that the work was carried out, also resulted in variations in ground conditions, and visibility was particularly poor following the heavy storms on 12th May.



Plate 4: The stripped surface of the main area, looking west

Unstratified finds included a piece of struck flint: a possible pebble core; and a flake of dark grey shale, which may have been utilised.

Fifteen pieces of pottery were also found, either from the topsoil or the surface of the subsoil following topsoil removal: these include single sherds of thirteenth- to early or mid-fourteenth-century Nottingham Green Glazed ware, and fifteenth- to sixteenth-century Cistercian-type ware, but the bulk of this small assemblage dates from the seventeenth century or later.

4. DISCUSSION

The struck flints add to the sparse, though growing, evidence for low level activity in the area of the site during the long span of time from the last glaciation to the Bronze Age or early Iron Age. The source of the flint was probably the river gravels, associated with the valleys of the Maun, which flows along the back of Kirton village, or the other rivers of wider Trent catchment, though flint also occurs as stones within glacial till deposits.

The pottery finds were very similar to the assemblage from the 2013 season, with once again single sherds dating to the thirteenth or fourteenth century, and the mid fifteenth to sixteenth century, along with a small collection of post-medieval wares. The earlier sherds were both probably of fairly local manufacture. The cumulative results from successive seasons of work add to a growing body of evidence for the range of ceramics available to the inhabitants of the village of Kirton as it developed through the medieval and post-medieval periods.

The results corroborated the observations from the earlier watching briefs (Moore 2013) that evidence for ridge and furrow agriculture to the south of Golden Hill Lane is lacking. This would imply that there were different agricultural regimes to the south and north of the lane in medieval or earlier post-medieval times, when ridge and furrow agriculture was last practised. It may well have been the case that Golden Hill Lane, or a boundary that preceded it, marked the limit of an area of arable land, adjacent to Egmonton Road, with the rising land to the south being used for pasture or common grazing.

5. CONCLUSION

The results of this watching brief once again add to the accumulation of evidence for human activity from the prehistoric period onward. In these earlier periods, the site would have been forested and would have seen little activity other than the occasional passage of hunting groups. Once cleared, the land would probably have been used for pasture. Arable agriculture was practised in the northern part of the area in the medieval period, but there is less evidence that this was the case for the area to the north of Golden Hill Lane. But overall, there is little evidence from any period of the intensity of use that might be expected in close proximity to a place of settlement.

6. ACKNOWLEDGEMENTS

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Hanson Heidelberg Cement Group

Brian Reid

Kirton Quarry Manager

Nottinghamshire County Council

Ursilla Spence

Senior Archaeological Officer

Specialist Contributors

Jane Young

Pottery

David Bonner

Flint

For Network Archaeology, the work was managed by Christopher Taylor, and carried out by Richard Moore. Finds were processed by Caroline Kemp.

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- Previously quarried
- Extension to Quarry, May 2014
- Temporary haul road

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Kirton Quarry

Figure 1
Location of current and
previous areas of study

Scale: 1:10 000

APPENDIX 1: FLINT AND WORKED STONE

David Bonner

Introduction

A piece of flint, weighing 91g and a stone flake, weighing 16g, were submitted for assessment. Both pieces were retrieved from the stripped subsoil surface, and were located by hand-held GPS. Each piece is identified by a 'find number', which relates to a GPS reading.

Assessment of assemblage

Condition

The flint (Find 6120053) is part of an angular nodule of roughly triangular cross-section. It has two corticated surfaces, one of which has had a flake removed, probably as a result of recent damage. The third surface has several flake scars and is slightly patinated. Edge damage suggests that there has been some movement since its initial deposition.

The second piece (Find 6120055) is a flake of dark grey to black mineral, probably a shale. It shows an apparent conchoidal fracture, but has subsequently been split longitudinally. The surface of the split has been damaged, probably recently, revealing a patch of greyish buff rock with small granular inclusions beneath the black surface.

Source

The flint was probably sourced locally, from River Terrace Deposits, present a short distance away to the north and east. Although the precise nature of the other fragment has not been positively determined, it is likely to have derived from the Coal Measures, which outcrop in the Mansfield area, to the west of the site.

Types

The flint is a so-called 'pebble core'. The status of these artefacts is not always clear, as it can be difficult to distinguish the removal of hard hammer flakes from a plough strike. However, on this piece, the flake scars coincide and one or two of the smaller flakes appear to truncate earlier ones, which may be an indicator of deliberate flaking. There is, though, no indication of a platform from which the 'flakes' have been removed, which makes them dubious. In summary, this is an example of possible hard-hammer flaking from the corticated surface of a pebble fragment. This flint could derive from the till

The stone resembles a struck flake, and has small scars at its broader end which may have resulted from deliberate retouch. The fractures are rough and angular, however, and accidental damage or frost shatter could equally account for this modification.

Dating

Technological traits that would suggest either earlier or later prehistoric flint working are not present and so dating on this basis cannot be attempted.

Discussion and Recommendations

The worked flint assemblage from Kirton Quarry is small in size and cannot be reliably dated. The value of the material lies in its representation of small scale prehistoric activity at the site. Further work is not required.

APPENDIX 2: POTTERY

Pottery archive

Jane Young

find	cname	full name	sub fabric	form type	sherds	vessels	weight	decoration	part	action	description	date
6120050	STMO	Staffordshire/Bristol mottled-glazed		cup	1	1	16		base		thick glazed	18th
6120051	NOTS	Nottingham stoneware		mug?	1	1	3	vertical machine incised zig-zag	BS			18th
6120052	BERTH	Brown glazed earthenware	fine orange-red sandy	jar	1	1	25		BS		int. dark brown glaze	late 17th to 18th
6120054	BERTH	Brown glazed earthenware	med red sandy	large jar	1	1	11		BS		ext. glaze; very dark ext glaze	late 17th to 18th
6120056	BERTH	Brown glazed earthenware	coarse brown	large jar	1	1	20		BS		dark brown int. glaze; Staffs/Derbs	mid 17th to 18th
6120057	BERTH	Brown glazed earthenware	coarse orange	large jar	1	1	19		BS		very dark brown int. glaze; Staffs/Derbs	late 17th to 18th
6120058	BERTH	Brown glazed earthenware	med orange-red sandy	jar/bowl	1	1	9		BS		very dark brown int. & ext. glaze	late 17th to 18th
6120059	NCBW	19th-century Buff ware		jar	1	1	3	white & blue banded with mocha	BS	discard		late 18th to 19th
6120060	ENGs	Unspecified English Stoneware	grey	bottle	1	1	12		BS	discard		late 18th to mid 20th

find	cname	full name	sub fabric	form type	sherds	vessels	weight	decoration	part	action	description	date
6120061	BERTH	Brown glazed earthenware	med orange-brown sandy	bowl	1	1	7		rim		everted rim; int & ext very dark brown glaze	late 17th to 18th
6120062	ENGs	Unspecified English Stoneware	buff	bottle	1	1	5		BS	discard		late 18th to mid 20th
6120063	MY	Midlands Yellow ware		jar?	1	1	9		BS			mid 16th to 17th
6120065	NOTGL	Light Bodied Nottingham Green Glazed ware		jug	1	1	7		BS		abraded; Cu glaze	13th to early/mid 14th
6120066	BERTH	Brown glazed earthenware	coarse orange	large jar	1	1	22		BS		very dark brown int. glaze; Staffs/Derbs	late 17th to 18th
6120067	CIST	Cistercian-type ware		cup	1	1	11		UHJ			late 15th to 16th

APPENDIX 3: OASIS SUBMISSION