



**39 HIGH STREET**

**WEST COWICK**

**EAST YORKSHIRE**

**ARCHAEOLOGICAL  
WATCHING BRIEF**

**REPORT  
MAY 2008**

**SURVEY AND EXCAVATION SECTION**



**ARCHAEOLOGICAL WATCHING BRIEF**  
39 HIGH STREET WEST COWICK  
EAST YORKSHIRE

SITE CODE: WCD08  
REPORT CODE: FAS2008 396 WCD346  
NGR: SE 64878 21594

**REPORT**  
May 2008



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## Summary

An archaeological watching brief was undertaken at 39 High Street, West Cowick, by Field Archaeology Specialists (FAS) Ltd on behalf of Kerry Kenning. The watching brief involved the monitoring of groundworks for the construction of a single detached garage; fieldwork was undertaken on 10th April 2008.

A small assemblage of medieval and post-medieval ceramic was recovered from a single homogenous layer overlying subsoil; a number of wasters and a single piece of kiln furniture were recovered. Assessment and scientific analysis indicated that ceramic production is likely to have taken place at or near the site in the 16th century.

## Acknowledgements

Field Archaeology Specialists would like to thank Ruth Atkinson, Sites and Monuments Record, for providing information during this project, and to the contractors for their assistance and cooperation.

## 1.0 INTRODUCTION

This document reports on an archaeological watching brief, carried out during the groundworks for a single detached garage at 39 High Street, West Cowick. The work was carried out by Field Archaeology Specialists (FAS) Ltd, on behalf of Ms Kerry Kenning, on 10th April 2008.

### 1.1 LOCATION AND LAND USE

The site of the newly-constructed garage lay to the north of a 19th-century house on the north side of High Street, bounded on all sides by residential properties, and accessed from a driveway to the east (Figure 1; NGR SE 6487 2159).

### 1.2 AIMS AND OBJECTIVES

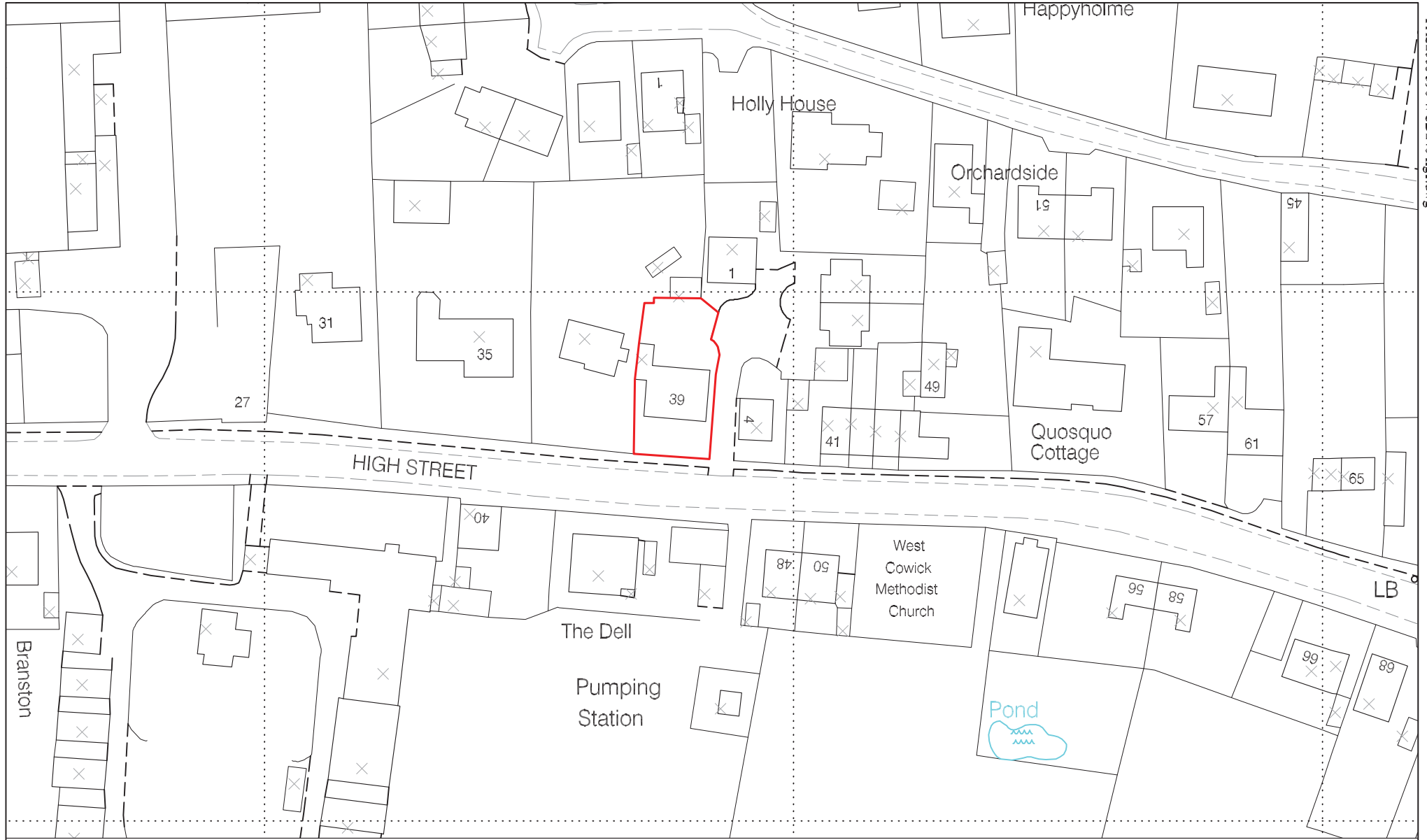
The aim of the watching brief was to monitor all groundworks, in order to characterise and preserve by record any archaeological remains impacted by development (Planning Ref: DC/07/05943/PLFWESTWW/NS). In particular, evidence for medieval pottery production had been encountered at a number of sites in the immediate vicinity, and remains of this date were anticipated.

### 1.3 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

The site at 39 High Street lies in the heart of the medieval village of West Cowick, situated close to the larger settlement of Snaith, and to the west of East Cowick. The village retains elements of its medieval plan, with linear plots fronting onto High Street, with a Back Lane to the north. Much of this area was in royal hands throughout the medieval period. To the southeast lies the Scheduled Ancient Monument of King's Manor moated site, reputed to have been constructed as a royal hunting lodge when much of the surrounding land was held by the Crown. By the early 14th century, Cowick manor had passed to the Duchy of Lancaster, returning to royal hands in 1322. The moat is thought to have been dug around an existing building complex in the 1320s. The manor was granted to the house of Lancaster in 1370, reverting to the Crown after the Battle of Bosworth. In the 17th century, the manor house had fallen into a ruinous state, and was replaced by Cowick Hall, which lies between the villages of East and West Cowick, and is currently in use as offices.

#### 1.3.1 Medieval pottery production

West Cowick has long been recognised as one of the main medieval pottery production sites of the region (Jennings 1992, 27-8). Documentary references from the 1320s onwards record the presence of potters, and archaeological evidence from the village has provide significant evidence for ceramic production. In 1963, excavation at 31 High Street, a short distance to the west of the site (see Figure 1) revealed several superimposed kilns. The lowest example had been disturbed, but three upper kilns were found to be six-flued Type 3 kilns, each rebuilt many times (McCarthy and Brooks 1988, 247). These were dated from the 13th to the 15th century; archaeomagnetic dating of one example returned a date of *c.*1350.



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Location map

Scale 1:1000



Figure 1



Further evidence for kilns was encountered more recently to the east of the site, at the Ship Inn, by York Archaeological Trust (*Medieval Archaeology* 2000, 313). Two kilns were excavated, and archaeomagnetically dated to 15th century. Ceramic production has also been indicated by finds of wasters through the village, including significant assemblages from the backfill of the King's Moat, and more recently from topsoil stripping in the area to the immediate east of the site of interest (information from Ruth Atkinson, Humber SMR).

The production centre at West Cowick produced a wide range of forms, including jugs, drinking vessels, cooking pots, cisterns, urinals; a distinctive form of later medieval plant holder was also produced at West Cowick (Moorhouse 1984). During the late 13th to 14th centuries, the pottery was often highly decorated with rouletting, fleur-de-lys stamps, anthropomorphic decoration and applied scroll- and pellet-work (McCarthy and Brooks 1988, 247).

### 1.3.2 Post-medieval to modern development

Cartographic evidence provided by the Ordnance Survey allows the development of the village to be traced from the 19th century onwards, and would seem to indicate that the basic layout of the settlement has changed little over the centuries. High Street remains the main east-west thoroughfare, with some more modern developments of housing to the north and south.

The first edition map of 1853 (OS 1853) shows the current property as a distinct plot of land, with a range of structures situated adjacent to the frontage, aligned with the terraced houses to the east, with detached outbuildings to the north. By 1891, the current house had been constructed, either incorporating the existing outhouses, or with replacements situated to the north (OS 1891). Subsequently, although significant levels of construction have seen the erection of new dwellings to the immediate east, the property itself had undergone little change.

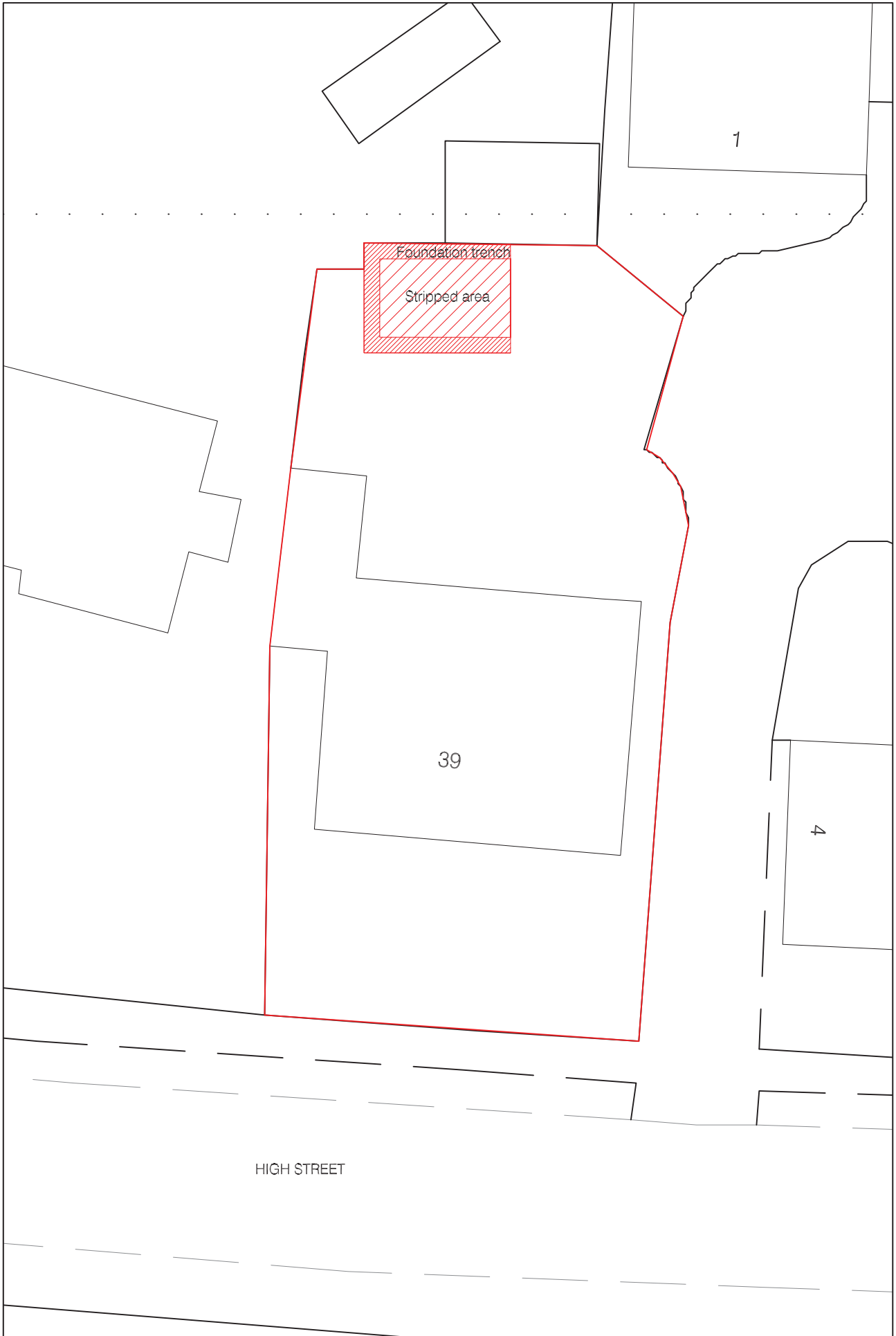
## 2.0 FIELDWORK PROCEDURE

The watching brief was undertaken in accordance with a specification issued by the Humber Sites and Monuments Record (SMR Casework No. PA/CONS/14450; Appendix A). The groundworks involved the stripping of topsoil, and excavation of a foundation trench for the construction of a garage (Figure 2). The trench measured 0.6m wide, 0.70m deep and defined a structure measuring a maximum 5.0m x 3.0m in plan (Plate 1). Excavation was carried out using a tracked mini-digger fitted with a 0.60m wide bucket .



**Plate 1** Foundation trench, looking west

Written and photographic records were made of all archaeological deposits. The excavation and recording system employed during fieldwork is based on a set of principles known as *Field Research Procedure* (Carver



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Location of groundworks

Scale 1:200



Figure 2



1999), the standard operating system employed by FAS. The procedure structures excavation data in an hierarchical system. Each stratigraphic unit defined during excavation, which is considered to have been formed by a single deposition, is referred to as a ‘context’, and where appropriate, contexts are grouped during excavation as ‘features’; a single index was created for contexts, starting at C1000, and for features, starting at F1. Each unit has a structured *pro forma* recording sheet to be completed using a series of keywords. Indices of photographic recording, samples and drawings have been compiled and cross-referenced with the context and feature indices; a summary of records created is provided in Appendix B. All coordinates and alignments in this report refer to the Ordnance Survey National Grid, and all heights are expressed in metres above Ordnance Survey datum (AOD).

### 3.0 FIELDWORK RESULTS

No features of archaeological significance were encountered during the watching brief, and the groundworks encountered a consistent sequence of layers across the small area (Table 1).

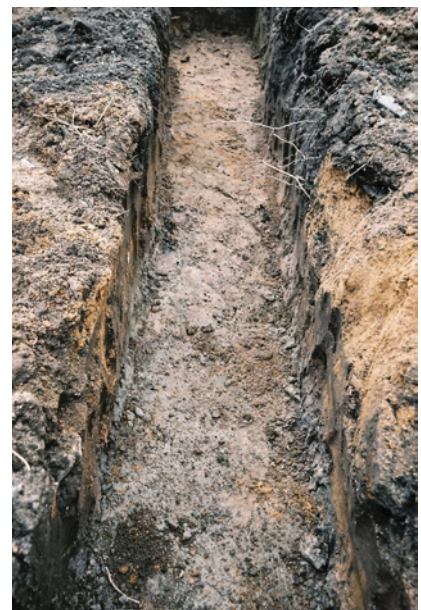
Table 1 Summary of contexts

C No.	F No.	Identity	Description	Munsell
1000		topsoil	modern topsoils and overburden	7.5YR3/1
1001		layer	layer of mortar, stone and CBM flecks	mixed
1002	1	backfill	backfill of modern service trench	mixed
1003		layer	clean layer of brown sandy clay, with medieval ceramic	7.5YR 2.5/2
1004		natural	clean, grey sandy clay	10YR6/2

The earliest deposit encountered was natural subsoil (C1004), which consisted of a clean, light brownish-grey sandy clay (Plate 2). This was contacted at a depth of 0.70m below ground level (*c.*5.3m AOD), at which point excavation ceased.

C1004 was overlain by an homogenous pack of stiff brown sandy clay (C1003), measuring *c.*0.45m in depth, and extending across the whole of the observed area (Plate 3). This deposit was very clean, and produced a significant assemblage of medieval ceramic, including both domestic wares and wasters (Appendix C and D). Assessment and chemical analysis of these fragments indicated that ceramic production, specifically of brown slipped jugs, occurred at the site in the 16th century if not before.

In the southern part of the excavated foundations, C1003 was overlain directly by C1001, a thin lens of limestone and CBM chips, in a mortar-



**Plate 2** Subsoil encountered during groundworks, looking east

rich matrix. This layer measured 0.05m in depth.

A service trench, truncating C1003, was identified in the northern part of the foundation trench, orientated east-west; this contained a pipe which formerly led to an oil tank.

C1000 was allocated to the modern topsoil which was stripped from the area prior to the excavation of the foundation trenches. This layer measured a maximum 0.30m in depth, and was highly mixed, containing a large amount of rubble, CBM and modern glass, which derived from recent renovations to the property, demolition of an outhouse and construction at the adjacent site.



**Plate 3** South-facing section, against northern wall of property

## 4.0 DISCUSSION

The results of the watching brief represent a simple sequence, dating to two main periods, relating to medieval and modern activity.

### 4.1 PERIOD 1 - MEDIEVAL TO POST-MEDIEVAL

Layer C1003 contained an assemblage of ceramic ranging in date from the medieval to the post-medieval period; no sherds from this layer necessarily post-dated the 16th century. None of the sherds of 13th to 15th-century pottery appeared to represent wasters, and this material is likely to be residual, deriving from the wider medieval settlement of West Cowick.

The presence of wasters, and a possible fragment of kiln superstructure or furniture, indicate that pottery, in particular brown slipped jugs, was being produced at or near the site during the 16th century. This information adds to an increasing body of evidence for ceramic production at West Cowick. Notably, evidence from this site indicates ceramic production of a later date than at 31 High Street (13th to 15th century) or the Ship Inn (15th century). This concurs with evidence from an evaluation at an adjacent site on Grange Road (Stanley 2007), where ceramic production of 16th- to 17th-century date was attested by wasters and kiln furniture. It would appear that pottery production shifted to various sites within the village during the 13th to 17th century, and that the increasing evidence will allow these changes to be charted.

### 4.2 PERIOD 2 - MODERN

The layer of limestone chips in the southern part of the foundation trench is likely to represent a phase of construction in the immediate area. Prior to the construction of adjacent houses in 2007, this property was part of a larger yard; the stone chips may derive from this use. A service trench to the former oil tank would have been in use at this time.

Subsequently, a layer of topsoil had been deposited, to be disturbed during the recent phase of construction and renovation in 2007 and 2008.

## 5.0 ASSESSMENT AND RECOMMENDATIONS

Although a simple sequence, the artefactual evidence from this small-scale watching brief adds to a growing body of information on medieval pottery production in West Cowick, and as such is significant to local and regional studies. The assemblage of pottery was subject to assessment and analysis in a single phase of post-excavation work, and so no further work is recommended; the ceramic assemblage is to be retained.

The archaeological significance of the results merits a brief note in the relevant local and national journals, being *East Riding Archaeologist*, *CBA Forum* and *Medieval Archaeology*. No further publication is recommended.

## 6.0 ARCHIVE

An electronic and paper copy of this report will be deposited with the Humber Sites and Monuments Record, and made available online *via* the OASIS website. The ceramic assemblage and paper archive will be deposited with the East Riding of Yorkshire Museums Service in Beverley.

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## ***References***

### *Cartographic sources*

Ordnance Survey. 1853. 1:10560

Ordnance Survey. 1892. 1:10560

Ordnance Survey. 1907. 1:10560

### *Secondary sources*

Carver, M.O.H. 1999. 'Field Archaeology', in G. Barker (ed) *Companion Encyclopaedia of Archaeology* (London): 128-181

McCarthy, M.R. and Brooks, C.M. 1988. *Medieval pottery in Britain, AD900 to 1600* (Leicester)

Moorhouse, S. 1984. 'Late medieval pottery plant holders from eastern Yorkshire' *Medieval Archaeology*, 28  
194-202

Stanley, J. 2007. '55 Grange Road, West Cowick: report on an archaeological evaluation: OSA07EV08'  
(unpublished archaeological report, Humber SMR)



## APPENDIX A SPECIFICATION FOR A PROGRAMME OF CONTINUOUS ARCHAEOLOGICAL OBSERVATION, INVESTIGATION AND RECORDING

Prepared by the Humber Sites and Monuments Record Office, for Ms Kenning.

Site Name: The Drive, 39 High Street, West Cowick, East Riding of Yorkshire

Development: Erection of detached garage

National Grid Reference: SE 64878 21594

Planning Reference Number: DC/07/05943/PLFWESTWW/NS

SMIR Casework Number: PA/CONS/14450

Date of Issue: 21-Feb-08

This brief is valid for one year from the date of issue. After this period the Humber Sites and Monuments Record Office should be re-consulted. This document should be read in conjunction with the **Notes for archaeological contractors proposing to do work in the area covered by the Humber SMR** (dated January 1999). These notes are available from the Humber SMR.

### 1.0 SUMMARY

- 1.1 This brief is for a programme of continuous archaeological observation, investigation and recording to be carried out during groundworks associated with the construction of a detached garage at the rear of 39 High Street, West Cowick.

The brief should be used by archaeological contractors as a basis for submitting a costed tender for the work required.

### 2.0 SITE LOCATION

- 2.1 The development plot is located on the north side of High Street in the village of West Cowick. The site is bounded to the south by High Street, to the east and west by residential land, and to the north by open ground.

### 3.0 PLANNING BACKGROUND

- 3.1 An application for Full planning permission for this development was received by the East Riding Council on 28th September 2007 (Application no. DC/07/05943/PLF).

Planning permission was subsequently granted on 1st February 2008 subject to an archaeological condition (no. 5) to secure a programme of archaeological work; the condition stated that:

“No development shall take place on the site until the applicant, or their agents or successors in title, has secured the implementation of a programme of archaeological work in accordance with a written scheme of investigation which has been submitted by the applicant and approved in writing by the local Planning Authority. Development shall be carried out in accordance with the approved details (PPG 16 paragraph 30)”.

- 4.1 The site of the proposed development lies within the historic core of the medieval village, on the north side of its High Street. West Cowick was a major pottery production centre during the medieval period, and a number of kilns and pottery dumps have been located throughout the village. Four kiln sites were identified in the early 1960s by

surface scatter of pot sherds, kiln debris and soil discoloration. In 1963, a kiln site to the east of the application area was excavated prior to the construction of number 31 High Street. The excavation revealed a superimposed series of four coal- or peat-fired pottery kilns which were in continuous use from the late 13th until the late 15th century.

The early stages of a monitored topsoil strip (in mid July 2006) on the adjacent site have revealed extensive spreads of medieval pottery wasters, burnt material, and pits, post-holes' and in situ medieval and early post-medieval deposits; these deposits are thought to extend not only over the rest of the site in question, but also into the adjoining plots (i.e. the current application plot). Currently we are still awaiting a report on the results of this adjacent evaluation; however the initial evidence is sufficient to indicate that further archaeological deposits will be present on the application site.

It is likely therefore, that any ground-works in this area will encounter archaeological deposits relating to the medieval pottery industry, and occupation on this site during the medieval and later periods.

## 5.0 METHODOLOGY

Should the contractor consider continued monitoring unnecessary at any stage in advance of the completion of all groundworks, they should consult with the SMR Office as a matter of priority.

- 5.1 The proposed scheme of works shall comprise the monitoring of any stripped topsoil, and the digging of foundations and service trenches: these should be undertaken under archaeological supervision. This is to enable the identification and recording of any archaeological material that might be uncovered. Time should be allowed for the archaeologist to record any features, both by scaled drawings and by black and white and colour photography
- 5.2 The developer's chosen archaeologist must be acceptable to the Local Planning Authority after consultation with the Sites and Monuments Record Office. Access to the site will be afforded to the developer's chosen archaeologist at all reasonable times.
- 5.3 Reasonable prior notice of the commencement of development is to be given to the archaeological contractor. A two-week period is suggested, where possible. The Sites and Monuments Record Office should be notified of the chosen contractor in advance of the watching brief
- 5.4 On completion of the work, an ordered archive should be prepared by the archaeologist and deposited with a registered museum. The proposed recipient museum must be contacted at the beginning of the project. A copy of the Archive Index and the name of the recipient museum should be sent to the Sites and Monuments Record. Contractors should make an allowance for a minimum of one box in calculating estimates for the museum's storage grant.
- 5.5 With the exception of human remains, and finds of treasure (as defined under the 1996 Treasure Act) which should be reported to the coroner, all finds are the property of the landowner. However, it is generally expected that the finds will be deposited with the archive. A finds recovery and conservation strategy should be agreed with the developer in advance of the project commencing. This should include contingency arrangements for artefacts of special significance. Any recording, marking and storage materials should be of archive quality, and recording systems must be compatible with the recipient museum. Copies of all recording forms and manuals should be submitted to the Archaeology Manager, prior to commencement of site works, if these have not been supplied



previously.

- 5.6 Within six weeks of the completion of the work, a report will be produced by the archaeologist, and submitted to the developer, the Local Planning Authority and the SMR Office.

The final report should include the following (as appropriate):

- A non-technical summary
- Site code/project number
- Planning reference number and SMR casework number
- Dates for fieldwork/visits
- Grid reference
- A location plan, with scale
- A plan of the developer's plan, with scale, showing the areas monitored (i.e. house block, garage service trenches etc.) and indicating the position of archaeological features in relation to the foundations etc.
- Section and plan drawings (where archaeological deposits are exposed), with ground level, Ordnance Datum and vertical and horizontal scales
- General site photographs (a minimum 35mm format), as well as photographs of any significant archaeological deposits or artefacts that are encountered
- A written description and analysis of the methods and results of the watching brief, in the context of the known archaeology of the area
- Specialist artefact and environmental reports, as necessary

- 5.7 The archaeological contractor should also supply a digital copy of the report in PDF format to the Humber Sites and Monuments Record Office.

- 5.8 Where a significant discovery is made, consideration should be given to the preparation of a short note for inclusion in a local journal.

- 5.9 All work shall be carried out in accordance with the developer's proposed timetable and shall not cause undue delay to the development unless otherwise agreed.

## 6.0 MONITORING

- 6.1 The work will be monitored under the auspices of the Sites and Monuments Record Office, who should be consulted before the commencement of site works.

## 7.0 HEALTH AND SAFETY

- 7.1 Health and safety will take priority over archaeological matters. All archaeologists undertaking fieldwork must comply with all Health and Safety Legislation. The archaeologist or archaeological organisation undertaking the work should ensure that they are adequately insured, to cover all eventualities, including risks to third parties. Any queries relating to this brief should be addressed to, The Sites and Monuments Record, Humber Archaeology Partnership, The Old School, Northumberland Avenue, Hull, HU2 OLN (Tel: 01482 217466, Fax: 01482 581897).

**APPENDIX B** INDEX TO FIELD FILE

CODE	DESCRIPTION	RECORD	FORMAT
<b>Indices</b>			
YO1	Index of notebooks	-	-
YO2	Index of contexts	1	A4
YO3	Index of features	1	A4
YO4	Index of structures	-	-
YO5	Index of drawings	-	-
YO6	.0 Index of photographs	1	A4
	.1 Index of film processing	1	A4
YO7	.0 Index of finds	1	A4
	.1 Index of finds by context	-	-
	.2 Index of finds by grid square	-	-
	.3 Sample Register	-	-
	.4 Artefact Register	-	-
	.5 Finds Storage Register	-	-
YO8	Index of geophysical data files	-	-
YO9	.0 Index of survey stations	-	-
	.1 Index of co-ordinate files	-	-
	.2 Index of topographic files	-	-
YO10	Index of interventions	1	A4
<b>Contexts</b>			
Y2	.0 Context Record	5	A4
	.1 Skeleton Record	-	-
	.2 Coffin Record	-	-
	.3 Masonry Record	-	-
	.4 Timber Record	-	-
<b>Features</b>			
Y3	.0 Feature Record	1	A4
	.1 Auger Record	-	-
<b>Structures</b>			
Y4	Structure Record	-	-
<b>Site drawing</b>			
Y5	.0 Legend	-	-
	.1 Plans	-	-
	.2 Maps	-	-
	.3 Sections	-	-
<b>Photographs</b>			
Y6	.0 Black and white negatives	-	-
	.1 Colour negatives	11	35mm
	.2 Colour slides	-	-
	.3 Colour enprints	11	6 x 4
	.4 Black and white prints	-	-
<b>Finds</b>			
Y7	.0 Finds Location Record	-	-
	.1 Artefact Record	-	-
<b>Survey</b>			
Y8	.0 Record of geophysical data files	-	-
	.1 Record of .RAW data file	-	-
	.2 Record of .FLD data file	-	-
	.3 Surface Reconnaissance Record	-	-

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## APPENDIX C CERAMIC ASSESSMENT AND ANALYSIS

Alan Vince and Kate Steane

### 1.0 INTRODUCTION

Archaeological investigations at West Cowick, East Yorkshire, undertaken by Field Archaeology Specialists Ltd, revealed a single deposit, 1003, containing a moderate-sized pottery assemblage.

Study of this assemblage by the authors established that the earlier finds are probably of later 13th to mid 14th-century date but that the majority of the finds consist of Humberware, including production waste. Analysis of a sample of this waste indicates that the site was producing vessels with an overfired brown slip, a type thought to have been current in the 16th century. No later Humberware was present in the collection and a small number of sherds of post-medieval pottery suggest that if there had been later activity it should be represented in the collection.

### 2.0 DESCRIPTION

#### 2.1 CERAMIC BUILDING MATERIAL

Two small fragments of brick were recovered. Neither show any sign of industrial use and no dimensions could be measured.

#### 2.2 FIRED CLAY

A single fragment of fired clay was found. This may have been part of a kiln superstructure or a piece of kiln furniture, such as a support. It has a noticeably finer fabric than the Humberware from the site and is probably an indication of the character of the parent clay to which fine sand was added to produce Humberware. Samples were taken for chemical analysis (Sample V5013).

#### 2.3 POTTERY

##### 2.3.1 Beverley Glazed ware

A sherd from a high-fired glazed jug with square-toothed roller-stamping on the body is probably Beverley Glazed ware (BEVO2B), of later 13th to mid 14th-century date. It is not abraded, but given the firing it would probably survive in a soil horizon without weathering for centuries.

##### 2.3.2 Humberware

Seventy-nine sherds of Humberware (HUM) were present. These include a small quantity of definite, overfired and warped waste sherds. Most are too altered to identify the form or any typological details. However, there was a general similarity

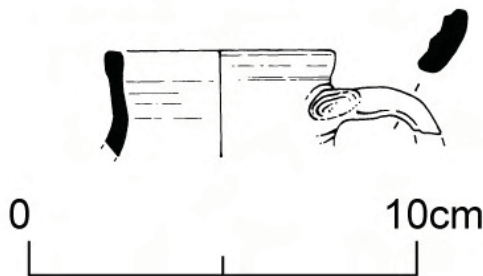
in appearance between the less high-fired areas of the waster sherds and some of the plain and brown-slipped jugs. Since the latter are a diagnostic type, datable to the 16th century (Watkins 1987), a small sample of sherds of this type (4 in total) were taken for chemical analysis and comparison with samples of wasters (5 in total). The results indicate that it is very likely that the slipped jugs were produced on site, and therefore that pottery production was taking place in the 16th century.

A single example of an unglazed drinking jug was recovered. This form was current in the later 14th century but there is no reason to believe that this was a waster or produced on the site.

Five examples of flat-based squat jars with everted rims were present. Such vessels were probably made in the 15th and 16th centuries and these examples might have been produced on site although they show no evidence for firing faults (but neither do they have any traces of sooting or internal deposits, common on this form).

Twenty-eight sherds of jugs with either no glaze or plain lead glaze were present. Eight fragments came from large oval sectioned handles, ranging from 30mm to 54mm in width. These were usually decorated with between one and five grooves running down the back and had thumb impressions on either side of the rim/handle join. Decoration on the body consisted of horizontal grooves, noted on just two sherds. Three base sherds were present, two of which had thumbing around the angle and the third had an internal glaze.

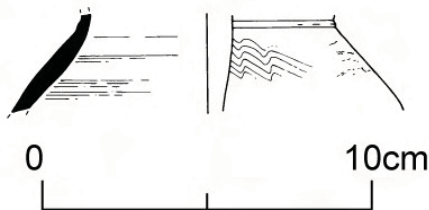
The jugs with an overfired brown slip had similar characteristics to the plain jugs, with three oval-sectioned handles (29, 35 and 41mm wide) and one body sherd with wavy combed decoration (Plates 1 to 4).



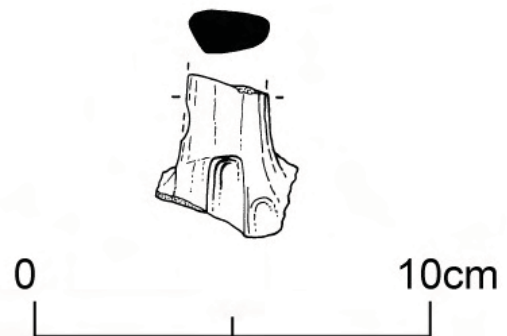
**Plate 1** WCD08 Brown-slipped Humberware jug with oval-sectioned handle



**Plate 2** WCD08 Brown-slipped Humberware jug



**Plate 3** WCD08 Brown-slipped Humberware jug with wavy combed decoration on shoulder



**Plate 4** WCD08 Brown-slipped Humberware jug. Oval-sectioned handle with thumb impressions at body join.

### 2.3.3 Brownware

Three sherds of Brownware (BERTH) were present. This is a post-medieval ware in which the glaze is coloured with added manganese or iron, giving it a mottled brown appearance. The sherds include one from a large jar, one from a jar and one from a jug. This ware is mainly of later 16th and 17th-century date.

### 2.3.4 Glazed Red Earthenware

Three sherds of glazed red earthenware (GRE) were present. All came from internally-glazed bowls. This ware has a long period of currency, from the later 16th to the 19th centuries.

## 3.0 DISCUSSION

The chemical analysis (Vince 2008) confirms that the fired clay, pottery waste and jugs with over-fired brown slip were probably all made from similar clays. In addition, an unknown number of the plain jug and jars in the collection might also have been made on site. However, none of these types can be closely dated and based on the brown-slipped vessels we can be certain that pottery production took place in the 16th century but not before.

The scatter of post-medieval coarseware on the site suggests that there was little activity on the site in the later 16th century and later.

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### Appendix 1

TS NO	Ref no	Actn	class	Cname	Sub-fabric	Description	Form	Part	No Sh	NoV	Wt	Condition	Use	Diam
			Pottery	BERTH			Large Jar	BS	1	1	71			0
			Pottery	BERTH			Jar	BS	1	1	9			0
			Pottery	BERTH		Handle Scar	Jug	BS	1	1	45			0
			Pottery	BEVO2B		Rect rst	Jug	BS	1	1	15			0
V5013	4981	ICPS	Fclay	FCLAY			Fclay	BS	1	1	211			0
			Pottery	GRE			Bowl	BS	1	1	30	Glaze Flaking		0
			Pottery	GRE			Bowl	R	1	1	135		Worn rim	400
			Pottery	GRE			Bowl	R	1	1	69			420
			Pottery	HUM		Narrow Body	DJ	BS	1	1	18			0
			Pottery	HUM			Jar	R	1	1	139			240

TS NO	Ref no	Actn	class	Cname	Sub-fabric	Description	Form	Part	No Sh	NoV	Wt	Condition	Use	Diam
			Pottery	HUM		Frag	Jar	R	1	1	15			0
			Pottery	HUM		Glazed Int	Jar	BS	2	2	109			0
			Pottery	HUM		Glazed Int	Jar	B	1	1	138			0
			Pottery	HUM			Jar	R	1	1	64			180
			Pottery	HUM		No Glaze; Strap Handle with Two Grooves, 30 Across	Jug	R	1	1	134			100
			Pottery	HUM		Strap Handle, 33 Across	Jug	H	1	1	73			0
			Pottery	HUM		Strap Handle, 5 Grooves, 38 Across	Jug	H	1	1	65			0
			Pottery	HUM		Strap Handle, 5 Grooves, 54 Across	Jug	H	1	1	167			0
			Pottery	HUM		Strap Handle, Handle Join	Jug	H/BS	1	1	149			0
			Pottery	HUM		Thumbing of Handle Join	Jug	BS	1	1	106			0
			Pottery	HUM			Jug	R	1	1	45			130
			Pottery	HUM		Strap Handle, 4 Grooves, 49 Across	Jug	H	1	1	67			0
			Pottery	HUM		One Thumb	Jug	B	1	1	61			0
			Pottery	HUM		Thumbed Base	Jug	B	1	1	49			0
			Pottery	HUM		Grooves; Lower Handle Join; Five Thumb Nail Indents	Jug	BS	1	1	69			0
			Pottery	HUM		Shoulder	Jug	BS	1	1	91			0
			Pottery	HUM		Handle Join	Jug	BS	1	1	55			0
			Pottery	HUM		Strap Handle with One Grooves; 43 Across	Jug	H	1	1	104			0
			Pottery	HUM		Strap Handle with Two Grooves; 34 Across	Jug	H	1	1	66			0
			Pottery	HUM			Jug	R	1	1	18			100
			Pottery	HUM		Handle Scar; Thumbed Rim	Jug	R	1	1	93			130
			Pottery	HUM		Shoulder with Grooves	Jug	BS	2	2	71			0
			Pottery	HUM		Glaze Int; Spotting Base Ext	Jug	BS	1	1	110			0
			Pottery	HUM		Handle Join; Firing Scar	Jug	BS	1	1	24			0
			Pottery	HUM		Glaze Int/ext	Jug	BS	1	1	160			0
			Pottery	HUM		Glazed Int	Jug	B	1	1	186			0
V5008	4976	ICPS	Pottery	HUM		Handle Scar	Jug	R/H	2	1	149	Waste; Bloating, Distortion		120
			Pottery	HUM	PURPLE		Jug	BS	1	1	52			0
			Pottery	HUM	PURPLE	Squashed Rod Handle 29 Across	Jug	H	1	1	56			0

TS NO	Ref no	Actn	class	Cname	Sub-fabric	Description	Form	Part	No Sh	NoV	Wt	Condition	Use	Diam
			Pottery	HUM	PURPLE	Frag	Jug	R	1	1	24			0
			Pottery	HUM	PURPLE		Jug	R	1	1	9			100
V5015	4983	ICPS; DR	Pottery	HUM	PURPLE		Jug	R	1	1	68			90
V5009	4977	ICPS	Pottery	HUM			Jug	R	1	1	82	Waste; Bloating, Distortion		100
V5014	982	ICPS; DR	Pottery	HUM	PURPLE	Strap Handle, Two Grooves, 35 Across	Jug	R/H	1	1	118			120
V5010	4978	ICPS	Pottery	HUM		Handle Join	Jug	BS	1	1	73	Waste; Distortion		0
V5011	4979	ICPS	Pottery	HUM			Jug	R	1	1	91	Waste; Bloating, Distortion		110
			Pottery	HUM		No Glaze	Jug/ Jar	BS	6	6	107			0
			Pottery	HUM		Dribble White Slip	Jug /Jar	BS	1	1	49			0
			Pottery	HUM		Full Glaze	Jug/jar	BS	2	2	28			0
			Pottery	HUM		Dribbles White Slip/glaze	Jug/jar	BS	2	2	48			0
V5017	4985	ICPS; DR	Pottery	HUM	PURPLE	Strap Handle, 41 Across	Jug	H	1	1	108			0
			Pottery	HUM		Dribbles White Slip and Spots Glaze	Jug/jar	BS	2	2	50			0
			Pottery	HUM			Jug/jar	B	1	1	66	Waste; Distortion		0
			Pottery	HUM			Jug/jar	BS	1	1	81	Waste; Distortion		0
			Pottery	HUM			Jug/jar	BS	1	1	26	Waste; Distortion		0
			Pottery	HUM			Jug/jar	B	1	1	53			0
			Pottery	HUM			Jug/jar	B	1	1	143			0
			Pottery	HUM			Jug/jar	BS	1	1	56			0
V5016	4984	ICPS; DR	Pottery	HUM	PURPLE	Combed Wavy Dec	Jug	BS	1	1	94			0
			Pottery	HUM		Dribble Glaze	Jug/jar	BS	1	1	71			0
			Pottery	HUM		Spot Glaze	Jug/jar	BS	1	1	19			0
			Pottery	HUM		Patchy Glaze	Jug/jar	BS	1	1	6			0
			Pottery	HUM			Jug/jar	BS	1	1	16	Decayed Glaze		0
			Pottery	HUM		No Glaze	Jug/jar	B	3	3	183			0
V5012	4980	ICPS	Pottery	HUM			Jug/jar	BS	1	1	44	Waste; Distortion		0
			Pottery	HUM		Glaze Spotting Base Ext	Jug/jar	B	4	4	514			0
			Pottery	HUM			Vessel	BS	2	2	132	Waste; Bloating, Distortion		0
			Pottery	HUM			Vessel	BS	3	3	39	Waste; Bloating, Distortion		0

TS NO	Ref no	Actn	class	Cname	Sub-fabric	Description	Form	Part	No Sh	NoV	Wt	Condition	Use	Diam
			Pottery	LHUM		Copper Glaze Over White Slip	Jug	BS	1	1	67			0
			Cbm	PMTIL			Brick	BS	2	2	95			0



**APPENDIX D CHEMICAL CHARACTERISATION OF MEDIEVAL POTTERY FROM WEST COWICK**

Alan Vince

**1.0 INTRODUCTION**

An archaeological watching brief carried out by Field Archaeology Specialists Ltd at a site in West Cowick (Site Code: WCD'08) revealed a spread of medieval pottery some of which was clearly waste. Unfortunately, those vessels which were undoubtedly wasters were too bloated and deformed to identify their form, and thus their date. Nevertheless, one of the distinctive types present in the collection, but never as clear waste, consisted of rounded jugs with an external brown slip, deliberately high fired to produce a purple, blistered surface. Such vessels are distinctive and have been dated to the 16<sup>th</sup> century (Watkins 1987; Didsbury and Watkins 1992). To establish whether these vessels could have been produced at the site, samples were taken for chemical analysis. In addition, samples of definite waste and of a piece of fired clay, probably used in a kiln superstructure or a piece of kiln furniture, were taken (Table 1).

Table 1

TSNO	Context	REFNO	cname	Form	Action	Description	subfabric
V5008	1003	4976	HUM	JUG	ICPS	HANDLE SCAR	WASTE
V5009	1003	4977	HUM	JUG	ICPS		WASTE
V5010	1003	4978	HUM	JUG	ICPS	HANDLE JOIN	WASTE
V5011	1003	4979	HUM	JUG	ICPS		WASTE
V5012	1003	4980	HUM	JUG/JAR	ICPS		WASTE
V5014	1003	4982	HUM	JUG	ICPS;DR	STRAP HANDLE, TWO GROOVES, 35 ACROSS	PURPLE
V5015	1003	4983	HUM	JUG	ICPS;DR		PURPLE
V5016	1003	4984	HUM	JUG	ICPS;DR	COMBED WAVY DEC	PURPLE
V5017	1003	4985	HUM	JUG	ICPS;DR	STRAP HANDLE, 41 ACROSS	PURPLE

**2.0 METHODOLOGY**

Offcuts from each sample were taken and the surfaces mechanically removed, to minimise the effect of post-burial contamination on the composition. The resulting block was then crushed to a fine powder and analysed using Inductively-coupled Plasma Spectroscopy at Royal Holloway College, London, under the supervision of Dr J N Walsh. A series of major elements were measured and expressed as percent oxides (Appendix 1) and a series of minor elements were measured as parts per million (Appendix 2). Silica was estimated by subtraction of the major element percentages from 100% and

all the measurements were normalised to aluminium and then examined using WinSTAT for Excel, and in particular the Factor Analysis routine in that software package (Fitch 2002).

### 3.0 RESULTS

#### 3.1 INTERNAL VARIATION

The normalised data were examined to see if there were any clear differences between the wasters, the brown-slipped jugs and the fired clay. The fired clay contained significantly less estimated silica than the other two groups (Table 2). It also contained slightly less iron, potassium, barium, strontium and lead and more magnesium, lithium, nickel, lanthanum, cerium, neodymium and europium. The two pottery groups, however, show no such differences.

Table 2

Group	N	Mean	Std.Dev.
WCD08 FCLAY	1	60.43	----
WCD08 PURP	4	64.53	1.536756622
WCD08 WASTE	5	66.27	1.652578833

Factor analysis of the normalised data revealed six factors. The first five factors did not clearly distinguish the three groups but the sixth factor separated the fired clay from the pottery groups. Examination of the weighting table indicated that only the iron and lithium weightings were responsible for this separation.

Those elements which were depleted in the fired clay are mostly likely to have been present in the sand fraction, and the fired clay is noticeably finer in texture than the pottery. The exception is the lead, which is presumably present in the pottery through contamination by lead glaze. The elements which are higher in frequency in the fired clay are all likely to have been present in the clay fraction. Since all are normalised results, this is unlikely to be due to the higher quantity of clay present in the fired clay and does suggest that the clay was not chosen from precisely the same source as the pottery.

#### 3.2 COMPARISON WITH OTHER WEST COWICK POTTERY

The normalised ICPS data for the WCD'08 samples were then compared with samples from other West Cowick sites:

- One sample from Cowick Manor, analysed for the South Yorkshire and North Derbyshire Pottery Reference collection (Cumberpatch 2004).
- Samples of ceramic building material and pottery wasters from Land west of Holly House, 55 Grange Road (Vince 2007).
- Samples from the 1963 Mayes excavations (various sites)
- A sample from the 1963 Mayes excavation analysed for the South Yorkshire and North Derbyshire Pottery

Reference collection (Cumberpatch 2004).

Factor analysis of this dataset found five factors. A plot of the first two factors (Fig 1) found that the 2007 Grange Road samples can be separated from each other and from the remainder by a combination of these two factors but that the remaining samples form a single cluster.

A plot of the factor scores for the third and fourth factors (Fig 2) showed that the F3 score separates the Cowick Manor

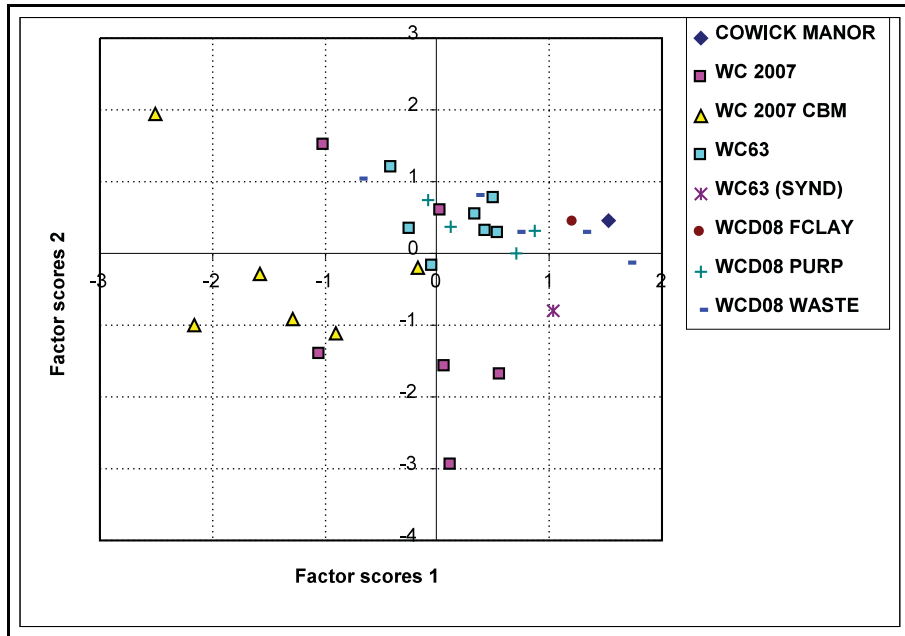


Figure 1

sample from the remainder whilst F4 separates the 1963 samples from the remainder and partially separates the 2007 Grange Road samples from the 2008 samples.

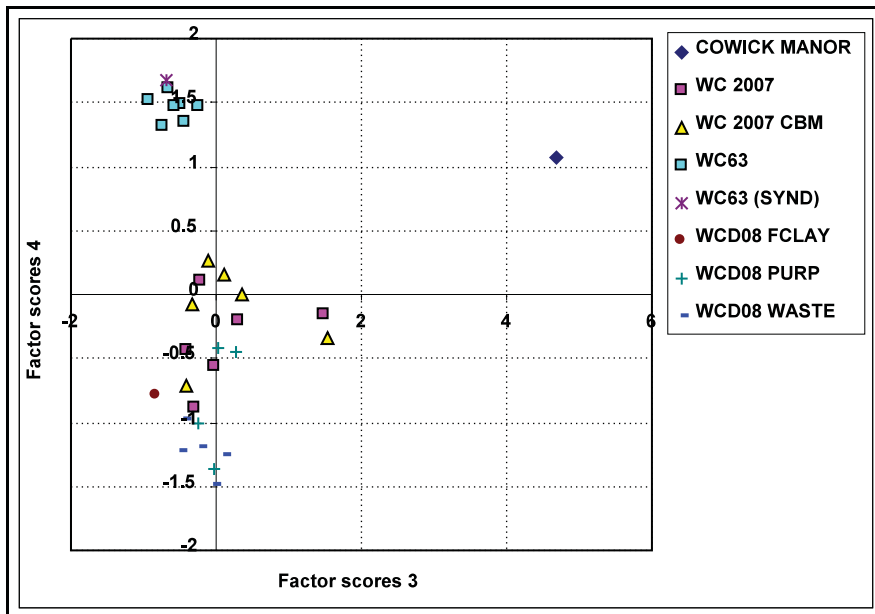


Figure 2

A plot of the fifth factor scores against the fourth (Fig 3) indicates that F5 separates the 1963 samples taken by the author from those sampled for the South Yorkshire/North Derbyshire fabric series but the two factors together also separate the 2008 from the 2007 samples.

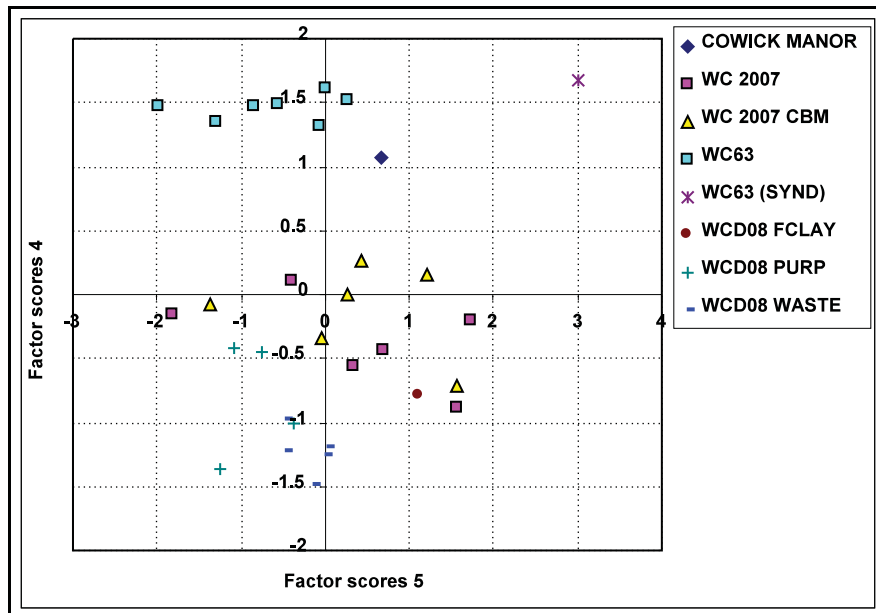


Figure 3

#### 4.0 CONCLUSIONS

There is no evidence for a difference in composition between the brown-slipped 2008 samples and the definite waste from the site. This supports the suggestion that the brown-slipped vessels were produced on site.

This conclusion is further supported by the clear distinction between the 1963 excavation samples and the remainder and between the 2007 and 2008 samples. There are differences between the sample analysed for the South Yorkshire/North Derbyshire fabric collection and those analysed for the author. These differences are probably due to measurement errors since they affect two elements: copper and samarium, and the only other sample with a high samarium value was also analysed for the South Yorkshire/North Derbyshire fabric collection (Fig 4). The high copper value might be the result of contamination by glaze. Several of the WCD'08 samples show high lead values which are clearly the result of glaze contamination but, since copper was not used as a colourant on the 2008 pottery, the copper values are typical of a background count (Appendix 2).

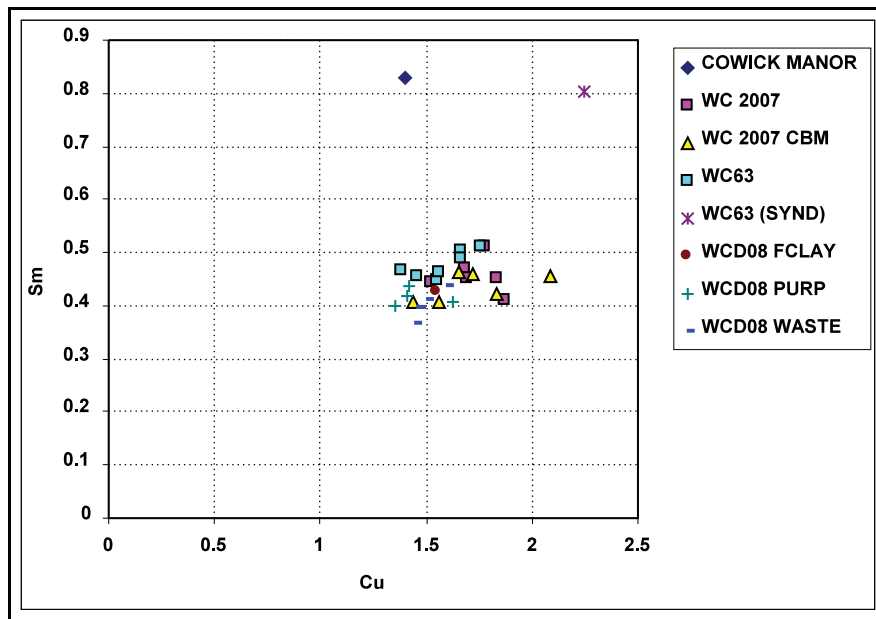


Plate Figure 4

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Appendix 1

TSNO	Al2O3	Fe2O3	MgO	CaO	Na2O	K2O	TiO2	P2O5	MnO
V5008	18.75	6.95	2.67	1.47	0.41	3.34	0.78	0.17	0.095
V5009	18.59	6.86	2.41	1.28	0.37	3.27	0.76	0.13	0.091
V5010	17.12	6.00	2.02	1.30	0.37	3.16	0.69	0.12	0.086
V5011	18.68	6.90	2.32	2.17	0.44	3.30	0.74	0.12	0.097
V5012	19.15	6.83	2.50	1.38	0.41	3.39	0.77	0.12	0.089
V5013	21.88	7.57	3.18	1.59	0.44	3.76	0.87	0.17	0.115
V5014	19.96	7.20	2.51	1.31	0.47	3.62	0.80	0.18	0.095
V5015	20.52	7.39	2.81	1.37	0.44	3.68	0.84	0.15	0.108
V5016	19.08	6.66	2.55	1.37	0.35	3.35	0.77	0.21	0.093
V5017	19.04	6.73	2.35	0.98	0.37	3.44	0.79	0.21	0.085

## Appendix 2

<b>TSNO</b>	<b>Ba</b>	<b>Cr</b>	<b>Cu</b>	<b>Li</b>	<b>Ni</b>	<b>Sc</b>	<b>Sr</b>	<b>V</b>	<b>Y</b>	<b>Zr*</b>	<b>La</b>	<b>Ce</b>	<b>Nd</b>	<b>Sm</b>	<b>Eu</b>	<b>Dy</b>	<b>Yb</b>	<b>Pb</b>	<b>Zn</b>	<b>Co</b>
V5008	469	89	30	103	59	17	113	120	27	76	45	84	47	8	2	5	3	753	93	20
V5009	455	85	28	96	58	17	109	120	29	85	46	83	48	8	2	5	3	2,029	90	19
V5010	472	68	25	97	51	15	108	99	19	39	40	72	42	7	1	4	2	607	83	16
V5011	469	84	27	106	57	16	121	119	25	62	44	81	46	7	2	5	3	35	89	19
V5012	468	87	28	112	58	17	112	121	26	80	45	87	47	8	2	5	3	37	90	19
V5013	50	107	34	134	71	20	118	141	33	73	55	103	57	9	2	6	3	27	106	23
V5014	507	93	27	106	52	17	114	119	26	64	46	85	48	8	2	5	3	402	99	19
V5015	511	101	29	113	62	18	117	126	23	63	48	91	50	9	2	5	2	2,084	98	20
V5016	496	115	27	98	56	17	114	123	26	80	46	88	48	8	2	5	3	1,125	96	19
V5017	499	117	31	103	48	17	109	123	26	75	46	84	48	8	2	5	3	627	97	17



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