

99/03



LINDSEY ARCHAEOLOGICAL SERVICES

**Normanton Phase II Replacement Scheme,
Lincolnshire**

Archaeological Assessment Report

Site Code: NHH 98

SK 9395 4605

on behalf of

Anglian Water Services Ltd

LAS Report No. 348

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Lincolnshire County Council
Archaeology Section
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Normanton Phase II Replacement Scheme, Lincolnshire

Archaeological Assessment Report

Site Code: NHH 98

Summary

Excavations in advance of an Anglian Water mains replacement scheme resulted in the discovery of 30 Anglo-Saxon burials overlying a series of Late Roman ditches and pits. Although the excavation encompassed only the narrow corridor formed by the pipeline easement, the discoveries provide a significant contribution to both Anglo-Saxon and Roman research frameworks. The cemetery is one of only a small number of Saxon inhumation cemeteries in Lincolnshire that have been excavated to modern standards and its publication will add significantly to the current state of knowledge. The pottery from the Roman features offers an unparalleled view of an almost exclusively late Roman ceramic assemblage with a low level of residual material.

1.0 Introduction

Lindsey Archaeological Services was commissioned by Anglian Water Services Ltd. in May 1998 to undertake archaeological investigations along part of the route of a replacement Water Main between St. Nicholas Church, Normanton and Hough on the Hill.

The archaeological work was carried out in accordance with the requirements of the Lincolnshire County Council Archaeological Section as set down in the *Lincolnshire Archaeological Handbook* (LCC 1998).

2.0 Previous Work

The potential of the site was first realised by the discovery of what was thought to be the stone foundations of a Roman building when the previous water pipeline was installed in 1954. A desk-based assessment, geophysical survey and excavation of the specific area of archaeological potential was requested by the Lincolnshire County Council Archaeology Section, as well as a watching brief on the rest of the route in order to investigate the potential of the site.

2.1 Desk Based Assessment

The first stage of the assessment was undertaken in order to assess the available information (Tann 1998). This did not produce much more evidence of the site than was already known from the SMR. The entry recorded the presence of a pit containing 2nd century pottery including Samian, and also what appeared to be the stone foundations of a building of unknown character.

2.2 Geophysical Survey (June 1998)

Geophysical Survey was undertaken by Oxford Archaeological Associates in order to pinpoint as closely as possible the location and extent of Roman occupation along the pipeline route. It comprised a magnetic susceptibility

survey of the topsoil. A gradiometer survey could not be carried out because of the existing cast iron pipe. The survey revealed an area of enhanced magnetic susceptibility approximately 100m in length in the area of the supposed location of the building. A focus of high intensity readings was also noted in the centre of the area.

2.3 Watching Brief (June-September 1998)

A watching brief was undertaken on the whole of the pipeline route During topsoil stripping of the area of archaeological potential defined by the geophysical survey, human bone was observed in the ploughsoil at a depth of between 0.25 and 0.3m. Topsoil stripping ceased at this depth and an area was set aside for further archaeological investigation.

3.0 The Excavation

The excavation was carried out between June and September 1998

The aim of the excavation was to:

- Identify the nature and extent of archaeological remains within the area of the pipe line easement.
- Obtain dating evidence from as many of the features as possible.
- Excavate features to understand their form and function
- Fully excavate and record all the burials that are under threat from the groundworks.

4.0 Method

Overburden was removed using a 360° excavator with a 1.6m wide toothless dyking bucket. The presence of human bone immediately below the topsoil prevented machine excavation beyond this depth.

All subsequent excavation was carried out by hand, the plough horizon was removed in spits, and burials were excavated as they were uncovered. Significant concentrations of material were plotted as they had the potential to reveal the presence of features whose cut and fills were invisible. Three-dimensional recording of all finds from an area approximately 10m by 4m carried out in order to ascertain if the Roman pottery was deliberately deposited in grave fills or present only as background.

Archaeological recording was carried out by a team of 8 experienced archaeologists, including a Site Director. A full written (single context) record was kept together with a daily log. A drawn record was maintained which included an overall site plan at a scale of 1:20 selected areas were planned at 1:10 and sections at 1:10. A full photographic record was made during the progress of the excavation. LAS operate a standard context recording system developed over 20 years based on the MOLAS and CAS model.

5.0 General Site Description

The site consisted of four phases of archaeology.

1. Prehistoric- represented by a single ditch and 3 sherds of pottery.
2. Romano British- occupation debris and ditches

3. Anglo-Saxon- 30 inhumation burials and the possible reuse of a Roman ditch
4. Medieval to present- medieval ridge and furrow and a modern plough horizon.

There was very little vertical stratigraphy and the vast majority of the material is confined to the middle two phases.

The plough horizon has formed over a period of time, probably since the Anglo-Saxon period. The upper archaeological horizons have become incorporated into the plough/soil horizon due to natural soil processes, though without losing spatial integrity. The cuts and fills of the upper levels of some features and, in certain cases, the whole feature had been lost. Their location was only recognisable by the presence of concentrations of artifacts.

6.0 Phase I Prehistoric

6.1 Features

A single feature produced 2 sherds of Iron Age pottery. As no other Iron Age material was recovered from this site no further work will be undertaken on this material.

6.2 Finds

Only 3 sherds of prehistoric pottery were found from the site, these were probably of Iron Age date.

6.3 Statement of Potential

There is little potential for this material to add further to our knowledge of either the period or the site and so only spot dating will be undertaken on the pottery.

7.0 Phase II Roman

7.1 Features

The Romano-British material consisted primarily of occupation debris and ditches representing boundary/drainage features. Due to the nature of the stratigraphy (see 5.1) it has been impossible at this stage to assign dates to all the features excavated.

Current analysis suggests that there are at least 8 linear features, 10 pits, and 3 postholes of Roman date. It may be possible at later stages of this project to assign dates to a number of the presently undated features.

7.2 Finds (see Appendices A and B)

7.2.1 Pottery (Appendix A)

Finds from the Roman deposits consist primarily of 1400 sherds of pottery weighing 31.489kg. These were mostly sealed within features. There is approximately 20% from the plough/soil horizon (106) and it may be possible to assign some of this material to features as concentrations of artefacts were plotted and material from an area of 10m by 4m was three-dimensionally

plotted. A small proportion of the assemblage was found in Anglo-Saxon graves.

The assemblage consists mainly of grey wares with relatively high proportions of shell gritted fabrics and Nene Valley colour coat. The importance of the material lies in its narrow date range, the majority being later 4th century and provides an '*exceptionally sound consistent assemblage of Roman pottery*' (Darling Appendix 3)

7.2.2 Metalwork (Appendix B)

19 coins dated to the fourth century. At this stage deemed unremarkable.

7.3 Statement of Potential

Pottery from this phase is almost exclusively late fourth century in date, uncontaminated by earlier or later material. Its similarity in composition to groups of a similar date found in Lincoln makes the assemblage of the utmost importance in understanding the relationship between rural and urban sites in the late Roman period. It should provide evidence relating to trading contacts in the late Roman period.

The physical remains on the site i.e. ditches pits and postholes are unremarkable. Severe truncation of the possible occupation features has made it impossible to be sure of the form or function of the features. However, they provide a context for the pottery found on the site and their phasing will enable a finer phasing of the pottery.

The coins will be spot dated and are not anticipated to contribute a great deal to the project beyond the possible dating of features, which are otherwise undated.

The material in the plough horizon technically unstratified remains important because of the relatively uncontaminated nature of the assemblage as a whole.

7.4 Storage and Curation

There are no conservation problems with the Roman pottery and these will be handed over to the Lincolnshire Museums Service.

8.0 Phase III Anglo-Saxon

8.1 Physical Remains

The Anglo-Saxon remains on the site were almost exclusively burials, although there is evidence of the possible reuse of a Roman gully. There were 30 burials, all of which were heavily affected by the homogenisation process, and so it was almost impossible to record the grave cuts accurately.

The burials were confined to the western part of the site and there is significant evidence that the cemetery continued beyond the limits of the excavation but as the sample contained a relatively large number of burials (30) the group provides an important cluster.

The burials themselves were in various states of preservation ranging from a single foot to well-preserved skeletons with well preserved grave goods.

8.2 The Finds (Appendix B)

8.2.1 Metalwork

The metalwork recovered from the site comprises 3 spearheads and 1 spear butt, 15 knives or knife fragments, 9 iron buckle fragments, 2 rings, 12 brooches, 3 silver brooches, 1 sleeve clasp, 3 girdle hangers. 9 miscellaneous fragments mainly of iron and copper.

8.2.2 Pottery

One complete Anglo-Saxon vessel from within a grave is the only Anglo-Saxon pottery found during the excavation.

8.2.3 Other Non-Metal Artefacts

60 beads (amber glass and jet), 2 ivory fragments, 1 bone pin, 1 jet bracelet fragment, 2 fragments of glass vessels.

The material is well preserved enough to allow drawing and classification although it is very fragile, especially in the case of the metalwork.

The majority of the material was found in burials but it may be possible in later stages of the project to assign some of the material, at present unstratified, to individual burials.

8.2.4 Skeletal Remains

A full skeletal analysis has been carried out. No further work will be done on the skeletons themselves apart from the integration of the results into a discussion as there were no distinctive characteristics or pathological information which warrants further work.

8.3 Statement of Potential

This cemetery is one of the few professionally excavated Anglo-Saxon cemeteries in Lincolnshire. The material recovered is unusual in range and can be contrasted with the cemetery found recently at Tallington in the south of the county.

The spatial association of the graves showed some clustering and it will be possible to more closely analyse this once the full identification of the grave goods has been completed.

It is possible that the cemetery was deliberately positioned close to a former Roman settlement of some status. This relationship could be further examined.

8.4 Storage and Curation

There are specific requirements for the conservation of the finds from the Saxon site these are contained within Appendix C. Skeletal remains are stable

but will be stored in the Lincolnshire Museums service controlled environment storage facilities.

9.0 Phase IV Medieval

This phase was represented by medieval ploughing. There was no material recovered during this phase and no further work will be carried out.

10.0 Environmental (Appendix C)

Twenty environmental samples were collected from the site, which were processed for assessment. The results, together with identification of the animal bone, of which there were 1321 fragments, are outlined in Appendix E.

The potential of these assemblages falls within two areas of study, the agricultural economy of the site and the specific interpretation of the activities taking place in the immediate area of the trench. Although much of the non-charred material appears is probably intrusive, there is a great deal of charred material that is likely to be reliable.

The three areas deserving of further work are the identification of the charred plant remains from most of the samples, the identification of the charcoal (twigs, plant stems and 'tubers') in the two burnt deposits, contexts 303 and 201, and the identification and analysis of the animal bone assemblage. This will help to elucidate the two main areas of environmental work

11.0 Report

A final report will be produced to satisfy the requirements of the Lincolnshire County Council Archaeology section and the client. It is anticipated that the report will be in the following format although it may be appropriate to make minor changes as the project develops.

1. Introductory Section containing:

1. Introduction
2. Acknowledgements
3. Circumstances of the excavation,
4. Location maps. For reasons of security these should be imprecise
5. Topography and ground conditions, degree of preservation
6. Excavation methodology

2. The Site

Phase I Prehistoric

1. Plan of prehistoric features
2. Description of features
3. Drawings of selected features
4. Discussion

Phase II Roman

1. Plan of Roman features
2. Description of features including dating evidence
3. Drawings of selected features

4. Discussion

Phase III Anglo-Saxon

1. Cemetery plan
2. Plans of individual graves
3. Descriptions of graves and positions of skeletons (including age and sex)
4. Locations of grave goods within graves
5. Illustrations of the finds laid out in grave-groups. Finds to be illustrated as detailed below.
6. Table of finds from graves as in this form:

Context Number										
Find type										
Spear heads					v		v			
Knives	v						v			
Buckles	v	v			v					
Rings				v						
Cruciform brooches		v			v		v	v		
Annular brooches	v	v					v			

Phase IV Post Roman

1. Plan of Post Roman features
2. Description of features
3. Discussion

3. Summary and integrated discussion**4. Photographs****5. Bibliography****Appendices**

1. Context Summary
2. Feature List
3. Roman Pottery
4. Saxon Finds
5. Human remains
6. Textiles (Penny Walton-Rogers, York)
Textile traces appear rare on the Normanton metal work but further remains may be identified during the course of investigation
7. Pottery thin sections (Alan Vince, Lincoln)
Details of the sources of the minerals used in the making of the pots.
8. Conservation comments and observations (Rob White, Lincoln)
9. Organic traces, Environmental Archaeology Unit, York (EAU)

12.0 Post Excavation Work Completed

Preparation of Site archive including cross-checking of records (paper, photographic and drawn).

Emergency conservation of artefacts

Initial preparation of artefacts i.e. washing marking and bagging

Preparation of assessment reports

Full report on the skeletal remains

13.0 Post Excavation to be completed

Task	Personnel	Time (days)	Cost
<i>Management</i>			
Project management	Mark Williams	1.5	£240.00
	Naomi Field	1.5	£320.00
<i>Specialists' Reports</i>			
Roman			
Roman Pottery report	Margaret Darling	6.5	£877.50
Pottery illustrations	David Hopkinson	10	£700.00
Transport and materials			£60.00
Roman coins identification	Kevin Leahy	0.5	£75.00
Anglo-Saxon			
Analysis of artefacts	Kevin Leahy	9	£1350.00
Integrated discussion	Kevin Leahy	4	£600.00
Editorial and liaison work	Kevin Leahy	2	£300.00
Drawings	To be arranged	20	£1600.00
Checking drawings	Kevin Leahy	1	£150.00
<i>Environmental</i>			
Animal bone identification etc	James Rackham	3	£450.00
Sorting botanical material	Alison Foster	2	£200.00
Botanical identification	J. Georgi	8	£1000.00
Charred material identification	To be arranged	3	£240.00
Coordination with environmental specialists	James Rackham	0.5	£75.00
Collation and integration of reports	James Rackham	1	£150.00
<i>Conservation</i>			
Labour	R.White	51	£8160.00
Materials and packaging			£422.85
<i>Excavation Report</i>			
Text preparation	Mark Williams	15	£2400.00
Illustrations	Nicki Smith	20	£1600.00
Editorial work	Naomi Field	1	£240.00
<i>Additional Publication</i>			
Publication in appropriate national journal	M. Williams + specialists	10	£1600
			£22810.35

14.0 Additional Reporting

A display will be prepared for the early medieval burials conference in London (£500).

15.0 Storage and Curation

The paper archive which consists of context sheets drawings and photographs will be deposited with Lincolnshire Museums Service. The object archive will also be deposited with the Lincolnshire Museums Service subject to agreement with the landowner.

Mark Williams
Lindsey Archaeological Services
March 18th 1999

APPENDIX A

The Roman Pottery
By Margaret Darling

REPORT 42 ON THE POTTERY FROM NORMANTON, NHH98.

for LINDSEY ARCHAEOLOGICAL SERVICES

by MARGARET J. DARLING, M.Phil., F.S.A., M.I.F.A.

27 November 1998

MAP2 ASSESSMENT

The assessment below follows MAP2 Appendix 4 (*Management of Archaeological Projects*, English Heritage, 1991).

A4.1.1 i QUANTITY

The total quantity of pottery archived (including a small quantity of tile) amounted to 1400 sherds, 31.489kg

A4.1.1 ii PROVENANCE

The pottery was distributed along the pipeline trench, as shown in Table 1.

Table 1 Spatial distribution

Area	Sherds	%	Weight	%	g/sherd
A	27	1.93	403	1.28	14.9
A;B	6	0.43	59	0.19	9.8
B	30	2.14	892	2.83	29.7
C	46	3.29	1269	4.03	27.6
D	455	32.50	11463	36.41	25.2
E	147	10.50	3908	12.41	26.6
F	397	28.36	6756	21.46	17.0
G	14	1.00	94	0.30	6.7
H	125	8.93	2996	9.51	24.0
-	153	10.93	3649	11.59	23.8
Total	1400		31489		

This shows the bulk of the finds coming from the central area, Areas C-F. The unlocated finds were mainly from non-archaeological deposits (e.g., furrows) and unstratified deposits. The freshest finds occurred in Areas B-E, the average sherd weight dropping in Area F, although the rise in Area H may indicate continuing activity in that direction. The exclusion of heavy mortarium sherds makes little difference to the average sherd weights.

Table 2 below shows the distribution of finds by type of feature.

Table 2 Pottery by type of deposit

Deposit	Sherds	%	Weight	%	g/sherd
Ditch	467	33.36	13011	41.32	27.9
Gully	125	8.93	3602	11.44	28.8
Grave	94	6.71	1242	3.94	13.2
Pit	59	4.21	2046	6.50	34.7
Pit/ph	3	0.21	13	0.04	4.3
Cut	16	1.14	466	1.48	29.1
Surface	117	8.36	1529	4.86	13.1
Layer	364	26.00	6013	19.10	16.5
Furrow	7	0.50	129	0.41	18.4
Treebole	10	0.71	210	0.67	21.0
Unstratified	138	9.86	3228	10.25	23.4
Total	1400		31489		

This table shows the freshest pottery coming from the cut features of pits, ditches and gullies, with more fragmented finds from the grave fills, surface and the overall clay layer 106.

The sherd links include a join between Grave 368 and ditch 166. Analysis of the archive relating to fabrics and forms indicates that the bulk of the pottery belongs to the latter part of the 4th century, with very little residual material. It appears to be an exceptionally sound consistent assemblage of late Roman pottery.

A4.1.1 iii RANGE AND VARIETY

a) FABRICS

The fabrics represented are shown in Table 3.

Table 3 Fabrics

Fabric	Code	Sherds	%	Weight	%
Samian Central Gaul	SAMCG	3	0.21	10	0.03
Mortaria Nene Valley	MONV	2	0.14	60	0.19
Mortaria Oxon Parchment	MOOX	2	0.14	99	0.31
Mortaria Oxon red-slip	MOOXR	4	0.29	31	0.10
Mortaria Oxon white-slip	MOOXW	4	0.29	185	0.59
Mortaria Swanpool	MOSP	10	0.71	929	2.95
Cream?	CR?	1	0.07	3	0.01
Oxidized white-slip	OXWS	2	0.14	24	0.08
Oxidized light	OXL?	1	0.07	11	0.03
Oxidized fine	OXF	3	0.21	10	0.03
Oxidized	OX	39	2.79	713	2.26
Oxidized Swanpool	SPOX	14	1.00	665	2.11
Nene Valley colour-coat	NVCC	143	10.21	3161	10.04
Colour-coat	CC	5	0.36	97	0.31
Swanpool colour-coat	SPCC	4	0.29	275	0.87
Much Hadham oxidized	MHAD	4	0.29	46	0.15
Grey fine	GFIN	2	0.14	9	0.03
Grey micaceous	GMIC	1	0.07	6	0.02
Nene Valley Grey ware	NVGW	2	0.14	62	0.20

Grey	GREY	744	53.14	17469	55.48
Late coarse	LCOA	84	6.00	1473	4.68
Late coarse?	LCOA?	46	3.29	570	1.81
Spiral-groove	SPIR	2	0.14	52	0.17
Coarse	COAR	19	1.36	133	0.42
Dales ware	DWSH	1	0.07	10	0.03
Shell-gritted	SHEL	193	13.79	2622	8.33
Huntcliff ware	HUNT	3	0.21	108	0.34
Tile	TILE	28	2.00	1957	6.21
Fired clay	FCLAY	2	0.14	13	0.04
Post-Roman	PRO	23	1.64	551	1.75
Post-Roman?	PRO?	9	0.64	135	0.43
Total		1400	100	31489	100

The definitively earliest pottery are the three very small abraded sherds of Central Gaulish samian. The fabrics include several only seen in the later Roman period, DWSH, MHAD and MOOX, and some only in the 4th century, such as the Swanpool fabrics, MOSP, SPOX and SPCC, LCOA, HUNT, SPIR, MOOXR and MOOXW. This is the first time the unusual fabric SPIR has been recognised outside Lincoln, and it is very unusual to find Huntcliff jars, HUNT, so far south and inland. At least three jars appear to be present, although given the vesicular nature of the fabric, small body sherds may have been included with the shell-gritted wares. The presence of only two sherds of Nene Valley grey ware would be consistent with the later 4th century date, although this may also be due to the closer connection to the city of Lincoln pottery industries. There are no amphorae.

A scatter of tile fragments were found, including parts of combed flue tiles from a heating system (with sooting internally) and roofing tegulae. There is also a post-Roman glazed tile fragment, and scraps of brick.

b) FORMS

The forms represented, irrespective of fabrics, are shown in table 4

Table 4 **Forms**

Form	Code prefix	Sherds	%	Weight	%
Flagon	F	6	0.43	162	0.51
Beaker	BK	35	2.50	373	1.18
Jar handled	JH	17	1.21	700	2.22
Jar narrow-neck	JNN	14	1.00	643	2.04
Jar	J	402	28.71	5738	18.22
Small jar/beaker	JBK	34	2.43	477	1.51
Jar large	JL	32	2.29	3335	10.59
Jar storage	JS	2	0.14	236	0.75
Closed	CLSD	73	5.21	918	2.92
Jar or Bowl	JB	72	5.14	2100	6.67
Bowl	B	150	10.71	6512	20.68
Dish	D	39	2.79	1278	4.06
Bowl or dish	BD	32	2.29	578	1.84
Mortaria	M	22	1.57	1304	4.14
Strainer	ST	6	0.43	99	0.31
Cheese-press	CHPR	1	0.07	73	0.23

Crucible	CRUC	1	0.07	19	0.06
Untyped	-	462	33.00	6944	22.05
Total		1400		31489	

Notable features are the paucity of beakers, the absence of lids or boxes, and the relatively high percentage of bowls and dishes, all in line with a late Roman date. Also mortaria at 1.6% on count appears to be high for a rural site. The presence of less common vessels, such as the cheese-press, strainer and a crucible, presumably related to metal working, can also be noted. Large storage jars appear to be low for a rural site. The rarity of assemblages of this date and quality means that comparative data is very sparse, and probably only to be found in the Lincoln archive.

Examined in more detail, the grey wares include many forms typical of the late Swanpool kilns in Lincoln (Webster and Booth 1947), and almost certainly coming from that source, alongside the mortaria, oxidized and colour-coated vessels. These include inturned bead-and-flange bowls, double lid lid-seated jars and other classic Swanpool types. Notable also is the appearance of the LCOA late coarse fabric, only seen in Lincoln in very late Roman contexts, mostly double lid-seated jars, but also bowls and dishes (Darling 1977). The shell-gritted wares include South Midlands shell-gritted jars (Brown 1994), double lid-seated jars, and dishes. There are also at least three jars of the Yorkshire Huntcliff type, and one, perhaps two jars in the rare very late fabric SPIR, hitherto only recognised in Lincoln.

The forms of the Nene Valley colour-coated assemblage are shown on table 5.

Table 5 Nene Valley colour-coated wares vessel forms

Form	Prefix Code	Shs	%	Wt	%
Bowl	B	40	27.97	1534	48.53
Dish	D	19	13.29	607	19.20
Bowl or dish	BD	22	15.38	268	8.48
Beaker	BK	21	14.69	133	4.21
Flagon	F	5	3.50	54	1.71
Jar	J	4	2.80	17	0.54
Closed	CLSD	22	15.38	323	10.22
Jar or bowl	JB	7	4.90	210	6.64
Untyped	-	3	2.10	15	0.47
	Total	143		3161	

Notable for the evidence for dating are the high proportions of bowls and dishes relative to the beakers. Body sherds unlikely to be beakers but impossible to allocate between wide- or narrow-mouthed jars are included as "Closed", the relatively high percentage indicative of a later Roman date. The forms include 17% (on count) bead-and-flange bowls, and a rare dish of the same type. The beakers are very fragmentary, but include at least one painted beaker, and the fabrics are consistent with the latest range.

A4.1.1.1 iv **CONDITION**

The condition of the pottery is generally good and many sherds are relatively fresh. No treatment is necessary. The average sherd weights ranged from 25-30g for the areas B-E with high concentrations of pottery.

A4.1.1 v **DOCUMENTATION**

The over-riding emphasis of the Roman pottery assemblage in the later 4th century, and the occurrence of pottery traded from late kilns in Lincoln indicates that access to data from late groups excavated in the city of Lincoln would be of value, if these were available in the public domain.

A4.1.2 **METHODOLOGY OF DATA COLLECTION**

The pottery has been archived according to the guidelines of *The Study Group for Roman Pottery*, the archive including sherd count and weight. A copy of the archive database is available on disk, and this database will be curated for future study.

4.2 **STATEMENT OF POTENTIAL**

Prior to excavation taking place, the presence of Roman pottery and coins and mid-Saxon material in the area had suggested the possibility of examining questions of continuity. It is notable that the Roman sherds included in the grave fills are quite fragmented. The presence of a joining sherd link between Grave 368 and the ditch 166 would suggest that they were accidental inclusions, but this question should be further examined.

The main result of the excavations for the Roman period is the indication of a relatively high-status site in the vicinity, given the range and quality of the pottery, and the presence of flue tiles from a heating system. The assemblage is arguably one of the most important for this part of Lincolnshire since it appears to be of a consistent late 4th century date, virtually uncontaminated by residual material. This is exceptionally rare, and further study and publication will greatly aid understanding the range available at that late date, and the trading contacts outside the area. The group adds important information for various pottery industries, particularly the Crambeck industry, represented by Huntcliff jars, but also the Oxfordshire kilns, and is thus of national importance. Since the pottery includes some of the fabrics and types seen in the latest Roman deposits in Lincoln, it is particularly valuable in demonstrating the relationship between rural establishments in the area and the city of Lincoln. The absence of significant residual content makes it more important than deposits of a similar date from an urban context.

Definition of a late 4th century group in this area will aid future work on other sites in the locality and, on a wider front, will add crucial information relating to the spatial changes in pottery assemblages in the area south of Lincoln, indicative of links between urban and rural communities. This clearly lies within the orbit of the city of Lincoln, whereas further south the pottery assemblages seem to be orientated more towards the Nene Valley. This type of evidence is essential for the understanding of Roman settlement.

A4.3 STORAGE AND CURATION

No problems are anticipated for long term storage. Since the assemblage is such an important late 4th century group, the discard of sherds would effectively damage the material archive.

RECOMMENDATIONS

The evidence of the coins will need to be taken into account with the pottery. The quality of the group suggests that quantification adding estimated vessel equivalents (EVEs) based on rim percentage would enhance its value, particularly on a national level (approximately 22% of the sherds are rims). More detailed work on the fabrics should also be undertaken, to expand on the archive level identifications. Preliminary identification of a number of unusual sherds as of post-Roman date will need to be checked. These may have a bearing on the location of the Saxon cemetery close to a late Roman site. Analysis of the fabric and form combinations should be undertaken in more detail to define the range for each fabric and kiln source.

Full publication is essential for such an important assemblage. 68 vessels were identified for drawing during archiving, and a further 35 will need to be examined to ensure the full range of the group is illustrated.

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APPENDIX B

The Anglo-Saxon Material
By Kevin Leahy

**The Anglo-Saxon cemetery at Normanton, Lincolnshire
Assessment Report
for Lindsey Archaeological Services**

By Kevin Leahy, BA, FSA, MA, MIFA, Principal Keeper of Archaeology and Natural Science, North Lincolnshire Museum Service

1.0 INTRODUCTION

Excavations in advance of the construction of the CUE water main resulted in the excavation of 30 Anglo-Saxon burials of sixth century date overlying a complex of Romano-British ditches. Although only those graves which lay on the route of the pipeline were excavated the easement provided a transept through the cemetery and established its extent on two sides. In addition to the finds from the graves material recovered from the sub-soil may be re-allocated to graves, or be of sufficient intrinsic interest to warrant study.

Although fragile, the finds from the cemetery are, in the main, sufficiently well preserved to allow them to be drawn and classified. The ironwork is in poor condition and x-ray photography and selective cleaning is required to reveal the form of the objects. Many of the copper alloy objects are obscured by corrosion products but details will be revealed by the procedure detailed above. Some of the organic material (the ivory) has undergone emergency conservation. Textile preservation appears poor but further traces may be identified on full study.

The preservation of the human bone is good which will allow the production of a detailed report on the age, sex and pathology of the people represented the remains. This will, in turn, inform discussion of the grave goods and burial rites and allow an assessment to be made of the relationship between grave goods and the age/ sex of the people with whom they were buried.

2.0 ASSESSMENT OF THE FINDS BY TYPE: PROPOSAL

2.1 Weapons

3 spear heads and 1 spear butt.

Classification *Swanton, 1973.*

Shield boss

1 shield boss fragment and 1 shield boss

Classification *Dickinson and Härke, 1993*

Conservation Requirements

Selectively clean to reveal the form of the spearheads and shield boss, stabilise and pack in inert materials.

Further work

Examine for traces of mineralised wood and refer to EAU, York, for identification.

Drawing requirements

Draw spearheads and spear-butt from x-rays and from sections revealed by selective cleaning. Use same procedure for the shield boss. Draw in outline only, do not draw rust patterns. Objects illustrated at 50% full-size in report.

Historical potential

Spearheads can be dated and some forms are regionally specific. Shield bosses may, in general terms, also be dated. Traces of organic material, from the spear-shafts and shield-board are to be expected and are of great interest. Weapon graves are relatively uncommon in Lincolnshire and any additional examples are important.

Estimate for report: 7 hours

2.2 Knives

10 knives and 5 knife blade fragments

Classification *Evison, 1987, 113-17; 1988, 23-4; Drinkall, 1998.*

Conservation Requirements

Selective conservation cleaning to reveal sections of blades and the blade hilt transitions. Investigate the blade's tangs to identify organic hilt materials. Examine blades microscopically for traces of mineralised sheaths.

Further work

Identify hilt materials, if surviving.

Drawing requirements

Blades to be drawn from x-rays at 100% or 50% full-size depending on size. To be drawn in outline and section only with no attempt made to show rust patterns.

Historical potential

Knives can be dated and can help provide a chronology for the site. They may also reflect status of the person with whom they were buried with larger blades being found with senior members of society. A number of the blades appear to have been broken in antiquity which may be of interest.

Estimate for report: 6 hours

2.3 Belt fittings

1 iron buckle plate, 2 iron buckles, 3 iron buckle/brooches, 1 copper alloy buckle and 2 copper alloy buckle fragments

Classification

Seek parallels following cleaning. Some of these objects may be either buckles or brooches, check positions in graves

Conservation Requirements

Selectively clean to reveal details, stabilise and pack in inert materials.

Further work

This will be dependent on what is found during cleaning but it not anticipated that much further work will be required

Drawing requirements

All belt fittings published at full-size

Historical potential

These are simple objects the form of which does not undergo any development and is not culturally specific. On a well excavated cemetery such as Normanton the position buckles and brooches in graves can, however, provide information on how they were worn, which may be culturally specific.

Estimate for report: 3 hours

2.4 Rings

1 iron ring and 1 iron ring with copper alloy rivet

Classification

Check for parallels in literature, see in particular *MacGregor and Bolick, 1993*

Conservation Requirements

Selective cleaning to reveal sections. Investigate the nature of the copper alloy rivet in SF 516. Stabilise and pack in inert materials.

Further work

Dependant on what is found during conservation cleaning but it is not anticipated that any further work will be needed..

Drawing requirements

Draw from x-rays and selective cleaning. Publish at full-size.

Historical potential

The simple nature of these rings makes detailed discussion difficult but their position in the grave may reveal their function. The ring with the copper alloy rivet is unusual and it is worth seeking parallels to identify it and seek cultural links.

Estimate for report 2 hours

2.5 Brooches

Cruciform brooches

2 florid cruciform brooches

Classification

As the work on cruciform brooches completed by Mortimer in 1990 remains unpublished it is intended to use the earlier terminology of *Åberg, 1926* and *Leeds and Pocock, 1971*. These are, at least, readily available and generally understood.

Square headed brooch

1 square headed brooch

Classification *Hines, 1997*

Annular brooches

3 flat sectioned and 2 round sectioned annular brooches

Classification *Hirst, 1985*

Quoit brooches

4 quoit brooches

Classification *Agar, 1985*

Conservation Requirements

Cleaning and stabilisation followed by packing in inert materials. It is suggested that the two 'Florid' cruciform brooches SF 463 and SF 507 and the Great Square Headed brooch SF 422 be fully cleaned. This will allow interpretation of their highly complex decoration and will reveal their gilded and silvered surfaces. Other brooches to be selectively cleaned to reveal details.

Further work

Check for textiles traces and submit to Penny Walton-Rogers if required.

Drawing requirements

All brooches published at full-size Any stamps or punch marks published at 200%

Historical potential

The brooches from Normanton form an unusual group. The ubiquitous plain cruciform brooches of Åberg's Groups II-IV are absent as are the common small-long brooches. This site has, however, produced two of the rare 'Florid' cruciform brooches of Åberg's Group V and a Great Squared Headed brooch. These brooches are the finest, and most studied class of Anglo-Saxon object and are both historically, and art historically, important. They are relatively

closely datable and are regionally specific making them worthy of study in detail. Annular brooches are, as expected, well represented but it is interesting to see examples of the quoit brooch, a type which has only recently been recognised in Lincolnshire. This odd group of brooches is important and well worth of study..

Estimate for report: 18 hours

2.6 Silver pendants

1 scutiform pendant fragment, 1 silver disc fragment and 1 scutiform pendant fragment?

Classification *Hines, 1984*

Legal Requirements

As Potential Treasure these objects have been declared to HM Coroner for the Grantham Division.

Conservation Requirements

Clean, reconstruct and check stability. Pack in inert materials.

Further work

An analysis of the alloy will be provided by the British Museum Research Laboratory as part of HM Coroner's investigation.

Drawing requirements

Published drawing at full-size

Historical potential

These appear to be 'scutiform' (shield-shaped) pendants, a type which was introduced into England from Scandinavia in the late fifth century. The Normanton finds appear unusual and worth of study.

Estimate for report: 3 hours

2.7 Sleeve clasp

1 single sleeve clasp

Classification *Hines, 1993*

Conservation Requirements

Cleaning and stabilisation followed by packing in inert materials.

Drawing requirements

Published at full-size.

Historical potential

Sleeve clasps are highly characteristic of Anglian cemeteries and to find only one is remarkable. This negative evidence is most interesting and might reflect the cultural affinities of the people buried at Normanton.

Estimate for report: 1 hour

2.8 Girdle hangers and keys

2 copper alloy girdle hangers and iron key fragments

Classification

Seek parallels in order to place these objects into context.

Conservation Requirements

Clean, and check stability. Attempt reconstruction of iron key. Pack in inert materials.

Drawing requirements

Publish drawings at full-size.

Historical potential

Keys may have been a badge of female status, and in addition to the functional keys Normanton has also produced a pair of non-functional decorative keys or 'girdle hangers'. These reflect the status of the woman with whom they were found.

Estimate for report 2 hours

2.9 Beads

60 beads (amber beads 37, glass beads 22, Jet bead 1)

Classification

The classification of beads is, at present, difficult as the work of Peggy Guido remains unpublished and that of Birte Bruggmann is not yet available. In view of this a classification will be used based on recent reports by *Drinkall (1998)*, *Evison (1987)* and *Hirst (1985)*.

Conservation Requirements

Clean only. Pack in inert materials. Long term storage in an appropriate environment.

Drawing requirements

All beads drawn at full-size. Shading conventions should be used to indicate the colours schemes of the beads. These will be based on the conventions used by Hirst in the Sewerby report (Hirst 1985, 64). If the order in which the beads were used in the necklace survived this should be reported but beads should also be presented by individual drawings.

Historical potential

Beads were important trade/status objects but discussion is limited by the absence of a published national corpus. Parallels for the Normanton beads will be sought within the region to attempt to identify links with other sites.

Estimate for report: 12 hours

2.10 Ivory fragments

Bag ring fragments

Classification *Bond 1994, 35-6: MacGregor, 1985.*

Conservation Requirements

Clean, reconstruct and check stability. Pack in inert materials.

Drawing requirements

Published drawing at full-size

Historical potential

These fragments provide further evidence for the distribution of ivory in Anglo-Saxon England. It was an exotic imported material and shows something of Anglo-Saxon trade (Huggett, 1988).

Estimate for report: 2 hours

Bone pin

1 bone pin

Classification *MacGregor, 1985*

Also seek parallels in order to place this object into context.

Conservation Requirements

Clean, and check stability. Pack in inert materials.

Drawing requirements

Published drawing at full-size

Historical potential

Simple objects like this pin are difficult to date and it is useful to have an example from a datable grave.

Estimate for report: 1 hour

2.12 Jet

1 jet bracelet fragment

Classification

Found in a Romano-British context therefore pre Saxon. Seek parallels to date this object within the Roman period.

Historical potential

Conservation requirements

Clean, reconstruct and check stability. Pack in inert materials.

Romano-British

Drawing requirements

Published drawing at full-size

exists

Historical potential

This object supports the dating given by the pottery for the gully.

Estimate for report: 1 hour

2.13 Glass vessels

1 folded rim fragment and 1 body fragment

Classification

Refer to Jenny Price, Leeds, for specialist comment.

Conservation Requirements

Pack in inert materials.

Drawing requirements

Publish rim only, drawing at full-size

Historical potential

Both fragments are likely to be of Roman date and may reflect on the nature of the Roman occupation of the site.

Estimate for report: consult specialist

(This is unlikely to be expensive)

2.14 Pottery

1 complete Anglo-Saxon domestic vessel

Classification

Seek parallels, see particularly *Myres 1977*

Conservation requirements

Clean, consolidate and restore whole vessel for drawing.

Further work

Check interior of vessel for residues?

Drawing requirements

Reconstruct vessel as far as possible on paper. Publish at 25% Full-size

Historical potential

The complete pot was found in a small pit which may have contained an infant burial, the small bones having dissolved. The discovery of sherds of Romano-British and Anglo-Saxon pottery in graves is a recognised phenomenon and may represent a burial ritual. The finds from the graves should be compared to the pottery from other contexts to see if a pattern exists.

Estimate for report on complete pot: 1 hour

2.15 Miscellaneous

1 hemisphere made from sheet copper alloy, tinned exterior with iron traces inside; 1 piece of copper alloy wire around to form a double loop; 2 scraps of sheet copper alloy, perforated; 1 length of lead rod, pencil fragment?; 1 length of iron rod, scrap of sheet copper alloy strip decorated with incised rings surrounding small holes; two lengths of copper alloy wire, two lengths of copper alloy wire; 1 fragment of sheet copper alloy strip with a single rivet through it.

Classification

The only object in this group which may be Anglo-Saxon is the slip-knot loop from Context 106, SF 3. It could, however, have formed part of a set of Roman balance scales. The other objects may be Roman, Anglo-Saxon or recent and are effectively undatable unless found in a context.

Conservation Requirements

Clean, reconstruct and check stability. Pack in inert materials.

Drawing requirements

Publish the slip-knot loop at full-size, only illustrate the other items if they came from an Anglo-Saxon context.

Historical potential

The slip knot loop is an interesting object and it is worth attempting to see if it could be related to a grave.

Estimate for report: 2 hours

2.16 Nails

6 iron nails

Classification

Seek parallels for stratified nails only

Conservation Requirements

Clean, reconstruct and check stability. Pack in inert materials.

Drawing requirements

Not to be drawn unless found in a grave in a non-residual context.

Historical potential

Two of the nails were found in graves and it is worth checking if they represent the remains of coffins. They may, however, be residual Roman material redeposited in the grave fill.

Estimate for report: 1 hour

2.17 Roman coins

19 Roman coins

Classification

As required, from the relevant volumes of 'Roman Imperial Coinage'

Conservation Requirements

Clean, check stability. Pack in inert materials. If the coins are considered important for the dating of the Romano-British features full conservation cleaning will be required to allow them to be identified.

Drawing requirements

Not to be drawn unless included in an Anglo-Saxon grave.

Historical potential

These coins all appear to be badly corroded 'third and fourth brass' of the fourth century. Unless found with a useful archaeological association it is not proposed to study them in detail.

Estimate for report: 4 hours, for spot identifications

3.1 Summary and integrated discussion

While 56 Anglo-Saxon cemeteries are known in Lincolnshire very few have been excavated and published to modern standards. From most sites we find finds but know nothing of their context, what objects were found together and how they lay in the grave. Professionally excavated burials such as those found at Normanton are providing vital evidence for our understanding of the Early Anglo-Saxon period in Lincolnshire and allowing us to see people, and not just pots and brooches.

The Normanton cemetery is complex and of great interest. While some important objects were found the most notable feature of the site is the large range of objects represented. Some aspects of the site are difficult to parallel, in particular the types of brooches found was most unusual.

Brooches of types which are usually quite common are absent, while more exotic types, such as the highly decorated 'Florid' brooches and the Great Square-Headed brooch were present, together with the unusual quoit brooches. The lack of the usually ubiquitous sleeve clasps is surprising and worthy of consideration, as these are one of the distinguishing features of Anglian, as opposed to Saxon, culture. Many aspects of the Normanton cemetery are strikingly different to the cemetery recently discovered at Tallington (Albone and Leahy, forthcoming) and will make an useful counterpart to it. The two sites can be compared and contrasted to turn these differences into historical or social evidence.

The age range of the individuals buried at Normanton appears to represent a balanced population with the remains of children and mature adults being present. Surprisingly, this is unusual. It will be useful to match the pattern of finds against the age and sex of the people with whom they were found. While some caution must be expressed before accepting the evidence from a transept through a cemetery as representative of the whole site However work on more fully excavated sites in Lincolnshire suggests that the pattern of graves from a transept is likely to be representative, at least in general terms

In view of the large amount of Romano-British material on the site it would be useful to look for any evidence for continuity on the site. This may be difficult to demonstrate as at least three of the brooches date from the sixth century, and not the early fifth century as needed to support continuity. Earlier material may be present and will be identified on full examination of the finds. The possibility also exists of Romano-British culture surviving beyond conventional AD 410 date for the end of Roman Britain.

The Normanton excavation has produced a good sample from an interesting Anglo-Saxon cemetery and it recommended that a post excavation study of the site be carried out and that it be prepared for publication.

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APPENDIX C

Environmental Report
By James Rackham

Normanton, NHH98

Environmental Archaeology Assessment

Introduction

Excavations on the line of an Anglian Water pipeline on the west side of Normanton village, Lincolnshire, uncovered an Anglo-Saxon graveyard and earlier late Roman features, comprising field ditches, possible enclosure ditches, gullies and pits. Twenty three soil samples were collected during the excavation seven of which were taken from the fills and around the skeletons of the Anglo-Saxon burials. Three of these latter were discarded before processing. The twenty samples submitted (Table 1) have been processed and assessed and their environmental and archaeological potential considered below. In addition four boxes of hand collected animal bone were recovered during the excavation and also submitted for assessment.

The site lay on iron rich soils above limestone and the residues after processing were composed almost entirely of iron concreted soil with a little limestone brash.

Table 1: List of soil samples submitted for assessment from Normanton NHH98

sample	context	feature	sample vol. lt	wt in kg	phase
3	117	grave fill	5	6	6th C
4	144	grave fill	10	9	6th C
6	185	grave fill	30	26	6th C
7	172	grave fill	30	32	6th C
8	177	fill of ditch 178	30	31	late 4th
9	303	burnt deposit in ditch	29	27	late 4th
10	288	fill of ditch	27	24.5	late 4th
11	201	burnt deposit in ditch	20	17	late 4th
12	229	basal fill of ditch	22	21	late 4th
13	262	basal fill of ditch	23	23	late 4th
14	360	fill of ditch	10	8.5	late 4th
15	374	single fill of ditch/gully	8	8	late 4th
16	427	fill of ditch	30	26	late 4th
17	434	fill of ditch	20	20	late 4th
18	365	lowest fill of ditch	22	22.5	late 4th
19	419	fill of ditch terminus	10	9	late 4th
20	290	single fill of ditch	27	20	late 4th
21	354	lowest fill of ditch	22	22	late 4th
22	264	single fill of small gully	28	27	late 4th
23	310	single fill of ?drip gully	7	7	undated

Methods

The bulk soil samples were processed in the following manner. Sample volume and weight was measured prior to processing. The samples were washed in a 'Siraf' tank (Williams 1973) using a flotation sieve with a 0.5mm mesh and an internal wet-sieve of 1mm mesh for the residue. Both residue and float were dried, and the residues subsequently re-floated to ensure the efficient recovery of charred material. The dry volume of the flots was measured, and the volume and weight of the residue recorded. A total of 410 litres of soil was processed in this way.

The residue from the samples was sorted by eye, and environmental and archaeological finds picked out, noted on the assessment sheet and bagged independently. A magnet was run through each residue in order to recover magnetised material such as hammerscale and prill. The residue was then discarded. The float of each sample was studied under a low power binocular microscope. The presence of environmental finds (ie snails, charcoal, carbonised seeds, bones etc) was noted and their abundance and species diversity recorded on the assessment sheet. The float was then bagged. The float and finds from the sorted residue constitute the material archive of the samples.

The individual components of the samples were then preliminarily identified and the results are detailed below in Tables 2 and 3.

The excavated bone has been briefly assessed (Appendix). The bone from each context was weighed and the number of fragments counted. The fragments from each context were rapidly scanned and a record made of the bone elements present from each species, how many jaws with teeth occurred, and any specific comments.

Results

The Soil Samples

Many of the samples produced uncharred seeds, a number produced uncharred wood fragments and several produced beetle fragments. In almost all cases it is probable that these finds represent contaminant material that has moved down through the soil, flown onto the site during excavation, or derived from root material from the recent hedge boundary that was probably removed this century from the line of the pipeline along the edge of the green lane. Although some of these finds are noted on Table 3 they are not considered further and only the charred plant material, bone and finds are deemed to be reliably contemporary with the excavated deposits. The absence of land snails in all but three of the samples and a fairly high level of corrosion of the hand excavated bone in some features indicates that the soils are in general slightly acid and some loss of shell and bone from some of the deposits must have occurred.

The late Roman deposits include a range of debris with bone and pottery evident in most samples, while fired clay, hammerscale and brick or tile were recorded in only a few samples. The quantity of burnt clay in sample 9, context 303, would support the interpretation that this deposit was burnt *in situ*. Small finds were rare although a small blue glass bead was recovered from context 201 (sample 11) and a corroded iron object (probably a nail) from 427 (sample 16).

Most of these samples are rich in environmental remains. The group of samples from the centre of the site (see Fig. 00, samples 6,7,8,9,11, 12 and 13) are characterised by numerous charred cereal grains, abundant chaff and weed seeds. The fact that the cereal includes many tail grains suggests that these assemblages might derive from the waste product of the later stages of crop processing, the fine sieving, which removes the larger grain for storage or use leaving the tail grain, small weed seeds and heavy bits of chaff (Hillman 1981). This interpretation must remain preliminary until a detailed botanical study has been conducted, but the distribution of this material throughout the features in this part of the site including two of the Anglo-Saxon grave fills suggests that this area was used for the disposal of this

waste. Two of the samples are described as burnt deposits within ditches and it seems probable that these actually represent the burning of this waste product and might suggest that the processing activity that generated it was taking place nearby.

The charred material from sample 16 several metres to the east is very similar and the general density of charred cereal grain, chaff and weed seeds (Table 3) across the whole of the excavated area would appear to reflect the general distribution of burnt waste across this part of the settlement as a result of repeated events or wind blow and disturbance. Structural evidence is apparently present to the north of the excavated trench and it may be appropriate to see this area as an agricultural processing area to the south of a farmstead or 'villa'. The clear mix of wheat, barley and oats that have been preliminarily identified and their distribution and relatively high density, along with possible pulses, suggests that this may have derived from repeated burning events, but further discussion must await the detailed botanical analysis.

Although charcoal is present throughout the samples it is only abundant in the burnt deposits, 303 and 201. In these samples the charcoal was mainly composed of small twigs, plant and grass or cereal stems, and 'tubers' (possibly the stem base of grasses). A similar assemblage of charred stems and twigs is present throughout the samples and very little roundwood or larger charcoal occurs. Much of this could equally be waste from the crop processing activities.

The area also received domestic waste since both pottery, animal bone and burnt bone is common in the features. The presence of partial skeletons of a sheep and a calf in two of the features (see below) is another indication that the excavated trench may lie within a 'farmyard' area.

Eleven of the samples produced fragments of sheep bone, six produced pig and only five produced cattle. Other species identified include goat, dog and deer, the latter an antler fragment. The human bone fragments recovered derived from the samples from grave fills or those in the immediate vicinity of the Anglo-Saxon burial ground. Field vole, *Microtus agrestis*, and frog or toad occur in a number of samples but the occurrence of water vole, *Arvicola terrestris*, which occurs in two samples, at a location several hundred metres from the nearest stream or water body suggests that this species may have been scavenging the crop waste and other food supplies available on the farm. The three samples that produced terrestrial molluscs all came from grave fills and may reflect the contemporary Anglo-Saxon or late Roman environment. Shell numbers were very small although the following taxa were recorded *Vallonia* sp., *V. costata*, *V. excentrica*, *Carychium* sp., *Punctum pygmaeum*, *Hygromia hispida*, *Vertigo* sp., *Acanthinula aculeata* and the blind snail *Cecilioides acicula*.

The four samples that were taken from the fills of the Anglo-Saxon graves have a very similar environmental assemblage to the samples of late Roman date on the site and it seems clear that these finds are re-worked and derived material from the Roman levels at the site. The undated sample from the possible drip gully, 310, has a similar, though less rich, charred plant assemblage as the other samples and is likely to be of similar date.

Excavated Animal Bone

A total of 1321 fragments of bone weighing 20.13 kilogrammes were recorded. This is a slight underestimation of the actual fragments but since in many contexts more than one

fragment could be recognised as deriving from the same bone, mainly due to recent breaks that must have occurred during excavation, washing and drying (a result of the poor condition of the bone in some of the contexts), these were not always scored individually. When the assemblage is catalogued the sample size is likely to reduce further.

Two general comments can be made. The preservation of the material varied and was poor in some contexts. Secondly the size of the bones of sheep indicated small animals similar in size to those of Iron Age date suggesting that little improvement of the sheep stock had taken place during the Roman period in this area. This needs to be tested by measurement and the bones compared with assemblages from Lincoln City and other Roman rural sites in the area.

The bulk of the pottery from the site is late Roman, and apart from possible Iron Age pottery in an early ditch and the pottery within the Anglo-Saxon graves there is no evidence for debris from other periods. It is probably therefore safe to assume that virtually all the animal bone sample is contemporary with the late Roman occupation at the site.

In contrast to the soil samples appreciably more contexts contained cattle than sheep (Table 4). The small size of the sheep at this site may have militated against their efficient recovery during excavation and the possibility that there may have been a bias against the bones of the smaller species should be considered in any further analysis. A loss of a proportion of the smaller bones in the poorly preserved assemblages may also have been a factor. The other species identified included pig, horse, dog, red deer and one bone of chicken.

Table 4: Frequency of contexts that produced excavated bone of each species
(total no. of contexts = 85)

Species	no. contexts
Cattle	68
Sheep/goat	37
Pig	20
Horse	23
Dog	5
Red deer	1
Chicken	1

A number of jaws of cattle, sheep and pig are present and will permit some assessment of the economic role of the animals at the site, but the measurement data is too limited for any statistical analysis. Context 254 contained the partial skeleton of an adult sheep, context 183 part of a calf skeleton, while context 286 appears to include parts of the feet and skull of a calf. Horse bones were fairly common and generally not so heavily fragmented as the bones of the other species. The occurrence of both innominates and parts of a femur of a horse in context 189 in conjunction with their lower level of fragmentation of this species suggests that the excavations may have recovered parts of disturbed horse burials. This should be verified during their post-excavation study.

Discussion and Recommendations

The bulk of the environmental evidence can be confidently assigned to the late 4th century AD. The samples were unusually rich and suggest that the excavated trench lies within an area of the Roman site where crop processing debris was discarded and burnt. The

agricultural character of the site is further illustrated by the burial of an adult sheep and a calf carcass in two of the features and the possible burial of horses. Primary butchery of the food animals is suggested by the occurrence of the feet and skull, but no other bones, of a calf in one feature and domestic rubbish in the form of butchered animal bones, broken pottery and occasional small finds indicates that household rubbish was also discarded in this area. The very few fragments of hammerscale in five of the samples serves to illustrate that iron smithing was conducted somewhere on the site. The relative importance of the cereal crops cultivated on the 'farm' must await further analysis and the conflicting results on the frequency of the domestic farm animals in the samples and hand collected material can also only be resolved after more detailed recording.

Two aspects of this collection are of considerable interest. The ceramic assemblage shows the deposits to be a tightly dated group of late Roman date with little or no evidence of residual or contaminant material from earlier or later periods. The environmental assemblages can therefore be closely assigned to the late 4th century a period for which limited well stratified assemblages have been recovered in Lincolnshire. For this reason both the environmental finds from the samples and the hand collected bone assemblages are deserving of analysis.

Secondly the charred plant remains in the samples represent an exceptional collection which can be expected to indicate which cereal species were grown at the site, their relative importance, the type of soils upon which they were grown, and the activities that generated the assemblages that have been recovered. The latter may allow consideration of what part of the site is represented within the excavated area.

The potential of these assemblages therefore falls within two areas of study, the agricultural economy of the site and the specific interpretation of the activities taking place in the immediate area of the trench. The paleoenvironmental potential of the assemblages is extremely limited and does not deserve any further attention.

Therefore the three areas deserving of further work are the identification of the charred plant remains from most of the samples, the identification of the charcoal (twigs, plant stems and 'tubers') in the two burnt deposits, contexts 303 and 201, and the identification and analysis of the animal bone assemblage.

Acknowledgements

Alison Foster processed and sorted the samples.

Bibliography

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Table 2: Normanton, NHH98: Archaeological finds from the samples

sample	context	feature	sample vol. lt	Res. wt.	Fired clay wt	Pot *	Coal/cinder	Ham' scale	Brick/tile wt	Bone wt	date	comment
3	117	grave fill	5	450		1/2				3	6th C	possibly heated sediment
4	144	grave fill	10	1150		2/5				50	6th C	
6	185	grave fill	30	2280		1/3		+		14	6th C	
7	172	grave fill	30	1900		2/6		+		33	6th C	
8	177	fill of ditch 178	30	3850		4/15				24	late 4th	
9	303	burnt deposit in ditch	29	850	250	13/18				27	late 4th	fired and heated sediment-magnetised only
10	288	fill of ditch	27	3470		1/5				13	late 4th	
11	201	burnt deposit in ditch	20	1900		1/3				24	late 4th	one small blue glass bead
12	229	basal fill of ditch	22	3270							late 4th	
13	262	basal fill of ditch	23	4180	1	3/14				85	late 4th	
14	360	fill of ditch	10	870				+	1	1	late 4th	
15	374	single fill of ditch/gully	8	620		1/4				<1	late 4th	
16	427	fill of ditch	30	2070		7/27		+		32	late 4th	corroded iron object (nail?)
17	434	fill of ditch	20	2470		3/89				60	late 4th	
18	365	lowest fill of ditch	22	3200						2	late 4th	
19	419	fill of ditch terminus	10	940						9	late 4th	
20	290	single fill of ditch	27	2950	4	1/26		+		2	late 4th	
21	354	lowest fill of ditch	22	3100		3/3				1	late 4th	
22	264	single fill of small gully	28	3780		3/49			1	28	late 4th	possibly heated sediment
23	310	single fill of ?drip gully	7	1160							late 4th	tiny slaggy piece in flot

* fragment or sherd no/weight in grammes

+ present

Table 3: Normanton, NHH98: Environmental finds from the samples

sample	context	sample vol. lt	flot vol ml.	char coal #	cereal #	chaff #	seeds, charred *	seeds, water-logged *	insects	snails #	bone #	burnt bone	comments
3	117	5	10	3	2			2/2	\$	2/2	2	+	barley, sheep, human
4	144	10	80	3	2	1	2/2	2/2	\$	1/1	4		barley, wheat, sheep, pig, human
6	185	30	20	3	2	2	2/2	3/2	\$	1/1	2		barley, wheat, tail grain, sheep, pig, frog/toad, common shrew, field vole
7	172	30	100	3	2	2	3/3	2/2	\$		3	+	wheat, barley, tail grain, sheep, pig, human, frog/toad, field vole, water vole,
8	177	30	20	3	3	2	2/3		\$		3	+	wheat, barley, tail grain, sheep, frog/toad, field vole, water vole
9	303	29	110	5	3	1	3/3	2/1	\$		3	+	wheat?, barley?, tail grain, dog, sheep, vole, small turdidae
10	288	27	80	3	3	1	3/2	2/1	\$		2	+	wheat, barley, oat, tail grain, pea?, bean?, sheep, deer, frog/toad
11	201	20	80	4	4	2	4/3	2/2	\$		2	+	tail grain, pea/bean?, cattle, human?, field vole
12	229	22	14	3	3	3	3/3	2/2					wheat, oat, tail grain
13	262	23	20	3	2	1	2/3	2/1	\$		3	+	wheat, barley, oat, tail grain, pig, sheep, cattle, goat, frog/toad, field vole
14	360	10	20	3	2	1	2/2	2/1	\$		1	+	wheat, barley, oat, tail grain, pea?, sheep
15	374	8	11	2	2		2/2	2/1			1		barley, tail grain, pea?
16	427	30	40	3	3	2	3/2	3/2			2		wheat, barley, oat, tail grain, pig, sheep, cattle, field vole
17	434	20	10	3	2	1	2/2	2/1			3		oat, tail grain, cattle, pig, mole, field vole
18	365	22	1	1	1	1		2/2			2		dog
19	419	10	6	2	1		1/1	2/1			2		sheep, frog/toad, field vole
20	290	27	27	3	3		2/2	2/2	\$		1	+	barley, oat, tail grain
21	354	22	3	2	1		1/2	1/1	\$		1		wheat, oat
22	264	28	23	3	2	1	2/2	3/2	\$		2	+	wheat?, barley, oat, tail grain, cattle, vole
23	310	7	10	3	1		1/1	2/2	\$				wheat

frequency of items: 1=1-10; 2= 11-50; 3=51-150; 4=151-250; 5=>250

* frequency/diversity - frequency as above and diversity as follows: 1=1-3; 2=4-10; 3=11-25; 4=26-50 taxa.

+ present

\$ present and probably modern contaminants

18/03/99

The Environmental Archaeology Consultancy

Appendix: Assessment catalogue of the hand collected animal bone from Normanton, NHH98

cont.	wt	frag nos	cattle	cattle tooth row	cattle bones	sheep	sheep tooth row	sheep bones	pig	pig tooth row	pig bones	others	bird	comments
101	15	2	Y	0	TIB		0			0				
104	9	1		0		Y	0	TIB		0				IMM
106	558	46	Y	0	RAD,MAN,TRV,UM2,MTC,SCP,LM,MTT	Y	0	TIB		0		MAN,SKL,FEM,ULN		FROM GRAVE-INCLUDES NUMBER HUMAN BONES
120	47	1		0		Y	1	MAN		0				FRAGMENTED MANDIBLE-ADULT
123	69	1	Y	0	SKL		0			0				FRAGMENTED PART SKULL
125	141	8		0			0			0		EQU, FEM		
129	2	2		0			0			0				INDET
130	241	12	Y	0	RAD,HUM,ATL		0		Y	0	SCP			
132	13	2	Y	0	MAN		0			0				
135	80	5		0			0			0		EQU,TTH,MAN,HUM,LBF		FRAGMENTED HUMAN BONES
137	141	29	Y	0	TIB,RIB	Y	0	TIB	Y	0	PH2	HUM,RIB,FRG		
145	80	1	Y	0	SCP		0			0				FRAGMENTED
148	15	1	Y	0	MTC		0			0				
150	356	35	Y	0	TRV, TIB,LML,AST,CAL,RIB	Y	0	TIB,MTT,HUM,RAD,	Y	0	HUM,TIB,SCP,INN,CAL			
155	356	31	Y	0	TIB	Y	0	TTH		0		EQU,MAX,TIB,MAN		FRAGMENTED MAXILLA-TEETH VERY WORN
172	215	20	Y	0	TIB,LMP,INC,ULN,SKL		0			0		EQU,TTH		
176	184	19	Y	1	MAN		0			0				FRAGMENTED JAW-SUB-ADULT
177	3270	114	Y	2	MTC,HUM,ULN,AST,INN,TIB,MTT,CAL,SCP,MAN,	Y	1	TIB,MAN,RAD	Y	0	HUM,FEM,SCP	EQU,AST,TIB,CAN,MAN	CHIK,HUM	
179	15	2		0		Y	0	LM2		0				
183	662	65	Y	0	AST,LMV,AXI,SCP,TIB,INC,CEV,RAD,CAL,HUM,INN	Y	0	MTT,LM2,TIB,RAD	Y	1	MAX	CER,ANT		CALF
185	271	30	Y	0	SCP,FEM,TIB,PMX	Y	0	HUM,UM1,INN,MTT,PH1	Y	0	MTC	EQU,PH2		
188	974	30	Y	1	MAN,TIB,INN,MTT,VER	Y	0	TIB,RAD		0		EQU,RAD,MTT,CEV		
189	1023	16		0			0			0		EQU,FEM,INN		FRAGMENTED PELVIS AND FEMUR OF HORSE
196	65	6	Y	0	INN	Y	0	FEM,TIB		0		EQU,PH1		
198	204	14	Y	0	MTT,HUM,PH1,LM2,PM3	Y	0	RAD		0				
199	14	1	Y	0	PET		0			0				
201	67	14	Y	0	LMV,INN	Y	0	INN,TIB		0				
204	89	5	Y	0	PH2		0		Y	0	MAN			
207	76	5	Y	0	SCP	Y	0	RAD		0		EQU,UM		
208	95	9	Y	0	HC		0			0		EQU,LM		
210	27	1	Y	0	MAN		0			0				
214	11	2	Y	0	UPM		0			0				
216	26	9	Y	0	HUM		0			0				FRAGMENTED CALF HUMERUS
222	483	16	Y	1	SCP,HUM,MTT,MAN,PH1,LM2	Y	0	HUM	Y	0	FEM	EQU,MAN		
225	60	44	Y	0	UPM3		0		Y	1	MAX			
229	466	20		0		Y	0	CAL		0		EQU,HUM,MAN,HUM,FEM		HORSE MAN FRAGMENTED
231	137	25	Y	0	UM,INN,TRV	Y	1	MAN,TIB,MTC,	Y	0	RAD			
235	117	18	Y	0	PH2,INN		0		Y	0	PH1,ULN	HUM,ULN		
240	29	5	Y	0	PH1	Y	0	UM3		0				
241	4	1		0			0			0				
244	25	10	Y	0	LPM2	Y	0	RAD		0				

Appendix: Assessment catalogue of the hand collected animal bone from Normanton, NHH98 (continued)

cont.	wt	frag nos	cattle	cattle tooth row	cattle bones	sheep	sheep tooth row	sheep bones	pig	pig tooth row	pig bones	others	bird	comments
254	489	83	Y	0	PH1,RAD	Y	2	TIB,MTT,MAN,SKL, HUM,RAD,ULN, CAL,MTC,ETC	Y	0	LI	HUM,TIB,PHI		PARTIAL ADULT SHEEP SKELY
256	67	22	Y	0	RIB		0			0				
258	16	9		0			0			0				
269	221	14	Y	0	ATL,RIB,TRV,SKL	Y	0	ATL		0				
271	333	23	Y	0	MTT,HUM,UPM	Y	2	MAN	Y	0	INN			
272	280	28	Y	0	RAD,ULN,SKL,PET,RIB		0			0				
274	27	4	Y	0	SAC		0		Y	0	SCP			
278	37	4	Y	0	UM2		0			0				
279	179	9	Y	0	MAN,SKL		0			0		EQU,INN		
283	16	1	Y	0	TRV		0			0				
286	554	82	Y	2	MAN,MAX,MTT,MTC,PH2,SKL		0			0				FEET AND SKULL FROM CALF?
287	1094	25	Y	0	RAD,TIB,SCP,LI,MAN		0			0		EQU,INN,MTP,MT C		FRAGMENTED HORSE PELVIS
288	90	7	Y	0	MTC,RIB	Y	0	UM2,LM2		0				
290	182	19	Y	1	MAN,MTT,UM2,UM3		0			0				
292	447	21	Y	1	MAN,SCP,INN,RIB	Y	0	HUM,TIB		0		EQU,LI		
302	33	1	Y	0	RIB		0			0				
303	43	4	Y	0	MAN		0			0				
305	3	2		0			0			0				
308	271	6	Y	0	INN,CAL	Y	1	MAN		0		EQU,RAD		
311	311	9	Y	0	RAD,ULN,MTC,INN		0		Y	0	SCP			
321	68	2	Y	0	FEM		0			0				
322	292	11	Y	0	MTT,SCP		0			0		EQU,UM		
328	951	49	Y	0	HUM,FEM,CEV,PH1,INN,PH2, MTC	Y	0	AST,TIB,PH1,MTT	Y	0	TIB	EQU,MTC		
333	394	35	Y	1	MAN		0			0				FRAGMENTED MANDIBLE-ADULT
351	10	1		0		Y	0	TIB		0				
360	4	3		0		Y	0	FEM		0				
365	32	10	Y	0	CPR,CPI		0			0		DOF,HUM,ULN, MAN,MTP		DOG OR FOX-PARTIAL SKELY
366	195	4	Y	0	RAD,ULN		0			0		EQU,LI		
372	21	5		0		Y	0	TIB,RAD		0		CAN,TIB		
374	266	30	Y	0	TIB,RAD,INN		0		Y	1	MAN			
376	26	1		0		Y	1	MAN		0				FRAGMENTED
406	11	1	Y	0	RIB		0			0				
408	235	12	Y	0	TRV	Y	0	MTT		0		EQU,TIB,ULN		
416	58	10	Y	0	HC,MAN	Y	0	PHI		0				
418	55	6	Y	0	LPM3	Y	0	HUM,SCP		0				
420	108	16	Y	0	MAN	Y	0	FEM	Y	0	SCP,ULN			
424	10	2		0			0			0				
426	186	17	Y	1	MAX,CQ		0		Y	0	ULN	EQU,TIB		FRAGMENTED HORSE TIBIA
427	16	14		0			0			0		CAN,MAN		FRAGMENTED DOG MANDIBLE
434	18	6	Y	0	MAN	Y	0	LDP4,FEM	Y	0	TRV			
436	105	3	Y	0	AST,CAL		0			0		CAN/BAD? FEM		
438	363	2	Y	0	RAD		0			0		EQU,RAD		
439	263	8	Y	0	SCP,TIB,LI		0			0				
999	1016	22	Y	0	RAD,MTC,HUM,LM2,SCP,CAL, CQ,	Y	0	MTC,RAD		0		CAN,MAN		CATTLE BONES VERY LARGE-RECENT?

Bone codes are listed in the attached key.

APPENDIX D

Conservation Report
By Rob White

NORMANTON MAINS REPLACEMENT SCHEME PHASE 1.

RESEARCH ARCHIVE CONSERVATION.

Methodology & Associated Costs.

The following sets out the required tasks, with associated resource implication, for the conservation treatment to research archive level of the Normanton assemblage. It addresses directly the requirements laid out by the finds specialist Kevin Leahy in his Assessment Report, following the same structure to provide uniformity and to allow comparison of costs across different finds type.

Wherever corrosion removal is alluded to below this will be undertaken in line with the condition of the item, ensuring no threat to its physical integrity.

WEAPONS.

TASKS.

- Selective corrosion removal.
- Additional x-radiography of selected items.
- Localised consolidation as appropriate.
- Provision of appropriate packaging/support for long-term integrity/safe access.

COSTS.

Labour (52 hours)	1040.00
Materials	87.76
	sub-total £1127.76

KNIVES.

TASKS.

- Selective corrosion removal.
- Appropriate examination/recording of mineral replaced organic components.
- Localised consolidation as appropriate.
- Provision of appropriate packaging/support for long-term integrity/safe access.

COSTS.

Labour (78 hours)	1560.00
Materials	116.16
	sub-total £1676.16

(Nb. The finds assessment report refers to a knife with finds number 305. This item has not been received by the conservation department and the above costs do not reflect its treatment.

If it is located and included for conservation the above sub-total will need to be increased accordingly).

BELT FITTINGS.

TASKS.

- Selective corrosion removal.
- Localised consolidation as appropriate.
- Chemical stabilisation as appropriate.
- Provision of appropriate packaging/support for long-term integrity/safe access.

COSTS.

Labour (26 hours)	520.00
Materials	43.79
	sub-total £563.79

RINGS.

TASKS.

- Selective corrosion removal.
- Localised consolidation as appropriate.
- Provision of appropriate packaging/support for long-term integrity/safe access.

COSTS.

Labour (8 hours)	160.00
Materials	15.95
	sub-total £175.95

BROOCHES.

TASKS.

- Full corrosion removal for selected items (find numbers 422, 463 & 507).
- Selective corrosion removal for remainder of items.
- Chemical stabilisation as appropriate.
- Provision of appropriate packaging/support for long-term integrity/safe access.

COSTS.

Labour (95 hours)	1900.00
Materials	63.27
	sub-total £1963.27

SILVER PENDANTS.

TASKS.

- Full corrosion removal.
- Reconstruction.
- Chemical stabilisation.
- Provision of appropriate packaging/support for long-term integrity/safe access.

COSTS.

Labour (9 hours)	180.00
Materials	5.69
sub-total	£185.69

SLEEVE CLASP.

TASKS.

- Full corrosion removal.
- Chemical stabilisation.
- Provision of appropriate packaging/support for long-term integrity/safe access.

COSTS.

Labour (3 hours)	60.00
Materials	2.89
sub-total	£62.89

GIRDLE HANGERS AND KEYS.

TASKS.

- Full corrosion removal.
- Reconstruction of selected item.
- Localised consolidation as appropriate.
- Chemical stabilisation as appropriate.
- Provision of appropriate packaging/support for long-term integrity/safe access.

COSTS.

Labour (28 hours)	560.00
Materials	18.71
sub-total	£578.71

GLASS BEADS, IVORY FRAGMENTS, BONE PIN, JET, & GLASS VESSELS.

All required work undertaken as part of site archive conservation completion (essential stabilisation for museum deposition).

POTTERY.

This item (find number 232) has not been received by the conservation department. If it is located its treatment costs will need to be assessed separately.

MISCELLANEOUS.

TASKS.

- Full corrosion removal.
- Localised consolidation as appropriate.
- Chemical stabilisation as appropriate.
- Provision of appropriate packaging/support for long-term integrity/safe access.

COSTS.

Labour (20 hours)	400.00
Materials	17.78
	sub-total £417.78

(Nb. There would appear to be a numbering discrepancy in this category. The item listed in the assessment report as small find number 40 is more likely to be number 43).

NAILS.

TASKS.

- Full corrosion removal.
- Localised consolidation as appropriate.
- Reconstruction where possible.
- Provision of appropriate packaging/support for long-term integrity/safe access.

COSTS.

Labour (24 hours)	480.00
Materials	30.22
	sub-total £510.22

ROMAN COINS.

TASKS.

- Full corrosion removal.
- Chemical stabilisation.
- Provision of appropriate packaging/support for long-term integrity/safe access.

COSTS.

Labour (65 hours)	1300.00
Materials	20.63
	sub-total £1320.63

(Nb. Find number 23 listed in this category is also listed under the miscellaneous section. Find numbers 499 and 530 do not appear to be coins and may have been mistakenly included in this section).

PROJECT TOTAL £8582.85

(VAT is not included in the above costs and would be charged in addition).