Walesby Hill, West Lindsey Lincolnshire

Archaeological Monitoring of Water Pipeline Installation.

Dave Webb

CAMBRIDGE ARCHAEOLOGICAL UNIT
UNIVERSITY OF CAMBRIDGE

Monitoring of Water Main Pipeline installation at Walesby Hill, West Lindsey, Lincolnshire.

Dave Webb

Cambridge Archaeological Unit
University of Cambridge
Department of Archaeology

September 2011

Report No. 1047

Site Code: WHMR09

Non Technical Summary

The Cambridge Archaeological Unit (CAU) undertook the archaeological monitoring of the instillation of a replacement water main pipeline at Walesby Hill, Lincolnshire, by Anglia Water and its agents between August 1st and August 10th 2009. The pipeline commenced at Walesby Hill and continued in a south-westerly direction towards Walesby. The monitoring recorded the presence of several intrusive features related to a complex of enclosures and trackways previously observed in a major aerial survey of the Lincolnshire Wolds. The features are probably a farmstead of the early Romano-British period.

Contents

Tables

1.1 Introduction

The Cambridge Archaeological Unit (CAU) undertook the archaeological monitoring of a 250m section of the instillation of a replacement water main pipeline at Walesby Hill, Lincolnshire, between August 1st and August 10th 2009. The evaluation was commissioned by Anglia Water with the aim of establishing and recording the presence, date, condition and significance of any archaeological remains. The evaluation was carried out in accordance with specification produced by the CAU (Beadsmoore 2009). The project was approved and monitored by Lincoln County Council Archaeology.

1.2 Location and Topography

The route of the water main pipeline is centred on TF 14668 93248, Walesby Hill, Walesby, West Lindsey, Lincolnshire. Walesby Hill is located in the northern section of the Lincolnshire Wolds overlooking the Lincoln clay vale. The Wolds are a series of low hills and steep valleys with an underlying geology of calcareous (Chalk) rock. The Wolds form part of an upland chalk landscape that stretches almost continuously from Kent to East Yorkshire. The typical open valleys of the Wolds are the result of glacial action during the last ice age. Much of the landscape of the Wolds is overlain by glacial deposits (Wilson 1948).

1.3 Archaeological and Historical Background

The area within which the pipeline construction took place is an area of known archaeology. The earliest evidence for activity in the area comes from Mesolithic flints collected near to the site. Aerial photography has identified Neolithic long barrows (HER 50234, HER 52995) and Bronze Age round barrows (HER 50443, HER 50444) in the area. Further evidence of Neolithic and Bronze Age activity comes from a scatter of Neolithic/Bronze Age flint (HER 51865) found near to the site. A Neolithic polished axe (HER 50155) and a Bronze Age axe were found at Walesby. To the north at Otby Top a potential prehistoric site has been identified (HER 51865), although at present only Roman material has been recovered (Beadsmoore). Roman activity has also been recorded in the area. In 1861 a large finds rich site with a Roman villa was excavated (HER 50571, Monument No. 351895); the site covered 8.75 hectares. A potential kiln site has also been identified (HER 51832). To the north of the crossroads at Walesby Top a double ditch linear feature (HER 50385) was recorded during the installation of a British Gas pipeline, and dated to the Romano-British period. In the immediate vicinity of the pipeline course, a possible farmstead and trackways were noted during aerial photographic survey (Jones 1988). Fieldwalking of the area has also produced abraded pottery including greywares, redwares and calcite gritted wares (HER 51852). A deserted medieval village and associated ridge and furrow is noted at Otby (HER 50543).

Figure 1. Location Plan

1.4 Methodology

The pipeline construction method utilised was an open top soil strip followed by the cutting of an open pipe trench. The topsoil was removed from a 2.0m wide easement for the pipeline trench construction by a tracked 360° machine using a 2.0m wide toothless bucket under archaeological monitoring by CAU staff. Archaeological monitoring was conducted over the initial 250m of the pipeline route as specified in the brief. Any potential archaeological features were investigated and treated in concordance with the specifications drawn up by the CAU (Beadsmoore 2009). After the initial archaeological recording was completed the pipeline installation continued with the cutting of the pipe trench. The pipeline trench was cut with a toothed 0.5m bucket, this again was monitored by a member of the CAU and treated as previously outlined. The use of a toothed bucket was dictated by the nature of the underlying chalk natural. The stripped surfaces and removed spoil were visually scanned and metal detected for any archaeological material. The excavation of all archaeological features was carried out by hand and any finds were retained. The recording was carried out following the CAU modified MOLAS system (Spence 1990) of archaeological site recording. All work was carried out in accordance with statutory Health and Safety legislation and with the recommendations of SCAUM (Allen & Holt 2002). The total area investigated was 500sq m. The site code is WHMR09

2.1 Results

The machine cutting of the easement and pipe trench commenced at the north-east corner of the field adjacent to the crossroads formed by Caistor Lane and Walesby Hill road. The pipe trench cut continued downslope towards Walesby running parallel with the field boundary and Walesby Hill Road. The initial removal of the topsoil from the easement revealed no archaeological material or features. It was not until the trench for the pipeline was cut that intrusive features could be discerned. Several features were revealed sealed beneath a layer of subsoil. The features could only be seen in profile within the vertical section of the pipe trench. Where it was possible, the upper layer was stripped by hand so that features could be identified in plan and alignments checked; however this was not possible for all the features due to the extensive overburden created by the machine excavation of the trench and the remaining depth of subsoil.

In total, twenty one features were recorded within the easement of the pipe trench. The features were distributed throughout the length of the cut for the pipe trench, with a cluster of seven features occurring between 60-80m south-west of the start point of the pipe trench. Although many of the sections were not recorded at precisely 90° to the alignment of the features, only the acute angle at which **F.15** bisected the trench cut produced a distorted profile. The majority of features (15) were identified as linear features (ditches), with two probable pits (**F.13, 19**), and a further two possible postholes (**F.6, 11**). The profiles of the ditches could be placed into two distinct groups, those with a shallow broad flat base (**F.3, 4, 9, 10, 12, 14,15**) and a second group (**F.2, 5, 7, 8, 16, 17, 18, 19, 21**) with a narrow more V-shaped profile with a concave base. Most of the

ditches fell into the two groups outlined and did not exceed 0.45m in depth; the only feature to do so was a **F.16** which was 0.90m in depth.

Although the machining was monitored and all exposed surfaces were examined (including a metal detecting survey) finds were only recovered from cut features. Finds were also restricted to an area between 60m and 200m from the start point of the pipe trench. Although the finds could be seen as being concentrated around a cluster of central features, the relatively small sample taken of the features due to the narrow cut of the pipe trench may have produced a distorted view of a larger site.

3.1 Discussion

Results from the aerial photographic survey conducted as part of the National Mapping Programme have identified several features adjacent to the top of Walesby Hill (Jones 1998). A complex of cropmarks identified from the photographs comprised of a large enclosure approximately 90m square, bounded on the north and west sides by possible trackways. In the north east corner of the large enclosure, a smaller 30m square enclosure appears to be conjoined to it. The roadway leading up to the top of Walesby Hill from Walesby bisects both of the enclosures. A further small enclosure, approximately 15m square, to the north of the larger enclosure and on the same alignment, is considered to be contemporary (EH monument record 893051). A partial enclosure to the north and on a different alignment is considered not to be contemporary or part of the same complex. The course of the water main easement runs adjacent to the edge of the field, parallel with the road from Walesby and bisects two of the enclosures seen in the aerial survey (Fig.2).

The broad east to west trackway located to the north of the small and large enclosures would appear to be cut by the water main pipe trench approximately 50-80m from the north east corner of the field. At this point three linear features (**F.4, F.5, F.9**) were aligned in a similar east to west direction. Features **F.4** and **F.9** possessing broad flat bottomed profiles and similar dimensions differed from **F.5** which had a more pronounced V-shaped profile and was smaller in dimensions. Pairing **F.4** and **F.9** would form a broad symmetrical trackway approximately 20m in width. The pairing of **F.5** with either **F.4** or **F.9** would form a narrower asymmetrical trackway between 7 and 13m in width. Due to the limited area exposed by the excavation precise alignments could not be ascertained, however the alignments of **F.4** and **F.9** appeared to be similar whereas **F.5** appeared to be on a more northerly alignment. The ceramic material recovered from **F.4** and **F.9** has a similar dating of mid to late 1st century AD. Unfortunately no dating material was recovered from **F.5**. Spatially the pairing of ditches **F.5** and **F.9** would make a trackway more in keeping with the adjacent enclosures than a pairing of **F.4** with either **F.5** or **F.9. W**ithout suitable material evidence or further excavation to confirm alignments the pairing can only remain conjecture.

Between **F.5** and **F.9,** several smaller slight features were noted, the relationship between the larger ditch **F.9** and the small ditch or gully **F.21** gave the only positive evidence of a sequence of feature's seen on the site. The other adjacent features including two other

Figure 2. Pipeline trench plan with aerial photography plots (Jones 1998)

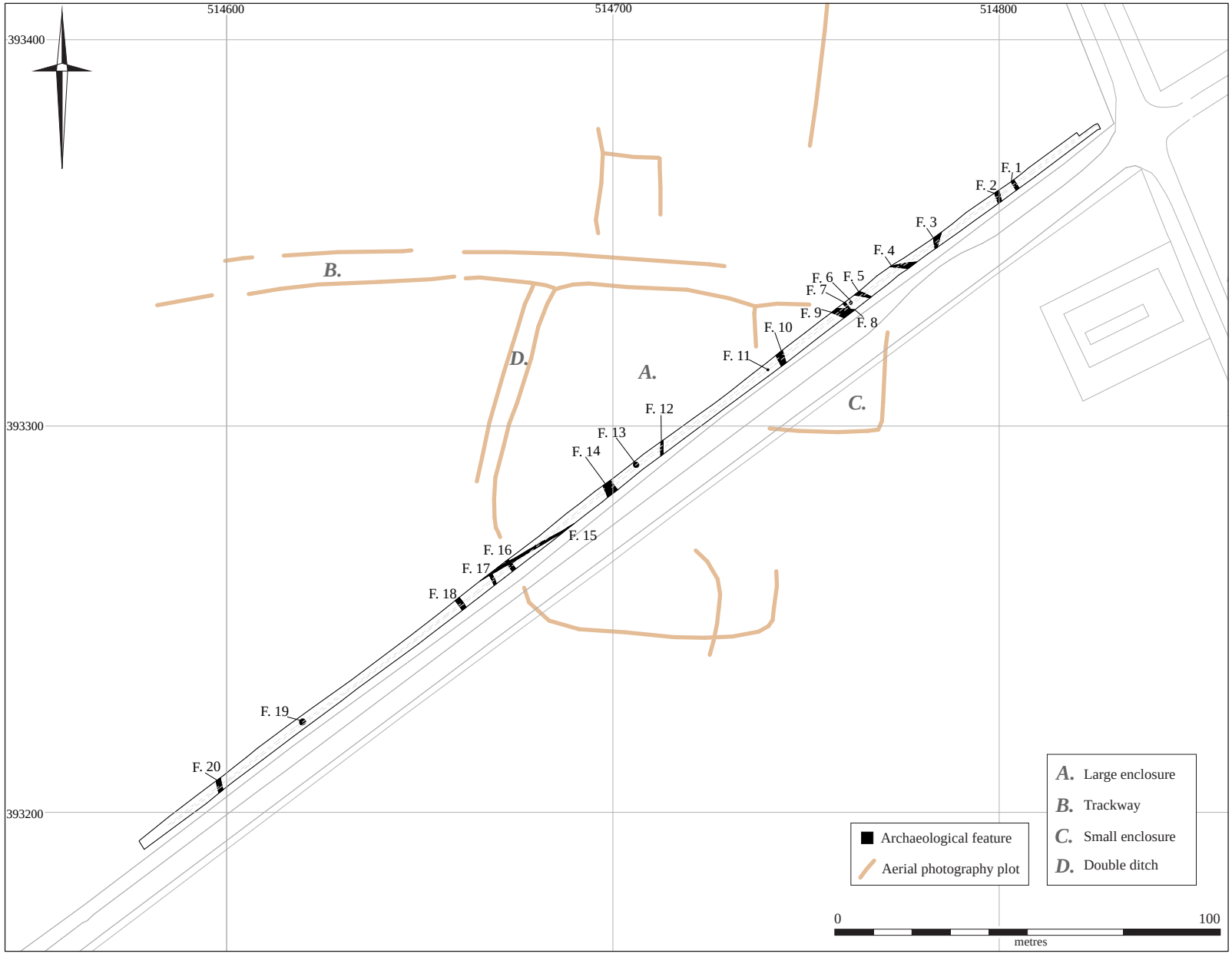


Figure 3. Pipeline trench plan with aerial photography plots (Jones 1998)

slight ditches or gullies (**F.7**, **F.8**) and a probable posthole (**F.6**) may be part of an earlier phase. If the larger ditches form a trackway it is most likely that any features within its path would have become redundant at this point. Whilst it is possible that the features are from a later phase there is no material evidence to support this notion, whilst there is evidence of earlier phasing. The dating however can only again remain conjecture as there is no conclusive dating evidence for **F.6**, **F.7** and **F.8**.

The north-west corner of the small square enclosure seen in the aerial survey would appear to be formed by **F.9** and **F.10**, both have a similar profile and contain material of the same period of mid to late 1st century AD. Within the enclosure no other features were noted.

The large enclosure (Fig.2. A) seen in the aerial survey is to the south of the east to west trackway (Fig.2. B) and to the south west of the small enclosure (Fig.2. C). This enclosure appears to have a further trackway (Fig.2. D) adjacent to it along its western perimeter or at least a double ditch system. At the point that the pipe trench would appear to bisect the south-west corner of the large enclosure, three ditches (**F.16**, **F.17**, **F18**) appear with a similar alignment to the aerial survey plots. The aerial survey plot only appears to show a double ditched trackway on the west side of the enclosure without a continuation around the south-west corner and the rest of the perimeter of the enclosure. Several linear features encountered during the excavation do not appear on the aerial survey and so the termination of the double ditch cannot be presumed with certainty. The feature most closely aligned with the inner ditch of the trackway or enclosure ditch is **F.16** whilst **F.17** and **F.18** align with the projected course of the outer corner of the trackway or enclosure complex. The profile of **F.16** showed a steep V-shaped ditch at least 2.40m in width and 0.90m in depth; this was the most substantial feature encountered during the excavation. The profiles of the putative outer ditch (**F.17**, **F.18**) although spatially on the right alignment demonstrate much slighter features than the large inner ditch (**F.16)**. The pairing of the features (**F.16** with **F.17** or **F.18**) to make a trackway or double ditched enclosure would seem an unlikely although not improbable combination.

The absence of a ditch of a similar corresponding profile and dimensions at the north end of the two enclosures suggests that the smaller enclosure was not superimposed over a pre-existing large enclosure but that the larger enclosure is an addition to the smaller enclosure. The presence of the slightly earlier material in the features adjacent to the small enclosure tends to support this notion.

A further ditch **F.15** on a north-east to south-west alignment bisected two of the ditches (**F.16** and **F.17**) and probably bisected **F.18**. Material of a similar period mid 1st to 2nd century AD was recovered from both the north-west to south-east aligned features and the north-east to south-west alignment, providing no temporal distinction between ditches. Since the ditches were only seen in profile and without being able to expand the area of excavation the relationship between the features could not be resolved.

Within the area demarcated by the large enclosure ditch several features were noted. A small pit (**F.11**) and a slight linear feature (**F.12**) produced no dating evidence, but were most likely prehistoric or Roman in origin. Two other features (**F.13**, **F.14**) produced material dated to the mid 1st to mid 2nd century AD. Feature no. 13 was a small pit with a fragment of ceramic material dated to the mid 1st to mid 2nd century AD and a T shaped copper alloy brooch dated to the late 1st to mid 2nd century AD (see Appendix 2). The brooch has been identified as a Colchester derivative group 10d (D. Mackreth *pers.comm*.). The distribution of the type 10 is to the south-west with the type 10d having its heartland around Somerset; however, examples are known further afield including examples in the east of the country in Cambridge and Norfolk. The brooch from Walesby would appear to add a further outlier to the group.

The second feature to produce dating evidence within the area demarcated by the large enclosure ditch was a broad flat bottomed ditch (**F.14**). The feature produced the largest quantity of ceramic material (see Appendix **3**) recovered from the pipe trench. In addition quantities of large burnt stone were recovered with a possible fragment of crudely dressed stone. The range of vessels comprised both fine and coarseware vessels including six jars, two bowls, two bowls/jars and a Baetican amphora (Fig.4.). The origin of this type amphora is the Guadalquivir valley in southern Spain (part of the Roman province of Baetica) and they are usually associated with the trade in Olive Oil and sometimes preserved olives (Sealey 1985). The presence of this vessel suggests connection with a wider trade network than that indicated by the rest of the assemblage that could just be the product of local manufacture. The fragment of crudely dressed stone could be indicative of a structure or road construction (see Appendix 5) in the vicinity; however, no other building material was recovered from any other features during the watching brief.

A small quantity of animal bones were recovered from the features in the southern segment of the large enclosure and included horse, cattle and sheep/goat remains. Traces of skinning were noted on the cattle bones whilst butchery was noted on some of the sheep vertebrae. Overall the faunal remains were considered to reflect a domestic assemblage (see Appendix **4**). No further faunal remains were recovered from elsewhere on the site. In addition to the faunal evidence, the environmental evidence (see Appendix **6**) recovered and the worked stones (see Appendix **5**) were concentrated in the south west corner of the large enclosure. Although only small, the composition of the assemblage and its focus within the enclosure suggests domestic activity and the possibility of a structure.

Outside the area defined by the complex of the trackways and enclosures, further features were noted. To the north two small linear features (**F.2**, **F3**) and to the south a small pit (**F.19**) and a further linear (**F.20**). The features were not observed during the aerial survey and may or may not be associated with the complex of trackways and enclosures. No dating material was recovered from the features; however, their stratographic location below the subsoil and the similarity of the fills suggests a prehistoric or Roman date.

To the north-east of the area subject to the watching brief, the monitoring of the Skitter to Hatton pipeline for British Gas in 1993 (Lincolnshire HER 50385) recorded the presence of a double ditch linear feature that contained a fragment of Romano-British pottery in its tertiary fill and a Roman coin of 1st century date was recovered from between the ditches. The co-ordinates given would appear to coincide with the trackway that appears to extend northwards from the vicinity of the small enclosure before eventually turning in an easterly direction on the aerial survey at this point. Other earlier work in the location has also noted evidence of an early Roman presence. Fieldwalking in 1985 of the field that the pipeline passed through (HER 51582) produced quantities of abraded greywares, oxidised redwares and calcite gritted wares dated to the Roman period.

4.1 Conclusion

The pattern of land use within the Lincolnshire Wolds has been characterised by Taylor (2007) in a study of the patterns of Roman rural settlement. He outlines a rather different pattern of land use in the region than that observed elsewhere in England. He describes a landscape with a lower level of settlement than elsewhere and an absence of monumental features within this landscape. The recorded settlement and farmsteads in the region tend to follow a dispersed pattern of small blocks of rectilinear fields and enclosures focussed on trackways interspersed by large open areas.

The initial impact of the Roman conquest on the rural settlements of the Lincolnshire Wolds appears from the current evidence to be somewhat limited (Bennet 2009). Although there is evidence for the transition or continuation from the Iron Age period to the Roman period at various sites on the Wolds, the adoption of Roman material culture in rural settings is very limited during the post-conquest period. Excavations at Barnetby-le-Wold recorded a farmstead with construction of traditional round houses continuing well into the Roman period and little sign of Roman style pottery being adopted until the 2nd century (Bennet 2009).

The excavation at Walesby Hill revealed a series of linear features of varying alignments along with other smaller features including pits and possible post-holes, indicating the presence of a settlement. The somewhat restricted view of the site produced by the pipeline easement when combined with the results from the earlier aerial survey can produce an enhanced view of the potential settlement. A combined view of the data confirms the aerial view of a large and small enclosure focused on adjacent trackways, the result of these excavation, add further linear features and indications of settlement, both within and outside the enclosures not seen in the aerial survey. The results also suggest that there may have been more than one phase of settlement; however, the evidence is only slight and more extensive excavation would be required to confirm this interpretation. The material culture recovered from the site suggests a domestic assemblage with a degree of high status including metalwork, fine-wares and imported material dating from the mid 1st century to the mid 2nd century; no earlier material was recovered.

4a)

4b)

4c)

4d)

Figure 4. Ceramic artefacts from Walesby Hill

The pattern of dispersed settlement seen at Walesby Hill is consistent with that observed for rural settlement of the Roman period elsewhere on the Lincolnshire Wolds. However, the material culture recovered from the site appears to be distinct from other settlements and farmsteads on the Wolds. The presence of finewares and imported material suggests a degree of high status and the dating of this material, the early adoption of Roman styles and tastes.

The lack of material later than the mid 2nd century from the site suggests a cessation of the occupation of the site at this time; however, a degree of caution should be employed at this point as the sample from the site as a whole is very small. To the south of the site (less than 500m) during this period a large villa complex appears to have been established covering over 8.75ha (Philpot. 1861). The site was discovered in 1861 and partially excavated producing ceramic material dating from the 2nd to 4th century, hypercaust material and a coin of Constantine II (316-340, Emperor 337-340). Further finds resulting from agricultural activity included in 1959 fragments of a lead vessel with a chi-rho monogram. A cast copper alloy eagles head terminal from a vehicle mount has also been found on the surface at the site. Whether the two sites have any form of relationship either as client, satellite or even precursor can only be speculated to at present as there is currently no evidence linking the sites and significant further investigation would be required to present any form of argument for such relationships. The preservation of the slight features at the site and the quantity and quality of the material recovered suggests that the enclosures at Walesby Hill could provide significant data in a study of the early Roman influence on the Lincolnshire Wolds, with the possible potential for further studies of the development and relationship with a villa complex.

Acknowledgements

The work was commissioned by Anglia Water and the site was monitored by Louise Jennings for Lincolnshire County Council Historic Environment Team. Emma Beadsmoore was the project manager acting for the Cambridge Archaeology Unit. Donald Horne conducted the digital survey, Brian Crossan digitized the plans and prepared the graphics. Frankie Cox,and Andy Wheelan, assisted on site. Don Mackreth commented on the Brooch. Katie Anderson reported on the ceramic assemblage. Vida Rajkovača reported on the faunal remains. Anne de Vareilles analysed the environmental remains. Simon Timberlake reported on the worked and other stone. Co-ordination with Clancy Dowcra was provided by Rob Martin.

References

Allen.J.L. and Holt.A. 2002. *Health and Safety in Field Archaeology*. SCAUM

Beadsmoore.E 2009 *Walesby Hill, West Lindsey. Project Specification for Archaeological Monitoring and Recording*. CAU

Bennet.M. 2009 *The Wolds before AD1000*. in The Lincolnshire Wolds ed. Robinson.D.

Jones D 1998 *Romano-British Settlements on the Lincolnshire Wolds*. in Lincolnshire's Archaeology from the Air ed. Bewley.R. series Occasional Papers in Lincolnshire History and Archaeology no.11

Jones D 1988 *Aerial Reconnaissance and Prehistoric and Romano-British Archaeology in Northern Lincolnshire – A Sample Survey*. Lincolnshire History and Archaeology. Vol. 23

Spence.C. 1990. *Archaeological Site Manual. Museum of London.*

Peacock, D.P.S. 1998 The Archaeology of Stone, English Heritage 1998, 61pp

Philpot.W.Rev. 1861. *The Remains of the Roman Villa in the Parish of Walesby*. Reports and papers of the architectural and archaeological societies of the counties of Lincoln and Northampton Vol.6.

Sealey, P. R. 1985, *Amphoras from the 1970 excavations at Colchester Sheepen*, British archaeological reports. British series, 142, BAR, Oxford, 1985.

Wilson.V. 1948 *British Regional Geology. East Yorkshire and Lincolnshire.* H.M.S.O.

Abbreviations Used
EH English Heritage Monuments Records
HER Lincolnshire Heritage and Enviroment Records

Appendix 1: Feature Descriptions

The features are listed by distance from the start of the pipe trench not in numerical order. Due to the variation in top soil and sub soil cover created by the machine strip the depth is taken from the base of the sub soil.

F.1 (25.5m)

Beneath 0.15m of sub soil a slightly irregular [11] feature with steep sloping sides and an undulating base. The fill [10] was comprised of a very firm reddish brown clay. No archaeological material was recovered.
Dimensions: Width 0.80m, depth 0.25m.
The feature is most likely a periglacial channel.

F.2 (31m)

A well defined cut [23] of a linear feature visible on both sides of the pipe trench and aligned in a north west to south east direction. The feature has steep sloping staight sides with a flattish base. The upper fill [21] was comprised of a reddish brown silty clay with moderately frequent chalk inclusions. The lower fill [22] was comprised of a dark reddish brown silty clay with small to medium chalk inclusions. No archaeological material was recovered.
Dimensions: Width 0.65m, depth 0.35m.
Feature type ditch.

F.3 (51m)

Beneath 0.08m of sub soil a well defined cut [25] of a shallow linear feature visible on both sides of the pipe trench and aligned in a north west to south east direction. The feature has moderate sloping staight sides with a flattish base. The fill [24] was comprised of a dark reddish brown silty clay with frequent chalk inclusions. No archaeological material was recovered.
Dimensions: Width 1.30m, depth 0.23m.
Feature type ditch.

F.4 (61.5m)

Beneath 0.08m of sub soil a well defined cut [4] of a broad, shallow, linear feature visible on both sides of the pipe trench and aligned in a east to west direction. The feature has shallow sloping slightly concave sides with a flattish base. The fill [3] was comprised of a brownish red silty clay with occasional chalk inclusions and occasional charcoal flecs. Material recovered roman pottery.
Dimensions: Width 1.65m, depth 0.18m.
Feature type ditch possibly north side of trackway

F.5 (74m)

Beneath 0.04m of sub soil a well defined cut [14] of a broad "V" shaped linear feature visible on both sides of the pipe trench and aligned in a north-west to south-east direction. The feature has moderately steep sloping straight sides with a narrow concave base. The fill [13] was comprised of a dark reddish brown silty clay with frequent chalk inclusions. No archaeological material was recovered.
Dimensions: Width 0.95m, depth 0.35m.
Feature type ditch

F.6 (77.75m)

Beneath 0.08m of sub soil a well defined cut [29] of a small pit. The feature has steep near vertical straight sides with a flat base. The fill [28] was comprised of a reddish brown silty clay with frequent small to medium chalk inclusions. No archaeological material was recovered.
Dimensions: Width 0.45m, depth 0.45m.
Feature type probable post hole.

F.7 (79m)

Beneath 0.05m of sub soil a well defined cut [16] of narrow linear feature aligned in a north west to south east direction. The feature has moderate sloping concave sides with a concave base. The fill [15] was

comprised of a reddish brown silty clay with frequent chalk inclusions. No archaeological material was recovered.
Dimensions: Width 0.60m, depth 0.20m.
Feature type ditch.

F.8 (80.5m)

Beneath 0.10m of sub soil a well defined cut [18] of a narrow "V" shaped linear feature visible on both sides of the pipe trench and aligned in an east to west direction. The feature has moderately steep sloping straight sides with a narrow concave base. The fill [17] was comprised of a reddish brown silty clay with occasional chalk inclusions. No archaeological material was recovered.
Dimensions: Width 0.40m, depth 0.18m.
Feature type ditch.

F.21 (81m)

Beneath 0.10m of sub soil a well defined cut [20] of a linear feature visible on both sides of the pipe trench and aligned in an east to west direction. The feature has moderate sloping straight sides with a concave base. The fill [15] was comprised of a dark reddish brown silty clay with frequent chalk inclusions. No archaeological material was recovered.
Dimensions: Width 0.55m, depth 0.22m.
Feature type ditch.

F.9 (81.5m)

Beneath 0.12m of sub soil a well defined cut [31] of a broad linear feature visible on both sides of the pipe trench and aligned in an east to west direction. The feature has shallow sloping concave sides with a broad concave base. The upper fill [30] was comprised of a dark reddish brown clayey silt with few small to medium sized chalk inclusions. The lower fill [50] was comprised of a greyish red brown silty clay with frequent small to medium sized chalk inclusions. Tip lines were visible at the edges. Roman pottery was recovered from the feature.
Dimensions: Width 1.30m, depth 0.35m.
Feature type ditch possibly south side of trackway and small enclosure ditch.

F.10 (101m)

Beneath 0.14m of sub soil a well defined cut [6] of a linear feature visible on both sides of the pipe trench and aligned in a north to south direction. The feature has a steep sloping straight side to the north-east and a moderate sloping slightly concave side to the south-west with a flattish base. The upper fill [5] was comprised of a dark brown silty clay with sparse medium to large chalk inclusions. The lower fill [12] was comprised of a reddish brown silty clay with frequent small to medium chalk inclusions. Ceramic material recovered [5].
Dimensions. Width 1.85m, depth 0.38m.
Feature type small enclosure ditch.

F.11 (105.5m)

Beneath 0.12m of sub soil a well defined cut [49] of a small possible pit feature only visible on one side of the pipe trench. The feature has moderately steep sloping straight sides with a concave base. The fill [48] was comprised of a dark greyish brown silty clay with frequent chalk inclusions. No archaeological material was recovered.
Dimensions. Width 0.56m, depth 0.29m.
Feature type probable post hole.

F.12 (139.5m)

Beneath 0.18m of sub soil a well defined cut [37] of a linear feature visible on both sides of the pipe trench and aligned in an north to south direction. The feature has a moderate sloping straight sides with a flattish base. The fill [36] was comprised of a dark greyish brown silty clay with frequent small to medium chalk inclusions. No archaeological material was recovered.

Dimensions. Width 1.05m, depth 0.18m.
Feature type ditch.

F.13 (147.5m)

Beneath 0.10m of sub soil a well defined cut [8] of a large possible pit feature only visible on one side of the pipe trench. The feature has shallow sloping concave sides with a flat base. The fill [7] was comprised of a dark brownish grey siltey clay with occasional chalk inclusions. Roman ceramic material and a copper alloy brooch were recovered.
Dimensions. Width 1.25m, depth 0.15m.
Feature type probable large pit.

F.14 (156.5m)

Beneath 0.20m of sub soil a well defined cut [42] of a linear feature visible on both sides of the pipe trench and aligned in an north-west to south-east direction. The feature has a steep sloping straight side to the north-east and a moderate sloping slightly concave side to the south-west with a flattish base. The upper fill [40] was comprised of a dark reddish brown silty clay with frequent chalk inclusions. The lower fill [41] was comprised of a dark grey clayey silt with frequent chalk inclusions. Frequent Roman ceramic material, animal bone and burnt stone recovered.
Dimensions: Width 2.05m, depth 0.35m.
Feature type ditch.

F.15 (180m)

Beneath 0.06m of sub soil a well defined cut [27] of a linear feature aligned almost parallel to the pipe trench cut in a north-east to south-west direction. The acute angle between the pipe cut and the feature resulted in a distorted section profile. The feature had moderate sloping straight sides with a flattish base. The fill [26] was comprised of dark reddish brown clayey silt with occasional chalk inclusions. Animal bone and quern stone recovered.
Dimensions: Width 2.25m (section at oblique angle) depth 0.20m.
Feature type ditch.

F.16 (189m)

A well defined cut [47] of a large linear feature visible on both sides of the pipe trench and aligned in an north-west to south-east direction.The feature has a steep sloping straight sides with a flattish concave base. The upper fill [45] was comprised of a dark brown clayey silt with moderate small to large chalk inclusions. The lower fill [46] was comprised of a greyish brown silty clay with frequent small to large chalk inclusions. Tip lines were visible in both fills. Ceramic material and animal bone were recovered.
Dimensions: Width 2.40m, depth 0.90m.
Feature type ditch.

F.17 (195m)

Beneath 0.14m of sub soil a well defined cut [35] of a linear feature visible on both sides of the pipe trench and aligned in a north-west to south-east direction. The feature has steep sloping straight sides with a concave base. The fill [34] was comprised of a reddish brown clayey silt with occasional chalk inclusions. Animal bone recovered.
Dimensions. Width 0.75m. Depth 0.45m.
Feature type ditch.

F.18 (205.5m)

Beneath 0.18m of sub soil a well defined cut [39] of a linear feature visible on both sides of the pipe trench and aligned in an north-west to south-east direction. The feature has a moderately steep sloping straight sides with a concave base. The fill [38] was comprised of a dark reddish brown silty clay with occasional chalk inclusions. No archaeological material was recovered.
Dimensions. Width 0.70m, depth 0.40m.
Feature type ditch.

F.19 (256.5m)

Beneath 0.12m of sub soil a well defined cut [33] of a small possible pit feature only visible on one side of the pipe trench. The feature has moderately steep sloping concave sides with a concave base. The fill [32] was comprised of a dark reddish brown clayey silt with few chalk inclusions. No archaeological material was recovered.
Dimensions. Width 1.25m, depth 0.25m.
Feature type probable pit.

F.20 (283.5m)

Beneath 0.15m of sub soil a well defined cut [44] of a broad shallow linear feature visible on both sides of the pipe trench and aligned in an north to south direction. The feature has a shallow sloping slightly concave sides with a concave base. The fill [43] was comprised of a dark greyish brown clayey silt with frequent chalk inclusions. No archaeological material was recovered.
Dimensions. Width 1.35m, depth 0.25m.
Feature type ditch.

Appendix 2: Small Finds (metal)

Fig 5: Brooch

<026> F. 13 [7] A copper alloy two piece T-shaped brooch of the Roman period. The brooch is largely complete, however the pin, spring cord and most of the catchplate are missing. The crossbar is cylindrical, on one side the crossbar is decorated at the end with a transverse incised line, the detail on the other side of the crossbar is obscured by ferrous corrosion. The bow has a pronounced moulded rib running down the centre of the bow with slight marginal ribs down each side. The Brooch appears to fit into Mackreth's Group 10.d of hinged Colchester Derivatives. Although the distribution of this group is largely in the south west there are other examples from the east of the country notably one from from Cambridge, as part of an old museum collection, and another 10.d1 unequivocally from Norfolk (Mackreth pers. comm.). The suggested dating for the brooch is late first into second century, but not later than 150/175.

Appendix 3: Late Iron Age and Roman Pottery (Katie Anderson)

A small but interesting assemblage totalling 165 sherds, weighing 2732g, was recovered from the watching brief. All of the pottery was analysed and details of fabrics, forms, decoration and date were recorded along with any other information deemed significant.

Assemblage Composition

The assemblage comprised predominately small to medium sized sherds; however, there were a number of larger sherds identified. The mean weight of the assemblage is relatively high at 16.5g, with an EVEs (estimated vessel equivalent) total of 3.35. A minimum of 12 different vessels were recorded, including some which are semi-complete. A range of vessel fabrics were identified (see Table 1), with sandy fabrics being the most commonly occurring, representing 77% of the total assemblage. Shell tempered wares totalled 17%, while grog-tempered 6%. The majority of fabrics are likely to have been locally made, although the exact source is unclear. The exceptions to this were two refitting sherds from the rim of a Baetican amphora (Fig.4.a) probably a Dressel 20, oil amphora.

Fabric	No.	Wt(g)
Baetican	2	466
Buff sandy	1	11
Coarse sandy greyware	36	582
Fine sandy micaceous	66	461
Grog tempered	6	172
Oxidised sandy	16	61
Reduced sandy ware	9	258
Shell-tempered	29	721
TOTAL	**165**	**2732**

Table 1: All pottery by fabric

A number of different vessel forms were identified, with jars being the most frequent, as is typical of Roman pottery assemblages. Within this group there were a variety of different jar forms, with rim diameters ranging from 8cm to 28cm. This included a carinated jar and a mini pedestal jar (Fig.4.d). Two further carinated vessels were also identified. One wide mouth beaded bowl was identified along with two further, beaded bowls.

Form	No.	Wt(g)
Amphora	2	466
Bowl	8	535
Bowl/dish	1	6
Bowl/jar	13	107
Jar	65	884
Unknown	76	734
TOTAL	**165**	**2732**

Table2: All pottery by form

Five different vessels were decorated, including two with roughcast decoration, and two with a row of stabbed decoration. Three vessels had usewear evidence, including a shell-tempered jar with exterior sooting and interior limescale. A large shell-tempered bowl had heavy sooting/burnt residue on the interior, while a shell-tempered bowl had limescale (Fig.4. c) on the interior. It is interesting to note that all of the vessels with usewear evidence were shell-tempered vessels, which would have been classed as coarseware vessels. Also of interest were three sherds which appear to have been trimmed into sub-rounded shapes (Fig.4.b). Although the trimming of vessels for alternative uses is common in the Roman period, it is generally bases that are trimmed, and in the case of these sherds, two of the three are body sherds.

Feature Analysis

Pottery was recovered from seven different features on the site. Feature 14 contained the largest quantity of material, totalling 81 sherds weighing 1952g, from two contexts. This comprised a range of vessel forms, including six jars, two bowls, two bowls/jar and two sherds from a Baetican amphora. The pottery from this feature broadly dates mid 1st- 2nd century AD. There is no obvious difference in date between sherds from the upper and lower fill of this ditch, suggesting deposition of material was over a short period of time. Feature 4 contained 54 sherds, weighing 297g. This included 50 sherds (280g) from a fine sandy, micaceous greyware carinated jar, with a rim diameter of 14cm. This vessel is early Roman in date, with a broad range mid-late 1st century AD. The remaining features all contained small quantities of pottery, although this did included several large and unabraded sherds. Feature 10 contained nine sherds (376g) four of which (307g) were from a large shell-tempered bowl.

Discussion

The pottery assemblage recovered from this site, although relatively small, is important in giving an insight into activity in this area during the Early Roman period. The size of the assemblage is a reflection of the size of the evaluation, rather than the level of archaeology at the site.

The pottery included a range of fineware and coarseware vessels, with a relatively high percentage of finewares (although this differs greatly depending on whether count or weight is used; 55% by count and 20% by weight). The two amphora sherds are the only definite evidence for non-local pottery at the site. The presence of this vessel is important in demonstrating links with wider trade networks, and also highlighting potential wealth/high status of the site in accessing non-local goods. It is of interest that no Samian was recovered from the site. Whilst this may simply be due to the limited excavation, it is possible that it is a reflection on the date of the site, suggesting immediate post-conquest occupation, before the trade in Samian peaked.

The site is located within a kilometre of a Roman villa (LHER 50571) and the pottery is certainly indicative of a villa assemblage, rather than a rural farmstead assemblage. It should however be noted that the pottery from the villa site was later Roman in date (broadly 2nd-4th century AD), thus suggesting this site pre-dates the villa, although a more detailed assessment of the villa pottery is required. It is clear from the material recovered from the site that there is great potential for much more material culture evidence.

Appendix 4 : Faunal Remains (Vida Rajkovača)

Excavations at WHMR site resulted in the recovery of 18 assessable bone specimens of which six were identified to species. State of preservation was moderate to quite poor. Butchery was noted on two specimens. The first instance was a cow astragalus (F.14) that had fine knife marks on the dorsal surface probably implying skinning. Sheep-sized cervical vertebra (F.16) has been split down the sagittal plane suggesting that the carcass was being split into left and right portions. Sheep mandible recovered from F.16 was aged to 6-8 years. It is difficult to discuss this assemblage any further, due to its small size; however, the general size of the elements would seem to indicate medium sized domesticates.

Taxon	**NISP**	**NISP%**	**MNI**
Ovicapra	4	66	1
Cow	1	17	1
Horse	1	17	1
Cattle-sized	5	.	.
Sheep-sized	7	.	.
Total	**18**	**100**	**.**

Table 3. Number of Identified Specimens (NISP) and Minimum Number of Individuals (MNI)

Appendix 5: Stone (Simon Timberlake)

Six pieces of stone (five burnt stones and one fragment of worked stone) were recovered from one feature (F.14) two contexts ([40] + [41]) on this site. <011> <016> and <019> consisted of heat-fractured pieces of a decalcified and fossiliferous dolomitic limestone/ sandstone (grit) – possibly of a local or near-local rock of Middle Jurassic age. The largest rock (<012>) collected is a small glacial erratic and waterworn boulder of quartzitic sandstone, possibly a Jurasso-Cretaceous sarsen. This shows clear signs (both sooting + reddening) of having been burnt in a hearth.

The final stone <013> from context [40] of F.14 is a small fragment (0.56 kg) of what was probably the upper stone of a rotary hand mill made of Upper Carboniferous Millstone Grit. This shows a section through this revealing what is a fairly standard thickness for an unworn stone (c.60mm), a faced upper surface, and a lower relatively little-used grinding surface with the dressing marks on the stone still visible beneath the grinding. The existence of both older and younger breaks in this quern fragment suggest that the quern fractured fairly early on in its life. This may have been smashed-up with hammers or else heat broken to turn this into foundation rubble or else for use as road metal. There was no evidence for burning on this piece, so it is not certain how this relates to the other burnt stone within these contexts.

Broken-up querns found deposited within pits and ditches are fairly common at Romano-British/ Roman settlements. Moreover, querns of Millstone Grit were commonly used in Southern Britain from the end of the 1st-century AD onwards. Millstone Grit querns of this sort were quarried and transported from the Southern Pennines (for instance, extraction sites have been identified at Wharncliffe Edge and Hathersage in Derbyshire (Peacock 1988). This sort of activity of burning and breaking up stone could be linked to the construction of foundations or else the metalling of roads or tracks.

Appendix 6: Assessment of Bulk Environmental Samples (Anne de Vareilles)

Methodology
Seven samples were taken and processed using an Ankara-type flotation machine. The flots were collected in 300µm aperture meshes and the remaining heavy residues washed over a 1mm mesh. Both the flots and heavy residues were dried indoors prior to analysis. Sorting of the flots and identification of macro remains were carried out under a low power binocular microscope (6x-40x magnification). Identifications were made using the reference collection of the G. Pitt-Rivers Laboratory, university of Cambridge. The >4mm fractions of the heavy residues were sorted by eye by F.Cox. Nomenclature follows Zohary and Hopf (2000) for cereals, Stace (1997) for all other flora and an updated version of Beedham (1972) for molluscs. All environmental remains are listed in tables 4.

Preservation
All seven samples generated small flots with very low volumes of charcoal; only features F.14 and F.13 contained any charcoal larger than 4mm across. Low numbers of cereal grains were present in all but F.13 and F.14, and wild plant seeds were found in even lower quantities, scattered across the features. Most of the grains are heavily puffed and abraded and could not be identified to species. Once charred, trampled, swept, etc., modern intrusive rootlets, orache seeds (*Atriplex* sp.) and the blind burrowing snail (*Ceciloides acicula*) indicate that the plant remains also suffered post-depositional disturbances. The preservation of mollusca is good: *c.*12 species are represented across the seven features. Their distribution is shown in table 4 but shall not be discussed.

Results and Conclusion
Hulled barley (*Hordeum vulgare sensu lato*), spelt (*Triticum spelta* L.) and possibly emmer wheat (*Triticum spelta/dicoccum*) were found. Free-threshing wheat is a type usually only found towards the end of the Roman period; however, a single spikelet fork was spotted in linear F.16 [46]. Grasses make up the majority of the wild plant assemblage which was probably collected along with the crop. The plant remains were not found in sufficient quantities to be described and explained in further detail. Their origins are probably mixed and their distribution appears to reflect a random scatter rather than any intentional placements.

Table 4: Charred Plant Macro Remains and Mollusca from the Bulk Soil Samples

Sample number		1	2	3	4	5	6	7
Context		50	5	36	40	32	46	7
Feature		9	10	12	14	19	16	13
Feature type		linear	linear	linear	linear	Pit	linear	Pit
Phase/Date								
Sample volume - litres		8	8	8	10	6	8	5
Charcoal volume - mililitres, estimates		<1ml	<1ml	<1ml	<1ml	<1ml	<1ml	<1ml
Flot fraction examined - %		100	100	100	100	100	100	100
large charcoal (>4mm)					-			-
med. charcoal (2-4mm)		-		-		-	-	+
small charcoal (<2mm)		++	+++	++	+	++	++	+++
vitrified charcoal		+		-			-	
Cereal grains and chaff								
Hordeum vulgare sensu lato	hulled barley grain		1	1				2
Triticum spelta / dicoccum	spelt or emmer wheat grain		1	3				1
Triticum sp.	indet. wheat grain							1
Hordeum / Triticum sp.	barley or wheat grain							5
indeterminate cereal grain fragments		4	9	6			1	10
Triticum spelta L. glume base	spelt chaff		1					
Triticum sp. glume base	hulled wheat chaff							1
Triticum sp. spikelet fork	free-threshing wheat chaff						1	
Non Cereal seeds								
Papaver sp.	Poppy			1			1	
Atriplex patula / prostrata	Oraches, Modern intrusive	+	-					
Rumex sp.	Dock		1					
Viola sp.	Violets		1	1				
Vicia / Lathyrus sp.	Vetches / Wild Pea 2-4mm			2				
Medicago / Trifolium sp.	Medics or Clover	1						
Odontites verna (Bellardi) Dumort. Red bartsia		1						1
Galium sp.	Bedstraws				1			
Large Poaceae	large wild grass seed	2	1	2			2	4
Small Poaceae	<2mm grass seed						3	
Indeterminate seed								
Indet. Poaceae culm internode	grass stem fragment	1						1
Indet. monocot root node			1					
Damp / Shade loving snail species								
Vallonia excentrica / pulchella								
Carychium tridentatum/ minimum		-				++	-	
Columella edentula (Draparnaud)		-	-	+	-	-	-	
Cochlicopa lubrica/ lubricella					-	+		
Discus rotundatus (Müller)						++		

Clausilia sp.						-		
Oxychilus / Aegopinella sp.					-	++	-	++
Dryer areas								
*Vallonia costata (*Müller)		-			+	+	-	-
Catholic species / Unspecific habitats								
Vertigo sp.					-	-		
Trichia sp.			++	++	++	+		
Helicella itala (L.)		-	++	++	+		-	+
Ceciloides acicula Müller – Blind burrowing snail		+++	++	++	++	+	++	++
Modern rootlets (modern straw)		P	P	(P)	P	P	P	P

Key: '-' 1 or 2, '+' 3-10, '++' 11-50, '+++' >50 items. P = present

Appendix: 7 Oasis Form: Oasis ID cambridg3-129696

Project Details	
Project Name	Monitoring of Water Main Pipeline installation at Walesby Hill, West Lindsey, Lincolnshire.
Short Description of the Project	The Cambridge Archaeological Unit (CAU) undertook the archaeological monitoring of the instillation of a replacement water main pipeline at Walesby Hill, Lincolnshire, by Anglia Water and its Agents between August 1st and August 10th 2009. The pipeline commenced at Walesby Hill and continued in a south westerly direction towards Walesby. The monitoring recorded the presence of several intrusive features related to a complex of enclosures and trackways previously observed in a major aerial survey of the Lincolnshire Wolds. The features are probably a farmstead of the early Romano-British period.
Project Dates	01-08-2009 10-08-2009
Previous/Future Work	Not known / Not known
Any Associated Project Reference Codes	Site Code: WHMR09 Accession Number: LCNCC:2009.115
Type of project	Field Evaluation
Site Status	none
Current Land Use	Cultivated Land 4 - Character Undetermined
Monument Type	1:Roman, Pits and Ditches
Significant Finds	1:Roman Brooch 2:Roman Pottery
Methods and Techniques	Monitoring Excavation and Recording
Development Type	Pipeline
Prompt	Water Act 1989 and subsequent code of practice
Position in the planning process	Not known / Not recorded
Project location	
Country	England
Site Location	LINCOLNSHIRE WEST LINDSEY WALESBY Walesby Hill
Study Area	500sqm
Site Coordinates	TF 14668 93248 53 0 53 25 23 N 000 16 27 W Point
Height OD	143 - 160m

Project Creators	
Name of Organisation	Cambridge Archaeological Unit
Project Brief Originator	Lincolnshire County Council
Project Design Originator	Emma Beadsmore
Project Director/Manager	Emma Beadsmore
Project Supervisor	David Webb
Type of Sponsor/Funding Body	Developer
Name of Sponsor/Funding Body	Anglia Water
Project Archives	
Physical Archive Recipient	Cambridge Archaeological Unit
Physical Archive ID	
Physical Contents	"Animal Bones","Ceramics","Metal"

Digital Archive Recipient	Cambridge Archaeological Unit
Digital Archive ID	
Digital Contents	
Digital Media Available	"Images raster / digital photography","Text"
Paper Archive Recipient	Cambridge Archaeological Unit
Paper Archive ID	
Paper Contents	
Paper Media Available	"Context sheet","Drawing","Notebook - Excavation',' Research',' General Notes","Plan","Section","Survey "

Project Bibliography (Report Details)	
Publication Type	Grey literature (unpublished document/manuscript)
Title	Walesby Hill, West Lindsey, Lincolnshire: Archaeological Monitoring of Water Pipeline Installation
Author(s)/Editor(s)	1:D.W.Webb 2: 3: 4:
Date	2012
Issuer or Publisher	Cambridge Archaeological Unit
Place of Issue or Publication	Cambridge
Description	An A4 wire-bound document, with a plastic laminate cover. It is 32 pages long, and has 5 illustrations.
Entry Data	
Name & E-Mail	Dave Webb dww25@cam.ac.uk
Date	

Brooch DSC_7628.jpg

Brooch Plate.jpg

Brooch Plate a.jpg

Ceramic DSC_1161.jpg

Ceramic DSC_1163.jpg

Ceramic DSC_1167.jpg

Ceramic DSC_1168.jpg

Ceramic DSC_1169.jpg

Ceramic DSC_1170.jpg

Ceramic DSC_1170 mod.jpg

WHMR09 DSC_7541.jpg

WHMR09 DSC_7511.jpg

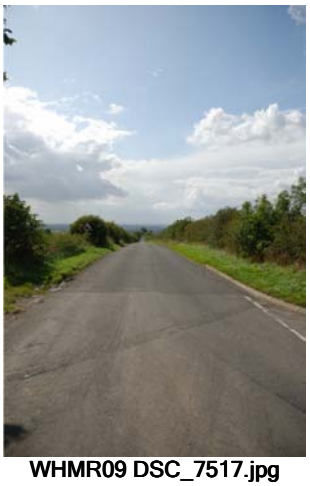
WHMR09 DSC_7512.jpg

WHMR09 DSC_7513.jpg

WHMR09 DSC_7514.jpg

WHMR09 DSC_7515.jpg


WHMR09 DSC_7516.jpg


WHMR09 DSC_7517.jpg


WHMR09 DSC_7518.jpg


WHMR09 DSC_7519.jpg


WHMR09 DSC_7520.jpg


WHMR09 DSC_7521.jpg


WHMR09 DSC_7522.jpg


WHMR09 DSC_7523.jpg


WHMR09 DSC_7524mod.jpg


WHMR09 DSC_7538.jpg


WHMR09 DSC_7602.jpg


WHMR09 DSC_7604.jpg

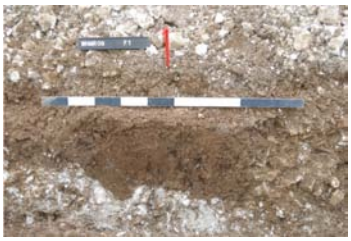

WHMR09 DSC_7609.jpg


WHMR09 DSC_7620.jpg

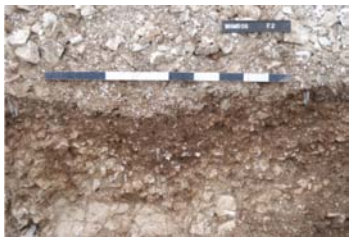

WHMR09 DSC_7620 mod bw col.jp


WHMR09 DSC_7632.jpg

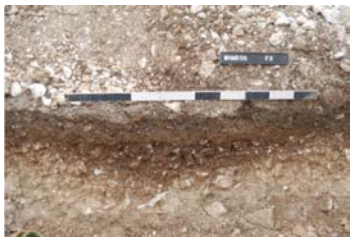
WHMR09 DSC_7633.jpg



WHMR09_fno_1_001.jpg



WHMR09_fno_2_001.jpg



WHMR09_fno_3_001.jpg

WHMR09_fno_4_001.jpg

WHMR09_fno_5_001.jpg

WHMR09_fno_6_001.jpg

WHMR09_fno_7_001.jpg

WHMR09_fno_8a_001.jpg

WHMR09_fno_8b_001.jpg

WHMR09_fno_9.jpg

WHMR09_fno_10.jpg

WHMR09_fno_11.jpg

WHMR09_fno_12.jpg

WHMR09_fno_13.jpg

WHMR09_fno_14.jpg

WHMR09_fno_15_001.jpg

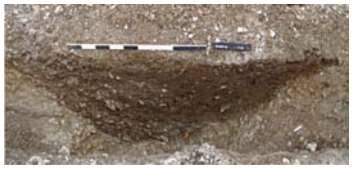
WHMR09_fno_15_002.jpg

WHMR09_fno_15_003.jpg

WHMR09_fno_15_004.jpg

WHMR09_fno_15_005.jpg

WHMR09_fno_16_002.jpg



WHMR09_fno_16_004a.jpg

WHMR09_fno_17_001.jpg

WHMR09_fno_18_001.jpg

WHMR09_fno_19_001.jpg

WHMR09_fno_19_001_01.jpg

WHMR09_fno_20_001.jpg