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## SUMMARY

The Museum of London Archaeology Service (MoLAS) was commissioned by Union Railways (South) Limited (URS) to undertake detailed archaeological investigations at Area 330 Archaeological Zone 1, from Fawkham Junction, to Dale Road, south of Gravesend, Gravesham, Kent, as part of the route wide watching brief. The Whitehill Road round barrow was identified as part of this process. This work formed part of an extensive programme of archaeological investigation carried out in advance of the construction of the Channel Tunnel Rail Link (CTRL).

This Zone, which lies in the North Kent Plain Landscape Zone, stretches for 4.40km from south-west to north-east. It follows an area of gently undulating land along the line of the disused Gravesend West Railway, from Fawkham Junction to Dale Road, which forms the boundary to Area 330 Zone 2.

The site showed evidence for:

### *Early Bronze Age (c 2000 – c 1500 BC)*

- An early Bronze Age barrow, surviving as a double ring ditch, was located to the west of Whitehill Road (ARC WHR 99). Cutting through the inner ditch backfill was a secondary, flexed, adult inhumation with an amber bead necklace dating to around 1600BC. This type of burial is normally associated with the Wessex culture and the location of the barrow, near to the westward flowing River Darent may be significant.
- Some residual early Bronze Age pottery sherds were found in the Fawkham Junction Roman ditches.

### *Roman (1<sup>st</sup> to 4<sup>th</sup> century AD)*

- A number of enclosure ditches, an oven and a pit were found at Fawkham Junction. The construction of the site appears to have been around the time of the Roman conquest and all the features appear to have gone out of use by AD100. These features contained a large amount of occupation waste and appear to form part of a settlement, which may be centred just outside the line of construction works.
- A boundary ditch was located to the east of Hook Green Road dated to the 1st century AD.

### *Post-medieval and modern (16<sup>th</sup> to 20<sup>th</sup> century)*

- A pit at Fawkham Junction dated to the 16<sup>th</sup> century.
- A boundary ditch/road to the east of Whitehill Road dated to the 16<sup>th</sup> century.
- A quarry pit or denehole was found to the east of Hook Green Road.
- A post-built structure of the modern period, apparently a fence-line relating to the disused Gravesend West Railway, was found to the east of Rockers Dean subway and at various other points along the southern side of the disused railway cutting.

Limited artefactual and ecofactual material was recovered from the above features across the Zone.

Although the construction/archaeological works in this area were of a more limited nature than seen elsewhere in Area 330, a suitable sample was observed, excavated and recorded to form a considered impression. Early Bronze Age funerary activity is seen to the west of Whitehill Road and implied near to Fawkham Junction; early Roman settlement activity was recorded at Fawkham Junction. It is possible that these sites are connected with the routeway along the westward facing Darent River Valley. Otherwise the evidence points to prehistoric – historic field systems spanning the works zone between the Darent Valley to the Ebbsfleet valley, Area 330 Zone 2.

## 1. INTRODUCTION

### 1.1 Project Background

1.1.1 The Museum of London Archaeology Services (MoLAS) was commissioned by Union Railways (South) Limited (URS) to undertake detailed archaeological investigations at Area 330, Archaeological Zone 1, between Fawkham Junction and Dale Road, south of Gravesend, Gravesham, Kent (Figure 1), as part of the route wide watching brief. The Whitehill round barrow was identified during this phase of work. This work formed part of an extensive programme of archaeological investigation carried out in advance of the construction of the Channel Tunnel Rail Link (CTRL).

1.1.2 The archaeological Written Scheme of Investigation was prepared by Rail Link Engineering (RLE), agreed in consultation with English Heritage and Kent County Council (KCC) on behalf of the Local Planning Authorities.

*Table 1: Zone 1 location*

Approx. Compass direction of Co-ord.	URL Easting	URL Northing	NGR Easting	NGR Northing
North-east	41290.130	51798.590	561286.092	171800.188
South-west	38969.510	49234.450	558965.470	169235.046

1.1.3 Zone 1 lies between CTRL route Chainage (CH) 200+000 and 203+750 and covers a length of 4.40km.

1.1.4 The topography of this Zone, from south-west to north-east, comprises undulating land along the line of the disused Gravesend West Railway, from Fawkham Junction to Dale Road.

*Table 2: Work on site*

Event name	Event code	Type	Contractor	Dates
Contract 330 Watching Brief	ARC 330 98	Watching Brief	MoLAS	December 1998 to May 2000
Whitehill Road barrow	ARC WHR 99	Detail excavation	MoLAS	1999

### 1.2 Geology and Topography

1.2.1 The solid geology consists of Upper Chalk overlaid locally by the silty sands and sandy clays of Thanet Beds (Figure 2).

- 1.2.2 The Zone follows the line of the disused Gravesend West Railway, from Fawkham Junction to Dale Road, roughly on a south to north alignment. From Fawkham junction the existing disused Gravesend West Railway route starts at ground level on the southern side of a tributary to the Darent River. It then crosses the small valley on an embankment before proceeding north in a cutting for the rest of the route.

*Table 3: Topographic and geological details, Area 330 Zone 1*

<b>Topography</b>	<b>Levels</b>	<b>Chainage</b>	<b>Geology</b>
Fawkham Junction	56.00m OD	200+400	Chalk
Southern side of valley containing Main Road	55.00m OD	200+600	Chalk
Base of valley of Main Road	43.60m OD	200+910	Chalk
Northern side of valley containing Main Road	57.10m OD	201+100	Chalk
Whitehill Road	49.70m OD	201+350	Chalk
Hook Green Road	43.50m OD	201+850	Thanet Beds
Rockers Dean Subway	29.10m OD	202+800	Thanet Beds
Dale Road	35.10m OD	203+700	Thanet Beds

- 1.2.3 Colluvial deposits (eroded Thanet sands from the high ground to the west of Zone 1) of relatively recent origin had accumulated locally between 0.40m and 4.00m deep.

### **1.3 Archaeological and Historical Background**

- 1.3.1 A desk-top assessment was commissioned by URL and carried out in 1993 (URL 1994). The report identified the area as having limited archaeological potential, and it was not considered necessary to conduct any advance archaeological works, as the construction works were of a limited nature. The construction works were limited to the stripping of soils for approximately 10m to either side of the existing railway cutting (or embankment) along the length of the Zone. In addition, new road bridges were constructed.

## 2. ORIGINAL PRIORITIES, AIMS AND METHODOLOGY

### 2.1 Research Objectives

2.1.1 The site is located within the Landscape Zone of the North Kent Plain (A2 Corridor). As such it was seen as a key area for studying the following Research Objectives:

*Farming communities (2000–100 BC)*

- Determine spatial organisation of the landscape in terms of settlement location in relation to fields, pasture, woodland, enclosed areas and ways of moving between these
- Consider environmental change resulting from landscape organisation and re-organisation
- Determine how settlements were arranged and functioned over time

*Towns and their rural landscapes (100 BC–AD 1700)*

- What was the effect of the development of towns (e.g. London, Springhead) on the organisation of the landscape?
- Did population increase and concentration effect natural resource exploitation and accelerate environmental change?
- How were settlements and rural landscapes organised and how did they function?
- How did the organisation of the landscape change through time?
- Consider the effect on the landscape of known historical events, eg the arrival of Roman administration

### 2.2 Landscape Zone Priorities

2.2.1 The following Landscape Zone Priorities, as specified in the Written Scheme of Investigation (WSI), taken from the *CTRL Archaeological Research Strategy*:

*Reconstruction of the changing palaeo-environment for all time periods in evidence, through 'on-site' and 'off-site' studies, and the interaction of past environments and human economies.*

- The interaction of hunter foragers with the natural environment
- Changes arising from the adoption of agriculturally based economies
- The effects of 'urban' growth and decline at Springhead, and the adoption of Roman ways and organisation in general

*Spatial organisation of the landscape, and changes through time*

The socio-economic landscape of later agriculturists (2000–100 BC)

The immediate pre-Roman–early Roman urban-rural landscape

- Pre-Roman urban origins
- The effect of the Roman administration on the established economic landscape
- The impact and effect of the development of Roman Watling Street
- Character, function and development of the rural urban fringe, and satellite uses



*The late and immediate post-Roman landscape*

- The decline of the urban economy and wider changes in the later Roman economy in general – how this is reflected in the archaeological resource, and its effect on rural settlement and economy

*Ritual and ceremonial use of the landscape*

## **2.3 Fieldwork Event Aims**

2.3.1 The Fieldwork Event Aims for the watching brief (ARC 330 98) Zone 1 were as follows:

*Primary aims*

- to establish a record of the changing palaeo-environment for all time periods present and the interaction with past economies.
- to determine the spatial organisation of the landscape, and changes through time.
- to determine the late and immediate post-Roman landscape.
- to determined the ritual and ceremonial uses of the landscape.

## 2.4 Fieldwork Methodology and Summary of Excavation Results

2.4.1 In summary, the fieldwork consisted of excavation under watching brief conditions. The methods of investigation were set out in a series of Written Schemes of Investigation, prepared by RLE, detailing the scope and methods of fieldwork and agreed with English Heritage and KCC on behalf of the local authority.

### *Watching Brief*

2.4.2 All construction groundworks, which potentially contained archaeological remains, were monitored by MoLAS archaeologists. The Whitehill Road round barrow (ARC WHR 99) was identified within the watching brief area. Construction backactors were fitted with flat bladed ditching buckets when conducting area stripping. Where archaeological remains were observed the area was cordoned off, excavated, and recorded by MoLAS archaeologists.

2.4.3 All features were partly or wholly excavated by hand and planned using pre-printed gridded permatrace and related to the site grid. The Whitehill round barrow (ARC WHR 99) was designated for 100% excavation. Individual contexts were recorded on pro-forma context sheets. Sections were drawn on pre-printed, gridded sheets of draughting film and the section positions accurately plotted using a total station.

2.4.4 A photographic record was kept of individual archaeological features and sections, appropriate groups of features and structures. Finds were bagged and retained and environmental samples, both bulk and column, were taken where necessary from features and deposits. In addition to the bulk and column samples from the Whitehill round barrow (ARC WHR 99) Optical Stimulant Luminescence was carried out on the fill of the inner ditch.

2.4.5 In summary the excavations revealed:

### *Early Bronze Age (c 2000 – c 1500 BC)*

- An early Bronze Age barrow, surviving as a double ring ditch, was located to the west of Whitehill Road (ARC WHR 99), near to the westward flowing River Darent. Cutting through the inner ditch backfill was a secondary, crouched, adult inhumation with an amber bead necklace dating to around 1600BC. This type of burial is normally associated with the ‘Wessex culture’.
- Some residual early Bronze Age pottery sherds were found in the Fawkham Junction Roman ditches.

### *Roman (1<sup>st</sup> to 4<sup>th</sup> century AD)*

- A number of enclosure ditches, an oven and a pit were found at Fawkham Junction. The construction of the site appears to have been around the time of the Roman conquest and all the features appear to have gone out of use by AD100. These features contained a large amount of occupation waste and appear to form part of a settlement, which may be centred just outside the line of construction works.
- A boundary ditch was located to the east of Hook Green Road dated to the 1st century AD.

### *Post-medieval and modern (16<sup>th</sup> to 20<sup>th</sup> century)*

- A pit at Fawkham Junction dated to the 16<sup>th</sup> century

- A boundary ditch/road to the east of Whitehill Road dated to the 16<sup>th</sup> century.
- A quarry pit or denehole was found to the east of Hook Green Road.
- A post-built structure of the modern period, apparently a fence-line relating to the disused Gravesend West Railway, was found to the east of Rockers Dean subway and at various other points along the southern side of the disused railway cutting.

## **2.5 Assessment Methodology**

2.5.1 This assessment report was commissioned by URS to the specification for assessment reports produced by RLE (CTRL Section 1 Archaeology: Post-Excavation Assessment Instruction No. 000-RMA-RLEVC-00030-AB), as discussed with English Heritage and Kent County Council. The production of this assessment was by the Museum of London Archaeology Service (MoLAS) with specialist advice provided by the Museum of London Specialist Services (MoLSS).

### 3. FACTUAL DATA AND QUANTIFICATION

#### 3.1 The Stratigraphic Record

3.1.1 The archaeological evidence consisted of negative features (pits, ditches, postholes etc) that were either recognised once the topsoil had been removed or as features sealed by a colluvial, ploughed subsoil.

3.1.2 Two foci of activity were identified (Figures 3a-3c). Elsewhere, evidence was scarce and dispersed. The results of the fieldwork can be summarised by period, as follows:

*Early Bronze Age (c 2000 - 1600 BC):*

3.1.3 Two general areas of activity were noted for this period. Firstly there were the remains of the barrow at Whitehill Road, and secondly there are the residual sherds of Beaker pottery in Roman contexts at Fawkham Junction.

Whitehill Road Barrow (ARC WHR 99)

3.1.4 A double ring ditch was recorded on the eastern side of the disused railway some 80m to the west of Whitehill Road (Figure 5 & Plate 1). The ditches were truncated horizontally and only survived where they were cut into the chalk bedrock. Immediately above the chalk were modern 19<sup>th</sup> and 20<sup>th</sup> century dumped deposits, consisting of coal, ash, and burnt waste material discarded along the Gravesend West Railway.

3.1.5 The outer ditch had been partly truncated on the northern side by the disused railway line. The ditch measured 17m in (internal) diameter and varied in width from 0.45m to 1.45m and the depth between 0.15m and 0.42m. This variation was dependant on truncation which was more severe on the south-western, upward side, than to the north-east. A 2.00m wide berm separated the outer and inner ditches. The inner ditch measured 11m in (internal) diameter, was between 0.58m and 1.00m wide and survived between 0.16m and 0.32m deep. Clearly visible on site was the fact that the inner ditch was shallower and narrower than the outer ditch. As the earthen mound had not survived and the area subjected to lateral truncation, no stratigraphic relationship between the two ditches was present. The only relationship that existed was between the skeleton and the inner ditch. As such, the two ditches may not be contemporary. The inner ditch could predate the outer one and represent an earlier barrow ditch, infilled and sealed by a later earthen mound associated with the outer ditch. Alternatively the opposite could be true, with the inner ditch being cut through the raised mound. The fills of each ditch was identical.

3.1.6 In the base of both ditches and in the central defined area were possible postholes and/or post pits, which may have been associated with the construction or use of the barrow. No dating evidence was found within the backfill of either the ditches or the postholes. The only finds were a small number of possible flint flakes and 344g of burnt flint. In addition a very small amount of charcoal was recovered, probably not enough for radiocarbon dating (it is also very likely to be contaminated with modern deposits). Part of the upper, inner ditch fill appears to have been burnt slightly in situ but this was directly below modern truncation.

- 3.1.7 In the absence of any dating evidence in either the ditches or the posthole features, optical stimulant luminescence was used on the fill of the outer ditch. The dates obtained were 15000 BC for the basal fill while the upper two samples were give a weighted mean date of  $5940 \text{ BC} \pm 340 \pm 660$  for the infilling of the ditch. As these dates appear to be unrealistically early it appears that the sediments had been incompletely bleached prior to filling the ditch, and the dates refer to the original bleaching of the sediments, before they entered the ditch. This result would be compatible for the ditches to have filled quickly after initial cutting.
- 3.1.8 No central burial was recovered, it is assumed that any burial that existed had been set in the mound itself, and been truncated by subsequent activity. It is also possible that, as with other barrows, the function did not rest with being solely a repository for burials.
- 3.1.9 A secondary crouched inhumation burial was found cutting through the backfilled inner ditch. The grave was located on the southern side of the barrow and aligned north-west (head) to south-east (feet). The grave cut measured 1.20m long by 0.70m wide and was 0.31m deep. Within the grave was a poorly preserved flexed inhumation, lying on the right side, with the head to the west (Plate 2).
- 3.1.10 Around the neck and shoulders of the skeleton was a necklace comprising twenty-one amber beads. The presence of the beads probably indicates that the burial was a female. Comparison of the type of burial and the amber beads with other sites elsewhere in Britain, indicate a date of *c* 1600 BC for the inhumation. There are, however, difficulties in dating the beads themselves. Amber beads (and other artefacts) are frequently found with burials during the early to middle Bronze Age both in Britain and elsewhere in continental Europe. Beads and necklaces of jet, amber and faience are traditionally associated with burials of the early Bronze Age Wessex culture.
- 3.1.11 The location of the barrow lies on high ground, facing to the north-east on a gentle slope. Approximately 150m gently upslope to the south lies the northern side of a dry valley, once a tributary of the Darent River. Such a location (near to but not at the top of the slope) is a typical position for a Barrow monument. It should be noted that although 100% of the barrow ring ditches were hand excavated and suitably sampled, an insufficient quantity of charcoal occurred for radiocarbon dating. This lack of charcoal and any other dating material suggests that any settlement activity was not in the immediate vicinity.
- 3.1.12 To the south-east of Whitehill Road are a series of cropmarks. These consist of possible enclosures, trackways, pits, and at least two ring ditches (URL, 1994), all undated and detected through aerial photograph interpretation. The presence of the Whitehill Road early Bronze Age barrow in the vicinity of these undated features may suggest a settlement, although probably post-dating the Whitehill Barrow.
- Fawkham Junction (ARC 330 98)
- 3.1.13 A number of residual Beaker (early Bronze Age) pottery fragments were recovered from 1<sup>st</sup> century AD Roman enclosure ditches at Fawkham Junction. Their presence there indicates some early Bronze Age activity.

General

- 3.1.14 The presence of struck flint flakes indicates a low level background of activity from the Neolithic and Bronze Age across the Zone.
- 3.1.15 A posthole recorded in section to the west of Dale Road contained prehistoric, probably Iron Age pottery. No other associated features were found, although this activity may relate to the South of Station Road (ARC SSR 99) activity in Area 330 Zone 2.

*Late Iron Age/Roman*

- 3.1.16 There was one main focus of activity in the Late Iron Age/Roman period, located at the southernmost point of the Zone at Fawkham Junction (ARC 330 98). The activity consisted of a series of ditches aligned north to south and four pits (Figure 4, Plate 3) and pottery gave a date range for the main occupation, probably between AD45 and AD100. It was obvious from the ditch alignments and the fact that the ditch fills were cut by pits (all features contained domestic refuse), that there was more than one phase of land management and use within this period.
- 3.1.17 The Fawkham ditch and pit pottery assemblages are large enough to provide reliable statistical data whilst at the same time appear to be relatively closely dated. There are a number of items of intrinsic interest such as *Terra Rubra* sherds and a plate with a coarse ware stamp that warrant individual study and consideration. The animal bone assemblage was fairly large and it should be possible to determine meat preferences and, to a limited extent (due to the small quantities of bones in each assemblage) how these animals were used. Of interest in this respect is the presence of a butchered horse bone, which suggests this animal was skinned, though not necessarily eaten.
- 3.1.18 The pottery and animal bone assemblages indicate that the ditches probably enclosed part of a settlement, rather than fields. Also that the settlement expanded during the period of use with earlier ditches truncated by pitting. The site does not continue into the second century AD in this area.
- 3.1.19 Elsewhere in Zone 1, the evidence for this period is sparse. At Hook Green Road a ditch aligned north-west to south-east was dated to no later than the 1st century AD (Figure 3b). This ditch is likely to be a field boundary.

*Post-medieval*

- 3.1.20 On the eastern side of Whitehill Road three parallel ditches orientated north to south were recorded, but were all undated. These were later recut to form two ditches, which may represent a droveway. The droveway was subsequently reshaped to form a boundary ditch. A sherd of pottery from the boundary ditch backfill is dated to the 17th century. The three phases of use may imply that the ditches were associated with a road which was originally of medieval date. This road was probably the original Whitehill Road, which was probably re-aligned with the construction of the Gravesend West Railway.
- 3.1.21 At Fawkham Junction a pit dated to the 17<sup>th</sup> century was found cutting through the backfill of the easternmost Roman ditch.
- 3.1.22 To the east of Hook Green Road was a denehole *c* 6.30m deep (Figures 3b, Plate 4), consisting of five chambers radiating from a central 1.00m wide shaft. The chambers extended to approximately 5.00m radially from the base of the shaft. Typologically this feature can be dated to the medieval/post-medieval period,

when such shafts were commonly excavated to provide chalk to spread on the fields. The Hook Green Road denehole was typical in being placed in the corner of a field, near to a road. The shaft, which had not been backfilled, had been capped with part of a tree trunk.

3.1.23 A pit containing 20<sup>th</sup> century ceramics and metal was found cutting through the backfill of the inner ditch of the Whitehill Bronze Age barrow. In the central area of the barrow was a posthole which may have formed part of a modern fence line connected with the Gravesend West Railway.

3.1.24 At Rockers Dean (Figure 3c) two postholes and a pit were recorded. The pit contained corrugated iron. The postholes probably represent part of a modern fence line associated with the disused Gravesend West Railway.

### 3.2 The Artefactual Record

#### *Prehistoric and Roman Pottery*

3.2.1 The excavation area Zone 1 produced a small assemblage, with the majority of the pottery coming from the Fawkham Junction site, dating to the early Roman period (probably mid to late 1<sup>st</sup> century). A small amount of prehistoric pot (24 sherds) was recovered, and four possible Beaker sherds were also found, all redeposited in Roman period ditches at Fawkham Junction. The Zone 1 (essentially Fawkham Junction) assemblage was recovered from settlement features such as ditches and pits. No pottery was found associated with the Whitehill Road Bronze Age barrow.

#### *Post Roman pottery*

3.2.2 A very small assemblage consisting of two sherds of domestic pottery dating to the 17th century were recovered from ARC 330 98. They comprise a fragment of a redware dish and the base of a flower pot.

#### *Building material*

3.2.3 From Fawkham Junction came three fragments of Roman tile from the kiln site at Eccles in north-west Kent dated AD 50-80, (10g); 5 fragments of fired ceramic of uncertain date (10g) and 3 fragments of ceramic of uncertain type (15g).

#### *Lithics*

3.2.4 A small assemblage of worked flint was recovered from the Whitehill Road round barrow (ARC WHR 99) and the Watching Brief (ARC 330 98). Small quantities of burnt unworked flint were also recovered. The material consists of relatively undiagnostic debitage, probably from the Neolithic or Bronze Age.

#### *Amber beads*

3.2.5 A total of twenty-one amber beads were recovered from the neck and shoulder area of the secondary inhumation at ARC WHR 99. Twenty beads are small and one is large and all are discoid with a single central hole. Four small beads are fragmentary and the rest are virtually complete. Comparison with other examples would give a date of approximately 1600 BC.

#### *Metalwork*

3.2.6 Two metal artefacts were recovered from Zone 1. A post-medieval copper alloy tag is unstratified (CH 200+650) from ARC 330 98. A post-medieval/modern feature at ARC WHR 99 produced very small fragments of copper alloy (too small to identify the object).

### 3.3 The Environmental Record

#### *Human Bone*

- 3.3.1 A flexed skeleton, probably female, was found in at the Whitehill Road Bronze Age barrow (ARC WHR 99, Plate 2). The state of preservation was poor but the bones of the skull may allow reconstruction to confirm the age and sex.

#### *Animal Bone*

- 3.3.2 This Zone produced 8.78kg (c 260 fragments) of animal bone from hand collection and 0.05kg (70 fragments) from sampling. Of the total hand collected count, 111 fragments were identifiable to species and body part. All of the bones came from the Fawkham Junction complex. The bones were in a good state of preservation and displayed evidence for species representation, interpretation of the local environment, and for butchery.

#### *Macroscopic plant remains & charcoal*

- 3.3.3 A total 21 samples were assessed for plant remains from ARC 330 98 and ARC WHR 99. These samples came from ditches and pits and were either dated Bronze Age or Roman. The contents consisted mainly of charred wood and were botanically poor in diversity and abundance.

#### *Mollusca*

- 3.3.4 In Zone 1 ARC 330 98 and ARC WHR 99 produced a total of 65 shells. The assemblage consisted of shade-loving and burrowing terrestrial species with no marine or freshwater forms.

#### *Geo-archaeology – Whitehill Road Round Barrow*

- 3.3.5 Three monolith samples were taken through segments of the inner and outer ditches of the Bronze Age barrow (ARC WHR 99). Assessment of these monoliths has identified a long period of considerable weathering before a more severe erosion of the surrounding land caused the upper fills to accumulate. Judging from the secondary inhumation, which cut through the filled inner ditch, it is likely that all fills date to the early Bronze Age (2000 – 1600BC). Pollen and micromorphological analysis could indicate the sequence of events and nature of the changing landscape and land-use during this period.

### 3.4 Dating

#### *Radiocarbon*

- 3.4.1 No radiocarbon samples were taken. Insufficient amounts of charcoal were recovered from the 100% excavation of the Whitehill Road barrow to allow for any subsequent radiocarbon dating.

#### *Dendrochronology*

- 3.4.2 No dendrochronology samples were taken.

#### *Luminescence*

- 3.4.3 Five samples were taken through a section of the outer barrow ditch at Whitehill Road (ARC WHR 99) of which three were analysed. The dates obtained were 15000 BC for the basal fill while the upper two samples were give a weighted mean date of 5940 BC  $\pm$  340  $\pm$  660 for the infilling of the ring ditch. It appears that the sediments had been bleached prior to filling the ditch as these dates appear to be too early. Another factor may have been the contamination of the fills with the bleached natural substrate, which would account for the early date.



### **3.5 Archive Storage and Curation**

#### *Stratigraphic archive*

- 3.5.1 The stratigraphic archive has been microfilmed and can be prepared for long term storage. The contexts have been entered onto the MoLAS Oracle database, and subsequently transferred to RLE Datasets.

#### *Finds and environmental archive*

- 3.5.2 The majority of the archive is not in need of any significant treatment to enable it to be put into long-term storage. There are a few points that should be made (see below).
- 3.5.3 The Bronze Age amber beads (ARC WHR 99) have been conserved but it is recommended that handling and movement of them is kept to a minimum as they remain in a fragile condition.
- 3.5.4 If thin sections are made of the monolith samples they will take up less storage space, stand a better chance of long term preservation and be amenable to a similar method of archiving to that for finds and environmental samples. As monoliths, the samples are not easily stored, need to be kept in a cool to cold and dark environment and are likely to deteriorate with time. Thin sections are easily available for further research and can be examined frequently without loss of information.
- 3.5.5 It is recommended that most of the material be retained at this stage, in order to be incorporated into any analysis and publication aspect of the project. Consideration will be given to selection for discard for some of the burnt flint, the building materials, the environmental samples and the metalwork.

### 3.6 Archive Index

Table 4: Archive index ARC 330 98 (Zone 1)

Item	Number Of Items or boxes or other	No of Fragments or litres or weight	Condition (No. of items) (W=washed; UW=unwashed; M=marked; P=processed; UP=unprocessed; D=digitised; I=indexed)
<b>ARC 330 98 – ZONE 1</b>			
Contexts records	89		P, I
A4 plans	13		P, D, I
A4 sections	24		P, D, I
Small finds	See ARC 330 Zone 4	1	W, M, P, I
Films (monochrome) S=slide; PR=print	15	73	P, I
Films (Colour) S=slide; PR=print	15	73	P, I
Lithics (boxes)	1 box size 1		W, I
Pottery (boxes)	5 size 1	1383	W, M, I
CBM (boxes)	1 size 1	35g	W
Animal Bone (boxes)	2 size 1	330	W, I
Molluscs	See ARC 330 98, zone 4	62	P, I
Flora	See ARC 330 98, zone 4		P, I
Flots	See ARC 330 98, zone 4		P, I
Soil Samples (10lit. buckets)	26		P – 100%
Soil Samples (no. of contexts)	13		

#### Quantification of Finds by volume (ARC 330 98 – ZONE 1)

Description	Capacity	No.	Total Volume
Shoe box (size 1)	0.0108m <sup>3</sup>	9	0.0972m <sup>3</sup>

Table 5 Archive index ARC WHR 99

Item	Number Of Items or boxes or other	No of Fragments or litres or weight	Condition (No. of items) (W=washed; UW=unwashed; M=marked; P=processed; UP=unprocessed; D=digitised; I=indexed)
<b>Whitehill Road Barrow ARC WHR 99</b>			
Contexts records	87		P, I
A4 plans	34		P, D, I
A4 sections	7		P, I
Small finds	1 box size 1	22	W, M, P, I
Films (monochrome) S=slide; PR=print		43	P, I
Films (Colour) S=slide; PR=print		88	P, I
Burnt flint (boxes)	See misc	344g	W, I
Pottery (boxes)	See misc		W
Fired clay (boxes)	n/a		
CBM (boxes)	See misc	6g	W, I
Stone (boxes)	See misc		W
Molluscs	See flora	6	P, I
Flora	1 size 1		P, I
Flots	See ARC SSR 99, Area 330 Zone 2		P, I
Misc.	2 size 1		P
Soil Samples (10lit. buckets)	6		P – 100%
Soil Samples (no. of contexts)	4		
Soil Samples (Monolith/kubiena tin)	3		
Samples absolute dating	n/a		

## Quantification of Finds by volume (ARC WHR 99)

Description	Capacity	No.	Total Volume
Shoe box (size 1)	0.0108m <sup>3</sup>	4	0.0432m <sup>3</sup>

## 4. STATEMENT OF POTENTIAL

### 4.1 Stratigraphy

4.1.1 The contexts recorded on the site have already been amalgamated to both subgroups and periods. The stratigraphic analysis will amalgamate the relevant sections of the specialist reports to form an integrated text.

4.1.2 The land of Area 330 Zone 1, which forms part of the North Kent Plain Landscape Zone, is dominated by the eroding Thanet beds from the west which have often deposited a considerable depth of material over the chalk. It is therefore perhaps subject to poorer drainage than the areas to the east. This may coincide with the apparent lack of occupation/settlement evidence. Furthermore the New Barn Road Roman road (Area 330 Zone 2) appears to pass from the Upper Ebbsfleet Valley in the direction of Wrotham/Tonbridge. It is possible this road is a reflection of earlier, prehistoric routeways, which would have led to a concentration of settlement sites to the east of Zone 1.

4.1.3 The nature of the linear cut through the landscape can give only a representative sample of the actual nature of land use: apparent gaps in the sequence may simply be due to activity unaffected by the CTRL works, although not far away. The stratigraphic evidence has the potential to contribute in varying degrees towards the following Time Periods:

- Farming Communities (2,000–100 BC)
- Towns and their rural landscapes (100 BC–AD 1700)

4.1.4 Within these time periods the stratigraphy can contribute towards the following Research Objectives:

#### ***Farming Communities (2,000–100 BC)***

- *Determine spatial organisation of the landscape in terms of settlement location in relation to fields, pasture, woodland, enclosed areas and ways of moving between these*

4.1.5 The archaeological work in Zone 1 has elucidated some useful information on the spatial organisation of the landscape in that the Whitehill Road Barrow was presumably a visible monument, which faces the fairly level plain to the north. It is likely that the monument was visible from any associated settlement and the settlement was associated with an area of arable agriculture.

4.1.6 Evidence for some Bronze Age activity is seen at Fawkham Junction where a small assemblage of redeposited Beaker pottery sherds were recovered. Elsewhere in the Zone there is no evidence for activity within this time period.

- *Determine how settlements were arranged and functioned over time*

4.1.7 Approximately 150m to the south of the Whitehill Road barrow is a valley which contained a tributary for the River Darent, which flows to the west. It is likely that the Darent river and valley formed a major routeway through the western hills and it is interesting to note, that the Whitehill Road barrow perhaps contained a burial of the ‘Wessex culture tradition’ with amber bead necklace, rather than an accompanying pottery vessel, which would be more usual in a

Kentish context. This would appear to show that the area of the Darent Valley was perhaps under a more westward looking sphere of influence than, for example the Beaker burials of Northumberland Bottom (Area 330 Zone 3).

***Towns and their rural landscapes (100 BC–AD 1700)***

- *What was the effect of the development of towns (e.g. London, Springhead) on the organisation of the landscape?*

4.1.8 No effect of the development of Springhead or any other known Roman town was found.

- *Did population increase and concentration effect natural resource exploitation and accelerate environmental change?*

4.1.9 No evidence for environmental change was recorded.

- *How were settlements and rural landscapes organised?*

4.1.10 A settlement developed at Fawkham Junction dating to the 1<sup>st</sup> century AD and further to the west, a (boundary) ditch was located near Hook Green Road. The evidence suggests a nucleus of settlement activity within a largely agricultural landscape, crossed by roads and trackways.

4.1.11 The road near to New Barn Road (Area 330 Zone 2), was an off-shoot to the south of Watling Street, passed to the east of Zone 1 in the direction of Wrotham/Tonbridge. It is likely that settlements were located closer to this road rather than in the area of the works.

- *How did the organisation of the landscape change through time?*

4.1.12 Settlement was certainly established at Fawkham Junction in the Late Iron Age - early Roman period, mostly between AD45 and AD100. The modern fields to the north of this site have undergone a resistivity survey in recent years, the results of which have indicated further field boundary ditches and other features, pointing to a settlement, although this may have been short-lived. It is not known if the entire settlement was abandoned/moved in the second century AD or at the end of the Roman period. The agricultural and rural aspect of this Zone appears to be continuous after the Roman period.

- *Consider the effect on the landscape of known historical events, eg. the arrival of Roman administration.*

4.1.13 The occupation site at Fawkham Junction went through a dynamic phase of growth and expansion in the period AD45 to AD100. Evidence for this is seen by the construction of ditches and the considerable amount of occupation debris (pottery, animal bones etc). However the occupation evidence disappears after this date. One of the many possibilities for this ‘abandonment’ may be an effect of the Roman administration, which perhaps lead to a redistribution of land in the area or population movement to the new towns.

**4.2 Landscape Zone Priorities**

4.2.1 In light of the above the following Landscape Zone Priorities were identified.

- *Reconstruction of the changing palaeo-environment for all time periods present, through ‘on-site’ and ‘off-site’ studies, and the interaction with past economies.*

- 4.2.2 Analysis of the monolith samples from the Whitehill Road barrow can be used to compare evidence for the changing environment during the Bronze Age and Romano-British periods in the environs of the North Downs and further afield. The samples can be compared to those taken from the sediment sequence South of Temple Precinct (ARC STP 99) in Area 330 Zone 2; those at Tollgate (ARC TLG 98) in Area 330 Zone 4; and those from the Bronze Age ring-ditch on Cobham Golf Course (ARC CGC 98) in Area 330 Zone 5.
- *The interaction of hunter foragers with the natural environment*
- 4.2.3 No evidence for the interaction of hunter foragers with the natural environment was found and as such this aim is deemed to have no further potential for consideration.
- *Changes arising from the adoption of agricultural based economies*
- 4.2.4 No evidence was found to answer this research aim and as such aim is deemed to have no further potential for consideration.
- *The effects of 'urban' growth and decline at Springhead, and the adoption of Roman ways and organisation in general*
- 4.2.5 The growth and decline of the settlement at Fawkham Junction may be a reflection of the Roman organisation of the landscape, with rural populations moving to the new towns.
- 4.2.6 The road near to New Barn Road (Area 330 Zone 2), an off-shoot to the south of Watling Street, passed to the east of Zone 1 in the direction of Wrotham/Tonbridge. It is likely that small settlements were located closer to this road than the Zone 1 works.
- Spatial organisation of the landscape, and changes through time***
- *The socio-economic landscape of later agriculturists (2000-100 BC)*
- 4.2.7 It is possible that an early Bronze Age, and probably later prehistoric settlement was established and associated with the Whitehill Road barrow. Aerial photographs of the area just to the south-west of the barrow indicate other ring ditches and possible enclosures of a prehistoric date, which may indicate settlement. Such settlements are generally sited to exploit good location/raw materials, arable land, pasturage, water sources and fuel sources. It would be reasonable to assume that the area at Whitehill Road contained all these features in the early Bronze Age.
- 4.2.8 No evidence for the later Bronze or Iron Ages was found, but it is unlikely that the area was abandoned, simply that the settlement concentrations did not coincide with the construction works.
- *The immediate pre-Roman – early Roman urban-rural landscape*
    - *Pre-Roman urban origins*
- 4.2.9 There is the possibility that Fawkham began as a pre-Roman Conquest site. If this is so then it would form part of a wider trend visible in southern England of a dynamic Late Iron Age society. It is generally considered that proto-urban settlements are a product of over-population coinciding with a planned/organised approach: more small settlements are deliberately set up within the same clan territory to soak up the excess population. It is possible this process was involved in Late Iron Age Britain.
- *The effect of the Roman administration on the established economic landscape*

4.2.10 It is possible the abandonment of the Roman Fawkham Junction site was connected with the establishment of the Roman administration (population movement to the towns), but also the settlement may have relocated without Roman influence.

➤ *The impact and effect of the development of Roman Watling Street*

4.2.11 Roman Watling Street does not pass near to this Zone. It is likely that there was a routeway up the Darent Valley, which has influenced the development of the land uses in this area throughout prehistory and history. Much of the zone lies between the influence of this routeway and the influence of Watling Street/Springhead to the north. The road near to New Barn Road (Area 330 Zone 2), was an off-shoot to the south of Watling Street, passed to the east of Zone 1 in the direction of Wrotham/Tonbridge. It is likely that settlements were located close to this road.

➤ *Character, function and development of the rural urban fringe, and satellite uses*

4.2.12 The area of Zone 1 appears to have been rural and agricultural in function, crossed by roads at intervals, during much of the prehistoric and historic period.

***The late and immediate post-Roman landscape***

- *The decline of the urban economy and wider changes in the later Roman economy in general – how this is reflected in the archaeological resource, and its effect on rural settlement and economy*

4.2.13 No evidence for the late and immediate post-Roman landscape was recovered.

***Ritual and ceremonial use of the landscape***

4.2.14 The ritual and ceremonial use of the landscape is represented by the early Bronze Age barrow at ARC WHR 99. The barrow is situated on a gentle north-facing slope, approximately half way between the top of the slope (which is 150m to the south) and the bottom, and situated on a visible promontory. Such a position is typical for these monuments in this area of Kent, as seen by the flat Beaker (double) burial to the north at Northumberland Bottom, Area 330 Zone 3 and the large, causewayed, early Bronze Age barrow to the north-west at Cobham, Area 330 Zone 5.

4.2.15 Continuity of activity in the Whitehill Road area is seen by the fact that the barrow ditches had already mostly filled when a secondary inhumation was interred through the inner ring ditch. It is possible that further barrows occur in the area, and a group of cropmarks to the east of Whitehill Road have been identified by aerial photograph analysis which appear to show ring ditches and trackways. These may be further monuments or the location of an associated settlement.

**4.3 Fieldwork event aims**

4.3.1 The Fieldwork Event Aims for the watching brief (ARC 330 98) Zone 1 were as follows:

*Primary aims*

- to establish a record of the changing palaeo-environment for all time periods to present and the interaction with past economies.

- to determine the spatial organisation of the landscape, and changes through time.
- to determine the late and immediate post-Roman landscape.
- to determined the ritual and ceremonial uses of the landscape.

4.3.2 These aims are little different from the Landscape Zone Priorities above and the answers are discussed above.

#### 4.4 Artefacts

##### *Ceramics: Prehistoric and Roman pottery*

4.4.1 The pottery assemblage has good potential to contribute to the following Landscape Zone Priorities:

##### ***Farming communities (2000-100 BC)***

- *Determine spatial organisation of the landscape, and changes through time*

4.4.2 The Beaker pottery from the Fawkham Junction site is residual and its highly abraded quality is of no potential other than to indicate some activity dating to the prehistoric period in the vicinity.

4.4.3 The Roman pottery will contribute greatly to the construction of a chronological framework within which the spatial organisation of the landscape and its development can be examined. Zone 1 is particularly important for the movement of both settlement and agricultural/pastoral activity across the landscape over time, especially the material from Fawkham Junction for the post-conquest period. Examination of the assemblage in terms of composition, percentage of Romanised and ‘native’ style wares will contribute to the study of the effects of the Roman conquest and levels of Romanisation.

4.4.4 The prehistoric and Roman pottery assemblages have good potential to contribute to the following Fieldwork Event Primary Aims:

- *To recover suitable Romano-British pottery assemblages to refine the understanding of fabric types and chronologies*

4.4.5 Clearly this secondary aim was achieved and the pottery assemblages from the boundary ditches at Fawkham Junction are able to contribute to the understanding of fabric types and chronologies. The ditch assemblages are large enough to provide reliable statistical data whilst at the same time appear to be relatively closely dated. There are also a number of items of intrinsic interest such as the *Terra Rubra* sherds and plate with a coarse ware stamp, that warrant individual study and consideration.

- *To determine the character function and development of the rural urban fringe and satellite uses*

4.4.6 The Roman pottery assemblage also has the potential to contribute to addressing the issue of the character, function and development of the rural urban fringe, and satellite uses. The question of why the area at Fawkham Junction was abandoned by the early 2<sup>nd</sup> century needs to be considered and to where the activity moved. In consideration with other evidence, the pottery will contribute to the characterisation of the activity.

4.4.7 The post-Roman pottery assemblage has no potential either for interpretation of the site or for local pottery activities. The two post-medieval sherds from a



boundary ditch at Whitehill Road and a pit at Fawkham Junction are probably derived from manuring of fields in the 17<sup>th</sup> century.

*Building material*

- 4.4.8 The building material has no potential to answer any research aims, other than to show contact between the Eccles tile works and Fawkham Junction.

*Lithics: Worked and Burnt Flint*

- *Farming communities (2000-100BC)*

- 4.4.9 Lithics may help to clarify the on site activities but, given the generally small numbers and the lack of diagnostic forms, this may be somewhat limited.

*Amber: Artefacts*

- 4.4.10 The amber beads from the Whitehill Road barrow (ARC WHR 99) can assist the following Landscape Zone Priority:

Spatial organisation of the landscape, and changes through time

- *The socio-economic landscape of later agriculturists (2000-100 BC)*

- 4.4.11 The presence of the beads is indicative of the early Bronze Age, probably related to a settlement in the area. Their presence may suggest contact with, or influence of, the Wessex culture. They are characteristic of a highly organised community with a well developed system of agriculture and trade/contact (gift/tribute/exchange) across a wide area of southern England. The information from the beads will contribute to the understanding of trade routes operating during this early period.

- 4.4.12 The amber beads are the only artefacts recovered from the burial (or the barrow). It has been noted that such necklaces are usually associated with female burials. Further work research involving comparative work with artefacts from similar sites is required to both date the burial and understand its social context.

- 4.4.13 The beads from ARC WHR 99 can assist the following Fieldwork Event Aim:

- *To determine the spatial organisation of the landscape and the changes through time*

- 4.4.14 The beads, as part of the burial, can assist in the interpretation of the landscape and the changes made to it through time.

- *To determine the ritual and ceremonial uses of the landscape*

- 4.4.15 The beads are the only artefacts recovered from the burial. As mentioned above, they may be able to give indications of status and sex. Their placement with a secondary burial within a Bronze Age barrow is of interest for interpreting the ritual and ceremonial uses of the landscape. Further work will be required with comparisons with other barrows, to form additional data relating to the distinctions between monuments with burials, highlighting the ritual and ceremonial aspect and those possibly indicating a secular aspect.

*Metalwork: Artefacts*

- 4.4.16 The metalwork from Zone 1 has no potential to assist the Landscape Zone Priorities or the Fieldwork Event Aims.

## 4.5 Environmental

### *Human Bone*

4.5.1 This has the potential to provide information for the following Fieldwork Event Aims:

- *to determine the ritual and ceremonial uses of the landscape*

4.5.2 The burial is a rarity in association with Bronze Age ring ditches. Establishing the age of the burial and comparisons with other burials of this nature, from comparison with similar contexts elsewhere, may help the interpretation of ritual burial practice during the early Bronze Age.

### *Animal Bone*

4.5.3 The animal bone has the potential to provide information for the following Fieldwork Event Aims:

- *Did population increase and concentration effect natural resource exploitation and accelerate environmental change?*

4.5.4 It should be possible to determine meat preferences and, to a limited extent (due to the small quantities of bones) how these animals were used. Of interest in this respect is the presence of a butchered horse bone. This cut undoubtedly suggests this animal was skinned, though not necessarily eaten. However, it is possible that this may be evidence for a continuation of the practise of eating horseflesh from the Iron Age into the early Roman period. This in turn may suggest that the local populace were less than completely Romanised. Finally there is one tantalising glimpse of high status food, as shown by the presence of a possible veal calf.

4.5.5 There is very little potential for direct study of the landscape.

- *to determine the ritual and ceremonial uses of the landscape.*

4.5.6 Regarding information concerning the ritual landscape, it was noted that a small collection of calcined bones were recovered from one of the Fawkham Junction ditchfills. These appear to be cattle-size rather than human fragments. They appear to be the remains of a hearth deposit.

### *Macroscopic plant remains and charcoal*

4.5.7 Due to the paucity of the plant remains in the samples they are not recommended for further analysis.

### *Mollusca*

4.5.8 The assemblage has very little potential for further study in terms of quantification of species, or of ecological interpretation. Identification of all species present will allow some comment on the general nature of the local environment at ARC WHR 99 only. It will not be possible to specify spatial and temporal variation resulting from changes in landuse.

### *Geo-archaeology*

- *To study the natural landscape, its geomorphology, vegetation and climate, as the context within which the archaeological evidence can be interpreted.*
- *Farming communities (2000 BC-100 BC): to consider environmental change resulting from landscape organisation and re-organisation.*

- 4.5.9 These aims may be achieved by pollen and soil micromorphological analysis of the Whitehill Road barrow ditch fills. These ditch fills contained no cultural material and only one (the inner) can be dated relative to a secondary burial with amber beads, which cut through its upper fill, from the Bronze Age period, c 2000 – 1600 BC. As the stratigraphic relationship between the ditches was destroyed by modern truncation two interpretations can be made:
- Both ditches are contemporaneous with an earthen mound in the centre, and the inner ditch silting derived from material washed into it from the mound. The burial was then interred through the ditch, as this would have negated the need to excavate the hard chalk.
  - The second possibility is that only the outer ditch is associated with the secondary burial and the inner ditch is from an earlier period.
- 4.5.10 Soil samples show that the deposits within the inner ditch differ from the outer, which may reflect environmental differences. The absence of primary fill in the inner ditch may highlight rapid erosion and infill, whilst the evidence from the outer ditch indicates a much slower accumulation and damp conditions. This may either indicate two phases of constructional activity highlighting changes in landscape organisation and re-organisation.
- 4.5.11 The evidence for a changing landscape can be compared to the Bronze Age ring ditch at Cobham Golf Course (ARC CGC 98), with material of a similar nature also dated to the early Bronze Age period. Comparisons with colluvial deposits at West of Northumberland Bottom (ARC WNB 98), and the buried soil horizons and colluvial deposits from the White Horse Stone (ARC WHS 98) and Pilgrims Way (ARC PIL 98) sites would indicate the similarities or diversity in the vegetation and assist in the establishment of an absolute chronology.
- 4.5.12 Pollen analysis should enable the nature of the changing landscape during and after the construction of the Whitehill Road barrow to be reconstructed. This could assist in determining whether both ditches are contemporaneous and comparisons with samples from the burial would refine the chronological sequence. Soil micromorphology should enable the sequence of events that led to the infilling of the ditch to be unravelled.

## 4.6 Statement of overall potential

4.6.1 The site lies within the North Kent Plain Landscape Zone. The principal site data has the potential to contribute towards the following Time Periods as defined in the CTRL Archaeology Research Strategy:

- *Farming Communities (2000-100 BC)*
- *Towns and their rural landscapes (100 BC - AD 1700)*

4.6.2 Within these Time Periods the data can be used to address the following Landscape Zone Priorities:

Farming Communities (2000-100 BC)

- *Consider environmental change resulting from landscape organisation and re-organisation*
- *To study the natural landscape, its geomorphology, vegetation and climate, as the context within which the archaeological evidence can be interpreted.*
- *The socio-economic landscape of later agriculturists*
- *The ritual and ceremonial landscape*

4.6.3 Early Bronze Age activity is seen at Whitehill Road (ARC WHR 99), with the identification of a barrow with a secondary burial. Associated with the burial was an amber bead necklace dated to c 1600 BC.

4.6.4 Monolith samples were taken from the fills of the barrow. The micromorphological analysis will indicate the sequence of events leading up to the infilling of the ditches. Pollen analysis will provide information on the changing vegetation of the environs during and after the construction of the barrow and the role of human impact in landscape change. This can be examined and compared with the buried soil horizons and colluvial deposits further afield at Whitehorse Stone (ARC WHS 98) and Pilgrim's Way (ARC PIL 98) within the CTRL project.

4.6.5 The amber beads are of particular importance as they are the only stratified early Bronze Age find in this Zone. Usually associated with the 'Wessex Culture' these can contribute to the understanding of trade and cultural links outside the North Downs of Kent. In addition their presence may indicate the status and sex of the burial (a secondary burial with noted rarity of secondary inhumations rather than cremations) and the possibility that the person was not indigenous to the area, but originally associated with the 'Wessex Culture'.

4.6.6 Analysis of the bone and teeth via stable chemical isotopes and DNA would indicate whether the burial was indigenous to the area or from further afield, highlighting social interactions with other communities.

4.6.7 The presence of the Whitehill Road barrow implies occupation in the vicinity, although none was found within this part of the trace of ARC 330 98 watching brief. It needs to be considered in relation to the double 'Beaker' burial at West of Northumberland Bottom (ARC WNB 98), the Neolithic mortuary enclosure at Tollgate (Zone 4) the barrow at Cobham (ARC CGC).

4.6.8 Towns and their rural landscapes (100 BC - AD 1700)

- *How were settlements and rural landscapes organised and how did they function*
- *How did the organisation of the landscape change through time*

- Consider the effect on the landscape of known historical events, e.g. the arrival of the Roman administration

- 4.6.9 Much of the evidence for rural landscapes relates to the early Roman (no later than the second half of the 1st century) and Post-medieval periods.
- 4.6.10 In the early Roman period, settlement was established in the area of Fawkham Junction. The archaeological evidence indicates agricultural practice away from the main settlement area and consisted of enclosure ditches, an oven and a pit. The area was abandoned by AD 100, but the evidence suggests that within this short space of time, the site had undergone more than one phase of land management.
- 4.6.11 Its establishment may be linked to the introduction of the Roman administration. The settlement seems to have been abandoned (or contracted) by the 2nd century AD.
- 4.6.12 The artefactual evidence has the potential to the dating and characterisation of the site. The pottery (eg the presence of *Terra Rubra* c 15 BC – AD 25) is significant for addressing questions relating to the late Iron Age-early Roman transition, the effects of the Roman conquest and levels of Romanisation. The study of the domesticated animal bones will help to characterise the site and may indicate changes in the local economy during this period. The site reflects the same pattern of events in the early Roman period as found at South of Station Road (ARC SSR 99), Area 330 Zone 2; Northumberland Bottom (ARC WNB 98 and Area 330, Zone 3); and Tollgate Area 330, Zone 4.
- 4.6.13 The rest of Zone 1 appears to show an agricultural function, with the area crossed by roads during the Roman, medieval and post-medieval periods. Examples are seen by a droveway/headland boundary at Whitehill Road, a Roman ditch at Hook Green Road and a denehole at Hook Green Road. These features have a limited potential except to show the continuity of agricultural functions.
- 4.6.14 These aspects can be compared with all other Zones in Area 330 (Zones 1 to 6).
- 4.6.15 Although the archaeological assessment has confirmed the potential of the archive to address both detailed questions about typologies and landscapes, no new research aims have been identified.

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## **6. ACKNOWLEDGEMENTS**

This assessment report was prepared by Portia Askew and Niall Roycroft, with the following MoLSS specialists; Liz Barham (conservation), Ian Betts (ceramic building material), Lyn Blackmore (post-medieval pottery), Philippa Bradley (flint), Jane Corcoran (geo-archaeology), Lisa Gray-Rees (botany), Jackie Keily (registered finds), Kevin Reilly (animal bones) Alan Pipe (molluscs), Louise Rayner (prehistoric and Roman pottery). The plans and figures were by Sophie Lamb and Kate Pollard of MoLAS. OS information was supplied by URS. The work was project managed by Niall Roycroft and Gordon Malcolm.

## **APPENDIX 1: ASSESSMENT OF PREHISTORIC AND ROMAN POTTERY**

Louise Rayner

### **1. Introduction**

- 1.1 The assemblage from Area 330 Zone 1 was derived wholly from areas of ARC 330 98 near the Fawkham Junction site. No pottery was found at the site of ARC WHR 99 either from the ring-ditch or associated burial.
- 1.2 The pottery from Zone 1 ARC 330 98 dates predominately to the early Roman period, probably the mid to late 1<sup>st</sup> century. A small amount of 2<sup>nd</sup> century Roman pottery is present but there is no real evidence for later Roman activity.
- 1.3 Four possible Beaker sherds were recovered with Late Iron Age – Early Roman material from the fill of a boundary ditch. The sherds are abraded and clearly residual.
- 1.4 The pottery can assist the following fieldwork event aims:
- To determine the spatial organisation of the landscapes, and changes through time
  - To recover suitable pottery assemblages for the study of the Bronze Age
  - To recover suitable Romano-British pottery assemblages to refine the understanding of fabric types and chronologies

### **2. Methodology**

- 2.1 All of the hand-collected pottery was recorded using standard MoLSS recording methods. The material is recorded on a context-by-context basis using fabric, form and decoration as unique identifiers. The prehistoric sherds were recorded using MoLSS fabric codes to indicate fabric groupings based on the dominant inclusions; and were subsequently transferred to Canterbury Archaeological Trust regional fabric codes.
- 2.2 Concerning the Late Iron Age/Belgic and early Romano-British material these codes should be taken to indicate broad fabric groupings and not defined fabric types. Due to local variations, sherds recorded under the same fabric code (both within the Zone 1 assemblage and from other CTRL sites recorded using CAT codes) will not represent one defined fabric, but enable sherds to be grouped with other similar material. The pottery was quantified by count and weight and aspects of condition were also noted.

### **3. Quantifications**

- 3.1 The assemblage from ARC 330 98 in the area of Zone 1 totalled 1383 sherds (5681g). Of these 4 sherds (50g) are of prehistoric date, whilst the remainder is early Roman (1359 sherds/5509g).



#### 4. Provenance

- 4.1 Four possible Beaker sherd was recovered with early Roman pottery from the fill of a boundary ditch [516]. The sherds have a sandy fabric and faint traces of comb impressed decoration. The sherds are very abraded and clearly residual, but in the light of the nearby (1km) Whitehill Road ring-ditch also of early Bronze Age date, may be of significance.
- 4.2 The majority of the material dates to the early Roman period and the bulk of the assemblage was recovered from a series of boundary ditches to the east of Fawkham Junction (Figure 4). The assemblage contains both Romanised and 'native' style wares, which suggests a date in the mid to late 1<sup>st</sup> century AD, probably from the early post-conquest period onwards. The ditch groups were large and contained a range of fabrics and forms.
- 4.3 One of the ditches produced two sherds of Gallo-Belgic *Terra Rubra*. The sherds, although not joining appear to derive from the same platter, although the size of the sherds makes it difficult to assign this to a specific form type. The fabric is TR1A, which is generally dated c 15 BC – AD 25, and *Terra Rubra* wares in general are in decline in the conquest period. Finds of *Terra Rubra* are scarce in west Kent and only limited circulation occurred in east Kent at centres such as Canterbury. The presence of this platter is therefore of note.
- 4.4 From the same ditch, a Gallo-Belgic imitation plate with a coarse ware stamp was recovered. These vessels are stamped in imitation of the imported wares, but frequently are either illiterate or consist of motifs rather than letters. The study of these stamps in terms of die links and their distribution is important for our understanding of the organisation of early post-conquest pottery production.
- 4.5 A large assemblage was recovered from pit [803] (sg 1025), which has been provisionally interpreted as a cooking or rubbish pit. Although large sherds from a cordoned jar are present, the range and diversity of the pottery present would suggest this assemblage is derived from domestic rubbish rather than representing vessels associated with cooking or ritual activity. The other evidence needs to be re-considered to refine the interpretation of this feature.
- 4.6 The pottery assemblage is composed of a similar range of fabric and forms to the assemblage recovered from ARC WNB 98 Zone 3. 'Native' wares such as shell-, grog-, and flint-tempered fabrics are very common. Romanised sandy wares are also present alongside sourced Kentish wares such as Upchurch fine wares, including Hoo white-slipped ware, (R16; R17.4) and Verulamium white wares (R15). Imported wares are restricted to a few sherds of south Gaulish samian (R42). The presence of these Roman wares suggests the activity continues into the later 1<sup>st</sup> century (c AD 70 onwards). The presence of early 2<sup>nd</sup> century pottery in the hill wash overlying one of the ditch fills, indicates the ditches have gone out of use by this period. The absence of any pottery indicative of a later 2<sup>nd</sup>, 3<sup>rd</sup> or 4<sup>th</sup> century date confirms the decline in activity by this period.

#### 5. Conservation

- 5.1 There are no conservation requirements for this material or any proposal for further study that would conflict with long-term storage.

## 6. Comparative material

- 6.1 As mentioned above the early Roman assemblage from the area to the east of Fawkham Junction has many similarities with the assemblage from Zone 3 ARC WNB 98 and as such can also be compared to the Farningham Hill assemblage.
- 6.2 A number of coarse ware stamps are known in Kent, including examples from the kiln material at Keston. The coarse ware stamp needs to be compared to other known examples to establish die or die-style links.

## 7. Potential for further work

- 7.1 The assemblage from Zone 1 has potential to contribute to the following fieldwork event aims and Landscape Zone aims:
- *To recover suitable Romano-British pottery assemblages to refine the understanding of fabric types and chronologies*
- 7.2 Clearly this secondary aim was achieved and the pottery assemblages from the boundary ditches are able to contribute to the understanding of fabric types and chronologies. The ditch assemblages are large enough to provide reliable statistical data whilst at the same time appear to be relatively closely dated. There are also a number of items of intrinsic interest such as the *Terra Rubra* sherds and the plate with the coarse ware stamp that warrant individual study and consideration.
- 7.3 The pottery assemblage has the potential to contribute to addressing the issue of the character, function and development of the rural urban fringe, and satellite uses. The question of whether the area was abandoned by the early 2<sup>nd</sup> century needs to be considered and where such activity shifted. In consideration with other evidence, the pottery will contribute to the characterisation of the activity.
- 7.4 The following further work is suggested in order to fulfil the potential of the assemblage:
- Define fabric descriptions for early Roman assemblage. This should be done in conjunction with the assemblage from ARC WNB 98 in order to establish whether any fabrics appear in both assemblages.
  - Detailed consideration of the stratigraphic relationship of the assemblage in order to detect changes in the assemblage composition that may be of chronological importance.
  - Research on coarse ware stamp including comparative study with other known dies
  - Consideration of other assemblages from the region with *Terra Rubra* and implications for the character of the Zone 1 assemblage
  - Preparation of publication text
  - Illustration of vessels of intrinsic interest and other selected closed groups

## 8. Bibliography

None

Table 6: ARC 330 98: Assessment of Prehistoric and Roman Pottery, quantifications and attributes

Context	Count	Weight	Period	D_Min	D_Max	Comments
158	41	308	RO	45	70	B2 2 B2 B3 2 RLD B3 2 B6 2A B6 B6.1 2T B9 2 B9 2A BUD B9 2T
316	6	35	RO	70	100	B9 2 RLD R15 R74.1
511	1	1	RO	45	100	B6.1
512	7	78	RO	45	100	B2 B6 B6.1 2A B6.1 B8 B9
515	13	87	RO	45	100	B2 2 B2 2V B2 B6 2 B6 B8 5 B8
516	47	112	RO	50	100	B2 B6 2 RLD B6 B9 2T R17.4
518	16	55	RO	120	300	B2 B2.3 2 B6 R73.1 2F BUD
520	5	62	RO	45	100	B2 B21 2A B6.1 B8
762	4	53	RO	45	100	B2 B6 R8.3
764	47	124	RO	50	100	B5 5 B6 2A16 B6 B8 2 R110 R73 2T
766	26	197	RO	45	100	B2 2 B2 B6
782	22	122	RO	50	100	B2 B6 2A B6.1 2 B9.1 R73
797	26	222	RO	45	100	B2 2 B2 B6 2A B6 B6.1 B9 2 B9
800	87	657	RO	45	100	B2 2 B2 2T B2 B5 2 B5 2T B5 B6 B6.1 2A16 R75 3A RPD R8.3
802	24	220	RO	50	100	B2 B5 B6 R7 2/3 R73 4/5 R73
803	222	2210	RO	45	70	B2 2T B2 B2.3 B21 2B NCD B21 B25 2T B5 2T B5 B6 2A B6 2A16 B6 2B B6 B6.1 B9
804	116	1224	RO	50	100	B1 3 ROD B2 B21 1 B21 B5 2 B6 2A STAB B6 2A B6 R17.1 R42 5DR18 R68 2 R73 R8.3
860	15	321	RO	45	70	B2 2 B2 2R B2 B6 B6.1 B9 2V B9
868	26	367	RO	45	100	B2 2 B2 5 B2 B5 2T B6 2A B6
870	329	4059	RO	50	70	B12ELG B2 2 B2 2T B2 2V NCD B2 5 B2 B2.3 2 B21 B5 1A B5 2A B5 B6 5 B6 B6.1 2A B6.1 2A16 B9 2 NCD B9 2 RLD B9 2 B9 2T B9 HPOF B9 B9.1 2 R114 3 R8.3
876	24	304	RO	45	100	B2 2 B2 2T B2 2V B2 B5 2 B6 B6.1
877	4	4	RO	45	100	B2
880	147	4076	RO	45	70	B2 2A NCD B2 5 B2 B21 2A B21 B5 2 B5 3A ROD B6 2A B6 B6.1 2A B9 2 NCD B9 2A B9 5 <93> B9 R75
881	65	1313	RO	45	70	B12ELG B2 2 HPOF B2 2/3 B2 2T B2 4/5 B2 B2.3 2A B25 B3 2A B6 2A B6 B6.1 2A B9 2T BUD B9 B9.1 2

Context	Count	Weight	Period	D_Min	D_Max	Comments
882	33	520	RO	45	100	B2 2 B2 2V B5 B6 B6.1 2 BUD B6.1 2A B9
896	3	1	RO	45	100	B5 2
902	3	91	RO	45	100	B3 2 B3 2T
516	4	11	EBA			SAND 3 <i>c</i> 2500-1600 BC Prehistoric: residual sherd of Beaker?

## Abbreviations:

Fabric codes are from the CAT Roman fabric type series.

<i>Form code</i>	<i>Expansion</i>
1A	Collared (or Hofheim-type) flagon
2	Jar
2A	Bead-rimmed jar
2A16	Lid-seated jar
2B	Short-necked everted rim jar
2F	Everted-rimmed jar
2T	Necked jar
2V	Storage jar
3	Beaker
3A	Butt beaker
4/5	Open form (bowl or dish)
5	Dish
5DR18	Drag 18

<i>Decoration code</i>	<i>Expansion</i>
BUD	Burnished decoration
HPOF	Hole (perforated after firing)
ROD	Rouletted decoration
RPD	Red painted decoration
RLD	Rilled
STAB	Stabbed decoration
NCD	Incised decoration

## **APPENDIX 2: ASSESSMENT OF POST-ROMAN POTTERY**

Lyn Blackmore

### **1. Introduction**

- 1.1 Two body sherds of post-medieval date were recovered from two different features excavated during the watching brief ARC 330 98. No medieval or later pottery was found on the excavation of ARC WHR 99.

### **2. Methodology**

- 2.1 The pottery was recorded by context, sherd count and weight on paper and on the Oracle database. The fabrics were identified using fabric codes in line with those of the Canterbury Archaeological Trust.

### **3. Quantifications**

- 3.1 Two sherds were recovered (total 29g). One is from a post-medieval redware dish, the other from the base of a small flower pot in a finer redware fabric.

### **4. Provenance**

- 4.1 The dish sherd was found in the fill of a field boundary ditch (sg 1028). The flower pot was found in a pit fill (sg 1040).

### **5. Conservation**

- 5.1 There are no conservation requirements.

### **6. Comparative material**

- 6.1 These wares are typical of the 17<sup>th</sup> century and similar finds can be found in most contemporary contexts.

### **7. Potential for further work**

- 7.1 The size of the collection, and of the sherds, is too small to make further work worthwhile. The potential is thus limited to dating and demonstrating some activity in the area, if only manuring of the fields, in the 17<sup>th</sup> century.

*Table 7: ARC 330 98 Assessment of Post Roman Pottery, quantifications and attributes*

<b>Context</b>	<b>Count</b>	<b>Weight</b>	<b>Period</b>	<b>D_MIN</b>	<b>D_MAX</b>	<b>Comments</b>
403	1	4	PM	1575	1700	PM1.3 FLP
797	1	25	PM	1550	1700	PM1 DISH

*Expansions to the fabric and form codes*

PM1	Post-medieval redware	1580-1800
PM1.3	Fine post-medieval redware	1575-1700
DISH	Dish	
FLP	Flower pot	

## **APPENDIX 3: ASSESSMENT OF BUILDING MATERIAL**

Ian Betts

### **1. Introduction**

- 1.1 From the watching brief (ARC 330 98) came three fragments of Roman tile from the kiln site at Eccles in north-west Kent dated AD 50-80 (10g, context 802), 5 fragments of fired ceramic of uncertain date (10g, context 516) and 3 fragments of ceramic of uncertain type (15g, contexts 318, 870).
- 1.2 The building material from ARC WHR 99 comprised fragment of pebble made of light grey coloured fine siltstone (1g, context 10) and a 5g fragment of possible post-medieval brick (MoL fabric 3032).

### **2. Methodology**

- 2.1 All the building material was been recorded for the assessment.
- 2.2 The data has been entered on an ORACLE database.
- 2.3 All the building material has been retained although consideration can be made for discard.

### **3. Quantifications**

- 3.1 The building material assemblage is 41g, comprising 1g of stone, 10g of Roman tile, 10g of fired ceramic, 5g of possible post-medieval brick and 15g of unidentified ceramic.

### **4. Provenance**

- 4.1 The stone was found associated with a Bronze Age barrow. The stone is probably part of a naturally occurring pebble rather than any sort of building material.

### **5. Conservation**

- 5.1 None required

### **6. Comparative material**

- 6.1 The tiles in Roman fabric type 2454 are believed to come from the Eccles area of north-west Kent where both tile and pottery made from the same distinctive yellow and white firing clay were produced.

**7. Potential for further work**

7.1 None, other than to demonstrate the trade link with the Eccles Roman tile site.

**8. Bibliography**

None

*Table 8: Assessment of Ceramic Building Material /Assessment of Fired Clay*

<b>Event code</b>	<b>Context</b>	<b>Count</b>	<b>Weight</b>	<b>Type (brick/ tile etc.)</b>	<b>Period (spot date)</b>	<b>D_Min</b>	<b>D_Max</b>	<b>Comments (decoration/ glaze/ fabric)</b>
ARC 330 98	318	2	5	?	UN			
ARC 330 98	516	5	10	Fired ceramic	UN			
ARC 330 98	802	3	10	Tile	RO	50	80	Fabric 2454
ARC 330 98	870	1	10	?	UN			
ARC WHR 99	10	1	1	Stone	UN			Part of natural pebble
ARC WHR 99	26	1	5	Brick?	PM			Post-medieval?



## **APPENDIX 4: ASSESSMENT OF WORKED AND BURNT FLINT**

Philippa Bradley

### **1. Introduction**

1.1 A total of six pieces of worked flint were recovered from the excavations. The worked flint consists of mostly hard-hammer struck flakes, irregularly worked cores, core fragments.

1.2 Burnt unworked flint was recovered from ARC WHR 99 and ARC 330 98. The burnt unworked flint consists of a range of small to large sized fragments or pebbles of heavily calcined flint.

### **2. Methodology**

2.1 The worked and burnt unworked flint was recorded onto the Oracle database using standard MoLSS methods. The material was recorded by typological group, where appropriate notes were made on pertinent technological attributes. Brief notes were also made on the general condition of the material. The burnt unworked flint was briefly scanned and quantified, a general note of the condition of the material was also made. Natural unworked flint was discarded.

### **3. Quantifications**

3.1 A total of 6 pieces of worked flint and 238 pieces of burnt unworked flint (weighing 1564g) was recovered from ARC WHR 99 and ARC 330 98. The flint is summarised in the tables below.

### **4. Provenance**

4.1 The worked flint was recovered from only a relatively limited number of contexts. The burnt unworked flint was spread over more contexts and concentrations, by both numbers and weight can be noted in several contexts *eg* [17], [36] (ARC WHR 99), and [682], [886] (ARC 330 98). The recovery of worn possible Beaker sherds from Fawkham Junction (ARC 330 98), confirms some limited prehistoric activity in the vicinity. However, since these contexts produced Roman ceramics, thus much of the flintwork must be redeposited.

### **5. Conservation**

5.1 The flint is appropriately bagged and boxed for long-term storage. Some of the burnt unworked flint is beginning to disintegrate, however, there is little that can be done to prevent this. No conservation is required. All of the natural flint has been discarded.

- 5.2 Selected burnt unworked flint could be discarded, keeping only a selection of representative material for archive purposes. The full quantification (by weight and number), together with a description of the material discarded would provide sufficient records for any future work.

## 6. Comparative material

- 6.1 The CTRL route has produced considerable Neolithic and Bronze Age flintwork with which this material can be compared. The material from Zone 1 provides more evidence for activity of this general character although dating this small undiagnostic group is somewhat problematic.

## 7. Potential for further work

- 7.1 The flint can contribute to the Research Objective:

*Farming communities (2000-100BC)*

- 7.2 This small group of material has very limited potential for further analysis. If a publication is produced it may be desirable to include a summary which can be drawn from this assessment.

- Prepare report for publication from assessment

## 8. Bibliography

None

Table 9: Worked Flint ARC WHR 99

Event code	Context	Count	Period	Comments
ARC WHR 99	6	1		Possible flake, also 3 natural
ARC WHR 99	22	-		2 natural
ARC WHR 99	39	-		3 natural
ARC WHR 99	40	1		Possible flake very irregular
ARC WHR 99	52	1		Cortical flake
ARC WHR 99	52	1		Possible core, few removals on small nodule
ARC WHR 99	69	-		3 natural
Total		4		

Table 10: Burnt Flint ARC WHR 99

Event code	Context	Count	Weight	Comments *
ARC WHR 99	7	1	4	
ARC WHR 99	17	3	129	
ARC WHR 99	11	4	31	
ARC WHR 99	14	2	7	
ARC WHR 99	19	6	89	
ARC WHR 99	36	13	71	
ARC WHR 99	40	7	6	
ARC WHR 99	45	1	1	
ARC WHR 99	52	7	6	
Total		44	344	

\* All heavily calcined grey/white

Table 11: Worked Flint ARC 330 98

Event code	Context	Count	Period	Comments
ARC 330 98	158	1		small rolled flake
ARC 330 98	316	-		1 natural discarded
ARC 330 98	682	1		small flake, possible use to edges, fresh condition
Total		2		

Table 12: Burnt Flint ARC 330 98

Event code	Context	Count	Weight	Comments *
ARC 330 98	159	14	49	
ARC 330 98	316	80	113	
ARC 330 98	512	3	5	
ARC 330 98	515	7	12	
ARC 330 98	520	5	13	
ARC 330 98	667	4	64	
ARC 330 98	682	37	408	
ARC 330 98	792	4	4	
ARC 330 98	800	10	43	
ARC 330 98	877	1	41	
ARC 330 98	882	9	101	
ARC 330 98	886	20	368	
Total		194	1220	

\* All heavily calcined grey/white

**APPENDIX 5: ASSESSMENT OF AMBER ARTEFACTS**

Jackie Keily

Conservation by Liz Barham

**1. Introduction**

1.1 A total of twenty-one amber beads, <2> and <3>, were recovered from burial [41] at ARC WHR 99 in Zone 1. They consist of seventeen virtually complete beads and four fragmentary.

1.2 The amber beads were recovered by hand excavation of a secondary flexed burial associated with a round barrow. The amber beads can assist the following fieldwork event aims:

- To determine the spatial organisation of the landscape, and changes through time
- To determine the ritual and ceremonial uses of the landscape

**2. Methodology**

2.1 The amber beads were accessioned in accordance with the Museum of London system.

2.2 The records have been entered onto the Oracle relational database/RLE datasets.

2.3 No sampling was undertaken of the beads.

**3. Quantifications**

*Table 13: Assessment of Amber Artefacts ARC WHR 99*

Context	Special Number	Material	Count	Period	Comments (Description)
40	2	Amber	14	BA	Discoid with a single central hole; 13 small and one large; all virtually complete
40	3	Amber	7	BA	Discoid with a single central hole; all small; 3 virtually complete and four fragmentary

**4. Provenance**

4.1 The beads were found around the neck area and right scapula of a poorly preserved skeleton, buried in a flexed position with the head to the west. The burial cut the backfill of the inner ditch of a Bronze Age barrow. Comparison with other sites, elsewhere in Britain, indicate a date of *c* 1600 BC for the burial.

## 5. Conservation

- 5.1 The beads have been conserved but it is recommended that handling and movement of them is kept to a minimum as they remain in a fragile condition.

## 6. Comparative material

- 6.1 Comparison with other sites, elsewhere in Britain, indicate a date of *c* 1600 BC for the burial. There are, however, difficulties in dating the beads themselves. Amber beads and artefacts are frequently found in burials during the early to middle Bronze Age both in Britain and elsewhere in continental Europe (Coles & Harding 1979, 31 & 256). Beads and necklaces of jet, amber and faience are traditionally associated with burials of the Wessex culture of the final Early Bronze Age (Barclay & Wallis, [1999] 234), although they occur elsewhere in Britain too (Shennan 1993, 60). In Britain the Bronze Age appears to have been the high point in the use of amber and as Shennan has pointed out of a total of approximately 200 occurrences of amber in prehistoric Britain about 130 date to the Bell Beaker and Early Bronze Age phases (*ibid*, 59). Although amber beads continued in use into the Roman period they were never as popular as in the prehistoric period (Allason-Jones 1991, 271). As can be seen from above the exact dating of the plain discoid beads from the present site is problematic and will require further research (see below).

## 7. Potential for further work

- 7.1 The beads can assist the following Landscape Zone Aim:
- *The socio-economic landscape of the later agriculturists (2000-100BC)*
- 7.2 The amber beads are the only artefacts recovered from the burial. As mentioned above, further work is required on their dating and also comparative work to see if any inferences about social status can be made. It has been noted elsewhere that such necklaces are usually associated with female burials (Barclay & Wallis [1999], 234).
- 7.3 The amber beads can assist with the following Fieldwork Event Aims:
- *To determine the spatial organisation of the landscape, and changes through time*
- 7.4 The beads, as part of the burial, can assist in the interpretation of the landscape and the changes made to it through time.
- *To determine the ritual and ceremonial uses of the landscape*
- 7.5 The beads are the only artefacts recovered from the burial. As mentioned above, they may be able to give indications of status and sex. Their place on a secondary burial within a Bronze Age barrow is of interest in interpreting the ritual and ceremonial uses of the landscape. Further work will be required comparing other ritual sites and burials of a similar date.

7.6 The following further work is recommended:

- Publication of the beads as part of an integrated report on the barrow and burial.
- Catalogue of the beads
- Research of comparative material/sites
- Writing of a short report on the beads
- Group photograph of the beads and drawings of *c* 5 beads

## 8. Bibliography

Allason-Jones, L, 1991, 'Objects of Amber, Jet and Shale' in N Holbrook & P T Bidwell *Roman finds from Exeter* Exeter Archaeological Reports 4, 271-274

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**APPENDIX 6: ASSESSMENT OF METALWORK**

Jackie Keily

**1. Introduction**

- 1.1 Two metal artefacts were recovered from archaeological work in Zone 1. A post-medieval copper alloy tag is unstratified (CH 200+650) from ARC 330 98. Site ARC WHR 99 produced very small fragments of copper alloy.
- 1.2 The metal artefact from ARC 330 98 was metal detected and that from ARC WHR 99 was recovered by hand excavation.
- 1.3 It is not thought that the metal finds from Zone 1 can assist any of the fieldwork event aims.

**2. Methodology**

- 2.1 The metal artefacts from Zone 1 were accessioned in accordance with the Museum of London system.
- 2.2 The records have been entered onto the Oracle relational database/RLE Datasets.
- 2.3 The metal artefacts have been X-rayed.
- 2.4 None of the metal finds were sampled.

**3. Quantifications***Table 14: Assessment of Metalwork from ARC 330 98*

Context	Special Number	Material	Count	Period	Comments (Description)
CH 200+650	81	Copper alloy	1	PM	Large flat disc tag or label with ESA engraved at the top and LONDON at the bottom of one side. There is an incomplete integral suspension loop at the top

*Table 15: Assessment of Metalwork from ARC WHR 99*

Context	Special Number	Material	Count	Period	Comments (Description)
15	1	Copper alloy	3	PM	Too small, fragmentary and corroded to be able to identify.

**4. Provenance**

- 4.1 The object from ARC 330 98 came from CH 200+650 and is, at present, unstratified. The small fragments from ARC WHR 99 came from [15] (a modern pitfill).

**5. Conservation**

- 5.1 The artefacts are stable and packed appropriately for long term archive storage.
- 5.2 There are no conservation treatment requirements for the two metal accessions.
- 5.3 The two metal artefacts should be retained although consideration could be given to the discard of the modern material.

**6. Comparative material**

- 6.1 Due to the limited size and nature of the assemblage, there is no requirement for comparative work.

**7. Potential for further work**

- 7.1 The metal finds have no potential to assist either the landscape Zone aims or the fieldwork event aims.

**8. Bibliography**

None



**APPENDIX 7: ASSESSMENT OF HUMAN BONE**

Bill White

**1. Introduction**

- 1.1 A human skeleton, with a necklace of amber beads, was recovered during the excavation of the Whitehill Road Barrow, ARC WHR 99.

**2. Methodology**

- 2.1 The human skeletal material was scanned and assessed in accordance with the MoLSS Environmental Archaeology Manual (in preparation). The results of the scan are summarised in the table below.

*Table 16: Assessment of Human Bone, Inhumation*

<b>Event code</b>	<b>Context</b>	<b>Context type</b>	<b>Period</b>	<b>Preservation (high/medium/low)</b>	<b>Completeness %</b>	<b>Age</b>	<b>Comments (pathology noted/sex)</b>
ARC WHR 99	41	burial	EBA	Low	25	Adult	(?)female

**3. Quantifications**

- 3.1 There was a single inhumation of an adult. The presence of the necklace is not necessarily diagnostic of a female burial. However, features on some of the cranial fragments suggested that the remains were female

**4. Provenance**

- 4.1 The burial was recovered in the flexed position (Plate 2). The body had been placed on the back, with the arms across the stomach area and the legs drawn up to the right; the head was leaning to the right. The burial had been placed in a grave, cut through the partially filled inner ring ditch of the Whitehill Road barrow (ARC WHR 99) (Figure 5). A twenty-one bead amber necklace was recovered from the neck area, indicating an Early Bronze Age date for the inhumation.
- 4.2 The condition of preservation of bone was low, with most bones collapsed by post-depositional weight, dampness and degrading.
- 4.3 The skull was represented by a shattered cranium and the right half of the mandible (although all the teeth were present). There were fragments of vertebrae, ribs and the long bones.

## **5. Conservation**

- 5.1 The human skeletal elements were collected in food-quality polyethylene bags and these were packed in an archive quality cardboard box. There are no conservation requirements for the analysis stage.
- 5.2 Under the terms of the CTRL Act 1996, all human remains are to be reburied.

## **6. Comparative material**

- 6.1 Much of the known Bronze Age human skeletal material comes from cremation burials (McKinley, 1999). The inhumation here is a secondary burial but comparative sites for inhumations would be those that have produced Beaker burials, both in Kent, including West of Northumberland Bottom (ARC WNB 98) and elsewhere such as those of the Wessex culture.

## **7. Potential for further work**

- 7.1 The human remains, in this burial context with associated grave goods have the potential to contribute to the following fieldwork aims:
- *to establish a record of the changing palaeo-environment for all time periods present and the interaction with past economies.*
  - *to determine the spatial organisation of the landscape, and changes through time.*
  - *Ritual and ceremonial use of the landscape*
- 7.2 Barrow burials are typically placed in areas of high visibility, usually to be seen from both the associated settlement (perhaps within 0.5km) and any nearby routeway. The barrow and burial perhaps indicate the presence of both these associated features and the amber bead necklace places the context of the individual and, perhaps, the direction of the local influences (westward rather than eastward). As a result the burial has a good context from which further research can be directed. It can be compared with the nearby cremation and Beaker burials Northumberland Bottom (ARC WNB 98) in Area 330 Zone 3, which appear to be subject to more Kentish influences.
- 7.3 Although the state of preservation of the burial as a whole was low, a detailed examination of the bones of the skull would allow re-construction, with confirmation of the sex as female and also an estimate of the age of this individual.
- 7.4 The presence of the amber bead necklace gives a reasonably good date for the burial. The Whitehill Road site is of great importance due to the rarity of inhumation burials in association with Bronze Age ring ditches, cremation being the more normal burial rite. As a consequence of this rarity, analysis of bone for stable chemical isotopes and DNA, both human and that of pathological organisms, ought to be considered, even though it is possible they would not produce significant results, in order to maximise any information that can be gathered from this individual. Any information would add to the corpus of knowledge for human populations during this period.

**8. Bibliography**

McKinley J I 1999 'Human bone and funerary deposits' in Walker K F *M3 Bar End to Compton: archaeological investigations at Twyford Down* Hampshire Field Club monograph (in press).

MoLSS (in prep.) *Environmental Archaeology Manual*

## **APPENDIX 8: ASSESSMENT OF ANIMAL BONE**

Kevin Rielly

### **1. Introduction**

- 1.1 Animal bones were almost all recovered during excavation works at Fawkham Junction in Zone 1 (ARC 330 98).
- 1.2 Animal bones were recovered by hand-collection on site and through wet-sieving bulk samples taken in the field. All hand-collected animal bones were washed and air-dried, then bagged and labelled as context groups. Bulk samples were washed using a modified Siraf tank fitted with 1.0mm and 0.25mm flexible nylon mesh to retain the residue and flot fractions respectively. These fractions were visually sorted for floral and faunal remains and labelled as individual sample groups.
- 1.3 The study of the material was carried out to study the following fieldwork event aims,
- to establish a record of the changing palaeo-environment for all time periods present and the interaction with past economies.
  - to determine the spatial organisation of the landscape, and changes through time.
  - to determine the ritual and ceremonial uses of the landscape.

### **2. Methodology**

- 2.1 All contexts containing faunal remains were analysed and recorded onto the ORACLE CTRL animal bone database. No sub-sampling of contexts was carried out. The information recorded included number and weight of bones per context, species representation (percentage abundance), and the estimated number of identified (to species), measurable, agable, worked and butchered fragments. Notes were taken regarding pathological examples and whether the assemblages were unusual in any way, for example if any bones were obviously part of the same skeleton or if any were burnt.

### **3. Quantification**

- 3.1 A total of 8.78kg, approximately 260 fragments, of animal bones were hand recovered from 22 contexts (all from the Fawkham Junction site), with an additional 0.05kg, or 70 fragments, from 6 soil samples. Of the total fragment count (hand collected), 111 fragments were identifiable to species and body part. This included 51 bones with potential for ageing data, 14 that can be measured and 12 showing evidence of butchery. No worked bones were recovered and none showed any obvious evidence of pathology. Relatively few bones from the samples were identifiable to species (a total of just 4 bones out of a grand total recovered of 70 fragments). This information is shown for all contexts (hand collected and sieved) in the Table 12 below.
- 3.2 The tables show the percentage of identifiable fragments represented by all of the specified species groups. All contexts are recorded in the table, including

environmental samples. It is evident that cattle represent the most consistently high percentage of identifiable fragments, with sheep/goat then pig containing the next highest percentages.

#### **4. Provenance**

- 4.1 The majority of the bones are well preserved and moderately fragmented. Notably, most of the assemblages provided a reasonably large proportion of bones which could be identified to species. Given the good condition of the bones, as well as the close dating (see below), it could be supposed that these assemblages had suffered a minimal level of disturbance following their deposition.
- 4.2 These assemblages, all within the Fawkham Junction excavations (ARC 330 98), were recovered from mid to late 1st century AD pit and ditchfills, these features representing settlement enclosures and local activity. Some of the ditchfills provided reasonably sized assemblages, but in general the quantities are rather small. As mentioned above, the proportions of identifiable bones are quite high. In addition, there is a good representation of age, and a moderate proportion of size data.
- 4.3 The species recovered from these assemblages include cattle, sheep/goat, pig and horse. Most of the identifiable bones clearly belong to the first three species, and in particular to cattle. Horse is generally represented by single fragments, with the exception of two partial articulations, composed of forelimb bones, possibly from nearby contexts within the same ditch (contexts [880] and [881]). It can be supposed that these bones are the remains of food dumps, possibly including the horse fragments. One of the articulations described above featured a phalange which had been cut close to the distal end. This could perhaps represent skinning rather than food waste, however, there is no reason to suppose that this animal had not been eaten as well as flayed.
- 4.4 Amongst the food waste there is a scapula from a very young calf. As this exhibits a butchery mark, it can be postulated that this animal had been killed for its meat. There is one other example of a similarly young domesticate – a metapodial from a lamb, which, without any butchery, is perhaps more likely to represent an infant mortality. The latter interpretation would suggest local rearing/stock keeping, while the consumption of such young animals would suggest the presence of a high status household in the vicinity of this site.
- 4.5 There were a small number of samples with bones, each providing rather small quantities. The identifiable fragments mainly belonged to the major domesticates, with the exception of a common shrew mandible from one of the ditchfills.
- 4.6 One sample, from a ditch (context 159) produced a small collection of calcined cattle-size fragments. It is to be wondered whether these may have some ritual significance or perhaps merely represent the cleaned out contents of a nearby hearth.

## 5. Conservation

- 5.1 It is recommended that all material be retained for the next stage of analysis and for any future comparative work.

## 6. Comparative material

- 6.1 The Roman bone assemblages from this site can be compared to those recovered from contemporary deposits throughout the sites in this project, and in particular from Northumberland Bottom (ARC WNB 98) and Hazells Road (ARC HRD 99) in Zone 3. Further sites within this project include Thurnham Roman Villa (Oxford Archaeological Unit), which has provided extensive remains including a possible shrine or temple. In addition, comparisons within North Kent include the large collections from the Roman villa at Keston within the London Borough of Bromley (Locker 1999).

## 7. Potential for further work

- 7.1 The relatively good condition of these bones would suggest that there is a reasonable potential for further study. While the quantities are not large, the available information could be suitable for a basic study of species representation and exploitation practises. The major potential is therefore to answer, at least in part, the fieldwork event aim concerned with past economies,

- *to establish a record of the changing palaeo-environment for all time periods present and the interaction with past economies.*

- 7.2 Here it should be possible to determine meat preferences and, to a limited extent (due to the small quantities of bones) how the various identified animal domesticates were used. This can be achieved by comparing the abundance (total fragment counts) of each identified species and through an analysis of the agable and sexable bones belonging to the major domesticates (cattle, sheep/goat and pig) respectively. Of interest regarding the food use of these animals is the presence of a butchered horse toe bone. This cut undoubtedly suggests this animal was skinned, though not necessarily eaten. However, it is possible that this may be evidence for a continuation of the practise of eating horseflesh from the Iron Age into the early Roman period (see Maltby 1981. 184). This in turn may suggest that the local populace were less than completely romanised. Finally there is one tantalising glimpse of high status food, as shown by the presence of a possible veal calf.

- 7.3 There is very little potential for a study of the first part of this event aim, that is for palaeo-environmental change. This would be dependant on the presence of environmental indicators as small rodents, certain birds and amphibians. These unfortunately are underrepresented or absent from the samples taken at this site.

- 7.4 The second event aim has some potential for further study. This was:

- *to determine the spatial organisation of the landscape, and changes through time.*

- 7.5 It was noticed that the bone assemblage at this site was very largely composed of cattle fragments. These were noticeably represented by adult individuals, which

may have been milch animals or those used for traction purposes. It can be suggested that the larger the number of oxen, the greater the quantity of nearby land given over to arable farming. Thus, assuming most of these adult individuals were oxen, it can be suggested that a large proportion of the surrounding landscape was given over to arable rather than pasture. An important element regarding the achievement of this aim will be to deduce the sex ratio of the adult cattle represented at this site.

7.6 Regarding information concerning the ritual landscape:

- *to determine the ritual and ceremonial uses of the landscape*

7.7 It was noted that a small collection of calcined bones were recovered from one of the ditchfills. These appear to be cattle-size rather than human fragments. While they may represent the remains of a cremation, they could equally be the remains of a hearth deposit.

7.8 A possible new research aim/objective could include a study of the size of the domesticates. It was noticed that there were a number of measurable bones, particularly belonging to cattle and horse. As well as determining the size/type of domesticates present at this site, the size information can also be used to determine sex. This could help towards a clarification of the problem concerning the use of cattle at this site.

## 8. Bibliography

- Locker, A. 1999. The animal bone. In Philp, B., Parfitt, K, Willson, J and Williams, W. *The Roman villa site at Keston, Kent. Second Report (Excavations 1967 and 1978-1990)*. Eighth Research Report in the Kent Monograph Series. The Kent Archaeological Rescue Group. 145-159.
- Maltby, M. 1981. Iron Age, Romano-British and Anglo-Saxon animal husbandry - a review of the faunal evidence. In M. Jones and G. Dimbleby (eds). *The environment of man: the Iron Age to the Anglo-Saxon period*. B.A.R. British Series 87. 155-203.

*Table 17: Assessment of Animal Bone – quantity of identifiable bones, age, measurements and butchery*

<b>Site</b>	<b>Context</b>	<b>S.No</b>	<b>N. iden</b>	<b>N. Agable</b>	<b>N. Meas</b>	<b>N. Butchered</b>	<b>N. Worked</b>
ARC 330 98	512	0	2	1	0	0	0
ARC 330 98	512	229	1	0	0	0	0
ARC 330 98	515	0	1	0	0	0	0
ARC 330 98	760	0	1	0	0	0	0
ARC 330 98	158	0	4	1	0	0	0
ARC 330 98	159	0	0	0	0	0	0
ARC 330 98	159	27	0	0	0	0	0
ARC 330 98	516	0	1	1	0	0	0
ARC 330 98	772	0	3	1	0	0	0
ARC 330 98	883	0	0	1	0	3	0
ARC 330 98	886	0	0	0	0	0	0
ARC 330 98	886	271	1	1	0	0	0
ARC 330 98	800	0	6	4	0	2	0
ARC 330 98	860	0	1	1	0	0	0
ARC 330 98	868	0	1	0	0	0	0
ARC 330 98	876	0	6	2	0	1	0
ARC 330 98	877	0	5	3	2	1	0
ARC 330 98	877	265	2	0	0	1	0
ARC 330 98	882	0	25	12	1	2	0
ARC 330 98	882	266	0	0	0	1	0
ARC 330 98	870	0	15	6	4	0	0
ARC 330 98	880	0	10	4	2	1	0
ARC 330 98	881	0	20	10	5	2	0
ARC 330 98	804	0	1	0	0	0	0
ARC 330 98	802	0	2	0	0	0	0
ARC 330 98	782	0	6	4	0	0	0
ARC 330 98	782	278	0	0	0	0	0
ARC 330 98	316	0	1	0	0	0	0

N - approximate number of bones. Iden - bones identifiable to species/species group.



Table 18: Assessment of Animal Bone – species, quantity and interpretation

Site	Context	S.No	Interpretation	Period	% of identified fragments									Count	Weight
					Sheep/Goat	Cattle	Pig	Horse	Dog	Small mammal	Bird	Fish	Other		
ARC 330 98	158	0	Ditch	RO	75	25	0	0	0	0	0	0	0	10	0.08
ARC 330 98	159	0	Ditch		0	0	0	0	0	0	0	0	0	2	0.01
ARC 330 98	159	27	Ditch		0	0	0	0	0	0	0	0	0	1	0.002
ARC 330 98	316	0	Ditch	RO	0	100	0	0	0	0	0	0	0	1	0.01
ARC 330 98	512	0	Ditch	RO	50	50	0	0	0	0	0	0	0	3	0.08
ARC 330 98	512	229	Ditch	RO	0	0	0	0	0	100	0	0	0	4	0.001
ARC 330 98	515	0	Ditch	RO	100	0	0	0	0	0	0	0	0	4	0.02
ARC 330 98	516	0	Ditch	RO	0	100	0	0	0	0	0	0	0	2	0.02
ARC 330 98	760	0	Ditch		0	100	0	0	0	0	0	0	0	1	0.03
ARC 330 98	772	0	Ditch		33	67	0	0	0	0	0	0	0	5	0.039
ARC 330 98	782	0	Ditch	RO	0	100	0	0	0	0	0	0	0	10	0.178
ARC 330 98	782	278	Ditch	RO	0	0	0	0	0	0	0	0	0	20	0.003
ARC 330 98	800	0	Ditch	RO	0	100	0	0	0	0	0	0	0	15	0.254
ARC 330 98	802	0	Pit	RO	0	50	0	50	0	0	0	0	0	2	0.078
ARC 330 98	804	0	Pit	RO	0	100	0	0	0	0	0	0	0	4	0.043
ARC 330 98	860	0	Ditch	RO	0	100	0	0	0	0	0	0	0	1	0.12
ARC 330 98	868	0	Ditch	RO	0	100	0	0	0	0	0	0	0	1	4
ARC 330 98	870	0	Ditch	RO	10	65	15	10	0	0	0	0	0	45	0.55
ARC 330 98	876	0	Ditch	RO	20	20	60	0	0	0	0	0	0	15	0.2
ARC 330 98	877	0	Ditch	RO	60	20	20	0	0	0	0	0	0	10	0.15
ARC 330 98	877	265	Ditch	RO	0	50	50	0	0	0	0	0	0	20	0.033
ARC 330 98	880	0	Ditch	RO	10	10	0	80	0	0	0	0	0	20	0.37
ARC 330 98	881	0	Ditch	RO	40	40	0	20	0	0	0	0	0	50	1.4

Site	Context	S.No	Interpretation	Period	% of identified fragments									Count	Weight
					Sheep/Goat	Cattle	Pig	Horse	Dog	Small mammal	Bird	Fish	Other		
ARC 330 98	882	0	Ditch	RO	33	33	34	0	0	0	0	0	0	50	1.05
ARC 330 98	882	266	Ditch	RO	0	0	0	0	0	0	0	0	0	14	0.007
ARC 330 98	883	0	Ditch		0	0	0	0	0	0	0	0	0	4	0.088
ARC 330 98	886	0	Pit		0	0	0	0	0	0	0	0	0	6	0.017
ARC 330 98	886	271	Pit		100	0	0	0	0	0	0	0	0	11	0.007

## **APPENDIX 9: ASSESSMENT OF CHARRED PLANT REMAINS & CHARCOAL**

Lisa Gray-Rees

### **1. Introduction**

- 1.1 This assessment reports on 21 environmental samples taken during the works in Area 3390 Zone 1 (ARC 330 98 and ARC WHR 99). These were processed by flotation in a Siraf type flotation tank. Seventeen samples produced botanical remains. These are recorded in the table below and are the samples.

### **2. Methodology**

- 2.1 Each sample was processed using a Siraf type flotation tank. Residues were collected in a 1mm mesh and flots were collected in a 250-micron mesh. Flots and residues were dried prior to scanning. Residues were scanned by eye. Environmental remains and artefacts (such as burnt flint, brick or tile fragments) were collected and transferred to the relevant specialists. Flots and plant remains recovered from the residues were examined in more detail using a low powered stereo microscope.
- 2.2 The modes of preservation, species diversity and abundance of organic remains in each sample were recorded on sheets then entered into the Oracle MoLAS/MoLSS database. Full sample details are given in the table below.

### **3. Quantifications**

- 3.1 Full details of these samples are given in the table below.
- 3.2 The quantities of remains were estimated and recorded in the following manner:

*For charred remains*

+ = 1-10

++ = 11-50

+++ = 51-100

++++ = 101-1000

1000+ = >1000.

*For waterlogged remains*

+ = 0-5

++ = 6-10

+++ = 11+

### **4. Provenance**

- 4.1 Most of these samples were provisionally dated as either Bronze Age or Roman. Three samples came from pits (<28>, <271>, and <272>). The remaining sample came from ditch features. All samples were botanically poor in terms of diversity

and abundance of remains. The richest sample was from a pit provisionally dated as Late Iron Age – Roman at Fawkham Junction. This sample contained a charred mallow (*Malva* sp.) seed and an uncharred elder (*Sambucus nigra* L) seed.

**5. Conservation**

5.1 None necessary. These samples can be discarded.

**6. Comparative material**

6.1 The contents of these samples were sparse and will not fulfil the research aims.

**7. Potential for further work**

7.1 Due to the paucity of the plant remains in the samples they are not recommended for further analysis.

**8. Bibliography**

None

Table 19: Assessment of Charred Plant Remains &amp; Charcoal

Sample Details					Flot Details					Residue	
Event Code	Context & type	Period	Sample no.	Sample size (l)	Flot size (ml)	Grain	Chaff	Weeds Seeds charred/ uncharred	Charcoal	Comments	Size (ml) proportion checked
ARC WHR 99	76/ pit	Bronze age/ Iron age	28	30	-	-	-	-	+		?
ARC WHR 99	52/ ditch	Bronze age/ Iron age	20	3	-	-	-	-	+		?
ARC WHR 99	69/ ditch	Bronze age/ Iron age	18	3	-	-	-	-	+		500ml
ARC WHR 99	23/ ditch	Bronze age/ Iron age	16	10	-	-	-	-	+		?
ARC 330 98	158/ ditch	Roman	27	25	-	-	-	-	+	-	1000ml
ARC 330 98	159 ditch	Roman	26	25	-	-	+	-	+	modern moss	800ml
ARC 330 98	316/ ditch	?	62	10	-	-	-	-	+	-	3000ml
ARC 330 98	318/ ditch	?	63	10	-	-	-	-	-	-	2000ml
ARC 330 98	512/ ditch	Late Iron Age or Roman	229	10	-	-	+	-	+	root/ rhizome frags	3000ml
ARC 330 98	782/ ditch	Late Iron Age or Roman	278	10	-	-	+	-	+	-	2000ml
ARC 330 98	800/ ditch	Roman	234	30	-	-	+	-	+	-	1600ml

Sample Details					Flot Details						Residue
Event Code	Context & type	Period	Sample no.	Sample size (l)	Flot size (ml)	Grain	Chaff	Weeds Seeds charred/uncharred	Charcoal	Comments	Size (ml) proportion checked
ARC 330 98	868/ ditch	Roman	261	30	-		+		+		4000ml
ARC 330 98	876/ ditch	Late Iron Age or Roman	264	30	-	-	-	-	+	-	3000ml
ARC 330 98	877/ ditch	Roman	265	20	10	-	-	-	+++	flecks of charred wood, moss fragments	4000ml
ARC 330 98	882/ ditch	Roman	268	30	-	-	-	-	+	-	5000ml
ARC 330 98	886/ pit	Late Iron Age or Roman	271	15	70	-	-	+/+	+++++	flecks of charred wood, moss fragments	1750ml
ARC 330 98	896/ pit	?	272	30	-	-	-	-	+	-	1500ml

## **APPENDIX 10: ASSESSMENT OF MOLLUSCS**

Alan Pipe

### **1. Introduction**

- 1.1 Mollusc shells were recovered during excavation works at the watching brief sites (ARC 330 98) and Whitehill Road Barrow (ARC WHR 99).
- 1.2 Mollusc shells were recovered by wet-sieving/flotation of bulk samples taken in the field. These were washed using a modified Siraf tank fitted with 1.0mm and 0.25mm flexible nylon meshes to retain the residue and flot fractions respectively. These fractions were air-dried and visually sorted for mollusc remains, which were bagged and labelled as individual sample groups.
- 1.3 The material was assessed to determine any possible value to the Fieldwork Event Aim:
  - to establish a record of the changing palaeo-environment for all time periods present and the interaction with past economies.

### **2. Methodology**

- 2.1 All samples containing mollusc remains were recorded onto a table template in terms of habitat preference and approximate quantification as specified in the CTRL project requirements. No sub-sampling of sample groups was carried out. Preliminary identifications of taxa were made using a binocular microscope and following Cameron & Kerney 1976; allocations of habitat preference followed Kerney 1999.

### **3. Quantifications**

- 3.1 The material is in good condition and presents no difficulty in terms of species identification. The value of the assemblage will not be affected by factors of preservation.
- 3.2 A total of four small groups of mollusc shells, an approximate total of 65 shells, were assessed. This material derived entirely from terrestrial species; there were no marine or freshwater forms. The identified taxa recovered were *Cecilioides acicula*, *Retinella sp.*, *Vallonia pulchella*, *Cepaea nemoralis*, *Hygromia sp.*, *Pomatias elegans*, and *Discus rotundatus*.
- 3.3 The table below groups this material in terms of habitat preference and relative abundance as specified by the CTRL assessment template.

#### **4. Provenance**

- 4.1 The snail shells come from the complex of ditches at Fawkham Junction, dated c AD50 to AD100 and from the outer ditch fill of the Whitehill Road Barrow, dated c 2000 – 1600 BC.

#### **5. Conservation**

- 5.1 Further analysis of this material would involve more detailed examination under a binocular microscope in order to ensure precise identification of all species present. There is no reason why such work would damage the shells or impose any restriction on long-term storage procedures.
- 5.2 The shells are mainly small and fragile and therefore liable to accidental damage by crushing. They should therefore all be stored by context/sample group in glass tubes or clear plastic boxes, each contained within labelled plastic bags. The complete assemblage should then be stored in an archive quality ‘shoe-box’.
- 5.3 The mollusc assemblage should be retained for comparison with other sites of similar dates in Area 330.

#### **6. Comparative material**

- 6.1 Although the very small size of this assemblage does not justify detailed inter-site comparison with any other particular site, for completeness it should be included in any overall review of the CTRL Zonal molluscan groups.

#### **7. Potential for further work**

- 7.1 The assemblage has very little potential for further study in terms of quantification of species, or of ecological interpretation. Identification of all species present will allow some comment on the general nature of the local environment at ARC WHR 99 only. It will not be possible to specify spatial and temporal variation resulting from changes in landuse.
- 7.2 All species would be identified and counted in order to maximise data retrieval from this very small group.

#### **8. Bibliography**

Cameron, R A D, & Redfern, M, 1976 British land snails *Linnean Society synopses of the British fauna no.6* London

Kerney, M, 1999 *Atlas of the land and freshwater molluscs of Britain and Ireland*, Colchester



Table 20: Assessment of molluscs from Zone 1

Event code	ARC 330 98	ARC 330 98	ARC 330 98	ARC WHR 99
Column/Sectn				
Sample	62	63	104	17
Context	316	318	403	69
Date/ interpretation	/fill	/fill	/fill	/ditch
Depth				
Catholic species				
Open country species				
Shade-loving species	+++	+++	+	
Burrowing species				+
Aquatic species				
<b>Approx totals</b>	<b>35</b>	<b>25</b>	<b>2</b>	<b>5</b>

+ present (0-5 items), ++ some (6-10 items), +++ many (11+).

## **APPENDIX 11: ASSESSMENT OF GEO-ARCHAEOLOGY**

Jane Corcoran

### **1. Introduction**

- 1.1 Three monolith samples were recovered from three separate segments of the inner and outer ring ditches during excavation works.
- 1.2 For each section sampled, a monolith tin (500mm x 50mm x 500mm) was hammered into the cleaned section face. The sediments and stratigraphy visible in section were described and drawn by the excavators on site. The monolith locations were marked on the section drawing and a level, related to Ordnance Datum was taken on the top of each tin. Each tin was wrapped in cling film and plastic bags, labelled and stored in a cold store prior to assessment.

### **2. Methodology**

- 2.1 The sediments sampled in each tin were cleaned and described using standard sedimentary criteria. This attempts to characterise the visible properties of each deposit, in particular relating to its colour, compaction, texture, structure, bedding, inclusions, clast-size and dip.
- 2.2 For each profile, every distinct unit was given a separate number and the nature of the contacts between each unit noted. Where several units appear to be part of the same depositional phase or event they have been grouped into a larger unit [indicated by a letter]. These units are related to the contexts identified on site in the profile description tables (Table 21, Table 22 and Table 23). Where possible in section 4 the profiles are discussed in terms of the context numbers as opposed to the units identified in the monolith tins.

### **3. Quantification**

#### **Sample <31>: section 3**

- 3.1 This sample was taken from the north east part of the outer ditch, through contexts [10] and [39].

Table 21: Assessment of Geo-Archaeology: Sample &lt;31&gt; Section 3

Context	Zone & unit	elevation of contact (m OD)	description and contacts	Related samples
		47.80	Top of sequence sampled	
10	A1	[0.17m thick]	Dark yellowish brown 10YR4/6 slightly sandy clay silt. Moderately abundant, poorly sorted subangular flint inclusions of 10-50mm diameter. Manganese or charcoal speckles throughout. Hard and compact. Diffuse contact to:	<8>
10	A2		Dark yellowish brown 10YR4/4 slightly sandy clay silt. More clayey and darker than unit A1. Manganese or charcoal speckles throughout. Hard and compact.	<8>
		47.57	Sharp contact	
39	B		Yellowish brown 10YR5/8 sandy clay-silt. Very abundant angular to sub-rounded chalk clasts, commonly c. 10mm diameter. Very occasional large (>50mm) sub-angular and small rounded flint pebbles. In basal 0.06m of unit the matrix appears to contain chalk grit and there is a big increase in chalk grit and granules. Hard and compact.	<10>
		47.30	Base of profile sampled	

**Sample <32> Section 4**

3.2 This sample was taken from the eastern part of the inner ditch, through contexts [37] and [17]. The sequence sampled was only 0.25m long (the length of half a monolith tin).

Table 22: Assessment of Geo-Archaeology: Sample &lt;32&gt; Section 4

Context	Zone & unit	elevation of contact (m OD)	description and contacts	Related samples
		48.84	Top of sequence sampled	
37	A1	[ 0.09m thick]	Dark yellowish brown 10YR4/4 slightly sandy very clayey silt. Frequent angular to sub angular flint clasts, often burnt, especially towards base of unit. Moderately loose and crumbly. Diffuse contact to:	
17	A2	[ 0.16m thick]	Dark yellowish brown 10YR4/6 very slightly sandy clayey silt. Marked from unit above by fewer flints, more compact structure, paler more orange colour and very occasional chalk grit and speckles.	
		48.59	Base of profile sampled	

**Sample <33>: section 7**

3.3 This sample was taken from the eastern part of the outer ditch, through context [62].

*Table 23: Assessment of Geo-Archaeology: Sample <33> section 7*

Context	Zone & unit	elevation of contact (m OD)	description and contacts	Related samples
		49.17	Top of sequence sampled	
62	A1	[0.27m thick]	Dark yellowish brown 10YR4/4 slightly sandy clayey silt. Compact and hard. Occasional poorly sorted flint clasts increase with depth. Manganese speckles occur throughout.	
	A2	[0.16m thick]	Dark yellowish brown 10YR 4/6 slightly sandy clayey silt. Very occasional flint granules. More orange and less stoney than A1. Large root channel tapers towards base of unit. Possible slight increase in clay content and darkening of colour towards base.	
		48.74	Sharp irregular contact	
3	B	[0.07m thick]	White 10YR8/1 chalky silt. Abundant very poorly sorted chalk clasts.	
		48.67	Base of profile sampled	

#### 4. Provenance

4.1 Monolith samples <31 and 33> are both from the outer ditch. In both samples the lowest fill was chalky with frequent chalk gravel and the overlying fill was decalcified.

4.2 The lowest contexts may reflect the initial weathering of the chalk ditch sides, probably quite soon after the construction of the ditch. In context [39] the matrix becomes more chalky towards the base of the ditch. Upwards in this context, the matrix becomes browner and chalk inclusions fewer.

4.3 This is likely to be a result of the stabilisation and plant / grass growth over the sides of the ditch, together with the weathering of the chalky primary fill. Such weathering, resulting from rainfall, plant growth and animal activities will have dissolved the chalky matrix and chalk rubble inclusions. In addition the accumulation of leaves, dust, eroded soil etc within the interstices of the chalk rubble will have led to a gradual accumulation of the decalcified matrix.

4.4 The upper contexts [10] in monolith <31> and [62] in monolith <33> were subdivided into an upper and lower unit. In monolith <31> the lowest part of context [10] was more humic, darker and slightly more clayey than the upper part. Whereas in monolith <33> the lower part of context [62] was possibly lighter and less stoney than the upper part of the context. In addition in this sample a concentration of flint gravel occurred between A1 and A2 (the upper and lower parts of context [62]).

- 4.5 It is possible that these characteristics represent an initial period when soil from the banks and ditch surroundings gradually accumulated in the ditch and a later period when more severe erosion was taking place either on the ditch sides or surrounding landsurface.
- 4.6 It is possible that this might indicate that initial landuse around the barrow was slight or possibly consisted of animal grazing and that subsequent local activities may have involved ploughing or re-use of parts of the barrow, which dislodged coarser gravel material.
- 4.7 As the later fills were decalcified it suggests that considerable weathering of the chalk had probably already taken place by this time. This might imply that the outer ditch infilled very slowly.
- 4.8 Manganese speckles within the ditch fills indicate that the environment within the ditch was likely to have been damp.
- 4.9 The nature and significance of the processes leading to the infilling of the ditch are likely to be better understood if soil micromorphological analysis is undertaken on the samples.
- 4.10 Pollen is likely to be preserved in the upper decalcified ditch fills. Pollen analysis may provide useful information on the changing landscape and landuse around the barrow for the period after its construction. Such information should provide a better understanding of the setting, visibility and context of the monument both to the people who constructed it and to following occupants of the area.
- 4.11 Monolith sample <32> was taken through the inner ditch. In this location there was no chalky primary fill and the ditch and fills were shallow and decalcified.
- 4.12 This is likely to be the result of weathering of the shallower inner ditch, which has left only a few chalk grit fragments in the lower fill [17].
- 4.13 The upper fill [37] was reddened with shattered burnt flints and may be the result of an *in situ* burning event, which scorched and transformed the pre-existing fill.
- 4.14 Soil micromorphological analysis might enable microscopic components of the materials burnt within the ditch to be identified.

## **5. Conservation**

- 5.1 If thin sections are made of the monolith blocks they will take up less storage space, stand a better chance of long term preservation and be amenable to a similar method of archiving to that for finds and environmental samples. As monoliths the samples are not easily stored, need to be kept in a cool to cold and dark environment and will be likely to deteriorate with time. In addition thin sections are easily available for further research and can be examined frequently without loss of information. Stored monoliths are less accessible and will gradually lose their potential for preserving information, especially as each time they are examined further cleaning will wear away the surface.
- 5.2 In the same way, processed sub-samples taken from the monoliths will be easier to store and less likely to deteriorate than the original soil material.

5.3 Long term storage as monolith samples is likely to be costly and is not an efficient use of space or archive material.

**6. Comparative material**

6.1 The evidence from further analysis of the monoliths should be compared to other evidence for the changing environment during the Bronze Age and Romano-British periods in the North Downs area and further afield. This will enable a better understanding of the exploitation and modification of the landscape by Bronze Age and later societies to be gained.

6.2 The snail sequence and pollen from the monolith samples from the Bronze Age ring-ditch on Cobham Golf Course (ARC CGC 98) should provide good comparative material relating to the infilling of a similar feature and timeframe. Comparative material will also include the colluvial sequences sampled during CTRL investigations in many of the North Downs sites.

6.3 Also published or otherwise available accounts of soil, pollen and snail evidence from buried soils and valley sediments in other parts of south-east England (eg: Godwin 1962; Thomas, 1989; Allen 1995; Preece & Bridgland 1998; Waller 1998; Waller and Hamilton 1998).

**7. Potential for further work**

7.1 The data from the monolith samples has potential to address the following landscape Zone and fieldwork aims:

- To study the natural landscape, its geomorphology, vegetation and climate, as the context within which the archaeological evidence can be interpreted.
- Farming communities (2000 BC-100 BC): to consider environmental change resulting from landscape organisation and re-organisation.

7.2 These aims may be achieved by pollen and soil micromorphological analysis of the ditch fills.

7.3 Pollen analysis should enable the nature of the changing landscape during and after the construction of the barrow (in the period of c 2000 to 1600 BC) to be reconstructed and soil micromorphology should enable the sequence of events that led to the infilling of the ditch to be unravelled.

7.4 Recommendations for further work on the monolith samples

task	requirement
Preparation and analysis of 16 pollen samples (*): <ul style="list-style-type: none"> <li>• 5 at c. 0.40mm intervals through units A1 and A2 in &lt;31&gt;</li> <li>• 11 at c.40mm intervals through units A1 and A2 in &lt;33&gt;</li> </ul>	Pollen specialist
a) Impregnation of the 3 monolith samples and manufacture of 6 thin sections of c.110 x 70mm	Likely to take 3 months to prepare the

<ul style="list-style-type: none"> <li>• from across contacts A1/A2 + A2/B in monolith &lt;31&gt;</li> <li>• from A1, A1/A2 and A2/B in monolith &lt;33&gt;</li> <li>• from A1/A2 in monolith &lt;32&gt;</li> </ul> <p>b) analysis / interpretation of the depositional and post-depositional characteristics recorded in these samples (*)</p>	<p>thin sections.</p>
<p>Comparison of the sequence and chronology of events with valley sediment profiles from other CTRL sites and from the published literature for the area.</p>	<p>Geoarchaeologist</p>
<p>* It is suggested that the thin sections / pollen slides should initially be scanned to assess their potential and, if suitable the analysis should be undertaken.</p>	

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