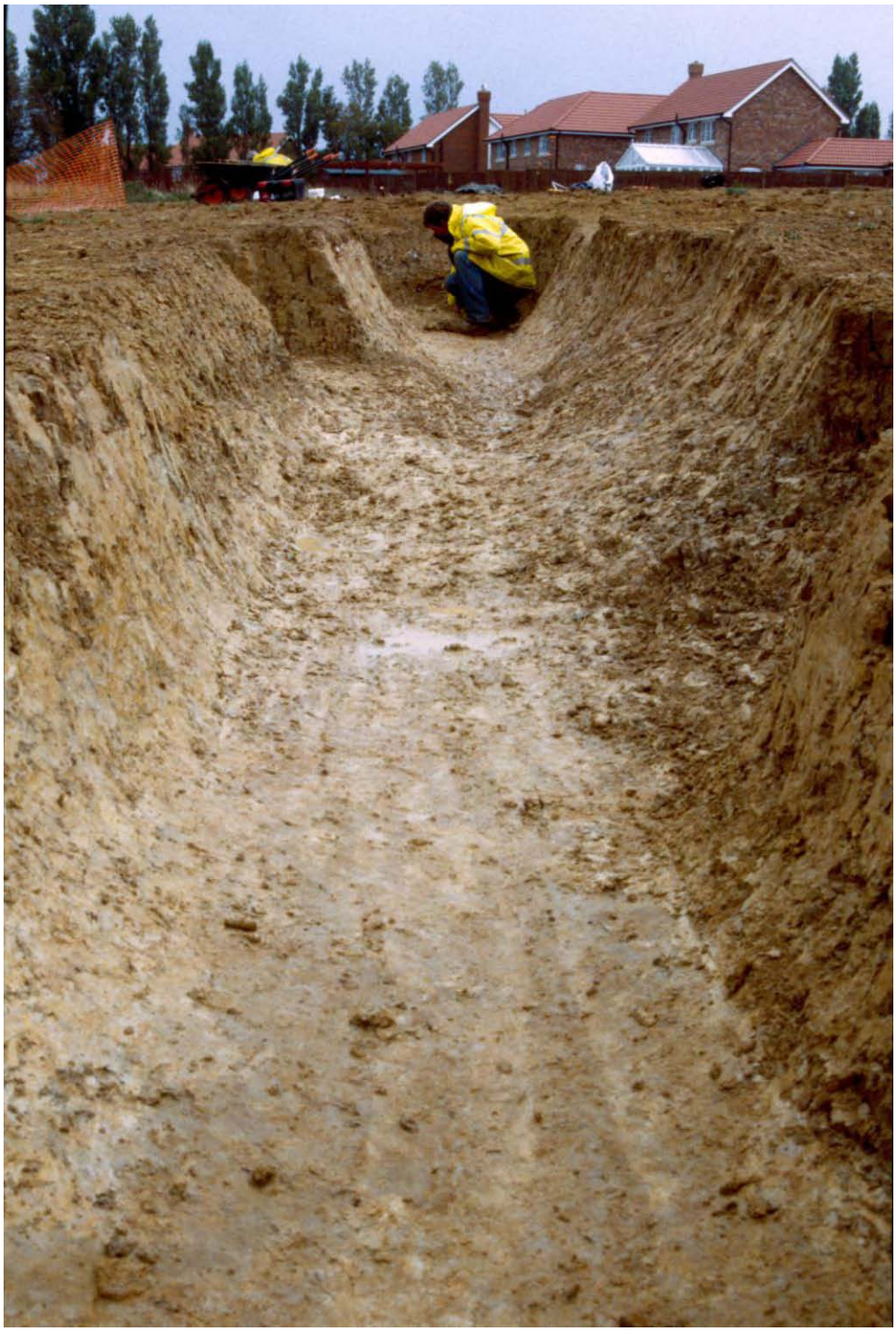
Wessex Archaeology

Kingsborough Manor Phase 2 Stage 1
Eastchurch, Isle of Sheppey, Kent

Assessment of Archaeological Excavation Results



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October 2005

KINGSBOROUGH MANOR PHASE 2 STAGE 1
EASTCHURCH, ISLE OF SHEPPEY, KENT

Assessment of Archaeological Excavation Results

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KINGSBOROUGH MANOR PHASE 2 STAGE 1
EASTCHURCH, ISLE OF SHEPPEY, KENT

SUMMARY

Wessex Archaeology was commissioned by Jones Homes (Southern) Ltd to conduct archaeological excavations on land associated with Phase 2 Stage 1 of an ongoing, low-density housing development. The Phase 2 Stage 1 site was located north east of Kingsborough Farm, Eastchurch, Isle of Sheppey, Kent, and to the north west of Kingsborough Manor housing development Phase 1 (**Fig. 1**). Work was undertaken between July and September 2004 and was carried out as a condition of planning permission for the development granted by Swale District Council and pursuant to a specification issued by the Heritage Conservation Group of Kent County Council. This report provides a brief summary of the excavation results.

The Site (NGR 597725 172394) comprised an area of land totalling approximately 15,759m² and was located to the north of Kingsborough Farm, 2km south-east of Minster and *c*. 1.25km to the north-west of the village of Eastchurch, Isle of Sheppey. It occupies an elevated position on the Isle of Sheppey, close to the north eastern edge of a ridge extending east-west along the island, with commanding views to the north and east over the Thames and the Essex coast. Lying generally at *c*. 70m above Ordnance Datum (aOD) the central site area slopes down gradually to the north and west toward Marrowbone Hill.

A Neolithic causewayed enclosure was identified in the eastern half of the Site. Consisting of three single circuit ditch segments, the causewayed enclosure extended south beyond the southern limit of excavation into a previously built up area of the Kingsborough Manor housing development. The third, northernmost segment marked the northern limit of the enclosure, which appears to have terminated just shortly in front of the natural break of slope. Though slight variations were evident in each of the excavated sections, a standard ditch profile and a common depositional sequence were recognisable throughout the feature. An excavated section cut through the southernmost segment revealed three phases of ditch in the form of a sequence of intercutting termini. Two posthole groups found within the south-eastern area of the enclosure are assumed to relate to the use of the monument during the Neolithic.

Two phases of a Late Bronze Age/Early Iron Age field system were identified towards the south east of the Site, the latest of which truncated segment 1 of the Neolithic causewayed enclosure. Possible further Bronze Age evidence was discovered in the form of a heavily truncated cremation related deposit located in the centre of the Site and a shallow, truncated pit situated in the south west corner of the Site.

Later activity on the Site was limited: A shallow medieval east-west orientated linear ditch was revealed in the north of the Site and may represent a truncated field boundary or track. A post-medieval east-west aligned field drain cut across the centre of the Site.

Considered in relation to the triple circuit causewayed enclosure discovered in earlier works, approximately 160m to the south, the archaeological excavation revealed regionally, nationally and probably internationally important evidence for Neolithic monuments.

KINGSBOROUGH MANOR PHASE 2 STAGE 1
EASTCHURCH, ISLE OF SHEPPEY, KENT

ACKNOWLEDGEMENTS

Wessex Archaeology is grateful to Rob Bourn (CgMs Consulting) and Jones Homes (Southern) Ltd for commissioning the work and for their continued assistance through the project. The advice and collaboration of Simon Mason and Lis Dyson (Kent County Council) is also acknowledged. Thanks are also due to Dr Frances Healy (English Heritage), Dr Mike Allen and Dr Cathie Chisham (Wessex Archaeology) for their time and advice.

Richard Greatorex managed the project on behalf of Wessex Archaeology. Phil Andrews and Susan Clelland directed the fieldwork with the assistance of the excavation team, Catherine McHarg, John Powel, Elina Brook, Lucy Smith, Mark Ingram, Rowan McAlley and Jane Roberts. Doug Murphy assisted with survey.

The finds were assessed by Lorraine Mepham, animal bone by Stephanie Knight, and flint by Matt Leivers. Charred plant remains and charcoal were assessed by Sarah F. Wyles, Chris Stevens and Cathie Chisham, pollen by Robert Scaife. The geoarchaeological evidence and sediments were assessed by Cathie Chisham. The environmental evidence was summarised by Mike Allen. The illustrations were prepared by Linda Coleman. Susan Clelland compiled this report, and Jörn Schuster was responsible for editing and programming.

KINGSBOROUGH MANOR PHASE 2 STAGE 1
EASTCHURCH, ISLE OF SHEPPEY, KENT

CONTENTS

LIST OF FIGURES

KINGSBOROUGH MANOR PHASE 2 STAGE 1
EASTCHURCH, ISLE OF SHEPPEY, KENT

Assessment of Archaeological Excavation Results

1 INTRODUCTION

1.1 Project Background

1.1.1 Wessex Archaeology was commissioned by Jones Homes (Southern) Ltd to conduct archaeological excavations on land associated with Phase 2 Stage 1 of an ongoing, low-density housing development. The Phase 2 Stage 1 site was located north-east of Kingsborough Farm, Eastchurch, Isle of Sheppey, Kent, and to the north-west of Kingsborough Manor housing development Phase 1(**Fig. 1**). Work was undertaken between July and September 2004 and was carried out as a condition of planning permission for the development granted by Swale District Council and pursuant to a specification issued by the Heritage Conservation Group of Kent County Council.

1.1.2 A mitigation excavation (Phase 2 Stage 1) was required on the three areas of proposed housing and of an easement required for drainage services. In total an area of 15,759m² was to be investigated to further elucidate information gathered during the Phase 2 Stage 1 evaluation (Oxford Archaeology, 2004).

1.2 The Site

1.2.1 The Site was located to the north of Kingsborough Farm, 2km south east of Minster and *c*. 1.25km to the north west of the village of Eastchurch, Isle of Sheppey (NGR 597725 172394). It occupied an elevated position on the Isle of Sheppey, close to the north eastern edge of a ridge extending east-west along the island, with commanding views to the north and east over the Thames and the Essex coast.

1.2.2 The Site lay generally at *c*. 70m above Ordnance Datum (aOD) and sloped down gradually to the north and west toward Marrowbone Hill. The underlying natural geology comprised Bagshot Sands, Claygate Beds and Head Gravel (British Geological Survey *1:50,000 Series*, Sheet 273).

1.3 Archaeological Background

1.3.1 Archaeological works associated with Phase 1 of the housing development (Archaeology South East 1999, Wessex Archaeology 2002) revealed a multiphase landscape ranging from the Neolithic period to the 13th-14th century AD.

1.3.2 Archaeology South-East (ASE) in an initial evaluation and excavation (Phase 1, Stage 1 excavation) identified a large Early Neolithic (4000 – 3000 BC) causewayed enclosure in the southern part of the site (ASE 2000). As only the second to be recorded in Kent (the other is in Ramsgate), this discovery was of regional and national archaeological importance. North of the causewayed enclosure, the excavation revealed part of a Bronze Age (1100 – 700 BC) enclosure circuit,

containing cremation or pyre debris pits and post-holes. Roman period features, include a rectilinear enclosure, post-holes and two cremation burials. Medieval ditches and undated features were also recorded.

1.3.3 Subsequent mitigation, through evaluation, watching brief monitoring and excavation (Phase 1 Stage 2 excavation), by Wessex Archaeology (2002) revisited a part of the Neolithic causewayed enclosure for detailed environmental samples and uncovered more of the Late Bronze Age enclosure revealed by Archaeology South East. Three other Late Bronze Age enclosures were found. The sub-square and northern-most of these appeared to be associated with a small cemetery comprising un-urned cremation pits or pyre debris pits. A limited range of structural features appeared to be associated with the enclosures. These included at least three fence lines. Pits associated with the enclosures contained finds possibly indicative of 'structured deposition', perhaps of ritual significance.

1.3.4 Later features included Middle-Late Iron Age (400 BC – AD 43) four-post 'granary' structures and Late Iron Age/Romano-British (100 BC – AD 410) ditches, possibly representing drove-ways or boundaries. These suggest the site underwent change in the later prehistoric period, from predominantly settlement and ritual use to agricultural use. Later Saxon (AD 410 – 1066) and medieval (1066 – 1499) features, interpreted as field boundaries, point to the agricultural use of this part of the Isle of Sheppey in those periods.

1.3.5 An archaeological evaluation of the Phase 2 Stage 1 site discussed in this report was undertaken by Oxford Archaeology (OA) during April/May 2004. The evaluation revealed possible Neolithic artefacts thought to be associated with the causewayed enclosure identified during the Phase 1 programme of investigation. Small scale evidence of Bronze Age settlement and agricultural use of the area with evidence, though sparse, for continued use into the Iron Age was also uncovered. Further evidence of agricultural field systems suggested use in Roman or medieval periods. A majority of the archaeological remains recorded were situated on the plateau in the north-eastern part of the Site.

2 AIMS

2.1.1 The aims and objectives for the work were set out in detail within the Project Specification prepared by CgMs Consulting, 2004. The specific aims are summarised below.

- Establish a relative and absolute chronology of the Site.
- Determine the internal morphology and land use of the Site.
- Clarify the character, nature, date and extent of remains associated with the Mid-Late Bronze Age settlement recorded during the evaluation and previous work.
- Clarify the character, nature, date and extent of remains of the Neolithic and Early Iron Age use and occupation of the plateau and the coombe.
- To determine the environmental history of the Site and its immediate surrounding area throughout the sequence of human activity present.
- To support the detailed assessment of chronology of the artefactual and environmental material with a programme of environmental samples if possible.
- Enhance the understanding of the prehistoric occupation of Sheppey within its local, regional and national context.

3 METHODOLOGY

3.1 Introduction

3.1.1 The on-site methodology followed that set out in detail within the Project Specification prepared by CgMs Consulting (2004).

3.1.2 The Site was visited on 1st September 2004 by Dr Frances Healy (English Heritage) and Dr M. Allen (Wessex Archaeology Environmental Manager) to observe and provide specific advice on environmental sampling strategy for the Neolithic causewayed enclosure.

3.2 Health and Safety

3.2.1 All work was carried out in accordance with the Health and Safety at Work etc. Act 1974 and the Management of Health and Safety regulations 1992 and all other relevant Health and Safety legislation and regulations and codes of practice in force at the time.

3.2.2 Prior to the commencement of the fieldwork a Risk Assessment was produced. All site staff involved in works signed and complied with this document.

4 EXCAVATION RESULTS – ARCHAEOLOGICAL SEQUENCE (FIG. 2)

4.1 Neolithic (4000 – 2400 BC)

4.1.1 A causewayed enclosure was identified in the eastern half of the Site. Consisting of three segments, the circuit extended south beyond the southern Site limit into a previously developed area of the Kingsborough Manor housing development. The third, northernmost segment marked the northern limit of the circuit, which terminated just before a natural break of slope.

4.1.2 Both a similar profile and depositional sequence were recognisable throughout the feature. This standard feature profile and fill pattern, common along the length of the monument, reflects a consistency in the natural landscape dynamics acting upon the physical properties of the geology through which the monument was cut.

4.1.3 The ditch profile comprised moderate stepped external (eastern) sides with a moderate break of slope to an irregular concave or uneven flat base. A moderate break of slope rose to form a steep concave internal (western) side.

Neolithic causewayed enclosure – depositional sequence

4.1.4 A primary deposit of eroded silts and clays formed a basal layer of fine material which accumulated in a series of small dumps, laminations and pockets. Material was derived from the initial weathering of the exposed natural within the feature sides with occasional lenses of windblown fine leeched silt and was recorded within the slight undulations of the ditch base.

4.1.5 Overlying this basal layer, a layer of rapidly re-deposited natural accumulated. Where frequent, naturally occurring gravel spreads and 'possible' periglacial features were evident on the adjacent ground surface, a significant quantity of gravel was recorded within these deposits. This episode may reflect a human impact on the surrounding landscape which consequently affected the rates of erosion within the ditch. However, more likely is that this high energy collapse of the feature sides occurred as a result of the first significant period of rain after construction of the monument, undermining the newly exposed soft natural geology present on the site. Subsequent to the undermining of the exposed sides and the settling of the collapsed material within the lower portion of the feature, the ditch profile became stabilised.

4.1.6 There is evidence through each of the segments, particularly within metres of the termini, that the horizon between the re-worked, slumped natural found at the base of the ditches and the overlying secondary deposits, represents a re-cut interface. Given the probable seasonality of activity at the Site it is likely that this interface denotes the cleaning out of the ditches. It does not appear that the entire profiles of the ditches were re-excavated, except within the termini where a more significant proportion of the feature profile was reinstated.

4.1.7 Subsequent to the stabilisation of the ditch profile a prolonged period of silting was recorded throughout the monument and consisted of secondary deposits derived from a gradually eroding landscape. Occasional small slumps of re-deposited natural material were recorded, punctuating this secondary silting period and reflecting localised undermining of the feature sides as a result of the movement of water within the ditch.

4.1.8 This central secondary fill sequence comprised leeched grey silts, which suggested prolonged water logging and gradual accumulation. Gravel inclusions generally settled towards the base of these deposits. Fine irregular orange mottling indicated periods of dry exposure between water driven events. These events are reflected by fine, light grey silt lenses defined by upper and lower fans of gravel representing intermittent stable episodes within the gradual silt build up.

4.1.9 Towards the upper part of this sequence fill material contained a greater frequency of gravels, had a greater degree of manganese staining, and had a greater clay content than recorded within the earlier deposits. Commonly, a grey brown colour this distinction is largely thought to be the result of post-depositional action vertically through the soil profile.

4.1.10 A tertiary layer of silt, derived from puddles on the uneven and reducing surface of the ditch, was found along the length of the monument and records a final phase of deposition.

4.1.11 A greater degree of anthropogenic management of the causeway terminals was implicated in artefact distribution and evidence of re-cutting. The assigning of particular meaning and importance to the terminals, given their association with access during the Neolithic, may also have influenced this activity.

4.1.12 It should also be noted that if overburden levels during the Neolithic were similar to those today (of between 0.3-0.5m), then, by projecting the increased profiles of the terminals, the actual width of the causeways would only have allowed access to one individual at a time.

4.1.13 A summary description of the three segments of the Neolithic causewayed enclosure is given below, a detailed account of each individual segment can be found in Appendix 10.2.

Segment 1 – southern segment – *group 6046*

4.1.14 Segment 1, represents the southern of the three ditch segments which extended approximately 40m in length from the southern limit of the central excavation area and formed a curvilinear feature orientated roughly north – south with a rounded northern terminus. The centre of the segment was truncated by a later Bronze Age/Early Iron Age field system, **group 6376.**

4.1.15 The segment had an average width of 3m and an average depth of 1.1m. Twelve metres north of the known southern limit of segment 1 an excavated section revealed three phases of construction taking the form of three successive inter-cutting termini. The phase 3-terminus had an orientation opposed to that of the previous two phases indicating a shifting of the causeways and thus the points of access to the monument.

4.1.16 Increased anthropogenic activity in close proximity to the ditch is indicated in the tertiary phase of silting by the relative abundance of charcoal flecking and pottery fragments compared with earlier deposits.

Segment 2 – central segment – group 6040

4.1.17 Segment 2 forms the central of the three ditch segments. It was 23.4m long, forming a linear ditch segment orientated north north west – south south east. Average width

and depth were recorded as 2.7m and 1.1m respectively. The internal (western) side of the ditch was steep and straight with a sharp break of slope to form an irregular flat base. The external (eastern) side was stepped with a near vertical lower portion and a shallow straight upper part.

4.1.18 As with segment 1, three phases of construction could be distinguished in segment 2. However, evidence for a phase 2-recutting was confined to the two termini where basal deposits **6347**, comprised of eroded/slumped natural derived from the undermining of the feature and surviving primarily against the ditch sides, revealed evidence for this second construction phase.

4.1.19 The phase 3 northern terminal of segment 2 contained a considerable number of deliberately deposited artefacts within basal sequence **6352**. These included diagnostic Neolithic pottery sherds, flint blades, fragments of a saddle quern and animal bone. The deliberate deposition of these artefacts did not occur within discrete contexts but in undulations and pockets within the naturally occurring deposit sequence.

Segment 3 – northern segment – group 6088

4.1.20 Only two phases were identified in this northernmost enclosure segment. Group **6353** represents the original construction of segment 3, extending for 14.2m and forming a north-west/south-east orientated linear ditch segment. A very shallow medieval east-west field boundary (ditch **6374**) truncated the upper surface of the southern terminus. The width of the Neolithic ditch segment narrowed from *c.* 1.75m at its southern terminus, to *c*1.1m at its northern terminus. A reduction in depth was also noted along the length of the feature, from 0.8m in the southern terminus to 0.4m in the northern. A relatively regular 'U-shaped' profile was evident within this segment, exhibiting steep, slightly convex sides and an irregular, flat base. The reduction in the profile of the ditch segment from south to north may also reflect a later hillside erosion of the upper part of the feature given its location towards the break of slope.

4.1.21 During a phase 2 re-cut (group **6357**) the termini were excavated to re-establish the original profile while the central ditch section was only re-cut to the upper horizon of the stabilising re-deposited natural, a similar cleaning/ditch maintenance technique to that recorded as phase 3 in segment 2.

Neolithic features within the causewayed enclosure

4.1.22 Two posthole groups were recorded and have provisionally been identified as of Neolithic date on account of pottery sherds recovered from postholes 6017, 6021 in posthole group **6319** and 6075 in posthole group **6320**. Only the very base of any of the postholes survived and none appeared to form coherent structures.

Group 6319

4.1.23 Located in the central southern part of Area A, posthole group **6319** comprises five very shallow sub-rounded scoops. Three smaller posthole bases had an average diameter of 0.4m and a depth of 0.05m. Two slightly larger posthole bases had a diameter of 0.7m and 0.8m respectively, though these too only survived to a maximum of 0.08m in depth. The postholes formed a small cluster and may be associated with a posthole group identified during Phase 2 Stage 1 within Evaluation Trench 8.

Group 6320

4.1.24 Located in the south-east corner of Area B, group **6320** comprised three postholes. The postholes were moderately defined 'U-shaped' features with flat bases. The smallest had a diameter of 0.25m and depth of 0.15m. Slightly larger, the other two postholes had a diameter of 0.4m and depths of 0.08m and 0.15m. A common fill of yellow to grey brown clay silt with occasional sub-rounded pebbles and manganese staining was recorded.

4.2 Late Bronze Age (1100 – 700 BC)

4.2.1 Several probable Late Bronze Age features were recorded within the excavation area and are thought to relate to the Bronze Age activity recorded during the Phase1 investigations.

4.2.2 An isolated sub-rectangular, shallow pit with a flat base, **6084**, was situated towards the south west of the Site and measured 2.45m in length, 2.1m in width and 0.12m in depth. The feature contained a basal fill of yellow brown clay silt with occasional small rounded flint. This homogenous deposit, derived from natural silting, filled much of the southern half of the pit. Concentrated towards the northern half of the feature, a layer of abundant oyster shell fragments within a pale yellow brown clay silt matrix was recorded overlying the natural silting found at the pit base. A deposit of grey brown clay silt characterised by relatively common charcoal flecks indicative of hearth/domestic debris overlay the oyster shell.

4.2.3 Modern/post-medieval plough marks were noted during the machine stripping process as truncating the natural from the centre of Area A (towards the highest point of the ridge), westwards towards the edge of the area and the corresponding break of slope. No plough marks were observed within the eastern half of the Site on the central plateau.

4.2.4 Located within the centre of the excavation area, a discrete and very heavily truncated cremation-related deposit, **6036**, was recorded. The feature was badly preserved, potentially plough damaged and affected by bioturbation. It was a sub-circular 'U-shaped' feature with a moderately flat base measuring 0.4m by 0.5m and a depth of 0.1m. The basal fill consisted of stained, re-deposited natural derived from immediate collapse of feature sides and post-depositional reaction with overlying material. The upper fill consisted of heat affected silty clay. The charcoal and fragments of burnt human bone within the deposit were concentrated on the southwest side of the feature. It is postulated that this feature is Bronze Age due to its form/type and the presence of similar features recorded during Phase 1 archaeological works.

Late Bronze Age/Early Iron Age (1100-400BC) field system

4.2.5 A series of three ditches (group **6376**, located in the south east corner of the Site) are thought to be the remains of a Late Bronze Age/Early Iron Age field system. It is possible that they represent the northern extent of the field system identified during the Phase 1 investigations. A central north west – south east ditch **6043**, truncated an earlier north south ditch segment, **6375** (a northern terminus was identified at the point of intersection). Where the central north west – south east ditch truncated Neolithic ditch segment 1, group **6046**, a perpendicular north east –south west arm of the field system was identified extending to the north east. Both sections of the Late

Bronze Age/Early Iron Age field system **6043** appeared to be constructed simultaneously as no truncation was evident on excavation. It is important to note that the Bronze Age field system truncated the upper fill of Neolithic ditch segment 1.

4.2.6 The earliest phase of Late Bronze Age/Early Iron Age ditch, the north - south terminal segment (**6375**)**,** had a width of 1.68m and a depth of 0.45m at its southern limit (defined by edge of excavation area), with steep concave, stepped sides. The base formed a broad, shallow 'U-shaped' central cut measuring 0.6m in width and 0.1m in depth. A lower fill of re-deposited natural silty clay with small to medium rounded gravels was recorded. The deposit was concentrated along the western side of the feature. The main ditch fill (context **6000**), a dark grey fine clay silt derived from gradual silting episodes, contained several Late Bronze Age/Early Iron Age pottery fragments and flint. A northern ditch terminal was identified extending one meter north of the northern side of north west – south east ditch **6043**. The recorded width of **6375** was 1.4m with a depth of 0.2m, however this broad, rounded, irregularly shaped terminus appeared to have been significantly affected by weathering and erosion, destroying its original profile and extent. Two fills were recorded, the lower a re-deposited natural silty clay derived from natural weathering and the upper an homogenous grey brown silty clay loam derived from gradual silting. Both profile and fill sequence of north – south ditch segment **6375** is indicative of a field boundary with a probable secondary drainage function and is the earlier of the two proposed Late Bronze Age/Early Iron Age field system ditches recorded.

4.2.7 The second phase of the Late Bronze Age/Early Iron Age field system identified (**6043**) was a moderately sized 'U-shaped' ditch with moderate to steep concave sides and a flat to shallow concave base. The ditch appeared to be deeper where it cut the upper silting of Neolithic ditch segment 1. The north-west/south-east arm of the ditch was filled with grey brown clay silt derived from gradual silting. The perpendicular north-east/south-west arm of the ditch had a basal fill of re-deposited natural derived from weathering underlying the central silt deposit. The north-east/south-west arm of the ditch became gradually shallower towards the north east and was not observed extending beyond OA Evaluation Trench 5. The north-west/south-east arm of the ditch also became shallower towards the north west and was not identified beyond the centre of Area A. No terminus was identified and it is thought that the north western end of the ditch suffered from natural weathering and later ploughing.

4.2.8 It is important to note that the Neolithic causewayed enclosure was filled prior to the later Bronze Age ditch construction which may provide an important dating link concerning the relationship between the triple circuit Neolithic causewayed enclosure to the south identified during Phase 1 archaeological works.

4.3 Medieval (1066 – 1499)

4.3.1 Towards the northern extent of Area A, a medieval field boundary ditch (group **6374**) was recorded truncating the northernmost of the three segments of the Neolithic causewayed enclosure. Orientated east – west, the ditch only survived to a depth of between 0.08m to 0.1m with an average width of 1m, gently sloping sides and a flat base. The fill comprised a grey brown clay loam with occasional small

rounded flint pebbles and rare pottery fragments. The feature was very shallow, even allowing for truncation, and its western extent was unclear.

4.4 Post-medieval/modern (1500 – present)

4.4.1 A shallow linear ditch (group **6056**) east - west aligned, was recorded truncating the middle of Area A. A small, 'U-shaped' profiled feature, the ditch was recorded as 0.48m to 0.56m wide and between 0.21m and 0.24m deep. The fills comprised re-deposited natural orange/brown silty clays with gravel overlain by dark brown topsoil derived clay silt. Fragments of roof tile and a coin of post-medieval date were retrieved. This feature probably represents a field drain.

4.4.2 A probable bomb crater was located in the south-west corner of Area A. Surviving as a sub rounded feature with severely heat affected areas of natural silty clay and gravel around its edge, **6318** was compactly backfilled with a mixed deposit of re-deposited natural and topsoil. The feature was metal detected under archaeological supervision and the melted metal fragments retrieved were found to be of 20th century date.

4.4.3 A disused modern metal water pipe was identified running across Areas A and B in a north-east/south-west alignment.

4.5 Natural features

4.5.1 These features were investigated following advise on the recording strategy by the in-house geo-archaeologist.

4.5.2 A representative section and suite of environmental samples was taken from a machine excavated slot in the north-eastern exposed extent of the dry valley, located c. 35m beyond the north east corner of the Site, for further detailed specialist investigation of soil formation and a potential buried soil.

4.5.3 A possible erosion channel, **6190**, was investigated to the south of the dry valley, identified during the earlier OA evaluation (OA Trenches 1–3), using machine excavated trenches, under constant archaeological supervision. A series of representative sections were drawn and a further suite of environmental samples taken along with a full photographic record. Another erosion channel was noted on the north-western edge of Area A. It was mapped but no further work was deemed necessary to explain its nature.

4.5.4 A machine dug trench was excavated in the central western part of the Site (designated Area C) to evaluate the archaeological potential of the colluvium which had formed at the base of the slope of the ridge. No archaeology was revealed and the colluvial layers observed were very sterile in nature. A full drawn and photographic record was taken.

5 FINDS ASSESSMENT

5.1 Introduction

5.1.1 The finds assemblage recovered from Kingsborough Manor Phase 2 Stage 1 is largely of early prehistoric date, with small quantities of later material. Amongst the assemblage, the early Neolithic pottery and associated lithics are of particular significance.

5.1.2 All finds recovered have been quantified by material type within each context, and total quantities are presented in **Table 1**. Following quantification, all finds have been briefly scanned, in order to ascertain their nature, range and condition. In addition, spot dates have been recorded for datable material (chiefly pottery).

5.1.3 This section presents an overview of the finds assemblage, on which is based an assessment of the potential of this assemblage to contribute to an understanding of the site in its local and regional context, with particular reference to material already recovered from the site during previous archaeological fieldwork (1999-2001). It is anticipated that any further work proposed will be undertaken as a supplement to analyses already undertaken for the previously excavated assemblages.

Table 1. Finds totals by material type

Material Type	Number	Weight (g)
Pottery	1163	7288
Early Neolithic	*1074*	*6877*
Late Bronze Age	*82*	*394*
Romano-British	*2*	*1*
Post-Roman	*5*	*16*
Ceramic Building Material	5	98
Fired Clay	10	537
Worked Flint	141	1597
Burnt Flint	21	179
Stone	30	47,602
Metalwork	8	-
Iron	*2*	-
Copper Alloy	*4*	-
Lead	*2*	-
Cremated Human Bone	28	9
Animal Bone	131	167
Other Material	1	-
Amber	1	-

5.2 Pottery

5.2.1 Pottery provides the primary dating evidence for the site. This assemblage is predominantly of prehistoric date, and includes a significant group of early Neolithic ceramics. The entire assemblage has been quantified by broad ware group (e.g. flint-tempered, sandy) within each context, and the presence of diagnostic sherds noted.

Ware totals are given in **Table 2**. Spot dates have been recorded on a context by context basis, although this is in many instances tentative (see below).

Table 2. Pottery totals by ware group

DATE RANGE	WARE GROUP	NO. SHERDS	WEIGHT
EARLY NEOLITHIC	Flint-tempered wares	1071	6842
	Organic-tempered ware	3	35
LATE BRONZE AGE	Flint-tempered wares	76	360
	Sandy wares	6	34
ROMANO-BRITISH	Greyware	2	1
SAXON	Organic-tempered ware	1	6
MEDIEVAL	Tyler Hill ware	1	1
POST-MEDIEVAL	All wares	3	9
		1163	7288

5.2.2 The overwhelming majority of the assemblage consists of sherds in flint-tempered fabrics, mainly coarse but with a few sherds with finer, better-sorted inclusions. The condition of these sherds ranges from fair to extremely poor. A high proportion of sherds have suffered significant abrasion, largely due to the poorly fired nature of the fabrics, resulting sometimes in the complete loss of surfaces (surface finishes involving the application of a slip or 'slurry' layer have laminated off) and the consequent masking of diagnostic features.

Early Neolithic

5.2.3 Diagnostic sherds within this flint-tempered group enable the confident identification of several context groups of Early Neolithic date. The largest of these groups were within segment 1 (**6046**) of the causewayed enclosure (secondary silting layer 6093 and stabilisation horizon 6109), accounting for 250 sherds, including plain and expanded rims (one with impressed dot decoration) and one decorated body sherd. Bowl profiles, one with lug scar, came from secondary silting layers 6214, 6218 (segment 2: **6040**), and 6176 (segment 3: **6088**). Other diagnostic sherds occurred in secondary silting layers 6254 (segment 1), 6216 (segment 2: 6040), 6091 (segment 2: 6040), and in upper silting layers 6136, 6243 (segment 1), 6219, 6220 (segment 2: 6040), 6089, 6090 and 6171 (segment 3). Altogether, these 15 context groups account for 610 sherds. Alongside the flint-tempered sherds (some in finer flint-tempered fabrics) are three sherds (context 6254) from a partial bowl profile in an organic-tempered fabric, unusual for the period.

5.2.4 A further 464 flint-tempered sherds from 45 contexts include no clearly diagnostic pieces, and have been at this stage tentatively dated as Early Neolithic, on the basis of a combination of provenance (most came from contexts within the causewayed enclosure, including three sherds from postholes 6017, 6021 in posthole group **6319** and 6075 in posthole group **6320** respectively) and similarity of fabric.

5.2.5 No sherds were recovered from redeposited material at the base of any of the three segments, but a few sherds (38) came from the fine silts within the primary deposits in segments 2 and 3; none of these are diagnostic. Most sherds occurred in secondary and later deposits, and no obvious ceramic sequence through these deposits can be discerned at this stage.

Late Bronze Age

5.2.6 A smaller group of sherds, however, in very similar flint-tempered fabrics, have been identified as Late Bronze Age, although not with any high degree of confidence. This group includes two possible 'gritty base' sherds (context 6013), and also associated are six small sherds in sandy fabrics (contexts 6038, 6141). There are no other diagnostic pieces amongst this group and it is possible that some of these sherds are in fact of Early Neolithic date. Thirty one sherds in a well-sorted flint-tempered fabric (context 6000) have been identified as Late Bronze Age or possibly Early Iron Age.

Roman and post-Roman

5.2.7 Two tiny body sherds (context 6068) are in a coarse greyware of Romano-British date. One organic-tempered sherd of early/middle Saxon date was found unstratified. One medieval sherd was identified, a sandy ware of Tyler Hill (Canterbury) type (context 6070). The three post-medieval sherds include coarse redwares and stoneware (contexts 6007, 6022).

5.3 Ceramic building material and fired clay

5.3.1 All of the ceramic building material recovered is of medieval or post-medieval date, and includes fragments of brick and roof tile.

5.3.2 Fired clay may represent further structural material, but is too poorly preserved to determine, comprising small, featureless and abraded fragments from several contexts (including eight fragments from the Neolithic causewayed enclosure).

5.4 Worked/utilised stone

5.4.1 Twenty-one fragments in a fine, whitish sandstone with a slightly sugary texture possibly derive from saddle quern(s); several pieces retain traces of worn (or ?polished) surfaces. The appearance of these 20 fragments is so similar as to suggest that they could come from a single object; 18 came from the Neolithic causewayed enclosure, although not all in the same segment or from the same level.

5.4.2 Amongst the remaining stone are four utilised pebbles (including two possible hammerstones and a polishing/rubbing stone), and one other ?saddle quern fragment in a coarse, ferruginous sandstone. The remaining four objects are pebbles which are apparently unutilised (and not necessarily non-local to the site).

5.4.3 A small quantity of burnt (unworked) flint is of uncertain date and origin, although probably prehistoric.

5.5 Worked flint

Raw material

5.5.1 The assemblage consists of locally available gravel flint, in a broad range of colours. Condition varies from relatively fresh to edge-damaged; a few pieces are patinated and one piece is burnt. The assemblage is small and chronologically mixed. The bulk of the material is Early Neolithic, with a small Late Bronze Age component. A relatively long blade could be a Late Glacial or early post-glacial piece, but could equally be Early Neolithic.

Neolithic

5.5.2 The majority of the assemblage came from fills of three segments of the Neolithic causewayed enclosure. The bulk of this material consists of unretouched primary, secondary and tertiary flakes, some of which have edge damage congruent with their use for cutting, chopping or scraping. Two broad technologies can be identified within this material. These can be characterised somewhat simply as a (probably) soft hammer blade technology and a hard hammer flake technology. This difference (if real) may relate to the chronological sequence of ditch fills, choices on the part of the knappers, or different stages in the reduction process. Further analysis would elucidate this question.

5.5.3 Some flakes have retouch on one or more margins, and there are a small number of formal tools. These include two projectile points: one is a leaf-shape of Green's form 2C (1980, 71) and the second is a larger, cruder piece which may be a partly worked blank for a second example of the same form. There is also a serrated blade, scrapers (at least one a classic Early Neolithic end scraper on a long narrow flake), and single and multi-platform cores. Bullhead flint occurs in these contexts and as unstratified pieces, which may be of a similar date.

Late Bronze Age

5.5.4 A limited quantity of lithics came from the ditches of a Late Bronze Age field system. This consists primarily of flake and core material. One piece was a crude secondary flake with marginal retouch, and a second a *flanc de nucléus* retouched into an end scraper.

5.6 Metalwork

5.6.1 The metalwork is all demonstrably or probably of post-medieval data, and includes two coins, copper alloy stud and button, iron chisel and nail/bolt, and lead musket balls.

5.7 Human bone

5.7.1 A small amount (9g) of cremated human bone was extracted from samples taken from the fill of cremation-related deposit 6036 in the centre of the Site. The bone is slightly worn and chalky in appearance and the assemblage contained little trabecular bone. The remains represent those of a subadult/adult (>13 yr.) individual of unknown sex. The nature of the deposit is currently uncertain.

5.8 Animal bone

5.8.1 A total of 61 bone fragments was hand-recovered, and a further 70 were extracted from samples. All are in very poor condition, eroded and fragmented, with no diagnostic features. None can therefore be identified to species, aged, sexed or measured, and the loss of bone surface means that no evidence of gnawing or butchery is visible.

5.8.2 Bone from **6081** is stained a black colour, but not necessarily burned. All fragments appear to have originated from large mammals, although this is probably a result of differential preservation biasing the assemblage in favour of larger animals.

5.9 Other material

5.9.1 Fragments of a single amber bead were retrieved from a soil sample taken from tertiary silt deposit **6243** within the Neolithic segmented ditch (segment 1: group **6046** Phase 3 terminus **6344**). The bead is an example of a flat spacer bead of Early Bronze Age type, although the precise shape and number of perforations is unknown. Amber finds have not previously been documented in Kent (see Beck and Shennan 1991, fig. 6.1), and the closest parallels for this object lie in the rich 'Wessex' Early Bronze Age burials of Wiltshire such as Upton Lovell (Annable and Simpson 1964, no. 227). There is no indication that the Kingsborough Manor bead had any funerary associations.

6 ENVIRONMENTAL EVIDENCE

6.1 Introduction

6.1.1 Samples were taken during the excavation for palaeo-environmental data to provide information about the environment, human modification of that environment and evidence of the farming and resource economy. Samples were processed and assessed to see their potential to contribute to these aims, and to define a suitable post-excavation programme.

6.1.2 Fifty-nine bulk samples were taken from the excavations. The samples were processed for the recovery and assessment of charred plant remains and charcoals. A further 11 monolith and kubiena samples were taken for sediment descriptions and for sampling for pollen.

6.1.3 Categories of palaeo-environmental evidence:

- charred plant remains
- charcoal
- pollen
- soils (soil micromorphology, chemistry etc)
- sediment descriptions

Table 3. Number of samples and sample sizes

Phase/Feature	Number of Samples	Total Volume
Neolithic Ditch Segment 1	**15**	**198 litres**
Neolithic Ditch Segment 2	**29**	**359.6 litres**
Neolithic Ditch Segment 3	**9**	**172 litres**
Neolithic Total	*53*	*729.6 litres*
Bronze Age/Unphased	**6**	**45**
Total	59	774.6 litres

6.2 Site sampling and potential

6.2.1 The principal aim of the on-site environmental sampling strategy was to augment the interpretation of archaeological and natural remains derived from the excavation process.

6.2.2 A range of bulk samples were taken from the prehistoric and natural features revealed on Site to examine the potential for surviving environmental remains to inform on the economic character of the local area. The scope of the bulk samples taken incorporated the extent of each feature geographically and its depositional sequence.

6.2.3 Several monolith samples were taken through the dry valley and the possible erosion channel identified during the Phase 1 Stage 1 Evaluation to elucidate on the physical character of their environments and if possible to relate those characteristics chronologically to the archaeological features identified on Site.

6.2.4 A single snail sample was taken from the machine excavated slot in the north-east of the dry valley, however the general acid condition of the material found on site rendered further sampling futile.

6.2.5 Several monolith samples were also taken through the southern and northern extents of the Neolithic causewayed enclosure to inform on the physical characteristics of the depositional process through detailed description. A further monolith was taken from a well-defined section that represented the characteristic fill sequence observed throughout the monument.

6.2.6 Where charcoal or potential *in-situ* burning was thought to be present within a deposit and the material could be securely obtained, bulk samples were specifically taken for dating analysis consideration.

6.2.7 The truncated cremation related deposit **6036** was 100% sampled to allow for full specialist interpretation of any surviving human remains and material associated with the cremation process.

6.3 Assessment results; methods and data

Charred plant remains and charcoals

6.3.1 The bulk samples were processed by standard flotation methods; the flot retained on a 0.5 mm mesh and the residues fractionated into 5.6 mm, 2 mm and 1 mm fractions and dried. The coarse fractions (>5.6 mm) were sorted, weighed and discarded.

6.3.2 The flots were scanned and sorted under a x10 - x30 stereo-binocular microscope. As no flot was particularly rich charred plant macros were extracted and identified as part of the assessment. The results are tabulated in Table E1 to E4 (see Appendix 10.3) following the nomenclature of Stace (1997). The quantity of wood charcoal, percentage of roots, and presence of modern seeds are also all recorded.

6.3.3 The flots were generally small and had high quantities of modern roots and several contained significant numbers of modern seeds. While it might be expected that the lowest fills might be less rooty this was not always the case and such rooting appears to have some spatial variation with segment 3 being especially rooty. This high presence of roots and modern seeds indicates that the samples were taken from fills that were located within still active soil horizons. Given the small size of charred plant macros the samples were interpreted with some caution, as the samples may have contained both more recent intrusive material and older reworked material.

The Neolithic causewayed enclosure ditches

6.3.4 Charred plant macros, especially cereals as is commonly the case with causewayed enclosure sites, e.g. Etton (Nye and Scaife 1998), Windmill Hill (Fairbairn 1999), Robin Hoods Ball (Moffett *et al.* 1989) and Whitesheet Hill (Hinton 2004) were relatively rare in the enclosure samples from Kingsborough. Cereal remains were however recovered from several of the fills, these were of free-threshing wheat *(Triticum aestivum sl*) and hulled wheats emmer or spelt (*Triticum dicoccum/spelta*). Only a single grain of barley (*Hordeum vulgare sl*) was recovered from segment 2, 6210. A further possible grain was also recovered. In one case, from the final silting of segment 2, 6080, context 6301, the grain could be identified as either emmer (*Triticum dicoccum*) or perhaps even einkorn (*Triticum monococcum*). Two other possible finds of pea (*Pisum sativum*) or celtic bean also came from other fills. A

probable find of celtic bean (*Vicia faba* var. *minor*) came from segment 2, 6080, context 6301.

6.3.5 Finds of Celtic bean are rare on Neolithic sites. It is notable that in the Neolithic phase at Maiden Castle, where broad bean was positively identified (Palmer and Jones 1991), the presence of spelt wheat in the samples may be intrusive given the intense Iron Age and Roman occupation on the site. It may be argued that this could also be the case for broad bean. Considering the high amount of rooting and presence of modern seeds it is possible that such elements at Kingsborough Manor are equally intrusive.

6.3.6 Unusually for a Neolithic site emmer glumes were also recovered, sometimes in quantity from a number of contexts. Almost all of these came from segment 2 where they were found with the possible stone polisher 6081 and around pot fills 6215, 6227 and 6218. Such finds require some further explanation. Seeds of probable weeds were few and far between in the assemblages. In general seeds of larger seeded weed species tend to predominate on Neolithic sites, and so was the case for this site. Of those recovered vetches/wild pea (*Vicia/ Lathyrus* sp.), cleavers (Galium aparine) and dock (*Rumex* sp.) are all recorded from other Neolithic sites in Britain.

6.3.7 Some of the samples also contained evidence for wild foods, e.g. hazelnut (*Corylus avellana*) fragments from segments 2 and 3, 6214 and 6112. The latter sample also contained fragments of sloe (*Prunus spinosa*) along with fill 6081 from segment 2. Additionally, several samples contained fragments of grass root stem and parenchyma (soft plant tissues), possibly from tubers that may relate to wild food resources.

6.3.8 Also of interest were several remains of elder (*Sambucus* sp.) seeds and a complete elder berry, within an upper final fill of segment 1, 6239, context 6243. The remains were in association with fragments of an amber bead and a relatively large quantity of charcoal that also contained elder.

6.3.9 There are some reasons to suspect that the berry and all but one of the seeds found are of dwarf elder (*Sambucus ebulus*) rather than the more commonly found common elder (*Sambucus nigra*). All but one of the seeds were noticeably rounder in shape rather than the usual elongated seeds of common elder. Both have woody stems, but whereas common elder reaches 7 metres or so in height dwarf elder rarely attains more than 2 metres. Also unlike common elder, dwarf elder dies back in winter. Naturally both are most commonly found on limestone or chalk. Today dwarf elder is a rare plant being restricted to limestone soils mainly in Kent, Somerset and Sussex. Like many of the wild species found within the Neolithic diet, including hazel and crab apple, both are more common elements of hedges and scrub land rather than denser woodland. The berries themselves are very similar although Elizabethan and later herbalists such as Culpepper and Gent, who mentioned them as having more powerful properties, favoured those of dwarf elder.

6.3.10 The berries do allow some time period to be put on the formation of the assemblage. The berries of dwarf elder ripen from mid-September to late October, while common elder ripens from late August to September. The berries can be dried and – certainly with common elder – are still being eaten by birds on the bush as late as December. It is probable then that the charring took place from very late summer to early winter.

6.3.11 The pottery indicates that the date of the assemblage is most likely to be early Neolithic. Hence the Site may be broadly contemporary with the early 3rd millennium occupation at The Stumble (cal. BC 3605–3370, Wilkinson and Murphy 1995), that lies also most directly opposite Kingsborough on the Essex side of the Thames estuary. It is interesting to note that some comparisons with the assemblage from The Stumble exist. The Stumble also produced many glume bases and spikelet forks of emmer while, compared to the number of wheat grains recovered, barley was also poorly represented in the samples. Seeds of dock, vetches/tares and cleavers were found, along with roots of grasses. Stones of sloe and fragments of hazelnut were also recovered, along with some pips of apple (*Malus sylvestris*).

6.3.12 In spite of the presence of frequent emmer grains on Neolithic sites, the presence of chaff is highly unusual (Robinson 2000). This raises the possibility that they also might be intrusive, although evidence for later occupation on the Site is very slight. Also if such material was intrusive they might be expected to be more homogeneous in their distribution.

6.3.13 It was noticeable that the samples containing glumes came from contexts with frequent fragments of pottery. Upon examination of these same contexts it was noticeable that several contained both charred and impressions of emmer wheat chaff that had been used as temper. In particular pot 7 from 6218 could be seen to have large homogenous charred inclusions of emmer chaff including both rachis and glumes. It seems probable that the chaff then comes from this source, having been used firstly as temper and then having become charred when the pot was fired. Along with chaff both impressions and charred fragments of grain also raise the question as to whether the grain may have come from this source as well.

6.3.14 The Site is of some considerable interest in what it may contribute towards the debate upon the extent of use of cereals within the British Neolithic (cf. Thomas 1999, Rowley-Conwy 2004). It is interesting to note that while cereals are not common on Neolithic sites in general, Neolithic pottery has often produced good evidence for cereal use (cf. Helbaek 1952). That glumes are more common here than on many other Neolithic sites suggests that taphonomy is perhaps a more important factor contributing to the absence or presence of cereal evidence upon British Neolithic sites than is often considered. This does not however diminish the fact that wild food remains, in this case of elder, sloe and hazelnut, are still commonly present on British Neolithic sites.

Unphased (possible Bronze Age)

6.3.15 The samples from the pit and cremation related deposits, that were thought to be Bronze Age in date, generally contained few remains. These included fragments of probable free-threshing wheat and a possible rachis and occasional glumes of hulled wheats emmer or spelt (*Triticum dicoccum/spelta*). Like the Neolithic samples fragments of parenchyma and grass roots were also present. Given the low number of remains from these features and the high number of modern seeds and roots it is possible that such elements may be intrusive or reworked.

6.3.16 One sample did contain quite high numbers of remains and this was from an unphased erosion gully, 6190, context 6183. This contained frequent numbers of glumes from which both emmer and spelt wheat (*Triticum spelta*) could be identified. A reasonable number of weed seeds were also recovered including cat's-

tail (*Phleum* sp.), brome grass (*Bromus* sp.), oats (*Avena* sp.), ribwort plantain (*Plantago lanceolata*), cleavers (*Galium aparine*), clover (*Trifolium* sp.), vetches/wild pea (*Vicia/ Lathyrus* sp.), wild mustards (*Brassica* sp.) and blinks (*Montia fontana ssp. chondrosperma*). The latter species would seem to indicate the cultivation of wetter soils.

6.3.17 The high prevalence of glumes and weed seeds with relatively few grains is characteristic of processing waste derived from domestic activities. It is probable that they relate to a nearby settlement from which they have been washed down into the gully. The presence of spelt makes it unlikely that the assemblage is earlier than the later Bronze Age and could be as late as Roman.

Charcoal

6.3.18 Charcoal was noted from the flots of the bulk samples and is recorded in Table E1 (Appendix 10.3). Very few of the samples contained enough wood charcoal to suggest either a secure dump or burning *in situ*. A few contexts from segment 2, contexts 6213, 6081 and sample 1266 did however contain reasonable quantities of charcoal. The other was the deposit containing the amber bead from the final silting of segment 1, context 6243, that contained quite high quantities of large and small fragments to suggest at least a dump, if not burning *in situ*. As well as berries and seeds of elder this sample also contained fragments of elder charcoal. While it cannot be ascertained that the charcoal came from common rather than dwarf elder, the former would seem more probable. Elder wood was also recovered from the causewayed enclosure at Abingdon (Western 1982); unfortunately the Site was not sampled for other plant macros.

Land Snails

6.3.19 No samples were taken specifically for land snails as the deposits were not obviously calcareous. This was confirmed by the lack of snails in the bulk samples.

Pollen

by Rob Scaife

6.3.20 A monolith through ditch segment 3 sampled the full infill sequence. A series of samples were taken from this for pollen, from which six were selected for pollen analysis. Those selected for assessment are highlighted in bold in the table below.

Table 4. Pollen samples

Pollen sample	Context	Fill
6cm **14cm**	6172	modern B/ tertiary
22cm **30cm**	6171	
38cm **46cm** 54cm **58cm**	6168- 6169	secondary
62cm	6167	inwash
66cm 70cm	6166	primary

6.3.21 The principal aim of this study was to establish presence or absence of sub-fossil pollen in the ditch fills and thus potential for reconstructing the local vegetation and

environment of the Neolithic period. Pollen was recovered from five of the six samples examined allowing some initial ideas relating to the local habitat of the Neolithic causewayed enclosure.

Pollen Method

6.3.22 Pollen sub-samples (six in total) of 2ml volume taken from the monolith profile of the enclosure ditch were processed using standard techniques for the extraction of the sub-fossil pollen and spores (Moore and Webb 1978; Moore *et al.* 1991). Micromesh sieving (10u) was also used to aid with removal of the clay fraction where present in these sediments. Pollen was extracted from 11 of the 13 samples. The sub-fossil pollen and spores were identified and counted using an Olympus biological research microscope fitted with Leitz optics. A pollen sum of 100-150 grains of dry land taxa per level was counted for each level where possible plus fern spores and miscellaneous elements which were counted outside of the basic pollen sum. A Pollen diagram (**Fig. 3**) was plotted using Tilia and Tilia Graph. Percentages have been calculated in a standard way as follows:

- Sum = % total dry land pollen (tdlp)
- Spores = % tdlp+sum of spores
- Misc. = % tdlp+sum of misc. taxa.

6.3.23 Taxonomy, in general, follows that of Moore and Webb (1978) modified according to Bennett *et al.* (1994) for pollen types and Stace (1992) for plant descriptions. These procedures were carried out in the Palaeoecology Laboratory of the School of Geography, University of Southampton.

The Pollen Data

6.3.24 Surprisingly, pollen was present in all but the basal sample assessed at 66cm, which was probably near the interface with the weathered natural. Pollen was present in the lower inwash horizon (6167), the secondary ditch fills (6168, 6169) and the more recent tertiary fills (6167 and 6172). Absolute pollen frequencies were calculated and found to be in the range of 8000-18,000 grains/ml. Pollen preservation as might be expected was variable with varying degrees of corrosion. However, the presence of thin walled taxa such as Poaceae (grasses) and small values of Lactucoideae (dandelion types) indicates that whilst pollen numbers are somewhat small, there has been limited differential preservation although the possibility of more recent reworked pollen is not ruled out.

6.3.25 Although there appear to be some changes taking place in the pollen stratigraphy, at the present state of examination it would not be valid to define any local pollen assemblage zones. The overall characteristics of the pollen assemblages and the changes noted are as follows.

- *<u>Trees and Shrubs</u>: Arboreal values are low with only sporadic occurrences of Quercus (oak), Tilia (lime), Alnus (alder) and a single grain of Carpinus betulus (hornbeam). Corylus avellana (hazel) is present in greater quantities at the base (17%) with values declining upwards in the profile.*

- *<u>Herbs</u>: These are dominant (to 95% of total pollen at the top of the profile). Poaceae (grasses: increasing upwards to 56%) are dominant.*

Plantago lanceolata (ribwort plantain) is important at the base of the profile (to 43%) but decline upwards (to 5%). Other lesser taxa include Ranunculus type (buttercups), Sinapis type (charlocks), Chenopodiaceae (goosefoots and oraches) and Asteraceae types (daisy family). There are small numbers of cereal type pollen grains (2% at 30cm).

- *Spores of ferns: These comprise small numbers of monolete forms, Dryopteris type (typical ferns) and Pteridium aquilinum (bracken) which increases to 16% in the upper sample. There are also small numbers of Polypodium vulgare (common polypody fern).*

Geoarchaeology and Sediments

6.3.26 Sediments in three areas were examined on site and a total of ten monoliths from five features or sequences were taken. The samples are summarised below

Monoliths

Causewayed enclosure ditches	
Ditch 6112 (segment 3)	
Monolith 1220	*described: section dwg 46 11 pollen samples taken*
Monolith 1211	*described: section dwg 46A*
Ditch 6134 (segment 1)	
1247 [6134]	*described: sect dwg 36a-c*
1248 [6134]	*described: sect dwg 36a-c*
Ditch 6248 (segment 1)	
1249 [6248]	*described*
1250 [6248]	*described*
Erosion Channel 6190	
Monolith 1213	*described: upper colluvium inc buried soil 6197*
Monolith 1	*described: lower col*
Kubiena 1215	*buried soil: context 6232-6234*
Sequence from dry valley north-east of the Site (natural feature 6328)	
Monolith 1216	*described: upper colluvium 6230-6233*
Monolith 1217	*described: lower colluvium 6232-6234*

The Causewayed Enclosure Ditches

6.3.27 Initial brief field examination showed the difference between the natural and primary fill of the causewayed enclosure ditches was relatively slight, the cuts ill defined and diffuse but with the primary fill slightly darker. The secondary fill tended to be gleyed and there was an apparent lack of organic material. Subsequently three sediment sequences from two segments of the ditch were examined. While the horizon thickness and total depth varied, the fills showed a number of characteristics in common, allowing the designation of stratigraphic units A-E for all. These units are described in Appendix 1 but can be summarised as follows:

- Unit A was of iron-stained olive brown silty clay with rare-occasional small stones. *It is interpreted as part of the modern soil (upper B or truncated A/B) formed on colluvium. In all cases the modern A horizon had been stripped or largely truncated prior to excavation. Modern B horizon.*

- Unit B was of iron and manganese stained olive brown clay with medium blocky structure with clear worm burrows. *This is interpreted as the soil (B horizon) formed on colluvium. Modern B/Rw horizon and Tertiary fill.*

- Unit C was of olive brown clay with small blocky structures, and <5% small-medium stones. *This is interpreted as a stasis horizon within the secondary colluvial ditch fill. Weakly developed structure indicates this may be a truncated soil B horizon and a concentration of iron oxide beneath this layer indicates weathering, with translocation of iron through the profile Secondary fill (?stasis).*

- Unit D was of olive brown silty clay with rare small stones. *This is secondary fill.*

- Unit E was of clean pale massive coarse silt to fine sand with occasional small-medium stones and occasional to common charcoal. *This unit apparently formed the primary fill and is believed to comprise eroded parent material and, from the texture, may be loessic in origin. Primary fill*

6.3.28 The sequence cut into natural (not recovered), described on-site as pale grey and yellow mottled clay over the majority of the site. However the parent material was patchy across the site and in places comprised a red brown silt loam.

6.3.29 The basal unit (E) of ditch segment 3 (group 6088, cut 6112) was of silty clay and the excavators observed blocks of laminated material within the layer and suggested it represented one event/major collapse. It was of slightly different texture and colour to unit E of the other ditch segments examined, and indeed the overlying fills were of different colour though similar character and sequence to those elsewhere, and this may relate to a patchy local drift geology, providing somewhat different eroded parent material locally at the top of the hill. In addition this sequence was more substantially gleyed and waterlogged, especially to the base.

6.3.30 Units A-E in the other two sequences, both with ditch segment 1, group 6046 are directly comparable, they are wholly consistent with each other and are likely to be contemporary. Unit E within cut 6134 (below context 6132) was originally thought to be natural during excavation, and any cut was diffuse so the full section was not exposed. However, at the other end of the ditch segment (cut 6258) unit E more clearly filled a dip in the base of the ditch, and since it is felt to be the same unit sedimentologically, likely occupies the same stratigraphic position. The two ends of the ditch are bisected by a later feature (Bronze Age ditch of field system, group 6376).

6.3.31 The primary fill of the causewayed enclosure ditch was dominantly weathered local geology washed and/or slumped into the feature, faint greying may indicate initial erosion of topsoil and in-wash of organic material. Waterlogged conditions are indicated for the ditches by gleying, with water pooling over relatively impermeable bedrock. The incorporated colluvial material was broadly the same as the colluvium noted elsewhere on site, with inclusion of the same rounded gravels. However, that in the ditches was of consistently different colour hue and lower organic content to that downslope which filled the natural features examined. It is suggested the degree of input directly from the cut ditch sides of parent material and gleying contributed to this difference while the more organic downslope sediments relate to eroded soil material which had moved downslope.

Sequence from dry valley north-east of the Site

6.3.32 The sequence from natural feature 6238 comprised a filled shallow coombe or gully edge, with a sequence of 132cm depth from ground surface recovered.

- Units 1 & 2 to 63cm depth were of disturbed layers of organic clay loam and unsorted gravel in a clay matrix. *These represent recent dumped topsoil and parent material mixed with colluvium*

- Unit 3 at 63-66cm was of dark organic silt loam with numerous fine rootlets and fragments of modern vegetation. *This is interpreted as the recent soil A horizon*

- Unit 4 was of organic silty clay with medium blocky structure. A diffuse irregular band of small-medium gravel occurred at 80cm and a fragment of clay pipe was noted at *c*.71cm. *This is interpreted as the recent soil B horizon formed on colluvium and may contain the remnants of a gravel fan.*

- Unit 5 was of soft friable clay silt and contained rare small rounded flints. *This colluvium may contain loessic material.*

- Unit 6 at 104-111cm was a slightly organic clay silt above and forming the matrix for a defined band of small-medium rounded gravel. Pottery, charcoal and fire-cracked flint were noted in this layer. Although there were numerous macropores in the layer, there was no apparent structure. This unit is interpreted as probable redeposited topsoil material and includes evidence of a gravel fan.

6.3.33 Previous work at the site (Oxford Archaeology, 2004) had suggested there might be a buried soil within the profile. As noted before, a thin darker, slightly organic horizon was noted here (unit 6), associated with a lens of rounded small-medium gravel, probably representing a gravel fan. It is suggested the material was deposited as hillwash, likely at the bottom of rills caused by high-energy runoff downslope from ploughed arable fields. No clear *in situ* pedogenic process was observed in this layer, and it is therefore suggested the increased organic matter and textural change relate to topsoil material eroded off and redeposited rather than being a buried soil. A kubiena has, however, been taken across this horizon into the underlying and overlying silts for soil micromorphology, which could further elucidate the formation processes acting on this deposit.

6.3.34 Unit 7 from 1.11m below ground was of a dark yellowish brown soft silt. This archaeologically sterile silt was loessic and may represent a localised patch/cap of Devensian-aged Brickearth. It differs sedimentologically from Unit 7 of Feature 6190 (below) but has been allocated the same unit number as both are apparently of weathered parent material.

6.3.35 Occasional fine roots, filled root voids, worms and worm burrows were noted throughout the shallow sequence into the basal silts.

6.3.36 A thin Holocene colluvial sequence has been described. It is believed the archaeological remains in Unit 6 may include Bronze Age but full analysis of the pottery will provide a chronology for the start of erosion and accumulation. Two higher-energy events or phases have been indicated by the gravel bands (probable gravel fans) identified. No clear buried soil has been found in the sequence, rather evidence of redeposited eroded topsoil material.

6.3.37 A gully feature (erosion channel 6190), comprised a sharply deepening gully or coombe. During topsoil stripping, the excavators noted a variable wavy-edged discoloration in plan. The feature was exposed in a machine trench excavated close

to the shallowest enclosure ditch near the top of the hill where it appeared as a shallow, c. 0.7m diffuse ditch-like feature with defined gravel lenses near the top of the hill, akin to the sequence described for natural feature 6238. These lenses became more diffuse and the sequence deepened sharply to c.2.5metres depth downslope and the following descriptions relate to a monolith sequence taken through that deep sequence. It is projected that the colluvial sequence may deepen further downslope. Given the orientation and position of the feature, it is believed the gully may converge with natural feature 6238 (coombe) downslope.

- Units 1 & 2 comprised mixed silty clay and loam with abrupt, sloping boundaries. They are interpreted as dumped topsoil and parent material.

- Unit 3 was a thin (5cm) horizon of organic silt loam at 18-23cm below ground. It displayed an abrupt boundary to the overlying sediment. This is interpreted as the truncated modern soil A horizon.

- Unit 4 comprised a slightly organic clay silt with weak blocky structure and numerous rootlets. It is interpreted as the modern soil B horizon, formed within the top of the colluvium.

- Unit 5/6 comprised c.1.8m of amorphous silty clay with no definable layers or horizons. The sediment contained occasional, randomly distributed small-large rounded flints. A fragment of charcoal and worked flint flake were noted at the base of the unit in the field and a bulk sample taken at this level. This thick deposit is of colluvium (hillwash), with some input of local eroded parent material. It is suggested there was also a degree of water-sorting of the material. Post-depositional alteration of the top of the unit included formation of manganese-stained root pseudomorphs and an increase in macropores but a buried soil was not identified.

- Unit 7 A stiff yellow-orange and grey mottled silty clay was exposed at the base from 2.24m below ground, with the filled diffuse channel cut into it. This cut was partially exposed but was seemingly u-shaped in profile. The unit is of exposed “natural”, the underlying silty clay regalith/parent material. The cut/channel is believed to have formed as a gully with erosion caused by sustained rain run-off during the Holocene. It might however have originally formed under periglacial conditions during the Devensian.

6.3.38 A deepening feature filled with and overlain by colluvium has been described. Its form is not consistent with an interpretation of a long-term watercourse, be that Devensian or earlier in age (becoming a dry valley in the Holocene) or a more recent palaeochannel. There is no indication of spring activity. The amorphous, relatively unsorted nature of the fill in the deep sequence and lack of any organic material also indicates a lack of long term Holocene channel activity. As noted above, the evidence may indicate shorter term erosional activity, with rainwater channelled into gullies, perhaps exploiting an inherited dip in the surface of the underlying bedrock, deepening downslope moving in the direction of the major dry valley at the base of the site.

6.3.39 The fill is colluvial in origin, with some input of sediment eroded from the clay bedrock, and deposited perhaps rapidly as hillwash and slips. Archaeological remains were noted for the base of the fill. The sequence was substantially deeper upslope where sherds of Bronze Age pottery were also found in the basal fill. The earliest phase of colluvium, filling three undated features found during investigations by

Oxford Archaeology (2004), was also found to contain Mid-Late Bronze Age pottery. Such an interpretation indicates that the immediate vicinity was unstable at or after the time of enclosure use, with an impermeable clay base and steep slope causing substantial run-off. This was probably accentuated by vegetation removal associated with site use, including, perhaps, arable cultivation, as suggested by the presence of gravel fans (see Allen 1988; Allen 1991; Schofield 1991; Bell and Boardman 1992). There is also direct evidence for Late Bronze Age agriculture at the site: Late Bronze Age/Early Iron Age ditches from a field system have been recorded in excavation.

6.3.40 No buried soil (other than recent) was identified in the deep sequence recorded here. A break in colluviation in the coombe sequence at the base of the slope was reported by Oxford Archaeology (2004), with deposits 4608 and 4613 representing a Bronze or Iron Age immature or incipient soil, overlain by colluvium containing 12th-14th century pottery. They found no such layer elsewhere and suggested this was due to ploughing on the hillsides. Here it is also suggested any stasis would have been eroded off the slopes by subsequent hillwash and that discrete phases of colluviation may have been blurred by watersorting of material in the gully.

7 POTENTIAL FOR FURTHER ANALYSIS

7.1 Potential of the structural evidence

7.1.1 In conjunction with the results from earlier stages of work, the results from the excavation of the Neolithic causewayed enclosure have great potential to considerably add to the interpretation and understanding of the internal morphology and land use of the Site which is situated on the second highest elevation on the Isle of Sheppey. The causewayed enclosure is only the third such monument excavated in Kent to date and as such is of regional and national importance (the other two being located *c.* 200m south-east of the Site and at Chalk Hill, Ramsgate (CAT 2001) respectively). Further analysis will have to examine whether the internal features, represented by the clusters of postholes in the south-east of the enclosure, really date to the Neolithic as suggested by the initial assessment of the sparse ceramic evidence recovered from them, and whether these structures are indeed related to the use of the monument. Depositions within the ditches point to the potential use of the monument for ritual purposes and allow for further consideration of the evidence in a local, regional and national context.

7.1.2 Further post-excavation analysis and comparison with other Neolithic monuments may further elucidate these ideas. Understanding the contextual environment within which the monument existed could be assisted by considering conclusions drawn from chronologically contemporary sites, in particular *The Stumble* which lay opposite Kingsborough on the Essex side of the Thames estuary. Environmental and pottery data suggest a degree of correlation worthy of further analysis.

7.1.3 The remains of a Late Bronze Age/Early Iron Age field system with at least two phases indicate a change in the use of the landscape and add to the evidence from earlier investigations.

7.1.4 Later features include medieval and post-medieval ditches and drains, which are of no great significance in themselves, probably indicating a predominantly agricultural use of the immediate vicinity of the Site.

7.2 Potential of the finds assemblage

7.2.1 This small assemblage augments the material already recovered from the site during previous fieldwork (Phase 1 and Phase 2 Stage 1), in particular the Neolithic assemblage (pottery and flint). Neolithic assemblages are rare in Kent, and those from causewayed enclosures rarer still – only two others are known from the county, one from nearby Kingsborough Farm, excavated during 1999-2001. Further analysis of the Neolithic pottery and worked flint will add significantly to the information already obtained from the site, and offers the potential of comparisons between the assemblages from two adjacent Neolithic monuments. Analysis of the smaller Bronze Age pottery assemblage is also recommended, not only to increase the body of ceramic data from the site at this period, but also to identify with greater confidence some of the flint-tempered fabrics for which a Neolithic or Bronze Age date is at this stage undecided.

7.2.2 Further examination of the stone, in particular the fragments from the causewayed enclosure, will provide an indication as to the type of object represented, and their potential source(s).

7.2.3 The single amber object is of significance as a rare occurrence of this material type, but little further information is likely to be gleaned.

7.2.4 The small amount of cremated human bone from possibly Late Bronze Age cremation-related deposit **6036** will be considered together with other cremation-related features from previous investigations discovered north of the Late Bronze Age enclosure to the east of the present Site.

7.2.5 The potential of other material types (animal bone, burnt flint, ceramic building material, fired clay, metalwork) for further analysis is limited by small quantities and/or poor condition, and no further work is proposed for these categories.

7.3 Environmental potential

Charred plant remains

7.3.1 Charred plant remains recovered during the excavation have been fully analysed during this assessment phase of works.

Charcoal

7.3.2 Charcoal is present sporadically, but in the Neolithic phases will provide information on the local natural woodland and management (coppicing pollarding) of that resource. The Bronze Age samples are largely restricted to cremation which will indicate species selected for the pyre (and thus available in the natural woodland), as well as pyre technology. Comparison of species lists between these two main phases will be of value. This data can be compared with similar data from Kingsborough Farm.

Land Snails

7.3.3 There is no potential for further work.

Pollen

Inferred vegetation and potential

7.3.4 Examination of the pollen spectra from this ditch suggests that the local habitat was a largely tree-less open environment. Where tree pollen occurs in small but continuous numbers, these are taxa with high pollen productivity and wind dispersal (anemophilous), such as for example oak, alder and hazel. With such values these may have travelled some distance. Of interest are the small numbers of lime (*Tilia*). These are usually under-represented in pollen sequences due to entomophily and flowering during mid-summer when trees are in leaf, thus further inhibiting their pollen dispersion. However, these are robust pollen grains that tend to preserve well in soils. Their presence in soils/sediments of this date is also significant since it is now accepted that lime was a major component of prehistoric woodland until clearances during the (Late) Neolithic and Bronze Age. Their presence here therefore suggests that the pollen spectra are at least of prehistoric date. Whether there has been modern or later contamination from faunal mixing or via root channels is not clear.

7.3.5 Overall the pollen spectra are dominated by grasses and other herbs of grassland (? pasture) including notably, ribwort plantain (*Plantago lanceolata*) with buttercups (*Ranunculus*), clovers (*Trifolium*) and medicks (*Medicago* type) for example. The former is markedly more important in the lower part of the sequence and is more likely to be representative of the Neolithic environment than the upper levels where some post-Neolithic pollen may have become incorporated.

7.3.6 The assessment has demonstrated that pollen is preserved in these Neolithic ditch sediments. It also suggests that the pollen may be contemporaneous with the Neolithic period although some caution has been expressed in case there has been the intrusion of later pollen due to faunal mixing or ingress down root channels. The potential for further analysis depends on the integrity of the contexts in terms of such taphonomic questions. For sediments considered to have that integrity, additional samples at a closer sampling interval (4cm) would be desirable. Given these caveats, only the basal samples are considered to be well enough sealed to contain a wholly Neolithic flora.

Geoarchaeology and Sediments

7.3.7 A series of causewayed enclosure ditch fills and downslope colluvial sequences have been described. The sediments recovered by monolith have been assessed and fully analysed (described and interpreted) in this report and have provided a good understanding of the broad sedimentological processes that have acted on the local area.

7.3.8 The ditch fills (notably the primary fill, unit E and the potential stasis horizon of unit C) do offer some potential for further elucidation of the environmental conditions present during the infilling of the feature. It is, therefore, recommended that:

- The bulk samples be processed for artefactual material, waterlogged and charred plant remains and their potential for analysis is assessed.
- Ditch segment 3 (group 6088, cut 6112, southern terminus of northernmost enclosure segment, monoliths: 1220, 1221-1) was somewhat gleyed and offers some potential for the preservation of plant remains by waterlogging. It is recommended that selected samples from the monolith be analysed for pollen.

7.3.9 The colluvial sequences downslope of the causewayed enclosure are suggested to be of Bronze Age or later date and do not directly relate to the Neolithic features. Substantial downslope movement of sediments and likely their associated artefacts has been identified at the site. It was recommended that the bulk sample retrieved from the base of the unit (equates to context 6183) be sieved for artefacts in order to provide a minimum age for deposition.

7.3.10 The existence of a stasis (a stable exposed landsurface) within the sequence would be of note and have the potential for investigation of human activity contemporary with its formation. No clear evidence for such a horizon exists in the sequences examined. Unit 6 of feature 6238 (coombe), which contained pottery, charcoal and fire-cracked flint was, however, slightly organic. It has been interpreted as probable redeposited topsoil material (and includes evidence of a gravel fan). Although some stabilisation has occurred at this level, it is unrelated to the Neolithic monument and no further analytical work is proposed.

7.4 Palaeo-environmental summary

7.4.1 The preservation of charcoal and plant remains associated with the Neolithic causewayed enclosure is of great value to determine the both the farming economy, and the nature of wild food resources. The presence of celtic bean in potential Neolithic contexts is of value in itself as the earliest known domestication of this in Britain is from the Isle of Wight (Scaife 1984).

7.4.2 These remains indicate the presence of cultivated cereal and of wild foods. What is perhaps slightly unusual here is the lack of hazelnuts and the prevalence, albeit in low quantities, of cereal remains. This provides some contrast with the other monument which contained caches of hazelnuts.

7.4.3 The sedimentological data provide a basic on-site ditch infill history while the gully and dry valley allow this site to be placed into its wider local context.

7.4.4 The combination of the data from the two monuments will provide an important contribution to the study of the Neolithic in southern England.

7.5 Radiocarbon dating

Introduction

7.5.1 In order to better understand the development and the chronological relation of the prehistoric monuments investigated at Eastchurch in recent years, a programme of radiocarbon dating is proposed. The following section gives an overview of the overarching aims for radiocarbon dating for the three sites investigated: Kingsborough Farm Phase 1 Stage 1(KF99 by ASE) and Kingsborough Manor Phase 1 Stage 2 = WA 46792 and Phase 2 Stage 1 = WA 57170 before focussing specifically on questions relating to the Phase 2 Stage 1-site covered in this report.

Key: * Either the available data, or budget, does not allow these questions to be answered by radiocarbon dating

** There is no suitable material to radiocarbon date these, but there is suitable artefactual material with which to answer these questions.

Causewayed Enclosures; General

7.5.2 The aims were to…

1.1 date the construction of each monument to enable comparison with other dated sequences in SE England. Where do these sites fall within the dated range on causewayed enclosure construction in southern England (compare Trundle, Offham, Whitehawk, Combe Hill, Bury Hill, Barkhale, for example);

1.2 determine if the two monument complexes are contemporary (within 250 years) or sequential;

1.3* determine if the three circuits at Kingsborough Farm are contemporary with each other, or are sequential as suggested for Offham;

1.4* determine the order of ditch circuit construction (Kingsborough Farm);

1.5* determine the duration between the construction of the first and last circuits (Kingsborough Farm);

1.6 determine the duration of the Neolithic activity on each site.

Neolithic Aims: Kingsborough Manor

7.5.3 In addition to the general Neolithic enquiries other questions posed were:

4.1 Define the phase of use of the monument (placed deposits) and are this a part of the immediate post-construction or use phase;
4.2 Define the duration of ditch infilling;
4.3 Are the segments contemporary (200 years) and can any sequence of construction be determined?

Cremation burials or cremation events: Kingsborough Manor

7.5.4 Relevant questions are:

5.1 Is the cremation related deposit and cremation activity a part of a single phase (up to 500yrs) of activity?
5.2 Are these contemporary (300 years) with, and is this a part of the same activity at, Kingsborough Farm.

Erosion gully 6190: Kingsborough Manor

7.5.5 6.1* Can the erosion gully be related to either the Neolithic or Bronze Age events on site or neither?

8 STORAGE AND CURATION

8.1 Museum

8.1.1 No decision has yet been taken as to the final destination of the project archive; discussions on the provision of storage space for archaeological archives from the county are ongoing. In the meantime the archive will be held by Wessex Archaeology. Deposition of finds with any identified repository will only be carried out with the full agreement of the landowner.

8.2 Conservation

8.2.1 No immediate conservation requirements were noted in the field. Finds which have been identified as of unstable condition and therefore potentially in need of further conservation treatment comprise the metal objects but given their likely post-medieval date this is not proposed.

8.3 Storage

8.3.1 The finds are currently stored in perforated polythene bags in seven cardboard or airtight plastic boxes, ordered by material type, following nationally recommended guidelines (Walker 1990).

8.4 Discard Policy

8.4.1 Wessex Archaeology follows the guidelines set out in *Selection, Retention and Dispersal* (SMA 1993), which allows for the discard of selected artefact and ecofact categories which are not considered to warrant any future analysis. In this instance, burnt, unworked flint has already been discarded, and no further discard is proposed.

8.4.2 The discard of environmental remains and samples follows the guidelines laid out in the "Wessex Archaeology Archive and Dispersal Policy for Environmental Remains and Samples". The archive policy conforms with nationally recommended guidelines (SMA 1993; 1995; English Heritage 2002) and is available upon request.

8.5 Archive

8.5.1 The complete site archive, which will include paper records, photographic records, graphics, artefacts and ecofacts, will be prepared following nationally recommended guidelines (SMA 1995).

8.6 Copyright

8.6.1 The full copyright of the written/illustrative archive relating to the Site will be retained by Wessex Archaeology Ltd under the Copyright, Designs and Patents Act 1988 with all rights reserved. The recipient museum, however, will be granted an exclusive licence for the use of the archive for educational purposes, including academic research, providing that such use shall be non-profitmaking, and conforms with the Copyright and Related Rights regulations 2003.

8.7 Security Copy

8.7.1 In line with current best practice, on completion of the project a security copy of the paper records will be prepared, in the form of microfilm. The master jackets and one

diazo copy of the microfilm will be submitted to the National Archaeological Record (English Heritage), a second diazo copy will be deposited with the paper records, and a third diazo copy will be retained by Wessex Archaeology.

9 REFERENCES

Allen, M.J., 1988, Archaeological and Environmental Aspects of Colluviation in SE England. In Groenman-van Wateringe, W. and Robinson, M. (ed) *Man-Made Soils*. Symposium of the AEA no. 6. BAR International Series 410 p67-92.

Allen, M.J., 1991, Analysing the landscape: a geographical approach to archaeological problems, in Schofield, A.J. ed., *Interpreting Artefact Scatters: Contributions to Ploughzone Archaeology.* Oxford: Oxbow Monograph 4, 39-57.

Annable, F.K. and Simpson, D.D.A., 1964, *Guide Catalogue of the Neolithic and Bronze Age Collections in Devizes Museum*, Wiltshire Archaeol. Natur. Hist. Soc., Devizes.

Archaeology South-East, 2000, Archaeological Investigations at Kingsborough Farm, Eastchurch, Isle of Sheppey, Kent: Post-excavation assessment and draft proposals for future work, unpub. client rep. 1067.

Beck, C. and Shennan, S., 1991, *Amber in Prehistoric Britain*, Oxbow Monog. 8, Oxford.

Bell, M. and Boardman, J. (eds), 1992, *Past and Present Soil Erosion. Archaeological and Geographical Perspectives*. Oxford: Oxbow Monograph 22.

Bennett, K.D., Whittington, G. and Edwards, K.J. 1994, 'Recent plant nomenclatural changes and pollen morphology in the British Isles', *Quaternary Newsletter* 73, 1-6.

CAT, 2001, Archaeological Excavations at Chalk Hill, Ramsgate Harbour Approach Road 1997/8: The Stratigraphic Record, unpubl. client report Canterbury Archaeological Trust.

CgMs, 2004, *Specification for an archaeological excavation: Kingsborough Manor Phase 2 Stage 1, Eastchurch, Isle of Sheppy, Kent.* CgMs Consulting.

English Heritage, 2002, *Environmental Archaeology; a guide to theory and practice of methods, from sampling and recovery to post-excavation.* Swindon, Centre for Archaeology Guidelines.

Gallois, R.W., 1965, *British Regional Geology, the Wealen District*. NERCC Institute of Geological Sciences. London: HMSO.

Geological Survey of Great Britain, 1977, *1:50,000 Geology (solid and drift) Sheet 272 Chatham*

Geological Survey of Great Britain, 1967, *1:50,000 Geology (solid and drift) Sheet 273 Faversham.*

Green, H.S., 1980, *The Flint Arrowheads of the British Isles part i.* Oxford, Brit. Archaeol. Rep. 75.

Fairbairn, A., 1999, Charred plant remains, in Whittle, A., Pollard, J. and Grigson, C. (eds), *The harmony of symbols: the Windmill Hill causewayed enclosure, Wiltshire.* Oxford: Oxbow Books, 139-56.

Fairbairn A. 1997, The charred plant remains, in *Sacred mounds and holy rings: Silbury Hill and West Kennet*. Edited by A. Whittle, pp. 133-42. Oxford: Oxbow Monograph 74.

Hodgson, J.M., 1976, *Soil Survey Field Handbook.* Harpenden, Soil Survey Technical Monograph No. 5.

Helbaek, H. 1952, Early Crops in Southern England, *Proceedings of the Prehistoric Society*, 18, 194-233.

Hinton, P., 2004, 'Plant remains', in Rawlings, M., Allen, M. J. and Healy, F., Investigation of the Whitesheet Down environs 1989-90: Neolithic Causewayed Enclosure and Iron Age settlement. *Wiltshire Archaeological and Natural History Magazine* 97, 177-9.

Jones, G., 2000, 'Evaluating the importance of cultivation and collecting in Neolithic Britain' in Fairbairn, A.S. (ed.), *Plants in Neolithic Britain and beyond.* Oxford: Oxbow Books, Neolithic Studies Group Seminar Papers 5, 79-84

Lang, D.C., 1987, *The Complete Book of British Berries.* London: Threshold Books.

Lowe, J.J. and Walker, M.J.C., 1997, *Reconstructing Quaternary Environments*. 2nd edition. Harlow: Pearson Education Ltd

Moffett, L, Robinson, M.A. and Straker, S., 1989, 'Cereals, fruit and nuts: charred plant remains from Neolithic sites in England and Wales and the Neolithic economy', in Milles, A., Williams, D. and Gardner, N. (eds), *The Beginnings of Agriculture*. Oxford, *BAR Int. Ser.* 496, 243-61.

Moore, P.D. and Webb, J.A. 1978. *An illustrated guide to pollen analysis,* London: Hodder and Stoughton.

Moore, P.D., Webb, J.A. and Collinson, M.E. 1991, *Pollen analysis,* 2nd edition, Oxford: Blackwell Scientific.

Morris, E.L. 1994, *The Analysis of Pottery*, Wessex Archaeology Guideline 4, Salisbury.

Murphy P. 1988, 'Plant macrofossils', in: Brown N (et al.). A late Bronze Age enclosure at Lofts Farm, Essex. *Proc. Prehist. Soc. 54,* 281-93.

Murphy P. 1989. Carbonised plant remains from The Stumble, an intertidal site in the Blackwater Estuary, Essex, England. *Circaea.* 6:1, 21-38.

Nye, S. and Scaife, R.G. 1998, 'Plant macro-fossils', in F. Pryor *Etton: Excavations at a Neolithic causewayed enclosure near Maxey, Cambridgeshire, 1982-87,* Archaeological Report No 18, pp. 289-300. London: English Heritage.

Oxford Archaeology, 2004, *Kingsborough Manor Phase 2 Stage 1, Eastchurch, Isle of Sheppey, Kent: Archaeological Evaluation Report*. Oxford Archaeology, unpublished client report for CgMs Consulting Ltd.

Palmer C and Jones M., 1991, 'Plant resources', in: Sharples N. Maiden Castle: excavation and field survey 1985-6. *HBMCE Archaeological Report 19,* 129-139.

PCRG 1997, *The Study of Later Prehistoric Pottery: General Policies and Guidelines for Analysis and Publication*, Prehistoric Ceramics Research Group Occas. Paper 1/2 (revised ed.).

Robinson, M.A., 2000, 'Further considerations of Neolithic charred cereals, fruits and nuts', in Fairbairn, A.S. (ed.), *Plants in Neolithic Britain and beyond,* Neolithic Studies Group Seminar Papers 5, 85-90, Oxford: Oxbow Books.

Rowley-Conwy, P. 2004, 'How the West was lost: A Reconsideration of agricultural origins in Britain, Ireland, and southern Scandinavia', *Current Anthropology*, 45, 83-113.

Schofield, A.J., ed., 1991, *Interpreting Artefact Scatters: Contributions to Ploughzone Archaeology,* Oxbow Monograph 4, Oxford.

SMA 1993, *Selection retention and dispersal of archaeological collections. Guidelines for use in England, Wales, and Northern Ireland*, Society of Museum Archaeologists.

SMA 1995, *Towards an Accessible Archaeological Archive*, Society of Museum Archaeologists.

Soil Survey of England and Wales, 1983, *Soils of South East England, Sheet 6*. Southampton: Ordnance Survey.

Stace, C. A., 1992, *New flora of the British Isles*, Repr., Cambridge: Cambridge Univ. Press.

Thomas, J. 1999, *Understanding the Neolithic,* Cambridge: Cambridge University Press.

Walker, K., 1990, *Guidelines for the Preparation of Excavation Archives for Long-Term Storage*, UKIC Archaeology Section.

Western A C., 1982, 'Charcoals'. In: Avery M., The Neolithic causewayed enclosure, Abingdon. In: Case, H.J. and Whittle, A.W.R. (eds.), Settlement patterns in the Oxford region: excavation at the Abingdon Causeway enclosure. *CBA Research Report 44 and Dept Antiquities, Ashmolean Museum,* 49.

Wessex Archaeology 2002, K*ingsborough Manor Development, Eastchurch, Isle of Sheppey, Kent: Watching Briefs, Evaluation and Phase 1, Stage 2 Archaeological Excavation: Assessment Report on the Results of the Excavation including proposals for Post-Excavation Analysis and Publication,* Ref. 46792.

Wilkinson, T. and Murphy, P., 1995, *Archaeology of the Essex Coast 1: The Hullbridge Survey*, East Anglian Archaeology 71.

10 APPENDICES

10.1 Table of contexts

Neolithic causewayed enclosure
Segment 1

Grp No.	Contexts	Description
6046		Segment 1
6321	6054, 6095, 6134, 6139, 6196, 6248, 6314	***Phase 1***
6322	6120, 6272, 6273	Primary erosion within terminal Phase 1
6323	6121, 6274, 6275, 6276, 6245	Gradually accumulated basal fine silts within terminal Phase 1
6324	6122, 6246, 6277, 6278	Central fill sequence of gradually eroded silts and gravels within terminal Phase 1
6325	6123, 6279, 6247	Final silting episode within terminal Phase 1
6327	6197, 6250, 6283, 6284, 6315	Basal deposit of silts and fine eroded natural, Main ditch sections
6328	6138, 6198, 6251, 6285	High energy deposit of slumped natural and gravel. Main ditch sections
6329	6199, 6252, 6253, 6286, 6314,	Low energy deposit representing prolonged period of gradual silting. Main ditch sections
6266	6266	***Phase 2*** –re-cut of northern terminus
6267	6267	Primary erosion
6268	6268	High energy gravel deposit – poss eroded bank. Within Phase 2 terminus
6269	6269	Central fill sequence of gradually eroded silts and gravels. Within Phase 2 terminus
6270	6270	Gradual accumulation of silts & sands. Puddling evident. Within Phase 2 terminus
6271	6271	Final silting episode. Within Phase 2 terminus
6326	6124, 6239, 6344	***Phase 3*** –ditch segment
6345	6125, 6240	Primary eroded sits within terminus
6330	6264, 6219, 6265, 6126	Rapidly accumulated slumps within terminus
6340	6133, 6137, 6245, 6287,6297	Episode of feature instability, slumped natural localised impacts within central ditch section
6341	6109, 6241, 6093, 6255, 6317	Low energy deposits, of fine eroded natural and gradually eroded topsoil & A^2 derived silt & sand. Stabilisation - Occasional waterlogging. Throughout ditch segment.
6342	6127, 6045, 6053, 6130, 6136, 6200, 6242, 6256, 6257, 6288, 6289, 6290, 6313	Episode of gradual silting. Material exhibits waterlogging/leeching/puddling and impact of water within feature. Throughout ditch segment
6343	6044, 6051, 6128, 6131, 6135, 6201, 6243, 6258	Tertiary episode of silting, material suggests higher rate of anthropogenic activity within close proximity probably Bronze Age.

Segment 2

Grp No.	Contexts	Description
6040		
6346	6326, 6031, 6161, 6189, 6303, 6332, 6080,	Original construction
6347	6304, 6306, 6351	Basal Deposit within terminal ends
6348	6147, 6033, 6062, 6064, 6065, 6207, 6209, 6205, 6204, 6208, 6188, 6206, 6309, 6186	Basal re-deposited natural through main ditch section
6364	6363, 6339	Phase Two re-cut within termini
6365	6082, 6083, 6211	Phase 2 re-cut fills within termini
6366	6037, 6367, 6368, 6335, 6210	Phase 3 re-cut – Throughout segment
6352	6237, 6081, 6083, 6223, 6213, 6212, 6214, 6305, 6215, 6224, 6226, 6227, 6216, 6217, 6218, 6302, 6301, 6160	Basal phase 3 sequence within terminals
6349	6060, 6066, 6187	Secondary fill through main ditch section
6369	6038, 6219, 6220, 6079	Secondary fill within termini
6350	6235, 6236, 6059, 6222	Slumping possible ploughing out of internal bank?
6370	6039, 6032, 6063, 6185, 6221, 6078, 6159	Secondary fill – Puddling – Throughout segment
6351	6338, 6334, 6079, 6158	Tertiary deposits

Segment 3

Grp No.	Contexts	Description
6088		
6353	6112, 6148, 6174, 6097, 6165, 6291, 6157, 6092	Original construction
6355	6150, 6175, 6308, 6098, 6164, 6156,	Re-deposited natural within main ditch section
6371	6166, 6096	Basal fill of terminals
6357	6336, 6373	Re-cut Phase 2
6354	6191, 6149, 6337	Basal fills in termini
6358	6167, 6192, 6311	Slumped natural within terminals
6356	6193, 6194, 6091	Fine silt accumulations within terminals
6372	6168, 6173	Secondary silting within terminals
6359	6151, 6176, 6099, 6163, 6155, 6292	Secondary silting in main ditch section
6360	6169, 6170, 6171, 6152, 6177, 6100, 6162, 6154, 6089	Secondary silt throughout segment
6361	6172, 6310, 6195, 6153, 6101	Tertiary Silting

Probably Neolithic features

Grp No.	Contexts (cut numbers)	Type
6319	6017, 6019, 6021, 6024, 6026	Posthole group
6320	6071, 6073, 6075	Posthole group

Other features

Grp No.	Contexts (cut numbers)	Type
6376		Bronze Age field gully system
6375	6001, 6144	Bronze Age field gully, 1st phase (NS)
6043	6004, 6042, 6142, 6260	Bronze Age field gully, 2nd phase (NW-SE + NS)
	6084	Bronze Age pit
	6036	Cremation related deposit
6374	6067, 6069	Medieval field boundary (EW)
6056	6027, 6029	Post-medieval field boundary drainage gully
	6015, 6190,	Erosion channel

10.2 Neolithic causewayed enclosure – detailed description of results

Segment 1 – southern segment

10.2.1 Segment 1 – **group 6046**, represents the southern of the three ditch segments which extended approximately 40m in length from the southern limit of the central excavation area and formed a curvilinear feature orientated roughly north – south with a rounded northern terminus. The centre of the segment was truncated by a later Bronze Age/Early Iron Age field system, **group 6376.**

10.2.2 The segment had an average feature width of 3m and an average depth of 1.1m. Twelve meters north of the known southern limit of segment 1 an excavated section revealed three phases of construction taking the form of three successive inter-cutting termini.

10.2.3 It is postulated that the occurrence of inter-cut termini (indicating shifting of the causeways) at the southern end of the monument may be due, in part, to likely points of entry from both the centre of the ridge way and the triple circuit Neolithic causewayed enclosure to the south. A lack of evidence for shifting causeways in the rest of the monument may support that theory. More detailed analysis may elucidate this further.

Phase 1

10.2.4 **Group 6321** represents the earliest segment 1 construction phase of a rounded northern terminus with a steep western (internal) side and a more gradually sloped eastern (external) side.

10.2.5 Within the associated Phase 1-terminus evidence of primary erosion, **6322**, was recorded underlying a series of gradually accumulated fine silts, **6323.** The central fill sequence, **6324,** comprised gradually accumulated silts and gravels derived from eroded natural material and eroded waterborne topsoil/A² silts and sands. Slumps of natural from the undercutting of the features sides was evident within this group of fills and is consistent with the water effected nature of these central deposits. A final layer of gradually accumulated material, **6325,** filled the ditch cut prior to the Phase 2 re-cutting which altered the alignment of the terminus, moving it approximately 1.5m to the west on a straighter arc. Though the alignment was altered the presumed position of the associated causeway remained consistent.

10.2.6 For the remainder of the segment it is suggested that the basal silt series **6327**, overlain by a high energy deposit of slumped re-worked natural **6328,** represents the initial stabilisation of the ditch profile corresponding to **6322** and **6323** within the associated terminus.

10.2.7 As witnessed throughout the remainder of the monument it is postulated that though the termini were re-cut fully, the upper secondary sequence within the remainder of the ditch was cleaned out only to the upper interface of the basal re-deposited natural **6328**. It is unclear, therefore, which phase fine silt deposits **6329** should be assigned to. The overlying disturbed eroded natural deposits **6340** are thought to have derived from instability created as a result of re-cutting. Given the overlying sequence this episode has been associated with the Phase 3 re-cutting of this segment, represented primarily by the third southern inter-cut terminus.

Phase 2 - northern terminus

10.2.8 Phase 2 was only recorded in the construction of a second, northern rounded terminus, **6266**, with a shallow, gradually sloping eastern side, steep western slope and a sub-rounded concave base truncating the Phase 1 terminus. An associated fill sequence followed the standard pattern witnessed throughout the rest of the monument. A basal deposit of primary erosion, **6267**, comprised fine silts and was overlain by a high energy deposit of eroded gravels, **6268**, derived from the collapse of the feature sides and slumped deposits associated with the Phase 1 construction. This episode of collapse resulted in the stabilisation of the ditch profile and was overlain by an episode of secondary silting, **6269** and **6270**. A tertiary deposit, **6271**, derived from puddling was truncated by the Phase 3 construction The exposed upper surface of the Phase 1 terminus, reused as an extension of the outer edge of the feature, also records this tertiary silting event.

10.2.9 It is suggested that an associated 'cleaning out' of the remainder of the ditch within the segment was undertaken at this time, however the probable Phase 3 episode has truncated evidence of this Phase 2 event.

Phase 3

10.2.10 An opposing southern, rounded terminus, **6326**, truncated the upper fills of the Phase 2 terminus and marks a transition period in the life of the monument. Its opposing orientation marks an alteration in the position of the causeways. This Phase 3 terminus is fairly shallow in depth and the rounded terminal arc appears to be of a smaller circumference than the other termini recorded on Site.

10.2.11 It could be argued that the relatively shallow depth (0.7m) of the terminus could be due to the fact that it was only dug to the existing depth to which the adjoining ditch segment was re-cut/cleaned out to. On average, 0.7m would reach the upper horizon of the basal fill sequence.

10.2.12 It should be noted that the excavated section of the three inter-cutting termini was prone to water logging as a result of runoff from the surrounding ground surface. Assuming this might also have been the case in the Neolithic, an increased rate of deposition may have resulted in that section of the segment. This might therefore indicate that silting and deposition could have varied within segments according to location and the immediate surrounding topography. As a result it might have been deemed necessary by the creators of the monument to change the orientation of the terminus described above (see 4.2.10).

10.2.13 Within the terminal the instability of the feature sides, partially through truncation of an earlier fill sequence, resulted in a thin primary deposit of eroded silts, **6345**, overlain by rapidly accumulated re-worked natural **6330**. Within the rest of the segments deposits represented by **6340** are thought to be contemporary.

10.2.14 Overlying rapid collapse events **6345** and **6340**, a prolonged period of natural silting, **6341** and **6342**, is recorded, comprising mid-dark grey clay silt mottled with orange flecking, which is indicative of mixed episodes of wet and dry conditions. The slight gravel lenses, indicating individual silting episodes within the depositional process, are consistent with this interpretation. Material accumulated within the base of **6341** was recorded as pottery rich stabilisation and may represent the final occupation of

the monument. The episode of gradual silting **6342** is thought to have accumulated following the abandonment of the monument.

10.2.15 A tertiary phase of silting, **6343**, contained sparse, poorly sorted gravels and very little clay content within the deposit matrix. Increased anthropogenic activity in close proximity to the ditch is indicated by the relatively abundant quantity of charcoal flecking and pottery fragments compared with earlier deposits. This activity may reflect a Bronze Age re-occupation of the area.

Segment 2 – central segment – group 6040

Phase 1

10.2.16 Group **6346** represents the original construction of the segment 2 ditch forming the central of the three ditch segments. It extended 23.4m in length, forming a linear ditch segment orientated north north west – south south east. Average width and depth were recorded as 2.7m and 1.1m respectively. The internal (western) side of the ditch was steep and straight with a sharp break of slope to form an irregular flat base. The external (eastern) side was stepped with a near vertical lower portion and a shallow straight upper part.

10.2.17 Within the two terminals, basal deposits **6347**, comprised of eroded/slumped natural derived from the undermining of the feature, survive primarily against the ditch sides. This group of deposits revealed evidence for a second construction phase, **6364**.

10.2.18 A series of redeposited natural fills, group **6348**, traced through the central portion of the ditch record the early slumping of the feature sides and stabilisation of the ditch profile. Due to the nature of these deposits it was not possible to identify ditch maintenance through this sequence. It is presumed that any successive cleaning of the feature along this central portion affected the upper exposed interface only and that the profile was not regularly re-cut. The profile of the overlying secondary fill sequence is indicative of a deliberately cut final phase of maintenance, **6366**, and is thought to have truncated any previous phases. However an intermediate phase of re-cutting/ditch maintenance, **6364**, is recorded within the two terminal ends which do appear to have been fully emptied. A longitudinal section excavated towards the northern terminal clearly illustrates this greater degree of management. It suggests that the terminal ends were re-excavated as elongated pits while the central area between the terminals were loosely cleaned out.

10.2.19 Ditch fills grouped within **6348** appeared to be the result of high energy, rapidly deposited material and were mostly concentrated towards the southern and central area of the segment. Material was recorded principally along the eastern side of the feature though slumping of the feature sides was also noted along the internal (western) side of the linear with the slumped material stabilising the ditch profile. The prevalence of material along the eastern side of the feature is thought to be a result of the increased erosive pressure experienced along this exposed side of the ditch and the natural site gradient. It is believed that an internal bank would have existed but due to the natural gradient and overall direction of erosion a majority of this material would have been washed down-slope away from the ditch.

Phase 2 – terminus re-cut

10.2.20 Represented by **6364,** both terminals associated with segment 2 exhibited evidence of re-cutting. A majority of the original terminus profile was re-established. A relatively thin layer of basal deposits **6365** survived a subsequent and final re-cut, **6366**. Comprised of eroded natural and windblown leeched silts, **6365** is thought to be the remains of a primary fill associated with this phase of maintenance.

10.2.21 Due to truncation by final re-cut phase **6366**, deposits within **6365** would then have formed the base of the final phase of use. Within the northern terminus deposit **6211** forms part of the **6365** group of basal deposits attributed to this second phase. It should be noted however, that the quern fragment retrieved from deposit **6211** was not wholly sealed by it and the object is thought to belong to final re-cut phase **6366.** Given the evidence for water derived erosion throughout each phase within the monument, it is reasonable to assume the weight of the quern fragment caused it to sink within the newly exposed base formed by truncated deposit **6211**.

Phase 3

10.2.22 A final phase of the monument is represented by re-cut **6366**, identified throughout the length of the segment. The central portion of the segment appears to have been potentially cleaned out. The uniform profile of overlying secondary deposits suggests a deliberate cut interface, however the original profile of the feature was not re-excavated thus the sides of the feature largely retained their stability. However within the terminals, particularly the fully excavated northern end, associated sections indicate a near complete re-excavation taking the form of an elongated pit. It is thought that while the central portions of the ditch were gradually silting, **6349**, the basal sequence recorded in the terminals, **6352**, comprised mixed deposits of eroded natural silts and sand, of slumped re-worked natural, and secondary derived silts. This reflects the comparative instability of the terminal profiles in relation to that of the main ditch section.

10.2.23 The northern terminal contained a considerable number of deliberated deposited artefacts within basal sequence **6352**. The deliberate deposition of these artefacts did not occur within discrete contexts but in undulations and pockets within the naturally occurring deposit sequence. The upper part of this sequence of fills comprised principally secondary derived material and reflects the gradual stabilisation of the terminal profile. These fills are thought to reflect the interface between the initial basal instability of the feature and subsequent gradual silting.

10.2.24 Basal sequence **6352** comprised a series of moderate to gradually accumulated sandy silts, laminated with thin irregular lenses of fine iron panning. Towards the upper interface of this depositional phase material consisted of multiple pockets and laminations of leeched grey silt, fine lenses of clay and oxidised fine, irregular lenses of orange sandy silt suggesting episodes of both wet and dry exposure. The overlying secondary derived deposits **6369** exhibited the same properties as that witnessed throughout the remainder of the segment in **6349**. Material from both may be described as gradually eroded topsoil and fine weathered natural. These predominately silt deposits were very leeched suggesting prolonged water logging. Gravel inclusions generally settled towards the base of deposits. Fine irregular orange mottling indicated periods of dry exposure between the water driven activity. An intermittent layer of iron-panning and a clear gravel boundary marked the end of

recognisable deliberate anthropogenic activity associated with the ditch. It is postulated that the monument was abandoned at this time.

10.2.25 Group **6350** consisting of discrete slumps of re-worked natural material and concentrated primarily with either terminal marked a possible boundary between secondary sequences and was overlain by depositional phase **6370** which comprised mid grey clay silts with frequent charcoal inclusions. Group **6370** is thought to record secondary silting occurring subsequent to the abandonment of the monument, this episode was principally defined by upper and lower fans of gravel and the gradually accumulating nature of the deposits is indicative of a substantial period of landscape and feature stabilisation. Material associated with this depositional episode derived from the silting and puddling of eroded topsoil with occasional lenses of eroded natural from the feature sides and contained a greater frequency of gravels, had a greater degree of manganese staining and a greater clay content than previously recorded within the sequence. As stated previously, much of this textural and visual distinction is thought to result from post-depositional activity through the soil profile.

10.2.26 A tertiary layer **6351** collected in puddles on the gradually reducing surface of the ditch. Due to the similarity in depositional process it was only possible to identify a boundary between this very final silting from the underlying clay silts where discrete lumps of re-worked natural were recorded along the upper western (internal) side of the feature. The re-worked natural potentially derived from the final ploughing out of an associated internal bank.

Segment 3 – northern segment – group 6088

Phase 1

10.2.27 Group **6353** represents the original construction of segment 3, the northern of the three segments extending for 14.2m and forming a north-west/south-east orientated linear ditch segment. A very shallow medieval east-west field boundary truncated the upper surface of the southern terminus. The width of the Neolithic ditch segment narrowed from *c*1.75m at its southern terminus, to *c*1.1m at its northern terminus. A reduction in depth was also noted along the length of the feature from 0.8m in the southern terminus to 0.4m in the northern. A relatively regular 'U-shaped' profile was evident within this segment, exhibiting steep slightly convex sides and an irregular, flat base. The reduction in the profile of the ditch segment from south to north may also reflect a later hillside erosion of the upper part of the feature given its location towards the break of slope.

10.2.28 Within the terminals, basal deposit **6371**, comprised of eroded/slumped natural derived from the undermining of the feature, is the only extant component of the fill sequence associated with the original construction of segment 3. In the southern, more substantial terminus this deposit survives primarily against the ditch sides. In the northern terminus the deposit survives against the western edge and into the base (it does not fully cover the base due to truncation by later re-cut). Only occasional lenses of re-deposited natural were visible against the eastern ditch side.

10.2.29 As in segment 2 the central portion of the segment 3 ditch comprised a series of reworked natural deposits within which occasional lenses of eroded topsoil were observed, **6355**. The material is thought to constitute the slumped natural from the undermining of the feature sides, the accumulation of which stabilised the ditch profile. Within this northern enclosure segment it is suggested that a similar

cleaning/ditch maintenance technique was used to that recorded in segment 2. During a phase 2 re-cut the termini were excavated to re-establish the original profile while the central ditch section was only re-cut to the upper horizon of the stabilising re-deposited natural.

Phase 2 re-cut

10.2.30 A re-cut, **6357**, is evident through the fill profiles in the southern terminus and the central ditch section. A step in the base of the trench between the central ditch section and the northern terminus and between the central ditch section and the southern terminus is indicative of the more substantial nature of the terminus re-cuts than witnessed through the adjoining, central section of the ditch.

10.2.31 Again, as seen in segment 2, the more substantial re-cutting of the termini led to the destabilisation of the feature sides and subsequent deposition of a series of mixed deposits consisting of primary eroded silts, **6354**, slumped natural from undermined feature sides, **6358**, and fine laminated silt accumulations, **6356**. The upper series of deposits in this basal sequence, **6372**, comprised material derived from primarily secondary silting thus indicating the re-stabilisation of the terminal profiles.

10.2.32 Through the central portion of the ditch, gradually derived secondary silting with occasional eroded natural, **6359**, accumulated within the partially cleaned out re-cut ditch profile. The nature of this material indicated that significant episodes of water-logging had been experienced. A majority of the coarse components (stones) recorded within these fills had settled towards the deposit base. Significant proportions of the finds retrieved from this segment were found within this episode of silting. The finds comprise mainly Neolithic pottery as well as some retouched flint and a possible saddle quern fragment.

10.2.33 Across the length of the ditch, upper secondary silt deposit **6360** demonstrates a prolonged episode of landscape stability and is thought to be comparable to **6370** within segment 2. Though derived from the same depositional processes as underlying **6359/6372**, this upper secondary band contained a greater frequency of gravel components, had a greater degree of manganese staining, a more significant clay content and was a darker in colour. However, this distinction, as stated previously, is thought to correspond to post-depositional processes within the soil profile.

10.2.34 A tertiary silting episode, **6361**, derived from puddling on the reducing surface of the ditch. It was not always possible to identify the boundary between the very final silting from the underlying clay silts due to the similarity in depositional process.

10.2.35 As only two construction phases were identified within segment 3 it is possible that this northern section of the enclosure was an extension added during the segments 1 and 2 phase 2 re-cutting. Thus segment 3 phase 2 would relate to the phase 3 re-cutting within segments 1 and 2.

10.3 Environmental tables

Unit Description	*Fine silt*		*Slump*	*Lower grey*	*Upper grey*			*Stable*	*Grey SC*				*Slump*	*Final Silt*	
Feature				terminus	insecure		terminus			terminus		terminus	terminus	ditch	
Feature	6124	6134	6095	6196	6095	6134	6244	6134	6196	6239	6239	6244	6239	6239	6244
Context	6125	6284	6094	6199	6093	6133	6245	6109	6201	6240	6241	6246	6242	6243	6247
Sample	1218	1259	1214	1228	1210	1260	1246	1258	1227	1242	1241	1245	1243	1240	1244
Volume	30	3	8	3	40	6	10	2	20	6	8	5	15	30	12
Flot	38	5	5	5	40	6	4	4	60	6	25	3	40	125	25
Roots	95%	70%	10%	20%	50%	80%	30%	70%	100%	95%	95%	20%	95%	15%	60%
Modern Seeds	2	-	-	10+	5-10	2	-	3	20+	1	-	-	-	10+	-
Charcoal >4mm	2	2	3	3	8	-	-	-	4	-	-	-	-	60	?
Charcoal >2mm	3	2	10	12	20+	-	2	3	3	-	-	3	2	100	?
CEREALS															
Triticum sp.	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Triticum aestivum sl (grain)	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-
Triticum dicoccum(glumes)	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
Poaceae/Cereal caryopsis indet.	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
Cereal (grain indet.)	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Parenchyma/Cereal indet.	2	-	-	-	-	-	-	-	1	-	-	-	-	1	-
SPECIES															
Crateagus monogyna	-	-	-	-	-	-	-	-	cf.1f	-	-	-	-	-	-
Vicia sp.	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Sambucus nigra	-	-	-	-	-	-	-	-	-	-	-	-	-	cf.1	-
Sambucus cf. *ebulus* (berry)	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
Sambucus cf. *ebulus*	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-
Galium aparine	-	-	-	-	1	-	-	-	-	-	-	-	-	1	-
Tuber remains	-	-	-	-	cf. 3	-	-	-	-	-	-	-	-	-	-
Tuber/fruit stone	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Parenchyma fragments	1	-	3	3	4	3	-	-	2	-	-	-	-	-	-
OTHER															
Twig type wood.	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-
Stem	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
Conglomerated charcoal, clay & quartz	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5

Table E1. Neolithic Causewayed Enclosure Ditch. Segment 1- 6046

Unit Description	*fine silt*			*Fepan*	*lower grey*			*Upper Grey*						*Iron pan*		*Grey SC*					*Lr puddle*		*Final Silt*			*??*	
Feature	terminus			stones	deposit		stone	t'rm	around pot		deposit		pot fill		pot 7				daub		terminus		N-end			terminus	
Feature	6037	6189	6303	6303	6210	6303	6037	6080	6210	6210	6210	6210	6210	6210	6303?	6031	6080	6189	6189	6303	6080	6303	6037	6189	6303	6037	6037
Context	6082	6207	6213	6212	6214	6214	6081	6301	6215	6216	6225	6226	6227	6218	6218	6060	6079	6187	6187	6219	6078	6220	6039	6185	6221	6038	6038
Sample	1237	1264	1251	1267	1230	1265	1207	1266	1235	1234	1231	1233	1232	1252	1270	1204	1208	1256	1263	1268	1222	1257	1236	1255	1254	1238	1239
Volume	20	35	2	5	20	0.5	8	20	0.5	5	0.5	6	0.6	2	1	10	8	40	0.5	8	20	40	20	30	24	4	6
Flot	10	60	20	3	12	2	35	30	3	5	1	8	2	4	2	10	20	200	1	20	60	125	60	250	170	30	15
Roots	60%	80%	10%	20%	30%	10%	30%	50%	20%	50%	50%	50%	20%	15%	50%	90%	50%	99%	99%	60%	95%	99%	90%	99%	99%	80%	90%
Modern Seeds	3	-	-	-	0	-	-	17	-	2	-	2	-	2	-	5	2-5	15+	2	4	10	-	20+	40	30	4	6
Charcoal >4mm	-	2	10	-	-	1	3	7+	1	-	-	-	-	-	-	1	8	1	-	7	2	-	1	1	-	4	-
Charcoal >2mm	4	3	+	-	10	2	20+	10+	3	2	1	5	3	-	-	-	20+	1	-	6	1	5	2	4	1	3	2
CEREALS																											
Hordeum sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	cf.1	-	-	-	-	-	-	-	-	-
Triticum sp.	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Triticum aestivum sl (grain)	-	2	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-
T. *monococcum/dicoccum* (gr)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
Triticum cf. *dicoccum*(grain)	-	cf.1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
T. dicoccum/spelta (grain)	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1
Triticum dicoccum(glumes)	-	-	-	-	-	-	2	-	2	-	-	-	15	-	19	-	3	-	-	-	-	-	-	-	-	-	-
T. dicoccum/spelta (glumes)	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Triticum spelta (glume base)	-	-	-	-	-	-	-	-	-	-	-	-	cf.1f	-	-	-	-	-	cf.1	-	-	-	-	-	-	-	-
Poaceae/Cereal caryopsis indet.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
Parenchyma /Cereal	-	3	-	-	-	-	2	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-
Flattened cereal grain?	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
SPECIES																											
Corylus avellana (shell frg.)	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rosaceae thorn	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Prunus spinosa	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Prunus /Crataegus sp.	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
*Rumex s*p.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Pisium/Vicia	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	cf.1	-	-	-	-	-	-	-	-	-
Vicia faba	-	-	-	-	-	-	-	cf.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vicia sp.	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Galium aparine	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Monocot basal culm node	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	cf.1	-	-
Poaceae (stem)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
Poaceae (basal culm node)	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Poaceae (mid size grain indet)	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Avena sp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	cf.1	-	-	-
Tubers	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	cf.3	-	-	-	-	-	-	-	-	-	-
Parenchyma fragments	4	4			1			10		1								4					4	5	2	2	2

Table E2. Neolithic Causewayed Enclosure Ditch. Segment 2 - 6040

Unit Description	*fine silt*	*slump*	*Upper Grey*		*Grey SC*	*lower puddle*		*final silt*	*?*
Feature	n-section	terminus	terminus		terminus	terminus		terminus	small find 8
Feature	6174	6112	6097	6112	6112	6092	6112	6112	6291
Context	6300	6192	6099	6168	6169	6090	6171	6172	6292
Sample	1269	1226	1212	1225	1224	1211	1219	1223	1261/2
Volume	40	20	8	6	18	5	20	20	35
Flot	30	15	40	6	40	25	15	35	125
Roots	85%	50%	90%	50%	65%	95%	90%	75%	80%
Modern Seeds	2	2	1	2	10	5	1	10	4
Charcoal >4mm	1	2	3	-	2	3	2	3	3
Charcoal >2mm	-	5	-	-	5	-	5	10	6
CEREALS									
Triticum aestivum sl (grain)	1	-	-	-	1	-	-	-	-
Triticum dicoccum/spelta (grain)	-	-	-	-	cf.1	-	-	-	-
SPECIES									
Corylus avellana (shell frg.)	-	-	-	-	2f	-	-	-	-
Prunus spinosa	-	-	-	-	4f	-	-	-	-
Trifolium sp.	-	-	-	-	1	-	-	-	-
Pisium sativum	-	-	-	-	-	-	-	-	cf.1
Poaceae (small rootlet)	-	-	-	-	-	1	-	-	-
Grain/tuber	-	-	-	-	1	-	-	-	-
Parenchyma fragments	3	2	-	6	-	8	3	-	4
Seed indet.	1	-	-	-	-	-	-	-	-
OTHER									
Discus rotundatus	-	1	-	-	-	-	-	-	-

Table E3. Neolithic Causewayed Enclosure Ditch. Segment 3 – 6088

Phase	?	LBA	LBA	LBA	LBA	BA
Feature	erosion	crem.	crem.	crem.	crem.	pit
Feature	6190	6036	6036	6036	6036	6084
Context	6183	6034	6035	6035	6035	6085
Sample	1229	1200	1201	1202	1203	1209
Volume	18	5	5	5	2	10
Flot	15	100	60	50	50	60
Roots	50%	85%	90%	90%	95%	80%
Modern Seeds	20+	15+	15+	10+	7	25+
Charcoal >4mm (Approximate fragments)	3	27	-	3	3	10
Charcoal >2mm (Approximate fragments)	5	50+	7	15	15	12+
CEREALS						
Triticum aestivum sl (grain)	-	-	cf.1	-	-	-
Triticum aestivum sl (rachis frg.)	-	-	-	-	-	cf.1
Triticum dicoccum/spelta (grain)	cf.1	-	-	-	-	-
Triticum dicoccum(glumes)	13	-	-	-	1	-
Triticum dicoccum(spikelet fork)	1	-	-	-	-	-
Triticum dicoccum/spelta (glumes)	31	-	-	-	-	1
Triticum dicoccum/spelta (spikelet)	2	-	-	-	-	-
Triticum spelta (glume base)	4	-	-	-	-	-
Poaceae/Cereal caryopsis indet.	-	-	-	-	-	1
Cereal (grain indet.)	3	-	-	-	-	cf.1
SPECIES						
Chenopodiaceae/Chenopodiaceae	cf.2	-	-	-	-	-
Chenopodiaceae	1	-	-	-	-	-
Montia fontana subsp. chondrosperma	1	-	-	-	-	-
Brassica sp.	1	-	-	-	-	-
Trifolium sp.	3	-	-	-	-	-
Vicia sp.	cf.1	-	-	-	-	-
Linum usitatissimum (immature capsule?)	cf.1	-	-	-	-	-
Galium aparine	2f	-	-	-	-	-
Plantago lanceolata	1	-	-	-	-	-
Monocot basal culm node	1	-	-	-	-	-
Carex sp. (trig)	-	cf.1	-	-	-	-
Poaceae (stem)	3	-	-	-	-	-
Poaceae (culm node)	4	-	-	-	-	-
Poaceae (basal culm node)	1	-	-	-	-	-
Poaceae (rootlet)	2	2	-	2	-	1
Poaceae (mid size grain indet)	1	-	-	-	-	-
Avena sp.	1	-	-	-	-	-
Avena sp. (awn)	1	-	-	-	-	-
Bromus sp.	1	-	-	-	-	-
Lolium/Festuca sp.	1	-	-	-	-	-
Phleum sp.	4	-	-	-	-	-
Parenchyma fragments	4	-	-	5	1	5
Seed indet.	1	-	-	-	-	-
LAND SNAILS						
Valvata sp. (burnt?or reworked?)	-	-	-	-	1	-
Planorbid sp. (from inside other)	-	-	-	-	1	-

Table E4. Bronze Age Samples

10.4 Sediment descriptions

Ditch segment 1, group 6046 , cut 6258 2 overlapping monoliths: <1249> at 0-60cm, monolith <1250> 50-111cm. Section drawing 60 (ground surface, top of unit 1)				
Depth (cm)	*Pollen Samples Taken*	*Context & Excavators description*	*Description*	
0-12	None	6258 upper fill of orange-brown silty clay	2.5Y 4/4 olive brown smooth silty clay, rare sub-rounded gravel 0.5cm. Rare fine rootlets, common strong fine Fe mottles [7.5Y 4/6 strong brown], common macropores Clear-abrupt boundary Soil, (upper B or truncated A/B horizon, not organic) formed on colluvium	**A**
12-41		6257-top of 6256, orange brown silty clay	As below, 2.5Y 4/4 olive brown dry compact clay, slight increase in silt to top. Defined worm burrows, reworking to base of unit. Occasional fine rootlets to base, occasional macropores, common strong coarse Fe and Mn staining. Medium blocky structure. 3 fragments 2-3mm charcoal 3-16cm. Diffuse boundary Soil (B horizon) formed on colluvium	**B**
41-62		(Base of) 6256 Orange grey silty clay	2.5Y 4/4 olive brown dry compact clay divided into small blocky peds, <5% sub-rounded-rounded gravel 1-5cm, Occasional macropores, occasional medium faint Fe mottles, rare fine rootlets. Diffuse boundary (there is some indication this is an inorganic stasis horizon, with post-deposition alteration)	**C**
62-92		6255 & 6254 pottery in latter (lower) layer. Orange grey silty clay	2.5Y 5/3 light olive brown silty clay, occasional small macropores, common strong Fe mottles [7.5Y 4/6 strong brown], rare Mn. 3mm wood charcoal at 89cm, 1mm at 85cm, rare sub-angular-rounded flints 0.3-2cm. Contexts not differentiated: other than a decrease in Fe mottling to top. (in excavation noted diffuse change, 6254 below browner) Clear boundary Colluvium	**D**
92-111		6251 & 6250 grey silt to base (6250) and gravel in orange grey silty clay	92-100cm apparently as below but increasing Fe staining becoming common strong coarse rare Mn stain. (In excavation this level showed an increase in clasts at this level, described as a slump) 100-111cm 2.5Y 6/3 light yellowish brown clean, soft massive coarse silt-fine sand. Occasional macropores, faint medium Fe stain. 2mm charcoal at 110 and 107cm. 4cm rounded flints (1 black 1 red), 107-110cm occasional rounded 0.5-3cm gravel to top Eroded parent material as primary fill (loessic?), NB this layer apparently forms the central basal fill of ditch but context 6249 (described as red orange silty clay, redeposited "natural"), not recovered by monolith, may have formed the primary fill on west side of feature	**E**

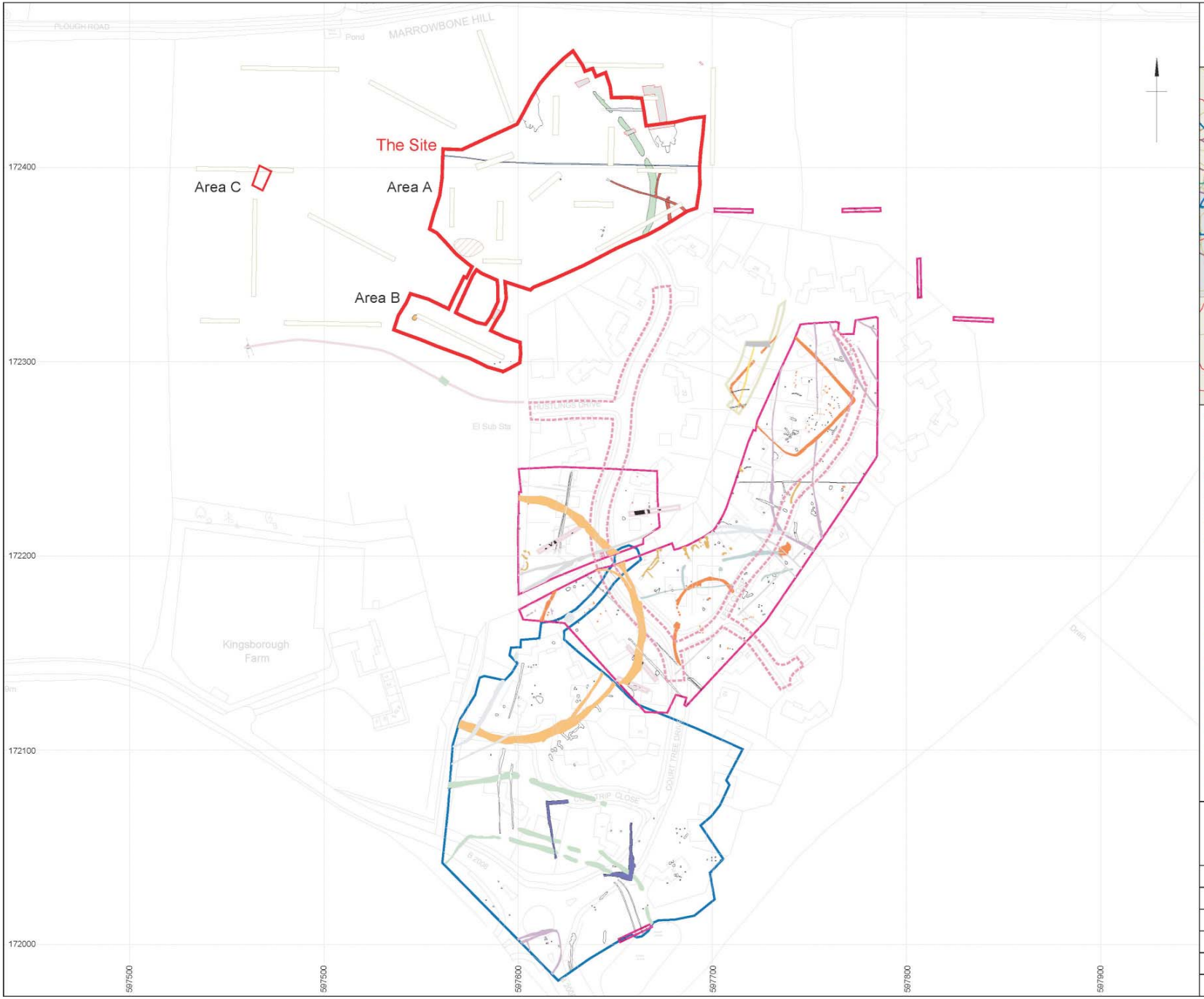
Ditch segment 1, group 6046 , cut 6134 2 overlapping monoliths: <1247> at 40-90cm below ground surface, monolith <1248> 35cm long, total sequence 80cm. Section drawing 36A (ground surface, top of unit 1)				
Depth [1] (cm)	*Pollen Samples Taken*	*Context & Excavators description*	*Description*	
0-30	None	6130	As below, 2.5Y 4/4 olive brown dry compact clay, slight increase in silt to top. Defined worm burrows, reworking to base of unit. Rare fine rootlets and Mn staining, strong coarse Fe staining increasing to the top, becoming common. Occasional sub-angular-rounded flint clasts 0.5-2cm, 2-3mm charcoal at 7,8,12 & 13cm. Diffuse boundary Soil formed on colluvium (B horizon?)	**B**
30-43		6109	2.5Y 4/4 olive brown dry compact clay divided into small blocky peds, c.30% sub-rounded-rounded gravel 1-5cm, Occasional macropores, occasional medium faint Fe mottles, rare fine rootlets. Clear-diffuse boundary Colluvium, (there is some indication this is an inorganic stasis horizon, with post-deposition alteration)	**C**
43-61		6132	2.5Y 5/3 light olive brown silty clay, occasional small macropores, common strong coarse Fe mottles [7.5Y 4/6 strong brown]. Occasional rounded red gravel 2-4cm. 2mm charcoal at 48cm, rare Mn staining, rare fine (recent) rootlets. Clear boundary Colluvium	**D**
61-80			2.5Y 6/3 light yellowish brown clean, soft massive coarse silt-fine sand, rare strong Fe mottling [7.5Y 4/6 strong brown]. 74-77cm concentration of sub-angular-rounded flint pebbles 2-3cm. *1cm fragment wood charcoal at 64cm (removed for possible dating)**, 2x2mm charcoal at 68cm, 1mm fragments at 62 and 64cm. Rare 1cm angular flints Eroded parent material as primary fill (loessic?), *Substantial quantities of charcoal were incorporated the fragment * removed for dating (now in fridge) probably relates to initial infilling of the ditch but may have been reworked (therefore earlier than fill) from elsewhere on-site. Notably, the majority of the charcoal comes from the upper part of this unit and there may be a delay in its deposition after cutting and initial in-filling (so later date). CJS has potentially more suitable dating material*	**E**

Ditch segment 3, group 6088, cut 6112, (southern terminus of northernmost enclosure segment) overlapping monoliths: <1220> at 0-42cm, monolith <1221> 42cm long, total sequence 72cm. Section drawing 46A (ground surface, top of unit 1)				
Depth (cm)	*Pollen Samples Taken @*	*Context & Excavators description*	*Description*	
0-16	6cm 14cm	6172 puddled silt, frequent stones	2.5Y 4/4 olive brown slightly organic silty clay. Well-developed fine-medium blocky structure, common medium-coarse Fe mottles, occasional fine rootlets. No visible inclusions (occasional randomly distributed gravel recorded in excavation). Diffuse boundary Soil (upper B or truncated A/B horizon) formed on colluvium	**A**
16-32	22cm 30cm	6171 pale grey silty clay, stones, leached	2.5Y 5/4 light olive brown heavily Fe stained clay silt c.15% rounded-sub-rounded clasts 0.3-2.5cm (larger clasts concentrated 24-30cm. Rare fine desiccated rootlets, common wood charcoal to base of unit. Moderately developed fine-medium blocky structure. Clear boundary Soil (B horizon) formed on colluvium	**B**
32-60	38cm 46cm 54cm 58cm	6168-6169 light grey windblown? and grey-brown silt, charcoal flecks	2.5Y 6/2 light brownish grey clay silt, common fine comminuted charcoal, occasional 2-3mm weak medium blocky structure, common faint medium Fe mottling. 3cm rounded flint at 50cm. Clear boundary. Colluvium, (there is some indication this is an inorganic stasis horizon, with post-deposition alteration) NB Two contexts suggested on site not differentiated from monolith.	**C?**
60-66	62cm	6167 orange grey silty clay from collapse of sides	10YR 5/3 brown clay silt, common small macropores, occasional 3-5mm charcoal. Faint bedding/ laminations. Rare faint fine Fe mottling notably along fine root voids. Clear boundary Water-sorted/ in-wash of colluvium	**D?**
66-72	66cm 70cm	6166 pale clay silt redeposited natural	2.5Y 6/2 light brownish grey pale gleyed silty clay. Common strong medium Fe staining [7.5YR 4/6 strong brown]. Occasional small lenses soft orange silt [2.5Y 5/4 light olive brown] rare 3mm charcoal Eroded parent material as primary fill NB although not observed in the monolith, the excavators observed "blocks of laminated material" and suggested the layer represented "one event/ major collapse".	**E?**

Ditch segment 3, group 6088, cut 6112, (southern terminus of northernmost enclosure segment) overlapping monoliths: <1220> at 0-42cm, monolith <1221> 42cm long, overlap not marked or depth given, believe 12cm overlap, total sequence 72cm. Section drawing 46A (ground surface, top of unit 1)				
Depth (cm)	*Pollen Samples Taken @*	*Context & Excavators description*	*Description*	
0-16	6cm 14cm	6172 puddled silt, frequent stones	2.5Y 4/4 olive brown slightly organic silty clay. Well-developed fine-medium blocky structure, common medium-coarse Fe mottles, occasional fine rootlets. No visible inclusions (occasional randomly distributed gravel recorded in excavation). Diffuse boundary Soil (upper B or truncated A/B horizon) formed on colluvium	**A**
16-32	22cm 30cm	6171 pale grey silty clay, stones, leached	2.5Y 5/4 light olive brown heavily Fe stained clay silt c.15% rounded-sub-rounded clasts 0.3-2.5cm (larger clasts concentrated 24-30cm. Rare fine desiccated rootlets, common wood charcoal to base of unit. Moderately developed fine-medium blocky structure. Clear boundary Soil (B horizon) formed on colluvium	**B**
32-60	38cm 46cm 54cm 58cm	6168-6169 light grey windblown? and grey-brown silt, charcoal flecks	2.5Y 6/2 light brownish grey clay silt, common fine comminuted charcoal, occasional 2-3mm weak medium blocky structure, common faint medium Fe mottling. 3cm rounded flint at 50cm. Clear boundary. Colluvium, (there is some indication this is an inorganic stasis horizon, with post-deposition alteration) NB Two contexts suggested on site not differentiated from monolith.	**C?**
60-66	62cm	6167 orange grey silty clay from collapse of sides	10YR 5/3 brown clay silt, common small macropores, occasional 3-5mm charcoal. Faint bedding/ laminations. Rare faint fine Fe mottling notably along fine root voids. Clear boundary Water-sorted/ in-wash of colluvium	**D?**
66-72	66cm 70cm	6166 pale clay silt redeposited natural	2.5Y 6/2 light brownish grey pale gleyed silty clay. Common strong medium Fe staining [7.5YR 4/6 strong brown]. Occasional small lenses soft orange silt [2.5Y 5/4 light olive brown] rare 3mm charcoal Eroded parent material as primary fill NB although not observed in the monolith, the excavators observed "blocks of laminated material" and suggested the layer represented "one event/ major collapse".	**E?**

Feature 6238 (dry valley/coombe) 2 overlapping monoliths: <1216> at 60-100cm below ground surface, monolith <1217> 95-138cm. Description of sediments 0-60cm from own field descriptions of adjacent section. Section drawing 31 (ground surface, top of unit 1)				
Depth (cm)	*Samples Taken*	*Context & Excavators description*	*Description*	
0-20cm		6229 topsoil/ A2, sandy silt	10YR 4/4 dark yellowish brown disturbed, slightly loose organic clay loam, modern vegetation and roots. Sharp boundary Dumped topsoil	**1**
20-63cm		6230 made up layer gravel and silty clay (redeposited Natural)	Mottled 10YR 5/4 yellowish brown and 7.5YR 5/6 strong brown slightly gleyed clay matrix, with 50% unsorted sub-rounded-rounded 0.5-6cm gravel randomly distributed and orientated. Occasional small quartzite pebbles and fire cracked flints. Abrupt boundary Mixed, dumped colluvium and parent material	**2**
63-66cm		6231 buried topsoil, sandy silt. Finds: clay pipe, PM pottery	10YR 3/2 dark greyish brown organic crumbly silt loam with numerous fine rootlets. Gradual boundary Recent truncated soil A horizon	**3**
66-91cm		6232 Buried Ac? Sandy silt, pebbles lower third	10YR 4/4 dark yellowish brown soft organic clay silt. Medium moderately developed blocky structure (accentuated by desiccation?) occasional fine roots Diffuse irregular band of small-medium gravel at 80cm. A fragment of clay pipe was noted at *c*.71cm, 2mm charcoal at 78cm. 1 soft rounded 1cm chalk fragment at 81cm. Boundary diffuse Recent soil B horizon, formed on colluvium, possible gravel fan represented	**4**
91-103cm	Kubiena 95-117cm	6233 Buried TS? Pale compact silt. Poss BA potterey and worked flint	10YR 4/6 dark yellowish brown soft friable clay silt. Rare sub-angular to rounded flint gravel 0.5-3cm, no structure observed. Clear boundary, numerous macropores, occasional fine rootlets Colluvium (NB some loessic content?)	**5**
103-111cm			10YR 3/3 dark brown slightly organic clay silt above and forming matrix for defined band of small-medium rounded gravel {in field section and mono, not on section drawing}. Occasional charcoal, pottery and fire-cracked flint noted in this layer, numerous macropores. Clear boundary Colluvium, containing eroded topsoil sediments and stones from gravel fan	**6**
111-138 cm		6234 ?colluvium, homogenous sterile clay silt	111-115cm 10YR 4/4 dark yellowish brown silt. Similar to below but slightly paler and cleaner, possibly bleached. No structure 115-138cm 7.5YR 4/6 strong brown Fe rich soft clay silt, occasional root voids and worm burrows, numerous macropores and dessicated fine rootlets Rw (cf. Brickearth)	**7**

Feature 6190 (Deep coombe/ erosion gully) overlapping monoliths: <1213> at 0.26-1.19cm below ground surface, monolith <1> 180-280cm (61cm gap between monoliths). Section drawing 1 (ground surface, top of unit 1)				
Depth [1] (cm)	*Samples Taken*	*Context & Excavators description*	*Description*	
0-15 (17)	None	6178? Building sand, mulch	10YR 2/2 very dark brown crumbly loose highly organic loam, no clear structure, occasional desiccated herbaceous stem and rootlets. Abrupt sloping boundary Dumped topsoil	**1**
15 (17)-18 (19)			10YR 4/4 dark yellowish brown silty clay, occasional small lenses 2.5Y 5/3 light olive brown clay. Abrupt sloping boundary Recent dumped natural/ regalith	**2**
18 (19)-23		6179?	10YR 3/2 very dark greyish brown dry compact organic silt loam, occasional rounded pebbles 2-3cm, occasional fine rootlets. Clear-diffuse boundary Recent truncated soil A horizon	**3**
23-46		6180? silty clay, Fe and Mn, rounded pebbles	10YR 3/4 dark yellowish brown moderately organic compact dry clay silt, rare rounded pebbles 0.3-2cm. Common fine rootlets, weak blocky structure, Fe deposition on inter-ped faces and in voids. Clear boundary Recent soil B horizon formed on colluvium	**4**
46-75		6181-6182? mottled Fe silty clay clay rounded pebbles	10YR 4/4 dark yellowish brown clay silt, common coarse strong Fe mottles (7.5YR 6/8 reddish yellow. Occasional macropores and fine rootlets. 58-61cm 3cm chipped sub-angular flint, 72-75cm >6cm chipped sub-rounded flint (both unworked). 3mm charcoal at 64cm. Diffuse boundary Colluvium (clasts apparently damaged during rolling i.e. derived)	**5**
75-241.5	(associated bulk sample taken from this layer)	6183 silty clay with pebbles	10YR 4/3 brown soft clay silt, occasional large macropores, common coarse medium Fe mottles. 79-81cm 5cm sub-angular flint, rare sub-angular-rounded flints 0.5-3cm 29-34cm. Occasional fine comminuted charcoal 35-37cm, 2mm charcoal at 19cm, 4cm angular fire-cracked flint 47-51cm. 83cm thin defined band of Fe deposition. Mn nodule at 54cm, increasing macropores and Mn filled root pseudomorphs from 11cm upwards, slight increase in organic content/ Mn staining to top. Decreasing clay to 28cm. Diffuse boundary Dominantly colluvium, decreasing weathered clay parent material input up profile. Some water sorting of the sediment is indicated. Post-depositional alteration to top	**5/6?**
241.5-254cm		Natural	2.5Y 5/3 light olive brown with coarse common Fe mottles (7.5YR 6/8 reddish yellow massive soft silty clay, no inclusions or structures. Rw/ reworked Rw	**7**



Wessex Archaeology

- 2004 Wessex Archaeology Excavation
- 2001 Wessex Archaeology Excavation
- 2000 Wessex Archaeology Excavation
- 2000 Wessex Archaeology Evaluation
- 1999 Wessex Archaeology Roadline Evaluation
- Archaeology South East Excavation
- Oxford Archaeology Evaluation

- Neolithic
- Bronze Age
- Late Bronze Age
- Late Bronze Age/ Early Iron Age
- Mid-late Iron Age
- Late Iron Age/ Romano-British
- Romano-British
- Saxon
- Medieval
- Post-medieval
- Post-medieval/ modern
- Undated
- Natural

Revision Number:	0
Illustrator:	LJC
Date:	18/10/04
Scale:	1:2000
Path:	Y:\PROJECTS\57170\D..O..

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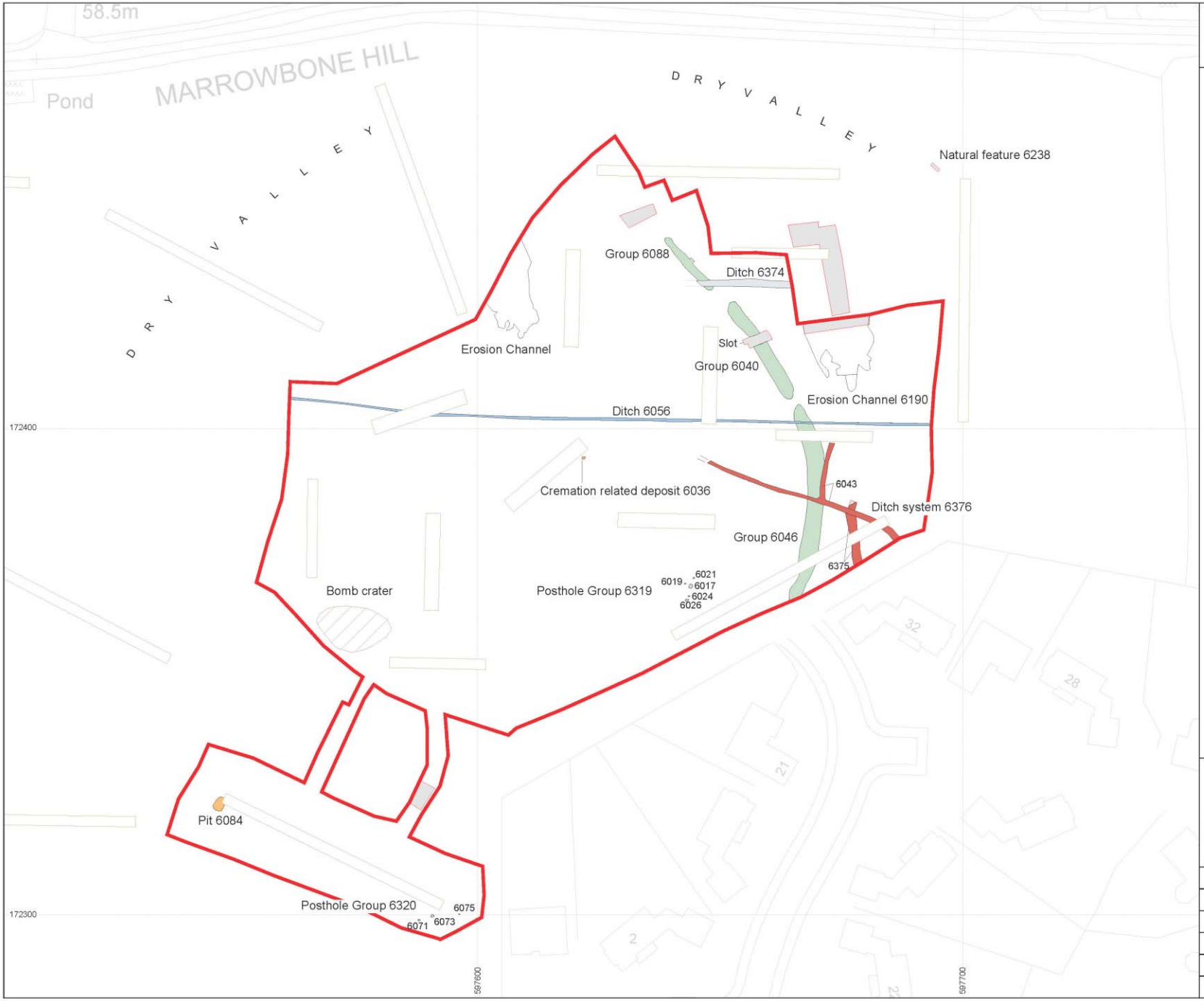
Site location in relation to previous archaeological investigations

Figure 1



Wessex Archaeology

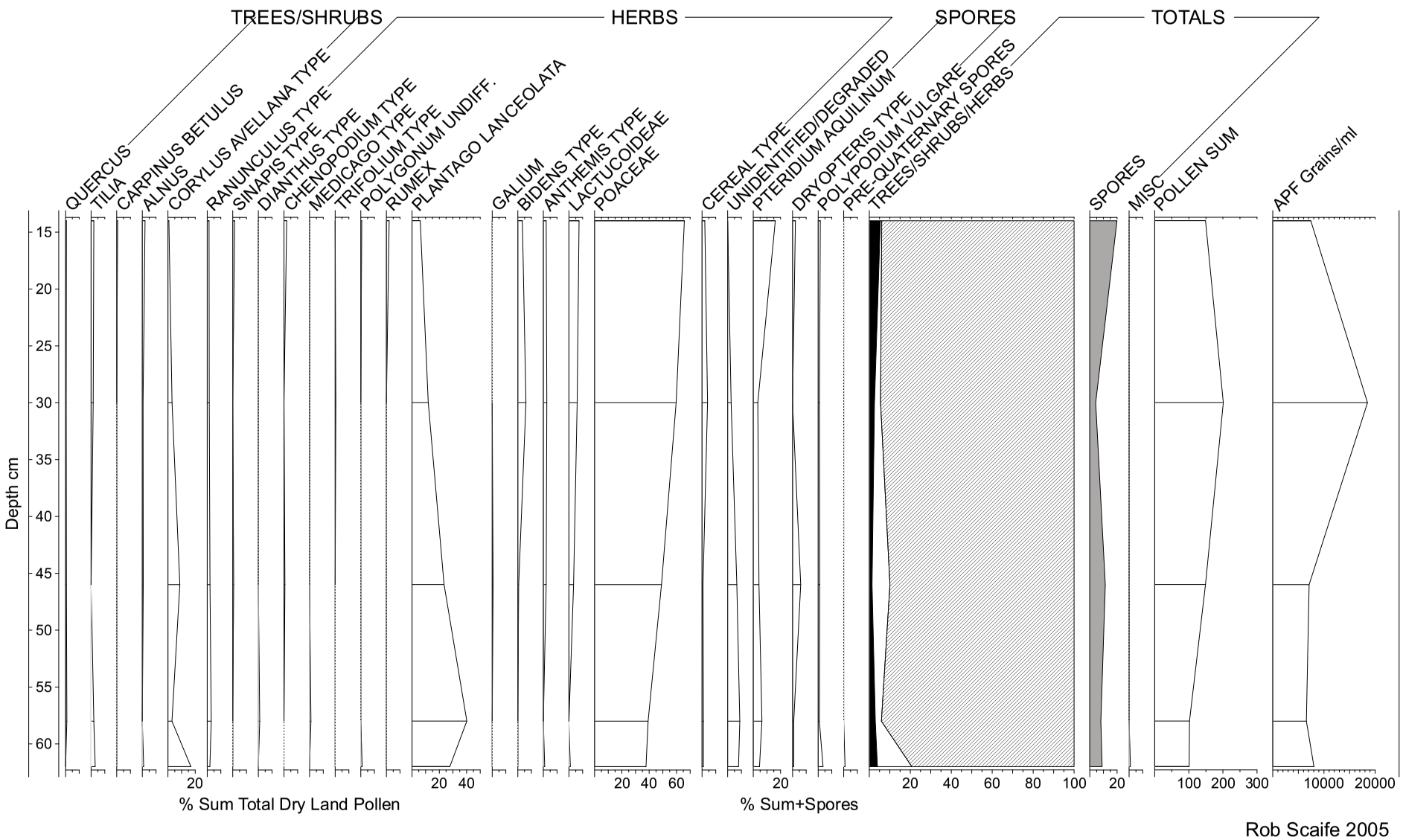
Neolithic
Bronze Age
Late Bronze Age/Early Iron Age
Medieval
Post-medieval
Undated
Machine slot

Revision Number:	0
Illustrator:	LJC
Date:	20/10/04
Scale:	1:800
Path:	Y:\PROJECTS\57170\

Drawing Office\Report Figures\Assessment\04_10_18\Assess.dwg

Plan of archaeological features

Figure 2



Pollen diagram

Figure 3

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