Archaeology South-East

ASE

Post-excavation Assessment and Updated Project Design Report Archaeological Excavation on Land South of the A259 New Road Littlehampton West Sussex

NGR TQ 505350 103320

ARUN DISTRICT COUNCIL

ASE Project No: 3307
Site Code: SRB05

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Abstract

This is a post-excavation assessment of an archaeological strip, map and sample excavation and watching brief undertaken at Land South of the A259 New Road, Littlehampton, West Sussex. The archaeological works were commissioned by Ramboll on behalf of Store Property Investments Limited in advance of proposed commercial re-development.

The total area excavated was approximately 1 hectare in size, and was undertaken between 29th October and 22nd November 2013. The earliest phase of activity was a Middle Bronze Age enclosure, field boundary ditch and burnt mound. The burnt mound included an associated hearth, trough and waterhole. Later activity included a prehistoric droveway and Late Iron Age/Roman field boundary ditches.

The report is written and structured so as to conform to the standards required of post-excavation analysis work as set out in Management of Research Projects in the Historic Environment (MoRPHE), Project Planning Notes 3 (PPN3): Archaeological Excavation (English Heritage 2008). Interim analysis of the stratigraphic, finds and environmental material has indicated a provisional chronology, and assessed the potential of the site archive to address the original research agenda, as well as assessing the significance of those findings. This has highlighted what further analysis work is required in order to enable suitable dissemination of the findings in a final publication. It is suggested that this should take the form of an article c. 5,000 words.

1.0 INTRODUCTION

1.1 Site Location

1.1.1 The site is bounded to the north by the A259 New Road and to the south by the main West Coastway railway line and a minor watercourse, Rustington Stream. The eastern boundary is formed by Mill Lane and the site is bounded to the west by an area of undeveloped floodplain (Figure 1).

1.2 Geology & topography

1.2.1 The underlying geology of the site is brickearth and Brighton-Norton Raised Beach deposits (British Geological Survey 1: 50,000, Sheets 317 and 332). The topography of the site is dictated by the sinuous Rustington Stream along the southern site boundary. The site can be divided into 3 topographical areas: a relatively-level top of bank (at the *c.* 3m OD contour); the bank sloping down to the floodplain, and the floodplain itself (*c*. 2m OD).

1.3 Scope of the project

1.3.1 Archaeology South-East (ASE) was commissioned by Ramboll, on behalf of Store Property Investments Limited, to undertake an archaeological strip, map and sample excavation (2013) and a subsequent watching brief (2016) on the site of a proposed re-development at land south of the A259 New Road, Littlehampton, West Sussex, hereafter referred to as 'the site' (centred on NGR: TQ 505350 103320).

1.3.2 The work was undertaken under the terms of Planning Condition 13 of Arun District Council's planning permission (reference A/44/06).

Planning Condition 13 of A/44/06 stated:

'*No development shall take place on the site until the Applicants have secured the implementation of a programme of archaeological work in accordance with a written scheme of investigation which has been submitted by the applicant and approved by the Local Planning Authority. Reason: The site is of archaeological significance and it is important that it is recorded by excavation before it is destroyed by development in accordance with policies CH7 of the West Sussex Structure Plan and AREA 17 of the Arun District Local Plan'*

1.4 Circumstances and dates of the work

1.4.1 An initial investigation of the site comprising 25 evaluation trenches identified significant archaeological remains (ASE 2005). In response to these findings West Sussex County Council (WSCC) requested a strip, map and sample excavation of two areas; Area 1 in the east and Area 2 in the west, targeted on identified archaeological remains (Figure 2). Area 1 was located at the top of the bank and Area 2 covered the top of bank and the bank to the edge of the flood plain. Archaeology South-East produced a *Written Scheme of Investigation* (WSI; ASE 2013) which was duly approved by WSCC and the subsequent excavation was mostly undertaken in accordance with this document. The exception to this was the southern section of Area 2 which had been shown during the previous evaluation to be the partially infilled

channel of the Black Ditch and to contain c. 2m + depth of alluvial deposits. The original proposal, as set out in Section 4.1 of the WSI (*ibid*.), involved the excavation of 3 x *c.* 30m long stepped trenches through the alluvial deposits to facilitate their recording in section. However, at the time of excavation the lower southern section was saturated with groundwater and excavation of the trenches was not possible. It was therefore agreed with Andy Shelley, Ramboll Archaeological Consultant and the WSCC Senior Archaeologist that the southern area would not be trench excavated but investigated by a hand auger survey, which would describe the lithology of the sequence; create a deposit model; and recover samples for palaeo-environmental assessment and absolute dating.

1.4.2 With this in mind, Area 2 was limited in size because of the potential for the contamination of Rustington Stream with runoff from the open excavations. During the groundworks, a watching brief was carried out during the excavation of a retaining wall footing and attenuation tank cut.

1.4.3 The excavation fieldwork was undertaken between 29th October and 22nd November 2013 and the watching brief was carried out between 7th March and 6th June 2016, under site code SRB05 and ASE Project Number 3307 AND 160070. The weather during the excavation was almost entirely unremitting heavy rain and the site conditions were very difficult. The identification and excavation of features was hampered by standing water.

1.5 Archaeological methodology

1.5.1 The topsoil and subsoil from across both excavation and watching brief areas was stripped by machine under archaeological supervision and then all exposed archaeological features were excavated by hand in accordance with the methodology laid out in the WSI (*ibid*.). The fieldwork was monitored by WSCC's Environment and Heritage Office.

Palaeoenvironmental Methodology

1.5.2 The area south-west of Area 2 clearly demonstrated a topographic low and in order to better understand the deposits an auger survey was carried out (for full core logs see Appendix 4). Using an Eikjelcamp hand auger a total of 35 cores were placed over the area. The lithology was recorded using the Troels-Smith (1955) system of sediment classification. The scheme breaks down a sediment sample into four main components and allows the inclusion of extra components that are also present, but that are not dominant. Key physical properties of the sediment layers are also identified according to darkness (Da), stratification (St), elasticity (El), dryness of the sediment (Dr) and the sharpness of the upper sediment boundary (UB) (Appendix 5).

1.5.3 The results of the auger survey were used to produce a deposit model within ArcGis. The data was interpolated using a tension Spline which creates a smoothed surface using irregularly spaced data. A colour ramp is used in order to clearly demonstrate changes in altitude in the underlying gravel surface and overlying Holocene sediments.

1.5.4 Two sediment sequences were also recovered for analysis using a Russian auger and were sub-sampled for pollen and microfossils at ASE. The lithological description was supplemented by digital photography.

1.5.5 A total of eight sub-samples were extracted for palynological analyses as follows: (1) sampling a standard volume of sediment (4gms); (2) adding two tablets of the exotic clubmoss *Lycopodium clavatum* to provide a measure of pollen concentration in each sample; (3) deflocculation of the sample in 1% Sodium pyrophosphate; (4) sieving of the sample to remove coarse mineral and organic fractions (>125µ); (5) acetolysis; (6) removal of finer minerogenic fraction using Sodium polytungstate (specific gravity of 2.0g/cm^3); (7) mounting of the sample in glycerol jelly. Each stage of the procedure was preceded and followed by thorough sample cleaning in filtered distilled water. Quality control is maintained by periodic checking of residues, and assembling sample batches from various depths to test for systematic laboratory effects. The assessment procedure consisted of scanning the prepared slides and noting the concentration, preservation and main taxa of pollen and spores on 10% of the slide. Pollen grains and spores were identified using the University of Reading pollen type collection and the following sources of keys and photographs: Moore *et al* (1991); Reille (1992). The concentration of microscopic charred particles is also recorded.

1.5.6 A total of eight subsamples were selected for microfossil (ostracods/foramnifera) assessment. The sediment samples, in each case, were broken up by hand into very small pieces and placed in ceramic bowls. They were then dried thoroughly in an oven. A little sodium carbonate was added (to help remove the clay fraction) and boiling water was poured over the sample. After soaking overnight each sample was then washed through a 75 micron sieve with hand-hot water and the resulting residue decanted back into the bowl for drying in the oven. In all cases a single washing produced a satisfactory breakdown. After final drying the samples were placed in labelled plastic bags. Picking was undertaken by first dry-sieving each sample into >500, >250, >150 and >75 micron fractions, then sprinkling a little of each fraction at a time onto a picking tray. A representative fauna of foraminifera and ostracods, where present, was then picked out into a 3”x1” faunal slide and a semi-quantitative estimate of each species made by experience and by eye (on a several specimens/common/abundant basis). Notes were also made of other important organic remains in each of the sample. These data were then logged on a spreadsheet.

1.6 Organisation of the report

1.6.1 This report is written and structured so as to conform to the standards required of post-excavation analysis work as set out Management of Research Projects in the Historic Environment (MoRPHE), Project Planning Notes 3 (PPN3): Archaeological Excavation (English Heritage 2008).

1.6.2 The report seeks to place the results from the site (hitherto referred to together as ‘the site’) within the local archaeological and historical setting; to quantify and summarise the results; specify their significance and potential, including any capacity to address the original research aims, listing any new research criteria; and to lay out what further analysis work is required to enable their final dissemination, and what form the latter should take.

1.6.3 The aim of the report is to provide a framework for carrying the report through to publication, including the resources required for analysis, publication and archiving. This report outlines the results of the fieldwork and the assessment of the finds and environmental samples. The significance of the results and the potential for further study are discussed in Section 6. Section 7 outlines

the revised research aims and Section 8 describes the further work required; following which a publication synopsis and breakdown of resources is presented.

1.6.3 Following on from the previous archaeological evaluation conducted by Archaeology South-East (ASE 2005; Trenches 1 – 25; Figure 2) work at the site ran as a single excavation, with the finds and environmental archives all recorded under a single site code: SRB05. Where relevant, the results from the evaluation have been integrated and assessed with the results from the main excavation and watching brief.

2.0 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

2.1 The site lies in an area of the Coastal Plain rich in known archaeological remains. A watching brief undertaken immediately to the north of the site during the construction of the A259 New Road, resulted in the observation of a range of archaeological features including a Bronze Age urned cremation burial, evidence of at least one Bronze Age burnt mound, and scatters of flintwork and Late Iron Age/Roman material. Two small Roman sites were also excavated further to the west as part of the same project. Other work has also been carried out in the immediate vicinity which identified Iron Age/Roman remains.

2.2 It is also worth noting that Angmering Roman villa lies *c.* 1km south of the site. This is a 1st- and 2nd-century winged main house with an architecturally elaborate bath-house (Gilkes 1999).

2.3 The evaluation of the site (ASE 2005) showed that its eastern extent had been truncated by a former site compound and probably the construction of a previous golf course. In Trenches 2, 3 and 5 a previous channel was recorded lying in a north-west to south-east alignment. Adjacent to this channel were a number of associated features of a prehistoric and Roman date along with a quantity of burnt flint, which may have been indicative of a burnt mound nearby, targeted by excavation Area 1. Mid to Late Bronze Age gullies in Trench 14 and undated probably prehistoric features in Trench 15 suggested another area of activity, targeted by excavation Area 2.

2.4 The earliest known map of the site, a draft Ordnance Survey map of 1800 (not illustrated), shows the course of the stream to the immediate south of the site, and a complex of buildings labelled as 'Ham' to the north. The field in which the site is situated is sub-divided by a number of hedges and there is a boundary running parallel to the stream. The windmill on Mill Lane is marked to the south-east, with a trackway on a different alignment to the current road some distance to the east of the site. The enclosure map of 1810 does not show the site in detail, although the windmill is marked.

2.5 The Bargham and Ham Tithe Map of 1847 covers the vast majority of the site and clearly shows the current alignment of the stream and position of the railway line (not illustrated). The owner of the land is given as William Gratwicke Kinleside Esq. and the tenant is John West Heasman. The land immediately adjacent to the stream is listed as 'Long Ozier Bed'. A small parcel of land in the extreme south-eastern corner of the site lay in Rustington parish and is listed under the same ownership. An inn is shown close to the windmill.

2.6 The Ordnance Survey maps of the 1870s show the site as part of one large field situated between the stream and Ham House to the north. By the 1890s there has been no discernible change within the boundaries of the site, although a brick-works had been constructed to the south of the railway line. By the 1910s there has been further development to the south, with the construction of a nursery, but again there has been no obvious change to the site.

2.7 By the 1930s there has been considerable change to the south, with the appearance of a residential development including a graveyard (which

survives to this day amongst the current industrial units). The field in which the site is situated has also been sub-divided with extremely straight hedges. The 1940s map shows considerable development to the south, and some alterations at the site with the encroachment of a roughly marked golf course at the extreme eastern end of the site, resulting in removal of parts of the new hedge lines.

3.0 ORIGINAL RESEARCH AIMS

3.1 The aims and methodology of the excavation were outlined in the WSI (ASE 2013) and are reproduced here as original research aims (ORAs):

- ORA1: Identifying and defining the character, development and extent of the later prehistoric and Romano-British activity identified in the preceding evaluation.

- ORA2: Determining the nature of features associated with the previous channel and determining whether they were associated with water management.

- ORA3: Determining whether a burnt mound lies on or potentially near the site.

4.0 RESULTS

4.1 All context numbers are shown in square brackets and group numbers are prefixed G. Where sub-groups are referred to, the shorthand SG is applied. The context register of the excavation is in Appendix 1.

4.2 Quantification of Site Archive

Type	Quantity	Notes
Context sheets	242	Individual context sheets
Section sheets	5	A1 multi-context permatrace sheets
Digital plans	1	Multi-context DWG plan
Photos	1film 1 film 161	Black and white transparency Colour slide Digital
Environment sample sheets	35	Individual sample sheets
Context register	7	
Environment sample register	2	
Photographic Register	9	
Drawing register	5	
Small finds register	1	

Table 1: Quantification of site archive

4.3 Palaeoenvironmental Results

(Figure 3)

4.3.1 The auger survey demonstrated that deposits up to 3.50m thick were preserved at the site (see Figures 3 and 11). These deposits have been divided into 5 units which overlie the basal gravels/chalk deposits. The underlying hard geology was mostly unrecoverable with the hand auger apart from where it was sufficiently weathered to be broken down into pieces small enough to fit inside the 2cm wide chamber. Another feature of the sediments were the presence of modern, deep penetrating stems of what appeared to be *Equisetum palustre* (marsh horsetail), a wet grassland plant, which in some instances could be seen throughout the metre of sediment recovered in the chamber. The sediment surrounding this rooting was oxidised and it was thought that this may have had an adverse effect on the preservation environment. However microfossils were well preserved as discussed below.

4.3.2 The lowest deposit encountered was a smooth grey silt (Unit 1) which contained occasional twig and shell fragments, c.0.30m thick. The organic component of this deposit was well-humified although in places monocot remains were visible and the sediment was occasionally black indicating a high organic content. This sediment is indicative of a low energy depositional environment.

4.3.3 Unit 1 was overlain with a sharp contact by a shelly sand deposit (Unit 2) which may indicate a shift of depositional conditions at the site. This was a thin deposit c. 0.17m and was a short-lived influx of coarse sediment possibly under high energy conditions before lower energy conditions returned to the site. The sources of this shell are unknown and may indicate a reworking of older deposits at the site under a changing fluvial regime.

4.3.4 This was overlain by Unit 3, a dark grey-black silt, again with visible plant remains and well humified organics, up to 2.1m thick. This deposit became lighter in colour towards the top of the profile where iron oxide mottling was recorded. The change in colour and reduction in organic content towards the top of the profile indicates the limit of water-table which has allowed the organic component to become oxidised and therefore more readily broken down.

4.3.5 The overlying stiff, red-brown silt-clay (Unit 4) was mixed with stones and chalk fragments throughout (*c.*1m) and demonstrated a sharp lower contact with Unit 3. This deposit appears to be colluvial in origin and was extremely dry despite the survey being carried out in winter when water tables are at their highest.

4.3.6 The sub-surface model that has been produced demonstrates the slope of the underlying gravels/chalk (Figure 3). The sample site lies at the edge of a much wider topographic low to the west which is clearly still wet grassland as evidenced by the presence of rushes (*Juncus* sp.). The auger survey was carried out at the edge of this feature where it curves to the north before curving back towards the channel. The active, modern channel cuts through these sediments and may be fairly late in date.

4.4 Archaeological Excavation Results

4.4.1 Natural Deposits

4.4.1.1 The natural geology was chalk with superficial deposits of Brighton-Norton Raised Beach deposits, overlain by a cap of brickearth and alluvium adjacent to the Rustington Stream (BGS website).

4.4.2 Residual Earlier Prehistoric Material

4.4.2.1 There was little residual earlier material. This consisted solely of six struck flints of Mesolithic to Early Bronze Age date and a single sherd of Early Bronze Age pottery.

4.4.3 Period 1: Middle Bronze Age (*c.* 1500 – 1150 BC)

Area 1: Enclosure 1 (Figure 4)

4.4.3.1 Located on the top of the bank, directly overlooking Rustington Stream to the south, was the northern portion of Enclosure 1. Although the full extent of the enclosure was not seen, it appeared to be of irregular shape in plan, with a sinuous outline and covered an area of at least 20m by 25m.

4.4.3.2 Forming the enclosure were two ditches: G5/G29 in the north and west and G6 in the east. Both ditches were shallow, no more than 0.4m deep, and generally with steep sides and a flat base. Most of the ditches were filled by one or two deposits of grey clay silts with occasional finds of Middle Bronze Age to Middle/Late Bronze Age pottery sherds, representing a gradual accumulation within the open enclosure ditches. Little of the eastern ditch (G6) was seen but it may have formed a wide entrance open to the north-east with the western ditch (G5). More was seen of G5, a sinuous boundary composed of intermittent ditch lengths. One length in particular (SG23; section 1) was notable, differing from the rest of the enclosure in having a deeper profile and a significant finds assemblage.

4.4.3.3 The intermittent nature of the enclosure, composed of both segmented ditch lengths and the occasional shallow pit, indicates that this was likely to have been more of a symbolic definition of space rather than a function feature, such as for defence or drainage.

4.4.3.4 Ditch length SG23 was 2.6m long, 0.5m wide, 0.6m deep and dug with vertical sides and an uneven base. The feature had been dug through the natural brickearth to the interface with the underlying chalk bedrock. Almost half of the original depth of the ditch had silted up with grey silt clay [143], before a *c.* 0.2m thick fill of burnt material [144] along the length of the open feature. This consisted of charcoal lumps and flecks, fire-cracked flint and burnt clay, including daub fragments with wattle impressions. The fragile burnt daub would certainly have originated from the near vicinity, most likely from structures within the enclosure. A notable finds assemblage was also recovered, including large pottery sherds from a fineware vessel and at least half an urn and six clay weights (RFs <1-6>), both complete and fragmentary.

4.4.3.5 This fill may represent part of the burnt down remains of a roundhouse and its contents, and ditch length SG23 seems to have been specially selected for the burnt material, as no other ditch fill was remotely similar. The problems of

the identification of deliberate special deposition as opposed to simple discarded refuse in the archaeological record is well-known, although in this case there does seem to have been an element of structured deposition the filling of ditch SG23.

4.3.3.6 After the internment of burnt material [144], ditch SG23 was left to silt-up with grey silt clay SG12 filling the remainder of the open feature. A notable find from this deposit was a polished flake: a rare and enigmatic artefact-type (see struck flint section). As the flake was lightly burnt it may have originated from the underlying fill of burnt material [144], and have been one of the objects, along with the pottery and clay weights, selected for special, structured deposition.

4.3.3.7 Environmental samples from the enclosure ditch fills contained marcobotanical remains of barley, and the wood charcoal remains of oak, hazel and birch. Less well represented were the remains of wild/weed macrobotanicals including possible hawthorn, fruit stones, Goosefoot and knotweed.

4.4.3.8 To the immediate north-east of the entrance to Enclosure 1 was Hollow 1. Only the south side of this large feature ([103]) fell within the excavation area and its exact nature and function is unclear, but it may have been a large depression created by the slow erosion of traffic, both human and animal, over a considerable period of time.

4.4.3.9 Hollow [103] curved broadly east-east to north-south and was *c.* 1m deep with gently sloping sides and a flat base. The hollow had gradually silted up over time and was filled with grey brown silt [102/138] containing 11 sherds of Middle Bronze Age pottery.

4.4.3.10 External to the enclosure to the immediate west was small pit [155] containing the lower half of a pottery vessel placed upright, and it may have originally been interred complete with the upper portion lost to truncation. The vessel was filled with fire-cracked flint, a deposit probably related to the nearby burnt mound workings. Another pit [257] was also filled with similar fire-cracked flint deposits (although they lacked the pottery vessels), and these two pits can also be interpreted as some form of special deposition.

4.4.3.11 Within the enclosure was cremation burial pit [105]. Although the pit contained no datable finds, it seemed to be spatially related to this land-use. The age and sex of the individual could not be discerned from the recovered burnt bone.

4.4.3.12 Across the area were a series of small pits (G20), some containing a few sherds of Middle Bronze Age/Late Bronze Age pottery, but the majority of other features contained no dateable material and lacked any stratigraphic relationships. This lack of chronological refinement means that these features cannot be assigned to this period with full confidence. In addition, the pits were all insubstantial, with none deeper than 0.1m, and it is highly unlikely that these were structural remains.

4.4.3.13 Pit [122] contained a significant assemblage of macrobotanical remains, consisting almost entirely of barley caryopses and small wood charcoal flecks. This pit appeared to have been dug as part of Enclosure 1, and was

immediately adjacent to ditch segment SG23. Like the finds in ditch SG23, the barley may have been deposited as a special act.

Area 2: Burnt Mound and Field Boundary (Figure 5)

4.4.3.14 To the west of Enclosure 1 and possibly of contemporary use, was field boundary ditch G1 and an adjacent burnt mound. The burnt mound included all of the archaeological features commonly associated with these prehistoric water-heating sites, including a hearth, trough, and waterhole, as well as the burnt mound itself.

4.4.3.15 Field boundary ditch G1 followed the curving contour of the bank immediately above the level of the floodplain. To the north, ditch G11 aligned north-east up the bank and appeared to be a contemporary field division. The ditches contained few finds and do not seem to have been in the immediate vicinity of any settlement. However, the ditch in the area adjacent to the trough and hearth was filled with dumps of burnt mound material, charcoal-enriched silt and fire-cracked flint [224], demonstrating that the ditch was a contemporary open feature with the burnt mound working (see section on Figure 5).

4.4.3.16 The burnt mound features were tightly clustered at the junction of the bank and floodplain, located *c.* 20m from the existing stream course. This low-lying area retained water well during the excavation and was clearly an ideal location for a burnt mound site.

4.4.3.17 Trough [305] was 2.3m long, 1.88m wide and 0.5m deep with near vertical sides and a flat base. There was no evidence of any lining, although the trough was dug into the largely imporous natural brickearth. The primary fill of the trough was slumped redeposited natural brickearth with moderate charcoal flecking [332]. Above this was a typical burnt mound deposit of mottled grey and black charcoal-enriched silt and fire-cracked flint [306] containing five sherds of Middle Bronze Age pottery.

4.4.3.18 At the south-east end of the trough was hearth [325]. The hearth was a shallow scoop of reddened heat-affected clay, 1.2m long and 0.8m wide. The immediate proximity of the hearth allowed hot stones to be simply pushed into the adjacent water-filled trough.

4.4.3.19 Peppering the north-east and south-east sides of the trough were a series of small pits or postholes G14. These were without exception filled with burnt mound material and contained no datable finds, although they were almost certainly contemporary with the use of the trough. Postholes are commonly found adjacent to troughs and have been variously interpreted as representing windbreaks and sweat lodges. However, these features are unlikely to be either of these structures: they were not located on the side of the prevailing wind, the south-west, and nor did they form a complete circuit necessary for a sweat lodge. Their function therefore remains obscure.

4.4.3.20 To the south-east of the hearth and trough was large sub-circular waterhole [203], 4.1m in diameter and 2.3m deep with steep sides and a flat base. The waterhole was dug through the natural brickearth and deep (more than 1.5m) into the underlying porous chalk bedrock, allowing groundwater to pour rapidly into the open feature.

4.4.3.21 The primary fill was mottled grey and blue alluvial clay with frequent fire-cracked flint [307]. This fill was over 1.2m thick and can be interpreted as gradual filling by water-lain sediments and occasional waste dumps during the life of the burnt mound workings.

4.4.3.22 Above [307] was a series of dumped deposits of charcoal-enriched silt, fire-cracked flint and re-deposited natural brickearth ([204], [205] and [206]). This can be seen as a period of deliberate infilling of the waterhole and perhaps marking the end of the nearby burnt mound working.

4.4.3.23 Environmental samples of the lower waterhole fills produced moderate quantities of wood charcoal including oak, Maloideae, hazel, Leguminosae and cherry/blackthorn. These wood types probably represented the fuel used in the hearth, adjacent to the trough, to heat the stones.

4.4.3.24 After the infilling of the waterhole, it was unlikely to have been a visible landscape feature, and the dumps were sealed by alluvial silt [207] and a possible colluvial deposit of brown clay silt [208]. The latter deposit contained nine sherds of Middle to Late Bronze Age pottery.

4.4.3.25 Sealing all of the cut features, apart from the waterhole were deposits of burnt mound material [211] and [254]. Finds from the former were two flakes of Mesolithic to Early Bronze Age date and a single Early Bronze Age pottery sherd, all of which can be considered residual.

4.4.3.26 The burnt mound material extend over an area *c*. 12m by 12m and *c*. 0.2m thick with the north and east sides truncated by later features. In areas, such as Ireland, where burnt mounds still survive as distinct landscape features, these are generally horseshoe or crescent-shaped with a centrally located trough. The Rustington burnt mound lacked this distinctive shape and had clearly suffered degradation, such as from ploughing or soil creep.

4.4.4 Period 2: Middle/Late Bronze Age (*c*. 1500 – 800 BC)

Area 1: Droveway/trackway 1 (Figure 6)

4.4.4.1 This period has been distinguished from the earlier Period 1 largely based on stratigraphic relationships, and while there is some ceramic dating evidence for later Bronze Age activity, the pottery assemblages do not form clearly defined groups. Despite the ambiguity of the dating evidence, this period saw a clear change in land-use with the abandonment of Enclosure 1 and the presumed associated settlement activity, to be replaced with a double-ditched droveway/trackway.

4.4.4.2 Droveway/trackway 1 was aligned approximately south-east – north-west following the flat ground at the top of the bank and may well have been the successor route to Period 1 Hollow [103].

4.4.4.3 The droveway/trackway was 3.6m wide and defined by two intermittent ditches containing relatively few finds. The intermittent nature of the droveway ditches suggests the route may also have been defined by hedgerows, which have left no archaeological trace. There were potential entrances, between *c.* 2m and 5m in width on both the north and south sides. The droveway may have suffered truncation to the east and west, as continuations in these directions were not found. The route appears to have only been in use for

perhaps a few generations, and there is no evidence of any later activity, both prehistoric and historic, in this area.

4.4.4.4 The finds from the droveway were unremarkable, apart from a relatively large struck flint assemblage from ditch fill [158]. The composition of the assemblage of 157 struck flints, including 78 flakes, a core, four tested nodules and two hammerstones, is suggestive of the initial de-cortication stage of flint-knapping. The raw material of pebbles and cobbles used for the knapping is likely to have been derived from the underlying geology of Brighton-Norton Raised Beach deposits, eroding out of the bank immediately adjacent to the droveway. This assemblage can perhaps be best interpreted as representing a single opportunistic exploitation by a droveway traveller, rather than a sustained occupation.

4.4.4.5 There were no features of this date in Area 2, and the burnt mound working and the field boundary ditch had both fallen out of use. The area was presumable open ground during this and the later prehistoric period.

4.4.4.6 Two features were recorded in evaluation trenches that lay outside of Areas 1 and 2 (see Figure 2). Both features, small pit [6/014] and shallow gully [8/024] were located on top of the bank to the west of Area 2 and maybe interpreted as activity peripheral to the Droveway 1. Pit [6/014] contained nine sherds of Late Bronze Age pottery, eight struck flints and a small amount of fire-cracked flint. Gully [8/024] contained three struck flints.

4.4.5 Period 3: Late Iron Age/Early Roman (*c*. AD 10 – 70)

4.4.5.1 All of the Late Iron Age/Early Roman and later features were located in Area 2. These were all field boundary ditches following the contour of the bank, more or less on the same alignment as Middle Bronze Age ditch G1. This contour probably defined the higher, drier pasture from the floodplain. Five ditches (G2, G3, G27, G28 and G29) all aligned more or less north-west to south-east could be broadly phased to this period. Only ditch G2 contained finds, a single sherd of earlier Roman coarse black surfaced Arun Valley ware and residual Middle/Late Bronze Age pottery sherds. The other ditches contained no finds but their spatial alignment suggests they were likely to be contemporary.

Period 3.1 Field Boundary/Droveway (Figure 7)

4.4.5.2 Field boundary ditch G2 was relatively shallow (*c*. 0.2m deep) and terminated or petered out in the north-west. The ditch was filled by grey brown clay silts and contained a small assemblage of Late Iron Age/Early Roman pottery sherds. Ditch G2 appeared to be the northern part of a pair forming a droveway. The contemporary southern ditch could have been any one of G27, G28 and G29.

Period 3.2 Field Boundary/Droveway (Figure 8)

4.4.5.3 Ditch G3 was a direct replacement for ditch G2 and was dug on virtually the same alignment, partially cutting through the earlier ditch. Ditch G3 was of a similar size and form and contained a small assemblage of Late Iron Age/Early Roman pottery sherds, including a few sherds of Dressel 1 amphora, a Republican Italian wine vessel imported to Britain between *c*. 120 – 10 BC. Like earlier ditch G2, this is likely to have been the northern ditch of

a pair forming a droveway. Again, its southern contemporary ditch could be any one of G27, G28 and G29.

4.4.5.4 The only other feature dating to this period was cremation burial [266] on top of the bank. The age or sex of the individual could not be determined from the recovered burnt bone assemblage. The cremation burial appeared to have been interred in a necked jar of Late Iron Age/Early Roman date.

4.4.6 Period 4: Roman (*c*. AD 43 – 410)

(Figure 9)

4.4.6.1 Ditch G4 followed the same general alignment as the earlier ditches, as well as having a spur to the south, delineating three separate fields. There were a few finds of prehistoric flintwork and five sherds of Roman pottery from this relatively large feature.

4.4.7 Period 5: Medieval/Early Post-Medieval (*c.* AD 1275 - 1700)

(Figure 10)

4.4.7.1 A portion of medieval pit [15/038] was identified in evaluation trench 15 that lay outside Area 1 (see Figure 2). The pit was substantial, over 2m wide and 1m deep with a stepped profile. Two small sherds of late 13th/14th century pottery were recovered from the single fill [15/039]. This feature was originally interpreted as a ditch in the evaluation, but it was not found in any of the adjacent trenches, and is more likely to have been a discrete feature.

4.4.7.2 Three small gullies G25 in the east of Area 2 appeared to have been dug to drain water down the slope towards the floodplain. A single find of a 15th /16th century horseshoe nail was recovered from gully fill [321]. These were the only features of this date identified and the area appears to have been under open pasture.

4.4.8 Period 6: Undated

4.4.8.1 In Area 2 and in several evaluation trenches (1, 6, 7 and 15) were a series of small pits and gullies containing no finds and it has not been possible to assign a chronological period to these features.

5.0 FINDS AND ENVIRONMENTAL MATERIAL: ASSESSMENT

5.0.1 A moderate assemblage of finds was recovered during the excavations (Appendix 2). All were washed and dried or air dried as appropriate. Finds were subsequently quantified by count and weight and were bagged by material and context. All finds have been packed and stored following IfA guidelines (2008b). No further conservation is required.

5.1 **Pollen** by N.A.F Marini and C.R. Batchelor

5.1.1 Pollen concentration was very high in all of the samples assessed, with the exception of Sample 1.16m in which the concentration was moderate (Table 2). The preservation of pollen was poor to moderate poor throughout.

5.1.2 Each of the four stratigraphic units identified in the auguring survey, appears to contain a similar and diverse assemblage. *Quercus* (oak), *Corylus* type (e.g. hazel), Poaceae (grasses) and *Chenopodium* type (goosefoot family) tend to dominate, with *Pinus* (pine), *Alnus* (alder), Lactuceae (dandelion family), *Artemisia* (mugwort), *Plantago* type (plantain), and sporadic occurrences of taxa such as *Ulmus* (elm), *Tilia* (lime), *Betula* (birch), Asteraceae (daisy family), *Rumex* type (dock/sorrel), Cyperaceae (sedges) and *Plantago lanceolata* (ribwort plantain). Aquatic taxa are only recorded in Unit 3, and include *Typha latifolia* (bulrush), *Menyanthes trifoliata* (bogbean) and *Stratiotes aloides* type (water soldier). Spores are dominated by *Pteridium aquilinum* (bracken) with *Filicales* (ferns) and *Polypodium vulgare* (polypody). The concentration of unidentifiable grains and microcharcoal was low to moderate.

5.1.3 The herbaceous assemblage is considered likely to be representative of plants growing in a marsh environment – e.g. grasses (possibly *Phragmites australis* – reeds), sedges, dock/sorrel, buttercups (Ranunculus type), mint (*Mentha* type) and bulrush. Whilst no definitive saltmarsh pollen has been identified (e.g. *Armeria maritima* – thrift or *Plantago maritima* – marsh plantain), there is good evidence to suggest a saline influence. All of the above taxa include varieties that are salt tolerant. Furthermore, *Chenopodium* type, which represents a significant proportion of the assemblage, may be representative of either saltmarsh (e.g. *Suaeda maritima* - thrift) or disturbed ground (e.g. *Chenopodium album* – fat hen) plants. This interpretation is of course enhanced by the proximity of the site to the present coastline and comparison with other proxies (see below). The limited occurrence of alder does suggest areas of freshwater wetland, perhaps at a greater distance from the site. There is also some evidence to suggest a stronger freshwater signal in Unit 3 due to the occurrence of bogbean and water soldier aquatic pollen. Raised values of pine and bracken pollen may also reflect the alluvial nature of the environment as opposed to representing the local vegetation. These grains have a morphology that allows them to travel long distances by fluvial/aeolian means which can result in them being over-represented in clastic sediments from such environments.

5.1.4 Beyond the wetland environment, mixed deciduous woodland is indicated by high numbers of oak and hazel. The very limited numbers of elm and lime pollen may suggest that the sequence post-dates the early Neolithic elm decline and Bronze Age woodland clearance. Thus, the pollen data may suggest a late prehistoric or historic date for the sequence. No definitive palynological indicators of human activity have been recorded (e.g. cereal

type) to support this however; only a few occurrences of *Plantago lanceolata* (ribwort plantain), *Centaurea nigra* type (black knapweed) and possibly *Chenopodium* type, may provide possible evidence of such activity, but the values recorded for these taxa do not permit us to draw convincing conclusions at this stage.

Table 2: Results of the pollen assessment from Rustington

	Depth (m BGL)	1.16	1.21	1.56	2.06	2.46	2.96	3.36	3.46
	Unit number	3			3			2	1
	Stratigraphy	Pale grey smooth silty clay dark rootlets/reed remains, oxidised root channels			Dark grey black sticky silt, occasional organic remains and small twigs			Sandy shelly silt with occasional flint gravel	Grey brown smooth silt occasional organics
Latin name	**Common name**								
Trees									
Alnus	alder	2	3	7	4	4	10		4
Quercus	oak	5	27	24	15	9	21	13	22
Pinus	pine	1	5	5	9	8	2	2	3
Ulmus	elm			1	2				1
Tilia	lime			1	1		2		1
Betula	birch	1	1			1	1		1
Shrubs									
Corylus type	e.g. hazel	1	6	6	15	2	16	10	10
Hedera	ivy								1
Salix type	willow	1							
Ilex type	holly				2				
Herbs									
Cyperaceae	sedge family	1		1				1	
Poaceae	grass family	1	5	19	11	11	7	7	1
Lactuceae	dandelion family	1	2	2	4	1		1	
Asteraceae	daisy family		2		4		1		
Artemisia	mugwort		2	2				2	1
Caryophyllaceae	pink family						1		

Chenopodium type	goosefoot family	1	6	12	4	2	6	1	3
Plantago type	plantain	2		1	3		5		
Plantago lanceolata	ribwort plantain				1		1		
Rumex aceotosa/acetosella	sorrel								1
Rumex type	e.g. dock						2		
Ranunculus type	buttercup					1			
Poterium sanguisorba	burnet							1	
Mentha type	mint		1						
Trifolium type	clover		1						
Centaurea nigra type	e.g. hardheads			1					
Aquatics									
Typha latifolia	bulrush						1		
Menyanthes trifoliata	bogbean					1	1		
Stratiotes aloides type	water soldier					1			
Spores									
Filicales	ferns	1		1		11		1	1
Pteridium aquilinum	bracken	6	11	7	6	14	5	2	2
Polypodium vulgare	polypody		1	4	1	1	1	1	3
Unidentifiable			1	8	8	9	5	4	
Total Land Pollen (grains counted)		17	61	82	75	39	75	38	49
Concentration*		3	5	5	5	5	5	5	5
Preservation**		3	3	2	2	2	3	2	3
Microcharcoal Concentration***		1	3	2	3	2	3	3	2
Suitable for analysis		**YES**	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**

Key:
**Concentration: 0 = 0 grains; 1 =1-75 grains, 2 = 76-150 grains, 3 =151-225 grains, 4 = 226-300, 5 =300+ grains per slide*
***Preservation: 0 = absent; 1 = very poor; 2 = poor; 3 = moderate; 4 = good; 5 = excellent*
****Microcharcoal Concentration: 0 = none, 1= negligible, 2 = occasional, 3 = moderate, 4 = frequent, 5 = abundant*

5.2 **Microfossils** by John Whittaker

5.2.1 The results of the microfaunal assessment, which proved quite informative, are shown in Table 3 that accompanies this report.

5.2.2 Plant debris and seeds were found in all eight subsamples and would merit further study by a specialist. Insect remains ("bugs", fragments of beetles, weevils and the like, and chironomids) occur in seven, but there are a few fish remains in only one sample (3.32-3.36m bgl). The molluscs are problematic and occur in the lower four samples, covering the interval 2.92-3.47m below ground level (bgl) and comprise mainly fragmentary shell - the remains of large marine bivalves in an advance state of wear and decalcification. This may be reworked from a fossil, probably Eocene deposit; but from where is not clear. Another alternative is that they are evidence of discarded "food molluscs".

5.2.3 Of particular importance to this assessment are the foraminifera and ostracods which occurred in eight and seven subsamples, respectively. Their distribution through the sequence is shown in Table 3, which is suitably colour-coded to show the ecological preferences of the various species. The foraminifera are dominated by three calcareous species (colour-coded grey), namely *Haynesina germanica, Elphidium williamsoni*, and a brackish *Ammonia* (difficult to name). They are typical of low-mid saltmarsh and tidal flats (Murray 2006) and they occur in most cases in abundance/superabundance. Associated with the brackish mudflats, which occurred throughout the time period of the deposition of these subsamples, was saltmarsh as evidenced by the accompanying agglutinating foraminifera (colour-coded turquoise). These latter make their test (shell) by cementing mineral grains onto an organic template and are even preserved when the environment is very inhospitable, and are unaffected by decalcification/weathering. Usually two species (*Trochammina inflata* and *Jadammina macre*scens) co-occur, often in abundance. These are the denizens of mid-high saltmarsh (Murray 2006). In one subsample in particular (at 2.02-2.06m blg) there are no less than 5 agglutinating species, probably indicating the greatest extent of saltmarsh occurred at that time. These species are herbivores and detritivores, living off decaying vegetation.

5.2.4 The foraminifera are joined within the interval 1.52m down to 3.50m bgl by brackish ostracods (colour-coded light green in Table 3) of tidal flats and creeks (Athersuch, Horne & Whittaker 1989). They are best developed between 2.92m down to 3.36m bgl where an extensive protected creek system would seem to have developed (evidenced in particular by *Cyprideis torosa* and certain species of *Leptocythere*).

5.2.5 The uppermost part of the sequence exhibits some weathering of the mudflats (as evidenced by the occurrence of iron mineral seen as orange mottling in the sediment) and the disappearance of the ostracods; this having taken place either contemporaneously or subsequently, as the estuarine contact disappeared.

5.2.6 There are, however, no freshwater or marine components whatsoever in the microfaunas. This seems to indicate two things. First, there was no major river at the site, and secondly, the mollusc fragments (lower in the sequence),

could not have been brought in by storm surges. The site seems to have been part of a brackish estuary with extensive saltmarsh in the vicinity.

5.2.7 Clearly an age determination of the sediments is urgently needed if more is to be made of the local geography at the time. The problems associated with dating brackish sediments, i.e the unknown salinity levels and therefore the nature of the marine reservoir effect, is well known and to that end *c.* 500 foraminifera and ostracods from the subsample at 3.17-3.26m bgl (-1.47/1.51m O.D.) have been recovered for AMS dating. In the same sample two large ?blackberry seeds have also been recovered which might contain enough carbon to record an AMS date and which will serve to calibrate the dating from the microfossils.

ORGANIC REMAINS						**Dating sample**		**BASE**
	Unit 3	Unit 3	Unit 3	Unit 3	Unit 3	Unit 2	Unit 2	Unit 1
Elevation (O.D.)	**+0.72/+0.68m**	**+0.37/+0.33m**	**-0.17/-0.21m**	**-0.57/-0.61m**	**-1.07/-1.11m**	**-1.32/-1.36m**	**-1.47/-1.51m**	**-1.62/-1.65m**
Depth below ground level	**1.17-1.21m**	**1.52-1.56m**	**2.02-2.06m**	**2.42-2.46m**	**2.92-2.96m**	**3.17-3.21m**	**3.32-3.36m**	**3.47-3.50m**
iron mineral	**x**		**x**	**x**				
plant debris + seeds	**x**	**x**	**x**	**x**	**x**	**x**	**x**	**x**
insects	**x**	**x**	**x**	**x**	**x**		**x**	**x**
brackish foraminifera	**x**	**x**	**x**	**x**	**x**	**x**	**x**	**x**
brackish ostracods		**x**	**x**	**x**	**x**	**x**	**x**	**x**
molluscs					**f**	**f**	**f**	**f**
fish remains							**x**	**[**
Ecology	***Brackish estuarine mudflats and creeks, with variously developed saltmarsh; some weathering in upper part of sequence***							
BRACKISH FORAMINIFERA								**[BASE]**
Elevation (O.D.)	**+0.72/+0.68m**	**+0.37/+0.33m**	**-0.17/-0.21m**	**-0.57/-0.61m**	**-1.07/-1.11m**	**-1.32/-1.36m**	**-1.47/-1.51m**	**-1.62/-1.65m**
Depth below ground level	**1.17-1.21m**	**1.52-1.56m**	**2.02-2.06m**	**2.42-2.46m**	**2.92-2.96m**	**3.17-3.21m**	**3.32-3.36m**	**3.47-3.50m**
***Ammonia* sp. (brackish)**	**xx**	**xx**	**xx**	**x**	**xx**	**xxx**	**xx**	**x**
Haynesina germanica	**x**	**x**	**x**	**xx**	**xx**	**xxx**	**xxx**	**xx**
Elphidium williamsoni	**x**	**x**		**x**	**xx**	**x**	**xx**	**xx**
Jadammina macrescens	**x**	**x**	**xxx**	**xx**	**o**	**o**	**o**	**xx**
Trochammina inflata	**x**		**xx**	**x**	**x**	**o**		**x**
Arenoparrella mexicana			**x**					
Miliammina fusca			**x**	**o**				
Tiphotrocha comprimata			**o**					

Calcareous foraminifera of low-mid saltmarsh and tidal flats			**Agglutinating foraminifera of mid-high saltmarsh**					
BRACKISH OSTRACODS								**[BASE]**
Elevation (O.D.)	**+0.72/+0.68m**	**+0.37/+0.33m**	**-0.17/-0.21m**	**-0.57/-0.61m**	**-1.07/-1.11m**	**-1.32/-1.36m**	**-1.47/-1.51m**	**-1.62/-1.65m**
Depth below ground level	**1.17-1.21m**	**1.52-1.56m**	**2.02-2.06m**	**2.42-2.46m**	**2.92-2.96m**	**3.17-3.21m**	**3.32-3.36m**	**3.47-3.50m**
Cyprideis torosa		**x**	**o**	**x**	**xx**	**xxx**	**xx**	**x**
Leptocythere porcellanea		**x**	**x**	**o**	**xxx**	**xx**	**x**	
Leptocythere castanea					**x**	**xx**	**x**	
Leptocythere lacertosa					**x**	**xx**	**x**	
Loxoconcha elliptica					**x**	**x**	**x**	
Brackish ostracods of tidal flats and creeks								

Organic remains are listed on a presence (x)/absence basis only; f – fragmentary
Foraminifera and ostracods are listed: o - one specimen; x - several specimens; xx – common; xxx – abundant/superabundant

Table 3: Ostracods and foraminfera from Rustington

5.3 **Flintwork** by Karine Le Hegarat

5.3.1 An assemblage of 239 pieces of flint considered to be humanly struck, weighing 7139g, as well as three flint hammerstones and two flint nodules were recovered through hand collection and from residues of environmental samples (Table 4). This amount includes 50 chips (less than 10mm^2) which represent 20.92% of the total assemblage of struck flint. In addition the archaeological work recovered just over 80 kg of burnt unworked flint fragments. The flint assemblage comprises a small Neolithic/Early Bronze Age component. However, the bulk of the assemblage is of later prehistoric date (Mid to Late Bronze Age/EIA). This is based on morphological and technological grounds. The majority of the flintwork (80.74% of the total assemblage, n=197) comes from Bronze Age features (Periods 1 and 2), and the material is likely to be contemporary with the main occupation of the site. The remaining material originates from unstratified deposits and from Mid/Late Iron Age or later features; it almost certainly represent re-deposited material. Overall, the worked flint material was thinly distributed across the entire site (Areas 1 and 2). However, a relatively sizeable assemblage was recovered from droveway G8 (contexts (158) SG30, (160) and (176) SG31 and (178) SG39).

Category type	**Periods 1 & 2**	**Periods 3, 4, 5 and unstratified material**	**Total**
Flakes	109	34	**143**
Blades, Blade-like flakes		2	**2**
Irregular waste	19	3	**22**
Chip	50		**50**
Core, Core fragments, Tested nodules	6	3	**9**
Retouched forms	8	5	**13**
Hammerstones	3		**3**
Nodules	2		**2**
Total	**197**	**47**	**244**
%	80.74%	19.26%	100%

Table 4: Summary of the struck flint by period (fragments of burnt unworked flint are not included)

5.3.2 The pieces of struck flint were individually examined and classified using a standard set of codes and morphological descriptions (Butler 2005 and Inizan *et al.* 1999). Basic technological details as well as further information regarding the condition of the artefacts (evidence of burning or breakage, degree of cortication and degree of edge damage) were recorded. Dating was attempted when possible. The assemblage was catalogued directly onto a Microsoft Excel spreadsheet.

5.3.3 The hand-collected fragments of burnt unworked flint were rinsed, scanned for worked pieces and quantified by piece and by weight. The burnt unworked flint from the sample residues were scanned for worked material and quantified by weight.

5.3.4 Two raw materials were identified. The first raw material consists of chalk-derived flint. The light to dark grey flint with occasional inclusions displays an off-white eroded cortex suggesting that the material was probably acquired from secondary source. In addition, several pieces exhibit smooth light to dark grey outer surface characteristic of pebbles/cobbles originating from a beach or riverine source. This material would have been immediately available. The assemblage is in a variable condition. Several artefacts mostly recovered from unstratified contexts are heavily damage, implying significant degree of post-depositional disturbance. However, a large proportion of the assemblage display minimal signs of weathering, indicating that the material had undergone negligible post-depositional reworking. Fifty five pieces were broken.

5.3.5 In total, 15 pieces come from unstratified deposits in ten trenches. The remaining 229 artefacts originate from 36 numbered contexts, most of which produced only low quantities of flintwork (less than four pieces). Only two contexts produced more than five pieces. Roman/Post-Roman ditch fill context (15) G25 produced eight pieces, and mid to late Bronze Age ditch fill context (158) G8 produced 157 pieces (Table 5). Twenty-five pieces came from features and deposits dated to the Middle Bronze Age - Period 1; from a waterhole and a burnt mound in Area 2 as well as from pits and ditches associated with an enclosure and field boundaries in Area 1. A total of 172 pieces were also recovered from archaeological features currently dated to the Mid - Late Bronze Age (Period 2). Contexts (158), (160), (176) and (178) associated with droveway G8 in Area 1 produced the majority of this assemblage (165 pieces), with the rest coming from an alluvial deposit. A further 32 pieces came mostly from ditch features dated to the Late Iron Age or later periods (Periods 3 and 4).

5.3.6 Although the artefacts were spread over both investigated areas (Area 1 and 2), features located in Area 1 and dated to Period 2 seems to have produced the largest quantity of material. Group 8 will be discussed separately, and the remaining assemblage will be considered as a whole.

	Period 1 - MBA - Groups 1, 5, 6, 9, 10, 12, 15 and 20	**Period 2 - MBA/LBA - Group 8 (droveway 1)**			**Period 2 - MBA/LBA remaining assemblage - Groups 16 and 22**	**Remaining assemblage (unstratified contexts, later periods)**	
Category type		**context (158) SG30**	**contexts (160) and (176) SG31**	**context (178) SG39**			**Total**
Flake	20	78	3	3	5	34	**143**
Blade-like						2	**2**
Chip		50					**50**
Irregular waste		19				3	**22**
Multiplatform flake core		1				1	**1**
Multiplatform blade core						1	**2**
Fragmentary core		1				1	**2**
Tested nodule		4					**4**
End scraper	2				1		**3**
Side scraper	1						**1**
End-and-side scraper	1					1	**2**
Piercer			1		1		**2**
Denticulate						1	**1**
Misc. Retouch	1					3	**4**
Hammerstone		2	1				**3**
Nodule		2					**2**
Total	**25**	**157**	**5**	**3**	**7**	**47**	**244**

Table 5: Summary of the struck flint by period and feature

5.3.7 Ditch slot fills (158) SG30, (160) and (176) SG31 and (178) SG39 have been associated with double ditched Droveway 1, G8. The contexts produced 157 pieces, three, two and three pieces of flint respectively. The overall edge condition of the material was relatively fair suggesting that the flintwork did not endure repetitive re-depositions. The assemblage consists almost entirely of un-retouched artefacts including 84 flakes, 50 chips, 19 shattered pieces, two cores, six nodules including four tested nodules and three hammerstones. Chalk-derived flint as well as flint pebbles/cobbles from a beach or riverine source were present. However, pebbles/cobbles dominated. These appeared to be of varying flaking quality including some very poor material with frequent flaws. The large quantity of primary flakes confirms that the group contains mainly debris from the first stage of knapping, the de-cortication stage. At the same time the flakes and cores suggest a reduction strategy characteristic of late prehistory. Secondary and tertiary flakes were crudely produced. No effort was made to prepare the edge of the platforms, most of which were cortical or plain and obtuse. When not cortical, platforms displayed incipient cones of percussion which are often associated with knapping accidents. Cores were minimally used. A single tool was recovered from context (176). The piercer which was crudely manufactured on a hard hammered flake is likely to be of Middle/Late Bronze Age. Overall, the scatter suggests that pebbles/cobbles and nodules were tested either within the ditch or in the vicinity of the droveway; or that the double ditched feature was used to dump debris from flint knapping. A refit was found between a core and a primary flake, but more might be performed.

5.3.8 There is a blade core that may be Mesolithic or Early Neolithic and five pieces that could be Neolithic or Early Bronze Age in date. However, late prehistoric pieces of flint are the most widespread. A single blade core recovered from unstratified context in Trench 9 may represent a Mesolithic or Early Neolithic artefact. It is in a poor condition. A few artefacts of possible Neolithic or Early Bronze Age date were recovered from Areas 1 and 2. These represent isolated finds, found either in later contexts or from unstratified deposits and include an end scraper, an end-and-side scraper, a polished flake and two flakes.

5.3.9 The end scraper and the end-and-side scraper were recovered from ditch fill context (144) SG24. The feature is associated with Mid Bronze Age Enclosure 1 (G5) in Area 1. The end scraper, made on a slightly plunging primary flake, displays fine retouch along the distal end forming a convex edge. The end-and-side scraper is manufactured on a natural flake. It exhibits regular retouches that form a convex edge. It seems that further retouching/reworking forming a groove along the edge was applied to the artefact, and the last function of the tool may not have been as a scraper. Based on technological ground, both tools could be Neolithic - Early Bronze Age in date.

5.3.10 The polished flake was found from ditch fill context (121) SG12 that is also associated with Middle Bronze Age Enclosure 1. Polished artefacts are usually associated with tools dated to the Neolithic period; most particularly prestigious tools such as axes, chisels and knives. The piece from context (121) is interesting because it does not represent a flake removed from a polished implement. The polishing on a flake struck from a polished implement would be present on the dorsal surface. The dorsal face of the flake from context (121) displays only flake scars from previous removals and no polishing. In fact, the polishing is only visible on the ventral face,

suggesting that it had been applied once the flake had been struck. Actually, with the exception of the polishing, the artefact would not be out of place in a late prehistoric assemblage. The flake is relatively thick (18.3mm), and the platform is wide, plain, cortical and obtuse. Cortex is also present along the right edge. Retouches applied along the left side and the distal end, give a sub-rectangular shape to the flake. It measures 56.7mm in length, 54.8mm in width and weights 79g. The retouches are continuous and short, and they are all direct. Polishing appears to have been undertaken once the desired shaping of the flake was obtained. Areas with striations are mostly visible in the centre on the ventral face and towards the distal end. The artefact is also very slightly burnt. Two interpretations are possible. The polished artefact was found in a Middle Bronze Age feature and it may represent a curated artefact deliberately selected and deposited in the feature. Such depositions within Late Bronze Age features are regularly recorded (for example, at Peacehaven; Lamdin-Whymark, forthcoming). On the other hand, the artefact may be contemporary with the ditch. The flake shares some morphological and technological characteristics with the flakes forming part of a "cache" within a late Bronze Age ditch excavated in Maidstone, Kent (Bishop 2006).

5.3.11 Two flakes from burnt mount deposit (211) SG55 differ from the other flakes in the assemblage. Pieces of flint débitage are not chronologically diagnostic; however, a Neolithic/Early Bronze Age attribution is not impossible for these pieces. It is interesting to note that one potsherd from the same context is possibly Early Bronze Age in date.

5.3.12 The bulk of the assemblage forms a coherent group consisting mainly of unretouched artefacts. The assemblage comprises a large quantity of flakes which are mostly crudely made, irregular and relatively thick. They display technological attributes characteristic of late prehistoric industry such as pronounced bulb of percussion as well as incipient cones of percussion, cortical or plain platforms and absence of platform edge preparation. The artefacts are therefore likely to date to the main occupation of the site (Periods 1 and 2).

5.3.13 A multiplatform flake core and a fragmentary core were found unstratified. Both had been randomly reduced and as for the cores from context (158) mentioned above, they are typical of later prehistoric assemblages. Three miscellaneous retouched pieces, a denticulate and a piercer were also recovered. They are mostly crudely made, often on hard hammered flake and display minimal retouching. A restricted range of formal tools is often seen as another indicator of late prehistoric assemblage (Young and Humphrey 1999).

5.3.14 A substantial assemblage of burnt unworked flint (just over 80kg) was hand collected and sorted from environmental samples (Table 6). The material came from 50 individually numbered contexts. Almost all the material (98.05%) comes from Bronze Age features (Periods 1 and 2), mostly from features dated to Period 1 (80.50%). Although some of the features produced only small quantities of burnt unworked flint, unsurprisingly the richest assemblages came from features associated with a burnt mound in Area 2, including a through, an hearth, a waterhole and a series of pits (Table 7).

Period	Hand collected FCF (fragments)	Hand collected FCF - Weight (g)	FCF from residues Weight (g)	Total Weight (g)	% Total
1	136	3696	60978	64674	80.50%
2	219	6602	7500	14102	17.55%
3,4 and 5	87	886	682	1568	1.95%
Total	**442**	**11184**	**69160**	**80344**	**100%**

Table 6: Burnt unworked flint

5.3.15 The degree to which the flint had been heated was fairly constant. The majority of the burnt unworked flint had been heavily calcined to a grey or white colour. The assemblage seems to comprise both pebble / cobble fragments as well as chalk derived flint. No large nodules were observed in the material retained from the environmental residues. In fact the fragments were mostly small-sized (up to 79mm).

Period	Area	Context	Parent_context	Group	Feature_type	Burnt unworked flint - Weight (g)	Burnt unworked flint - Description
1	2	306	305	13	Trough	23890	Calcined grey, occasional red fragments; small fragments up to 52mm
1	2	324	325	14	Hearth - by trough side	10356	Calcined grey, occasional red fragments, pebble fragments present; small fragments up to 56mm
1	2	204	203	12	Waterhole	9040	Calcined grey to white with occasional red fragments; small-sized fragments up to 37mm
1	2	307	203	12	Waterhole	6684	Calcined grey white, occasional red fragments; pebble fragments and chalk derived flint; small fragments up to 55mm
1	2	238	237	17	Pit	1520	Calcined mid grey to white, occasional red fragments; small fragments up to 43mm
1	2	258	259	17	Pit	7570	Calcined light grey to white, occasional reddish tinge; pebble fragments; fragments up to 79mm
1	1	156	155	9	Pit	1614	Hand-collected; discarded

Period	Area	Context	Parent_context	Group	Feature_type	Burnt unworked flint - Weight (g)	Burnt unworked flint - Description
2	2	207	207	16	Alluvium	2900	Calcined grey to white with occasional red fragments; small-sized fragments up to 20mm
2	1	119	117	22	Pit	8362	Calcined grey, fragments with reddish tinge; fragments up to 58mm

Table 7: Summary of burnt unworked flint rich feature

5.4 **The Prehistoric and Roman Pottery** by Anna Doherty

5.4.1 A prehistoric and Roman pottery assemblage, totalling 233 sherds, weighing 5268g, was hand-collected during the excavation and a single sherd from the watching brief. The assemblage is predominantly of Middle to Late Bronze Age date but contains a small element of later Iron Age/Early Roman material.

5.4.2 The pottery was examined using a x20 binocular microscope. Fabrics were defined according to a site specific fabric type series formulated in accordance with the guidelines of the Prehistoric Ceramics Research Group (PCRG 2010). The pottery was quantified by sherd count, weight, and Estimated Vessel Number (ENV) on pro forma sheets which are retained in the archive. The data was also entered into an Excel spreadsheet. A small assemblage from the evaluation (26 sherds) has previously reported on (ASE 2005) and is drawn into the assessment of significance and potential below. Pottery found in the residues of environmental samples was briefly scanned; however, as these generally comprised small undiagnostic fragments in similar fabrics to hand-collected sherds from the same contexts, this material was not quantified in detail.

Pottery fabric descriptions

CALC1 Sparse/moderate light coloured calcareous rock-inclusions of 0.5-1.5mm in a fairly quartz free matrix

FLIN1 Moderate to common; most are 0.5-2.5mm, with rare/sparse coarse examples of up to 4mm. The matrix is fairly quartz free and may contain rare fine linear voids suggesting burnt out organic material

FLIN2 Moderate flint; most are fine (c.0.5-1mm), with rare/sparse coarser examples up to 2.5mm. The matrix is generally silty; surfaces are usually relatively well-finished and sometimes well-burnished

FLIN3 Common to abundant flint ranging from 0.5-6mm. Although the flint is ill-sorted there is a fairly even distribution of different size grades. The matrix is generally fairly quartz free.

FLIN4 Similar to FLIN1 in terms of size, frequency and sorting of flint inclusions but with a very silty background matrix, often containing sparse or occasionally moderate red iron rich inclusions of 0.5-1.5mm

FLIN5 Common/abundant and relatively well-sorted flint of 0.5-1.5mm. Surfaces are often well-burnished

FLIN6 Similarly coarse flint-tempering as FLIN3 but with only moderate frequency and a more bi-modal size distribution (examples tend to fall either within the range 0.5-2mm or 4-6mm). The matrix is generally fairly quartz free.

FLIN7 Sparse ill-sorted flint of 0.5-7mm in dense slightly silty matrix.

FLGR1 Similar to FLIN1 but also containing moderate rounded grog inclusions of 0.5-3mm

FLQU1 Sparse to moderate flint, ranging from 0.2-2.5mm with moderate coarse quartz grains of 0.3-0.5mm.

GROG1 Common rounded grog of 1-3mm in a dense slightly silty matrix

5.4.3 ?Early Bronze Age

5.4.3.1 The earliest material in the assemblage is a single sherd in grog-tempered fabric GROG1. This is from the shoulder of a thick-walled form with a pronounced carination and two small poorly-defined surface impressions. Fabric, form and decoration are all consistent with Early Bronze Age ceramic traditions such as Bi-conical and Collared Urn. However, the sherd was found as a residual element in Middle Bronze Age burnt mound layer [211].

5.4.4 Middle and Late Bronze Age pottery

5.4.4.1 The majority of the assemblage is thought to be of Middle Bronze Age Deverel-Rimbury (DR) type although there is some evidence for early traits of the Late Bronze Age Post Deverel-Rimbury (PDR) tradition. Extremely coarse flint-tempered wares, FLIN3 and FLIN6, which are particularly characteristic of large DR Barrel/Bucket Urn forms, make up about two-thirds of the well-stratified Bronze Age assemblage. However, quite a high proportion of these derive from a few fragmented, partially-complete vessels so these fabric types make up a smaller proportion of estimated vessels (27% of ENV). Two examples of very thick-walled barrel urns were stratified together in pit fill [116], whilst another very characteristic DR element, an applied cordon with finger impressions was also recorded in fill [191] of ditch G8.

5.4.4.2 Medium coarse fabrics FLIN1 and FLIN4, which may be associated with DR or PDR ceramic traditions, account for about a third of total ENV. These were generally found as undiagnostic bodysherds although one diagnostic example of a hook-rim jar form with relatively thin-walls from fill [164] of ditch G7 suggests some PDR influences. Another trait which indicates that activity probably continued into the Late Bronze Age is the fairly high proportion of fine ware fabrics, FLIN2 and FLIN5, which account for roughly a third of ENV. Although fine burnished pottery can make up an element of Middle Bronze Age assemblages in Sussex, it does not usually form such a major component. A single example of a necked jar form in fabric FLIN2, found in pit fill [116], also appears fairly characteristic of the PDR tradition.

5.4.5 Chronological change

5.4.5.1 The Bronze Age archaeology has been divided into separate periods, Period 1 and 2, largely based on stratigraphic and spatial interpretation. Although there is evidence for some differentiation in dating within the later Bronze Age pottery assemblage – at least in terms of individual diagnostic sherds – these elements do not seem to divide neatly into well-stratified groups of clearly defined date. Instead Middle and Late Bronze Age fabrics and forms often seemed to be stratified together. This does not necessarily mean that the earlier pottery should be thought of as entirely residual or unassociated. These groups are probably indicative formation processes involving accumulations of material from multiple primary sources which derived from settlement activity of reasonably long duration. Having said this, there is considerable continuity between Middle and Late Bronze Age pottery styles and the shift from a wholly DR assemblage to one featuring elements of the PDR tradition could happened over a period of decades rather than centuries.

5.4.6 Structured deposition

5.4.6.1 The base and lower wall of a truncated vessel were recovered in fill [156], of pit [155]. The vessel was relatively thin-walled, considering the coarseness of its fabric (FLIN6). It also featured fine flint-gritting on the underside of the base and prominent finger-smearing on vessel exterior. This vessel appears to have been placed upright and intact. There was no evidence that it was associated with a cremation but it did contain a deposit containing a large amount of fire-cracked flint. These might be directly related to the primary use of the pot (for example, using flint as 'pot-boilers'). Alternatively, it may represent some other kind of deposit deliberately scooped up and placed into the ground within the vessel. In either case this seems to represent a special deposit of some kind.

5.4.6.2 Another pottery deposit which possibly falls into this category is that from fill [144] of ditch [150] G5. Large bodysherds representing at least half of a large DR style urn were recovered alongside a few large base sherds from a finer vessel. There has been some debate about whether such deposits can be seen as deliberate or special or whether they simply represent rubbish deposited close to its primary site of breakage/discard (for example, Seager Thomas 2008, 21). However, in this case, the association with other material, including three different types of clay weight, tends to suggest an element of structured deposition.

5.4.7 Middle Iron Age to Early Roman

5.4.7.1 Just 26 sherds, weighing 108g, were found in features assigned to the later Iron Age/Early Roman period. The majority of these are flint-tempered bodysherds which may be residual Middle/Late Bronze Age pieces. A handful of bodysherds, all from field boundary ditches G2 and 3, are in fabric types unlikely to pre-date the Middle Iron Age, including a flint-tempered ware with a very sandy background matrix (FLQU1) and a distinctive calcareous rock-tempered fabric (CALC1). Ditch G2 also produced a few bodysherds from a single amphora, found during the evaluation, in fill [13]. These are almost certainly examples of Republican Italian wine amphora (Dressel 1), imported to Britain between *c*. 120-10BC. In general, the very limited number of contemporary sherds might suggest a Middle to Late Iron Age date for these ditches. However, the ditch G2 also produced a single early Roman

bodysherd, in an unsourced reduced ware, from fill [316] and it is unclear whether this should be seen as intrusive.

5.4.7.2 Features assigned to the Middle/Late Bronze Age also produced four intrusive examples of flint-and-grog tempered sherds (FLGR1) thought to date to the Late Iron Age/early Roman period. A single context, fill [265] of pit [266], contained several fresh Roman sherds from a necked jar in Arun Valley oxidised sandy ware fabric. The fabric and form suggest a broadly earlier Roman date.

5.5 The Ceramic Building Material by Trista Clifford

5.5.1 A single abraded box flue tile fragment weighing 120g was recovered from ditch fill [228]. The fabric is mid pinkish orange abundant medium sand with chunky pale buff inclusions and coarse dark red clay pellet inclusions.

5.6 The Fired Clay by Trista Clifford

5.6.1 A fairly large assemblage of 2440 fragments of fired clay weighing just over 15kgs was recovered by hand and from environmental bulk samples from 20 separate contexts. Table 8 shows an overview of the assemblage.

5.6.2 The fragments were examined with the naked eye for diagnostic characteristics indicating form and/or function, and recorded on *pro-forma* archive sheets. Fabrics were identified using a x10 magnification binocular microscope. Three fabric groups were identified:

Fabric 1- Fine sand temper with sparse medium to coarse rounded quartz, sparse organic voids and sparse very fine iron rich inclusions.
Fabric 2- Silty fabric with sparse fine sand and no other visible inclusions; organic impressions sometimes visible on surfaces
Fabric 3- Variant of Fabric 1 with more frequent medium quartz
Eleven fired clay objects were Registered but have been reported on within this section as these were the only Registered Finds from the site.

5.6.3 By far the majority of the assemblage derives from period 1 features. The mean fragment weight (MFW) is 6.2g overall, indicating a high degree of abrasion across the assemblage. However the difference in MFW between the hand excavated and bulk sampled assemblage is very big: 24.4g compared to 3.8g, an indicator of the vast difference in abrasion between the two assemblages. Whilst the hand excavated fragments are abraded, it is possible to identify diagnostic features, whereas most of the material retrieved from samples was abraded into spherical lumps with any diagnostic traits having been lost. MFW varies slightly between periods: combined MFW for period 1 is 6.6g; Period 2 is 7.4g and Period 3.2 is just 2.5g.

5.6.4 Table 8 shows that amorphous or undiagnostic utilised fragments make up just over two thirds of the assemblage by weight. It is likely that this fraction of the assemblage masks some pieces of larger objects such as weights. Single diagnostic characteristics such as wattle impressions and single flat surfaces are present only in very small numbers. Wattle impressions measured between 5-16mm, with one shallow possible wattle impression on a piece from [144] measuring 20mm. A fragment from [184] exhibits a flat surface with an incised line along one edge and a semi-circular thumb or withy impression in the broken section.

		Fabric			
Period	**Form**	**1**	**2**	**3**	**Total**
1	**Amorphous**	1760/6752g	1/6g		1761/6758g
	Utilised	181/3688g		1/54g	182/3742g
	One flat surface		1/10g		1/10g
	Wattle impression	5/212g			5/212g
	?Briquetage	2/6g	10/14g		12/20g
	Cylindrical Weight	1/88g	2/580g		3/668g
	Spherical Weight	10/762g	13/348g		23/1110g
	?Pyramidal weight	2/246g			2/246g
	Pyramidal weight		1/458g		1/458g
Total		**1961/11754g**	**28/1416g**	**1/54g**	**1990/13224g**
2	**Amorphous**	27/74g	123/278g	1/8g	151/360g
	Utilised	1/10g	7/24g		8/34g
	One flat surface		7/106g		7/106g
	Wattle impression		1/22g	1/28g	2/50g
	?Briquetage	1/6g			1/6g
	Briquetage Vessel	1/18g	2/12g		2/30g
	Pyramidal weight	1/698g			1/698g
Total		**31/806g**	**140/442g**	**2/36g**	**173/1284g**
4	**Amorphous**	277/700g			277/700g
Total		277/700g			277/700g
Grand Total		**2269/13260g**	**168/1858g**	**3/90g**	**2440/15208g**

Table 8: Overview of the assemblage by fragment count and weight

5.6.5 A small amount of possible briquetage was recovered in fabrics 1 and 2 from both period 1 and 2 features. Although these have the appearance of briquetage they are undiagnostic in terms of specific function. A single rim sherd with straight wall profile came from period 1 ditch fill [158] thickness measured between 20mm and 12mm. Two further probable vessel wall fragments came from period 2 ditch fill [178]. The profile of these fragments is curved, with wall thicknesses of 11-12.5mm. The apparent absence of briquetage supports or structural material indicates that salt working was probably not taking place on site.

5.6.6 Three different forms of weight were recovered from features of period 1 and 2. A complete weight of pyramidal form with axial piercing in Fabric 1 came from ditch fill [144] (RF<1>). This is a fairly small example (diameter of base 72mm, height 91mm) which has parallels from Mucking in Essex (Bond 1988, 38). Two further bases with broken apices were recovered from ditch fills [112] RF<11> and [176] RF<10>. These are closer to the more usual larger size range, measuring c.115mm in diameter.

5.6.7 Ditch fill [144] also contained fragments from two cylindrical weights (RF<5> and RF<6>) which have diameters of 82mm and 80mm respectively. RF<6> is the more complete of the two with a central vertical piercing measuring 16mm diameter. Weights of this form have also been interpreted as

pedestals (Lane and Morris 2001) or oven/ kiln furniture (eg Poole 2011, Woodward 2009). A much smaller, sub-cylindrical weight, RF<8>, was also recovered from [112]. This weight has an incomplete height of 64mm and a vertical piercing measuring 14.5mm in diameter. A sub-spherical weight, RF<9>, from the same context is of a similar size; height 54.5mm, piercing diameter 13mm.

5.6.8 Three further sub –spherical weights came from [144] (RFs<2-4>). The smallest and most complete of these, RF<4> measures 52mm high with a diameter of 56.5mm and a piercing diameter of 17mm. RF<2> and <3> are slightly larger but less complete with heights of 74.8mm and 84.4mm respectively. A complete spherical weight, RF<7>, from the same context has similar dimensions of height 73mm, diameter 81mm and a piercing diameter 17-21mm. A further fragment consisting of one hemisphere from a spherical object came from ditch [121], although the broken surface shows no evidence of a piercing. Spherical weights are not a known form of weight and therefore a parallel has yet to be found for these objects.

5.7 The Bulk Metalwork by Trista Clifford

5.7.1 Only a very small number of metal objects were recovered from the site. Seven tiny fragments of corroded copper alloy were recovered from Area 1 ditch fill [178] weighing less than 1g. The fragments are unidentifiable and are therefore not intrinsically dateable. Area 2 drainage ditch fill [321] contained a single iron horseshoe nail (wt 6g) of Goodhall type D which has a 15th-16th century date range (Goodhall 2011, 364).

5.8 The Metallurgical Remains by Luke Barber

5.8.1 Although no hand-collected slag was recovered from the site, residues from 23 of the environmental samples produced 'magnetic fines'. These were closely inspected and recorded on a *pro forma* for the archive. Nearly all of these residues were composed of burnt stone and clay granules that had been weakly magnetised by heat. As such they are not indicative of any industrial process and could simply relate to burning from domestic hearths or crop/vegetation clearance. However, Middle/Late Bronze Age ditch [159] (fill [161], G8) and Middle Bronze Age hearth [325] (fill [324, G14) produced minuscule quantities (two and one respectively) of tiny hammerscale flakes. However, considering the context and size of these, together with the presence of Roman activity, it is highly likely these are intrusive flecks. The assemblage is not considered to hold any potential for further analysis.

5.9 The Geological Material by Luke Barber

5.9.1 The archaeological work recovered eight pieces of stone, weighing 3412g, from six individually numbered contexts. The material has been fully listed on pro forma for archive with the information being used to create an Excel database.

5.9.2 The most common stone is Lower Greensand. There is an irregular piece (58g) with sparse glauconite from [121] that may be derived from a quern but is not of the typical Lodsworth-type variant of the Lower Greensand. The other two pieces of Lower Greensand are clearly of Lodsworth type. The 260g fragment from [144] is from a 40mm thick stone with a somewhat dished grinding face rather indicative of a broken rotary quern being re-used as a

'grain-rubber'. The 212g fragment from [176] is from an upper stone with 37mm thick edge and part of its grinding face. Unfortunately too little is present to estimate the diameter. Both querns would not be out of place in the Roman period.

5.9.3 Three pieces of quartzite were recovered. Two conjoining pieces (2415g) from a well-worn beach boulder were recovered from [144]. Both show clear signs of scotching prior to breakage. Context [154] produced a 352g weathered grey quartzite fragment with no obvious sign of human modification. Both these stones would have been easily available on the beach to the south. The final two pieces of stone consist of a 112g fragment of weathered friable buff-orange Tertiary sandstone (context [178]) and a 3g piece of purple ferruginous sandstone (context [279]). Both could be of local origin.

5.10 The Animal Bone by Gemma Ayton

5.10.1 A small animal bone assemblage containing 20 fragments of bone weighing 1032g was recovered from two Roman field boundary ditch fills [226] and [261]. The assemblage is a moderate condition with some large but no complete bones remaining. All of the identifiable fragments derive from horse and include the distal tibia, astragalus and calcaneum. Pelvic fragments and teeth have also been recovered an it seems likely that this was once a complete, horse skeleton that has been truncated or disturbed. No evidence of butchery, burning, gnawing or pathology has been noted.

5.10.2 A further 26g of bone was retrieved from whole earth samples the majority of which is too small and poorly preserved to be identified. Unidentifiable, cremated bone was recovered from samples <1013>, <1016> and <1023>. Sample <1040> produced 35 fragments of medium-mammal size ribs. Due to the size and condition of this assemblage, it holds no potential for further analysis and no further work is required.

5.11 Environmental Samples: Macro-botanicals and Charcoal By Dr Lucy Allot

5.11.1 A total of 31 bulk soil samples were taken during excavation work at the site, in order to recover environmental remains such as charred plant macrofossils, wood charcoal, fauna and mollusca as well as to assist finds recovery. These samples ranged in volume from 4 litres to 60 litres, and originated from a variety of features including cremations, pits, ditches, a waterhole, alluvial deposits, and features associated with burnt mounds. The samples were processed and assessed at Archaeology South-East, Portslade, in January to February 2014. During an evaluation at the site (Stevens 2005) eleven samples were processed and scanned for environmental remains and artefacts. Barber (2005) recorded very few macrobotanical remains and only small to moderate quantities of wood charcoal. The samples produced large quantities of modern roots suggesting a moderate level of modern contamination through bioturbation. Results from evaluation samples have not been incorporated into this report, however reference is made to these in the further work section below.

5.11.2 Bulk soil samples were processed in their entirety in a flotation tank, and the flots and residues were retained on 500µm and 250µm meshes respectively and air dried prior to sorting. The residues were passed through graded sieves (8, 4 and 2mm) and each fraction sorted for environmental and artefact

remains (Appendix 2). Finds and faunal remains arising from the residues and flots have been incorporated into the specialists finds reports. This report focuses on macrobotanical remains and charcoal. The flots were measured and weighed prior to scanning under a stereozoom microscope at x7-45 magnifications and an overview of their contents recorded (Table 2). For the purposes of assessment 100ml of larger flots was scanned. Preliminary identifications (Appendix 3) of macrobotancial remains have been made using modern comparative material and reference texts (Cappers *et al.* 2006, Jacomet 2006, NIAB 2004). Nomenclature used follows Stace (1997).

5.11.3 Charred wood remains from 14 samples were assessed for taxonomic composition. Charcoal fragments recovered from the heavy residue of samples were fractured along three planes (transverse, radial and tangential) according to standardised procedures (Gale & Cutler 2000). Specimens were viewed under a stereozoom microscope for initial grouping, and an incident light microscope at magnifications up to 400x to facilitate identification of the woody taxa present. Taxonomic identifications were assigned by comparing suites of anatomical characteristics visible with those documented in reference atlases (Hather 2000, Schoch *et al.* 2004), and by comparison with modern reference material held at the Institute of Archaeology, University College London. Identifications have been given to species where possible, however genera, family or group names have been given where anatomical differences between taxa are not significant enough to permit satisfactory identification. Nomenclature used follows Stace (1997), and taxonomic identifications of charcoal are recorded in Table 1.

5.11.4 Results

5.11.4.1 *Period 1: Middle Bronze Age, Sample <1011>, fill [106] of pit [105]*

5.11.4.1.1 The flot from this pit produced a small quantity of wood charcoal flecks (primarily <2mm in size). No macrobotanical remains were evident. The residue contained a large quantity of burnt human bone fragments and a small amount of wood charcoal.

5.11.4.1.2 *Enclosure, Samples <1014>, <1019>, <1022>, & <1029>, ditch fills [112], [121], [127] & [144] respectively; sample <1018>, fill [116] of pit [115]*

5.11.4.1.3 Charred cereal grains were recorded in each of the enclosure ditch deposits sampled as well as in pit sample <1018>, [116]. The range of cereals noted varies very little across these samples with barley present in each and wheat, bread-type wheat and oats sporadically present. Both rounded and angular barley grains which suggest naked and hulled varieties, respectively, are present in some of the assemblages. Several twisted barley grains which provide evidence for 6-row barley, have also been noted. Preservation of cereals was poor to moderate and many of the cereal grains have abraded surfaces and/or appear puffed. In sample <1019> sediment concretions on the surface of the grain were also common. Wild/weed taxa are less well represented than the crop remains and also display poor to moderate preservation. Samples <1014> and <1029> contained possible hawthorn (cf. *Crataegus monongyna*) fruit stones. Goosefoot (*Chenopodium* sp.) and knotweed (*Persicaria* sp.) are also present in sample <1014>.

5.11.4.1.4 While samples <1014>, <1018> and <1022> produced only small assemblages of wood charcoal remains, much larger quantities were

recovered from samples <1019> and <1029>. The charcoal assemblages were dominated by oak (*Quercus* sp.) charcoal, with hazel (*Corylus avellana*) and birch (*Betula* sp.) also present, along with wood of the Maloideae subfamily, which includes hawthorn (*Crataegus monogyna*), rowan, service and whitebeam (*Sorbus* spp.), apple (*Malus* sp.) and pear (*Pyrus* sp.). A small amount of animal bone was recorded in sample <1018>, however no other biological remains were recorded. Various classes of artefacts were recovered, including fired clay, burnt and worked flint, pottery, stone and magnetised material.

5.11.4.1.5 *Burnt mound trough and associated features, Sample <1044>, fill [324] of hearth [325]; sample <1042>, fill [306] of trough [305]; sample <1045>, fill [342] of pit [341] adjacent to trough*

5.11.4.1.6 Macrobotanical remains were uncommon in samples <1042>, <1044> and <1045>. No cereals or other crop remains were present and only occasional well preserved hawthorn (*Crataegus monongyna*) stones were recorded in trough [305] and pit [341] adjacent to the trough. The charred component of the flots consisted almost entirely of small wood charcoal flecks measuring <2mm in size.

5.11.4.1.7 The residue of sample <1044> contained very few organic or artefactual remains, consisting of a small amount of wood charcoal, slag and magnetised material, and a very large quantity of burnt flint. Sample <1045> also contained only a small amount of charcoal, along with small amounts of magnetised material and burnt flint. A larger quantity of charcoal was recovered from sample <1042>, consisting of fragments of oak, Maloideae and Leguminosae wood, which includes gorse (*Ulex europaeus*) and broom (*Cytisus scoparius*). This sample again produced a small quantity of magnetised material, and a very large amount of burnt flint.

5.11.4.1.8 *Pits, Samples <1012>, fill [108] of pit [107]; <1013>, fill [110] of pit [109]; <1015>, fill [114] of pit [113]; <1020>, fill [123] of pit [122]; <1021>, fill [125] of pit [124]; <1023>, fill [133] of pit [132]; <1024>, fill [154] of pit [153]; <1034>, fill [238] of pit [237]; <1036>, fill [242] of pit [241]; <1037>, fill [244] of pit [243]; <1038>, fill [258] of pit [259]*

5.11.4.1.9 The presence and abundance of macrobotanical remains in the Middle Bronze Age pit samples varied greatly. Samples <1013>, <1015>, <1034>, <1036>, <1037> and <1038> contained no macrobotanical remains. Instead the small flots contained wood charcoal flecks, primarily <2mm in size. Samples <1012>, <1023>, <1024> and <1021> contained a few cereal caryopses, the majority of which were poorly preserved either as a result of abrasion or fragmentation. Taxa identified include barley, oat and wheat. In the small assemblage from sample <1021>, [125] some of the barley grains appear consistent with naked barley.

5.11.4.1.10 The assemblage from sample <1020>, [123] contrasts with those discussed above. This flot consisted almost entirely of barley caryopses and small wood charcoal flecks with only a few wheat and possible bread-type wheat grains also noted. Many of the barley grains are rounded in cross section and appear consistent with naked barley although more angular barley grains are also present suggesting both naked and hulled varieties may be present. Several twisted grains indicate that 6-row barley was present. Further analysis will assist in characterising the range of taxa present

in this pit feature. As small flecks of charcoal were very common, fully sieving this sample may reveal further small macrobotanical remains such as weeds and chaff. At present only one goosefoot seed has been noted.

5.11.4.1.11 Small to moderate quantities of charred wood remains were found in the residues of these samples. Charcoal was assessed from samples <1020> and <1036>, and the assemblages were dominated by oak, although Maloideae and yew (*Taxus baccata*) were also noted in sample <1036>. Other environmental remains were rare, with only small amounts of animal and fish/microfauna bone, burnt bone fragments, and land snail shells recorded. Burnt flint was recorded in almost all samples, with particularly large assemblages present in samples <1034> and <1038>. Other artefactual remains noted comprised magnetised material, pottery, fired clay and worked flint.

5.11.4.1.12 *Waterhole, Samples <1032> & <1043>, fills [204] and [307] respectively of waterhole [203]*

5.11.4.1.13 No charred macrobotanical remains were recorded in samples <1032> and <1043> from waterhole feature [203] although small flecks of wood charcoal were very common. The flots contained small quantities of uncharred vegetation although since neither deposit was recorded as waterlogged during excavation these are probably comparatively modern intrusive elements.

5.11.4.1.14 The residues of both samples produced moderate quantities of wood charcoal. A variety of wood taxa were identified in these samples, including oak, Maloideae, hazel, Leguminosae and cherry/blackthorn (*Prunus* sp.). Other biological remains were uncommon, with a small amount of animal bone recorded in sample <1032>, and a few land snail shells noted in sample <1043>. Both samples contained very large assemblages of burnt flint, although other artefact remains were rare. Small amounts of wood, magnetised material and pottery were recorded in sample <1032>, while sample <1043> also contained magnetised material and worked flint.

5.11.4.2 *Period 2: Middle to Late Bronze Age*

5.11.4.2.1 *Droveway, Sample <1026>, fill [158] of ditch [157]; samples <1027>, <1028> & <1030>, fills [160], [161] and [176] respectively of ditch [159]; sample <1031>, fill [194] of ditch [190]*

5.11.4.2.2 Botanical remains were infrequent in samples from droveway ditch fills. Each of the samples produced moderate quantities of small charcoal flecks (<2mm in size). Samples <1026> and <1031> contained no macrobotanical remains. Samples <1027>, <1028> and <1030> contain barley and wheat/barley cereal caryopses and a possible pea (cf. *Pisum sativum*) was noted in sample <1028>. Charred weed/wild taxa were infrequent with goosefoot (*Chenopodium* sp.) and black bindweed (cf. *Fallopia convolvulus*) the only taxa recorded in sample <1030>.

5.11.4.2.3 The residues of most samples from droveway ditches only produced small quantities of charcoal, although a larger assemblage was found in sample <1030>. Again, the charcoal assemblage from these samples consisted mostly of oak, however Maloideae, cherry/blackthorn and Leguminosae fragments were also recorded. The only other environmental remains noted

were a small number of animal bone fragments in sample <1027>. Inorganic remains recovered included burnt and worked flint, pottery, fired clay, stone and magnetised material.

5.11.4.2.4 *Sample <1033>, alluvial deposit [207]*

5.11.4.2.5 Small wood charcoal flecks were moderately common in the flot from sample <1033>. Few environmental remains were recovered from the residue of this sample, consisting of small quantities of wood charcoal and animal bone. The sample also produced a large amount of burnt flint, along with small amounts of worked flint, pottery and magnetised material.

5.11.4.2.6 *Sample <1016>, fill [119] of pit [117]*

5.11.4.2.7 A small assemblage of charred macrobotanical remains was recovered from sample <1016>, [119]. Taxa recorded include broad bean (*Vicia faba*), wheat (*Triticum* sp.), and barley (*Hordeum* sp.). Many of the macrobotanicals were poorly preserved with abraded surfaces.

5.11.4.2.8 A moderate quantity of charcoal was recovered from the residue of the sample, consisting of oak, cherry/blackthorn, hazel and Leguminosae fragments, with small roundwood frequently noted. A small amount of burnt bone was also noted, and the residue also contained a large amount of burnt flint, along with worked flint, fired clay and pottery.

5.11.4.2.9 *Period 4: Late Iron Age/Early Roman, Sample <1039>, fill [265] of pit [266]*

5.11.4.2.10 Macrobotanical remains were scarce and poorly preserved in sample <1039> from the fill [265] of pit feature [266] with only indeterminate remains recorded. The flot contained abundant small charcoal flecks and the residue of this sample contained a moderate amount of wood charcoal. The charcoal assemblage comprised mostly oak fragments, although rose (cf. *Rosa* sp.) and cherry/blackthorn were also recorded. A large amount of burnt bone was also recovered, along with burnt flint, pottery, fired clay and magnetised material.

5.11.4.2.11 *Period 5: Roman/Post Roman, Sample <1040>, fill [301] of pit [302]*

5.11.4.2.12 No macrobotanical remains were present in the sample <1039> from pit [302]. The residue of this sample produced a moderate amount of animal bone, and a small amount of wood charcoal, along with pottery, burnt flint and magnetised material.

5.12 Human Cremated bone

5.12.1 Cremated human bone was recovered from two contexts, MBA pit fill [106] (G21, SG4, pit [105]) and LIA/ER pit fill [265] (G18, SG84, pit [266]). Both cremation burials were recovered from the site as environmental samples (<1011> and <1039> respectively). Following the processing of the samples sieve fractions of <4mm, 4-8mm and >8mm were presented for assessment.

5.12.2 The assessment of this material was undertaken according to standard guidelines (McKinley 2004). The total of weights of the cremation deposits were established and the assemblages were then examined to record the degree of fragmentation and fragment colour. The presence and weight of

fragments from all skeletal areas (skull, axial skeleton, upper limb, lower limb) was noted. The potential of the assemblage to yield demographic or other information was then considered.

5.12.3 All recognisable finds were removed during the processing stage but the material was scanned for the presence of possible staining on bone or for animal bone.

5.12.4 The table below summarises the results of the analysis. The fragment size totals include both the identifiable and unidentifiable material.

		WEIGHT (grams)						AGE	SEX	IDENTIFIABLE			
	Context	Fragment size (mm)					Total (g)			S	A	U	L
		0-4	5-8	9-20	21-30	30+							
MBA	**106**	318.2	743.0	483.6	27.3	7.9	*1580.0*	A?	?	✓	✓	✓	✓
LIA/ER	**265**	32.4	249.6	111.6	0.0	0.0	*393.6*	A?	?	✓	✓	✓	✓

Table 9: Summary results of cremated human bone analysis
(S= skull, A = axial, U= upper limb, L = lower limb, A = adult)

5.12.5 From the initial assessment it would appear that both cremation deposits contain the remains of a single individual, with no repeated elements noted. The MBA burial produced a total of 1580 grams of bone whereas the LIA/ER burial only produced 393.6 grams.

5.12.6 Fragments enabling age at death to be confidently established were not present in either assemblage and fragment size alone was used to provide age estimates. No sexually diagnostic fragments were identified and no evidence of pathology was noted on any fragments.

5.12.7 The cremation process associated with both burials was highly efficient, with 99% of the bone an off-white colour. No animal bone or other intrusive material was noted in either assemblage.

6.0 OVERVIEW AND SIGNIFICANCE OF RESULTS

6.1 Realisation of the original research aims

6.1.1 ORA1 Identifying and defining the character, development and extent of the later prehistoric and Romano-British activity identified in the preceding evaluation.

6.1.2 The excavation identified a Middle Bronze Age enclosure with possible evidence for settlement and a contemporary field system and burnt mound working adjacent to an area of mudflats. The Late Iron Age/Roman period was characterised by field systems.

6.1.3 ORA2 Determining the nature of features associated with the previous channel and determining whether they were associated with water management.

6.1.4 Although no palaeochannel was found, the palaeoenvironmental survey identified evidence of a protected brackish estuary, likely to comprise of saltmarsh, tidal mudflats and a protected creek system. No features were found that could be associated with water management.

6.1.5 ORA3 Determining whether a burnt mound lies on or potentially near the site.

6.1.6 A burnt mound was indeed located on the site, and it was found in association with features of indicative of prehistoric water-heating: a trough, hearth and waterhole.

6.2 Significance and potential of the individual datasets

6.2.1 Palaeoenvironmental

6.2.1.1 The sediments recorded at Rustington have provided an example of the palaeoenvironmental archive contained within the Coastal Plain. The microfossil record was well-preserved within the silts that infill what is now understood to be a protected brackish estuary. The microfossils suggest that this comprised saltmarsh, tidal mudflats and at the onset of sedimentation in a protected creek system. The pollen was also reasonably well preserved and provides an understanding of the vegetation both on and off site.

6.2.1.2 The lack of freshwater or marine influence in the microfossil assemblage suggests this feature was not part of the Black Ditch channel now located to the north of the site. The presence of saline tolerant plants (*Chenopodium*) in the pollen record in combination with the agglutinating foraminifera suggests the presence of mid-high saltmarsh in the vicinity of the site. The ostracods suggest the greatest extent of this lies at 2.02-2.06m bgl. The low occurrence of alder pollen in this wetland environment also supports the theory that the hydrology is saline-dominated.

6.2.1.3 The pollen also gives a picture of the surrounding dryland vegetation which lack any anthropogenic indicators such as cereal pollen. The higher, drier areas were dominated by oak-hazel woodland. Although the sequence is at present undated the low instances of elm and lime pollen indicate a late prehistoric/historic date and may cover the time period of activity recorded in Areas 1 and 2.

6.2.1.4 The site lies to the east of the Arun valley and little work has been undertaken to characterise the palaeoenvironmental archive of this and the surrounding fluvial system. Cartographic sources demonstrate the area of the auger survey to have been marshy ground with an associated channel in at least the later 18th century (Yeakell-and-Gardner-1778-83). However this channel is probably a fairly late feature with its depth enhanced by regular dredging/reed removal to promote better drainage.

6.2.1.5 Work undertaken to the north of the by-pass (Rudling 1990) demonstrated the presence of alluvium up to a depth of 3m which contained freshwater molluscs. A detailed analysis of this sequence is not available so the exact nature of the deposit is unclear and is recorded as several distinct layers of alluvium. No absolute dating was carried out (although bog oaks were recovered) and the sedimentation may represent the floodplain deposition from the Black Ditch which may have been accreting at a completely different time to the on-site deposits.

6.2.1.6 The only other comparable material in proximity of the site is a sequence recovered from Willowbrook Road, Worthing (ASE 2009; Pope *et al*., in press), which had very similar estuarine/saltmarsh microfaunas at least in the initial part of that sequence. This was localised and formed the Broadwater inlet by the flooding of the lower reaches of a major dry (Findon) valley by the breaching of a coastal barrier caused in part by the Holocene sea-level rise. The same mechanism probably acted on the Arun estuary at Littlehampton through the breaching of the coastal barrier and (perhaps extensive) flooding of the lower reaches of the present estuary, extending over what is now the relict Black Ditch at Rustington, but not much further east. The Late Bronze Age is acknowledged as a time of increased marine influence although the exact timing of this change is inconsistent along the East Coast (Woodcock 2003: Waller and Long 2010). The sedimentation recorded at the Rustington site may lie at the very edge of a protected estuary which may explain the lack of freshwater influence despite the proximity of the Black Ditch. However the morphology of the Black Ditch channel is unclear as are the timing and mechanisms of any change in the channel's course which may mean it is not contemporary with the Rustington sequence.

6.2.1.7 The lack of dated sequences from the Coastal Plain underline the significance of this work and the importance of acquiring robust dating. A single date of 3690-3470 Cal BP is recorded from the Willowbrook Road site and no dating was carried out at the previous excavations at along the by-pass.

6.3 The Stratigraphic Sequence

6.3.1 Period 1: Middle Bronze Age: Enclosure 1 and the Burnt Mound working

6.3.1.1 Although there was no firm evidence found of the character of the occupation in Enclosure 1, there were tantalising clues regarding its likely nature. These are mostly derived from the finds from the structured deposition in ditch SG23 and include clay weights, a polished flint and fragments of burnt daub. These are suggestive of domestic occupation, such as a farmstead, the predominant settlement type of the Middle Bronze Age (Bruck 2000, 273-275). This part of Enclosure 1 seems to have had a special significance: In the vicinity of SG23 were potential special deposits of barley in pit [122], and pottery and fire-cracked flint [155] and [257] and cremation burial [105]. In addition, the

presence of a contemporary burnt mound and field boundary ditch indicates a wider exploitation of the surrounding landscape.

6.3.1.2 There is also tentative evidence of further settlement in vicinity of the site. A watching brief was undertaken in the 1980s on the redevelopment of the adjacent south side of the Rustington Stream, immediate opposite Enclosure 1. The remains included three roughly circular areas of burnt clay patches together with irregular clusters of postholes, which were interpreted at the time as 'huts' (Rudling 1990 6-7). What type of occupation these remains, recorded in difficult circumstances, before the advent of the Government's Planning Policy Guidance Note 16 'Archaeology and Planning' (PG16), actually represent is debatable, but they do at least indicate that the high ground on the other side of the stream was dry land in the Bronze Age. The 'hut' remains may well represent some form of activity related to the close proximity of an estuarine foreshore, such as salt-working hearths.

6.3.1.2 The remains of burnt mound working at Rustington are of considerable significance. In a category of monument usually devoid of material culture, this burnt mound contained a small, but datable, finds assemblage. In addition, the importance of the burnt mound is enhanced by the group value of the associated features of trough, hearth and waterhole, as well as by the palaeoenvironmental evidence of adjacent mudflats and the possible settlement at Enclosure 1. Together these individual elements combined to give the site the potential to shed light, not just on the local environment of Rustington in the Bronze Age, but also to add meaningful comment to the wider discussion regarding the function and significance of burnt mounds in general.

6.3.2 Period 2: Middle/Late Bronze Age Droveway

6.3.2.1 Droveway 1 is significant in both signalling the end of the Enclosure 1 occupation and in succeeding Hollow 1, maintaining the Rustington Stream bank as a likely east-west route around the mudflats. In addition, the presence of a flint decortication assemblage in ditch fill [158] may give an insight into a single, opportunistic event of a prehistoric traveller.

6.3.4 Iron Age Hiatus

6.3.4.1 There was no evidence of any enduring occupation on the site from the end of the Bronze Age (*c.* 800 BC) until the beginning of the Late Iron Age (*c*. 100 BC). This hiatus in activity during the greater part of the Iron Age has been demonstrated on numerous sites on the Coastal Plain and this apparent decline has elicited much comment on the possible causes including political upheaval and climate change (see Yates 2007, Brown 2008). Given the wider context, the absence recorded here is unremarkable.

6.3.5 Periods 3 and 4: Late Iron Age/Roman Field Systems

6.3.5.1 Ditch G2 (Period 3.1), Ditch G3 (Period 3.2) and Ditch G4 (Period 4) and the features recorded in the watching brief area are essentially the same use of the landscape in the Late Iron Age/Roman period and may demonstrate a continuous occupation of the site during these periods. Other excavations in both Rustington and in the vicinity have also identified elements of an organised agricultural landscape during these periods. To the east excavations on the site of a new Sainsbury's supermarket recorded elements

of a Roman field system (Rudling 1990, 1-19; Gilkes 1992, 233-234) and to the immediate west of the site the remains of a Roman timber building were found during archaeological work in advance of the construction of the new A259. This building was tentatively interpreted as a watermill, based on fragments millstone and the close proximity of the Rustington Stream (Rudling 2000, 15-28).

6.3.5.2 The presence of an urned cremation burial [266] on top of the bank suggests that some form of domestic occupation was in the close vicinity, and may either relate to one of the previously excavated adjacent sites, or to an as of yet unidentified local settlement.

6.3.5.3 Further afield, at Roundstone Lane in Angmering, *c.* 1km to the north-east, the extensive remains of Roman droveways and field systems were recorded on a 25 hectare site. In addition, there was evidence of timber buildings and a Late Roman corn dryer (Griffin 2003, 98-101). Some 1km to the west, at the HRI site, were located successive Roman enclosures with evidence of pottery manufacture and the processing of spelt wheat (Worrell 2007).

6.3.5.4 Clearly, Rustington and the wider area were part of an exploited agricultural landscape in the Late Iron Age and Roman periods, no doubt centrally organised around villas at Angmering *c.* 1km to the north and Littlehampton *c.* 0.5km to the south-west.

6.3.6 Period 5: Post-Roman

6.3.6.1 Other than drainage gullies G25 and medieval pit [15/038] there was no evidence for any occupation of the site from the Roman period onwards, indicating that the site remained under open pasture.

6.4 **Flintwork** by Karine Le Hegarat

6.4.1 The assemblage of worked flint confirms the presence of prehistoric activity at and around the site. However, it suggests little intense activity until the Bronze Age. A single blade core provide evidence for Mesolithic/Early Neolithic presence, and five artefacts are characteristic of the Neolithic or Early Bronze Age period. Two of these artefacts were found within the burnt mound and three are associated with Enclosure 1. It includes a polished flake. Although this piece is thought to be residual, the artefact may actually be contemporary with the feature (see above). Otherwise, the bulk of the assemblage is mostly represented by unmodified pieces of flint débitage, the majority of which is actually the result from unskilled casual knapping. It is consistent with a late prehistoric date and would therefore be contemporary with the main occupation of the site (Period 1 and 2). Overall, the artefacts were thinly distributed, but ditch slot fill (158) Group 8 produced a moderate scatter. The group indicates that knapping was carried out either within the ditch or in the vicinity of the feature, and the tested nodules together with the large quantity of primary flakes suggest initial de-cortication stage.

6.4.2 Small assemblages of worked flint ranging in date from the Neolithic to the late Bronze Age have been recovered in the area of the site (Place 1990, Gilkes 1992 and Butler 2000). Overall, the flint assemblage from Rustington points to a multi-activity site. It contains a variety of retouched tools suggesting settlement. For instance scrapers are often associated with hide working activities. But it also produced material indicating a concern with

primary reduction. Nonetheless, it is too restricted to shed further light on settlement or industrial activities.

6.4.3 Work at the site produced large quantities of burnt unworked flint the majority of which are directly associated with a burnt mound. The exact function of burnt mounds is still unclear. Burnt mound sites are usually Middle to Late Bronze Age in date (English Heritage 2011). They may represent remnants of activities involving the immersion of heated pieces of flint to heat or boil water, activities such as cooking, brewing, leather working, dying, salt producing and bathing (English Heritage 2011, Barfield & Hodder 1987, O' Drisceoil, 1988). Alternative uses could have been to dry corn (Cunliffe 2002) or to obtain tempering material for ceramics.

6.4.4 The sheer quantity of material recovered from the site, the intense degree of its burning and the absence of other stones imply that the material was deliberately selected for its properties and that it was intentionally heated. Whatever its function, the material relates to a significant activity carried out at the site. However, as noted above the precise function of this type of material is unclear, and the interpretation of large amounts of burnt unworked flint remains problematic. Nonetheless, the assemblage of burnt unworked flint may provide evidence for the location and the extent of burnt flint related activities performed at the site. The source for the flint is likely to be the Brighton – Norton Raised Beach deposits in the vicinity of the site.

6.5 The Prehistoric and Roman Pottery by Anna Doherty

6.5.1 Middle and Late Bronze Age pottery assemblages are particularly common on the West Sussex Coastal Plain. An overview of pottery from the region has been published relatively recently and forthcoming publication of a number of larger and more diagnostic assemblages from nearby sites is likely to enhance our understanding of local prehistoric pottery traditions (Seager Thomas 2008 and in prep). This is a fairly small assemblage with a limited number of diagnostic feature sherds. There is also some evidence that stratified groups contain material of slightly mixed date. Having said this, the evidence regarding possible structured deposits is worth highlighting and briefly comparing with other sites in the region. Overall the Bronze Age assemblage is assessed to be of local significance.

6.5.2 The later Iron Age/Early Roman material comprises just a few fairly undiagnostic sherds and is therefore of low significance. However, a bodysherd of probable Dressel 1 amphora found in the evaluation stage is worth mentioning in the stratigraphic discussion as Republican wine amphorae are very sparsely distributed in the central part of the Coastal Plain.

6.6 The Bulk Metalwork by Trista Clifford

6.6.1 The metal finds have been recorded on *pro forma* sheets and digitally for the archive. They are of minimal significance and hold no potential for further work. No further work is proposed

6.7 The Ceramic Building Material by Trista Clifford

6.7.1 The CBM has minimal significance beyond dating of the feature from which it was recovered. It has been recorded for the site archive and no further work is required.

6.8 The Fired Clay by Trista Clifford

6.8.1 The fired clay assemblage contains only small amounts of briquetage. The presence of container/vessel briquetage fragments indicates that although salt was being utilised, it was probably imported rather than produced on site. Small amounts of briquetage are not uncommon on sites of this period therefore the briquetage is not considered to be of any great significance.

6.8.2 The fired clay weights however are of local and possibly regional significance. While it is not unusual to find pyramidal and cylindrical weights within the same site, the deposition of three forms of weight together with pottery vessels within a single context might be considered unusual and may be indicative of structured deposition. The weight forms themselves are also worthy of further investigation, the spherical form being seemingly unparalleled.

6.9 The Geological Material by Luke Barber

6.9.1 The assemblage is small and of local significance only.

6.10 Environmental Samples: Macro-botanicals and Charcoal by Dr Lucy Allot

6.10.1 The majority of samples produced very few macrobotanical remains and in many instances preservation of these was poor to moderate. Where the remains are more abundant they tend to be better preserved and the assemblages hold some potential to examine the range of cereal crops represented. It is notable that the larger, significant assemblages are from Middle Bronze Age deposits and that, with the exception of sample <1016>, the assemblages of macrobotanical remains from Middle to Late Bronze Age occupation Period 2 are very small. There is no evidence for plant use associated with the later, Period 4 and 5 occupations.

6.10.2 The majority of features encountered at the site, and consequently the samples taken, do not contain deposits associated with primary processing, use or discard of crops and other plant resources. Instead the pits, ditches and waterhole almost certainly contain waste discarded over several episodes and/or may have accumulated in open features gradually over time. Given that these deposits are likely to contain mixed assemblages, the apparent predominance of barley in some of the Middle Bronze Age samples is interesting and it may indicate that barley was prominent at the site. The comparatively homogeneous nature of the cereal assemblages also suggests that although not from primary deposits they may not have been subject to significant mixing or reworking.

6.10.3 Preliminary results of the assessment indicate that the largest assemblages are from samples taken from enclosure ditch groups G5 and G6 and from prehistoric pits G20. The composition of the macrobotanical remains assemblages in these is very similar and lends support to allocating the small pits to this occupation period. Barley (possibly both naked and hulled) and wheat grains, including free-threshing bread-type wheat are present in the ditch and pit features. It appears that barley grains dominate the largest assemblages although quantification during analysis work will clarify this. Analysis will also aim to confirm the presence of naked barley in addition to hulled barley through comparison with reference material. Grains that are rounded in cross section are common although those that are more angular

are also evident suggesting that both naked and hulled varieties are probably present. Transverse wrinkles on the dorsal surface that are characteristic of naked barley have not been recorded as yet because the surfaces of many of the grains are slightly damaged. A full sort of the macrobotanicals will determine whether any of the grains preserve this detail and comparison with reference material will assist in identifying the taxa present. Barley grains are not uncommon in Middle Bronze Age assemblages from the region and this crop would have been ideally suited to the lighter calcareous soils of the South Downs. Evidence for hulled barley is stronger than for naked barley in the region and although large deposits of well-preserved naked barley have been recorded at Graylingwell (Le Hégarat & Allott 2011) this crop is currently unknown from sites located on the coastal plain of West Sussex (Allott forthcoming/in prep.). Once the identification has been confirmed the current assemblage may therefore be of regional significance contributing new evidence for the distribution of the crop.

6.10.4 Although several of the deposits contained non-cereal crops and seeds the evidence they contribute towards developing an image of the local vegetation or the types of land and crops being cultivated is limited. Peas and beans were almost certainly cultivated locally and consumed during the Middle and Late Bronze Age. Hawthorn stones probably derive from scrub land or hedgerows and they may have been collected for their edible flesh or could have been brought to the site together with wood. The arable and ruderal weeds noted are able to grow on a range of different types of land. The current wild/weed assemblage holds no potential for further analysis although fully sieving and sorting will reveal whether further seeds and botanical remains are present in the smallest fractions that are rich in wood charcoal flecks. Non-cereal crops present in the assemblages will be recorded together with the crops during analysis. They are present in such small quantities that they are unlikely to contribute significant additional information regarding their cultivation.

6.10.5 Although many of the samples assessed produced only small quantities of wood charcoal, moderate to large assemblages were recorded in some samples. The preservation of the charcoal fragments was in general poor to moderate. Most fragments were abraded, and many also displayed evidence of sediment concretion and infiltration linked to fluctuations in groundwater level. With the exception of sample <1044>, from a hearth adjacent to the trough of the burnt mound, the samples derived from contexts representing the secondary deposition of burnt material rather than *in situ* burning. As such, the assemblages are likely to derive from amalgams of material from multiple domestic and industrial burning events, and are of little value in the discussion of the selection of wood as fuel for particular purposes. The results of this assessment are, however, of significance to an overall examination of fuel wood acquisition strategies at the site.

6.10.6 There was very little variation in the wood taxa identified from the different periods of occupation and land use at the site, although the vast majority of samples originated from deposits dated to the Bronze Age. Oak was predominant in the assemblages from all periods, in some samples to the exclusion of any other wood taxa. This suggests that fuel wood was primarily procured from oak-dominated deciduous woodland, and that this taxon was dominant in the local landscape. Taxa such as Maloideae, hazel, birch, and cherry/blackthorn may represent other trees present in mixed woodland, or alternatively may provide evidence of the exploitation of woodland margin or

hedgerow environments. The presence of rose charcoal in sample <1039> is very likely to derive from wood cut from hedgerows. The Leguminosae charcoal recorded probably derives from gorse or broom growing on chalk downland or heathland in the nearby South Downs, and the yew identified in sample <1036> is also likely to originate from this area.

6.10.7 Although Bronze Age activity had been recorded in previous investigation near to the site, environmental remains were not examined from these sites, and so no immediate comparative charcoal assemblage is present (Rudling 1990, Gilkes 1992, Rudling & Gilkes 2000). Small to moderate quantities of charcoal were found in samples taken during evaluation work at the site (Stevens 2005), however again taxonomic identifications were not assigned. Further afield, however, other contemporary sites on the southern edge of the South Downs have produced comparable charcoal assemblages. Significant quantities of oak and Leguminosae charcoal have been identified in Neolithic and Bronze Age deposits at Mile Oak Farm (Berzins 2002a), and a similar variety of taxa to those identified at the site were also found at Redhill (Berzins 2002b) and Coldean Lane (Berzins 2002c). All these taxa would have been found in woodland, hedgerow or scrub close to the site, and as such are likely to represent to some degree the composition of local woodland plant communities. Further examination of this charcoal assemblage, as recommended below, will give a fuller picture of both fuel wood acquisition strategies and woodland composition, and enable more detailed comparisons to be made.

6.11 Cremated Human Bone

6.11.1 Two deposits contained identifiable human bone and fragments from all skeletal areas were identified. Further study of the analysis results will enable the degree of fragmentation to be examined as well as the percentage by weight of the fragments from each skeletal area. It is not thought that further examination of the material will result in more detailed results or more accurate age or sex estimates.

7.0 REVISED RESEARCH AIMS

7.1 This section combines those original research aims that the site archive has the potential to address with any new research aims identified in the assessment process by stratigraphic, finds and environmental specialists to produce a set of revised research aims that will form the basis of any future research agenda. Original research aims (OR's) are referred to where there is any synthesis of subject matter to form a new set of revised research aims (RRA's) posed as questions below.

RRA1 Due to the lack of any dated palaeoenvironmental sequences from this area, any analysis will be invaluable to begin to allow an understanding of the evolution of the landscape of the coastal plain. With this in mind, does this palaeoenvironmental sequence represent accumulation over the time period of the archaeological activity and if so how has the vegetation and landscaped changed over the life of the feature?

RRA2 How can this palaeoenvironmental sequence further enhance our understanding of the nature of the inland effects of sea level change?

RRA3 Can any other parallels for the polished flint be found in Sussex or further afield?

RRA4 Are there any other examples of de-cortication stage flint-knapping assemblages in the vicinity of the Brighton-Norton Raised Beach deposits?

RRA5 What was the likely nature of the occupation in Middle Bronze Age Enclosure 1 and how does it relate to the 'hut' sites identified on the other side of the stream? (ORA1)

RRA6 Can more parallels be found for the items selected for structured deposition in ditch SG23? Can any more light be shed on the likely nature or order of the internment?

RRA7 What was the likely function of the burnt mound working and what was its likely duration of use? What does the evidence from Rustington add to the wider debate on the nature of burnt mounds? (ORA3)

RRA8 Other burnt mound deposits have been found in the Rustington area. What was the nature of these, and did they also have associated features such as troughs and hearths? (ORA3)

RRA9 Can a clearer focus be reached on the local Roman agricultural landscape in the light of the new findings? (ORA1)

8.0 METHODOLOGY AND RESOURCE ALLOCATION

8.1 Palaeoenvironmental

8.1.1 The sequence has demonstrated that it has the potential to provide a reconstruction of the vegetational history of the site. The sampling interval of this assessment is quite coarse and therefore further analyses would involve a closer sampling interval for both pollen and microfossils with the pollen counts taken to 300 grains.

8.1.2 The sequence should also be subject to a programme of dating which may include the recovery of dates from the foram assemblage (3.17-3.21m contain enough individuals to date). The problems of dating Holocene brackish foram assemblages include the relative influence of salinity and the marine reservoir effect which is unknown for this site. In order to provide a possible calibration for this date it is recommended that seeds recovered from the microfossil processing also be submitted for dating.

8.1.3 Should an open section become available it may be advantageous to collect bulk samples for analysis in order to enhance the microfossil record. The area to the east of the site demonstrated a widening of this estuary-type feature which is expressed as a topographic low with associated terrace that is clearly visible. This area presents a target for future research and may help to better characterise the morphology of the feature. The lack of well-dated sequences from the Arun and its tributary valleys make this sequence of regional importance and a programme of further analysis is strongly recommended.

Pollen: QUEST to count to full analysis with extra samples to make a complete sequence Pollen diagram and Discussion **Fee**

Microfossils: Extra samples to make a complete sequence and discussion **Fee**

Text preparation **3 Days**

8.2 The Stratigraphic Sequence

8.2.1 A final report will be prepared following the format outlined below. The report for publication will include all phases of archaeological work carried out on the site and include data from the evaluation and watching brief. Information supplied by the various specialists will be included within the publication, and appropriate plans and maps will illustrate the text. The major tasks to be completed by the principal stratigraphic author at the next stage of analysis and to complete the publication are summarised in Table 10, resources required for analysis and publication.

10 Days

8.3 Flintwork by Karine Le Hegarat

8.3 The assemblage is not considered to have any potential for further analysis such as refitting or detailed attribute analysis. Nonetheless, the prehistoric occupation of the Coastal Plain is still poorly understood and documented. The flint assemblage is small, but given that it is likely to be contemporary with the settlement and possibly with the use of the burnt mound, it is recommended that a short note based on this assessment should be prepared for publication. It is recommended that an account of the substantial quantity of burnt unworked flint recorded at the site including its possible function should be prepared. Comparison with other burnt mounds from the Coastal Plain and further afield should be included.

Further work:

Identifying parallels for the polished flake recovered from ditch fill context (121) SG12 1.5 Days

Comparing the flint assemblage with assemblages recovered from similar settlement sites associated with burnt mounds

1 Day

Total 2.5 Days

8.4 The Pottery by Anna Doherty

8.4.1 It is proposed that a brief summary publication report should be prepared on the Bronze Age pottery assemblage. This can be largely based on the above text although some limited further research is recommended for regional evidence of structured deposition, involving pottery. No further work is needed on the later Iron Age/early Roman assemblage although it is recommended that the presence of sherds of Dressel 1 amphora from evaluation context (T5 /013]) is mentioned in the stratigraphic text. Only two feature sherds are complete enough to warrant illustration.

Further research on regional parallels 0.5 Day

Prepare summary report 0.5 Day

Total 1 Day

8.5 Ceramic Building Material by Trista Clifford

8.5.1 No further work is required on the assemblage.

8.6 The Fired Clay by Trista Clifford

8.6.1 The material from ditch fill [144] should be briefly reassessed for diagnostic fragments. A report on the fired clay objects should be included for publication, drawing on this report but including local and regional parallels for the weight forms. Up to 10 objects are suitable for illustration.

Analysis of possible mould from [184] by Justine Bayley at UCL **Fee**

Brief reassessment of material from [144] 0.5 day

Research further parallels/ comparative sites		1 day
Production of publication report		1 days
Catalogue of illustrated finds		0.5 days
	Total	**3 Days**

8.7 The Animal Bone by Gemma Driver

8.7.1 No further work is required.

8.8 The Bulk Metalwork by Trista Clifford

8.8.1 No further work is required.

8.9 The Environmental Samples by Lucy Allot

8.9.1 *Charred Macrobotanicals*

8.9.1.1 Full analysis is recommended for charred macrobotanical remains arising from four of the environmental samples. Full sieving and sorting is required for samples <1014>, <1019> and <1029> from enclosure group G5 and for <1020> from pit group G20. In addition three samples, <1018> and <1022> (G5) and <1021> (G20), should be included in the report for comparison. Very few identifications further to those already made are likely to be obtained although it may be possible to refine the barley taxa. Analysis will focus on quantifying and identifying the cereal crops evident in the Middle Bronze Age deposits selected and it will contribute data regarding the types of barley being cultivated at this time. A literature search will be undertaken to locate comparative sites from the surrounding counties.

8.9.1.2 No further work is recommended for samples from the later occupation phases or for the small cereal assemblages recorded during the evaluation phase of work.

8.9.2.1 *Charcoal*

8.9.2.2 Six samples contained moderate to large assemblages of wood charcoal which would benefit from further investigation. These comprise samples <1019> and <1029> from Middle Bronze Age enclosure ditch fills [121] and [144] respectively, sample <1042> from Middle Bronze Age burnt mound trough [305], sample <1043> from fill [307] of Middle Bronze Age waterhole [203], sample <1030> from Mid to Late Bronze Age droveway ditch [159], and sample <1016> from Mid to Late Bronze Age pit [117]. Further charcoal identifications from these samples will help to shed light on the fuel procurement strategies of the Bronze Age inhabitants of the site, and the wooded environments present in the local vicinity. It is recommended that these samples are analysed, and the results combined with those of this assessment and compared with published contemporary assemblages during analysis work. No significant assemblages of wood charcoal were noted in samples taken during evaluation work at the site (Stevens 2005), and it is not recommended that these are included in further work.

8.9.3 *Charred Macrobotanicals*

8.9.3.1 Full analysis of macrobotanical remains from samples <1014>, <1019>, <1029> and <1020> and limited identifications will be provided for macrobotanicals in samples <1018>, <1022> and <1021>.

Identification (including comparison with reference material) and data entry 2.5 days

Literature consultation and report production 1.5 days

8.9.4 *Charcoal*

8.9.4.1 Analysis of charcoal from 6 samples: <1016>, <1019>, <1029>, <1030>, <1042> & <1043>

Identification & data entry	2 days
Literature consultation and report production	1.5 days
Total	**7.5 days**

8.10 C14 Radiocarbon Dating

8.10.1 Up to twelve AMS samples from the burnt mound and associated features; ditch SG23; cremation burial pit fill [106] and palaeoenvironmental samples **Fee**

8.11 The Geological Material by Luke Barber

8.11.1 No further work is required.

8.12 Cremated Human Bone

8.12.1 The analysis results will be studied in order to calculate the degree of fragmentation and the percentages by weight of fragments from each skeletal area. A report will be produced summarising the results and comparing them to other burials of the same period.

Results analysis	0.5 day
Report production	0.5 day
Total	**1 day**

8.13 Illustration

Up to fired clay 15 objects	3 days
Two pottery vessels	0.5 day
Polished flake from Middle Bronze Age ditch fill context (121) SG12	0.5 day
Prepare publication figures	2 days
Total	**3.5 days**

8.14 Project Management

8.13.1 Project management of the publication process **1 day**

8.15 Editing

8.14.1 Internal editing **2 days**

9.0 PUBLICATION AND ARCHIVING PROPOSALS

9.1 *Publication Synopsis*

9.1.1 It is proposed that, as the findings are worthy of publication, an article will be produced *c.* 5,000 words. The report will present the results from all phases of archaeological investigations with particular reference to integrating the site with the adjacent previously excavated areas and understanding the wider historic landscape.

9.1.2 The report will include appropriate maps, plans and illustrations.

It is proposed the article will follow the publication synopsis outlined below, resulting in an article of *c*. 5, 000 words for publication in the Sussex Archaeological Collection journal.

Working Title
Excavations at Rustington

Introduction
Circumstances of fieldwork and background

Excavation Results
Integrated narrative text by period

Discussion

Specialist Reports
Pollen
Microfauna
Pottery
Fired Clay
Environmental Evidence

Acknowledgements
Bibliography

Figures
Plans, selected sections, photographs and illustrations

9.2 *Artefacts and Archive Deposition*

9.2.1 Following completion of the post-excavation work the site archives will be deposited with Littlehampton Museum.

10.0 RESOURCES AND PROGRAMMING

Staffing

The project team will be composed as follows:

Team Member (TBC)	**Initials**	**Tasks**
Giles Dawkes	GD	Site Analysis; Report production; archive collation
Anna Doherty	AD	Prehistoric & Roman pottery
Trista Clifford	TC	Fired Clay
Lucy Sibun	LS	Cremated human bone
Karine Le Hegaret	KL	Struck flint
Kristina Krawiec	KK	Palaeoenvironmental
External specialist		Pollen
External specialist		Microfauna
External specialist		Charcoal
Louise Rayner/ Jim Stevenson/Dan Swift	LR JM DS	Post-Excavation Project Manager; editing
Justin Russell	JR	Publication Figures
Fiona Griffin	FG	Publication Figures

Table 10: Project Team

Publication Resources

Task	Team Member	Days
Stratigraphic		
Finalise grouping	GD	1 day
Define, describe and finalise landuse entities and periods and phases	GD	2 days
Comparative reading & research	GD	2 days
Prepare integrated publication report. This task comprises the combination of the stratigraphic period descriptions and the relevant portions of completed finds, environmental, documentary and integrated analytical reports. Photographic images will also be selected from the archive for publication. Completion of this task will result in the first (unedited) draft of the report	GD	4 days
Post edit amendments	GD	1 day
Subtotal	**GD**	**10 days**
Specialist Analysis and Reporting		
Palaeoenvironmental	KK	3
Pollen	QUEST	Fee
Microfossils	QUEST	Fee
Pottery	AD	1
Fired Clay	TD	3
Flintwork	KL	2.5
C14 dating	Lab	fee
Environmental	LA	7.5
Cremated human bone	LS	1
Illustration and preparation of report text		
Prepare plans and sections for publication	JR	2
Artefact Illustration (flint and fired clay)	FG	3.5
Project management	LR/JS/DS	1 day
Publication edit	LR/JS/DS	2 days
Publication production costs		fee

Table 11: Publication resources

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Appendix 1: Excavation Context Register

CONTEXT		GROUP			PERIOD		
100	Deposit	22			1		
101	Deposit	22			1		
102	Fill	10	Hollow	1	1	Middle Bronze Age	
103	Cut	10	Hollow	1	1	Middle Bronze Age	
104	Deposit	23			1		
105	Cut	21	Cremation		1	1	Middle Bronze Age
106	Fill	21	Cremation		1	1	Middle Bronze Age
107	Cut	20	Prehistoric pits		1	1	Middle Bronze Age
108	Fill	20	Prehistoric pits		1	1	Middle Bronze Age
109	Cut	20	Prehistoric pits		1	1	Middle Bronze Age
110	Fill	20	Prehistoric pits		1	1	Middle Bronze Age
111	Cut	5	Enclosure	1	1	Middle Bronze Age	
112	Fill	5	Enclosure	1	1	Middle Bronze Age	
113	Cut	20	Prehistoric pits		1	1	Middle Bronze Age
114	Fill	20	Prehistoric pits		1	1	Middle Bronze Age
115	Cut	5	Enclosure	1	1	Middle Bronze Age	
116	Fill	5	Enclosure	1	1	Middle Bronze Age	
117	Cut	22	Prehistoric pits		2	1	MBA/LBA
118	Fill	22	Prehistoric pits		2	1	MBA/LBA
119	Fill	22	Prehistoric pits		2	1	MBA/LBA
120	Cut	5	Enclosure	1	1	Middle Bronze Age	
121	Fill	5	Enclosure	1	1	Middle Bronze Age	
122	Cut	20	Prehistoric pits		1	1	Middle Bronze Age
123	Fill	20	Prehistoric pits		1	1	Middle Bronze Age
124	Cut	20	Prehistoric pits		1	1	Middle Bronze Age
125	Fill	20	Prehistoric pits		1	1	Middle Bronze Age
126	Cut	6	Enclosure	1	1	Middle Bronze Age	
127	Fill	6	Enclosure	1	1	Middle Bronze Age	

128	Cut	7	Droveway	2	1	MBA/LBA	
129	Fill	7	Droveway	2	1	MBA/LBA	
130	Cut	20	Prehistoric pits	1	1	Middle Bronze Age	
131	Fill	20	Prehistoric pits	1	1	Middle Bronze Age	
132	Cut	9	Prehistoric pits	1	1	Middle Bronze Age	
133	Fill	9	Prehistoric pits	1	1	Middle Bronze Age	
134	Fill	11	Field boundary ditch		1	2	Middle Bronze Age
135	Cut	11	Field boundary ditch		1	2	Middle Bronze Age
136	Fill	11	Field boundary ditch		1	2	Middle Bronze Age
137	Cut	11	Field boundary ditch		1	2	Middle Bronze Age
138	Fill	10	Hollow	1	1	Middle Bronze Age	
139	Fill	11	Field boundary ditch		1	2	Middle Bronze Age
140	Cut	11	Field boundary ditch		1	2	Middle Bronze Age
141	Fill	4	Field boundary ditch		5	2	Roman/Post-Roman
142	Cut	4	Field boundary ditch		5	2	Roman/Post-Roman
143	Fill	5	Enclosure	1	1	Middle Bronze Age	
144	Fill	5	Enclosure	1	1	Middle Bronze Age	
145	Cut	9	Prehistoric pits	1	1	Middle Bronze Age	
146	Fill	9	Prehistoric pits	1	1	Middle Bronze Age	
147	Cut	9	Prehistoric pits	1	1	Middle Bronze Age	
148	Fill	9	Prehistoric pits	1	1	Middle Bronze Age	
149	Fill	5	Enclosure	1	1	Middle Bronze Age	
150	Cut	5	Enclosure	1	1	Middle Bronze Age	
151	Cut	9	Prehistoric pits	1	1	Middle Bronze Age	
152	Fill	9	Prehistoric pits	1	1	Middle Bronze Age	
153	Cut	9	Prehistoric pits	1	1	Middle Bronze Age	
154	Fill	9	Prehistoric pits	1	1	Middle Bronze Age	
155	Cut	9	Prehistoric pits	1	1	Middle Bronze Age	
156	Fill	9	Prehistoric pits	1	1	Middle Bronze Age	
157	Cut	8	Droveway	2	1	MBA/LBA	

158	Fill	8	Droveway2	1	MBA/LBA		
159	Cut	8	Droveway2	1	MBA/LBA		
160	Fill	8	Droveway2	1	MBA/LBA		
161	Fill	8	Droveway2	1	MBA/LBA		
162	Cut	20	Prehistoric pits	1	1	Middle Bronze Age	
163	Fill	20	Prehistoric pits	1	1	Middle Bronze Age	
164	Fill	7	Droveway2	1	MBA/LBA		
165	Cut	7	Droveway2	1	MBA/LBA		
166	Fill	7	Droveway2	1	MBA/LBA		
167	Cut	7	Droveway2	1	MBA/LBA		
168	Fill	5	Enclosure1	1	Middle Bronze Age		
169	Cut	5	Enclosure1	1	Middle Bronze Age		
170	Fill	5	Enclosure1	1	Middle Bronze Age		
171	Cut	5	Enclosure1	1	Middle Bronze Age		
172	Cut	20	Prehistoric pits	1	1	Middle Bronze Age	
173	Fill	20	Prehistoric pits	1	1	Middle Bronze Age	
174	Cut	20	Prehistoric pits	1	1	Middle Bronze Age	
175	Fill	20	Prehistoric pits	1	1	Middle Bronze Age	
176	Fill	8	Droveway2	1	MBA/LBA		
177	Cut	8	Droveway2	1	MBA/LBA		
178	Fill	8	Droveway2	1	MBA/LBA		
179	Fill	5	Enclosure1	1	Middle Bronze Age		
180	Cut	5	Enclosure1	1	Middle Bronze Age		
181	Cut	1	Field boundary ditch		1	1	Middle Bronze Age
182	Fill	1	Field boundary ditch		1	1	Middle Bronze Age
183	Cut	8	Droveway2	1	MBA/LBA		
184	Fill	8	Droveway2	1	MBA/LBA		
185	Fill	8	Droveway2	1	MBA/LBA		
186	Cut	3	Field boundary ditch		4	2	LIA/Early Roman
187	Fill	3	Field boundary ditch		4	2	LIA/Early Roman

188	Cut	3	Field boundary ditch		4	2	LIA/Early Roman
189	Fill	3	Field boundary ditch		4	2	LIA/Early Roman
190	Cut	8	Droveway2	1	MBA/LBA		
191	Fill	8	Droveway2	1	MBA/LBA		
192	Cut	8	Droveway2	1	MBA/LBA		
193	Fill	8	Droveway2	1	MBA/LBA		
194	Fill	8	Droveway2	1	MBA/LBA		
195	Cut	5	Enclosure1	1	Middle Bronze Age		
196	Fill	5	Enclosure1	1	Middle Bronze Age		
197	Cut	8	Droveway2	1	MBA/LBA		
198	Fill	8	Droveway2	1	MBA/LBA		
199	Cut	8	Droveway2	1	MBA/LBA		
200	Fill	8	Droveway2	1	MBA/LBA		
201	Cut	3	Field boundary ditch		4	2	LIA/Early Roman
202	Fill	3	Field boundary ditch		4	2	LIA/Early Roman
203	Cut	12	Waterhole	1	2	Middle Bronze Age	
204	Fill	12	Waterhole	1	2	Middle Bronze Age	
205	Fill	12	Waterhole	1	2	Middle Bronze Age	
206	Fill	12	Waterhole	1	2	Middle Bronze Age	
207	Deposit	16	Alluvium/colluvium	2	2	MBA/LBA	
208	Deposit	16	Alluvium/colluvium	2	2	MBA/LBA	
209	Cut	2	Field boundary ditch		3	2	LIA/Early Roman
210	Fill	2	Field boundary ditch		3	2	LIA/Early Roman
211	Deposit	15	Burnt mound layers	1	2	Middle Bronze Age	
212	Cut	3	Field boundary ditch		4	2	LIA/Early Roman
213	Fill	3	Field boundary ditch		4	2	LIA/Early Roman
214	Cut	1	Field boundary ditch		1	2	Middle Bronze Age
215	Fill	1	Field boundary ditch		1	2	Middle Bronze Age
216	Cut	4	Field boundary ditch		5	2	Roman/Post-Roman
217	Fill	4	Field boundary ditch		5	2	Roman/Post-Roman

218	Fill	4	Field boundary ditch	5	2	Roman/Post-Roman
219	Cut	2	Field boundary ditch	3	2	LIA/Early Roman
220	Fill	2	Field boundary ditch	3	2	LIA/Early Roman
221	Cut	3	Field boundary ditch	4	2	LIA/Early Roman
222	Fill	3	Field boundary ditch	4	2	LIA/Early Roman
223	Cut	1	Field boundary ditch	1	2	Middle Bronze Age
224	Fill	1	Field boundary ditch	1	2	Middle Bronze Age
225	Fill	1	Field boundary ditch	1	2	Middle Bronze Age
226	Fill	4	Field boundary ditch	5	2	Roman/Post-Roman
227	Cut	2	Field boundary ditch	3	2	LIA/Early Roman
228	Fill	2	Field boundary ditch	3	2	LIA/Early Roman
229	Cut	4	Field boundary ditch	5	2	Roman/Post-Roman
230	Cut	3	Field boundary ditch	4	2	LIA/Early Roman
231	Fill	3	Field boundary ditch	4	2	LIA/Early Roman
232	Deposit	16	Alluvium/colluvium	2	2	MBA/LBA
233	Cut	17	Prehistoric pits	1	2	Middle Bronze Age
234	Fill	17	Prehistoric pits	1	2	Middle Bronze Age
235	Cut	17	Prehistoric pits	1	2	Middle Bronze Age
236	Fill	17	Prehistoric pits	1	2	Middle Bronze Age
237	Cut	17	Prehistoric pits	1	2	Middle Bronze Age
238	Fill	17	Prehistoric pits	1	2	Middle Bronze Age
239	Cut	17	Prehistoric pits	1	2	Middle Bronze Age
240	Fill	17	Prehistoric pits	1	2	Middle Bronze Age
241	Cut	17	Prehistoric pits	1	2	Middle Bronze Age
242	Fill	17	Prehistoric pits	1	2	Middle Bronze Age
243	Cut	17	Prehistoric pits	1	2	Middle Bronze Age
244	Fill	17	Prehistoric pits	1	2	Middle Bronze Age
245	Deposit	15	Burnt mound layers	1	2	Middle Bronze Age
246	Cut	3	Field boundary ditch	4	2	LIA/Early Roman
247	Fill	3	Field boundary ditch	4	2	LIA/Early Roman

248	Deposit	15	Burnt mound layers	1	2	Middle Bronze Age	
249	VOID			2			
250	Deposit	16	Alluvium/colluvium	2	2	MBA/LBA	
251	Cut	1	Field boundary ditch		1	2	Middle Bronze Age
252	Fill	1	Field boundary ditch		1	2	Middle Bronze Age
253	Deposit	15	Burnt mound layers	1	2	Middle Bronze Age	
254	Deposit	15	Burnt mound layers	1	2	Middle Bronze Age	
255	Fill	4	Field boundary ditch		5	2	Roman/Post-Roman
256	Fill	20	Prehistoric pits	1	1	Middle Bronze Age	
257	Cut	20	Prehistoric pits	1	1	Middle Bronze Age	
258	Fill	17	Prehistoric pits	1	2	Middle Bronze Age	
259	Cut	17	Prehistoric pits	1	2	Middle Bronze Age	
260	Cut	1	Field boundary ditch		1	2	Middle Bronze Age
261	Fill	1	Field boundary ditch		1	2	Middle Bronze Age
262	Cut	4	Field boundary ditch		5	2	Roman/Post-Roman
263	Fill	4	Field boundary ditch		5	2	Roman/Post-Roman
264	Fill	4	Field boundary ditch		5	2	Roman/Post-Roman
265	Fill	18	Roman pit	4	2	LIA/Early Roman	
266	Cut	18	Roman pit	4	2	LIA/Early Roman	
267	Cut	25	Shallow drainage ditches		5	2	Roman/Post-Roman
268	Fill	25	Shallow drainage ditches		5	2	Roman/Post-Roman
269	Cut	25	Shallow drainage ditches		5	2	Roman/Post-Roman
270	Fill	25	Shallow drainage ditches		5	2	Roman/Post-Roman
271	Fill	8	Droveway2	2	MBA/LBA		
272	Cut	8	Droveway2	1	MBA/LBA		
273	Cut	25	Shallow drainage ditches		5	2	Roman/Post-Roman
274	Fill	25	Shallow drainage ditches		5	2	Roman/Post-Roman
275	Cut	25	Shallow drainage ditches		5	2	Roman/Post-Roman
276	Fill	25	Shallow drainage ditches		5	2	Roman/Post-Roman
277	Cut	26	Shallow drainage ditches		5	2	Roman/Post-Roman

278	Cut	26	Shallow drainage ditches	5	2	Roman/Post-Roman
279	Fill	26	Shallow drainage ditches	5	2	Roman/Post-Roman
280	Fill	26	Shallow drainage ditches	5	2	Roman/Post-Roman
281	Cut	19	Undated pits	5	2	Roman/Post-Roman
282	Fill	19	Undated pits	5	2	Roman/Post-Roman
283	Cut	1	Field boundary ditch	1	2	Middle Bronze Age
284	Fill	1	Field boundary ditch	1	2	Middle Bronze Age
285	Fill	4	Field boundary ditch	5	2	Roman/Post-Roman
286	Fill	8	Droveway2	1	MBA/LBA	
287	Cut	8	Droveway2	1	MBA/LBA	
288	Cut	1	Field boundary ditch	1	2	Middle Bronze Age
289	Fill	1	Field boundary ditch	1	2	Middle Bronze Age
290	Cut	4	Field boundary ditch	5	2	Roman/Post-Roman
291	Fill	4	Field boundary ditch	5	2	Roman/Post-Roman
292	Fill	4	Field boundary ditch	5	2	Roman/Post-Roman
293	Fill	5	Enclosure1	1	Middle Bronze Age	
294	Cut	5	Enclosure1	1	Middle Bronze Age	
295	Cut	4	Field boundary ditch	5	2	Roman/Post-Roman
296	Cut	4	Field boundary ditch	5	2	Roman/Post-Roman
297	Cut	25	Shallow drainage ditches	5	2	Roman/Post-Roman
298	Fill	25	Shallow drainage ditches	5	2	Roman/Post-Roman
299	Cut	4	Field boundary ditch	5	2	Roman/Post-Roman
300	Fill	4	Field boundary ditch	5	2	Roman/Post-Roman
301	Fill	19	Undated pits	5	2	Roman/Post-Roman
302	Cut	19	Undated pits	5	2	Roman/Post-Roman
303	Cut	2	Field boundary ditch	3	2	LIA/Early Roman
304	Fill	2	Field boundary ditch	3	2	LIA/Early Roman
305	Cut	13	Trough	1	2	Middle Bronze Age
306	Fill	13	Trough	1	2	Middle Bronze Age
307	Fill	12	Waterhole	1	2	Middle Bronze Age

308	Fill	4	Field boundary ditch	5	2	Roman/Post-Roman
309	Cut	4	Field boundary ditch	5	2	Roman/Post-Roman
310	Fill	4	Field boundary ditch	5	2	Roman/Post-Roman
311	Cut	4	Field boundary ditch	5	2	Roman/Post-Roman
312	Fill	4	Field boundary ditch	5	2	Roman/Post-Roman
313	Cut	4	Field boundary ditch	5	2	Roman/Post-Roman
314	Cut	25	Shallow drainage ditches	5	2	Roman/Post-Roman
315	Fill	25	Shallow drainage ditches	5	2	Roman/Post-Roman
316	Fill	2	Field boundary ditch	3	2	LIA/Early Roman
317	Cut	2	Field boundary ditch	3	2	LIA/Early Roman
318	Cut	25	Shallow drainage ditches	5	2	Roman/Post-Roman
319	Fill	25	Shallow drainage ditches	5	2	Roman/Post-Roman
320	Cut	26	Shallow drainage ditches	5	2	Roman/Post-Roman
321	Fill	26	Shallow drainage ditches	5	2	Roman/Post-Roman
322	Fill	14	Trough side features	1	2	Middle Bronze Age
323	Cut	14	Trough side features	1	2	Middle Bronze Age
324	Fill	14	Trough side features	1	2	Middle Bronze Age
325	Cut	14	Trough side features	1	2	Middle Bronze Age
326	Cut	4	Field boundary ditch	5	2	Roman/Post-Roman
327	Fill	4	Field boundary ditch	5	2	Roman/Post-Roman
328	Cut	14	Trough side features	1	2	Middle Bronze Age
329	Fill	14	Trough side features	1	2	Middle Bronze Age
330	Cut	4	Field boundary ditch	5	2	Roman/Post-Roman
331	Fill	4	Field boundary ditch	5	2	Roman/Post-Roman
332	Fill	13	Trough 1 2	Middle Bronze Age		
333	Cut	14	Trough side features	1	2	Middle Bronze Age
334	Fill	14	Trough side features	1	2	Middle Bronze Age
335	Cut	14	Trough side features	1	2	Middle Bronze Age
336	Fill	14	Trough side features	1	2	Middle Bronze Age
337	Cut	14	Trough side features	1	2	Middle Bronze Age

338	Fill	14	Trough side features	1	2	Middle Bronze Age
339	Cut	14	Trough side features	1	2	Middle Bronze Age
340	Fill	14	Trough side features	1	2	Middle Bronze Age
341	Cut	14	Trough side features	1	2	Middle Bronze Age
342	Fill	14	Trough side features	1	2	Middle Bronze Age
343	VOID					
344	Cut	4	Field boundary ditch	5	2	Roman/Post-Roman

Appendix 2: Residues quantification (* = 0-10, ** = 11-50, *** = 51 – 250, **** = >250) and weights (in grams)

Sample Number	Context	Context / deposit type	Sample Volume litres	Sub-Sample Volume litres	Charcoal >4mm	Weight (g)	Charcoal <4mm	Weight (g)	Charcoal Idenitifications	Bone and Teeth	Weight (g)	Burnt bone >8mm	Weight (g)	Burnt bone 4-8mm	Weight (g)	Burnt Bone 2-4mm	Weight (g)	Fishbone & microfauna	Weight (g)	Land Snail shells	Weight (g)	Other (eg ind, pot, cbm)
1011	106	CR	10	10	*	<2	**	<2				***	556	***	680	***	316					
1012	108	P	10	10			**	<2														FCF */18g - Magnetised material */<2g
1013	110	P	10	10	**	<2	**	2								*	<2					FCF */6g - Magnetised material */2g
1014	112	D	10	10	**	2	**	4	Maloideae (1), *Quercus* sp. (9)													Fired clay ***/1016g
1015	114	P	10	10			**	<2														FCF */8g - Magnetised material */<2g
1016	119	P	40	40	***	8	**	2	*Quercus* sp. (5), *Prunus* sp. (3), Leguminosae (1), *Corylus avellana* (1)							*	<2					FCF ***/3420g - Fired clay **/44g - Pot */22g - Flint */<2g
1018	116	P	10	10	**	4	**	<2	*Quercus* sp. (10)	*	<2											Pot */18g - Fired clay **/68g
1019	121	D	40	40	****	124	****	112	*Quercus* sp. (10)													FCF **/220g - Fired clay ****/2274g - Pot **/138g - Flint */2g
1020	123	P	10	10	**	8	***	22	*Quercus* sp. (10)									*	<2			Fired clay **/114g

Sample Number	Context	Context / deposit type	Sample Volume litres	Sub-Sample Volume litres	Charcoal >4mm	Weight (g)	Charcoal <4mm	Weight (g)	Charcoal Idenitifications	Bone and Teeth	Weight (g)	Burnt bone >8mm	Weight (g)	Burnt bone 4-8mm	Weight (g)	Burnt Bone 2-4mm	Weight (g)	Fishbone & microfauna	Weight (g)	Land Snail shells	Weight (g)	Other (eg ind, pot, cbm)
1021	125	P	10	10	*	<2	**	<2														FCF */2g - Pot */20g - Magnetised material */<2g
1022	127	D	40	40	*	<2	**	<2														Flint */9g - FCF */50g - Pot */<2g
1023	133	P	20	20	*	<2	**	<2						*	<2					*	<2	Pot */6g - Flint */22g - FCF **/90g - Fired clay */6g - Magnetised material **/<2g
1024	154	P	20	20	*	<2	**	<2														Pot */<2g - FCF **/18g - Magnetised material **/<2g
1026	158	D	40	40	**	<2	**	2														FCF **/354g - Pot */<2g - Flint **/19g - Magnetised material */<2g
1027	160	D	40	40	**	2	***	<2	Maloideae (1), *Quercus* sp. (9)													FCF */40g - Fired clay */16g - Magnetised material **/<2g - Flint */10g
1028	161	D	40	40	*	<2	**	<2														Fired clay **/26g - FCF */62g - Magnetised material **/<2g - Wood */<2g
1029	144	D	40	40	****	114	****	80	*Corylus avellana* (1), *Betula* sp. (1), *Quercus* sp. (8)													Fired clay ****/3808g - FCF **/416g - Flint */26g - Stone */48g - Pot */18g - Magnetised material ***/6g

Sample Number	Context	Context / deposit type	Sample Volume litres	Sub-Sample Volume litres	Charcoal >4mm	Weight (g)	Charcoal <4mm	Weight (g)	Charcoal Idenitifications	Bone and Teeth	Weight (g)	Burnt bone >8mm	Weight (g)	Burnt bone 4-8mm	Weight (g)	Burnt Bone 2-4mm	Weight (g)	Fishbone & microfauna	Weight (g)	Land Snail shells	Weight (g)	Other (eg ind, pot, cbm)
1030	176	D	40	40	***	26	**	4	*Quercus* sp. (4), *Prunus* sp. (1), Maloideae (5)													FCF **/252g - Fired clay **/96g - Pot */10g - Flint */75g - Magnetised material **/<2g - Stone */960g
1031	194	D	10	10	**	2	**	<2	Leguminosae (4), *Quercus* sp. (5), Maloideae (1)													Fired clay **/164g - Pot */10g b- Magnetised material */<2g - FCF **/472g
1032	204	W	40	40	***	6	***	6	*Corylus avellana* (2), Maloideae (2), *Prunus* sp. (6)	*	<2											FCF ****/9040g - Wood */<2g - Magnetised material **/<2g - Pot */<2g
1033	207	NO	40	40	*	<2	**	<2		*	<2											FCF ****/2900g - Pot */<2g - Magnetised material */<2g - Flint */3g
1034	238	P	5	5	**	4	***	4														FCF ***/1520g
1036	242	P	7	7	**	2	***	2	*Quercus* sp. (6), Maloideae (3), *Taxus baccata* (1)													FCF ***/810g - Magnetised material */<2g
1037	244	P	4	4	*	<2	**	<2														FCF **/138g - Magnetised material */<2g
1038	258	P	10	10	**	2	**	<2														FCF ****/7570g - Magnetised material **/<2g

Sample Number	Context	Context / deposit type	Sample Volume litres	Sub-Sample Volume litres	Charcoal >4mm	Weight (g)	Charcoal <4mm	Weight (g)	Charcoal Idenitifications	Bone and Teeth	Weight (g)	Burnt bone >8mm	Weight (g)	Burnt bone 4-8mm	Weight (g)	Burnt Bone 2-4mm	Weight (g)	Fishbone & microfauna	Weight (g)	Land Snail shells	Weight (g)	Other (eg ind, pot, cbm)
1039	265	P	60	60	**	8	***	2	cf. *Rosa* sp. (1), *Prunus* sp. (3), *Quercus* sp. (6)			**	116	***	246	***	32					FCF **/512g - Magnetised material ***/6g - Pot */12g - Fired clay ***/694g
1040	301	P	18	18	*	<2	**	<2		***	22											FCF **/170g - Pot */10g - Magnetised material */<2g
1042	306	P	40	40	***	42	****	60	Maloideae (6), Leguminosae (3), *Quercus* sp. (1)													Magnetised material **/<2g - FCF ****/23890g
1043	307	W	40	40	***	14	***	6	Leguminosae (1), Maloideae (5), *Quercus* sp. (3), *Prunus* sp. (1)											*	<2	Flint */57g - Magnetised material **/<2g - FCF ****/6684g
1044	324	HE	40	40	**	2	**	<2														FCF ****/10356g - Slag */<2g - Magnetised material **/<2g
1045	342	P	20	20	**	2	**	<2														Magnetised material ***/<2g - FCF */40g

Appendix 3: Flot quantification (* = 1-10, ** = 11-50, *** = 51-250, **** = >250) and preservation (+ = poor, ++ = moderate, +++ = good)

Sample Number	Context	Parent Context	Period	Context / deposit type	Group	Weight g	Flot volume ml	Volume scanned	Uncharred %	Sediment %	Seeds uncharred	Charcoal >4mm	Charcoal <4mm	Charcoal <2mm	Charred botanicals (from residue)	Crop seeds charred	Identifications	Preservation	Weed seeds charred	Identifications	Preservation	Large mammal bone
1014	112	111	1	D	5	2	10	10	70	<5	*		*	****		*	*Hordeum* sp. (1)	++	*	*Chenopodium* sp., *Persicaria* sp. cf. *Crataegus monongyna* (1)	+/++	
1018	116	115	1	P	5	6	15	15	70	20			*	****		**	cerealia indet. *Hordeum* sp., cf. *Triticum* sp.	+/++				
1019	121	120	1	D	5	18	60	60	65	20					* *Triticum/Hordeum* sp. (1)	**	*Hordeum* sp., *Triticum* sp., *Avena* sp. (1), *Triticum aestivum*	+/++				
1029	144	150	1	D	5	22	90	90	15	5		*	*	****		**	*Hordeum* sp. cf. *Triticum* sp.	++	*	cf. *Crataegus monongyna* (1)	+	
1022	127	126	1	D	6	4	20	20	60	30	*		*	***		*	*Triticum aestivum* type, cf. *Hordeum* sp.	++	*	cpr indet.	+	
1023	133	132	1	P	9	7	15	15	70	20			*(1)	***		*	*Avena* sp. (1), & cpr/cerealia indet.	+/++				

Sample Number	Context	Parent Context	Period	Context / deposit type	Group	Weight g	Flot volume ml	Volume scanned	Uncharred %	Sediment %	Seeds uncharred	Charcoal >4mm	Charcoal <4mm	Charcoal <2mm	Charred botanicals (from residue)	Crop seeds charred	Identifications	Preservation	Weed seeds charred	Identifications	Preservation	Large mammal bone
1024	154	153	1	P	9	4	15	15	75	10			*	***		*	*Hordeum* sp. (1/2)	++				
1032	204	203	1	W	12	11	45	45	5	5	*		*	****								
1043	307	203	1	W	12	8	35	35	30	30			*	****								
1042	306	305	1	P	13	16	55	55	10	<5		*	**	****					*	*Crataegus monongyna* (2), Indet. Cpr (1)	+++ /+	
1044	324	325	1	HE	14	3	10	10	80	10				****								
1045	342	341	1	P	14	4	10	10	10	10	*(1)		*	****					*	*Crataegus monongyna* (1)	+++	
1034	238	237	1	P	17	<1	<5	<5	10	<5	*	*	*	***								
1036	242	241	1	P	17	<1	<5	<5	70	<5				***								

Sample Number	Context	Parent Context	Period	Context / deposit type	Group	Weight g	Flot volume ml	Volume scanned	Uncharred %	Sediment %	Seeds uncharred	Charcoal >4mm	Charcoal <4mm	Charcoal <2mm	Charred botanicals (from residue)	Crop seeds charred	Identifications	Preservation	Weed seeds charred	Identifications	Preservation	Large mammal bone
1037	244	243	1	P	17	<1	<5	<5	40	20				**								
1038	258	259	1	P	17	2	<5	<5	98	<2				***								
1012	108	107	1	P	20	4	10	10	50	45	*			***	* *Hordeum* sp.	*	cerealia indet (1)	+				
1013	110	109	1	P	20	45	10	10	60	10			*	***								
1015	114	113	1	P	20	6	10	10	40	58				***								
1020	123	122	1	P	20	52	155	100	10	<5		*	**	****	* (7) *Hordeum* sp., cf. *Triticum* sp., cerealia indet.	*** (*)	*Hordeum* sp., cf. *Triticum aestivum*	+++	*	*Chenopodium* sp. (1)	++	
1021	125	124	1	P	20	3			70	15			*	***	* (7) cerealia indet. *Triticum/Hordeum* sp.	* (*)	*Hordeum* sp., *Triticum* sp.	+/++				
1011	106	105	1	CR	21	3	10	10	70	<5			*	***								
1026	158	157	2	D	8	7	20	20	60	<5	*	*	**	****								

Sample Number	Context	Parent Context	Period	Context / deposit type	Group	Weight g	Flot volume ml	Volume scanned	Uncharred %	Sediment %	Seeds uncharred	Charcoal >4mm	Charcoal <4mm	Charcoal <2mm	Charred botanicals (from residue)	Crop seeds charred	Identifications	Preservation	Weed seeds charred	Identifications	Preservation	Large mammal bone
1027	160	159	2	D	8	5	30	30	80	<5		*	*	***	* *Hordeum* sp. (3)							
1028	161	159	2	D	8	2	10	10	90	<5	*			***		*	*Hordeum* sp. (1), Indet cpr (1), cf. *Pisum* sp. (1/2)	+/++				
1030	176	159	2	D	8	8	20	20	70	<5	*	*	**	****		*	*Triticum/Hordeum* sp. (1)	+	*	*Chenopodium* sp., cf. *Fallopia convolvulus*	++	
1031	194	190	2	D	8	<1	10	10	90	<5	*			***								
1033	207	207	2	NO	16	14	25	25	40	40			*	****								
1016	119	117	2	P	22	30	85	85	60	30			*	****		**	cpr indet. *V. faba* (1), *Triticum* sp., *Hordeum* sp.	+/++				
1039	265	266	4	P	18	7	30	30	90	<5	*	*	*	****		*	Indet cpr	+				
1040	301	302	5	P	19	7	20	20	60	20	*			***								*

Appendix 4: Auger survey

Core 1

0-0.90m	Da	St	El	Sicc	UB	
		3	0	0	3	0
		Ag1 As3 Gmin Gmaj++				

Red brown stiff cilt clay, occasional stones, chalk- colluvium

0.90-1.20m	Da	St	El	Sicc	UB
	2	0	0	2	4
	Ag2 As2				

Grey sticky silt clay trends into next unit

1.20-1.30m	Da	St	El	Sicc	UB
	3	0	0	3	0
	Ag3 As1 Th				

Black grey sticky silt, modern roots of reeds

1.30-2.40m	Da	St	El	Sicc	UB
	2	0	0	3	0
	Ag3 As1 Tl				

Grey mottled silt, modern root, occasional wood fragments

2.40-3.10m	Da	St	El	Sicc	UB
	3	0	0	3	4
	Ag3 Sh1 Gmaj				

Dark grey silt, occasional pebbles

3.10-3.27m	Da	St	El	Sicc	UB
	2	0	0	3	4
	Ag1 Gmin2 ptm1				

Crushed shell and sandy silt, occasional rounded chalk fragments

3.27-3.63m	Da	St	El	Sicc	UB
	2	0	0	3	4
	Ag3 Sh1 Tl+ ptm				

Smooth grey silt, occasional twigs and shell fragments

Core 2

0-0.40m	Da	St	El	Sicc	UB	
		3	0	0	3	0

Ag1 As3 Gmin Gmaj++

Brown silt clay occasional small stones

0.40-1.04m	Da	St	El	Sicc	UB
	2	0	0	4	4

Ag1 As3

Oxidised alluvial clay

1.04-2.65m	Da	St	El	Sicc	UB
	2	0	0	3	1

Ag3 As1 Tl Dh++

Grey blue silt clay, sticky, occasional twigs

2.65-3.05m	Da	St	El	Sicc	UB
	3	0	0	3	3

Ag3 Sh1 Tl ptm

Dark grey sticky silt, root channels occasional shell frags

3.05-3.40m	Da	St	El	Sicc	UB
	2	0	0	4	4

Ag1 Gmin2 ptm1

Shelly sand occasional silt

Core 3

0-0.40m Da	St	El	Sicc	UB	
	3	0	0	3	0

Ag1 As3 Gmin Gmaj++

Red brown stiff silt clay, occasional stones, chalk- colluvium

0.40-1.10m	Da	St	El	Sicc	UB
	3	0	0	3	4

Ag1 As3 Gmin Gmaj++

Oxidised silt clay alluvium

1.10-1.90m	Da	St	El	Sicc	UB
	3	0	0	3	2

Ag3 Sh1

grey sticky silt clay

1.90-3.03m	Da	St	El	Sicc	UB
	3	0	0	3	3

Ag3 Sh1 Tl

Dark grey sticky silt, rooty

3.03-3.26m	Da	St	El	Sicc	UB
	2	0	0	4	4
	Ag1 Gmin2 ptm1				

Shelly sand occasional silt

3.26-3.60m	Da	St	El	Sicc	UB
	3	0	0	3	4
	Ag3 Sh1 Tl ptm				

Dark grey sticky silt, root channels occasional shell frags

Core 4

0-0.90m	Da	St	El	Sicc	UB
	3	0	0	3	0
	Ag1 As3 Gmin Gmaj++				

Red brown stiff silt clay, occasional stones, chalk- colluvium

0.90-1.30m	Da	St	El	Sicc	UB
	2	0	0	3	4
	Ag2 As2				

Oxidised alluvial silt clay

1.30-1.67m	Da	St	El	Sicc	UB
	2	0	0	3	2
	Ag3 Sh1 Th+				

Grey blue silt clay, modern roots

Transect 1

Core 5

0-0.60m	Da	St	El	Sicc	UB
	3	0	0	3	0
	Ag1 As3 Gmin Gmaj++				

Red brown stiff silt clay, occasional stones, chalk- colluvium

0.60-0.70m	Da	St	El	Sicc	UB
	2	0	0	3	4
	Ag2 As2				

Oxidised alluvial silt clay

0.70-0.75m chalky clay

Core 6

0-0.70m	Da	St	El	Sicc	UB	
		3	0	0	3	0
		Ag1 As3 Gmin Gmaj++				

Red brown stiff silt clay, occasional stones, chalk- colluvium

0.70-1.50m	Da	St	El	Sicc	UB
	2	0	0	3	4
	Ag2 As2				

Oxidised alluvial silt clay, very soft, less oxidised at base

Core 7

0-0.90m	Da	St	El	Sicc	UB	
		3	0	0	3	0
		Ag1 As3 Gmin Gmaj++				

Red brown stiff silt clay, occasional stones, chalk- colluvium

0.90-2.10m	Da	St	El	Sicc	UB
	2	0	0	2	4
	Ag2 As2 ptm+				

Oxidised alluvial silt clay, very soft, less oxidised at base occasional shell

Core 8

0-0.90m	Da	St	El	Sicc	UB	
		3	0	0	3	0
		Ag1 As3 Gmin Gmaj++				

Red brown stiff silt clay, occasional stones, chalk- colluvium

0.90-2.50m	Da	St	El	Sicc	UB
	2	0	0	2	4
	Ag3 As1 ptm+ Tl+ Dh+				

Oxidised alluvial silt clay, less oxidised at base, wood at 1,67-1.74m smooth silt at base

Transect 2

Core 9

0-0.61m	Da	St	El	Sicc	UB	
		3	0	0	3	0
		Ag1 As3 Gmin Gmaj++				

Red brown stiff silt clay, becoming greyer at base

0.61-1.47m	Da	St	El	Sicc	UB
	2	0	0	2	4

Ag3 As1

Oxidised alluvial silt clay

1.47-1.49m Chalky clay

Core 10

0-0.60m	Da	St	El	Sicc	UB	
		3	0	0	3	0

Ag1 As3 Gmin Gmaj++

Red brown stiff silt clay, becoming greyer at base

0.60-1.30m	Da	St	El	Sicc	UB
	2	0	0	2	4

Ag3 As1

Oxidised alluvial silt clay, wood at 1.30-1.38m

1.30-2.00m	Da	St	El	Sicc	UB
	2	0	0	2	2

Ag3 As1 Tl Dh+

Soft blue grey silt , occasional woody frags and plant remains

Core 11

0-0.60m	Da	St	El	Sicc	UB	
		3	0	0	3	0

Ag1 As3 Gmin Gmaj++

Red brown stiff silt clay, becoming greyer at base

0.60-1.20m	Da	St	El	Sicc	UB
	2	0	0	2	4

Ag3 As1

Oxidised alluvial silt clay

1.20-2.60m	Da	St	El	Sicc	UB
	2	0	0	2	2

Ag2 As1 Sh1 Tl ptm

Soft blue grey silt, occasional bark fragments, reed remains

Transect 3

Core 12

0-0.15m	Da	St	El	Sicc	UB	
		3	0	0	3	0

Ag1 As3 Gmin Gmaj++

Red brown stiff silt clay

0.15-0.35m	Da	St	El	Sicc	UB
	2	0	0	3	4
	Ag2 As1 Gmin1				

Gritty grey orange mottled sandy clay

0.35-0.45m	Da	St	El	Sicc	UB
	2	0	0	3	2
	Ag3 As1				

Oxidised alluvial silt clay

Core 13

0-0.70m	Da	St	El	Sicc	UB
	3	0	0	3	0
	Ag1 As3 Gmin Gmaj++				

Red brown stiff silt clay, becoming greyer at base

0.70-0.82m	Da	St	El	Sicc	UB
	2	0	0	3	4
	Ag2 As1 Gmin1				

Gritty grey orange mottled sandy clay

0.82-1.15m	Da	St	El	Sicc	UB
	3	0	0	3	2
	Ag2 As1 Dh1				

Dark brown silt clay, occasional organic fragments

1.15-1.20m	Da	St	El	Sicc	UB
	2	0	0	2	2
	Ag2 As1 Sh1 ptm				

Blue grey silt, occasional plant remains

Core 14

0-0.60m	Da	St	El	Sicc	UB
	3	0	0	3	0
	Ag1 As3 Gmin Gmaj++				

Red brown stiff silt clay

0.60-1.00m	Da	St	El	Sicc	UB
	2	0	0	3	4

Ag2 As1 Gmin1

Gritty grey orange mottled sandy clay

1.00-1.60m	Da	St	El	Sicc	UB
	2	0	0	2	2

Ag2 As1 Sh1

Blue grey silt, occasional plant remains

Core 15

0-0.60m	Da	St	El	Sicc	UB
	3	0	0	3	0

Ag1 As3 Gmin Gmaj++

Red brown stiff silt clay

0.60-1.10m	Da	St	El	Sicc	UB
	2	0	0	3	4

Ag2 As1 Gmin1

Oxidised alluvial clay

1.10-1.64m	Da	St	El	Sicc	UB
	2	0	0	2	2

Ag2 As1 Sh1

Blue grey silt, occasional plant remains

1.64-3.20m	Da	St	El	Sicc	UB
	3	0	0	2	2

Ag2 As1 Sh1 ptm

Black grey silt, frequent organic remains, occasionally shelly

Transect 4

Core 16

0-0.20m	Da	St	El	Sicc	UB
	3	0	0	3	0

Ag1 As3 Gmin Gmaj++

Red brown stiff silt clay

0.20-0.30m	Da	St	El	Sicc	UB
	2	0	0	3	4

Ag2 As1 Gmin1 Gmaj++

Gritty grey orange mottled sandy clay too stoney to core

Core 17

0-.86m	Da	St	El	Sicc	UB
	3	0	0	3	0
	Ag1 As3 Gmin Gmaj++				

Red brown stiff silt clay

0.86-1.17m	Da	St	El	Sicc	UB
	2	0	0	3	4
	Ag2 As1 Gmin1				

Oxidised alluvial clay, grey at base, occasional reed remains

Core 18

0-0.80m Da	St	El	Sicc	UB	
	3	0	0	3	0
	Ag1 As3 Gmin Gmaj++				

Red brown stiff silt clay

1.80-1.60m	Da	St	El	Sicc	UB
	2	0	0	3	4
	Ag2 As1 Gmin1				

Oxidised alluvial clay

Core 19

0-0.90m Da	St	El	Sicc	UB	
	3	0	0	3	0
	Ag1 As3 Gmin Gmaj++				

Red brown stiff silt clay

0.90-1.60m	Da	St	El	Sicc	UB
	2	0	0	3	4
	Ag2 As1 Gmin1				

Oxidised alluvial clay

1.60-2.15m	Da	St	El	Sicc	UB
	2	0	0	2	2
	Ag2 As1 Sh1				

Blue grey silt, occasional plant remains

2.15-2.57m	Da	St	El	Sicc	UB
	2	0	0	2	2
	Ag2 Gmin1ptm1 Tl				

Smooth grey shelly sand with silt, occ wood fragments

Core 20

0-0.60m	Da	St	El	Sicc	UB	
		3	0	0	3	0
		Ag1 As3 Gmin Gmaj++				

Red brown stiff silt clay

0.60-1.10m	Da	St	El	Sicc	UB
	2	0	0	3	4
	Ag2 As1 Gmin1				

Oxidised alluvial clay

1.10-2.81m	Da	St	El	Sicc	UB
	2	0	0	2	2
	Ag3 Dh1				

Dark grey smooth mottled silt, occasional plant remains

2.81-3.00m	Da	St	El	Sicc	UB
	2	0	0	2	4
	Ag2 Gmin1ptm1 Tl				

Smooth grey shelly sand with silt, occ wood fragments

3.00-3.34m	Da	St	El	Sicc	UB
	3	0	0	2	4
	Ag3 Dh1				

Smooth dark grey silt

Transect 5

Core 21

0-0.50m	Da	St	El	Sicc	UB	
		3	0	0	3	0
		Ag1 As3 Gmin Gmaj++				

Red brown stiff silt clay

0.50-0.55m	Chalky clay

Core 22

0-0.90m	Da	St	El	Sicc	UB	
		3	0	0	3	0
		Ag1 As3 Gmin Gmaj++				

Red brown stiff silt clay

0.90-1.70m	Da	St	El	Sicc	UB

	2	0	0	3	4
	Ag2 As1 Gmin1				

Oxidised alluvial clay, chalky at base

Core 23

0-0.85m Da	St	El	Sicc	UB	
	3	0	0	3	0
	Ag1 As3 Gmin Gmaj++				

Red brown stiff silt clay

0.85-1.43m	Da	St	El	Sicc	UB
	2	0	0	3	4
	Ag2 As1 Gmin1				

Oxidised alluvial clay

1.43-2.70m	Da	St	El	Sicc	UB
	3	0	0	2	2
	Ag3 As1				

Brown grey sticky silt clay

Core 38

0-0.40m Da	St	El	Sicc	UB	
	3	0	0	3	0
	Ag1 As3 Gmin Gmaj++				

Red brown stiff silt clay

0.40-1.10m	Da	St	El	Sicc	UB
	2	0	0	4	4
	Ag2 As2				

Oxidised alluvial clay

1.10-2.40m	Da	St	El	Sicc	UB
	2	0	0	3	1
	Ag2 As1 Gmin1				

Grey sandy silt clay

2.40-2.87m	Da	St	El	Sicc	UB
	3	0	0	2	4
	Ag3 As1				

Pale grey smooth silt

Core 25

0-0.50m	Da	St	El	Sicc	UB	
		3	0	0	3	0
		Ag1 As3 Gmin Gmaj++				

Red brown stiff silt clay

0.50-1.17m	Da	St	El	Sicc	UB
	2	0	0	4	4
	Ag2 As2				

Oxidised alluvial clay, very dry

1.17-1.50m	Da	St	El	Sicc	UB
	2	0	0	3	2
	Ag2 As2				

Grey alluvial clay

1.50-2.85m	Da	St	El	Sicc	UB
	2	2	0	2	2
	Ag3 Sh1				

Soft blue grey silt ocasionsal laminations, darker silts

2.85-3.27m	Da	St	El	Sicc	UB
	2	1	0	2	4
	Ag2 Gmin1ptm1 Tl				

Smooth grey shelly sand with silt, occ laminations at base

3.27-3.58m	Da	St	El	Sicc	UB
	3	0	0	2	4
	Ag3 As1				

Light blue grey smooth silt

Transect 6

Core 26

0-0.60m	Da	St	El	Sicc	UB	
		3	0	0	3	0
		Ag1 As3 Gmin Gmaj++				

Red brown stiff silt clay

0.60-1.20m	Da	St	El	Sicc	UB
	2	0	0	4	4
	Ag2 As2				

Oxidised alluvial clay, very dry

1.20-1.80m	Da	St	El	Sicc	UB
	2	0	0	3	2
	Ag2 As2				

Grey alluvial clay

Core 27

0-0.60m	Da	St	El	Sicc	UB
	3	0	0	3	0
	Ag1 As3 Gmin Gmaj++				

Red brown stiff silt clay

0.60-1.10m	Da	St	El	Sicc	UB
	2	0	0	4	4
	Ag2 As2				

Oxidised alluvial clay

1.10-2.30m	Da	St	El	Sicc	UB
	2	0	0	3	2
	Ag2 As2 Gmin+ Tl				

Grey alluvial clay, sandy at base, poss wood at base v hard to core

Core 28

0-0.60m	Da	St	El	Sicc	UB
	3	0	0	3	0
	Ag1 As3 Gmin Gmaj++				

Red brown stiff silt clay

0.60-2.10m	Da	St	El	Sicc	UB
	2	0	0	4	4
	Ag2 As2				

Oxidised alluvial clay

2.10-2.20m	Da	St	El	Sicc	UB
	2	1	0	2	4
	Ag2 Gmin1ptm1 Tl				

Smooth grey shelly sand with silt

2.20-2.71m	Da	St	El	Sicc	UB
	3	0	0	2	4
	Ag3 As1				

Light blue grey smooth silt

Transect 7

Core 29

0-0.60m	Da	St	El	Sicc	UB
	3	0	0	3	0
	Ag1 As3 Gmin Gmaj++				

Red brown stiff silt clay

0.60-1.60m	Da	St	El	Sicc	UB
	2	0	0	4	4
	Ag2 As2				

Oxidised alluvial clay

1.60-1.90m	Da	St	El	Sicc	UB
	2	0	0	3	2
	Ag2 As2				

Grey alluvial clay

Core 30

0-0.50m	Da	St	El	Sicc	UB
	3	0	0	3	0
	Ag1 As3 Gmin Gmaj++				

Red brown stiff silt clay

0.50-1.00m	Da	St	El	Sicc	UB
	2	0	0	4	4
	Ag2 As2				

Oxidised alluvial clay

1.00-1.80m	Da	St	El	Sicc	UB
	2	0	0	3	1
	Ag3 As1				

Grey sticky silt clay

1.80-2.00m	Da	St	El	Sicc	UB
	2	1	0	2	4
	Ag2 Gmin1ptm1				

Smooth grey shelly sand with silt

2.00-2.30m	Da	St	El	Sicc	UB

	3	0	0	2	4
	Ag3 As1				

Light blue grey smooth silt

Core 37

0-0.50m Da	St	El	Sicc	UB	
	3	0	0	3	0
	Ag1 As3 Gmin Gmaj++				

Red brown stiff silt clay

0.50-0.90m	Da	St	El	Sicc	UB
	2	0	0	4	4
	Ag2 As2				

Oxidised alluvial clay

0.90-2.60m	Da	St	El	Sicc	UB
	2	0	0	3	1
	Ag2 As1 Gmin1				

Grey sandy silt clay

2.60-2.70m	Da	St	El	Sicc	UB
	3	0	0	2	4
	Ag3 As1				

Pale grey smooth silt

Transect 8

Core 31

0-0.60m Da	St	El	Sicc	UB	
	3	0	0	3	0
	Ag1 As3 Gmin Gmaj++				

Red brown stiff silt clay

0.60-1.60m	Da	St	El	Sicc	UB
	2	0	0	4	4
	Ag2 As2				

Oxidised alluvial clay

1.60-1.80m	Da	St	El	Sicc	UB
	2	0	0	3	1
	Ag2 As1 Gmin1				

Grey sandy silt clay

1.80-2.40m	Da	St	El	Sicc	UB
	3	0	0	2	4
	Ag3 As1				

Light blue grey smooth silt

Core 32

0-0.60m Da	St	El	Sicc	UB	
	3	0	0	3	0
	Ag1 As3 Gmin Gmaj++				

Red brown stiff silt clay

0.60-1.10m	Da	St	El	Sicc	UB
	2	0	0	4	4
	Ag2 As2				

Oxidised alluvial clay

1.10-2.90m	Da	St	El	Sicc	UB
	2	0	0	3	1
	Ag3 As1				

Grey sticky silt clay

Core 36

0-0.40m Da	St	El	Sicc	UB	
	3	0	0	3	0
	Ag1 As3 Gmin Gmaj++				

Red brown stiff silt clay

0.40-1.10m	Da	St	El	Sicc	UB
	2	0	0	4	4
	Ag2 As2				

Oxidised alluvial clay

1.10-2.92m	Da	St	El	Sicc	UB
	2	0	0	3	1
	Ag2 As1 Gmin1				

Grey sticky silt clay, occ woody fragments

2.92-3.10m	Da	St	El	Sicc	UB
	2	3	0	3	3
	Ag2 Gmin1ptm1 Tl				

grey shelly sand with silt laminations

Transect 9

Core 33

0-0.60m	Da	St	El	Sicc	UB	
		3	0	0	3	0
		Ag1 As3 Gmin Gmaj++				
Red brown stiff silt clay						
0.60-1.10m		Da	St	El	Sicc	UB
		2	0	0	4	4
		Ag2 As2				
Oxidised alluvial clay						
1.10-1.40m		Da	St	El	Sicc	UB
		2	0	0	3	1
		Ag2 As1 Gmin1				
Grey sticky silt clay, occ reed fragments						
1.40-1.50m		Da	St	El	Sicc	UB
		2	3	0	3	4
		Ag2 Gmin1ptm1 Tl				
grey shelly sand with silt laminations						
1.50-2.30m		Da	St	El	Sicc	UB
		3	0	0	2	4
		Ag3 As1				
Light blue grey smooth silt						

Core 34

0-0.60m	Da	St	El	Sicc	UB	
		3	0	0	3	0
		Ag1 As3 Gmin Gmaj++				
Red brown stiff silt clay						
0.60-1.00m		Da	St	El	Sicc	UB
		2	0	0	4	4
		Ag2 As2				
Oxidised alluvial clay						
1.00-2.00m		Da	St	El	Sicc	UB
		2	0	0	3	1

Ag2 As1 Gmin1

Grey sticky silt clay, occ reed fragments

2.00-2.10m	Da	St	El	Sicc	UB
	2	3	0	3	2

Ag2 Gmin1 ptm1 Tl

grey shelly sand with silt laminations, occ wood fragments

2.10-2.40m	Da	St	El	Sicc	UB
	3	0	0	2	2

Ag3 As1

Light blue grey smooth silt

Core 35

0-0.50m	Da	St	El	Sicc	UB
	3	0	0	3	0

Ag1 As3 Gmin Gmaj++

Red brown stiff silt clay

0.50-1.00m	Da	St	El	Sicc	UB
	2	0	0	4	4

Ag2 As2

Oxidised alluvial clay

1.00-2.96m	Da	St	El	Sicc	UB
	3	1	0	3	1

Ag2 As1 Gmin1

Grey –black sticky silt clay, occ reed fragments weakly laminated

2.96-3.12m	Da	St	El	Sicc	UB
	2	3	0	3	4

Ag2 Gmin1 ptm1 Tl

grey shelly sand with silt laminations, occ wood fragments

3.12-3.30m	Da	St	El	Sicc	UB
	3	0	0	2	2

Ag3 As1

Light blue grey smooth silt

Sample core <1041>

0-0.50m	Da	St	El	Sicc	UB
	3	0	0	3	0

Ag1 As3 Gmin Gmaj++

Red brown stiff silt cla,y removed by machine

0.50-1.01m	Da	St	El	Sicc	UB
	2	0	0	3	4

Ag2 As2 Th

Orange grey mottled silt clay, occasional plant remains/ rootlets

1.01-1.60m	Da	St	El	Sicc	UB
	2/3	0	0	3	2

Ag3 As1 Th+ Dh+

Pale grey smooth silt clay dark rootlets/reed remains, oxidised root channels

1.60-3.17m	Da	St	El	Sicc	UB
	3	0	0	2	1

Ag3 As+ Dh1 Th+

Dark grey black sticky silt, occ organic remains and small twigs

3.17-3.38m	Da	St	El	Sicc	UB
	2	1	0	3	3

Ag2 Gmin1 Gmaj+ ptm1 Dh+

Sandy shelly silt occasional flint gravel

3.38-3.50m	Da	St	El	Sicc	UB
	2	0	0	2	4

Ag3 As1 Dh+

Grey brown smooth silt occasional organics

Appendix 5: Troels-Smith classification table

Degree of Darkness	
nig.4	black
nig.3	
nig.2	
nig.1	
nig.0	white

Degree of Stratification	
strf.4	well stratified
strf.3	
strf.2	
strf.1	
strf.0	no stratification

Degree of Elasticity	
elas.4	very elastic
elas.3	
elas.2	
elas.1	
elas.0	no elasticity

Degree of Dryness	
sicc.4	very dry
sicc.3	
sicc.2	
sicc.1	
sicc.0	water

	Sharpness of Upper Boundary
lim.4	< 0.5mm
lim.3	< 1.0 & > 0.5mm
lim.2	< 2.0 & > 1.0mm
lim.1	< 10.0 & > 2.0mm
lim.0	> 10.0mm

	Sh	*Substantia humosa*	Humous substance, homogeneous microscopic structure
I Turfa	*Tb*	*T. bryophytica*	Mosses +/- humous substance
	Tl	*T. lignosa*	Stumps, roots, intertwined rootlets, of ligneous plants
	Th	*T. herbacea*	Roots, intertwined rootlets, rhizomes of herbaceous plants
II Detritus	*Dl*	*D. lignosus*	Fragments of ligneous plants >2mm
	Dh	*D. herbosus*	Fragments of herbaceous plants >2mm
	Dg	*D. granosus*	Fragments of ligneous and herbaceous plants <2mm >0.1mm
III Limus	*Lf*	*L. ferrugineus*	Rust, non-hardened. Particles <0.1mm
IV Argilla	*As*	*A.steatodes*	Particles of clay
	Ag	*A. granosa*	Particles of silt
V Grana	*Ga*	*G. arenosa*	Mineral particles 0.6 to 0.2mm
	Gs	*G. saburralia*	Mineral particles 2.0 to 0.6mm
	Gg(min)	*G. glareosa minora*	Mineral particles 6.0 to 2.0mm
	Gg(maj)	*G. glareosa majora*	Mineral particles 20.0 to 6.0mm
	Ptm	*Particulae testae molloscorum*	Fragments of calcareous shells

HER Form

Site Code	SRB05					
Identification Name and Address	Land South of the A259 New Road, Littlehampton, West Sussex					
County, District &/or Borough	West Sussex					
OS Grid Refs.	TQ 505350 103320					
Geology	Brickearth and alluvium					
Arch. South-East Project Number	3307					
Type of Fieldwork	Eval.	Excav. √	Watching Brief	Standing Structure	Survey	Other
Type of Site	Green √ Field	Shallow Urban	Deep Urban	Other		
Dates of Fieldwork	Eval. 2005	Excav. Oct-Nov 2013	WB.	Other		
Sponsor/Client	Rambol					
Project Manager	Jon Sygrave					
Project Supervisor	Giles Dawkes					
Period Summary	Palaeo.	Meso.	Neo.	BA √	IA √	RB √
	AS	MED	PM	Other Modern		

Summary

This is a post-excavation assessment of an archaeological strip, map and sample excavation undertaken at Land South of the A259 New Road, Littlehampton, West Sussex. The archaeological works were commissioned Ramboll on behalf of Store Property Investments Limited in advance of proposed commercial re-development.

The total area excavated was approximately 1 hectare in size, and was undertaken between 29th October and 22nd November 2013. The earliest phase of activity was a Middle Bronze Age enclosure, field boundary ditch and burnt mound. The burnt mound included an associated hearth, trough and waterhole. Later activity included a prehistoric droveway and Late Iron Age/Roman field boundary ditches.

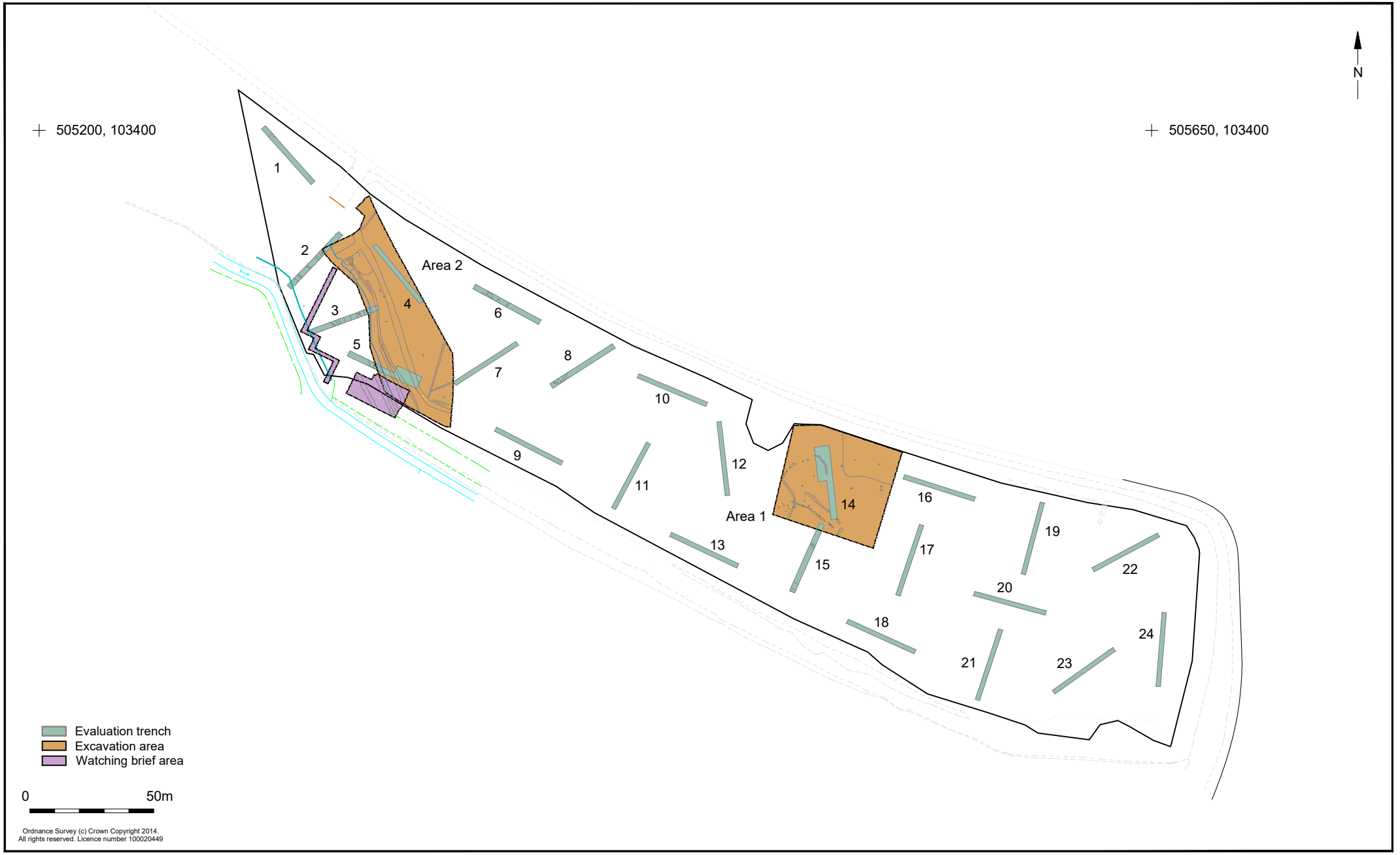
OASIS FORM

OASIS ID: archaeol6-172718

Project details	
Project name	Rustington
Short description of the project	This is a post-excavation assessment of an archaeological strip, map and sample excavation undertaken at Land South of the A259 New Road, Littlehampton, West Sussex. The archaeological works were commissioned Ramboll on behalf of Store Property Investments Limited in advance of proposed commercial re-development. The total area excavated was approximately 1 hectare in size, and was undertaken between 29th October and 22nd November 2013. The earliest phase of activity was a Middle Bronze Age enclosure, field boundary ditch and burnt mound. The burnt mound included an associated hearth, trough and waterhole. Later activity included a prehistoric droveway and Late Iron Age/Roman field boundary ditches.
Project dates	Start: 29-10-2014 End: 22-11-2014
Previous/future work	Yes / No
Any associated project reference codes	SRB 05 - Sitecode
Any associated project reference codes	3307 - Contracting Unit No.
Type of project	Recording project
Site status	None
Current Land use	Cultivated Land 1 - Minimal cultivation
Monument type	BURNT MOUND Middle Bronze Age
Monument type	DITCH Middle Bronze Age
Monument type	DITCH Roman
Significant Finds	FLINT Bronze Age
Significant Finds	POTTERY Bronze Age
Investigation type	"Full excavation"
Prompt	Direction from Local Planning Authority - PPS
Project location	
Country	England
Site location	WEST SUSSEX ARUN RUSTINGTON Land South of the A259 New Road, Littlehampton, West Sussex
Postcode	BN17 5RZ
Study area	1.00 Hectares
Site coordinates	TQ 505350 103320 50.8722780478 0.139741770479 50 52 20 N 000 08 23 E Point
Height OD / Depth	Min: 1.00m Max: 4.00m
Project creators	
Name of Organisation	Archaeology South-East
Project brief originator	Ramboll
Project design originator	Archaeology South-East
Project director/manager	Jon Sygrave
Project supervisor	Giles Dawkes
Type of sponsor/funding body	private client

Project archives	
Physical Archive recipient	Littlehampton Museum
Physical Contents	"Animal Bones","Ceramics","Environmental","Glass","Metal","Worked stone/lithics"
Digital Archive recipient	Littlehampton Museum
Digital Contents	"Animal Bones","Ceramics","Environmental","Metal","Stratigraphic","Survey","Worked stone/lithics"
Digital Media available	"Database","Spreadsheets","Survey","Text"
Paper Archive recipient	Littlehampton Museum
Paper Contents	"Animal Bones","Ceramics","Environmental","Glass","Metal","Stratigraphic","Survey","Worked stone/lithics"
Paper Media available	"Context sheet","Notebook - Excavation',' Research',' General Notes","Photograph","Plan","Report","Section","Survey "
Project bibliography 1	
Publication type	Grey literature (unpublished document/manuscript)
Title	Post-excavation Assessment and Updated Project Design Archaeological Excavation at Land South of the A259 New Road, Littlehampton, West Sussex
Author(s)/Editor(s)	Giles Dawkes
Other bibliographic details	2013335
Date	2014
Issuer or publisher	Archaeology South-East
Place of issue or publication	Portslade
Entered by	Giles Dawkes (gilesdawkes@ucl.ac.uk)
Entered on	26 February 2014

© Archaeology South-East		Rustington Bypass	Fig. 1
Project Ref: 3307	August 2016	Site location	
Report Ref: 2013335	Drawn by: JLR		



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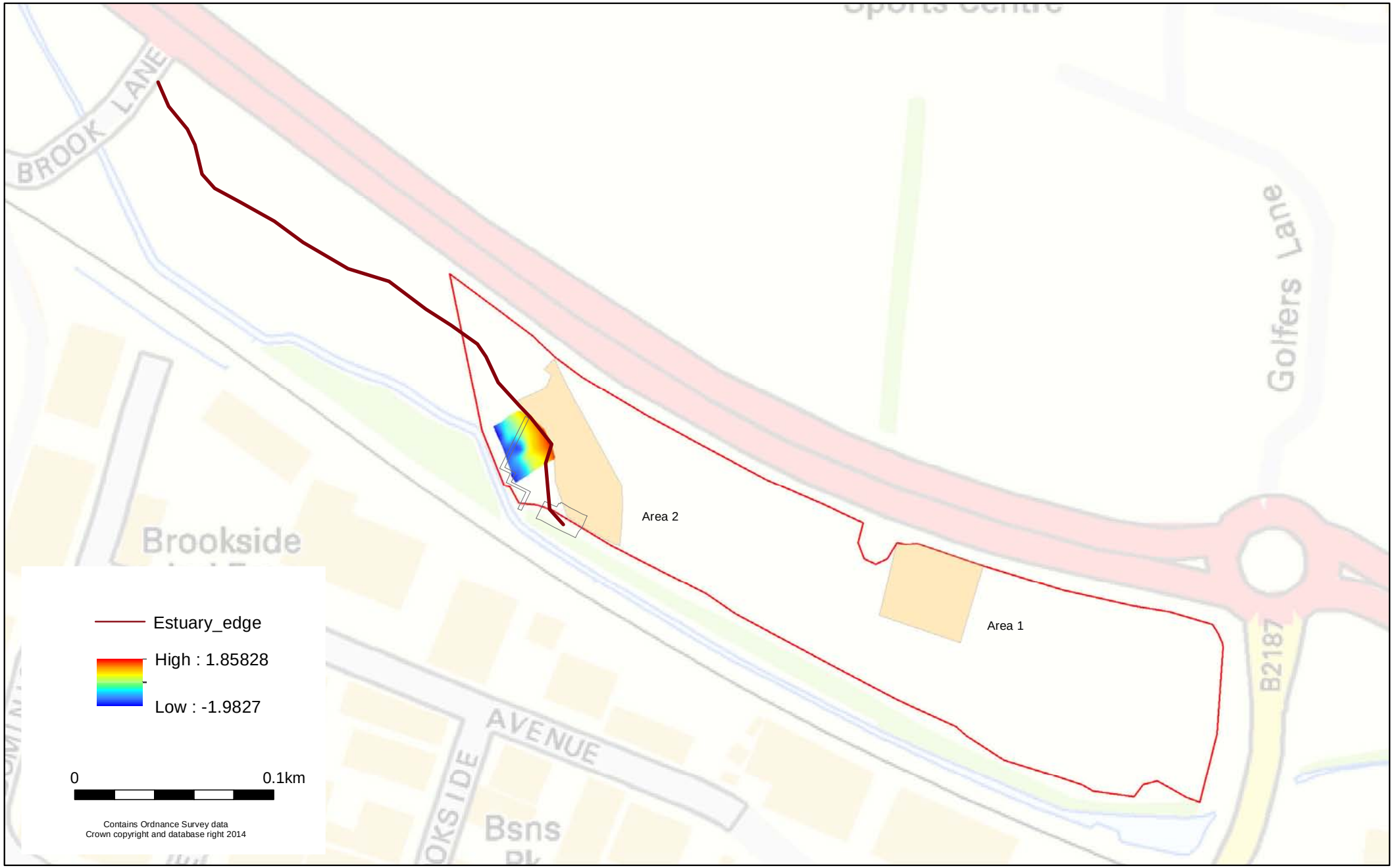
Project Ref: 3307	August 2016	Site plan	
Report Ref: 2013335	Drawn by: JLR		



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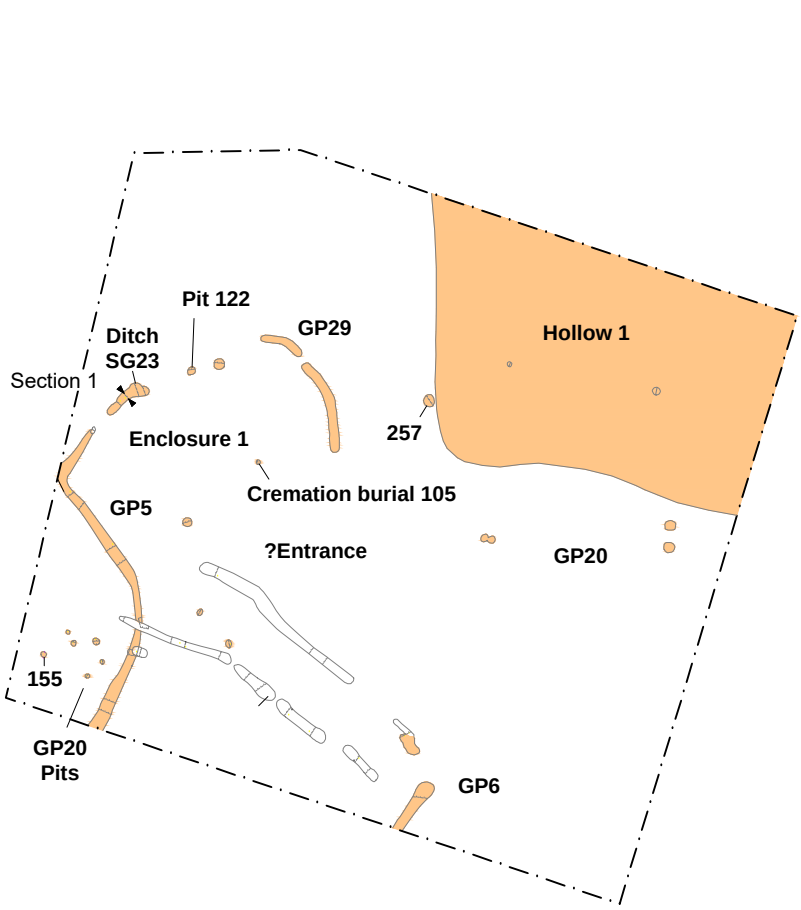
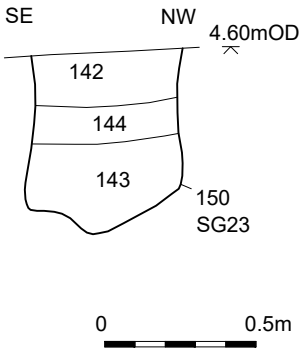
Project Ref: 3307	August 2016	Palaeoenvironmental survey results	
Report Ref: 2013335	Drawn by: JLR		



SG23 looking south

0 10m



0 0.5m

SG23 ditch fills

Special deposit in pit 155

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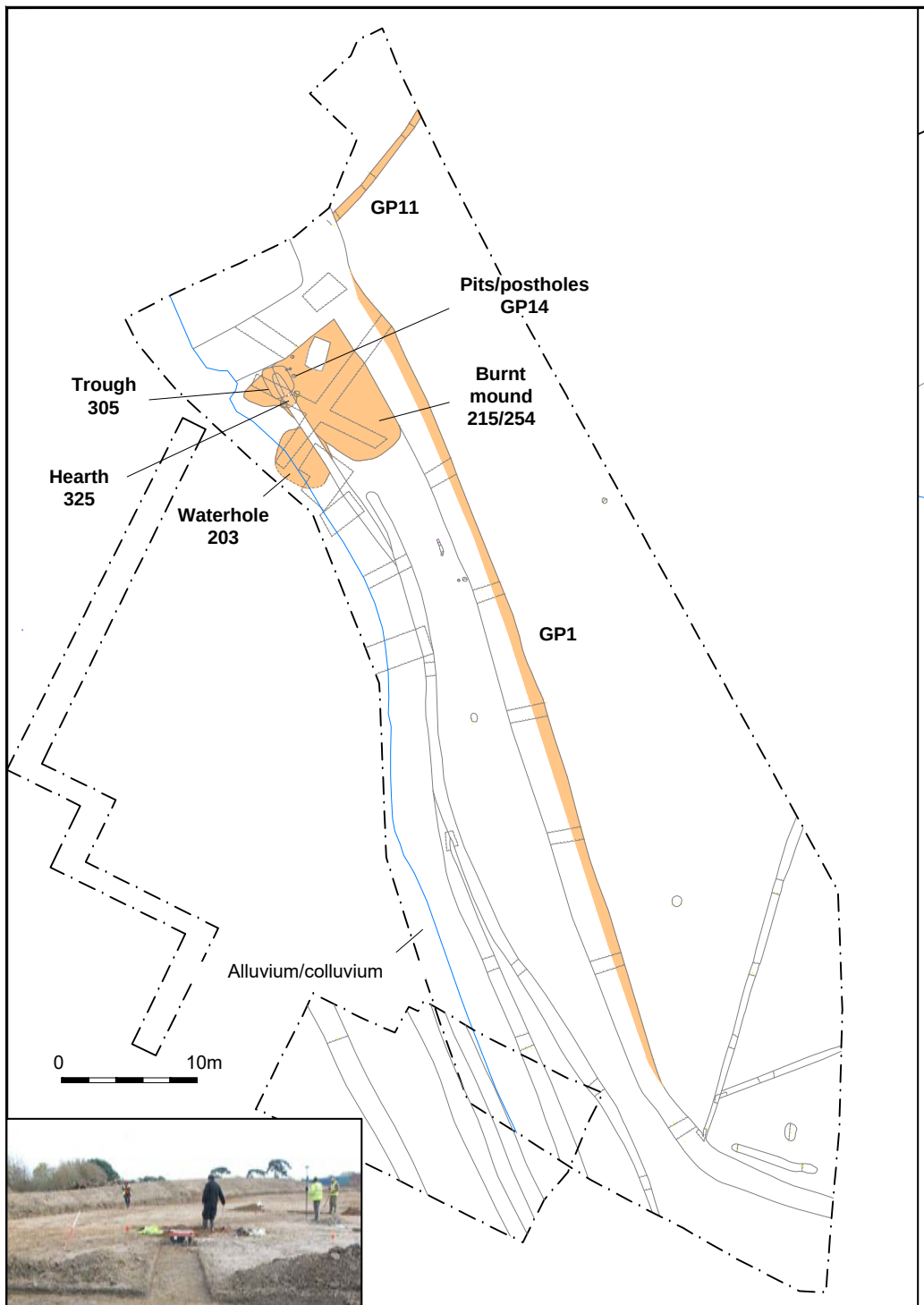
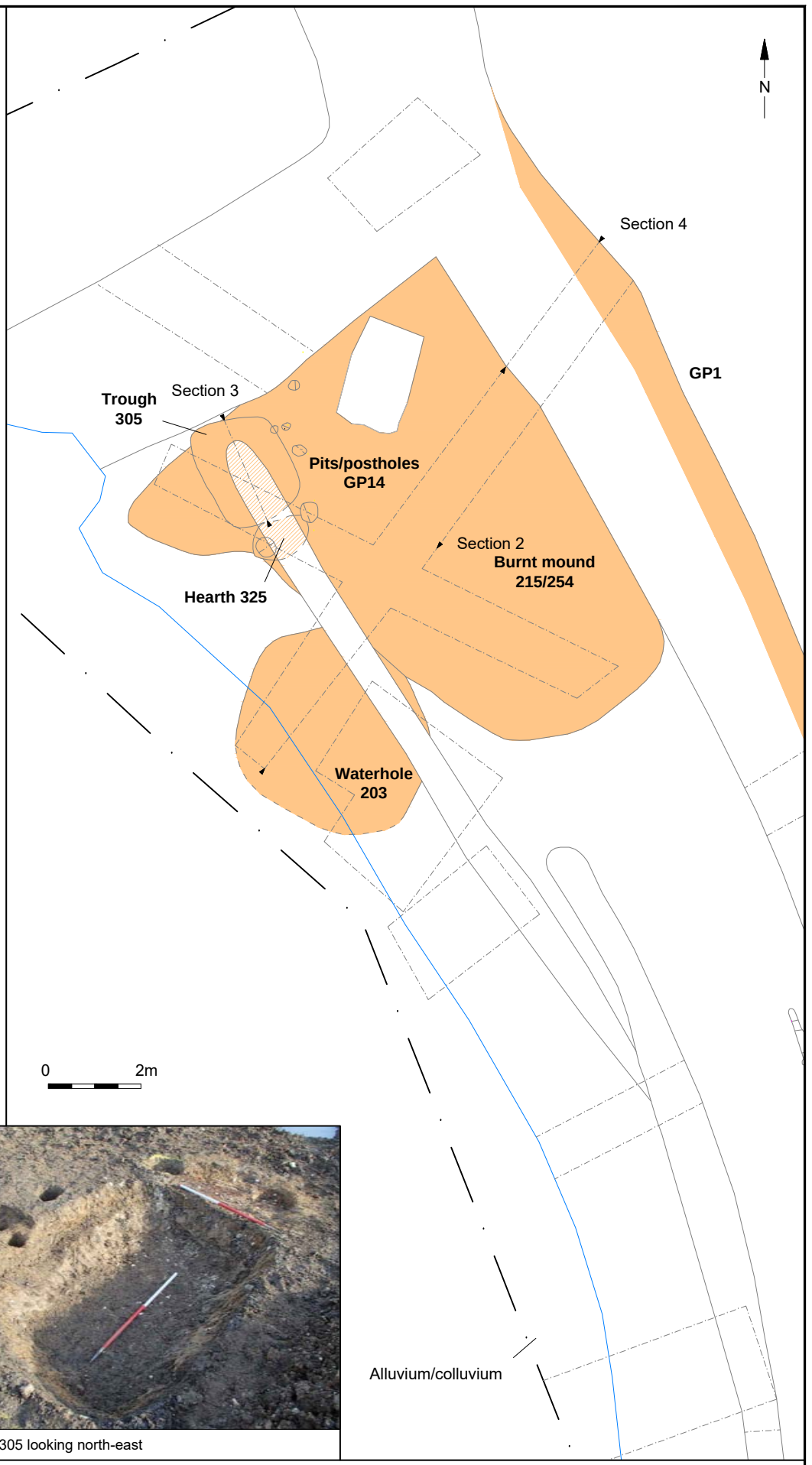
Project Ref: 3307	August 2016	Period 1 Area 1, plan, section and photographs	
Report Ref: 2013335	Drawn by: JLR		

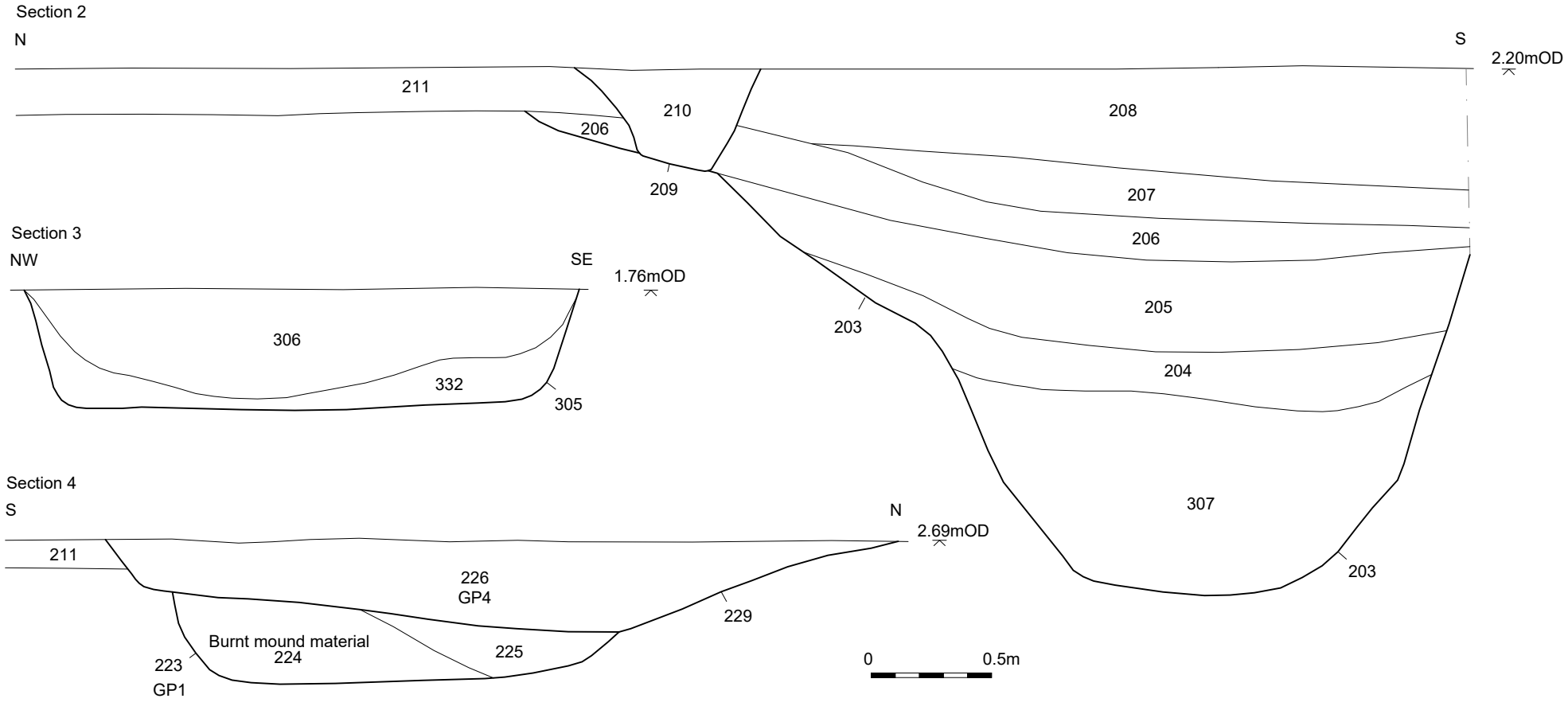




Trough fill 306 under the burnt mound looking east

Waterhole 203 looking north

Trough 305 looking north-east



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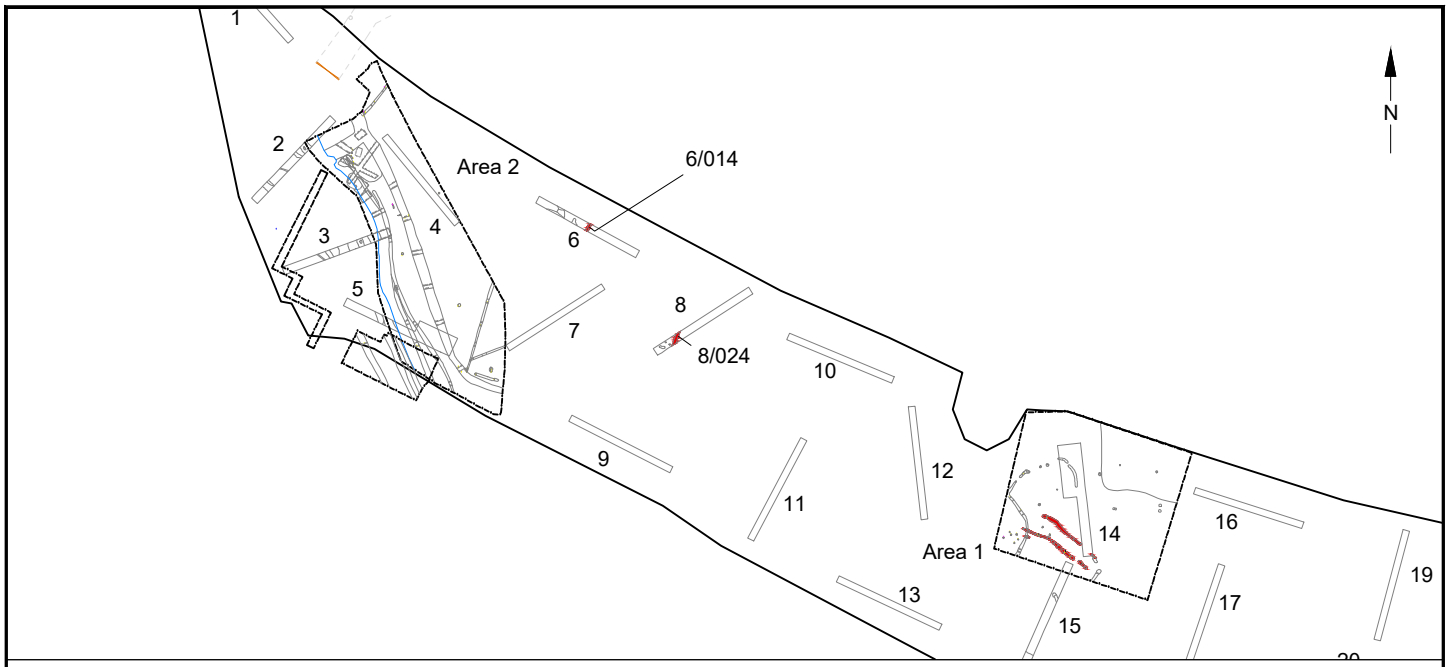
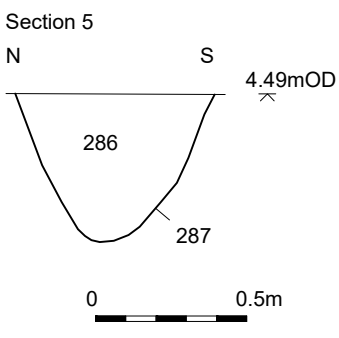
Project Ref: 3307	August 2016	Period 1 Area 2, plan sections and photographs	
Report Ref: 2013335	Drawn by: JLR		



South side of Doveway 1 looking west



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Project Ref: 3307	August 2016	Period 2 Area 1	
Report Ref: 2013335	Drawn by: JLR		

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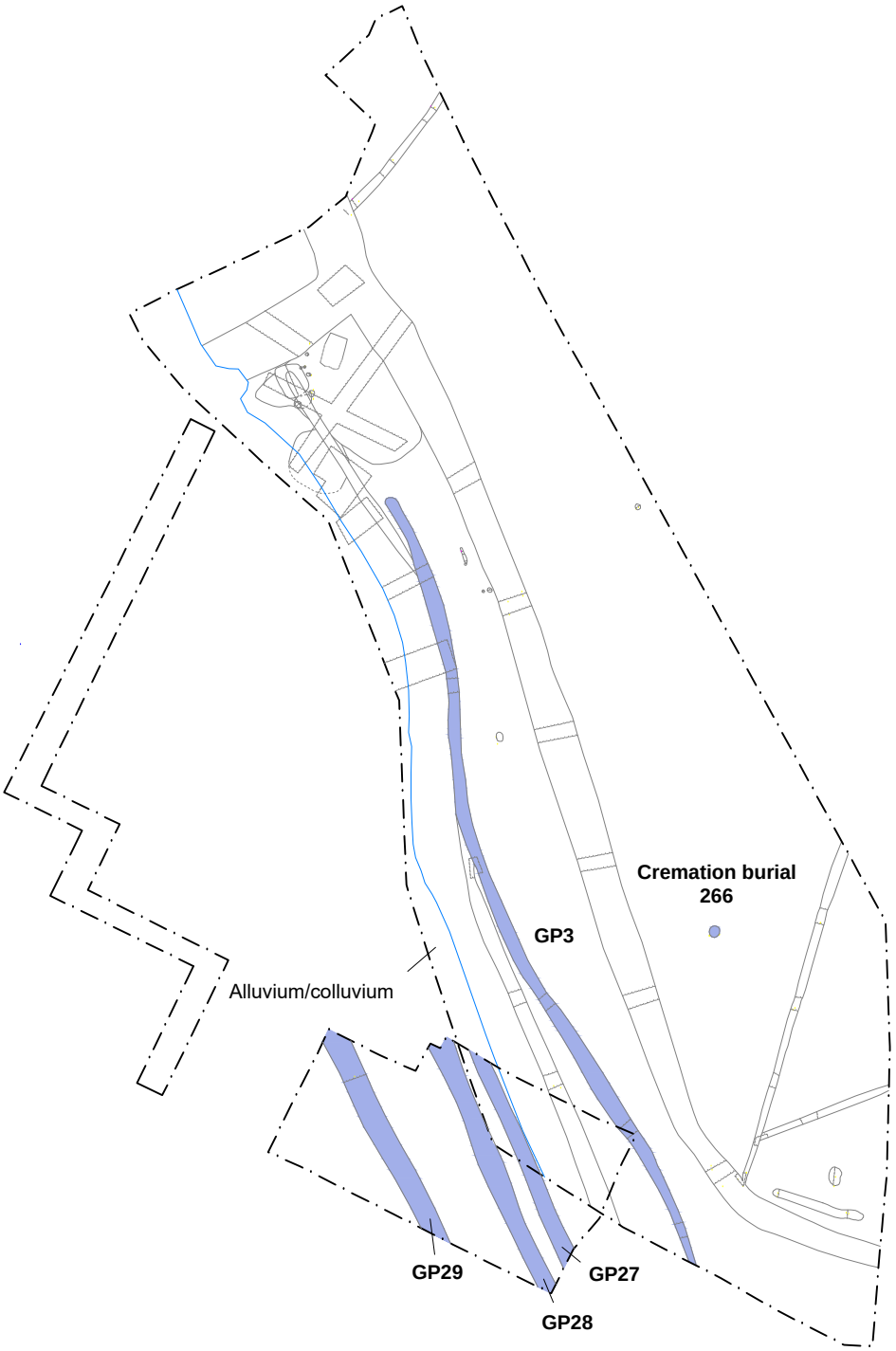
Project Ref: 3307	August 2016	Period 3.1	
Report Ref: 2013335	Drawn by: JLR		



0 10m

219 GP3 looking north-west

266 looking north-west

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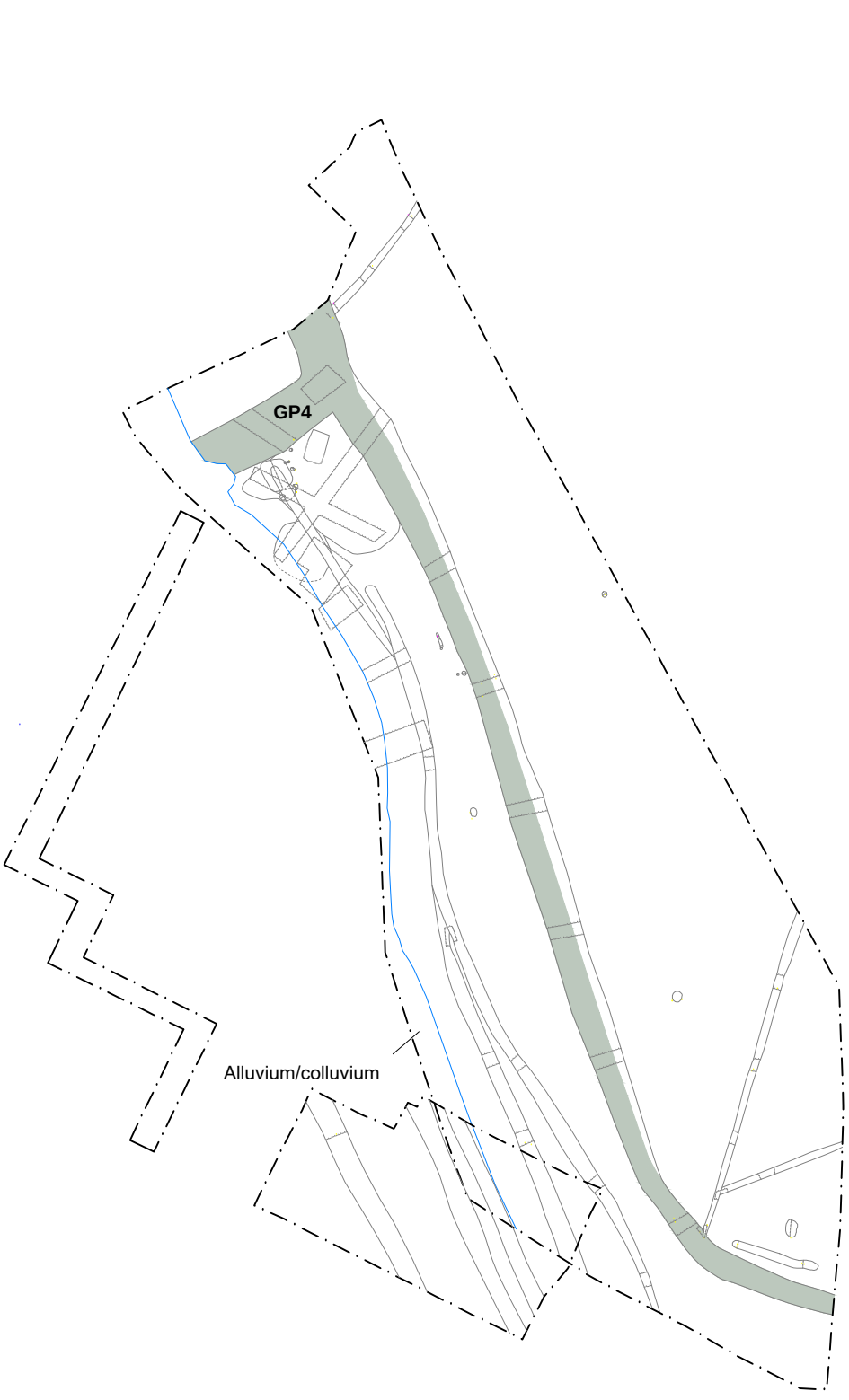
Project Ref: 3307	August 2016	Period 3.2	
Report Ref: 2013335	Drawn by: JLR		



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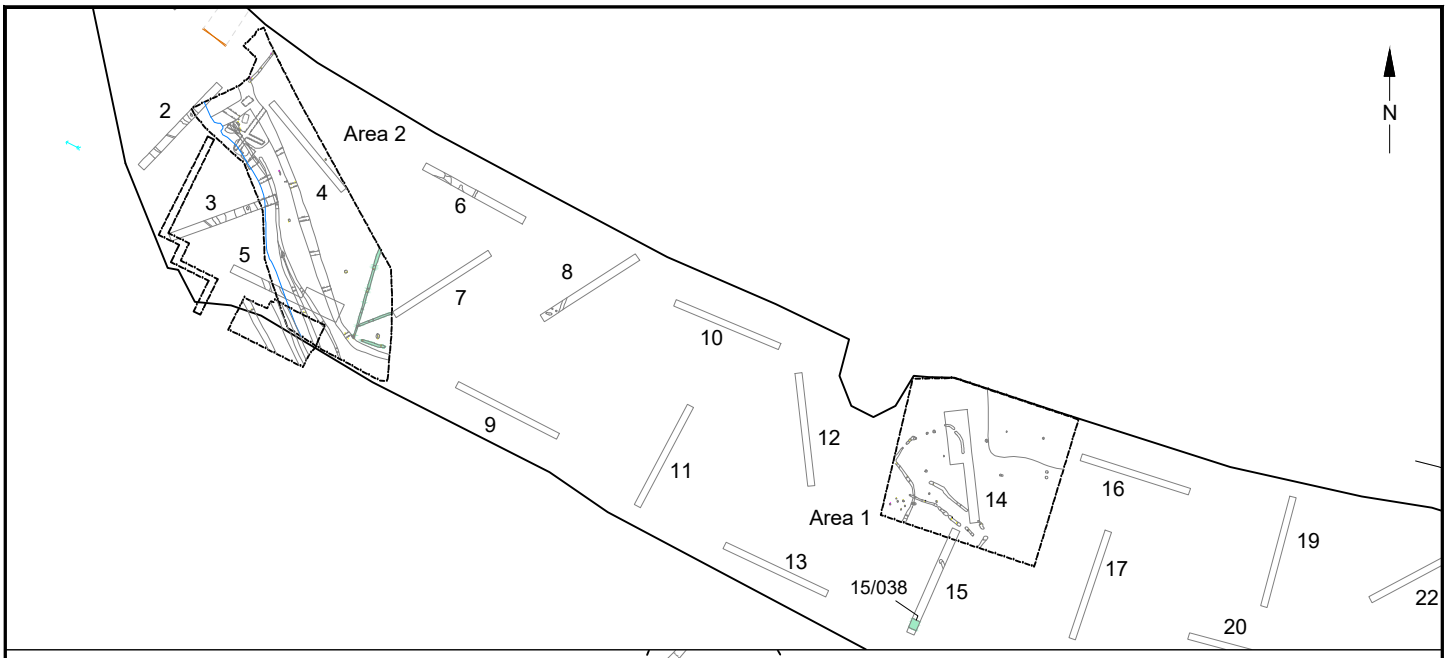
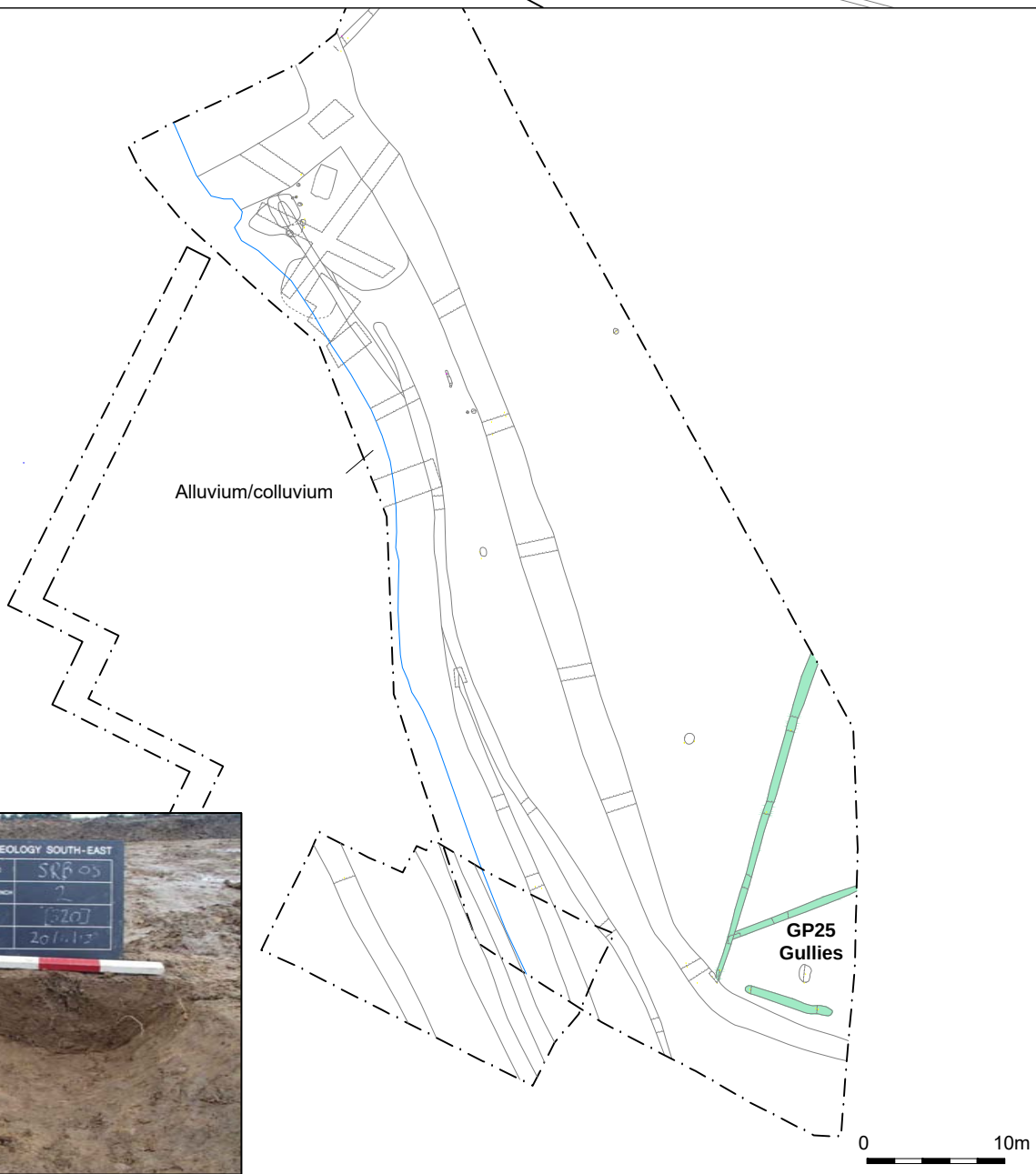
Project Ref: 3307	August 2016	Period 4	
Report Ref: 2013335	Drawn by: JLR		





320 GP25, looking east

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Project Ref: 3307	August 2016	Period 5	
Report Ref: 2013335	Drawn by: JLR		

Area 1 under excavation

Area 2 looking east. The Rustington stream and floodplain are on the right

Undertaking the borehole survey

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Project Ref: 3307	August 2016	Photographs	
Report Ref: 2013335	Drawn by: JLR		

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