Excavation of a Mesolithic site at Kingsdale Head (SD712 799) by the Ingleborough Archaeology Group 2009-2010

N.D. Melton, H. Russ and D.S. Johnson

Ingleborough Archaeology Group

2014

Excavation of a Mesolithic site at Kingsdale Head (SD712 799) by the Ingleborough Archaeology Group, 2009-2010

N.D. Melton, H. Russ and D.S. Johnson

Ingleborough Archaeology Group gratefully acknowledges funding from Grassroots Grants and the Council for British Archaeology, Yorkshire.

Reconstruction by Helen McKinley of the Mesolithic site at Kingsdale Head

Published by Ingleborough Archaeology Group, Ingleborough Community Centre, Ingleton via Carnforth, LA6 3HG

www.ingleborougharchaeologygroup.org.uk

Contents **Page**

Figures

Tables

Appendices

1 Introduction

1.1 Kingsdale Head: excavation history

Excavations at Kingsdale Head commenced on 6 September 2005, for a duration of three weeks; continued from 11 June 2006 for three weeks; in April and July 2007; in May 2009, for three weeks; and were completed starting on 22 May 2010, lasting for two weeks. The site was excavated by members of the Ingleborough Archaeology Group with supervisory assistance from various organisations: the University of Bradford's Archaeological, Geographical and Environmental Sciences Department in 2005 and 2006; Vivienne Metcalf of ArcheType in 2007; and Dr Nigel Melton and Dr Hannah Russ in 2009 and 2010.

The 2005-2007 excavations were spread over a wide area (see Figure 5), with the main concentrations focused on three features of contrasting date and form. Trenches 1 and 7 investigated a longhouse-type structure, dated by ceramics and radiocarbon dating of charcoal to the high medieval period (1210-1290 cal AD at 95.40% probability, SUERC-11500. GU-14469); Trench 2 investigated a burnt mound, radiocarbon dated to the Bronze Age (1540-1410 cal BC, SUERC-10485.GU-14118 at 89.60%; and 1500-1370 cal BC, SUERC 10486. GU-14119 at 91.40%); Trench 6 focused on a large cooking pit (Batty and Batty 2007, passim). In 2009-2010, Trench 8 – the focus of this Report – investigated the area surrounding the Trench 6 cooking pit. Trenches 3, 4 and 5 were opened up for training purposes.

1.2 Site location, topography and geology

The Kingsdale Head excavation site is located in the parish of Thornton in Lonsdale near Ingleton, North Yorkshire, centred on grid reference SD712 799 (Fig. 1).

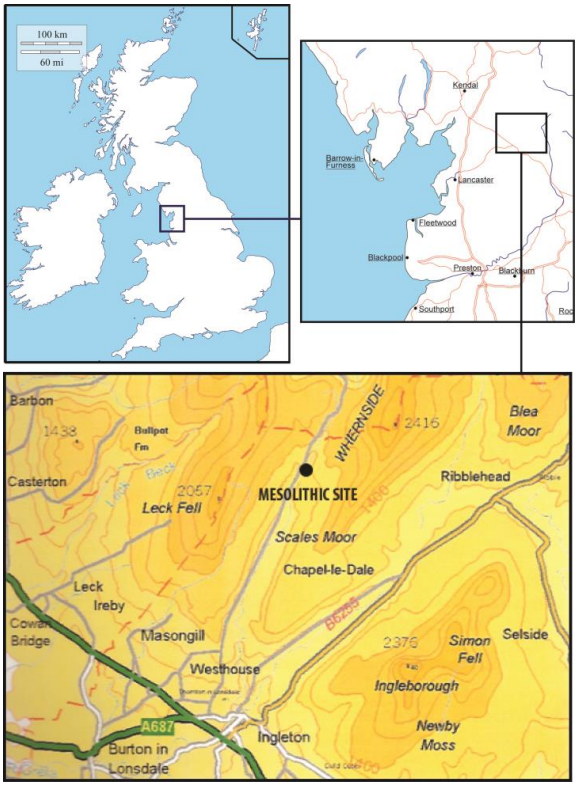


Fig. 1: Kingsdale Head site location

Kingsdale is a long and relatively narrow glaciated valley, 4.5 km long, orientated south-west to north-east. Altitude within the valley ranges from 250 m OD at the southern end to 330 m OD at the northern. Most of the valley, apart from the enclosures between Shout Scar and Keld Head Scar on the western slopes, is managed by two farms located within the valley: Kingsdale Head Farm and Braida Garth Farm. Several areas are under tree plantation management, as below Braida Garth Scar at Yordas Wood and around Kingsdale Head itself. There is also some natural cover of ash (*Fraxinus* sp.), rowan (*Sorbus* sp.) and hawthorn (*Crataegus* sp.) (Batty and Batty 2007, 28).

The valley is drained by Kingsdale Beck, much of which was straightened in a land improvement scheme in the early nineteenth century, and its various tributaries, notably Long Gill, Back Gill, Buck Beck and Cluntering Gill at the northern end, all of which flow through over-deepened glacial meltwater channels; and the outfall from a major cave system at Keld Head.

Kingsdale is underlain by Carboniferous strata, with Carboniferous Limestone overlain by alternating beds of limestone and sandstone, with occasional shale bands of the Yoredale Group (Johnson 2007). The Yoredale beds form the higher ground and their impermeable nature impedes infiltration resulting in poor drainage, in turn leading to anaerobic conditions within the soils thereby increasing acidity levels. The limestone strata are well drained and support nutrient-rich grass species.

The valley sides are masked by a veneer of glacial till forming an impermeable matrix of clay and stones which gives rise to typical landforms of glacial deposition, namely lateral moraines and recessional moraines. The steep slope up which the road climbs from Cluntering Gill Bridge is composed of till deposits.

Meltwater exerts considerable forces of erosion and deposition: the steep-sided gills result from the former; while the locality of the excavation site displays evidence of the latter. Between the sheepfold and Trench 2 in Long Gill, and along the left bank of Cluntering Gill, are massive partially vegetated boulder spreads made up of stone mainly brought down by meltwater and major flood events. Many of the larger angular stones were deposited at an acute angle, with their long axis facing upstream, stacked against the other by the sheer force of water like fallen dominoes, in a natural process called imbrication (see Figure 14 which illustrates this process in stones within the colluvium layer [802] in the Trench 8 excavations).

1.3 Background to the 2009 and 2010 excavations of Trench 8

1.3.1 Geophysical Survey

Geophysical surveys using gradiometry and resistivity were undertaken of the entire site prior to the 2005 excavation (Fig. 2 and see below, Section 3.2) (Batty and Batty 2007, 38-42).

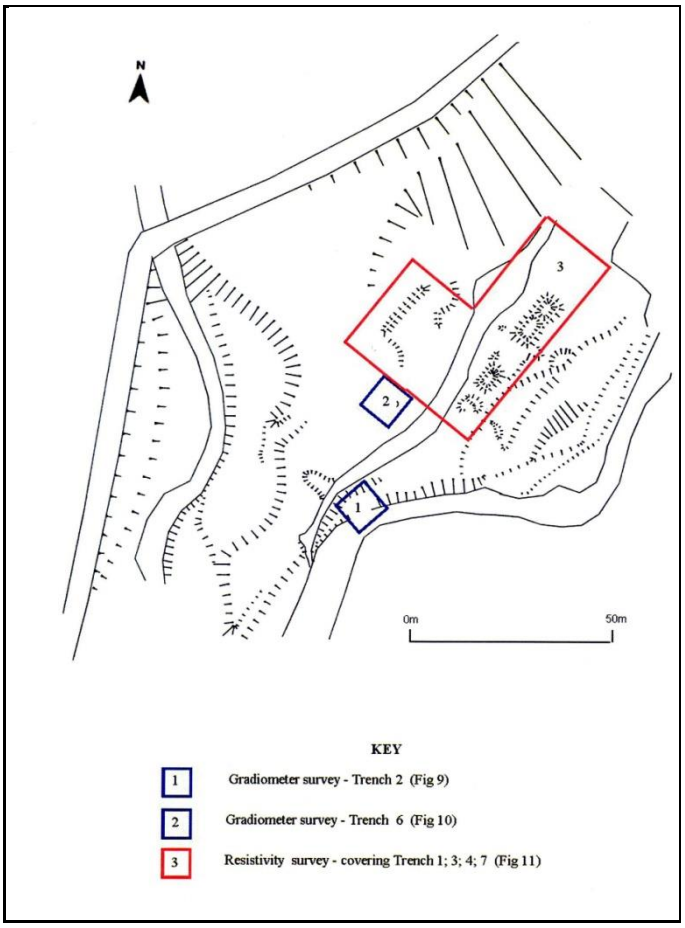


Fig. 2: Areas covered by geophysical survey (Batty and Batty 2007, 39)

The gradiometer survey revealed two major anomalies: one, investigated by Trench 2 (Area no. 1 on Figure 2) proved to be a Bronze Age burnt mound; and the second which was investigated by Trench 6 in 2006 (Area no. 2 on Figure 2), a c. 1.5 m-diameter pit that was filled with a large number of stones that had been heated. A sample of burnt wood from the base of this pit provided a Mesolithic radiocarbon date.

The gradiometer plot of the area surrounding this latter feature (Fig. 3) had several clear anomalies. In addition to the main anomaly, there were similar, but smaller anomalies (shown in reddish-brown) to the south-west and north-east, and a large 'halo' of weak anomalies. These suggested that additional, possibly Mesolithic, features were present – possibly additional pits or hearths – while the arc of small anomalies (shown in yellow) seemed to suggest a possible set of postholes. The grey tinting on the plot represents background readings.

The resistivity survey (Fig. 4) highlighted the rectangular structure excavated in Trench 1 (Area no. 3 on Figure 2, a medieval building) as well as several bank features and a palaeochannel.

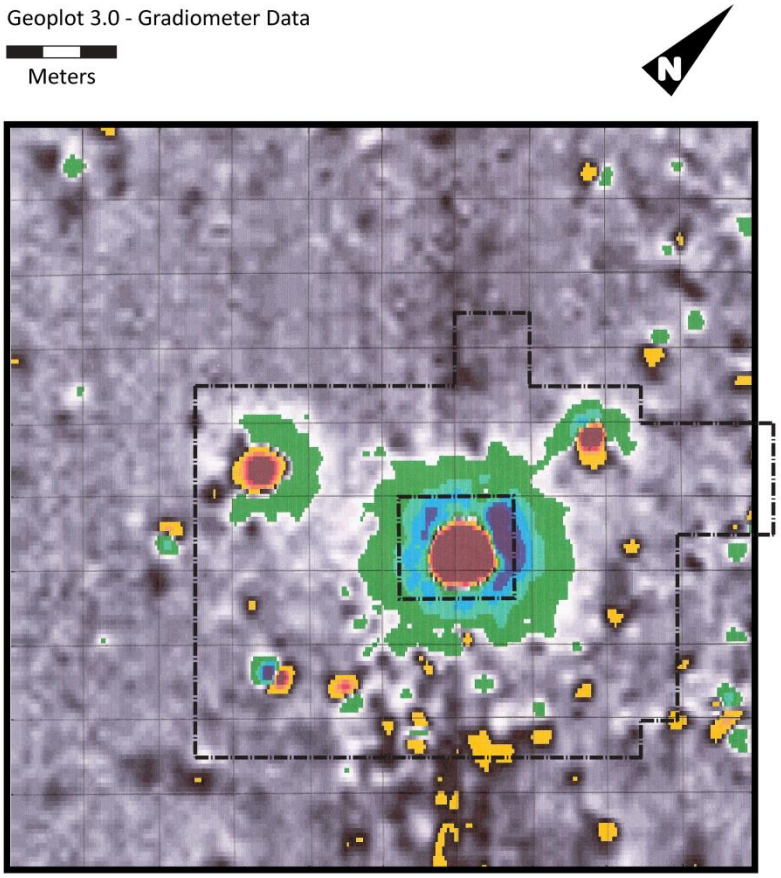


Figure 3: Gradiometer survey showing anomalies investigated by Trenches 6 and 8 (adapted from: Batty and Batty 2007, 41)

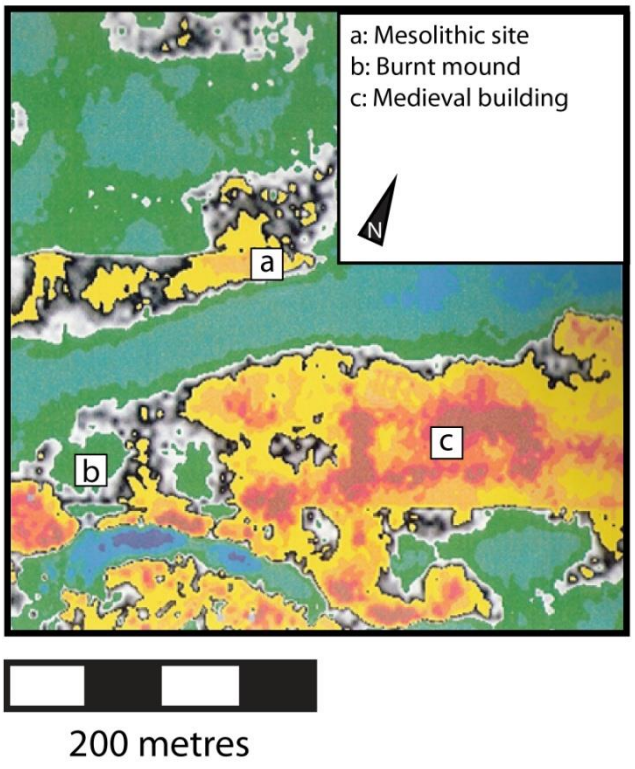


Figure 4: Resistivity survey of Trench 2 (adapted from: Batty and Batty 2007, 42)

1.3.2 Sandymire

Sandymire is located on Kingsdale Beck, below the artificially-straightened section, where the ground is naturally damp, at SD696 763. Excavation here, in 2005, was based on timbers seen emerging from the riverbank above the water line being exposed by fluvial erosion (Batty 2008). One such piece of hazel (*Corylus* sp.) bore clear signs of having been worked using a metal tool. It was radiocarbon dated to 1640-1450 cal BC (SUERC-11495. GU-14448), placing it firmly within the Bronze Age thereby confirming that the wood had been cut using a bronze axe. No conclusive evidence was found to suggest the type of structure that had been constructed here but the preliminary interpretation was of a timber trackway across boggy ground.

In a later period of dry weather, when water levels were lower than normal, further timbers were seen under water at a greater depth than the previous set (*ibid.* Batty 2008). Several pieces were removed for examination at the York Archaeological Trust and two displayed evidence of having been gnawed by beaver (*Castor* sp.). A section of willow (*Salix* sp.) collected from the underwater site was radiocarbon dated to 5730-5670 cal BC (Beta Analytic RC Lab 2-233907). Thus the beaver-gnawed wood at the site shows that there was habitat suitable for beavers in the valley during the Mesolithic, though there are no means of determining for what length of time these conditions applied, and no physical evidence of a beaver lodge.

1.3.3 Trench 6

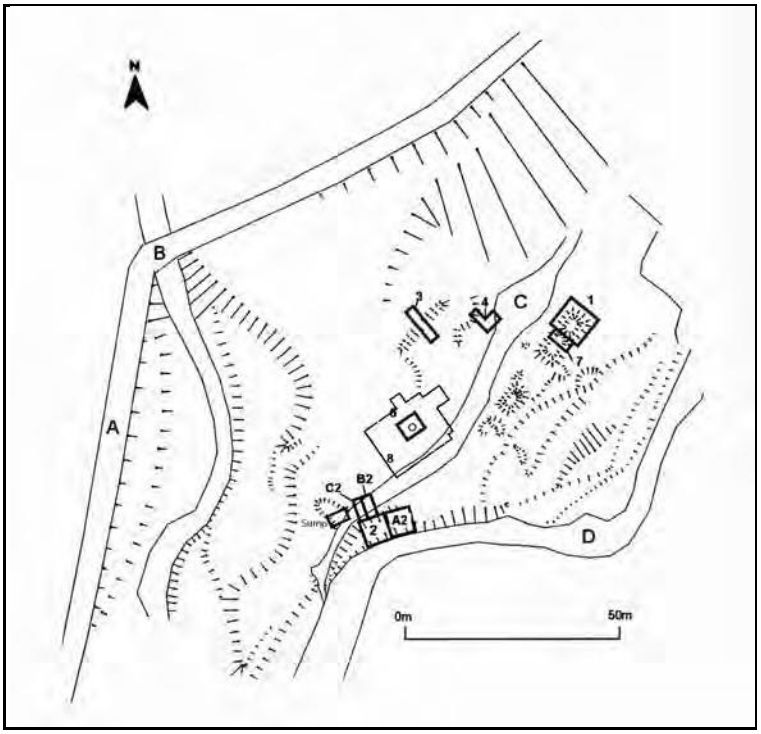


Fig. 5: Location of excavation trenches (1-6) and palaeochannel (C) (Adapted from Batty and Batty 2007, 44)

In 2005 the emphasis of excavation was on Trench 1, a medieval building, and Trench 2, a Bronze Age burnt mound (Batty and Batty 2007, 46-76). The relationship of the various trenches across the excavation site, and their proximity to the palaeochannel, are shown on Fig. 5. Detailed plans of these two structures are shown on Figs. 6 and 7.

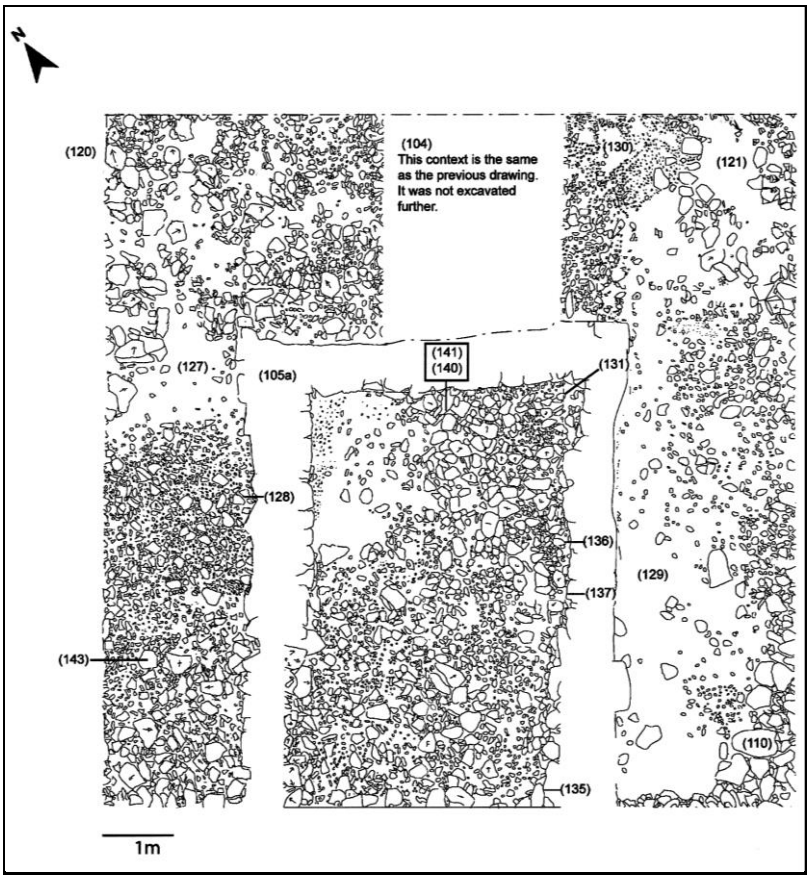


Fig. 6: Trench 1 - plan of archaeological features (Batty and Batty 2007, 49)

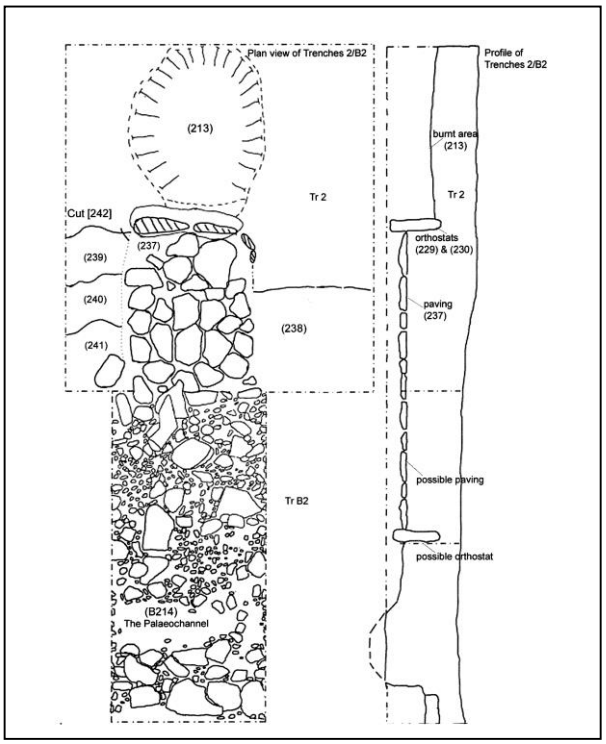


Fig. 7: Trench 2 – plan and section of archaeological features (Batty and Batty 2007, 72)

In 2006 Trench 6 was excavated in order to investigate the large circular magnetic anomaly detected in the gradiometer survey. The anomaly proved to be a Mesolithic cooking pit, detected in the gradiometer survey as a result of the pit having been filled with stones that had been heated, possibly to enable the food to be cooked by steaming (Batty & Batty 2007, 88).

The pit was c. 1.50m in diameter at the rim and 0.80m at the base, though it was irregular in plan when first exposed, and depth was c. 0.60m when fully excavated (Figs. 8 and 9). On completion of the excavations a squarish, possibly later phased, extension can be observed on the northern edge of this feature (see Figure 20).

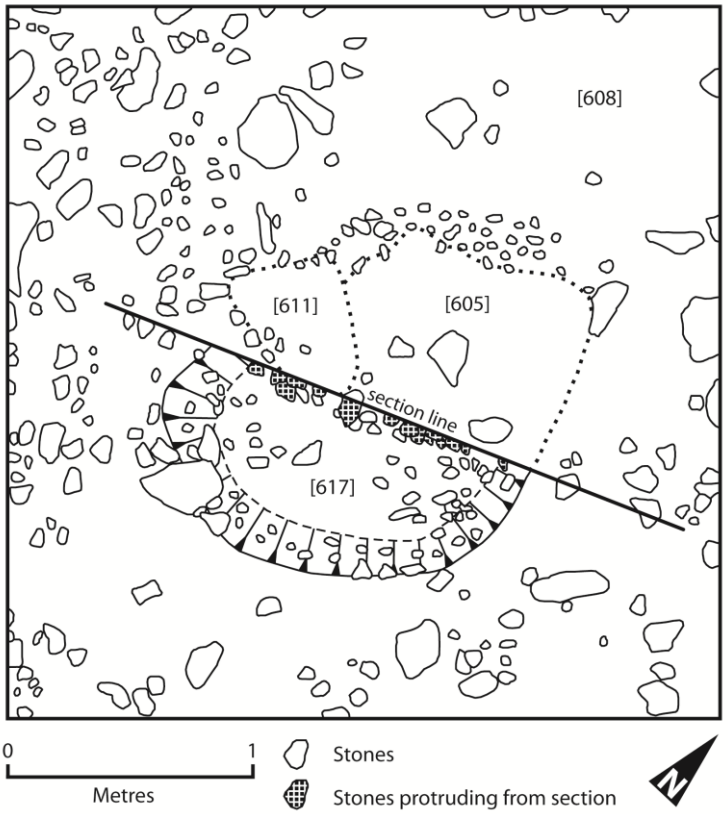


Fig. 8: Plan of the large pit excavated in 2006 (adapted from Batty and Batty 2007, 83)

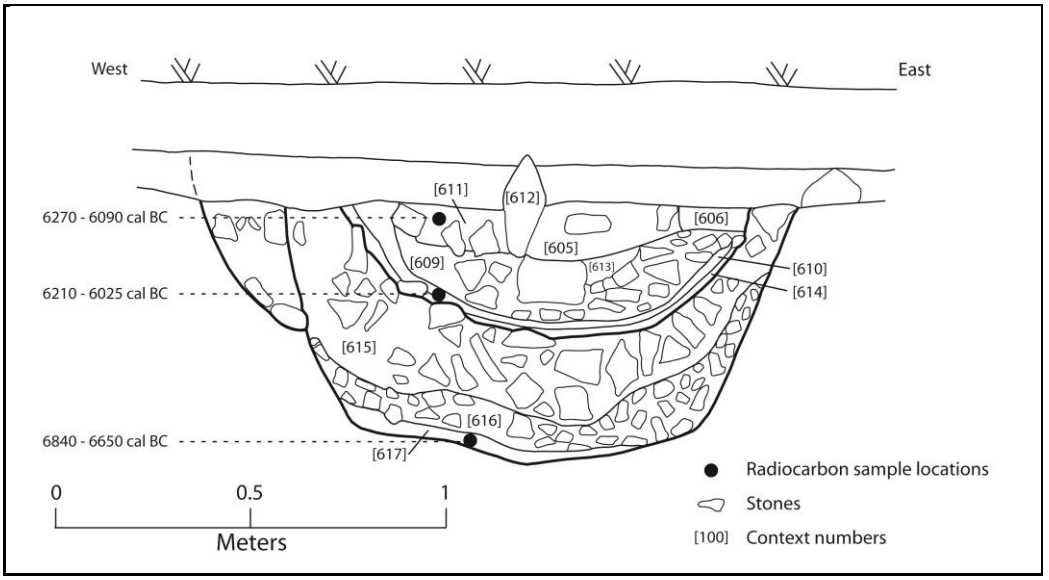


Figure 9: Section through the large pit excavated in 2006 (adapted from Batty and Batty 2007, 83)

Twenty contexts were identified within the stratigraphic sequence of the pit. These included clay and clayey silt deposits [605], [614] and [617], and sandstone cobbles or fragments [606], [609] and [615]. The natural clay into which the pit had been cut showed no evidence that a fire had burned within the pit, although the rim of the feature had been heat-affected.

Context [617], a black greasy lens 0.10m thick, covered the base of the pit and quantities of burnt material were recovered from within it. Six environmental samples, <1662>, <1669> and <1671-74> were taken from the primary context [617]. All of the samples taken from the pit contained both wood and charcoal except for context [611] <1652> which contained only charcoal. There was a concentration of wood in [607] and heat-fractured stone in [610]. A charred seed was found in [611] <1652> but it was too degraded to enable positive identification.

Context [617] also contained hawthorn (*Crataegus* sp.) charcoal <1671> which was radiocarbon dated (below, Section 7) at 6840-6650 cal BC at 80.7 per cent probability (SUERC-11499 GU-14468) placing the pit in the middle Mesolithic period (Batty and Batty 2007, 133; Howard 2007, 15).

2 Aims and objectives for the investigation of the potential Mesolithic features in 2009 and 2010 (Trench 8)

2.1 2009 Season

The 2006 excavation season ended with several important research questions unanswered and with a number of areas that required further investigation. The 2009 excavations were designed to address these issues.

Geophysical survey of the area surrounding Trench 6 highlighted other anomalies that were not investigated during the 2005 season (see Figure 3). There were two significant magnetic anomalies south-west and north of the cooking pit and the possibility that they were additional Mesolithic features needed to be investigated. The gradiometer survey also revealed an arc of magnetic anomalies, spaced at fairly regular intervals around the eastern side of the cooking pit (see Figure 3). The possibility that the latter represented postholes, containing burnt stones, of a wind shelter around the pit warranted further investigation. Such a structure would be an extremely rare example in Mesolithic Britain, and therefore a site of national importance.

Only one radiocarbon date had been obtained from the Trench 6 cooking pit in 2005 and additional dates were required in order to confirm that the cooking pit was Mesolithic and determine the period over which it was in use. There was also a need to obtain evidence of the Mesolithic environment at Kingsdale Head.

The geophysical survey had identified a palaeochannel running very close to the putative arc of postholes and further investigation was required to determine whether this channel was coeval with the large Mesolithic pit, though evidence from Trench 2 suggested the channel was possibly post-Bronze Age (Batty and Batty 2007, 71).

During excavation of Trench 6 in 2005 a small number of lithic artefacts were recovered (Batty and Batty 2007, 82), and a further aim was to investigate lithic evidence for Mesolithic activity at the site, in the form of cores, tools and debitage.

As with all Ingleborough Archaeology Group projects, the excavation aimed to involve the local community in a practical way, and to provide a high level of fieldwork training.

2.2 2010 Season

Unfavourable weather conditions in 2009 meant that it had not been possible to complete the excavation down to the underlying natural clay. One of the main objectives for 2010 was to complete that task in order to reveal the origin of the arc of weak anomalies in the gradiometer survey of 2005.

At the very end of the 2009 excavation season a second, smaller, pit in the western corner of Trench 8 was revealed. This pit contained burnt material and was associated with an overlying area of flat heated stones [809] (Fig. 10). This feature was the western of the two large additional geophysical anomalies on the geophysical survey (the other (north-eastern) anomaly was found to be a mole trap!). An important objective for 2010 was to fully excavate this feature and to obtain a sample for radiocarbon dating, enabling comparison with the Trench 6 cooking pit.

Fig. 10: Stones [809] exposed in 2009

It was proposed that the Trench 6 pit be re-opened in order to examine more closely its detailed form. Further samples for radiocarbon dating were selected from charcoal recovered during the 2005 excavations.

During the 2009 Trench 8 excavations a spread of c. 300 lithics – predominantly chert debitage – provided evidence for on-site knapping (see Section 6). By the end of that year's excavations, the delays brought about by the inclement weather meant that this could not be conclusively confirmed. In 2010, therefore, a further objective was to examine lithic typology and spatial distribution in order to investigate whether chert was being knapped on site or had been transported there by downslope movement.

Investigation of the burnt mound in Trench 2, in 2005, had suggested that the palaeochannel may have been active at some time after the Bronze Age but its proximity to the Mesolithic cooking pit in Trench 6, and its identification (in 2009) in the south-eastern corner of Trench 8 suggested the possibility that it could have also been active during the Mesolithic. Further investigation of the palaeochannel was therefore required in 2010.

3 Methodology

3.1 Geophysical survey

Two methods of geophysical survey were undertaken prior to the 2005 excavations. These comprised an earth resistance survey, using an RM 15 resistivity meter, and a magnetometry survey, using a FM 36 Fluxgate Gradiometer, in both cases with 0.50m probe spacing. Field data were manipulated using Geoplot 3.0 software (Batty and Batty 2007, 38). The nature of drift geology on the site – glacial till deposits and alluvial stone fans – reduced the effectiveness of the earth resistance survey, though it did reveal the footprint of the longhouse-type building in Trench 1 (see Figure 6), and the palaeochannel running north-east to south-west across the site (see Figure 4).

The gradiometer survey (see Figure 3) highlighted the large cooking pit in Trench 6, as well as other anomalies around the pit as previously discussed.

Excavation in 2009 had failed to locate evidence for the arc of weak anomalies that appeared to be associated with the large cooking pit. At the start of the 2010 excavations, therefore, a magnetometer scan of Trench 8 was undertaken by a Group member with the aim of determining if these anomalies were still present. This scan confirmed that some of these anomalies were no longer present, despite the base of the archaeological contexts not having been reached. Other anomalies were located over the palaeochannel, suggesting that the initial readings had reflected superficial burnt material.

3.2 Topographical survey

Topographical surveying of the entire site was undertaken prior to excavation by two members of the Group using a Zeiss Elta total station, with data manipulation by Penmap software to produce a hachure plan, and Golden Software's Surfer 8 to produce a 3D image.

Late glacial (deposition of till) and periglacial (meltwater flow and the development of alluvial stone fans) processes at Kingsdale Head have shaped the detailed land surface seen today. The slopes to the west and north of the road are steep and based on till deposits, while east and south of the road the ground level decreases more gradually along the elongated stone fans of Cluntering Gill and Long Gill. The altitude on the road at the bridge over the former stream had been determined by the Ordnance Survey as 327m above Ordnance Datum. The excavation site itself lay more or less on the 320m contour, with a very slight dip from north to south. A detailed contour plot within Trench 8 was made on completion of the excavation (Fig. 11).

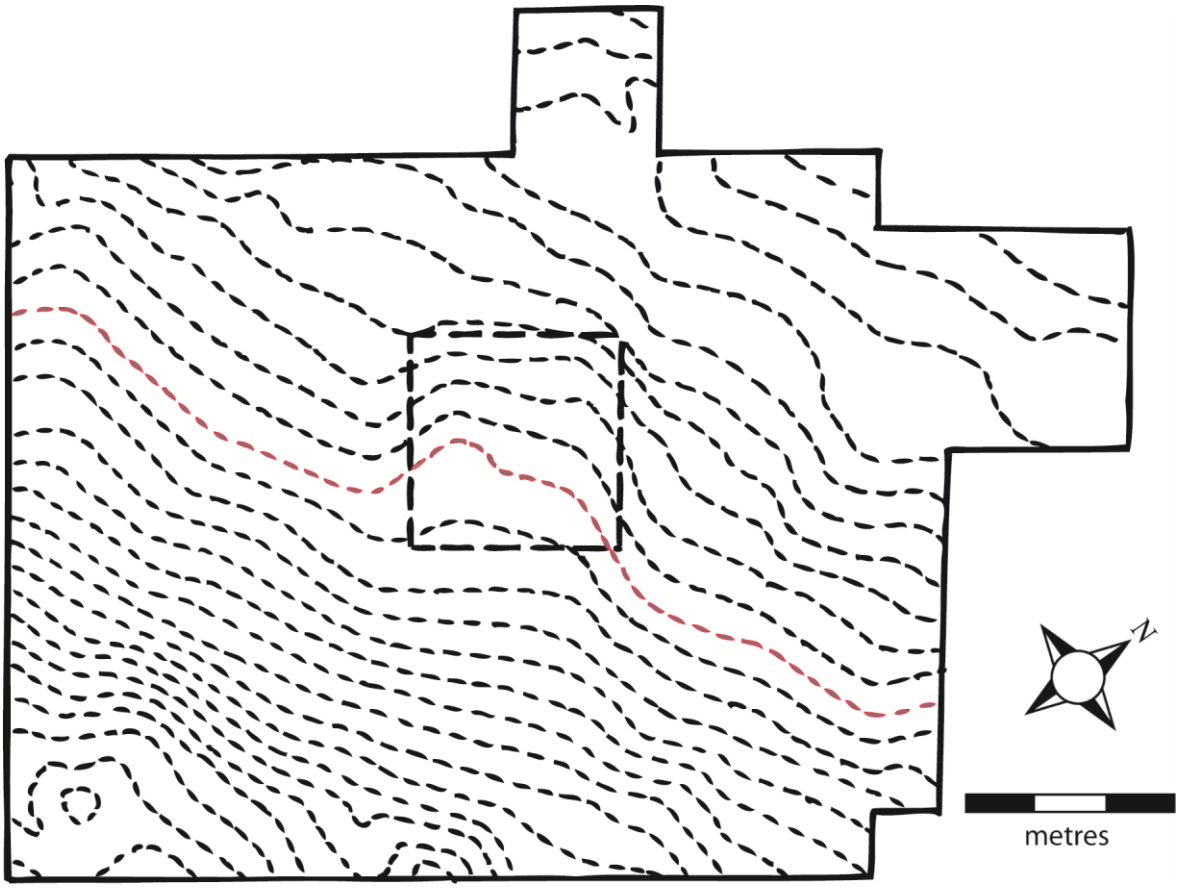


Fig. 11: Contour plot of Trench 8 (contours at 0.1m intervals). Red contour at 320m. Topography dips N-S

3.3 Trench 8

Trench 8 was located to encompass both Trench 6, the large cooking pit excavated in 2006, the two larger, and the arc of weak, anomalies on the gradiometer survey (see Figure 3) that were potentially associated with the cooking pit. The aims were to examine the additional anomalies and to investigate the use of the area immediately surrounding the pit, which appeared to be the focus for Mesolithic activity on site.

The thick colluvial layer [802] that sealed the archaeological features was excavated in spits of 0.05m. The trench was excavated on a 1 m grid (Fig. 12) in order to enhance interpretation of spatial patterning of archaeological and environmental samples, and to permit a systematic sampling pattern of the latter to be devised.

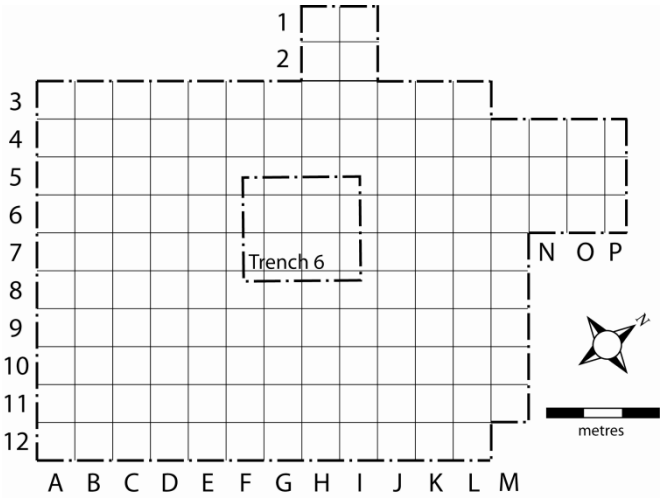


Fig. 12: The grid system which was used during the excavation of Trench 8, showing final extent of excavations at the end of the 2010 season

Three small extensions were added: the first being rows one and two, added to the original trench in order to examine, for comparative purposes, an area that was relatively 'blank' on the gradiometer data to determine whether there was activity beyond that indicated by the geophysics. In the second extension, columns M, N, O and P were excavated to examine an area with some faint indications of a second, possible outer, arc of very weak anomalies shown by the gradiometer data. At the end of the 2010 fieldwork season, the trench was extended 1m (Column M) in order to further examine the main concentration of finds of chert debitage in Column L (Fig. 13).

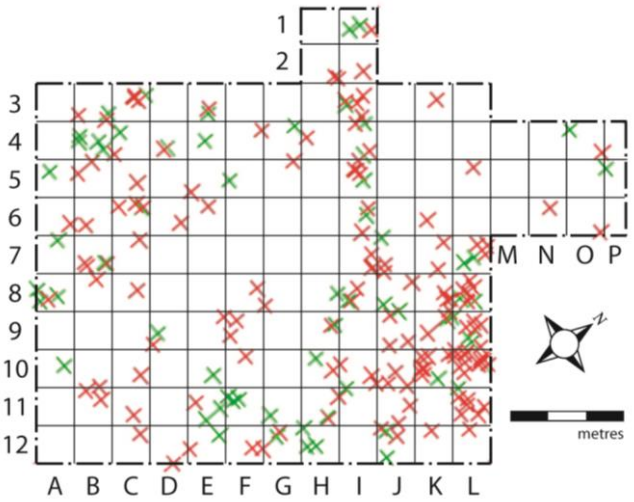


Fig. 13: Flint (green) and chert (red) distribution in Trench 8 in 2009

3.4 Environmental sampling

3.4.1 2009 Strategy

The entire contents of Trench 6 had been dry-sieved using a 0.5 mm mesh during the 2006 excavations. The fill of the pit located in Trench 6 was dominated by pieces of burnt stone in a matrix of clay and humic material. In addition, a small quantity of a greasy black material [617], the result of burning, was recovered from a lens at the base of the pit. The colluvium that sealed the pit had been transported from upslope by fluvial processes in the millennia after the Mesolithic activity at the site.

In 2009 a systematic sampling strategy was implemented. Samples were taken from the colluvium [802], for either dry-sieving or flotation.

The initial plan had been to dry-sieve three buckets per spit from each of the 120 1 m x 1 m grid squares that encompassed Trench 8. However, for logistical reasons, dry-sieving was reduced to one bucket per square per spit. However, the areas containing particularly high concentrations of lithics (squares J-K 8 and 10-12) had all (100%) of the excavated material dry-sieved. All samples showed contamination in one form or another, mainly from roots but also from earthworms and insect larvae. In addition, samples collected and sealed during the 2006 Trench 6 excavations, but not examined, were wet-sieved in the flotation tank during the 2009 fieldwork season. A one-litre sample was taken from each spit of each grid square for flotation.

After flotation, heavy fractions were dried and sealed in ziplock sample bags to be analysed post-excavation, whilst the light fractions were stored in flot jars to be dried and sorted at a later date. Smaller samples were wet sieved using 0.5mm and 0.25mm sieve meshes. Samples were processed at Bradford University. (See below, Section 4.2, for further details.)

3.4.2 2010 Strategy

Flotation and dry-sieving of context [802] in 2009 (see below) did not provide any environmental data that contributed to the understanding of past conditions or activity at Kingsdale Head. The sampling strategy was therefore modified for 2010. During the 2010 excavation environmental samples were taken with the aim of trying to recover ecofacts. The samples were selected using a preset pattern for [802], a hillwash deposit. A total (100%) sample was taken from [811], the charcoal-silt layer within the small fire pit, owing to the importance of this context. No on-site flotting was undertaken in 2010, all samples were bagged for processing (using 0.5 and 0.25mm meshes) at the University of Bradford.

Within [802] one in five buckets per square per spit was dry-sieved using a 2mm mesh. This was undertaken as a quality control check on the recovery of chert debitage from microlith production from the hand trowelling. A small number of chert pieces were recovered during this process, but in general the hand recovery rate of the +2mm chert fragments was extremely high.

3.5 Post-excavation (artefacts)

During both 2009 and 2010 excavation seasons a substantial number of worked stone pieces and debitage were recovered from the site, but no bone was preserved. Anthropogenic stone pieces were catalogued on-site with subsequent analysis by Russ (see Section 6 and Russ 2009; 2013).

4 The 2009-10 excavations

Trench 8 was hand-excavated following turf removal using a mechanical de-turfer. The turf sealed a heavily root-contaminated subsoil [801] into which a recent disturbance, a small, roughly conical hole [805] containing a mixture of fresh turf and topsoil [806] had been cut at a point 0.5m north of the edge of Trench 6.

Removal of topsoil [801] exposed a layer of compact, reddish brown, clayey silt colluvium [802]. A second feature within topsoil [801] and colluvium [802] appeared to be a mole nest and contained a metal object, /802\, identified as a mole trap. The position of this find corresponded to the possible archaeological feature to the north of the Trench 6 cooking pit indicated by high readings on the 2005 gradiometer survey (see Figures 3, 8 and 9).

Colluvium [802] also contained loose and earthfast stones, some of which provided clear evidence of downslope movement in the form of imbrication of stones within it (Fig. 14), [802] and was present over most of the trench, the exception being in the southern corner where a friable clayey silt [803] was exposed. This latter layer contained both loose and earthfast stones and was subsequently proved to be the upper fill of the palaeochannel that had been identified on the geophysical survey. Subsequent excavation revealed the northern edge of palaeochannel [804] running across the south-eastern edge of the trench. Details of the stratigraphy within the palaeochannel were established when the sump for the flotation tank was sited within it, adjacent to the Bronze Age burnt mound excavated in 2006 (Trench 2). The site for the sump (see Figure 5) was chosen with the intention of gaining details of the palaeochannel, whilst minimising the risk of damage to any in-situ archaeology. The sump excavation revealed that the upper fill of the channel [502] (= [802] in Trench 8) sealed a more compacted layer of dark grey silt [503] that showed signs of anaerobic conditions being present. This layer sealed a layer of dark grey glutinous clayey silt [504] that in turn sealed the primary fill of the channel, a layer of compacted dark grey, glutinous clay [505] that contained charcoal and a large quantity of reddened and heat-shattered fragments of sandstone. The latter were derived from the adjacent burnt mound excavated in Trench 2, confirming that the palaeochannel was post-Bronze Age in date. The spread of Mesolithic lithic material in Trench 8 extended to the northern edge of the palaeochannel which thus appears to have truncated the area of Mesolithic activity.

Fig. 14: Stones within colluvium [802] displaying evidence of downslope movement

Colluvium [802] was removed in 0.05m spits and sealed two further features. One of these was a small shallow scoop [838] (Fig. 15) that was located close to the north-eastern edge of the large cooking pit [622] excavated in Trench 6 in 2005. This feature had a silty infill [838] which contained chert tools and debitage, confirming that it was an archaeological rather than natural feature. It was sealed by a layer of clay [808] under the main colluvial layer [802]. The second feature sealed by the colluvium was located at the position indicated by the second of the two high readings on the 2005 gradiometer survey, and was located to the west of cooking pit [622] (see Figure 3). It consisted of a roughly oval spread of horizontally-laid and fairly tightly packed pieces of sandstone [809]. These stones sealed a small pit [810] that contained a silty black fill [811] (Figs. 16, 17, 18 and 19), and a charcoal fragment which provided a radiocarbon date of 6600-6440 cal BC.

The large cooking pit [622] that had been excavated in 2006 (Fig. 20) was re-opened and two further radiocarbon dates obtained from charcoal fragments recovered in 2006.

Fig. 15: Shallow scoop [838]

Fig. 16: Charcoal-rich base of fill [811] in pit [810], showing relationship to stone feature [809]

Fig. 17: Plan of stone feature [809]

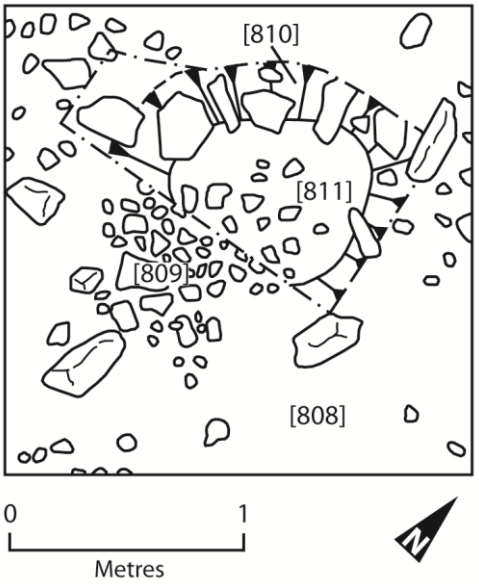


Fig. 18: Plan of excavated pit [810]

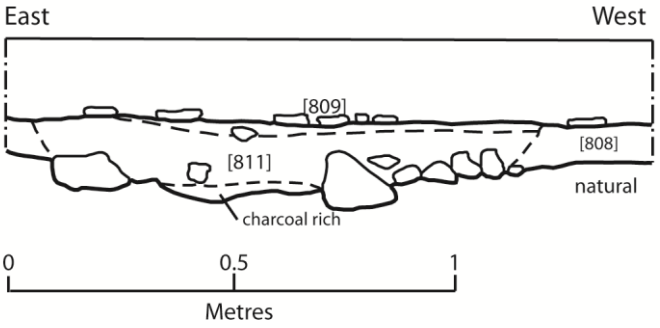


Fig. 19: Section of small pit [810]

Fig. 20: Trench 6 - the large cooking pit as excavated in 2006

5 Environmental Samples - Results

In Trench 6 (2006), flotation of sediment samples produced three pieces of flint and two of chert. These represented debitage resulting from the working of these materials in the vicinity. Most samples contained charcoal. A large fragment of wood was recovered from [607] within the fire pit (<1648>) though its species was not identified. Further details of these were discussed in Section 1.3.3.

Most of the 2006 samples from the cooking pit, and from the colluvium [802] excavated in 2009, contained stone fragments, either quartz or siltstone, as might be expected in an area where sandstone dominates the alluvial fans and superficial till deposits. Possible heat fractures were noted in two samples (<1830> from [802] and <1654> from [610]. Possible tree resin was recovered from one sample (<1833> from [802]).

Environmental samples obtained in 2009 yielded a small amount of unidentified charcoal and abundant micro-charcoal (Figure 18).

In 2010 the smaller fire pit [811] was subjected to 100% sampling, with samples of charcoal being taken for radiocarbon dating. The spread of the charcoal across the site (Fig. 21) is consistent, with small quantities being present in nearly all of the heavy fractions and several of the light fractions. Interestingly, heat-fractured stone was found in the area of grid square I11 which is away from both of the pit features. Amorphous burnt organic material was also found within the light fractions. The 100% sample taken from [811] yielded further charcoal and heat fractured stones.

No samples from 2006, 2009 or 2010 yielded any identifiable charred plant macrofossils, insects or molluscs for analysis.

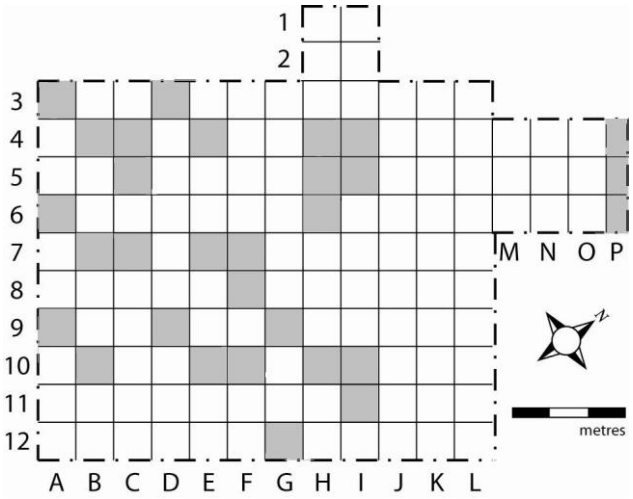


Fig. 21: The distribution of charcoal in context [802] in 2009

6 Lithics report

6.1 Introduction and methods

During excavation of the Mesolithic features at Kingsdale Head in 2009 and 2010 an assemblage of flint and chert artefacts was recovered. The assemblage included tool types associated with the Mesolithic and Neolithic/Bronze Age as well as waste from stone tool working (debitage). The material was recovered mainly from Context [802] – a site-wide stratigraphic layer of re-deposited clayey colluvium.

Artefacts were recorded in situ using a total station to allow accurate spatial analysis (Fig. 23). Each piece was identified to material and technology category, and then assessed for evidence of working (flake removal and re-touch) and thermal alteration (in the form of pot-lids, crazed surface and discolouration). The presence of cortex was recorded for flint using a scale 0-3 where 0 = no cortex, 1 = 0.1-33% cortex, 2 = 33.1-66% cortex and 3 = 66.1-100% cortex. Each piece was measured to give maximum length, width and breadth to the nearest 0.1mm. The resulting catalogue was then used to address questions regarding the use and function of the area excavated in 2009 and 2010 at Kingsdale Head.

6.2 Results 2009

In total, 270 flint and chert artefacts were recovered from the 2009 excavations. The assemblage was dominated by chert artefacts (Fig. 22 and Table 1), with only 23% of artefacts being flint. Examples of the tools and cores recovered from the site can be found in Appendix 9.

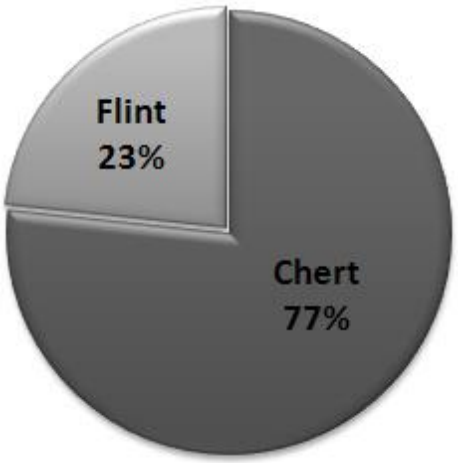


Fig. 22: Raw materials represented in the lithic assemblage from excavations at Kingsdale Head in 2009 (KH09), based on number of pieces

Flint

Fifteen flint pieces displayed evidence of re-touch, and included 3 scrapers, a microlith, an awl, a knife, a backed blade, a truncate and a notched piece. In addition to these specific tool types there were also 5 'miscellaneous retouch flakes' (MRF); these are pieces that have re-touch, but do not resemble any specific tool form. There are also the remains of flint working in the form of cores (2), core fragments (2), platform rejuvenation flakes (3), a microburin and debitage (40). In total, 23.8% of the flint assemblage was attributed to a tool form or identified as an MRF.

Chert

A total of 21 chert pieces could be attributed to specific tool type or MRF: these included 9 microlith and microlith fragments, 2 scrapers, an awl, a truncate and a notch in addition to 7 MRFs. In addition to stone tools there were also cores (7), core fragments (12), platform rejuvenation flakes (4), microburins (2) and debitage (161). In comparison with flint only 10.1% of the chert assemblage could be identified as a tool form or MRF.

Artefact Type	Flint	Chert	Total
Microlith/microlith fragment	1	9	10
Scraper	4	2	6
Awl	1	1	2
Truncate	1	1	2
Notch	1	1	2
Knife	1	0	1
Backed Blade	1	0	1
MRF	5	7	12
Core/Core Fragment	3	19	22
Platform Rejuvenation Flake	3	4	7
Microburin	1	2	3
Debitage	41	161	202
Total	63	207	270

Table 1: Summary of the lithic assemblage from Kingsdale Head in 2009 (KH09)

Fig. 23 shows the distribution of flint (green crosses) and chert (red crosses) across Trench 8. There is a clear cluster of artefacts at the east corner of the trench (K8/L8-K10/L11); this is dominated by chert pieces. An absence of flint and chert towards the centre of Trench 8 (F5/H5-F7/H7) is due to previous excavation of this area (2006, Trench 6). There is an absence of finds from the southern corner (A11-B12) as this is where a palaeochannel cut through the colluvium.

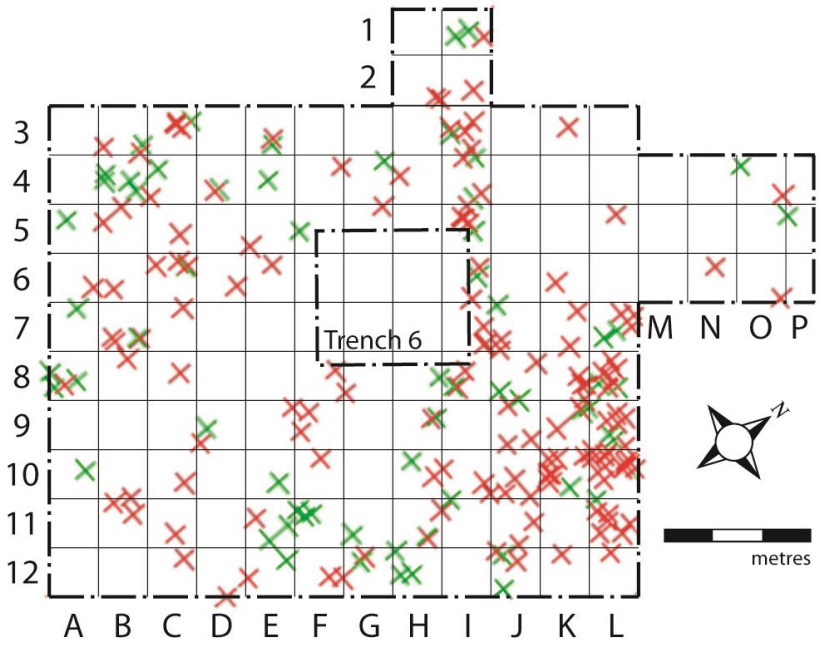


Fig. 23: Spatial distribution of flint (green crosses) and chert (red crosses) at Kingsdale Head, Trench 8 in 2009. Distribution plot provided by Jeff Price

6.3 Results 2010

In 2010 a total of 797 pieces of flint and chert were recovered from Trench 8 at Kingsdale Head. These were found in a colluvial layer of silty loam that covers the whole area. No stratigraphic sequence could be observed within the colluvial layer; however, truncated mole runs suggest that the layer did not form uniformly over time but may have gone through several cycles of formation and truncation since the Mesolithic period.

Flint and chert were hand collected during trowelling, but they were also recovered during dry sieving of excavated sediments to ensure recovery of smaller pieces that may be missed during excavation. The assemblage of lithics is dominated by small, unworked pieces of black chert (Fig. 24 and Tables 2 and 3) that can be classified as debitage (waste flakes resulting from the production of stone tools). 14.4% of the total assemblage (115 pieces) represented recognisable tool forms, cores and core fragments, or pieces with miscellaneous retouch (miscellaneous retouched flake – MRF). Recognisable tool forms included microliths and microlith fragments, scrapers (including side, end and double ended scrapers), backed pieces, awls, burins, notched pieces, a truncated piece and numerous MRFs (see Table 3). A range of pieces resulting from tool production were recovered from the site during the 2010 season and included cores, core fragments, microburins, platform rejuvenation flakes and a burin spall, in addition to many unmodified flakes and blades, and debitage (Table 2).

In 2010 two areas of high lithic concentration were observed (Fig. 25). High frequencies of lithic pieces were recovered in the areas covered by excavation units J5 and K5, as well as L10 and M10 and the units surrounding both of these areas.

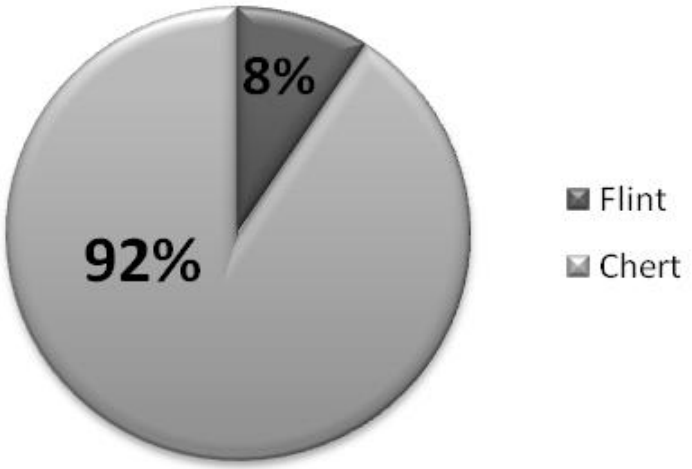


Fig. 24: Raw materials represented in the lithic assemblage from excavations at Kingsdale Head in 2010 (KH10), based on number of pieces

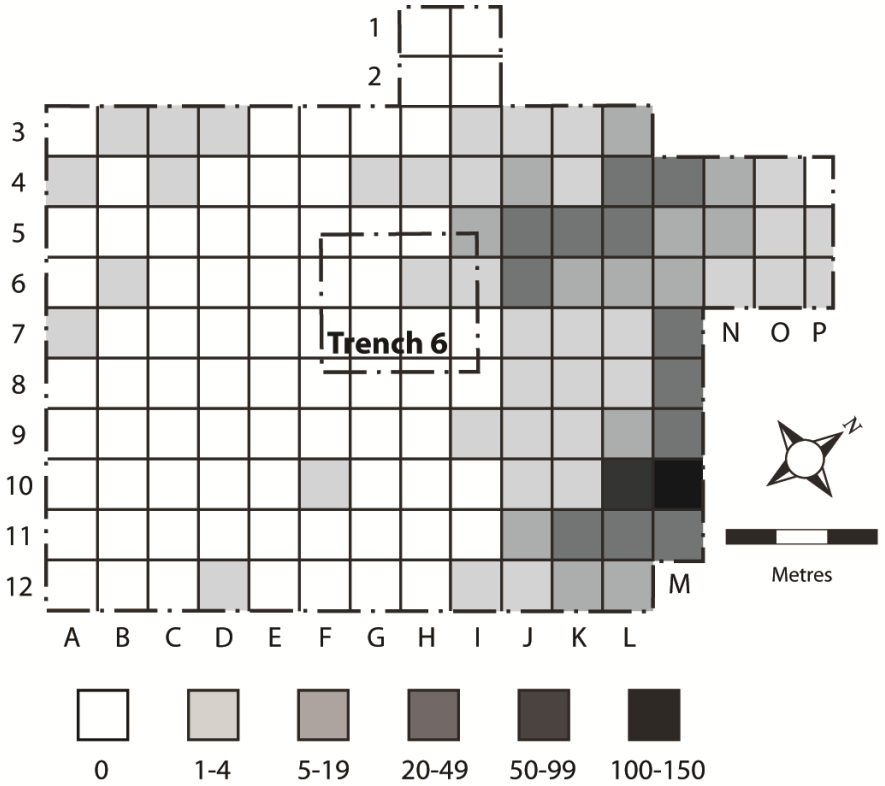


Fig. 25: Distribution of lithics (flint and chert) recovered from excavations at Kingsdale Head in 2010

Classification	Flint	Chert	Total
Tool	16	55	71
Tool production (cores, platform rejuvenation flakes, burin spalls, microburins)	9	35	44
Unmodified and debitage	49	632	681
Potlid	0	1	1
Total	74	723	797

Table 2: Summary table of lithics recovered during excavations at Kingsdale Head in 2010

Artefact Type	Flint	Chert	Total
Backed piece (including backed blades)	1	3	4
Awl	3	0	3
Burin	0	3	3
Scraper*	3	7	10
Microlith/microlith fragment	3	17	20
Miscellaneous retouch flake (MRF)	6	20	26
Notched	0	4	4
Truncate	0	1	1
Total	16	55	71

Table 3: Tool forms represented in the Kingsdale Head 2010 lithics assemblage.
** Scrapers include side, end, doubled ended and scraper fragments*

6.4 2009 and 2010 Combined Results

To interpret the lithics recovered from Kingsdale Head appropriately, the 2009 and 2010 datasets need to be combined. Tables 4 and 5 and Figure 26 convey the combined data for material type (Table 4), artefact type (Table 5) and distribution of lithics across the excavated area of the site (Fig. 26). In total, 1067 pieces of flint and chert were recovered from Trench 8 during excavations in 2009 and 2010 (Table 4). Chert pieces dominated the assemblage in both years, though this is particularly true for the 2010 assemblage. Tools and tool production pieces and waste were recovered during both seasons with relatively comparable tool forms being recovered in both seasons (see Tables 1, 2 and 3). In both cases, and overall, microlith and microlith fragments were the most commonly recovered tool form providing evidence for human activity at the site dating to the Mesolithic period. Combined distribution data (Fig. 26) indicate two areas of concentrated lithics in K5 and L5, and L10, L11 and M10. The former concentration (K5/L5 area) was only observed in 2010, while the latter concentration (L10/L11/M11) featured in both 2009 and 2010 excavations.

Material	2009	2010	Total
Flint	63	74	137
Chert	207	723	930
Total	270	797	1067

Table 4: Materials identified in the lithics assemblage recovered from Kingsdale Head in 2009 and 2010

Artefact Type	Flint	Chert	Total
Microlith/microlith fragment	4	26	30
Scraper*	7	9	16
Notch	1	5	6
Backed pieces (including backed blades)	2	3	5
Awl	4	1	5
Burin	0	3	3
Truncate	1	2	3
Knife	1	0	1
MRF	11	27	38
Total	31	76	107

*Table 5: Artefact classification for tools recovered during excavations at Kingsdale Head in 2009 and 2010. * Scrapers include side, end, doubled ended and scraper fragments*

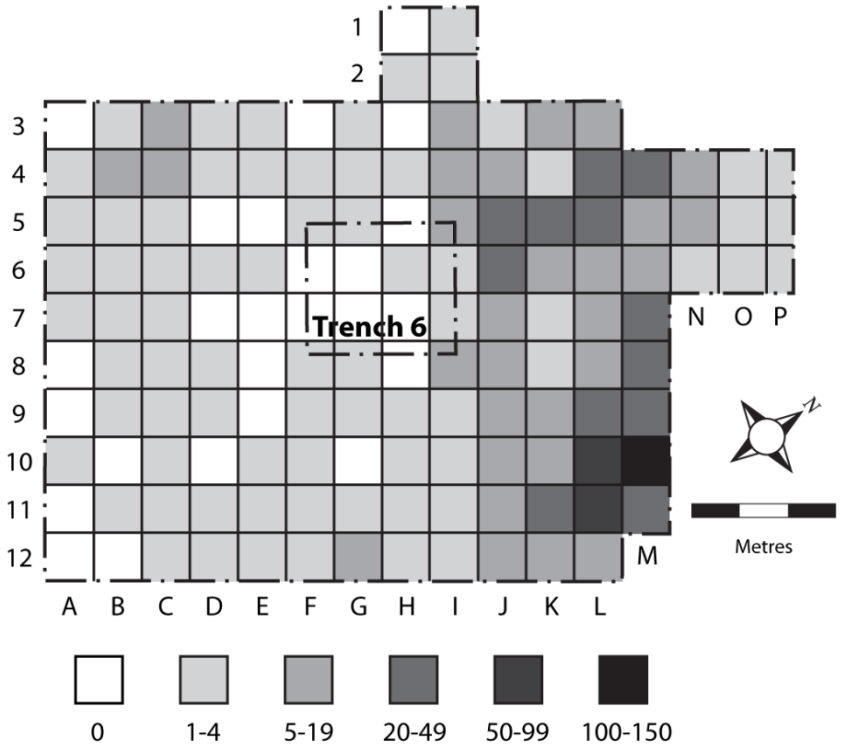


Fig. 26: Distribution of lithics (flint and chert) at Kingsdale Head including 2009 and 2010 excavations

6.5 Discussion and Conclusion

The presence of microliths, microburins (the waste from microlith production), microblade cores and microdebitage at the Kingsdale Head site are clear evidence for occupation at the site during the Mesolithic period. This is supported by a radiocarbon date of 6960-6660 cal BC (Batty & Batty 2007, 86) from a piece of wood recovered from a stone-filled pit in Trench 6, excavated in 2006 (Batty & Batty 2007; Howard 2007, 15), and the additional three radiocarbon dates on charcoal recovered from the site in 2009/10. Other tool forms suggest a continued use of the site into the Neolithic and Bronze Age periods. Bronze Age occupation of the site is supported by the excavation of a burnt mound at Kingsdale Head in 2006, dated to 1606-1419 cal BC and 1448-1271 cal BC by radiocarbon (Batty & Batty 2007, 69. Calibrated using OxCal 4.1). In comparison with the typically Mesolithic tools, which are mostly made from chert, the typically Neolithic/Bronze Age tools are more frequently made from flint. This indicates an increasing use of flint over time, perhaps suggesting more widespread trade links or the ability to travel increased distances to source flint, which makes a higher quality finished product than most of the locally sourced cherts.

Chert tools and debitage are much more abundant than flint at the Kingsdale Head site. This is to be expected in this area where chert is the locally available material. Flint could be procured in the form of small nodules from glacial till deposits; however, flint is more reliably sourced from chalklands a good distance from Kingsdale Head. Although there is evidence for chert and flint working at the Kingsdale Head site (e.g. debitage, cores, core fragments of both materials), there is a higher proportion of tool forms of chert (7.1%) compared with those of flint (2.9%). The low occurrence of both flint and chert tool forms compared with the high frequency of tool production pieces and debitage indicates the use of the site at Kingsdale Head for the production of stone tools during the Mesolithic, mainly from the locally available black cherts.

6.6 Glossary of terms (lithics)

BC	Before Christ (year 0)
BP	Before present
Bronze Age	Dating to around 3700 – 2500 BP in the UK
Chert	A stone type found in limestone areas. Produces lower quality tools than flint. Found locally in the Kingsdale Head area
Core	A chert or flint piece that has been used to produce flakes and/or blades for tool production
Cortex	Chalky outer surface of flint nodules
Debitage	The waste flakes produced during the production of stone tools
Flint	A type of chert which is found in chalk formations. Produces high quality tools
in situ	Here used to describe the recording of artefacts in the position that they were excavated.
Mesolithic	The middle stone age, dating to around 10,000 – 5000BP in the UK
Microlith	A small stone tool associated with the Mesolithic period
Microburin	A waste product from the production of microliths
Neolithic	The new stone age, dating to around 6000 – 3000BP in the UK
Platform rejuvenation flake	A flake removed from a core to restore a dulled striking platform so the core can be used to produce more flakes
Pot lid	A small fragment of flint or chert that has popped off the surface during heating due to expansion of liquid or air pockets.

7 Radiocarbon dates – *Zoe Outram*

Three additional radiocarbon dates were obtained in 2010, all from fragments of charcoal. A date of 7030-6640 cal BC (SUERC-11499, 7900±35BP, 95.4% confidence) had been obtained in 2006 from charcoal found in context [617], the primary fill of the cooking pit excavated in Trench 6. This established that the primary fill of the pit was deposited within the Mesolithic period. The purpose of two of the additional dates obtained in 2010 was to examine the period over which this pit had been in use.

One of the 2010 dates was obtained from context [610] (SUERC-32272, 7230±35BP), a thin dark, greasy layer that was present at a point approximately half way up the fill of the pit. [610] was of particular interest as it sealed a thin clay layer [614] that appeared on the section associated with a secondary re-cut with the pit. This interpretation of a second phase of use of the pit was also supported by the fact that [610] was sealed by a layer of sharp, heat-fractured, stones. A date was also obtained from context [611] (SUERC-33528, 7345±35BP), the last of the fills contained within the pit in order to bracket the lifespan of the feature. These samples provided dates of 6220-6020 cal BC (GU-22802) and 6350-6070 cal BC (GU-23469) respectively (both 95.4% confidence) and suggest that the upper section of the pit fill may represent activities or events that occurred over short timescales (see Figure 9 – pit section – for the location of the dated samples).

The third date obtained in 2010 was from context [811], the dark, silty infill of the small pit [810] that, in association with the small area of stones [809], had appeared as an anomaly on the geophysical survey to the east of the large pit [622]. The date obtained, 6600-6440 cal BC (SUERC-27624, 7674±40BP, 95.4% confidence), confirms that this feature was also Mesolithic and lies within the period of use of the large pit [622].

The dates within the pit were investigated within a Bayesian framework, as this allows additional chronological information to be incorporated into the statistical assessment of the dates (Bronk-Ramsey 2009 Buck *et al.* 1991; Buck *et al.* 1994). Additional chronological information can take two forms: either actual dates, such as known dates from historical records, or from other forms of scientific dating ('absolute' dates), or, and in the case for Kingsdale, the stratigraphic sequence of contexts can be utilised ('relative' dates). The OxCal 4.2 programme was selected for the analysis as it allowed chronological models to be built easily and produced clear graphical outputs that display the models imposed on the sequence through the production of probability distribution plots of the selected dates (Bronk Ramsey 1995). OxCal 4.2 also utilises the most recent calibration curve, IntCal13 (Reimer et al. 2013) to calibrate the radiocarbon dates (Bronk Ramsey 2013).

The dates were inserted into the model in 'Sequence', which represents the stratigraphic order of the sampled contexts (Fig. 27 and Table 6). The use of the boundary function within an ordered sequence of dates is the most complicated aspect of Bayesian analysis, as the results are very sensitive to the assumptions made about the sequence (Steier and Rom 2000; Steier et al. 2001; Bronk Ramsey 2000). A boundary was used at the beginning and end of each sequence produced for the dates from Kingsdale. Modelled estimates were produced for the period of time that elapsed between the different phases of activity using the 'Date' function within OxCal; for the contexts sampled at Kingsdale this related to the period of time separating the primary infilling of the pit and the later re-cutting event. Following the statistical assessment of the dates, two probability distributions are produced: one that represents the raw calibrated age range, and the second (infilled) which represents the modelled age range produced following the inclusion of the

stratigraphic information in the model, and referred to as posterior density estimates. The modelled estimates have been highlighted in italics when discussed within the text to differentiate them from the raw calibrated age ranges.

The degree to which the stratigraphic model imposed on the dates agrees with the chronological information is quantified by the 'agreement index' value (A-values). The critical value defined for the agreement indices is set at 60%: values below this level were indicative of problems within the sequence and may indicate the presence of residual or intrusive material (Bronk Ramsey 2013). It is important to note that although the inclusion of stratigraphic information can constrain the resulting age ranges through the production of posterior density estimates, these age ranges are the result of a statistical model that is imposed on the data and the interpretation of the stratigraphy within the field. Any new information, such as additional dating evidence or a different model being imposed on the data, will produce different posterior density estimates.

The assessment of the dates in sequence has resulted in the production of modelled estimates that are more precise than raw calibrated age ranges alone. The posterior density estimates could be used to suggest that the primary infill of the pit was deposited at some point not earlier than 7000BC and not later than 6640BC. The secondary re-cutting of the pit can be inferred through the modelled estimate produced from context [610] (SUERC-32272), which provides a *terminus ante quem* of 6220-6115BC for this event. A modelled estimate was also produced that estimated the period of time between the primary infilling of the pit and the deposition of context [610], which directly sealed the re-cutting event associated with the pit. A modelled estimate of 6765-6160BC was obtained for this event, indicating that there may have been a considerable delay between the primary and secondary use of the pit. The final infilling of the pit was placed at the beginning of the 7th millennium BC, indicating that the activities associated with the pit took place within a 1000 year period. In reality, the wiggly nature of the calibration curve within this period has restricted the resolution available for the dates produced from the pit. However, the application of the statistical model to the dates has reduced the size of the age ranges from between 190 and 375 years to between 105 and 360 years. (See Appendix 7 for details of the radiocarbon analyses.)

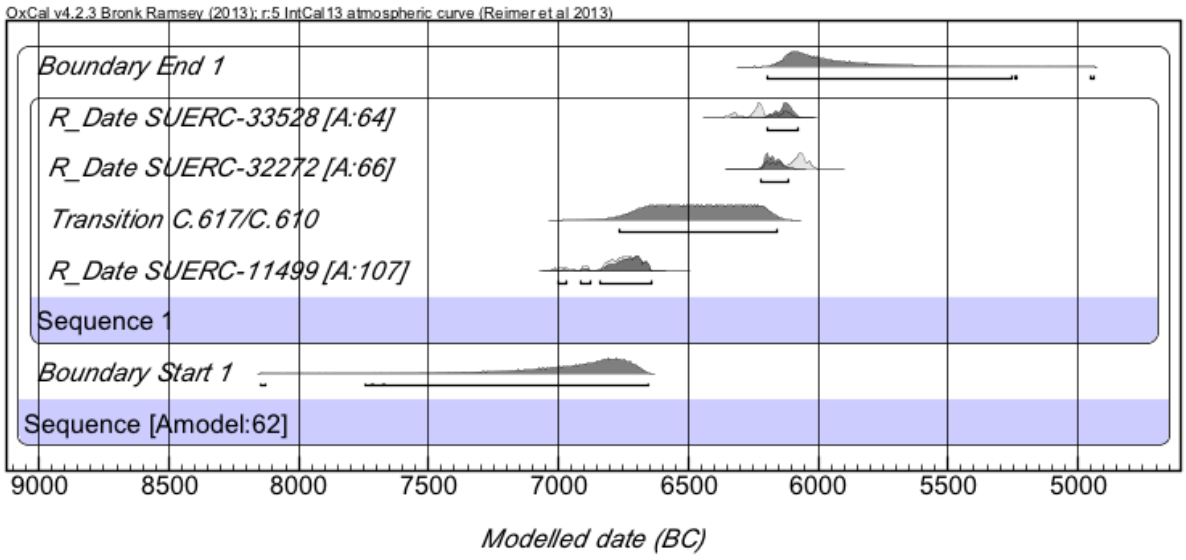


Fig. 27: Modelled radiocarbon dates for sample from Trench 6 cooking pit. Modelled by Zoe Outram, University of Bradford

Lab. Code	Context	Uncal	Calibrated age range	Modelled age range
SUERC-		BP	95% confidence	95% confidence
	Boundary End 1			*6200-5255BC (95.1%); 5245-5235BC (0.1%); 4950-4940BC (0.2%)*
33528	KH09/611	7345 ±35	6360-6290BC (15.2%) 6270-6090BC (80.2%)	*6195-6080BC*
32272	KH09/610	7230 ±35	6210-6025BC	*6220-6115BC*
	Transition C.617/C.610			*6765-6160BC*
11499	KH09/617	7900±35	7025-6965BC (7.2%); 6950-6935BC (1.3%); 6915-6880BC (6.1%); 6840-6650BC (80.7%)	*7005-6970BC (2.4%); 6915-6880BC (3.7%); 6845-6645BC (89.2%)*
	Boundary Start 1			*8145-8125BC (0.3%); 7745-7720BC (0.3%); 7715-7680BC (0.4%); 7675-6655BC (94.3%)*

Table 6: Summary of the calibrated and modelled age estimates produced for the Trench 6 cooking pit

8 Discussion

The site at Kingsdale Head complies with the factors that have been identified as having influenced the site-selection criteria of Mesolithic hunter-gatherer groups in the upland regions of northern Britain. These include its situation on a south-east facing slope and its proximity to a water source. At an elevation of 320m AOD, it is somewhat lower than the most preferred site option of within the range of 380-460m AOD (Spikins 1999, 13). The watershed at Kingsdale lies at 330m AOD just to the north of the site, giving it some protection from northerly winds. Nearby sources of chert may also have influenced the choice of site. It has also been noted that sites are often situated where they can command good views, interpreted as 'lookout sites' for groups of hunters watching for red deer (Jacobi 1978, 325) and this is true of the site at Kingsdale Head which commands views down the valley to the south (Fig. 29).

The large pit at Kingsdale, which was c.1.5m in diameter at the surface, 0.8m at the base and 0.6m deep, is unusual in the British archaeological record. The depth and the lack of evidence for in-situ burning at its base rule out interpretation of this feature as a fire pit, but the numerous heated and fire-cracked stones in its fill do suggest that it was used for cooking food. This feature, together with the smaller pit (which probably was a fire pit or hearth), indicate that the site at Kingsdale was more than a transient camp occupied for a short period during the seasonal round of hunting activities. The large pit is most closely paralleled at the Mesolithic habitation site at Culverwell at the southern tip of the Isle of Portland, Dorset (Palmer 1999, 25). At that site, amongst a number of Mesolithic hearths and floors, was a round pit with a band of baked clay around its rim. It was about a metre in diameter and a metre deep, and contained Mesolithic material throughout its midden infill. It was interpreted as either a water storage tank or a pit where food was cooked using indirect heat – either by heating water with hot stones or by wrapping the food in leaves and placing it in layers of heated midden material. The Kingsdale pit, with its infill of stones that bear evidence of having been heated, clearly invites a similar interpretation. The infill of this pit does not, for example, resemble those excavated in the Mesolithic pit alignment at Warren Field, Crathes, Aberdeenshire (Murray et al. 2009). These pits were considered to be connected with ceremonial activity. A number of them are of similar dimensions and some displayed evidence of having been re-cut in the Neolithic.

The quantity of chert debitage present at Kingsdale reinforces its interpretation as a temporary habitation site used, perhaps, whilst awaiting migrating red deer and during processing of their carcasses, and for the production of stone tools during these periods. The radiocarbon dates from the larger pit demonstrate revisiting of the site, and therefore its importance to generations of hunter-gatherers.

Fig. 28: Trench 8 and the view down the valley taken at the end of the 2009 season

9 Conclusions

Recent research on the Yorkshire Dales in the Mesolithic has included studies of mobility and contact based on the distribution of sites that have been identified by lithic scatters and by scientific analysis of the finds (Evans et al. 2007), and a complex seasonal use of the upland, lowland and coastal zones has been proposed (Donahue and Lovis 2006).

The radiocarbon dates from the excavations at Kingsdale Head suggest that the valley was an important site used by hunter-gatherer groups over a number of centuries in the 7th millennium BC. The re-visiting of the site, which the cooking and fire pits suggest was a habitation site used over many generations, probably reflects its favourable position in a relatively sheltered location and close to a water source, Sandymire Brook. In this respect, it can be compared with other upland sites in Yorkshire such as those at Warnock Hill near Marsden where a number of fire pits were excavated in the 1920s (Barnes 1982, 25-27) and at Deepcar (Radley and Mellars, 1964). Nearby sources of chert may also have influenced the location of the site at Kingsdale, as could the views it commanded if the valley was used as a migration route by red deer. Unfortunately, soil conditions on site were not favourable to the preservation of the faunal remains that might have clarified the latter point.

The lithics assemblage provides further evidence for use of the site during the Mesolithic and subsequent prehistoric periods. The low frequency of tools in comparison with production waste suggests that Kingsdale Head was used as a location for the production of stone tools, especially during the Mesolithic period.

The site is, therefore, important in providing new evidence for testing hypotheses of seasonal mobility in the uplands of northern Britain during this period.

10 References

Barnes, B A. 1982. *Man and the Changing Landscape*. Liverpool: Merseyside County Museum and Liverpool Department of Prehistoric Archaeology.

Batty, A. 2008. *The Sandymire Project*. Ingleton: Ingleborough Archaeology Group. (http://www.ingleborougharchaeology.org.uk/Sandymire.html Accessed 26th February 2014).

Batty, A and Batty, A. 2007. *The Kingsdale Head Project*. Ingleton: Ingleborough Archaeology Group.

Bronk Ramsey, C. 1995. Radiocarbon calibration and analyses of stratigraphy: the OxCal programme. *Radiocarbon* 37(2), pp. 425-430.

Bronk Ramsey, C. 2000. Comment on 'The use of Bayesian statistics for ^{14}C dates of chronologically ordered samples: a critical review'. *Radiocarbon* 42(2), pp. 199-202.

Bronk Ramsey, C. 2013. OxCal 4.2 Manual. Oxford Radiocarbon Accelerator Unit (http://c14.arch.ox.ac.uk/oxcalhelp/hlp_contents.html). Last accessed 21/1/2014.

Buck, C E, Christen, J A, Kenworthy, J B and Litton, C D. 1994. Estimating the duration of archaeological activity using ^{14}C determinations. *Oxford Journal of Archaeology* 3(2), pp. 229-240.

Buck, C E, Kenworthy, J B, Litton, C D and Smith, A F M. 1991. Combining archaeological and radiocarbon information: a Bayesian approach to calibration. *Antiquity* 65, pp. 808-821.

Donahue, R E and Lovis, W A. 2006. Regional settlement systems in Mesolithic northern England: scalar issues in mobility and territoriality. *Journal of Anthropological Archaeology* 25, pp. 248-258.

Evans, A A, Wolframm, Y B, Donahue, R E and Lovis, W A. 2007. A pilot study of 'black chert' sourcing and implications for assessing hunter-gatherer mobility strategies in northern England. *Journal of Archaeological Science* 34, pp. 2161-2169.

Howard, C (ed.). 2007. *The Kingsdale Survey 2005-2007*. Ingleton: Ingleborough Archaeology Group.

Ingleborough Archaeology Group. 2009. *Project design for further archaeological investigation of a confirmed Mesolithic structure*. Ingleton: Ingleborough Archaeology Group. (Accessed 25 February 2010).

Jacobi, R M. 1978. Northern England in the eighth millennium bc: an essay. In P. Mellars (ed.) *The Early Postglacial settlement of Northern Europe*. London: Duckworth, 295-332.

Johnson, D S. 2007. Geology in A and A Batty (eds.) *The Kingsdale Head Project*. Ingleton: Ingleborough Archaeology Group, pp. 14-18.

Murray, H K, Murray, J C and Fraser, S M. 2009. *A Tale of the Unknown Unknowns. A Mesolithic pit alignment and a Neolithic timber hall at Warren Field, Crathes, Aberdeenshire*. Oxford: Oxbow.

Palmer, S. 1999. *Culverwell Mesolithic habitation site, Isle of Portland: excavation report and research studies*. BAR British Series 287. Oxford: Archaeopress.

Radley, J and Mellars, P. 1964. A Mesolithic structure at Deepcarr, Yorkshire, England and the affinities of its associated flint industries. *Proceedings of the Prehistoric Society* 30, pp. 1-22.

Reimer, P J, Bard, E, Bayliss, A, Warren Beck, J, Blackwell, P G, Bronk Ramsey, C, Buck, C E, Cheng, H, Edwards, R L, Friedrich, M, Grootes, P M, Guilderson, T P, Haflidason, H, Hajdas, I, Hatté, C, Heaton, T J, Hoffmann, D L, Hogg, A G, Hughen, K A, Kaiser, K F, Kromer, B, Manning, S W, Niu, M, Reimer, R W, Richards, D A, Scott, E M, Southon, J R, Staff, R A, Turney, C S M and van der Plicht, J. 2013. IntCal13 and Marine13 Radiocarbon Age Calibration Curves 0–50,000 Years cal BP. *Radiocarbon* 55(4), pp. 1869-1887.

Russ, H. 2009. The Lithic Assemblage from Kingsdale Head (KH09). Ingleton: Ingleborough Archaeology Group. Unpublished interim report.

Russ, H. 2013. The Lithic Assemblage from Kingsdale Head (KH10). Ingleton: Ingleborough Archaeology Group. Unpublished interim report.

Spikins, P. 1999. *Mesolithic Northern England: environment, population and settlement*. BAR British Series 283. Oxford: Archaeopress.

Steier, P and Rom, W. 2000. The use of Bayesian statistics for ^{14}C dates of chronologically ordered samples: a critical analysis. *Radiocarbon* 42(2), pp. 183-198.

Steier, P, Rom, W and Puchegger, S. 2001. New methods and critical aspects in Bayesian mathematics for ^{14}C calibration. *Radiocarbon* 43(2A), pp. 373-380.

11 Acknowledgements

The Kingsdale Head project would not have been possible without the dedication and support provided by many people. We would like to offer our thanks to:

All members of the Ingleborough Archaeology Group, but especially:
Chris Bonsall for photography
Carol Howard for finds recording
Geoff Price for survey work

Landowners – Mr and Mrs M Faraday of Kingsdale Head Farm
Funding bodies – Grassroots Grants and the CBA Yorkshire
Joshua Horrocks, processing of environmental samples from Trench 8
Robert White of the Yorkshire Dales National Park Authority for support
Geoff Chapman of The Flying Camera for aerial photography during the 2009 phase
Ingleborough District Scouts – use of tent and caravan in 2009 and 2010
Jayne Lis and Ingleborough Community Centre for logistical support in 2009 and 2010
Jane Wheeler for environmental report on Trench 2
Roger Martlew for geophysics in 2010
The Upper Wharfedale Heritage Group and other volunteers for their participation in the excavation
Alan King for information on the Mesolithic in the Kingsdale Head area.

12 Appendices

Appendix 1: List of contexts

Trench 6

Context	Context type	Description	Interpretation
601	Deposit	Clayey silt	Buried soil stone features appearing.
602	Deposit	Silt	Irregular dark discolouration. Maybe topsoil.
603	Fill	Sandy silt	Infill of previously excavated test pit. Distinct area of reddish crushed sandstone with clear edge showing against NW adjacent to (602).
604	Deposit	Sandy silt	Stony surface with sandy silt orange mottled throughout. Apparent curving feature coming through in centre of trench.
605	Fill/deposit	Clayey silt	An area of inwashed clay surrounding (606).
606	Structure		An arc of stones that appears to be associated with the anomaly found on the geophysics. Filled by (605).
607	Deposit	Clayey silt	Black patch towards SE of trench appears to be base of (602).
608	Deposit	Clayey silt	Possible natural soil surface.
609	Fill		Layer of sharp edged small stones abutting black layer (610). Further excavation revealed (610) went under stones (609).
610	Fill/deposit	Silty Clay	Fill of pit feature (606) beneath stones (609). A thin greasy black layer.
611	Fill/deposit	Clayey silt	Darker patch of material visible in section of pit feature separated from (605) by stone (612).
612	Fill/deposit		Stone separating (605) and (611).
613	Fill/deposit	Gritty clay	An area of gritty material below (605) abutting (612) but not present under (611).
614	Fill/deposit	Clay	A clayey deposit under (610).
615	Fill/deposit	Silty clay	An area of burnt material below (614). Stones vary from 0.05m to 0.12m.
616	Structure		Bowl lining made from broken, angular sandstone; stones did not appear to be burnt.
617	Fill/deposit	Silty clay	Black greasy layer under (616) containing charcoal.
618	Fill/deposit	Clayey grit	Fill containing large amount of burnt pebbles.
619	Structure	Sandstone	A lining of angular stones defining bowl-stones varying in size 0.20m to 0.30m. Larger stones at bottom. Grey material between stones.
620	Deposit	Sticky clay	An area of clay and pebbles probably natural.
621	Deposit	Gritty clay	Natural at bottom of bowl probably same as (620).
622	Cut		Cut for large pit.

Trench 8

Context	Context type	Description	Interpretation
801	Deposit	Topsoil, clayey silt	A layer of topsoil covering the entire trench, deeper towards the east of the trench, downslope, indicating a certain amount of hillwash.
802	Deposit	Subsoil, hillwash, clayey silt	A layer beneath the topsoil (801) that is distinct from (801). Heavily matted with roots of the dominant vegetation. Probably hillwash prior to the development of (801).
803	Deposit, fill	Fill of palaeochannel, clayey silt	A layer of grey silt that forms the uppermost fill of the assumed palaeochannel. Sealed by (801).
804	Cut		A natural break of slope formed by the palaeochannel in a sheltered backwater of the main stream. It cuts the natural and colluvial layers (801) & (808). Sealed by (802), (803).
805	Disturbance, cut		A small, roughly conical, hole that has been dug within the last few years, possibly by metal detectorists, but for reasons unknown. Sealed by (801), contains (806).
806	Fill, turf & topsoil	Fill of cut (805)	Fresh turf and topsoil pushed into cut (805). Sealed by (802).
807	'Structure'	Sandstone	Spread of sandstone pebbles of irregular size & shape. Angular & sub-angular, generally with flat surface uppermost. The densest concentration lies in a linear band. None appears to be earthfast. They lie between 5 larger sandstone boulders, also not earthfast. Seals (808), sealed by (802).
808	Deposit	Silty clay	Layer of well-compacted & consolidated clay with sandstone cobbles of variable shape & size. The uppermost surface consisted of a high proportion of highly degraded, rounded sandstone cobbles. It is the same material that underlies (802) & was originally deemed natural, but is actually a layer of colluvium. Seals natural, sealed by (803), (802).
809	Fill	Sandstone	An oval spread of small sandstone pieces, laid flat in many cases, tightly packed. Aligned NW-SE overall. Apparently set between 4 large sandstone cobbles/boulders which may (or may not) be related. Sealed by (802), seals (811), fills (810).
810	Cut		A cut into the lower colluvial layer during the making of the small fire pit. Sealed by (809), seals natural, filled by (808), (811), (809).
811	Fill	Silty, charcoal-rich	A deposit of silty charcoal of variable thickness, no recognisable plants forms, lining the pit formed by cut (810). Sealed by (809), fills (810).

Context	Context type	Description	Interpretation
812	Lens	Greyish brown silt	A small lens of dark silt within the orange-mottled (802) covering much of the trench. Irregular in shape. Sealed by (802), fills (823), contiguous with (808). Above natural. Probable mole nest.
813	Fill	Clayey silt	Fill of a hole, inclined at an acute angle. Probable mole hole. Sealed by (802), fills (814), contiguous with (808). .
814	Cut		A circular hole filled with later dark-coloured material. Probable mole hole. Sealed by (802), filled by (813), contiguous with (808). Above natural.
815	Cut		A small & shallow hole. Probable mole hole. Sealed by (802), filled by (816), contiguous with (808). Above natural.
816	Fill	Silty sand	Infill of a cut/hole, deposited at an indeterminate later date. Sealed by (802), fills (815), contiguous with (808).
817	Cut		A small circular hole. Probable mole hole. Sealed by (802), filled by (818), contiguous with (808). Above natural.
818	Fill	Silty sand	Infill of a circular hole, deposited at an indeterminate later date. Sealed by (802), fills (817), contiguous with (808).
819	Cut		A small void hole. Probable mole hole. Sealed by (802), filled by (820), contiguous with (808). Above natural.
820	Fill	Silty clay	Later infill of hole/cut (819). Sealed by (802), fills (819), contiguous with (808).
821	Cut		Small, shallow circular hole. Probable mole hole. Sealed by (802), filled by (822), contiguous with (808). Above natural.
822	Fill	Gritty silt	Later infill of hole/cut (821). Sealed by (802), fills (821), contiguous with (808).
823	Cut		Cut for an irregularly-shaped hole or depression infilled with dark material of unknown provenance. Probable mole nest. Sealed by (802), filled by (812), contiguous with (808). Above natural.
824	Cut, mole hole		Small oval hole, infilled with dark material. Probable mole hole. Sealed by (802), filled by (825), contiguous with (808). Above natural.
825	Fill	Silt	Fill of (824), a probable mole hole. Sealed by (802), fills (824), contiguous with (808).
826	Cut, mole hole		Small hole, infilled with dark material. Probable mole hole. Sealed by (802), filled by (827), contiguous with (808). Above natural.
827	Fill	Silt	Fill of (826), a probable mole hole. Sealed by (802), fills (826), contiguous with (808).

Context	Context type	Description	Interpretation
828	Cut, mole hole		Small hole. Probable mole hole. Sealed by (802), filled by (829), contiguous with (808). Above natural.
829	Fill	Silt	Fill of (828), a probable mole hole. Sealed by (802), fills (828), contiguous with (808).
830	Cut, mole hole		Small circular hole. Probable mole hole. Sealed by (802), filled by (831), contiguous with (808). Above natural.
831	Fill	Silt	Fill of (830), a probable mole hole. Sealed by (802), fills (830), contiguous with (808).
832	Cut, mole hole		Small hole. Probable mole hole. Sealed by (802), filled by (833), contiguous with (808). Above natural.
833	Fill	Silt	Fill of (832), a probable mole hole. Sealed by (802), fills (832), contiguous with (808).
834	Cut, mole hole		Small hole. Probable mole hole. Sealed by (802), filled by (835), contiguous with (808). Above natural.
835	Fill	Silt	Fill of (834), a probable mole hole. Sealed by (802), fills (834), contiguous with (808).
836	Cut, mole hole		Small hole. Probable mole hole. Sealed by (802), filled by (837), contiguous with (808). Above natural.
837	Fill	Silt	Fill of (836), a probable mole hole. Sealed by (802), fills (836), contiguous with (808).
838	Cut		Shallow scoop, possibly natural, adjacent to large cooking pit. Filled with silt and very small stones, it also contained chert lithics and charcoal flecks. Sealed by (802), filled by (839), contiguous with (808). Above natural.
839	Fill	Silty sand	Fill of shallow scoop (838), contains a concentration of chert lithics and flecks of charcoal too small to be sampled. In the upper part of the fill there were pieces of sandstone, 2 of which were lying at an acute angle. Sealed by (802), fills (838), contiguous with (808).
840	Natural	clay	Natural, glacially-deposited clay. Sealed by colluvium (802). Some of the stone settings and rounded nature of some cobbles indicate fluvial action in addition to glacial. Some stones have evidence of imbrication and could have been deposited during a flood event. Sealed by (802), contiguous with (841).
841	Natural	Firm clay	Natural clay with a higher proportion of stone (840). The stone in (841) is more highly degraded by weathering than that in (840) and more rounded, indicative of fluvial action. It is concluded that (841) resulted from downslope water flow. Sealed by (802), contiguous with (840).

Sump for flot tank, excavated within the palaeochannel

Context	Context type	Description	Interpretation
501	Deposit	Topsoil	Layer of topsoil. Seals [502].
502	Deposit, fill	Clayey silt	Layer of dark grey silt below the topsoil [501] within the palaeochannel. The final phase of silting up within the abandoned palaeochannel. Sealed by [501], seals [503].
503	Deposit, fill	Clayey silt	Layer of dark grey silt, more compacted and showing signs of anaerobic conditions. It represents an earlier succession of palaeochannel deposition. Sealed by [502], seals [504].
504	Deposit, fill	Clayey silt	Layer of glutinous dark grey silt. Contains a high proportion of orange mottling and sandstone. On the east side of the sump most stones were river worn, but on the west side they were more angular. The proportion of stone inclusions decreased from west to east. Sealed by [503], seals [505].
505	Deposit, fill	Clay	Layer of compacted and glutinous dark grey clay. Contains a high proportion (60-70%) of fractured, angular, small pieces of reddened and burnt sandstone and charcoal flecking. These represent the outer edge/tail end of the Bronze Age burnt mound located in the nearby Trench 2. This indicates that the palaeochannel is post-Bronze Age in date. Sealed by [504].

Appendix 2: List of small finds

Trench 6

SF Number	Context	Object	Material
547	601	Flint x 1 small flake	Flint
576	601	Chert x1	Chert
578	601	Chert	Chert
583	601	Quartz	Quartz
584	601	Chert core?	Chert
585	601	?	Stone
588	601	Chert flake	Chert
589	601	Chert Flake	Chert
591	601	Quartz	Quartz
594	601	Chert - worked	Chert
617	601	Quartz	Quartz
620	602	Quartz	Quartz
625	601	Pebble	Stone
628	601	Flint - worked	Flint
639	603	Quartz	Quartz
641	601	Chert x1	Chert
645	601	Chert x1	Chert
647	601	Chert	Chert
651	604	Quartz x1	Quartz
653	604	Chert - worked	Chert
655	604	Chert - worked	Chert
656	604	Quartz x1	Quartz
660	604	Quartz x1	Quartz
663	604	Quartz	Quartz
669	604	Chert	Chert
674	601	Charcoal	Charcoal
678	601	Chert x1	Chert
684	604	Chert x1	Chert
685	601	Chert x1	Chert
765	604	Chert x 1	Chert
772	601	Flint fragment	Flint
773	601	Quartz	Quartz
777	604	Quartz	Quartz
861	611	ES 1652	Sample
865	610	ES 1653	Sample
877	610	ES 1656	Sample
890	610	ES 1658	Charcoal
898	615	ES 1659	Burnt material
927	615	ES 1261	Charcoal

SF Number	Context	Object	Material
1042	609	Quartz x1	Quartz
1057	610	Charcoal	Charcoal
1062	617	ES 1669	Sample
1105	617	ES 1671	Sample
1107	617	ES 1672	Sample
1112	617	ES 1673	Charcoal
1117	617	ES 1674	Sample
1038	613	ES 1667	Sample

Trench 8

2009

Find No.	Grid	Spit	Context	Material	Technology	Portion	Tool Type	Cortex	TA	Length	Width	Thickness	Colour
803	B6	1	802	Chert	Blade	Whole	Microlith	0	0	13.2	5.1	2.3	Grey
805	B7	1	802	Chert	Blade	Distal		0	0	7.5	4.9	1.1	Black
806	C12	p	803	Chert	Fragment	Medial		0	0	14.4	8.0	1.9	Grey
809	L8	1	802	Chert	Blade	Proximal		0	0	8.0	6.0	1.1	Black
810	L9	1	802	Chert	Fragment	Whole		0	0	12.0	6.9	3.0	Black
811	J10	1	802	Chert	Flake	Whole		0	0	12.9	7.8	1.8	Black
812	L10	1	802	Chert	Flake	Whole	Platform Rejuvenation Flake	0	0	19.3	14.7	3.4	Black
813	L10	1	802	Flint	Blade	Whole		0	0	17.3	7.1	1.9	Beige
814	L10	1	802	Chert	Flake	Whole		0	0	8.8	6.1	2.0	Black
815	L10	1	802	Chert	Flake	Distal		0	0	35.6	22.3	9.8	Grey banded
816	B11	p	803	Chert	Core			1	0	9.6	21.0	11.1	Black
819	J9	1	802	Chert	Flake	Whole		0	0	20.8	16.6	6.9	Black
820	K7	1	802	Chert	Flake	Whole		0	0	7.1	13.8	1.0	Black
821	J8	1	802	Chert	Fragment	Whole	Notch	0	0	22.6	7.7	6.2	Grey
822	C11	2	803	Chert	Blade	Proximal				10.9	6.9	1.9	Black
825	J8	1	802	Flint	Flake	Distal	Platform Rejuvenation Flake	0	0	22.6	1.7	8.9	Beige
826	E3	2	302	Flint	Fragment	Whole		0	1	20.9	15.0	6.4	Grey
827	I1	2	802	Flint	Blade	Whole	De-cortification Flake	2	0	21.1	10.0	3.9	Orange
828	E3	2	802	Chert	Blade	Whole		0	0	8.3	3.2	1.0	Black
829	A4	2	802	Flint	Blade	Distal	Backed Blade	0	0	15.1	8.6	5.2	Beige
830	A5	2	802	Flint	Blade	Whole		0	0	18.0	8.8	3.0	Beige
831	G3	2	802	Flint	Flake	Whole		1	0	8.7	6.4	0.7	Orange
833	N4	1	807	Chert	Flake	Distal		0	0	30.5	19.0	7.2	Grey
834	B4	2	802	Flint	Flake	Whole		0	0	20.0	13.0	1.5	Orange
835	F5	2	802	Flint	Flake	Distal		0	0	17.1	22.4	3.1	Orange
836	A8	2	802	Flint	Fragment	Whole		1	1	22.1	17.6	9.0	Grey
837	B5	2	802	Chert	Flake	Proximal		0	0	7.1	3.8	0.7	Black
840	C7	2	802	Chert	Blade	Whole		0	0	12.2	4.8	2.1	Black
841	F11	2	802	Flint	Flake	Whole		0	0	16.0	10.6	4.8	Orange
842	E12	2	802	Flint	Flake	Distal		0	0	5.8	6.1	1.6	Brown
843	A10	2	802	Chert	Fragment	Whole		0	0	22.1	14.6	7.4	Black
844	B7	2	802	Chert	Flake	Medial		0	0	16.6	12.0	3.1	Black
846	C6	2	802	Chert	Core fragment	Distal Tip		0	1	6.9	14.1	8.8	Grey
847	F8	2	802	Chert	Fragment	Whole	MRF	0	0	14.0	12.0	6.1	Grey
848	O4	2	807	Flint	Flake	Distal		0	0	16.0	22.1	3.0	Grey
849	E11	2	802	Chert	Flake	Proximal	Platform Rejuvenation Flake	0	0	12.6	12.7	3.1	Black

Find No.	Grid	Spit	Context	Material	Technology	Portion	Tool Type	Cortex	TA	Length	Width	Thickness	Colour
850	E11	2	802	Flint	Blade	Distal	Microburin	0	0	19.0	8.9	4.0	Marbled
851	F10	2	802	Chert	Flake	Whole	Awl	0	0	22.0	19.2	4.8	Black
856	H9	2	802	Chert	Core fragment	Whole		0	0	18.9	34.8	11.2	Beige
857	A7	3	802	Flint	Flake	Whole	Scraper	1	0	34.5	35.0	8.0	Brown
859	H12	2	802	Flint	Fragment	Whole		0	1	19.1	17.9	8.4	Patinated
860	B3	3	802	Flint	Blade	Distal		0	1	15.8	7.8	2.2	Patinated
862	H9	2	802	Chert	Core fragment	Whole		0	0	16.7	30.0	23.5	Grey
864	I5	2	802	Chert	Core	Whole		0	0	26.8	70.9	49.0	Grey
865	B7	3	802	Chert	Blade	Medial	Microlith Fragment	0	0	7.5	3.2	1.2	Grey
868	I7	2	802	Chert	Core	Whole		0	0	25.2	14.2	13.0	Black
870	B4	3	802	Flint	Flake	Whole	Late Neolithic/ Early Bronze Age knife	0	0	40.0	29.8	5.2	Grey
871	A8	3	802	Chert	Flake	Proximal	Microburin	0	0	15.9	11.5	5.0	Black
872	B8	3	802	Chert	Flake		Microlith	0	0	8.0	6.8	2.4	Grey
873	I11	2	802	Flint	Core fragment	Whole		0	0	21.2	16.8	9.9	Beige
874	D4	3	802	Chert	Flake	Distal		0	0	17.2	14.1	2.1	Black
875	H11	2	802	Flint	Flake	Distal	MRF	0	0	15.3	13.9	3.1	Orange
876	B9	3	802	Chert	Flake	Proximal		0	0	8.7	12.0	4.0	Grey
878	B4	3	802	Chert	Flake	Distal	Platform Rejuvenation Flake	0	0	20.1	12.7	6.0	Grey
881	F11	3	802	Flint	Flake	Proximal		0	1	10.0	10.0	3.3	Rose
882	I8	1	802	Chert	Flake	Proximal		0	0	8.9	6.0	4.0	Grey banded
883	C5	3	802	Chert	Core	Whole		0	0	26.2	23.5	15.0	Grey
884	I8	1	802	Chert	Flake	Distal		0	0	8.1	5.9	0.6	Black
885	C9	3	802	Flint	Flake	Whole	Platform rejuvenation Flake	1	0	12.2	6.3	2.8	Red
887	A6	3	802	Chert	Blade	Whole	MRF	0	0	23.2	7.9	4.0	Black
890	G11	3	802	Flint	Flake	Distal	MRF	1	0	11.6	9.0	2.4	Brown
													Black
892	D11	3	802	Chert	Fragment	Whole		0	0	12.8	7.0	5.4	Black
893	F11	3	802	Flint	Flake	Distal		0	0	12.1	6.9	3.0	Brown
894	I8	3	802	Flint	Fragment	Whole	MRF	0	1	16.0	12.0	7.5	Grey
895	G8	3	802	Chert	Flake	Distal	Microburin	0	0	8.6	4.5	2.2	Black
896	F9	3	802	Chert	Flake	Whole		0	1	12.0	9.6	2.0	Black
897	C6	3	802	Chert	Flake	Whole	Platform Rejuvenation Flake	0	0	17.5	16.0	6.0	Black
898	D11	3	802	Flint	Flake	Distal		0	0	8.1	14.0	1.1	Grey
899	F9	3	802	Chert	Core fragment	Whole		0	0	31.0	25.0	19.2	Black
900	H11	3	802	Chert	Flake	Medial		0	0	11.4	13.2	5.0	Grey
901	I11	3	802	Chert	Flake	Medial		0	0	14.5	10.0	3.0	Grey
902	G9	3	802	Chert	Fragment	Whole		0	0	7.6	6.9	0.9	Grey
903	H11	3	802	Chert	Flake	Whole	Scraper	0	0	21.3	15.7	11.4	Black

Find No.	Grid	Spit	Context	Material	Technology	Portion	Tool Type	Cortex	TA	Length	Width	Thickness	Colour
904	H11	3	802	Chert	Fragment	Whole		0	0	9.1	6.8	4.6	Grey
905	I8	3	802	Chert	Core fragment	Whole		0	0	9.0	16.9	12.9	Black
906	D6	3	802	Chert	Flake	Whole		0	0	13.0	9.1	0.7	Black banded
907	E10	3	802	Flint	Flake	Distal	Awl	0	0	15.0	15.6	4.1	Grey
908	G12	3	802	Flint	Flake	Whole		0	0	11.5	9.0	1.8	Orange
909	G12	3	802	Chert	Flake	Medial		0	0	5.0	4.6	0.8	Black
909	G12	3	802	Chert	Flake	Medial		0	0	5.0	4.6	0.8	Black
911	L10	2	802	Chert	Flake	Whole		0	0	7.1	5.7	0.4	Black
912	L10	2	802	Chert	Flake	Distal		0	0	7.7	5.0	0.5	Black
913	K10	2	802	Chert	Flake	Distal		0	0	14.0	11.1	1.8	Black
914	L10	2	802	Chert	Flake	Whole		0	0	16.3	11.8	2.0	Black
915	L10	2	802	Chert	Flake	Medial		0	0	7.0	9.1	1.9	Black
916	K10	2	802	Chert	Flake	Distal		0	0	5.0	5.9	1.1	Black
917	L10	2	802	Chert	Blade	Proximal		0	0	10.6	5.1	1.8	Black
919	K10	2	802	Chert	Flake	Distal		0	0	12.9	8.6	2.0	Black banded
920	K3	2	802	Chert	Flake	Whole		0	0	16.4	10.7	4.0	Black
922	L10	2	802	Chert	Flake	Whole		0	0	12.1	5.9	3.0	Black
923	L7	2	802	Chert	Flake	Whole		0	0	10.0	6.8	3.0	Black
924	K7	2	802	Chert	Flake	Medial		0	0	6.0	5.1	1.3	Black
925	L10	2	802	Chert	Flake	Proximal		0	0	5.0	4.8	1.1	Black
926	L10	2	802	Chert	Flake	Distal		0	0	5.1	5.9	0.9	Black
927	P4	2	802	Flint	Flake	Medial		0	0	7.8	12.1	2.1	Beige
928	L10	2	802	Chert	Flake	Distal		0	0	9.0	8.2	2.4	Black
929	K10	2	802	Chert	Flake	Distal		0	0	5.4	3.0	0.9	Black
930	L10	2	802	Chert	Flake	Distal		0	0	6.4	4.2	0.9	Black
931	K10	2	802	Chert	Flake	Distal		0	0	4.2	4.0	1.9	Black
932	L10	2	802	Chert	Flake	Distal		0	0	5.9	6.1	0.7	Black
933	L10	2	802	Chert	Flake	Medial		0	0	6.5	13.7	4.1	Black
934	K10	2	802	Chert	Flake	Proximal		0	0	7.9	8.0	2.0	Black
935	L10	2	802	Chert	Flake	Whole	MRF	0	0	7.0	9.7	2.0	Black
936	K10	2	802	Chert	Blade	Medial		0	0	13.2	6.1	1.9	Black
937	J10	2	802	Chert	Core			0	0	35.4	35.6	16.1	Black
938	L10	2	802	Chert	Blade	Medial		0	0	9.2	4.6	2.0	Black
939	J10	2	802	Chert	Flake	Whole		0	0	26.1	22.0	7.8	Black
940	J7	2	802	Chert	Blade	Medial		0	0	10.1	4.8	2.0	Black banded
942	J10	2	802	Chert	Core fragment			0	0	18.0	18.9	10.9	Black
943	J10	2	802	Chert	Flake	Proximal		0	0	14.2	9.6	1.8	Black
945	L5	2	802	Chert	Fragment	Whole		0	0	15.1	15.9	14.0	Black
946	K10	2	802	Flint	Flake	Proximal		0	0	9.0	9.9	1.6	Beige

Find No.	Grid	Spit	Context	Material	Technology	Portion	Tool Type	Cortex	TA	Length	Width	Thickness	Colour
947	H12	3	802	Flint	Flake	Whole		1	0	15.0	19.0	3.2	Black
948	J8	2	802	Chert	Core			0	0	27.8	27.8	19.0	Black
949	L11	2	802	Flint	Blade	Distal	MRF	1	0	30.3	14.8	4.2	Grey
951	L11	2	802	Chert	Flake	Whole		0	0	9.5	4.8	1.0	Black
952	J11	2	802	Chert	Flake	Whole		0	0	20.1	7.6	2.8	Black
953	L11	2	802	Chert	Flake	Whole		0	0	12.0	9.0	2.0	Black
954	L11	2	802	Chert	Fragment	Whole		0	0	13.0	10.0	4.9	Black
955	U/S		802	Chert	Flake	Distal		0	0	19.0	14.4	6.1	Black
956	J8	2	802	Chert	Flake	Distal		0	0	8.0	7.3	2.9	Black
957	L8	2	802	Chert	Flake	Medial		0	0	8.0	7.1	2.2	Black
958	L11	2	802	Chert	Core fragment			0	0	41.5	15.7	10.9	Black
959	K8	2	802	Chert	Flake	Medial		0	0	8.4	6.8	1.2	Black
960	L11	2	802	Chert	Blade	Distal		0	0	6.6	2.8	0.6	Black
961	I10	2	802	Chert	Core fragment			0	0	14.8	22.1	10.8	Black
964	L11	2	802	Chert	Flake	Proximal		0	0	15.9	10.0	2.1	Black
965	L8	2	802	Chert	Flake	Whole	MRF	0	0	11.0	16.3	6.2	Black
966	L11	2	802	Chert	Flake	Medial		0	0	3.6	5.0	1.2	Black
967	L8	2	802	Chert	Flake	Medial		0	0	8.1	4.4	0.8	Black
968	I10	2	802	Chert	Blade	Distal		0	0	11.5	4.0	1.8	Black
969	L8	2	802	Flint	Flake	Whole		0	0	22.5	12.6	8.1	Brown
970	L11	2	802	Chert	Flake	Medial		0	0	4.5	4.1	1.0	Black
971	J11	2	802	Chert	Flake	Whole		0	0	11.4	15.4	3.2	Black
972	J8	2	802	Flint	Flake	Distal		0	0	19.5	10.4	2.1	Brown
973	L8	2	802	Flint	Core fragment	Whole		0	0	26.1	7.8	5.9	Brown
974	J11	2	802	Chert	Fragment	Whole		0	0	25.0	19.5	9.9	Black
976	J12	2	802	Chert	Flake	Medial		0	0	6.7	5.3	0.9	Black
977	L8	2	802	Chert	Flake	Distal		0	0	3.0	10.6	1.7	Black
978	J9	2	802	Chert	Core fragment			0	0	34.9	20.4	17.2	Black
979	L11	2	802	Chert	Core fragment			0	0	18.8	24.4	7.9	Black
980	K9	2	802	Chert	Flake	Medial		0	0	3.5	2.4	0.2	Black
981	K12	2	802	Chert	Flake	Distal		0	0	14.0	11.6	1.8	Black
982	L11	2	802	Chert	Blade	Whole		0	0	8.0	3.1	1.0	Black
984	K5	2	802	Chert	Core fragment	Whole		0	0	22.8	9.1	5.9	Black banded
986	J9	2	802	Chert	Flake	Proximal		0	0	4.8	6.4	1.4	Black
987	C3	4	802	Chert	Flake	Whole		0	0	10.8	7.1	2.2	Black
989	L12	3	802	Chert	Flake	Proximal	Microlith fragment	0	0	7.2	3.1	1.2	Black
990	C3	4	802	Chert	Flake	Distal		0	0	7.0	6.3	2.0	Black
991	L9	2	802	Chert	Flake	Proximal		0	0	20.6	11.6	2.6	Black
992	J9	2	802	Chert	Blade	Whole		0	0	53.4	21.0	11.3	Black
993	L9	2	802	Chert	Flake	Proximal		0	0	9.4	11.1	1.8	Black
994	L9	2	802	Chert	Blade	Distal		0	0	32.1	8.1	4.8	Black

Find No.	Grid	Spit	Context	Material	Technology	Portion	Tool Type	Cortex	TA	Length	Width	Thickness	Colour
995	C3	4	802	Flint	Flake	Medial		0	0	30.7	22.2	5.7	Brown
997	L9	2	802	Flint	Blade	Whole	Platform Rejuvenation Flake	0	0	30.2	11.0	6.4	Grey
998	B3	4	802	Chert	Flake	Distal		0	0	12.8	18.2	4.2	Black
999	J11	2	802	Chert	Fragment	Whole		0	0	3.1	3.1	1.2	Black
1000	L9	2	802	Flint	Flake	Medial		0	0	5.9	6.1	2.0	Grey
1001	B3	4	802	Chert	Flake	Whole		0	0	34.0	19.3	8.0	Black
1002	D4	4	802	Flint	Flake	Whole	Scraper	1	0	38.4	33.8	14.2	Grey
1003	F4	4	802	Chert	Flake	Proximal		0	0	14.1	15.2	5.0	Black banded
1004	B4	4	802	Chert	Blade	Whole		0	0	20.3	6.0	3.4	Black
1005	G5	3	802	Chert	Flake	Whole		0	0	24.1	16.0	5.3	Black
1006	H2	3	802	Chert	Flake	Distal		0	0	11.3	6.4	1.9	Black
1007	C3	4	802	Chert	Flake	Proximal		0	0	5.1	4.9	1.1	Black
1008	A8	4	802	Flint	Flake	Distal		0	1	6.9	5.4	1.5	Grey
1011	E6	4	802	Chert	Flake	Medial		0	0	7.0	5.5	2.4	Black
1012	I3	3	802	Flint	Flake	Whole		0	0	4.8	7.2	1.8	Grey
1013	D6	4	802	Chert	Fragment	Whole		0	0	6.9	5.0	1.2	Black
1014	C6	4	802	Chert	Flake	Whole	MRF	0	0	16.0	26.8	6.3	Beige
1016	A8	4	802	Flint	Flake	Whole	MRF	0	0	18.0	13.7	6.2	Reddish brown
1017	F9	4	802	Chert	Flake	Proximal		0	0	23.9	16.0	4.2	Black
1018	B7	4	802	Flint	Flake	Whole	Convex Scraper	0	0	34.8	41.9	4.5	Brown
1019	A8	4	802	Chert	Fragment	Whole		0	0	6.0	4.1	1.1	Black
1020	I4	3	802	Chert	Flake	Whole		0	0	23.4	15.8	5.0	Black
1021	H4	3	802	Chert	Fragment	Whole		0	0	11.1	10.7	4.9	Black
1022	G9	4	802	Chert	Flake	Whole		0	0	21.0	13.2	8.9	Black
1023				Flint	Flake	Distal		0	0	8.0	13.2	2.7	Brown
1024				Chert	Flake	Proximal		0	0	9.8	6.9	1.2	Black
1025	C8	4	802	Chert	Fragment	Whole		0	0	8.1	4.8	2.8	Black
1026	H4	3	802	Chert	Flake	Distal	Microlith	0	0	10.9	6.0	2.0	Grey
1027	F11	4	802	Chert	Fragment	Whole		0	0	12.8	21.0	10.1	Black
1028	E12	4	802	Chert	Flake	Distal		0	0	9.9	7.6	4.2	Black
1029	I4	3	802	Flint	Flake	Proximal		0	0	15.6	10.5	2.4	Grey
1030	I4	3	802	Chert	Flake	Medial	Microlith	0	0	7.1	3.1	1.1	Grey
1031	G12	4	802	Chert	Fragment	Whole		0	0	11.1	8.0	5.0	Black
1032	I8	4	802	Flint	Flake	Medial		0	0	13.0	16.0	2.3	Grey
1033	I6	3	802	Chert	Flake	Medial		0	0	14.1	9.0	2.6	Grey
1034	A10	4	802	Flint	Flake	Whole		0	0	20.0	18.5	3.1	Brown
1035	I6	3	802	Chert	Flake	Whole	Scraper	0	1	15.0	17.6	10.0	Grey
1036	B11	4	802	Chert	Fragment	Whole		0	0	14.0	12.4	4.0	Black
1037	I8	4	802	Chert	Flake	Medial		0	0	5.4	8.3	1.4	Black
1038	H10	4	802	Chert	Blade	Medial		0	0	3.6	1.6	0.3	Black
1039	I1	4	802	Chert	Flake	Medial		0	0	18.9	16.1	4.0	Black

Find No.	Grid	Spit	Context	Material	Technology	Portion	Tool Type	Cortex	TA	Length	Width	Thickness	Colour
1040	D9	4	802	Flint	Flake	Whole	Notch	1	0	23.2	21.5	3.7	Orange
1041	I11	4	802	Chert	Fragment	Whole		0	0	13.3	10.5	6.0	Black
1042	D9	4	802	Chert	Fragment	Whole		0	0	8.4	5.5	3.1	Black
1043	H2	3	802	Chert	Flake	Whole		0	0	24.6	11.9	5.8	Grey
1045	D8	4	802	Chert	Fragment	Whole		0	0	7.8	7.8	5.9	Grey
1046	I1	4	802	Flint	Flake	Whole	Scraper	0	0	27.7	24.6	4.4	Brown
1047	I3	4	802	Chert	Flake	Whole		0	0	12.0	8.1	2.9	Black
1048	I3	4	802	Chert	Flake	Whole		0	0	11.3	7.0	3.4	Grey
1049	L10	3	802	Chert	Flake	Distal		0	0	6.1	3.8	0.3	Black
1050	I3	4	802	Chert	Flake	Medial		0	0	12.0	9.9	2.8	Black
1051				Chert	Flake	Medial		0	0	7.1	5.7	1.1	Black
1053	K5	4	802	Chert	Core fragment			0	0	10.2	18.0	12.0	Black
1054	I2	4	802	Chert	Flake	Distal		0	0	10.9	5.0	2.1	Black
1055	E10	4	802	Chert	Fragment	Whole		0	0	7.0	6.1	2.8	Black
1056	J7	3	802	Flint	Core			0	0	19.0	20.3	13.3	Orange
1057	B11		803	Chert	Flake	Medial		0	0	5.6	11.0	2.9	Black
1058	C11		804	Chert	Flake	Distal	MRF	0	0	65.8	48.4	24.0	Black banded
1059	C11		804	Chert	Flake	Distal		0	0	17.1	9.2	6.0	Black
1060	I4	4	802	Chert	Flake	Medial		0	0	9.3	6.1	2.1	Black
1061	D12		803	Chert	Blade	Whole		0	0	26.1	12.4	3.9	Black
1062	H12	4	802	Flint	Flake	Whole		0	0	20.0	20.0	2.7	Brown
1063	E4	3	802	Flint	Fragment	Whole		0	0	8.0	7.6	1.6	Orange
1064	I4	4	802	Chert	Fragment	Whole	MRF	0	0	14.2	12.7	6.8	Black
1065	L9	4	802	Chert	Flake	Distal		0	0	14.6	8.9	2.0	Black
1066	P4	1	802	Chert	Flake	Proximal		0	0	19.9	12.2	3.1	Black
1067	K9	4	802	Chert	Fragment	Whole		0	0	34.0	33.9	14.8	Black
1068	I5	4	802	Flint	Flake	Proximal		0	0	5.0	10.0	2.9	Beige
1069	C4		808	Flint	Flake	whole		0	0	24.0	19.8	3.9	Grey
1070	K9	4	802	Chert				0	0	13.1	6.8	2.9	Black
1071	C4		808	Chert	Flake	Medial	Microlith Fragment	0	0	5.4	2.1	2.0	Black
1072	K9	4	802	Chert	Flake	Whole		0	1	5.5	5.1	1.0	Black
1073	G12		808	Chert	Flake	Distal		0	0	6.2	3.9	0.9	Black
1074	B4/C4		808	Flint	Blade	Medial	Microlith	0	1	14.9	3.8	2.1	Patinated
1075	B11		808	Chert	Flake	Medial		0	0	8.3	7.2	2.2	Black
1076	J12	4	802	Chert	Flake	Proximal		0	0	16.8	15.0	4.5	Black
1077	J12	4	802	Chert	Flake	Distal		0	0	19.5	26.2	8.0	Black
1078	I5	4	802	Chert	Flake	Whole		0	0	19.9	15.5	5.8	Black
1079	L10	4	802	Chert	Blade	Whole		0	0	53.5	24.1	10.8	Grey
1080	I6	4	802	Flint	Flake	Medial		0	1	8.0	6.3	1.8	Patinated
1081	G12		808	Chert	Blade	Whole		0	0	14.9	4.2	2.0	Black
1082	K10	4	802	Chert	Blade	Distal		0	0	25.8	10.2	3.1	Black
1082	K10	4	802	Chert	Blade	Distal		0	0	25.8	10.2	3.1	Black

Find No.	Grid	Spit	Context	Material	Technology	Portion	Tool Type	Cortex	TA	Length	Width	Thickness	Colour
1084	C4		808	Chert	Flake	Proximal		0	0	16.6	12.4	4.5	Black
1085	L7	4	802	Chert	Flake	Distal	Microlith Fragment	0	0	4.5	3.0	1.1	Black
1086	K10	4	802	Chert	Flake	Proximal		0	0	24.0	13.0	5.2	Grey banded
1087	I5	4	802	Chert	Flake	Medial		0	0	25.2	14.9	6.9	Black
1088	I4	4	902	Chert	Core			0	0	60.0	49.8	35.0	Black
1089	B5		808	Chert	Flake	Whole		0	0	7.4	6.0	1.1	Black banded
1091	L7	4	802	Chert	Flake	Whole		0	0	13.8	27.0	8.3	Black
1092	K9	4	802	Flint	Blade	Whole		0	0	13.9	6.0	1.8	Brown
1093	L7	4	802	Chert	Flake	Medial		0	0	7.2	6.0	2.0	Black
1094	L7	4	802	Flint	Flake	Whole		0	0	8.1	9.0	2.0	Grey
1095	F12		808	Chert	Blade	Distal		0	0	14.0	4.9	1.9	Black
1096	L7		802	Chert	Flake	Whole		0	0	9.9	5.1	3.2	Black
1097	J12	4	802	Chert	Flake	Proximal		0	0	5.4	12.5	4.7	Black
1098	P6	3	802	Chert	Blade	Medial	Microlith	0	0	10.0	2.8	1.1	Black
1099	J12	4	802	Chert	Flake	Proximal		0	0	5.6	6.1	2.0	Grey
1100	P5	3	802	Chert	Flake	Whole		0	0	21.9	16.1	5.5	Black
1101	J12		802	Chert	Flake	Medial		0	0	21.9	14.5	3.6	Black
1102	L10		802	Flint	Flake	Distal	Truncate	0	0	17.2	11.4	2.7	Grey
1103	J12		802	Flint	Core			1	0	18.0	20.0	12.1	Orange
1104	J12		802	Chert	Flake	Medial		0	0	5.1	7.0	0.8	Black
1106	E11	4	802	Chert	Flake	Distal		0	0	15.9	11.8	4.0	Black
1107	J12		802	Chert	Blade	Whole		0	0	28.2	10.0	4.1	Black
1108	L7	4	802	Chert	Flake	Whole		0	0	19.5	10.9	3.8	Black
1110	C4		808	Chert	Flake	Whole		0	0	22.0	20.8	9.0	Black
1111	L7	4	802	Flint	Flake	Whole		0	1	17.0	14.6	5.6	Beige
1112	B4		811	Chert	Flake	Whole		0	0	5.0	4.9	1.1	Black
1113	L7	4	802	Chert	Fragment	Whole		0	0	10.7	9.0	5.8	Black
1114	L7	4	802	Chert	Flake	Whole		0	0	24.6	16.0	4.0	Black
1117	J12	4	802	Chert	Flake	Proximal		0	0	7.2	5.3	1.8	Black
1118	J12	4	802	Chert	Flake	Whole		0	0	13.2	8.5	1.0	Black
1119	J12	4	802	Flint	Flake	Whole		0	0	15.0	15.4	3.6	Brown
1120	C4		808	Flint	Flake	Whole		1	0	41.2	17.8	7.3	Grey

2010

Find No.	Grid	Spit	Context	Material	Technology	Portion	Tool Type	Cortex	TA	Length	Width	Thickness	Colour
1201	K7		802	Chert	Flake	Whole		0	0	12.4	10.8	2.2	Black
1202	L3		802	Chert	Flake	Whole		0	0	3.3	10.4	1.8	Grey
1203	L10		802	Chert	Flake	Whole		0	0	10.2	8.0	1.1	Black
1204	K7		802	Chert	Blade	Whole		0	0	14.8	5.5	1.7	Black
1205	L10		802	Chert	Flake	Distal		0	0	13.5	10.6	2.6	Black
1207	J7		802	Chert	Flake	Medial		0	0	9.5	6.7	1.3	Black

Find No.	Grid	Spit	Context	Material	Technology	Portion	Tool Type	Cortex	TA	Length	Width	Thickness	Colour
1208	L10		802	Chert	Flake	Whole		0	0	5.2	4.0	0.4	Black
1209	J10		802	Chert	Flake	Whole		0	0	4.9	2.0	0.6	Black
1210	L10		802	Chert	Blade	Whole		0	0	15.0	3.5	2.7	Black
1211	L10		802	Chert	Flake	Proximal		0	0	8.5	10.7	2.3	Black
1212	I3		802	Chert	Blade	Proximal		0	0	8.6	3.3	0.9	Black
1213	L10		802	Chert	Flake	Whole		0	0	6.2	3.3	1.3	Black
1214	K10		802	Chert	Flake	Whole		0	0	9.1	6.1	1.2	Black
1215	L10		802	Chert	Flake	Proximal		0	0	8.1	7.1	2.0	Black
1216	N5		802	Chert	Flake	Distal		0	0	6.1	7.5	2.8	Black
1218	K8		802	Flint	Blade	Whole		1	0	16.2	6.9	5.3	Grey
1219	L10		802	Chert	Flake	Whole		0	0	9.4	7.6	1.4	Black
1220	L10		802	Chert	Flake	Whole		0	0	5.5	4.8	1.2	Black
1221	L10		802	Chert	Fragment	Whole		0	0	9.5	7.4	3.9	Black
1222	L10		802	Chert	Flake	Proximal		0	0	3.6	5.7	0.9	Black
1223	L10		802	Chert	Flake	Medial		0		8.7	4.3	1.1	Black
1224	J4		802	Chert	Flake	Distal		0	0	11.2	6.8	1.9	Black
1225	K10		802	Chert	Blade	Whole		0	0	18.2	8.8	3.4	Black
1226	J11		802	Chert	Blade	Whole		0	0	18.8	6.6	2.7	Dark grey
1227	L10		802	Chert	Flake	Whole		0	0	3.8	2.5	0.3	Black
1228	L10		802	Chert	Flake	Whole		0	0	5.8	5.2	1.1	Black
1229	L10		802	Chert	Flake	Whole		0	0	19.2	15.8	5.4	Black
1230	L10		802	Chert	Flake	Whole		0	0	8.8	9.5	2.3	Black
1231	L10		802	Chert	Flake	Medial		0	0	8.7	9.6	2.3	Black
1232	L10		802	Chert	Flake	Medial		0	0	7.7	5.3	2.0	Black
1233	L10		802	Chert	Flake	Whole		0	0	18.1	15.5	7.0	Black
1234	L10		802	Chert	Blade	Whole		0	0	19.2	7.9	3.2	Black
1235	L10		802	Chert	Flake	Whole		0	0	7.0	4.9	1.4	Black
1236	K10		802	Chert	Flake	Whole		0	0	17.5	9.6	4.0	Black
1237	J11		802	Chert	Flake	Whole		0	0	5.4	3.9	1.5	Black
1238	K6		802	Flint	Flake	Distal		0	0	5.1	5.1	17.0	Patinated
1239	K8		802	Chert	Fragment			0	1	9.1	6.0	5.0	Black
1240	I5		802	Flint	Flake	Distal	end scraper	0	0	13.5	21.6	3.6	Dark brown
1241	L10		802	Chert	Flake	Whole		0	0	8.0	7.2	1.1	Black
1242	L10		802	Chert	Flake	Medial		0	0	5.9	3.6	0.6	Black
1243	N5		802	Chert	Flake	Proximal	? Backed blade?	0	0	6.5	6.7	3.1	Black
1245	L10		802	Chert	Flake	Whole		0	0	4.9	4.0	0.7	Black
1247	K11		802	Chert	Flake	Proximal		0	0	8.3	6.9	0.6	Black
1248	L10		802	Chert	Flake	Medial		0	0	3.9	5.5	1.2	Black
1249	L10		802	Chert	Flake	Whole		0	0	3.8	2.0	0.6	Black

Find No.	Grid	Spit	Context	Material	Technology	Portion	Tool Type	Cortex	TA	Length	Width	Thickness	Colour
1251	O4		802	Flint	Flake	Proximal	MRF	0	0	15.1	11.1	2.8	Beige
1252	L10		802	Chert	Blade	Distal		0	0	9.0	3.1	1.2	Black
1253	L10		802	Chert	Flake	Medial		0	0	5.4	3.3	0.7	Black
1254	L10		802	Chert	Flake	Medial		0	0	2.7	2.2	0.8	Black
1255	J5		802	Flint	Flake	Medial	Backed blade fragment	0	1	13.8	7.6	1.8	Light grey
1256	L10		802	Chert	Flake	Whole		0	0	25.1	13.4	4.2	Black
1257	L10		802	Chert	Flake	Whole		0	0	4.6	6.1	0.8	Black
1258	L10		802	Chert	Blade	Whole		0	0	5.5	2.0	0.3	Black
1259	L6		802	Flint	Flake	Medial		0	0	13.5	8.9	4.2	Beige
1260	I5		802	Chert	Flake	Whole		0	0	16.9	9.0	2.5	Black
1261	K11		802	Chert	Flake	Proximal		0	0	12.5	11.7	2.1	Black
1262	I5		802	Chert	Flake	Distal		0	0	6.1	9.0	1.6	Black
1263	J11		802	Chert	Flake	Distal		0	0	3.8	6.0	1.7	Grey
1264	L10	s	802	Chert	Flake	Proximal		0	0	10.7	16.4	1.8	Black
1265	L10	s	802	Chert	Flake	Medial		0	0	6.7	5.5	1.9	Black
1266	L10	s	802	Chert	Flake	Proximal		0	0	4.0	5.9	1.3	Black
1267	K11		802	Chert	Blade	Whole		0	0	18.8	5.8	3.2	Black
1268	K4		802	Chert	Flake	Whole		0	0	24.4	17.9	3.6	Black
1269	H10		802	Chert	Blade	Proximal		0	0	8.0	3.6	1.5	Black
1270	L10		802	Chert	Flake	Whole		0	0	3.7	4.2	0.6	Black
1271	L11		802	Chert	Flake	Distal		0	0	12.6	8.8	3.1	Black
1272	L11		802	Chert	Blade	Whole		0	0	10.8	4.4	1.7	Black
1273	L11		802	Chert	Flake	Distal		0	0	7.3	3.3	0.9	Black
1274	L11		802	Chert	Flake	Whole		0	0	4.5	3.4	1.5	Black
1275	L7		802	Flint	Blade	Whole	MRF	1	0	29.2	12.8	4.5	Light brown
1276	K11		802	Chert	Blade	Whole		0	0	10.4	4.2	1.2	Black
1277	J11		802	Chert	Flake	Whole		0	0	10.8	7.5	1.5	Black
1278	J11		802	Chert	Flake	Proximal		0	0	4.2	5.4	0.8	Black
1279	K11		802	Chert	Flake	Whole		0	0	10.4	10.0	2.1	Black
1280	K9		802	Chert	Blade	Whole		0	0	6.6	2.9	1.4	Black
1281	L11		802	Chert	Flake	Whole		0	0	6.4	4.3	0.5	Black
1282	L11		802	Chert	Flake	Medial		0	0	4.4	5.5	1.2	Black
1283	L11		802	Chert	Flake	Medial		0	0	4.7	3.3	0.8	Black
1284	K11		802	Chert	Flake	Distal		0	0	4.3	7.0	0.9	Black
1285	L11		802	Chert	Blade	Whole		0	0	9.3	2.7	0.9	Black
1286	L11		802	Chert	Flake	Proximal		0	0	4.6	4.1	1.1	Black
1287	L11		802	Chert	Flake	Distal		0	0	6.6	3.8	0.6	Black
1288	L10		802	Flint	Flake	Distal		3	0	10	9.1	2.5	Grey
1289	M6		802	Chert	Fragment			0	0	6.8	5.7	3.0	Dark grey

Find No.	Grid	Spit	Context	Material	Technology	Portion	Tool Type	Cortex	TA	Length	Width	Thickness	Colour
1290	L10		802	Chert	Flake	Proximal		0	0	13.6	9.6	2.2	Black
1291	I6		802	Flint	Blade	Whole	End scraper	0	0	30.6	14.6	5.1	Beige
1292		s	802	Chert									
1293		s	802	Chert									
1294		s	802	Chert									
1295		s	802	Chert									
1296		s	802	Chert									
1297		s	802	Chert									
1298		s	802	Chert									
1299	L11		802	Chert	Flake	Whole		0	0	18.6	21.7	2.9	Black
1300	L11		802	Chert	Flake	Whole		0	0	3.7	1.9	0.6	Black
1301	L11		802	Chert	Flake	Whole		0	0	2.7	2.4	0.4	Black
1303	J5		802	Chert	Flake	Medial		0	0	7.3	9.2	3.8	Black
1305	L9		802	Chert	Blade	Whole		0	0	5.2	2.0	1.1	Black
1306	L11		802	Chert	Flake	Medial		0	0	6	6.4	1.6	Black
1307	J10		802	Chert	Flake	Whole		0	0	6.5	5.5	0.8	Black
1308	K11		802	Chert	Flake	Distal		0	0	14.8	10.5	2.3	Black
1309	L9		802	Chert	Flake	Proximal		0	0	6.8	4.7	1.3	Black
1310	L11		802	Chert	Flake	Distal		0	0	6.2	8.3	0.9	Black
1311	L11		802	Chert	Flake	Medial		0	0	9.6	7.4	2.5	Black
1312	L9		802	Flint	Flake	Whole	Scraper	0	0	18.8	15.9	4.2	Light brown
1313	H6		802	Chert	Blade	Distal		0	0	18.6	6.6	4.4	Black
1314	K11		802	Chert	Flake	Whole		0	0	21.3	22.4	3.2	Black
1315	L10	s	802	Chert	Flake	Whole		0	0	9.9	6.9	1.7	Black
1316	L10	s	802	Chert									
1317	L10	s	802	Chert									
1318	L10	s	802	Chert									
1319	L12		802	Chert	Flake	Medial		0	0	6.9	7.1	1.8	Black
1320	K11		802	Chert	Blade	Whole		0	0	7.5	3.7	1.1	Black
1321	J9		802	Flint	Flake	Whole		1	0	22.6	13.9	7.6	Orange
1322	L4		802	Flint	Flake	Whole		0	0	4.8	11.3	1.2	Grey with patchy patination
1324	K11	s	802	Chert	Flake			0	0				Black
1325	K11	s	802	Chert	Flake			0	0				Black
1326	K11	s	802	Chert	Flake			0	0				Black
1327	K11	s	802	Chert	Flake			0	0				Black
1328	K11	s	802	Chert	Flake			0	0				Black
1329	K11	s	802	Chert	Flake			0	0				Black
1330	K11	s	802	Chert	Flake			0	0				Black
1331	K11	s	802	Chert	Flake			0	0				Black
1332	L4		802	Chert	Flake	Medial		0	0	7.5	5.1	2.3	Black

Find No.	Grid	Spit	Context	Material	Technology	Portion	Tool Type	Cortex	TA	Length	Width	Thickness	Colour
1333	M10 /11	de-turf	802	Chert	Flake	Whole		0	0	13.8	7.1	3.6	Black
1334	K11		802	Chert	Flake	Proximal		0	0	6.1	7.5	2.0	Black
1335	L12		802	Chert	Flake	Medial		0	0	6.4	10.2	1.8	Black
1336	L12		802	Chert	Flake	Distal		0	0	5.1	2.7	0.8	Black
1337	K6		802	Chert	Flake	Whole	Notch	0	0	26.1	14.1	7.4	Black
1338	M4		802	Chert	Flake	Distal		0	0	5.5	5.2	1.4	Dark grey
1339	K6		802	Chert	Flake	Whole	MRF	0	0	25.2	23.0	13.7	Grey
1340	K11	s	802	Chert	Flake			0	0				Black
1341	K11	s	802	Chert	Flake			0	0				Black
1342	K11	s	802	Chert	Flake			0	0				Black
1343	K12		802	Chert	Flake	Proximal		0	0	4.3	3.3	0.8	Black
1344	M4		802	Chert	Flake	Medial		0	0	5.1	7.0	2.8	Black
1345	L8		802	Flint	Flake	Medial		0	0	29.1	18.1	3.2	Brown
1346	O6	s	802	Chert	Flake	Whole		0	0	14.9	8.0	4.6	Black
1347	M4		802	Chert	Flake	Medial		0	0	3.6	4.7	1.0	Black
1348	L12	s	802	Chert	Flake	Whole		0	0	15.7	9.0	3.0	Black
1350	L9	s	802	Chert	Flake	Proximal		0	0	5.8	5.6	1.7	Black
1351	K6		802	Chert	Flake	Whole		0	0	37.0	19.8	8.6	Black
1352	O5		802	Flint	Flake	Distal		0	1	5.4	4.8	0.7	Patinated
1353	L9		802	Chert	Flake	Whole	Truncate	0	0	19.2	9.1	4.0	Black
1356	J9		802	Chert	Flake	Medial		0	0	11.4	8.7	3.3	Black
1358	J8	s	802	Chert	Flake	Proximal		0	0	6.9	8.4	2.0	Black
1360	K12		802	Chert	Flake	Medial		0	0	7.1	6.6	1.5	Black
1361	L8	s	802	Chert			Core Fragment	0	0	16.9	12.1	7.7	Black
1362	K12		802	Chert	Flake	Whole		0	0	4.8	6.0	1.3	Black
1363	M5		802	Chert	Flake	Whole		0	0	24.3	17.1	9.5	Black
1364	N5		802	Chert	Flake	Distal		0	0	8.2	5.0	4.0	Black
1365	L11		802	Flint	Flake		Core	1	0	21.7	16.4	4.9	Brown
1366	M10		802	Chert			Core Fragment	0	0	23.6	29.4	13.5	Black
1368	M10		802	Chert	Flake	Whole		0	0	5.8	5.9	1.1	Black
1369	M10		802	Chert	Flake	Whole		0	0	6.8	4.3	0.9	Black
1370	I9		808	Chert	Flake	Whole		1	0	16.5	21.4	5.4	Black
1371	N4		802	Chert	Flake	Whole		0	0	10.7	9.2	3.6	Light grey
1372	M11		802	Chert	Flake	Proximal		0	0	6.6	4.4	1.4	Black
1373	M10		802	Chert	Flake	Whole	Burin	0	0	18.9	10.4	3.7	Black
1374	N5		802	Chert	Blade	Whole		0	0	12.6	5.3	2.3	Black
1375	M11		802	Chert	Flake	Distal		0	0	6.9	4.9	1.6	Black
1376	I9		808	Chert	Flake	Whole		0	0	7.5	12.1	2.9	Black
1377	M7		802	Chert	Blade	Whole		0	0	5.8	2.3	0.9	Black
1378	K12		802	Chert	Flake	Whole		0	0	4.9	6.3	1.9	Black
1379	M5		802	Flint	Flake	Medial		0	0	11.5	11.9	2.8	Grey with patchy patination

Find No.	Grid	Spit	Context	Material	Technology	Portion	Tool Type	Cortex	TA	Length	Width	Thickness	Colour
1380	L9		802	Chert	Flake	Proximal		0	0	12.7	14.2	4.0	
1381	L6		802	Flint	Flake	Distal		0	0	5.4	5.7	0.9	Light grey
1382	K12		802	Chert	Flake	Proximal		0	0	14.4	11.4	2.8	Black
1383	M5		802	Chert	Flake	Whole		0	0	4.7	3.0	0.8	Black
1384	L9		802	Chert	Flake	Whole		0	0	18.4	10.0	2.8	Black
1385	L6		802	Chert	Blade	Distal		0	0	12.2	6.0	2.3	Black
1386	L9	s	802	Chert	Blade	Proximal		0	0	8.7	4.2	2.2	Black
1387	L9		802	Chert	Blade	Whole		0	0	30.8	11.9	2.8	Black
1388	G4		802	Chert			Core	0	0	14.5	37.2	15.1	Grey
1389	L6		802	Chert	Blade	Whole	Backed blade	0	0	18.0	6.6	2.6	Black
1390	L9		802	Chert	Flake	Distal		0	0	8.5	7.1	2.3	Black
1391	G4		802	Chert	Flake	Whole		0	0	31.1	15.7	7.2	Grey
1392	L9		802	Chert	Flake	Proximal		0	0	7.2	9.5	1.9	Grey
1393	L9		802	chert	Flake	Medial		0	0	21.5	10.8	4.1	Grey
1395	K12		802	Chert	Flake	Whole	MRF	0	0	34.7	28.3	22.9	Dark grey
1396	L6		802	Chert	Flake	Proximal		0	0	5.2	5.8	2.7	
1397	L9		802	Chert	Flake		Microlith fragment	0	0	4.7	2.9	1.6	Black
1398	G4		808	Flint	Flake	Whole	Platform rejuvenation flake?	0	0	27.6	21.6	6.8	Brown
1399	L9		802	Chert	Flake	Whole	Burin	1	0	35.5	37.8	7.7	Black
1400	L9		802	Chert	Flake	Whole		0	0	17.6	15.2	5.3	Black
1401	M6		802	Chert	Flake	Whole		0	0	8.0	5.6	4.3	grey
1402	L9		802	Chert	Flake	Whole		0	0	3.3	2.2	1.5	Black
1403	L6		802	Flint	Flake	Whole		1	0	22.3	13.5	6.8	Brown with patination
1404	M6		802	Chert	Blade	Whole		0	0	9.1	3.4	2.0	
1405	L12		802	Chert	Flake	Proximal	Microburin	0	0	10.7	9.0	2.3	Black
1406	M6		802	Chert	Flake	Whole		0	0	10.6	14.3	4.2	Grey
1408	H12		802	Flint	Blade	Whole	Platform refresher	0	0	23.4	10.1	5.6	Brown with patination
1409	K8		802	Chert			Core	1	0	33.2	35.6	35.1	Black
1410	L12	s	802	Chert									
1411	L12	s	802	Chert									
1412	L3		802	Chert	Blade	Whole		0	0	27.7	7.8	3.8	Black
1413	J3		802	Chert	Flake	Whole	MRF	0	0	16.9	16.5	3.3	Grey
1414	L3		802	Chert	Blade	Proximal		0	0	36.5	17.0	4.4	Grey
1415	M6		802	Chert	Flake	Medial		0	0	5.1	5.1	2.2	Grey
1416	P6		802	Chert	Flake	Distal		0	0	6.6	3.5	1.1	Black
1417	N4		802	Chert	Flake	Medial		0	0	8.3	6.9	2.7	Black
1418	H12	s	808	Chert	Flake	Whole		0	0	5.4	4.2	1.3	Black
1419	M12	s	802	Chert	Flake	Distal		0	0	3.6	5.9	1.4	Grey

Find No.	Grid	Spit	Context	Material	Technology	Portion	Tool Type	Cortex	TA	Length	Width	Thickness	Colour
1421	K9		802	Chert	Flake	Whole		0	0	6.0	4.2	0.8	Black
1422	J7		802	Chert	Blade	Whole		0	0	17.0	7.7	4.7	Black
1423	L9	s	802	Flint	Flake	Distal		0	0	7.0	6.1	0.9	Brown
1424	N5		802	Chert	Flake	Distal	MRF	0	0	6.0	4.8	1.8	Black
1425	M6		802	Chert	Flake	Whole		0	0	4.4	2.3	0.9	Black
1426	K9		802	Chert	Blade	Distal		0	0	17.0	6.7	3.2	Grey
1427	M6		802	Chert	Flake	Distal		0	0	3.4	2.2	1.7	Grey
1428	N5	s	802	Chert	Flake	Proximal		0	0	10.3	8.1	3.2	Black
1430	N5	s	802	Chert	Flake	Whole		0	0	4.9	4.1	0.5	Black
1431	N4		802	Chert	Flake	Medial		0	0	5.8	5.3	0.9	Black
1433	K12		802	Chert	Flake	Whole		1	0	38.3	22.2	9.6	Black
1434	M4		802	Flint	Flake	Distal		0	0	9.8	6.2	1.1	Pink
1436	J3		802	Chert	Flake	Whole		0	0	27.3	24.2	10.3	Black
1437	K3		802	Chert	Flake	Whole		0	0	35.2	18.2	5.0	Black
1439	L3		802	Chert	Flake	Distal		0	0	10.4	14.3	4.3	Black
1440	N4		802	Chert	Blade	Whole		0	0	27.1	9.7	4.3	Black
1441	O4		802	Chert			Core	0	0	55.5	37.8	21.5	Dark grey
1442	M4		802	Chert	Flake	Distal		0	0	4.9	3.8	1.1	Grey
1443	K5		802	Chert	Flake	Whole		0	0	5.1	6.7	2.8	Black
1444	K9		802	Chert	Flake	Medial		0	0	7.6	5.4	1.1	Black
1445	K5		802	Flint	Flake	Whole		0	0	6.9	3.5	1.9	Grey
1446	N4		808	Chert	Blade	Whole	Core	0	0	26.7	6.9	5.4	Black
1447	K5		802	Flint	Flake	Distal		0	1	10.1	5.5	2.9	Patinated
1448	L12		802	Chert	Blade	Proximal		0	0	10.8	6.5	1.7	Black
1449	L3		802	Flint	Flake	Whole		0	0	8.1	5.1	2.8	Brown
1450	L3		802	Chert	Flake	Distal		0	0	3.8	7.3	3.9	Black
1451	K5		802	Chert	Flake	Whole		0	0	11.0	7.1	1.9	Black
1452	K3	s	802	Chert	Flake	Whole		0	0	7.5	5.8	1.1	Black
1453	K3	s	802	Chert	Blade	Whole		0	0	7.3	3.0	1.1	Black
1454	M4		802	Chert	Flake	Whole		0	0	5.8	3.7	1.7	Black
1455	K6		802	Chert	Flake	Whole		0	0	10.7	9.3	5.6	Black
1456	L6		802	Chert			Core	0	0	12.7	25.8	24.3	Dark grey
1457	K3		802	Chert	Flake	Whole		0	0	17.8	8.2	1.8	Black
1458	K12	s	802	Chert	Flake	Whole	Scraper/platform re-fresher	0	0	20.4	12.9	6.3	Black
1459	K6		802	Chert			Core Fragment	0	0	7.7	18	14.5	Black
1460	P5		808	Chert	Flake	Proximal		0	0	10.8	8.8	3.1	Black
1461	L7		802	Flint	Flake	Distal		0	0	13.1	12.1	5.6	Grey
1462	K6		802	Chert	Flake	Medial		0	0	5.4	9.1	2.5	Grey
1463	L3		802	Chert	Flake	Whole		1	0	23	17.9	4.3	Black
1464	M5		802	Chert	Flake	Whole		0	0	3.8	7.7	0.7	Black
1465	L6		802	Chert	Flake	Whole		0	0	4.1	2.6	1.0	Black

Find No.	Grid	Spit	Context	Material	Technology	Portion	Tool Type	Cortex	TA	Length	Width	Thickness	Colour
1466	M5		802	Chert	Flake	Whole		0	0	1.7	5.0	0.5	Black
1467	M5		802	Flint	Flake	Distal		0	0	12.3	9.2	3.0	Light grey
1468	L3		802	Chert	Flake	Whole		0	0	5.4	5.3	1.2	Black
1469	L5		802	Chert	Flake	Whole		0	0	13.2	6.9	2.7	Black
1470	N5		808	Chert	Flake	Whole		0	0	23.2	16.4	6.2	Black
1471	K12		802	Chert	Flake	Proximal		0	0	8.1	8.3	2.5	Black
1472	L5		802	Chert	Flake	Proximal		0	0	6.0	6.2	1.7	Black
1473	L5		802	Chert	Blade	Whole	Microlith	0	0	9.2	2.7	1.4	Black
1474	L5		802	Chert	Flake	Whole		0	0	16.9	13.4	5.2	Black
1475	K6		802	Chert	Flake	Whole		1	0	12.3	15.5	6.9	Black
1476	L4		802	Chert	Flake	Whole		1	0	14.2	13.1	5.5	Black
1477	N5		808	Chert	Flake	Whole		0	0	7.8	4.6	2.3	Grey
1479	H4		802	Flint	Flake	Whole	Micro burin	0	0	8.6	4.4	1.8	Brown
1480	L4		802	Chert			Core Fragment	0	0	15.6	32	24.6	Black
1481	K6		802	Chert	Flake	Proximal		0	0	9.2	6.2	2.3	Black
1482	K6		802	Chert	Flake	Proximal		0	0	4.8	8.7	1.5	Black
1483	L4		802	Flint	Flake	Proximal		0	0	9.2	12.3	2.3	Light brown
1484	L6		802	Chert			Core	0	0	28.8	21.3	14.4	Black
1485	J5		802	Chert	Fragment			0	0	9.0	12.1	4.1	Black
1486	J4		802	Chert	Blade	Whole		0	0	11.6	4.4	2.6	Black
1488	K12		802	Chert	Flake	Medial		0	0	6.7	5.8	3.1	Grey
1489	M6		802	Flint	Flake	Whole	Awl	0	0	6.1	13.1	3.2	Grey
1491	K6		802	Chert	Blade	Distal		0	0	18.4	6.9	2.5	Black
1492	M6		802	Chert	Flake	Medial		0	0	2.5	10.6	0.9	Black
1493	M6		802	Chert	Flake	Distal		0	0	15.4	7.3	3.0	Grey
1494	L10		808	Chert	Blade	Distal	MRF	0	0	11.4	5.5	1.3	Black
1495	L10		808	Chert	Flake	Distal		0	0	11.2	7.4	2.0	Black
1497	K5		808	Chert	Flake	Whole		0	0	17.6	12.1	1.8	Black
1498	L10		808	Chert	Flake	Whole		0	0	3.0	2.8	0.4	Black
1499	L10		808	Chert	Flake	Proximal		0	0	3.9	3.9	1.2	Black
1500	K6		808	Chert	Flake	Distal		0	0	7.3	5.8	1.8	Grey
1501	L10		808	Chert	Flake	Medial		0	0	3.8	5.2	0.9	Black
1502	L10		808	Chert	Flake	Medial		0	0	4.8	4.3	1.8	Black
1503	J6		808	Chert	Flake	Distal		0	0	9.6	12.7	2.0	Black
1504	L11		808	Chert	Flake	Whole		0	0	5.0	3.2	1.2	Black
1505	K6		808	Chert	Flake	Whole		0	1	14.0	11.8	5.6	Grey
1506	J6		802	Chert	Blade	Distal		0	1	12.3	5.3	2.4	Black
1508	L5		808	Chert	Flake	Distal		0	0	8.5	5.4	1.2	Black
1509	L11		808	Chert	Flake	Medial		0	0	3.6	4.8	1.0	Black
1510	L10		808	Chert	Flake	Distal	Microlith fragment	0	0	4.4	2.6	1.4	Black
1511	C3		808	Chert	Blade	Whole		0	0	23.2	8.1	3.0	Black

Find No.	Grid	Spit	Context	Material	Technology	Portion	Tool Type	Cortex	TA	Length	Width	Thickness	Colour
1512	L5		808	Flint			Core	0	0	36.4	25.3	15.0	Beige
1513	L10		808	Chert	Flake	Whole		0	0	3.3	3.4	1.2	Black
1514	L10		808	Chert	Flake	Whole		0	0	7.3	5.8	1.8	Black
1515	J6		802	Chert	Flake	Whole		0	0	9.1	5.0	2.6	Black
1516	L11		808	Chert	Flake	Whole		0	0	3.5	4.4	0.8	Black
1517	L10		808	Chert	Flake	Whole		0	0	2.3	4.4	1.1	Black
1518	B3		808	Chert			Core fragment	0	0	5.0	10.6	6.7	Black
1519	L5		808	Flint			Core pebble	2	1	24.9	24.6	18.0	Pink
1520	C4		808	Flint	Flake	Whole	MRF	0	0	21.9	19.8	7.6	Black
1522	J6		802	Chert	Flake	Proximal		0	0	8.7	6.5	1.3	Light grey
1523	L10		808	Chert	Blade	Whole		0	0	7.0	3.5	0.6	Black
1524	L10		808	Chert	Flake	Proximal		0	0	6.1	5.4	1.1	Black
1525	M4		808	Chert	Flake	Whole		0	0	13.5	8.3	4.0	Black
1526	J6		802	Chert			Core	0	0	22.6	27.3	11.7	Grey
1527	L10		808	Chert	Blade	Whole	Burin spall	0	0	15.3	5.9	5.7	Black
1528	L3		808	Chert	Flake	Whole		0	0	17.0	13.2	6.8	Grey
1529	J6		802	Chert	Flake	Whole		0	0	6.8	7.9	5.6	Black
1530	L10	s	808	Chert	Flake	Whole		0	0				
1531	L10	s	808	Chert	Flake	Whole		0	0				
1532	M4		808	Chert	Blade	Whole		0	0	30.6	8.8	4.0	Black
1533	M4		808	Chert	Flake	Whole		0	0	5.9	5.7	1.8	Black
1534	M4		808	Chert	Flake	Whole		0	0	4.1	4.3	1.5	Black
1535			808	Chert	Blade	Whole		0	0	15.5	6.0	3.4	Black
1536	L11		808	Chert	Flake	Whole		0	0	6.3	2.8	0.6	Black
1537	J4		808	Chert	Flake	Whole		0	0	14.6	9.4	6.3	Black
1538	L5		808	Chert	Flake	Whole		0	0	14.5	10.1	2.6	Dark grey
1539	C4		808	Chert	Blade	Whole	Microburin	0	0	9.6	3.5	1.3	Black
1540	M4		808	Chert	Flake	Whole		0	0	8.7	14.6	5.1	Black
1541	L10		808	Chert	Flake	Distal		0	0	9.3	10.7	1.8	Black
1543	L11		808	Chert	Flake	Distal		0	0	11.0	10.6	1.7	Black
1544	L10		808	Chert	Flake	Distal	MRF	0	0	7.5	5.4	1.1	Black
1545	L5		808	Chert	Flake	Whole		0	0	12.5	8.9	2.8	Black
1547	M4		808	Flint			Core Fragment	0	0	18.8	13.3	8.0	Light grey
1548	L5		808	Chert	Flake	Whole		0	0	11.4	8.2	2.2	Black
1549	L10		808	Chert	Flake	Whole		0	0	3.4	2.6	0.5	Black
1550	M4		808	Chert	Flake	Proximal		0	0	6.1	5.5	2.2	Black
1551	L5		808	Flint	Flake	Whole		0	0	16.4	9.3	3.2	Light grey
1553	J6		802	Chert			Core	0	0	29.4	25.0	11.8	Black
1554	L4		808	Chert	Flake	Whole		0	0	18.6	11.0	5.9	Dark grey
1555	J5		802	Chert	Flake	Whole		0	0	8.5	11.8	3.1	Black
1556	K11		802	Chert	Flake	Whole		0	0	18.4	9.5	1.5	Black
1557	L4		808	Chert	Flake	Medial		0	0	11.0	11.9	3.0	Black

Find No.	Grid	Spit	Context	Material	Technology	Portion	Tool Type	Cortex	TA	Length	Width	Thickness	Colour
1558	M4		808	Chert	Flake	Distal		0	0	10.9	5.6	3.8	Black
1559	J5		802	Flint	Flake	Medial		0	0	4.4	8.6	3.2	Light grey
1560	L5		808	Chert	Flake		Core Fragment	2	0	16.5	17.7	15.3	Black
1561	L4		808	Chert	Flake	Whole	Scraper (double ended)	0	0	26.6	18.7	6.3	Black
1562	M4		808	Chert	Blade	Whole		0	0	24.8	9.1	3.3	Black
1563	L11	s	808	Chert	Flake	Distal		0	0	7.8	7.1	1.3	Black
1564	L11	s	808	Chert	Blade	Whole		0	0	7.0	3.4	0.7	Black
1565	K5		808	Chert	Flake	Whole		0	0	6.0	9.2	1.7	Black
1566	L5		808	Chert	Flake	Distal		0	0	9.0	11.	2.5	Black
1567	B6		808	Chert	Flake	Proximal		0	0	9.0	8.2	2.2	Black
1568	K5		808	Chert	Flake	Medial		0	0	5.5	9.3	2.9	Black
1569	K5		808	Chert	Flake	Whole		0	0	7.7	6.6	3.5	Black
1570	K5		808	Chert	Flake	Distal		0	0	13.5	7.4	4.7	Black
1571	L10		808	Chert	Flake	Proximal		0	0	4.9	4.2	1.8	Black
1572	J5		802	Chert	Flake	Whole		0	1	31.0	12.6	2.8	Black
1573	K5		808	Chert	Flake	Proximal		0	0	6.0	3.1	1.0	Black
1574	M4		808	Chert			Core	0	0	22.8	17.5	17.7	Black
1575	K5		808	Chert	Flake	Medial		0	0	6.6	8.2	1.7	Grey
1576	J5		802	Chert	Flake	Whole		0	1	9.6	8.0	3.3	Black
1577	L10	s	808	Chert	Flake	Whole		0	0	6.7	10.4	3.6	Black
1578	L11		808	Chert	Flake	Whole		0	0	5.3	5.3	1.3	Black
1579	L5		808	Chert	Flake	Whole	MRF	0	0	21.2	17.7	3.1	Black
1580	L10		808	Chert	Blade	Whole	MRF	0	0	11.9	4.3	1.9	Black
1581	K5		808	Chert	Blade	Distal		0	0	14.3	4.1	1.1	Black
1582	M4		808	Chert	Flake	Whole		0	0	9.0	5.4	0.9	Black
1583	L6		808	Chert	Flake	Whole	MRF	0	0	18.8	12.3	6.7	Black
1584	L11		808	Chert	Flake	Whole		0	0	11.8	6.9	2.2	Black
1585	K5		808	Chert	Flake	Whole		0	0	15.1	9.1	7.3	Black
1586	L10		808	Chert	Flake	Medial		0	0	8.2	14.7	2.8	Black
1587	L5		808	Chert	Blade	Medial		0	0	15.5	5.9	2.4	Black
1588	L3		808	Chert	Flake	Whole		0	0	18.4	12.4	4.7	Black
1589	M4		808	Chert	Flake	Whole		0	0	2.8	4.9	0.8	Black
1590	L10		808	Chert	Flake	Medial		0	0	8.5	5.1	0.9	Black
1591	L5		808	Chert	Flake	Whole		0	0	9.2	6.5	1.6	Black
1592	L5		808	Chert	Blade	Whole		0	0	10.5	3.9	1.1	Black
1593	L11		808	Chert	Flake	Proximal	Microburin	0	0	5.0	3.8	1.1	Black
1594	A7		808	Flint	Flake	Distal		0	0	5.7	5.0	1.0	Dark grey
1595	L11		808	Chert	Flake	Proximal		0	0	8.2	7.4	1.9	Black
1596	L4		808	Flint	Flake	Distal		1	0	19.4	10.9	3.9	Brown
1597	M4		808	Chert	Blade	Whole		0	0	22.5	6.9	3.1	Black
1598	L4		808	Chert	Flake	Whole		0	0	13.3	8.4	2.2	Black

Find No.	Grid	Spit	Context	Material	Technology	Portion	Tool Type	Cortex	TA	Length	Width	Thickness	Colour
1599	L5		808	Chert	Flake	Whole		0	0	16.6	10.8	8.0	Black
1600	M4		808	Flint	Blade	Whole	Microlith	0	0	11.4	3.9	1.2	Light grey
1601	D3		808	Chert			Core	2	0	20.0	42.0	32.5	Black
1603	J5	s	802	Chert	Blade	Whole		0	0	10.9	3.3	1.7	Black
1604	J5	s	802	Chert	Flake	Medial		0	0	6.6	5.6	2.6	Dark grey
1605	L11		808	Chert	Blade	Whole		0	0	18.9	5.2	1.5	Black
1606	L10		808	Chert	Flake	Distal		0	0	5.6	4.3	0.7	Black
1607	L4		808	Chert	Flake	Distal		0	0	6.3	9.5	3.3	Black
1608	D3		808	Chert	Blade	Whole		0	0	15.9	7.7	2.6	Grey
1609	L5		808	Chert	Blade	Whole		0	0	8.2	3.2	1.0	Black
1610	L5		808	Chert	Flake	Whole	MRF	0	0	19.9	18.1	5.2	Black
1611	L10		808	Chert	Flake	Medial		0	0	4.1	6.0	1.2	Black
1612	L10		808	Chert	Flake	Medial		0	0	6.6	6.2	1.4	Black
1613	L11		808	Chert	Flake	Whole		0	0	8.0	7.4	1.5	Black
1614	B6		808	Chert	Flake	Medial		0	0	18.4	10.0	3.7	Black
1615	M4		808	Chert	Flake	Whole		0	0	24.1	31.6	4.9	Black
1616	L4		808	Chert	Flake	Distal		0	0	9.5	18.8	4.2	Black
1617	A4		802	Chert	Flake	Distal		0	0	20.9	12.4	6.3	Dark grey
1618	M5		808	Chert	Flake	Medial		0	0	12.1	6.6	2.3	Black
1619	L11		808	Chert	flake	Distal		0	0	7.7	5.5	1.1	Black
1620	L11	s	808	Chert	Flake	Medial		0	0	3.4	6.7	0.7	Black
1621	L11	s	808	Chert	Flake	Distal		0	0	6.0	3.4	1.2	Black
1622	M5		808	Chert	Flake	Distal		0	0	6.3	4.8	3.0	Black
1623	L11		808	Flint	Flake	Medial		1	0	36.0	29.2	12.7	Dark grey
1624	K12		808	Chert	Flake	Whole	Notch	0	0	19.4	13.6	2.8	Black
1625	M5		808	Chert	Flake	Medial		0	0	5.8	18.1	2.6	Black
1626	L10		808	Chert	Flake	Proximal		0	0	12.3	7.7	2.2	Black
1627	L10	s	808	Chert	Blade	Distal		0	0	10.7	4.1	1.0	Black
1628	L10	s	808	Chert	Flake	Proximal		0	0	5.4	6.0	1.5	Black
1629	K11		808	Flint	Flake	Whole	MRF	0	0	9.1	7.3	1.8	Brown
1630	L11		808	Chert	Flake	Whole		0	0	8.5	9.8	1.5	Black
1631	M5		808	Chert	Flake	Whole		0	0	9.7	9.4	2.8	Black
1632	L4		808	Chert	Flake	Whole	Side scraper?	0	0	21.5	11.8	6.6	Black
1633	L4		808	Flint	Blade	Distal	? Microburin	1	0	19.5	9.3	1.9	Beige
1634	J4	s	808	Chert	Blade	Whole		0	0	9.0	3.5	0.9	Black
1635	K11		808	Chert	Flake	Whole		0	0	19.9	9.5	6.1	Black
1636	K11		808	Chert	Blade	Whole		0	0	9.5	4.3	1.0	Black
1637	L11		808	Chert	Flake	Distal		0	0	5.6	8.2	2.3	Black
1638	M6		808	Flint	Blade	Medial	Awl	0	0	13.9	4.9	2.3	Light grey
1639	M5		808	Chert	Flake	Whole		0	0	15.2	15.9	3.9	Black
1640	J5		808	Flint	Flake	Medial		0	0	7.1	8.8	1.0	Light grey
1641	L11		808	Chert	Flake	Proximal		0	0	7.7	9.1	2.2	Black
1642	L11		808	Chert	Flake	Whole		0	0	16.7	12.6	3.1	Black
1643	J6		838	Chert	Flake	Whole		0	0	17.9	11.7	5.4	Grey

Find No.	Grid	Spit	Context	Material	Technology	Portion	Tool Type	Cortex	TA	Length	Width	Thickness	Colour
1644	K11		808	Chert	Flake	Distal		0	0	5.4	8.6	3.1	Black
1645	L4		808	Chert	Blade	Whole		0	0	30.6	11.2	6.8	Black
1646	K5		802	Chert	Flake	Distal	MRF	0	0	4.7	5.1	0.9	Black
1647	J6		838	Chert	Flake	Distal		0	0	13.8	9.9	4.1	Black
1648	K11		808	Chert	Flake	Medial		0	0	3.7	4.2	0.8	Black
1649	E1		808	Chert	Flake	Whole		0	0	9.2	6.9	4.3	Black
1650	L11	s	808	Chert	Flake	Whole		1	0	16.3	15.9	6.4	Black
1651	L11	s	808	Chert	Flake	Proximal		0	0	8.5	7.3	0.5	Black
1653	L11		808	Chert	Flake	Distal	MRF	0	0	6.3	6.9	3.2	Black
1654	K11		808	Chert	Flake	Whole		0	0	16.8	10.4	2.7	Black
1655	K11		808	chert	Flake	Whole	MRF	0	0	18.8	28.1	8.2	Black
1656	M6		808	Chert	Flake	Medial		0	0	10.6	7.2	1.5	Black
1657	L4		808	Flint			Core	1	0	19.4	19.2	13.7	Beige
1658	M6		808	Chert	Flake	Medial		0	0	4.1	6.0	1.2	Black
1659	L4		808	Chert	Flake	Whole		0	1	8.3	6.3	2.4	Black
1660	L11		808	Chert	Flake	Whole		0	0	5.7	5.2	1.1	Black
1661	K11	s	808	Chert	Flake			0	0				Black
1662	K11	s	808	Chert	Flake			0	0				Black
1664	K11	s	808	Chert	Flake	Medial	Microburin	0	0	7.1	4.8	1.3	Black
1665	K11	s	808	Chert	Flake			0	0				Black
1666	K11	s	808	Chert	Flake			0	0				Black
1667	J6		838	Chert	Flake	Proximal		0	0	5.3	4.5	1.3	Black
1668	L5		808	Chert	Flake	Whole		0	0	5.8	16.9	5.2	Black
1669	M6		808	Chert	Blade	Medial		0	1	11.4	4.6	2.0	Black
1670	M6		808	Chert	Flake	Whole		0	0	7.3	7.4	1.3	Black
1671	J6		838	Chert	Flake	Proximal	Notch	0	0	21.6	13.0	5.3	Black
1672	L4	s	808	Flint	Blade	Medial	MRF	0	0	9.3	4.4	1.4	Trans-luscent brown
1673	L4	s	808	Chert	Flake	Whole		0	0	7.8	10.8	1.3	Black
1674	L4	s	808	Flint	Flake	Whole		0	0	11.2	6.3	1.3	Dark grey
1675	K11	s	808	Chert	Flake	Distal		0	0	9.7	5.5	1.7	Black
1676	L5		808	Chert	Blade	Medial		0	0	9.8	9.2	3.7	Dark
1677	K4		808	Flint	Flake	Whole		1	0	23.3	16.8	5.6	Brown
1678	M6		808	Chert	Flake	Whole		0	0	5.8	6.1	0.8	Black
1679	J6		838	Chert	Flake	Whole		0	0	16.7	14.3	2.6	Black
1680	J11		808	Chert	Flake	Whole		0	0	21.1	15.7	5.3	Black
1681	L5		808	Chert	Flake	Whole		0	0	8.6	6.1	4.4	Black
1682	M6		808	Chert	Flake	Whole		0	0	6.6	4.3	0.9	Black
1683	L10		808	Chert	Flake	Whole		0	0	6.8	5.3	1.6	Black
1684	J11		808	Chert	Flake	Whole	MRF?	0	0	23.0	12.1	4.2	Black
1685	K11		808	Flint	Flake	Whole		0	0	17.5	12.8	3.9	Trans-lucent light grey

Find No.	Grid	Spit	Context	Material	Technology	Portion	Tool Type	Cortex	TA	Length	Width	Thickness	Colour
1686	L10		808	Chert	Flake	Whole		0	0	6.5	5.8	1.6	Black
1687	K4		808	Chert	Blade	Whole		0	0	22.1	8.8	5.3	Black
1688	K4		808	Chert	Flake	Proximal		0	0	23.4	12.1	3.1	Black
1689	I12		808	Chert	Flake	Whole	Burin	0	0	27.4	20.7	5.0	Black
1690	J6		838	Chert	Flake	Distal		0	0	4.4	12.3	2.7	Grey
1691	L10		808	Chert	Blade	Distal		0	0	11.6	5.4	2.3	Black
1692	L5	s	808	Flint	Flake	Whole		0	0	16.8	9.8	3.3	Grey
1693	L5	s	808	Chert	Flake	Whole		0	0	7.3	4.6	3.1	Black
1694	L5	s	808	Chert	Flake	Distal		0	0	6.9	4.3	1.9	Grey
1695	L4	s	808	Chert	Flake	Medial		0	0	12.9	7.4	2.5	Grey
1696	L10		808	Chert	Blade	Whole		0	0	16.9	7.9	1.6	Black
1697	L10	s	808	Chert	Flake	Whole		0	0	5.9	4.1	1.3	Black
1698	J4		808	Chert	Flake	Whole	Notch	0	0	12.2	9.6	3.5	Black
1699	J11		808	Chert	Flake	Whole		0	0	13.9	7.1	3.2	Black
1702	I12		808	Chert	Blade	Medial	Microlith	0	0	8.8	3.0	2.2	Black
1703	M4		808	Chert	Flake	Whole		0	0	9.3	6.6	1.9	Black
1705	L4	s	808	Chert	Blade	Distal		0	0	8.5	4.0	1.7	Black
1706	L4	s	808	Chert	Flake	Distal		0	0	12.3	9.7	1.2	Grey
1707	J5		808	Chert	Flake	Distal		0	0	6.8	3.6	2.2	Grey
1708	J12		808	Chert	Flake	Proximal		0	0	8.5	8.3	1.3	Black
1709	M5		808	Chert	Flake	Whole		0	0	26.4	13.4	5.9	Black
1710	K5		808	Chert	Flake	Whole		0	0	21.4	11.2	2.9	Black
1711	M4		808	Flint	Flake	Distal		0	0	16.3	9.1	2.9	Trans-lucent light grey
1712	J5		808	Flint	Flake	Whole		0	0	11.8	8.6	1.6	Grey
1713	M4		808	Chert	Flake	Proximal		0	0	9.6	10.1	2.4	Black
1714	J5		808	Chert	Blade	Whole		0	0	15.1	6.2	2.7	Black
1715	M4		808	Chert	Flake	Medial		0	0	10.4	8.1	2.0	Black
1716	J5		808	Chert	Blade	Whole	Microlith	0	0	15.8	3.2	1.5	Black
1717	M4		808	Chert	Blade	Distal		0	0	14.1	6.6	1.7	Black
1718	K5		808	Chert	Flake	Whole		0	0	13.9	17.3	4.1	Black
1719	M4		808	Chert	Blade	Distal	Microlith fragment	0	0	6.5	2.9	1.1	Black
1720	K5		808	Chert	Flake	Whole		0	0	14.4	19.0	7.1	Black
1721	K5	s	808	Chert	Flake	Medial		0	0	5.7	9.0	4.6	Black
1722	K5	s	808	Chert	Flake	Medial		0	0	9.4	8.1	2.1	Black
1723	M5	s	808	Flint	Flake	Proximal		1	0	13.5	8.7	4.2	Beige
1724	J5		808	Chert	Blade	Whole		0	0	12.2	4.7	3.9	Black
1725	M5	s	808	Chert	Flake	Medial		0	0	4.2	7.0	1.7	Black
1726	J6		838	Chert	Flake	Medial		0	0	8.6	9.9	1.8	Black
1727	K5		808	Chert	Flake	Medial		0	0	9.5	9.1	1.3	Black
1728	K5		808	Chert	Flake	Proximal		0	0	14.1	9.4	1.7	Black

Find No.	Grid	Spit	Context	Material	Technology	Portion	Tool Type	Cortex	TA	Length	Width	Thickness	Colour
1729	K5		808	Chert	Flake	Proximal		1	0	7.6	8.5	3.1	Black
1730	N6		808	Chert	Flake	Proximal		0	0	7.3	5.3	1.2	Black
1731	J5		808	Chert	Flake	Whole		0	0	13.2	22.8	5.4	Black
1733	J5		808	Flint	Flake	Whole		0	0	8.9	15.6	2.3	Grey
1734	K5		808	Chert			Core fragment/MRF	0	0	22.2	12.9	8.7	Black
1735	K5		808	Chert			Core	0	0	22.3	48.2	9.3	Black
1736	J5		808	Chert	Flake	Medial	MRF	0	0	8.2	4.7	1.4	Black
1737	K5		808	Chert	Blade	Whole		0	0	18.6	7.6	5.7	Dark grey
1738	K5		808	Chert	Flake	Whole		0	0	14.3	11.2	4.0	Black
1739	J6		838	Chert	Flake	Whole	Scraper fragment	0	0	23.0	18.2	7.0	Black
1740	K5		808	Chert	Flake	Whole	MRF	0	0	16.3	21.0	2.8	Black
1741	J6		838	Chert	Flake	Whole		0	0	9.3	12.4	2.0	Dark grey
1742	K5		808	Chert	Flake	Whole		0	0	10.6	7.0	3.5	Black
1743	K5		808	Chert	Flake	Medial		0	0	8.8	6.9	1.4	Black
1744	J6		838	Flint	Flake	Whole		0	1	11.3	11.3	3.4	White
1746	F10		808	Chert			Core	0	0	20.1	16.6	11.5	Black
1747	J6		838	Chert	Blade	Whole	MRF	0	0	18.2	7.1	2.3	Black
1748	K6		808	Chert	Flake	Proximal		0	0	7.0	8.0	2.4	Black
1749	K5		808	Chert	Flake	Proximal		0	0	18.6	14.6	3.0	Black
1750	J6		838	Chert			Core fragment	0	0	17.0	28.1	13.5	Black
1752	L5		808	Chert	Flake	Whole		0	0	21.3	12.6	2.3	Black
1753	L5		808	Chert	Flake			0	0	12.1	9.1	4.2	Black
1754	L5		808	Chert	Flake	Proximal		0	0	7.7	5.9	1.1	Black
1755	M9		801	Chert	Flake	Proximal		0	0	11.1	6.3	2.5	Black
1756	J6		838	Chert	Flake	Whole		0	0	6.9	2.8	0.7	Black
1757	K5		808	Chert	Flake	Proximal		0	0	13.0	6.9	3.7	Black
1760	K5		808	Chert	Flake	Whole		0	0	40.0	28.5	8.3	Black
1761	H4		808	Flint	Flake	Distal		0	0	7.7	9.6	1.4	Brown
1762	K5		808	Chert	Flake	Whole		0	0	25.7	14.1	4.3	Black
1763	J6		838	Chert	Flake	Whole		0	0	15.1	9.7	3.7	Black
1764	I5		802	Chert			Core fragment	0	0	14.4	27.5	13.1	Black
1765	M9		801	Chert	Blade	Distal	Microlith fragment	0	0	8.1	3.7	2.2	Black
1766	I4		808	Flint	Blade	Whole	Microlith	0	0	11.1	4.3	2.2	Grey
1767	K5		808	Flint	Flake	Whole		1	0	44.0	34.1	17.5	Grey
1768	L4		808	Chert	Flake	Whole		0	0	7.0	4.9	3.4	Black
1769	J6		838	Chert	Flake	Whole		0	0	16.5	22.1	10.1	Black
1770	K5		808	Chert	Flake	Whole		0	0	16.6	11.7	4.0	Black
1771	I4		808	Chert	Flake	Whole		0	0	22.6	14.5	4.0	Black
1772	J5		808	Chert	Flake	Whole		0	0	15.1	22.4	5.1	Black
1773	K5		808	Chert			Core fragment	0	0	26.5	22.8	11.7	Black
1774	K5		808	Chert	Blade	Whole		0	0	26.6	12.2	5.0	Black

Find No.	Grid	Spit	Context	Material	Technology	Portion	Tool Type	Cortex	TA	Length	Width	Thickness	Colour
1775	J5		808	Chert	Flake	Distal		0	0	11.6	6.1	1.9	Black
1776	M9		801	Chert	Blade	Whole	Microlith	0	0	11.1	3.4	1.5	Black
1777	K5		808	Chert	Blade	Whole		0	0	23.9	8.8	4.5	Black
1778	K5		808	Chert	Flake	Whole		0	0	10.5	5.3	2.4	Black
1780	K5		808	Chert	Flake	Whole		0	0	26.9	14.1	7.6	Black
1781	K5		808	Chert			Core	0	0	14.7	25.0	21.8	Black
1782	J6		838	Chert	Flake	Whole		0	0	27.3	29.2	15.1	**B**lack
1783	K5		808	Chert	Blade	Whole		0	0	16.7	7.2	7.0	Black
1784	J6		838	Chert	Flake	Whole	MRF	0	0	20.8	12.9	3.8	Black
1785	I5		808	Chert	Flake	Medial		0	0	6.2	6.6	1.5	Black
1786	J6		838	Chert	Blade	Whole	Microlith	0	0	10.3	3.6	1.8	Black
1787	M9		801	Chert	Flake	Whole		0	0	7.1	6.1	1.1	Black
1788	I5		808	Chert	Flake	Medial		0	0	8.5	6.2	2.0	Black
1789	M10		801	Chert	Flake	Distal		0	0	10.7	8.9	4.4	Black
1790	K5		808	Chert	Flake	Whole		0	0	19.7	16.2	8.1	Black
1791	M10		801	Chert	Flake	Whole		0	0	16.1	13.6	2.9	Black
1792	J6		838	Chert			Core	0	0	16.1	36.0	16.0	Black
1793	M10		801	Chert	Blade	Distal		0	0	13.1	5.6	1.5	Black
1794	M7		801	Chert	Flake		Microburin	0	0	9.2	7.0	2.4	Grey
1795	J6		838	Chert	Flake	Whole		0	0	17.4	16.8	6.3	Black
1796	M10		801	Chert	Flake	Distal		0	0	10.1	10.8	2.7	Black
1798	J5		808	Chert	Flake	Proximal		0	0	11.1	9.4	2.7	Black
1800	M10		801	Chert	Blade	Whole		0	0	32	14.9	10.2	Black
1801	M7		801	Chert	Flake	Proximal		0	0	9.5	13	2.0	Black
1802	M10		801	Chert	Flake	Proximal		0	0	10.3	6.9	1.9	Black
1803	M10		801	Chert	Flake	Distal	Microburin	0	0	8.4	5.9	1.5	Black
1804	K5		808	Chert	Flake	Whole		0	0	24.4	14.6	6.9	Light grey
1805	M10		801	Chert	Flake	Whole		0	0	10.5	6.3	2.7	Black
1806	J5		808	Chert	Flake	Distal		0	0	26.6	12.7	3.4	Grey
1807	J5		808	Chert	Blade	Proximal		0	0	17.2	8.2	2.6	Black
1808	D12		808	Chert	Flake	Whole		0	0	7.4	6.3	2.1	Black
1809	L5		808	Chert	Flake	Whole	MRF	0	1	14.2	8.5	3.0	Black
1810	M6		808	Chert	Flake	Whole		0	0	17.1	10.5	7.0	Black
1812	H12		808	Chert	Blade	Whole		0	0	7.3	2.1	2.1	Black
1813	M9		802	Chert	Blade	Whole		0	0	23.8	10.9	3.2	Black
1814	M9		802	Chert	Flake	Proximal		0	0	8.7	10.4	1.9	Black
1815	M9		802	Chert	Blade	Whole		0	0	9.0	3.6	1.9	Black
1816	M10		802	Chert	Flake	Whole		0	0	24.9	13.6	7.2	Black
1817	M9		802	Chert			Core fragment	0	0	13.5	17.6	12.8	Black
1818	J6		838	Chert	Blade	Distal	microburin	0	0	25.4	10.6	3.7	Black
1819	M10		802	Chert	Flake	Whole		0	0	8.7	6.3	1.3	Black
1820	M10		802	Chert	Flake	Whole		0	0	20.6	10.6	3.5	Black
1821	J6		838	Chert	Flake	Whole		0	0	13.1	11.9	3.8	Black

Find No.	Grid	Spit	Context	Material	Technology	Portion	Tool Type	Cortex	TA	Length	Width	Thickness	Colour
1822	M10		802	Chert	Flake	Whole		0	0	5.7	6.8	1.1	Black
1823	M9		802	Chert	Flake	Medial		0	0	8.2	18.3	2.1	Black
1824	Unstratified		808	Chert	Flake	Whole		0	0	17.5	10.5	1.9	Black
1825	M10		802	Chert	Flake	Whole		0	0	13.5	8.8	2.8	Black
1826	M10		802	Chert	Flake	Whole		0	0	13.1	9.5	4.9	Black
1827	M10		802	Chert	Flake	Whole		0	0	9.3	5.1	1.0	Black
1828	M10		802	Chert	Flake	Medial		0	0	6.8	8.7	1.2	Black
1829	M9		802	Chert	Blade	Whole		0	0	8.2	1.2	0.9	Grey
1830	M8		802	Chert	Blade	Proximal	Microlith	0	0	11.4	3.1	1.4	Dark grey
1832	M10		802	Chert	Flake	Distal		0	0	11.4	6.6	2.2	Black
1833	M10		802	Chert	Flake	Distal		0	0	15.8	9.8	3.0	Black
1834	M9		802	Chert	Flake	Whole		0	0	10.8	5.8	0.8	Black
1835	M10		802	Chert	Flake	Whole		0	0	8.0	7.7	1.8	Black
1836	M10		802	Chert	Flake	Medial		0	0	4.2	4.6	0.3	Black
1837	M10		802	Chert	Blade	Medial		0	0	8.7	3.0	1.0	Black
1838	M10		802	Chert	Flake	Distal		0	0	6.9	6.8	1.1	Black
1839	M10		802	Chert	Flake	Medial		0	0	4.1	3.4	0.5	Black
1840	M9		802	Chert	Flake	Proximal		0	0	7.3	10.5	2.4	Black
1841	M9		802	Flint	Flake	Whole		0	0	5.6	4.2	2.9	Beige
1842	M10		802	Chert	Flake	Whole		0	0	6.1	2.2	0.8	Black
1843	M10		802	Chert	Flake	Whole		0	0	9.6	6.2	1.9	Black
1844	M11		802	Chert	Flake	Distal		0	0	6.0	3.6	1.3	Black
1845	M11		802	Flint	Flake	Medial		0	0	3.8	5.2	1.4	Grey
1846	M11		802	Chert	Blade	Whole		0	0	11.4	4.8	1.2	Black
1847	M11		802	Chert	Flake	Whole	End scraper	0	0	28.3	19.9	6.6	Black
1848	M9		802	Chert	Flake	Distal		0	0	12.4	9.2	6.2	Black
1849	M11		802	Chert	Blade	Distal		0	0	8.4	4.0	0.7	Black
1850	M10		802	Chert	Flake	Proximal		0	0	6.7	8.0	1.2	Black
1851	M10		802	Chert	Blade	Whole		0	0	18.5	6.1	3.6	Black
1852	M9		802	Chert	Flake	Whole		0	0	7.6	3.9	1.1	Black
1853	M11		802	Chert	Flake	Whole		0	0	4.7	3.1	0.7	Black
1854	M10		802	Chert	Flake	Medial		0	0	5.8	4.5	0.9	Black
1855	M10		802	Chert	Flake	Whole		0	0	17.5	12.5	1.5	Black
1856	M9		802	Chert	Flake	Whole		0	0	13.9	9.8	3.2	Black
1857	M9		802	Chert	Flake	Whole		0	0	15.9	21.3	3.7	Black
1858	M10		802	Chert	Blade	Medial		0	0	14.4	7.0	1.7	Black
1859	M10		802	Chert	Flake	Distal		0	0	7.6	5.7	1.5	Black
1860	M9		802	Chert	Blade	Distal		0	0	17.0	8.5	2.4	Black
1861	M8		802	Chert	Blade	Medial		0	0	10.5	4.9	1.0	Black
1862	M9		802	Chert	Blade	Whole		0	0	15.7	6.5	3.0	Black
1863	M10		802	Chert	Blade	Medial	MRF	0	0	4.9	5.2	1.6	Black
1864	M11		802	Chert	Flake	Whole		0	0	4.5	4.1	0.9	Black
1865	M10		802	Chert	Flake	Distal		0	0	5.6	4.2	0.8	Black

Find No.	Grid	Spit	Context	Material	Technology	Portion	Tool Type	Cortex	TA	Length	Width	Thickness	Colour
1866	M10		802	Chert	Flake	Distal		0	0	7.9	6.2	1.9	Black
1867	M9		802	Flint	Flake	Medial		0	0	6.0	4.8	1.8	Grey
1868	M10		802	Chert	Flake	Distal		0	0	5.2	4.5	1.2	Black
1869	M10		802	Chert	Flake	Whole		0	0	3.7	6.0	0.7	Black
1870	M11		802	Chert	Flake	Whole		1	0	24.6	17.2	6.2	Black
1871	M11		802	Chert	Flake	Whole		0	0	29.8	22.7	4.2	Black
1872	M10		802	Chert	Flake	Distal		0	0	9.2	5.5	1.3	Black
1873	M10		802	Chert	Blade	Distal		0	0	7.2	3.1	0.8	Black
1874	M10		802	Chert	Flake	Whole		0	0	15.5	9.3	3.4	Black
1875	M10		802	Chert	Flake	Proximal		0	0	10.2	11.3	1.6	Black
1876	M10		802	Chert	Flake	Whole		0	0	14.5	9.4	2.3	Black
1877	M9		802	Chert	Flake	Whole		0	0	9.2	9.2	3.1	Black
1878	M10		802	Chert	Flake	Distal		0	0	5.2	3.2	0.8	Black
1880	M11		802	Chert	Flake	Distal		0	0	3.0	6.2	0.5	Black
1881	M11		802	Chert	Flake	Whole		0	0	2.3	6.0	2.3	Black
1882	M10		802	Chert	Flake	Proximal		0	0	6.1	4.6	1.0	Black
1883	M10		802	Chert	Blade	Distal		0	0	10.7	5.2	1.9	Black
1884	M11		802	Chert	Flake	Proximal		1	0	27.8	22.8	7.2	Dark grey
1885	M10		802	Chert	Blade	Whole		0	0	24.3	8.2	2.5	Black
1886	M9		802	Chert	Flake	Whole	End scraper/mrf	0	0	14.8	14.4	3.9	Black
1887	M10		802	Chert	Flake	Medial		0	0	6.8	9.0	1.4	Black
1888	M8		802	Flint	Blade	Whole		2	0	27.1	7.6	7.6	Brown
1889	M10		802	Flint	Flake	Distal		0	1	9.6	8.1	1.6	Grey
1890	M10		802	Chert	Flake	Whole		0	0	6.5	3.1	0.8	Black
1891	M10		802	Chert	Flake	Whole		0	0	2.6	4.8	1.8	Black
1892	M10		802	Chert	Flake	Distal		0	0	4.0	6.0	1.2	Black
1893	M10		802	Chert	Flake	Whole		0	0	4.3	3.7	0.7	Black
1894	M10		802	Chert	Flake	Distal		0	0	2.0	4.1	1.0	Black
1895	M10		802	Chert	LOST			\	\	\	\	\	Black
1896	M10		802	Chert	Blade	Distal		0	0	6.8	3.2	0.9	Black
1897	M10		802	Chert	Blade	Whole		0	0	7.0	3.4	1.5	Black
1898	M11		802	Chert	Flake	Whole		0	0	15.1	12.6	6.0	Black
1899	M11		802	Chert	Flake	Whole		0	0	6.4	7.4	0.8	Black
1900	M9		802	Chert	Flake	Whole		1	0	31.9	33.4	15.1	Black
1901	M9		802	Chert	Flake	Whole		0	0	13.3	10.0	2.4	Black
1902	M10		802	Chert	Flake	Proximal		0	0	7.2	4.5	1.7	Black
1903	M8		802	Chert	Flake	Medial		0	0	10.9	12.6	2.3	Black
1904	M10		802	Chert	Blade	Whole		0	0	9.3	3.7	0.9	Black
1905	M11		802	Chert	Blade	Distal		0	0	8.2	4.0	1.5	Black
1906	M8		802	Chert	Flake	Distal		0	0	4.2	6.5	1.1	Black
1907	M10		802	Chert	Flake	Whole		0	0	3.5	4.5	0.9	Black
1908	M10		802	chert	Flake	Distal		0	0	12.2	13.5	2.3	Black

Find No.	Grid	Spit	Context	Material	Technology	Portion	Tool Type	Cortex	TA	Length	Width	Thickness	Colour
1909	M10		802	Chert	Flake	Proximal		0	0	8.9	9.5	3.4	Black
1910	M9		802	Chert	Flake	Medial		0	0	12.0	7.4	1.7	Black
1911	M9		802	Chert	**B**lade	Whole	Microlith	0	0	9.4	3.6	1.6	Black
1912	M10		802	Chert	Flake	Distal		0	0	7.2	4.0	1.7	Black
1913	M10		802	Chert	Flake	Distal		0	0	6.9	5.8	1.6	Black
1914	M10		802	Chert	Flake	Whole		0	0	4.7	4.3	1.5	Black
1915	M10		802	Chert	Flake	Proximal		0	0	10.1	7.6	2.0	Black
1916	M8		802	Chert	Flake	Medial		0	0	4.7	4.6	1.0	Black
1917	M9		802	Chert	Flake	Proximal		0	0	6.2	5.9	1.7	Black
1918	M8		802	Flint	Blade	Medial	Awl	0	0	25.9	12.7	1.7	Beige
1919	M11		802	Chert	Flake	Distal		0	0	6.0	5.1	1.0	Black
1920	M11		802	Chert	Blade	Distal		0	0	14.6	6.5	1.2	Black
1921	M10		808	Chert	Flake	Whole		0	0	12.6	10.9	4.2	Black
1922	M7		808	Chert	Flake	Distal		0	0	5.8	2.5	0.8	Black
1923	M10		808	Chert	Flake	Proximal		0	0	8.6	8.8	2.0	Black
1924	M7		808	Chert	Flake	Whole		0	0	7.8	5.6	1.5	Black
1925	M11		808	Chert	Flake	Whole		0	0	6.0	4.2	1.9	Black
1926	M10		808	Chert	Flake	Proximal		0	0	12.6	10.6	2.9	Black
1927	M10		808	Chert	Flake	Distal		0	0	13.2	7.1	2.8	Black
1928	M10		808	Chert	Blade	Whole		0	0	15.6	5.4	1.6	Black
1929	M10		808	Chert	Flake	distal		0	0	15.3	7.9	2.7	Black
1930	M10		808	Chert	Flake	Whole		0	0	16.7	10.9	5.4	Black
1931	M7		808	Chert	Flake	Whole		0	0	14.9	13.5	3.2	Black
1932	M10		808	Chert	Flake	Proximal		0	0	4.3	6.3	1.8	Black
1933	M10		808	Chert	Flake	Whole		0	0	22.6	13	4.7	Black
1934	M10		808	Chert	Flake	Medial		0	0	8.9	6.7	2.3	Black
1935	M11		802	Chert	Flake	Whole		0	0	18.8	13.5	4.2	Black
1936	M8		808	Chert	Flake	Medial	Platform refresher flake	0	0	27.6	12.9	9.6	Grey banded
1937	M10		808	Chert	Flake	Whole		0	0	13.0	10.5	3.1	Black
1938	M10		808	Chert	Flake	Whole		0	0	14.5	8.8	1.5	Black
1939	M10		808	Chert	Flake	Medial		0	0	5.6	5.4	1.0	Black
1940	M9		808	Chert	Blade	Whole		0	0	21.3	6.2	2.2	Black
1941	M11		808	Chert	Flake	Whole		0	0	8.3	4.8	1.8	Black
1942	M11		808	Chert	Flake	Proximal		0	0	10.5	8.7	2.4	Black
1943	M9		808	Chert	Blade	Whole		0	0	16.8	5.6	3.5	Black
1944	M10		808	Chert	Flake	Whole		0	0	11.4	12.0	3.3	Black
1945	M10		808	Chert	Flake	Whole		0	0	12.3	8.0	2.5	Black
1946	M10		808	Chert	Flake	Distal		0	0	8.5	6.0	1.7	Black
1947	M10		808	Chert	Flake	Medial		0	0	4.3	4.7	0.6	Black
1948	M7		808	Chert	Flake	Distal		0	0	3.6	6.0	2.1	Black
1949	M9		808	Chert	Blade	Whole		0	0	20.4	7.5	2.5	Black
1950	M10		808	Chert	Flake	Whole		0	0	5.3	4.9	0.5	Black

Find No.	Grid	Spit	Context	Material	Technology	Portion	Tool Type	Cortex	TA	Length	Width	Thickness	Colour
1951	M7		808	Chert	Flake	Proximal		0	0	7.5	6.4	1.6	Black
1952	M7		808	Chert	Flake	Distal		0	0	4.7	4.3	0.8	Black
1953	M7		808	Chert	Flake	Whole		2	0	12.2	17.1	7.8	Black
1954	M10		808	Chert	Flake	Whole		0	0	19.8	10.6	3.4	Black
1955	M10		808	Chert			Core fragment	0	0	18.0	10.3	7.2	Black
1956	M10		808	Chert	Flake	Proximal		0	0	3.8	7.0	1.0	Black
1957	M8		808	Flint	Flake	Medial		0	?	3.7	4.2	0.9	White patination
1958	M7		808	Chert	Flake	Medial		0	0	7.4	7.0	1.8	Black
1959	M10		808	Chert	Flake	Proximal		0	0	7.4	5.2	1.1	Black
1960	M10		808	Chert	Flake	Medial		0	0	5.1	6.8	1.2	Black
1961	M10		808	Chert	Flake	Medial		0	0	5.5	4.5	1.0	Black
1962	M10		808	Chert	Flake	Medial		0	0	9.4	8.5	4.0	Black
1963	M10		808	Chert	Flake	Whole		0	0	18.0	20.2	3.5	Black
1964	M8		808	Chert			Pot lid	0	1	12.5	8.2	2.7	Black
1965	M9		808	Chert	Blade	Medial	Microlith	0	0	9.4	4.4	1.7	Black
1966	M10		808	Chert	Blade	Proximal	Backed piece	0	0	14.4	6.0	2.6	Black
1967	M10		808	Chert	Flake	Whole		0	0	11.9	6.3	1.7	Black
1968	M10		808	Chert	Flake	Distal	Scraper fragment	0	0	11.6	18.4	6.6	Black
1969	M9		808	Chert	Flake	Whole		0	0	7.6	6.0	1.2	Black
1970	M10		808	Chert	Blade	Proximal		0	0	8.8	2.7	0.7	Black
1971	M11		808	Chert	Flake	Proximal		0	0	4.6	5.1	1.3	Black
1972	M11		808	Chert	Flake	Distal		0	0	9.0	5.2	0.9	Black
1973	M11		808	Chert	Flake	Proximal		0	0	5.7	4.9	1.1	Black
1974	M10		808	Chert	Flake	Whole		0	0	8.4	8.6	2.3	Black
1975	M10		808	Chert	Flake	Whole		0	0	9.0	12.6	1.6	Black
1976	M10		808	Chert	Flake	Medial		0	0	8.8	8.1	1.9	Black
1977	M10		808	Chert	Flake	Whole	Use wear	0	0	12.7	7.1	1.8	Black
1978	M10		808	Chert	Flake	Distal		0	0	13.6	9.6	1.9	Black
1979	M10		808	Chert	Blade	Whole		0	1	17.4	8.0	3.3	Black
1980	M8		808	Chert	Flake	Whole		0	0	6.1	3.7	2.1	Black
1981	M8		808	Chert	Flake	Medial		0	0	9.4	6.5	1.3	Black
1982	M10		808	Chert	Flake	Proximal		0	0	5.4	6.2	1.3	Black
1983	M9		808	Chert	Flake	Whole		0	0	20.4	14.9	3.5	Black
1984	M10		808	Chert	Flake	Whole		0	0	10.6	7.0	3.6	Black
1986	M8		808	Chert	Blade	Medial	Microlith	0	0	8.3	3.4	1.7	Black
1987	M9		808	Flint	Flake	Proximal		0	0	8.2	10.3	4.0	Orangey brown
1988	M10		808	Chert	Flake	Proximal		0	0	12.3	7.5	2.5	Black
1989	M10		808	Chert	Flake	Proximal		0	0	8.6	7.4	1.5	Black
1990	M10		808	Chert	Flake	Distal		0	0	7.2	7.4	1.0	Black
1991	M10		808	Chert	Flake	Medial		0	0	7.0	6.7	1.5	Black
1992	M10		808	Chert	Flake	Whole		0	0	6.8	5.5	1.1	Black

Find No.	Grid	Spit	Context	Material	Technology	Portion	Tool Type	Cortex	TA	Length	Width	Thickness	Colour
1993	M10		808	Chert	Flake	Distal		0	0	3.2	6.7	1.7	Black
1994	M10		808	Chert	Flake	Distal		0	0	5.0	5.1	0.9	Black
1995	M10		808	Chert	Flake	Whole		0	0	4.3	5.6	0.8	Black
1996	M10		808	Chert	Flake	Whole		0	0	4.6	3.6	0.3	Black
1997	M10		808	Chert	Flake	Medial		0	0	6.9	4.2	0.6	Black
1998	M10		808	Chert	Flake	Distal		0	0	5.5	3.7	0.8	Black
1999	M10		808	Chert	Flake	Distal		0	0	4.5	4.6	1.7	Black
2000	M11		808	Chert	Blade	Proximal		0	0	7.2	1.6	0.5	Black
2001	M9		808	Chert	Blade	Medial	Microlith	0	0	8.9	3.4	1.3	Grey
2002	M10		808	Chert	Blade	Whole		0	0	23.0	8.4	2.4	Black
2003	M10		808	Chert	Blade	Distal		0	0	8.1	3.1	0.7	Black
2004	M10		808	Chert	Flake	Proximal		0	0	8.6	6.4	1.6	Black
2005	M10		808	Chert	Flake	Medial		0	0	3.8	6.6	1.3	Black
2009	M8		808	Chert	Flake	Whole		0	0	11.1	15.1	4.4	Black
2010	M8		808	Chert	blade	Whole	Microlith	0	0	17.6	3.9	2.0	Black
2011	M11		808	Chert	Flake	Medial		0	0	4.6	3.9	1.0	Black
2012	M10		808	Chert	Blade	Whole		0	0	11.9	3.7	2.0	Black
2013	M10		808	Chert	Flake	Proximal		0	0	8.5	7.6	2.5	Black
2014	M10		808	Chert	Flake	Distal		0	0	6.6	5.9	2.0	Black
2015	M10		808	Chert	Flake	Proximal		0	0	5.8	4.8	1.8	Black
2016	M10		808	Chert	Flake	Proximal		0	0	5.1	4.2	1.3	Black
2017	M10		808	Chert	Flake	Medial		0	0	2.7	5.1	0.9	Black
2018	M10		808	Chert	Flake	Whole		0	0	3.8	4.0	0.9	Black
2019	M10		808	Chert	Flake	Proximal		0	0	5.6	3.7	1.4	Black
2020	M10		808	Chert	Flake	Medial		0	0	6.1	5.7	1.1	Black
2021	M10		808	Chert	Flake	Medial		0	0	2.8	4.7	0.5	Black
2022	M10		808	Chert	Flake	Distal		0	0	3.4	3.3	0.6	Black
2023	M10		808	Chert	Flake	Whole		0	0	4.8	2.6	0.7	Black
2024	M7		808	Flint	Blade	Whole		0	0	24.6	6.6	3.2	Beige
2025	M8		808	Chert	Flake	Medial		0	0	3.2	8.9	1.5	Black
2026	M11		808	Chert	Flake	Distal		0	0	6.8	7.7	0.8	Black
2027	M8		808	Chert	Flake	Distal		0	0	17.8	11.0	2.3	Black
2028	M7		808	Chert	Flake	Whole		0	0	7.3	3.0	1.4	Black
2029	M7		808	Flint	Flake	Distal	MRF	0	0	14.3	11.3	3.1	Brown
2030	M7		808	Chert	blade	Medial	Microlith	0	0	8.9	2.7	1.9	Black
2031	M7		808	Chert	Flake	Medial		0	0	6.0	12.1	1.8	Black
2032	M7		808	Chert	Blade	Medial	Microlith	0	0	9.1	3.1	2.4	Black
2033	M7		808	Chert	Flake	Proximal		0	0	4.2	5.9	1.2	Black
2034	M7		808	Chert	Flake	Distal		0	0	3.8	6.0	2.3	Black
2035	M7		808	Chert	Flake	Distal		0	0	4.6	4.6	1.0	Black
2036	M7		808	Chert	Flake	Distal		0	0	6.4	8.3	1.2	Black
2037	M7		808	Chert	Flake	Medial		0	0	4.4	5.4	1.9	Black
2038	M7		808	Chert	Flake	Distal		0	0	8.6	6.2	1.7	Black

Find No.	Grid	Spit	Context	Material	Technology	Portion	Tool Type	Cortex	TA	Length	Width	Thickness	Colour
2039	M8		808	Flint	Flake	Whole		0	0	29.2	18.2	9.7	Grey
2040	M7		808	Chert	Flake	Medial		0	0	4.0	6.8	2.1	Black
2042	M7		808	Flint	Blade	Distal		0	0	13.9	6.6	2.2	Light grey
2043	M7		808	Chert	Flake	Distal		0	0	7.4	4.8	2.5	Black
2044	M7		808	Flint	Blade	Distal		0	0	15.1	4.2	2.1	Light grey
2046	M8		808	Flint	Flake	Distal		0	0	7.7	6.5	2.6	Beige
2047	M8		808	Flint	Blade	Medial	Microlith	0	0	11.6	3.5	1.9	Beige
2048	M7		808	Flint	Flake	Whole		0	0	16.0	10.8	3.9	Beige
1355a	K12		802	Chert	Flake	Medial		0	0	8.8	7.9	1.8	Black
1355b	L9		802	Chert	Flake	Distal		0	0	13.6	8.3	3.0	Black

Appendix 3: List of environmental samples

Trench 6

Sample Number	Context	Reason Taken
1651	605	Charred remains/soil micro
1648	607	Charred remains/bones/pollen/soil micro
1667	609	Charred remains/soil micro SF 1038
1668	609	Soil micro also for stone analysis
1653	610	Charred remains/soil micro SF No 865
1654	610	Charred remains/soil micro
1656	610	Charred remains/soil micro/C14 SF No 877
1658	610	Charred remains/soil micro SF No 890
1652	611	Charred remains/soil micro SF No 861
1657	615	
1659	615	Charred remains/soil micro SF No 898 burnt material
1661	615	C14 SF NO 927
1662	617	Charred remains/soil micro/C14
1669	617	C14 - SM No 1062 Charcoal
1671	617	Charcoal Charred remains/ C14 - tree species id SM No 1105
1672	617	Charred remains/C14 tree species id. SF No 1107
1673	617	Charcoal - tree species id SF No 1112
1674	617	Charcoal and wood C14 SF No 1117
1678	618	Soil Micro

Trench 8

Sample Number	Context	Reason Taken
1804	802	Grid sampling number A3-3
1805	802	Grid sampling number D3-3
1806	802	Grid sampling number B7-3
1807	802	Grid sampling number B4-3
1808	802	Grid sampling number E4-3
1809	802	Grid sampling number C5-3
1811	802	Grid sampling number A6-3
1812	802	Grid sampling number D6-3
1813	802	Grid sampling number E7-3
1814	802	Grid sampling number C8-3
1815	802	Grid sampling number F8-3
1816	802	Grid sampling number A9-3
1817	802	Grid sampling number D9-3
1818	802	Grid sampling number B10-3
1819	802	Grid sampling number E10-3
1821	802	Grid sampling number F11-3
1829	802	Grid sampling number G3-3

Sample Number	Context	Reason Taken
1830	802	Grid sampling number I11-3
1831	802	Grid sampling number G12-3
1832	802	Grid sampling number G9-3
1833	802	Grid sampling number I5-3
1840	802	Grid sampling number C10-4
1841	802	Grid sampling number I10-4
1842	802	Grid sampling number P6-1
1843	802	Grid sampling number P4-1
1844	802	Grid sampling number P5-1
1846	802	Grid sampling number P5-2
1847	802	Grid sampling number P4-2
1852	802	Grid sampling number P5-3
1858	802	Grid sampling number H10-3
1859	802	Grid sampling number I4-4
1860	802	Grid sampling number C4-4
1861	802	Grid sampling number F7-4
1862	802	Grid sampling number F10-4
1863	802	Grid sampling number C7-4
1864	802	Grid sampling number H4-3
1865	802	Grid sampling number P6-2
1866	802	Grid sampling number F4-4
1855	811	Possible fire pit, total sampling for carbon date

Appendix 4: List of Plans and Sections

Trench 6

Plan or Section	Drawing No.	Scale	Facing	Drawn by	Size
Plan	1563	1:20		D Stephenson	A3
Plan	1564	1:20		A Batty, D Stephenson	A3
Plan	1565a	1:20		A Batty	A3
Plan	1565b	1:20		A M Batty	A3
Section	1566	1:10	S	A Batty, N Melton	

Trench 8

2009

Plan or Section	Drawing No.	Scale	Facing	Drawn By	Size	Date
Section	1500	1:10	S	D. Johnson	A4	9/5/2009
Plan	1501	1:20		D. Johnson / C. Judge	A4	12/5/2009
Plan	1502	1:20		K.M.B.	A3	18/5/2009
Plan	1503	1:20		J.M.B.A.	A3	18/5/2009
Plan	1504	1:20		T.D.N.	A3	18/5/2009
Plan	1505	1:20		H.M.S.	A3	18/5/2009
Plan	1506	1:20		J.M.B.A.	A3	18/5/2009
Plan	1507	1:20		T.D.N.	A3	18/5/2009
Plan	1508	1:20		K.M.B.	A3	18/5/2009
Plan	1509	1:20		H.M.S./ J.C./ E.J.	A3	18/5/2009
Plan	1510	1:20		A.C. Armstrong	A3	19/5/2009
Plan	1511	1:20		C. Bonsall	A3	19/5/2009
Plan	1512	1:20		K.M.B / T.D.N.	A4 (x2)	22/5/2009
Plan	1513	1:20		A.C. Armstrong	A4 (x2)	22/5/2009
Plan	1514	1:20		J.M.B.A.	A4 (x2)	22/5/2009
Plan	1515	1:20		D. Johnson/ C.A.Howard	A3	24/5/2009
Plan	1516	1:20		N. Melton/ J.A. /D. Johnson	A4	27/5/2009
Plan	1517	1:20		D. Johnson	A3	28/5/2009
Plan	1518	1:20		C. Bonsall.	A3	28/5/2009
Plan	1519	1:20		J.M.B.A.	A3	28/5/2009
Plan	1520	1:20		T.D.N.	A3	28/5/2009
Plan	1521	1:20		K.M.B.	A3	28/5/2009
Plan	1522	1:20		N. Melton	A3	28/5/2009
Plan	1523	1:20		C.A. Howard/ T.D.N.	A4	28/5/2009
Section	1524	1:10		D. Johnson	A4	29/5/2009
Section	1525	1:10		T.D.N.	A4	29/5/2009

2010

Plan or Section	Drawing No.	Scale	Facing	Drawn By	Size	Date
Plan	1526	1:20		D. Johnson		25/5/2010
Plan	1527	1:20		D. Johnson		25/5/2010
Plan	1528	1:20		D. Johnson		28/5/2010
Plan	1529	1:20		D. Johnson		28/5/2010
Section	1530	1:10	N	D. Johnson		30/5/2010
Plan	1531	1:20		C. Bonsall	A3	3/6/2010
Plan	1532	1:20		C. Judge	A3	3/6/2010
Plan	1533	1:20		J.Asher	A3	3/6/2010
Plan	1534	1:20		A.C. Armstrong	A3	3/6/2010
Plan	1535	1:20		J. Horrocks	A3	3/6/2010
Plan	1536	1:20		N. Melton / J.P.	A3	3/6/2010
Plan	1537	1:20		A.C. Armstrong	A3	3/6/2010
ection	1538	1:10	N	D. Johnson		3/6/2010

Appendix 5: List of photographs

Trench	Name of file	Date	Description	Viewing direction
6	Plate 17	/	Section through the fire pit	\
6	Plate 18	/	Outer bowl of the fire pit	\
2009 – Trench 8 (Chris Bonsall except 67,68,69: Brian Clark)				
8	KH09	07/05/2009	Overview of trench 8	South-East
8	KH09 (1)	07/05/2009	Overview of Trench 8	South-West
8	KH09 (2)	12/05/2009	Overview of Trench 8	North-West
8	KH09 (3)	12/05/2009	Overview of Trench 8	North-East
8	KH09 (4)	12/05/2009	Overview of Trench 8	South-East
8	KH09 (5)	12/05/2009	Overview of Trench 8	South-East
8	KH09 (6)	12/05/2009	Overview of trench 8	South-West
8	KH09 (7)	14/05/2009	A Section of the trench	Unknown
8	KH09 (8)	14/05/2009	A Section of the trench	Unknown
8	KH09 (9)	14/05/2009	A Section of the trench	Unknown
8	KH09 (10)	14/05/2009	A Section of the trench	Unknown
8	KH09 (11)	21/05/2009	A Section of the trench	South-East
8	KH09 (12)	21/05/2009	A Section of the trench	North-East
8	KH09 (13)	21/05/2009	A Section of the trench	North-West
8	KH09 (14)	21/05/2009	A Section of the trench	Unknown
8	KH09 (15)	22/05/2009	A Section of the trench	South-East
8	KH09 (16)	22/05/2009	A Section of the trench	South-East
8	KH09 (17)	23/05/2009	A Section of the trench	South-East
8	KH09 (18)	24/05/2009	Close up on Stone feature	North-East
8	KH09 (19)	24/05/2009	Close up on Stone feature	South-East
8	KH09 (20)	24/05/2009	Close up on Stone feature	South-East
8	KH09 (21)	24/05/2009	Close Up on possible Post hole	South-East
8	KH09 (22)	24/05/2009	Close Up on possible Post hole	South-East
8	KH09 (23)	24/05/2009	Close up on stone feature	South-East
8	KH09 (24)	24/05/2009	Close up on stone feature	South-East
8	KH09 (25)	25/05/2009	Overview of trench 8	South-East
8	KH09 (26)	25/05/2009	Overview of trench 8	South-East
8	KH09 (27)	25/05/2009	Overview of trench 8	South-East
8	KH09 (29)	25/05/2009	Overview of trench 8	South-West
8	KH09 (30)	25/05/2009	Overview of trench 8	North-West
8	KH09 (31)	25/05/2009	Overview of trench 8	North-West
8	KH09 (32)	25/05/2009	Overview of trench 8	North-East
8	KH09 (33)	25/05/2009	Overview of trench 8	North-East
8	KH09 (34)	25/05/2009	Overview of trench 8	North-East
8	KH09 (35)	25/05/2009	Overview of trench 8	South-East
8	KH09 (36)	25/05/2009	Overview of trench 8	South-East
8	KH09 (37)	25/05/2009	Overview of trench 8	South-East
8	KH09 (38)	25/05/2009	A Section of trench 8	South-East
8	KH09 (39)	25/05/2009	A Section of trench 8	South-East
8	KH09 (40)	26/05/2009	Close Up	South-West

Trench	Name of file	Date	Description	Viewing direction
8	KH09 (41)	26/05/2009	Close Up	North-West
8	KH09 (42)	26/05/2009	Close up of A Stone Feature	South-East
8	KH09 (43)	26/05/2009	Close up of A Stone Feature	South-East
8	KH09 (44)	28/05/2009	Close up of A Stone Feature	South-East
8	KH09 (45)	28/05/2009	Close up of A Stone Feature	South-West
8	KH09 (46)	28/05/2009	Close up of A Stone Feature	South-East
8	KH09 (47)	28/05/2009	Close up of A Stone Feature	North-West
8	KH09 (48)	28/05/2009	Close up of A Stone Feature	South-West
8	KH09 (49)	28/05/2009	Close up Of possible burnt area	South
8	KH09 (50)	28/05/2009	Close up Of possible burnt area	North-West
8	KH09 (51)	28/05/2009	Close up Of possible burnt area	North-West
8	KH09 (52)	28/05/2009	Close up Of possible burnt area	North-West
8	KH09 (53)	28/05/2009	Close up Of possible burnt area	North-West
8	KH09 (54)	28/05/2009	Close up on Feature	South-East
8	KH09 (55)	28/05/2009	Close up on Feature	South-East
8	KH09 (56)	28/05/2009	Close Up on Burnt Feature	North
8	KH09 (57)	28/05/2009	Close Up on Burnt Feature	North
8	KH09 (58)	28/05/2009	Close Up on Burnt Feature	North
8	KH09 (60)	28/05/2009	Close Up on Burnt Feature	South-East
8	KH09 (61)	28/05/2009	Close up on Feature	South-East
8	KH09 (62)	28/05/2009	Close up on Feature	South-East
8	KH09 (63)	28/05/2009	Close Up on Burnt Feature	South
8	KH09 (64)	28/05/2009	Close Up on Burnt Feature	North
8	KH09 (65)	28/05/2009	Close Up on Burnt Feature	North
8	KH09 (66)	28/05/2009	Close Up on Burnt Feature	North
8	KH09 (67)	09/05/2009	View of the context section	Unknown
8	KH09 (68)	09/05/2009	View of the context section	Unknown
8	KH09 (69)	09/05/2009	View of the context section	Unknown
2009 Aerial Photographs (the flying camera)				
Site	IMG_0011.jpg	24/05/2009	View looking down Kingsdale	Aerial
Site	IMG_0014.jpg	24/05/2009	Confluence of Cluntering Gill & Long Gill	Aerial
Site	IMG_0017.jpg	24/05/2009	View of the excavation site	Aerial
Site	IMG_0018.jpg	24/05/2009	View of the excavation site	Aerial
Site	IMG_0022.jpg	24/05/2009	View of the excavation site	Aerial
Site	IMG_0023.jpg	24/05/2009	View of the excavation site	Aerial
Site	IMG_0052.jpg	24/05/2009	View of the excavation site	Aerial
Site	IMG_0065.jpg	24/05/2009	View of Trench 8	Aerial
Site	IMG_0066.jpg	24/05/2009	View of Trench 8	Aerial
2010 – Trench 8 (Chris Bonsall)				
8	KH10	24/05/2010	J9 Dark humic lens in colluviums – possible mole activity. Cut 823 Fill 812	N/W
8	KH10 (1)	24/05/2010	J9 Dark humic lens in colluviums – possible mole activity. Cut 823 Fill 812	N
8	KH10 (2)	24/05/2010	L9. Group of 3 humic intrusions – possibly mole activity. 802.	N

Trench	Name of file	Date	Description	Viewing direction
8	KH10 (3)	24/05/2010	L9. Group of 3 humic intrusions – possibly mole activity. 802.	NW
8	KH10 (4)	24/05/2010	J9. Subcircular intrusion – humic material removed. Cut 814 Fill 813.	N
8	KH10 (5)	24/05/2010	J9. Subcircular intrusion – humic material removed. Cut 814 Fill 813.	S
8	KH10 (6)	24/05/2010	J9. Dark humic lens in colluviums – half section. Cut 823 Fill 812.	N
8	Kh10 (7)	24/05/2010	M11. Subcircular intrusion – humic material removed. Cut 819 Fill 820.	N
8	KH10 (8)	24/05/2010	M10. Subcircular intrusion – humic material removed. Cut 821 Fill 822.	N
8	KH10 (9)	24/05/2010	L12. Subcircular intrusion – humic material removed. Cut 815.	N
8	KH10 (10)	24/05/2010	L12. Subcircular intrusion – humic material removed. Cut 815.	S
8	KH10 (11)	24/05/2010	K12. Subcircular intrusion – humic material removed. Cut 817.	NE
8	KH10 (12)	24/05/2010	J9. Dark lens – humic materiall removed. Cut 823.	N
8	KH10 (13)	24/05/2010	M10. Subcircular intrusion - humic material removed. Cut 821.	NE
8	KH10 (14)	24/05/2010	M10. Subcircular intrusion with humic material. Cut 828 Fill 829	N
8	KH10 (15)	24/05/2010	M11. Subcircular intrusion – humic material removed. Cut 819.	E
8	KH10 (16)	24/05/2010	L12. Stone arrangement in colluvium. 802.	E
8	KH10 (17)	24/05/2010	L12. Stone arrangement in colluvium. 802.	NE
8	KH10 (18)	28/05/2010	C5 Colour change adjacent to pit anomaly 809. 808.	N
8	KH10 (19)	28/05/2010	C5. Colour change adjacent to pit anomaly 809. 808.	N
8	KH10 (20)	28/05/2010	A3. Stone arrangement to pit anomaly 809. 808.	N
8	KH10 (21)	28/05/2010	A3. Stone arrangement to pit anomaly 809. 808.	NE
8	KH10 (22)	02/06/2010	Whole Trench. Final clean 803 840 841.	NW
8	KH10 (23)	02/06/2010	Whole Trench. Final clean 803 840 841.	NE
8	KH10 (24)	02/06/2010	Whole Trench. Final clean 803 840 841.	SW
8	KH10 (25)	02/06/2010	Whole Trench. Final clean 803 840 841.	SE
8	KH10 (26)	03/06/2010	J6 Scoop Cut 838	S
8	KH10 (27)	03/06/2010	J6 Scoop Cut 838	W
8	KH10 (28)	04/06/2010	M7-M12 Final clean. 840 841.	SE
8	KH10 (29)	04/06/2010	M7-M12 Final clean. 840 841	SE

Thumbnails for photographs listed above

Trench 6

Plate 17

Plate 18

Trench 8 – 2009

KH09 (1).jpg

KH09 (2).jpg

KH09 (3).jpg

KH09 (4).jpg

KH09 (5).jpg

KH09 (6).jpg

KH09 (7).jpg

KH09 (8).jpg

KH09 (9).jpg

KH09 (10).jpg

KH09 (11).jpg

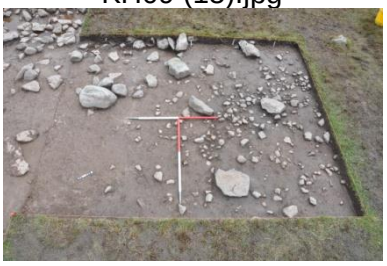
KH09 (12).jpg

KH09 (13).jpg

KH09 (14).jpg

KH09 (15).jpg

KH09 (16).jpg



KH09 (17).jpg

KH09 (18).jpg

KH09 (19).jpg

KH09 (20).jpg

KH09 (21).jpg

KH09 (22).jpg

KH09 (23).jpg

KH09 (24).jpg

KH09 (25).jpg

KH09 (26).jpg

KH09 (27).jpg

KH09 (29).jpg

KH09 (30).jpg

KH09 (31).jpg

KH09 (32).jpg

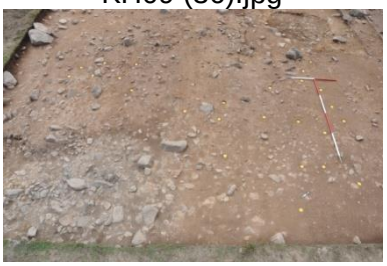
KH09 (33).jpg

KH09 (34).jpg

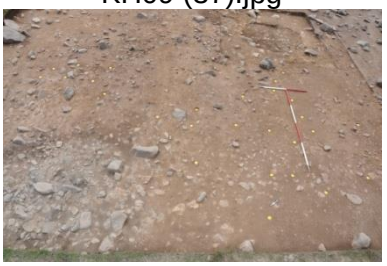
KH09 (35).jpg

KH09 (36).jpg

KH09 (37).jpg



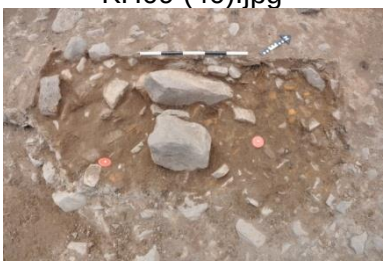
KH09 (38).jpg



KH09 (39).jpg

KH09 (40).jpg

KH09 (41).jpg



KH09 (42).jpg

KH09 (43).jpg

KH09 (44).jpg

KH09 (45).jpg

KH09 (46).jpg

KH09 (47).jpg

KH09 (48).jpg

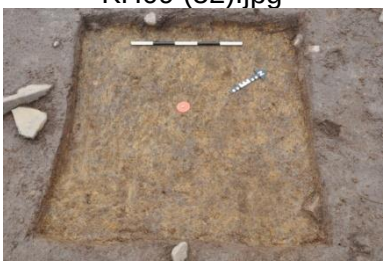
KH09 (49).jpg

KH09 (50).jpg

KH09 (51).jpg

KH09 (52).jpg

KH09 (53).jpg



KH09 (54).jpg

KH09 (55).jpg

KH09 (56).jpg

KH09 (57).jpg

KH09 (58).jpg

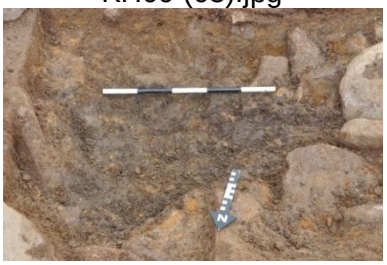
KH09 (60).jpg

KH09 (61).jpg

KH09 (62).jpg

KH09 (63).jpg

KH09 (64).jpg



KH09 (65).jpg

KH09 (66).jpg

KH09 (67).jpg

KH09 (68).jpg

KH09 (69).jpg

KH09.jpg

Aerial – 2009

IMG 0011

IMG0014

IMG 0017

IMG 0018

IMG 0022

IMG 023

IMG 052

IMG065

IMG 066

Trench 8 2010: Chris Bonsall

KH10

KH10 (1)

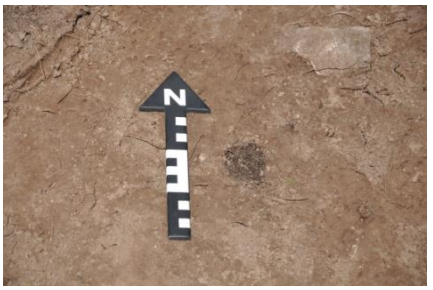
KH10 (2)

KH10 (3)

KH10 (4)

KH10 (5)

KH10 (6)

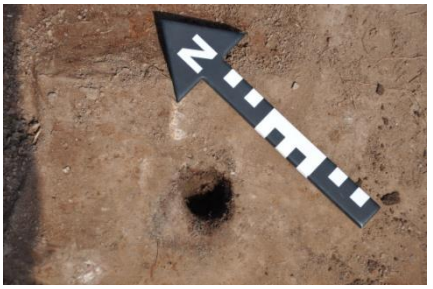


KH10 (7)

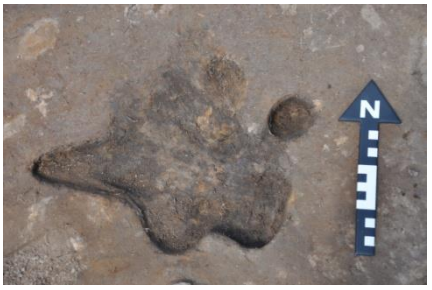
KH10 (8)

KH10 (9)

KH10 (10)



KH10 (11)



KH10 (12)

KH10 (13)

KH10 (14)

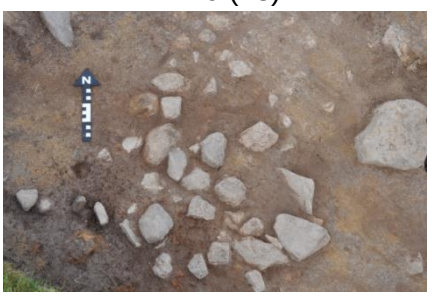
KH10 (15)

KH10 (16)

KH10 (17)

KH10 (18)

KH10 (19)



KH10 (20)

KH10 (21)

KH10 (22)

KH10 (23)

KH10 (24)

KH10 (25)

KH10 (26)

KH10 (27)

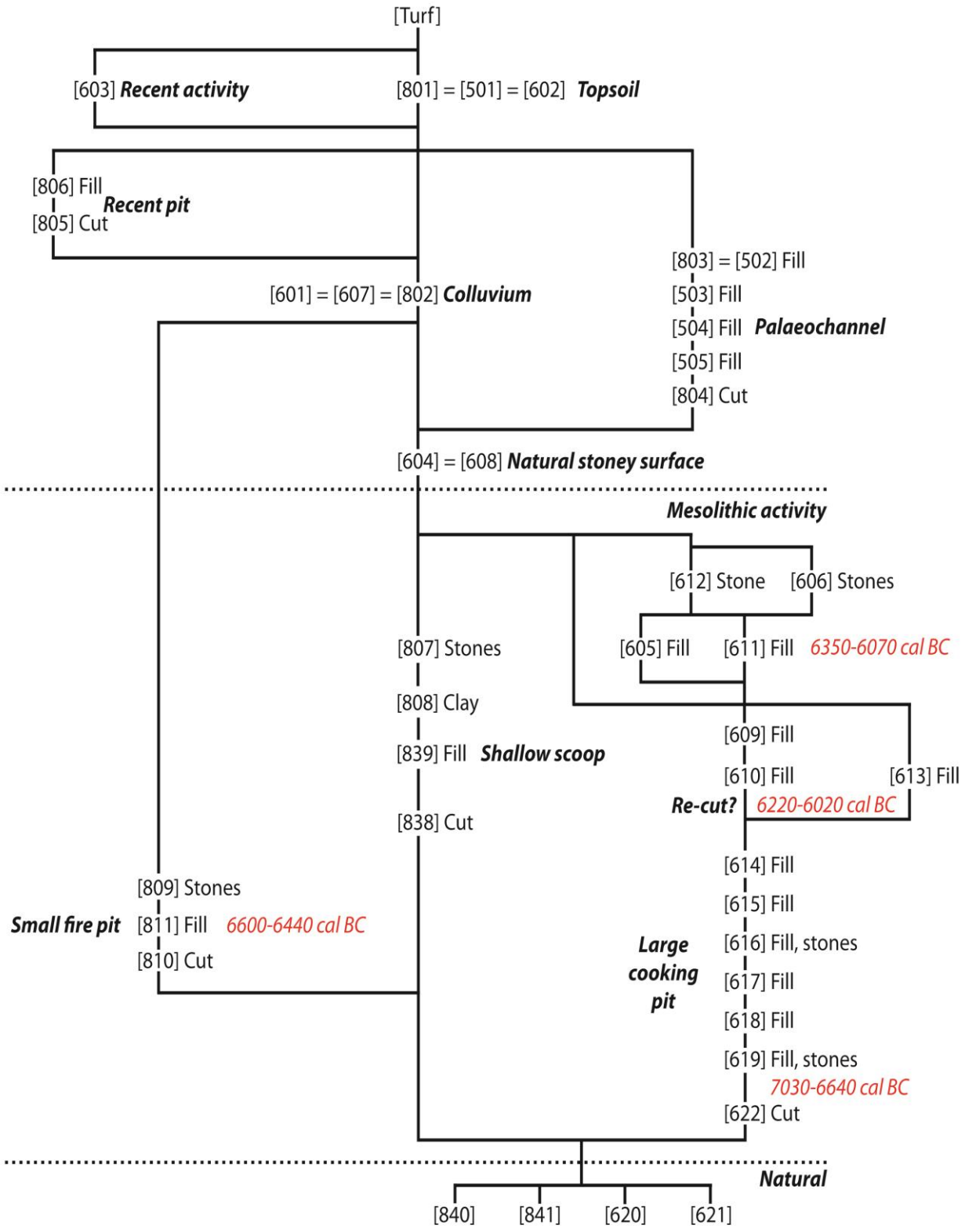
KH10 (28)

KH10 (29)

Appendix 6: Site matrix

Kingsdale Head Mesolithic site, Trenches 6, 8 and flotation tank sump

Combined site matrix (excluding mole activity)



Appendix 7: Radiocarbon dates

Site	Sample	Material	Context	Uncal (BP)	Calibrated 68.2% confidence	Calibrated 95.4% confidence	Delta ^{13}C ‰
Kingsdale Head	(GU-23469) SUERC-33528	Charcoal	KH09/611	7345 ±35	6250-6200BC (34.3%); 6190-6180BC (3.5%); 6170-6160BC (6.1%); 6150-6100BC (24.4%)	6360-6290BC (15.2%) 6270-6090BC (80.2%)	-25.3
Kingsdale Head	(GU-22802) SUERC-32272	Charcoal	KH09/610	7230 ±35	6200-6195 (9.7%); 6180-6175 (4.0%); 6160-6145 (6.2%); 6105-6030BC (53.3%)	6210-6025BC	-25.3
Kingsdale Head	(GU-20738) SUERC-27624	Charcoal	KH09/811	7670 ±40	6565-6545 (14.0%) 6530-6460 (54.2%)	6600-6440 (95.4%)	-25.7
Kingsdale Head	(GU-14468) SUERC-11499	Charcoal	KH06/617	7900 ±35	6820-6660 BC	7025-6965BC (7.2%); 6950-6935BC (1.3%); 6915-6880BC (6.1%); 6840-6650BC (80.7%)	

Radiocarbon dates have been calibrated using IntCal13 (Reimer et al. 2013)

Appendix 8: Environmental report on the Trench 2 burnt mound

Analysis of archaeological charcoal from a burnt mound deposit at Kingsdale Head, Thornton in Lonsdale, North Yorkshire.

Jane Wheeler, School of Archaeological, Geographical and Environmental Sciences, University of Bradford, Bradford, BD7 1DP

Abstract

The assessment of archaeological charcoal from a burnt mound deposit at Kingsdale Head provides a snapshot into the vegetational composition of the local environment during the Middle to Late Bronze Age. Whilst species utility appears to have been influenced by taxon availability as opposed to deliberate species selection for fuelwood, non-taxon analysis of predominantly juvenile stemwood suggests relatively short-term and repetitive cycles of exploitation as opposed to environmental impacts affecting woodland and scrub in the immediate environs of the site. Human-environment markers may therefore be connected to mobility patterns and convergence which, in turn, may be connected to burnt mound utility and process at this upland site during prehistory.

Keywords: archaeological charcoal, burnt mound, Bronze Age, species diversity, fuelwood

Introduction

Excavations by members of the Ingleborough Archaeology Group (IAG) at Kingsdale Head (SD712799) between 2005 and 2010 have revealed a multi-phase site which, to date, comprises i) a Mesolithic fire pit with associated heat-affected flat stones (Trench 6); ii) Bronze Age burnt mound deposits (Trench 2); and iii), a medieval farmstead (12th – 13th century) (Trench 1) (IAG 2007; Melton *et al*. 2011).

Preliminary environmental sampling following dry-sieving and subsequent analysis was originally conducted by the University of Bradford (data currently unpublished) from Trench 6 (Later Mesolithic fire pit framed by fragments of flat burnt stones) and Trench 2 (burnt mound deposits dating to the Middle Bronze Age) during the excavation seasons of 2005-2006. (Radiocarbon dates in respect of environmental sampling for Trenches 1 and 2 are presented in Table 1.) Trench 6 was void of charcoal, apart from small particles comprising a sticky carbonised residue at the base of the fire pit feature (IAG 2007, 98). Trench 2 revealed a noticeable division between the layers of burnt stone and ash, and whilst there were ´very few pieces´ of charcoal present these fragments were identified to genus: i.e. *Betula* (Birch) (the dominant species in respect of quantitative presence), *Corylus* (Hazel), and *Alnus* (Alder) (IAG 2007, 98). This report presents the results of an independent charcoal-specific environmental study using archaeological macro-charcoal to investigate fuelwood species composition and to identify human-environmental markers in association with burnt mound activity at a northern upland site.

Lab. No.	Feature	Enviro. sample	Context	Material	Conventional ^{14}C date	Calibrated Date 95.4% probability	Archaeological Period
SUERC 10485 (GU-14118)	Trench 2	[211]	(211)	Charcoal fragment	3220 ± 35 BP	1610BC (5.8%) 1570BC 1540BC (89.6%) 1410BC	Middle Bronze Age
SUERC 10486 (GU-14119)	Trench 2	[1618]	(233)	Charcoal fragment	3150 ± 35 BP	1500BC (91.4%) 1370BC 1340BC (4.0%) 1310BC	Middle / Late Bronze Age
SUERC 11499 (GU-14469)	Trench 6	[1671]	(617)	Charcoal fragment *Crataegus* (Hawthorn)	7900 ± 35 BP	7030BC (7.5%) 6960BC 6950BC (1.5%) 6930BC 6920BC (6.3%) 6870BC 6850BC (80.1%) 6640BC	Mesolithic

Table 1 Radiocarbon dates in respect of environmental sampling and analysis from Trenches 2 and 6 (IAG 2007, 69, 86, 133-34)

A bulk environmental sample (10 l) of charcoal fragments was collected from where Context (205) is exposed by erosion in the river bank in a final attempt to provide sufficient material to investigate taxa ubiquity and to assess evidence for age on cutting, the type of wood used – i.e. branchwood, stemwood, trunkwood etc – and also to produce quantifiable evidence for species-specific selection and/or random selection of the specific taxa. Ten litres of material were collected from the basal 5cm of Context (205) - comprising a burnt layer of ash and charcoal particles, charcoal fragments, and inclusions of burnt angular stone. Whilst it is recognised that this context was not dated, its neighbouring association with (233) implies a relative Bronze Age provenance.

Methodology

Sampling Strategy

Context (205) (Trench 2) was the only stratified deposit to provide sufficient bulk material for analysis. The bulk sample was air-dried in the laboratory, and then dry-sieved using a 4mm mesh. Samples were selected randomly by hand to prevent only the largest fragments being selected for analysis. One hundred fragments of charcoal ≥4 mm were sub-sampled to assess i) taxonomic composition, ii) age on cutting, and iii) trends in growth ring width variation.

Identification

Standard methods of identification followed Leney and Casteel (1975). Fragments were fractured to produce a fresh transverse section (TS), tangential longitudinal section (TLS), and radial longitudinal section (RLS). Examination of the TS utilised a low power stereoscope microscope (Leica Wild M3Z) with antennae lamp. Analysis of the TLS and RLS was undertaken using a high power incident microscope (Nikon Optiphot) up to 400 x. Identification to genus was made using modern wood keys (Schweingruber 1979, 1990; Hather 2000) supported by a modern charcoal reference collection. Nomenclature follows Schweingruber (1990).

Methods of quantification

Fragment count was adopted as the quantifiable and most objective means of sample measure.

Species diversity

Species diversity was used to assess the total number of species or taxa present, and to demonstrate abundance (after Pielou 1969 in Pearsall 2000, 209-10) – i.e. low species diversity (1-4 species) inferring high human selectivity of preferred species), and/or high diversity (5 or more species) (Wheeler 2011, 19).

Non-taxon analysis (tree ring analysis)

Data other than taxon abundance were collated to enable non-taxon analysis to be undertaken. The repetitive patterns of growth ring width variation sequences, i.e. consecutive groups of wide and narrow annual growth rings (AGRs), were counted to reveal AGR trends comparable with growth patterns attributed to cutting cycles observed in modern wood samples and archaeological specimens (Bernard *et al*. 2006; Boyd 1988; Haas and Schweingruber 1994; Haneca *et al*. 2006; Rackham 2001; Rasmussen 1990; Schweingruber *et al*. 2006; Thiebault 2009; Wheeler 2011).

Results

Table 2 shows species composition (%) of charcoal fragments from context (205). The sample set is dominated by *Corylus* (58%) and *Betula* (29%), with equal but much lower counts of *Quercus* (Oak), *Alnus* (Alder), and *Salix/Populus* (Willow/Poplar) (4% respectively). 5% of fragments were indeterminate due to the friable nature of their anatomical structure. 60% of indeterminate fragments revealed distorted anatomical features indicative of root/legume structures or bark, whilst 20% displayed a glassy texture with chaotic anatomical structure representative of heat-affected juvenile branchwood or twigwood (Wheeler 2011).

Species	Number of fragments (%) (n = 100)
Corylus sp.	58
Betula sp.	25
Indeterminate	5
Quercus sp.	4
Alnus sp.	4
Salix/Populus sp.	4

Table 2 Species composition (%) of charcoal fragments from Context (205)

The average size of charcoal fragments from this assemblage was: length 5.5mm and width 8mm. Two charcoal fragments were complete, i.e. with heartwood and bark intact. Total annual growth ring counts (TAGRs) are shown in Table 3. Both fragments were identified as *Corylus*. TAGR counts indicate that Sample 1 was cut after 17 years' growth, with the three width variation trends suggesting the source was affected by cutting or environmental stresses (such as a dry hydrological phase or light restriction due, for example, to overshadowing or competition in a dense canopy) after nine years of fast uninterrupted growth. The subsequent five years of slow growth indicate some form of environmental stress (often seen after cutting), which was followed by a further three years of fast uninterrupted growth prior to cutting to provide fuelwood. In comparison, Sample 6 demonstrates a total of six years fast uninterrupted growth at the point of cutting.

Sample No.	Species	TAGR width variation counts			
		Wide AGRs (1)	Narrow AGRs (1)	Wide AGRs (2)	Total
1	*Corylus* sp.	9	5	3	17
4	*Corylus* sp.	6	-	-	6

Table 3 TAGR width variation counts in complete charcoal fragments from Context (205)

The remaining sample set (98 fragments) provided fractured charcoal fragments with partial AGR counts. *Corylus* and *Betula* had the highest AGR counts of 17 and 13 AGRs respectively, *Alnus* - 8, *Quercus* - 7, and *Salix/Populus* - 5. However, mean AGR counts suggest that *Alnus* (5.5) and *Quercus* (5.5) may have been cut on a slightly longer cycle than *Corylus* (4.9) and *Betula* (4.8), and also *Salix/Populus* (4.2).

Species	Mean AGR count	Highest AGR Count	Lowest AGR count
Corylus sp.	4.9	17	2
Betula sp.	4.8	13	1
Quercus sp.	5.5	7	4
Alnus sp.	5.5	8	4
Salix/Populus sp.	4.2	5	2

Table 4 AGR counts in relation to species: mean, highest, and lowest counts

In respect of wood type origin, i.e. stemwood, branchwood, or trunkwood, 90% of samples were identified as originating from stemwood, 5% from stemwood/branchwood, and 2% from stemwood/branchwood/trunkwood. 3% of the charcoal samples (all from indeterminate wood types) did not present structural features and AGR counts or curvatures to suggest structural source or origin.

Species	Structural Source / Origin		
	Stemwood (%)	Stemwood/ Branchwood (%)	Stemwood/Branchwood/ Trunkwood (%)
Corylus sp.	54	4	-
Betula sp.	23	1	-
Quercus sp.	2	-	2
Alnus sp.	4	-	-
Salix/Populus sp.	4	-	-
Indeterminate	2	-	-

Table 5 Structural source / origin of wood types in respect of species

High species diversity is indicated by the presence of five species (i.e. *Corylus, Betula, Alnus, Quercus,* and *Salix/Populus*). The diversity result suggests that wood type selectivity in terms of specific species was random in respect of the selection of the fuelwood admixture collected from context (205).

Discussion

The limitations of analysing an isolated sample-set of archaeological charcoal and the presentation of results from the isolated Context (205) are acknowledged. The absence of context specific and both quantitative and qualitative charcoal data following the preliminary environmental sampling of Trench 2 (currently unpublished), other than the environmental information presented in the original *Kingsdale Head Project* report (2007, 98) (which identified species only), is disappointing. The results of the 2010 sampling strategy presented in this report challenge the low species diversity of three (implying high human selectivity of preferred species), and the species specific composition of charcoal collected in 2006/2007. Therefore a cross-context comparison cannot be presented in this report due to the lack of accessible published and unpublished data at the time of writing.

Results of quantification, species diversity, and non-taxon analysis of charcoal fragments collected from Context (205) in 2010 show *Corylus* to be the dominant species in the burnt mound residue, being quantitatively greater by 50% than the second major dominant species – i.e. *Betula*. The quantitative predominance of *Corylus* suggests that this particular species dominated the local vegetational mosaic surrounding the burnt mound site at the time Context (205) was deposited. Noticeably the lower quantity of *Betula* fragments is interesting because this observation contrasts with the findings of the preliminary charcoal assessment. High species diversity results (≥5) indicating low species specific selectivity of wood types from Context (205) suggest the fuelwood admixture was randomly collected from the available resources, which due to the high stemwood component most probably comprised predominantly Hazel scrub or coppice with pockets of scrubby carr vegetation including Birch (a primary coloniser) with occasional Alder and Willow (as opposed to Poplar). The presence of Oak, particularly the observation of possible branchwood and/or trunkwood, albeit on a very small scale, also suggests that available resources were being collected for fuelwood – and which may have included fallen branches, debris and deadwood.

Non-taxon analysis is again limited. However, the TAGR width variation counts could be interpreted as insinuating some form of cutting regime or cyclical impact (such as foddering) in respect of the utilisation of *Corylus* at five to six yearly intervals. Interestingly, cross-species AGR counts also total an average of five years. Although it should be noted that the majority of fragments assessed were not complete, therefore an element of subjectivity has been introduced into the AGR results. Whilst the average AGR count is five, the actual probability is ≥5 due to fragmentation. However, the constant of five and ≥5 in terms of TAGR and AGR counts respectively suggests some form of cyclical impact on wood resources adjacent to the site, which may be associated with mobility patterns and/or convergence at Kingsdale Head during the Middle to Late Bronze Age when this specific burnt mound was being utilised.

Acknowledgements

This research was conducted to complement the ongoing work of The Kingsdale Head Project. Thanks go to Nigel Melton (University of Bradford), David Johnson and Arthur Batty (Ingleborough Archaeology Group) for inviting me to become involved with the project. Additional thanks go to Hannah Russ (University of Sheffield) for sharing data, Mark Wheeler for his help during fieldwork, and to Stuart Fox for his assistance and advice in the laboratory.

References

Bernard, V, Renaudin, S and Margueire, D. 2006. 'Evidence of trimmed oaks (Quercus sp.) in north western France during the early middle ages (9th-11th centuries AD)' in A. Dufraisse (ed.), *Charcoal Analysis: New analytical tools and methods for archaeology (Papers from the Table-Ronde held in Basel in 2004)* (BAR International Series 1483). Oxford: Archaeopress, pp. 103-08.

Boyd, W E. 1988. 'Analysis and interpretation of non-artefactual wood assemblages from archaeological sites' in T Hackens, A V Munaut and C Till (eds.) *Wood and Archaeology*. Strasbourg: Council of Europe, pp. 311-18.

Haneca, K, Boeren, I, van Acker, J and Beeckman, H. 2006. 'Dendrochronology in suboptimal conditions: tree rings from medieval oak from Flanders (Belgium) as dating tools and archives of past forest management'. *Vegetation History and Archaeobotany* **15**, pp. 137-44.

Hass, J N and Schweingruber, F H. 1993. 'Wood-anatomical evidence of pollarding in ash stems from the Valais, Switzerland'. *Dendrochronologia* **11**, pp. 35-43.

Hather, J G. 2000. *The identification of the Northern European Woods: A guide for archaeologists and conservators*. London: Archetype Publications Ltd.

Ingleborough Archaeology Group. 2007. *The Kingsdale Head Project: A report on the excavation of a longhouse type structure with associated features identified by geophysical surveys, and three training trenches.* Ingleton: Ingleborough Archaeology Group.

Melton, N, Russ, H and The Ingleborough Archaeology Group. 2011. A Mesolithic site at Kingsdale Head, near Ingleton, North Yorkshire. Poster: University of Bradford/University of Sheffield/IAG.

Leney, L and Casteel, R W. 1975. 'Simplified procedure for examining charcoal specimens for identification'. *Journal of Archaeological Science* **2**, pp. 153-59.

Pearsall, D M. 2000. *Palaeoethnobotany: A Handbook of Procedures* (2nd ed.). San Diego: Academic Press.

Pielou, C E. 1969. *An Introduction to Mathematical Ecology*. New York: Wiley.

Rackham, O. 2001. *Trees and woodland in the British Landscape: The complete history of Britain´s trees, woods, and hedgerows*. London: Phoenix Press.

Rasmussen, P. 1990. 'Pollarding of trees in the Neolithic: Often presumed – difficult to prove' in D E Robinson (ed.), *Experimentation and Reconstruction in Environmental Archaeology*. Oxford: Oxbow, pp. 77-99.

Renfrew, C. & Bahn, P. 2008. *Archaeology: theories, methods and practice*. Fifth Edition. London: Thames & Hudson.

Schweingruber, F H. 1979. *Microscopic Wood Anatomy*. Birmensdorf: Swiss Federal Institute of Forestry Research.

Schweingruber, F H. 1990. *Anatomy of European Woods: An atlas for the identification of European trees, Shrubs and Dwarf Shrubs*. Berne/Stuttgart: Paul Bern.

Schweingruber, F H, Börner, A and Schulze, E-D. 2006. *Atlas of Woody Plant Stems: Evolution, Structure, and Environmental Modifications.* Berlin/Heidelberg/New York: Springer.

Thiébault, S. 2006. 'Wood-anatomical evidence of pollarding in ring porous specimens: A study to develop?', in A Dufraisse (ed.), *Charcoal Analysis: New Analytical Tools and Methods for Archaeology (Papers from the Table-Ronde held in Basel 2004)* (BAR International Series 1483). Oxford: Archaeopress, pp. 95-102.

Wheeler, J. 2011. 'Charcoal analysis of industrial fuelwood from medieval and early modern iron-working sites in Bilsdale and Rievaulx, North Yorkshire, UK: evidence for species selection and woodland management'. *Environmental Archaeology* **16 (1)**, pp. 16-35.

Appendix 9: Examples of stone tools and cores from Kingsdale Head (KH09)

KH09 Trench 8 (802) artefact no. 851
Chert awl

KH09 Trench 8 (802) artefact no. 857.
Flint scraper

KH09 Trench 8 (802) artefact no. 868
Chert microblade core

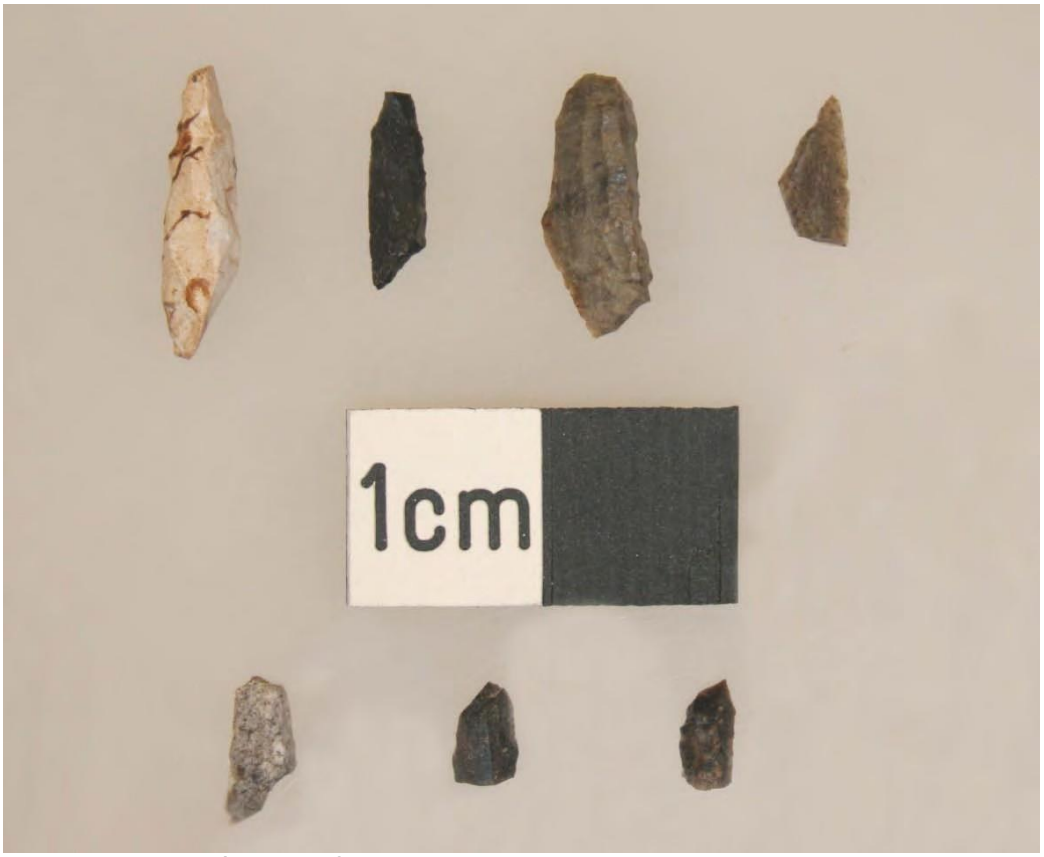
KH09 Trench 8 (802) artefact no. 870
Flint knife

KH09 Trench 8 (802) artefact no. 1002.
Flint scraper

KH09 Trench 8 (802) artefact no. 1018.
Flint convex scraper

KH09 Trench 8 (802) artefact no. 1035
Chert scraper. Thermally altered

KH09 Trench 8 (802) artefact no. 1056
Flint core



KH09 Trench 8. Artefact nos 1074, 1098, 803, 865, 1030, 1085, 1071.
A selection of microliths and microlith fragments