

ARCHAEOLOGICAL PROGRAMME OF WORK

WATER MAIN REPLACEMENT SCHEME BROAD ROAD CHARTERHOUSE-ON-MENDIP SOMERSET

NGR: ST 49737 57625 – ST 49910 56855

REF: BA1225BWBRC



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Cover: View south of standing stone (1002) with associated stone (1008) (foreground) and earth/turf spread (1019) (immediately behind)

Report specification

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1. Non-Technical Summary

The archaeology recovered during the programme of works at Charterhouse has revealed a multi-period prehistoric landscape with a background signature of Post-medieval (c. 1540-1900) activity in Field 4, probably relating to a farmstead that is known to have been located in this area.

1.1 Mesolithic

The earliest evidence recovered comprises flint pieces dating to the later Mesolithic period (7500-4000 BC). The character of the evidence suggests that the immediate landscape was not the location of longer-term settlement during this period and the finds recovered probably represent visits to the area by hunter-gatherers, perhaps during hunting activities.

1.2 Late Neolithic

Neolithic (4000- 2300 BC) activity is also attested. Field 4 produced the strongest evidence, with the majority of the finds thought to be of this date. Interestingly, the flint finds were found primarily associated with the remains of a cairn or stone spread (4003), either between the stones themselves or within the deposit which the stones sealed (4004). In addition to finds, a radiocarbon date was obtained from a hazelnut-shell fragment recovered from deposit (4004) producing a Late Neolithic date (3000-2300 BC).

Due to the heavily truncated nature of the feature (4003), it is difficult to clarify its original form, whether circular or ovate or indeed part of something much larger. Disturbance may be related to the laying of the previous pipeline.

Small fragments of cremated bone were also recovered and it is conceivable that (4003) was a mortuary structure. Although mortuary evidence from this period is not well known on Mendip, it is possible that this structure is akin to the Late Neolithic round mounds found in the eastern Cotswolds and Wessex (Darvill, 2004), although these tend to be much larger and have earth and ditch components.

Alternatively, given the rather flat, 'un-mound-like' nature of the surviving portion of the Charterhouse structure it could be interpreted as a platform, either circular or ovate, that was used to facilitate particular activities that may have included aspects of mortuary practice. The presence of small fragments of cremated bone suggests cremated remains may have been brought to the site (there was no evidence of in-situ burning) for redistribution to other locales within the landscape. Although, assessment of the cremated remains could not ascertain whether or not they were human, it seems likely that they were, given this purposive activity. It must be noted, however, that these remains were not directly dated and cannot with any certainty be considered contemporaneous with the stone structure (4003).

If the cremated bone is considered to be associated with the stone spread (4003), then this would represent a significant find. Evidence for Late Neolithic burial on Mendip is limited to the deposition of human remains within a cave.

If a direct association is accepted between the cremated bone and the structure (4003), it is possible that one of its uses may have been as a component of a multi-stage mortuary ritual. Alternatively, the structure may have had a more 'ritual' character akin to monuments considered to have served multiple functions, such as meeting-places, locations for trade and exchange and / or ceremony.

1.3 Late Neolithic/Early Bronze Age

The majority of the flint assemblage has been characterised as dating from the Late Neolithic / Early Bronze Age (3000- 2500 BC) and derives primarily from Field 1 and 2. The lithic (flint and chert) evidence suggests that during this period, there was a marked concentration of activity in this area, the nature of which is difficult to characterise as lithic scatters of this size are often thought to represent evidence for settlement, although their association with monuments may point to the durable remains of rituals, such as food preparation and feasting (Lewis, 2005).

A standing stone (1002) set within a stone socket [1004] was also revealed and investigated; this was associated with a spread of stone and turf/earth. Standing stones are notoriously difficult to date as they are often protected scheduled ancient monuments, however they are generally accepted as being prehistoric (Swarbrick, 2012).

The lithic (flint and chert) evidence from within the non-contaminated backfill (1023) deposit of the stone socket [1004] suggests a Late Neolithic / Early Bronze Age date based on the short and squat character of the flint flakes. From the available evidence, it seems likely that the standing stone monument (1002) was constructed during this time and is thus broadly contemporary with the lithic evidence recovered from elsewhere in Field 1.

With an overall length of c. 0.85m and standing c. 0.45m above ground, the Charterhouse standing stone is relatively small compared to other examples in the SW of England. However, smaller, less conspicuous standing stones of a similar height are known.

The presence of a spread of stone and earth / turf surrounding the standing stone is a notable discovery. These monuments are often scheduled and are thus rarely excavated. It is possible that this spread represents a platform-like structure acting to delineate the stone with respect to the immediate landscape, perhaps in an act of veneration and / or simply as a device to enhance the physical presence of the stone.

The Charterhouse standing stone occupies a prominent position on the edge of a small promontory before the hillside descends steeply to the north. The Late Neolithic and Early Bronze Age Mendip landscape is considered to have been of particular ritual significance and it is not surprising that this monument type occurs in this location.

2. Introduction

Border Archaeology was instructed by Bristol Water plc to carry out a programme of archaeological works at Broad Road Charterhouse-on-Mendip (herein referred to as Charterhouse) in Somerset associated with a water main replacement scheme (*fig. 1*). An easement c. 15m wide was laid out across four fields and approximately a 10m width within this easement was stripped of topsoil allowing archaeological features to be identified and excavated within the area of impact.

The programme of works revealed a multi-period prehistoric landscape with a background signature of Post-medieval activity. The prehistoric archaeology consisted of the frequent recovery of struck lithics (primarily flint) within the topsoil and subsoil horizons, a standing stone (Field 1) and platform-like structure (Field 4). In addition, two natural features were revealed, although these are considered to have been subject to some degree of anthropogenic intervention.

3. Site Description

The soils of the area immediately N of Broad Road generally comprise typical paleo-argillic brown earths of the NORDRACH series (581a). These are well-drained often deep fine silty over clayey soils and are stoneless or possess chert stones. The underlying drift geology is an aeolian silty drift over Carboniferous limestone.

The fields extending S of Broad Road to the Mast Reservoir largely comprise typical brown earths of the MILFORD series (541a), composed of well-drained fine loamy soils overlying Devonian sandstone, siltstone, mudstone and slate; and ferric podzols of the LARKBARROW series (633), which consist of reddish, very acid permeable loamy upland soils. Associated loamy soils have a seasonally wet thin peaty surface horizon and whilst others are characterised by a thin iron pan. These soils overlie Devonian reddish sandstone (SSEW 1983).

4. Archaeological Background

The Charterhouse landscape evidences activity from the prehistoric through to the post-medieval period. Within the immediate area of the pipeline route an extensive scatter of prehistoric worked flint has been recovered within an area to the N of the civil defence wireless station (close to the S end of the pipeline route). The near landscape is also peppered with prehistoric monuments ranging from a proposed Late Neolithic henge, formally interpreted as a Roman amphitheatre, and several degraded round barrows dating to the Early Bronze Age. Many of the archaeological features recovered from the programme of works at Charterhouse fit comfortably within this prehistoric landscape character.



Fig. 1: Location map of pipeline route

To the E of the pipeline route there is evidence of an extensive Roman mining settlement at Charterhouse-on-Mendip, which is known to encompass an area of at least 27ha. Whilst the focus of Romano-British settlement lay well to the E and SE, the fact that little fieldwork or survey work has been carried out in the immediate vicinity of the pipeline route means that the full extent of Roman activity in this area is unclear. Despite the investigation of archaeological features and the recovery of artefactual material from the topsoil and subsoil, no evidence of Roman activity was discovered during this current programme of archaeological works.

The potential of recovering evidence of Late Medieval/Early Post-medieval archaeology was considered high due to the close proximity of the pipeline route to the earthworks of a deserted farmstead, possibly representing the early 14th century settlement of 'Ilwick' and evidently still in occupation up to around 1800. Although these earthworks occupy part of a field immediately S of the B3134 and lie in close proximity to the pipeline route, only a background signature of post-Medieval pottery was recovered from the topsoil.

5. Methodology

Areas subject to archaeological monitoring were detailed in a Written Scheme of Investigation compiled by Border Archaeology and approved by Stephen Membury of Somerset County Council prior to the commencement of engineering works.

In summary, the easement crossed four fields commencing at the Charterhouse reservoir and terminating at the B3134. Topsoil was stripped along a 10m-wide section of the easement to an engineering depth of approximately 0.15m. Features of archaeological potential were identified during this process and, where appropriate, excavation proceeded by hand.

All archaeological site works within the study area were undertaken in accordance with accepted standards of professional and ethical procedure. The archaeological programme of work detailed herein was carried out in accordance with recognised sources of professional guidance including *Standard and Guidance for an archaeological watching brief* (IfA 2008), *Standard and Guidance for archaeological excavation* (IfA 2008) and *Management of Research Projects in the Historic Environment* (MoRPHE) (EH 2006). Reference was also made to the relevant English Heritage Historic Environment Local Management (HELM) resources. Border Archaeology adheres to the IfA *Code of conduct* (2013) and *Code of approved practice for the regulation of contractual arrangements in field archaeology* (2008) and work was carried out in compliance with Bristol Water's *Code of Conduct*.

6. Results

6.1 Field 1

Topsoil (1000) was stripped from the easement to the required depth (approximately 0.15m) and comprised mid-brown, slightly sandy silt containing a moderate amount of sub-angular

small to medium-sized stone fragments. Underlying the topsoil was a natural deposit (1005) of orange-brown, silty sand with frequent stone, which extended the length of the easement. Within (1000) and (1005) moderate quantities of struck lithic items were recovered. The topsoil strip revealed four features (*fig. 2*). The first of these was an amorphous feature roughly crescent-shaped in plan and the second an upright stone interpreted as a boundary marker. A standing stone set within a stone socket was also revealed and investigated; this was associated with a spread of stone and turf/earth. A small circular structure was identified in close proximity to the standing stone.

In addition to the topsoil strip, a rough bank (1001) between Field 1 and Field 2 was removed by machine to facilitate access. This boundary bank (1001) consisted of mid-brown sandy silt with medium to large stone blocks, arranged as a low bank approximately 2.30m wide and 0.35m deep. Although this boundary can be seen on the 1781 enclosure map, the recovery of a modern shotgun-shell casing from beneath the bank material suggests that it may have been disturbed or removed and reinstated during the construction of the previous pipeline.

6.1.1 Natural hollow

Feature [1015] measured approximately 3.27m NW-SE × 2.70m NE-SW, forming a roughly crescent-shaped plan with a maximum depth of c.0.60m. Six fills or deposits were identified (*fig. 3*). The primary fill (1014) consisted of mid-red/brown clay with occasional small stone rubble inclusions, which had an average thickness of c.0.11m. The secondary fill (1013) was composed of a stone rubble deposit, with an average thickness of c.0.40m, overlying which was a firm, black/dark grey silty clay, containing frequent charcoal flecks and fragments (1012), which attained an average thickness of c.0.15m. This charcoal-rich deposit was overlain by (1011), a firm dark yellow sandy silt with frequent charcoal flecks and fragments, attaining a maximum thickness of c.0.07m. The uppermost fill(s), (1007) / (1006), consisted of firm black/ dark grey, charcoal-rich sandy silt and firm, dark grey, charcoal-rich, slightly sandy silt, respectively. These latter deposits were similar in nature and may in fact have been the same, with (1006) representing an inclusion or lens within (1007).

Feature [1015] is considered to be a natural hollow or depression within (1005). Although identified as having a cut, this was not clearly defined during excavation. In addition, the unusual shape and notable paucity of artefactual material, namely, a single lithic item derived from (1012), would appear to support this interpretation. The primary fill is believed to have accumulated as a result of natural silting, which would suggest the depression or hollow had been open. The thickness and composition of (1013) suggest deliberate backfilling, perhaps to ensure the safety of livestock. The remaining fills were notably charcoal-rich, again suggesting deliberate infill. However, due to the lack of artefactual evidence, dating these infill events is problematic – the single flint flake was undiagnostic and, given the relative frequency of lithic items in the topsoil and subsoil of Mendip, is probably residual.

6.1.2 Marker stone

A rough-hewn stone block (1010) was located at approximately the mid-point of Field 1 (*Plate 1*). The stone measured 0.45m × 0.20m × 0.10m deep and lay above or was possibly set into the natural subsoil (1005). No cut was identified and it is thus possible that the

feature represents a re-deposited stone that may have acted as a boundary marker. The absence of finds denies the possibility of dating (1010).

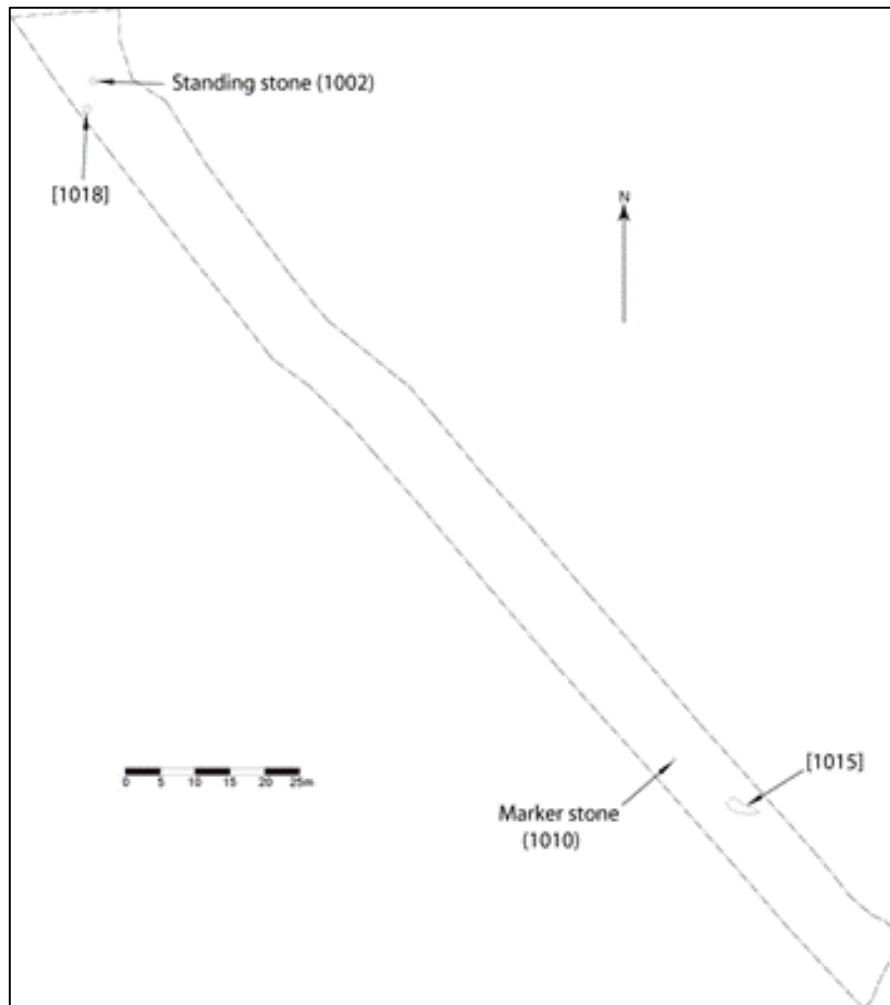


Fig. 2: Plan of Field 1 denoting location of archaeological features

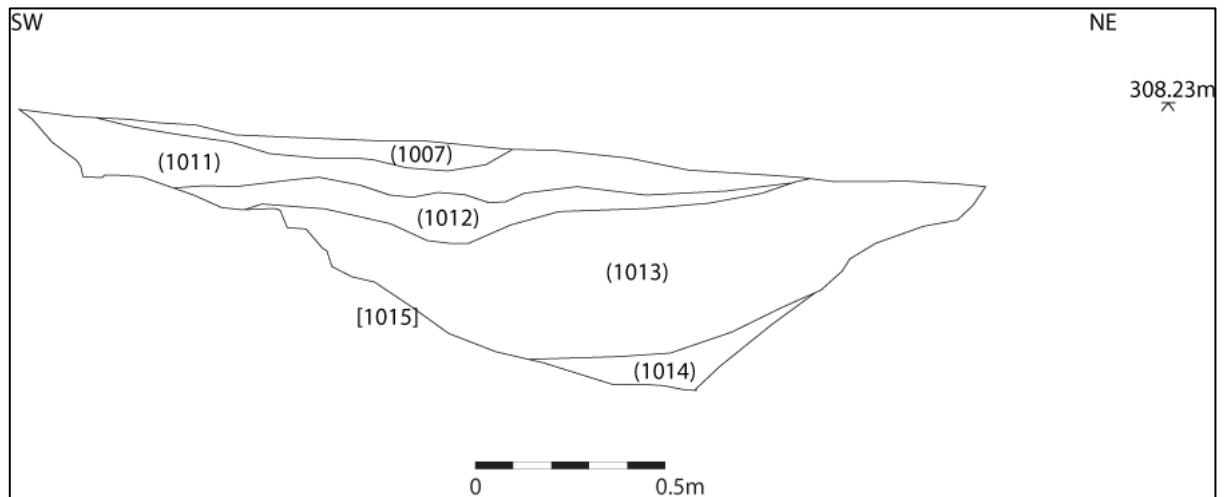


Fig. 3: SE-facing section of [1015] natural hollow



Plate 1: Possible marker stone, looking S

6.1.3 Standing stone

At the north-westernmost extent of Field 1, machining revealed an upright stone (1002). The stone measured approximately 0.85m × 0.5m and would have stood c. 0.45m above the surface from which it had been cut (*Plate 2*) (see *fig. 13* for a detailed illustration). As the stone was situated beyond the area of engineering impact, excavation was investigative,

comprising a slot c. 1.75m × 0.6m through the stone socket and incorporating the surrounding deposits on either side to obtain sequential and chronological data. Manual excavation revealed a small composite monument considered to have been constructed in three phases.

The upright stone had been erected and placed within a stone socket [1004] measuring c.0.66m NW-SE × c.0.77m NE-SW × c.0.47m (*fig. 4*). The socket was roughly square in plan, with near-vertical sides and an uneven, but slightly concave base; however, the NW edge exhibited a sharper slope, which may have served to facilitate insertion of the stone (1002) into the socket before it was raised to an upright position. The socket was cut from a buried soil horizon (1021), which was similar in composition to (1005), although sealed beneath the deposits surrounding the upright stone.



Plate 2: Standing stone (1002) with associated stone (1008) (foreground) and earth/turf (1019) (immediately behind) spread looking S

The stone socket was backfilled with (1003) and (1023), which probably represent a single deposit differentiated solely on the basis of possible contamination resulting from its discovery by machine. Backfill (1003) consisted of loose orange brown silty sand with no identified inclusions, whilst (1023) consisted of friable, very dark brown, sandy silt with frequent sub-angular fragments of natural stone and rare charcoal flecking. The more pronounced orange hue of (1003), representing the potentially contaminated backfill material, may be a result of mixing with (1005), an orangey-brown silty sand.

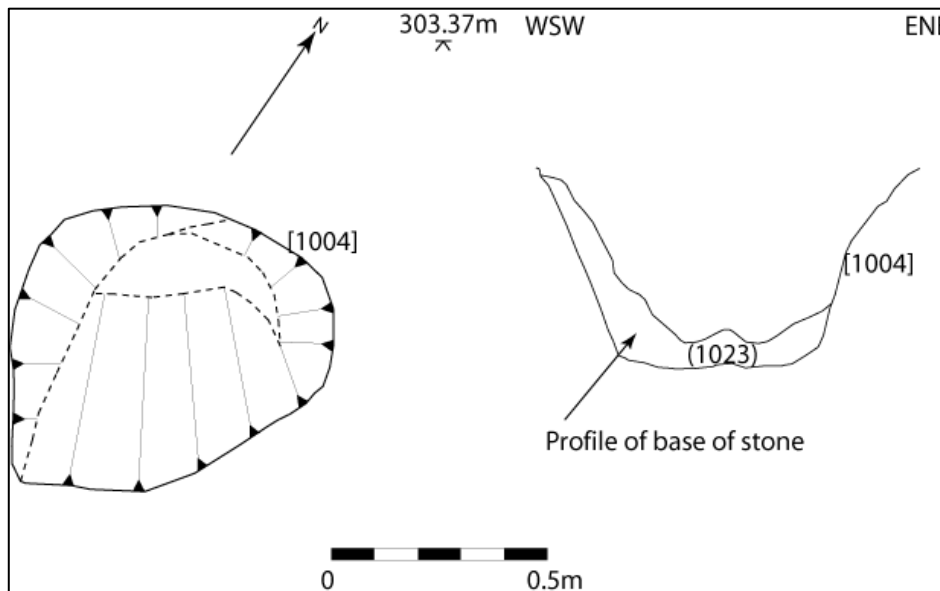


Fig. 4: Profile and plan of stone socket [1004]

The second phase of activity constitutes the construction of a roughly circular spread around the standing stone (*figs. 5 & 6*). On one side (NNE to SSW), the spread (1008) was composed from sub-angular stones, either one or two stones deep and ranging in between 3cm × 5cm × 4cm and 14 × 14 × 5cm. The deposit was roughly semi-circular, although evidence of disturbance was noted at its edges. A micro-layer (1022) was identified beneath (1008), composed of moderately compact to loose mid orangey-brown silty sand streaked with dark brown to black organic silt and exhibiting occasional very small angular to sub-angular stones. The organic content of this deposit and its presence between the stones and the buried soil horizon may indicate degraded turves suggesting the stones may have been placed on unprepared open grass land.

Constituting the second half of the spread was a deposit of turves / earth (1019) that was largely devoid stone and which contrasted markedly with (1008). This deposit consisted of loose mid orangey-brown silty sand frequently mottled with a dark brown silt / organic matter containing occasional small and medium-sized sub-angular stones. The deposit measured approximately 1.3m at its widest point and was 0.0 5m deep; the mottling suggests heavy bioturbation. It is probable that this deposit was originally much deeper and that its upper levels had been removed by machine. In plan, it was more difficult to distinguish an edge, although it would appear to have been roughly semi-circular in shape, similar to (1008), as the composition of the soil beyond was more stony (see *Plate 2* above). Within the turf / earth material, an additional deposit of compact mid to pale yellow clay (1020) was observed to the NE of the standing stone. Clay of a similar nature was observed at a much greater depth during excavation of the pipe trench.

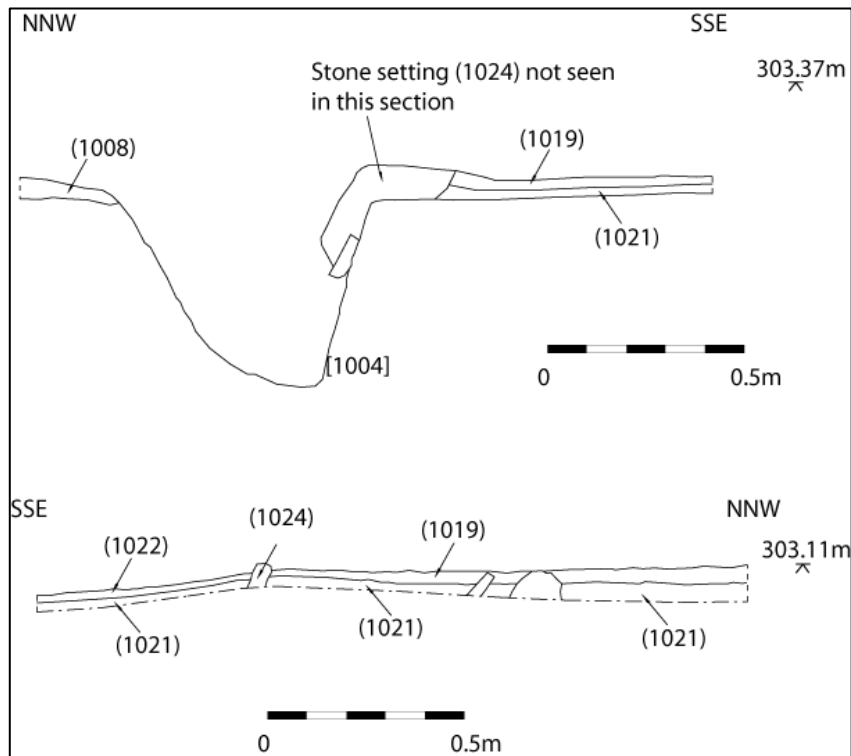


Fig. 5: WSW facing section (above) and ENE facing section (below) through stone socket and surrounding deposits

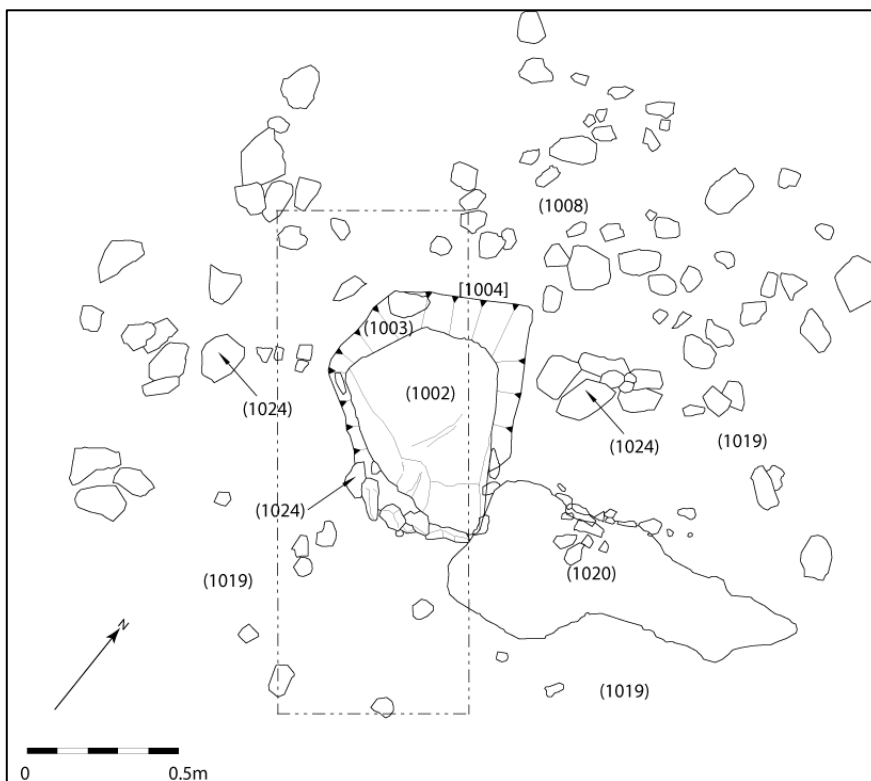


Fig. 6: Plan of standing stone and associated deposits including location of trench



Plate 3: Stone setting (1024)

These deposits are considered contemporary, as at the point at which they met to the NNE and SSW of the standing stone (1002) they were found to abut each other, as well as overlying the stone socket [1004] and abutting the standing stone (1002) (see *fig. 5* above). Both deposits, (1008) and (1019), appeared to rise very slightly towards the standing stone (1002); however, their form seemed more akin to a spread of material than to a low mound.

A third phase of activity is attested by the insertion of small upright stones forming a linear /curvilinear stone setting (1024) delineating the stone spread (1008) and the turves / earth deposit (1019), as well as encircling the standing stone to the E (*Plate 3*). Although superficially the stones appeared to mark the precise boundary between the opposing sides of the spread surrounding the standing stone, they were clearly set within the turf / earth spread (1019).

Struck flint and chert artefacts were recovered from within the immediate vicinity of the standing stone and from the backfill deposits, (1003) and (1023). Diagnostic tools include an Early Bronze Age thumbnail scraper found on the surface of (1019) and a narrow blade microlith of Late Mesolithic date from within the contaminated backfill (1003). In addition to the latter, a small exhausted core was recovered. Within the securely sealed backfill (1023), two further lithic items were recovered comprising of two flakes: one with light retouch, the other evidently well-used. Although not diagnostic tools, both flakes are indicative of Late Neolithic / Early Bronze Age technology, being shorter and squatter. In addition, recovered from the interface with (1021) and (1019) was a flint flake exhibiting heavy use-wear. Other

lithic items from the immediate area of the standing stone (1002) are also suggestive of a Late Neolithic/Early Bronze Age date.

6.1.4 Circular structure

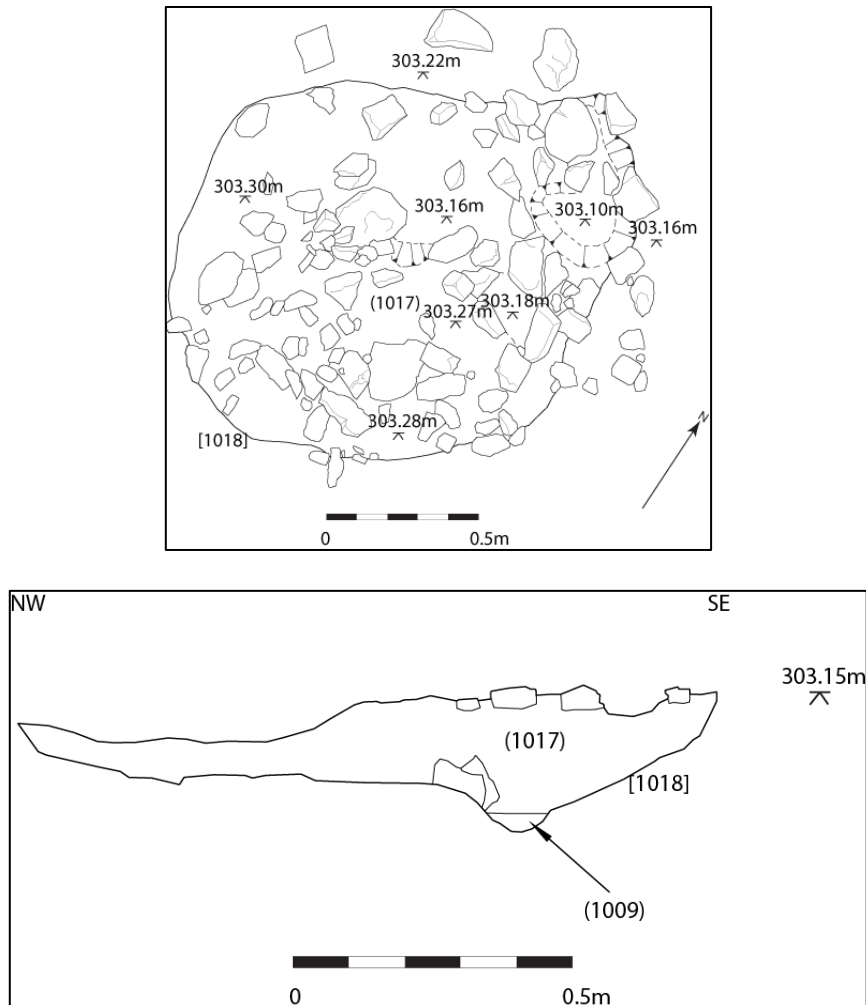


Fig. 7: Pre-excavation plan and SW facing section of circular structure [1018]

A short distance to the SE of the standing stone (1002) was a roughly circular feature (*fig. 7*). The cut [1018] measured approximately 1.53m × 1.23m × c. 0.25m and revealed slightly concave sides and an undulating base. At the base of [1018] was a loose dark brown silty sand (1009) with no identified inclusions, which is believed to represent evidence of bioturbation. Overlying this and forming the primary fill was (1017), a compact mid-brown clayey sand with a very high frequency (>70%) of medium to large angular stones and rare charcoal flecks and very small charcoal pieces.

This stone-rich fill (1017) has been interpreted as the possible basal remains of a small, circular structure / platform that filled [1018]; although there were no finds recovered from this feature, its proximity to (1002) makes any link with the standing stone and its associated monument attractive. As with the standing stone, lithics found in the immediate vicinity suggest a Late Neolithic / Early Bronze Age date.

6.2 Field 2

The topsoil (2000) was composed of a mid- to dark brown sandy silt, with frequent stone inclusions, and was stripped to an approximate depth of 0.15m. Due to the steeply sloping topography to the N, (2000) overlay three deposits of differing composition. At the top of the slope to the S was (2001), a firm, light greyish-brown silty clay with very frequent stone rubble inclusions, thought to be the regolith, as bedrock is shallow at this point. At approximately mid-slope, the terrain briefly levelled out and directly underlying (2000) was (2004), a mid-yellowish-brown clayey silt with occasional irregular stones. At the northernmost end of the field, close to its boundary with Field 3, the topsoil overlay (2007), a mid-reddish-brown, clayey silt, with frequent stone inclusions. The variable composition of the soil deposit beneath topsoil (2000) is consistent with active colluviation. A moderate amount of flint debitage, with some tools, was recovered from (2000) with occasional flint recovered from (2004). Overall, the flint was not diagnostic, although the general character of the debitage suggests a Late Neolithic to Early Bronze Age date (see 6.1 Lithics). A single sherd of pottery and two fragments of CBM were recovered from (2000) and (2004); pottery from the latter dates to the 13th to 14th century.

Two features of possible archaeological potential were recorded in Field 2: a possible occupation horizon and a tree-bole containing cultural material (*fig. 8*).

6.2.1 (?) Occupation horizon

A dark brown / black clayey silt deposit with occasional stones (2002) was revealed at the top (S) of the field and lay a significant distance E of the area of engineering impact and thus remained unexcavated. It is possible that this deposit represented a discrete occupation horizon; however, as no further investigation was undertaken, this remains speculative.

6.2.2 Tree bole

A feature revealed at the southern end of the field measured c. 3.07m N-S x c. 3.73m E-W and contained two fills (*fig. 9*) (*Plate 4*). The lower of the two (2005) consisted of loose, mid to light grey clayey silt with yellowish-grey mottling. It contained small to medium-sized sub-angular stones and was c. 0.18m deep. The upper fill (2003) was c. 0.24m deep and consisted of loose to moderately compact dark brown clayey silt containing frequent small to medium-sized stone rubble and occasional charcoal inclusions. No cut was discernible and the feature was thus interpreted as either a natural hollow or depression or, more likely, a tree-bole.

Interestingly, lithic items were recovered from the upper fill (2003) and, whilst no diagnostic tools were present, the character of the assemblage suggested a Late Neolithic to Early Bronze Age date, although these are likely to be residual.

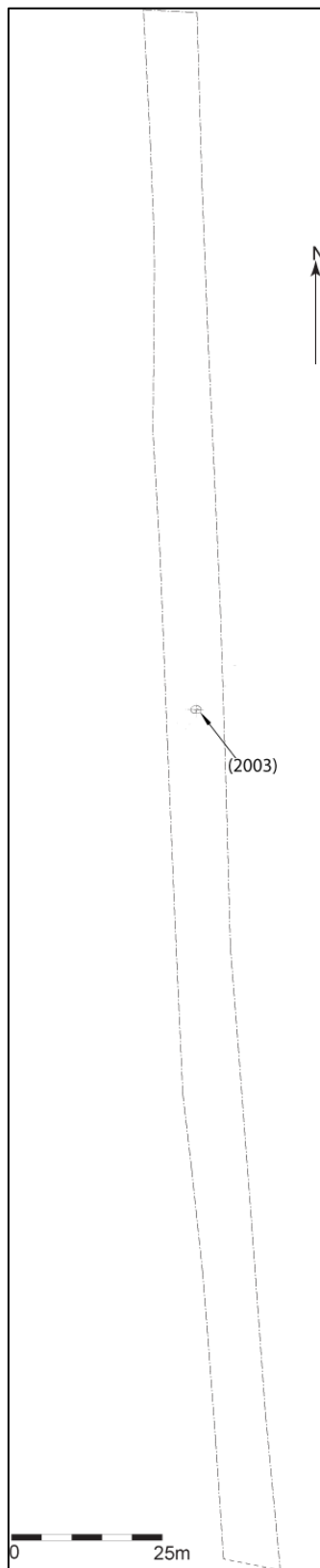


Fig. 8: Plan of Field 2

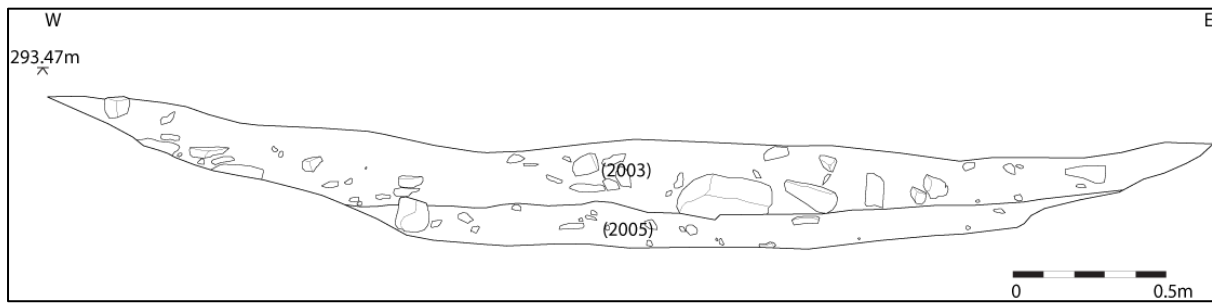


Fig. 9: S-facing section of tree-bole (2003) and (2005)



Plate 4: Post-excavation photograph of tree-bole

6.3 Field 3

As with Fields 1 and 2, topsoil (3000) was stripped from the easement and comprised mid-greyish-brown sandy silt, containing small stones. Mirroring the topography in Field 2, Field 3 formed the opposing side to a dry valley which sloped upwards to the N, where it began to form a plateau close to the boundary with Field 4. As such, (3000) varied in depth between c.0.12m at the northern end of the field and c.0.30m at the southern. Beneath (3000) was a subsoil deposit (3001) of moderately compact, mid-orangey-brown sandy silt with frequent charcoal flecking. Although the composition of (3001) was fairly homogenous, it displayed signs of sorting indicative of colluvial activity. Due to the shallow nature of (3001) towards the N, two discrete patches, (3002) and (3003), of firm yellowish-brown / green clay interpreted as underlying geology were observed.

No features of archaeological interest were encountered in Field 3. Unstratified finds included occasional flint, modern and Post-medieval pottery, CBM, glass and modern materials, such as rope and plastic. Two modern features were recorded: a linear [3004] containing the modern water pipeline (3005) and a second linear [3007] containing a modern or Post-medieval stone-filled land drain or soak-away.

6.4 Field 4

The topsoil in Field 4 (4000) consisted of dark reddish-brown clayey silt which was stripped to an approximate depth of 0.10m. Beneath (4000) was a subsoil deposit (4001) of moderately compact mid-orangey-brown clay silt, containing occasional stone fragments. Unstratified finds from these deposits consisted of occasional modern pottery and CBM, one sherd of medieval pottery and frequent flint. One feature of archaeological interest was discovered within Field 4 (*fig. 10*).

6.4.1 Cairn / stone spread

The feature of interest consisted of a semi-circular stone spread / structure (4003) measuring approximately 8m N-S × 2.50m E-W × c.0.30m (*Plate 5*). It had been heavily truncated by a modern trench [4007] for a water pipeline (4006). It was notable that beyond this truncation, there were no loose stones or rubble in the topsoil or subsoil in the immediate or wider vicinity. Due to the position of (4003) beyond the area of impact, investigative excavation only was undertaken, consisting of three small test-pits to establish form and function (*fig. 11*).

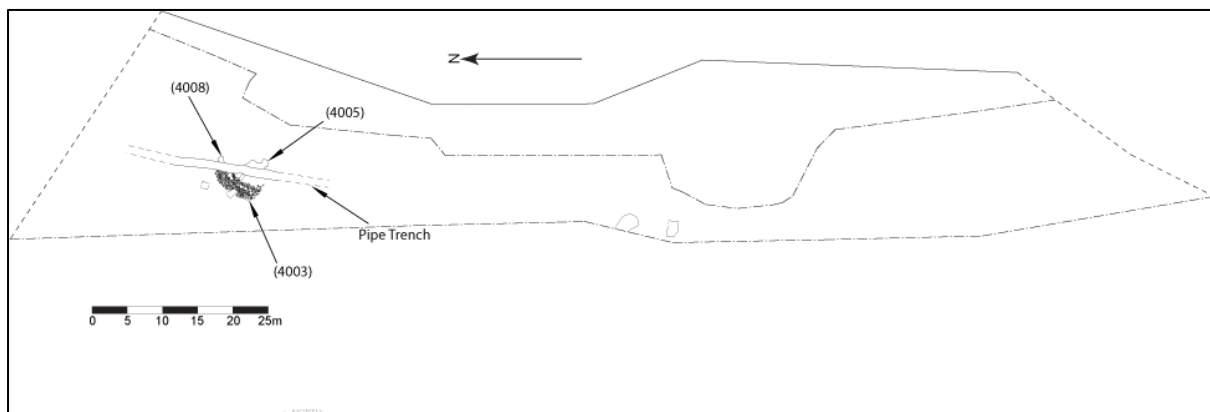


Fig. 10: Plan of Field 4

Excavation revealed that (4003) overlay a deposit (4004) consisting of a moderately compact reddish-brown clayey-silt with moderate to frequent charcoal flecking (*fig. 12*). Beneath this deposit was the natural bedrock, observed in other areas of Field 4 where it outcrops near to the surface. It is not certain whether (4004) represented a deliberate deposit of earth over naturally outcropping bedrock or whether the stone structure / spread (4003) sealed a naturally occurring buried soil horizon.

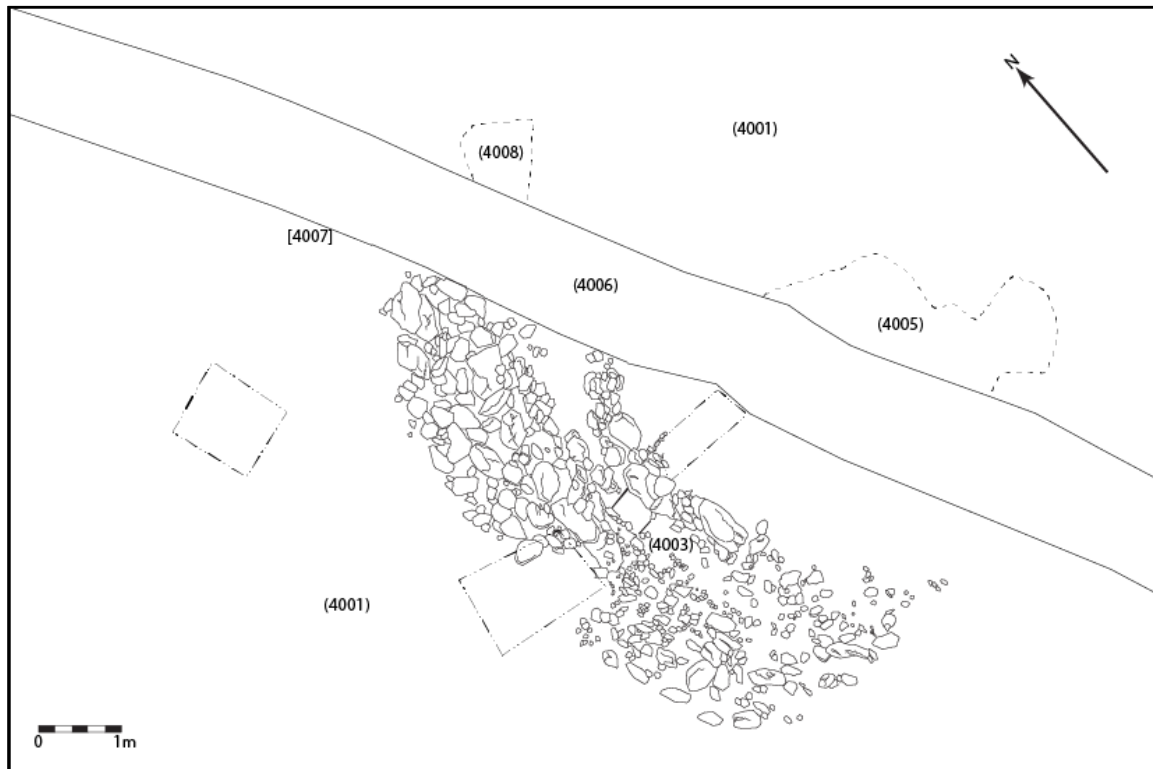


Fig. 11: Plan of (4003), (4005) and (4008)



Plate 5: Photograph looking N

The stone spread / structure (4003) which overlay (4004) was one or two stones deep and this largely depended on the size of stone (*i.e.* larger stones were only one deep). To the W, the outline of the spread / structure was semi-circular; however, to the E, it appeared that the majority of the spread had been truncated by a modern services trench [4007]. It is not clear whether this later event essentially bisected the spread / structure as the cut [4007] was not flush to the stone spread / structure in its southern half (see *fig. 11*). It is possible that, during the excavation of [4007], larger stones from (4003) were removed or dragged within this southern extent, accounting for the apparent gap.

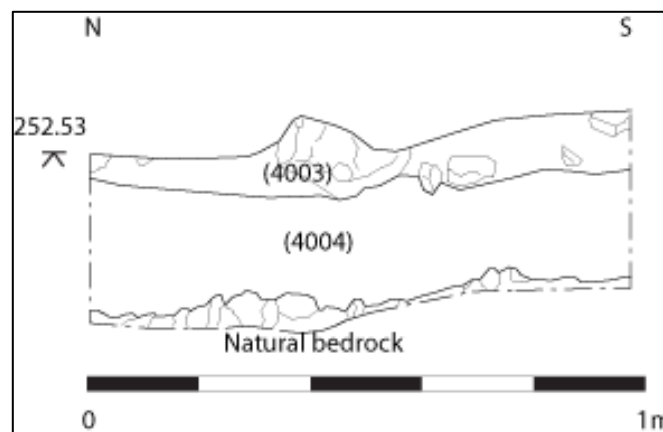


Fig. 12: W-facing section of (4003) and (4004)

Unusually, there were no stones to the E, beyond the modern service trench [4007]: indeed, this area was notably devoid of medium to large stones or rubble, suggesting perhaps that the stone spread / structure originally consisted of a semi-circular structure that had been clipped in its northern half by [4007]. Alternatively, it is possible that (4003) was originally circular or ovate and formed either a round spread of stones or a small cairn. Supporting this interpretation was the presence of a disturbed area (4005) to the E of the modern service [4007], which comprised disturbed rubble of a similar type to (4003) in addition to cremated bone. A more discrete area of disturbed rubble (4008) occurred farther to the N of (4005), although this was less convincing than (4005) due to its size, *c.* 1m × 0.75 (in plan).

Artefactual evidence recovered from (4003), (4004) and (4005) consisted principally of flint; however, a single small fragment / crumb of medieval black sandy coarse ware was recovered from (4005). No diagnostic tools were identified in the lithic assemblage; however, the general character of the assemblage from all areas of Field 4 suggests a Neolithic date in contrast to the assemblages from Fields 1, 2 and 3.

Palaeoenvironmental samples were taken of deposit (4004) and were found to contain a number of hazelnut shells suitable for radiocarbon dating. The results produced a date range of 2943-2878 cal BC giving a *terminus post quem (tpq)* within the earlier part of the Late Neolithic, a date which corresponds to the recovered lithic material. The use of hazelnut shell to date (4004) rather than charcoal, which can commonly occur within subsoil deposits and is therefore easily incorporated into a later feature, corroborates a prehistoric origin for this feature. The fragment of medieval pottery from the heavily disturbed area of cremated bone is likely to be residual. Given the available evidence, it is likely that stone cairn / spread (4003) and underlying deposit (4004) are of Late Neolithic date.

7. Finds

Both artefactual material and environmental bulk samples were recovered from the programme of works at Charterhouse-on-Mendip. The discussion below is a summary of the findings of the specialist analyses, with special reference to research aims and the local / regional significance and context of the findings. Materials including flint, chert, stone, pottery and a few small fragments of cremated bone were recovered. Additionally, 14 contexts were bulk-sampled.

7.1 Flint and chert

Fields 1, 2, 3 and 4 produced an assemblage consisting of 171 struck flint and chert items and these were examined by Dr Hugo Anderson-Wymark. Overall, the assemblage primarily consisted of debitage with some tools present. Flint was the dominant raw material used and the majority of the assemblage derived from chalk sources, although some had been obtained from a fluvial source, such as river gravels, on or close to a chalk region.

7.1.1 Field 1

Field 1 produced 45 flint and two chert items, recovered primarily from the topsoil (1000). Small regular flakes dominate the topsoil assemblage and these are suggestive of a Late Neolithic / Early Bronze Age technology. Retouched items consist of two thumbnail scrapers (*Plate 6, 4-6*), a scraper on a non-flake blank (*Plate 6, 8*) and three retouched flakes.

Archaeological contexts which contained flint / chert items included one of the deposits (1012) within the natural hollow [1015] and the contexts were directly associated with the standing stone (1002). The single item to be recovered from (1012) was a flake, on its own undiagnostic, but fitting comfortably with the topsoil assemblage from Field 1.

The majority of stratified lithic material derived from the standing-stone monument. Within the assemblage, a small quantity of retouched items were identified and include a straight-backed narrow blade microlith (*Plate 6, 1*) from the contaminated backfill (1003) of the stone socket [1004]; and a retouched flake (ill. 7) within the non-contaminated stone-socket backfill (1023). Other flint items from stratified contexts associated with the standing stone include a chert core (ill. 3) from (1003), which evinces platform abrasion and a few regular removals, tentatively assigned a Mesolithic date; a well-used flake from (1023) characteristic of Late Neolithic / Early Bronze Age technology and a flake exhibiting heavy use-wear from the surface of the buried soil horizon (1021) beneath the turf / earth spread (1019).

Several lithic items also derived from (1025), a deposit overlaying the turf / earth (1019) and stone (1008) spreads. Of interest was a thumbnail scraper typologically associated with the Early Bronze Age. Other items include an edge-blunted point produced on a bladelet (*Plate 6* ill. 2) resembling a narrow-blade microlith, chips and flakes, the latter similar in nature to the topsoil assemblage.

7.1.2 Field 2

Most of the flint items from Field 2 were recovered from the topsoil (2000) and subsoil (2004) horizons, with eight flint items deriving from the tree-bole fills (2003, 2005). The topsoil and subsoil assemblage primarily suggests a Late Neolithic / Early Bronze Age flake-oriented technology; however, three corticated artefacts (two flakes and a crested blade) from the topsoil suggest a probable Mesolithic or Early Neolithic date. Retouched items from the topsoil and subsoil deposits include four scrapers, two serrated flakes and one retouched flake. While diagnostic Early Bronze Age thumbnail scrapers are absent from this field, it is notable that all four examples present are of comparatively small proportions (the largest (SF27) is 34mm × 36mm (*Plate 6, 9*) and one example, although crudely manufactured on a thick flake fragment, has a semi-circular scraping edge 16mm in diameter that is comparable to thumbnail forms (*Plate 6, 10*). Two scrapers also exhibit piercing spurs (*Plate 6, 10 & 11*) and one is manufactured from Upper Greensand chert (*Plate 6, 12*). It therefore appears likely that the lithic assemblage dates from the Early Bronze Age and is related to the activity in Field 1.

The flint items recovered from the tree-bole produced a single retouched item, a notched flake. The remaining seven items consisted of chips and flakes and would again fit comfortably within a Late Neolithic / Early Bronze Age technology.

7.1.3 Field 3

Field 3 produced 17 flints from the topsoil (3000) and subsoil (3001), with four deriving from the backfill of the modern pipeline. The assemblage includes several small flakes and two scrapers that are broadly comparable to the material from Field 2 and probably date from the Late Neolithic / Early Bronze Age. A disc scraper from (3001) (*Plate 6, 13*) exhibits some invasive working on its ventral surface and heavy battered use-wear, while the other scraper from (3001) (*Plate 6, 14*) exhibits a prominent 'nose' on its proximal right-hand side. It is, however, notable that four flints (a bladelet, two blade-like flakes and a piercer manufactured on a blade) are products of a blade-orientated industry. These flints are of thin regular proportions and typically exhibit blade scars on their dorsal surfaces. These flints are not intrinsically datable but the technology is most typical of the Mesolithic or Early Neolithic.

7.1.4 Field 4

Field 4 yielded 54 flints – approximately 17 from the topsoil (4000), subsoil (4001) and from the surface of the bedrock (4002) – and the majority of the assemblage from this field was found in association with the possible cairn (4003). Overall, the lithics from this field differ from the rest of the assemblage as chalk flint is the exclusive raw material and the flake products are of subtly different morphology. The flakes are typically thin and of regular proportions but they are not as squat as the Early Bronze Age flakes in Fields 1 or 2 or as narrow as the Mesolithic / Early Neolithic blade-orientated products in Field 3.

The retouched tools comprise two scrapers – one disc form (*Plate 6 Ill.15*) and one burnt and broken fragment – a piercer, two spurred flakes – one with two prominent spurs (*Plate 6 Ill.16*), two flakes with slight abrupt edge retouch and a small fragmentary artefact that may be interpreted as a bifacial tool manufactured on a flake or a small flake core reworking a

scraper or similar flake tool (Plate 6 Ill.17). These technological differences indicate the assemblage probably dates from the Neolithic but in the absence of diagnostic artefacts it is not possible to be more specific.



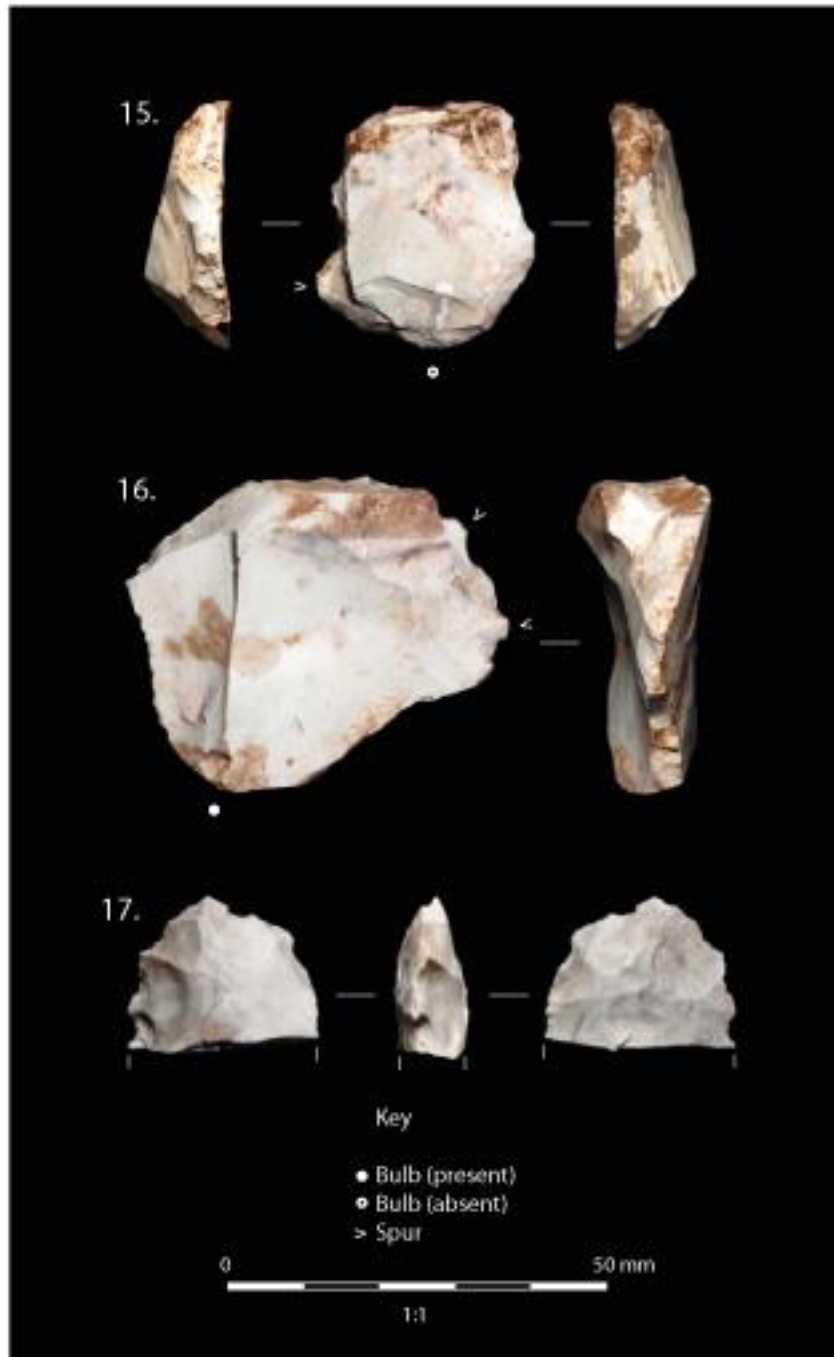


Plate 6 – Lithic material recovered from the excavations at Charterhouse

7.1.5 Summary

The assemblage recovered from Charterhouse-on-Mendip evidences activity from the Mesolithic through to the Early Bronze Age. The Mesolithic component of the assemblage is likely to derive from the Late Mesolithic, based on the production of narrow blades. Both tips had been broken from the microliths, suggesting that they were either discarded or lost during hunting activities. The narrow blade microlith and the possible Mesolithic chert core from the contaminated backfill (1003) of the standing stone are likely to be residual, either having been incorporated into the fill during machining or, indeed, when the stone socket

was dug, as other Mesolithic material is present in the immediate and surrounding landscape.

The majority of the assemblage from Charterhouse was indicative of a Late Neolithic / Early Bronze Age technology, with a small quantity of diagnostic thumbnail scrapers present. This assemblage-type was largely restricted to Field 1 and 2 at the centre of which was the standing-stone monument. The presence of chips and flakes suggests that knapping episodes were occurring locally, perhaps in and around the standing stone.

7.2 Petrology

Petrological identification was sought for the standing stone (1002), as these monuments are often scheduled and therefore little is known about the detail of stone sources exploited; whether, for example, they were locally derived stones or brought to the site from varying distances. A sample taken from the standing stone was thus sent to Dr Kevin Haywood at QUEST University of Reading for thin-section analysis.

The results indicate that the standing stone was a local Fine-grained sandstone, either a grey flaggy member of the Upper Devonian Tintern Sandstone Group 1km to the N, or a Millstone Grit, Quartzitic Sandstone Group, Millstone Grit Series (Naumrian) Upper Carboniferous, the nearest outcrop of which is at Westbury-sub-Mendip 6km S of Charterhouse, with a possible closer outcrop 4km SE (just S of Cheddar).

These results strongly indicate that the stone erected at Charterhouse-on-Mendip, probably during the Late Neolithic / Early Bronze Age, derived from a minimum distance of 1 km and up to 4-6 km away. It is believed that the surface facing S represents where the stone was detached (either by natural or cultural means) from the bedding plane, being mostly smooth and flat in character. The N-facing surface, however, evidences a number of regular and distinctive markings, which are likely to be tooling marks (*fig. 13*). The modification of this surface seems to have been carried out in order to dress this surface which faces towards the open landscape.

7.3 Ceramics

A small assemblage of ceramic material was recovered and was examined by Dr Alejandra Gutiérrez. The material consisted of 64 pieces of CBM and 12 sherds of pottery. Overall, the material derived from unstratified or disturbed contexts and thus has little interpretational potential. Spot-dates were obtained and indicate a predominance of Post-medieval and Modern material with a few sherds of Medieval wares. To the W of the easement in Field 4 there is reported to have been a Post-medieval farmstead (see above) and it is possible that the Post-medieval wares relate to this settlement.

7.4 Palaeoenvironmental

Thirteen contexts were bulk sampled during the programme of works and the processing and analysis of these was undertaken by Archaeological Services University of Durham (ASUD).

7.4.1 Field 1

The fills (1006, 1007, 1011, 1012) of the natural hollow or tree-bole feature [1015] predominantly contained hazelnut shell and hazel charcoal fragments, suggesting a specific exploitation of this tree species.

Three contexts associated with the standing stone were sampled and include the contaminated (1003) and un-contaminated (1023) backfill of the stone socket, as well as the turf / earth deposit (1019) encircling the standing stone to the S. The results indicated that from all three samples tiny twigs of willow / poplar and fragments of birch were recovered. In addition, a single sedge nutlet was recorded in (1019).

7.4.2 Field 2

A bulk sample was taken from (2003) and (2005), two of the three fills from the tree-bole feature. Context (2003) produced a few tuber / rhizomes as well as a few charcoal fragments of gorse / broom and heather twigs, whilst (2005) produced only a few fragments of gorse / broom charcoal.

7.4.3 Field 4

One bulk soil sample was recovered from deposit (4004) from beneath the stone cairn / spread (4003). Hazelnut shell and *Maloideae* (hawthorn, apple, whitebeams and pear) charcoal were recovered. The hazelnut shell from this context was used for radiometric dating (see below) to attempt to establish a *tpq* for (4003).

7.4.4 Summary

The palaeoenvironmental data obtained from the analysis of the bulk soil samples at Charterhouse has not yielded a rich assemblage of plant macrofossils. The notable absence of charred cereal remains may be a reflection of preservation or, rather, the prehistoric nature of the site. Hazelnut shells may suggest a prehistoric origin for the fills of the natural hollow / tree-bole [1015] and the stone spread/structure (4003) and its underlying deposit (4004), as they offered a highly nutritious and easily gathered food source in the Neolithic and Bronze Age.

7.5 Human remains

Small fragments of cremated bone were recovered from Field 4 in the disturbed area (4005) of the stone spread / structure (4003). Assessment of these fragments by Archaeological Services University of Durham has confirmed that they were indeed cremated. The white colour of all of the bone fragments indicates the bone had achieved full oxidation and all organic components had been lost. This would be achieved if the bone had been exposed for a sufficient length of time to temperatures over c. 600°C.

7.6 Radiocarbon dating

A hazelnut shell was submitted for radiocarbon dating to the Scottish Universities Environmental Research Centre for processing. The results have produced a date of 4296 +/- 30 BP (SUERC-48137) and have been expressed using the one sigma level of confidence. Calibration has produced a date range of 3011-2878 cal. BC at 95.4% probability (please see section 11.4 for more detail).

8. Summary conclusion

The archaeology recovered during the programme of works at Charterhouse has revealed a multi-period prehistoric landscape with a background signature of Post-medieval activity in Field 4. As this evidence has little interpretative potential it will not be discussed further here, although it is worth mentioning that it probably relate to the Post-medieval farmstead discussed in Section 3.

8.1 Mesolithic

The earliest evidence recovered dates to the later Mesolithic, indicated by the presence of two narrow-blade microliths and bladelet debitage. Overall, the assemblage is small and probably represents visits to the area by hunter-gatherers, perhaps during hunting activities, as both recovered microliths have their tips missing and may thus represent hunting losses.

At the southern end of Field 1, beyond the easement and near to the wireless station, a large quantity of lithic material was recovered (Dennison, 1986). The assemblage contains a small Mesolithic component consisting of a microlith and blades supporting the interpretation that the immediate landscape was not the location of longer-term settlement during this period.

8.2 Late Neolithic

Neolithic activity is also evidenced from the lithic material. Field 4 produced the strongest signature, with the majority of the assemblage thought to be of this date. Interestingly, the lithics were found primarily associated with the cairn / stone spread (4003), either between the stones themselves or within the deposit which the stones sealed (4004). In addition to the lithic material, a radiocarbon date was obtained from a hazelnut-shell fragment recovered from deposit (4004) producing a Late Neolithic date of 2943-2878 cal. BC.

Initially, the remaining form of this feature was thought to represent a heavily truncated round cairn of possible Early Bronze Age date; however, both the C14 date and the lithic evidence point towards a Neolithic date and, more specifically, to the Late Neolithic. Due to the heavily truncated nature of the feature, (4003), it is difficult to say with any certainty what its original form was (*i.e.* circular or ovate or indeed part of something much larger). What seems clear is that the truncation activity seems to have left the extant portion of (4003) *in-situ*. It is believed that, during the laying of the previous pipeline [4007], these works were facilitated to the E of the pipe trench, disturbing and removing part of (4003), as can be evidenced by the disturbed nature of (4005).

The deposit (4004) which was sealed beneath the stones (4003) is believed to have been the result of deliberate deposition rather than naturally-occurring subsoil, as it differed from the surrounding subsoil. This deposit and the overlying stones (4003) seem to occupy a prominent position within the immediate landscape, located on a naturally protruding limestone outcrop. Stratigraphically, the deposit (4004) was laid down first followed by the stones (4003); there was no mixing of these deposits. Theoretically, (4004) and (4003) can be considered as two separate events; however, it is not certain whether they were separated by a significant period or whether the stones (4003) were placed immediately on the underlying deposit. The date obtained from the hazelnut shell fragment thus dates the deposition of the underlying deposit (4004) and gives a *tpq* for the construction of the stone layer (4003). The flint-work, however, from both around the stones and from within the underlying deposit is of the same character and it is thus likely that the stones were laid sometime in the Late Neolithic.

Given the presence of small fragments of cremated bone, it is conceivable that (4003) was a mortuary structure, such as a Late Neolithic round or ovate mound. The nearest monuments of this type can be found in the eastern Cotswolds and Wessex (Darvill, 2004), although these tend to be much larger and have earth and ditch components. This possibility seems unlikely when direct parallels are sought; however, as is often the case for Early Bronze Age round mounds, they can occur in a variety of sizes.

Alternatively, given the rather flat, 'un-mound-like' nature of the surviving portion of the Charterhouse structure it could be interpreted as a constructed platform, either circular or ovate in form, that was used to facilitate particular activities that may have included aspects of mortuary practice. The presence of small fragments of cremated bone within a disturbed area (4005) of the stone spread (4003) suggest cremated remains may have been brought to the site (there was no evidence of *in-situ* burning) for redistribution to other locales within the landscape. Although, assessment of the cremated remains could not ascertain whether or not they were human, it seems likely that they were given this purposive activity. It must be noted, however, that these remains were not directly dated and cannot with any certainty be considered contemporaneous with the stone structure (4003).

Other evidence for Late Neolithic activity on Mendip occurs in the form of henge monuments, deposition of artefacts and human remains within caves and swallets, lithic scatters and pits. If the cremated bone is considered to be associated with the stone spread (4003), then this would represent a significant find - little is known about the deposition of Late Neolithic human remains or associated mortuary practices on Mendip. Evidence for Late Neolithic burial on Mendip is limited to the deposition of human remains within a swallet / cave. At Totty Pot, situated on the plateau at the head of Cheddar Gorge, one individual was dated to the Late Neolithic (2830-2460 cal. BC OxA-16460) whilst three individuals dated to immediately before the commencement of the Late Neolithic (Schulting *et al.* 2010). There was no evidence of cremation practices at Totty Pot, with individuals interred as either complete or disarticulated remains.

More generally, this pattern of poor representation for Late Neolithic burial is not unique to Mendip and the surrounding area but occurs across Britain. Cremation and inhumation seem to both be appropriate modes of mortuary treatment, with no distinct regional variation. For example, in Wessex, Late Neolithic cremations are known from Stonehenge (Parker-Pearson

et al. 2009), whilst inhumations have been discovered within Late Neolithic round mounds (Darvill, 2004). If a direct association is accepted between the cremated bone and the structure (4003), it is possible that one of its uses may have been as one component of a multi-stage mortuary ritual, serving either as a place of final deposition within a round mound or as the focus of an intermediary stage utilising a platform-like structure.

Alternatively, the structure may have a more 'ritual' character akin to monuments considered to have served multiple functions, such as meeting-places, locations for trade and exchange and / or ceremony. The Charterhouse structure is located near to Gorsey Bigbury henge monument (ApSimon *et al.*, 1976) and the proposed henge at Rains Batch (Fradley, 2009), which was later reworked into an amphitheatre during the Roman period. Slightly farther away, though still on the plateau, are the Priddy Circles (Lewis & Mullan, 2011), which are believed to be large ceremonial monuments and have recently been dated to the early third millennium. The structure (4003) at Charterhouse may tie into this ritualised monumental complex; although much smaller than the large henge monuments, it may represent a more ephemeral constituent of the ritual landscape.

8.3 Late Neolithic/Early Bronze Age

The majority of the lithic assemblage has been characterised as dating from the Late Neolithic / Early Bronze Age and derives primarily from Field 1 and 2. Beyond the easement in Field 1, as discussed above, a large lithic scatter consisting of some 200 pieces and recovered from mole hills also dates to this period (Dennison, 1986). From the lithic evidence it would appear that during this period, there was a marked concentration of activity in this area, the nature of which is difficult to characterise as lithic scatters of this size are often thought to represent evidence for settlement, although their association with monuments may point to the durable remains of rituals, such as food preparation and feasting (Lewis, 2005). It is possible that the lithic material from Field 1 and 2 recovered during the course of the present programme of work viewed in conjunction with the lithics from Field 1 beyond the easement represents activities associated with the standing stone and associated circular structure. However, it must be stressed that both the lithic evidence and the standing stone are broadly assigned a Late Neolithic / Early Bronze Age date and they may in fact be related to distinct temporal events.

Standing stones are notoriously difficult to date as they are often protected scheduled ancient monuments. Where excavation has occurred beyond the scheduled area, peripheral activity such as pits, cremations and lithic material have been recovered (Lewis forthcoming for an example in Somerset, Yarberr); however, these do not have a direct physical relationship with the standing stone and thus cannot date its construction. Standing stones are generally accepted as being prehistoric, although later examples are also known (Swarbrick, 2012).

The lithic evidence from within the non-contaminated backfill (1023) deposit of the stone socket [1004] suggests a Late Neolithic / Early Bronze Age date based on the short and squat character of the flakes. Moreover, the presence of a thumbnail scraper directly overlying the turf / earth spread (1019) suggests a *terminus ante quem* (*taq*) in the Early Bronze Age. Although the backfill deposits (1003) and (1023) within the stone socket [1004] were 100 per cent bulk sampled, no material suitable for radiometric dating was recovered. From the available evidence, it seems likely that the standing stone monument (1002) was

constructed during the Late Neolithic / Early Bronze Age and is thus broadly contemporary with the lithic evidence recovered from elsewhere in Field 1.

The Charterhouse standing stone (1002) is relatively small compared to other examples in the SW of England. However, smaller, less conspicuous standing stones of a similar height are known. Examples of these include the Exford 4, 5 and 6 standing stones at Hoar Moor on Exmoor, which are 0.5m, 0.3m and 0.4m high, respectively (Fowler, 1988). The Butestone at Banwell, another, slightly more local example, is also on the smaller side, standing 0.4m high. The Charterhouse standing stone has an overall length of c. 0.85m and would have stood c. 0.45m above ground.

Although singular standing stones, stone settings, stone rows and stone circles are fairly common throughout SW Britain and, indeed, Somerset (Swarbrick, 2012), they are notably absent on the Mendip plateau. N of Cheddar Head, in the parish of Priddy, there are 16 (now recumbent) stones over two fields, which have tentatively been interpreted as a stone setting (Hack, 1985/6); a large quantity of Late Neolithic / Early Bronze Age lithics has been recovered from the same fields. Some standing stones are located in the lowland areas surrounding the plateau – the Wimblestone near Weston-super-Mare (Swarbrick, 2012), the Yarberry farm stone at Yarberry (Lewis forthcoming) and Hurdlestone.

The presence of a spread of stone and earth / turf surrounding the standing stone is a notable discovery. As discussed above, these monuments are often scheduled and are thus rarely excavated. It is possible that this spread represents a platform-like structure acting to delineate the stone with respect to the immediate landscape, perhaps in an act of veneration and / or simply as a device to enhance the physical presence of the stone. However, as is the case with respect to much prehistoric monument construction, this process did not necessarily occur as a single event. The three phases identified in the construction of the standing stone and its associated spread of stone and earth / turf with a final stone setting may indeed mark particular events in the monument's history. Equally, the circular structure located near to the standing stone may also be related to activity in the vicinity of the monument; however, this interpretation remains tentative owing to the lack of dating evidence.

The Charterhouse standing stone occupies a prominent position on the edge of a small promontory before the hillside descends steeply to the N. From a landscape perspective, it is overlooked by the Early Bronze Age Beacon Batch barrow cemetery to the W and is located a short distance from the Late Neolithic Gorsey Bigbury henge monument and the probable henge monument at Rains Batch (Roman amphitheatre). The Late Neolithic and Early Bronze Age Mendip landscape is considered to have been of particular ritual significance and it is not surprising that this monument type occurs here.

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11. Appendix 1: Context Register

11.1 Field 1

(1000)	Moderately compacted, mid-brown, slightly sandy silt, with moderate amount of small to medium stones. Extends trench wide. Overlies (1005)
<i>INTERPRETATION:</i>	<i>Topsoil</i>
(1001)	Loose to moderately compacted, mid-brown sandy silt, with frequent medium to large stone rubble/blocks, contained elements of rusted barbed-wire and a shotgun shell case. Frequent evidence of root activity. Dimensions, D 0.35m x 2.3m N-S x 5.1m E-W
<i>INTERPRETATION:</i>	<i>Reinstated boundary bank/wall</i>
(1002)	Single upright monolith, measuring approximately c.0.85m in height x c.0.50m at widest (c.0.25m at narrowest point) x c.0.20m in depth; slightly tapers. Fills [1004] wide end first.
<i>INTERPRETATION:</i>	<i>Standing Stone of possible Early Bronze Age date</i>
(1003)	Loosely compacted, orange brown silty sand, with no inclusions identified. Dimensions unknown. Fill of [1004]
<i>INTERPRETATION:</i>	<i>Backfill or packing material for (1002) in [1004]</i>
[1004]	Sub-circular/squarish in plan, with irregular corners, measuring c.0.66m NW-SE x c.0.77m NE-SW x c.0.47m deep; the sides are roughly vertical, except the NW edge slopes gradually to an uneven, slightly concave base; Filled by (1002), (1003) and (1023)
<i>INTERPRETATION:</i>	<i>Cut/socket for (1002)</i>
(1005)	Loose to moderately compacted, orange brown silty sand, with frequent moderately sized to small stone rubble and moderate to occasional worked flint and debitage. Appears throughout Field 1.
<i>INTERPRETATION:</i>	<i>Sub-soil</i>
(1006)	Firm, mid to dark grey sandy silt, with very frequent charcoal; Dimensions 0.10m x 0.03m; Fills [1015]
<i>INTERPRETATION:</i>	<i>Uppermost Fill in [1015]</i>
(1007)	Firm, blackish grey sandy silt with frequent charcoal flecks, and occasional charcoal 'patches'. Dimensions max depth c. 0.07m. Fills [1015] Similar to(1006)
<i>INTERPRETATION:</i>	<i>Upper fill in [1015]</i>
(1008)	Roughly semi-circular/elliptical stone spread, comprising small stone rubble of various size (ranging from c.0.03m x c.0.05m x c.0.04m to c.0.14m x c.0.14m x c.0.05m). Dimensions, c. 1.15m x 2.7m x 0.05m deep
<i>INTERPRETATION:</i>	<i>Stone spread associated with (1002)</i>
(1009)	Friable, dark brown silty sand, with no identified inclusions. Dimensions: c.0.04m x c.0.63m x c.0.03m

<i>INTERPRETATION:</i>	<i>Root damage in base of cut [1018]</i>
(1010)	Stone, measuring c.0.20m x c.0.45m x c.0.10m, that is roughly rectangular in shape with a tapered point
<i>INTERPRETATION:</i>	<i>Possible boundary marker, unknown date</i>
(1011)	Moderately compacted, dark yellow sandy silt with frequent charcoal, measuring c.2.00m x c.2.47m x c.0.07m; appears to be similar to (1007); Fills [1015]
<i>INTERPRETATION:</i>	<i>Middle fill in [1015]</i>
(1012)	Firm, blackish grey silty clay with very frequent charcoal; dimensions: c. 1.60 x 0.17 deep
<i>INTERPRETATION:</i>	<i>Tertiary fill of [1015]</i>
(1013)	Moderately compacted stone rubble, measuring: c. 1.30m x 0.40m deep; Fills [1015]
<i>INTERPRETATION:</i>	<i>Secondary fill of [1015]</i>
(1014)	Moderately compacted, mid reddish brown clay, with occasional small stone rubble inclusions; measuring: c. 0.40m x 0.11m deep; Fills [1015]
<i>INTERPRETATION:</i>	<i>Primary fill of [1015]</i>
[1015]	Roughly semi-circular, irregular feature, with irregular slides that slope into a slightly concave, roughly flat base; dimensions: c.3.27m x c.2.70m x c.0.60m deep. Filled by (1006), (1007), (1011), (1012), (1013) and (1014)
<i>INTERPRETATION:</i>	<i>Tree-throw or natural hollow</i>
(1016)	Firm, yellowish brown slightly sandy clay, with moderate to frequent small stone rubble inclusions; extent unknown.
<i>INTERPRETATION:</i>	<i>Natural clay</i>
(1017)	Compact, mid-brown clayey sand, with rare charcoal flecks as well as small charcoal pieces, with very frequent medium to large angular fragments of stone; dimensions: c.0.25m x c.1.35m x c.1.25m. Fills [1018].
<i>INTERPRETATION:</i>	<i>Possible basal remains of a small circular structure</i>
[1018]	Roughly ovoid feature, with slightly concave sides and undulating base, with evidence of root action (1009). Filled by (1017), but contains (1009). Dimensions: c.1.53m x c.1.23m x c.0.25m
<i>INTERPRETATION:</i>	<i>Shallow cut for stony fill (1017)</i>
(1019)	Loosely compacted, mid-orange-brown silty sand, with frequent dark brown organic silt mottling, and occasional small and medium-sized subangular limestone inclusions, dimensions: c. 1.3m at widest point x c. 0.05m deep
<i>INTERPRETATION:</i>	<i>Small turf/earth spread/deposit</i>
(1020)	Compact, mid/pale yellow clay, with occasional small limestone inclusions; dimensions: c.0.50m x c.0.80m x c.0.08m.
<i>INTERPRETATION:</i>	<i>Deposit within (1019)</i>
(1021)	Moderately compacted, mid orange brown silty sand, with occasional small and medium sized subangular stone inclusions; dimensions

	unknown, as not excavated. Cut by [1004]
<i>INTERPRETATION:</i>	<i>Buried soil horizon</i>
(1022)	Loose to moderately compacted, mid-orange brown silty sand with dark organic silt, with occasional very small angular to subangular limestone inclusions. Dimensions: c.0.02m-c.0.03m x >c.1.10m x slot wide
<i>INTERPRETATION:</i>	<i>Thin degraded soil horizon</i>
(1023)	Loosely compacted, very dark brown sandy silt, with frequent subangular fragments of natural stone, very rare flecks of charcoal. Similar to (1003), Fills [1004]
<i>INTERPRETATION:</i>	<i>Backfill of [1004]/packing material for (1002)</i>
(1024)	Linear/curvilinear stone setting, comprising natural stone; stones set into (1019) Dimensions: c. 1.3m in length
<i>INTERPRETATION:</i>	<i>Stone setting</i>
(1025)	Loose to moderately compacted, mid orange brown silty sand, with frequent moderately sized to small stone rubble and occasional worked flint. Dimensions: c. 0.10m x c. 2.5m
<i>INTERPRETATION:</i>	<i>Subsoil/buried soil horizon associated with (1002)</i>

11.2 Field 2

(2000)	Moderately compacted, medium-dark brown sandy silt, with frequent natural rubble; dimensions: trenchwide x c.0.10m depth (average)
<i>INTERPRETATION:</i>	<i>Topsoil</i>
(2001)	Firm, light grey-brown, silty clay, with very frequent limestone rubble; dimensions: trenchwide x depth unknown. Observed in pipeline trench to a minimum depth of c.1.00m
<i>INTERPRETATION:</i>	<i>Natural, regolith</i>
(2002)	Loose to moderately compacted, dark black-brown clayey silt with occasional small natural stones; dimensions: unknown. Unexcavated as significantly beyond the area impacted by the pipeline
<i>INTERPRETATION:</i>	<i>? Occupation horizon</i>
(2003)	Loose to moderately compacted, dark brown clayey silt with frequent natural rubble, occasional charcoal inclusions; dimensions: c.4.60m x c.3.77m x depth: c.0.09m to c.0.22m.
<i>INTERPRETATION:</i>	<i>Secondary fill of tree bole</i>
(2004)	Moderately compacted, mid yellow-brown, slightly clayey silt, with occasional irregular natural stones, dimensions: width of trech and c. 10m in length;
<i>INTERPRETATION:</i>	<i>Subsoil</i>
(2005)	Loose to moderately compacted, mid to light grey with some yellowish grey mottling, clayey silt, with occasional small to medium subangular stones; dimensions: c.2.50m x c.1.50m x depth: c.0.13m x c.0.19m
<i>INTERPRETATION:</i>	<i>Primary fill of tree bole</i>
(2007)	Moderately compacted, mid-red brown slightly clayey silt, with frequent

	natural stones of irregular shape and size; dimensions, appears in the N end of Field 2.
<i>INTERPRETATION:</i>	<i>Subsoil</i>

11.3 Field 3

(3000)	Moderately compacted, mid-greyish brown sandy silt, with occasional small natural stone; dimensions: trenchwide x depth: c.0.12m to <c.0.30m.
<i>INTERPRETATION:</i>	<i>Topsoil</i>
(3001)	Moderately compacted, mid-orange brown, sandy silt with frequent charcoal flecking, moderate charcoal pieces; dimensions: trenchwide x depth: c.0.15m to c.0.25m.
<i>INTERPRETATION:</i>	<i>Subsoil</i>
(3002)	Compact, pale yellowish brown brittle clay, with no inclusions identified (appeared in patches in the S end of Field 3); dimensions: unknown. Similar to (3003)
<i>INTERPRETATION:</i>	<i>Natural</i>
(3003)	Compact, yellowish brittle clay with no inclusions identified (revealed in patches in the centre of Field 3); dimensions: unknown. Similar to (3002)
<i>INTERPRETATION:</i>	<i>Natural</i>
[3004]	Modern linear cut, orientated roughly N-S, for modern water main; unexcavated. Filled by (3005). Same as [4007]
<i>INTERPRETATION:</i>	<i>Cut of existing pipeline</i>
(3005)	Modern water main. Fills [3004]. Unexcavated. Same as (4006)
<i>INTERPRETATION:</i>	<i>Fill of [3004]; modern water main</i>
(3006)	Moderate to loosely compacted, reddish brown silty sand, with frequent natural stones of varied size. Very irregular; dimensions: c.8.97m (visible) x c.0.84m to c.1.72m x depth: unknown. Fills [3007].
<i>INTERPRETATION:</i>	<i>Land drain or soakaway</i>
[3007]	Roughly linear cut land drain or soak away, orientated roughly NE-SW; dimensions: c.8.97m (visible) x c.0.84m to c.1.72m x depth: unknown. Filled by (3006)
<i>INTERPRETATION:</i>	<i>Cut for land drain/soakaway</i>

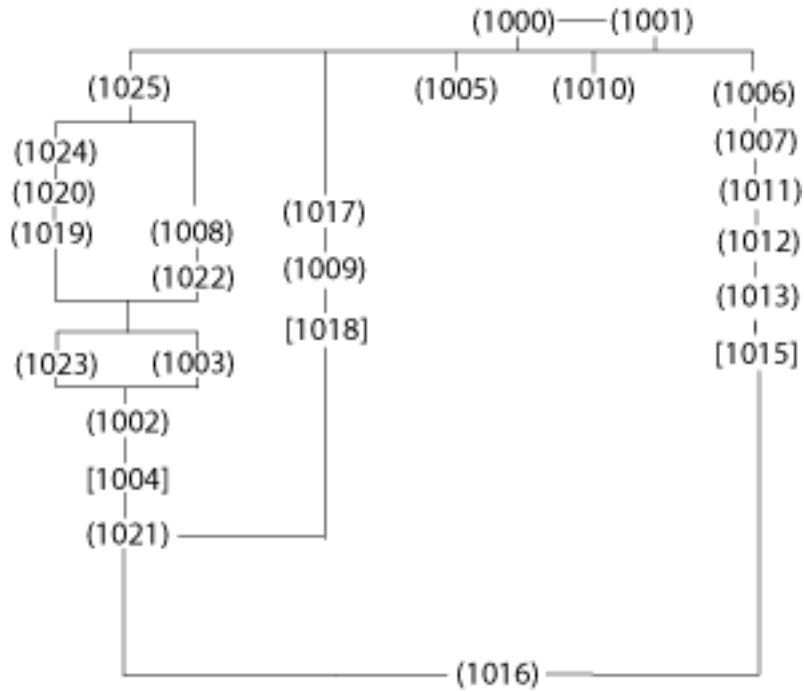
11.4 Field 4

(4000)	Moderately compacted, dark reddish brown, clay silt, with occasional small stones; dimensions: trenchwide x c.0.10m
<i>INTERPRETATION:</i>	<i>Topsoil</i>
(4001)	Moderately compacted, mid orange brown, clay silt, with moderate stone rubble, occasional stone fragments; dimensions: trenchwide x depth: unknown.

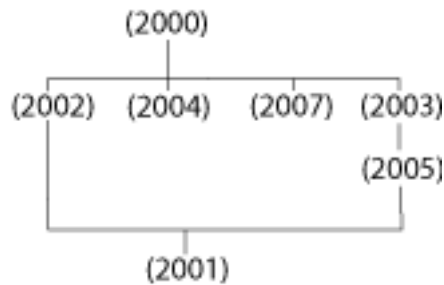
<i>INTERPRETATION:</i>	<i>Subsoil</i>
(4002)	Well-compacted, mid bluish grey limestone, with no inclusions identified; dimensions: trenchwide x depth: unknown.
<i>INTERPRETATION:</i>	<i>Natural limestone bedrock</i>
(4003)	Stone spread or cairn, comprising limestone blocks, forming a semi-circular structure; the stones are generally only one 'course' thick, although two 'courses' are present in places.
<i>INTERPRETATION:</i>	<i>Neolithic stone spread</i>
(4004)	Moderately compacted, reddish brown clay silt, with moderate to frequent charcoal flecking; dimensions: unknown x depth: c.0.15 0.20m. Underlies (4003) and overlies natural (4002)
<i>INTERPRETATION:</i>	<i>Possible occupation horizon between (4003) and (4002)</i>
(4005)	Loose to moderately compacted, grey limestone rubble; dimensions: c. 0.75m x 2.3m
<i>INTERPRETATION:</i>	<i>Possible remnants of (4003) to E where it has been impacted by [4007]</i>
(4006)	Fill of modern water main. Fills [4007]. Unexcavated. Same as (3005)
<i>INTERPRETATION:</i>	<i>Fill of [4007]; existing pipeline</i>
[4007]	Modern linear cut, orientated roughly N-S, for modern water main; unexcavated. Filled by (4006). Same as [3004].
<i>INTERPRETATION:</i>	<i>Cut of existing pipeline</i>
(4008)	Loosely compacted, grey limestone, with no inclusions; dimensions: c. 0.7m x 0.6m Very disturbed, even more so than (4005). Similar to (4005) and (4003)
<i>INTERPRETATION:</i>	<i>Possible E-most extent of (4003)</i>

12. Appendix 2: Site matrix

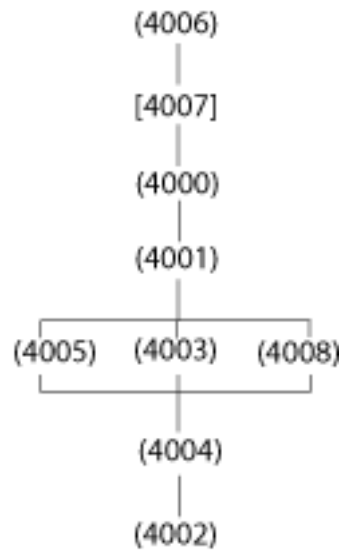
12.1 Field 1



12.2 Field 2



12.3 Field 4



13. Appendix 3: Specialist reports

13.1 FLINT AND CHERT

Dr Hugo Anderson Whymark

13.1.1 Introduction

Excavations along the route of a pipeline at Charterhouse-on-Mendip yielded 171 struck flint and chert artefacts (*Table 1*). These artefacts date from the Mesolithic, Neolithic and Early Bronze Age and reflect temporally and spatially distinct episodes of activity in the local landscape.

CATEGORY TYPE	FIELD 1 1000S	FIELD 2 2000S	FIELD 3 3000S	FIELD 4 4000S	GRAND TOTAL
Flake	21	22	6	33	82
Bladelet			1	2	3
Blade-like flake		1	2	1	4
Irregular waste			2		2
Chip	14	23	2	9	48
Rejuvenation flake core face/edge				1	1
Crested blade		1			1
Multiplatform flake core			1		1
Unclassifiable/fragmentary core	1				1
Bifacial tool/Core?				1	1
End scraper		1			1
Side scraper		1			1
End and side scraper		1		1	2
Disc scraper		1	1	1	3
Thumbnail scraper	3				3
Scraper on a non-flake blank	1				1
Other scraper			1		1
Microlith: Edge-blunted point	2				2
Piercer			1	1	2
Spurred piece				2	2
Serrated blade/flake		2			2
Notch		1			1
Retouched flake	2			2	4
Misc. retouch	1	1			2
Grand total	45	55	17	54	171
No. of burnt flints (%)*	4 (12.9)	4 (12.5)	1 (6.7)	1 (2.2)	10 (8.1)
No. of broken flints (%)*	17 (54.8)	21 (65.6)	6 (40)	15 (33.3)	59 (48)
No. of retouched flints (%)*	9 (29)	8 (25)	3 (20)	8 (17.8)	28 (22.8)

* Percentage excludes chips

Table 1: The flint assemblage from Charterhouse-on-Mendip by field

13.1.2 Methodology

The lithics were catalogued according to broad artefact / debitage type and retouched pieces were classified following standard morphological descriptions (Bamford 1985, 72-7; Healy 1988, 48-9; Bradley 1999, 211-27; Butler 2005). Additional information was recorded on the condition of the artefacts, including, burning, breakage, the degree of edge-damage and the degree of cortication. The assemblage was catalogued directly onto a Microsoft Access database and data manipulated in Microsoft Excel. A copy of the catalogue has been deposited with the archive.

13.1.3 Raw material

The raw material most frequently exploited was flint, but four flakes of chert were also present. The flint varied in colour, but translucent light to mid-brown was most common; occasional pieces of opaque mid-grey flint were noted. The cortex, where present, typically exhibited a 2-11mm thick unabraded buff-coloured surface, indicating that this raw material was obtained from a chalk region over 40km to the E or SE. A small number of flints exhibited a water-worn or abraded cortex and these are likely to have been obtained from a fluvial source, such as river gravels, on or close to a chalk region.

The four chert artefacts are of two different types of Upper Greensand chert. Two retouched tools – an edge-blunted point (1003) (*Plate 7, 1*) and a disc scraper (2000) (*Plate 7, 12*) – were manufactured from a good quality, although slightly granular, translucent light yellowish-brown (butterscotch) chert; a thin white cortex is present on one piece. A core (1003) (*Plate 7, 3*) and a flake (3001) (not illustrated) were manufacture on a fine-grained, mottled light to dark brown chert with off-white speckles. Upper Greensand cherts are potentially available from outcrops c. 35km to the E or SE, but it is not known if exposures or quality chert is available in this area; quality Upper Greensand cherts are also available 50+ km to the S.

13.1.4 Condition

The majority of the lithics were in reasonably fresh condition, although some artefacts from the topsoil exhibited moderate edge-damage. The artefacts from Fields 1-3 are mostly free from surface cortication, but the lithics from Field 4 exhibit a moderate to heavy white surface cortication (see *Plate 7, 15-17*); this is likely to reflect localised differences in ground conditions and is not of chronological significance.

13.1.5 The assemblage

The flint assemblage will be considered by field below.

- **Field 1**

Field 1 yielded 45 flints from seven archaeological contexts. More than half of the assemblage was recovered from topsoil (1000) (26 flints) and a further 12 flints were recovered from a silty soil (1025) surrounding a standing stone and an associated stone / soil mound. A single flint was recovered from a palaeosol (1021) contemporary with the

erection of a standing stone. The remaining flints were recovered from a small number of features including stone socket [1004], fills (1003) and (1023) and a tree-throw hole (1012).

The lithic assemblage includes two Mesolithic, possibly Early Mesolithic, edge-blunted points (1003) (*Plate 7, 1*) and (1025) (*Plate 7, 2*). One of these is manufactured from Upper Greensand chert, while the other is of flint, and both exhibit broken tips indicating that they have been used and lost or discarded. Only one other artefact from this field is tentatively attributed a Mesolithic date: an Upper Greensand chert core weighing 13.8 g that exhibits platform-edge abrasion and the scars of a few regular removals (*Plate 7, 3*).

Neolithic / Early Bronze Age industry: Seven retouched artefacts were recovered comprising: three thumbnail scrapers (two with piercing spurs; 4-6), a scraper on a non-flake blank (8), two flakes with limited slight abrupt edge retouch and a 'miscellaneously retouched' artefact that appears to be a flake struck from the edge of a finely retouched scraper. The three thumbnail scrapers are of particular note as they are classic examples of this Early Bronze Age, Beaker-associated form. Two examples were recovered from the topsoil (1000) (*Plate 7, 4 & 5*) and one was retrieved from the soil that overlies the mound surrounding the standing stone (1025) (*Plate 7, 6*). A particularly large retouched flake (SF149) (*Plate 7, 7*) (weight: 31.3g) was recovered from the fill (1023) of the standing stone socket [1004], potentially indicating that it was specially selected for deposition in this context.

- **Field 2**

Fifty-five flints were recovered from five archaeological contexts in Field 2. The vast majority of the lithics were recovered from topsoil (2000) (29 flints) and a buried agricultural soil (2004) (13 flints), but a tree-throw hole yielded eight artefacts, (2003), (2005), and a possible occupation deposit (2006) yielded five flints.

The lithic assemblage from Field 2 forms a coherent Late Neolithic / Early Bronze Age flake-orientated assemblage, with the possible exception of three corticated artefacts from the topsoil that are probably Mesolithic or Early Neolithic (2000) (flakes SF1/SF7 & crested blade SF73). The assemblage contains eight retouched artefacts comprising four scrapers (*Plate 7, 9-12*), two serrated flakes, a notched flake and a flake with 'miscellaneous edge retouch' that is not classifiable as a particular artefact form. While diagnostic Early Bronze Age thumbnail scrapers are absent from this field, it is notable that all four examples present are of comparatively small proportions (the largest, SF27, is 34mm long by 36mm wide (9) and one example, although crudely manufactured on a thick flake fragment, has a semi-circular scraping edge, 16mm in diameter, that is comparable to thumbnail forms (10). Two scrapers also exhibit piercing spurs (*Plate 7, 10 & 11*) and one is manufactured from Upper Greensand chert (*Plate 7, 12*). It therefore appears likely that the lithic assemblage dates from the Early Bronze Age and is related to the activity in Field 1.

- **Field 3**

Field 3 yielded a small assemblage of 17 flints: four were recovered from topsoil, 12 from subsoil and one from context (3005). The assemblage includes several small flakes and two scrapers that are broadly comparable to the material from Field 2 and probably date from the late Neolithic / Early Bronze Age. A disc scraper from (3001) (SF114) (*Plate 7, 13*) exhibits some invasive working on its ventral surface and heavy battered use-wear, while the other scraper (SF 90) (*Plate 7, 14*) exhibits a prominent 'nose' on its proximal right-hand side.

It is, however, notable that four flints (a bladelet, two blade-like flakes and a piercer manufactured on a blade) are products of a blade-orientated industry. These flints are of thin regular proportions and typically exhibit blade scars on their dorsal surfaces. These flints are not intrinsically datable but the technology is most typical of the Mesolithic or Early Neolithic.

- **Field 4**

Field 4 yielded 54 flints in six archaeological contexts. A small number of flints were recovered from the topsoil (4000), subsoil (4001) and the surface of the bedrock (4002), but the majority were found among the stones of a cairn (4003) and in related contexts (4004) and (4005).

The lithics from this field differ from the rest of the assemblage, as chalk flint is the exclusive raw material and the flake products are of subtly different morphology. The flakes are typically thin and of regular proportions, but they are not as squat as the Early Bronze Age flakes in Fields 1 or 2 or as narrow as the Mesolithic / Early Neolithic blade-orientated products in Field 3. The retouched tools comprise two scrapers (one disc form (*Plate 7, 15*) and one burnt and broken fragment), a piercer, two spurred flakes (one with two prominent spurs) (*Plate 7, 16*), two flakes with slight abrupt edge retouch and a small fragmentary artefact that may be interpreted as a bifacial tool manufactured on a flake or a small flake core reworking a scraper or similar flake tool (*Plate 7, 17*). These technological differences indicate the assemblage probably dates from the Neolithic but in the absence of diagnostic artefacts it is not possible to be more specific.

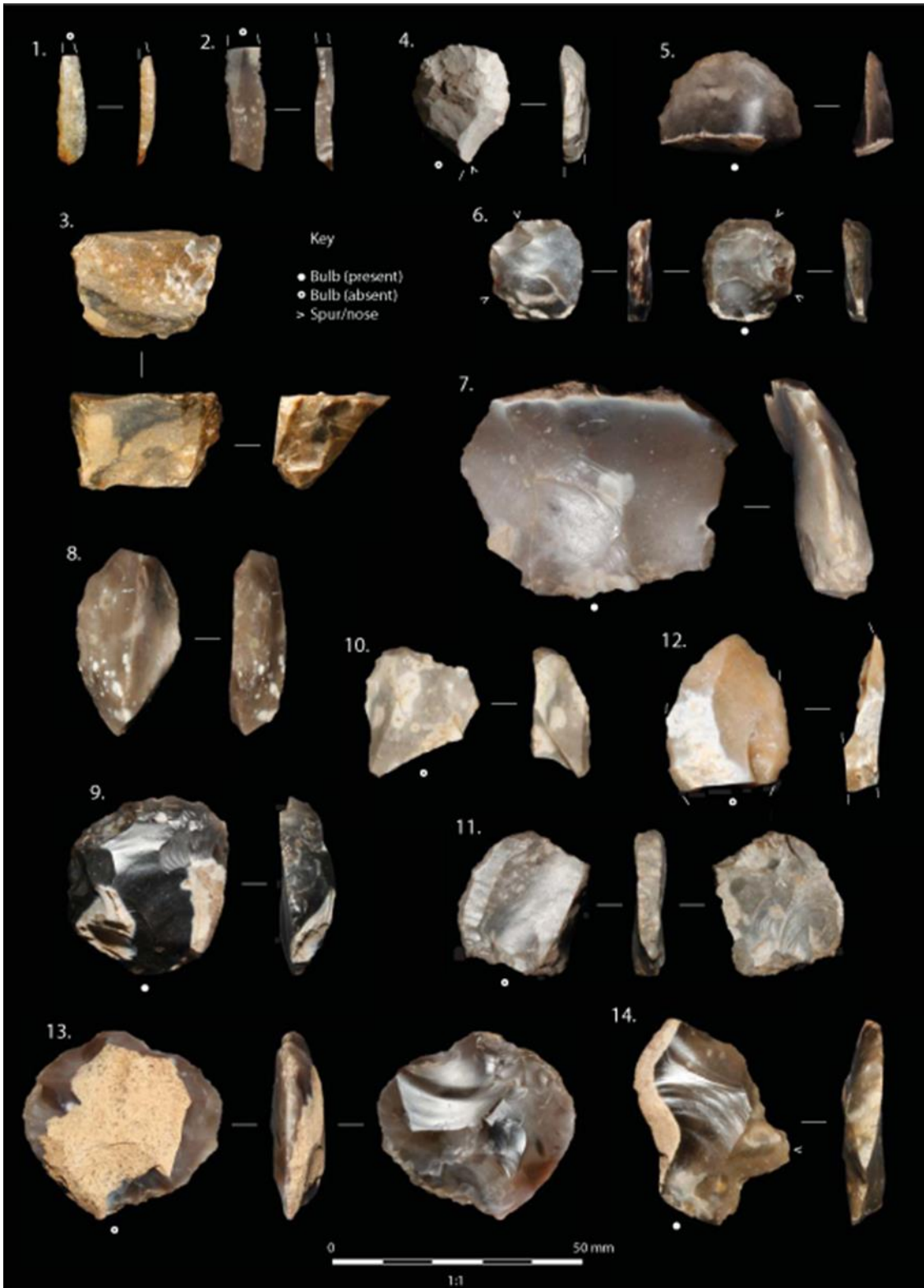
13.1.6 Discussion

The lithic assemblage recovered along the route of the pipeline indicates significant prehistoric activity in the local landscape over several millennia. Field 1 yielded two microliths indicating Mesolithic hunter-gather activity in the landscape and this Early presence is further supported by the recovery of a small number of flints from Fields 2 and 3 that have been broadly dated to the Mesolithic or Early Neolithic. In the absence of a specific artefact concentration, these lithics may be considered to form a part of a diffuse scatter reflecting a presence in the landscape rather than a specific activity site. The Somerset HER records numerous discoveries of isolated Mesolithic flints in the local landscape but significantly one substantial scatter was located nearby (Todd 2003).

In Field 4, a small assemblage of lithics broadly dated to the Neolithic is associated with a small stone cairn. These lithics provide a broad date for this structure but the limited assemblage provides little indication of the range of activities undertaken at this location. Neolithic scatters are reasonably numerous in the local landscape and fall within a region rich in Neolithic monuments, including the Priddy Circles and Stanton Drew. The sole use of chalk flint in this scatter, however, reminds us that Neolithic populations were exceptionally mobile and this raw material provides a link to the chalk downlands of Wiltshire and more distant Neolithic communities.

The Early Bronze Age lithics were concentrated Fields 1 and 2 and the standing stone in Field 1 may have been the focus for activity in this period. The Early Bronze Age lithic assemblage is very modest in size but lithic scatters that can be closely dated to the Early Bronze Age

through the presence of thumbnail scrapers are exceptionally uncommon in SE Britain and this artefact scatter represents a significant addition to the corpus. This lithic assemblage therefore significantly enhances our understanding of prehistoric activity in the region and assists dating of the archaeological remains identified.



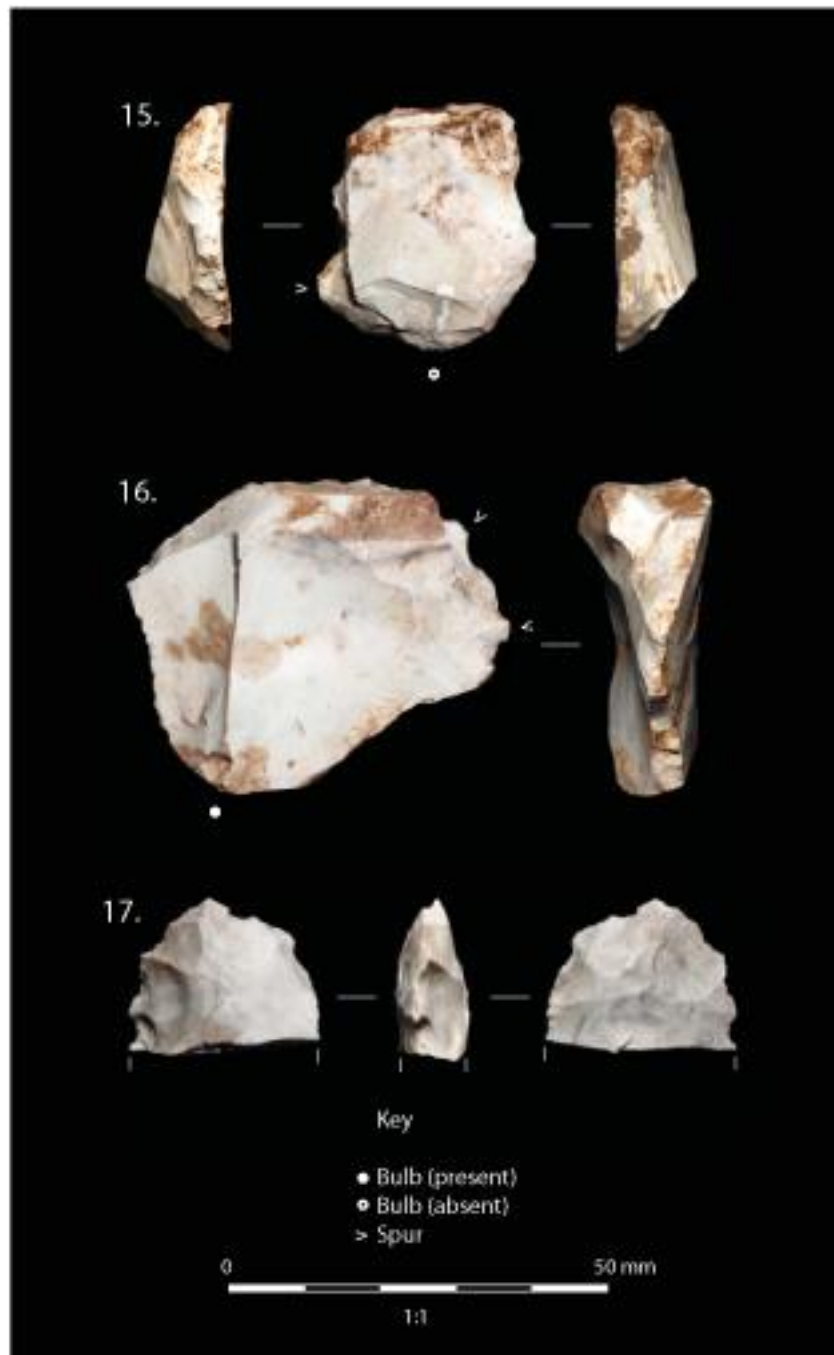


Plate 7: Lithic material recovered from the excavations at Charterhouse

13.1.7 Illustration catalogue

1. Edge-blunted point with slight break to tip. Weight: 0.6g. Greensand chert. Field 1. Stone socket 1004, fill 1003. SF25. Residual Mesolithic.
2. Edge-blunted point with broken tip. Mid grey flint. Weight: 0.8g. Field 1. Soil horizon 1025. SF76. Mesolithic.
3. Fragmentary flake core of Greensand chert. Weight: 13.8g. Field 1. Stone socket [1004], fill (1003). SF26. Residual Mesolithic?
4. Burnt disc-shaped thumbnail scraper manufactured from flint. Note the proximal break forms a spur that has been used for piercing. Weight: 2.5g. Field 1. Topsoil (1000). SF46. Early Bronze Age (Beaker).
5. D-shaped thumbnail scraper manufactured from flint. Weight: 3.7g. Field 1. Topsoil (1000). SF95. Early Bronze Age (Beaker).
6. Disc-shaped thumbnail scraper with a small spur on the right hand proximal side, manufactured from flint. Note two later removals on the ventral surface create a secondary spur. Weight: 2.5g. Field 1. Soil horizon (1025). SF41. Early Bronze Age (Beaker).
7. Edge-retouched flint flake. Weight: 31.1g. Field 1. Possibly an intentional deposit in stone socket [1004], fill (1023). SF149. Late Neolithic/Early Bronze Age.
8. Scraper manufactured on a thermally fractured piece of flint. Weight: 7.8g. Field 1. Topsoil (1000). SF44. Late Neolithic/Early Bronze Age?
9. End and side scraper manufactured from chalk flint. Note one heat spall on retouch from light burning. Weight: 14.3g. Field 2. Occupation deposit (2006). SF27. Late Neolithic/Early Bronze Age.
10. End scraper manufactured on an irregular flint flake with a spur on the right hand proximal edge. Note the curvature of the blade edge is comparable to thumbnail scrapers. Weight: 5.6g. Field 2. Buried agricultural soil (2004). SF4. Early Bronze Age (Beaker)?
11. Side scraper with piercing spurs on each side manufactured on a flint flake. Note some invasive flaking on the ventral surface. Weight: 5.1g. Field 2. Topsoil (2000). SF9. Late Neolithic/Early Bronze Age.
12. Lightly burnt and broken disc scraper of Greensand chert. Weight: 4.3g. Field 2. Topsoil (2000). SF18. Late Neolithic/Early Bronze Age.
13. Disc scraper of chalk flint, which exhibits some flaking on its ventral surface and heavy use damage. Weight: 14.1g. Field 3. Subsoil (3001). SF114. Late Neolithic/Early Bronze Age?
14. End and side scraper of chalk flint, which exhibits a prominent nose on its right hand side. Weight: 10.3g. Field 3. Subsoil (3001). SF90. Late Neolithic/Early Bronze Age?
15. Crude and irregular disc scraper of chalk flint, which exhibits a prominent spur on its right hand side. Heavy white cortication. Weight: 9.3g. Field 4. Stone cairn (4003). SF112. Neolithic.
16. Flake of chalk flint that exhibits two spurs. Heavy white cortication. Weight: 27.5g. Field 4. Subsoil (4001). SF126. Neolithic.

17. Bifacial tool manufactured on a flake or a small flake core reworking a scraper or similar flake tool. Moderate white cortication. Weight: 4.9g. Field 4. Stone cairn (4005). SF155. Neolithic.

13.1.8 Bibliography

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Flint Catalogue

Context	Small Find No	CATEGORY	CATEGORY TYPE	Total no	Burnt no	Broken No	Weight	Comments	Utilised?	Cortication?	Post Depositional Damage
1000	36	57	Retouched flake	1		1	0.6	small flake fragment with limited edge retouch.	No	Uncorticated	Slight post depositional damage
1000	38	62	Misc. retouch	1			0.6	small flake seeming struck from the edge of a neatly manufactured flake tool, possibly a scraper	No	Uncorticated	Slight post depositional damage
1000	39	1	Flake	1		1	0.7		No	Uncorticated	Fresh
1000	40	1	Flake	1			13.2	possible reworked retouch, but may be damage. Curious raw material. Possibly a mid brown flint with white fossil inclusions, but it may be a chert.	No	Light Cortication	Heavy post depositional damage
1000	42	6	Chip	1			0.1		No	Uncorticated	Slight post depositional damage
1000	43	6	Chip	1			0.1		No	Uncorticated	Slight post depositional damage
1000	44	41	Scraper on a non-flake blank	1			7.8	thermall fractured piece of flint with semi abrupt edge retouch along one side.	No	Uncorticated	Slight post depositional damage
1000	45	6	Chip	1			0.2		No	Uncorticated	Slight post depositional damage
1000	48	1	Flake	1	1	1	0.6	thick cortex	No	Uncorticated	Slight post depositional damage
1000	49	6	Chip	1	1	1	0.1		No	Uncorticated	Slight post depositional damage
1000	51	1	Flake	1	1	1	0.4		No	Uncorticated	Slight post depositional damage
1000	52	1	Flake	1			0.1		No	Uncorticated	Slight post depositional damage
1000	53	1	Flake	1			3.3	squat flake. Worn gravel flint cortex. LN-eba?	No	Uncorticated	Slight post depositional damage
1000	56	6	Chip	1		1	0.3	seeming used although less than 10mm	Yes	Uncorticated	Slight post depositional damage
1000	65	6	Chip	1			0.5		No	Uncorticated	Slight post depositional damage
1000	66	6	Chip	1			0.1		No	Uncorticated	Slight post depositional damage
1000	67	6	Chip	1			0.1		No	Uncorticated	Slight post depositional damage
1000	69	1	Flake	1		1	0.3	thin white gravel cortex	No	Uncorticated	Slight post depositional damage
1000	70	1	Flake	1		1	1.3		Yes	Uncorticated	Moderate post depositional damage
1000	71	6	Chip	1			0.3	gravel flint	No	Uncorticated	Slight post depositional damage
1000	72	1	Flake	1		1	0.3		No	Uncorticated	Fresh
1000	75	1	Flake	1		1	0.2	modern break	No	Moderate Cortication	Slight post depositional damage
1000	78	1	Flake	1			11.5	from chunk flake core. Hard hammer	Yes	Uncorticated	Slight post depositional damage
1000	79	1	Flake	1		1	0.5	well used.	Yes	Uncorticated	Slight post depositional damage
1001	35	1	Flake	1		1	0.1	thin.	No	Uncorticated	Slight post depositional damage
1003	26	24	Unclassifiable/fragmentary core	1			13.8	small exhausted corel chert type 2. plt abr.	No	Uncorticated	Slight post depositional damage
1005	37	1	Flake	1	1	1	0.8		No	Uncorticated	Slight post depositional damage
1005	47	1	Flake	1			1.6	squat uncorticated flake	No	Uncorticated	Fresh
1005	50	1	Flake	1		1	1.2	chalk flint cortex	No	Light Cortication	Slight post depositional damage
1005	54	1	Flake	1			2.7	squat flake	No	Uncorticated	Fresh
1005	55	1	Flake	1		1	0.7	2.5 mm thick chalk cortex	No	Light Cortication	Slight post depositional damage
1005	57	6	Chip	1			0.1		No	Uncorticated	Slight post depositional damage
1005	68	6	Chip	1		1	0.1		No	Uncorticated	Slight post depositional damage
1005	77	6	Chip	1			0.1		No	Uncorticated	Slight post depositional damage



1005	85	6	Chip	1		1	0.1	No	Uncorticated	Slight post depositional damage
1005	96	6	Chip	1			0.1	No	Light Cortication	Slight post depositional damage
1012	97	1	Flake	1		1	3.5	No	Uncorticated	Fresh
1021	166	1	Flake	1		1	0.8	Yes	Uncorticated	Slight post depositional damage
1023	148	1	Flake	1			8.5	Yes	Uncorticated	Slight post depositional damage
1023	149	57	Retouched flake	1			31.1	Yes	Uncorticated	Moderate post depositional damage
2000	1	1	Flake	1		1	2.6	Yes	Light Cortication	Slight post depositional damage
2000	5	62	Misc. retouch	1		1	2.7	No	Uncorticated	Fresh
2000	6	1	Flake	1	1	1	35.4	No	Uncorticated	Slight post depositional damage
2000	7	1	Flake	1			7.6	No	Moderate Cortication	Moderate post depositional damage
2000	8	1	Flake	1		1	11.1	Yes	Uncorticated	Slight post depositional damage
2000	10	1	Flake	1			0.7	No	Uncorticated	Fresh
2000	11	1	Flake	1	1	1	0.5	No	Uncorticated	Slight post depositional damage
2000	12	6	Chip	1			0.1	No	Uncorticated	Slight post depositional damage
2000	13	1	Flake	1		1	0.1	No	Uncorticated	Slight post depositional damage
2000	14	6	Chip	1			0.1	No	Uncorticated	Slight post depositional damage
2000	15	1	Flake	1			2.9	No	Uncorticated	Slight post depositional damage
2000	18	39	Disc scraper	1	1	1	4.3	No	Uncorticated	Slight post depositional damage
2000	19	47	Serrated blade/flake	1		1	1.2	Yes	Uncorticated	Slight post depositional damage
2000	20	1	Flake	1		1	0.6	No	Uncorticated	Slight post depositional damage
2000	28	6	Chip	1			0.1	No	Uncorticated	Slight post depositional damage
2000	29	6	Chip	1	1	1	0.1	No	Uncorticated	Slight post depositional damage
2000	30	6	Chip	1	1	1	0.1	No	Uncorticated	Slight post depositional damage
2000	31	6	Chip	1			0.1	No	Uncorticated	Slight post depositional damage
2000	34	6	Chip	1			0.4	No	Uncorticated	Slight post depositional damage
2000	60	1	Flake	1		1	1.7	Yes	Uncorticated	Slight post depositional damage
2000	61	1	Flake	1		1	0.2	No	Uncorticated	Slight post depositional damage
2000	62	6	Chip	1			0.1	No	Uncorticated	Slight post depositional damage
2000	63	1	Flake	1		1	0.5	No	Uncorticated	Moderate post depositional damage
2000	64	6	Chip	1			0.2	No	Uncorticated	Slight post depositional damage
2000	73	75	Crested blade	1		1	16.9	Yes	Light Cortication	Slight post depositional damage
2000	74	1	Flake	1		1	0.3	No	Uncorticated	Moderate post depositional damage
2000	80	1	Flake	1			0.5	No	Uncorticated	Fresh
2000	83	47	Serrated blade/flake	1			9.3	No	Uncorticated	Slight post depositional damage

2003	2	50	Notch	1		9.4	small 6mm by 2mm notch on a broken flake. Entirely abraded gravel flint cortex. N-EBA?	No	Uncorticated	Slight post depositional damage
2003	3	1	Flake	1		1.2	squat	No	Uncorticated	Slight post depositional damage
2003	16	6	Chip	1		0.2		No	Uncorticated	Slight post depositional damage
2003	17	1	Flake	1	1	0.3		No	Uncorticated	Slight post depositional damage
2003	22	6	Chip	1	1	0.1		No	Uncorticated	Slight post depositional damage
2003	23	1	Flake	1		0.6	broad. Small area of 3.5mm thick chalk? Cortex	No	Uncorticated	Slight post depositional damage
2003	24	6	Chip	1		0.1		No	Uncorticated	Moderate post depositional damage
2004	103	4	Blade-like	1	1	0.9	thin. Soft hammer with plt abr.	No	Uncorticated	Slight post depositional damage
2004	107	6	Chip	8		1.9		No	Uncorticated	Slight post depositional damage
2004	107	1	Flake	3	3	1.8		No	Uncorticated	Slight post depositional damage
2005	110	6	Chip	1		0.1		No	Uncorticated	Slight post depositional damage
2006	99	6	Chip	1		0.4		No	Uncorticated	Slight post depositional damage
2006	100	6	Chip	1		0.2		No	Uncorticated	Slight post depositional damage
2006	101	1	Flake	1	1	0.3	vague resemblance to a micro burin but no clear retouched notch.	No	Uncorticated	Slight post depositional damage
2006	102	1	Flake	1	1	2.8		No	Light Cortication	Slight post depositional damage
3000	82	1	Flake	1		2.7	squat In-eba feel. Hard hammer	Yes	Uncorticated	Slight post depositional damage
3000	87	1	Flake	1		3.8	6mm thick chalk cortex	No	Uncorticated	Fresh
3000	89	1	Flake	1	1	0.8	not corticated. Gravel flint	No	Uncorticated	Fresh
3000	116	21	Multiplatform flake core	1		6.5	small exhausted core. Small squat flake removlas.	No	Uncorticated	Fresh
3001	81	44	Piercer	1		2.3	on short blade like flake with dbr. Distal cortex. Concave notch helps form point. N-eba.	Yes	Uncorticated	Slight post depositional damage
3001	88	66	Natural	1		1.4	small piece of apparently unworked quartz.	No	Uncorticated	Slight post depositional damage
3001	91	1	Flake	1		13.8	possible notch. Well used.	Yes	Uncorticated	Slight post depositional damage
3001	92	1	Flake	1	1	0.5		No	Uncorticated	Slight post depositional damage
3001	93	3	Bladelet	1	1	1.2	dbr. Meso-Neo	No	Uncorticated	Moderate post depositional damage
3001	94	5	Irregular waste	1		0.6		No	Uncorticated	Slight post depositional damage
3001	109	4	Blade-like	1	1	1.5	Chert type 2 - fine grained mottled light to dark brown with off white speckles. Probably upper greensand chert. Dbr Meso?	Yes	Uncorticated	Slight post depositional damage
3001	115	6	Chip	2		0.1		No	Uncorticated	Slight post depositional damage
3001	120	4	Blade-like	1	1	1		No	Uncorticated	Slight post depositional damage
3001	134	1	Flake	1	1	0.8	soft hammer. Plt abr	No	Uncorticated	Slight post depositional damage
3005	84	5	Irregular waste	1		0.8	thin white gravel flint cortex.	No	Uncorticated	Slight post depositional damage
4000	158	1	Flake	1		2.2	Neo-eba?	No	Uncorticated	Fresh
4000	159	1	Flake	1	1	0.7	thin buff cortex	No	Moderate Cortication	Slight post depositional damage
4000	169	1	Flake	1		0.9		No	Moderate Cortication	Fresh
4000	171	1	Flake	1		1		No	Light Cortication	Slight post depositional damage
4001	125	1	Flake	1		0.1		No	Moderate Cortication	Slight post depositional damage
4001	127	1	Flake	1		11.4	no cortex, but inclusions like chalk flint	Yes	Heavy Cortication	Slight post depositional damage



4001	131	1	Flake	1			8.7	chalk cortex	No	Light Cortication	Fresh
4001	133	6	Chip	1			0.5		No	Uncorticated	Slight post depositional damage
4001	137	1	Flake	1		1	0.8	deliberate flexion fracture	No	Heavy Cortication	Moderate post depositional damage
4001	140	38	End and side scraper	1	1	1	2.6	approximated one quarter of a burnt and broken scraper manufactured on a small flake. Possibly a thumbnail form. neat retouch	No	Uncorticated	Slight post depositional damage
4001	147	1	Flake	1			1.1		Yes	Moderate Cortication	Slight post depositional damage
4001	167	1	Flake	1			0.2		No	Light Cortication	Slight post depositional damage
4001	168	1	Flake	1		1	0.1		No	Uncorticated	Slight post depositional damage
4002	104	1	Flake	1		1	0.3	possible slight retouch or platform preparation	No	Moderate Cortication	Slight post depositional damage
4002	105	1	Flake	1			0.2	glossy on dorsal. Chalk flint.	No	Moderate Cortication	Slight post depositional damage
4002	106	6	Chip	1			0.3		No	Uncorticated	Slight post depositional damage
4002	142	1	Flake	1			3.6		No	Moderate Cortication	Slight post depositional damage
4003	108	1	Flake	1			2.4	small plunging flake	No	Light Cortication	Slight post depositional damage
4003	111	1	Flake	1			2.1	used. Thin, reegular. Meso-neo	Yes	Uncorticated	Slight post depositional damage
4003	113	1	Flake	1		1	3	well used. Thin regular flake	Yes	Moderate Cortication	Slight post depositional damage
4003	117	1	Flake	2		1	0.3	recent break	No	Moderate Cortication	Slight post depositional damage
4003	118	6	Chip	1			0.1		No	Moderate Cortication	Slight post depositional damage
4003	119	1	Flake	1			2.2	side trimming. Unabraded cortex2mm thick	No	Moderate Cortication	Fresh
4003	122	6	Chip	1			0.1		No	Moderate Cortication	Slight post depositional damage
4003	123	44	Piercer	1		1	0.2	difficult to classify as small and fragmentary. Thin gravel flint cortex.	No	Moderate Cortication	Slight post depositional damage
4003	124	1	Flake	1			8.2	large core trimming. Meso-neo	Yes	Moderate Cortication	Slight post depositional damage
4003	128	6	Chip	1	1	1	0.1		No	Uncorticated	Slight post depositional damage
4003	129	1	Flake	1			7.5	5mm thick unabraded buff chalk cortex.	No	Light Cortication	Fresh
4003	130	1	Flake	1			5		No	Moderate Cortication	Slight post depositional damage
4003	132	1	Flake	1		1	1.1	probable a wedge shaped fragment from deliberate breakage	No	Uncorticated	Fresh
4003	135	3	Bladelet	1		1	1.2	chalk flint. Side trimming.	No	Moderate Cortication	Fresh
4003	136	6	Chip	1			0.1		No	Moderate Cortication	Slight post depositional damage
4003	138	6	Chip	1			0.1		No	Moderate Cortication	Fresh
4003	139	1	Flake	1		1	1	sharp natural spur, but no clear use.	No	Moderate Cortication	Fresh
4003	143	1	Flake	1			1.2		No	Moderate Cortication	Fresh
4003	144	1	Flake	1			0.5		No	Moderate Cortication	Slight post depositional damage
4003	145	4	Blade-like	1		1	0.5		No	Moderate Cortication	Fresh
4003	170	57	Retouched flake	1		1	2.2	limited edge retouch	No	Heavy Cortication	Slight post depositional damage
4004	160	3	Bladelet	1			0.4	possibly struck from a hammerstone	No	Heavy Cortication	Slight post depositional damage
4004	161	1	Flake	1			10	chalk flint cortex. Soft hammer	Yes	Moderate Cortication	Fresh
4004	162	1	Flake	1			0.3		No	Moderate Cortication	Slight post depositional damage
4004	163	1	Flake	1			2	possibly a white flint?	No	Heavy Cortication	Fresh
4004	164	6	Chip	1			0.2		No	Moderate Cortication	Slight post depositional damage
4004	165	1	Flake	1			0.5		No	Moderate Cortication	Slight post depositional damage



4005	150	1	Flake	1
4005	151	9	Rejuvenation flake core face/edge	1
4005	152	1	Flake	1
4005	153	45	Spurred piece	1
4005	154	6	Chip	1
4005	157	57	Retouched flake	1

1	0.3		No	Heavy Cortication	Slight post depositional damage
	7.5	struck from platform of a flake core. Not quite enough working to class as a platform tablet.	No	Moderate Cortication	Fresh
	3	chalk flint. 11mm thick unabraded cortex	No	Light Cortication	Slight post depositional damage
	9.9	well used flake with point create by placing a notch by natural notch.	Yes	Moderate Cortication	Fresh
	0.1		No	Light Cortication	Slight post depositional damage
	4.2	distal trimming with a limited are of abrupt edge retouch. Rough buff cortex	No	Uncorticated	Slight post depositional damage

13.2 ASSESSMENT OF THE STANDING STONE AT CHARTERHOUSE-ON-MENDIP

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13.2.1 Introduction

This report summarises the findings arising out of the petrographic assessment undertaken on a stone sample taken from the small standing stone discovered at Charterhouse Somerset. Standing stone (1002) measured approximately 0.7m high by 0.5m wide and sat within a stone socket [1004]. Abutting the stone was a very low mound or spread – half of which consisted of stones (1008) and the other half turves and earth (1019). The flint found within the backfill of the stone socket and from the area immediately around the standing stone was characteristic of the Late Neolithic / Early Bronze Age, with one thumbnail scraper found directly on top of the turves / earth indicating an Early Bronze Age date. The petrological sample (c. 400g) was assessed in order to: (1) identify (using hand-lens, binocular microscope; petrological microscope) the fabric of the stone to determine its geological character and source and (2) make recommendations (if any) for further study.

13.2.2 Methodology

The application of a 1kg masons hammer and sharp chisel to the sample ensured that a small fresh fabric surface was exposed. The stone sample was initially examined in hand specimen (hand-lens Gowland × 10) to determine its overall petrological character. The sample was then treated with a dilute solution of hydrochloric acid to gauge whether or not the rock had calcite or dolomite inclusions (important in determining sources dolomite, *e.g.* from nearby Triassic Dolomitic Conglomerate); unlike calcite, it does not fizz when treated with dilute hydrochloric acid. For a more detailed visual inspection the fabric was initially examined at ×20 magnification using a binocular microscope (Leica L2). However, as no definite geological source could be determined, the decision was made to prepare the sample using the rock preparation facilities at the School of Archaeology, Geography and Environmental Sciences University of Reading for thin-section examination and analysis. The thin-section was examined at resolutions upwards of ×40 using a petrological microscope (Leica DM EP).

Staining was also a necessary intermediate process during the thin-section preparation of this rock (Adams & Mackenzie 1998; Mackenzie & Adams 1994) in determining whether there is any calcite or dolomite. It also picks out the variability in colour between ferroan and non-ferroan calcite, as well as dolomite, with the addition of Alizarin Red C and Potassium Hexocynoferrate powder. The decision to half-stain the section after final lapping but before cover-slipping allowed both treated and untreated parts of the slide to be examined and compared.

Finally, consultation of the local geological memoir (Kellaway & Welch, 1993) and corresponding map (1:50 000 map of Bristol), as well as the specialist's own reference collection of geological samples from western England, was undertaken to further determine its geological character and (if possible) geological source

13.2.3 Local geology

Charterhouse lies in the Mendips an area of upland dominated by folded younger hard grey Lower Carboniferous limestones (especially the Black Rock Limestone) and calcareous mudstones (Lower Limestone Shales) on the rim of a large pericline (Kellaway & Welch 1993, 48-50), with older Upper Devonian sandstones (Tintern sandstones) at its core. The youngest rocks in the sequence, unfolded Triassic Keuper Marl and Dolomitic Conglomerate, lie slightly further away (c. 3km).

Slightly further afield still are occasional small inliers of Upper Carboniferous sediments, such as one lying 6km S of Charterhouse at Westbury-sub-Mendip GR 52 49 and a possible example even closer (4km SE), just S of Cheddar.

13.2.4 The standing stone - petrology

Lithology: Fine-grained pale-grey compact quartz sandstone Sub-litharenite (Folk 1965)

Source: Local Fine-grained sandstone. Either a) grey flaggy member of the Upper Devonian Tintern Sandstone Group 1km to the N (Kellaway & Welch, 1993, 17) or b) Millstone Grit, Quartzitic Sandstone Group, Millstone Grit Series (Naumrian) Upper Carboniferous: Nearest outcrop Westbury-sub-Mendip 6km S of Charterhouse with a possible closer outcrop 4km SE (just S of Cheddar).

This fine grained, very hard, compact, light grey quartz sandstone was devoid of calcareous material, as there was no reaction with dilute hydrochloric acid (later verified by no stain after the application of Alizarin Red C and Potassium Hexocynoferrate powder). At a higher magnification (×20) Leica L2 the fine grey sub-angular interlocking quartz grains occurred together with a speckling of lighter cream angular inclusions and occasional mica and iron oxide and could with confidence be assigned to a sandstone rock.

At the highest level of visual analysis (Leica DM LP Polarising microscope), the thin-section was examined to determine the type of sandstone and from there a list of possible rock sources could be suggested.

The fine (0.2mm size grains) interlocking mosaic of this sandstone became all the more apparent with its very low porosity (<5%) (picked out by only the occasional epotec green coloured resin). At magnifications of ×60, it was possible to identify the proportions of each grain-type using point-count analysis. Given the high proportions of quartz (79%), compared to lithic fragments (12%) and feldspar (9%), the rock could be assigned as a Sub-litharenite (Folk 1965) (*figs. 1-3*). Although too fine and lacking the porosity of a gritstone, this sandstone was somewhat comparable by colour, texture and mineralogy with examples of fine Millstone Grit (Upper Carboniferous)¹ a rock that is found associated with coal measure

¹ The comparative thin-section was from the Namurian of Central Scotland (Glasgow) prepared as part of a study of sandstone building stones in Victorian Glasgow (Hayward, in prep.)

sediments throughout the British Isles, *e.g.* Central Coalfield Scotland, NE England, Yorkshire, W Midlands, S Wales and Somerset.

Two possible source-rocks do, however, still need to be considered. As well as Millstone Grit (Quartzitic sandstone Group), which is found in two local inliers, one 6km to the S at Westbury-sub-Mendip, the other 4km SE near Cheddar, it is also somewhat comparable with the description of the Upper Devonian Tintern Sandstone described as 400ft of purplish, brown, *grey* and *flaggy* and sandstone (Kellaway & Welch 1993, 17). In the absence of a representative sample of this rock, it is not possible at this stage to be definite as to the exact source.

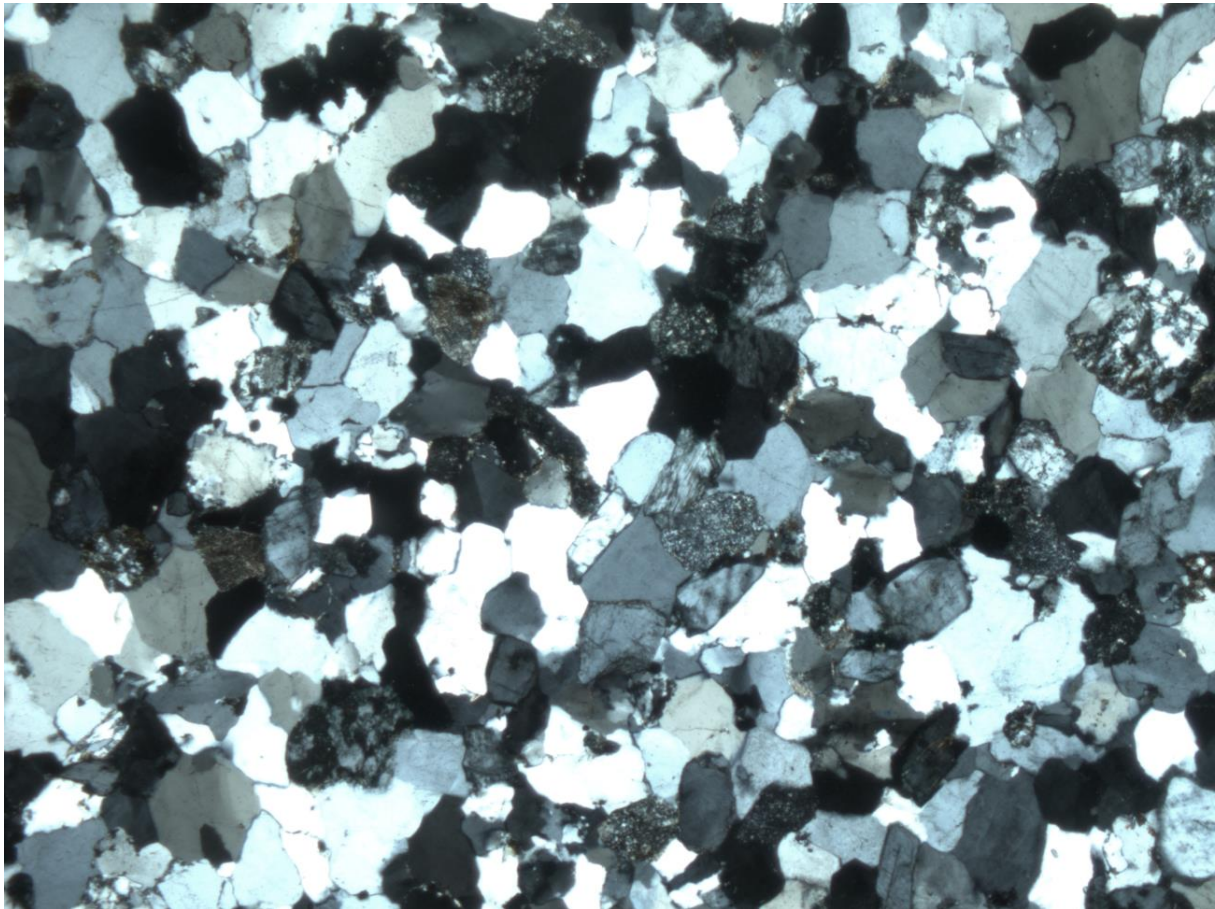


Fig. 1: Low power field of view 4.8mm - crossed polars showing small a sublitharenite with abundant small (0.1-0.4mm) sub-angular grey and white quartz grains (79%), lithic fragments - speckled grains (11%) and feldspar grey (9%) with occasional twinning

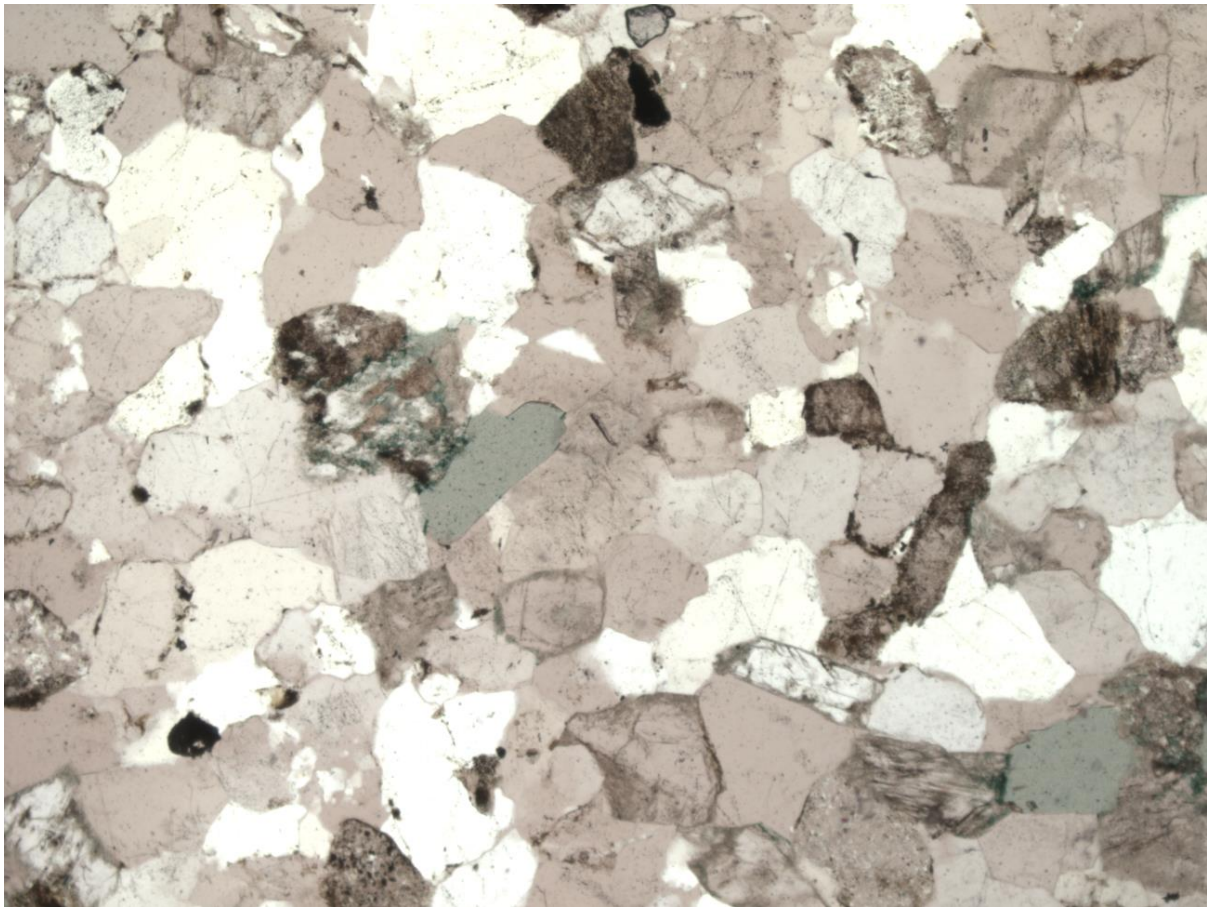


Fig. 2: Medium power field of view 2.4mm Plane Polarised Light - showing small (1-4mm) sub-rounded interlocking white and pink quartz (79%) and white feldspar (9%) with rock fragments brown speckled fragments (11%). Porosity low picked out by green staining

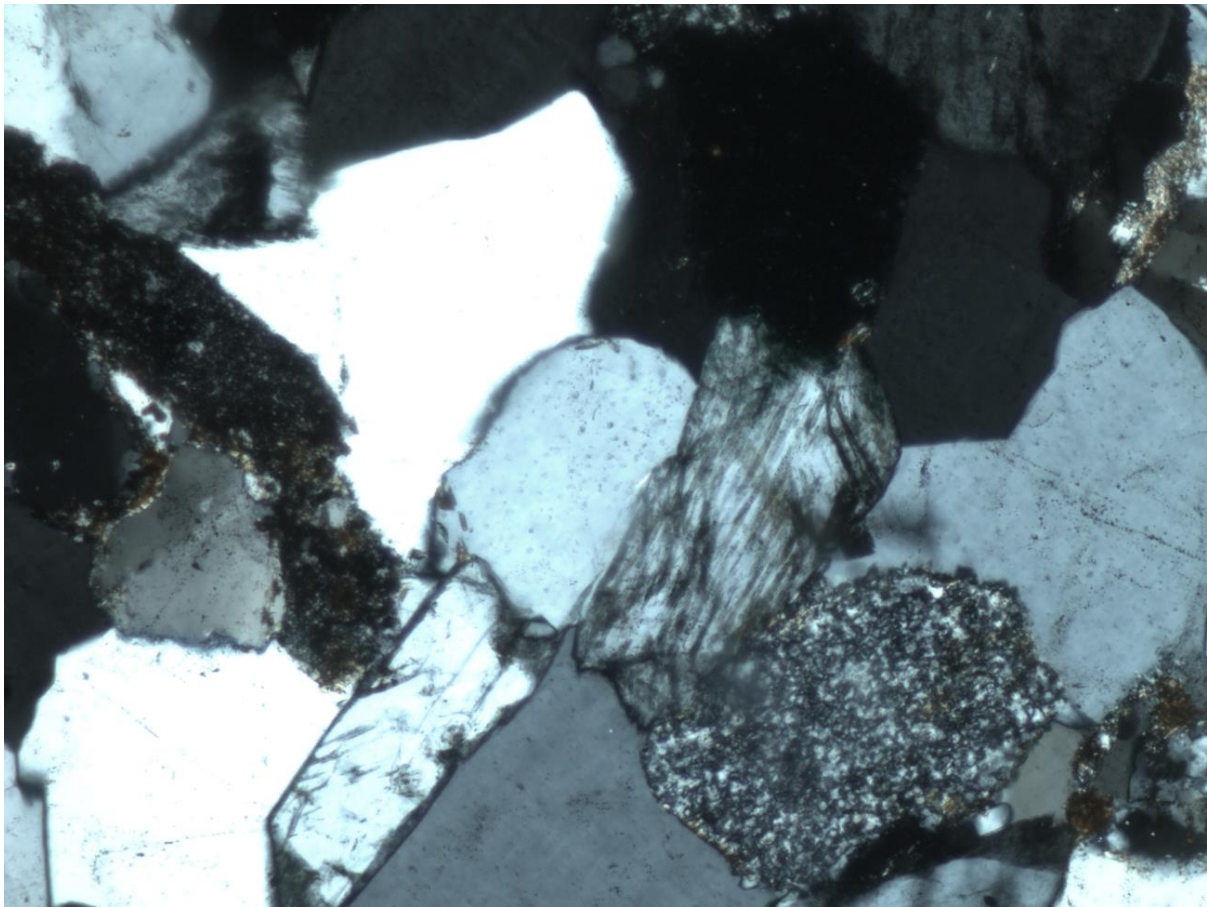


Fig. 3: High Power field of view 1mm. Crossed polarised light. Showing sub-angular grey quartz centre, light grey feldspar showing twinning to its right, and lithic fragment speckled below this

11.2.5 Summary

Hand-specimen and thin-section comparative petrological analysis has been successful in determining that this Early Bronze Age standing stone is made from a fine, compact, light grey quartz arenitic sandstone; a Sub-litharenite (Folk 1965). It is a local old Upper Palaeozoic rock, quite different from the younger Triassic red sandstones and the old Lower Devonian Brownstones that outcrop within this general area. Two candidates need to be considered. First, a fine Millstone Grit from the two local (4-6kms) very small inliers at Westbury-sub-Mendip and Cheddar (BGS map 264) or the more local flaggy sandstone from the Upper Devonian Tintern Sandstone (Kellaway & Welch 1993, 17). Until a representative sample of the grey member of Tintern sandstone rock can be obtained it is only possible at this stage to state that the standing stone came from a locally acquired (4-6km) Upper Palaeozoic sediment and not something exotic, *e.g.* locally derived Glacial erratic / sandstone transport from much further afield. Local acquisition in the Bronze Age makes sense, given of variety of robust locally outcropping sandstone materials that would be suitable for this purpose.

13.2.6 Recommendation

For publication, it would be worthwhile obtaining a sample of the local Tintern sandstone group and comparing it with the standing stone sample to be more definite of what very local source this is. It may also well be worth looking at the material types used in other standing stones, e.g. Deerleap stones (Westbury-sub-Mendip) Batcombe Hollow Standing Stone (Draycott), from this part of Somerset to see if they represent different types of locally acquired material available from the rich and diverse geology of this part of western England rather than a central source.

13.2.7 References

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13.3 PALAEOENVIRONMENTAL ASSESSMENT

Lorne Elliott & Dr Anwen Caffell
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13.3.1 Summary

- **The project**

This report presents the results of palaeoenvironmental assessment of 14 bulk samples taken during archaeological works at Broad Road Charterhouse Somerset.

The works were commissioned by Border Archaeology and conducted by Archaeological Services Durham University.

- **Results**

Findings comprised tiny fragments of flint from occupation horizon (2006) and backfill deposit (1023), and a trace of calcined bone and a few small fragments of abraded pottery from deposit (4004). Charred plant macrofossil remains were sparse with low numbers of hazel nutshell fragments present in deposit (4004) and four fills (1007, 1011, 1012 & 1017) from feature [1015], possibly indicating a prehistoric origin for these deposits. The fills of feature [1015] predominantly comprised hazel charcoal suggesting a specific exploitation of this species. Charcoal of birch, oak, willow / poplar, *Maloideae* and travellers-joy were also recorded in the assemblages. Charred heather twigs and charcoal of gorse / broom from contexts (2003) and (2005) are likely to represent the remains of clearance burning of rough pasture land.

Small fragments of cremated bone from (4005) were examined with a view to identification, but they could not be differentiated between animal or human bone.

- **Recommendations**

Where appropriate, if stratigraphic or artefactual evidence does not provide close dating, radiocarbon analysis on carefully selected plant remains may be worthwhile. In the event that firm evidence of a Neolithic or Early Bronze Age origin is provided, charcoal analysis (including the processing of any additional material) of targeted samples may be considered, as the Mendip Hills has seen little palaeoenvironmental work for these periods (Webster 2007).

No further work is required for the plant macrofossil remains as the flots were scanned in their entirety and no additional information would be provided from an analysis. If additional work is undertaken at the site, the results of this assessment should be added to any further palaeoenvironmental data produced.

The flots should be retained as part of the physical archive of the site. The residues were discarded following examination.

13.3.2 Project background

- Location and background

This report presents the results of palaeoenvironmental assessment of 14 bulk samples from Broad Road Charterhouse comprising fills of possible prehistoric origin. These include a charcoal-rich deposit, an occupation layer relating to a flint scatter and a soil deposit beneath a heavily truncated stone spread that may be a round cairn of Bronze Age origin. An assessment of cremated bone recovered from a disturbed context (4005) next to this possible round cairn was also undertaken.

- Objective

The objective of the scheme of works was to assess the palaeoenvironmental potential of the samples, establish the presence of suitable radiocarbon dating material and provide the client with appropriate recommendations.

- Dates

Samples were received by Archaeological Services between 11th April and 7th May 2013. Assessment and report preparation was conducted between 21st June and 5th July 2013.

- Personnel

Assessment and report preparation was conducted by Lorne Elliott. Cremated bone assessment was by Dr Anwen Caffell and soil processing was by Janet Beveridge and Nathan Thomas.

- Archive

The flots and finds are currently held in the Environmental Laboratory at Archaeological Services Durham University awaiting collection or return. The charred plant remains will be retained at Archaeological Services Durham University.

13.3.3 Methods

The bulk samples were manually floated and sieved through a 500 μ m mesh. The residues were examined for shells, fruit-stones, nutshells, charcoal, small bones, flint, glass, pottery sherds and industrial residues and were scanned using a magnet for ferrous fragments. The flots were examined at up to $\times 60$ magnification for charred and waterlogged botanical remains using a Leica MZ7.5 stereomicroscope. Identification of these was undertaken by comparison with modern reference material held in the Environmental Laboratory at Archaeological Services Durham University. Plant nomenclature follows Stace (1997). Habitat classification follows Preston *et al.* (2002).

A selection of charcoal fragments was identified from each sample, in order to provide material suitable for radiocarbon dating. The transverse, tangential and radial sections were

examined at up to $\times 600$ magnification using a Leica DMLM microscope. Identifications were assisted by the descriptions of Schweingruber (1990), Hather (2000), Gale & Cutler (2000) and modern reference material held in the Environmental Laboratory at Archaeological Services Durham University.

The snail remains were identified to species using the descriptions of Cameron (2008) and Kerney & Cameron (1979). Nomenclature follows Anderson (2005) and habitat classifications follow Cameron (2008) and Kerney & Cameron (1979).

The palaeoenvironmental assessment was undertaken in relation to the research objectives outlined in the regional research framework for South West England (Webster 2007).

13.3.4 Results

Finds from the samples were sparse and comprised a trace of calcined bone and a few small fragments of abraded pottery from deposit (4004). Fragments of flint were recovered from occupation horizon (2006) and backfill deposit (1023), and small quantities of semi-vitrified fuel waste occurred in both samples from a possible tree throw (2003).

Charred plant macrofossil remains were also sparse, with low numbers of hazelnut shell fragments present in deposit (4004) and four of the fills (1007, 1011, 1012 and 1017) from feature [1015]. A single sedge nutlet was recorded in (1019) and a few tuber / rhizomes occurred in samples from (2003). Charred cereal remains were absent from all of the samples.

Varying quantities of charcoal were present in all of the samples but charcoal was most commonly recorded in contexts from feature [1015]. From the selected fragments of charcoal identified from each sample, the fills from feature [1015] predominantly comprised hazel, with fragments of round-wood noted. Fragments of oak stem-wood were present in (1011) and oak branch-wood occurred in (1012) and (1003). Tiny twigs of willow / poplar were recovered from (1003), (1019), (1023) and (2006) and fragments of birch were noted in (1003), (1019) and (1023). A few fragments of gorse / broom were recorded in (2005) and gorse / broom (some of which was only partially charred) and heather twigs occurred in small quantities from both samples of (2003). Context (2006) contained a small fragment of round-wood charcoal that resembled traveller's-joy (*Clematis vitalba*). The anatomy comprised sheath cells, spiral thickening and large solitary early-wood vessels with late-wood vessels in tangentially oriented clusters. However, the size and condition of the fragment prevented certain identification. Context (4004) was the only sample comprising *Maloideae* (hawthorn, apple, whitebeams and pear) charcoal.

The remains of the burrowing snail *Cecilioides acicula* (Müller) were present in the soil deposit (4004). This is almost certainly intrusive and of no interpretative value.

Small numbers of uncharred seeds, including bramble, vetches, buttercup, thistles, knotgrass and dandelions were noted in many of the samples. The non-waterlogged nature of the site and the presence of roots suggest that these are recent intrusions. The results are presented in Appendix 1.

Material suitable for radiocarbon dating is available for the majority of the samples as listed in Appendix 1.

13.3.5 Discussion

The assessment provides little evidence for the nature of the features, due to the sparsity of charred plant remains. However, the small charred plant macrofossil assemblages predominantly comprised fragments of hazelnut shell. This may suggest a prehistoric origin for the fills as charred nutshells are regularly recorded from prehistoric sites (Greig 1991), particularly from deposits dating to the Neolithic and Bronze Age periods. They offered a highly nutritious and easily gathered food source (McComb & Simpson 1999).

Contexts (2003) and (2005), described as tree-throw fills, comprised small fragments of charred heather twigs and / or charcoal of gorse / broom. Although charcoal of gorse / broom and heather has been used as fuel from as early as the Middle Bronze Age (Webster 2007), the partial charring of some of the gorse may indicate a recent origin for these deposits and probably represents the remains of clearance-burning of rough pasture land.

The fills of feature [1015] predominantly comprised hazel charcoal, suggesting the specific exploitation of this tree-species. The presence of round-wood also indicates branch-wood or small stem-wood was being used. Charcoal fragments of birch and small twigs of willow / poplar were recorded in fills (1003), (1019) and (1023). These apparently differing assemblages may represent an alternative use or a separate phase of activity. *Maloidea* charcoal was only recorded in (4004) and may also represent a different phase of activity, although the sample size examined is too small to provide firm interpretations.

The presence of *cf. traveller's-joy* from occupation horizon (2006) is noteworthy for a prehistoric context. This species is a climbing perennial with liana-like woody stems and often covers large areas of hedgerows and crowns of trees on base-rich soils (Stace 1997; Preston *et al.* 2002). Its presence in the charcoal record may be the result of burning larger branch-wood as fuel to which it was attached. Archaeological records indicate the use of this species for ties or bindings (Gale & Cutler 2000).

Small fragments of cremated bone from (4005) were examined with a view to identification, but they could not be differentiated between animal or human bone. The white colour of all of the bone fragments indicates the bone had achieved full oxidation and all organic components had been lost. This would be achieved if the bone had been exposed for a sufficient length of time to temperatures over *c.* 600°C, with a plentiful supply of oxygen (McKinley 2004).

13.3.6 Recommendations

Where appropriate, if stratigraphic or artefactual evidence does not provide close dating, radiocarbon analysis on carefully selected plant remains may be worthwhile. In the event that firm evidence of a Neolithic or Early Bronze Age origin is provided, charcoal analysis (including the processing of any additional material) of targeted samples may be considered, as the Mendip Hills has seen little palaeoenvironmental work for these periods (Webster 2007).

No further work is required for the plant macrofossil remains, as the flots were scanned in their entirety and no additional information would be provided from an analysis. If additional work is undertaken at the site, the results of this assessment should be added to any further palaeoenvironmental data produced.

The flots should be retained as part of the physical archive of the site. The residues were discarded following examination.

13.3.7 Sources

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13.4 RADIOCARBON DATING

Scottish Universities Environmental Research Centre

23rd September 2013

Laboratory Code: SUERC-48137 (GU31399)

Submitter: Charlotte O'Brien Archaeological Services Durham University South Road Durham DH1 3LE

Site Reference: Broad Road Charterhouse Somerset (BRC13)

Context Reference: [4004]

Sample Reference: 25

Material: Charred nutshell (*Corylus avellana*)

$\delta^{13}C$ relative to VPDB -24.5 ‰

Radiocarbon Age BP: 4296 \pm 30

N.B: The above ^{14}C age is quoted in conventional years BP (before 1950 AD). The error, which is expressed at the one sigma level of confidence, includes components from the counting statistics on the sample, modern reference standard and blank and the random machine error.

The calibrated age ranges are determined from the University of Oxford Radiocarbon Accelerator Unit calibration program (OxCal4).

Samples with a SUERC coding are measured at the Scottish Universities Environmental Research Centre AMS Facility and should be quoted as such in any reports within the scientific literature.

Calibration Plot:

