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Archaeological Observation

South East Water

Swinley Forest Strategic Water Main

Route 3: Crowthorne Nine Mile Ride (Ringmead)

Bracknell Forest

Berkshire/Surrey

December 2015

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1 Executive Summary

Border Archaeology Ltd (BA) was commissioned by South East Water (SEW) to carry out a programme of Archaeological Observation of engineering ground works associated with the Swinley Forest Strategic Water Main Bracknell Forest Berkshire/Surrey.

The scheme comprised three sections of pipeline: Paschal Wood to Crowthorne Reservoir (Route 1), Crowthorne Reservoirs to Penny Hill (Route 2) and Crowthorne Nine Mile Ride (Ringmead) (Route 3). The overall distance covered was approximately 5.2km.

This report concerns Route 3: Crowthorne Nine Mile Ride (Ringmead) (figs. 1 and 2). The results of observations carried out with regard to Route 1 and Route 2 are contained within a separate report produced by Border Archaeology (BA 2015), Route 3 was approximately 1.9km in length, the first c.700m of which required Archaeological Observation.

Route 3 commenced immediately east of Caesar's Camp hillfort (HER MBF 7414) at SU 86658 65605, approximately 100m from the foot of the ramparts, running 350m northeast before turning north for 300m, adjacent to the extant tracks and woodland, to join Nine Mile Ride/B3430 at SU 86910 66074. The topsoil was removed along the pipeline route to create a working easement and a subsequent phase of pipe-trenching was carried out for the insertion of the new water main.

In addition to the proposed works, a small compound measuring 30m × 30m was constructed near Caesar's Camp at SU 86804 65745, which also required archaeological monitoring.

Prior to commencement of the works, it was considered highly likely that archaeological features, finds and/or deposits of Romano-British date were to be encountered due to the close proximity to the Iron Age hill fort Caesar's Camp. Despite this no evidence of Romano-British date was uncovered during the course of the observations, with much of the ground heavily disturbed by the extant Scots Pine (Pinus sylvestris) tree plantation. The features observed, excavated and recorded have been assigned to the period of the modern plantation development.

2 Introduction

Border Archaeology Ltd (BA) was instructed by South East Water to undertake a programme of Archaeological Observation in connection with a pipeline scheme extending through Swinley Forest Bracknell Berkshire/Surrey. This report concerns Route 3: Crowthorne Nine Mile Ride (Ringmead), which originated at SU 86658 65605 and extended for a distance of c.1.9km; however, only the first *c.*700m required Archaeological Observation, which terminated at SU 86910 66074 (*figs. 1 & 2*).

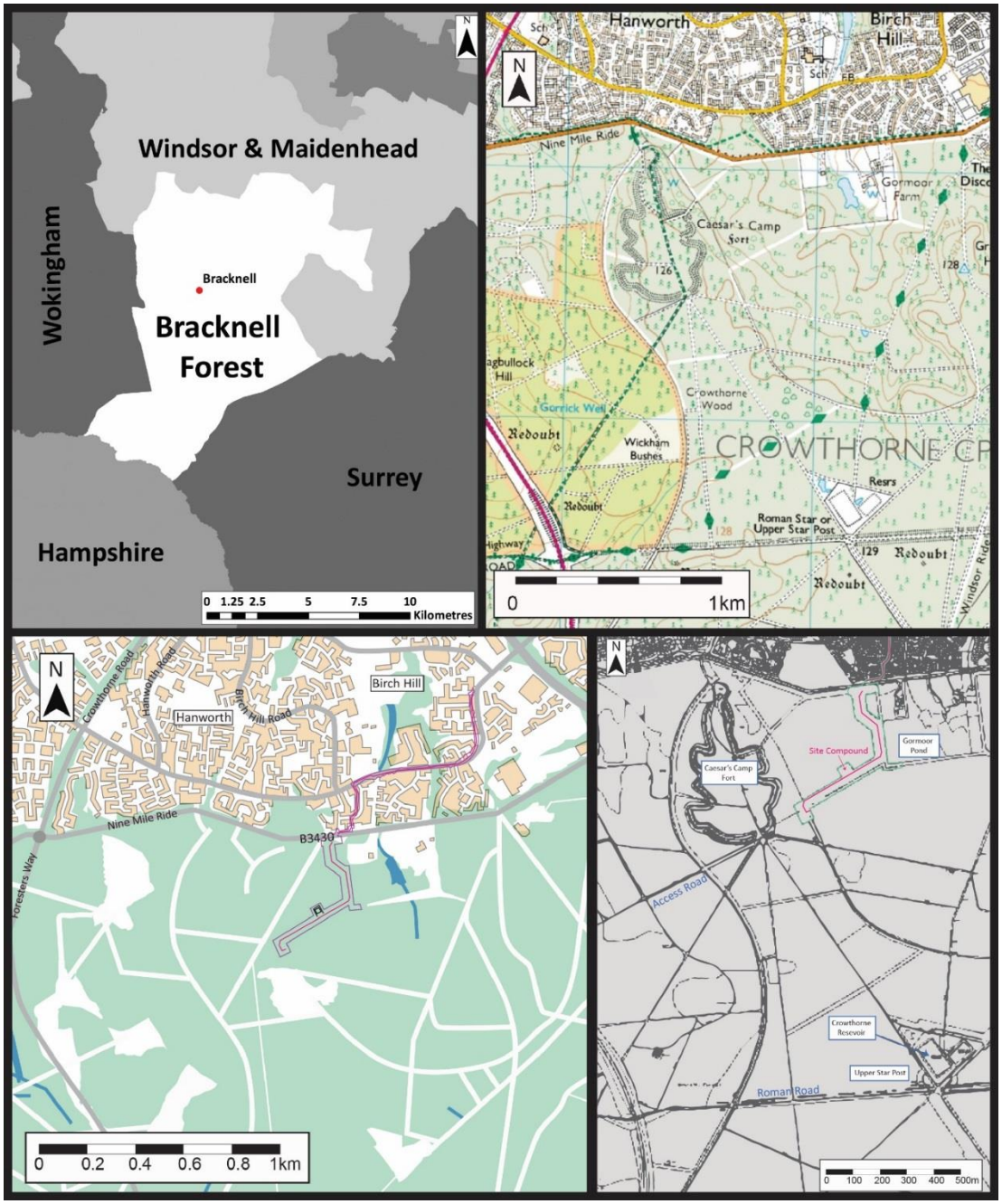

Fig. 1: Site location plan

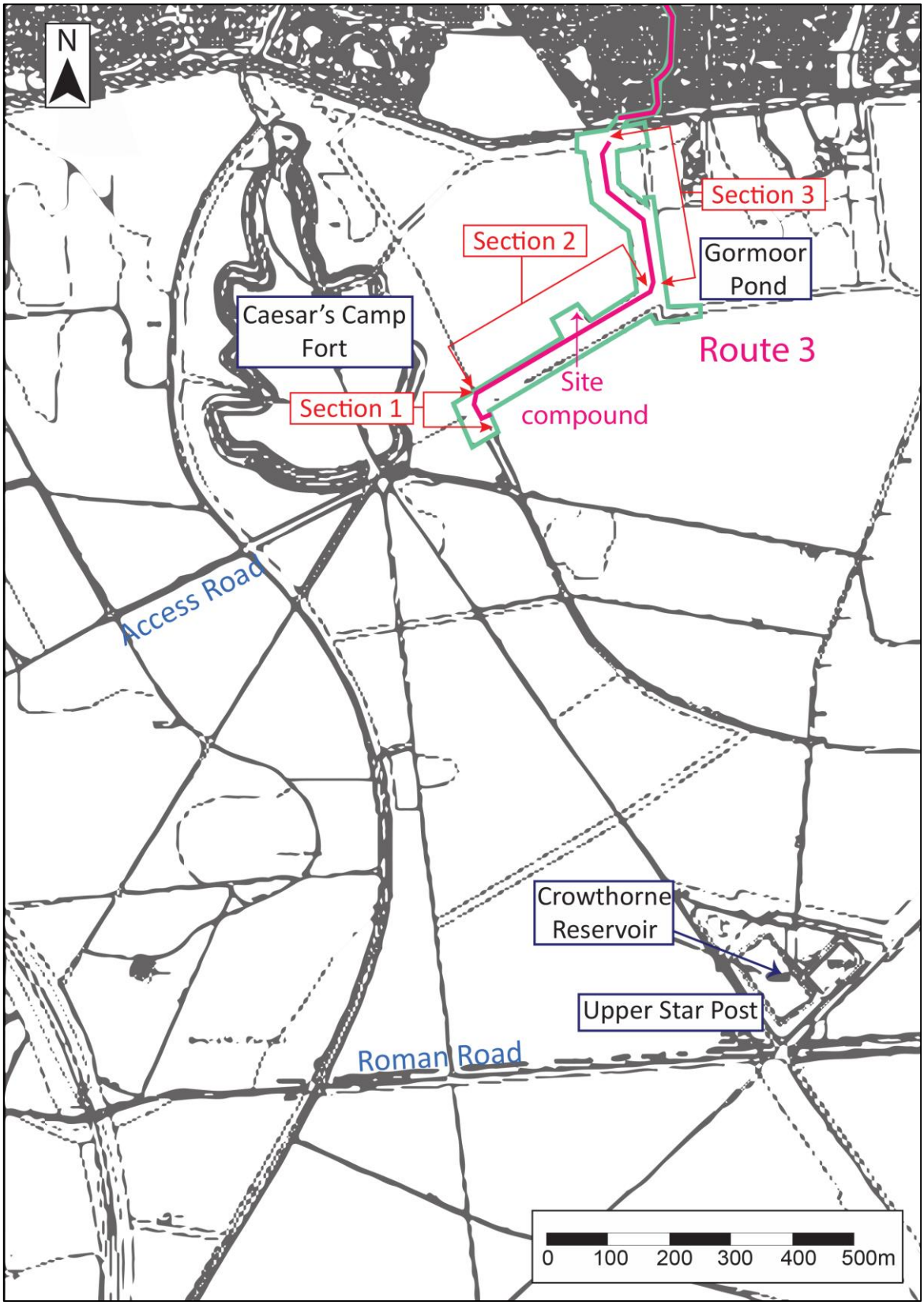

Fig. 2: Route plan

Copies of this report will be provided to Roland Smith of Berkshire Archaeology and Tony Howe Senior Planning Archaeologist Surrey County Council.

3 Site Description

The site lies within the Swinley Park Plateau Forest and Heaths, an area of woodland lying within Bracknell Forest and Surrey Heath, which was created in the early 19th century and comprises modern large-scale conifer plantation predominantly of Scots Pine (*Pinus sylvestris*) set in regular straight rows.

At its at SW end, Route 3 lay at 121.76m AOD falling to 94.54m AOD at the NE end.

From the late 18th century, the area was in use by the military for infantry training. The site also lies within the vicinity of an Iron Age and Romano-British landscape represented by the settlement of Wickham Bushes and its associated network of roads and tracks and the hillfort of Caesar's Camp.

The site has not been subject to any modern development and any buried remains were thus considered likely to have been well preserved.

3.1 Soils & Geology

Two predominant soil types have been identified in the immediate vicinity of the site, consisting of paleo-argillic podzols of the SOUTHAMPTON series (634) and stagnogley-podzols of the Holidays Hill series (643a). The first of these is characterised by lowland heath habitats, coniferous and deciduous woodland. The soils in these areas are composed of well-drained very acid, very flinty sandy soils with bleached subsurface horizon. The geology is plateau gravel and river terrace drift.

The Holidays Hill series consists of wet lowland heath habitats and coniferous woodland. These comprise naturally very acid sandy over clayey and loamy over clayey soils, locally with humose or peaty surface horizons, slowly permeable subsoils and slight seasonal waterlogging. They are underlain by Tertiary and Cretaceous sand, loam and clay (SSEW, 1983). The soil conditions within this area are generally characterised by a thin layer of sandy soil directly over subsoil.

4 Historical and Archaeological Background

Twenty-five individual records, including monuments, find-spots and buildings, containing evidence of historical activity spanning the prehistoric to modern periods are recorded in the Berkshire HER within a 500m (radius) corridor along Route 3 of the pipeline, four of which are within a 200m (radius) corridor along Route 3.

All archaeological monuments and features within the study area of the Ringmead Nine Mile Ride scheme of works, were identified as heritage assets prior to the commencement of any groundworks (*fig. 3*), none of which were impacted by Route 3.

4.1 Prehistoric

There are 12 entries within the study area assigned to this period, with additional evidence from the wider landscape showing that the area was used throughout the Neolithic, Bronze Age and Iron Age periods for both occupation and funerary purposes.

An archaeological evaluation located at what was later to become the Middle/Late Iron Age hillfort of Caesar's Camp (MBF569) identified activity from the Late Neolithic/Early Bronze Age and Middle to Late Iron Age. Additionally, a scatter of flint artefacts (MBF7421) was found within the hillfort of Late Neolithic/Early Bronze Age date.

Located at the SE corner on the circuit of the bank of Caesar's Camp two concentrations (MRM16009) of burnt flint, forming mounds, were identified and these were assigned to the Bronze Age. Within the wider landscape, extensive evidence of Bronze Age funerary practice has been discovered in Bracknell Forest in the form of a number of round barrows. A cemetery comprising a group of four such mounds and a rectangular platform was identified on a triangular summit by Thomas Welsh in the late 1970s (HER MBF 632; MBF 633; MBF 634; MBF 635; MBF 636). A large isolated mound in Bramshill Forest, known since the Early Modern period as 'Windmill Stem', is also understood to have originated as a Bronze Age burial mound which was later reused as a windmill mound during the post-medieval period (MBF638).

The Scheduled Ancient Monument (SAM) of the univallate Iron Age hillfort of Caesar's Camp itself comprises a single massive rampart bank enclosing an area of more than 10ha (MBF 569). The rampart attains a height of 4m in places and survives to a width of up to 15m. There is a further bank-and-ditch along the E side of the monument, as well as several others at different points around the perimeter (MBF 7414). Access was originally at the S end of the monument, where the original causeway is believed to survive as a buried feature.

Limited archaeological investigations within the monument have revealed scatters of pottery sherds (MBF 7422; MBF 7423; MBF 7425), features and finds (MBF7412) and a large storage jar (MBF 7424). Further evidence of occupation included pits of a Middle/Late Iron Age date (MBF 7413), while a geophysical survey of part of the site revealed a number of pits, tracks and possible building structures below the present ground level.

It is within the hinterland to the E of the hillfort (MBF569) that Route 3 is located, where there was potential of finding associated finds, features or deposits.

Beyond the study area to the S, occupation appears to have continued into the Late Pre-Roman Iron Age (LPRIA), evidence of which included a gravel floor laid across a silt-filled ditch (MBFF 625), shallow ditches and gullies (MBF 627) and a coin of the early 1st -century British leader, Cunobelin (MBF 569).

4.2 Roman

No entries of this date have been identified within the 500m search area of Route 3; it is within the wider landscape that Roman period activity is evident.

A section of the major Roman Road connecting the provincial capital of *Londinium* with the cantonal capital of the Artrebates at *Calleva Atrebatum* (Silchester) (Margary's route 4a) runs through the woods to the S of Route 3 and remained visible into historical times, when it acquired the name 'Devil's Highway' (MWK 1733). Additionally, minor Roman roads and trackways were evident, which are reflected by the rides that still run through the forest (MBF1765; MBF1767; MBF1769; MBF1770; MBF1768).

Following construction of the road (MWK1733), the small linear settlement or town was established at Wickham Bushes. The settlement (MBF 623) is a SAM and is situated W of Crowthorne Reservoir.

The settlement was occupied throughout the Roman period and included dwellings, agricultural structures and small semi-industrial workshops. The buried remains of a number of large, multi-room buildings with tiled roofs have been identified whilst the substantial quantities of pottery recovered, together with a brooch and other artefacts, suggest a series of successive phases of occupation extending well into the 4th century AD (MBF 628; MBF 631; MRM 15793; MRM 15969; MRM 16394).

4.3 Medieval

Little archaeological evidence for medieval activity has been identified within the boundary of the study area. Only two finds have been recorded from within the study area, both at the Caesar's Camp earthwork. These included a single medieval nail and a ceramic pipkin handle, dated to the 13th or 14th century (MBF 7426; MBF 7427).

Within the wider landscape, the area formed part of the township of Sonning, which comprised the present parishes of Sonning, Ruscombe, Arborfield, Sandhurst, Hurst and Wokingham and was a part of the 'Charldon' hundred held in demesne by the Bishop of Salisbury (Ditchfield & Page 1923, 198; Williams & Martin 2002, 141).

Sonning was a large and profitable holding, assessed at 60 hides and worth £50 per annum to its lord during the reign of Edward the Confessor. However, by the time of the Domesday survey in 1086 it was assessed at only 24 hides and its annual value had fallen to £40 (Williams & Martin 2002, 144).

The manor of Sandhurst was a late development, mentioned for the first time in a document of 1316 (Ditchfield & Page 1923, 206-10). Then it was still held by the Bishop of Salisbury, although it had passed into the possession of the Abbey of Chertsey by the end of the 15th century (*ibid*). At the Dissolution of the Monasteries, the manor was surrendered to the Crown, before being conveyed to a succession of lay landowners after 1562.

4.4 Post-Medieval

There are seven entries of Post-Medieval date within the 500m study area. This area of the landscape remained common heathland for much of the post-medieval period. The local plateau gravels were exploited as building materials by local residents and a post-medieval gravel pit is recorded at Caesar's Camp (MBF 7419). Other features possibly associated with low-key land use during the period included a boundary ditch or gully and a fence post, both discovered at the same site (MBF 7418; MBF 7420).

Efforts to prepare the Army for war began in the early 1790s in the study area. These included at least five practice earthwork redoubts and associated monuments built in a line 2km in length along the edge of the Easthampstead Plain plateau (MBF 572; MBF 573; MBF 574; MBF 575; MBF 576; MBF 577; MBF 578). Associated features included a sub-square redoubt at Caesar's Camp, roughly 40m across (MBF 586), which is likely to have been a reviewing mound.

A trench system, understood to have been contemporary with the redoubts was also recorded outside the study area to the W; these and other trenches were also used for infantry training during subsequent conflicts (MBF 6692; MBF 6693; MBF 6694).

Probable evidence of military field kitchens has been discovered in the study area (MBF 579; MBF 580; MBF 584), with additional field kitchens (MBF 582; MBF 583) falling outside the study area. Several of these features have been truncated by tree-planting, which appears to have begun in the area following the end of the Napoleonic Wars in the second decade of the 19th century.

In 1812, the Royal Military College moved from Great Marlow in Buckinghamshire to Sandhurst, where it purchased an estate of 450 acres. By the 1840s, the College owned an estate of nearly 700 acres in the parish, large areas of which had been planted with trees by the middle of the century.

The tithe apportionment of Sandhurst revealed the extent to which the sandy heathland in the parish had been planted with conifers by the early 1840s (TNA IR 29/2/107). Although the tithe map is damaged and in poor condition, the forest appears to have been part of the Crown estate of 765 acres in the parish (TNA IR 30/2/107). The accompanying apportionment described the entire estate as 'plantations of firs', which appears to have been planted only relatively recently. By the early 20th century there were as many as 149 woods and plantations in the parish (Ditchfield & Page 1923, 206).

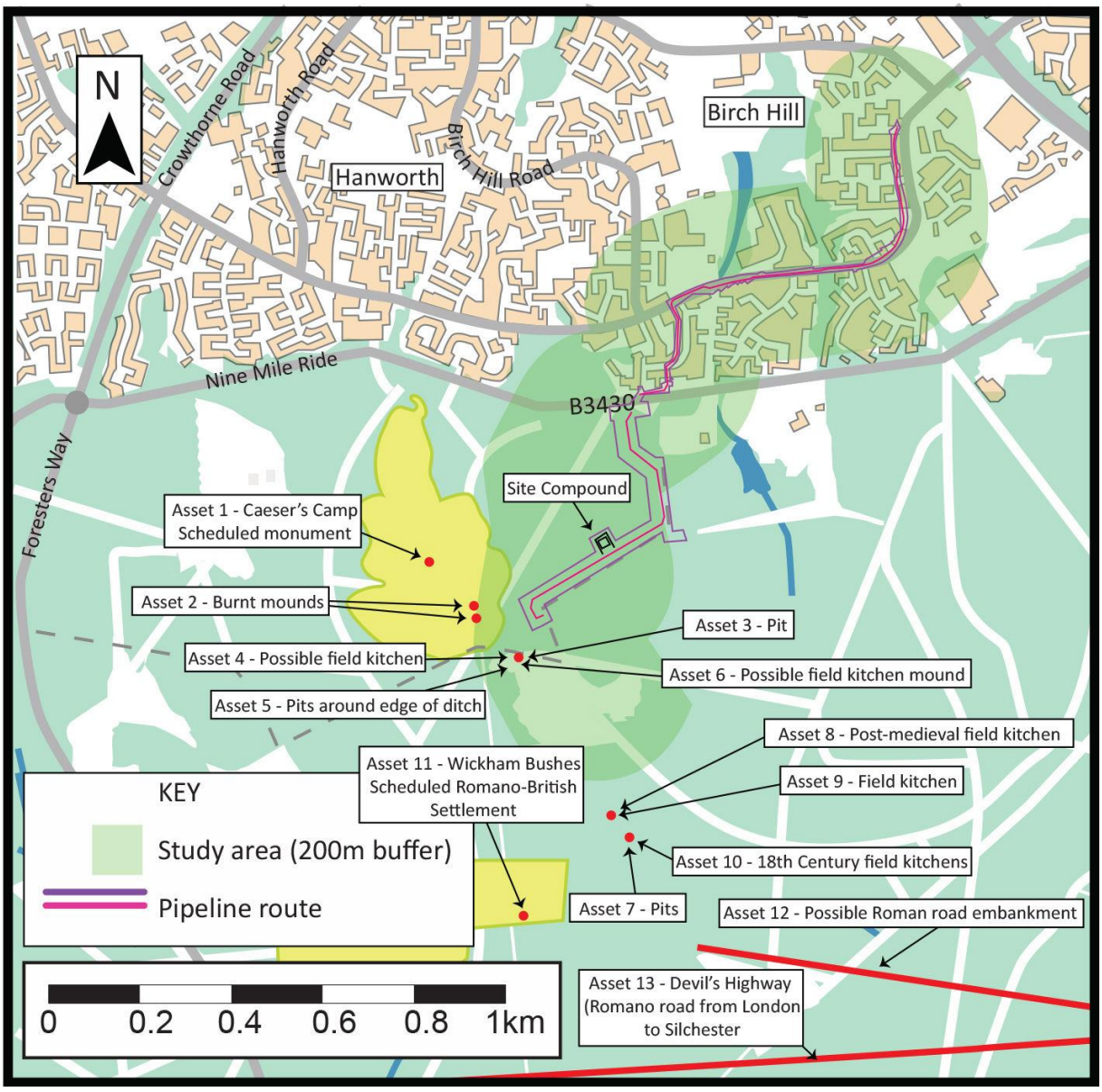

Fig. 3: Plan showing identified heritage assets in study area and wider landscape
(Based on information provided by Jacobs)

4.5 Modern

There were two entries probably dating to the late 19th and early 20th centuries first shown on the 1911 Ordnance Survey map. These included the Keeper's Cottage (since demolished) and an associated well at Caesar's Camp (MBF 570; MBF 571).

Parts of Bracknell and Swinley Forests had been used for infantry training by the British Army for more than two centuries and the area continued to be militarily important during the Second World War.

4.6 Sites of Unknown Date

There were two entries of unknown date within the 500m (radius) corridor study area. These two entries comprised 10 pits (MBF581; MBF585). Nine of the small pits (MBF581) were encountered during an excavation of a mound near Caesar's Camp in 1949 and were found to contain oak and beech charcoal, which showed signs of burning. The tenth pit (MBF585) was located within the hinterlands of the hillfort to the SE.

5 Methodology

The programme of archaeological work was carried out in accordance with practices set out in *Standard and Guidance for an archaeological watching brief* (CIfA 2014), *Standard and Guidance for archaeological excavation* (CIfA 2014) and *Standard and guidance for the collection, documentation, conservation and research of archaeological materials* (CIfA 2014). Border Archaeology adheres to the CIfA *Code of conduct* (2014) and *Regulations for professional conduct* (2015).

5.1 Archaeological Observation

Intrusive ground-works within the specific study area comprised an initial topsoil strip to create a 10m wide working easement carried out by a machine fitted with a toothless ditching bucket and observed by an archaeologist. This was followed by a secondary phase of pipe trenching for the insertion of the new main.

An archaeologist was present during all works potentially affecting archaeological remains and the presence/absence of archaeological features was noted and recorded to a satisfactory and proper standard, consistent with CIfA guidance (2014).

5.2 Recording

Full written, graphic and photographic records were made in accordance with Border Archaeology's *Archaeological Field Recording Manual* (2014). Records included:

- A *pro-forma* context record for each stratigraphic unit
- Plans of excavated areas showing: the extent of the area (tied into the Ordnance Survey National Grid and located on a 1:2500 plan), the extent of all stratigraphic units, and appropriate detail within stratigraphic units
- A photographic record of all stratigraphic units - including a representative photographic record of the progress of the archaeological work. The record was made using a high-resolution digital camera and an appropriate scale was included in each photograph; all photographic records were indexed and cross-referenced to written site records. Details concerning subject and direction of view were maintained in a photographic register, indexed by frame number.

5.3 Excavation

All archaeological deposits identified as appropriate for further investigation were examined according to established criteria for the excavation of archaeological remains (CIfA 2014).

Hand-excavation of archaeological deposits was undertaken for the recovery of stratigraphic data, with the extent and character (colour, texture, boundary characteristics etc.) of each archaeological context being defined by trowelling prior to excavation. Excavation of features and deposits was sufficient to establish their date and character and was undertaken strictly within engineering parameters. The excavation of pits and other non-structural intrusions allowed for their stratigraphic recording and for the identification of any related material.

6 Results

6.1 Context Register

Item	Context No.	Type	Interpretation	Discussion	Finds					Dating
					Small Find	Pot	Bone	Misc.	Sample No.	
1	(300)	Layer	Topsoil	Loose blackish-brown sandy loam; frequent up-cast natural; moderate small–med angular and sub-rounded stone & gravel inclusions. Extending easement wide at an average depth of *c*.0.05–0.30m. Above the topsoil was a *c*.0.10m deep humus-rich layer.						Modern
2	(301)	Layer	Natural	Soft patchy black, dark grey, pale grey, white, mid orange & pale yellow sands; frequent downcast topsoil (from modern tree-rooting), occasional pockets & rare inclusions of small–med angular stone and gravel. Extending easement wide at LOE.						N/A
3	[302]	Cut	Narrow shallow plantation gully associated with modern forestry plantation	Linear; aligned NE–SW; measuring >7.30m × 0.10–0.28m × *c*.0.07m.						Modern
4	(303)	Deposit	Single fill of [302]	Soft black silty sand; rare small sub-rounded stone & gravel inclusions.						Modern
5	[304]	Cut	Narrow shallow gully associated	Linear; aligned NE–SW; measuring >9.45m × 0.18–0.37m × *c*.0.10m.						Modern

			with modern plantation							

6	(305)	Deposit	Single fill of [304]	Soft black silty sand; rare small sub-rounded stone & gravel inclusions.						Modern
7	[306]	Cut	Narrow shallow gully associated with modern plantation	Linear; aligned NE–SW; measuring 3.90m × 0.25–0.30m × *c*.0.09m.						Modern
8	(307)	Deposit	Single fill of [306]	Soft black silty sand; rare small sub-rounded stone & gravel inclusions.						Modern
9	[308]	Cut	Narrow shallow gully associated with modern plantation	Linear; aligned NE–SW; measuring 3.65m × 0.10m × *c*.0.025m.						Modern
10	(309)	Deposit	Single fill [308]	Soft black silty sand; rare small sub-rounded stone & gravel inclusions.						Modern
11	[310]	Cut	Terminus (rounded N end) of NNW–SSE linear ditch [312]	Semi-circular in plan; break of slope top moderate, sides gradually sloping, base concave; measuring 4.50m (as exposed within the easement) × 0.60m × 0.07m.						Modern?
12	(311)	Deposit	Single fill of [310]	Soft black silty sand; rare small sub-rounded stone & gravel inclusions.						Modern?
13	[312]	Cut	Ditch	Linear; aligned NNW–SSE; break of slope top moderate, sides gradually sloping sides, break of slope base moderate, base concave; measuring >4.58m × 0.87m × *c*.0.10m.						Modern?

14	(313)	Deposit	Single fill of [312]	Soft black silty sand; rare small sub-rounded stone & gravel inclusions.					<300>	Modern?
15	[314]	Cut	Ditch (not visible in pipe trench section)	Linear; aligned E–W; measuring <10m × *c*.1m.						Modern?
16	(315)	Deposit	Single fill? of [314]	Moderately compacted mid orange-brown clayey silt; occasional small–med angular & sub-rounded stone & gravel inclusions.						Modern?

Route 3 extended over a distance of 700m and was divided into three sections to reflect the topography of the area and to assist recording (*fig. 2*). However, the topsoil (300) and natural (301) were found to be consistent in terms of composition and single context numbers have thus been assigned throughout.

6.2 Section 1

Section 1 was located at the SW end of Route 3, on the summit of the hill. This section measured *c*.56m in length and extended NNW–SSE turning E at its NNW end and ran parallel to the extant trackway. This section commenced at NGR SU 86658 65605 at the SSE end, where the ground level was 121.94m AOD, declining gradually NNW to a height of 120.8 AOD.

The easement width was 10m with the depth of excavation *c*.0.18m BGL (below ground level). At the machine horizon, a superficial geological deposit was encountered (301) and for the first *c*.40m of the route (301) was predominately composed of small to medium stones and gravels in a matrix of whitish-yellow sands, with frequent patches of downcast topsoil (300) (*Plate 1*).

No evidence of truncation by archaeological features was present within the easement at the machine horizon and it was thus no necessary to carry out observation of the open cut pipe trench.

Plate 1: View SSE showing the Route 3, Section 1 easement

The stratigraphic profile comprised an organic deposit of woodland debris (humus layer) overlying the topsoil (300), with the natural substrate (301) below. Both deposits were heavily intermixed as a result of tree-rooting. No subsoil was encountered within the easement strip.

It is possible to consider (300) as an imported make-up deposit, introduced to assist the tree plantation and land management of the forest. Additionally, patches of (300) appeared to be ash-rich in composition, suggesting large-scale clearance and management of the heathland by controlled burning prior to the plantation.

6.3 Section 2

Section 2 of Route 3 ran ENE–WSW parallel to the extant trackway along the eastern slope of the hill and measured *c*.339m in length. At the WSW end, the height of the ground level was 120.88m AOD, declining to 100.02m AOD at the ENE end.

The easement width was 10m, with a maximum depth of *c*.0.40m BGL at the ENE end. A superficial geological deposit (301) was revealed at the machine horizon; as seen throughout the route, frequent patches of downcast (300) was present (*Plate 2*).

Plate 2: View WSW showing Route 3, Section 2 easement

The natural substrate (301) was truncated by features within the easement machine horizon and these were investigated and recorded prior to the easement strip continuing down to the natural deposit (301); observation of the open-cut trench for the water mains pipe was thus not required on this section of the route.

Plate 3: SSE -facing section of easement strip at ENE end of Route 3 Section 2

The stratigraphic profile comprised an organic humus layer overlying topsoil (300), which overlay the natural substrate (301) underlying (300). No subsoil was present within the easement strip (*Plate 3*). The current land use being conifer plantation, both deposits were heavily intermixed as a result of tree-rooting.

In spite of this heavy disturbance and its potential to obscure any archaeological features, a series of narrow, shallow linears running NE–SW were encountered, sealed by topsoil (300), within the machine horizon (*fig. 11*). These were observed intermittently along the ENE end of the easement. Some of these linear features continued beyond the limit of excavation along the NNW edge.

The westernmost of the linear features, [306] and [308], (*Plates 4 & 5, figs.4 & 5*) were located *c*.172m along the route from the WSW end of the easement at 105.42m AOD and were interpreted as gullies associated with modern forestry. Both contained single fills, (307) and (309), composed of black silty sand with rare small sub-rounded stone and gravel inclusions.

Plate 4: General view SW of plantation gullies [306] and [308]

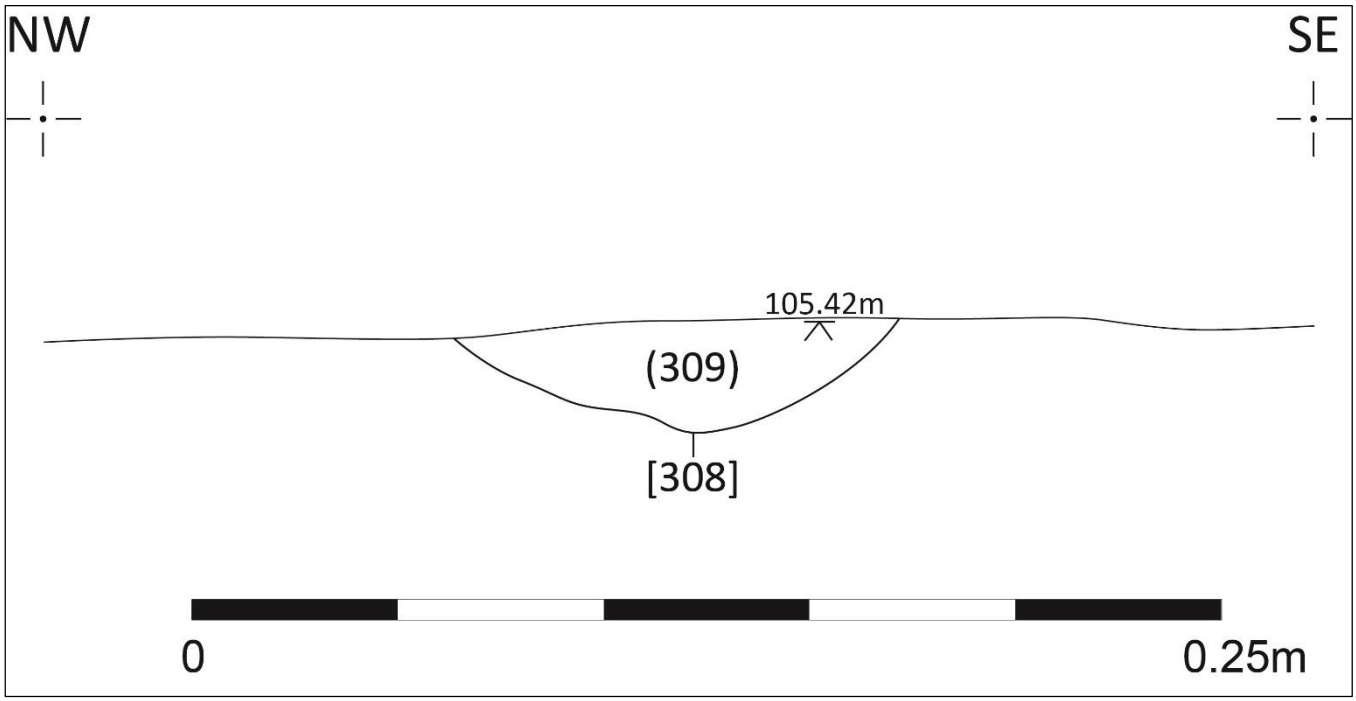

Fig. 4: SW -facing section of gully [308].

Plate 5: SW -facing section of plantation gully [306]

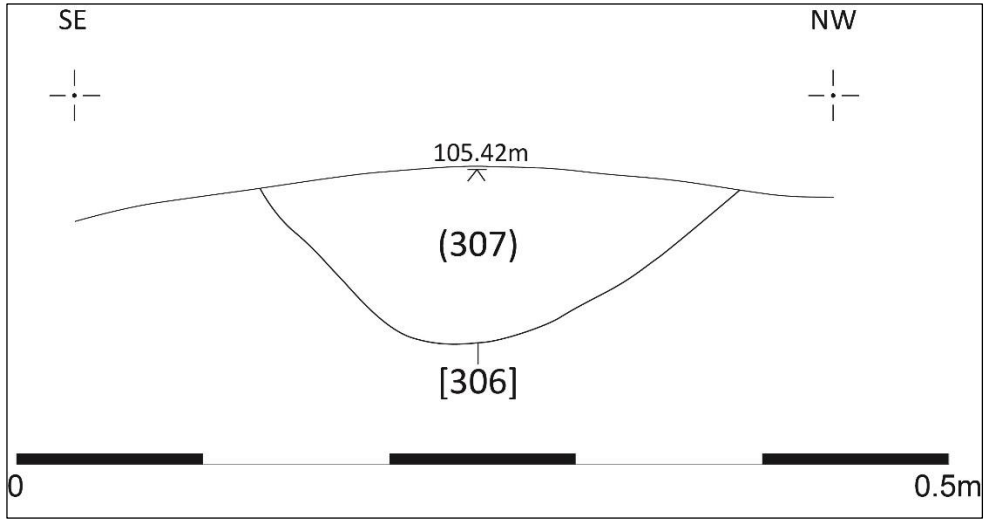

Fig. 5: NE -facing section of gully [306]

The easternmost linears, [302] and [304] (*Plates 6 & 7; figs. 6 & 7*), were located *c*. 40.50m ENE of [306] and [308] at 104.02m AOD. Again, both contained single fills, (303) and (305), which were identical in composition to (307) and (309). No finds were recovered from these deposits.

It was not considered necessary to excavate all linears revealed in this area, as excavation of [302], [304], [306] and [308] established the character of these features and it was clear that they formed part of the same event. Initially, they were considered to display the characteristics and appearance of wheel-ruts; however, subsequent investigation and further consideration of the character of the wider landscape indicated that these features represented plantation gullies associated with modern forestry activity, similar features being visible and extant throughout the forest.

Plate 6: General view to the SW of plantation gullies [302] and [304]

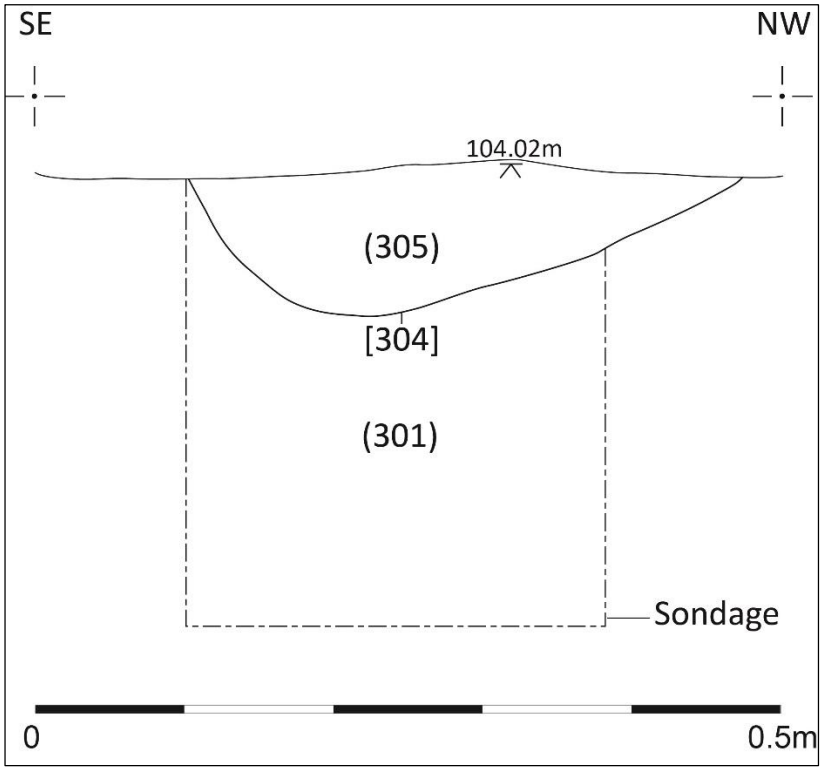

Fig. 6: NE -facing section of gully [304]

Plate 7: SW -facing section of plantation gully [302]

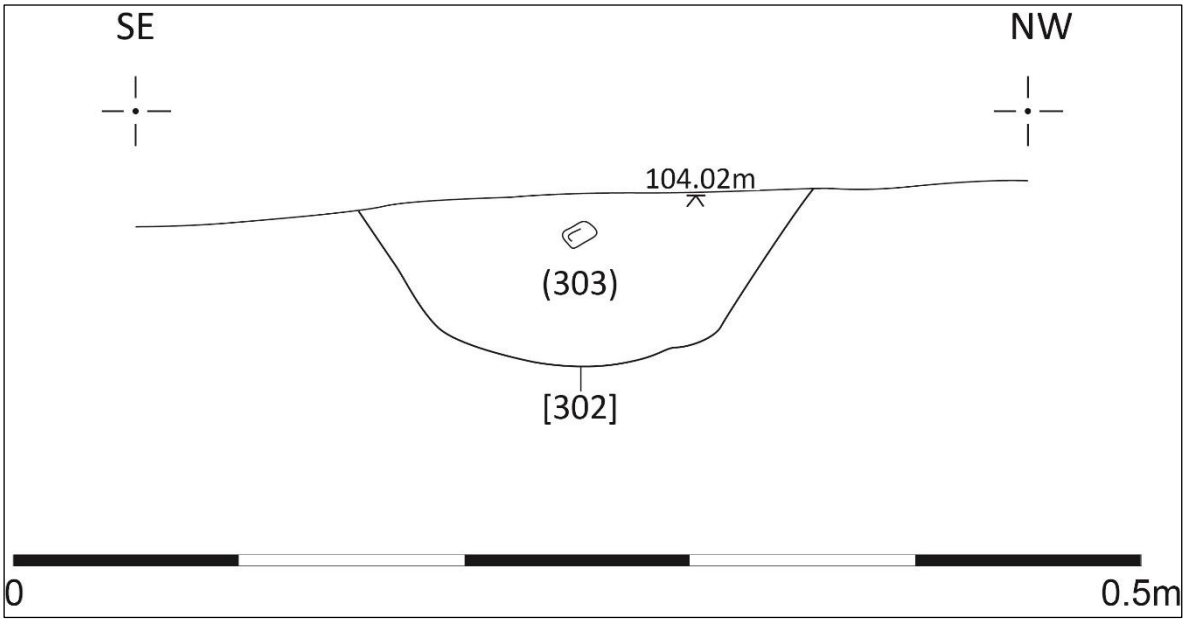

Fig. 7: NE -facing section of gully [302]

Additionally, a linear ditch [312] (*Plates 8 & 9, figs. 8, 9 & 10*) was revealed running NNW-SSE perpendicular to the alignment of the easement. It was located *c*.165.90m along Section 2 of Route 3 from the WSW end of the easement at 105.92m AOD. The ditch extended SSE beyond the easement; however, its NNW terminus [310] was located 4.55m within the easement (*Plates 8 & 10*).

Plate 8: General view SSE of ditch terminus [310] and ditch slot [312]

The single fill of ditch (313) and terminus fill (311) appeared identical in composition and colour to the fills of forestry gullies (303), (305), (307) and (309) and it would thus seem plausible that this feature formed part of the forest management regime, with many extant drainage ditches visible throughout the forest. A soil sample <300> was taken of deposit (313) and this has been subject to assessment, which found a complete absence of palaeoenvironmental materials, suggesting context formation during the recent past at a considerable distance from any human interference (*Appendix 1*). No finds were recovered from deposits (313) or (311).

Plate 9: NNW -facing section of ditch slot [312]

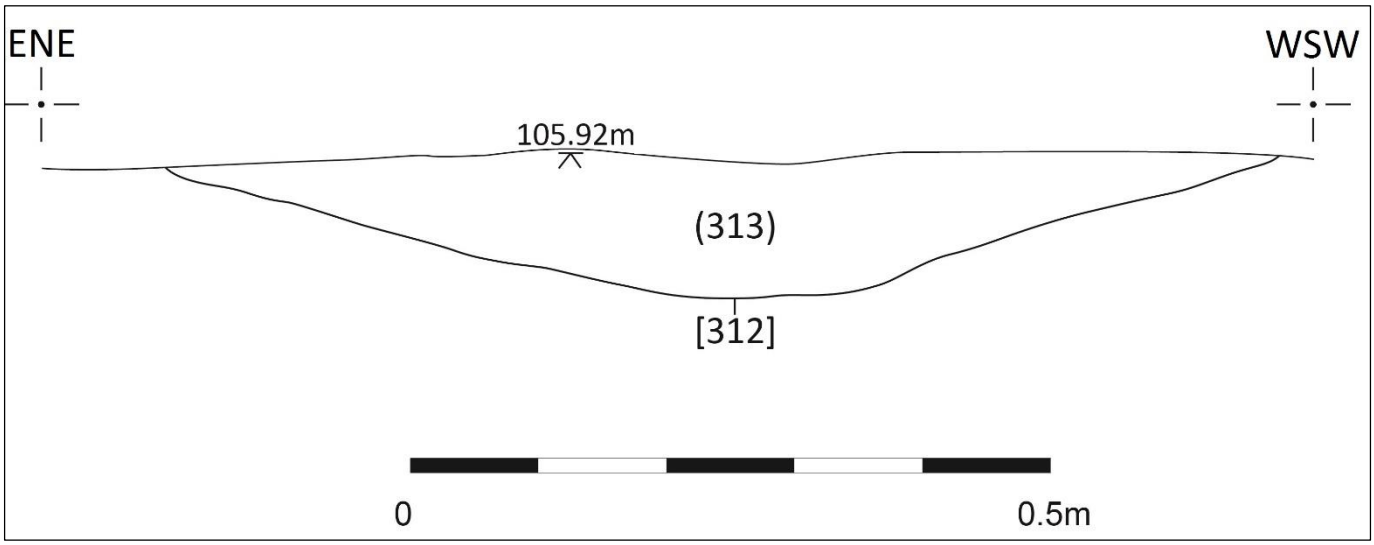

Fig. 8: NNW -facing section of ditch [312]

Plate 10: ENE -facing section of ditch terminus [310]

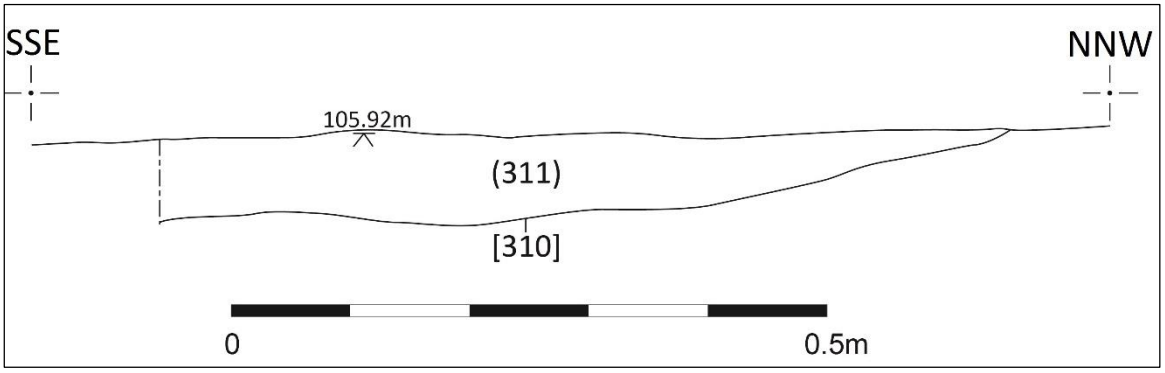

Fig. 9: ENE -facing section of ditch terminus [310]

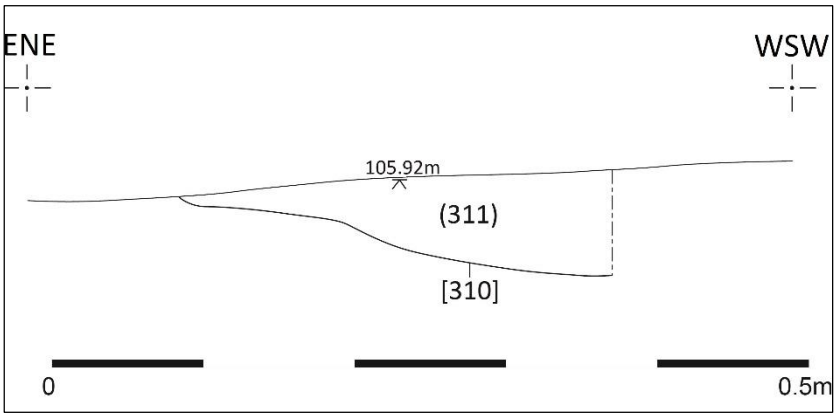

Fig. 10: NNW -facing section of ditch terminus [310.

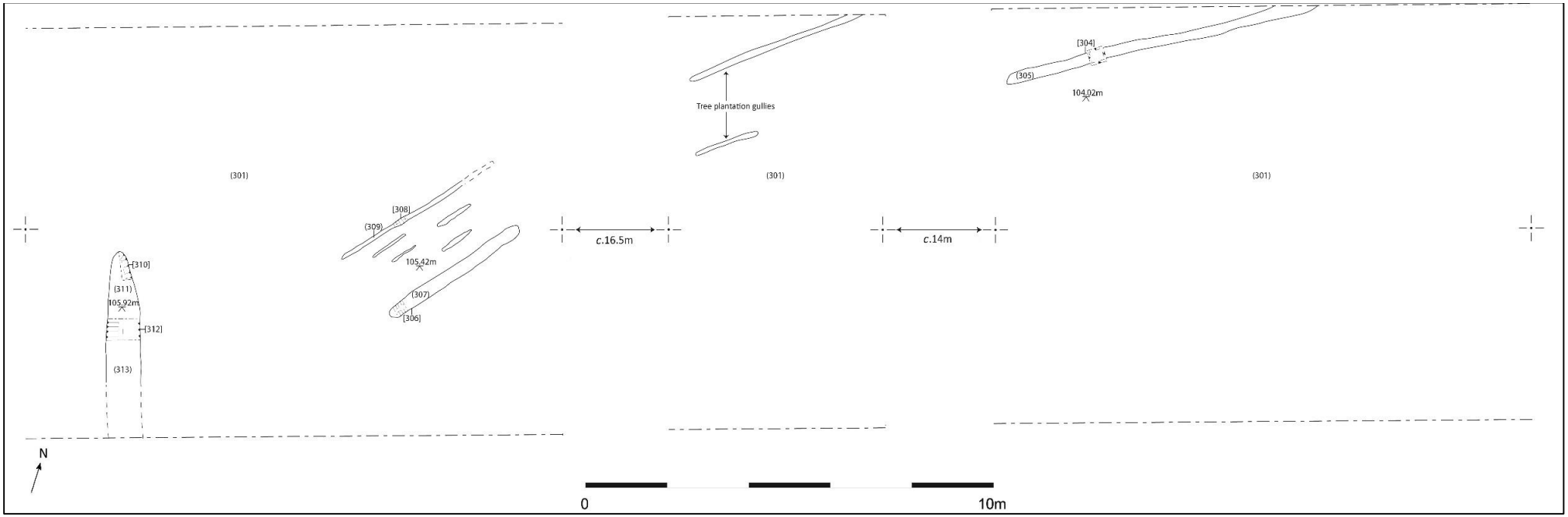

Fig. 11: Plan of excavated features encountered within Section 2 of Route 3

6.3.1 Site Compound

A compound was established within the vicinity of Section 2 of Route 3 measuring 30m × 30m (*Plate 11*). As seen across the route as a whole, below an organic humus deposit was topsoil (300) and the superficial geological deposit (301) which, were heavily disturbed with frequent up-cast natural within the topsoil and downcast topsoil within the natural.

The machine horizon of the compound strip was *c*.0.28m BGL onto the natural substrate (301), where no features truncated (300) or (301) and no deposits of archaeological significance were present within the limit of excavation.

Plate 11: General view E of the site compound strip

6.4 Section 3

Section 3 of Route 3 was located on a low-lying, gradually sloping plateau situated at the base of the hill measuring *c*.305m in length and orientated N–S., turning NW, then N and finally running on a NE alignment at its northernmost extent.

At the southern end of Section 3 of the route, the height of the ground level was 100.02m AOD, declining to 95.04m AOD at the northern end.

The easement width was 10m, with a depth of *c*.0.30m BGL at the southern end and a maximum depth of *c*.0.50m at the northern end. For the first *c*.188m of Section 3, superficial geological deposit (301) was encountered at the machine horizon of the easement strip (*Plate 12*). At *c*.5m S of the line of a stream bank (orientated E-W) and beyond the stream to the N of its bank, the machine horizon was still within topsoil (300), resulting in this area requiring archaeological monitoring during the subsequent excavation of the open-cut pipe trench.

Plate 12: View N of easement strip at the southern end of Route 3 Section 3

Plate 13: View S of easement strip to S of stream

The stratigraphic profile comprised an organic humus deposit overlying the topsoil (300), with the natural substrate (301) below (300). There was no subsoil present within the easement strip (*Plate 14*). Both deposits were heavily intermixed due to modern tree-rooting.

The natural substrate (301) on the southern side of the stream was truncated by possible E-W linear ditch [314], located *c*.66m S of the stream running parallel with [314] and continuing beyond the limit of excavation to the E and W of the easement (*Plate 15*). In plan, the ditch was *c*.1m wide and +10m in length.

Plate 14: W -facing section of easement at S end of Route 3 Section 3

The feature was machine excavated, as it was clear the subsequent open-cut pipe trench would cross through it to reveal its profile in section. However, [314] was not encountered during the pipe-trenching observations, suggesting that the remains may have been shallow, with only the base of the cut visible in plan, and that this ditch base may subsequently have been obliterated in section due to a combination of waterlogged soil conditions and the impact of heavy machinery. However, modern clay drainage pipe fragments were previously noted within the fill (315) of [214], suggesting the feature may represent the remains of a modern drainage ditch.

A series of NW–SE plantation gullies were encountered to the S of the stream, extending along the western edge of the easement for a distance of some 30m (*Plate 16*). These were not excavated, as, in plan, they were identical to the modern forestry features [302], [304], [306] and [308] located within Section 2 of Route 3.

To the S of [314], the open-cut pipe trench excavation was not monitored, as the machine horizon for the easement reached natural (301) and no archaeological features or deposits were encountered.

Over the final *c.*112m of the route, where the archaeological monitoring terminated at NGR SU 86910 66074, the machine horizon for the easement, as stated, did not reach the superficial geological deposit but was still within the topsoil (300) (*Plates 17 & 18*).

Here, (300) was rich in humic material; the area was considerably waterlogged, with water draining to the E towards Gormoor pond. The excavation of the open-cut pipe trench was observed in this area (*Plate 19*), the trench

being *c*.0.80m wide and 1.20m below the machine horizon of the easement, where natural deposit (301) was reached at 0.53m–0.65m BGL.

There were no truncations by archaeological features or archaeological deposits present within the pipe trench (*Plate 20*).

Plate 15: View W of possible ditch [314]

Plate 16: General view of NW–SE plantation gullies

Plate 17: General view N of easement strip at N end of Route 3 Section 3

Plate 18: E -facing section of easement at N end of route

Plate 19: General view NW along pipe trench, looking towards the third bend of Section 3 of Route 3

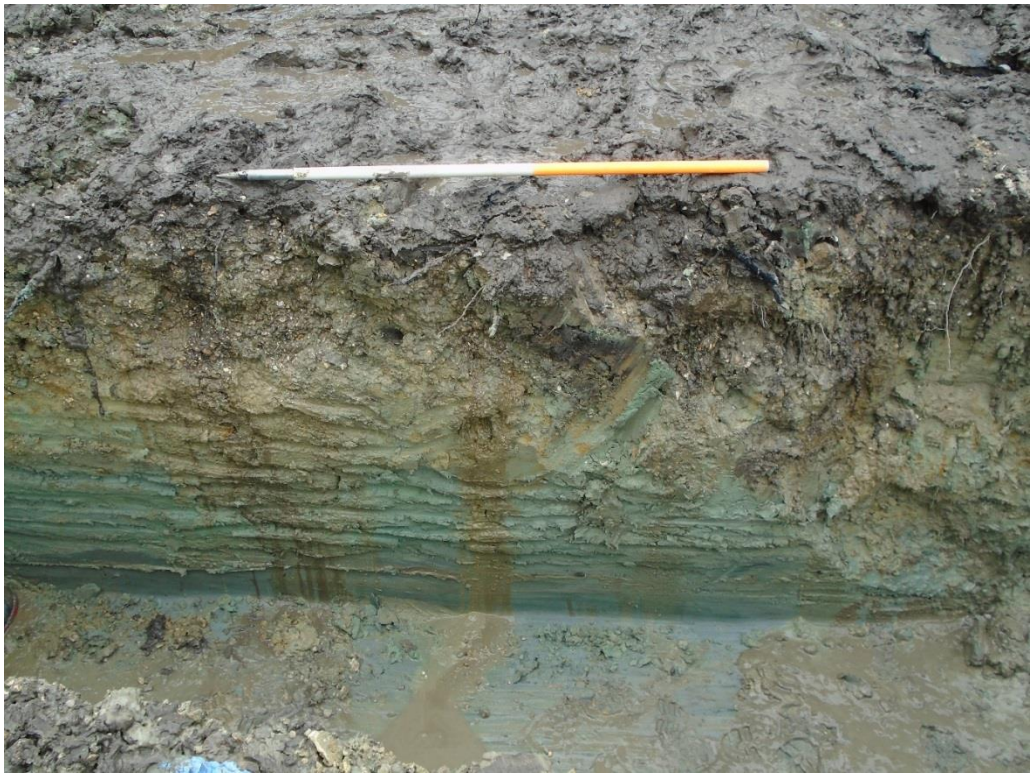

Plate 20: E -facing section of pipe trench

7 Discussion

Archaeological Observation revealed little evidence of significant archaeological finds, features or deposits. A number of linear features associated with modern forestry plantation activity were recorded and disturbance associated with these had clearly affected most deposits. The topsoil (300) and subsoil (301) appeared to be ash-rich in places, which suggested the possibility of large-scale heathland clearance and management by controlled burning prior to the plantation. Alternatively, these ash-rich areas and evidence of underground burning within the soil composition may correlate with a fire which broke out in Swinley Forest in May 2011 and which destroyed 170 hectares of woodland plantation, mainly within Crowthorne Forest.

A programme of replanting was implemented in January 2012 following the fire and subsequent clearance of burnt trees, which were felled and chipped, the debris being used as mulch to supress weeds, conserve moisture and protect against frost and excessive sun. The ground was subsequently scarified, upturning the soil and mulch. This process was most evident in soil deposit (300), localised to the area N of the stream within Section 3 of the route, where the deposit was rich in mulch and burnt organic humus debris.

Additionally, the replanting of *c*. 60,000 trees required the excavation of plantation gullies and evidence of this was observed with respect to features [302], [304], [306] and [308] within Section 2 of the easement and was visible

also as unexcavated linears of the same character encountered in Section 2 and 3 of the route. It is possible that these linears were associated with an earlier plantation phase but they certainly related to forest management.

Any potential archaeological horizons may have been mixed by the scarifer or plough if this was used in the past to cultivate the land for the tree-plantation. This also may be the explanation as to why no subsoil was encountered during the programme of works.

Tree-root disturbance, whilst evident throughout the easement strip, was localised, the typical root depth of Scots Pine (*Pinus sylvestris*) being 2.1m (Crow 2004). A greater level of disturbance occurred as a result of cultivation, with bioturbation generally causing less impact on archaeological deposits. However, considering that in some areas the cover over the superficial geological deposit (301) was *c*.0.18m, certain areas were more liable to be affected by such activities than others, with any potential surface scatters unlikely to survive the movement of machinery or other traffic, with any near-surface archaeology at risk from rutting.

The pipeline route falls within the wider landscape of the Iron Age hill fort of Caesar's Camp, with Section 1 of Route 3 located *c*.93m away from the earthworks. However, no deposits, features or finds associated with this period were encountered during the course of the groundworks. Additionally, the Romano-British settlement of Wickham Bushes is located *c*.640m to the S; however, again, no archaeological deposits, features or finds of this nature were discovered.

As stated, this may be due to the disturbance or removal of any potential archaeology during silvicultural activity associated with the forest cover and the rides or during the fire in 2011 and the subsequent replanting scheme.

7.1 Confidence Rating

With due regard to any potential impact on the survival of archaeological features, deposits or finds associated with 19th -20th -century forest management regimes, including initial ground preparation and subsequent tree-rooting & stump removal, BA has full confidence in the integrity of its results. A consistent engineering groundworks methodology was employed throughout the programme of topsoil removal and subsequent open-cut trenching, forest floor detritus and debris being carefully separated from the topsoil, with machine excavation undertaken in spits to assist identification of any potential archaeological deposits. Consequently, a confidence rating of HIGH is considered appropriate.

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9 Bibliography

Barratt, N., 2013, *An Archaeological Desk-Based Assessment of the proposed routes of mains water schemes in Bracknell Forest, Berkshire*, Kent Archaeological Projects

Border Archaeology, 2014, *Archaeological Field Recording Manual*

Border Archaeology, 2015, *Swinley Forest Strategic Water Main*. Report Ref: BA1445SEWSF

Border Archaeology, 2015. *Palaeoenvironmental Report concerning flotation analysis and archaeobotanical identification, for SEW Swinley Forest Strategic Water Main*, Report Ref: BA1445SEWSF PALAEOENV

CIfA, 2014, *Standard and guidance for the collection, documentation, conservation and research of archaeological materials*

CIfA, 2014, *Standard and guidance for an archaeological watching brief*

CIfA, 2014, *Code of conduct*

CIfA, 2015, *Regulations for professional conduct*

Colls, D., 2006, *Devil's Highway, Crowthorne, Berkshire. An Archaeological Evaluation*, Thames Valley Archaeological Services Ltd

Crow, P., 2004. *Trees and forestry on archaeological sites in the UK: a discussion document*. Revised edition. [online] [Accessed 26 January 2016]

Ditchfield, P.H. & Page, W. (Eds.), 1923, *The Victoria History of Berkshire: Volume 3*, London

Ford, S., 2005, *Wickham Bushes, Easthampstead, Bracknell, Berkshire. An Archaeological Survey*, Thames Valley Archaeological Services Ltd

Margary, I.D., 1955, *Roman Roads in Britain*: *Volume I: South of the Foss Way - Bristol Channel*, London

Margary, I.D., 1973, *Roman Roads in Britain*, London

SSEW, 1983, *Soil Map of England and Wales Scale 1:250, 000*, Silsoe

Williams, A. & Martin, G. H., 2002, *Domesday Book: A complete translation*, London

9.1 Websites

Bracknell News. 2011. *Serious Fires in Crowthorne* [online]. Available at: http://www.bracknellnews.co.uk/news/13455587.Serious_fires_in_Crowthorne/ [Accessed 14 December 2015]

Forestry Commission. 2015. *Forest Fire Recovery work begins at Swinley* [online]. Available at: http://www.forestry.gov.uk/newsrele.nsf/WebPressReleases/1154C0CF1360A6428025790C0051BB71 [Accessed 14 December 2015]

9.2 Cartography

Ordnance Survey 1st Edition Berkshire 6-inch map 1876

Ordnance Survey 2nd Edition Berkshire 6-inch map 1899

Ordnance Survey 3rd Edition Berkshire 6-inch map 1913

10 Appendix 1: Palaeoenvironmental Report concerning flotation analysis and archaeobotanical identification

Amy Bunce BSc MA
Border Archaeology Ltd

10.1 Executive Summary

This Report has been prepared by the Palaeoenvironmental Department at Border Archaeology Ltd (BA) to facilitate and elucidate the palaeoeconomic interpretations of potential archaeology discovered during archaeological observation (BA1445SEWSF) conducted on the route of the Swinley Forest Strategic Water Main works through Bracknell Forest and Surrey Heath on behalf of South East Water.

No material of archaeological origin, archaeobotanical or otherwise, was recovered. Instead, the highly humic material was found to be comprised solely of sands and silts, with exceedingly low occurrences of very small stones. However, the anaerobic conditions of vegetal matter build-up had created an environmental akin to that of peat formation and, in a direct parallel to peat, heavy concentrations of un-decayed woodier plants were present.

Although dark in colour due to the soil tannins, they were in no way carbonised. Due to the humic nature of the deposit, the age of such material cannot be determined nor, usually, can it be written-off as modern. However, in this instance, the recent land-use change over the water main route would strongly suggest a recent formation of this material as a result of the forestation.

Due to the absence of material within deposits of exceptional preservational quality, it is fair to suggest that no human interference was enacted within the vicinity during the deposition of the fill. This leads to a conclusion of relatively modern and very short-lived activity at a considerable distance from any habitation.

One sample was recovered from the singular fill of a linear at the base of a hill. 20ℓ of this deposit was received by BA's Palaeoenvironmental Department and processed through flotation, with the resultant organic and inorganic material sorted and identified.

10.2 Introduction

This report details the results derived from 20ℓ of soil recovered from one context along Swinley Forest Strategic Water Main Route 3: Bracknell to Crowthorne Nine Mile Ride. Route 3 was approximately 1.9km in length, the first *c.*700m of which required Archaeological Observation.

A practice of monitoring of the establishment of a working easement was undertaken across much of the route length; the linear feature that was sampled was identified in this manner. Creation of the working easement through the heavily wooded landscape created challenges to the usual methods of recognition of archaeological features. However, the presence of sizable tree stumps was largely accepted as being incompatible with the survival of archaeologically secure material. Following the easement creation, the necessity for monitoring of the pipe trench excavation could be assessed.

The focused sampling strategy employed addressed deposits solely of archaeological origin that were conclusively free from disturbance and contamination. As such, the results could confidently be used to inform the palaeoenvironmental picture of the features they represented. However, the presence of only one feature acceptable for palaeoenvironmental sampling reflects the paucity of archaeological findings rather than the limitations of the sampling strategy.

The samples were processed by means of flotation and the potential archaeobotanical remains from both the floating element and the heavier residue were sorted and visually identified. While archaeobotanical recovery was a failure, this was clearly not due to any taphonomic biases as peat and the humic soils apparent at Swinley Forest will preserve all organic remains well. The favourable conditions for organic preservation starkly highlights the sterile nature of the palaeoenvironmental recovery and, indeed, the absence of archaeological material.

The area of study has been recognised by the Soil Survey of England and Wales as comprising thin soils that produce lowland heath and woodland habitats (SSEW 1983). They are well-drained and acidic with a tendency towards peat formation, all characteristics amply borne out by the palaeoenvironmental sampling.

10.3 Methodology

10.3.1 Objectives of analysis

The purpose of the palaeoenvironmental sampling strategy implemented during Archaeological Observation is the retrieval of non-specific palaeoenvironmental remains and the further characterisation of features that cannot be fully investigated due to the confines of the working schedule. Where archaeological observation is synonymous with excavation, the purpose of the palaeoenvironmental sampling strategy becomes that of non-specific palaeoenvironmental recovery coupled with specific palaeoenvironmental recovery, as dictated by the regional research frameworks and the site palaeoenvironmental potential.

10.3.2 Sampling methodology

Sampling methodology followed the BA *Palaeoenvironmental Department Manual* (2015) for environmental sampling and processing. On site, the samples were collected in sample buckets and identified by context and sample number. Following receipt into the Palaeoenvironmental Department, they were assigned bucket numbers for tracking purposes. The samples were not subject to sub-sampling and their entirety was processed by means of flotation.

Flotation was undertaken in Siraf-style tanks with a 1mm retent mesh and 250µm flot sieve. No refloating was required for these samples. Retents were initially scanned by magnet to retrieve archaeometallurgical debris and a sieve bank was used to facilitate visual sorting with the smaller fractions sorted by means of magnifying lamp and/or illuminated stereo zoom microscopy (≥×10). The flots were sorted entirely by means of illuminated stereo zoom microscopy (≥×10). The results of this analysis are reported with the flot and retent data recombined; this is due to limited to no variance in the species being reported.

10.4 Personnel

Flotation and primary analysis was undertaken by Robin Putland BSc MSc, Janice McLeish MA, Matthew Gutteridge BSc and David Elgar BSc MSc, with assistance from Corey Koppelow BSc and Carolina Sanchez-Ignacio BSc within BA's Palaeoenvironmental Department. This work was further assisted by BA's field staff as part of a programme of Continuing Professional Development (CPD). Further analysis and identification was undertaken by Robin Putland BSc MSc and Amy Bunce BSc MA.

10.5 Description of results

10.5.1 Description and implications of materials recovered

Detailed below are the general implications of the discovery of certain materials within the palaeoenvironmental samples.

10.5.2 Uncarbonised organic material

The presence of uncarbonised organic material is entirely complicit with the humic, almost peaty, nature of the soils at Swinley Forest. The absence of carbonised material when such conditions are equally favourable to their preservation strongly suggests a complete absence of human interference in this area. Of the uncarbonised material recovered, roots and/or twigs had by far the greatest abundance. It is highly plausible that this woody material derives from trees or shrubs, in particular, ericaceous shrubs, as in these early days of peat formation and prior to moss colonisation, the more substantial remains do survive the depositional environment better.

10.6 Description of significant palaeoenvironmental contexts

As the sampling from Swinley Forest was of only one context (313), its archaeological implications are considered in detail below. Further results can be observed in the table below.

10.6.1 Fill (313)

The fill (313) of linear [312] appears to represent an accumulation of un-decayed organic materials from the immediate vicinity. It is unlikely that this preservational environment is restricted to the linear cut but the effects may well be amplified within the negative feature. Of especial note is the complete absence of faunal material or charcoal, even of the fragmentary wind-blown variety. In addition, there are no terrestrial snail shells; however, this is the one palaeoenvironmental indicator that may not survive acidic waterlogged deposits, such as those forming at Swinley Forest.

Very little retent quantity was derived from this context due to the sand and silt humic nature of the deposit and the resultant exceedingly low volume of stony material. What stones were recovered were predominantly quartz or gravels of a size equable with an interpretation of washed-in material.

10.7 Results

The following table details the results of both the archaeobotanical material and the archaeological finds. The flot and retent data have been recombined due to the lack of variation between the material represented.

10.7.1 Table of archaeobotanical and non-archaeobotanical remains

		Context no.	313	
		Sample no.	300	
		Sample part	1/2	2/2
		Bucket no.	E2936	E2937
		Sample vol. (mℓ)	50	50
		% sample analysed	100	100
		Waterlogged?	N	N
		Refloated?	N	N
Latin name	Common name	Plant part		
Uncarbonised organic material				
Wood & shrub	Indeterminate	bark	++	+
Wood & shrub	Indeterminate	twig/root	+++	++++
Wood & shrub	Indeterminate	fragments	++	+

Abundance key: + = rare; ++ = occasional; +++ = common; ++++ = abundant

10.8 Conclusions and recommendations

The intention of the focused but non-specific palaeoenvironmental sampling was the retrieval of archaeobotanical remains. However, the complete absence of palaeoenvironmental materials has instead suggested context formation during the recent past at a considerable distance from any human interference.

10.9 Bibliography

BAL, 2015, *Palaeoenvironmental Department Manual*

Campbell, G., Moffett, L. & Straker, V., 2011 - *Environmental Archaeology: A Guide to the Theory and Practice of Methods, from Sampling and Recovery to Post-excavation* (2nd Edition), Swindon

Groningen Institute of Archaeology, 2006-*present* - *Digital Seed Atlas of the Netherlands*, available at: https://dzn.eldoc.ub.rug.nl

Jacomet, S., 2006, *Identification of Cereal Remains from Archaeological Sites* (2nd Edition), Basel

Martin, A. & Barkley, W., 2000, *Seed Identification Manual*, New Jersey

Renfrew, J., 1973, *Palaeoethnobotany: The Prehistoric Food Plants of the Near-East and Europe*, London

Schoch, W., Pawlik, B. & Schweingruber, F., 1988, *Botanical Macro-Remains: an Atlas for the Determination of frequently encountered and ecologically important Plant Seeds,* Berne & Stuttgart

Schweingruber, F., 1990, *Microscopic Wood Anatomy* (3rd Edition), Birmensdorf

SSEW, 1983, *Soil Map of England and Wales Scale 1:250, 000*

Stace, C., 2010, *New Flora of the British Isles* (3rd Edition), Cambridge

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