



LAND AT MYTHOP HALL FARM, MYTHOP LANE, WEETON, LANCASHIRE

Archaeological Evaluation



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Prepared by: Mark Bagwell Elizabeth Huckerby
Position: Project Officer Environmental Manager
Date: October 2005

Checked by: Emily Mercer Signed.....
Position: Senior Project Manager
Date: October 2005

Approved by: Alan Lupton Signed.....
Position: Operations Manager
Date: October 2005

Oxford Archaeology North

Storey Institute
Meeting House Lane
Lancaster
LA1 1TF
t: (0044) 01524 848666
f: (0044) 01524 848606

w: www.oxfordarch.co.uk
e: info@oxfordarch.co.uk

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Janus House
Osney Mead
Oxford
OX2 0EA
t: (0044) 01865 263800
f: (0044) 01865 793496

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SUMMARY

Shackleton Associates, on behalf of their client R Collinge and Son, commissioned Oxford Archaeology North (OA North) to undertake a programme of archaeological work on an area of pasture at Mythop Hall Farm, Mythop Lane, Weeton, Lancashire (centred NGR SD 3721 3539), as a condition of the planning consent (planning application reference 05/05/0010). The proposed development is for an angling lake and associated access. The archaeological work comprised a low-level desk-based assessment, followed by an archaeological field evaluation and palaeoenvironmental assessment, and was undertaken in July and August 2005.

The desk-based assessment consisted of consultation of the Lancashire Sites and Monuments Record (SMR) and resources within OA North's library. The results showed the potential for prehistoric activity within the vicinity of the study site. Stray finds and occasional flint scatters have been found within a 1.5km radius of the site, dated to the Neolithic and Bronze Age, and particularly within areas of higher ground above the moss, which may be the focal points of activity and possible settlement. This indicates that some areas were being exploited, possibly for agricultural purposes. Organic soil was identified from recent mapping of the area in the eastern part of the site, around the position of the proposed angling lake, and is thought to relate to an eroded peat deposit. This had been previously dated to the Neolithic period. A former watercourse is also known to meander through the site, to the west of centre, and is likely to be associated with a former estuarine channel.

The evaluation comprised the excavation of 11 trial trenches, each 30m in length. Trenches 1 and 2, focused on an area of high ground in the west of the site. Although no artefacts or features of archaeological significance were recovered during the evaluation, the fieldwork identified extensive peat deposits, and the presence of well-preserved wood throughout the peat sequence. Trench 1 revealed a post-medieval field boundary ditch, but no evidence of any earlier activity. Trenches 3-11 targeted the eastern area of the study site, and revealed the anticipated peat soils that potentially date to the Neolithic period. However, peat deposits survive to a depth of *c* 2.4m, which is much deeper than the eroded peat deposit suggested by previous research (Tooley 1978). The peat has possibly resulted from a mire, accumulated within the watercourse of former estuarine channel, the western edge of which appears to have been located in Trenches 2 and 7. In addition, Trench 9 revealed a large bog oak. Two sections were recovered for dendrochronological dating. However, its growing conditions led to an asymmetrical trunk unsuitable for analysis.

An environmental assessment was carried out that showed that an alder/hazel carr woodland had developed on the site with oak becoming more important. This was later replaced by open fen vegetation towards the top of this sequence, and it is likely that the site became very wet at this time. However, it would appear that a considerable depth of peat has already been removed from the site, as is known to have taken place throughout the Fylde region. No dates were obtained during the assessment of the potential of the samples, but the presence of material suitable for radiocarbon dating was identified. There is the potential to record the changing nature of the environment at the site and to place this within a chronological framework. This work would be able to enhance the existing work of Tooley (1978) and Middleton *et al* (1995) for this area of Lancashire, which is of national importance.

However, despite the prehistoric potential of the site, neither the programme of trenching or the environmental assessment recorded any significant anthropogenic activity. Consequently, the formation of the proposed angling lake will not have an impact upon an identified archaeological resource, and therefore it is recommended that no further archaeological investigation be undertaken. However is it proposed that further processing and analysis of environmental samples recovered from the site could be undertaken. At the very minimum, it is recommended that during the excavation for the development additional peat samples are retrieved. This should be in the form of two sequences for immediate analysis or for archiving for future research; once the peat resource has been destroyed the potential record has been lost.

ACKNOWLEDGEMENTS

Oxford Archaeology North (OA North) would like to thank Julian Shackleton of Shackleton Associates for commissioning the project on behalf of R Collinge and Son. Thanks are also extended to John Collinge for his help and co-operation on site, and provision and operation of the mechanical excavator. The cutting and delivery of the bog oak to OA North's offices by John Collinge was greatly appreciated. Thanks are also due to the SMR staff in Preston for their assistance with this project, and to Ian Tyers of Sheffield University for his dendrochronological assessment.

The desk-based assessment and finds assessment was undertaken by Jo Dawson. The evaluation was undertaken by Mark Bagwell, who was assisted by Jason Clarke and Steve Clarke, with the drawings produced by Mark Tidmarsh. The environmental samples were processed by Sandra Bonsall and assessed by Elizabeth Huckerby, who are grateful to the Lancaster University Geography Department for the use of their laboratory facilities. The project was managed by Emily Mercer who also edited the report, together with Alan Lupton.

1. INTRODUCTION

1.1 CIRCUMSTANCES OF PROJECT

- 1.1.1 Shackleton Associates, acting as agents on behalf of their client R Collinge and Son, requested that Oxford Archaeology North (OA North) undertake an archaeological investigation of land at Mythop Hall Farm, Weeton, Lancashire (centred NGR SD 3721 3539). Planning consent has been granted, with a condition for a programme of archaeological work, for the development of an area of mainly pasture for the purposes of an angling lake and associated access (planning application reference 05/05/0010). The site is positioned in an area of high archaeological potential, and an assessment of the impact of the proposed development on any possible archaeological remains is required prior to any construction works commencing on site. Lancashire County Archaeology Service (LCAS), acting on behalf of the local planning authority, provided a brief for the required investigation. The purpose of this initial evaluation is to allow for an appropriate mitigation strategy to be proposed.
- 1.1.2 The work was carried out in July and August 2005, and consisted of a low-level desk-based assessment and a programme of evaluation trenching. The research would provide an overview of the archaeological and historical background for the subsequent fieldwork, and comprised an assessment of the Sites and Monuments Record (SMR) and research within the library held at OA North. The evaluation consisted of 11 trenches to sample and characterise the nature of any remains. This report sets out the results of the archaeological investigation in the form of a short document, outlining the findings, followed by a statement of the archaeological potential and significance, and an assessment of the impact of the proposed development.

2. METHODOLOGY

2.1 PROJECT DESIGN

2.1.1 A project design (*Appendix 2*) was submitted by OA North in response to a request from Shackleton Associates, on behalf of their R Collinge and Son. This was prepared in accordance with a brief prepared by LCAS (*Appendix 1*) and was adhered to in full. The work was consistent with the relevant standards and procedures of the Institute of Field Archaeologists (IFA), and generally accepted best practice.

2.2 DOCUMENTARY RESEARCH

2.2.1 In order to provide an historical and archaeological context for the fieldwork, a rapid assessment was undertaken of relevant documentary sources. The study area consisted of the site and an approximate 500m radius. An appraisal of the Lancashire SMR was carried out, together with the archives and library at OA North, in order to establish the extent and character of sites of archaeological interest already known within the study area. The results have been presented in *Section 3.2*.

2.2.2 ***Lancashire Sites and Monuments Record (SMR), Preston:*** the SMR is a database of known archaeological sites and monuments within the county and is maintained by Lancashire County Council. Each site recorded within the study area was accessed and a brief record made for incorporation into the report, where relevant.

2.2.3 ***Oxford Archaeology North:*** OA North has an extensive archive of secondary sources relevant to the study area, as well as numerous unpublished client reports on work carried out both as OA North and in its former guise of Lancaster University Archaeological Unit (LUAU). These were consulted where necessary. Significantly, work carried out for the North West Wetlands Survey by LUAU was also consulted.

2.3 EVALUATION

2.3.1 At the request of LCAS (*Appendix 1*), 11 trenches, each measuring 30m by 2m, were excavated across the site to confirm the presence or absence of archaeological deposits and, if present, to characterise whether they were of archaeological significance.

2.3.2 The trenches were excavated through relatively soft ground using a 1.50m wide toothless ditching bucket, working under archaeological supervision. Mechanical excavation progressed down to the level of natural deposits or first potentially significant archaeological deposits in each trench. Trenches 1 and 2 were relatively shallow, excavated to an approximate depth of between 0.40m and 0.60m below ground level. Trenches 4-6 were excavated to 1.2m below ground level, and the remaining trenches, except were excavated to depths of

up to 2.6m to record the level of the natural alluvium and the full profile of the peat deposits. All trenches were subject to hand cleaning, in the form of shovel scraping and hoeing as machining progressed, and where archaeological features were encountered, these were subject to manual excavation in order to ascertain their date, character, and extent.

- 2.3.3 All trenches were excavated in a stratigraphical manner, whether by machine or by hand. The trenches were accurately located by the use of a Global Positioning System, which provides accuracies of $\pm 0.25\text{m}$. The levels of trenches and archaeological deposits were established with respect to temporary benchmarks.
- 2.3.4 A sampling strategy was followed utilising a variety of methods in order to maximise the environmental potential of the site, under the guidance of OA North's environmental manager. These took the form of bulk samples from three of the trenches (Trenches 6, 7, and 10), monolith samples were taken of the peat sequence from Trench 8 and two complete sections of a tree were recovered for dendrochronological dating from Trench 9.
- 2.3.5 All information identified in the course of the evaluation was recorded stratigraphically, with sufficient pictorial record (plans, sections, and both monochrome and colour slide) to identify and illustrate individual features.
- 2.3.6 Results of the field investigation were recorded using a system, adapted from that used by Centre for Archaeology of English Heritage. The archive includes both a photographic record and accurate large scale plans and sections at an appropriate scale (1:20, and 1:10). Recording was principally in the form of *pro forma* Trench Sheets for each trench, which recorded the orientation, length and depth of machining, and described the nature of topsoil, subsoil and geological deposits. All deposits were recorded using *pro forma* context sheets.

2.4 ENVIRONMENTAL ASSESSMENT

- 2.4.1 **Introduction:** peat was recorded in most of the evaluation trenches and it was decided to sample the deepest exposure, revealed in Trench 8 (Fig 4). Peat often forms on wet ground when the anaerobic and waterlogged conditions inhibit the complete decomposition of organic plant remains. An accumulation over many millennia preserves pollen and plant macrofossil and insect remains. The study of these remains provides a record of how the environment and ecology of the site has changed through time and also indirectly anthropogenic activity, for example forest clearance, burning and cultivation. For these reasons, monolith samples were taken from the open section in Trench 8. A bog oak was also retrieved from Trench 9 and was submitted to Ian Tyers of Sheffield University for dendrochronological dating.
- 2.4.2 **Field methodology:** overlapping monolith samples were taken from the open peat face in Trench 8. The upper most sample was at a depth of 0.35m from the present ground surface, and the deepest was at 2.54m (Fig 4). The samples

were labelled, double wrapped in polythene and transported to OA North's offices.

- 2.4.3 **Laboratory methodology:** the surface of the samples were cleaned and the sediments described and recorded. Eight subsamples were taken for the assessment of pollen and plant remains, from those samples were at depths of 0.45m, 1.15m, 1.45m, 1.65m, 1.97m, 2.15m, 2.41m and 2.50m from the present ground surface.
- 2.4.4 **Pollen preparation:** the eight samples were prepared for pollen analysis using the standard techniques of potassium hydroxide, zinc chloride, and acetolysis (Faegri and Iversen 1989). The residues were mounted in silicone oil and examined with an Olympus BH-2 microscope using x400 magnification routinely, and x1000 for critical grains. All the samples were assessed for pollen and counting continued until a sum of between 90 and more than 100 pollen grains from land pollen types had been reached on two or more complete slides, to reduce the possible effects of differential dispersal under the coverslip (Brooks and Thomas 1967). Pollen identification was carried out using the standard keys of Faegri and Iversen (1989) and Moore *et al* (1991) and a small reference collection held at OA North. Cereal-type grains were defined using the criteria of Andersen (1979); indeterminate grains were recorded using groups based on those of Birks (1973). Plant nomenclature follows Stace (1991) and charcoal particles greater than 5µm were also recorded following the procedures of Peglar (1993). Data are presented in percentages of the total land pollen and fern spores with the exception of the pollen sum and charcoal sum, which are given in total grains.
- 2.4.5 **Plant macrofossils preparation:** eight small samples were taken from the monoliths for the assessment of charred and waterlogged plant remains. The samples were wet sieved through a 250 micron mesh and the residues retained in water. The flots were scanned with a Leitz/Wild stereo-microscope and all plant material was recorded as present or abundant, and provisionally identified. Botanical nomenclature follows Stace (1991).

2.5 ARCHIVE

- 2.5.1 A full professional archive has been compiled in accordance with the project design (*Appendix I*), and in accordance with current IFA and English Heritage guidelines (English Heritage 1991). The paper and digital archive will be deposited with the County Record Office, Preston, on completion of the project.

3. BACKGROUND

3.1 LOCATION, TOPOGRAPHY AND GEOLOGY

- 3.1.1 The study area lies in the present day civil parish of Weeton-with-Preece, which was formerly a township within the parish of Kirkham. The township comprises the settlements of Weeton, Preece, Swarbrick and Mythop, each occupying discrete higher ground amongst the mosses (Farrer and Brownbill 1912, 176). The site lies approximately 250m to the north-east of Mythop Hall Farm, off Mythop Lane that runs between Blackpool to the west and Weeton to the east. The proposed development, within a total area of 7.45 hectares, is situated within two arable fields at approximately 5m aOD, set within the floor of a shallow valley running north/south and east/west (Shackleton Associates 2004). Site access is from Mythop Road via a track from the west. A north/south dyke forms the eastern boundary of the study area, approximately 150m beyond which the Preston to Blackpool railway line runs along an embankment.
- 3.1.2 The underlying geology of the area is Permo-Triassic mudstone. However, the character of the study area is formed by drift deposits which completely mask the solid geology (Middleton *et al* 1995, 5-6). These were laid down since the end of the Devensian (*c*10,000 BC) and can be characterised as three types: colluvium, estuarine alluvium and lowland peat (*ibid*).

3.2 HISTORICAL AND ARCHAEOLOGICAL BACKGROUND

- 3.2.1 **Introduction:** the historical and archaeological background is based on information held by the Lancashire SMR (the sites recorded in which are prefixed 'PRN'), including sites identified during the North West Wetlands Survey (the sites recorded in which are prefixed 'LA') (Middleton *et al* 1995). The evidence is set out below by period, but it should be noted that the area surrounding the proposed development also contained remains that had not been dated. These included cropmarks/enclosures (PRN 2808, 3859, 3860, 3861), ridge and furrow and strip fields (PRN 3862, LA366), and a possible rabbit warren (PRN 12834).
- 3.2.2 **Prehistoric Period:** there is considerable evidence for prehistoric activity in the environs of the proposed development area, mainly in the form of stray finds or finds scatters. Several flint scatters have been identified, with the earliest dated to the Neolithic period (LA85; *op cit* 235), also being the closest to the proposed development area, situated approximately 0.5km to the south-south-east of its boundary. Other scatters, located up to 1.5km from the site, have been dated to the Neolithic to Early Bronze Age (LA84 and LA94 (PRN 25340); *op cit* 235-6). In addition, a single stray flint was dated to the Early Bronze Age (LA89; *op cit* 235) and a palstave to the Bronze Age (PRN 46). Other flints have not been so closely dated - a scatter was dated broadly to the early prehistoric period (LA83; *op cit* 235), and another flint remains undated (LA87, *ibid*).

- 3.2.3 The eastern half of the proposed development area is covered in organic soil, suggesting it was formerly an area of peat that has now eroded (*op cit*, fig 44). Indeed, an earlier soil survey recorded peat in this area (PRN 3467, 3470, 3471; Ordnance Survey 1970; Tooley 1978), and to the south peat of varying depths was still present during the 1990s (*op cit*, fig 44). The peat has been dated to the Neolithic period (*ibid*). Several watercourses have been recorded within the band of peat/organic soil, and also to its sides (PRN 3703, 3704, 3712, 3719, 3720). Parts of some of these are likely to be affected by the proposed development, since they appear to lie within its boundary (PRN 3704). These are likely to have existed prior to, during, and after peat formation, and can be contemporary with nearby archaeological sites and can elucidate landscape formation processes (*op cit*, 16).
- 3.2.4 **Roman Period:** the possible course of a Roman road is recorded running through the proposed development area (PRN 15530), and the designation of 'possible' rather than 'probable' or 'certain' reflects the mixed opinions in relation to its route. Margary states that '*low ground has to be crossed to the east of Mythop, and a large agger has been noted there, up to 60 feet wide at the base, 36 feet wide at the top, but generally there is little now to be seen*' (Margary 1957, 107, Road 703). More recently some possible remains have been recorded close to the proposed development area, with a scatter of stones being noted close to the Mythop to Weeton road (Graystone 1996, 65). The curving route advocated by Margary and many others is one of two recorded courses, the other being in two straight sections (*ibid*). The curving route has been dismissed as '*illogical. If the road was heading for Fleetwood, it might go this far west, but for a port in the Skippool Creek area there is no reason to cross Weeton Moss*' (Welsh 1989).
- 3.2.5 Although the course of the road may be very doubtful close to the proposed development area, it should be noted that several finds of Roman date have been recovered within 1.5km of the site. Three coins (PRN 344, 12025, 15376), one coin or medal (PRN 343), and one melon bead (PRN 47) have been found, indicating Roman activity in the general area.
- 3.2.6 **Medieval Period:** evidence of medieval agriculture survives in the area as ridge and furrow (LA82 (PRN 11356) and LA95; Middleton *et al* 1995, 235-6), and also as more extensive remains including a trackway, headlands, and associated ridge and furrow (LA105; *op cit*, 237). Two deserted medieval villages have also been suggested for the area, Preece and Mythop (PRN 1294, and PRNs 1624 and 2807), although there is no surface evidence of shrunken or deserted villages. The buildings that have survived from these villages include houses or halls (PRN 1294, 1292), and horseshoes likely to date to the medieval period have also been identified in the area (PRN 48).
- 3.2.7 **Post-Medieval Period:** there were many post-medieval buildings in the area, some of which have survived and others that have been demolished, but all generally agricultural or domestic in nature (PRN 4843, 4849, 4853, 5938, 18387, 25342, 25343). A gravel pit has also been identified (PRN 5945) and several coins have been found (PRN 12012, 12013, 12014).

3.3 ARCHAEOLOGICAL INTERVENTIONS

- 3.3.1 An archaeological evaluation was carried out in 1997 to the west of the proposed development area (PRN 23583), and one trench revealed very humic organic soils and well-preserved wood, which demonstrated clear palaeoecological potential (LUAU 1997, 4). An archaeological desk-based assessment was carried out to the south-west as recently as 2003, but there appears to have been no fieldwork component to the project (PRN 25339; Egerton Lea Consultancy Ltd 2003, ii). An archaeological desk-based assessment and field inspection was also carried out further to the south in 1994 (PRN 23421), which identified considerable peat survival in the area of the Norcross to M55 link assessment in 1994 (LUAU 1994, fig 4).

4. RESULTS

4.1 INTRODUCTION

- 4.1.1 Recent mapping of the area (Middleton *et al*) has identified organic soil in the eastern part of the study site, suggestive of eroded former peat deposits, which potentially date to the Neolithic period. This area, which forms the principal area for the formation of the proposed fishing lake, sits just above the 5m contour within the basin of a shallow north/south valley, suggesting a former estuarine channel (Huckerby *pers comm*).
- 4.1.2 As per the project brief (*Appendix 1*), 11 trenches measuring 30m by 2m were excavated (Fig 2), covering an approximate combined area of 660m². Trenches 3-11 targeted the potential peat deposits to assess their archaeological and palaeoecological significance and to provide a date for their formation. Trenches 1 and 2, situated along the route of the proposed access road for the angling lake, targeted the higher ground above the shallow valley at around the 10m contour, which has potential for Neolithic and Bronze Age activity. The summary results of the evaluation are presented below. The context list is reproduced in *Appendix 3*.

4.2 TRIAL TRENCHING RESULTS

- 4.2.1 **Trench 1:** orientated east/west, Trench 1 was located within a field in the north-west of the site (Fig 2; Plate 1), close to a track leading from Mythop Hall. The trench was excavated to a depth of 0.60m to the level of natural deposits.
- 4.2.2 Natural subsoil, **41**, was revealed in the base of the trench comprising fairly compact grey-yellow sandy-clay with between *c* 20-30% poorly sorted small subrounded stones. It was cut by a north/south orientated linear ditch, **40**, with a rounded profile, which ran across the centre of the trench (Fig 3; Plate 2). The ditch was sample excavated, revealing a homogeneous fill, **39**, comprising grey-brown sandy-clay. A fragment of clay pipe stem recovered suggests it dated to the post-medieval period. The ditch was sealed by 0.30m thick subsoil, **38**, comprising red-brown sandy-clay. The subsoil was sealed by grey-brown sandy-clay topsoil with a thickness of 0.30m.
- 4.2.3 **Trench 2:** was positioned on east/west gently sloping ground to the east of Trench 1 (Fig 2). The trench was excavated to a depth of 0.40m in the west, and a maximum of 0.85m at its eastern end to the level of natural subsoil deposits. The slope of the natural subsoil, **45**, reflected that of the surrounding surface topography (Plate 3), which is likely to be the western edge of the peat deposit.
- 4.2.4 Natural subsoil comprised grey clayey coarse sand with *c* 30% small-medium subrounded stones. In the eastern end of the trench it was overlain by two deposits. The lowest comprised a band of mid-dark grey fine-grained sandy-clay, **44**, between 0.20m and 0.30m thick, overlaid by a 0.30m thick organic

peat deposit, **43**, with *c* 10% wood fragments mainly comprising twigs and small branches. A large branch with a diameter of 0.20m was revealed within **43**, laying across the trench; it appeared to be a natural branch with no evidence of having been worked or forming part of a structure. Topsoil, **42**, comprising 0.30m thick brown-grey organic silty-clay, was located along the length of the trench sealing peat and natural subsoil deposits.

- 4.2.5 **Trench 3:** orientated north/south, Trench 3 was situated in the north of the study area and to the east of Trench 2 (Fig 2). It was excavated to a depth of 1.2m in the south of the trench and 1.7m in the north of the trench to the level of natural deposits (Plate 4).
- 4.2.6 Natural alluvium, **36**, was revealed in the north of the trench at the base of the stratigraphic sequence, sloping from north to south and following the general topography of the area. It comprised mid blue-grey sandy-clay with *c* 20%-30% poorly sorted small subrounded stones and occasional medium stones. It was sealed by two peat deposits, the lowest being a 0.90m thick mid brown organic wood peat, **35**, with a high proportion of the deposit (between *c* 30% and 40%), comprising partially decayed wood fragments, twigs and branches from trees. These were randomly deposited within the peat and did not represent any recognisable man-made structure. The upper peat deposit, **34**, was dark brown with a thickness of 0.50m. This had a much lower quantity (*c* 10%-20%) of recognisable wood particles within it. The topsoil, **33**, overlying **34** was a degraded peat soil deposit, comprising a 0.30m thick grey-brown sandy-peat.
- 4.2.7 **Trench 4:** was positioned on level ground to the east of Trench 3 (Fig 2). The trench was excavated to a depth of 1.20m. It revealed a similar peat sequence to that revealed in Trench 3, except in Trench 4 the base of the peat was not examined. The lowest deposit, **32**, with a thickness of over 0.5m, comprised very wet light-mid brown organic wood peat with *c* 20%-30% naturally-deposited partially-decayed wood fragments, twigs and branches from trees. Above this was a layer of dark brown peat, **31**, with a thickness of 0.50m., overlain by topsoil, **30**, comprising 0.30m thick grey-brown sandy-peat.
- 4.2.8 **Trench 5:** orientated east/west, Trench 5 was situated in the north-east of the study area and to the east of Trench 4 (Fig 2). The trench was excavated to a depth of 1.2m.
- 4.2.9 Excavation revealed two peat deposits similar to those identified in Trenches 3 and 4. The lowest deposit, **29**, with a thickness of over 0.5m, comprised very wet light-mid brown organic wood peat with *c* 20%-30% naturally-deposited partially-decayed wood fragments, twigs and branches from trees. The upper 0.5m thick peat deposit, **28**, was dark brown with *c* 10%-20% wood particles. The overlying topsoil, **27**, was a degraded peat soil deposit, comprising 0.30m thick grey-brown sandy-peat.
- 4.2.10 **Trench 6:** orientated east/west, Trench 6 was situated to the south of Trench 3 within a large rough pasture field (Fig 2; Plate 5). The trench was excavated to a depth of 1.2m below ground level.

- 4.2.11 The peat sequence identified in Trench 6 was similar to those in Trenches 3-5. The lowest deposit, **3**, with a thickness of over 0.4m, comprised very wet light-mid-brown organic wood peat with *c* 20%-30% naturally-deposited, well-preserved wood fragments, twigs and branches. The upper peat deposit, **2**, was dark brown with a thickness of 0.50m with *c* 10%-20% wood particles. The topsoil, **1**, that sealed the peat deposits along the length of the trench comprised 0.30m thick brown sandy degraded peat soil.
- 4.2.12 **Trench 7:** orientated east/west, was situated in the west of the study area and to the south of Trench 6 (Fig 2). The trench was excavated to a depth of 1.2m at its western end, and a stepped sondage was excavated at the eastern end to a maximum depth of 2.6m in order to examine deposits underlying the peat. Natural alluvium, **8**, was revealed, comprising blue-grey sandy-clay with *c* 20% small subrounded stones and occasional medium-sized stones. It was very shallow at the west end, 0.35m below ground level, with a gradual west/east slope (Plate 6), but in the east of the trench it sloped steeply to 2.60m below ground level, where it was revealed in the base of the sondage. This slope is likely to relate to the edge of the former water course, and therefore the western edge of the peat.
- 4.2.13 The alluvium was sealed by three peat deposits, **5**, **6**, and **7**. The lowest, **7**, comprised a 0.50m thick peat deposit with *c*20% wood fragments (Plate 7). Overlying peat deposit, **6**, comprised 1.2m thick wet mid-brown organic wood peat, with a higher proportion of the deposit, *c* 30%, comprising partially decayed wood fragments, twigs and branches. These were randomly deposited within the peat and did not represent any recognisable man-made structure. The upper peat deposit, **5**, was dark brown with a thickness of 0.40m. This had a much lower quantity (*c* 10%) of wood fragments within it. The overlying topsoil, **4**, was a degraded peat soil deposit, comprising 0.30m thick grey-brown sandy-peat.
- 4.2.14 **Trench 8:** orientated east/west, Trench 8 was situated in the south-west of the site and to the south of Trench 7 (Fig 2). The trench was excavated to a general depth of 1.2m. A stepped sondage was excavated in the east of the trench to a maximum depth of 2.6m in order to examine the profile of the underlying peat deposits. Two monolith samples were taken through the full sequence (Fig 4).
- 4.2.15 Natural alluvium, **26**, was revealed in the base of the sondage at 2.6m below ground level, comprising blue-grey fine sandy-clay with *c* 5% small subrounded stones. The total depth of overlying peat was 2.20m, and broadly represented three layers, **23**, **24**, **25** (Fig 4; Plate 8). The earliest comprised 0.70m thick mid brown very wet peat, **25**, with *c* 30% wood detritus. Also identified within the deposit were hazelnuts and acorns. The secondary peat deposit, **24**, formed above **25** was similar in appearance, but with higher concentrations of wood detritus; it was 1m in thickness. The upper peat deposit, **23**, was dark brown with a thickness of 0.50m. This had a much lower quantity (*c* 10%) of wood particles within it. The overlying topsoil, **22**, was a degraded peat soil deposit, comprising 0.30m thick grey-brown sandy-peat.

- 4.2.16 **Trench 9:** orientated east/west, Trench 9 was situated in the east of the study area within a large rough pasture field (Fig 2). The trench was excavated to a depth of 2.30m.
- 4.2.17 Natural alluvium was revealed in the base of the eastern end of the trench, comprising wet mid-grey, fine clay sand, **16**. The overlying peat sequence identified in Trench 9 was similar to those in other trenches. The lowest deposit, **15**, with a thickness of 1m, comprised very wet light-mid-brown organic wood peat with *c* 20%-30% naturally-deposited partially-decayed wood fragments, twigs and branches. The upper peat deposit, **14**, was dark brown with a thickness of 0.60m with *c* 20%-30% wood fragments. A well-preserved tree trunk with a girth of 1.50m and a root bowl, was found within this deposit laying north-west/south-east across the trench. It showed no evidence of being worked or having formed part of a structure, implying that it was a natural tree that had toppled over. A cut section of the tree was recovered for dendrochronological dating. The topsoil, **13**, which sealed the peat deposits along the length of the trench, comprised 0.30m thick brown sandy degraded peat soil.
- 4.2.18 **Trench 10:** measuring 30m in length by 2m wide, and orientated north/south, was situated in the centre of the study area within an arable field (Fig 2). The trench was excavated to a general depth of 1.20m. A stepped sondage was excavated in the north the trench to a maximum depth of 2.70m to provide a complete section of the underlying peat and alluvial deposits (Plate 9; Fig 5).
- 4.2.19 Natural alluvium, **12**, was revealed in the base of the sondage at 2.70m below ground level, comprising blue-grey fine sandy-clay with *c* 5% small subrounded stones (Fig 5). The earliest deposit above the alluvium comprised 1.70m thick mid brown very wet peat, **11**, with *c* 10% wood fragments, including easily identifiable twigs, roots and branches of trees. The upper peat deposit, **10**, was dark brown with a thickness of 0.40m. This had a lower quantity (between *c* 5-10%) wood fragments within it. The overlying topsoil, **9**, was a degraded peat soil deposit, comprising 0.35m thick grey-brown sandy-peat.
- 4.2.20 **Trench 11:** orientated east/west, was situated in the north-east of the study area and to the south of Trench 5 (Fig 2). The trench was excavated to a general depth of 1.3m. A stepped sondage was excavated in the east of the trench to a maximum depth of 2.3m, in order to record the full profile of alluvial and peat deposits.
- 4.2.21 Natural alluvium, **21**, was revealed in the base of the sondage at 2.3m below ground level, comprising blue-grey fine sandy-clay. The total depth of overlying peat was 2m, broadly representing three layers. The earliest comprised 1.40m thick mid-brown very wet peat, **20**, with *c* 30% wood detritus comprising the twigs, roots and branches of trees. The secondary peat deposit, **19**, formed above **20**, was similar in appearance, with *c* 10% wood detritus within the deposit. The upper peat deposit, **18**, was dark brown with a thickness of 0.30m. This had a much lower quantity (*c* 10%) wood fragments within it. The overlying topsoil, **17**, was a degraded peat soil deposit, comprising 0.30m thick grey-brown sandy-peat.

4.3 FINDS

4.3.1 In total, four artefacts were recovered during the evaluation, all of which dated to the post-medieval period. The items represented comprised a possible storage crock, a possible cup, and a clay tobacco pipe; the fragments are catalogued in *Appendix 4*.

4.4 ENVIRONMENTAL ASSESSMENT

4.4.1 **Results - stratigraphy:** the sequence of deposits in Trench 8, outlined in Table 1, below, show that between 2.42-2.34m below ground level, the underlying basal clay became more organic and, above this, a wood peat developed. At 0.45m depth from the ground surface an organic soil was recorded.

Depth m	Sediment description
0.35-0.45	Organic soil
0.45-2.34	Wood peat
2.34-2.42	Clay with organic remains
2.42+	Grey clay

Table 1: description of sediments in the monolith samples from Trench 8 (depths are in metres from the present ground surface)

4.4.2 **Results - pollen:** pollen was preserved in all samples except that taken from a depth of 1.15m. Table 2 shows that the preservation of the pollen was mixed, but it would not inhibit further analysis. The pollen sum (total land pollen and fern spores) is dominated by tree and shrub pollen in all samples except that from 0.45m. The pollen record suggests that towards the base of the sequence an alder hazel carr was growing at Mythop Hall moss with very few plants from more open conditions recorded. However, at depths of 2.15m, 1.97m, 1.67m and 1.45m, oak pollen became more abundant suggesting a greater presence of this taxon near the site and, perhaps, drier conditions. An increase in the number of fern spores may represent some disturbance to the woodland. The greatest change in the pollen record took place at 0.45m, when there was a sharp reduction in the values of tree pollen associated with a steep rise in the pollen of sedges. This suggests that the site probably became a fen community during this time.

4.4.3 There was very little charcoal recorded in the pollen samples, which suggests little anthropogenic activity on the site during the formation of the peat. At other sites in the Fylde, for example Fenton Cottage, Winmarleigh Moss and Peel (Middleton *et al* 1995), charcoal is abundant in the wood peat above the clays. The absence of anthropogenic activity is also confirmed by the fact that there was no pollen recorded in the record from plants usually associated with such activity.

TAXA		Depth below ground surface						
		0.45m	1.45m	1.67m	1.97m	2.15m	2.41m	2.5m
Trees and shrubs		24.4	70.2	95.8	79.5	95.5	97.4	94.7
Herbs		63.5	2.5	0.6	3.2	3.0	0.9	3.8
Fern spores		12.2	26	3.6	17.3	1.5	1.7	1.5
Trees and shrubs:								
<i>Alnus</i>	Alder	6.7	36.8	73.9	24.4	68.4	69.9	54.9
<i>Betula</i>	Birch	0.9	1.4	1.2	6.3	2.3	1.7	2.4
<i>Ulmus</i>	Elm	0	2.5	1.2	0	1.5	4.3	1.5
<i>Pinus</i>	Pine	1.2			3.2	1.5	0	1.5
<i>Quercus</i>	Oak	12.8	16.1	10.9	30.7	10.5	4.3	4.5
<i>Taxus</i>	Yew	0	0	0	0	0	0	0
<i>Tilia</i>	Lime	0.9	0	0	0	0	0.3	0
<i>Corylus avellana</i> -type	Hazel-type	2.0	13.3	8.5	15	10.5	15.5	28.6
<i>Salix</i>	Willow	0.3	0	0	0	0	0	1.5
<i>Hedera</i>	Ivy	0.3	0	0	0	0.8	0	0
Herbs:								
Apiaceae	Cow parsley family	0.3	0.4	0	0	0	0	0
Asteraceae	Daisy-type	0	0.4	0	0	0	0	0
<i>Calluna</i>	Heather	0	0	0	0	0	0.9	0
Cyperaceae	Sedges	62.9	0.7	0	1.6	0.8	0	0
<i>Filipendula</i>	Meadowsweet	0	0.4	0	0	0.8	0	0
<i>Hypericum</i>	St John's Wort	0	0.4	0	0	0	0	0
<i>Plantago</i> sp	Plantains	0	0	0	0.8	0	0	0
Poaceae	Grasses	0.3	0.4	0	0	0	0	2.2
<i>Urtica</i>	Nettles	0	0	0.6	0	0	0	0
Undifferentiated herbs		0	1.4	0	0.8	1.5	0	1.5
Fern spores:								
<i>Polypodium</i>	Polyploid ferns	1.2	9.5	2.4	6.3	0.8	1.7	0
<i>Pteridium</i>	Bracken	0	0.7	0	0.8	0	0	0
Undifferentiated ferns		11.0	15.8	1.2	10.2	0.8	0	1.5

Aquatics:								
<i>Phragmites</i>	Common reed	0	0	0	0	0	0	0
<i>Sphagnum</i>	Bog moss	0	0	0	0.8	0	0	0
Indeterminates		1.2	3.5	3.0	12.6	0.8	0.9	0
TOTAL POLLEN		345	285	165	127	133	116	133

Table 2: Mythop Hall, Lancashire percentage results of the pollen assessment.
Total pollen includes all land pollen and fern spores

4.4.4 **Results - plant macrofossils:** the plant macrofossil record from the samples, shown in Table 3, demonstrates that the peat was well humified with wood remains. Towards the base of the organic soil (Table 1), alder seeds were identified, confirming that alder was growing nearby, together with some leaf fragments, charcoal and insect remains.

Depth	AMP	Wood frags	Alder seeds	Insect remains	Leaf frags	Charcoal
0.45	++			+		
1.15	++					
1.45	++	++				
1.67	++	++				
1.97	++	+	+		+	+
2.15	+	+			+	
2.41	++				+	
2.50	+			+		Quartz

Table 3: Plant macrofossil results (AMP is amorphous plant material).

4.4.5 **Dendrochronology:** unfortunately, the oak trunk submitted to Ian Tyers at Sheffield University was considered not suitable for dating. The tree had grown asymmetrically, probably in conditions of stress for growth, making it unsuitable for dendrochronological dating (Ian Tyers *pers comm*).

5. CONCLUSION

5.1 DISCUSSION

- 5.1.1 Recent work in the vicinity of the site has highlighted the potential for prehistoric activity within the area. Stray finds and occasional flint scatters have been found within a 1.5km radius of the site, dated to the Neolithic and Bronze Age (see *Section 3.2*), indicating that parts of the area were being exploited, possibly for agricultural purposes. Areas of greatest potential are those on slightly higher ground above the mosses (LUAU 1997, 14). Recent mapping of the area (Middleton *et al* 1995) identified organic soil in the eastern part of the site thought to relate to an eroded peat deposit, in the area of the proposed angling lake. This was dated to the Neolithic period (*ibid*). A former watercourse was also mapped through the site likely to be associated with a former estuarine channel, suggesting the origin of the prehistoric peat mire (Huckerby *pers comm*).
- 5.1.2 Trenches 3-11 targeted the peat deposits, and revealed natural alluvium at a consistent depth of around 2.4m below ground level, possibly laid down under marine conditions. This was sealed by a uniform sequence of well-preserved peat deposits with a consistent depth of up to 2.4m. This was significantly deeper than anticipated by the documentary research, which suggested most of the peat had now been eroded (Middleton *et al* 1995, fig 44), despite the contradictory research by Tooley (1978) from 1966-1978 demonstrating a considerable depth of peat. The stratigraphic sequence recorded during the evaluation comprised between three and four layers of peat, each between 0.5m and 1m in thickness and containing well-preserved organic remains. However, there was no archaeological evidence, either artefactual or structural, for anthropogenic activity, which was also confirmed by the environmental assessment. None of the pollen grains usually associated with such activity were recorded, for example ribwort plantain, bracken spores or cereal grains.
- 5.1.3 A bog oak, recovered from Trench 9, initially presented the opportunity for dendrochronological dating. However, its growing conditions resulting in an asymmetrical trunk prevented any analysis (Ian Tyers *pers comm*). Analysis also showed it had died naturally and was not felled. A bog oak excavated 500m to the south of Fenton Cottage, Over Wyre, just to the north of Mythop Hall, was dated by dendrochronology to 3023±9BC (Middleton *et al* 1995).
- 5.1.4 The environmental assessment revealed that an alder/hazel carr woodland had developed on the site with oak becoming more important on the drier ground. Fern spores also increase in the pollen record at the same time suggesting that the woodland may have been disturbed at this time. The carr woodland was replaced by an open fen vegetation towards the top of this sequence when very large numbers of sedge pollen grains were recorded. It is likely that the site became very wet at this time.

- 5.1.5 Earlier work by Tooley (1978) suggests that the peat probably started forming after the Lytham VI marine transgression when sea-levels fell around the coast of Lancashire. Marine conditions were replaced by freshwater conditions at this time, which has been dated to *c* 4000 cal BC, during the Neolithic. As the vegetation became more terrestrial, fen carr woodland replaced the reed swamps. This woodland was in turn replaced by fen communities and then by raised mires (Tooley 1978; Middleton *et al* 1995). This was also the case at Mythop Hall moss, as the peat evidence showed the carr woodland to have been replaced by a fen sedge community towards the top of the palaeoenvironmental sequence. At Fenton Cottage, Over Wyre, fen carr, indicated by wood peat, was replaced *c* 2559-1950 cal BC by *Scheuzenia* (Rannock rush) peat, indicative of a flooding horizon. It is possible, therefore, that the transition to a fen sedge community observed at Mythop Hall, occurred at a similar date.
- 5.1.6 It is probable that a considerable depth of peat has already been removed from the site, as both commercial and domestic peat exploitation are known to have taken place throughout the Fylde region in the first half of the twentieth century (Middleton *et al* 1995). At this time, the upper part of the peat stratigraphy, which accumulated during and subsequent to the Bronze Age, when the mires became ombrotrophic (fed solely by rainwater) raised mires, was selectively cut for fuel and horticulture, leaving the lower wood and *Eriophorum* peats untouched (*ibid*); it would appear that the situation at Mythop Hall is similar.
- 5.1.7 The environmental assessment of the peat deposits was able to demonstrate the presence of material suitable for radiocarbon dating, and that pollen and plant macrofossils are preserved within the deposits. There is the potential to record the changing nature of the environment at the site and to place this within a chronological framework. This data would enhance the existing work of Tooley (1978) and Middleton *et al* (1995) for this area of Lancashire, which is of national importance. The work would entail the re-sampling of two peat sequences (to be removed in advance of the development), selecting material for four radiocarbon dates, and analysing the pollen and plant macrofossils in detail.
- 5.1.8 Trenches 2 and 7 appear to have identified the western edge of the peat, which becomes thinner as the ground rises up above 5m aOD. This was also identified in aerial photographs of the site (Shackleton Associates 2004). Organic peat deposits were sealed by humic organic soils, or peat soil, formed through agricultural practices during the post-medieval period.
- 5.1.9 Trench 1 revealed a north/south ditch running on a similar alignment to the surrounding field system, suggesting it was a former post-medieval field boundary. A single clay pipe stem was recovered from its fill dated to between the eighteenth and twentieth centuries. Trenches 1 and 2 did not reveal any evidence for earlier activity.

5.2 IMPACT

5.2.1 The historical documentary research highlighted the archaeological potential of the locality around the study area, with the higher ground above the moss and around its fringes being the most likely locations for prehistoric settlement. This suggests that parts of the site at least, have archaeological potential. The evaluation trenches, however, did not recover any evidence for prehistoric settlement or other activity, or associated artefactual material, that would be affected by the proposed development. The formation of the angling lake will result in the removal of identified peat deposits and there will also be a negative impact from the development of access roads and tree planting. The peat deposits contain a potentially significant palaeoecological resource, much of which would be destroyed by the proposed development.

5.3 RECOMMENDATIONS

5.3.1 Due to the fact that the evaluation did not reveal any anthropogenic or datable archaeological features that would be compromised by the proposed angling lake, the identified resource was not of sufficient archaeological importance to justify recommending any further formal archaeological fieldwork.

5.3.2 Despite the environmental assessment not having demonstrated extensive evidence of anthropogenic activity, the condition and depth of the peat deposits encountered in the east of the site were significantly greater than envisaged. This represents an important palaeoecological resource that may be worthy of further study to inform the date and ecological development of the site, and furthermore, may elucidate landscape formation processes. It is proposed that one sequence should be taken from the deepest deposits and another sequence from the margins of the moss, to provide information on whether the formation of peat was synchronous. Dating material from the top of the sequence will help to date any transitions. This would be achieved by radiocarbon dating material from the base of the sequences. It is also likely that the pollen record from the peat at the margin of the basin will record very local changes in the vegetation, and that the deeper deposits will provide a more regional picture.

5.3.3 It would be necessary to analyse the pollen and plant macrofossil at a closer sampling interval than that used in this evaluation assessment, when considering that, on average, a metre of peat (in the lowlands) accumulates in 1000 years, and sampling at depth intervals of 0.10m represents a period of at least 100 years.

6. BIBLIOGRAPHY

6.1 CARTOGRAPHIC SOURCES

Ordnance Survey, 1970 *Soil Survey of Lancashire*, 1:250,000

6.2 SECONDARY SOURCES

Andersen, ST, 1979 Identification of wild grass and cereal pollen, *Danm Geol Unders Arbog*, **1978**, 69-92

Birks, HJB, 1973 *Past and present vegetation of the Isle of Skye: A Palaeoecological Study*, Cambridge

Brooks, D, and Thomas, KW, 1967, The distribution of pollen grains on microscope slides. 1. The non randomness of the distribution, *Pollen and Spores*, **9**, 621-9

Egerton Lea Consultancy Ltd, 2003 *Land South of Mythop Road, Mythop, near Weeton, Lancashire: Archaeological Assessment*, unpubl rep

English Heritage, 1991 *Management of Archaeological Projects*, second edition, London

Farrer, W and Brownbill, J (eds), 1912 *The Victoria History of the County of Lancaster*, **5**, ed. J Croston, Liverpool

Faegri, K, and Iversen, J, 1989 *Textbook of Modern Pollen Analysis*, 4th edn (Rev K Faegri, PE Kaaland, and K, Krzywinski), Chichester

Graystone, P, 1996 *Walking Roman Roads in the Fylde and the Ribble Valley*, Lancaster

LUAU (Lancaster University Archaeological Unit), 1994 *Norcross to M55 Link, Lancashire: Archaeological Assessment*, unpubl rep

LUAU (Lancaster University Archaeological Unit), 1997 *Petroleum Exploration Site Mythop: Archaeological Evaluation Report*, unpubl rep

Margary, ID, 1957 *Roman Roads in Britain, Volume 2: North of the Foss Way-Bristol Channel (including Wales and Scotland)*, London

Middleton, R, Wells, CE, and Huckerby, E, 1995 *North West Wetlands Survey 3: The Wetlands of North Lancashire*, Lancaster Imprints **4**, Lancaster

Moore, PD, Webb, JA, and Collinson, ME, 1991 *Pollen Analysis*, 2nd edn, Oxford

Peglar, SM, 1993 The mid Holocene *Ulmus* decline at Diss Mere, Norfolk, UK: a year-by-year pollen stratigraphy from annual laminations, *Holocene*, **3(1)**, 1-13

Shackleton Associates, 2004 *Formation of Fishing Lake at Mythop Hall Farm, Weeton*, Landscape Report

Stace, C, 1991, *New Flora of the British Isles*, Cambridge

Tooley, MJ, 1978, *Sea-level Changes in North-West England during the Flandrian Stage*, Oxford

Welsh, TC, 1989 *Letter to Ben Edwards, County Archaeologist, 30th July 1989*, in file of PRN 12834

7. ILLUSTRATIONS

7.1 FIGURES

Figure 1: Site Location Map

Figure 2: Trench location plan

Figure 3: Plan of Trench 1, showing post-medieval field boundary

Figure 4: South-facing section through peat deposits in the eastern end of Trench 8, showing the locations of monolith samples 1 and 2

Figure 5: East-facing section through peat deposits in the northern end of Trench 10

7.2 PLATES

Plate 1: Field in the north-west of the study area, with Trench 1 in the foreground, looking north-east

Plate 2: Trench 1, field boundary ditch **40**, looking south

Plate 3: General view of Trench 2, showing the slope of the natural subsoil, **45**

Plate 4: General view of Trench 3, looking north

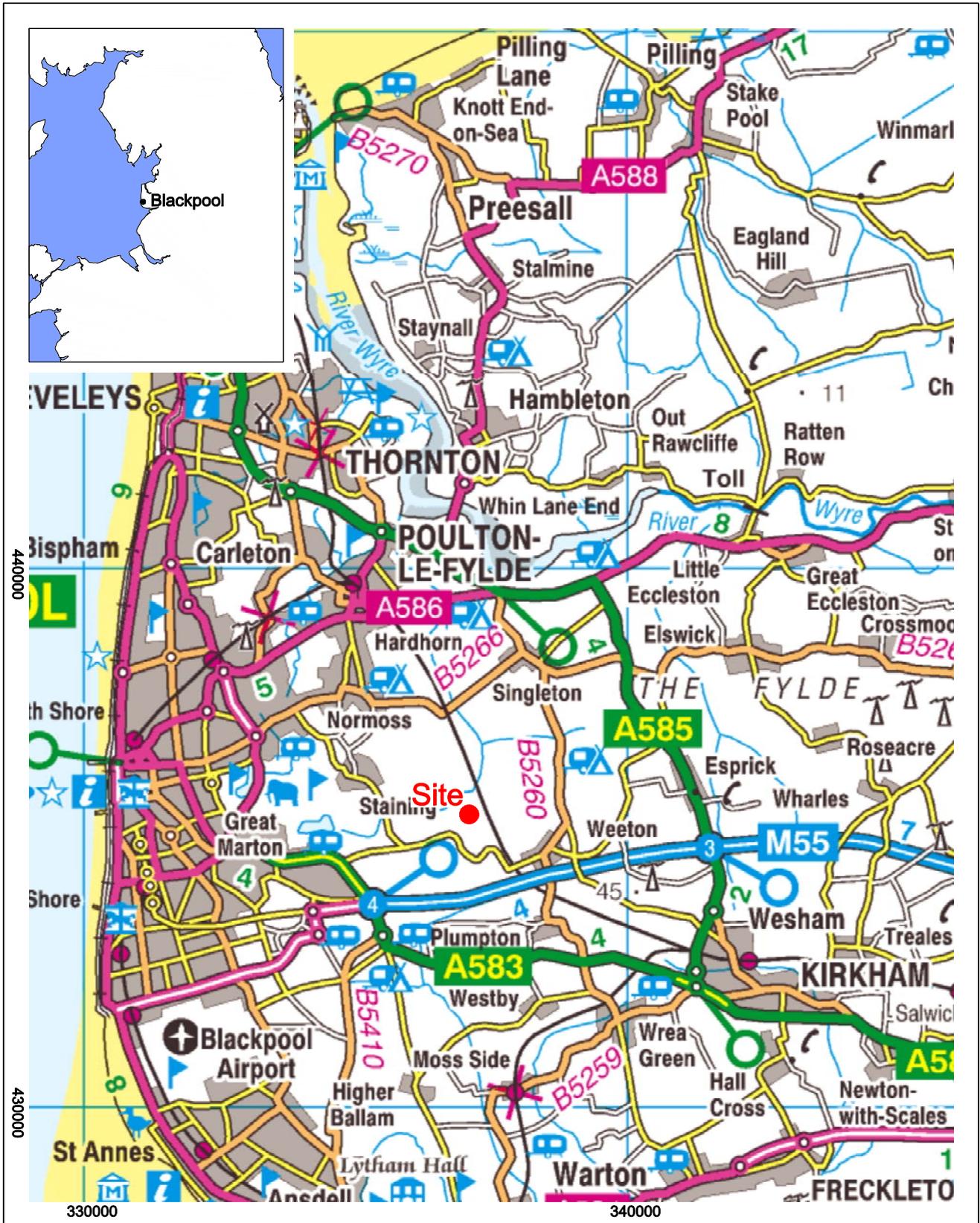
Plate 5: View of the southern field looking south-east, with the location of Trench 6 (backfilled) in the foreground

Plate 6: Oblique view of the south-facing section in the eastern end of Trench 7, showing the sloping natural topography on the edge of the peat mire

Plate 7: Trench 7, south-facing section shows the typical peat sequence and alluvium in the base of the 2.6m deep sondage.

Plate 8: South-facing section within the sondage in the eastern end of Trench 8. The full peat sequence can be seen above the alluvial deposits

Plate 9: General view of Trench 10, showing the full depth of peat deposits to the level of the natural alluvium in the base of the sondage



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0 2000m



Figure 1: Site Location Map

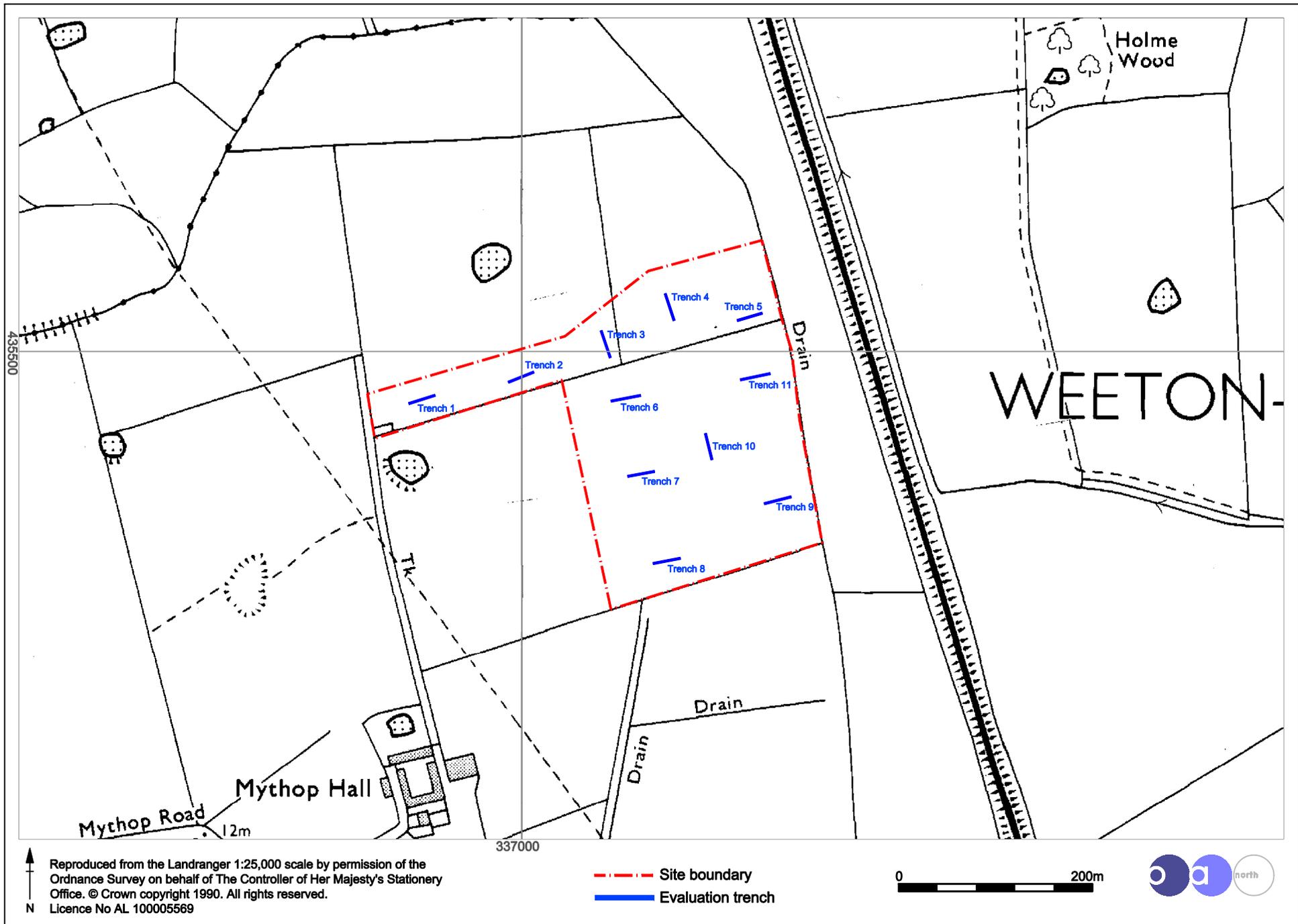
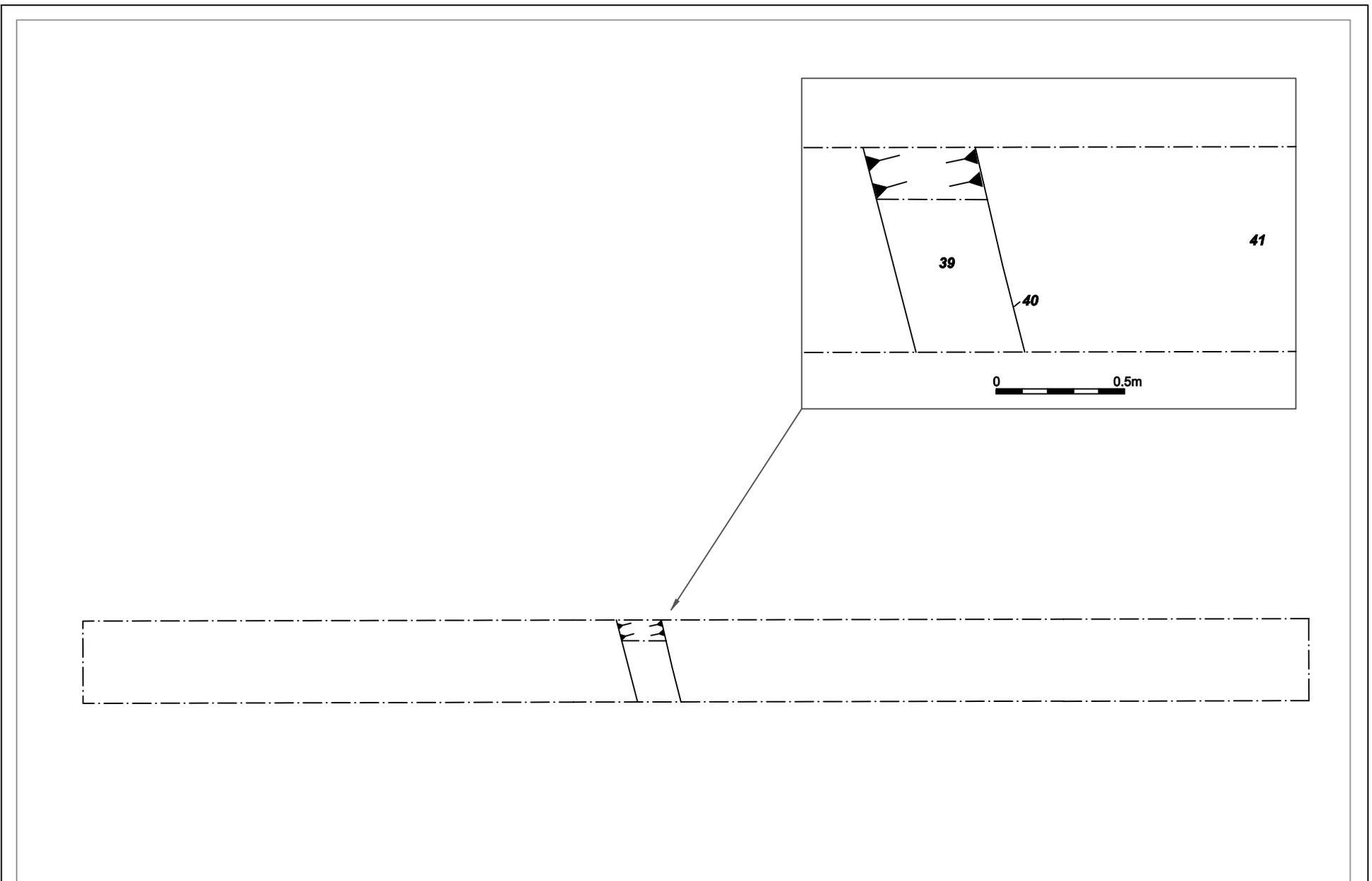


Figure 2: Trench location plan



Key
 - - - Edge of trench
 ——— Archaeological feature
 41 Context number

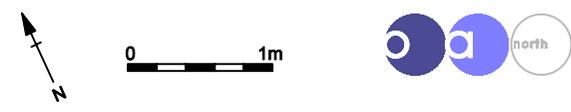


Figure 3: Plan of Trench 1, showing the post-medieval field boundary

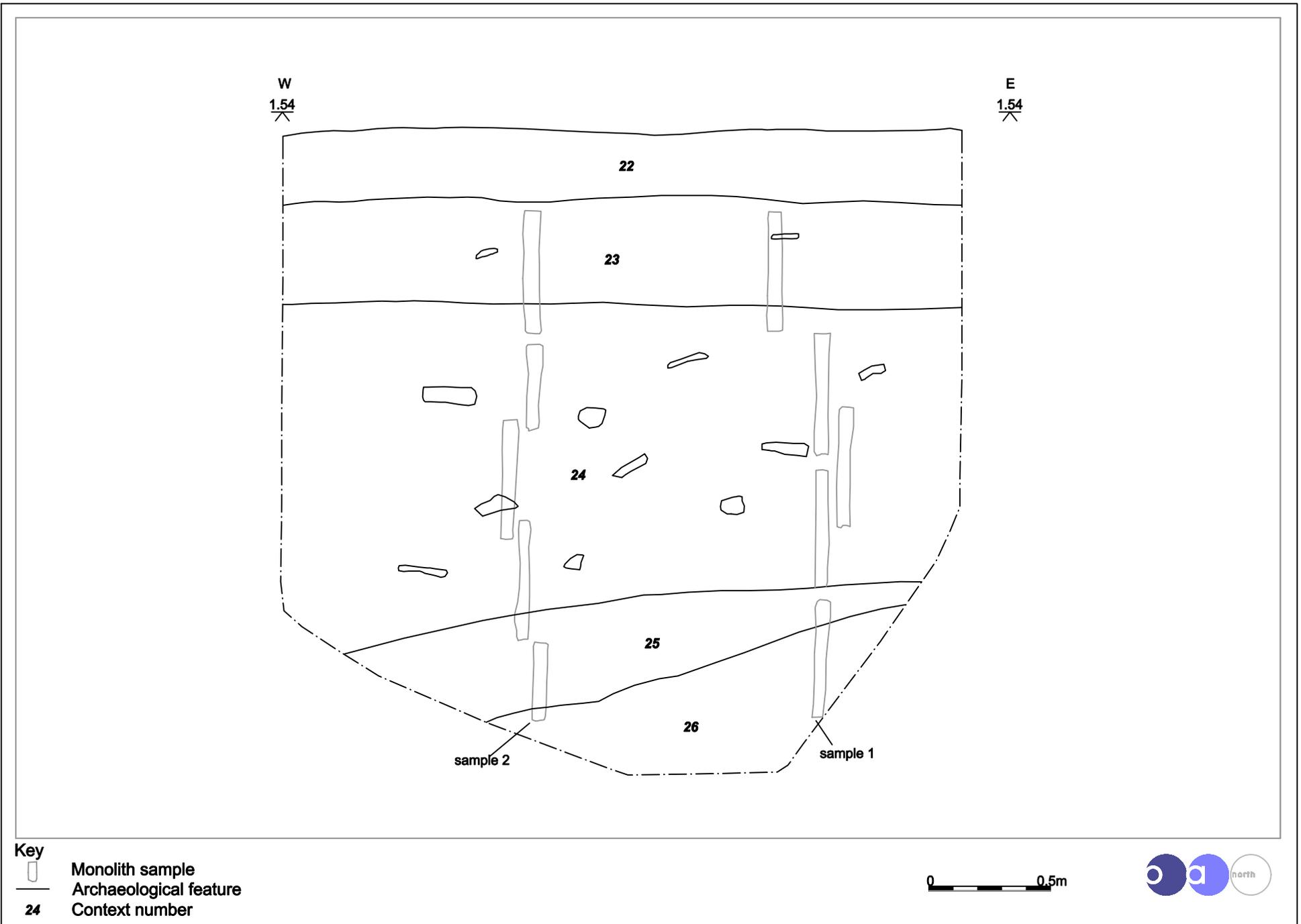
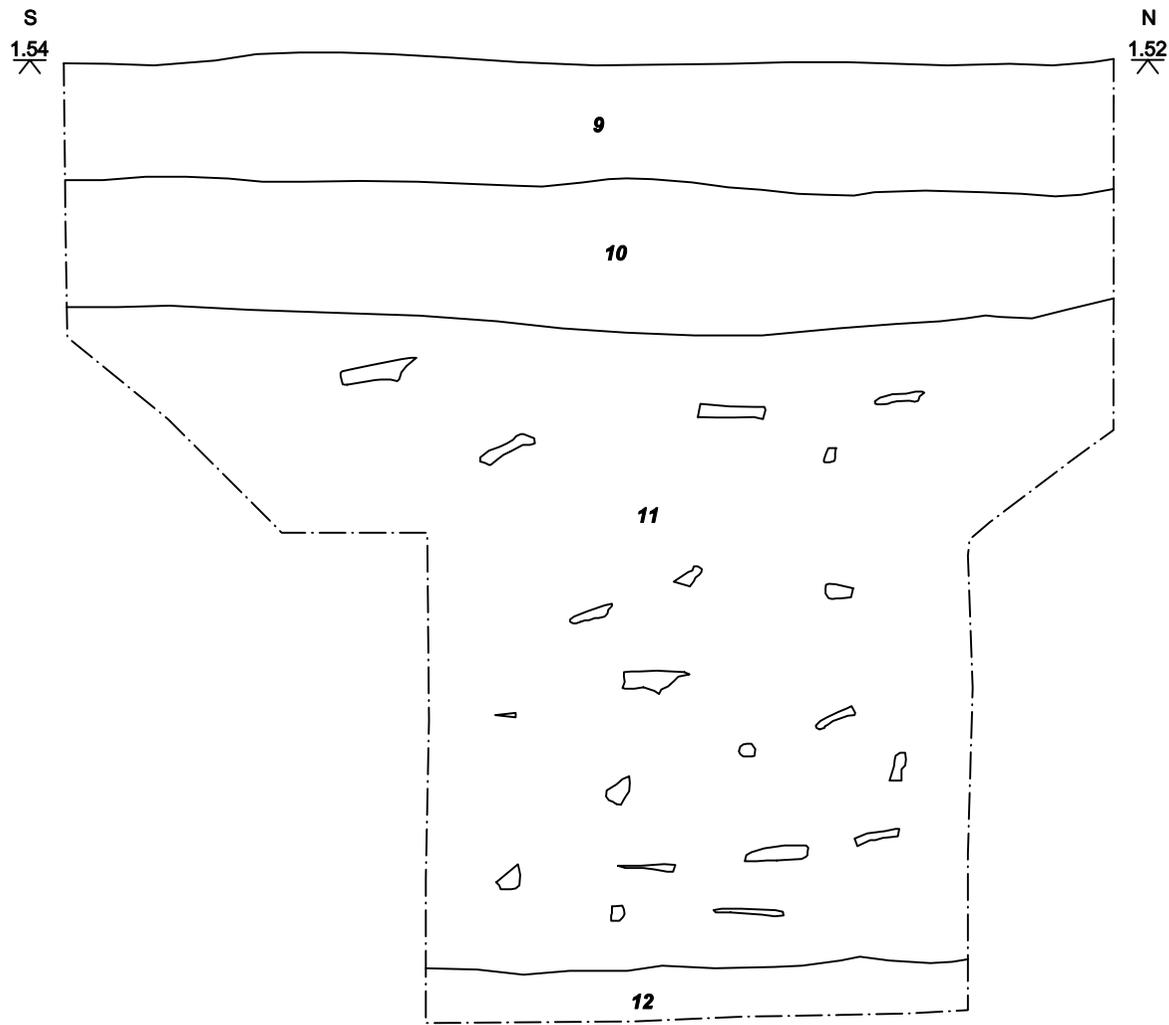


Figure 4: South-facing section through peat deposits in the eastern end of Trench 8, showing the locations of monolith samples 1 and 2



Key
 - - - Section edge
 — Archaeological feature
11 Context number

0 0.5m



Figure 5: East-facing section through peat deposits in the northern end of Trench 10



Plate 1: Field in the north-west of the study area, with Trench 1 in the foreground, looking north-east



Plate 2: Trench 1, field boundary ditch **40**, looking south



Plate 3: General view of Trench 2, showing the slope of the natural subsoil, 45



Plate 4: General view of Trench 3, looking north



Plate 5: View of the southern field looking south-east, with the location of Trench 6 (backfilled) in the foreground



Plate 6: Oblique view of the south-facing section in the eastern end of Trench 7, showing the sloping natural topography on the edge of the peat mire



Plate 7: Trench 7, south-facing section shows the typical peat sequence and alluvium in the base of the 2.6m deep sondage.



Plate 8: South-facing section within the sondage in the eastern end of Trench 8. The full peat sequence can be seen above the alluvial deposits



Plate 9: General view of Trench 10, showing the full depth of peat deposits to the level of the natural alluvium in the base of the sondage

APPENDIX 1: PROJECT BRIEF

APPENDIX 2: PROJECT DESIGN

1. INTRODUCTION

1.1 PROJECT BACKGROUND

1.1.1 Shackleton Associates (hereafter the 'client'), acting as agents on behalf of their client, has requested that Oxford Archaeology North (OA North) submit proposals for an archaeological evaluation. The site concerns land at Mythop Hall Farm, Weeton, Lancashire (centred NGR SD 3721 3539), which is proposed for redevelopment as a fishing lake with associated access (planning application reference 05/05/0010). The local planning authority, as advised by the Lancashire County Archaeology Service (LCAS), have imposed a condition requesting a programme of archaeological investigation. Due to the site being within an area of high archaeological potential, the impact of the proposed development on any archaeological remains is required prior to any construction works commencing on site. The following project design has been prepared and should be read in accordance with the brief issued by LCAS.

1.2 QUALITY ASSURANCE

1.2.1 Oxford Archaeology (OA) is a Registered Archaeological Organisation with the **Institute of Field Archaeologists (no 17)**. OA is not at present ISO certified but operates an internal QA system governed by standards and guidelines outlined by English Heritage and the Institute of Field Archaeologists.

1.2.2 **Standards:** it is OA's stated policy to adhere to current professional standards set by IFA, English Heritage, Association of Local Government Archaeological Officers, Museums Organisations. OA helps the profession to develop and establish standards by serving on national working parties (eg recently on archives), and conforms with current legislation and national and local policy standards for archaeology health and safety and other relevant matters.

1.2.3 OA has established technical manuals, procedures and policies which control its work covering field recording, finds retention and discard, finds storage and handling, environmental sampling and processing, archiving and post-excavation. These have been developed to conform with best professional practice.

1.2.4 **Staff:** OA ensures that its staff are fairly recruited, fairly employed, and properly qualified for their work whether by formal qualification or by established and verifiable experience. OA have established terms and conditions of employment and a system of staff representation to ensure regular consultation on employment matters.

1.2.5 OA ensures that staff remain committed and enhance their abilities using annual staff appraisals, supporting formal and informal training and educational courses.

1.2.6 **Procurement of services and materials:** OA procures subcontracted work on the basis of value for money, considering quality, track record and service, as well as cost. OA regularly reviews quality of subcontracted work and uses tendering procedures for major sub-contracts.

1.2.7 Procurement of materials is on the basis of quality and availability, as well as cost, especially in respect of long-term storage of archives (OA adheres to archive quality photographic materials and processes, archive quality boxes etc).

1.2.8 **Working Practices:** management procedures ensure that all work conducted within the Company and all end product reports to clients are monitored and evaluated whilst they are in progress, during compilation, and after completion.

1.2.9 **Data Acquisition and Security:** for fieldwork projects OA always removes records and finds from site every day, and ensures equipment is secured.

2 OBJECTIVES

- 2.1 The assessment aims to evaluate archaeological deposits that may be threatened by the proposed development in order to determine their presence, extent, nature and significance. To this end, the following evaluation programme has been designed. The results will provide LCAS with the necessary information as to whether further mitigation works are required prior to, or during, the development. The required stages to achieve these ends are as follows:
- 2.2 **Documentary Research:** to obtain background information on the archaeological and historical context of the site, which will form the knowledge base for the evaluation trenching.
- 2.3 **Archaeological Evaluation:** to implement a programme of trial trenching examining a minimum of 11 trenches within the outlined development area.
- 2.4 **Report and Archive:** the archaeological investigation will culminate with a written report, which will aim to assess the significance of the data generated by this programme within a local and regional context. It will present the results of the evaluation and would make an assessment of the archaeological potential of the area.

3. METHOD STATEMENT

3.1 INTRODUCTION

- 3.1.1 The following work programme is submitted in line with the objectives summarised above.

3.2 DOCUMENTARY RESEARCH

- 3.2.1 The first stage of the archaeological investigation will involve a rapid desk-based study of the site and its environs. This will involve consultation of the Lancashire Sites and Monuments Record (SMR) in Preston and a review of sources held in the OA North library. The information will provide the basis of archaeological and historical knowledge for the site supervisor, and will be incorporated into the final evaluation report. For the purposes of this enquiry, a copy of the Landscape Report (2004) undertaken by the client would be appreciated.

3.3 EVALUATION

- 3.3.1 The programme of trial trenching will establish the presence or absence of any previously unsuspected archaeological deposits and, if established, will then test their date, nature, depth and quality of preservation. In this way, it will adequately sample and provide information concerning the threatened available area.
- 3.3.2 **Trench configuration:** the evaluation is required to examine a minimum of 11 trenches measuring 2m in width (the approximate width of a typical excavator bucket) and 30m in length. The location of these trenches will be determined by the information gained from the rapid desk-based study, and in agreement with LCAS prior to the fieldwork commencing.
- 3.3.3 A contingency is available for additional trenching measuring up to 60m². This is dependant on the initial evaluation trenching results, and its use will be defined by LCAS
- 3.3.4 **Methodology:** the topsoil will be removed by machine (fitted with a toothless ditching bucket) under archaeological supervision, and will be removed in successive spits of a maximum 0.2m thickness to the surface of the first significant archaeological deposit. This deposit will then be cleaned by hand, using either hoes, shovel scraping, and/or trowels depending on the subsoil conditions, and inspected for archaeological features.
- 3.3.5 All features of archaeological interest will be investigated and recorded unless otherwise agreed by the LCAS. The trenches will not be excavated deeper than 1.20m to accommodate health and safety constraints; any requirements to excavate below this depth will involve recosting.
- 3.3.6 All trenches will be excavated in a stratigraphical manner, whether by machine or by hand. Trenches will be located by use of GPS equipment, which is accurate to +/- 0.25m, or Total Station. Altitude information will be established with respect to Ordnance Survey Datum.
- 3.3.7 **Scanning of spoil heaps:** the spoil will be scanned by a member of the OA North field team using a metal detector for non-ferrous metal artefacts. Modern artefacts, of nineteenth century or later, will be noted but not retained.

- 3.3.8 Any investigation of intact archaeological deposits will be exclusively manual. Selected pits and postholes will normally only be half-sectioned, linear features will be subject to no more than a 10% sample, and extensive layers will, where possible, be sampled by partial rather than complete removal. It is hoped that in terms of the vertical stratigraphy, maximum information retrieval will be achieved through the examination of sections of cut features. All excavation, whether by machine or by hand, will be undertaken with a view to avoiding damage to any archaeological features, which appear worthy of preservation *in situ*.
- 3.3.9 **Recording:** all information identified in the course of the site works will be recorded stratigraphically, using a system, adapted from that used by Centre for Archaeology Service of English Heritage, with sufficient pictorial record (plans, sections, colour slides and monochrome contacts) to identify and illustrate individual features. Primary records will be available for inspection at all times.
- 3.3.10 Results of all field investigations will be recorded on *pro forma* context sheets. The site archive will include both a photographic record and accurate large scale plans and sections at an appropriate scale (1:50, 1:20 and 1:10). All artefacts and ecofacts will be recorded using the same system, and will be handled and stored according to standard practice (following current Institute of Field Archaeologists guidelines) in order to minimise deterioration.
- 3.3.11 Plans must include OD spot heights for all principal strata and any features.
- 3.3.12 In cases where no archaeological deposits have been identified, it is necessary for at least one long section of each trench will be recorded. All sections will contain heights OD.
- 3.3.13 **Reinstatement:** it is understood that there will be no requirement for reinstatement of the ground beyond backfilling. The ground will be backfilled so that the topsoil is laid on the top, and the ground will be roughly graded with the machine. Should there be a requirement by the client other than that stated this will involve recosting.
- 3.3.14 **Fencing/hoarding requirements:** it is assumed that the client will advise on the arrangements/requirements for the site to be protected from public access. Should heras fencing or similar be required this has been costed as a contingency item.
- 3.3.15 **Environmental Sampling:** deposits will be sampled and assessed for their potential for palaeoenvironmental analysis. Environmental samples (bulk samples of 30 litres volume, to be sub-sampled at a later stage) will be collected from stratified undisturbed deposits and will particularly target negative features (gullies, pits and ditches). It may be necessary for OA North's environmental manager to attend site to discuss the sampling strategy, depending on the deposits, and request advice from English Heritage's Regional Science Advisor.
- 3.3.16 An assessment of the environmental potential of the site will be undertaken through the examination of suitable deposits by the in-house palaeoecological specialist, who will examine the potential for further analysis. This will be undertaken in accordance with English Heritage Guidelines (2002).
- 3.3.17 The assessment would include soil pollen analysis and the retrieval of charred plant macrofossils and land molluscs from former dry-land palaeosols and cut features. In addition, the samples would be assessed for plant macrofossils, insect, molluscs and pollen from waterlogged deposits. It will also consider the potential for the dating of peat deposits and requirements for any radiocarbon and archaeomagnetic dating.
- 3.3.18 The costs for the palaeoecological assessment are defined as a contingency and will be called into effect if suitable deposits are identified.
- 3.3.19 **Faunal remains:** if there is found to be the potential for discovery of bones of fish and small mammals a sieving programme will be carried out. These will be assessed as appropriate by OA north's specialist in faunal remains, and subject to the results, there may be a requirement for more detailed analysis. A contingency has been included for the assessment of such faunal remains for analysis.
- 3.3.20 **Human Remains:** any human remains uncovered will be left *in situ*, covered and protected. No further investigation will continue beyond that required to establish the date and character of the burial. LCAS and the local Coroner will be informed immediately. If removal is essential the exhumation of any funerary remains will require the provision of a Home Office license, under section 25 of the Burial Act of 1857. An application will be made by OA North for the

study area on discovery of any such remains and the removal will be carried out with due care and sensitivity under the environmental health regulations. The cost of removal or treatment will be agreed with the client and costed as a variation.

- 3.3.21 **Treatment of finds:** all identified finds and artefacts will be retained, although certain classes of building material can sometimes be discarded after recording if an appropriate sample is retained on advice from the recipient museum's archive curator.
- 3.3.22 All finds will be exposed, lifted, cleaned, conserved, marked, bagged and boxed in accordance with the United Kingdom Institute for Conservation (UKIC) *First Aid For Finds*, 1998 (new edition) and the recipient museum's guidelines. They will be assessed in terms of the potential for further investigation and preservation needs.
- 3.3.23 Only those finds that are of a quality worthy of display will be fully conserved, but metalwork and coinage from stratified contexts may be X-rayed. Any conservation requirements will be discussed with the client and costed as a variation.
- 3.3.24 **Treasure:** any gold and silver artefacts recovered during the course of the excavation will be removed to a safe place and reported to the local Coroner according to the procedures relating to the Treasure Act, 1996. Where removal cannot take place on the same working day as discovery, suitable security will be employed to protect the finds from theft, which may require costing as a variation in discussion with the client.
- 3.3.25 **Contingency plan:** a contingency costing may also be employed for unseen delays caused by prolonged periods of bad weather, vandalism, discovery of unforeseen complex deposits and/or artefacts which require specialist removal, use of shoring to excavate important features close to the excavation sections etc. This has been included in the Costings document and would be charged in agreement with the client.
- 3.3.26 The evaluation will provide a predictive model of surviving archaeological remains detailing zones of relative importance against known development proposals. In this way, an impact assessment will also be provided.
- 3.3.27 **Access:** liaison for basic site access will be undertaken through the client and it is understood that there will be access for both pedestrian and plant traffic to the site.

3.4 REPORT AND ARCHIVE

- 3.4.1 **Report:** one bound and one unbound copy of a written synthetic report will be submitted to the client. A digital copy of the report will be supplied as a pdf on CD ROM to the SMR held by LCAS within eight weeks following the completion of the fieldwork. However, this may need to be revised in agreement with LCAS should any specialist reports be outstanding. A copy of the report is also required by English Heritage's Regional Science Advisor. The report will include;
- a site location plan related to the national grid
 - a front cover to include the planning application number and the NGR
 - the dates on which the fieldwork was undertaken
 - a concise, non-technical summary of the results
 - an explanation to any agreed variations to the brief, including any justification for any analyses not undertaken
 - a description of the methodology employed, work undertaken and results obtained
 - an historical and archaeological background
 - plans and sections at an appropriate scale showing the location and position of deposits and finds located
 - a list of and dates for any finds recovered and a description and interpretation of the deposits identified. This artefact analysis will include illustration of finds crucial to dating and interpretation
 - a description of any environmental or other specialist work undertaken and the results obtained

- a copy of this project design and the LCAS project brief, and indications of any agreed departure from the details
 - the report will also include a complete bibliography of sources from which data has been derived.
- 3.4.2 **Confidentiality:** all internal reports to the client are designed as documents for the specific use of the client, for the particular purpose as defined in the project brief and project design, and should be treated as such. They are not suitable for publication as academic documents or otherwise without amendment or revision.
- 3.4.3 **Archive:** the results of all archaeological work carried out will form the basis for a full archive to professional standards, in accordance with current English Heritage guidelines (*Management of Archaeological Projects*, 2nd edition, 1991). The project archive will include summary processing and analysis of all features, finds, or palaeoenvironmental data recovered during fieldwork, which will be catalogued by context.
- 3.4.4 The deposition of a properly ordered and indexed project archive in an appropriate repository is essential and archive will be provided in the English Heritage Centre for Archaeology format and a synthesis will be submitted to the Lancashire SMR (the index to the archive and a copy of the report). OA North practice is to deposit the original record archive of projects with the appropriate Record Office.
- 3.4.5 All artefacts will be processed to MAP2 standards and will be assessed by our in-house finds specialists. The deposition and disposal of any artefacts recovered in the evaluation will be agreed with the legal owner and an appropriate recipient museum. LCAS will be notified of the arrangements made.
4. HEALTH AND SAFETY
- 4.1 OA North provides a Health and Safety Statement for all projects and maintains a Unit Safety policy. All site procedures are in accordance with the guidance set out in the Health and Safety Manual compiled by the Standing Conference of Archaeological Unit Managers (1997). A written risk assessment will be undertaken in advance of project commencement and copies will be made available on request to all interested parties.
- 4.2 Full regard will, of course, be given to all constraints (services etc) during the evaluation as well as to all Health and Safety considerations. As a matter of course the Unit uses a U-Scan device prior to any excavation to test for services, however, this is **only an approximate location tool**. Any drawings or knowledge of live cables or services that may pose a risk to OA North staff during evaluation **must be made known to the project manager** of OA North before site work. This will ensure the risk is dealt with appropriately.
- 4.3 A portable toilet with hand washing facilities will be provided and located on or adjacent to the site.
- 4.4 Any known contamination issues or any specific health and safety requirements on site should be made known to OA North by the client or main contractor on site to ensure all procedures can be met.
- 4.5 Should areas of previously unknown contamination be encountered on site the works will be halted and a revision of the risk assessment carried out. Should it be necessary to supply additional PPE or other contamination avoidance equipment this will be costed as a variation.
- 5 OTHER MATTERS
- 5.1 PROJECT MONITORING
- 5.1.1 Whilst the work is undertaken for the client, LCAS will be kept fully informed of the work and its results, and will be notified a week in advance of the commencement of the fieldwork. Any proposed changes to the project design will be agreed with LCAS in consultation with the client.
- 5.1.2 If it is feasible, the trenches will remain open during the course of the fieldwork and backfilled once fieldwork is completed. This will allow the LCAS representative the opportunity to visit

the site and view the findings, including the trenches, any finds on site and any records not in immediate use. As part of the monitoring process any deficiencies observed during the LCAS visit will be amended to the satisfaction of their representative.

5.2 WORK TIMETABLE

- 5.2.1 **Documentary Research:** one day will be required to undertake this element.
- 5.2.2 **Evaluation Trenching:** approximately four days will be required to complete this element.
- 5.2.3 **Report:** the report and archive will be produced following the completion of all the fieldwork. The final report will be available within eight weeks of completion of the fieldwork, and the archive deposited within six months.
- 5.2.4 **Scheduling:** OA North would require a formal written agreement at least one to two weeks prior to the anticipated start date to ensure sufficient resources and schedule the work as above. It is also a requirement of the LCAS brief that their representative has been provided with one week's notice.

5.3 INSURANCE

- 5.3.1 OA North has a professional indemnity cover to a value of £2,000,000; proof of which can be supplied as required.

6. STAFFING

- 6.1 The project will be under the direct management of **Emily Mercer BA (Hons) MSc AIFA** (OA North Senior Project Manager) to whom all correspondence should be addressed.
- 6.2 The documentary research will be undertaken by **Jo Dawson** (OA North supervisor) who is very experienced in such work and capable of carrying out projects of all sizes.
- 6.3 The evaluation will be supervised by either an OA North project officer or supervisor experienced in this type of project. Due to scheduling requirements it is not possible to provide these details at the present time. All OA North project officers and supervisors are experienced field archaeologists capable of carrying out projects of all sizes.
- 6.4 Assessment of the finds from the evaluation will be undertaken under the auspices of OA North's in-house finds specialist **Christine Howard-Davis** (OA North finds manager). Christine has extensive knowledge of finds from many periods, although she does have considerable experience with Roman finds, being involved with the excavations at Ribchester and at present with the Carlisle Millennium Project.
- 6.5 Assessment of any palaeoenvironmental samples will be undertaken by or under the auspices of **Elizabeth Huckerby MSc** (OA North project officer). Elizabeth has extensive knowledge of the palaeoecology of the North West through her work on the English Heritage-funded North West Wetlands Survey.

REFERENCES

- English Heritage, 1991 *Management of Archaeological Projects*, second edition, London
- English Heritage, 2002 *Environmental Archaeology: A guide to the theory and practice of methods, from sampling and recovery to post-excavation*,
- SCAUM (Standing Conference of Archaeological Unit Managers), 1997 *Health and Safety Manual*, Poole
- UKIC, 1990 *Guidelines for the Preparation of Archives for Long-Term Storage*, London
- UKIC, 1998 *First Aid for Finds*, London

APPENDIX 3: CONTEXT DESCRIPTIONS

Context	Trench	Type	Description
1	6	Deposit	Topsoil (peat soil) layer
2	6	Deposit	Peat layer
3	6	Deposit	Peat layer
4	7	Deposit	Topsoil (peat soil) layer
5	7	Deposit	Peat layer
6	7	Deposit	Peat layer
7	7	Deposit	Peat layer
8	7	Deposit	Sandy clay estuarine alluvium
9	10	Deposit	Topsoil (peat soil) layer
10	10	Deposit	Peat layer
11	10	Deposit	Peat layer
12	10	Deposit	Sandy clay estuarine alluvium
13	9	Deposit	Topsoil (peat soil) layer
14	9	Deposit	Peat layer
15	9	Deposit	Peat layer
16	9	Deposit	Sandy clay estuarine alluvium
17	11	Deposit	Topsoil (peat soil) layer
18	11	Deposit	Peat layer
19	11	Deposit	Peat layer
20	11	Deposit	Peat layer
21	11	Deposit	Sandy clay estuarine alluvium
22	8	Deposit	Topsoil (peat soil) layer
23	8	Deposit	Peat layer
24	8	Deposit	Peat layer
25	8	Deposit	Peat layer
26	8	Deposit	Sandy clay estuarine alluvium
27	5	Deposit	Topsoil (peat soil) layer
28	5	Deposit	Peat layer
29	5	Deposit	Peat layer
30	4	Deposit	Topsoil (peat soil) layer
31	4	Deposit	Peat layer
32	4	Deposit	Peat layer
33	3	Deposit	Topsoil (peat soil) layer
34	3	Deposit	Peat layer
35	3	Deposit	Peat layer
36	3	Deposit	Sandy clay estuarine alluvium

37	1	Deposit	Topsoil (peat soil) layer
38	1	Deposit	Peat layer
39	1	Fill of 40	Peat layer
40	1	Cut, filled by 39	Peat layer
41	1	Deposit	Natural subsoil
42	2	Deposit	Topsoil (peat soil) layer
43	2	Deposit	Peat layer
44	2	Deposit	Peat layer
45	2	Deposit	Natural subsoil

APPENDIX 4: FINDS CATALOGUE

Tr	Cxt	Qty	Material	Description	Date range
1	37	2	Ceramic	Refitting brown-glazed red earthenware crock (?) fragments	Late seventeenth - early twentieth century
1	39	1	Ceramic	Slightly abraded clay tobacco pipe stem fragment with foot present, and partially reduced core at bowl end	Eighteenth - early twentieth century
6	1	1	Ceramic	Mottled(?) -glazed buff-coloured earthenware cup (?) rim	Late seventeenth - early eighteenth century?

Tr = Trench; Cxt = Context; Qty = Quantity