Wessex Archaeology

Land South of Yeoford Way, Marsh Barton Trading Estate, Exeter

Geoarchaeological Assessment Report

Ref: 77790.04

January 2012

LAND SOUTH OF YEOFORD WAY, MARSH BARTON TRADING ESTATE, EXETER

Geoarchaeological Assessment Report

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QUALITY ASSURANCE

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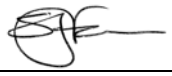
1		DN	SF		12/12/11	77790 GEOARCHAEOLOGICAL ASSESSMENT REPORT_1
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LAND SOUTH OF YEOFORD WAY,
MARSH BARTON TRADING ESTATE, EXETER

Geoarchaeological Assessment Report

Contents

Summary v
Acknowledgements vi

1 INTRODUCTION 7
1.1 Project Background 7
1.2 Site location 7
1.3 Scope of document 8

2 METHODOLOGY 8
2.1 Boreholing 8
2.2 Borehole locations 8
2.3 Geoarchaeological recording 8

3 RESULTS 8
3.1 Introduction 8
3.2 Sediments 9
3.3 Dating 10
3.4 Waterlogged plant remains 11
3.5 Insects 12
3.6 Molluscs 12
3.7 Pollen 12
3.8 Ostracods & foraminifera 12

4 POTENTIAL AND PROPOSALS FOR FURTHER WORK 13
4.2 Waterlogged plant remains 13
4.3 Insect remains 13
4.4 Land and freshwater molluscs 13
4.5 Pollen 13
4.6 Ostracods and foraminifera 13
4.7 Dating 14

5 DISCUSSION 14

6 BIBLIOGRAPHY 14

7 APPENDIX 1: SEDIMENT DESCRIPTIONS OF BOREHOLES 16

Figure 1 Site and borehole location plan
Figure 2 Schematic transect showing borehole results
Figure 3 Probability distribution for SUERC-36570 and SUERC-36569

Table 1: Radiocarbon determinations 10
Table 2: Content of ostracod samples 13
Table 3: Sediment descriptions for Borehole 1.1 16
Table 4: Sediment descriptions for Borehole 1.2 16
Table 5: Sediment descriptions for Borehole 1.3 17

Table 6: Sediment descriptions for Borehole 1.4 18
Table 7: Sediment descriptions for Borehole 1.5 19
Table 8: Sediment descriptions for Borehole 1.6 20
Table 9: Sediment descriptions for Borehole 2.1 21
Table 10: Sediment descriptions for Borehole 2.2 21
Table 11: Sediment descriptions for Borehole 2.3 22
Table 12: Sediment descriptions for Borehole 2.4 23
Table 13: Sediment descriptions for Borehole 2.5 24
Table 14: Sediment descriptions for Borehole 2.6 25

LAND SOUTH OF YEOFORD WAY, MARSH BARTON TRADING ESTATE, EXETER

Geoarchaeological Assessment Report

Summary

Wessex Archaeology was commissioned by RWP Construction and Property Consultants on behalf of Prego Developments Limited c/o Eagle One Limited to undertake a programme of archaeological work prior to development on land south of Yeoford Way on the Marsh Barton Trading Estate, Exeter, centred on NGR 293199, 089389.

The fieldwork comprised the mechanical excavation of four trial trenches and four test pits distributed across the site, and the excavation of twelve boreholes comprising two transects of six boreholes each. The borehole transects were positioned to investigate the locations of potential palaeochannels. This report details the results of the borehole survey, which was carried out alongside the trenching programme in order to investigate deposits identified as containing possible organic material during geotechnical works.

In both transects alluvially deposited sediments were recorded between the basal gravel and the thick homogenous overbank flood deposits. In Transect 2 the sediments were thin mineralogenic and slightly humic silts; in Transect 1 similar mineralogenic silts were recorded, but in addition one borehole contained silty gritty peaty deposits rich in waterlogged plant remains. These sediments, interpreted as entrained detrital material deposited at the edge of an active channel, have been radiocarbon dated to the early Mesolithic. The plant remains indicate a river valley flora dominated by hazel and oak, typical for the period.

It is likely that the sampled material represents a remnant of what could have been quite extensive early Holocene channel deposits, which would have occupied the relict topography left by the late Pleistocene anastomosing channel system.

LAND SOUTH OF YEOFORD WAY,
MARSH BARTON TRADING ESTATE, EXETER

Archaeological Evaluation Report

Acknowledgements

This project was commissioned by RWP Construction and Property Consultants on behalf of Prego Developments Limited c/o Eagle One Limited (the Client) and Wessex Archaeology is grateful to them in this regard. Wessex Archaeology would also like to thank Alan Cattell of Structural Soils Limited who undertook the borehole survey and Andy Pye, Exeter City Council Archaeological Officer, who monitored the project on behalf of Exeter City Council.

The environmental samples were processed by Nicki Mulhall and were assessed by Dr. Chris Stevens and Sarah F. Wyles. The borehole analysis was completed by Dave Norcott. The report graphics were prepared by Elizabeth James. The project was managed on behalf of Wessex Archaeology by Sue Farr.

LAND SOUTH OF YEOFORD WAY,
MARSH BARTON TRADING ESTATE, EXETER

Geoarchaeological Assessment Report

1 INTRODUCTION

1.1 Project Background

1.1.1 Wessex Archaeology was commissioned by RWP Construction and Property Consultants, on behalf of Prego Developments Limited c/o Eagle One Limited (the Client), to carry out a programme of archaeological work prior to development of land to the south of Yeoford Way, Marsh Barton Trading Estate, Exeter (hereafter 'the Site'), centred on National Grid Reference (NGR) 293199, 089389.

1.1.2 The fieldwork comprised the mechanical excavation of four trial trenches and four test pits distributed across the Site, and the excavation of twelve boreholes comprising two transects of six boreholes each. The borehole transects were positioned to investigate the locations of potential palaeochannels. The results of the trial trench evaluation and test pit evaluation have been reported on in an earlier report (WA 2011b). This report details the results of the borehole survey, which was carried out alongside the trenching programme in order to investigate deposits identified as containing possible organic material during geotechnical works.

1.1.3 A Written Scheme of Investigation (WSI, Wessex Archaeology 2011a) setting out the methodologies and standards to be implemented during the fieldwork was submitted to and approved by the English Heritage Scientific Advisor and the Exeter City Council (ECC) Archaeological Officer in advance of the fieldwork commencing.

1.1.4 This report details the results of the borehole survey, which was carried out alongside the trenching programme in order to investigate deposits identified as containing possible organic material during geotechnical works (Card Geotechnics 2009).

1.2 Site location

1.2.1 The Site comprised an irregular plot of land and contained two fields with a total area of some 15.4ha. It lies on the southern fringes of Exeter and is bounded to the west by Bad Homburg Way (B3123), to the south by the A379 and Matford Brook, to the north-east by the Plymouth to Penzance railway line and to the north by the Matford Park Trading Estate (**Figure 1**).

1.2.2 The British Geological Survey indicates the north-west of the Site lies on Alphington Breccia whilst the south-east part lies on the more recent Heavitree Breccia. The former consists of mudstone rich breccias, but being poorly cemented it weathers readily to a clay. The latter is better cemented and often used as a building stone. During the Quaternary Period the valley became overlain with estuarine alluvium which has given rise to silty clays.

1.2.3 The Site was under pasture and gradually increased in elevation from 2.75m above Ordnance Datum (aOD) in the north-eastern corner to *c*. 5m aOD in the south-western corner of the Site.

1.3 Scope of document

1.3.1 This assessment report presents the results of the geoarchaeological and palaeoenvironmental work carried out on samples obtained during the geoarchaeological borehole survey.

1.3.2 The geoarchaeological/palaeoenvironmental and archaeological potential of the sedimentary sequence(s) are assessed, and recommendations are made with regard to further work.

2 METHODOLOGY

2.1 Boreholing

2.1.1 The programme of coring was undertaken by Structural Soils Ltd, working as a direct subcontractor to Wessex Archaeology.

2.1.2 Structural Soils Ltd have over 10 years of experience and a British Drilling Associations accreditation and work to BS 5930: 1981 Code of Practice of Site Investigation, as well as to the British Drilling Association Guidance Note for the safe drilling of landfills and contaminated land 1992.

2.1.3 Coring for sediment retrieval was effected using a tracked percussion (Terrier) rig which recovered continuous sleeved cores in 1m sections through the sequence.

2.2 Borehole locations

2.2.1 Twelve purposive boreholes were drilled along two transects (**Figure 1**) which were positioned to intersect the courses of possible palaeochannels, identified by the presence of organic sediments in the geotechnical works (Card Geotechnics 2009).

2.3 Geoarchaeological recording

2.3.1 The sleeved core samples were returned to the offices of Wessex Archaeology, where they were opened and subjected to geoarchaeological description and interpretation following Hodgson (1997) including Munsell colour, nature of boundaries, inclusions, structure etc.

3 RESULTS

3.1 Introduction

3.1.1 The following sections provide a summary of the information recorded from the borehole analysis. Sediment descriptions for the boreholes are presented in **Appendix 1: Tables 3-14**.

3.2 Sediments

3.2.1 In general a similar sequence of deposits was present across the Site, with river valley gravels of presumed Late Pleistocene date generally directly overlain by a thick layer of fine mineralogenic alluvium typical of overbank flooding sedimentation during the Holocene period.

3.2.2 The modern soil profile within the upper part of this overbank alluvium differed considerably between Transects 1 and 2, with that in Transect 2 being deeper and more complex. This is a result of a greater degree of waterlogging in the lower areas of the Site.

3.2.3 Each transect had boreholes in which interesting sediments were recorded above the basal gravels and beneath the overbank alluvial sediments (Boreholes 1.3, 1.4 and 1.6 in Transect 1 and 2.3, 2.4 and 2.6 in Transect 2).

Transect 1

3.2.4 In all of the boreholes in Transect 1 there was a sandy gritty silt deposit recorded towards the top of the sequence at around 2.9-3.3m OD; this has been interpreted as a higher energy flooding episode, although it is unclear why it is not present in Transect 2.

3.2.5 In **Borehole 1.3** woody peat-like deposits were recorded above the basal gravel at 1.95-2.56m below ground level (1.93-1.32m OD). The layers contained plentiful recognisable plant remains including hazelnuts and wood fragments, were very silty and gritty, and showed clear signs of layering. Towards the top of the sequence, larger wood fragments were recorded within a fine clay and silt matrix.

3.2.6 Although labelled as 'peat' for illustrative purposes (**Figure 2**), these are best interpreted as detrital layers deposited alongside and within sediments of an active channel edge, rather than true peat layers. The distinction is caused by the plant remains having accumulated within the sediments relatively rapidly as mobile clasts, rather than having built up slowly *in situ*. Consequently, although the deposit has a high potential to provide a snapshot of the palaeoenvironmental conditions through the analysis of plant macrofossils, the deposit has low potential to contain a record of palaeoenvironmental change through time.

3.2.7 For this reason the best approach to interpretation of these detrital layers is with assessment of the macrofossil content in order to elucidate the channel conditions (ostracods, molluscs) and to provide information on vegetation through analysis of waterlogged plant remains. This was combined with radiocarbon dating on suitable identified discrete plant macrofossils, which were plentiful in the form of hazelnuts.

3.2.8 The deposits have been dated to the early Mesolithic period (see *Dating* below).

3.2.9 The peaty layers were sealed by 0.2m of fine silt, above which was the overbank alluvial and soil layers recorded across the Site.

3.2.10 In **Boreholes 1.4** and **1.6** a relatively thin (0.2-0.25m) relatively well sorted coarse silt layer was recorded overlying the gravel. In both cases a finer clay loam alluvium of similar thickness overlay the silts. These deposits underlie the overbank alluvium, and are very likely to also date from the Early Post Glacial or

early Mesolithic period. The deposits did not contain any material suitable for radiocarbon dating.

Transect 2

3.2.11 In **Boreholes 2.5** and **2.6** a layer of fine gritty gravel overlay the coarser basal river gravels; in **Borehole 2.5** this was quite thick at *c.* 1.4m, and beneath it the upper coarse gravel surface had a clayey matrix. It is probable that there was a significant hiatus between the deposition of the coarse and fine gravels, and that the fine gravel is an Early Post Glacial or early Holocene channel or levee deposit. No material suitable for dating was recovered.

3.2.12 In **Boreholes 2.3**, **2.4** and **2.6** a thin (0.1-0.16m) sandy silt was overlain by a thin (0.1-0.2m) slightly humic clay loam; both were alluvial in origin and recorded at around 1.0 to 1.4m aOD. Although the layers contained no dating evidence, they are likely to be of a comparable date to the channel edge deposits in Transect 1, and of early Holocene date. They were not subsampled for micro- or macrofossils due to their undateable nature and likelihood to contain reworked material.

3.3 Dating

3.3.1 Two samples of a single almost complete waterlogged hazelnut shell were taken from borehole BH1.3 at 2.03m and 2.52m depth (**Fig. 2**). These were submitted to the Scottish Universities Environmental Research Centre, East Kilbride (SUERC) for radiocarbon dating.

Results

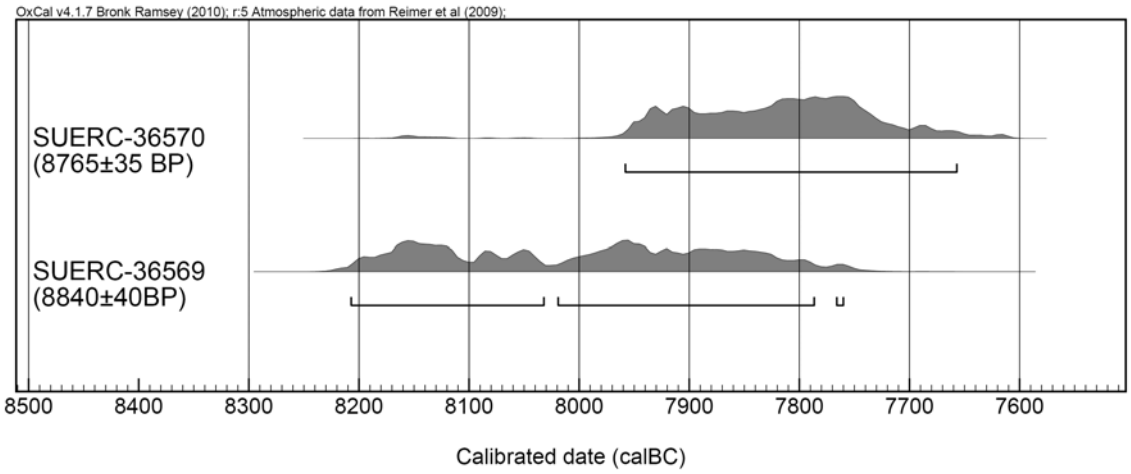
3.3.2 The radiocarbon determinations were calibrated using OxCal 4.1.7 (Bronk Ramsey 2001; 2009) and the IntCal09 calibration curve (Reimer *et al.* 2009) and are quoted in the form recommended by Mook (1986) with the end points rounded outward to 10 years (**Table 1; Fig. 3**).

Table 1: Radiocarbon determinations

Borehole 1.3 (depth)	Identification	Laboratory Code	$\delta^{13}C$	Date BP	calibration BC (2 sig. 95.4%)
2.03m bgl	*Corylus avellana* (whole nutshell)	SUERC-36570	-27.9‰	8765±35	7960-7650 cal. BC
2.52m bgl	*Corylus avellana* (whole nutshell)	SUERC-36569	-26.1‰	8840±40	8210-7760 cal. BC

3.3.3 The results indicate that these deposits were laid down during the Early Mesolithic, in the latter part of the 8th millennium BC.

Figure 3 Probability distribution for SUERC-36570 and SUERC-36569



3.4 Waterlogged plant remains

3.4.1 **Borehole 1.3** was noted to contain waterlogged or partially waterlogged plant material during laboratory description, and subsamples of around 100 to 200ml were taken at 2.03m, 2.12m, 2.41 and 2.52m depth.

3.4.2 The subsamples were processed for the recovery of waterlogged remains. Laboratory flotation was undertaken with flots retained on a 0.25mm mesh and residues on a 0.5mm mesh. Residues and flots were stored in sealed containers with Industrial Methylated Spirits (IMS). The larger fraction (>5.6mm) was sorted, weighed and discarded. The flots were visually inspected under a x10 to x40 stereo-binocular microscope to determine if waterlogged material occurred. Where waterlogged material was present, preliminary identifications of dominant taxa, were conducted and are presented below. Nomenclature follows that of Stace (1997).

Results

3.4.3 The upper sample from 2.03m depth had only a few shells of hazelnut (*Corylus avellana*) and no other remains.

3.4.4 The lower samples from 2.12m, 2.41m and 2.52m were richer in remains and two acorn cups (*Quercus* sp.), several buds, and a large number of hazelnut (*Corylus avellana*) shells and fragments were recorded. Also present were typical scrub species, such as two stones of dogwood (*Cornus sanguinea*), four of hawthorn (*Crataegus monogyna*) and one of sloe (*Prunus spinosa*). Seeds of herbaceous species were less frequent but included single seeds of buttercup (*Ranunculus* cf. *repens*) and woody nightshade (*Solanum dulcamara*).

Discussion

3.4.5 In southern Britain hazel (*Corylus avellana*) tends to dominate the floodplain, alongside pine, from around 8500 cal. BC to 8000 cal. BC, with alder (*Alnus glutinosa*) making inroads alongside and then coming to dominate from around 7500 to 7000 cal. BC. Both hazel and alder usually largely disappear from the floodplain around the later Bronze Age to Iron Age.

3.4.6 In these samples, the absence of alder and the presence of hazel suggests a date for the deposit between 8500 cal. BC and 7500 cal. BC, and this was confirmed by the two radiocarbon dates that placed the sequence around 8210-7760 cal. BC (8840±40 BP; SUERC-36569) to 7960-7650 cal. BC (8765±35 SUERC-36570).

3.4.7 The range of species suggest mainly woodland edge scrub, but the presence of relatively few open ground species or even aquatics suggests that the local environment may have been relatively closed and dry, with the exception of the channel deposits from which the samples were taken. Dogwood (*Cornus sanguinea*) is a fairly typical species of the period, often being a coloniser of calcareous mull or dried peat soils within former channels or ox-bows.

3.5 Insects

3.5.1 The waterlogged samples were assessed for insect remains at the same time as plant macrofossils. No insects were found to be present in the samples.

3.6 Molluscs

3.6.1 The waterlogged samples were examined for molluscan remains, but none were found to be present.

3.6.2 A similar absence of ostracods indicates a probable lack of survival of calcareous ecofacts of all kinds, with post depositional dissolution of calcareous material having occurred within the sampled sediments.

3.7 Pollen

3.7.1 As discussed in *Sediments* above, given the nature of the sediment deposition the potential for a meaningful pollen sequence was considered to be low, therefore no samples were taken for pollen assessment.

3.8 Ostracods & foraminifera

3.8.1 Three samples taken from **Borehole 1.3** have been assessed and analysed for the presence, preservation and environmental significance of their foraminifera and ostracod content. The sampled sediments are thought to comprise alluvial sediments within the Exe valley.

Method

3.8.2 Sediment samples of approximately 10cm^3 were treated with a weak solution of hydrogen peroxide and wet sieved through a 63µm sieve. The sediment was dried and sieved to fractions of 500µm, 250µm and 125µm. Specimens were picked out under 10-60x magnification using a Vickers microscope. Where possible fifty specimens per sample were picked out and kept in card slides.

Results

3.8.3 The full results of the foraminifera and ostracod content of the three samples is given in **Table 2** and is summarised below:

3.8.4 At 2.45m, no ostracods or foraminifera were present. Other remains noted within the sample included frequent plant remains including acorns (*Quercus* sp.), charcoal and seeds.

3.8.5 At 2.25m, no ostracods or foraminifera were recovered. Other remains noted within the sample included occasional plant remains and small pieces of charcoal.

3.8.6 At 1.90m no ostracods or foraminifera were recovered. The sample was notably barren of all organic remains.

3.8.7 It is also notable that no molluscan remains were recorded and it is possible that post depositional dissolution of calcareous material has occurred within the sampled sediments.

Table 2: Content of ostracod samples

Borehole	1.3	1.3	1.3
Depth/Height (m)	2.45	2.25	1.9
Plant remains	xxx	xx	0
Charcoal	x	x	0
Acorn (*Quercus* sp.)	x	0	0
Seeds	x	0	0

O: no occurrence; x: 2 to 9 specimens; xx: 10 to 50 specimens; xxx: over 50 specimens

4 POTENTIAL AND PROPOSALS FOR FURTHER WORK

4.1.1 The potential and proposals for further palaeoenvironmental work is discussed below by material type.

4.2 Waterlogged plant remains

4.2.1 Given the short-lived nature of deposition and lack of thickness of the contexts in question, there is no potential for further analysis from these samples and therefore no further work is proposed.

4.3 Insect remains

4.3.1 Due to the absence of insect remains, the samples have no potential for further analysis and therefore no further work is proposed.

4.4 Land and freshwater molluscs

4.4.1 Due to the absence of molluscan remains, the samples have no potential for further work.

4.5 Pollen

4.5.1 The samples have the potential to contain pollen, but given the nature of the sediment deposition (quite rapid) and the likelihood of reworked material, the overall potential is considered to be low and therefore no further work is proposed.

4.6 Ostracods and foraminifera

4.6.1 Due to the absence of any remains, the samples have no potential for further work.

4.7 Dating

4.7.1 No further work is proposed.

5 DISCUSSION

5.1.1 The boreholing survey was targeted upon areas of the Site which had been identified as containing organic deposits in a previous geotechnical survey. These sediments were considered to have the potential to relate to palaeochannel deposits buried at depth. The results broadly bear this out.

5.1.2 In both transects alluvially deposited sediments were recorded between the basal gravel and the thick homogenous overbank flood deposits. In Transect 2 the sediments were thin mineralogenic and slightly humic silts; in Transect 1 similar mineralogenic silts were recorded, but in addition one borehole contained silty gritty peaty deposits rich in waterlogged plant remains. These sediments, interpreted as entrained detrital material deposited at the edge of an active channel, have been radiocarbon dated to the early Mesolithic. The plant remains indicate a river valley flora dominated by hazel and oak, typical for the period.

5.1.3 It is likely that the sampled material represents a remnant of what could have been quite extensive early Holocene channel deposits, which would have occupied the relict topography left by the late Pleistocene anastomosing channel system.

5.1.4 Due to their apparent tenuity and relatively rapid deposition, the deposits sampled do not have any great potential *per se*, but they may be indicative of some potential for preservation of deposits of early Holocene to Mesolithic date in similar topographic locations in the wider environs.

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7 APPENDIX 1: SEDIMENT DESCRIPTIONS OF BOREHOLES

Table 3: Sediment descriptions for Borehole 1.1

Feature:	n/a	**Borehole:** 1.1		**Comments:**	
Level (top):	3.80m aOD	**Drg:**	n/a		
Depth (m)	**Pollen samples**	**Other samples**	**Context**	**Sediment description**	**Interpretation**
0-0.50				7.5YR 5/4 brown clay loam, reddish tinge, quite common fine macropores, rootlets etc. Clear boundary	Turf & topsoil in top of overbank alluvial deposits
0.50-0.80				5YR 5/4 reddish brown gritty sandy silt loam, very friable, represents an episode(s) of higher energy flooding. Clear boundary	Gritty sand deposited by overbank flooding
0.80-2.40				5YR 4/6 yellowish red clay loam, 5-10% mottles of light grey. Getting gravelly at 2.1m.	Gradual built-up of fine sediments from overbank flooding
2.40-+				Grey gravelly clay down to 2.20 then full gravel.	Gravel

Table 4: Sediment descriptions for Borehole 1.2

Feature:	n/a	**Borehole:** 1.2		**Comments:**	
Level (top):	3.85m aOD	**Drg:**	n/a		
Depth (m)	**Pollen samples**	**Other samples**	**Context**	**Sediment description**	**Interpretation**
0-0.50				7.5YR 5/4 brown clay loam, reddish tinge, quite common fine macropores, rootlets etc. Clear boundary	Turf & topsoil in top of overbank alluvial deposits
0.50-0.80				5YR 5/4 reddish brown gritty sandy silt loam, very friable, represents an episode(s) of higher energy flooding. Clear boundary	Gritty sand deposited by overbank flooding
0.80-2.20				5YR 4/6 yellowish red clay loam, 5-10% mottles of light grey	Gradual built-up of fine sediments from overbank flooding
2.20-2.60				Gravel, grey and clayey at top	Gravel

Table 5: Sediment descriptions for Borehole 1.3

Feature:	n/a	**Borehole:** 1.3		**Comments:**	
Level (top):	3.88m aOD	**Drg:**	n/a		
Depth (m)	**Pollen samples**	**Plant Macros**	**Other**	**Sediment description**	**Interpretation**
0-0.50				7.5YR 5/4 brown clay loam, reddish tinge, quite common fine macropores, rootlets etc. Clear boundary	Turf & topsoil in top of overbank alluvial deposits
0.50-0.80				5YR 5/4 reddish brown gritty sandy silt loam, very friable, represents an episode(s) of higher energy flooding. Clear boundary	Gritty sand deposited by overbank flooding
0.80-1.75				5YR 4/6 yellowish red clay loam, 5-10% mottles of light grey	Gradual built-up of fine sediments from overbank flooding
1.75-1.95			FO 1.90	10YR6/2 light brownish grey silty clay loam (mostly fine silt), clear boundary	Alluvium
1.95-2.11		2.03		Very woody ?peaty deposit, large wood fragments in grey silty clayey matrix. Waterlogged, excellent preservation of wood, could be ?root. ID'd as Oak. ?entrained material	Woody silty peat
2.11-2.56		2.12 2.41 2.52	FO 2.25 FO2.46	Black / very dark grey gritty silt with common to very common small rounded grit to gravel in the 0.5-4mm range. Contains waterlogged wood and / or roots, hazelnuts. Excellent preservation/ Grittier layers @2.16-2.25, woodier and more humic @2.38-2.55.	Woody silty peat with alluvial inputs of grit
2.56-3.50				Reddish silty sand on / in gravel	Valley gravels

Table 6: Sediment descriptions for Borehole 1.4

Feature:	n/a	**Borehole:** 1.4		**Comments:**	
Level (top):	3.93m aOD	**Drg:**	n/a		
Depth (m)	**Pollen samples**	**Other samples**	**Context**	**Sediment description**	**Interpretation**
0-0.50				7.5YR 5/4 brown clay loam, reddish tinge, quite common fine macropores, rootlets etc. Clear boundary	Turf & topsoil in top of overbank alluvial deposits
0.50-0.80				5YR 5/4 reddish brown gritty sandy silt loam, very friable, represents an episode(s) of higher energy flooding. Clear boundary	Gritty sand deposited by overbank flooding
0.80-2.50				5YR 4/6 yellowish red clay loam, 5-10% mottles of light grey	Gradual built-up of fine sediments from overbank flooding
2.50-2.65				Blue grey clay loam mottled with 2.5Y 5/3 light olive brown, colour change to LOB (gradual) on exposure ∴ waterlogged / reduced. Clear boundary	Waterlogged overbank alluvium
2.65-2.80				10YR4/1 dark grey coarse silt loam with some very fine sand, occasional waterlogged wood fragment (cf. root). Coming down onto / into gravel	Alluvial silt, waterlogged, could be end-Pleistocene
2.80-3.60+				Gravel, rounded, fine to 30mm	River gravels

Table 7: Sediment descriptions for Borehole 1.5

Feature:	n/a	**Borehole:** 1.5		**Comments:**	
Level (top):	3.98m aOD	**Drg:**	n/a		
Depth (m)	**Pollen samples**	**Other samples**	**Context**	**Sediment description**	**Interpretation**
0-0.50				7.5YR 5/4 brown clay loam, reddish tinge, quite common fine macropores, rootlets etc. Clear boundary	Turf & topsoil in top of overbank alluvial deposits
0.50-0.80				5YR 5/4 reddish brown gritty sandy silt loam, very friable, represents an episode(s) of higher energy flooding. Clear boundary	Gritty sand deposited by overbank flooding
0.80-2.50				5YR 4/6 yellowish red clay loam, 5-10% mottles of light grey, getting greyer to base	Gradual built-up of fine sediments from overbank flooding
2.50-2.80				Gravelly grey clay; top of gravel rather than separate context	Gravely clay
2.70-3.60+				Gravel	River gravels

Table 8: Sediment descriptions for Borehole 1.6

Feature:	n/a	**Borehole:** 1.6		**Comments:**	
Level (top):	4.05m aOD	**Drg:**	n/a		
Depth (m)	**Pollen samples**	**Other samples**	**Context**	**Sediment description**	**Interpretation**
0-0.50				7.5YR 5/4 brown clay loam, reddish tinge, quite common fine macropores, rootlets etc. Clear boundary	Turf & topsoil in top of overbank alluvial deposits
0.50-0.80				5YR 5/4 reddish brown gritty sandy silt loam, very friable, represents an episode(s) of higher energy flooding. Clear boundary	Gritty sand deposited by overbank flooding
0.80-2.20				5YR 4/6 yellowish red clay loam, 5-10% mottles of light grey	Gradual built-up of fine sediments from overbank flooding
2.20-2.55				Blue grey clay loam mottled with 2.5Y 5/3 light olive brown, colour change to LOB (gradual) on exposure ∴ waterlogged / reduced. Clear boundary	Waterlogged overbank alluvium
2.55-2.80				10YR4/1 dark grey coarse silt loam with some very fine sand, occasional waterlogged wood fragment (cf root). Coming down onto / into gravel from 2.70	Alluvial silt, waterlogged, could be end-Pleistocene
2.80-3.60+				Gravel	River gravels

Table 9: Sediment descriptions for Borehole 2.1

Feature:	n/a	**Borehole: 2.1**		**Comments:**	
Level (top):	2.73m aOD	**Drg:**	n/a		
Depth (m)	**Pollen samples**	**Other samples**	**Context**	**Sediment description**	**Interpretation**
0-0.25				2.5YR 4/6 red clay loam. With turf on top. Lots macropores.	Turf and upper soil profile
0.25-0.60				10YR 7/2 4/4 brown clay loam to silty clay loam, quite friable, looks pale possible leached. Seen in test pits / trenches. Clear boundary	soil profile
0.60-1.0				7.75YR 4/4 brown clay loam, common macropores, iron staining and manganese nodules, grey around rootlets, clear boundary	soil profile
1.00-1.30				5YR 5/6 yellowish red clay loam,	Overbank flood sediments
1.30+				Gravel, clayey at top	Gravel

Table 10: Sediment descriptions for Borehole 2.2

Feature:	n/a	**Borehole: 2.2**		**Comments:**	
Level (top):	2.84m aOD	**Drg:**	n/a		
Depth (m)	**Pollen samples**	**Other samples**	**Context**	**Sediment description**	**Interpretation**
0-0.25				2.5YR 4/6 red clay loam. With turf on top. Lots macropores.	Turf and upper soil profile
0.25-0.60				10YR 7/2 4/4 brown clay loam to silty clay loam, quite friable, looks pale possible leached. Seen in test pits / trenches. Clear boundary	soil profile (in overbank seds)
0.60-1.0				7.75YR 4/4 brown clay loam, common macropores, iron staining and manganese nodules, grey around rootlets, clear boundary	soil profile (in overbank seds)
1.00-1.50				5YR 5/6 yellowish red clay loam,	Overbank flood sediments
1.50+				Gravel, clayey at top	Gravel

Table 11: Sediment descriptions for Borehole 2.3

Feature:	n/a	**Borehole: 2.3**		**Comments:**	
Level (top):	2.88m aOD	**Drg:**	n/a		
Depth (m)	**Pollen samples**	**Plant Macros**	**Other**	**Sediment description**	**Interpretation**
0-0.25				2.5YR 4/6 red clay loam. With turf on top. Lots macropores.	Turf and upper soil profile
0.25-0.60				10YR 7/2 4/4 brown clay loam to silty clay loam, quite friable, looks pale possible leached. Seen in test pits / trenches. Clear boundary	soil profile (in overbank seds)
0.60-1.0				7.75YR 4/4 brown clay loam, common macropores, iron staining and manganese nodules, grey around rootlets, clear boundary	soil profile (in overbank seds)
1.00-1.50				5YR 5/6 yellowish red clay loam,	Overbank flood sediments
1.50-1.60				10YR 4/3 brown silty clay loam, slightly humic, oxidises on prolonged exposure. No plant remains visible.	Slightly humic alluvium
1.60-1.70				10YR 5/1 grey sandy silt loam, quite pliable so bit clayey too.	Sandy silty alluvium
1.7+				Gravel, clayey at top	Gravel

Table 12: Sediment descriptions for Borehole 2.4

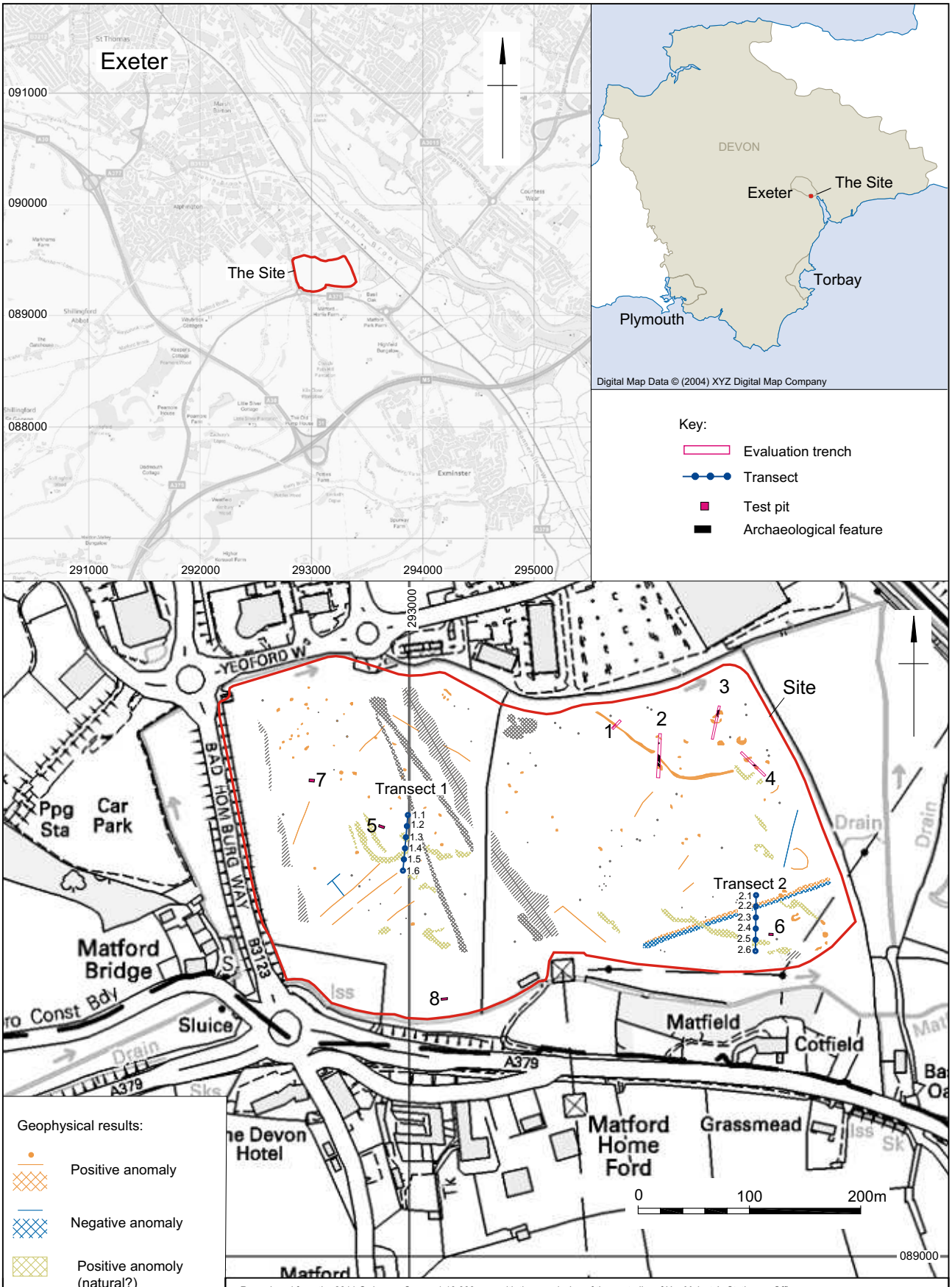
Feature:	n/a	**Borehole: 2.4**		**Comments:**	
Level (top):	2.93m aOD	**Drg:**	n/a		
Depth (m)	**Pollen samples**	**Other samples**	**Context**	**Sediment description**	**Interpretation**
0-0.25				2.5YR 4/6 red clay loam. With turf on top. Lots macropores.	Turf and upper soil profile
0.25-0.60				10YR 7/2 4/4 brown clay loam to silty clay loam, quite friable, looks pale possible leached. Seen in test pits / trenches. Clear boundary	soil profile (in overbank seds)
0.60-1.0				7.75YR 4/4 brown clay loam, common macropores, iron staining and manganese nodules, grey around rootlets, clear boundary	soil profile (in overbank seds)
1.00-1.50				5YR 5/6 yellowish red clay loam,	Overbank flood sediments
1.50-1.60				10YR 4/3 brown silty clay loam, ?humic, oxidises on prolonged exposure. No plant remains visible.	Slightly humic alluvium
1.60-1.70				10YR 5/1 grey sandy silt loam, quite pliable so bit clayey too..	Sandy silty alluvium
1.7+				Gravel, clayey at top	Gravel

Table 13: Sediment descriptions for Borehole 2.5

Feature:	n/a	**Borehole:** 2.5		**Comments:**	
Level (top):	2.93m aOD	**Drg:**	n/a		
Depth (m)	**Pollen samples**	**Other samples**	**Context**	**Sediment description**	**Interpretation**
0-0.35				2.5YR 4/6 red clay loam. With turf on top. Lots macropores.	Turf and upper soil profile
0.35-0.60				10YR 7/2 4/4 brown clay loam to silty clay loam, quite friable, looks pale possible leached. Seen in test pits / trenches. Clear boundary	soil profile (in overbank seds)
0.60-0.90				5YR 5/6 yellowish red clay loam,	Overbank flood sediments
0.90-0.98				Gritty sandy fine gravel	Higher energy flooding
GAP					
1.30-2.30				Gritty sandy fine gravel generally 5-15mm	Fine gritty gravel
2.30-2.50				Dark grey clayey gravel	Gravel
2.5-3m+				Gravel	Gravel

Table 14: Sediment descriptions for Borehole 2.6

Feature:	n/a	**Borehole:** 2.6		**Comments:**	
Level (top):	3.01m aOD	**Drg:**	n/a		
Depth (m)	**Pollen samples**	**Other samples**	**Context**	**Sediment description**	**Interpretation**
0-0.45				2.5YR 4/6 red clay loam. With turf on top. Lots macropores.	Turf and upper soil profile
0.45-0.70				10YR 7/2 4/4 brown clay loam to silty clay loam, quite friable, looks pale possible leached. Seen in test pits / trenches. Clear boundary	soil profile (in overbank seds)
0.70-1.00				7.75YR 4/4 brown clay loam, common macropores, iron staining and manganese nodules, grey around rootlets, clear boundary	soil profile (in overbank seds)
1.00-1.65				5YR 5/6 yellowish red clay loam,	Overbank flood sediments
1.65-1.83				10YR 4/3 brown silty clay loam, ?humic, oxidises on prolonged exposure. No plant remains visible.	Slightly humic alluvium
1.83-2.00				10YR 5/1 grey sandy silt loam, quite pliable so bit clayey too. Even sandier at 1.87-1.92. Boundary missing in core end.	Sandy silty alluvium
2.00-2.30				Gritty sandy fine gravel generally 5-15mm	Fine gritty gravel
2.30-3.00+				Gravel	Gravel



Geophysical results:

- Positive anomaly
- Negative anomaly
- Positive anomoly (natural?)
- Magnetic debris
- Ferrous
- Dipolar anomaly

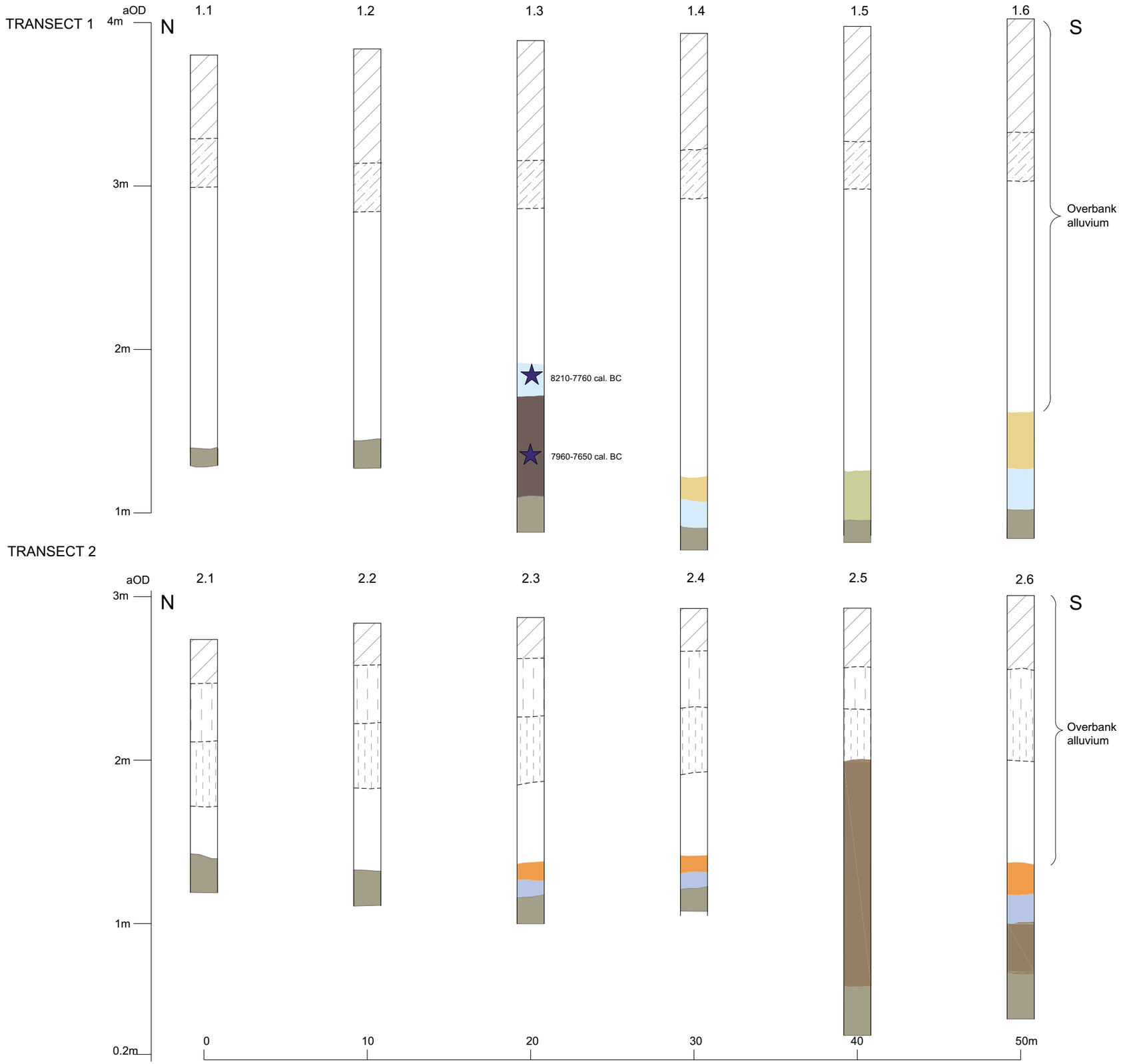
Wessex Archaeology

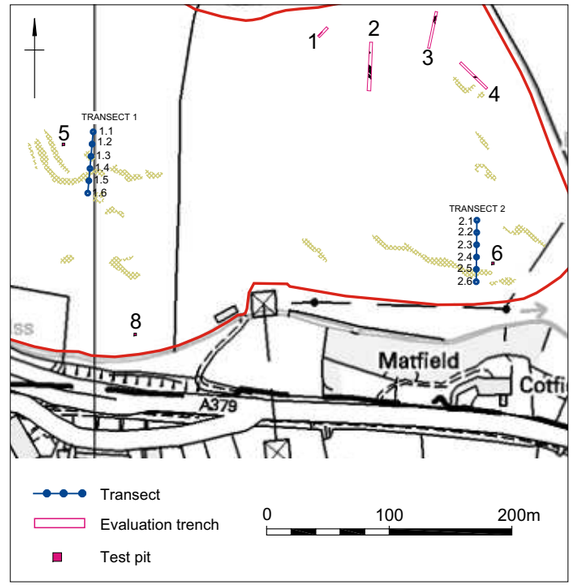
Geophysical survey by Archaeological Surveys Ltd

Date:	05/01/12	Revision Number:	1
Scale:	1:50,000 1:5,000	Illustrator:	SEJ
Path:	Y:\PROJECTS\77790\Drawing Office\Report figs\Geo Assess\77790_geo.dwg		

Site location

Figure 1





Radiocarbon sample
Turf and topsoil
Gritty flood deposit
Soil profile
Overburden
Silt
Peat
Fine alluvium
Humic alluvium
Sandy silt
Gritty fine gravel
Clayey gravel
Gravel

Date:	05/01/12	Revision Number:	1
Scale:	1:250 & 1:25	Illustrator:	SEJ
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Schematic transect diagrams for Transects 1 and 2

Figure 2

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