

Dagenham &
Washlands Public
Realm Enhancements
London Borough of Havering



**Archaeological
Evaluation Report**



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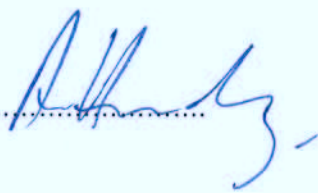
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Dagenham and Washlands, Public Realm Enhancements,

London Borough of Havering

Archaeological Evaluation Report

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Summary

In June of 2010, Oxford Archaeology South (OAS) undertook a field evaluation at Washlands Reservoir, Dagenham, Essex (NGR TQ 5033 8369) for Ove Arup and Partners Ltd on behalf of the Environment Agency. The work was undertaken as part of a proposed Habitat Creation Project in the floodplains of the Wantz Stream and Beam River. This work will involve significant landscaping of areas within the floodplains that has the potential to impact upon important archaeological deposits.

The evaluation aimed to assess the likely impacts of the scheme on the buried archaeological resource. It is the third phase of evaluation and excavation works in this development area and consisted of nine trenches located just off the edge of the gravel terrace promontory to the south of a reservoir area, and just to the west of the confluence of the two watercourses. The evaluation (Phase III) was carried out on land immediately south of the 2005 excavations, which identified extensive archaeological activity from the early Mesolithic, Bronze Age and Iron Age periods and later Roman occupation.

Archaeological features were identified in four out of the nine trenches. Most were isolated features or finds, but a focus of possibly prehistoric archaeological activity was identified in Trench 5. Three ditches and three possible pits were identified at the interface of the gravel terrace and floodplain. A large ditch at the south-east edge of the trench, which coincides with a clear break of slope in the existing topography, appears to be associated with the settlement activity identified on the gravel terrace. It is likely to represent a continuation of a ditch seen in the excavation area to the south-east. This ditch runs parallel to the course of the Wantz Stream to the south and west, probably forming an early flood defence barrier. A post-medieval ditch was also identified at the edge of the trench dug higher up in the sequence into the upper alluvium.

The remaining features identified in Trench 5 were cut into an early Holocene weathered landsurface that sloped down from the edge of the terrace to the base of the floodplain. This deposit was most extensive in this trench, where it coincided with a bend in the Wantz Stream. The features in Trench 5 features contained worked and burnt flint and were sealed by peat deposits that have been previously dated to the late Iron Age.

Two isolated probable prehistoric features were also identified in Trenches 3 and 7, cut into the same weathered sands. All are undated and there were too few in number to allow any meaningful interpretation. A sequence of five closely spaced post-medieval ditches and a possible pit was identified cut in the upper alluvium within Trench 9 next to the Beam River.

The result of the fieldwork indicates that there is high potential for further in situ archaeological deposits, and in particular important early prehistoric activity, to be identified along the edge of the Wantz Stream floodplain, and associated with this landsurface. It seems reasonable to assume that this activity could extend to the floodplain and peat deposits in the form of votive offerings, trackways and boats that rarely survive on archaeological sites. The floodplain has the potential to contain preserved deposits and palaeoenvironmental sequences of regional importance.



Beamwashlands, Dagenham, Greater London

Archaeological Evaluation Report

1 INTRODUCTION

1.1 Scope of work

- 1.1.1 Oxford Archaeology South (OAS) was commissioned in June 2010 by Ove Arup and Partners Limited to undertake a field investigation of the proposed impacts of a BAP Habitat Creation Scheme on the floodplains of the Wantz Stream and Beam River. The proposed scheme will involve significant landscaping of these floodplains that will include the creation of ponds, reedbeds and wet woodlands. The work has the potential to impact on archaeological deposits.
- 1.1.2 The Beam River Floodplain is designated as an Area of Archaeological Significance in the London Borough of Barking and Dagenham UDP. The designation reflects the potential of the area to contain preserved organic archaeological remains dating from Mesolithic through to the later post-medieval period, in waterlogged and anaerobic conditions in the alluvial deposits. Previous evaluation and strip-map-sample (SMS) fieldwork undertaken by OAS (OA 2005) on an adjacent area located multi-period archaeological deposits that are likely to extend into the proposed habitation area. Therefore Ove Arup and Partners Limited, acting on behalf of the Environment Agency and in consultation with the Greater London Archaeology Advisory Service (GLAAS), have commissioned an archaeological evaluation in order to assess the impact of the scheme on any potential archaeological deposits.
- 1.1.3 Nine trenches were dug into the floodplains of the Wantz Stream and Beam River to investigate the archaeological potential of these areas. Sondages were employed in each trench and three boreholes were also drilled in order to investigate the deeper floodplain sequence that was inaccessible by trenching. This report outlines the results of the evaluation and discusses the extent and significance of archaeological deposits identified and what this could potentially mean to the proposed scheme.

1.2 Location, geology and topography

- 1.2.1 The Dagenham Washlands Site is located in East Dagenham, within the London Borough of Havering (Fig. 1). The Site is located to the north of the former Ford Motor Works and close to the village of Dagenham (NGR TQ 5033 8369). It lies to the south-west of Dagenham Hospital (now demolished) and to the north and east of the Wantz Stream and Beam River. The floodplain comprises areas of tall grasses, flood defences and strands of trees.
- 1.2.2 The site is located on the south-west side of a gravel promontory between the Beam River to the north-east and the Wantz Stream. The ground slopes gently from the edge of the terrace at 4m OD down towards the reservoir at 0.5m OD, which is bounded by a steep flood bank.
- 1.2.3 The underlying geology is London Clay overlain by Lower Thames Valley, Mucking Gravels of the first terrace (British Geological Survey South Sheet 257, 1st edn. Quaternary, 1977). It is situated on the floodplain of the Wantz Stream and Beam River,



and a deeply stratified sequence of alluvial and peat deposits have been previously identified within the area (OA 2005; OA 2009; TVAS 2009).

1.3 Archaeological and historical background

The archaeological potential of the Site has been previously outlined in the desk-based assessment (ref) which is summarised in the following sections:

Palaeolithic

- 1.3.1 Evidence from the Palaeolithic period is largely confined to isolated find spots. Palaeolithic hand axes have been found at Barking Creek, near Uphall, on Ripple Road, Gale Street, Five Elms and Beacontree Heath.

Mesolithic

- 1.3.2 Evidence from the Mesolithic period is also confined to find spots, mainly consisting of lithic finds from the alluvial deposits on the banks of the Thames and sealed by peat. The stratified flint concentrations at Beam Washlands potentially offer better understanding of Mesolithic activity and environment in the area.

Neolithic and Bronze Age

- 1.3.3 Little evidence of Neolithic and Bronze Age activity was recorded at Beam Washlands, but features of this date have been revealed in the vicinity, including a few ring ditches (GLSMR 012497; GLSMR 058298) 2-3 km to the north of the site, identified by aerial photography. The main focus of prehistoric activity nearby was in the lower Ingrebourne Valley at Rainham. This activity included an occupation site and trackway at Bridge Road, Rainham, and an early Neolithic settlement at Brookway Allotments (GLSMR 062153).

Iron Age

- 1.3.4 Iron Age evidence is not well represented in the immediate vicinity of Beam Washlands. Further away, an Iron Age hillfort was situated at Uphall, c 6 km to the west of the site, while a settlement (GLSMR 061906) was discovered at Abbey Road, Barking (MoLAS 2000). Other sites are located in Rainham c 6-7 km east of Dagenham including a large triple-ditched enclosure/hill-fort and a middle Iron Age settlement or farmstead (GLSMR 060062, 060059). More Iron Age sites have been identified in Redbridge and Havering, including a field system and a cropmark site (GLSMR 060335) at Eastern Avenue, Ilford. An Iron Age farmstead (GLSMR 060802) was excavated at Goodmayes Hospital, Redbridge, while enclosures, ring ditches, pits and postholes were recorded at Redlands Quarry (GLSMR 06105, 6, 8, 10).

Roman

- 1.3.5 A concentration of Roman funerary activity was identified just across the Beam River, approximately 0.5 km to the south-east of the site. This site, at the Mardyke estate comprised a cremation and inhumation cemetery and finds including a complete flagon and a quern. Another inhumation burial and cremation burial site, approximately 200 m to the east of the Mardyke estate yielded more cremation burials, and a limestone coffin containing two bodies and various glass vessels. Pottery from the urned cremation burials here suggests that this site dates to the 1st century AD, although the antiquity of the work (1928) means that this date cannot be considered conclusive.



- 1.3.6 The Beam Washland site adds to the list of Roman-period rural settlements in the area. A site c 2 km to the west of the site revealed a rectilinear enclosure (possibly with a palisade) of Late Iron Age to early Roman date (monument ID - ML 066640). A concentration of sites have been recorded on the eastern side of the Ingrebourne Valley, c. 2.5 km south-east of the site. These sites include at least three farmsteads (including structural evidence), field systems, trackways, wells, enclosures (including multiple ditched enclosures) and a cemetery.

Post-Roman

- 1.3.7 The historic settlement of Dagenham (c 1 km to the north of the site) developed as a local centre during the Saxon period at a favourable crossing point on the Wantz Stream and was first recorded in a document dating from AD 690. Excavations have been carried out in the town and have revealed medieval and post-medieval remains.

1.4 Previous fieldwork results

- 1.4.1 In 2005 OA undertook a series of archaeological works on behalf of the Environment Agency, in response to a proposed flood alleviation improvement scheme on land just north of the present evaluation. This phased works included trial trenching, followed by excavation and borehole analysis of the deeper floodplain sequence.
- 1.4.2 The excavations highlighted that the area was a focus for multi-period settlement with a range of activities present that included farming, industrial and burial practices from the Mesolithic, Iron Age and Roman periods, with limited post-Roman activities (OA 2009). Two in situ Mesolithic flint scatters were also identified at the edge of the excavation area associated with a fluvial sand deposit that was sealed by prehistoric peat deposits. This activity abuts the area of the proposed Habitat Creation Scheme.
- 1.4.3 A watching brief was also maintained by Thames Valley Archaeological Service (TVAS 2009) on geotechnical ground investigations within the area. No archaeological features were identified but peat deposits were found in association with the floodplain of the Beam River.

1.5 Acknowledgements

OA would like to thank Clare King of the Environment Agency for facilitating the works and for her advice during the project. The fieldwork was undertaken by Brian Matthews, Carl Champness and Mike Shaw who worked on the site. The project was managed by Hugh Beamish.



2 EVALUATION AIMS AND METHODOLOGY

2.1 Aims

2.1.1 The aims and objectives of the evaluation were as follows (Arup 2010 and OA 2010):

- To determine or confirm the general nature of any remains present.
- To determine or confirm the approximate date or date range of any remains, by means of artefactual or other evidence.
- To determine or confirm the approximate extent of any remains.
- To determine the condition and state of preservation of any remains.
- To determine the degree of complexity of the horizontal and/or vertical stratigraphy present.
- To determine or confirm the likely range, quality and quantity of any artefactual evidence present.
- To determine the potential of the site to provide palaeo-environmental and/or economic evidence and the forms in which such evidence may be present.
- To make available the results of the investigation.

2.1.2 In addition specific project wider research have been proposed to ensure that all archaeological works is driven by justifiable and identifiable research objectives:

Aim 1: To characterise the early Mesolithic activity, assessing the range of activities this material represented and how these contribute to our understanding of Mesolithic habitation in this area.

Aim 2: To investigate the nature of activity during the later prehistoric and particularly the Iron Age.

Aim 3: To analyse and describe the burial rite, and characterise the relationship between the cemetery and other activity, such as industry and settlement in the Roman Period.

Aim 4: To analyse and interpret the early Roman land enclosure

Aim 5: To examine the organisation, scale and products of the Roman pottery industry at Dagenham

Aim 6: To describe the activities in addition to pottery production and characterise the nature of associated settlement

Aim 7: To analyse and interpret the effect of changing environmental conditions on the scale and nature of activity on the site.



Aim 8: To describe the sequence of environmental change and consider its impact on human activity.

Aim 9: To assess the longevity of boundaries on the site.

2.1.3 In addition the research Framework of Greater London (2002) will also provide a wider back-drop for the aims.

2.2 Evaluation methodology

2.2.1 The methodology outlined in the Written Scheme of Investigation (WSI) for this project (Arup 2010) was closely followed on Site with only slight modifications. The excavation strategy was discussed with Claire King and David Divers (GLAAS), to ensure the on-site aims and objectives set out in the WSI were suitably met.

2.2.2 Eight 30m x 1.6m trenches and one additional 10m x 1.6m trench were excavated in the locations shown on Figure 2. Only Trench 2 needed to be relocated due to ecological constraints on Site, and therefore was re-orientated to avoid an area of long grass where nesting birds may have been present.

2.2.3 The trenches were excavated to the base of the BAP Habitat construction requirements in each area or to the depth of to the first significant archaeological horizon, whichever was encountered first. Deeper sondages were dug by machine at the relevant position in each trench. The maximum sondage dimension was 3m deep, 3.5m long and 2m wide. Three boreholes were also drilled using a terrier percussion rig adjacent to the trenches, in areas where the sequence was too deep for trenching.

2.2.4 All trenches were dug with a mechanical excavator fitted with a toothless bucket. A suitably experienced archaeologist supervised all of the machining. Topsoil and subsoil was stored separately and reinstated in the correct order in order to prevent mixing. The spoil was also scanned for artefacts and metalwork, which was recorded and retained.

2.2.5 The archaeological features identified were excavated by hand in order to fulfil the aims of the project specification, with reference to the aims and objectives given above and to the strategy set out in Table 1 and section 4.1.2 of the Ove Arup/EA Archaeological WSI dated March 2010.

2.2.6 Care was taken not to compromise the integrity of archaeological features or deposits, which might better be excavated under the conditions pertaining to full excavation. Full written and drawn records of all excavated contexts were made in accordance with best archaeological practice and in accordance with GLAAS guidance papers (GLAAS 2009).

2.2.7 A unique site code was agreed with the Valence House Museum prior to starting the fieldwork (BMV 05). The recording system was fully compatible with that most widely used elsewhere in London. All excavation and recording was in accordance with the *IFA Standard and Guidance for Field Evaluation*. Recording, cleaning and conservation of finds followed the *IfA Standard and Guidance for the collection, documentation, conservation and research of archaeological materials*.

2.2.8 A geoarchaeologist was also present on-site for the duration of the fieldwork to provide advice and assistance to the field team with reference to the recording and sampling of the alluvial sediment sequences. This helped to ensure consistency and allow the



results of the evaluation to be considered in light of previous work carried out at the Site.

- 2.2.9 The floodplain sediments were recording in line with English Heritage guidelines (2004) and sediment description was based on Jones *et al* 1999. Environmental samples were taken from a range of deposits and features to assess the Site's potential. The scope of the sampling programme was aimed at identifying significantly different deposits, in character or of a different date, to those previously investigated at the Site as well as those directly associated with archaeological remains.



3 RESULTS

3.1 Presentation of results

- 3.1.1 The results presented in the main text of this report provide a detailed overview of the findings of the evaluation works. A comprehensive listing of individual trench descriptions and related context data can also be found in Appendix A. The borehole sampling logs can be found in Appendix D.
- 3.1.2 A decimal numbering system was employed to ensure that contexts (individual archaeological records of features and deposits) recorded during the evaluation did not coincide with those recorded during the excavation phase within Area 1 and 2, as both these projects were allocated the same site code. Hence all context numbers were trench-specific with the trench number starting at five thousand and then being followed by the trench number and double zero (e.g. The first context used for Trench 1 would be 5100).
- 3.1.3 All recovered finds and samples are recorded in the specialist reports in Appendices B and C, with a summary also provided in the detailed trench descriptions (see Appendix A). The trench descriptions also contain the dimensions of both the trenches and the features within showing the depths of the deposits and, where appropriate, the relevant dating.

3.2 Soils and ground conditions

- 3.2.1 The geology of the Site and environs is clearly defined by the BGS mapping (Sheet 257 1:50,000), and the mapping confirmed as correct in various field interventions. The trenches were dug through thin deposits of modern topsoil and made ground deposits, onto well-preserved floodplain sequences. The trenches could only go deep enough to investigate the upper alluvial sequence. Only the boreholes were able to reach the full depth to Pleistocene gravels and London Clay.
- 3.2.2 Flooding of the trenches was a constant problem and pumps were used to manage the water-level. The deep sondages within the trenches proved to be particularly prone to flooding and were not left open for any extended period. Once the sondages were recorded and examined for the presence of archaeological deposits they were backfilled.

3.3 Distribution of archaeological deposits

General

- 3.3.1 One main focus of significant archaeological activity was located in the evaluation, a number of prehistoric features and finds were identified on weathered fluvial sand deposits that made up the interface between the terrace and the floodplain deposits. The features found in the field suggest that there is a focus of potential prehistoric activity, centred on the sloping weathered sands around Trenches 5, adjacent to excavation Area 1. A few isolated prehistoric features and finds were also identified from the surface of similar sandy deposits within Trenches 3 and 8.
- 3.3.2 Later archaeological features were also identified within Trenches 5 and 9. These were found to be dug from higher up in the sequence associated with a stabilised surface of the upper silty clay alluvium.



3.3.3 In order to aid in the interpretation and assessment of the sediment sequences and archaeological deposits, the trench sequences have been correlated into stratigraphic units by a geoarchaeologist and broadly mapped across the floodplain with the geology (Fig 3.). The stratigraphic units are based on the deposit model proposed previously developed during the geoarchaeological investigations (OA 2005 and 2006). The following stratigraphic units were previously identified within the Wantz Stream floodplain:

- Made ground/topsoil
- Upper Alluvium
- Peat/organic deposits.
- Lower sands
- Pleistocene Gravels
- Bedrock

3.3.4 Assignment of individual contexts to stratigraphic units is based on texture, nature of inclusions and sedimentary contacts. However, it should be noted the correlation of widely spaced trenches only allows for the broadest of correlations and may not necessarily be representative of the entire Site sequence. Localised sedimentary sequences can often occur in such fluvially active environments due to different variations in topography, vegetation and hydrology.

Trenches 1 and 2 (Fig. 4)

3.3.5 Trenches 1 and 2 contained no archaeological features and came down on to floodplain and channel deposits at depths between 0.30m and 0.50m from the surface. The edge of the terrace gravel was not present within the trenches and the sequences comprised silty clay alluvium overlying peat/organic deposits and sealed by modern made ground and topsoils.

3.3.6 At the base of Trench 1 a sequence of peats (5103) and humic silty clays (5108 and 5104) were identified between 0.90m and 2.00m below ground surface. This sequence was overlain by approximately 0.50m of silty clay alluvium (5102) and sealed by made ground (5101) and topsoil (5100).

3.3.7 At the eastern end of Trench 1 two possible bank/terrace erosional deposits were identified (5105 and 5106) between the alluvium and the peats. These comprised pale brown silty and sandy clays with 15% sub-rounded pebble gravels that accumulated on the undulating surface of the peat (5108). These deposits varied in thickness between 0.10m and 0.20m possible representing two different episodes of erosion. An imbrex Roman tile was recovered from context 5106.

3.3.8 Trench 2 contained a similar sequence of deposits, but with one notable difference. A potential channel deposit (5203) 0.80m in thickness was identified inter-stratified between the organic deposits 5204 and 5202, which may have also potentially removed parts of the organic sequence. No eroded bank material was identified within the trench. This sequence was overlain by a silty clay alluvium (5201) and 0.20m thick deposits of modern topsoil (5200).

Trench 3 and 4 (Fig. 5)

3.3.9 Trenches 3 and 4 contained a very similar sequence of floodplain deposits of thick peat underlying channel deposits, alluvium and made ground/topsoil. A deposit of weathered



light reddish yellow sands was identified towards the east of Trench 3 close to the gravel terrace sloping down towards the river. This surface appeared to have been oxidised due to exposure to the sub-aerial processes.

- 3.3.10 A well-stratified sequence of organic silty clay (5304 and 306) and peat deposits (5310 and 5305) were identified in the base of the Trench 3 between 0.80m and 2.0m in depth. These deposits were overlain by 0.50m thickness of light silty clay channel fill (5404), a thin lens of peat (5309) and then overlying deposits of silty clay alluvium (5301) and made ground (5301) and topsoil (5300).
- 3.3.11 Two interconnected circular post holes were identified dug into the surface of the weathered sands. Post-hole 5313 was 0.30m in diameter and only 0.06m in depth. It was filled with a firm mid greyish clayey sand (5314), and contained burnt flint. Post-hole 5315 was of a similar nature, 0.23m in diameter and 0.08m in depth. It was filled with a similar clayey fill (5316) and produced struck flint and three small pottery fragments.
- 3.3.12 A split tree trunk was also identified in the top of the peats at depth of 1.0m and this was investigated for signs of working or tool marks. Following cleaning, the tree trunk appeared to have been a natural split piece of wood that was likely to have been overturned by later fluvial activity.
- 3.3.13 Trench 4 had a similar floodplain sequence. A peat sequence (5405) at a depth of 1.0m (-0.62m aOD) was found to underlay a sequence of dark grey silty clay channel fills (5404) and thin peat deposits (5408), sealed by later alluvium (5401) and topsoil (5400). The terrace edge deposits were not present within the trench and may have been either truncated by channel activity or could be located further to the north east.
- 3.3.14 Borehole OA11 was drilled adjacent to the side of the Trench 4 to provide a complete sample of the channel sequence for sediment description and palaeoenvironmental assessment.

Trench 5 (Fig. 6)

- 3.3.15 Trench 5 was excavated down onto an extensive weathered sand deposit (5518) in the eastern end of the trench and a floodplain sequence of peats (5521 and 5507) and inter-stratified channel deposits (5516) towards the west. The sands were encountered at a depth of 0.60m (+0.59m aOD) next to the terrace and +1m (+0.19m aOD) in the middle of the trench before disappearing under the peats. This sequence was overlain by a 0.50m thick deposit of silty clay alluvium (5501) and a thin topsoil (5500).
- 3.3.16 A dense focus of archaeological features and deposits were identified associated with the surface of the sands. Three linear ditches and three pits were identified dug into this horizon. Towards the east end of the trench, the upper surface of the sands appears to preserve an early prehistoric landsurface.
- 3.3.17 A large NE-SW linear ditch (5503) was identified at the eastern end of the trench. The ditch extended across the full width of the trench and also disappeared into the eastern end of the trench. It was at least 1.15m in width and 0.40m-0.50m in depth. The ditch was filled with a primary silting deposit (5505) and secondary clayey silt deposit (5504). Fragile fragments of animal bone were recovered from the primary silts but no datable material were recovered. This sequence was overlain by a localised deposit of friable to loose dark grey clayey silt (5502) with frequent sub-rounded gravel pebbles (20-30%) that might represent an eroded bank deposit associated with the ditch.



- 3.3.18 The ditch was substantial enough to be interpreted as a possible boundary ditch. A boundary ditch of similar dimension and nature has been recorded at the edge of the excavation Areas 1 and 2. It is possible that this feature may represent a continuation of the south-western boundary ditch of the Roman settlement.
- 3.3.19 A very truncated linear ditch terminus was identified higher up in the sequence cut through the upper alluvium (5501) and into the surface of the sands. The ditch was too shallow to be excavated but did contain post-medieval pottery and frequent oyster shell.
- 3.3.20 A shallow NW-SE linear ditch (5511) was also located further down the sand deposits. The ditch was only 0.10m in depth and 1.20m wide, with signs of significant root disturbance. The ditch was filled with pockets of primary silting and a sandy silt secondary deposit (5512). Frequent worked and burnt flint were recovered from the ditch fills and one piece of fired clay, suggesting a possible prehistoric date.
- 3.3.21 Three possible prehistoric oval-shaped pits were located further down the slope against the southern bulk of the trench. All three of the pits were filled and sealed by the overlying peat deposits (5520). The largest of the pits [5509] was 1.5m in length and 0.60m in depth. The pit was filled with a thin primary silting fill and a secondary blackish brown silty peat (5510). The pit fills produced occasional worked and burnt flint.
- 3.3.22 A second pit [55014] was 1.62m in length and 0.11m deep. It was filled with a similar sequence of primary silting and blackish brown silty peat (55015), that contained rare inclusions of sub-angular burnt flint. Pit [5519] was 1m in length and only 0.10m in depth. It was filled with a silty peat deposit (5520) that contained rare inclusions of burnt flint.
- 3.3.23 A large tree trunk was identified at a depth of 0.50m in the top of the peat sequence. This was cleaned and recorded in situ, before being examined for signs of woodworking. On further examination, the tree (possibly alder) appeared have been unworked, and overturned during the deposition of the overlying alluvium.
- 3.3.24 The base of the peats were identified within OABH12 at 1.78m (-1.09m aOD) that was drilled next to the trench. This was underlain by a thick sequence of laminated fluvial sands. The weathered London Clay was identified at a depth of 3m (-2.31m aOD).
- 3.3.25 The only modern truncation of the trench sequence was the cut of a modern sewage pipe 5522 that was identified at the western end of the trench.

Trench 6 and 7 (Fig. 7)

- 3.3.26 Trenches 6 and 7 revealed a similar sequence of sandy edge and floodplain deposits. A thick sequence of peat (5703, 5708 and 5603) and organic silty clay (5709, 5604) were identified at the base of both trenches towards the west. These were overlain by silty clay alluvium (5601, 5602, 5701, 5702 and 5707) and modern topsoils (5600 and 5700). The sandy edge deposits (5606 and 5704) were identified towards the east of both trenches and were encountered between 0.50m and 1m in depth. The top of the peat sequence was identified at 0.50m in Trench 6 (+0.50m aOD) and 0.70m (+0.39m aOD) in Trench 7. No archaeological deposits were identified in either trench, but a piece of worked flint was recovered from the surface of the weathered sands in Trench 7.
- 3.3.27 A cut of the modern sewage pipe 5705 and backfill deposits (5708) were identified in the middle of trench 7.



Trench 8 and 9 (Fig. 8)

- 3.3.28 Trench 8 was dug as part of the contingency to further investigate the sandy edge deposits. The trench was dug to half its proposed width as the south-western end of the trench was truncated by the cut of the modern sewer pipe 5806. The weathered sands (5808) were encountered at a depth of 0.80m (+0.78m a OD) in the east end of the trench and sloped down to 1.90m (-0.32m aOD) towards the west. This surface was overlain by a 0.60m thick peat deposit (5804) that petered out further up slope towards the terrace. A similar thickness of overlying brownish grey silty clay alluvium (5801) was identified sealed by 0.30m of silty topsoil (5800).
- 3.3.29 The trench contained one NW-SE linear ditch 5803, which produced burnt and worked flint. The ditch extended across the trench and was 1.0m in width and 0.40m in depth. It was filled with a thick primary light brownish grey sandy silt (5805) and a overlying dark yellowish brown sandy silt (5804). No other archaeological deposits were identified within the trench.
- 3.3.30 Trench 9 was located on the eastern bank of the Beam River, adjacent to the modern flood defences. The topsoil (5900) and made ground deposits (5901) were removed to reveal a dense concentration of 5 linear ditches (5903, 5916, 5905, 5907, 5911), one possible pit (5909) and an area of possible disturbance (5902) dug into the surface of the upper alluvium. These features were identified at a depth of 0.40m below the current ground surface (+0.40m aOD).
- 3.3.31 The ditches all appeared to be well-preserved and of various profiles and sizes. They mostly followed a NE-SW alignment, except for ditch 5907 that followed an NW-SE alignment. The ditches were filled with a similar dark reddish grey silty clay (5908, 5906, 5916, 5904). The dimensions of each of the features can be found within the trench descriptions in Appendix A. Three of the ditches were excavated and recorded, modern glass, peg tile and pottery were recovered from ditch 5906 and pottery from the surface of ditch (5916), all indicative of a post-medieval to modern activity.
- 3.3.32 Once the features had been recorded, two sondages were dug through the alluvium to the base of the fluvial sands (5914) that were encountered at a depth of 2.10m in the middle of the trench and 1.30m in the eastern end towards the terrace edge. These deposits did not appear to have been weathered and could have been submerged early in the Holocene. A sequence of stratified peats (5919) and organic silty clays (5913) were identified overlying the sands between 1.10m (-0.42m aOD) and 2.10m (-1.52m aOD). A borehole sample (OABH10) was drilled next to the side of the trench to provide a stratified sample of the sequence for palaeoenvironmental assessment.

3.4 Distribution of finds

- 3.4.1 Overall there was a very low rate for the recovery of finds across the Site. Concentrations of all the finds types were found to correlate to the sand deposits at the interface between the edge of the floodplain and terrace, or to the modern focus in Trench 9 next to the Beam River.
- 3.4.2 A brief summary of the finds of the evaluation is presented below. Detailed specialist reports on all of the finds can be found in Appendices B and C at the back of this report.

Pottery

- 3.4.3 There was a noticeable paucity of pottery across the evaluation area, and what pottery that was recovered principally was concentrated in the foci identified. A total of 7 sherds of pottery weighing 92 g. were recovered from four contexts from Trenches 3, 5 and 9.



This is all of post-medieval date apart from three joining scraps of pottery which may be prehistoric. All the pottery was examined and spot-dated during the present assessment stage.

- 3.4.4 The possible prehistoric sherd from the post-hole in Trench 3 (Context 5316, now three joining scraps) is very small, worn and shapeless. It has a soft grey fabric with moderate coarse organic temper and sparse-moderate coarse angular flint, mostly white. On the basis of the flint it is probably of prehistoric date, although an early Anglo-Saxon date cannot be ruled out.
- 3.4.5 A linear ditch terminus (5513) produced a post-medieval red earthenware jar rim dated to c 1675-1825. Two linear ditches in Trench 9 produced only a single sherd each of 19th-century 'china'.

Ceramic building material

- 3.4.6 Two pieces of CBM weighing 2002g were recovered from Trenches 1 and 9. The pieces include a worn (probable) Roman imbrex from a possible terrace/bank erosion deposit (5106) in Trench 1, and a post-medieval peg tile probably datable to the 16th-19th centuries from Trench 9.

Fired clay

- 3.4.7 A single, small, very worn piece of fired clay (weight 11 g.) was recovered from a linear ditch fill (5512) in Trench 5. This is in a soft orange-brown sandy fabric with light grey patches. The piece is well-rounded and has completely lost its original surfaces and so is basically undatable, although it is probably prehistoric.

Worked flint

- 3.4.8 A total of 15 pieces of worked flint were recovered during the evaluation from six contexts from Trenches 3, 5, 7 and 8.
- 3.4.9 All the flint, with the exception of the Clark's type C 1, a microlith from context 5512, can be classified as undatable prehistoric debitage flakes or shattered pieces. The microlith potentially gives an early Mesolithic date to the flint from context 5512, which forms a collection of small debitage flakes on fine flint raw material, probably local river gravels. With the exception of the 2 flints from context 5805, the flakes from all contexts are relatively small, generally accepted as an indication that they are earlier rather than later prehistoric. The two larger flakes from context 5805 are a noticeably different raw material and are possibly from the same cobble. Although most of the flints are from features, and possibly in secondary contexts, it is all in relatively fresh condition.

Burnt flint

- 3.4.10 A total of 62 fragments of burnt, unworked flint, weighing 829g, were recovered from 9 different contexts from Trenches 3, 5 and 8. A equal amount of burnt flint was recovered from the surface of the sands and peat deposits as well as from the archaeological features.

Other finds

- 3.4.11 A total of 6 pieces of oyster shell was also recovered from a medieval ditch terminus (5513) within Trench 5. These were 1 upper and 1 lower shells and four un-attributable fragments. Also, a single sherd of glass (context 5906) was recovered from a ditch within Trench 9, that represents a modern moulded bottle or jar.



Environmental material

- 3.4.12 Three bulk soil samples were taken for the recovery of charred plant remains (CPR), waterlogged plant remains (WPR) and artefacts. These were taken from a range of prehistoric features identified in Trenches 3 and 5. Three monolith samples and three borehole samples were also obtained through the floodplain sequence.
- 3.4.13 Bulk sample <5000> (5512) was taken from a prehistoric shallow ditch which was noted in the field to contain both frequent worked and burnt flint, and was thought to be potentially a dried-out waterlogged deposit. Sample <5002> (5515) was taken from a prehistoric pit filled with silty peat, for the recovery of CPR and potentially for dried-out WPR. Sample <5006> (5316) was taken for the recovery of CPR, from a deliberate backfill of a posthole that was noted to contain fragmentary pottery.
- 3.4.14 None of the features produced any significant ancient waterlogged assemblages, suggesting that these deposits have previously dried out. The alluvial nature of the deposits would suggest that were originally deposited within waterlogged contexts and have later dried out in more recent times through modern drainage or water management of the Wantz Stream.

4 DISCUSSION

4.1 Reliability of field investigation

- 4.1.1 Overall, the results of the evaluation were reliable, particularly in demonstrating the presence and depth of the archaeological remains associated with the weathered sands at the interface of the gravel terrace and floodplain. However, there is always a possibility that isolated features may survive between the trenches (Hey & Lacey 2001). The ephemeral nature of the activity identified in the trenches (flint scatters and shallow pits) is not likely to be laterally extensive. None of the archaeological features, and in particular the archaeological ditches, could be traced between trenches.
- 4.1.2 The fieldwork also identified a degree of truncation across the evaluation area. The trend across the whole area was for markedly shallow features, which suggests a high level of truncation in parts of the sequence resulting from either erosion of the sands or later fluvial disturbance. This will have also had an effect on the presence and recovery of artefactual evidence. Certainly well preserved in-situ remains are present further up the sequence closer to the terrace, but greater levels of truncation were noted towards the base of the slope.
- 4.1.3 Beyond this the only modern interference observed was in the form of occasional modern ground make-up deposits, field drains, and one larger sewage cut that was identified in Trenches 5, 7 and 8. Only the main sewage pipe that runs parallel to the Wantz Stream appears to have had a significant impact upon archaeological preservation and in particular the peat deposits adjacent to the floodplain edge.

4.2 Sedimentary sequence

- 4.2.1 The evaluation revealed a sequence of floodplain deposits that are consistent with those identified previously on Site and correlated to the deposit model presented by OA (2005a and 2006c). A interpretative floodplain cross-section is presented in Figure 9.
- 4.2.2 Similar sequences have been frequently recorded elsewhere in the east London Marshes, mainly on the Thames floodplain (e.g. Bates 1999, Bates and Barnham 1995, Bates and Whittaker 2004, Devoy 1977, 1979, 1980, 1982, Haggart 1995, Marsland 1986, Sidell and Wilkinson 2004, Sidell *et al* 2000, Wilkinson 1988, Wilkinson *et al*



2000) although they have not been extensively investigated within the Dagenham area in the vicinity of the Beam River and Wantz Stream.

- 4.2.3 The basal sandy gravels that underlie the Holocene floodplain sequence were only reached during the evaluation in boreholes of OA10 and OA12, at depths of 3.50m and 4.50m respectively. These deposits represent the incision of a late glacial channel sequence that accumulated during the last glacial maximum. They accumulated in a cold climate environment within high-energy braided channels that were fed by summer melt-water from melting glacier ice.
- 4.2.4 The evaluation identified an absence of sandy gravel deposits towards the north-west area of the Wantz Stream within the area of Trenches 1-4. The absence of sandy gravels may reflect greater scouring in this particular area or that the late glacial channel may have been located further to the west.
- 4.2.5 Overlying the sandy gravels was a laminated sequence of fluvial sands that were identified at depths between 2.75m and 4.74m. These deposits are thought to represent the transition from braided meandering river systems to more stable anastomosing channels during the early Holocene. The weathered sand identified at the edge of the floodplain and terrace edge could be part of channel edge deposits or equally cold climate erosion deposits from the surface of the gravel terrace. What is more certain is that these sloping sands formed an early prehistoric landsurface at the edge of the floodplain that was utilised by prehistoric communities.
- 4.2.6 The evaluation recorded the peat sequence between -0.68 m and -1.52m aOD. This is consistent with those previously recorded within the Wantz Stream floodplain (OA 2005c and 2006). Closer examination of these deposits revealed a complex sequence of organic silt clay, silty peat and peat with occasional lenses of more minerogenic silt-clay and sandy silt within the lower levels. These deposits have been shown to represent a mosaic of different wetland environments from reed swamp to alder carr (OA 2007).
- 4.2.7 The accumulation of the upper silty clay alluvium is widely believed to represent an increase in water levels and marine incursions on the floodplain. The overturned tree trunks recorded in the surface of the peats in Trenches 3 and 5, testify to the rapid rate at which this incursion appears to have occurred. There is a suggestion of estuary expansion occurring during the Iron Age and Roman period. In Westminster, for instance, there is evidence for marine penetration to altitudes of about -0.2m OD after c.750-350BC at Storey's Gate, Westminster and Joan St., Southwark (Sidell *et al.*, 2000). In East London, too, Wilkinson *et al.* (2000) found evidence for marine transgression after c.750-420BC in the more landward areas of their Silvertown site. There is also good archaeological evidence that at the start of the Roman period (between 1540 and 1907 years ago) the tidal head was located further up the estuary at Roman *Londinium*. These periods of estuary expansion could provide a mechanism for a rise in water table forcing a change from alder carr to reedswamp, perhaps also with periodic tidal inundation as indicated by the presence of brackish and marine diatoms.
- 4.2.8 The Site appears to have been partially drained and managed from the post-medieval period onwards. The modern topsoil and make-up deposits would have accumulated during this period and represent seasonal dry stable conditions. The upper surface of the alluvium appears to have been stabilised and used for predominantly agricultural purposes before Dagenham Hospital was built.



4.3 Archaeological interpretation and potential

- 4.3.1 The concentration of archaeological features in Trench 5 would indicate a focus of prehistoric and later activity at the edge of the floodplain overlooking the Wantz Stream, associated with the weathered sands. This is consistent with the results of the excavation that identified a concentration of prehistoric activity at the edge of the terrace and the start of the sands. Two large Mesolithic flint scatters and a burnt mound deposits were previously identified on the sands and sealed by peat deposits (OA 2006).
- 4.3.2 The large boundary ditch identified at the eastern end of Trench 5 possible marks the western edge of the settlement and could have acted as an early flood defence. The evidence of eroded bank material would suggest that this bank was of good height. No later prehistoric or Roman features or finds were recovered to the south west of this ditch, and it may reflect increasing water levels and flooding on the floodplain during this period.
- 4.3.3 The prehistoric focus of activity on the slope of the terrace may be able to contribute considerably to the understanding of the main site. As such, this focus may be very important, particularly if the presence of early prehistoric activity is part of a wider phase of activity within the floodplain sequence. Certainly *in situ* flint scatters and early prehistoric features associated with an early landsurface are preserved within the proposed area. There is also a high potential that floodplain deposits such as peats may preserve structures such as timber trackways, bridges or evidence of river-side occupation. Evidence of ritual or votive practices, particularly metal artefacts or deposition of human remains, may also be recovered from these deposits. The remains of Iron Age and Roman crossing and access points, in the form of bridges and jetties, could also potentially be found within the upper alluvium. The prehistoric activity has been shown to be more widespread through this evaluation process than had previously been recognised. The significance of this activity is still difficult to gauge as the exact nature of the activity focus is currently unknown, but appears to be concentrated at the edge of the floodplain of the Wantz Stream.

4.4 Recommendations

- 4.4.1 Where possible the intact alluvial sequence underlying the thin topsoil and made ground deposits should be preserved *in situ*, due to its high archaeological potential. In particular the weathered sands and peat deposits may preserve important archaeological and palaeoenvironmental evidence. Where the proposed works of the scheme extend into the alluvial sequence then it will potentially impact deposits of archaeological interest and may therefore require further archaeological mitigation.
- 4.4.2 It is recommended that a palaeoenvironmental assessment of one main trench sample sequence from the Site be undertaken to assess its potential to inform about the nature of the changing floodplain environment. This should include an assessment of the full range of palaeoenvironmental evidence: plant remains, insects, pollen, snails, ostracods/forams and diatoms.
- 4.4.3 A programme of radiocarbon dating should also be undertaken from key deposits within the sequence in order to establish a basic chronological framework and correlate the stratigraphy between sequences. It is suggested that between 4-6 AMS dates will provide an adequate dating framework. The material to be dated, where possible, should derive from wood, seeds and other plant remains, thought to represent the *in-situ* floodplain vegetation.



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APPENDIX A. TRENCH DESCRIPTIONS AND CONTEXT INVENTORY

Trench 1						
General description					Orientation	NE-SW
Trench 1 contained no archaeological features and came down on to floodplain deposits. The edge of the gravel terrace was not identified in the base of the trench. A thin mixed erosional deposit (5106) identified at the north western edge of the trench towards the gravel terrace produced a Roman imbrex tile.					Avg. depth (m)	1.0-1.20
					Width (m)	1.6
					Length (m)	25
Contexts						
context no	type	Width (m)	Depth (m)	comment	finds	date
5100	Layer	-	0.2	Topsoil	-	-
5101	Layer	-	0.3	Sandy silt	Wellington boot	Modern
5102	Layer	-	0.7	Silty clay alluvium	-	-
5103	Layer	-	0.8	Organic rich silty clay/peat	-	-
5104	Layer	-	-	Organic silty clay	-	-
5105	Layer	-	0.2	Silty clay alluvium	-	-
5106	Layer	-	0.2	Mixed sandy clay gravel	Imbrex tile	Roman
5107	Layer	-	0.15	Silt clay	-	-
5108	Layer	-	0.3	Silty clay	-	-
Trench 2						
General description					Orientation	NE-SW
Trench 2 contained no archaeological features and came down on to a channel cut and floodplain deposits. The edge of the gravel terrace was not identified within the trench.					Avg. depth (m)	1.0-1.20
					Width (m)	1.6
					Length (m)	25
Contexts						
context no	type	Width (m)	Depth (m)	comment	finds	date
5200	Layer	-	0.2	Topsoil	-	-
5201	Layer	-	0.4	Oxidized alluvial silty clay	-	-
5202	Layer	-	0.4	Organic silty clay	-	-
5203	Layer	-	0.6	Alluvial silty clay	-	-
5204	Layer	-	-	Organic silt clay	-	-
5205	Layer	-	0.8	Cut of a channel	-	-
5206	Layer	-	-	Organic silty clay	-	-
Trench 3						
General description					Orientation	NW-SE
Trench 3 It contained two possible post holes dug into weathered sand deposits with flint inclusions					Avg. depth (m)	
					Width (m)	1.6



					Length (m)	30
Contexts						
context no	type	Width (m)	Depth (m)	comment	finds	date
5301	Layer	-	0.12	Topsoil	-	-
5302	Layer	-	0	Alluvial subsoil	-	-
5303	Layer	-	0.15	Peat	-	-
5304	Layer	-	-	Alluvium	-	-
5305	Layer	-	0.15	Peat	-	-
5306	Layer	-	-	Channel deposits	-	-
5307	Layer	-	-	Channel deposits	-	-
5308	Layer	-	0.28	Eroded bank material	-	-
5309	Layer	-	0.3	Organic silty clay	-	-
5310	Layer	-	-	Peat	-	-
5311	Layer	-	0.15	Eroded bank material	-	-
5312	Layer	-	0.15	Made ground	-	Modern
5313	Cut	0.3	0.06	Cut of post hole	-	Prehistoric
5314	Fill	0.3	0.06	Fill of post hole	Flint/burnt flint	Prehistoric
5315	Cut	0.25	0.08	Cut of post hole	-	Prehistoric
5316	Fill	0.25	0.08	Fill of post hole	Pot/flint	Prehistoric
Trench 4						
General description					Orientation	NE-SW
Trench 4 was devoid of archaeology and the sandy floodplain edges deposits. The trench went through a natural channel sequence comprising greyish clay overlying stratified peats.					Avg. depth (m)	1.20-2.50
					Width (m)	1.6
					Length (m)	30
Contexts						
context no	type	Width (m)	Depth (m)	comment	finds	date
5400	Layer	-	0.2	Topsoil	-	-
5402	Layer	-	0.25	Alluvial subsoil	-	-
5403	Layer	-	0.18	Friable humic clay	-	-
5404	Layer	-	0.8	Channel deposits	-	-
5405	Layer	-	-	Peaty silty clay	-	-
Trench 5						
General description					Orientation	NW-SE
Trench 5 contained one possible N-S aligned ditch terminus, and the three pits. The western end of the trench was heavily truncated by a modern feature.					Avg. depth (m)	0.60-1.50
					Width (m)	1.6
					Length (m)	30
Contexts						



context no	type	Width (m)	Depth (m)	comment	finds	date
5500	Layer	-	0.2	Topsoil	-	-
5501	Layer	-	0.2	Subsoil	-	-
5502	Layer	-	-	Clayey silt	-	-
5503	Cut	>1.15	0.68	Cut of linear ditch	-	Prehistoric/Roman
5504	Fill	>1.15	0.68	Siltry clay fill of ditch (5503)	Flint and burnt flint	Prehistoric/Roman
5505	Fill	>1.15	0.27	Sandy clay fill of ditch (5503)	Flint and burnt flint	Prehistoric/Roman
5506	Layer	-	0.15	Silty clay	-	-
5507	Layer	-	0.5	Blackish brown peat	-	-
5508	Wood	>1.60	0.6	Wood (tree trunk)	-	-
5509	Cut	1.5	0.5	Cut of oval pit	-	Prehistoric
5510	Fill	1.5	0.5	Fill of oval Pit (5509)	Flint, burnt flint and fired clay	Prehistoric
5511	Cut	1.2	0.1	Cut of N-S linear ditch	-	Prehistoric
5512	Fill	1.2	0.1	Fill of Linear ditch (5511)	Burnt flint	Prehistoric
5513	Fill	-	-	Fill of ditch / pit terminus	Pot and tile	Post-medieval
5514	Cut	1.64	0.11	Cut of oval shaped pit	-	Prehistoric
5515	Fill	1.64	0.11	Fill of oval shaped pit	Flint and burnt flint	Prehistoric
5516	Layer	-	0.5	Silty clay channel fill	-	-
5517	Layer	-	-	Clayey sand	-	-
5518	Layer	-	-	Silty sand	-	-
5519	Cut	1	0.1	Cut of oval shaped pit	-	Prehistoric
5520	Fill	1	0.1	Fill of pit 5519	Burnt flint	Prehistoric
5521	Layer	-	-	Organic silty clay/peat	-	-

Trench 6

General description

Trench 6 contained no archaeological features or deposits. It came down on to weather sands to the east and floodplain peats in the west.

Orientation

NE-SW

Avg. depth (m)

0.70-2.00

Width (m)

1.6

Length (m)

30

Contexts

context no	type	Width (m)	Depth (m)	comment	finds	date
5600	Layer	-	0.26	Topsoil	-	-
5601	Layer	-	0.25	Silty clay	-	-
5602	Layer	-	0.20	Silty clay	-	-



5603	Layer	-	0.5	Silty peat	-	-
5604	Layer	-	1	Silty clay	-	-
5605	Layer	-	-	Fine sandy silt	-	-
5606	Layer	-	-	Sandy silt	-	-
5607	Layer	-	-	Clay	-	-



Trench 7						
General description				Orientation	NE-SW	
Trench contained a single, irregular linear feature [8800.004], which contained some worked flint. These are likely residual as no other early features were found during the works. Natural was a light reddish-brown sandy clay with flint inclusions.				Avg. depth (m)	0.70-2.50	
				Width (m)	1.6	
				Length (m)	30	
Contexts						
context no	type	Width (m)	Depth (m)	comment	finds	date
8800.001	Layer	-	0.33	Topsoil	-	-
8800.002	Layer	-	0.54	Subsoil	-	-
8800.003	Layer	-	-	Natural	-	-
8800.004	Cut	0.5	0.11	Cut of ditch	-	-
8800.005	Fill	0.5	0.11	Single fill of ditch	Flint	late Mesolithic/early Neolithic
Trench 8						
General description				Orientation	NE-SW	
Trench 8 was excavated to half its length to investigate the weathered sand deposits. One N-S linear ditch was identified on the surface of these deposits.				Avg. depth (m)	0.80-2.0	
				Width (m)	1.6	
				Length (m)	15	
Contexts						
context no	type	Width (m)	Depth (m)	comment	finds	date
5800	Layer	-	0.25-0.30	Topsoil	-	-
5801	Layer	-	0.6	Alluvial subsoil	-	-
5802	Layer	-	0.7	Silty peat	-	-
5803	Cut	1	0.4	Cut of N-S linear ditch	-	-
5804	Fill	-	0.2	Primary fill of ditch [5804]	-	Prehistoric
5805	Fill	-	0.2	Secondary fill of ditch [5804]	-	Prehistoric
5806	Cut	-	4	Cut of sewage pipe trench	-	Modern
5807	Fill	-	4	Fill of sewage pipe trench	-	Modern
5808	Layer	-	-	Fine weathered silty sand	-	-
Trench 9						
General description				Orientation	E-W	
Trench 9 was located on the opposite side of the Beam River and revealed a floodplain sequence of alluvium overlying peat and fluvial sands. Five post-medieval ditches and one possible pit were dug into the surface of the upper alluvial material, which was sealed by modern ground make-up deposits.				Avg. depth (m)	0.70-2.10	
				Width (m)	1.6	
				Length (m)	30	
Contexts						
context	type	Width	Depth	comment	finds	date



Trench 9						
no		(m)	(m)			
5900	Layer	-	0.15	Topsoil	-	Modern
5901	Layer	-	0.4	Made ground	-	Modern
5902	Layer	-	-	Alluvial clay	-	-
5903	Cut	-	0.29	N-S linear ditch	-	-
5904	Fill	-	-	Fill of ditch 9503)	-	Post-medieval/modern
5905	Cut	0.85	0.14	NW-SE linear ditch	-	Post-medieval/modern
5906	Fill	0.85	0.14	Silty clay fill of ditch (5905)	Glass	Post-medieval/modern
5907	Cut	0.61	0.08	NE-SW linear ditch	-	Post-medieval/modern
5908	Fill	0.61	0.08	Secondary fill of ditch (5909)	-	Post-medieval/modern
5909	Cut	1.12	0.5	Cut of oval pit	-	Post-medieval/modern
5910	Fill	1.12	0.17	Silty clay fill of (5909)	Pot	Post-medieval/modern
5911	Fill	1.12	0.33	Lower fill of [5909]	-	Post-medieval/modern
5912	Layer	-	0.13	Peat	-	-
5913	Layer	-	0.9	Silty clay alluvium	-	-
5914	Layer	-	-	Silty clay alluvium	-	-
5915	Fill	1.65	0.2	Fill of ditch	Pot	Post-medieval/Modern
5916	Cut	1.65	-	N-S linear ditch	-	Post medieval/modern



APPENDIX B. FINDS REPORTS

Pottery report*By John Cotter*

- 4.4.1 A total of 7 sherds of pottery weighing 92 g. were recovered from four contexts. This is all of post-medieval date apart from three joining scraps of pottery which may be prehistoric. All the pottery was examined and spot-dated during the present assessment stage. For each context the total pottery sherd count and weight were recorded on an Excel spreadsheet, followed by the context spot-date which is the date-bracket during which the latest pottery types in the context are estimated to have been produced or were in general circulation. Comments on the presence of datable types were also recorded, usually with mention of vessel form (jugs, bowls etc.) and any other attributes worthy of note (eg. decoration etc.).
- 4.4.2 The possible prehistoric sherd (Context 5316, now three joining scraps) is very small, worn and shapeless. It has a soft grey fabric with moderate coarse organic temper and sparse-moderate coarse angular flint, mostly white. On the basis of the flint it is probably of prehistoric date, although an early Anglo-Saxon date cannot be ruled out. One context produced a post-medieval red earthenware jar rim dated to c 1675-1825. Two contexts produced only a single sherd each of 19th-century 'china'. Further details are recorded in the spot-dates spreadsheet. No further work on the assemblage is recommended.

Context	Spot-date	No.	Weight	Comments
5316	Prehistoric?	3	2	1 vess/ sherd, now 3 crumbs. Worn rounded scrap of soft grey brickearthy fabric with some organic temper and moderate coarse angular flint - the latter suggests Prehistoric rather than Anglo-Saxon, but uncertain
5513	c1675-1825	2	86	PMR Post-med red earthenware, Woolwich Ferry-type. Jar rim, sub-collared, showing Dutch-style influences. Clear orange glaze int & ext. Worn on int edge - prob from use. Prob 18C. Joining sherds
5906	19C	1	2	ENPO English porcelain. Dish/bowl rim
5915	Mid 19C	1	2	REFW Refined white earthenware bs with purple stencilled dec or sponged dec
TOTAL		7	92	



Flint report

By Geraldine Crann

4.4.3 A total of 15 flints were recovered from 6 contexts.

Context	Description	Date
5316	Natural, can be discarded.	
5504	Tertiary flake, on dark mottled flint with large inclusions.	
5504	Secondary flake with hinge termination on fine pale brown flint. Cortex 10%.	
5504	Tertiary flake on fine dark grey flint.	
5510	Secondary flake with hinge termination on mottled brown flint. Cortex 10%.	
5510	Shattered piece, one edge patinated.	
5512	Secondary flake on fine pale brown flint, possible usewear along distal edge	
5512	Tertiary flake on fine dark mottled flint, end snapped in antiquity.	
5512	Clark's type C.1.a microlith on fine dark grey mottled flint.	Mesolithic.
5512	Burin spall? or shattered piece on mottled flint.	
5512	Secondary flake on fine brown mottled flint, possible usewear on proximal dorsal edge.	
5512	Small flake on fine mottled pale brown flint.	
5704	Tertiary flake on pale grey chert.	
5805	Core trimming element on mottled greenish brown flint, 20% cortex. Likely to be from same cobble as 5805 below	
5805	Primary flake on mottled greenish brown flint, cortex 35%. Likely to be on same cobble as 5805 above.	

4.4.4 All the flint, with the exception of the Clark's type C 1.a microlith from context 5512, can be classified as undatable prehistoric debitage flakes or shattered pieces. The microlith potentially gives an early Mesolithic date to the flint from context 5512, which forms a collection of small debitage flakes on fine flint raw material, probably local river gravels. With the exception of the 2 flints from context 5805, the flakes from all contexts are relatively small, generally accepted as an indication that they are earlier rather than later prehistoric. The two larger flakes from context 5805 are on a noticeably different raw material and are possibly from the same cobble. Although all the flint is likely to be re-deposited it is all in relatively fresh condition.

4.4.5 The small quantities of worked flint recovered limits the interpretation of the material, beyond illustrating a human presence in the local area during the Mesolithic and earlier prehistoric period.

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The ceramic building material (CBM)

by John Cotter

- 4.4.6 The CBM assemblage comprises 2 pieces weighing 2002 g., from 2 contexts. The assemblage was examined and spot-dated during the present assessment stage following standard Oxford Archaeology procedures and the data recorded on an Excel spreadsheet. As usual, the dating of broken fragments of ceramic building material is an imprecise art and spot-dates derived from them are necessarily broad and should therefore be regarded with caution. The pieces include a worn (probable) Roman imbrex (5106), and a post-medieval peg tile probably datable to the 16th-19th centuries. Fuller details may be consulted in the spreadsheet. No further work on the assemblage is recommended.

Context	Spot-date	No.	Weight	Comments
5106	Roman	1	128	Probably Roman (P Booth thinks so too). Curved imbrex end in v sandy orange fabric. Worn
5915	16-19C?	1	72	Edge frag. Prob post-med peg tile (13mm thick) in light orange fabric. Rough underside. Fairly fresh. Not impossibly Roman though
TOTAL		2	200	

Fired clay

by John Cotter

- 4.4.7 A single, small, very worn piece of fired clay (weight 11 g.) was recovered from Context (5512). This is in a soft orange-brown sandy fabric with light grey patches. The piece is well-rounded and has completely lost its original surfaces and so is basically undatable, although it is probably quite ancient. No further work recommended.

Burnt unworked flint

by Geraldine Crann.

- 4.4.8 A total of 62 fragments of burnt, unworked flint, weighing 829g, were recovered from 9 contexts on site.



Context	Description
5314	1 piece, weight 14g
5504	7 pieces, total weight 127g
5507	3 pieces, total weight 40g
5510	7 pieces, total weight 266g
5512	25 pieces, total weight 221g
5515	2 pieces, weight 30g
5518	1 piece, weight 8g
5804	9 pieces, total weight 35g
5805	8 pieces, total weight 92g

- 4.4.9 No further action is recommended in respect of this assemblage which, having been recorded, may be discarded.

Marine shell.

by Geraldine Crann.

- 4.4.10 A total of 6 pieces of oyster shell were recovered from context 5513 on the site. These were 1 upper and 1 lower shells and four un-attributable fragments.
- 4.4.11 The assemblage is of low potential and requires no further work.



APPENDIX C. ENVIRONMENTAL REPORTS

Waterlogged and charred plant remains

by Julia Meen

Introduction

4.4.12 Three bulk soil samples were taken for the recovery of charred plant remains (CPR), waterlogged plant remains (WPR) and artefacts. Sample <5000> (5512) was taken from a prehistoric shallow ditch which was noted in the field to contain both frequent worked and burnt flint, and was thought to be potentially dried out waterlogged. Sample <5002> (5515) was taken from a prehistoric pit filled with silty peat, for the recovery of CPR and potentially for dried out WPR. Sample <5006> (5316) was taken for the recovery of CPR, from a deliberate backfill of a posthole which was noted to contain fragmentary pottery .

AIMS

4.4.13 Sampling was undertaken to:

- Record the range of soils and sediments on site.
- Determine whether ecofacts and environmental evidence (such as plant remains, animal bone, human bone and molluscs) are present.
- Determine the quality, range, state and method of preservation of any ecofactual evidence.
- Recover and identify any small artefacts.
- Make further recommendations about sampling for future excavations at the site.

Method

4.4.14 Sample <5002>, recorded as possibly containing dried out waterlogged material, was inspected and found to be almost dry, with little potential for waterlogging apparent after an initial assessment, and thus was processed for the recovery of CPR by water flotation using a modified Siraf style flotation machine. The flot was collected on a 250µm mesh and the heavy residue sieved to 500µm, and both were dried in a heated room, after which the residue was sorted by eye for artefacts and ecofactual remains. The flot was scanned for charred plant remains using a binocular microscope at approximately x15 magnification. A 1 litre sub-sample of sample <5000> was hand-floated for the recovery of WPR and the flot and the residue were collected separately on 250µm meshes and stored in water-filled containers in cold storage, with the remaining sediment retained. Sample <5006>, although taken for the recovery of CPR, was inspected and found to be a wet clay with woody fragments and no visible charred material, and was therefore hand-floated for waterlogged plant remains in the same manner as sample <5000>. Both waterlogged flots were scanned for WPR and insects using a binocular microscope at approximately x15 magnification. Identifications were made with guidance from Dr. Wendy Smith but without reference to Oxford



Archaeology's reference collection and therefore, should all be seen as provisional. Nomenclature for the plant remains follows Stace (1997).

Results

- 4.4.15 Sample <5000> (105) was a brown clayey, sandy silt, with a fine sand content of approximately 10%. It was almost dry, compacted into irregular, friable blocks, with occasional dry, hard, irregular blocks of compacted silt. There were few inclusions, with occasional small pebble sized flints. 1L was processed for the recovery of WPR and 9L was retained in case further analysis was required.
- 4.4.16 Sample <5002> was an almost dry, fairly soft, firm sandy loam, a mix of approximately 40% dark greyish brown and 60% light brownish grey. There were very few inclusions, with one rounded pebble and one burnt flint noted, and little residue was produced. Although listed on the sample register as possibly containing dried out waterlogged material there was no obvious sign of this when the sediment was inspected. 35L was processed for the recovery of CPR, bones and artefacts.

Bones and artefacts

- 4.4.17 Finds from the samples are detailed in Table 2. The small quantity of residue recovered from sample <5002> produced one burnt flint and one snail. No bones or artefacts were recovered from the hand-flotation of samples <5000> or <5006>.

Plant Remains

- 4.4.18 Table 1 summarises the assessment results for charred plant remains (CPR) from sample <5002> and of waterlogged plant remains (WPR) from samples <5000> and <5006>.
- 4.4.19 The CPR flot of sample <5002> was dominated by grass and plant stems, and contained a large number of fungal bodies. Charcoal was present but in low quantity, and only occasionally reached a size exceeding 2mm. Rare seeds were present, none of which had been preserved by charring, and included isolated examples of nettle (*Urtica* sp.), goosefoot (*Chenopodium* sp.), possible sedge (*Carex* sp.), and two examples of bramble (*Rubus* sp.). Where these seeds were fragmented they could be seen to contain a pale, intact inner structure, suggesting that they are modern rather than dried out waterlogged; the presence of occasional worm case fragments is also suggestive of a modern origin for at least part of this assemblage. Abundant non-charred woody fragments were also present in this sample.
- 4.4.20 The WPR flot of sample <5000> also contained abundant fungal bodies, and was dominated by roots. Worm cases were noted infrequently and one possible fragment of *Coleoptera* case was present.
- 4.4.21 The WPR flot of sample <5006> contained abundant wood fragments, stems, and root material. One fragment of moss was observed which looked to be modern, and the presence of worm cases further suggests that much of the material may be modern in origin. A single seed was observed and rare charcoal flecks were present.

DISCUSSION AND RECOMMENDATIONS

- 4.4.22 Although very little charred material was recovered from any of the three samples taken from this site, other samples recovered from excavations in this area demonstrate that the environment is suitable for the preservation of CPR, and suggests that deeper



features may have considerable potential for the recovery of charred plant remains which would relate directly to the prehistoric economy of this area.

- 4.4.23 Although when sampled in the field it was noted that the features may contain dried-out waterlogged fills, none of the samples produced WPR assemblages likely to be of interpretative value, especially as the few seeds which were present looked to be modern. Although woody material was present, it is not possible to conclusively say whether this is dried out ancient material but the fact that it was found in association with material such as worm cases, roots and apparently modern seeds (it was noted during excavation that it was difficult to prevent surrounding modern material from contaminating the sample) strongly suggests that the majority of this material is modern. Other excavations at Beam Washlands have, however, encountered waterlogged deposits (Pelling 2007) so while the the samples assessed during this evaluation may not contained dried out-waterlogged seeds, the possibility of encountering waterlogged deposits should be borne in mind during any subsequent excavations, particularly due to the location of the site and the presence of peaty fills.
- 4.4.24 Pollen has been recovered in interpretable quantities from excavations at Beam Washlands (Huckerby 2007) and this should be borne in mind should suitable deposits (buried soils or waterlogged deposits) be discovered.
- 4.4.25 If further excavations are carried out, standard 30-40L bulk samples and specialist samples for waterlogged plant remains and pollen (if appropriate) should be taken from a range of potentially datable features across the site and should be in accordance with the most recent sampling guidelines (eg. Oxford Archaeology, 2005 and English Heritage, 2002).

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Table C.2. Summary of flots Table 1: Assessment of charred and waterlogged plant remains from Beam Washlands, Dagenham, BMV05

Sample No	Context No	Feature Type	Sample Volume (L.)	Date/ Phase	Flot vol (ml)	Grain	chaff	weeds	other CPR/WPR	Insects	Charcoal	Molluscs	Comments on CPR / WPR	CPR / WPR Potential
5000	5512	Ditch	1	Prehis toric	20				++				c. 50% of waterlogged flot scanned. Abundant fungal bodies present. Occasional worm cases and one possible <i>Coleoptera</i> fragment noted. Abundant roots and rare woody fragments also present.	C
5002	5515	Pit	35	Prehis toric	150			+	+++		++		c. 15% of flot scanned. Abundant fungal bodies present. Rare seeds including 2 bramble (<i>Rubus</i> sp) plus isolated examples of goosefoot (<i>Chenopodium</i> sp), nettle (<i>Urtica</i> sp.) and possible sedge (<i>Carex</i> sp.), although where sedge and goosefoot were fractured they could be seen to contain an intact inner structure, suggesting they are modern. Low quantity of charcoal, only occasionally greater than 2mm in size. Occasional worm cases. Abundant woody fragments and grass stems.	C
5006	5316	Posthole	1	?	30			+	+++		+		c. 50% of flot scanned. Abundant woody material, plant stems and roots. One seed noted and rare charcoal flakes. Occasional worm cases and one fragment of moss, both likely to be modern.	C

Table 2: Assessment of finds from Beam Washlands, Dagenham, BMV05

SAMPLE NUMBER	CONTEXT NUMBER	Snails	Burnt Flint
5000	5512	-	-
5002	5515	1	1
5006	5316	-	-

Key: + = <5 ++ = 5-10 +++ = 10-25 ++++ = 25-50



APPENDIX D. BOREHOLE LOGS



APPENDIX E. SUMMARY OF SITE DETAILS

Site name: Beamwashlands, Dagenham, Essex.

Site code: BMV 05

Grid reference: TQ 5033 8369

Type: Evaluation

Date and duration: Fieldwork occurred between the of June 2010

Area of site: 53 ha

Summary of results: A total of 9 trenches and 3 boreholes, were excavated and recorded across the floodplains of the Wantz Stream and Beam River priori to creation of a new habitat creation project . The evaluation identified additional prehistoric activity near to that discovered during the previous works, although it is not yet known whether these are part of the same activity. The evaluation also identified a continuation of the Romano British activity area identified during the previous excavations.

Location of archive: The archive is currently held at OA, Janus House, Osney Mead, Oxford, OX2 0ES, and will be deposited with the Museum of London in due course, under the following accession number: BMV 05

GEOARCHAEOLOGICAL SERVICES



FIELD SEDIMENT LOGGING SHEET

SITE CODE: BMV05

NG EASTING: 550167.736

DATE: 20.07.2010

BH NO: OA11

ELEVATION: 0.52

NG NORTHING: 183710.634

LOGGER: CH

Depth	Lithology	Cores	Description
0.00			0.00, 0.23 Very dark grey friable to compact homous rich silt, plentiful grass roots. (TOPSOIL)
0.50			0.23, 0.81 Very dark brown mottled reddish brown (20%) firm organic rich clayey silt, black organic silt band (60mm) at .4m. (ALLUVIUM)
1.00			0.81, 1.00 Very dark brown organic silt, pseudofirbous. (PEAT SEQUENCE)
1.50			1.00, 1.11 Very dark brownish grey soft organic silt, small black organic inclusions (10%). (PEAT SEQUENCE)
			1.11, 1.47 Dark brown (quickly turning black) moderately firm pseudofibrous organic silt. (PEAT SEQUENCE)
			1.47, 1.88 Very dark olive soft organic rich silt, slightly clayey, small black organic inclus. (25%). (PEAT SEQUENCE)
2.00			1.88, 2.00 Black firm organic silt, pseudofibrous, small organic inclus. (wood, 30%). (PEAT SEQUENCE)
			2.00, 2.06 Light greyish brown poorly sorted sand with plant detritus (40%). (PEAT SEQUENCE)
2.50			2.06, 2.75 Black soft organic silt, pseudofibrous, grey fine sand at 2.6 to 2.7m. (PEAT SEQUENCE)
			2.75, 2.91 Very dark greyish brown fine to medium sand (40%) with small to medium subrounded pebbles. (FLUVIAL SANDS)
3.00			2.91, 3.40 Greenish grey soft silty clay, traces of fine sand at 3.17 to 3.24m, fine blackish organic inclus. (1%). (FLUVIAL SANDS)
3.50			3.40, 3.47 Brownish grey firm organic rich sandy silt. (FLUVIAL SANDS)
			3.47, 4.00 Bluish grey firm silty clay .(FLUVIAL SANDS)
4.00			4.00, 4.32 Dark bluish grey with dark brownish grey bands (30mm) firm silty clay with a fine sandy silt band (30mm) at 4.03m. (FLUVIAL SANDS)
4.50			4.32, 4.74 Dark greenish grey firm silty and sandy clay. (FLUVIAL SANDS)
5.00			4.74, 5.00 Very dark olive grey very firm silty clay, weak fine stratification, mica present. (LONDON CLAY)

NOTES:

Voids at 0.0 to 0.23, 1.00 to 1.12 and 2.00 to 2.16m

GEOARCHAEOLOGICAL SERVICES



FIELD SEDIMENT LOGGING SHEET

SITE CODE: BMV05

NG EASTING: 550167.736

DATE: 20.07.2010

BH NO: OA11

ELEVATION: 0.52

NG NORTHING: 183710.634

LOGGER: CH

Depth Lithology Cores Description

5.00			5.00, 5.50 Very dark olive grey very firm silty clay. (LONDON CLAY)
5.50			5.50, 6.00 Very dark grey very firm silty clay. (LONDON CLAY)
6.00			

NOTES:

Voids at 0.0 to 0.23, 1.00 to 1.12 and 2.00 to 2.16m

GEOARCHAEOLOGICAL SERVICES



FIELD SEDIMENT LOGGING SHEET

SITE CODE: BMV05

NG EASTING: 550483.786

DATE: 20.07.2010

BH NO: OA10

ELEVATION: 0.8

NG NORTHING: 183439.736

LOGGER: CH

Depth Lithology Cores Description

0.00	[Lithology pattern: horizontal dashes]		0.00, 0.32 Dark greyish brown firm clayey silt, plentiful grass roots. (TOPSOIL)
0.50	[Lithology pattern: horizontal dashes]		0.32, 0.58 Dark greyish brown firm to soft clayey silt with small to medium pebbles (10%) and pockets of sand (5%). (MADE GROUND).
1.00	[Lithology pattern: horizontal dashes]		0.58, 0.96 Olive grey mottled yellowish brown (15%) (top 0.04m darker - palaeosol?) soft silty clay, abrupt lower contact. (ALLUVIUM)
1.50	[Lithology pattern: diagonal lines]		0.96, 1.58 Black soft organic rich silt, clear contact. (PEAT SEQUENCE)
2.00	[Lithology pattern: diagonal lines]		1.58, 1.69 Very dark grey soft organic rich silt, small blackish peat clasts (15%) include. (PEAT SEQUENCE)
2.50	[Lithology pattern: diagonal lines]		1.69, 1.96 Dark grey soft silty clay, small organic inclusions (wood, 10%). (PEAT SEQUENCE)
3.00	[Lithology pattern: diagonal lines]		1.96, 2.15 Greenish grey firm fine sand, small brown organic inclusions (10%) (FLUVIAL SANDS)
3.50	[Lithology pattern: diagonal lines]		2.15, 2.60 Dark grey mottled light olive brown (30%) soft sandy silt, slightly clayey, round wood inclusions (5%). (FLUVIAL SANDS)
4.00	[Lithology pattern: diagonal lines]		2.60, 3.50 Olive grey mottled dark yellowish brown (20%) soft fine to medium clayey sand, organic inclusions, wood (10%). (FLUVIAL SANDS)
3.50	[Lithology pattern: diamonds]		3.50, 3.74 Dark greyish brown fine to medium sand (40%) and small to medium subangular pebbles of flint (60%). (PLEISTOCENE GRAVEL)
4.00	[Lithology pattern: diamonds]		3.74, 3.86 Olive brown loose medium sand. (PLEISTOCENE GRAVEL)
4.00	[Lithology pattern: diamonds]		3.86, 4.00 Greyish brown medium to coarse sand (30%) and small to large subangular pebbles of flint (70%). (PLEISTOCENE GRAVEL)

NOTES:
NO VOIDS

GEOARCHAEOLOGICAL SERVICES



FIELD SEDIMENT LOGGING SHEET

SITE CODE: BMV05

NG EASTING: 550156.703

DATE: 20.07.2010

BH NO: OA12

ELEVATION: 1.8

NG NORTHING: 183661.218

LOGGER: CH

Depth	Lithology	Cores	Description
0.00			0.00, 0.06 Very dark brown soft crumbly humic silt, plentiful grass roots. (TOPSOIL)
0.06			0.06, 0.22 Dark brown (quickly turning black) soft pseudofibrous organic silt. (ALLUVIUM)
0.22			0.22, 0.37 Dark brown becoming yellowish brown firm silty clay . (ALLUVIUM)
0.37			0.37, 1.36 Dark brown soft pseudofibrous organic silt, firm organic rich silty clay (0.1m) at 0.60. (PEAT SEQUENCE)
1.36			1.36, 1.42 Dark greyish brown soft organic rich silt. (PEAT SEQUENCE)
1.42			1.42, 1.48 Grey loose fine sand. (FLUVIAL SANDS)
1.48			1.48, 1.78 Olive grey soft to firm clayey silt, slightly sandy, small brown organic inclus. (5%). (FLUVIAL SANDS)
1.78			1.78, 1.88 Pale greenish grey loose silty fine sand. (FLUVIAL SANDS)
1.88			1.88, 2.32 Dark greenish grey, mottled bluish grey (15%) soft clayey fine to medium sand. (FLUVIAL SANDS)
2.32			2.32, 2.98 Dark greyish olive loose fine to medium sand, traces of silt and clay, blackish organic inclusions at 2.45m (20%). (FLUVIAL SANDS)
2.98			2.98, 4.00 Brownish yellow loose fine to medium sand with traces of silt. (FLUVIAL SANDS)

NOTES:

Void at 0 - 0.2m



Scale 1:50,000

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Figure 1: Site location

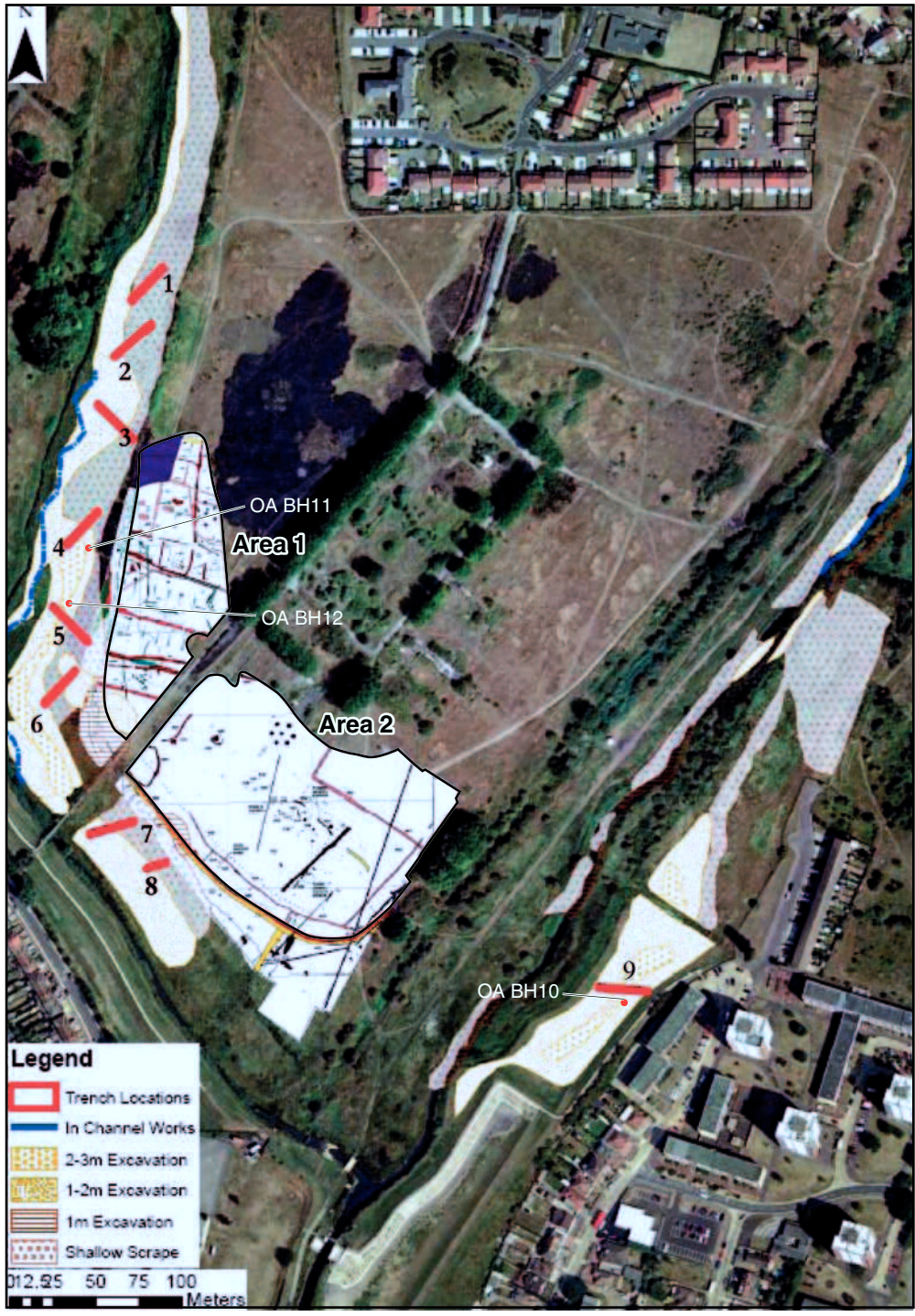


Figure 2: Trench and borehole location plan, with areas of proposed impact

X:\BMVEV2_Dagenham\Washlands\Eval\010\Geomatics\02 CAD\001\current\BMVEV2_BMVEV2_Dagenham_Beam_Washlands_040610.dwg (Figure 2 A4)***matt.bradley* 20 Jul 2010



CHECKED BY: MB*HK*190710

0 100 m
Scale at A4 1:2000

Figure 3: Geology and palaeotopography

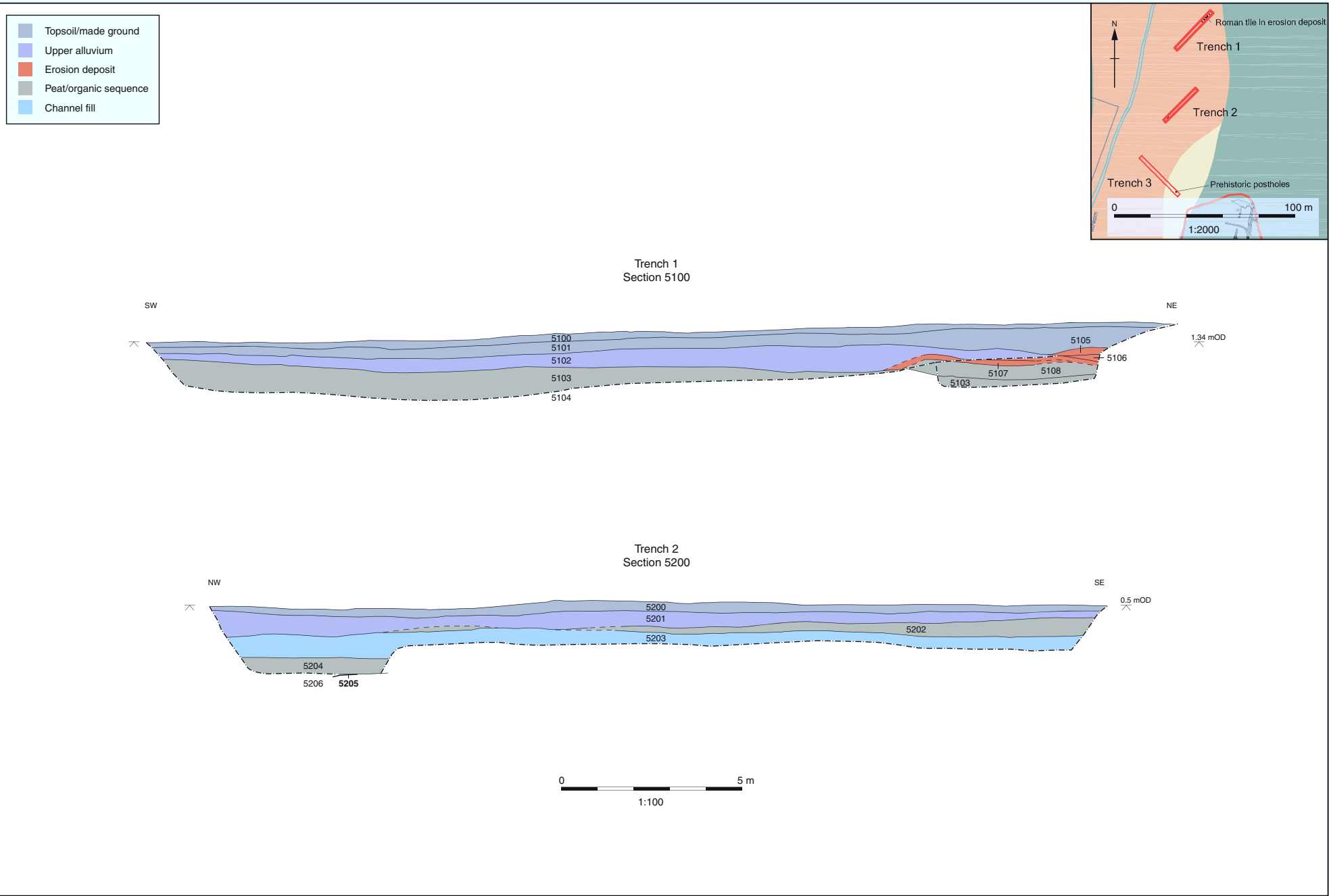


Figure 4: Sections of trenches 1 and 2

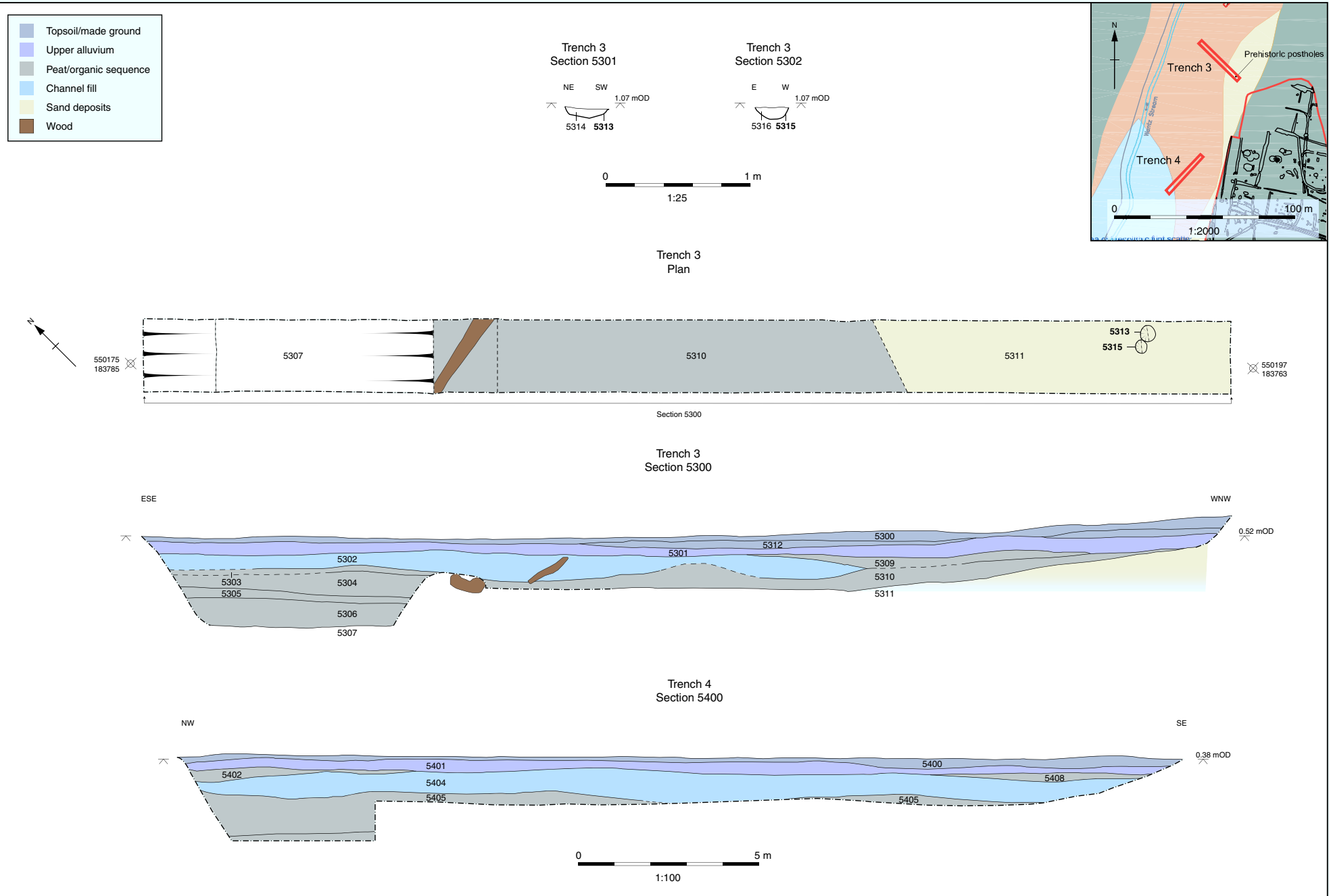


Figure 5: Sections and plan of trenches 3 and 4

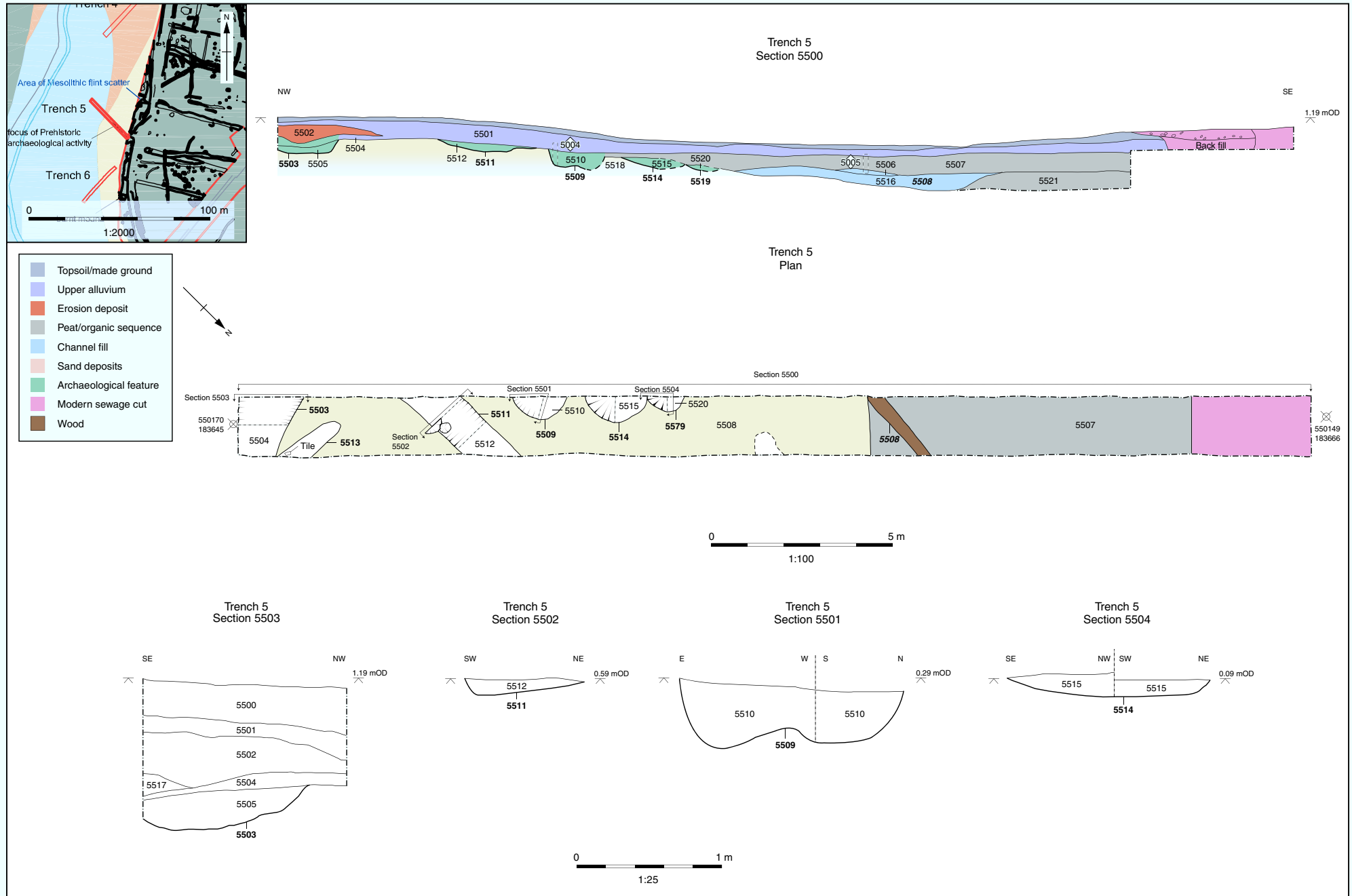
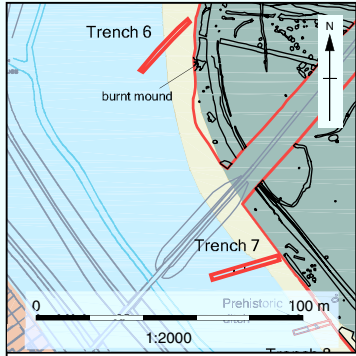


Figure 6: Sections and plan of trench 5



- Topsoil/made ground
- Upper alluvium
- Peat/organic sequence
- Sand deposits
- Modern sewage cut
- Wood

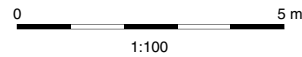
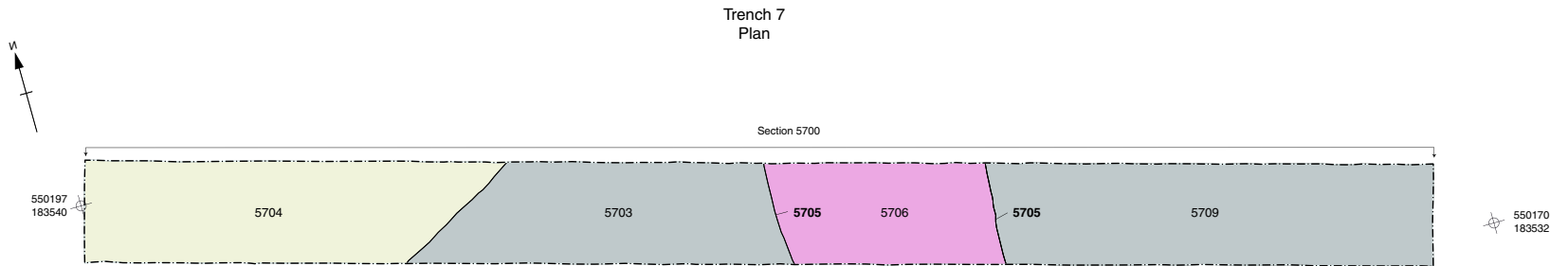
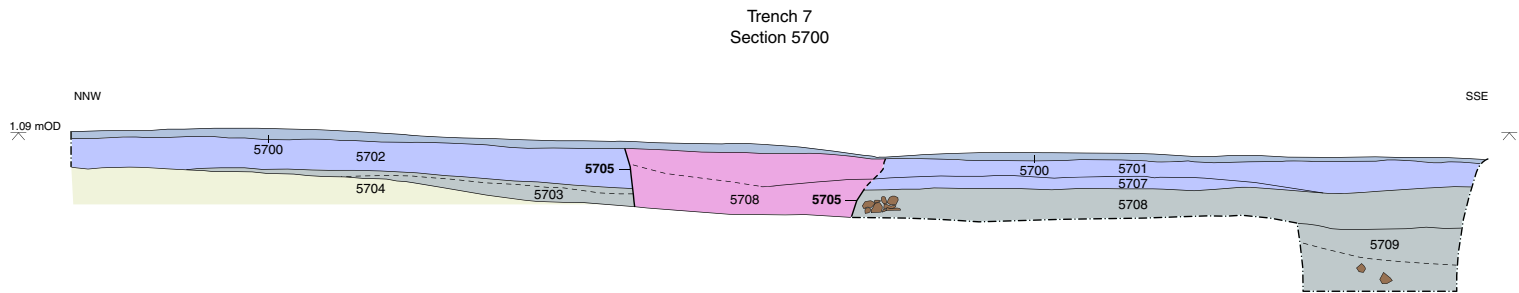
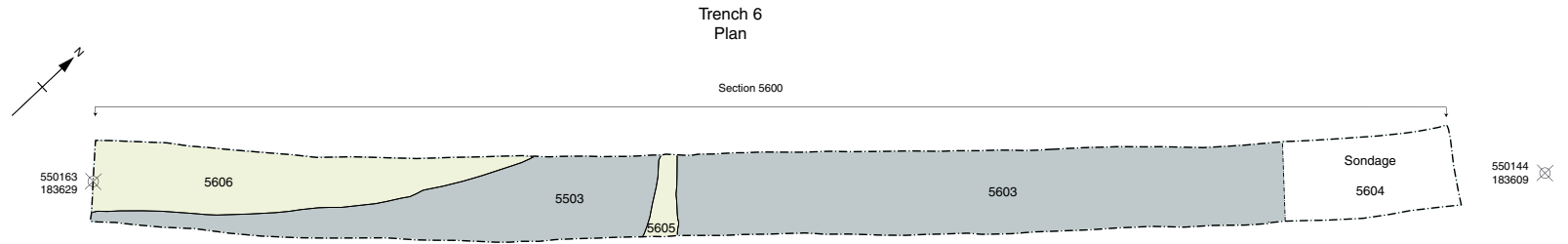
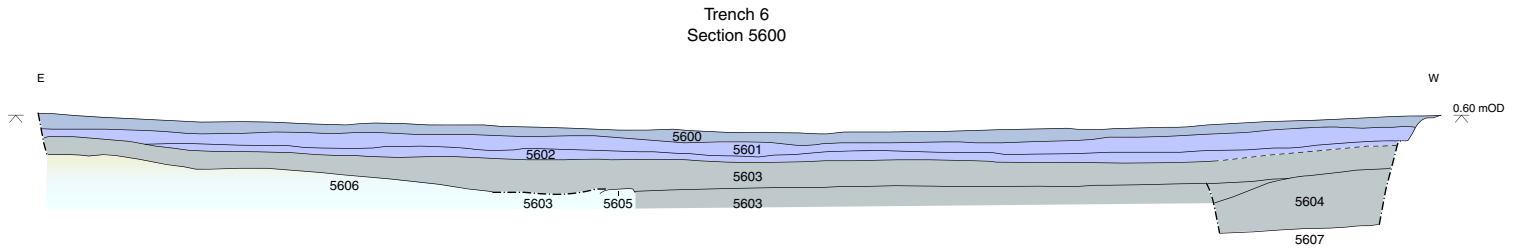


Figure 7: Trenches 6 and 7, plans and sections

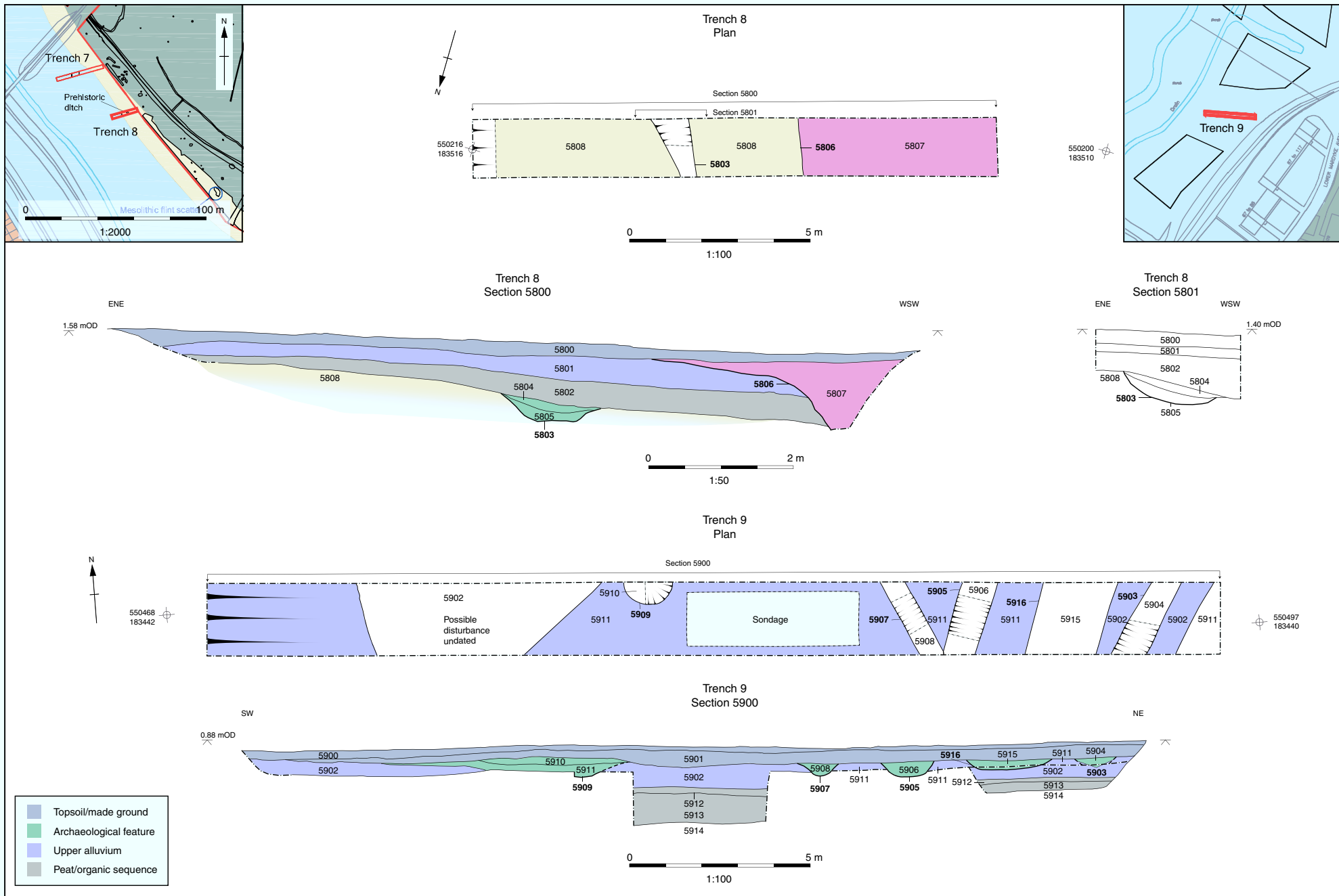
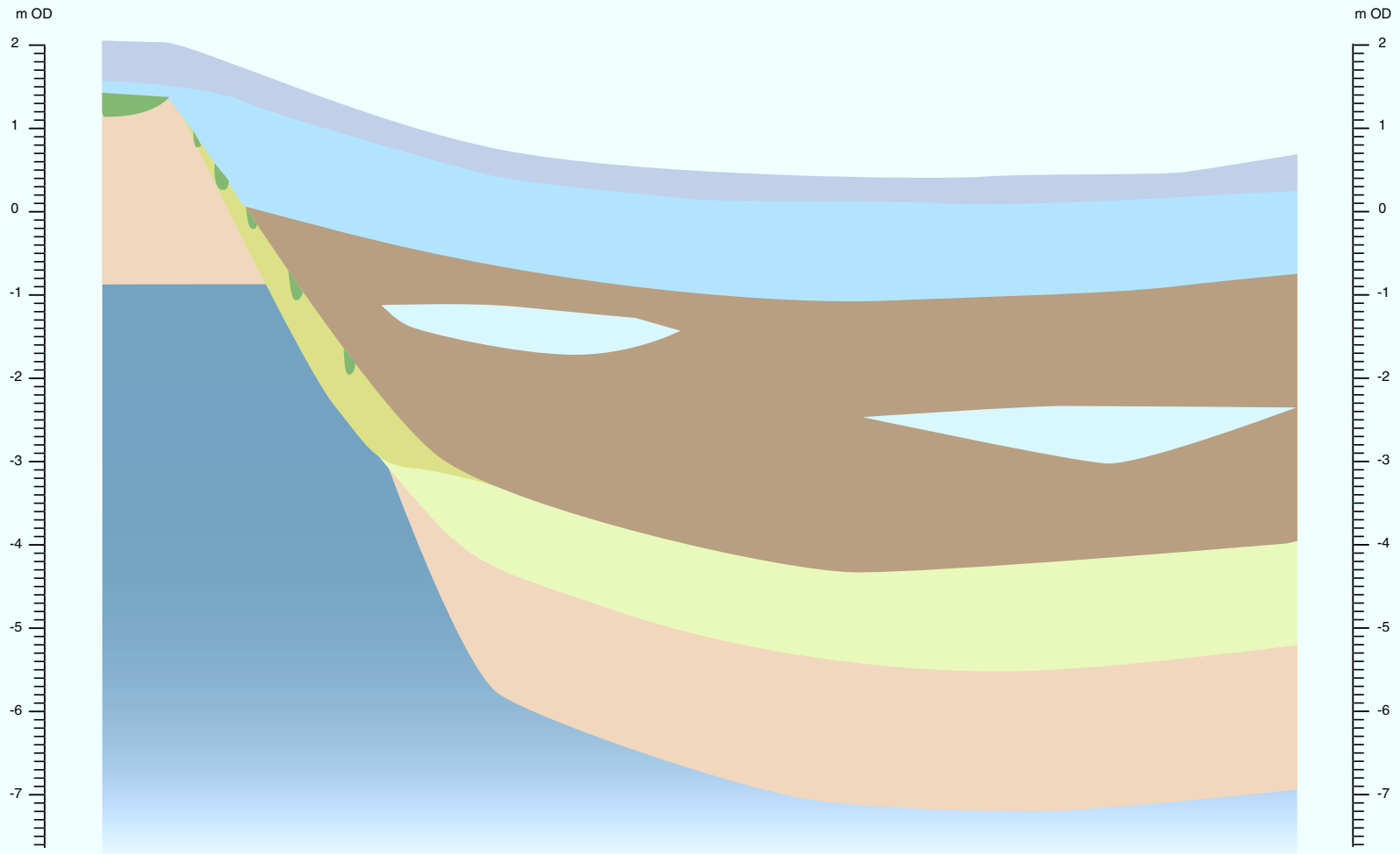


Figure 8: Sections and plans of trenches 8 and 9



- Made ground/topsoil
- Upper silty clay unit
- Main peat unit
- Channel deposits
- Weathered sands
- Lower sandy silt unit
- Sandy gravels and bedrock
- London clay
- Archaeological feature

0 500 mm
1:10

Figure 9: Interpretative floodplain cross-section



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