Deepham's Sewage Works Edmonton Greater London

Updated Geoarchaeological Deposit Model

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Deepham's Sewage Treatment Works, Edmonton
London Borough of Enfield

Updated Geoarchaeological Deposit Model

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BY

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In August 2010 Oxford Archaeology South (OAS) was commissioned by Thames Water Utilities Ltd to update the geoarchaeological deposit model for Deepham's Sewage Treatment Works, Edmonton, Greater London. The Site lies partly on the floodplain, just to the east of the River Lea, in close proximity to William Girling reservoir. Early prehistoric deposits have previously been identified on the Site, preserved under parts of the Sewage Works.

Following the recommendations made in the original desk-based assessment (Lewis 1995) and in consultation with Thames Water and the Greater London Archaeological Advisory Service (GLAAS), the Site deposit model was updated and extended to cover the entire Sewage Works area. The model was developed using data from 112 boreholes and test pits, a proportion of which was not available to the original 1995 study.

The model demonstrates a considerable depth of Holocene alluvium (up to 3m in thickness) is preserved on the lower floodplain to the south east of the Site. This alluvium predominantly comprises minerogenic silt clays, although locally a series of intercalated organic silt and peat units were also noted. The terrace gravels rise up in the west, with an extremely shallow covering of alluvium and brickearth. Of note is an alluvial deposit identified within the Pleistocene gravel on the floodplain which may equate to the Lea Valley Arctic Beds.

A preliminary chronological model of sediment formation is proposed, combined with a zoned map of archaeological potential. This zonation broadly describes the potential of different areas of the Site to contain and preserve archaeological and palaeoenvironmental remains. Overall the south and east of the Site is shown to have high potential to preserve early prehistoric remains and deposits buried within the alluvium. Further to the west, disturbance associated with the construction of the sewage works appears to have removed much of the original soils and in places disturbance extends to the surface of the terrace gravels. Within these areas of Site, only the more substantial archaeological features and deposits, comprising the deepest ditches and pits, may survive.

Deepham's Sewage Treatment Works, Edmonton
London Borough of Enfield

Updated Geoarchaeological Deposit Model

1 INTRODUCTION

1.1 General

1.1.1 In August 2010 Oxford Archaeology South (OAS) was commissioned by Thames Water Utilities Ltd to produce an updated geoarchaeological deposit model for Deepham's Sewage Works, Edmonton. The purpose of the deposit model was to facilitate understanding of the archaeological and palaeoenvironmental potential of the buried alluvial sequence. Multiple phases of geotechnical investigations have previously been conducted on the Site and although some of the earlier data was considered in the original desk-based assessment (Lewis 1995), a body of data that was unavailable during the original study, as well as work carried out since 1995, required consideration.

1.1.2 As part of the current study all available ground investigation data has been collated and inputted into suitable geological modelling software to produce a broad understanding of the extent and character of the sedimentary sequence and buried topography. The deposit model forms the basis from which potential impacts on the historic environment from further ground interventions/development can be assessed.

1.2 Topography and geology

1.2.1 The Site is located in the Deepham's Sewage Treatment Works, Pickett's Lock Lane, Edmonton, London Borough of Enfield (NGR: 535800 193500). The Site contains slurry lagoons surrounded by earthwork bunds, work's buildings and areas of hard standing and storage tanks (Fig. 1).

1.2.2 The Site is located on the western edge of the River Lea, a tributary of the River Thames, and extends across the former floodplain, which was reclaimed during the post-medieval period. The Site lies between +15 m and +10 m OD, sloping downward towards the river, in close proximity to the William Girling reservoir. The drift geology of the area is mapped as alluvium to the east and Kempton Gravel to the west, with brickearth to the northwest (BGS sheet 256 1:50,000). Previous geotechnical and archaeological investigations at the Site have identified a sequence of alluvium, marls, brickearth and peat deposits underlying thick deposits of made-ground.

1.2.3 The Quaternary history of the Lea Valley has been previously summarised in Gibbard (1994, 109-112). The floodplain gravel is known as the "Lea Valley Gravel", a member which includes the gravel and sand units that underlie the modern floodplain and the "Lower Terrace", 1-2 m above the floodplain on the western bank (Warren 1916). Contained within these gravels are organic rich deposits dating from the last glaciation known as the Lea Valley Arctic Beds (Gibbard 1994, 109).

1.3 Archaeological background

1.3.1 The archaeological potential of the Site has been outlined previously in Lewis (1995) and is summarised in the following sections.

Prehistoric (500,000BC – 43AD)

1.3.2 The prehistoric period is represented by relatively few findspots. The earliest remains include Palaeolithic and Mesolithic flint artefacts, mostly recovered from the floodplain or riverine locations.

1.3.3 By the Bronze Age there is evidence to suggest that large areas of London were being organised into co-axial field systems serviced by droveways and waterholes. On the floodplain of the Thames and its tributaries, such as the Rivers Lea and Colne, there is evidence for rising water-levels and correspondingly the construction of wooden trackways and platforms. Bronze Age finds from the area are more frequent and tend to be found in these water-lain or peat contexts. Some are clearly utilitarian tools lost by accident, others; a rapier, spearhead and shield, may reflect ceremonial or ritually placed deposits. Excavations to the north of the Site at Rammey Marsh, has also revealed a complex sequence of occupation and land division of Bronze Age date (Wessex Archaeology 1997).

1.3.4 Finds of prestigious metalwork from alluvial contexts during the Iron Age may represent a continuation of ritual offerings within water bodies. Pottery, coins and metalwork within the wider area would also suggest some settlement within the surrounding river terraces.

1.3.5 Low-lying floodplain locations were preferably settled and utilised in Mesolithic and Neolithic times (Clarke 1976). During later prehistory when flooding caused by rising water levels meant many floodplains in Southern Britain become uninhabitable (Lambrick and Robinson 1984), Bronze Age and Iron Age occupation is interpreted as retreating to the terrace edges and islands of the floodplain. A series of 'gravel islands' and the terrace edge have previously been mapped across the Site (Lewis 1995).

Roman (43AD – 450AD)

1.3.6 In the Roman period, *Londinium* (London) developed into an urban centre and later the provincial capital of Roman Britain (Perring and Bridgham 2000). A network of roads was constructed that connected London to the regional centres, such as *Lindum Colonia* (Lincoln). The Roman road to Lincoln runs just to the west of the Site.

Roman remains are well represented within the area surrounding the Site with the emphasis of activity along the corridor of the Roman road. Finds of pottery, coins and metal work would suggest a largely settled landscape at this time.

Medieval (450AD – 1539AD)

1.3.7 After the Roman abandonment of Britain London fell into decline. There is little documentary evidence for Saxon *Lundenwic*, and even less for the outlying areas. Evidence of Saxon activity in the area of the Site is not well represented, but settlement activity has been identified at Edmonton and Lower Hall Lane, relatively close to the Site boundary.

1.3.8 In contrast, later medieval activity from the area is well-represented, with a large number of sites and findspots. Deepham's Manor House lies just to the north of the Site beneath the retained area of the Sewage Works.

Post-medieval to Modern (1539AD onwards)

1.3.9 During the post medieval period the area was predominantly used for mixed agriculture, associated with Deepham's Manor Farm. In 1552, the Manor is recorded as owning 25 bullocks, oxen, horses, pigs, geese and chickens. By 1585, the house had disappeared, leaving only a barn and a moated site.

1.3.10 It was not until 1870's that the Sewage Works was constructed on the former Deepham's Farm and the works were extended to cover 200 acres in 1927. The construction of the Works will have had a major impact on the archaeological survival at the Site. However, the previous borehole records do reveal areas of intact alluvial deposits towards the south. No work has previously been undertaken to the north in the area of the current Site and the level of survival is unknown.

1.3.11 Quarrying of brickearth and gravel is widely known to have occurred in the area, in particular to the north of the Deepham's Site at Pickett's Lock. These works continued to be exploited until 1951.

1.4 Previous archaeological investigations

1.4.1 The archaeological potential of the Site was highlighted in the desk-based assessment (Lewis 1995). This study identified significant archaeological deposits in the area and suggested that similar deposits could extend into the Site. The study also identified, through the examination of geotechnical boreholes, the presence of buried peat deposits, sealed beneath alluvium and found in association with gravel islands. It concluded that the Site has high potential to preserve early prehistoric archaeology associated with buried land surfaces.

1.4.2 Two phases of field evaluation were undertaken in 2001 in order to investigate the archaeological potential of the south of the Site. The first phase (Pine 2001) was targeted on the deposits and topographic features identified in the desk-based assessment. No archaeological remains were identified during the evaluation.

Deposits of modern made-ground up to 1m in thickness were recorded sealing a sequence of alluvium and laterally extensive peat. The second phase of evaluation also produced no evidence of archaeological deposits or artefacts of interest (Hull & Ford 2001). The peat deposits identified during the trenching were further sampled and three samples were processed for radiocarbon dating. The remains of a land surface, developed on the surface of the gravel, produced an early Mesolithic date (KIA-14505: 6870±46 BP). The main peat body identified within the sequence formed between the Neolithic and Bronze Age (KIA-14506: 3820±48 BP), but the start of minerogenic accumulation could not be accurately established due to issues of contamination.

1.4.3 A Watching Brief was also maintained between January and December 2001 on further intrusive works. Again no archaeological deposits were identified and some areas showed signs of severe disturbance.

1.4.4 In May 2010 a geoarchaeological Watching Brief was carried out by OAS on the drilling of five geotechnical boreholes (OAS 2010). In the eastern zone a deep alluvial sequence was recorded with intercalated peat beds. In the north western sector the Pleistocene gravel lay at higher elevations and here the Holocene alluvial deposits were thinner. Modern and Victorian make-up deposits were also identified overlying alluvial subsoils in this area, with clear signs of truncation, in some areas down to gravel.

2 AIMS

2.1.1 The overarching aim of this work was to produce an updated deposit model for the Deepham's Site, integrating the various facets of previous ground investigations. More specifically the study aimed to;

- describe and interpret the sediment sequence from the geotechnical data;
- update and expand the deposit model that was created by Lewis (1995) with any new data available;
- identify significant variations in the deposit sequence indicative of localised features such as topographic highs or palaeochannels;
- identify the location and extent of any waterlogged organic deposits and address the potential and likely locations for the preservation of archaeological and palaeoenvironmental remains;
- re-assess the archaeological significance of the Site and whether further mitigation should be recommended.

3 METHODOLOGY

3.1.1 In order to create the deposit model 112 borehole and test pit logs were examined (Fig. 2). The logs derive from a series of geotechnical ground investigation undertaken since 1987 (Table 1), in addition to the boreholes drilled in May 2010 and a series of older historical records from Pickett's Lock Golf Course (prefixed by GLC).

Table 1: Summary of ground investigation reports

Report Ref.	Date	Report	Lewis 1995
476	Feb 1987	Deepham's S.T.W – Lodge House Ground Investigation	
GG476A	April 1990	Deepham's Sludge Lagoons Ground Investigation	
GG476D/14 2066	Aug 1992	Deepham's S.T.W Remodelling. Report on Ground Investigation	
GG476C/14 2064	Sept 1992	Deepham's S.T.W Remodelling. Factual Report on Ground Investigations	
30696	Sept 1993	Report on Site Investigation at Deephams Sewage Treatment Works, Edmonton	√
GG476E	Mar 1994	Deepham's S.T.W Digestion and Thickening, Ground Investigation	√
GG476F/144 148	Dec 1994	Deepham's S.T.W Contamination Study. Interpretative Report on Ground Investigation	√
722535	May 2009	Factual Report on Ground Investigations at Deepham's STW, Enfield, London	

3.1.2 The lithological data from the logs was inputted into geological modelling software (©Rockworks14) for analysis and correlation of deposits into key stratigraphical units. These units have been used to demonstrate the nature and the extent of sediment accumulation patterns across the Site. Various cross sections (Fig. 7) and elevation plots (Figs. 3-6) have been produced in order to illustrate the main points of discussion.

3.1.3 It should be noted that apart from the records produced from the work carried out in May 2010, no core or sample data was available to verify any of the observations made in this report. All information comprised paper copies of boreholes and test pits records and consequently a range of problems may exist with this type of data set (Bates *et al.*, 2000).

4 RESULTS

4.1 General

4.1.1 The sediments recorded at the Site may be divided into four broad stratigraphic units (Figs. 3 and 7):

- London Clay bedrock (located at the base of the Pleistocene gravels, not coloured in Fig 3., coloured purple in Fig. 7)
- Pleistocene gravels (coloured orange)
- Holocene alluvium (coloured blue)
- Made ground/ground make-up deposits (coloured grey)

4.1.2 Considerable complexity was, however, noted within these four units. A localised silty clay unit within the Pleistocene gravels (coloured yellow in Figs. 3 and 7), for example, may indicate the location of a late Devensian channel. The Holocene alluvial sequence, although predominately minerogenic, frequently contained discrete lenses of organic silts and peats (coloured black in Fig. 7).

4.1.3 The quality in the recording of the deposits varied between individual geotechnical logs and different phases of site investigation. In some instances interpretation of the sediment description was necessary in order to utilise the borehole data, especially in the older borehole logs. Of particular note is the late Devensian Brickearth which is known to overlie the gravel in the northwest of the Site This unit could not be accurately identified in any of the boreholes or test pits and consequently is not mapped as a separate stratigraphic unit. It is possible that sediments assigned to either part of the Pleistocene gravels or Holocene alluvium to the northwest of the Site actually relate to Brickearth deposits.

4.2 Stratigraphic description

Pre-Holocene deposits and basement topography

London Clay bedrock

4.2.1 London Clay was reached in the majority of the boreholes, recorded as a stiff to firm blue or grey silty clay, locally very silty. The modelled surface of the London Clay was recorded between *c* -5.1 m and +7.4 m OD, sloping from west to east, caused by alluvial erosion during the Pleistocene. This culminates in a low point on the east of the survey area and creates not only a topographic gradient across the Site, but also a chronological gradient for the Holocene deposits. This is especially relevant, as the Holocene sequences are deeper and peat deposits are more common to the east of the Site.

Pleistocene gravels

4.2.2 The gravel was encountered in the majority of interventions. The borehole logs varied in their description of this unit, with colour varying between yellow to grey. It was most commonly described as sandy gravel, with the sand fraction varying between coarse and fine, and the gravel fraction between angular and sub-rounded, with frequent flint inclusions.

4.2.3 The coarse grained character of the deposits suggests accumulation under cold climate periglacial conditions within high energy braided streams. On the basis of previous work (Gibbard 1994) deposits at the lower elevations can be equated with the Floodplain or Lea Valley Gravels. Any archaeological remains identified within these deposits are likely to be reworked by fluvial processes.

4.2.4 Thin layers of soft clay were some times noted in the logs that may represent organic infilling of eroded palaeochannels. A discrete deposit of silty clay, with occasional mention of organic material was noted within the Pleistocene gravel aggradation in the eastern part of the study area to a maximum thickness of 2.78 m

The late Devensian/early Holocene topographic template

4.2.5 The modelled surface of the Pleistocene deposits (Fig. 4) lies between elevations of *c* +11.2 m and +6.4 m OD. The shape of this surface essentially defines the topography of the early Holocene landscape. Bates (1998) refers to this as the 'topographic template' and suggests that variations in the template largely dictated patterns of subsequent landscape evolution as flooding ensued during the later prehistoric period.

4.2.6 Examination of this surface reveals the highest elevations occur in the north-western sector of the Site defining the edge of the gravel terrace. This surface, however is somewhat undulating. A small N-S promontory of higher ground at *c* +8.5 m to +9.5 m OD appears to extend into the floodplain area in the southern part of the area and a further area of higher ground occurs in the south western sector at *c* +9.0 m to +9.5 m OD. Both of these features are consistent with those identified in the 1995 model. The lowest elevations occur in the central eastern sector of the Site corresponding to the position of the underlying late Devensian channel fills.

The Holocene alluvial sequence

4.2.7 The Holocene alluvium (Fig. 5) consisted of a multitude of lithological units that varied between silty clays, clayey silts, peaty clays and peats. The colour of the clays varied through blue, green, red, brown and grey. The maximum modelled thickness was *c* 4.1m overlying the lowest elevations in the surface of the gravel in the eastern part of the Site.

4.2.8 Previous borehole monitoring identified organic sands just above the surface of the gravels (OAS, 2010). This is undoubtedly an early Holocene stratigraphic unit representing a floodplain surface. The cross-sections illustrate the lithological variability of the alluvium in the eastern part of the Site with several bifurcating units occurring at the base, and within, the sequence (Fig. 7). No peat units were recorded in the western part of the Site within the east-west cross-section.

4.2.9 The peat units represent low-energy deposits, formed through the encroachment of vegetation on the floodplain, probably as an indirect result of fluctuating sea levels in the Thames Estuary. Extensive peat deposits indicate the development of alder and

willow carr, which appears to have become widely established on the floodplain of the Thames and its tributaries valleys during the Neolithic and Bronze Age (Long *et al.,* 2000; Sidell *et al.,* 2000 & 2004 and Bates *et al.,* 2004). Artefacts associated with these peat deposits are likely to have undergone only limited lateral transportation and would have been rapidly sealed by later flood deposits. Above the peats was fine-grained alluvium, a unit that indicates a rising water-level and increased alluviation on the floodplain.

Victorian and modern make-up deposits

4.2.10 A series of Victorian and modern make-up deposits (Fig. 6) were identified overlying the Holocene alluvium and terrace gravels. These deposits represent ground-raising and levelling activities of a similar nature to those identified throughout the area. Clearly parts of the Site appear to have been truncated by the digging of various sewage tanks and the foundations of former utility buildings. Due to the fact many of the older borehole records appear to have been drilled prior to the construction of the tanks these areas have been shaded to illustrate potentially severe truncation of the underlying alluvium.

5 DISCUSSION

5.1 Landscape development

5.1.1 A useful chronological summary of the results of the sedimentary modelling is presented below in Table 2.

Event	Date	Archaeological significance
Erosion/incision on the surface of the London Clay, with a topographic low point in the east of the survey area	Pleistocene	Created the topographic template that deposition of the Pleistocene and Holocene lithologies has followed.
Deposition fluvial gravel	Pleistocene before 28,000 BP	May contain reworked artefactual material.
Deposition of the alluvial unit in the terrace gravels (Lea Valley Arctic Bed?)	28,000 - 21,000 BP?	Preservation of ecofactual proxies, such as pollen, Coleoptera elytra, etc that facilitate reconstruction of the environment . Confined to the east of the Site.
Further deposition fluvial sand and gravel	21000 BP - c. 10000 BP	May contain reworked artefactual material.
Weathering of surface of Pleistocene deposits and peat accumulation	Early Holocene	Deposits survive at depth on the alluvial floodplain. High potential for preservation of relict landsurfaces and palaeoenvironmental material. Potential for evidence of 'dry land' human activity

		to be preserved insitu.
Deposition of alternating units of organogenic and minerogenic sediments	Early, mid and later Holocene	A substantial depth of Holocene alluvium is preserved in the eastern part of the Site. this has some potential to preserve palaeoenvironmental remains and evidence for seasonal 'wetland' activities, although some reworking may have occurred associated with the minerogenic sediments The transition/margins of the floodplain wetland and areas of higher ground are areas of high archaeological sensitivity.

Table 2: Chronological development of the sediment sequence

5.1.2 The Tertiary London Clay was incised during the Pleistocene by a large channel occupying the Lea Valley. This channel deposited the fluvial gravel unit, reworking sands and gravels from earlier periods. The thickest deposits of gravel lie in the northeastern part of the survey area. An alluvial unit is evident within this gravel unit. This silty clay was not continuously deposited across the Site, but confined to the north and east, correlating with the lowest elevations in the London Clay. This deposit may be an equivalent of the Lea Valley Arctic beds, representing a cold stage accumulation between 28,000 and 21,000 BP.

5.1.3 The Pleistocene to Holocene transition is defined by the deposition of finer grained sediment bodies above the gravels. During the Watching Brief on recent geotechnical boreholes a sand unit was recorded immediately above the gravels (OAS, 2010). This sand may have been deposited by late Glacial/early Holocene outwash channels. The surface of the sand was latterly subject to stabilisation, weathering and soil formation under relatively dry ground conditions. Whilst this unit is not recorded in the borehole data reviewed, it is very possible that this horizon was present but recorded as a part of the gravel.

5.1.4 Above the gravels there is a series of peat, silt and clay dominated deposits. Peat deposits are largely located in the eastern part of the Site as the Holocene alluvial sequence becomes thicker. The fluctuation between minerogenic (silt and clay) and organic (peat and organic silt and clay) deposits represents changing environments of relatively stable well-vegetated land surfaces and periods of instability, flooding and erosion/sedimentation. There is high potential for insitu archaeological remains to be located on stable land-surfaces, particularly at channel edge/marginal locations. As it stands the phases of organic/peat accumulation are not completely understood and the pattern appears to be rather complex, probably representing a mosaic of different environments existing on the floodplain at any one time. The original evaluation work in the southern part of the Site recorded at least two peat units. The first of these lay directly above the gravel and was dated to the early Mesolithic period (KIA-14505: 6870±46 BP). The second peat unit provided a date straddling the Neolithic and Bronze Age (KIA-14506: 3820±48 BP).

5.2 Archaeological potential

5.2.1 The overall deposit model clearly demonstrates that prior to the construction of the sewage treatment works in the 1870's, the Site contained considerable archaeological potential. This potential has been significantly reduced by the continual expansion of the sewage works throughout the years.

5.2.2 Based of the findings of this deposit model, the Site at Deepham's can be broadly divided into four broad zones of archaeological potential (Fig. 8):

Zone 1: Floodplain sequence

5.2.3 This is effectively the area of the low-lying floodplain, where substantial deposits of Holocene alluvium are preserved. There is the potential for archaeological remains dating from the Mesolithic period onwards to be preserved within this sequence.

5.2.4 These floodplain deposits also have the potential to preserve organic remains. This includes palaeoenvironmental evidence, but also wooden structures and artefacts such as trackways, platforms and boats. Votive offerings have also been frequently recovered from these wetland deposits within the Lea and other tributaries of the Thames. It is probable that the top of the Pleistocene lithology contains a range of different geomorphological environments, caused by minor variations in localised topography, such as palaeochannels, areas of interspersing gravel and sand bars, etc. Early prehistoric archaeology has often been found in association with similar topographical features.

Zone 2: Terrace edge environment

5.2.5 The interface between the gravel terrace and floodplain is liable to be an area of high archaeological potential due to the presence of areas of higher ground overlooking the floodplain. As flooding ensued during the Holocene these areas would have been reduced to islands of dry ground within a predominantly wetland environment. As such, they may have acted as a focus for human activity, perhaps seasonally exploiting the abundant resources available on the floodplain.

5.2.6 Early prehistoric archaeology present at the edge of the floodplain may have been sealed and preserved by later alluviation caused by increasing water-levels from the late prehistoric period. Frequent concentrations of prehistoric flint scatters and specialist hunter/fishing camps have been recorded along the tributaries of the Thames.

Zone 3: Terrace gravel

5.2.7 The river terrace gravels have a very shallow covering of Holocene alluvium, in some cases made ground is placed directly on top of the terrace gravels. Whilst this is an area of high probability to have once contained archaeological remains, much of it may have been badly disturbed/truncated and eroded. The terrace gravels might contain reworked Pleistocene artefacts, truncated archaeological features and

reworked artefactual material. Preservation of the gravels is piecemeal across the Site and difficult to accurately predict.

Zone 4: Areas of modern truncation

5.2.8 Large areas of the Site are covered by the sewage treatment tanks that extend to depths of up to 8.0 m. In many other areas, above ground tanks and works buildings are located with associated services. The potential impact of these structures on the underlying sequence is not currently known.

5.2.9 The overall area of the tanks is considered to have no archaeological potential, due to the likely depth of truncation. In areas associated with above ground structures, the potential is thought to be generally low due to the impacts of their foundations. However, there is a chance that on the floodplain, archaeological deposits may still survive underneath these foundations within the alluvium at a greater depth.

5.3 Significance

5.3.1 The deposit model has provided a good understanding of the Site stratigraphy providing baseline data on the Site's preservation and archaeological potential. The key findings are summarised below:

- Deepham's Sewage Works is located at the interface of the gravel terrace and floodplain of the River Lea.
- The Pleistocene topography across the Site is marked, dipping roughly from west to east, to a topographic low point adjacent to the extant channel of the River Lea.
- The Pleistocene fluvial gravels deposits contain a fine grained alluvial deposit that is potentially equivalent to the Lea Valley Arctic Beds. This has a high potential for containing palaeoenvironmental remains. reworked artefacts may be found associated with the gravels themselves.
- This transition from the higher ground of the gravel terrace and the lower ground of the floodplain in the past would have resulted in a mosaic of habitat types across the valley floor.
- The Holocene alluvium is appreciably thicker to the northeast of the Site and is notably thinner over the upstanding River Terrace 1 gravels. In some parts of the Site the Holocene Alluvium has been truncated.
- Organic deposits an peats in the eastern part of the site have high potential for the preservation of insitu palaeoenvironmental remains and the remains of wooden structures/artefacts.
- The results of this work offers supportive evidence of the gravel islands identified by Lewis (1995 Figure 8: topographic features 4 and 4a).

- There is significant truncation across parts of the Site, especially in the areas of the sewage settling tanks and associated works structures.

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Appendix A. STRATIGRAPHIC DATA

Name	Easting	Northing	Investigation	TD	Elevation	Top: Made ground	Top: Holocene Alluvium	Top: Upper gravel deposits	Top: Alluvial in gravel	Top: River terrace 1 deposits	Top: London Clay
476/1	535660	193800	TW1987	4.1	16.7	16.7	14.2	14.2	14.2	11.16	-
476A/1	535660	193800	TW1990	15	13.66	13.66	9.86	7.96	7.96	7.96	8
476A/2	535960	193020	TW1990	10	14.3	14.3	8.1	8.1	8.1	8.1	5.82
476A/5	535940	192860	TW1990	10	14.72	14.72	9.62	7.52	7.52	7.52	5.59
476A/6	535910	192860	TW1990	10	14.49	14.49	9.69	7.99	7.99	7.99	7.4
476A/7	535850	192820	TW1990	15	14.19	14.19	10.69	7.79	7.79	7.7	1.3
476C/2	535824	193422	TW 1992 (Sept)	9.1	12.1	12.1	9.2	7	7	7	3.6
476C/3	535968	193405	TW 1992 (Sept)	16.7	12	12	10.1	7.4	7.4	7.4	-0.55
476C/4	535942	193338	TW 1992 (Sept)	17.8	11.55	11.55	8.65	5.95	4.25	2.05	-0.6
476C/5	535946	193239	TW 1992 (Sept)	17.4	11.35	11.35	8.55	7.85	4.55	1.45	-0.7
476C/6	535973	193253	TW 1992 (Sept)	25	12	12	9.2	8.3	5.2	-0.5	-9.38
476C/7	536027	193243	TW 1992 (Sept)	25	12.02	12.02	8.22	8.22	2.72	-5.48	-9.45
476C/8A	536067	193375	TW 1992 (Sept)	20.7	11.75	11.75	9.15	7.05	-3.85	-5.85	-5.78
476E/1	535900	193400	TW 1994 (Mar)	8.45	9.65	9.65	7.1	7.1	7.1	7.1	4.04
476E/2	535880	193400	TW 1994 (Mar)	9	9.74	9.74	7.54	7.54	7.54	7.54	3.8
476E/3	535850	193410	TW 1994 (Mar)	5.8	9.7	9.7	7.65	7.65	7.65	7.65	6.13
476E/4	535840	193370	TW 1994 (Mar)	8.46	9.73	9.73	7.63	7.63	7.63	7.63	2.16
476E/5	535870	193360	TW 1994 (Mar)	9.4	9.71	9.71	7.66	7.66	7.66	7.66	1.11
476E/6	535910	193350	TW 1994 (Mar)	9	9.81	9.81	5.61	5.61	5.61	5.61	5.01
476F/1	535642	193305	TW 1994 (Dec)	10	11.41	11.41	6.81	6.81	6.81	6.81	3.29
476F/2	535773	193394	TW 1994 (Dec)	10	10.99	10.99	10.99	10.99	11.41	10.99	2.39
476F/3	535870	193165	TW 1994 (Dec)	10	10.49	10.49	9.19	8.69	8.69	8.69	3.56
476F/4A	536001	193203	TW 1994 (Dec)	10	10.26	10.26	9.16	7.96	3.26	3.02	-
476F/A (TP)	535744	193281	TW 1994 (Dec)	3	12.22	12.22	10.92	10.92	10.92	10.92	9.62
476F/B (TP)	535986	193206	TW 1994 (Dec)	3	10.32	10.32	9.02	7.72	7.72	7.72	-
476F/C (TP)	536040	193182	TW 1994 (Dec)	3	11.83	11.83	10.23	10.23	10.23	10.23	10.23
476F/D (TP)	536018	193132	TW 1994 (Dec)	3	12.33	12.33	9.73	-	-	-	-
476F/E (TP)	536010	193096	TW 1994 (Dec)	3	12.2	12.2	10.6	-	-	-	-
476F/F (TP)	536034	193201	TW 1994 (Dec)	3	11.04	11.04	8.74	-	-	-	-
476F/G (TP)	535882	193172	TW 1994 (Dec)	2.4	11.04	11.04	9.04	9.04	9.04	9.04	-
476F/H (TP)	535866	193110	TW 1994 (Dec)	3	10.73	10.73	8.23	8.23	8.23	8.23	-
476F/I (TP)	535745	193114	TW 1994 (Dec)	2.7	10.22	10.22	9.62	8.92	8.92	8.92	-
476F/J (TP)	535754	193150	TW 1994 (Dec)	2.6	10.22	10.22	9.62	8.62	8.62	8.62	-
476F/K (TP)	535830	193176	TW 1994 (Dec)	2.4	10.32	10.32	9.72	8.32	8.32	8.32	-
476F/L (TP)	535899	193108	TW 1994 (Dec)	2.5	10.47	10.47	9.87	9.17	9.17	9.17	-
476F/M (TP)	535888	193079	TW 1994 (Dec)	2.6	10.25	10.25	9.95	8.25	8.25	8.25	-
476F/N (TP)	535930	193067	TW 1994 (Dec)	2.5	10.23	10.23	9.63	8.93	8.93	8.93	-
476F/O (TP)	535932	193119	TW 1994 (Dec)	3	10.51	10.51	9.51	8.91	8.91	8.91	-
BH1/93	535786	193251	TW1993	20	10.4	10.4	9.8	5.9	5.9	5.9	5.8
BH12	535633	193673	TW 2009	8.1	11.2	11.2	7.2	7.2	7.2	7.2	4.9
BH13	535699	193540	TW 2009	10	11.2	11.2	7.9	7.9	7.9	7.9	5
BH14	535693	193673	TW 2009	10	11.3	11.3	9.3	9.3	9.3	9.3	5.9
BH2	535578	193434	TW 2009	19	11.6	11.6	9.8	9.6	9.6	9.6	2.9
BH2/93	535806	193173	TW1993	10	10.4	10.4	9.9	8.4	8.4	8.4	4.4
BH3/93	535847	193100	TW1993	10	10.4	10.4	9.8	8.4	8.4	8.4	4.6
BH3A	535617	193441	TW 2009	18	11.6	11.6	10.3	10.2	10.2	10.2	6
BH3C	535591	193442	TW 2009	17.6	11.7	11.7	10.5	9.7	9.7	9.7	1.5
BH4	535661	193437	TW 2009	10	11.6	11.6	10.4	9.6	9.6	9.6	3.9
BH4/93	535750	193125	TW1993	10	10.4	10.4	9.8	8.4	8.4	8.4	5.6
BH5	535704	193431	TW 2009	18	11.4	11.4	9.5	9.5	9.5	9.5	4.6
BH5/93	535874	193219	TW1993	10	10.4	10.4	10.1	8.4	8.4	8.4	6

BH6	535669	193394	TW 2009	20	12	12	9	9	9	9	3.95
BH6/93	535765	193206	TW1993	10	10.45	10.45	9.85	8	8	8	6.7
BH7	535628	193397	TW 2009	20	12.1	12.1	10.9	10.1	10.1	10.1	3.4
BH7/93	535761	193134	TW1993	10	10.4	10.4	9.8	7.9	7.9	7.9	4.7
BH8/93	535810	193132	TW1993	10	10.4	10.4	9.9	8.95	8.95	8.95	5.4
BHMW1	535777	193688	EA2010	8	12.1	12.1	10.1	10.1	9.6	10.1	4.8
BHMW2	535764	193670	EA2011	7.5	11.6	11.6	10.6	10.1	10.6	10.1	5.9
BHMW3	535672	193699	EA2012	7	11.4	11.4	10.4	10.4	10.4	10.4	6.1
BHMW7	535653	193689	EA2013	7	11.4	11.4	10.2	10.2	10.9	10.2	6.1
BHMW8	535922	193322	EA2014	9	12.1	12.1	9.1	6.9	6.9	6.9	3.86
GLCBH128	535430	193823	historical	6.53	11.56	11.56	11.26	10.36	10.36	10.36	7.09
GLCBH152	535692	193993	historical	8.51	12.47	12.47	12.17	10.8	10.8	10.8	5.55
GLCBH166	535505	193340	historical	11.01	11.49	11.49	9.36	9.36	9.36	9.36	5.05
GLCBH171	535878	192355	historical	7.91	10.35	10.35	8.38	7.92	7.92	7.92	4.57
GLCBH172	535670	192699	historical	7.2	9.74	9.74	9.09	9.09	9.09	9.09	7.68
GLCBH51	535709	193855	historical	7.16	11.68	11.68	11.43	11.43	11.43	11.43	5.58
GLCBH52	535785	193836	historical	9.15	11.27	11.27	11.12	10.06	10.06	10.06	6.55
GLCBH53	535870	193810	historical	6.7	11.11	11.11	10.73	9.74	9.74	9.74	5.75
GLCBH54	535960	193790	historical	7.33	10.93	10.93	10.71	9.87	9.87	9.87	5.2
GLCBH55	536045	193760	historical	6.7	11.01	11.01	10.71	9.49	9.49	9.49	5.99
GLCBH56	536133	193741	historical	6.61	11.01	11.01	10.11	10.11	10.11	10.11	6.56
GLCBH57	535685	193773	historical	6.09	11.61	11.61	11.31	11.31	11.31	11.31	6.81
GLCBH58	535760	193752	historical	6.09	11.07	11.07	10.77	10.32	10.32	10.32	6.81
GLCBH59	535850	193728	historical	7	11.22	11.22	10.92	10.01	10.01	10.01	5.2
GLCBH60	535935	193707	historical	9.03	10.68	10.68	10.38	7.64	5.51	5.21	2.8
GLCBH61	536026	193681	historical	10.27	10.31	10.31	10.01	7.88	7.88	7.88	1.5
GLCBH62	536114	193655	historical	7.46	10.33	10.33	10.03	8.51	8.51	8.51	5.71
GLCBH63	535640	193692	historical	5.83	11.34	11.34	11.04	11.04	11.04	11.04	5.42
GLCBH64	535735	193665	historical	6.65	11.13	11.13	10.75	10.75	10.75	10.75	5.65
GLCBH65	535825	193640	historical	6.7	10.98	10.98	10.68	9.46	9.46	9.46	5.46
GLCBH66	535913	193622	historical	7.84	10.64	10.64	9.34	7.67	7.67	7.67	4.09
GLCBH67	536002	193598	historical	12.31	10.41	10.41	10.11	6.32	4.8	3.28	-0.61
GLCBH68	536089	193570	historical	13.25	10.18	10.18	10.18	6.28	6.28	6.99	-0.19
GLCBH69	535625	193600	historical	8.48	11.23	11.23	10.93	10.63	10.63	10.63	3.99
GLCBH70	535715	193580	historical	7.6	10.95	10.95	10.65	10.65	10.65	10.65	5.33
GLCBH71	535810	193560	historical	5.77	11.1	11.1	8.83	8.83	8.83	8.83	12.45
GLCBH72	535880	193508	historical	7.26	11.21	11.21	10.5	8.76	8.76	8.76	5.52
GLCBH73	535980	193508	historical	16.52	11.26	11.26	9.66	6.55	6.55	6.55	-4.24
GLCBH74	536070	193485	historical	16.39	11.63	11.63	9.95	6.59	6.59	6.59	-3.61
GLCBH75	535597	193521	historical	7.61	10.98	10.98	10.68	9.62	9.62	9.62	5.85
GLCBH76	535688	193490	historical	7	11.03	11.03	10.58	10.28	10.28	10.28	5.5
GLCBH77	535780	193465	historical	8.22	11.33	11.33	10.42	10.42	10.42	10.42	4.33
GLCBH78	535860	193440	historical	6.09	9.83	9.83	9.07	8.77	8.77	8.77	6.76
GLCBH79	535960	193420	historical	11.92	11.36	11.36	9.76	5.08	5.08	5.08	-0.34
GLCBH80	536045	193395	historical	15.12	11.75	11.75	8.34	6.85	6.85	6.85	-3.76
GLCBH81	535755	193380	historical	9.62	11.03	11.03	9.96	9.96	9.96	9.96	3.65
GLCBH82	535845	193355	historical	12.44	10.58	10.58	9.97	8.83	2.81	1.95	0.19
GLCBH83	535925	193335	historical	12.78	11.4	11.4	9.27	6.99	5.62	2.88	0.49
GLCBH84	536035	193305	historical	21.82	11.75	11.75	9.77	9.77	9.77	8.6	-
GLCBH85	535820	193270	historical	7.45	10.67	10.67	10.14	8.7	8.7	8.7	6
GLCBH86	535910	193245	historical	7.31	11.02	11.02	8.31	8.31	8.31	8.31	4.53
GLCBH87	536002	193222	historical	24.37	10.77	10.77	9.09	7.73	3.31	-3.85	-12.94
GLCBH88	535685	193097	historical	11.22	11.28	11.28	8.54	8.54	8.54	8.54	0.87
GLCBH89	535823	192955	historical	7.62	10.57	10.57	8.74	8.74	8.74	8.74	4.3
TP1/93	535794	193240	TW1993	3	10.4	10.4	9.9	8.55	8.55	8.55	-
TP3/93	535818	193236	TW1993	3	10.4	10.4	9.7	7.8	7.8	7.8	-
TP4/93	535828	193123	TW1993	3	10.4	10.4	9.85	8.3	8.3	8.3	-
TP5/93	535846	193157	TW1993	3	10.4	10.4	9.5	7.6	7.6	7.6	-
TP6/93	535836	193209	TW1993	3	10.4	10.4	9.8	8.1	8.1	8.1	-

TP7/93	535790	193116	TW1993	3	10.4	10.4	9.9	8.6	8.6	8.6	-
TP8/93	535768	193189	TW1993	3	10.4	10.4	9.9	7.9	7.9	7.9	-

Appendix B. SUMMARY OF SITE DETAILS

Site name:	Deepham's Sewage Works, Edmonton.
Site code:	DSW10
Grid reference:	535800 193500
Type:	Stratigraphis Deposit model
Date and duration:	10th -18th August 2010
Area of site:	0.06 Ha
Summary of results:	Update of the Site's Deposit model to provide baseline data on the underlying stratigraphy and help to inform any further mitigation strategies that may be required.
Location of archive:	Museum of London

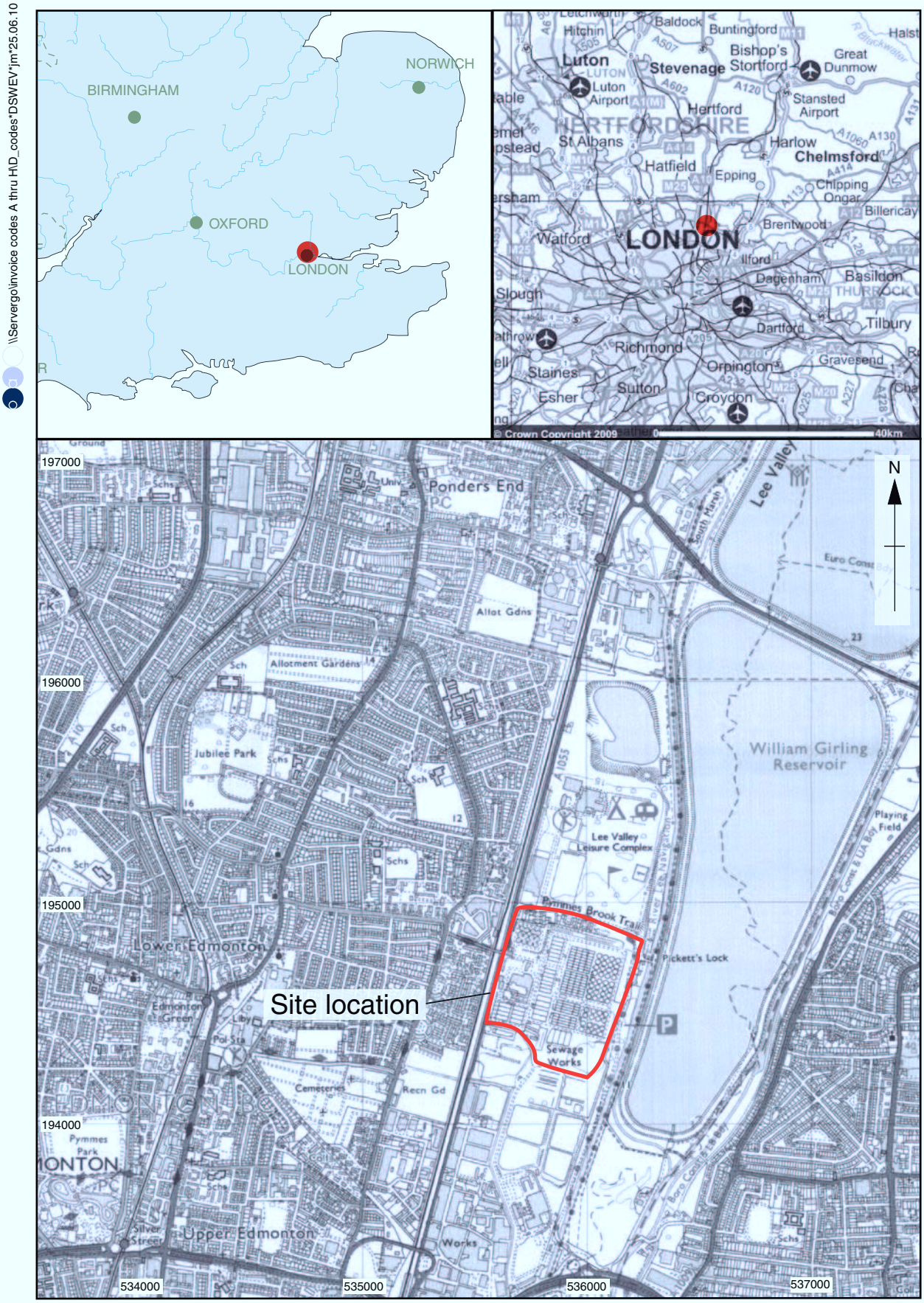

Figure 1: Site location

Figure 2: Plan of site and previous geotechnical and archaeological investigations

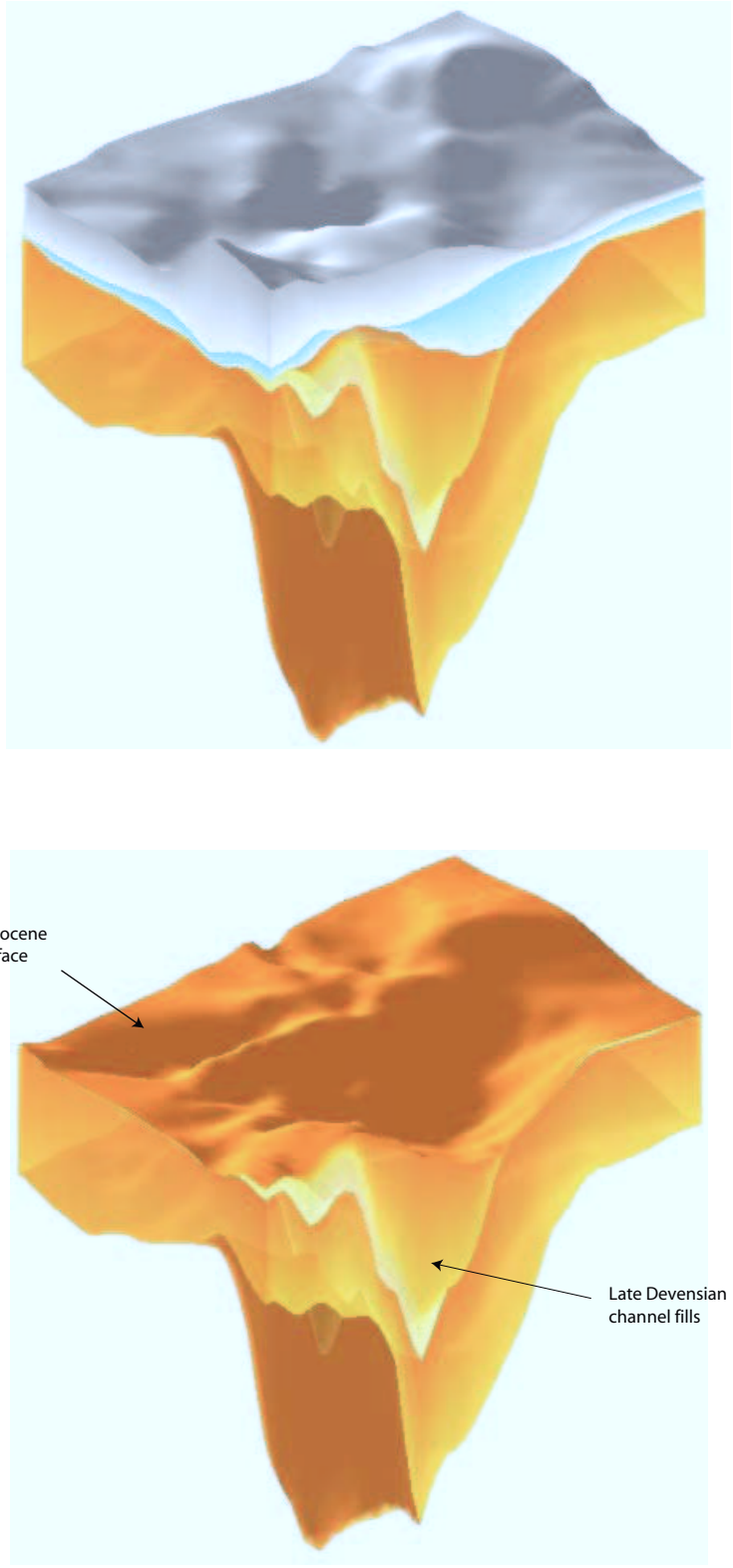

Figure 3 : 3-d stratigrahic model (view to NE, vertical scale exaggerated x20)

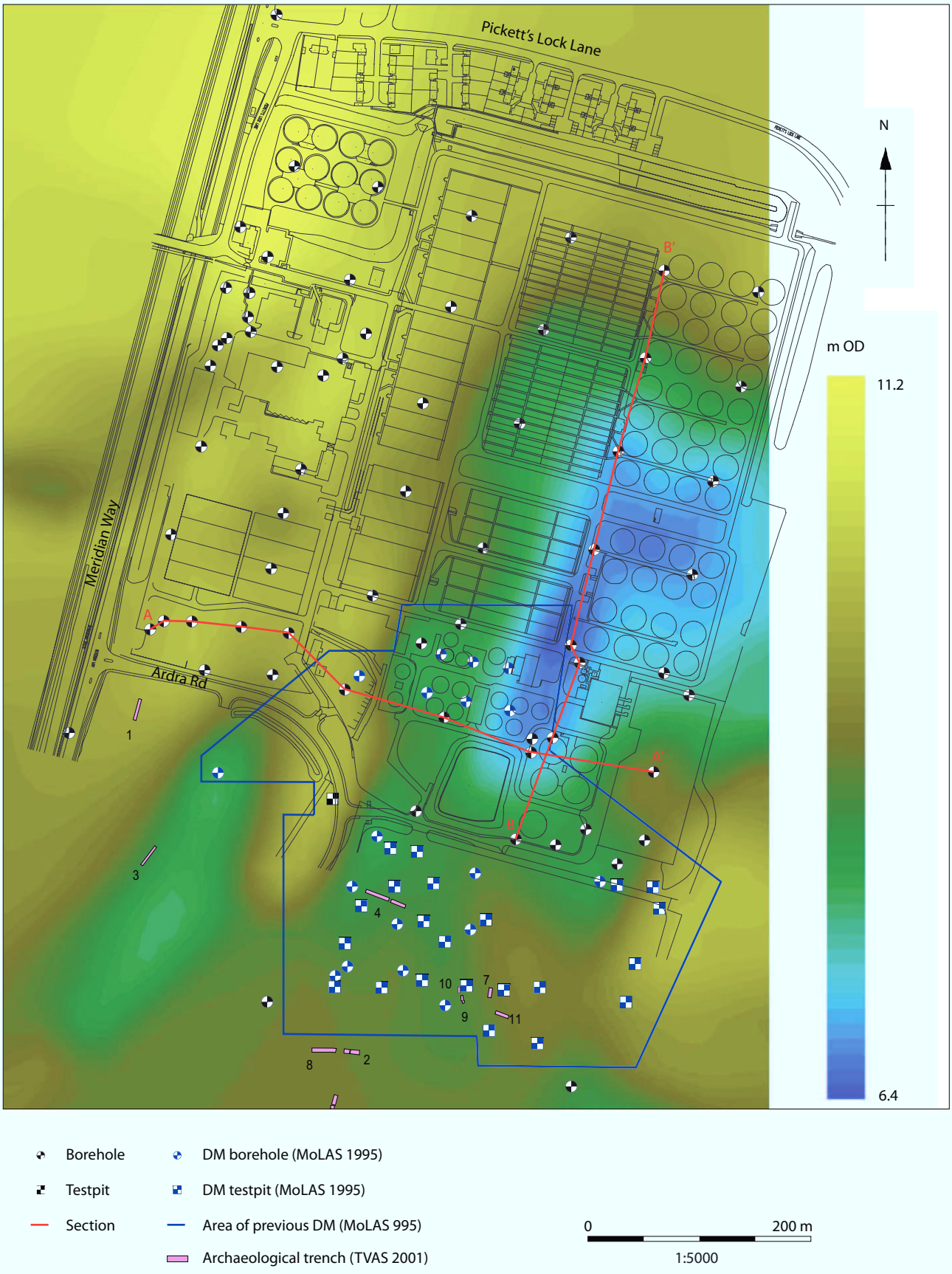

Figure 4: 2-D plot of the modelled early Holocene landsurface

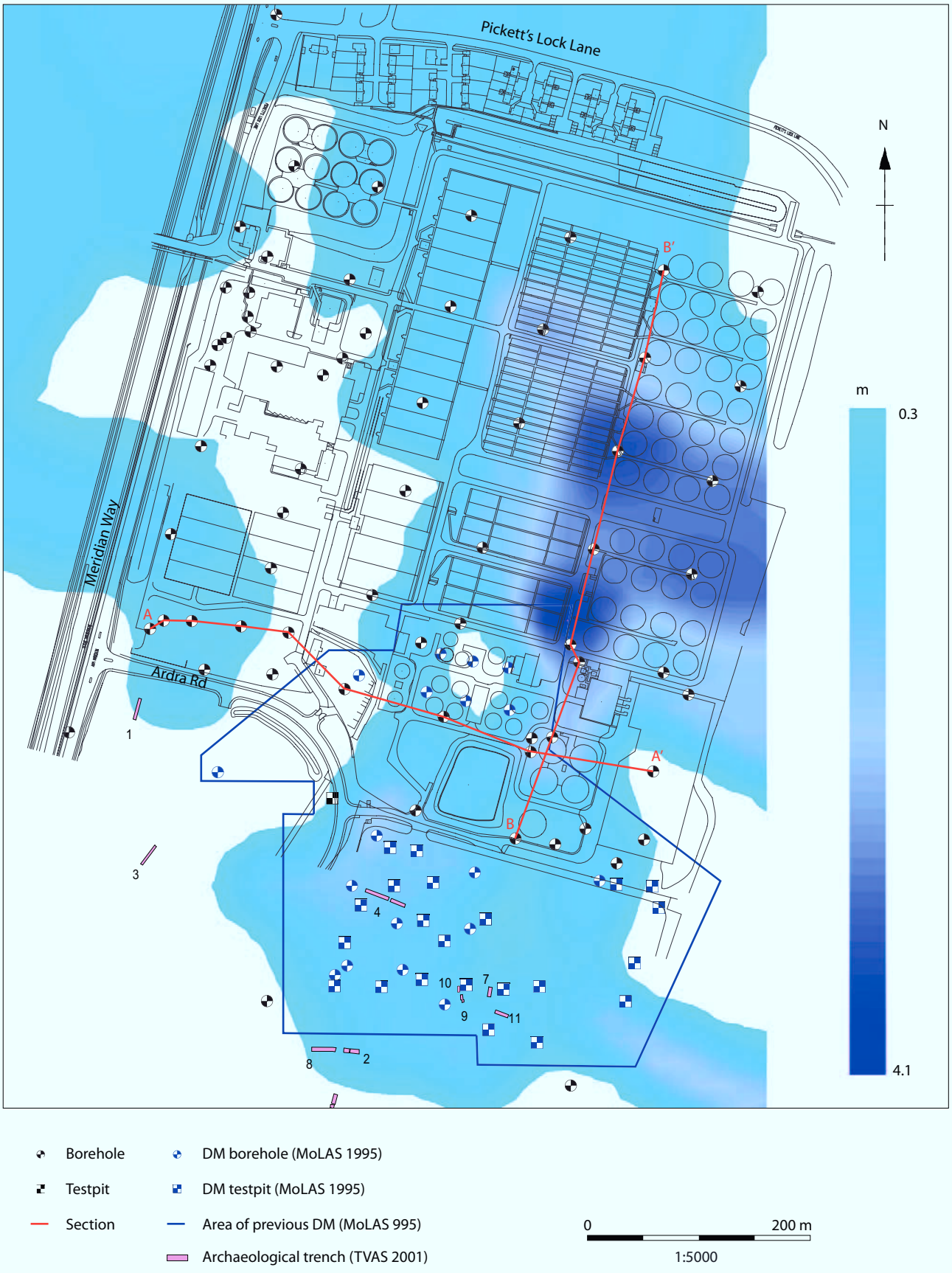

Figure 5: 2-D plot of the thickness of Holocene alluvium (>0.3m))

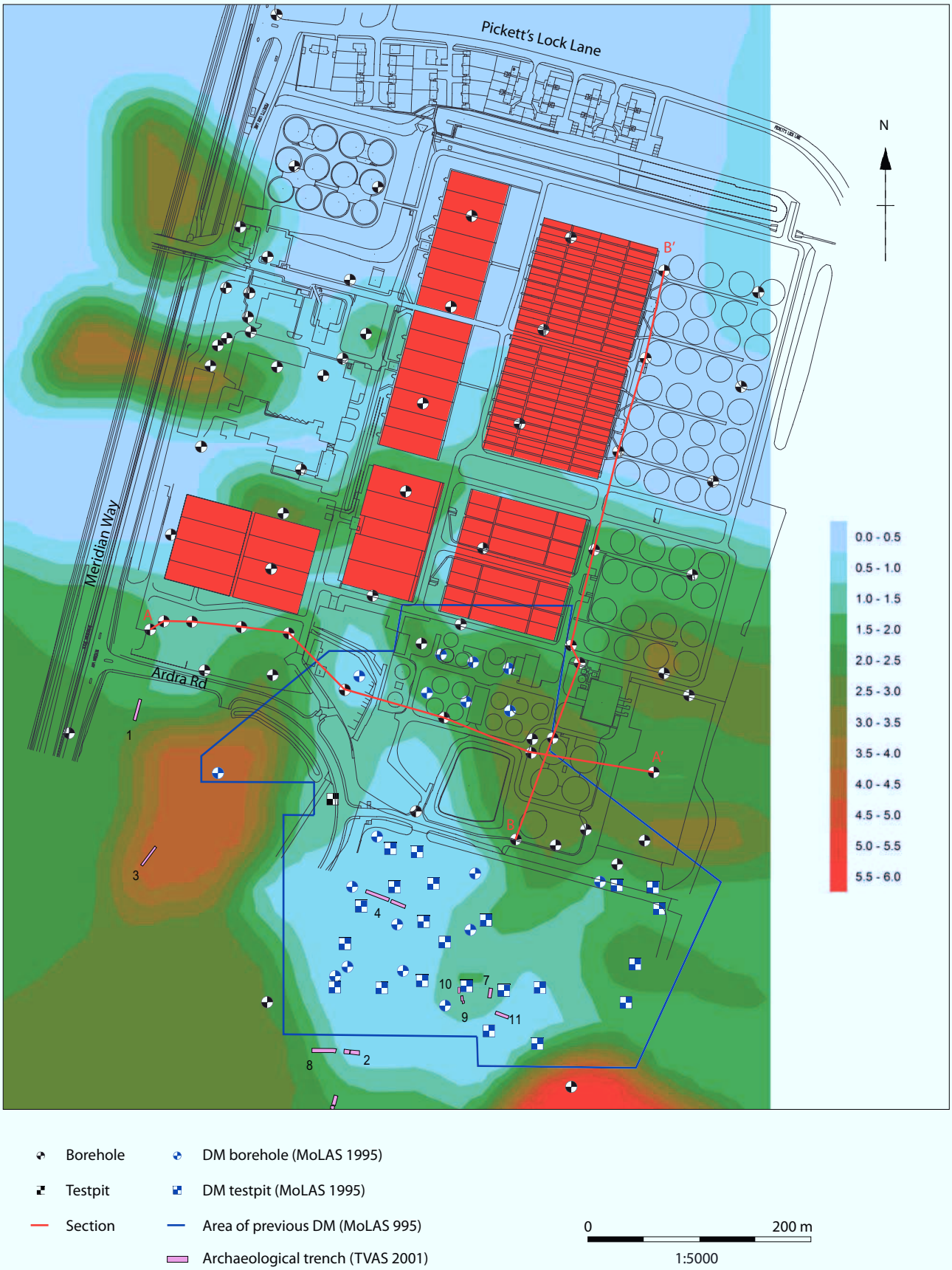

Figure 6: 2-D plot of the thickness of modern made ground

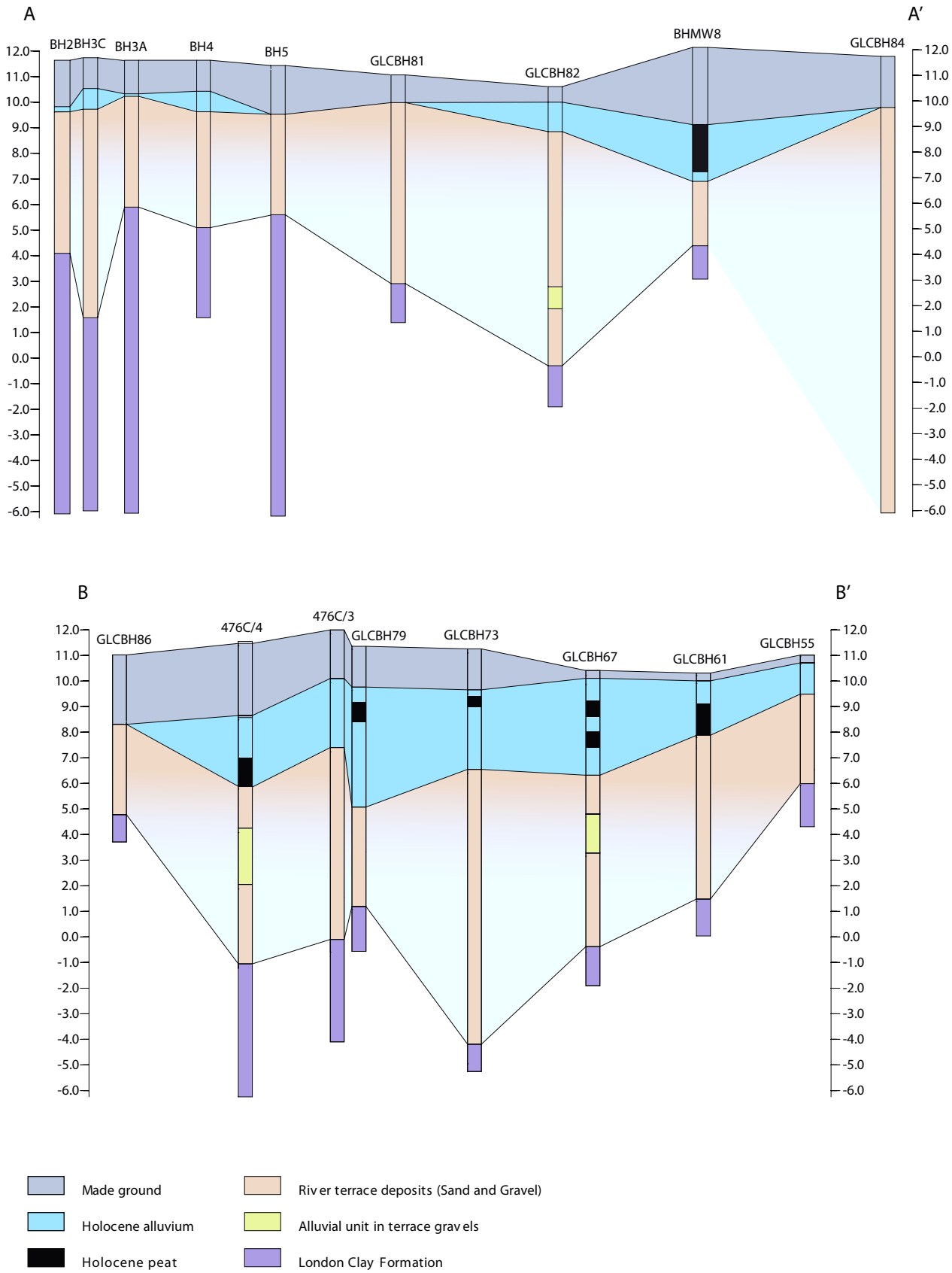

Figure 7: Cross sections

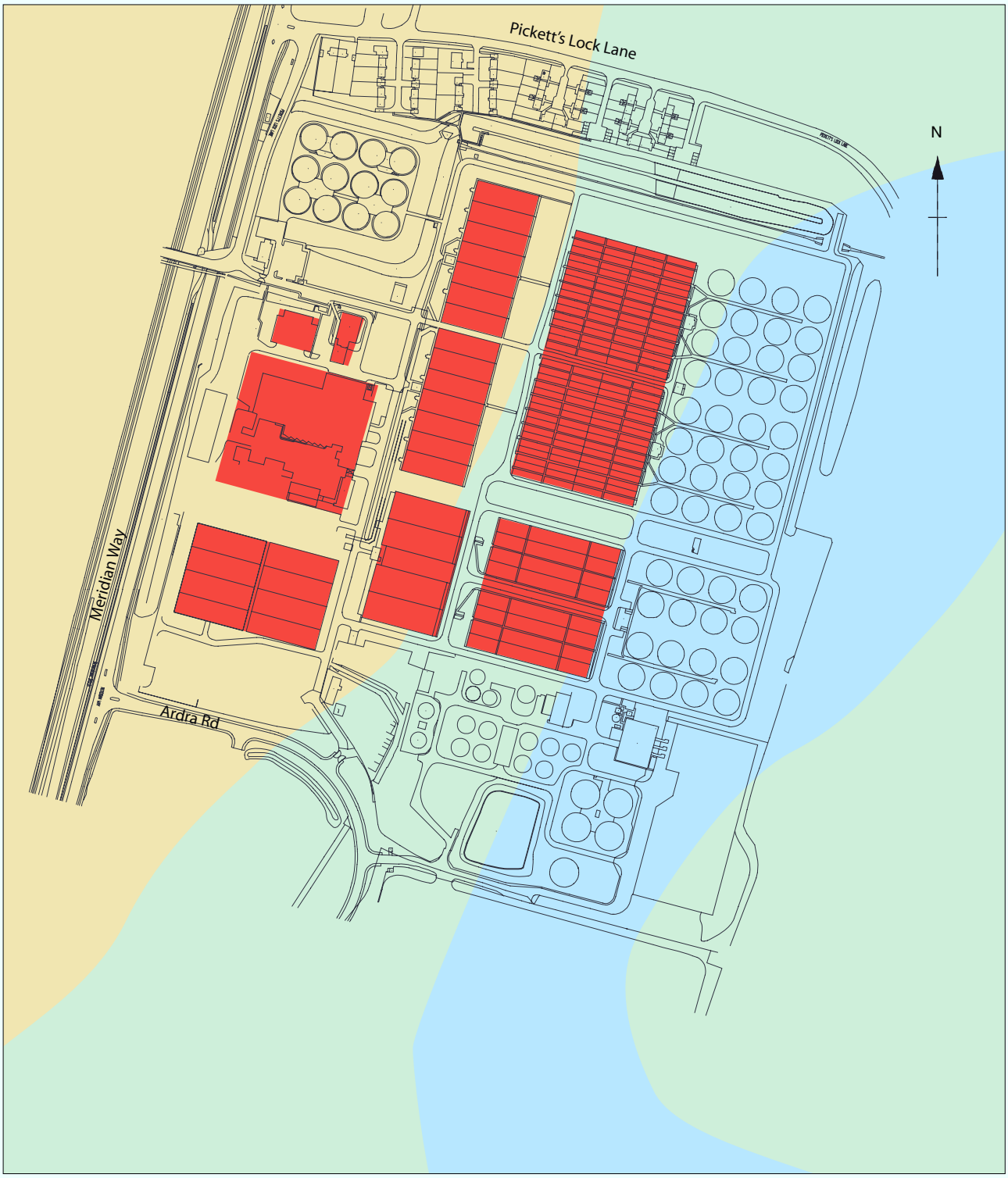

Figure 8: Zones of archaeological potential

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