Riverside Energy Park

Preliminary Environmental Information Report

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DESK BASED DEPOSIT MODEL REPORT

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RIVERSIDE ENERGY PARK
LONDON BOROUGH OF BEXLEY
Desk-Based Deposit Modelling Report

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Written by: C.R. Batchelor

QUEST, School of Archaeology, Geography and Environmental Science, Whiteknights, University of Reading, RG6 6AB
Tel: 0118 378 7978 / 8941
Email: c.r.batchelor@reading.ac.uk
http://www.reading.ac.uk/quest

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1. NON-TECHNICAL SUMMARY

A program of geoarchaeological deposit modelling was carried out by Quaternary Scientific (University of Reading) in connection with the proposed development of the Riverside Energy Park (REP), London Borough of Bexley. The site refers to the REP site is defined as the site of the permanent works in the area adjacent / around Riverside Resource Recovery Facility (RRRF) north of Norman Road, rather than the entire application boundary. The Temporary Laydown Areas, Electrical Connection route and Electrical Connection Point at Littlebrook substation, Dartford, have been scoped out due to the superficial groundworks in these areas. The work was commissioned by Orion Heritage. The aims of the investigation were: (1) to summarise current understanding of the nature of the sub-surface stratigraphy, in particular the presence and thickness of alluvium and peat across the site; (2) to evaluate the potential of these sediments for providing information on the environmental history of the site, and evidence of human activity, and (3) to make recommendations for further work as part of the planning condition (if necessary).

In order to carry out the work, over 130 geotechnical logs were inspected and evaluated, together with records from nearby archaeological/geoarchaeological investigations. The depth, thickness and nature of each major sedimentary unit was extracted and entered into geological modelling software, from which a series of topographic surface and thickness maps were produced. The results of the deposit modelling indicate that the sediments recorded at the Riverside Energy Park site are similar to those recorded elsewhere in the Lower Thames Valley, with Late Devensian Shepperton Gravel overlain by a tripartite sequence of Holocene Lower Alluvium, Peat and Upper Alluvium, buried beneath modern Made Ground. In addition, the following features were noted: (1) the absence of Peat on the south-eastern part of the site (as noted beneath the Former Borax Works site), and (2) the presence of organic-rich/peat deposits within the Lower Alluvium which were not studied as part of the Former Borax Works investigations.

However, due to an absence of borehole records, our knowledge and understanding of the sedimentary sequence is limited across the south-western part of the site. A program of 12 new geotechnical boreholes is due to be put down commencing in late March 2018 (Figure 15), and the monitoring of a select number of sequences is recommended. This will enable both complete coverage of the model for the site to be achieved, as well as ground-truthing of those areas already covered. The ideal boreholes for monitoring would be BH1, BH2, BH4 & BH8 as these represent a good spatial distribution across this area of the site; however, there is room for flexibility depending upon the program of works, and BH3, BH5 and BH10 would be suitable alternative locations.

On the basis of the likely depth of the sediments and findings from nearby sites, the archaeological potential of the site is considered low; however, this cannot be confirmed until a deposit model is produced. Even in the absence of the archaeological remains, the sediments have the potential to contain further information on the past landscape, through the assessment/analysis of palaeoenvironmental remains (e.g. pollen, plant macrofossils and insects) and radiocarbon dating. It is therefore recommended that the need for further palaeoenvironmental work is considered after the initial fieldwork and deposit modelling stage.

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2. INTRODUCTION

2.1 Site context

This report summarises the findings arising out of the desk-based geoarchaeological deposit modelling undertaken by Quaternary Scientific (University of Reading) in connection with the proposed development of the Riverside Energy Park, London Borough of Bexley. The Riverside Energy Park development would combine a waste Energy Recovery Facility (ERF), battery storage, a roof-mounted solar photovoltaic installation, an anaerobic digestion facility and provision for CHP readiness, along with a new connection to the existing electricity network (Figure 1). This report is concerned primarily with the Riverside Energy Park site only; the Temporary Laydown Areas, Electrical Connection route and Electrical Connection Point at Littlebrook substation, Dartford, have been scoped out due to the superficial groundworks in these areas. Quaternary Scientific were commissioned by Orion Heritage to undertake the geoarchaeological investigations.

The site is located on the floodplain of the Estuarine Thames, adjacent to the modern waterfront and ca. 1.8km north of the floodplain edge and the rising ground of the valley side. The site lies on the south side of the Thames, forming part of the Erith Marshes which occupies the eastern end of the area of floodplain enclosed by the river, where it makes a broad northward loop between Woolwich in the west and Erith in the east. The whole of this area of valley floor, which has its most northerly point at Crossness, is underlain by Holocene Alluvium. The British Geological Survey (BGS) 1:50,000 Sheets 257 Romford (1996) and 271 Dartford (1998) show the alluvium overlying sandy gravel deposits which can be confidently referred to as the Shepperton Gravel of Late Devensian age (Gibbard, 1994), which are in turn underlain by London Clay (an Eocene deposit).

Geoarchaeological and archaeological works have previously taken place across a large proportion of the site (particularly on the western side), which originally formed the Former Borax Works, Norman Road site (NNB07; Figure 2). These works consisted of a geoarchaeological deposit modelling exercise based upon historical geotechnical data, which led to the opening of nine deep archaeological trenches from which samples were taken for laboratory-based geoarchaeological and palaeoenvironmental analysis (Figure 3; Batchelor et al., 2008). Combined, the results from this exercise indicated a broadly consistent stratigraphic sequence comprising a unit of sand and gravel (the Shepperton Gravel) up to 10m in thickness, overlain by fine-grained alluvium, generally between 6.0m and 11.0m in thickness. A discontinuous peat, up to 2.0m thick, appears to be present occurred at or close to the base of this alluvial sequence, with a separate, but also discontinuous peat horizon at a higher level in the alluvial sequence and more extensively preserved inland from the estuarine margin. In the intertidal zone and off-shore the alluvial sequence has been heavily truncated. The subsequent archaeological trenches (Figure 3) enabled samples to be collected from the upper part of the sequence, and the peat was dated from approximately 4800 to 3000 cal BP (late Neolithic to late Bronze Age).

Similar investigations have taken place on a number of neighbouring / nearby sites, including: Burts Wharf (Batchelor, 2016); the Former NuFarm Site (Young et al., 2008a); Alchemy Park (Batchelor & Young, 2015; Batchelor et al., 2016); Crossness (Devoy, 1979) / Crossness Sewage Works.
(Batchelor et al., 2007a; Batchelor et al., 2007b; Green et al., 2011); North Bexley Drainage Improvements (Branch et al., 2004); Imperial Gateway (Batchelor et al., 2008b); Crabtree Manorway South (Askew and Spurr, 2006); Pirelli Works (Young et al., 2012); Corinthian Quay (Corcoran & Lam, 2002); Erith Spine Road / Bronze Age Way (Sidell et al., 1996); Veridion Park (Green & Batchelor, 2013) & Parkway Primary School (Young & Batchelor, 2016) (see Figure 2). These records broadly indicate the same sequence of Shepperton Gravel, overlain by alluvium, including a thick horizon of peat, capped by Made Ground. Important variations in the underlying topography of these sediments have also been identified including: (1) indications of a deep west-east aligned channel traversing the southern part of the Alchemy Park site; (2) potential channels in the area of Pirelli Works (Young et al., 2013) and Veridion Park (Green & Batchelor, 2011) and (3) an uneven shape to the Shepperton Gravel has been identified on the Crossness Sewage Treatment Works site adjacent to the river; potentially representing north-south aligned channels draining towards the Thames, separated by more elevated ridges of gravel.

2.2 Palaeoenvironmental and archaeological significance

The existing records therefore indicate considerable variation in the height of the Shepperton Gravel surface, and the type, thickness and age of the subsequent Holocene deposits across the surrounding area. Such variations are significant as they represent different environmental conditions that would have existed in a given location. For example: (1) the varying surface of the Shepperton Gravel may represent the location of former channels and bars; (2) the presence of peat represents former terrestrial or semi-terrestrial land-surfaces, and (3) the Alluvium represents periods of inundation/flooding by estuarine or fluvial waters. Thus by studying the sub-surface stratigraphy across the site in greater detail, it will be possible to build an understanding of the former landscapes and environmental changes that took place across space and time.

Organic-rich sediments (in particular Peat) also have high potential to provide a detailed reconstruction of past environments on both the wetland and dryland from the Mesolithic to late Bronze Age periods. In particular, there is the potential to increase knowledge and understanding of the interactions between relative sea level, human activity, vegetation succession and climate in this area of the Lower Thames Valley. Significant vegetation changes include the Mesolithic/Neolithic decline of elm woodland, the Neolithic colonisation and decline of yew woodland; the Late Neolithic/Early Bronze Age growth of elm on Peat, and the general decline of wetland and dryland woodland during the Bronze Age. Such investigations are carried out through the assessment/analysis of palaeoecological remains (e.g. pollen, plant macrofossils & insects) and radiocarbon dating. So-called palaeoenvironmental reconstructions are currently being undertaken on sequences from the Alchemy Park site (Batchelor et al., in prep), and have previously been carried out at Crossness Sewage Works (Batchelor et al., 2007a, b), the Former Borax Works (Batchelor et al., 2008a), Imperial Gateway (Batchelor et al., 2008b) and Pirelli Works (Young et al., 2012).

Finally, areas of high gravel topography, soils and peat represent potential areas that might have been utilised or even occupied by prehistoric people, evidence of which may be preserved in the archaeological (e.g. features and structure) and palaeoenvironmental record (e.g. changes in
vegetation composition). Prehistoric structures have been located in the peat locally to the site at Erith Spine Road / Bronze Age Way (Sidell, 1996) and on the Erith Foreshore (Sidell pers. comm.).

2.3 Aims and objectives

A desk-based geoarchaeological exercise has been instigated to: (1) summarise current understanding of the nature of the sub-surface stratigraphy, in particular the presence and thickness of alluvium and peat across the site; (2) to evaluate the potential of these sediments for providing information on the environmental history of the site, and evidence of human activity, and (3) to make recommendations for further work as part of the planning condition (if necessary). In order to address these aims, the stratigraphic data from existing stratigraphic records were used to produce a deposit model of the major depositional units across the site.
Figure 1: The Riverside Energy Park site and associated zones of construction. The geoaarchaeological study focuses on the permanent works in the area adjacent / around Riverside Resource Recovery Facility (RRRF) north of Norman Road, rather than the entire application boundary.
Figure 2: Location of Riverside Energy Park (red) and other selected geoarchaeological / archaeological local sites: (1) Former Borax Works (NNB06; Batchelor et al., 2008a); (2) Burts Wharf (Batchelor, 2016); (3) Former NuFarm Site (Young et al., 2008a); (4) Alchemy Park (Batchelor & Young, 2015; Batchelor et al., 2016); (5) Crossness (Devoy, 1979) / Crossness Sewage Works (Batchelor et al., 2007a; Batchelor et al., 2007b; Green et al., 2011); (6) North Bexley Drainage Improvements (Branch et al., 2004); (7) Imperial Gateway (Batchelor et al., 2008b); (8) Crabtree Manorway South (Askew and Spurr, 2006); (9) Pirelli Works (Young et al., 2012); (10) Corinthian Quay (Corcoran & Lam, 2002); (11) Erith Spine Road / Bronze Age Way (Sidell et al., 1996); (12) Veridion Park (Green & Batchelor, 2013) & (13) Parkway Primary School (Young & Batchelor, 2016).
Figure 3: Location of historical geotechnical and archaeological investigation across the Riverside Energy Park and Former Norman Road sites, London Borough of Bexley.
3. METHODS

3.1 Deposit modelling

The deposit model for the Riverside Energy Park site was based on a review of over 130 historical geoarchaeological, geotechnical and archaeological borehole / test-pit records, incorporating those put down across the site itself, and those taken from its immediate surroundings (Figure 2). This included data taken from the following sources: Wilkinson Associates (1992); AERC (2003); Soil Mechanics (2007); the Former Borax Works (Batchelor et al., 2008a), and the British Geological Survey (http://www.bgs.ac.uk/data/boreholescans/home.html). Sedimentary units from the boreholes were classified into five groupings: (1) Gravel, (2) Lower Alluvium; (3) Peat; (4) Upper Alluvium and (5) Made Ground. In addition, over 750 records were collated to examine key deposits across the wider area.

The classified data for groups 1-5 were then input into a database with the RockWorks geological utilities software. Models of surface height were generated for the Gravel, Lower Alluvium, Peat and Upper Alluvium (Figures 4-6, 8 & 9). Thickness of the Peat, Total Alluvium and Made Ground (Figures 7, 10 & 11) was also modelled (also using a nearest neighbour routine). Three borehole transects were compiled (Figures 12-14).

In general, both the distribution and density of boreholes across much of the site is high, but coverage is largely absent towards the south-west corner. In general, reliability improves from outlying areas where the models are largely supported by scattered archival records towards the core area of boreholes. Because of the ‘smoothing’ effect of the modelling procedure, the modelled levels of stratigraphic contacts may differ slightly from the levels recorded in borehole logs and section drawings. As a consequence of this the modelling procedure has been manually adjusted so that only those areas for which sufficient stratigraphic data is present will be modelled. In order to achieve this, a maximum distance cut-off filter equivalent to a 50m radius around each record was applied to all deposit models for the site itself, and 100m for the model created for the wider area. In addition, it is important to recognise that multiple sets of boreholes are represented, put down at different times and recorded using different descriptive terms and subject to differing technical constraints in terms of recorded detail including the exact levels of the stratigraphic boundaries.
4. RESULTS, INTERPRETATION & DISCUSSION OF THE GEOARCHAEOLOGICAL FIELD INVESTIGATIONS & DEPOSIT MODELLING

The results of the deposit modelling are displayed in Figures 4 to 14; Figures 4 to 11 are surface elevation and thickness models for each of the main stratigraphic units. Figures 12 to 14 are 2-dimensional transects across the site from south-west and west-east. The results of the deposit modelling indicate that the number and spread of the logs is sufficient to permit modelling with a high level of confidence across much of the site, but coverage is largely absent towards the south-west.

The full sequence of sediments recorded in the boreholes comprises:

Made Ground
Upper Alluvium – widely present
Peat – widely present
Lower Alluvium – widely present, frequently peaty
Gravel (Shepperton Gravel)

4.1 Shepperton Gravel
Gravel was present in all the boreholes that penetrated to the bottom of the Holocene sequence. The modelling exercise indicates that the surface of the Shepperton Gravel is relatively even, ranging between -7.5 and -9.5m OD across the site, with a gradual decrease in height towards the north and east (Figures 4 & 12-14). Beyond the southern margin of the site, this surface appears to rise gently to between -7 and -6m OD, whilst one (most likely erroneous) record indicates a surface of -4m OD.

The Gravel represents the Shepperton Gravel which was deposited during the Late Glacial (MIS2; 15,000 to 10,000 BP) and comprises the sands and gravels of a high-energy braided river system which, while it was active would have been characterised by longitudinal gravel bars and intervening low-water channels in which finer-grained sediments might have been deposited. Such a relief pattern would have been present on the valley floor at the beginning of the Holocene when a lower-energy fluvial regime was being established.

In order to place the findings of this investigation in a wider regional context, the modelling procedures carried out have been extended to cover a larger area of the local Thames floodplain, including locations where previous similar geoarchaeological investigations have been undertaken (see Figure 2). The results of this wider-scale investigation are presented as a contour model of the Shepperton Gravel surface (Figure 5). The surface of the Shepperton Gravel is chosen as the basis for this wider regional evaluation because the relief features present on that surface are widely understood to have strongly influenced patterns of sedimentation on the Thames floodplain throughout the Holocene, and to have had a significant impact on the topography of prehistoric land surfaces. It is highlighted that the larger area has been modelled at a coarser resolution (100m as opposed to 50m radius from each borehole) and due to the absence of records in certain areas, the coverage of the model is incomplete.
One of the principal relief features recorded in the nearby area is a large linear depression cut into the Shepperton Gravel surface (up to -11.2m OD) and extending west to east or north-west to south-east across the Alchemy Park site. Borehole coverage is insufficient to gauge the exact dimensions of this channel, but it would appear to be a maximum of 100-200m wide on the basis that the Shepperton Gravel surface is recorded at above -9m OD on the Imperial Gateway (Batchelor et al., 2008b) and Pirelli Works (Young et al., 2008b) sites. Extrapolating the orientation and origin of the channel is also restricted by the lack of coverage, however it would appear to be part of a wider pattern of probable drainage lines radiating from a more elevated part of the Shepperton Gravel surface identified during investigation of the Veridion Park site to the west (Batchelor and Green, 2013), whilst a deep embayment around Belvedere Industrial Estate suggest its confluence with the Thames at this point. Other deep depressions are identified within the modelled area, include two which are orientated approximately north-south across the Pirelli Works site (Young et al., 2008b). The gravel surface at the base of these features however, is recorded at approximately -8m OD, indicating they are substantially shallower than that recorded at Alchemy Park (-11.2m OD). In addition, an uneven surface of the Shepperton Gravel has been identified on the Crossness Sewage Works site adjacent to the river; potentially representing north-south aligned channels draining towards the Thames, separated by more elevated ridges of gravel (Green et al., 2011).

4.2 Lower Alluvium

The Lower Alluvium rests directly on the Shepperton Gravel and is recorded in the majority of records across the site; it is however absent in various sequences (e.g. SM-BH19, TQ485E306, SM-BH105, SM-BH104; Figures 12-14). The apparent absence of Lower Alluvium could be a true reflection of natural variations in the stratigraphic sequence. Alternatively, the apparent absence of Lower Alluvium could be a reflection of the drilling/description method used by the geotechnical team at the time of investigation.

Where recorded, the deposits of the Lower Alluvium are generally described as a predominantly silty or clayey unit tending to become increasingly sandy downward in most sequences. The Lower Alluvium frequently contains detrital wood or plant remains, and in many cases is described as organic rich, or peaty, or with traces of peat; in a few of the records distinct horizons of peat are recorded measuring up to 1m in thickness close to the interface with the Gravel (e.g. SM-BH104; Figure 14). The surface of the Lower Alluvium (where recorded) generally rests between -3 and -4m OD (Figure 6), though individual records indicate heights ranging between -2 and -8m OD (Figures 12-14). The thickness of the Lower Alluvium ranges from 1 to 8m; thicker occurrences are often present where the surface of the Shepperton Gravel lies at a lower level.

The sequences captured from the Former Borax Works site did not reach sufficiently deep to capture the organic-rich / Peat deposits recorded towards the base of the Lower Alluvium. However, radiocarbon dating of sequences from nearby sites such as Alchemy Park (Batchelor et al., 2016), Pirelli Works (Young et al., 2012) and Imperial Gateway (Batchelor et al., 2008b) suggest the Lower Alluvium began accumulating during the early to middle Holocene around 7000 cal BP (late Mesolithic; Figure 13). Deposition took place during a time when the main course of the Thames was...
probably confined to a single meandering channel. During this period, the surface of the Shepperton Gravel was progressively buried beneath the sandy and silty flood deposits of the river. The richly-organic nature of the Lower Alluvium, with evidence of localised and short-lived, probably episodic peat accumulation suggests that this was a period during which the valley floor was occupied by a network of actively migrating channels, with a drainage pattern on the floodplain that was still largely determined by the relief on the surface of the underlying Shepperton Gravel.

4.3 Peat
Overlying the Lower Alluvium across the majority of records from the site is a bed of peat generally ranging in thickness between 1 and 2m (Figures 7 and 12-14). The greatest thickness of Peat is recorded in the south-eastern corner of the site, where an isolated record indicates 5m of Peat is preserved. The surface of the peat (Figure 8) is fairly level between -1.0m and -2.0m OD.

The widespread occurrence of Peat above the Lower Alluvium indicates a general transition to a more stable valley floor, possibly associated with falling relative sea level and slight incision of the main channel of the Thames, encouraging the development of semi-terrestrial conditions across most of the floodplain. The peat is composed of wood and herbaceous remains indicating that during its accumulation the floodplain supported the growth of sedge fen/reed swamp and woodland communities. Radiocarbon dating of sequences from the Former Borax Works site (Batchelor et al. 2008a) and nearby sites such as Alchemy Park (Batchelor et al., 2016), Pirelli Works (Young et al., 2012), Imperial Gateway (Batchelor et al., 2008b) and Crossness Sewage Works (Batchelor et al., 2006) suggest that the peat began accumulating during the middle Holocene around the time of the transition from the Mesolithic to Neolithic cultural period, and continued until the Bronze Age; a period of around 3000 years.

Peat is however absent in a number of borehole records from the south-western corner of the site (Figure 13) including archaeological trenches 7-9 on the southern part of the Former Borax Works site (Figure 3; Batchelor et al., 2008a), indicating truncation by a subsequent process. The spatial extent of this feature across other areas of the Riverside Energy Plant site is unknown and beyond is unknown.

4.4 Upper Alluvium
The uppermost unit in the Holocene alluvial sequence is the Upper Alluvium, the deposits of which comprise largely sterile clays and silty clays. These deposits are recorded in every record across the site and more widely across the modelled area (Figures 9 & 12-14). The Upper Alluvium generally ranges between 1 and 5m in thickness, but occasionally reaches greater thicknesses where the Lower Alluvium and or Peat is absent. The deposition of the Upper Alluvium had the effect of infilling the remaining inequalities in the relief of the floodplain, so that the surface of the Upper Alluvium (Figure 9) is remarkably level on land between +0m and +2m OD.

The Upper Alluvium is typical of the mineral-rich sediments that are present as the uppermost element of the Holocene sequence beneath most floodplains in southern and south-east England. It is generally considered to reflect increased sediment loads resulting from intensification of
agricultural land use from the later prehistoric period onward, combined with the effects of rising sea level.

4.5 Made Ground
Between 1 and 4m of Made Ground caps the Holocene alluvial sequence (Figure 11).
Figure 4: Top of the Shepperton Gravel (m OD) (site outline in red)
Figure 5: Top of the Shepperton Gravel (m OD) across the wider area (for site names see Figure 1)
Figure 6: Top of the Lower Alluvium (m OD) (site outline in red)
Figure 7: Thickness of Peat (m) (site outline in red)
Figure 8: Top of Peat (m OD) (site outline in red)
Figure 9: Top of the Upper Alluvium (m OD) (site outline in red)
Figure 10: Thickness of Total Alluvium (m) (site outline in red)
Figure 11: Thickness of Made Ground (m) (site outline in red)
Figure 12: West–East (north) transect of selected boreholes across Riverside Energy Plant, London Borough of Bexley
Figure 13: West–East transect (south) of selected boreholes across Riverside Energy Plant, London Borough of Bexley
Figure 14: North-South transect of selected boreholes across Riverside Energy Plant, London Borough of Bexley
5. CONCLUSIONS AND RECOMMENDATIONS

A desk-based geoarchaeological exercise was instigated to: (1) summarise current understanding of the nature of the sub-surface stratigraphy, in particular the presence and thickness of alluvium and peat across the site; (2) to evaluate the potential of these sediments for providing information on the environmental history of the site, and evidence of human activity, and (3) to make recommendations for further work as part of the planning condition (if necessary). In order to address these aims, the stratigraphic data from existing stratigraphic records were used to produce a deposit model of the major depositional units across the site.

The results of the deposit modelling indicate that the sediments recorded at the Riverside Energy Park site are similar to those recorded elsewhere in the Lower Thames Valley, with Late Devensian Shepperton Gravel overlain by a tripartite sequence of Holocene Lower Alluvium, Peat and Upper Alluvium, buried beneath modern Made Ground. In addition, the following features were noted: (1) the absence of Peat on the south-eastern part of the site (as noted beneath the Former Borax Works site), and (2) the presence of organic-rich/peat deposits within the Lower Alluvium which were not studied as part of the Former Borax Works investigations. However, due to an absence of borehole records, our knowledge and understanding of the sedimentary sequence is limited across south-western part of the site. A program of 12 new geotechnical boreholes is due to be put down commencing in late March 2018 (Figure 15), and the monitoring of a select number of sequences is therefore recommended. This will enable both complete coverage of the model for the site to be achieved, as well as ground-truthing of those areas already covered. The ideal boreholes for monitoring would be BH1, BH2, BH4 & BH8 as these represent a good spatial distribution across this area of the site; however, there is room for flexibility depending upon the program of works, and BH3, BH5 and BH10 would be suitable alternative locations.

On the basis of the likely depth of the sediments and findings from nearby sites, the archaeological potential of the site is considered low, although this cannot be confirmed until a complete deposit model is produced. However, even in the absence of archaeological remains, the sediments have the potential to contain further information on the past landscape, through the assessment/analysis of palaeoenvironmental remains (e.g. pollen, plant macrofossils and insects) and radiocarbon dating. So called environmental archaeological or palaeoenvironmental investigations can identify the nature and timing of changes in the landscape, and the interaction of different processes (e.g. vegetation change, human activity, climate change, hydrological change) thereby increasing our knowledge and understanding of the site and nearby area. In the case of human activity, palaeoenvironmental evidence can include: (1) decreases in tree and shrub pollen suggestive of woodland clearance; (2) the presence of herbs indicative of disturbed ground, pastoral and/or arable agriculture; (3) charcoal/microcharcoal suggestive of anthropogenic or natural burning, and (4) insect taxa indicative of domesticated animals. Such investigations are routinely carried out where required as part of planning conditions across the Lower Thames Valley and its tributaries, instructed by the Local Planning Authority Archaeological Advisor. It is therefore recommended that the need for further palaeoenvironmental work is considered after the initial fieldwork and deposit modelling stage.
Figure 15: Proposed Geotechnical borehole locations
6. REFERENCES


