# London Gateway: Site X Cooling Marshes Kent



# Archaeological Investigation Report



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# LONDON GATEWAY SITE X: COOLING MARSHES, KENT

# ARCHAEOLOGICAL INVESTIGATION REPORT

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#### NON-TECHNICAL SUMMARY

A trial trench evaluation was carried out on reclaimed marshland within the alluvial floodplain of the River Thames in the parishes of Cooling and High Halstow, on the Hoo Peninsula (NGR TQ 7650 7850). The project forms part of the environmental mitigation programme carried out in relation to development of the London Gateway Port, at Stanford-le-Hope in Essex. The purpose was to assess the archaeological potential of the site and identify any constraints on the creation of a new mudflat, which is to be developed as a replacement habitat for wildlife. When the design of the mudflat has been finalised an Archaeological Project Design (APD) will be prepared, detailing any mitigation measures that may be required. 122 trenches were excavated, each 50m x 2m in plan, representing approximately a 1% sample of the investigation area.

British Geological Survey boreholes indicate that the geological sequence consists of Holocene marine alluvial deposits 15-20m thick, overlying Pleistocene gravels 200mm to 6.5m thick, which in turn overlie chalk bedrock. In this context any in situ prehistoric remains are likely to be buried at a depth of several metres, beyond the maximum depth of investigation. As expected, no in situ prehistoric or Roman archaeology was found in the trenches. A small number of previous Iron Age and Roman finds are noted in the Kent Heritage Environment Record in the intertidal foreshore to the north of the existing sea defences, in the north-west corner of the site, which may indicate the presence of a Roman site at relatively shallow depth, in process of erosion (OA 2012a, sites 26 and 28). However no archaeology was found in the nearest trenches (7, 12, 13, 80, 82) within the top metre of the sediment sequence.

Archaeological remains within the top 1m of the sediment sequence were very sparsely distributed in general. The trenching has successfully characterised various potentially significant archaeological features identified by the previous surveys. Most of the geophysical anomalies investigated appear to relate to infilled former channels, which were recognised in 50 of the trenches.

The most significant archaeology comprised a series of medieval mound deposits and dumps of domestic refuse, interpreted as a possible salt-making site, subsequently re-used as a sheep-fold/ refuge mound (Site 1), which is located between Salt Fleet and Hope Fleet, near the southern edge of the site. Residual Bronze Age worked flints and Roman pottery, suggest that the medieval site may overlie an earlier sequence of mound deposits buried at greater depth than 1m. This is the only site identified by the evaluation that is likely to act as a constraint on the development of the new mudflat.

Two other sites recorded as sheepfolds on 19<sup>th</sup> century maps (Sites 2 and 3) included evidence for post-medieval and modern activity only. Of these, Site 2 (Trench 56) produced pottery from the late medieval/early post-medieval transition (c 1475-1550), which was recovered from the fill of a former channel. Site 3 included a brick sheep dip, which appears to have been in use in the late 18th century but was made from what may have been recycled 16th/17th century bricks. Site 4, another 19th century sheepfold, produced only modern artefacts.

# 1 INTRODUCTION

#### 1.1 Project planning background

- 1.1.1 Oxford Archaeology (OA) was commissioned by DP World (DPW) to conduct an archaeological trench investigation for a proposed amelioration area at 'Site X', located at Salt Creek and Halstow Marshes, in Kent. The area forms part of the London Gateway Port and Park Development, which received planning permission from Government on the 30th May 2007. The applications were in the form of an Outline Planning Application for the Park (OPA) and a Harbour Empowerment Order (HEO) for the Port. A condition of both permissions is the implementation of the London Gateway Archaeological Mitigation Framework (OA 2003). Originally included as a Technical Report to the Environmental Statement, the purpose of this document was to establish a strategic framework, applicable to the entirety of the archaeological resource, within which the London Gateway archaeological programme would operate.
- 1.1.2 Site X is an ecological amelioration area required under the terms of the HEO. Fortyfive hectares is to be selected from the overall site area and transformed into mudflats to create habitats for wading birds and other wildlife. The total site area considered in the desk-based assessment was 183 hectares (OA 2012a). The southeastern area has since been excluded from further consideration, leaving 109 hectares (130 hectares including the existing sea wall footprint, which is not available for survey purposes). The creation of the mudflats will involve reducing the ground level in the designated area by c.0.5m (possibly up to a metre in localised areas). A new sea wall will be constructed near the southern edge of the site using the excavated material. Finally the existing sea wall will be breached to allow the site to be flooded by the tidal waters of the Thames estuary.
- 1.1.3 A desk-based assessment suggested that the ground reduction may affect diverse archaeological and heritage resources (OA 2012a). Magnetometer and Lidar surveys were carried out to clarify the archaeological potential of the site and identify targets for intrusive investigation (OA 2013a).
- 1.1.4 In accordance with the guidance contained within the AMF, OA produced an Archaeological Project Design (APD, OA 2013b), describing the scope of the proposed archaeological trenching at Site X which was accepted by Kent County Council.

# 1.2 Scope of work

1.2.1 In accordance with the procedures outlined within the London Gateway Archaeological Mitigation Framework a programme of fieldwork was undertaken to address the aims listed below. Phases 1a to 1c were completed prior to commencement of trial trenching. The results of Phase 2a are detailed in this report. Given largely negative results from the trench investigation, the contingency for hand augering (Phase 2b) was not required.

#### Phase 1: Non-intrusive surveys

Phase 1a: Update the previous desk-based assessment in order to identify surrounding heritage assets and archaeological potential (OA 2012a).

Phase 1b: Extensive gradiometer survey (OA/ Bartlett-Clark Consultancy 2013).

Phase 1c: Lidar analysis of significant geomorphological and cultural features with topographic expression (results incorporated in geophysical survey report – OA/Bartlett-Clark Consultancy 2013).

#### Phase 2: Trench investigation

Phase 2a: Trenching programme (current phase).

Phase 2b: Contingency for hand auger in areas of the main palaeochannel and to better define archaeological areas (contingency - concurrent with trenching work).

#### Phase 3: Mitigation

Phase 3: Detailed mitigation proposals (scope subject to results from Phase 2a-b) and the finalised design for the new mudflat.

#### 1.3 Location, geology and topography

- 1.3.1 The site is located on the alluvial floodplain of the River Thames in the parishes of Cooling and High Halstow, and centred approximately at NGR TQ 765 785. The total extent of the original project area is shown on the location plan (Fig.1). The survey area, field numbers and trench locations are shown on Figure 2, which also shows detailed surface topography derived from Lidar data and interpreted gradiometer survey features.
- 1.3.2 The survey area is flat reclaimed marshland at an elevation between c. 0m to +0.5m AOD, and is now covered by improved grassland, subdivided by watercourses and tidal channels. Salt Fleet crosses the centre of the site and Hope Fleet forms the southern boundary.
- 1.3.3 The geology of the site is mapped by the British Geological Society as estuarine and marine alluvium overlying London Clay (BGS sheet 272 Scale 1:50,000). The alluvium, which comprises silt and clay with interbedded peat and seams of sand and gravel is c. 15m to 23m deep. These deposits seal Pleistocene gravels that vary between 200mm and 6.5 metres in depth. These in turn overlie solid geology comprising Upper Cretaceous Upper Chalk (central area of marshes) sandwiched between Palaeocene Lambeth Group and Thanet Sand Formation (northern and southern parts of the marshes).
- 1.3.4 The survey area lies at a considerable distance from the nearest historic village centres at High Halstow and Cooling, which lie on the chalk ridge that forms the spine of the Hoo Peninsula, c 2km to the south.
- 1.3.5 An extensive network of creeks and drainage channels (both natural and man-made) divides the site into a series of fields (numbered 1-11 on Figure 2). The fields are low-lying and level, bounded to the north by a line of sea defences and to the south

by Hope Fleet. Salt Fleet flows from west to east through the southern part of the site, draining into Egypt Bay.

1.3.6 One large relict creek (a tributary of Salt Fleet) is apparent on the geophysical survey plot and late 19th century historic maps, but is not visible at ground level or on the Lidar data, suggesting that the western side of the site at least has been subject to extensive levelling in the course of the 20th century, presumably to promote drainage and agricultural improvement.

#### 1.4 Previous surveys

- 1.4.1 Oxford Archaeology (OA) and Wessex Archaeology (WA) in conjunction with Gill Andrews (Consultant Archaeologist) completed a preliminary desk-based assessment to inform the London Gateway Harbour Empowerment Order Environmental Statement in 2002. OA had responsibility for landside aspects of the development and WA for the marine-side) (WA 2001). An update of the site-specific DBA report was completed in 2012. This focused on the landside elements as creation of the new mudflat was not expected to have a significant impact offshore (OA 2012a). An outline of the results from the DBA and previous archaeological field investigation in the area are discussed below.
- 1.4.2 An extensive landscape characterisation project has recently been completed for the Hoo Peninsula by English Heritage, the results of which have been made available as background information (Bannister 2011). The survey effectively combined Historic Landscape Charcterisations (HLC) and Historic Seascape Characterisation (HSC) features within a GIS database. Medieval routeway and settlement patterns were found to underpin the modern character of the landscape between Cooling and Cliffe marshes. The irregular nature of the fields were found to have been largely dictated by the network of drainage creeks and fleets. The site is considered to be a prime location for historical saltworkings and pottery production.
- 1.4.3 Other than the London Gateway and English Heritage surveys, no systematic archaeological fieldwork has been undertaken within the site. However, a number of small-scale excavations have been carried out over the past 45 years within the wider area. Excavations by the Lower Medway Archaeological Research Group (LMARG) recovered sherds of Romano-British coarseware pottery along with fragments of tile on what was considered to be a salt-making site on Halstow Marshes c. 450 metres south-east of the site. Further excavations by LMARG in 1974 located a second Romano-British salt-working site c. 370 metres to the southeast of the site. A third Romano-British salt-working site, excavated at Cliffe Marshes in the mid-1960s, c. 965 metres to the south west of Site X, also produced a number of human burials. Further excavations took place on this site during a watching brief conducted by Kent Archaeological Society between 1977 and 1979 during pipeline and drainage works.
- 1.4.4 The North Kent marshes are well known as a centre of pottery production in the early Roman period. Monaghan (1987) produced a study of the pottery types associated with this area ('Thameside'), which includes a discussion of the nature and extent of pottery production in the marshes.

# 1.5 Geoarchaeological background

- 1.5.1 In order to understand fully the character and distribution of archaeological sites in the Lower Thames Estuary area and the reasons behind major changes in occupation and settlement patterns in the past it is necessary to understand the changing nature of the estuary itself. The geological history of the Thames is complex; the recent geomorphological development of the area and the establishment of the modern topography have resulted from major drainage pattern modifications during the Quaternary.
- 1.5.2 The currently adopted stratigraphic sequence for the Lower Thames is based on work undertaken by Devoy (1977, 1979, 1982). Borehole stratigraphies were integrated with biostratigraphic studies to infer successive phases of marine transgressions (Thames 1-V) represented by clay/silt units and regressions (Tilbury 1-V) represented by peat units. Devoy constructed two age-altitude curves of relative sea level movement, one for Tilbury (outer estuary) and one for Crossness, Dartford and Broadness (inner estuary). The model suggests that transgressions occurred in the Palaeolithic/early Mesolithic periods, the late Mesolithic/early Neolithic periods, throughout the Bronze Age, in the middle Iron Age and at the beginning of the 4th century AD (Devoy 1980).
- The 'Thames-Tilbury' model is regarded as the seminal work in this area and has 1.5.3 been widely applied by researchers outside the original study area in the absence of regional models. However, more recent work (Haggart 1995 in Sidell et al 2000,16) has highlighted several problems, such as the need for two age/altitude curves, suggesting that it cannot always be easily applied to the whole of the Thames Estuary, both in terms of lithology and age/ altitude analysis (Sidell et al 2000, 16). This reflects the complex nature of the floodplain environment during this period, consisting of peat forming communities, migrating channels and sand eyots (Sidell 1998). Bates (1995, 1998, 2000, 2004) points out that Devoy's work has resulted in a view of sediment accumulation being controlled within the area by a combination of factors dominated by sea-level change and tectonic depression, taking no account of palaeogeography, sedimentary basin size and local to regional sedimentation patterns. More recent work has been aimed at constructing regional models for estuary development (Long 1995, Long et al 2000) which begin to address the range of factors responsible for sequence accumulation. These studies focus on detecting contrasting zones, where the archaeological significance depends upon the position of the wetland-dryland interface, or identifying between channels, peatlands and siltlands. Such areas are considered to be the foci of human activity and a key to identifying areas of high archaeological potential.
- 1.5.4 Deposit modelling has not been undertaken at Site X and is not proposed due to the shallow depth of the construction impact. BGS borehole data indicates that the Holocene alluvial sequence is very thick (15 23m) but the mudflat creation will only affect at the maximum the top 1m of the deposit sequence. There is currently no site specific information on the depth at which Roman or prehistoric sites might be encountered, although general deductions can be drawn from comparisons with Devoy's model and subsequent modelling work elsewhere in the lower Thames, including recent work at the main London Gateway site on the opposite bank of the Thames (OA 2012b).

## 1.6 Historical and archaeological background

- 1.6.1 There are no known sites or finds dated to the prehistoric period within the site. Because of the changes in sea level and build-up of successive layers of alluvium discussed above, former prehistoric land surfaces are buried at depth within the alluvial sequence, below the 1m maximum depth of investigation. Prehistoric features could be present at any depth within the underlying thickness of Holocene alluvium but will not be affected by creation of the mudflat.
- In the Roman period coastal marshes were important for a number of economic 1.6.2 activities including pottery manufacture and salt-making industries, which probably began in the Iron Age or earlier, but now continued on a considerably larger scale, along with oyster fishing and salt boiling used in the processing of fish, rough grazing and farming (Monaghan 1987, 18). Roman archaeology has been found in the immediate vicinity, although the only recorded sites of this period within the site boundary are Roman pottery sherds recovered from the foreshore in front of the sea wall in the north-western corner of the site (OA 2012, Fig. 2, numbers 26 and 28). These could derive from a Roman saltern or pottery kiln under active tidal erosion, although no indications of Roman activity were found in the nearest evaluation trenches to the south of the sea wall. The nearest suspected Roman salt-making site was excavated by the Lower Medway Archaeological Research Group to the southeast of the site. It uncovered quantities of coarse Roman pottery, and fragments of roofing and bonding tile. It is possible that Roman archaeology could be encountered within the top metre of the sediment sequence, especially if located on mounds at a higher level than the contemporary marsh surface.
- 1.6.3 There is no evidence for Anglo-Saxon activity within the site boundary.
- 1.6.4 The vast majority of sites identified by the DBA and non-intrusive surveys date from the medieval and later periods. The area of the proposed new mudflat is located within the medieval parishes of Cooling and High Halstow. It is likely that the main foci of manorial settlement grew up on the higher ground c 2 km to the south of the site, on the southern edge of the marshes, in the vicinity of the historic villages of Cliffe, Cooling (or Cowling) and High Halstow (OA 2012).
- 1.6.5 During the early medieval period and in later periods the coastal marshes would have been important for sheep pasture and for a number of economic activities such as salt production, fowling and fishing. Domesday Book mentions no fisheries within Cliffe and Cooling, although it is unclear whether the survey provides a complete picture of fishing activity in Kent in AD1086 The site lay outside the three main salt manufacturing areas on the Isles of Thanet and in Sheppey and Romney Marshes, and none of the 24 salt-pans (salinae) recorded in Domesday lie nearby. To what extent the Domesday folios provide a complete picture of the salt-making centres in Kent in 1086 is not clear (Darby and Campbell 1971, 538). Many of the mounds identified in the North Kent marshes are likely to be the remnants of salt making sites dating from the medieval and post-medieval period. In the post-medieval period this typically took the form of either wooden troughs or clay-lined trenches that used sand to filter out the salt (known as 'sleeching'), which was then boiled in small buildings, housing peat-fired furnaces, or through the construction of pools used to collect salt water at high tide. This coastal industry disappeared by the end of the 18th century as it was unable to compete with Cheshire salt, particularly rock salt, mined from the end of the 17th century (Crossley 1990, 224). 'Salt Fleet' might reasonably be

expected to have been connected with salt-making at some point, probably before it was cut off from the sea by reclamation in the 17th century).

- 1.6.6 The chronology of land reclamation is not known in detail. However a map of the Cliffe and Higham Levels, dated 1695, shows the marshes immediately to the west of the site. A note indicates that 'All of the Levels eastward of this [i.e. the Cooling marsh] is sewed entirely by the Fleets and Delph Ditches'. It would therefore appear that reclamation of the marshland within the evaluation site had largely been completed by 1695. The 17th century was a period of major investment in large scale systematic reclamation of salt marshes. The marshes on the opposite bank of the Thames at Canvey Island and Fobbing were 'inned' in the 1620s (Biddulph et al 2012).
- 1.6.7 An assessment of the Cooling estate in 1300, prior to the construction of Cooling Castle, indicates that there were three mills within the estate (the location of which is not known) and a large number of sheep pastured in the marsh. Much of the marsh was described as 'saltings', indicating that they were not enclosed by sea walls in the early 14th century (Nichols undated booklet, 8).
- 1.6.8 Fishing and the use of boats in the creeks within the marsh may have led to the preserved remains of sunken or abandoned boats still being present within these creeks. The fleets appear to have been actively maintained using sluices etc. While the main creeks were still navigable they would have formed an important conduit between the settlements of Cliffe, Cooling and High Halstow and the main channel of the Thames, as well as providing access to the floodplain itself. There is therefore potential for the remains of boats and also possibly of wharves to be found along the edge of the main fleets.
- 1.6.9 The Tithe maps of the parishes of Cooling and High Halstow are the earliest detailed maps of the area of the evaluation site, both of which are dated 1842 (OA 2012, Figs. 5 and 6). The maps show individual parcels of reclaimed marshland, behind a sea wall (OA 70). The parcels are fairly uniform in size (if somewhat irregularly shaped, being defined in large part by natural creeks) suggesting planned reclamation, with the land being divided up into several properties. Isolated small farms or sheepfolds are depicted, within enclosures, forming a central hub to surrounding larger plots of land. The site includes two such site (OA 102 and 74) which are identified as sheepfolds on 19th and 20th century maps. The central hub fields and sheepfolds were probably located on slightly higher ground in the former marshland and indicate possible areas of higher archaeological potential in the medieval and earlier periods.
- 1.6.10 The OS 1st edition 6" map (1870-72) shows little change from the Tithe maps. The OS 2nd edition 6" map (1898) marks the appearance of two sea walls along the edges of the Cooling and Halstow Marshes (OA 84 and 85). The OS 6" maps from 1910 up to the present day show relatively little change, other than the creation of a new section of seawall at Egypt Bay after 1961 along with the disappearance of several sheepfolds and the infilling of one major creek in the western part of the site, and some of the smaller drains. Comparison of aerial photographs from 1947, 1961 and 1999 suggests that the site may have been extensively levelled, and these features infilled, between 1947 and 1961.

# 2 EVALUATION AIMS AND METHODOLOGY

#### 2.1 Aims

- 2.1.1 The main project aims were as follows:
  - 1 Identify any archaeological remains or significant deposits that may be removed or impacted during the formation of the mudflat, in order to develop a further understanding of past human activity and changing environments and landscapes within the Halstow Marshes. The impact is limited to the top 1m of the sediment sequence.
  - 2 Test and investigate the nature of the anomalies highlighted in the desk-based assessment, gradiometer and Lidar surveys.
  - 3 Investigate the extent, conditions, nature, character, quality and date of any archaeological and palaeoenvironmental remains encountered.
  - 4 Identify significant variations in the near-surface sedimentary sequence indicative of localised features such as tidal creeks or palaeochannels. Palaeoenvironmental reconstruction of the Holocene alluvial sequence is not a central focus of this investigation due to the shallow construction impact. This aim is concerned with identifying and characterising likely locations for archaeological sites such as coastal salterns, which are invariably found alongside active or former creeks.
  - 5 Define the significance of any archaeological features or deposits in order to inform further mitigation measures, which may include preservation in situ or by record.
  - 6 Investigate any evidence of late prehistoric, Roman or medieval reclamation or other activity within the marshes, which may include pottery manufacture and salt-working sites.
  - 7 Investigate any evidence for Second World War remains.
  - 8 Investigate any wooden remains that may represent structures such as boats, fishtraps, trackways or wharfs relating to the exploitation of the marsh environment.

#### 2.2 Methodology

- 2.2.1 The APD originally proposed a 1% sample of the site by area (130 trenches, each 50m x 2m in plan). This is a comparatively low intensity trenching sample, but is appropriate as the trench plan was informed by gradiometer survey results and Lidar data. Of the 122 trenches excavated, 61 were located to investigate specific targets. These included magnetic anomalies identified by geophysical survey, possible earthwork features identified on the Lidar plot, and various features identified from aerial photographs or historic maps. The remaining 61 trenches were distributed to infill gaps in coverage.
- 2.2.2 Eight trenches could not be excavated due to various access constraints, including the presence of protected nesting birds (50, 87, 115, 116, 117), the placement of the temporary compound (63) and difficulties in crossing a creek with the machine (60, 61). The unexcavated trenches are indicated on the trench plan (Fig.2).

- 2.2.3 The depth of investigation was limited to 1.0m from existing ground level, which is the maximum depth of impact arising from the proposed development. The general depth of ground reduction required to create the new mudflat is expected to be c. 0.5m, with the possibility of localised deeper excavations up to 1m deep.
- 2.2.4 The trenches were excavated using up to three 21-ton 360 tracked mechanical excavators. Each machine was fitted with a wide toothless ditching bucket. Deposits were removed in spits of no more that 20mm. Excavations continued until the first archaeological horizon was exposed or a depth of 1m was reached. All mechanical excavation was undertaken under close archaeological supervision.
- 2.2.5 The depth of the trenches, wet ground conditions and consequently unstable trench sides meant that no access was permitted to the excavated trenches. If potentially significant archaeology was observed, the trench sides were (if necessary) to be battered to prevent the sides from collapsing. In practise the only significant archaeology requiring hand investigation was encountered at very shallow depth.
- 2.2.6 Following mechanical excavation, all areas of the trench that required examination or recording were cleaned using appropriate hand tools. Recording took place in accordance with OA fieldwork manual (Wilkinson 1992).
- 2.2.7 Flooding of trenches was expected to be a significant problem during excavation. To mitigate it, trenches containing no significant archaeology were backfilled as soon as recording was complete, as agreed with KCC. Trenches were not left open overnight unless very shallow.

# 3 RESULTS

## 3.1 Presentation of results

3.1.1 This section comprises an overview of the results, focused on the most significant evidence. Individual trench and context descriptions are detailed in Appendix A. The general location of the trenches is shown on Figure 2. Context descriptions are presented in summary in the context inventory (Appendix A), and within the descriptive text where they are integral to the interpretation of the context in question. Artefacts and animal bone recovered, and the contents of soil samples, are noted in the following site descriptions where they occurred. Hardly any archaeological cut features were recorded and this is reflected in the small number of sections and detailed trench plans included in the report. Palaeochannels were noted in numerous trenches (see section 3.8) but were not recorded/ investigated in detail unless associated with archaeological sites.

# 3.2 Conditions during fieldwork

- 3.2.1 Flooding in the trenches was a significant issue, particularly in the western fields (1 and 8) where there was extensive standing surface water. As very little archaeology was encountered in the majority of trenches, there was sufficient time between excavation of the trenches and the onset of flooding to inspect and record the deposit sequence, without any need for pumping. The only archaeology which required detailed investigation was encountered at shallow depth in Trenches 16, 30 and 32, which were not flooded.
- 3.2.2 The weather was generally dry and clear, but with occasional periods of rain.

#### 3.3 General distribution of archaeological deposits

- 3.3.1 Archaeological features were in general very sparsely distributed. The vast majority of archaeological features and deposits were found in association with four distinct sites, all of which had previously been identified from historic maps and aerial photographs and confirmed by magnetometer and Lidar survey (Figs. 3 and 4, Sites 1 4). Detailed plans and sections are focussed in particular on Site 1, which contained a significant concentration of medieval archaeology, possibly a saltern mound in origin, which was re-used as a sheepfold during the late 19th and early 20th centuries (and possibly earlier).
- 3.3.2 Sites 2, 3 and 4 produced evidence only for post-medieval and modern activity and are interpreted as sheepfolds. None of them appeared to be located on mounds. In the case of Site 2 unstratified pottery finds from palaeochannel fills suggest activity in the vicinity from the 15th or 16th century through to the 20th century. The earlest recorded activity at Sites 3 and 4 probably dates from the late 18th or 19th century, although a brick-built sheep dip at Site 3 was made from unfrogged Tudor bricks (possibly recycled from a 16th century building). Sites 2 and 3, in particular appear to have been important focal points in the 19th century enclosure system, which is consistent with their use as sheep folds.

# 3.4 Site 1 - Trenches 30-34 (Figs. 5 - 11)

- 3.4.1 A group of five closely spaced trenches (30-34) was positioned to investigate an earthwork in Field 11, near the southern edge of the site, near the north bank of Hope Fleet. The overall dimensions of this site are approximately 70m by 40m. The site is visible on historic maps, aerial photographs, Lidar and magnetometer plots. It has previously been interpreted as a possible medieval saltern in origin, re-used as a sheep-fold in the late 19th/ 20th centuries (DBA reference 82; Geophysical survey reference 'CC'; NMR 1534817).
- 3.4.2 **Trench 30** This trench, which was excavated across the northern edge of the mound, crossed a large pit at its east end, probably a pond or channel (cut 3002, fills 3003 and 3004). The aerial photos show broad elongated earthworks at these locations on a SW-NE alignment which seem to be channels or ponds, forming the western side of the Site 1 earthworks.
- 3.4.3 A medium-sized medieval pottery assemblage was recovered from a series of reddish coloured silty clay dump deposits infilling the feature (3010 and 3011). The assemblage comprised 52 sherds (710g) probably of 14th-15th century date. The two main pottery bearing contexts (3003 and 3004) each contained a small sherd from the same Saintonge jug, indicating that both contexts are broadly contemporary. The smaller group in context 3003 contained other wares compatible with the jug. The larger assemblage from context 3004 is more mixed as it also contained some (residual?) early medieval pottery, with a broad 12th 14th century date range. Residual middle Bronze Age worked flints were also present.
- 3.4.4 No other cut features or structures were present in this trench, but an infilled channel or pond (3005) was recorded running through the central part of the trench, the fills of which produced modern finds, including ink bottle and wine bottle sherds and a socketed spade head. Sixty-two sheep/ goat bones were recovered from the same context.
- 3.4.5 **Trench 31** This trench contained no recognisable archaeological cut features or structures. Sheep/ goat bones were recovered from alluvium infilling a palaeochannel. The alluvial deposits consisted of relatively homogeneous silty clay with no trace of the artefact-rich dump deposits encountered in Trenches 30 and 32, or the reddened possible saltern deposits seen in Trenches 33 and 34.
- 3.4.6 **Trench 32** The most obvious archaeological remains in Site 1 were recovered from Trench 32, comprising a series of artefact and organic-rich medieval dump deposits. No archaeological cut features were present. A small palaeochannel (cut 3208; fill 3209) investigated at the north end of the trench contained a small amount of animal bone. The layers were only present at the north end of the original trench. A cross-shaped extension was excavated to investigate the extent of the deposit which indicated that it continued c.15m to the west and 10m to the east. On the 1961 aerial photo (Fig. 8) the deposit appears to coincide with a dark irregular soil mark, in contrast to the circular mound to the east which shows up as a light coloured soil mark (on the 1999 aerial photo the soil mark colours are reversed).
- 3.4.7 In section the dump deposits formed a mound of interleaved layers with a high point near the north end of the trench. A series of organic grey silty clay layers (3203, 3204, 3205, 3210) rich in artefacts and environmental remains, were interleaved with layers of less artefact-rich grey silty clay (3206, 3207, 3211), the latter possibly representing hiatuses or flood events between episodes of rubbish dumping. The

uppermost layer (3204) was encountered immediately below topsoil. Elsewhere the medieval layers were sealed by a disturbed subsoil layer (3201) which contained occasional medieval pottery but may derive from deliberate levelling of the mound in the late 20th century.

- 3.4.8 Although the surviving mound deposits formed a relatively complex stratigraphic sequence (at least 1m thick), the pottery from all of the individual contexts fell within the period from c. 1175 1350. The largest individual pottery assemblage (167 sherds) came from context 3205, which is the latest of the stratified medieval layers and can be dated to c.1200-1300, perhaps suggesting a slightly tighter date range for the medieval deposit sequence as a whole. The earliest context in the sequence (3215) contained six sherds with a similiar date range (c. 1175 1300). In total 512 medieval sherds were recovered from the sequence in Trench 32, a high density given the limited extent of the trench.
- 3.4.9 Contexts 3203, 3204, 3205 and 3207 which are otherwise firmly dated to the medieval period, contained a total of 20 residual worked flint fragments, consistent with mid-late Bronze Age date. Contexts 3205 and 3210 also contained 1 sherd each of residual Roman pottery. This anomaly is discussed further below.
- 3.4.10 The only metal finds recovered from this trench were nail fragments and some tiny undiagnostic iron fragments, including possible hammerscale, all from context 3204. The hammerscale may indicate small scale metal-working in the vicinity.
- 3.4.11 Two whetstones were both recovered from layer 3205 and a hone from layer 3203. All are of Norwegian Ragstone, a typical medieval whetstone material and are extremely well used.
- 3.4.12 Some small pieces of ceramic building material (CBM) recovered from a sieved sample (context 3204) are irregular with impressions of plant stems running through them. A few of these have a flat smooth surface. They may relate to the use of turves for fuel, the clay adhering around the base of the turf being waste debris following burning. Alternatively turf may have been used as superstructure for an oven or hearth and the clay represent lining over the inner face.
- 3.4.13 Fish bones, recovered from a sieved sample from context 3204, included small flatfish, herring and eel.
- 3.4.14 **Trench 33** The northern end of the trench investigated the eastern edge of the circular mound, which consisted of a slightly reddened silty clay deposit (3302) which became gradually thicker, slightly redder and more distinct towards the north end of the trench. No artefacts were recovered from this deposit. A single medieval sherd was found in association with a similiar (but more obviously red) deposit at the west end of Trench 34 (3405). Deposit 3302 lay immediately below 0.3m thick topsoil and was 0.6m thick at the north end of Trench 33. Mid-orange brown silty clay alluvium, typical of oxidised natural alluvium encountered elsewhere on the site, was encountered near the base of the trench at a depth of 0.9m.
- 3.4.15 Three-quarters of the trench (the southern part) was occupied by possibly redeposited silty clay alluvial deposits (3303), thought to be infilling a pond or palaeochannel. The 1961 aerial photo shows a partially infilled palaeochannel which cuts through Trench 33 on a NW-SE alignment, passing to the SW of the circular mound. A scatter of disarticulated animal bones (sheep/goat) was recovered from the base of this context (3303), which appeared to lie at the interface between the channel edge and the adjacent reddish mound deposits described above (3302). A

localised layer of charcoal was found within the alluvium infilling the channel, at a depth of 0.8m, near the southern end of the trench, apparently a localised dump deposit. There were no associated finds so the date of this is uncertain, but the pond/ channel infill in general is likely to be of post-medieval or modern date on stratigraphic grounds, if the reddish mound deposit is medieval.

- 3.4.16 The topsoil in this trench (3300) contained numerous modern finds including brick rubble, slates, iron obects and glass, presumably derived from one of the former 19th century sheepfold structures.
- 3.4.17 **Trench 34** This trench contained no archaeological cut features or structures. The sediment sequence consisted of topsoil overlying alluvial deposits. A palaeochannel was noted towards the eastern end of trench. Within the alluvial deposits a faint band of apparently heat-reddened silty clay was observed at the western end of the trench at the base (at a depth of 1.0m), which appears to represent a dumped deposit rather than in situ structural remains. The layer was removed when cleaned by trowelling so appeared to be very thin, and faded out to the east. The deposit could potentially be residues from sleeching or salt evaporation, indicating a saltern in the vicinity. One sherd of medieval pottery was found on the surface of the layer. The sherd was recovered from a significantly greater depth than the medieval dump deposits in trenches 30 and 32, indicating that the medieval deposit sequence at Site 1 survives to a thickness of at least 1m on the highest surviving part of the mound.

# 3.5 Site 2 (Trenches 54-56 and 71; Figs.12 - 13)

- 3.5.1 A focus of post-medieval and modern activity was investigated in the vicinity of Trenches 51, 52, 53, 54, 55 and 56. This site had previously been identified from historic maps, aerial photographs, Lidar and magnetometer plots (DBA reference 102; Geophysical survey feature 'L').
- 3.5.2 **Trench 51** The only archaeological feature recognised in these trenches was the remains of a metal scaffold pole and timber structure in the north end of Trench 51, probably part of a former footbridge of 20th century date.
- 3.5.3 **Trenches 53, 54, 55 and 56** Infilled palaeochannels were noted in all of these trenches. Unstratified sherds of pottery recovered from channel fills suggest activity at this general location from the late 15th or 16th century through to the 20th century. Trench 56 was the only location in Site X which produced pottery from the late medieval/early post-medieval transition (c 1475-1550). This was recovered from the fill of a palaeochannel which also contained a partly articulated sheep skeleton (context 5605).
- 3.5.4 A post-medieval sheepfold is depicted at this location on the 1898 Ordnance Survey map of Halstow Marsh. This consisted of a group of buildings that divided in two a small enclosure, defined by drainage ditches to the west of Egypt Bay. The area was still divided by 1897 although there were by then fewer buildings. The northern half of the enclosure in 1897 was planted with trees. The buildings had been demolished by 1908 although their general location is indicated by a slight depression seen on aerial photographs taken in 1947. Most of the drainage ditches have since been filled-in and levelled. This site was identified as part of the English Heritage Hoo Peninsula Landscape Project (Newsome 2012). No surface signs of the site were visible during the trenching and there was no evidence for a mound from the surveys or excavated trenches.

# 3.6 Site 3 (Trenches 16, 17 and 22; Figs.14 - 17)

- 3.6.1 Located in Field 1, this site was identified from aerial photographs, historic maps, Lidar and geophysical survey (DBA reference 82; geophysical survey feature 'CC'; NMR 1534817; Figs.3 and 4). Trenches 16 and 17 investigated the site of a postmedieval and modern sheepfold, which is labelled as such on the 1st edition OS map (surveyed 1870-72) and on 20th century OS maps up until at least the 1970s.
- 3.6.2 Surface features include the foundations of a brick building with a concrete floor. This building was rectangular in plan and measured c. 8m NW-SE and c. 18 m NE-SW. It was located on a rectangular mound or platform raised c. 300mm above the surrounding ground. The mound measures c. 12 m NW-SE and c. 20 m NE-SW. The building foundation (1602) is made from yellow stock bricks, which were probably made in the period between c.1820 and 1900. The concrete floor (1610) survives in patches but has mostly been broken up.
- 3.6.3 There was no evidence in Trench 16 for occupation prior to the post-medieval period. The earliest structure (1611) was a semi-circular section of brick wall, probably originally a circular structure, adjoining a straight section of wall. This appears to be the remains of a sheep dip. A circular plunge bowl connected to a short straight passage is a common form of 18th-20th sheep dip, which can be made from brick or concrete. This example is made from hand-made, unfrogged bricks of late 16th 17th century type. However, the earliest occupation deposits in Trench 16 date from the late 18th century. Finds from an occupation layer contemporary with the sheep dip (1613) included pottery, clay pipe fragments, and miscellaneous small finds with a date range from c. 1740-1800. It seems likely that the sheep dip was built in the latter part of the 18th century and that the bricks were probably re-cycled from an earlier building. The bricks might have been transported from the nearest village centres at Halstow and Cooling, c. 2km to the south, or could have been brought in by boat from a wider catchment area.
- 3.6.4 The sheep dip was cut in half longitudinally by the construction of the 19th century rectangular brick structure (1602) with concrete floor (1610). An occupation deposit associated with this later phase (1612) included fragments of transfer printed pottery, clay pipe, pantiles and glass vessels with a date range from c.1830 to 1900. A group of four modern sheep burials was found in the same trench (1603, 1604, 1605, 1606) adjacent to the sheepfold structure. These were photographed but not investigated as clearly of modern date, with organic remains adhering and may have been diseased animals.
- 3.6.5 Aerial photographic evidence indicates that the sheepfold was demolished between 1961 and 1999. The scarcity of 20th century domestic artefacts pehaps suggests that shepherds in the area may have spent less time living in the marshes after the end of the 19th century.
- 3.6.6 The Tithe Map of 1842 shows a small enclosure adjoining a roughly circular small field at this location, which is not labelled, but may have acted as a hub for controllling livestock movements in the surrounding marshes. It is suggested in the DBA as a possible farmstead, but there is no evidence for domestic buildings in the excavated trenches or on the historic maps. Most archaeological features were concentrated in Trench 16.
- 3.6.7 **Trench 22** investigated a nearby post-medieval pond (DBA reference 133). The pond is visible as an oval earthwork on aerial photographs taken in 1947, mapped as part

of the English Heritage: Hoo Peninsula Landscape Project. When inspected at ground level for the DBA in February 2012 it was found to be a slightly oval, almost circular depression c. 13 m in diameter and c. 300mm in depth. The pond was not detected with any clarity by the magnetometer or Lidar survey. Aerial photographic evidence indicates that it was extensively infilled and levelled at an unknown date between 1961 and 1999.

3.6.8 The edges of the infilled pond were recorded in Trench 22, suggesting a diameter of at least 9.4m. Three fills were identified. The lower fill (2203) appeared to have accumulated gradually as a result of alluvial deposition, rather than through deliberate infilling. Deposit 2204 was thin dark layer containing organic material which probably represents a buried soil horizon. The upper fill (2205) comprised alluvial clay similar to 2203, but is probably redeposited, having been used to infill the pond in the late 20th century. Deposit 2204 contained a cluster of disarticulated sheep/ goat bones. No other artefacts were recovered.

# 3.7 Site 4 (Trenches 25-26, Fig.18)

- 3.7.1 A sheepwash is marked at this location on modern OS maps. It is first shown on the OS 1st edition 6" map of 1872. A pile of rubble was noted at this site when it was visited for the DBA on 15th February 2012, but no structure could be discerned.
- 3.7.2 **Trench 25** No archaeology was encountered in this trench. A palaeochannel edge was noted at the south-west end of the trench.
- 3.7.3 **Trench 26** Immediately below topsoil at the north-west end of the trench, two modern concrete and wooden posts were observed. The topsoil (2600) contained a considerable amount of loose brick and concrete rubble indicated the presence of a former sheepfold structure of 20th century date. No evidence for earlier activity was observed. The structure was located on the edge of an infilled channel.

# 3.8 Other archaeological features

- 3.8.1 **Trench 14** contained a single shallow linear feature, probably a drainage ditch of recent date (not illustrated).
- 3.8.2 **Trench 18** contained a carefully laid brick rubble surface made from unfrogged Tudor bricks (1809, Fig.19). The surface lies in close proximity to a sheepfold known to have been in use in the 19th century (Site 3, 50m to the north) and is likely to be an associated structure. As with the sheep dip in Site 3 (Trench 16), the Tudor bricks may have been recycled from an earlier structure.
- 3.8.3 **Trench 80** contained three undated possible features, interpreted as postholes (cuts 8004, 8006, 8007).

#### 3.9 Palaeochannels

3.9.1 Palaeochannels are a ubiquitous feature in alluvial environments. They were noted in the trench records but not recorded in detail unless associated with archaeological deposits. Visible traces of relatively recently infilled tidal palaeochannels were noted in section, usually as broad bands of darker coloured silty clay in the following 50 trenches: 3, 4, 8, 9, 14, 15, 16, 17, 18, 19, 20, 24, 25, 26, ,27, 28, 30, 32, 33, 34, 35,

36, 37, 38, 39, 42, 43, 48, 53, 54, 55, 56, 68, 69, 70, 72, 73, 80, 82, 85, 86, 94, 100, 110, 111, 112, 114, 119, 120, 126. Many palaeochannel fills contained sheep bones, generally individual bones but in one case articulated. In the vicinity of Sites 1 and 2, medieval, post-medieval and modern pottery was also found within palaeochannel fills, as described above.

3.9.2 The following 74 trenches did not include visible traces of palaeochannel cuts: 1, 2, 5, 6, 7, 10, 11, 12, 13, 21, 22, 23, 29, 31, 40, 41, 43, 44, 45, 46, 47, 49, 51, 52, 57, 58, 59, 62, 63, 64, 65, 66, 67, 71, 74, 75, 76, 77, 78, 79, 81, 83, 84, 88, 89, 90, 91, 92, 93, 95, 96, 97, 98, 99, 101, 102, 103, 104, 105, 106, 107, 108, 109, 113, 118, 121, 122, 123, 124, 125, 127, 128, 129, 130. In many cases these trenches were cut through anomalies interpreted as palaeochannels on the geophysical survey plot, Lidar data or aerial photos. The absence of recorded channels in these trenches is likely due to the difficulty in differentiating palaeochannel fills (recently redeposited alluvium) from the surrounding alluvium.

#### 3.10 Sea defences

- 3.10.1 No evidence was found in any of the trenches for former sea defences. Trench 48 was placed to investigate a possible length of former sea wall (DBA reference 159) but no archaeological features were visible, and no finds were recovered. The earthwork was too slight to recognise and may have been levelled since 1947.
- 3.10.2 **Trench 12**, located near the sea defences in the north-west corner of Field 1, contained a single undated posthole (cut 1202) the fill of which included wood fragments. In isolation this feature cannot be interpreted reliably. It could be a fence post. Being within the top 1m of the alluvial sediments it is likely to be of relatively recent date.

# 3.11 Modern drainage and levelling

- 3.11.1 Mechanically installed land drains were noted in the majority of trenches, but not recorded in detail. Many of the linear bands on the gradiometer survey plot are likely to be land-drains although they are not very clearly apparent. In the trenches their alignment is variable but predominantly north-south. The variety of drains present indicates that multiple phases of drainage have been undertaken.
- 3.11.2 There was evidence that the parts of the site have been subject to mechanical levelling in the later 20th century, presumably to promote drainage and improve the pasture. One large creek in the western half of the site (a former tributary of Salt Fleet), is shown as an active channel on the 1842 Tithe Map and is clearly apparent on the geophysical survey plot, but there is little or no trace of it on the Lidar plot. In addition, features on the Lidar plot, outside the development to the west, appear much more clearly defined/ less eroded than those within the site.
- 3.11.3 The surface topography appears relatively undisturbed in some parts of the site, as shown by the surviving medieval mound on the north bank of Hope Fleet (Site 1, Trenches 30 34), although here too aerial photographic and archaeological evidence suggests that the mound was cleared of 19th century sheepfold structures and partially levelled between 1947 and 1961.

# 3.12 Finds summary (See Appendix B)

- 3.12.1 A small collection of 20 fragments of worked flint, consistent with a Bronze Age date, were residual in medieval contexts at Site 1.
- 3.12.2 A total of 693 sherds of pottery weighing 10.470kg was recovered from 31 contexts, the majority of medieval date, from Site 1. Two Roman sherds were residual in medieval contexts at Site 1.
- 3.12.3 A total of 14 pieces of ceramic building material (CBM) weighing 7.776kg was recovered from 8 contexts. This included medieval tile fragments from Trench 30 (Site 1) but mostly comprised sample bricks from post-medieval/ modern structures in Trench 16 (Site 3).
- 3.12.4 The metalwork assemblage comprised a wide variety of objects, 32 in total, from trenches throughout the site. The largest number were from medieval contexts at Site 1.
- 3.12.5 Other finds include 17 post-medieval/ modern clay pipe stems, the majority from Sites 2 and 3.

#### 3.13 Environmental summary (See Appendix B)

#### Animal bone

3.13.1 Excluding four modern sheep burials in Trench 16 (which were not retrieved), a total of 475 animal bones were recorded from the evaluation trenches, the majority of which (415 fragments) came from infilled palaeochannels. The recovered bones were concentrated in two distinct zones in the vicinity of probable sheep folds which seem to have been in at least occasional use from the medieval period to the modern (Sites 1 and 2). The identifiable portion of the assemblage is overwhelmingly dominated by sheep / goat bones (most likely sheep in this context). The bone assemblage from the fill of palaeochannel 5606 (Trench 56, Site 2) included part of an articulated sheep skeleton.

#### Charred plant remains

- 3.13.2 Sample <1001> (1203) was taken from the fill of a posthole in Trench 12. Samples <1002> (8003) and <1003> (8008) were taken from the fill of postholes in Trench 80. Sample <1004> (8204) was a possibly natural feature within Trench 82 and the sample was taken to ascertain if any evidence of human activity was present. Sample <1005> (3306) was a possible charcoal dump within Trench 33. Sample <1006> (3204) was a potential midden of medieval date within Trench 32 and sample <1007> (11902) was believed to be a dump of burnt material within Trench 119.
- 3.13.3 Apart from sample <1006>, from the artefact-rich medieval deposit at Site 1, the samples were fairly barren and did not provide useful evidence to help interpret the features/deposits.

# 4 DISCUSSION

#### 4.1 Reliability of Field Investigation

- 4.1.1 The main limitation of the investigation is the 1m depth limit, which was determined by the maximum depth of impact of the proposed new mudflat. Any Roman and prehistoric finds within the site are likely to be buried at greater depth. The DBA established that the archaeological potential of the top metre of the sediment sequence is largely confined to the medieval and post-medieval periods, with a slight chance of encountering Roman deposits. This has been borne out by the evaluation results. The only prehistoric and Roman material recovered were a small number of residual artefacts found in medieval contexts at Site 1.
- 4.1.2 No trenches could be excavated in the intertidal zone to the north of the sea defences. Iron Age and Roman finds have been recovered along the foreshore along the northern site boundary, to the north of the sea wall, which may indicate the presence of a Roman site at relatively shallow depth, in process of erosion (OA 2012a, sites 26 and 28). However no archaeology was found in the nearest trenches (7, 12, 13, 80, 82) within the top metre of the sediment sequence. Any remains underlying the existing sea defences are likely to have been extensively disturbed during construction of the sea wall and associated drains.

#### 4.2 Evaluation objectives and results

- 4.2.1 The trenching has successfully characterised the potentially significant archaeological features identified by the previous surveys. Archaeological remains within the top 1m of the sediment sequence were very sparsely distributed in general. Most of the geophysical anomalies investigated appear to relate to infilled former channels, which were recognised in 50 of the trenches. Hardly any cut archaeological features were identified.
- 4.2.2 As expected there was no evidence for *in situ* prehistoric, Roman or Anglo-Saxon remains within the evaluation area. As noted below small numbers of residual Bronze Age worked flints and Roman pottery were recovered from artefact-rich medieval dump deposits in Trenches 30 and 32. If the artefact rich deposits derive from the site (rather than being imported from elsewhere) these finds may indicate that Site 1 has a long history as a focus of activity within the marshes.
- 4.2.3 Most significant archaeology was concentrated at Site 1, comprising a series of medieval mound deposits interpreted as a possible salt-making site, subsequently reused as a sheep-fold/ refuge mound (discussed in detail below).
- 4.2.4 Two other 19th century sheepfold sites (Sites 2 and 3) were investigated but produced only evidence for post-medieval and modern activity. Of these, Site 2 (Trench 56) produced pottery from the late medieval/early post-medieval transition (c 1475-1550), the only location where pottery of this date range was recovered. The sherds were recovered from the fill of a palaeochannel which also contained a partly articulated sheep skeleton (context 5605). Site 3 included a brick sheep dip, which appears to have been in use in the 18th century but was made from what may have been recycled 16th/17th century bricks. Site 4, another 19th century sheepfold, produced only modern artefacts.

- 4.2.5 There is no evidence, that any of these post-medieval/ modern sites (Sites 2 4) were located on refuge mounds. Late 19th century maps show that the sheepfolds at Sites 2 and 3 formed hubs within the enclosure system, controlling access to and from the surrounding areas of marsh. This suggests that they may have been established at much the same time as the reclamation and enclosure of the Cooling Marshes, probably in the post-medieval period. Available documentary evidence suggests that reclamation had not been completed in the 14th century, but was complete by the late 17th century.
- 4.2.6 There is no definitive evidence for permanent post-medieval settlement within the site at any date, although seasonal occupation at least is clearly evident in dumps of domestic finds from the sheepfold sites, particularly Site 1 in the medieval period and Site 3 in the late 18<sup>th</sup> 19th century. Sites 1, 2 and 3 all include slight hints of activity in the post-medieval period, but the most substantial evidence is for sheepfolds or similar agricultural structures dating from the late 18th or 19th century, continuing in use into the early 20th century.
- 4.2.7 One of the objectives of the evaluation was to look for timber structures, preserved in waterlogged conditions, that might shed light on historic land-use within the marshes. Apart from 19th/20th century footbridge structural remains, no preserved waterlogged wooden remains were identified during the evaluation. This is probably explained by the oxidisation of the upper part of the Holocene alluvium caused by seasonal drying out, which would cause any organic remains within the upper alluvium to decay. As the depth of investigation was limited to 1m, the trenches were excavated entirely through the oxidised alluvium.

#### 4.3 Site 1 interpretation and significance

- 4.3.1 On the basis of aerial photographic evidence Site 1 was thought to represent a mound formed from the discarded waste material from salt manufacture, a process known as 'sleeching' in which brine was extracted from salt-rich sands and sediments, concentrated and evaporated. Depressions in the mounds are thought to mark the site of the putative saltpan building. The evaluation results broadly confirmed the interpretation of this site, although no structural remains were encountered. The reddish coloured soils in Trenches 33 and 34 appear to coincide with the circular mound visible on the aerial photographs and 1898 OS map. They are poorly dated, with just a single associated sherd of medieval pottery. No *in situ* hearths were identified, but the fired clay assemblage from Trench 32 includes traces of burnt turf or peat that could have been used as fuel, or to construct ephemeral hearths on the surface of the mound.
- 4.3.2 No stratigraphic relationship was established between the faintly reddened soils in Trenches 33 and 34 and the artefact-rich medieval dump deposits in Trenches 30 and 32, which appear to form a spatially separate series of deposits extending to the west of the circular mound, possibly separated from it a channel, which passes through Site 1 on a NW-SE alignment (most clearly apparent on the 1961 aerial photo, Fig. 8). The dump deposits could be contemporary with the putative medieval salt-making activity or reflect a later phase of use as a sheep fold/ refuge mound. The pottery from Trench 32 falls within the late 12th to early 14th century whereas the pottery from Trench 30 dates from the late 14th-15th century, indicating a prolonged period of use. A circular feature on the 1898 OS map appears to depict the medieval mound. According to 'A Dictionary of the Kentish Dialect and Provincialisms (1888) 'a little raised mound in the marshes to which the shepherds and their flocks can retire when the salterns are submerged by the tide' was traditionally known as a 'coterell'.

- 4.3.3 The contents of the medieval dump deposits overlying the reddened deposits seems typical of normal domestic refuse from any low status coastal settlement and the deposits might suggest that medieval salters lived on the site during the summer months. One potential problem with that interpretation is that the deposits contained residual finds including 20 pieces of mid-late Bronze Age worked flint and two sherds of Roman pottery. As Bronze Age and Roman horizons are likely to be buried by alluvium at least a metre or two below the present ground surface, the occurrence of residual finds of those dates requires some explanation in this remote marshland location. One possibility is that the site has a long history of human use, as a refuge mound within the marshes, and excavations by medieval salters periodically turned up prehistoric and Roman artefacts. Alternatively the medieval dump deposits may have been transported to the site from a settlement elsewhere with a long history of habitation. The latter seems unlikely as the nearest permanent settlements would have been located *c* 2km to the south, beyond the marsh edge.
- 4.3.4 Since no trace of the late 19th/ 20th buildings or enclosure were found in the trenches, historic maps and aerial photographic evidence suggest that the foundations are likely to have been completely removed during levelling/ truncation of the site, probably between 1947 and 1961. The 1870-2 OS map is the earliest which shows individual minor agricultural buildings, such as sheepfolds (for example Sites 2, 3 and 4), but does not show any features at Site 1 (this could be an omission). A building (approximately 5m square) is first depicted on the 2nd edition map of 1897, in the south-western side of the site within a small trapezoidal enclosure (western end of Trench 32). A second smaller building/ structure is depicted outside the enclosure to the north-east, at the highest point of the surviving mound (at the western end of Trench 34). What appears to be the same larger building and the general shape of the enclosure are also clearly apparent on an aerial photograph taken in 1947 although the smaller building to the north-east had been demolished by that date. The larger building had been demolished by 1961, but traces of the trapezoidal enclosure are still apparent on the aerial photograph. The condition of the monument in 1999 looks largely unchanged compared with the 1961 photo.

# 4.4 Conclusions

- 4.4.1 The design of the proposed new mudflat has not been finalised at this stage, as selection of the location is dependant upon understanding the archaeological constraints. The only site identified by the evaluation that is likely to act as a constraint on development is Site 1, a medieval/ post-medieval salt-making site and livestock refuge mound, located between Salt Fleet and Hope Fleet, near the southern edge of the site.
- 4.4.2 Once the mudflat design has been developed sufficiently, an Archaeological Project Design (APD) will be prepared, in accordance with the London Gateway Archaeological Mitigation Framework, which considers the impact of the development and details any mitigation measures that may be required.

#### 4.5 Acknowledgements

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- 4.5.2 The OA field team was supervised by John Boothroyd and included Dan Sykes, Dan Strachan, Kat Nicholls and Jim Harriss. The project was managed by Stuart Foreman.

# APPENDIX A – TRENCH DESCRIPTIONS AND CONTEXT INVENTORY

Trench 1									
General des	scription	1	Orient	tation	N-S				
			Avg. d	lepth (m)	1m				
Trench devo	oid of arc	haeology. (	Width	(m)	2.2				
natural of Si	ity sanu.				Length (m)		50		
Contexts									
context no	type	Width (m)	Depth (m)	comment		finds	date		
300	Layer		0.02	Topsoil – dark brown silty c	lay.				
301	Layer		0.05	Subsoil – mid brown silty cl	ay				
302	Layer		>0.75	Alluvial – mottled brown ora	ange clay	,			

Trench 2	2					
General	descript	tion	Orientation	NW-SW		
					Avg. depth (m)	1m
Trench d	evoid of	archaeolo	sts of topsoil overlying alluvial deposits.	Width (m)	2.2	
					Length (m)	50
Contexts	6					
context no	type	Width (m)	Depth (m)	comment	finds	date
200	Layer		0.25	Topsoil – dark brown silty clay.		
201	Layer					

Trench 3	3					
General	descrip	tion			Orientation	NW-SW
					Avg. depth (m)	1m
Trench c	onsisted	of topsoil	l overlying	subsoil. A shallow linear was recorded at	Width (m)	2.2
the north	western				Length (m)	50
Contexts	5					
context no	type	Width (m)	Depth (m)	comment	finds	date
300	Layer		0.02	Topsoil – dark brown silty clay.		
301	Layer		0.05	Subsoil – mid brown silty clay		
302	Layer		>0.75	Alluvial – mottled brown orange clay		
303	Cut	0.26	0.12	Ditch – Moderate concave sides and base		
304	Fill	0.26	0.12	Fill of 303 – mid to dark brown grey silty clay		
305	Cut			Drainage Channel		
306	Fill			Fill of 305 – Mixed grey brown clay silt.		

Trench 4						
General	descrip	tion	Orientation	N-S		
			Avg. depth (m)	1m		
Trench de	evoid of	archaeo	nsists of topsoil overlying subsoil and alluvial	Width (m)	2.2	
ueposits.	Former	channel	Length (m)	50		
Contexts						
context	type	Width	Depth	comment	finds	date

Trench 4								
no		(m)	(m)					
400	Layer		0.1	Topsoil – dark brown silty clay.				
401	Layer		0.1	Subsoil – mid-dark grey brown silty clay				
402	Layer		>0.75	Alluvium – mottled orange brown blue clay				

French 5								
General	descrip	tion	Orientation	N-S				
					Avg. depth (m)	1m		
Trench d	evoid of	archaec	nsists of topsoil overlying alluvial deposits.	Width (m)	2.2			
					Length (m)	50		
Contexts	5							
context no	type	Width (m)	Depth (m)	comment	finds	date		
502	Layer		0.25	Topsoil – dark brown silty clay.				
501	Layer		>0.75	Alluvium – mottled orange brown blue clay				

Trench 7	7					
General	descrip	tion			Orientation	E-W
			Avg. depth (m)	1m		
Trench d	evoid of	archaec	Width (m)	2.2		
ueposits.	Evident		rpannių		Length (m)	50
Contexts	5					·
context no	type	Width (m)	Depth (m)	comment	finds	date
700	Layer		0.2	Topsoil – dark brown silty clay.		
701	Layer		0.1	Subsoil – light brown silty clay		
702	Layer		>0.70	Alluvium – mottled orange brown blue clay		

Trench 8	}					
General	descrip	tion			Orientation	N-S
					Avg. depth (m)	1m
Trench denosits	evoid of Former	archaec	ology. Co	nsists of topsoil overlying subsoil and alluvial	Width (m)	2.2
ueposits.	i unnei	Charme		Length (m)	50	
Contexts	5					
context no	type	Width (m)	Depth (m)	comment	finds	date
800	Layer		0.2	Topsoil – dark brown silty clay.		
801	Layer		0.1	Subsoil – mid-dark grey brown silty clay		
802	Layer		>0.70	Alluvium – mottled orange brown blue clay		
803	Cut	16	>1m	Channel		
804	Fill			Fill of Channel 803 – Mixed grey brown and orange, humic clay silt.		

Trench 9		
General description	Orientation	N-S
	Avg. depth (m)	1m
French devoid of archaeology. Consists of topsoil overlying alluvial deposits.	Width (m)	2.2
	Length (m)	50
Contexts		

Trench 9							
context no	type	Width (m)	Depth (m)	comment	finds	date	
900	Layer		0.3	Topsoil – dark brown silty clay.			
901	Layer		>0.75	Alluvium – mottled orange brown blue clay			
902	Cut			Channel Cut			
903	Fill		>1m	Fill of Channel 902 – Silt clay loam mixed yellow and dark brown, initial natural silting followed by deliberate backfilling.			

Trench 1	0					
General o	descrip	tion			Orientation	N-S
				Avg. depth (m)	1m	
Trench de	evoid of	archaeo	nsists of topsoil overlying subsoil and alluvial	Width (m)	2.2	
ueposits.					Length (m)	50
Contexts	;					
context no	type	Width (m)	Depth (m)	comment	finds	date
1000	Layer		0.25	Topsoil – dark brown silty clay.		
1001	Layer		>0.75	Alluvium – mottled orange brown blue clay		

Trench 1	1					
General	descrip	tion		Orientation	NE-SW	
			Avg. depth (m)	1m		
Trench d	evoid of	archaec	Width (m)	2.2		
ueposits.				Length (m)	50	
Contexts	5					
context no	type	Width (m)	Depth (m)	comment	finds	date
1100	Layer		0.25	Topsoil – dark brown silty clay.		
1101	Layer		0.35	Subsoil – light brown silty clay		
1102	Layer		>0.4m	Alluvium – mottled orange brown blue clay		

Trench 1	French 12								
General	descrip	tion			Orientation	N-S			
				Avg. depth (m)	1m				
Trench co	onsisted	l of topso rthern er	oil overlyi	ng alluvial deposits; a single posthole was	Width (m)	2.2			
iocaleu a				Length (m)	50				
Contexts	5								
context no	type	Width (m)	Depth (m)	comment	finds	date			
1200	Layer		0.3	Topsoil – dark brown silty clay.					
1201	Layer		>0.7	Alluvium – mottled orange brown blue clay					
1202	Cut	0.4	0.38	Cut of post hole – concave base with steep sides					
1203	Fill	0.4	0.38	Fill of posthole 1202 – mid blue tenacious clay, including wooden post fragment.					
1204	Layer		>0.7	Alluvium – mottled orange brown blue clay					

Trench 13		
General description	Orientation	NE-SW

Trench 1	rench 13									
					Avg. depth (m)	1m				
Trench d	evoid of	archaec	ology. Co	nsists of topsoil overlying subsoil and alluvial	Width (m)	2.2				
ueposits.	Length (m) 50									
Contexts	Contexts									
context no	type	Width (m)	Depth (m)	comment	finds	date				
1300	Layer		0.20	Topsoil – dark brown silty clay.						
1301	Layer		0.1	Subsoil – Mid brown silty clay						
1302	Layer		>0.7m	Alluvium – mottled orange brown blue clay						

Trench 1	French 14								
General	descrip	tion	Orientation	NE-SW					
Trench co	onsisted	l of topso	Avg. depth (m)	1m					
Palaeoch	annel 1	407 was	d to be truncating the subsoil and had been	Width (m)	2.2				
recorded.	. The su end by	bsoil sea	Length (m)	50					
Contexts	6								
context no	type	Width (m)	Depth (m)	comment	finds	date			
1400	Layer		0.25	Topsoil – dark brown silty clay.					
1401	Layer		>0.65	Alluvium – mottled orange brown blue clay					
1402	Cut	10	>1	Palaeochannel					
1403	Fill	10	>1	Fill of 1402 – mixed blue brown silty clay, diffuse horizons.					
1404	Cut	0.6	0.16	Cut of ditch					
1405	Fill	0.6	0.16	Fill of ditch					
1406	Layer		0.1	Subsoil – light mid brown silty clay					
1407	Cut	3.9	>1	Palaeochannel					
1408	Fill	3.9	>1	Fill of 1408 – mixed grey brown and orange clay silt. Humic					

Trench 1	French 15								
General	descrip	Orientation	NE-SW						
			Avg. depth (m)	1m					
Trench d	evoid of	archaec	nsists of topsoil overlying subsoil and alluvial	Width (m)	2.2				
ueposits.	Deliber	atery bat		Length (m)	50				
Contexts	5								
context no	type	Width (m)	Depth (m)	comment	finds	date			
1500	Layer		0.25	Topsoil – dark brown silty clay.					
1501	Layer		0.15	Subsoil – Mid brown silty clay					
1502	Layer		>0.6	Alluvium – mottled orange brown blue clay					
1503	Cut	4	1	Palaeochannel					
1504	Fill	4	1	Fill of 1504 – Mixed brown grey orange silty clay, humic appearance.					

Trench 1	6					
General	descrip	tion			Orientation	N-S
					Avg. depth (m)	1m
					Width (m)	2.2
					Length (m)	50
Contexts	5				3()	
context no	type	Width (m)	Depth (m)	comment	finds	date
1600	Layer			Topsoil – dark brown silty clay		
1601	Layer			Alluvium – mottled orange brown blue clay		
1602	Str			Brick farm structure	Yellow stock brick	c1820-1900
1603	Cut			Sheep burial - not excavated		
1604	Cut			Sheep burial - not excavated		
1605	Cut			Sheep burial - not excavated		
1606	Cut			Sheep burial - not excavated		
1607	Cut			Palaeochannel		
1608	Fill			Fill of 1607 – dark orange brown silty clay		
1609	Layer			Subsoil – dark brown silty clay		
1610	Str			Concrete floor		
1611	Grp			Pre 19 <sup>th</sup> century structure		
1612	Layer			Friable dark orangey brown clay silt, occupation layer. Associated with structures 1602 and 1610	3 sherds pottery; 7 clay pipe framents; CBM pantile; modern glass vessel fragments	c.1830-1900
1613	Layer			Firm mid orange brown silty clay, occupation layer associated with structure 1611	19 sherds pottery; 3 clay pipe fragments; iron ring from a wooden patten; Cu alloy button; Fe nail stem	c.1740-1800
1614	Cut			Pit Cut		
1615	Fill			Fill of pit 1614 firm dark brown clayey silt.		
1616	Cut			Cut for structure 1602		
1617	Str			Wall of structure 1611	handmade brick	16 <sup>th</sup> / 17 <sup>th</sup> century
1618	Str			Wall of structure 1611	16 <sup>th</sup> / 17 <sup>th</sup> century handmade brick	
1619	Str			Wall of structure 1611		
1620	Str			Wall of structure 1611		
1621	Cut					
1622	Fill			Fill of cut 1616, firm dark brown clayey silt	5 sherds pottery; Brick	c.1720-1780
1623	Grp			Group of sheep burials.		

Trench 1	7					
General o	descrip	tion		Orientation	NW-SE	
				Avg. depth (m)	1m	
Trench de	evoid of	archaeo	nsists of topsoil overlying subsoil and alluvial	Width (m)	2.2	
ueposits.		manner,	Length (m)	50		
Contexts						
context no	type	Width (m)	Depth (m)	comment	finds	date
1700	Layer		0.20	Topsoil – dark brown silty clay.	Possible crank handle	20 <sup>th</sup> century
1701	Layer		0.05	Subsoil – Mid brown silty clay		
1702	Layer		>0.75	Alluvium – mottled orange brown blue clay		
1703	Layer	3	>1m	Palaeochannel		
1704	Fill	3	>1m	Fill of 1703 – mixed brown and orange silty clay, humic appearance.		

Trench 1	Trench 18								
General	descrip	tion		Orientation	NE-SW				
					Avg. depth (m)	1m			
Trench d	evoid of	archaec	Width (m)	2.2					
ueposits.			Length (m)	50					
Contexts	5				-				
context no	type	Width (m)	Depth (m)	comment	finds	date			
1800	Layer		0.20	Topsoil – dark brown silty clay.					
1801	Layer		0.1	Subsoil – Mid brown silty clay					
1802	Layer		>0.7m	Alluvium – mottled orange brown blue clay					
1803	Cut	12.5	>1	Channel Cut					
1804	Fill	12.5	>0.7	Fill of 1803 – deliberate backfilling					
1805	Fill	12.5	>1m	Fill of 1803 - primary silting					
1806	Cut			Channel Cut					
1807	Fill			Fill of 1806					
1808	Fill			Fill of 1806					
1809	Str			Hard standing					
1810	Layer			Layer sealing 1809					

Trench 1	9					
General	descrip	tion			Orientation	NW-SE
Trench de deposits.	evoid of A palae	archaec	ology. Co el was loc	nsists of topsoil overlying subsoil and alluvial cated 10m from NW end.	Avg. depth (m)	1m
Width (m	)	2.2				
Length (I	m)	50				
Contexts	5					
context no	type	Width (m)	Depth (m)	comment	finds	date
1900	Layer		0.20	Topsoil – dark brown silty clay.		
1901	Layer		0.1	Subsoil – Mid brown silty clay		
1902	Layer		>0.7m	Alluvium – mottled orange brown blue clay		
1903	Cut	18	1m	Channel Cut		

Trench 19								
1904	Fill	18	0.4	Fill of 1903 – mixed orange brown deliberate backfill				
1905	Fill	18	0.4	Fill of 1903 – natural silting, humic appearance mid grey brown silty clay				
1906	Fill	18	0.2	Fill of 1903 – natural silting mixed blue brown clay.				

Trench 20								
General	descrip	tion	Orientation	NE-SW				
Trench d	evoid of	archaec	Avg. depth (m)	1m				
deposits.	Trench	containe	Width (m)	2.2				
former ch	nannel c	rossing v	was obse	erved.	Length (m)	50		
Contexts	5							
context no	type	Width (m)	Depth (m)	comment	finds	date		
2000	Layer	-	0.20	Topsoil – dark brown silty clay.				
2001	Layer	-	0.1	Subsoil – Mid brown silty clay				
2002	Layer	-	>0.7m	Alluvium – mottled orange brown blue clay				
2003	Str			Channel crossing point.				
2004	Cut			Palaeochannel				
2005	Fill			Fill of 2004 – dark orange brown silty clay				
2006	Cut			Palaeochannel				
2007	Fill			Fill of 2006 – friable dark blackish brown clayey silt.	1 sherd pottery	c.1900-2000		
2008	Fill			Fill of 2006 – mid orangey brown with grey mottling.				

Trench 2	1					
General	descrip	tion		Orientation	NW-SE	
Trench de deposits.	evoid of	archaec	Avg. depth (m)	1m		
Width (m) 2.2		2.2				
Length (m)		50				
Contexts	5					
context no	type	Width (m)	Depth (m)	comment	finds	date
2100	Layer	-	0.15	Topsoil – dark brown silty clay.		
2101	Layer	-	0.25	Subsoil – Mid brown silty clay		
2102	Layer	-	>0.6m	Alluvium – mottled orange brown blue clay		

Trench 2	Trench 22										
General	descrip	tion			Orientation	E-W					
			Avg. depth (m)	1m							
Trench d	evoid of	archaec	Width (m)	2.2							
ueposits.	AISC	entury p	observed during excavation	Length (m)	50						
Contexts	5										
context no	type	Width (m)	Depth (m)	comment	finds	date					
2200	Layer	-	0.15	Topsoil – dark brown silty clay.							
2201	Layer	-	0.25	Subsoil – Mid brown silty clay							

Trench 22							
2202	Layer	-	>0.6m	Alluvium – mottled orange brown blue clay			
2203	Cut	9.4	0.7	Pond	9 sheep/goat bones		
2204	Fill	8.49	0.25	Fill of pond 2203 – soft mid blue grey clay, naturally accumulated			
2205	Fill	8.67	0.1	Fill of pond 2203 – soft dark grey silty clay.			

Trench 2	French 23									
General	descrip	tion		Orientation	N-S					
			Avg. depth (m)	1m						
Trench d	evoid of	archaec	Width (m)	2.2						
ueposits.				Length (m)	50					
Contexts	5									
context no	type	Width (m)	Depth (m)	comment	finds	date				
2300	Layer	-	0.2	Topsoil – dark brown silty clay.						
2301	Layer	-	0.15	Subsoil – Mid brown silty clay						
2302	Layer	-	>0.6m	Alluvium – mottled orange brown blue clay						

Trench 2	French 24									
General	descrip	tion			Orientation	NW-SE				
			Avg. depth (m)	1m						
Trench d	evoid of	archaec	ology. Co	nsists of topsoil overlying subsoil and alluvial	Width (m)	2.2				
ueposits.	raiaeu	channer			Length (m)	50				
Contexts	6									
context no	type	Width (m)	Depth (m)	comment	finds	date				
2400	Layer		0.15	Topsoil – dark brown silty clay.						
2401	Fill	27	0.4	Fill of 2406 – mid orange brown silt clay						
2402	Fill	27	0.2	Fill of 2406 – dark brown clay silt with humic appearance – deliberate backfill	5 sherds pottery; 2 vessel glass fragments	c.1875-1925				
2403	Fill	27	0.2	Fill of 2406 – dark brown clay silt humic appearance – natural silting						
2404	Layer	-	>0.85	Alluvium – mottled orange brown blue clay						
2405	Fill	27		Fill of 2406 – pale blue orange clay – natural silting						
2406	Cut	27	>1m	Palaeochannel						

Trench 2	French 25									
General	descrip	tion		Orientation	N-S					
Trench d	evoid of	archaec	Avg. depth (m)	1m						
deposits.	Palaeo	channel	Width (m)	2.2						
trench.			Length (m)	50						
Contexts	5									
context no	type	Width (m)	Depth (m)	comment	finds	date				
2500	Layer	-	0.2	Topsoil – dark brown silty clay.						
2501	Layer	_	0.15	Subsoil – Mid brown silty clay						
2502	Layer	-	>0.6m	Alluvium – mottled orange brown blue clay						

Trench 25							
2503	Cut	-		Palaeochannel			
2504	Fill	-	ł	Fill of 2503			

Trench 26								
General o	descrip	tion	Orientation	NW-SE				
			Avg. depth (m)	1m				
Trench de	evoid of	archaeo	Width (m)	2.2				
ueposits.	raiaeou		Length (m)	50				
Contexts								
context no	type	Width (m)	Depth (m)	comment	finds	date		
2600	Layer	-	0.2	Topsoil – dark brown silty clay.				
2601	Layer	-	0.15	Subsoil – Mid brown silty clay				
2602	Layer	-	>0.6m	Alluvium – mottled orange brown blue clay				
2603	Cut	5	>1	Palaeochannel				
2604	Fill	5	0.2	Fill of 2603 – primary silting, subsoil erosion				
2605	Fill	5	>1	Fill of 2603 – deliberate backfill, mixed dark brown orange clay silt.				

Trench 2	French 27								
General	descrip	tion	Orientation	E-W					
Trench d	evoid of	archaeo	logy Co	nsists of tonsoil overlying subsoil and alluvial	Avg. depth (m)	1m			
deposits.	Alluvial	variation	Width (m)	2.2					
34m of th	e trench	۱.	Length (m)	50					
Contexts	5								
context no	type	Width (m)	Depth (m)	comment	finds	date			
2700	Layer	-	0.2	Topsoil – dark brown silty clay.					
2701	Layer	-	0.15	Subsoil – Mid brown silty clay					
2702	Layer	-	>0.6m	Alluvium – mottled orange brown blue clay					
2703	Fill	>34	>1	Fill of 2704 – mixed blue orange silty clay					
2704	Cut	>34	>1	Palaeochannel – not discernible.					

Trench 28								
General	descrip	tion			Orientation	N-S		
				Avg. depth (m)	1m			
Trench de	evoid of	archaec	nsists of topsoil overlying subsoil and alluvial	Width (m)	2.2			
ueposits.		channer	om nom normenn end.	Length (m)	50			
Contexts	5							
context no	type	Width (m)	Depth (m)	comment	finds	date		
2800	Layer	-	0.2	Topsoil – dark brown silty clay.				
2801	Layer	-	0.15	Subsoil – Mid brown silty clay				
2802	Layer	-	>0.6m	Alluvium – mottled orange brown blue clay				
2803	Cut	22	>1m	Palaeochannel				
2804	Fill	-	-	Fill of 2803 – pale blue orange silty clay				
2805	Fill	-	-	Fill of 2803 – shell rich mid grey brown				
2806	Fill	-	-	Fill of 2803 – dark grey brown clay silt				

Trench 2	Э					
General o	lescrip	tion		Orientation	NW-SE	
Trench de	woid of	archaeo	sists of topsoil overlying subsoil and alluvial	Avg. depth (m)	1m	
deposits.	Running	g for 6m	be centre of the trench a thin gravel layer,	Width (m)	2.2	
2904 was	observ	ed to be	underlyir	ng the topsoil.	Length (m)	50
Contexts						
context no	type	Width (m)	Depth (m)	comment	finds	date
2900	Layer	-	0.15	Topsoil – dark brown silty clay.		
2901	Layer	-	0.15	Subsoil – Mid brown silty clay		
2902	Layer	-	>0.7m	Alluvium – mottled orange brown blue clay		
2903	Layer	-	>0.7m	Alluvium – light blue grey clay		
2904	Layer	-	0.1m	Mid grey brown clay silt with gravel inclusions.	circular pivot lining for a large door;	modern

Trench 3	0					
General	descript	ion			Orientation	NE-SW
					Avg. depth (m)	1m
Consists	of topsoi	il overlyir	Width (m)	2.2		
			Length (m)	50		
Contexts	5					
context no	type	Width (m)	Depth (m)	Comment	finds	date
3000	Layer	_	0.15	Topsoil – dark brown silty clay.		
3001	Layer	-	0.15	Subsoil – Mid brown silty clay		
3002	Layer	_	>0.6m	Pit cut		
3003	Layer	-		Fill of pit/ pond 3002. Reddish silty clay	15 sherds medieval pottery; Residual M/LBA worked flint	c.1280-1350
3004	Layer	-		Fill of pit/ pond 3002. Reddish silty clay	36 sherds medieval pottery; 1 sherd residual Roman pottery; bar like Fe object; quern fragment; vessel glass (undiagnostic date); Residual M/LBA worked flint	c.1380-1450
3005				Channel cut		
3006				Fill of channel 3005	Fe nail; Fe slag?	undated
3007				Fill of channel 3005		
3008				Fill of channel 3005	Fe socketted spade; ink bottles and one wine bottle fragment; 62 sheep/goat bones	modern
3009				Alluvium	1 sherd medieval pottery	c.1050-1225
3010				Reddish alluvium (mound deposit?)		

Trench 30							
3011				Reddish alluvium (mound deposit?)			

Trench 3	61					
General	descrip	tion	Orientation	N-S		
			Avg. depth (m)	1m		
Trench denosits	evoid of	archaec	Width (m)	2.2		
ueposits.	Occasii		seen in allowinn (2502) but not collected.	Length (m)	50	
Contexts	5					
context no	type	Width (m)	Depth (m)	comment	finds	date
3101	Layer	-	0.25	Topsoil – mid grey brown silty clay.		
3102	Layer	-	0.15	Subsoil – mid brown silty clay		
3103	Layer	-	>0.6m	Mottled orange brown/ blue grey clay	Animal bone noted in records but not collected	

Trench 32						
General	descrip	tion	Orientation	N-S		
Trench 32	2 include	ed an ex	Avg. depth (m)	1m		
concentra	ations of	່ 12 <sup>ຫ</sup> -13 <sup>ຫ</sup>	Width (m)	2.2		
sherds. T proportior bones als animal bc sievingOr No archae	he depo n of pep so recov one from nly occa eology a	pery furr pery furr ered fror this dep sional sr apparent	Length (m)	50		
Contexts	;					
context no	type	Width (m)	Depth (m)	Comment	finds	date
3200	Layer	-	0.2	Topsoil – dark brown silty clay.	29 sherds medieval pottery; modern wire- drawn nail	Unstratified ploughsoil finds (pottery date range - c.1225-1350)
3201	Layer	-	0.05	Subsoil – Mid brown silty clay	46 sherds medieval pottery; Fe possible cut nail; cylindrical bottle glass (undiagnostic date); 6 residual M/LBA flint artefacts; 2 oyster valves; 2 peppery furrow; 2 cockle shells	c.1225-1350
3202	Layer	-	>0.75	Alluvium – mottled orange brown blue clay		
3203	Layer			Dark grey brown, dumped deposit	58 sherds medieval pottery; 1 hone	c.1225-1350
3204	Layer			Mid grey brown silty clay dumped deposit	25 sherds medieval pottery; Fe nail head; finy Fe fragments, possibly	c.1270-1350
Trench	32					
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			hammerscale? 1 residual M/LBA flint; 110g peppery furrow mollusc shell; 434g mussell shell; 16 fish bones			
3205	Layer	Dark brown grey clayey silt – dumped deposit	167 sherds medieval pot 1 residual sherd south Gaulish samian (early Roman); 2 whetstones; 12 residual M/LBA flints	c.1175-1300		
3206	Layer	Mid grey green – dumped deposit	14 sherds medieval pottery	c.1270-1350		
3207	Layer	Mid reddish brown – dumped deposit	48 sherds medieval pottery; 2 residual M/LBA flints	c.1250-1350		
3208	Cut	Palaeochannel				
3209	Fill	Fill of 3208 – soft light blue grey clay	51 frags sheep/goat bone			
3210	Layer	Mid orange brown silty clay – dumped deposit	49 sherds medieval pottery; 1 residual sherd Roman pot	c.1150-1250		
3211	Layer	Mid grey green clay – dumped deposit.	30 sherds medieval pottery; 1 residual M/LBA flint	c.1150-1250		
3212	Fill	Fill of channel 3208 – firm mid reddish brown clay	27 sherds medieval pottery; 1 residual M/LBA flint	c.1270-1350		
3213	Cut	Posthole – gradual concave base and sides				
3214	Fill	Fill of 3213 – firm mid brown silty clay	1 sherd medieval pottery	c.1150-1350		
3215	Fill	Fill of palaeochannel 3208	6 sherds medieval pottery; 1 residual M/LBA flint	c.1175-1300		
3216	Fill	Fill of palaeochannel 3208	10 sherds medieval pottery; Fe fragment	c.1150-1250		

Trench 33			
General description	Orientation	N-S	
Trench devoid of archaeology. Consists of topsoil overlying subsoil and alluvial	Avg. depth (m)	1m	
deposits. Finds included sheep/goat bones from the top of an infilled	Width (m) 2.2		
palaeochannel.	Length (m)	50	
Contexts			
context type Width Depth comment	Finds	date	

Trench	Trench 33									
no		(m)	(m)							
3300	Layer	-	0.10	Topsoil – dark brown silty clay.	Horse shoe	modern				
3301	Layer	-	0.2	Subsoil – Mid brown silty clay						
3302	Layer	-	0.6	Alluvial deposit – mid red brown clay						
3303	Fill	42.5	>1	Fill of 3308 – mid orange brown silty clay	13 frags sheep/goat bone					
3304				VOID						
3305				VOID						
3306	Layer			Charcoal dump within alluvium						
3307	Layer		>0.7	Alluvium						
3308	Cut	42.5	>1	Palaeochannel						

Trench :	34					
General	descrip	tion	Orientation	E-W		
Trench c	devoid of	archaec	ology. Cor	nsists of topsoil overlying subsoil and alluvial	Avg. depth (m)	1m
deposits	. Palaeo	channel	towards e	eastern end of trench. Within the alluvial	Width (m)	2.2
situ. The saltern o pottery v	ese could or pottery vas found	potentia kiln of u	ally be sin ncertain o surface o	hilar to red hill material, perhaps indicating a date in the vicinity. 1 sherd of medieval f this material.	Length (m)	50
Context	S					
context no	type	Width (m)	Depth (m)	comment	Finds	date
3400	Layer	-	0.15	Topsoil – dark brown silty clay.		
3401	Layer	-	0.2	Subsoil – Mid brown silty clay		
3402	Layer	-	>0.75m	Alluvium – mottled orange brown blue clay with red saltern striations.		
3403	-	-	-	Same as 3402	1 sherd medieval pottery	c.1170-1350
3404	Cut	-	-	Palaeochannel		
3405	Fill	-	-	Fill of Palaeochannel	1 sherd medieval pottery	c.1150-1350
3406	Cut	-	-	Field drain		
3407	Fill	-	-	Field drain.		

Trench 3	85					
General	descrip	tion		Orientation	N-S	
Trench e	vcavate	d ontiroly		nalaeochannel 3209, evidence of two disused	Avg. depth (m)	1m
crossings	s observ	ed at no	rthern en	d. A later chalk crossing suitable for vehicle	Width (m)	2.2
use overl	lay an ea	arlier wo	od footbr	idge.	Length (m)	50
Contexts	6					
context no	type	Width (m)	Depth (m)	comment	Finds	date
3500	Layer	-	0.2	Topsoil – dark brown silty clay.		
3501	Layer	-	0.2	Subsoil – Mid brown silty clay		
3502	Layer	-	>0.6	Alluvium – mottled orange brown blue clay		
3503	Fill		0.4	Fill of 3509 – dark grey brown silt clay, humic		
3504	Fill	-	-	Fill of 3509 Mottled dark brown grey silt clay		
3505	Str			Chalk surface / track		
3506	Layer			Make up layer for 3505 – cbm and chalk rich		
3507	Str			Remains of wood foot bridge		

Trench 35								
3508	Layer	Levelling deposit						
3509	Cut	Palaeochannel						

Trench 3	6					
General	descrip	tion			Orientation	N-S
Trench de	evoid of	archaeo	logy Co	sists of topsoil overlying subsoil and alluvial	Avg. depth (m)	1m
deposits.	Palaeo	channel	observed	I 30m from southern end of trench and	Width (m)	2.2
continuin	g to the	northern	limit.		Length (m)	50
Contexts	5					
context no	type	Width (m)	Depth (m)	comment	Finds	date
3600	Layer	-	0.25	Topsoil – dark brown silty clay.		
3601	Layer	-	0.15	Subsoil – Mid brown silty clay		
3602	Layer	-	>0.6	Alluvium – mottled orange brown blue clay		
3603	Cut	20	>1	Palaeochannel		
3604	Fill	20	>1	Fill of 3603 – light blue grey clay		

Trench 3	7					
General	descrip	tion		Orientation	E-W	
					Avg. depth (m)	1m
Trench de	evoid of	archaec	nsists of topsoil overlying palaeochannel fill.	Width (m)	2.2	
					Length (m)	50
Contexts	5					
context no	type	Width (m)	Depth (m)	comment	Finds	date
3700	Layer	-	0.2	Topsoil – dark brown silty clay.		
3701	Fill	>50m	>0.8	Palaeochannel fill – light blue grey with orange mottling silty clay		

Trench 3	8					
General	descrip	tion			Orientation	N-S
					Avg. depth (m)	1m
Trench de	evoid of	archaeo	logy. Co	nsists of topsoil overlying subsoil and alluvial	Width (m)	2.2
ueposits.					Length (m)	50
Contexts	5				-	
context no	type	Width (m)	Depth (m)	comment	finds	date
3000	Layer	-	0.15	Topsoil – dark brown silty clay.		
3001	Layer	-	0.15	Subsoil – Mid brown silty clay		
3002	Layer	-	>0.6m	Alluvium – mottled orange brown blue clay		
3008					Fe spade	20 <sup>th</sup> century

Trench 39		
General description	Orientation	N-S
	Avg. depth (m)	1m
Trench devoid of archaeology. Consists of topsoil overlying alluvial deposits. A	Width (m)	2.2
palaeochainer was observed at the northern limit	Length (m)	50
Contexts		

Trench 39									
context no	type	Width (m)	Depth (m)	comment	finds	date			
3900	Layer	-	0.2	Topsoil – dark brown silty clay.					
3901	Fill	-	-	Fill of 3904 – mid dark grey brown with orange mottle clay silt.					
3902	Fill	-	-	Fill of 3904 – mid orange brown silty clay					
3903	Layer	-	>0.8m	Alluvium – mottled orange brown blue clay					
3904	Cut	-	-	Palaeochannel					

Trench 4	0					
General	descrip	tion		Orientation	NE-SW	
					Avg. depth (m)	1m
Trench de	evoid of	archaeo	logy. Co	nsists of topsoil overlying subsoil and alluvial	Width (m)	2.2
ueposits.					Length (m)	50
Contexts	;					
context no	type	Width (m)	Depth (m)	comment	finds	date
4000	Layer	-	0.25	Topsoil – dark brown silty clay.		
4001	Layer	-	0.10	Subsoil – Mid brown silty clay		
4002	Layer	-	>0.65	Alluvium – mottled orange brown blue clay		

Trench 4	1					
General	descrip	tion		Orientation	NE-SW	
			Avg. depth (m)	1m		
Trench d	evoid of	archaec	Width (m)	2.2		
ueposits.				Length (m)	50	
Contexts	5					
context no	type	Width (m)	Depth (m)	comment	finds	date
4000	Layer	-	0.15	Topsoil – dark brown silty clay.		
4001	Layer	-	0.15	Subsoil – mid brown silty clay		
4002	Layer	-	>0.7	Alluvium – mottled orange brown blue clay		

Trench 4	2					
General	descrip	tion			Orientation	NW-SE
Trench d	evoid of	archaec	loav Co	nsists of tonsoil overlying subsoil and Alluvial	Avg. depth (m)	1m
deposits.	Palaeo	channel	Brom SE end; modern rubble inclusions	Width (m)	2.2	
suggest l	ocation	of a form	ner cross	ing point.	Length (m)	50
Contexts	5					
context no	type	Width (m)	Depth (m)	comment	Finds	date
4200	Layer	-	0.2	Topsoil – dark brown silty clay.		
4201	Layer	-	0.1	Subsoil – mid brown silty clay		
4202				VOID		
4203	Fill	22	>1	Fill of 4205 – mid to dark blackish brown clay silt.		
4204	Layer	-	0.7	Alluvium – mottled orange brown blue clay		
4205	Cut	22	>1	Palaeochannel		

Trench 4	3					
General	descrip	tion	Orientation	NE-SW		
Trench d	evoid of	archaec		nsists of tonsoil overlying subsoil and alluvial	Avg. depth (m)	1m
deposits.	A palae	ochanne	Width (m)	2.2		
14m from	the SW	/ end of	the trenc	h.	Length (m)	50
Contexts	5					
context no	type	Width (m)	Depth (m)	comment	Finds	date
4000	Layer	-	0.2	Topsoil – dark brown silty clay.		
4001	Cut	8	>1	Palaeochannel		
4002	Fill	8	>1	Fill of 4001 – mid to dark mottled orange brown clay silt.		
4003	Layer	-	0.4	Subsoil – Mid brown silty clay		
4004	Layer	-	>0.4	Alluvium – mottled orange brown blue clay		

Trench 4	4					
General	descrip	tion			Orientation	NE-SW
					Avg. depth (m)	1m
Trench d	evoid of	archaec	nsists of topsoil overlying subsoil and alluvial	Width (m)	2.2	
ueposits.				Length (m)	50	
Contexts	5					
context no	type	Width (m)	Depth (m)	comment	Finds	date
4400	Layer	-	0.2	Topsoil – dark brown silty clay.		
4401	Layer	-	0.05	Subsoil – mid brown silty clay		
4402	Layer	-	>0.75	Alluvium – mottled orange brown blue clay		

Trench 4	French 45									
General	descrip	tion	Orientation	NE-SW						
			Avg. depth (m)	1m						
Trench de	evoid of	archaeo	nsists of topsoil overlying subsoil and Alluvial	Width (m)	2.2					
ueposits.				Length (m)	50					
Contexts	5				-					
context no	type	Width (m)	Depth (m)	comment	Finds	date				
4500	Layer	-	0.15	Topsoil – dark brown silty clay.						
4501	Layer	-	0.15	Subsoil – Mid brown silty clay						
4502	Layer	-	>0.7	Alluvium – mottled orange brown blue clay						

Trench 4	6					
General	descrip	tion	Orientation	NW-SE		
			Avg. depth (m)	1m		
Trench de	evoid of	archaec	ology. Co	nsists of topsoil overlying subsoil and alluvial	Width (m)	2.2
ueposits.				Length (m)	50	
Contexts	5					
context no	type	Width (m)	Depth (m)	comment	Finds	date
4600	Layer	-	0.25	Topsoil – dark brown silty clay.		
4601	Layer	-	0.1	Subsoil – Mid brown silty clay		
4602	Layer	-	>0.65	Alluvium – mottled orange brown blue clay		

Trench 4	7					
General	descrip	tion			Orientation	N-S
			Avg. depth (m)	1m		
Trench d	evoid of	archaeo	nsists of topsoil overlying subsoil and alluvial	Width (m)	2.2	
ueposits.				Length (m)	50	
Contexts	5					
context no	type	Width (m)	Depth (m)	comment	Finds	date
4700	Layer	-	0.2	Topsoil – dark brown silty clay.		
4701	Layer	-	0.15	Subsoil – mid brown silty clay		
4702	Layer	-	>0.65	Alluvium – mottled orange brown blue clay		

Trench 4	18					
General	descrip	tion			Orientation	E-W
					Avg. depth (m)	1m
Trench d	evoid of	archaec	ology. Co	nsists of topsoil overlying alluvial deposits.	Width (m)	2.2
					Length (m)	50
Contexts	S					
context no	type	Width (m)	Depth (m)	comment	Finds	date
4800	Layer	-	0.15	Topsoil – dark brown silty clay.		
4801	Fill	17	0.8	Fill of 4803 – mid to dark grey brown silty sand with orange mottle, natural accumulation		
4802	Layer	-	>0.85	Alluvium – mottled orange brown blue clay		
4803	Cut	17	0.8	Palaeochannel		

Trench 4	19					
General	descrip	tion			Orientation	N-S
			Avg. depth (m)	1m		
Trench d	evoid of	archaec	nsists of topsoil overlying subsoil and alluvial	Width (m)	2.2	
ueposits.			Length (m)	50		
Contexts	5					
context no	type	Width (m)	Depth (m)	comment	Finds	date
4900	Layer	-	0.2	Topsoil – dark brown silty clay.		
4901	Layer	-	0.15	Subsoil – mid brown silty clay	8 sherds modern pottery	c.1836-1900
4902	Layer	-	>0.65	Alluvium – mottled orange brown blue clay		

Trench 5	1					
General	descript	tion			Orientation	N-S
Trench m	odern so	caffold ar	Avg. depth (m)	1 <i>m</i>		
crossing a	a former	channel.	Width (m)	2.2		
deposits.				Length (m)	50	
Contexts	;					
context no	type	Width (m)	Depth (m)	comment	Finds	date
5100	Layer	-	0.25	Topsoil – dark brown silty clay.		

5101	Layer	-		Humic recent channel infill contained metal scaffold pole and wood structure.	
5102	Layer	-	0.2	Mid brown grey sily clay – channel infill	
5103	Layer	-	>0.65	Alluvium – mottled orange brown blue clay	
5104	Layer	-	0.1	Subsoil – mid brown silty clay	

Trench 5	52					
General	descrip	tion			Orientation	N-S
				Avg. depth (m)	1m	
Trench d	evoid of	archaec	Width (m)	2.2		
ueposits.				Length (m)	50	
Contexts	5					
context no	type	Width (m)	Depth (m)	comment	Finds	date
5200	Layer	-	0.25	Topsoil – dark brown silty clay.		
5201	Layer	-	0.1	Subsoil – mid brown silty clay		
5202	Layer	-	>0.65	Alluvium – mottled orange brown blue clay		

Trench 5	French 53							
General	descrip	tion			Orientation	N-S		
Trench d	evoid of	archaec	ology Co	nsists of tonsoil overlying subsoil and alluvial	Avg. depth (m)	1m		
deposits.	The tre	nch was	observe	d to have been entirely cut through a	Width (m)	2.2		
palaeoch	annel.				Length (m)	50		
Contexts	5							
context no	type	Width (m)	Depth (m)	comment	Finds	date		
5300	Layer	-	0.2	Topsoil – dark brown silty clay.	16 sherds modern pottery; 1 clay pipe fragment; wine bottle fragment	c.1830-1900		
5301	Layer	-	0.25	Subsoil – mid brown silty clay				
5302	Layer	-	>0.5	Palaeochannel fill – mottled orange and blue clay				
5303	Layer	-	>0.1	Alluvium – mottled orange brown blue clay				

Trench 5	4					
General	descrip	tion			Orientation	N-S
			Avg. depth (m)	1m		
Trench de	evoid of	archaec	logy. Co	nsists of topsoil overlying subsoil and alluvial	Width (m)	2.2
ueposits.	illiee k	alaeuch	anneis w		Length (m)	50
Contexts	5					
context no	type	Width (m)	Depth (m)	comment	Finds	date
5400	Layer	-	0.2	Topsoil – dark brown silty clay.	Cu alloy disc (very worn coin?); button	19 <sup>th</sup> century?
5401	Layer	-	0.1	Subsoil – mid brown silty clay	12 sherds modern pottery; 3 clay pipe fragments; 1 late 19 <sup>th</sup> century bottle glass fragment	c.1830-1870

Trench	Trench 54							
5402	Layer	-	>0.7	Alluvium – mottled orange brown blue clay				
5403	Fill	4	>1	Fill of 5404 – mid dark grey brown with orange mottle	12 sherds modern pottery; 4 Fe nails; Lead window came; 72 sheep/goat bones	c.1830-1870		
5404	Cut	4	>1	Palaeochannel				
5405	Fill	12	>1	Fill of 5406 – dark grey brown with orange mottle				
5406	Cut	12	>1					
5407	Fill	6	>1	Fill of 5408 – mid dark grey brown with orange mottle				
5408	Cut	6	>1	Alluvium – mottled orange brown blue clay				

Trench 5	French 55							
General	descrip	tion			Orientation	NW-SE		
					Avg. depth (m)	1m		
Trench d	evoid of	archaec	logy. Co	nsists of topsoil overlying alluvial deposits.	Width (m)	2.2		
THEFICITIC	Untainet	i two pai	aeuchan		Length (m)	50		
Contexts	5							
context no	type	Width (m)	Depth (m)	comment	finds	date		
5500	Layer	-	0.2	Topsoil – dark brown silty clay.				
5501	Fill	4	>1	Fill of 5505 – dark grey brown with orange mottle clay silt				
5502	Fill	6	0.5	Fill of 5506 – dark grey brown with orange mottle clay silt	51 sheep/ goat bones			
5503	Fill	>9	>1	Fill of 5506 – pale blue clay				
5504	Layer	-	>0.8	Alluvium – mottled orange brown blue clay				
5505	Cut	4	>1	Palaeochannel				
5506	Cut	>9	>1	Palaeochannel				

Trench 5	French 56							
General	descrip	tion			Orientation	NE-SW		
			Avg. depth (m)	1m				
Trench d	evoid of	archaec	ology. Co	nsists of topsoil overlying subsoil and alluvial	Width (m)	2.2		
ueposits.	Trench	Containe	eu z pala	leochannels.	Length (m)	50		
Contexts	5				· -			
context no	type	Width (m)	Depth (m)	comment	finds	date		
5600	Layer	-	0.2	Topsoil – dark brown silty clay.	1 sherd modern pottery	c.1700-1900		
5601	Layer	-	0.1	Subsoil – mid brown silty clay				
5602	Fill	2	1	Fill of 5606 – dark grey brown with orange mottle clay silt	29 sherds modern pottery; 7 sherds mid-late 19 <sup>th</sup> century bottle glass (1 medicine, one ink, 2 wine and 1 cut glass)	c.1830-1860		
5603	Fill	<2	>0.1	Fill of 5606 – mid brownish grey clay silt				
5604	Layer	-	>0.7	Alluvium – mottled orange brown blue clay				

Trench 5	Trench 56						
5605	Fill	3	>1	Fill of 5607 – dark grey brown with orange mottle clay silt	10 sherds late med/ early post- med pottery; 57 frags sheep/goat bone	c.1475-1550	
5606	Cut	2	1	Palaeochannel			
5607	Cut	3	>1	Palaeochannel			

Trench 5	57						
General description Orientation N-S							
			Avg. depth (m)	1m			
Trench d	evoid of	archaec	nsists of topsoil overlying subsoil and alluvial	Width (m)	2.2		
ueposits.				Length (m)	50		
Contexts	5						
context no	type	Width (m)	Depth (m)	comment	finds	date	
5700	Layer	-	0.25	Topsoil – dark brown silty clay.			
5701	Layer	-	0.1	Subsoil – mid brown silty clay			
5702	Layer	-	>0.65	Alluvium – mottled orange brown blue clay			

Trench 5	58					
General	descrip	tion		Orientation	NW-SE	
				Avg. depth (m)	1m	
Trench d	evoid of	archaec	ology. Co	nsists of topsoil overlying subsoil and Alluvial	Width (m)	2.2
ueposits.				Length (m)	50	
Contexts	5					
context no	type	Width (m)	Depth (m)	comment	finds	date
5800	Layer	-	0.25	Topsoil – dark brown silty clay.		
5801	Layer	-	0.2	Subsoil – mid brown silty clay		
5802	Layer	-	>0.55	Alluvium – mottled orange brown blue clay		

Trench 5	9					
General	descrip	tion		Orientation	W-E	
			Avg. depth (m)	1m		
Trench d	evoid of	archaec	ology. Co	nsists of topsoil overlying subsoil and alluvial	Width (m)	2.2
deposits.				Length (m)	50	
Contexts	5					
context no	type	Width (m)	Depth (m)	comment	finds	date
5900	Layer	_	0.2	Topsoil – dark brown silty clay.		
5901	Layer	-	0.1	Subsoil – mid brown silty clay		
5902	Layer	-	>0.7	Alluvium – mottled orange brown blue clay		

Trench 62		
General description	Orientation	NE-SW
	Avg. depth (m)	1m
Trench devoid of archaeology. Consists of topsoil overlying subsoil and alluvial	Width (m)	2.2
deposits.	Length (m)	50

Trench 6	French 62							
Contexts	Contexts							
context no	type	Width (m)	Depth (m)	comment	finds	date		
6200	Layer	-	0.25	Topsoil – dark brown silty clay.				
6201	Layer	-	0.45	Subsoil – mid brown silty clay				
6202	Layer	-	>0.3					

Trench 6	65					
General	descrip	tion		Orientation	NW-SE	
				Avg. depth (m)	1m	
Trench d	evoid of	archaeo	ology. Co	nsists of topsoil overlying subsoil and Alluvial	Width (m)	2.2
ueposits.				Length (m)	50	
Contexts	6					
context no	type	Width (m)	Depth (m)	comment	finds	date
6500	Layer	-	0.25	Topsoil – dark brown silty clay.		
6501	Layer	-	0.1	Subsoil – mid brown silty clay		
6502	Layer	-	>0.65	Alluvium – mottled orange brown blue clay		

Trench 6	rench 67								
General description NE-S						NE-SW			
					Avg. depth (m)	1m			
Trench d	evoid of	archaec	logy. Co	nsists of topsoil overlying alluvial deposits.	Width (m)	2.2			
					Length (m)	50			
Contexts	5								
context no	type	Width (m)	Depth (m)	comment	finds	date			
6500	Layer	-	0.2	Topsoil – dark brown silty clay.					
6501	Layer	-	>0.8	Alluvium – mottled orange brown blue clay					

Trench 6	French 68						
General	descrip	tion		Orientation	N-S		
			Avg. depth (m)	1m			
Trench de	evoid of	archaec	Width (m)	2.2			
deposits.	rwo pa	aeochai	Length (m)	50			
Contexts	5				·		
context no	type	Width (m)	Depth (m)	comment	finds	date	
6800	Layer	-	0.2	Topsoil – dark brown silty clay.			
6801	Layer	-	0.25	Subsoil – mid brown silty clay			
6802	Layer	-	>0.55	Alluvium – mottled orange brown blue clay			
6803	Cut	13	>1m	Palaeochannel			
6804	Fill	13	0.3	Fill of 6803 – mottled dark brown with yellow clay silt, humic			
6805	Fill	13	>0.5	Fill of 6803 – mottled brown blue orange clay			
6806	Cut	>18	>1	Palaeochannel			
6807	Fill	>18	>1	Fill of 6806 – mottled blue orange clay			

Trench 69

Trench 6	9					
General o	descrip	tion	Orientation	E-W		
				Avg. depth (m)	1m	
Trench de	evoid of	archaeo	logy. Col	nsists of topsoil overlying subsoil and alluvial	Width (m)	2.2
ueposits.	raiaeu			Length (m)	50	
Contexts						
context no	type	Width (m)	Depth (m)	comment	finds	date
6900	Layer	-	0.3	Topsoil – dark brown silty clay.		
6901	Layer	-	>0.7	Alluvium – mottled orange brown blue clay		
6902	Cut	30	>1	Palaeochannel		
6903	Fill	15	>1	Fill of 6902 – Mottled dark brown and yellow clay silt, humic		
6904	Fill	30	>1	Fill of 6902 – Mottled blue and orange clay.		

Trench 7	rench 70								
General	descrip	tion			Orientation	E-W			
			Avg. depth (m)	1m					
Trench denosits	evoid of	archaec	nsists of topsoil overlying subsoil and alluvial	Width (m)	2.2				
ueposits.					Length (m)	50			
Contexts	5								
context no	type	Width (m)	Depth (m)	comment	finds	date			
7000	Layer	-	0.15	Topsoil – dark brown silty clay.					
7001	Layer	-	0.5	Subsoil - mid brown silty clay					
7002	Layer	-	>0.8	Alluvium – mottled orange brown blue clay					

Trench 7	'1					
General	descrip	tion			Orientation	E-W
					Avg. depth (m)	1m
Trench denosits	evoid of	archaeo	Width (m)	2.2		
ueposits.				Length (m)	50	
Contexts	5					
context no	type	Width (m)	Depth (m)	comment	finds	date
7100	Layer	-	0.2	Topsoil – dark brown silty clay.		
7101	Layer	-	0.1	Subsoil – Mid brown silty clay		
7102	Layer	-	>0.7	Alluvium – mottled orange brown blue clay		
7103	Cut	17	>1	Palaeochannel		
7104	Fill	17	>1	Fill of 7103 – Pale blue silty clay		

Trench 7	2					
General	descrip	tion		Orientation	N-S	
			Avg. depth (m)	1m		
Trench d	evoid of	archaeo	Width (m)	2.2		
ueposits.	raiaeu	Charmer			Length (m)	50
Contexts	6					
context no	type	Width (m)	Depth (m)	comment	finds	date
7200	Layer	-	0.2	Topsoil – dark brown silty clay.		

Trench	Trench 72					
7201	Layer	-	0.1	Subsoil – Mid brown silty clay		
7202	Fill	2	>1	Fill of 7204 – mid orange brown with blue grey mottling.		
7203	Layer	-	>0.7	Alluvium – mottled orange brown blue clay		
7204	Fill	2	>1	Palaeochannel		

Trench 7	<b>′</b> 3					
General	descrip	tion		Orientation	N-S	
Trench d	evoid of	archaec	Avg. depth (m)	1m		
deposits.	The vas	st majori	ty of the	trench was observed to coincide with an infilled	Width (m)	2.2
palaeoch	annel.				Length (m)	50
Contexts	5				•	
context no	type	Width (m)	Depth (m)	comment	finds	date
7300	Layer	-	0.2	Topsoil – dark brown silty clay.	2 shrapnel fragments; length of Fe bar; 5 Fe nails	20 <sup>th</sup> century
7301	Layer	-	0.1	Subsoil – mid brown silty clay		
7302	Layer	-	>0.7	Alluvium – mottled orange brown blue clay		
7303	Fill	53.1	>1	Fill of 7304 – Mottled mid and dark grey brown silty clay		
7304	Cut	53.1	>1	Palaeochannel		

Trench 7	74					
General	descrip	tion			Orientation	NE-SW
			Avg. depth (m)	1m		
Trench d	evoid of	archaec	nsists of topsoil overlying subsoil and alluvial	Width (m)	2.2	
ueposits.					Length (m)	50
Contexts	6					
context no	type	Width (m)	Depth (m)	comment	finds	date
7400	Layer	-	0.15	Topsoil – dark brown silty clay.		
7401	Layer	-	0.15	Subsoil – mid brown silty clay		
7402	Layer	-	>0.7	Alluvium – mottled orange brown blue clay		

Trench 7	75					
General description Orientation NW						
			Avg. depth (m)	1m		
Trench d	evoid of	archaec	Width (m)	2.2		
ueposits.				Length (m)	50	
Contexts	5					
context no	type	Width (m)	Depth (m)	comment	finds	date
7500	Layer	-	0.25	Topsoil – dark brown silty clay.		
7501	Layer	-	0.05	Subsoil – mid brown silty clay		
7502	Layer	-	>0.7	Alluvium – mottled orange brown blue clay		

Trench 76		
General description	Orientation	NE-SW

Trench 7	Trench 76								
					Avg. depth (m)	1m			
Trench de	French devoid of archaeology. Consists of topsoil overlying alluvial deposits. Width (m) 2.2								
					Length (m)	50			
Contexts	5								
context no	type	Width (m)	Depth (m)	comment	finds	date			
7600	Layer	-	0.2	Topsoil – dark brown silty clay.					
7601	Layer	-	>0.8	Alluvium – mottled orange brown blue clay					

Trench 7	rench 79									
General	descrip	tion		Orientation	NW-SE					
					Avg. depth (m)	1m				
Trench d	evoid of	archaec	logy. Co	nsists of topsoil overlying alluvial deposits.	Width (m)	2.2				
					Length (m)	50				
Contexts	5				·					
context no	type	Width (m)	Depth (m)	Comment	finds	date				
7900	Layer	_	0.2	Topsoil – dark brown silty clay.						
7901	Layer	-	>0.8	Alluvium – mottled orange brown blue clay						

Trench 8	Trench 80							
General	descrip	tion	Orientation	NW-SE				
			Avg. depth (m)	1m				
Consists	of topso	il overlyi	Width (m)	2.2				
postiloles	Swere ii	ivestigat	eu towar	ds the two end of the trench.	Length (m)	50		
Contexts	6							
context no	type	Width (m)	Depth (m)	comment	finds	date		
8000	Layer	-	0.25	Topsoil – dark brown silty clay.				
8001	Layer	-	0.05	Subsoil – mid brown silty clay				
8002	Layer	-	>0.7	Alluvium – mottled orange brown blue clay				
8003	Fill	0.34	0.6	Fill of 8004 – soft light blue clay				
8004	Cut	0.34	0.6	Cut of posthole				
8005	Fill	>0.18	>0.7	Fill of 8006 - soft light blue clay				
8006	Cut	>0.18	>0.7	Cut of post hole				
8007	Cut	0.35	>0.5	Cut of post hole				
8008	Fill	0.35	>0.5	Fill of 8007 - soft light blue clay				
8009	Layer	-	>0.7	Alluvium – mottled orange brown blue clay				

Trench 8	81					
General	descrip	tion		Orientation	E-W	
Trench d	evoid of	archaec	logy. Co	nsists of topsoil overlying alluvial deposits.	Avg. depth (m)	1m
Width (m) 2.2						
Length (m) 50						
Contexts	5					
context no	type	Width (m)	Depth (m)	comment	finds	date
7900	Layer	-	0.2	Topsoil – dark brown silty clay.		
7901	Layer	-	>0.8	Alluvium – mottled orange brown blue clay		

Trench 8	2					
General o	descrip	tion	Orientation	E-W		
Trench de	evoid of	archaeo	Avg. depth (m)	1m		
deposits.	A geolo	gical and	Width (m)	2.2		
containing	g a rich	organic o	deposit.		Length (m)	50
Contexts						
context no	type	Width (m)	Depth (m)	comment	finds	date
8200	Layer	-	0.3	Topsoil – dark brown silty clay.		
8201	Layer	-		Alluvium – mottled orange brown blue clay		
8202	Cut			Geological feature		
8203	Fill			Fill of 8202 – Pale blue with yellow mottle clay, soft		
8204	Fill			Fill of 8202 – Mid brown organic rich layer		
8205	Fill			Fill of 8202 – Pale blue clay, glade		
8206	Layer	-	0.1	Subsoil – Mid brown silty clay		

Trench 8	33					
General	descrip	tion	Orientation	NW-SE		
					Avg. depth (m)	1m
Trench d	evoid of	archaec	ology. Co	nsists of topsoil overlying subsoil and alluvial	Width (m)	2.2
ueposits.					Length (m)	50
Context	S				-	
context no	type	Width (m)	Depth (m)	comment	finds	date
8300	Layer	-	0.25	Topsoil – dark brown silty clay.	1 shrapnel fragment; fullered Fe horseshoe	20 <sup>th</sup> century
8301	Layer	-	0.15	Subsoil – mid brown silty clay		
8302	Layer	-	>0.6	Alluvium – mottled orange brown blue clay		

Trench 8	4					
General	descrip	tion	Orientation	NW-SE		
				Avg. depth (m)	1m	
Trench de	evoid of	archaeo	nsists of topsoil overlying subsoil and alluvial	Width (m)	2.2	
ueposits.					Length (m)	50
Contexts	5					
context no	type	Width (m)	Depth (m)	comment	finds	date
8400	Layer	-	0.2	Topsoil – dark brown silty clay.		
8401	Layer	-	0.1	Subsoil – mid brown silty clay		
8402	Layer	-	>0.7	Alluvium – mottled orange brown blue clay		

Trench 85		
General description	Orientation	N-S
	Avg. depth (m)	1m
Trench devoid of archaeology. Consists of topsoil overlying subsoil and Alluvial	Width (m)	2.2
	Length (m)	50
Contexts		

Trench 85							
context no	type	Width (m)	Depth (m)	comment	finds	date	
8500	Layer	-	0.25	Topsoil – dark brown silty clay.			
8501	Layer	-	0.15	Subsoil – mid brown silty clay			
8502	Layer	-	>0.6	Alluvium – mottled orange brown blue clay			
8503	Fill	4	-	Fill of 8505 – mottled mid grey brown orange brown clay silt			
8504	Fill	4	1	Fill of 8505 - Mottled dark grey brown orange clay silt			
8505	Cut	4	>1	Palaeochannel			

Trench 8	6					
General	descrip	tion		Orientation	N-S	
					Avg. depth (m)	1m
Trench d	evoid of	archaeo	nsists of topsoil overlying alluvial deposits.	Width (m)	2.2	
i i encir a	ppeareu	to cut e		Length (m)	50	
Contexts	5					
context no	type	Width (m)	Depth (m)	comment	finds	date
8600	Layer	-	0.2	Topsoil – dark brown silty clay.	1 shrapnel fragment	20 <sup>th</sup> century
8601	Layer	-	1m	Fill of Palaeochannel – light blue grey clay		
8602	Layer	-	-	Alluvium – mottled orange brown blue clay		

Trench 8	8					
General	descrip	tion			Orientation	NW-SE
					Avg. depth (m)	1m
Trench de	evoid of	archaec	nsists of topsoil overlying subsoil and alluvial	Width (m)	2.2	
ueposits.				Length (m)	50	
Contexts	5					
context no	type	Width (m)	Depth (m)	comment	finds	date
8800	Layer	_	0.2	Topsoil – dark brown silty clay.		
8801	Layer	-	0.1	Subsoil – mid brown silty clay		
8802	Layer	-	>0.7	Alluvium – mottled orange brown blue clay		

Trench 9	0					
General	descrip	tion			Orientation	NW-SE
					Avg. depth (m)	1m
Trench d	evoid of	archaed	Width (m)	2.2		
deposits.			Length (m)	50		
Contexts	5					·
context no	type	Width (m)	Depth (m)	comment	finds	date
9000	Layer	-	0.2	Topsoil – dark brown silty clay.		
9001	Layer	-	0.05-0.2	Subsoil – mid brown silty clay		
9002	Layer	-	>0.65	Alluvium – mottled orange brown blue clay		
9003	Layer	10	0.15	Dark brown silty clay, humic		

Trench 9	)1					
General	descrip	tion			Orientation	E-W
					Avg. depth (m)	1m
Trench d	evoid of	archaec	Width (m)	2.2		
ueposits.					Length (m)	50
Contexts	5					
context no	type	Width (m)	Depth (m)	comment	finds	date
9100	Layer	-	0.15	Topsoil – dark brown silty clay.		
9101	Layer	-	0.1	Subsoil – mid brown silty clay		
9102	Layer	-	>0.75	Alluvium – mottled orange brown blue clay		

Trench 9	rench 92							
General	descrip	tion		Orientation	N-S			
						1m		
Trench de	evoid of	archaeo	ology. Co	nsists of topsoil overlying subsoil and alluvial	Width (m)	2.2		
ueposits.				Length (m)	50			
Contexts	5				-			
context no	type	Width (m)	Depth (m)	comment	finds	date		
9200	Layer	-	0.15	Topsoil – dark brown silty clay.				
9201	Layer	-	0.05	Subsoil – mid brown silty clay				
9202	Layer	-	>0.8	Alluvium – mottled orange brown blue clay				

Trench 9	3					
General	General description					NE-SW
			Avg. depth (m)	1m		
Trench de	evoid of	archaeo	Width (m)	2.2		
ueposits.				Length (m)	50	
Contexts	;					
context no	type	Width (m)	Depth (m)	comment	finds	date
9300	Layer	-	0.2	Topsoil – dark brown silty clay.		
9301	Layer	-	0.1	Subsoil – mid brown silty clay		
9302	Layer	-	>0.7	Alluvium – mottled orange brown blue clay		

Trench 9	)4					
General	descrip	tion		Orientation	NW-SE	
				Avg. depth (m)	1m	
Trench d	evoid of	archaec	logy. Co	nsists of topsoil overlying subsoil and Alluvial	Width (m)	2.2
ueposits.	raiaeu	Channer		Length (m)	50	
Contexts	5					
context no	type	Width (m)	Depth (m)	comment	finds	date
9400	Layer	-	0.2	Topsoil – dark brown silty clay.		
9401	Cut	4	>1	Palaeochannel		
9402	Fill	4	>1	Fill of 9401 – dark grey brown silty clay with occasional orange mottle		
9403	Layer	-	0.05	Subsoil – mid brown silty clay		
9404	Layer	-	>0.75	Alluvium – mottled orange brown blue clay		

Trench 9	5					
General o	General description					N-S
						1m
Trench de	evoid of	archaeo	logy. Cor	nsists of topsoil overlying subsoil and alluvial	Width (m)	2.2
ueposits.				Length (m)	50	
Contexts						
context no	type	Width (m)	Depth (m)	comment	finds	date
9500	Layer	-	0.25	Topsoil – dark brown silty clay.	3 shrapnel fragments	20 <sup>th</sup> century
9501	Layer	-	0.25	Subsoil – mid brown silty clay		
9502	Layer	-	>0.5	Alluvium – mottled orange brown blue clay		

Trench 9	French 96							
General	descrip	tion	Orientation	E-W				
				Avg. depth (m)	1m			
Trench de	evoid of	archaeo	Width (m)	2.2				
ueposits.			Length (m)	50				
Contexts	;							
context no	type	Width (m)	Depth (m)	comment	finds	date		
9600	Layer	-	0.2	Topsoil – dark brown silty clay.				
9601	Layer	-	0.15	Subsoil – mid brown silty clay				
9502	Layer	-	0.45	Alluvium – mottled orange brown silt clay				
9603	Layer		0.2	Alluvium – mid grey brown silty clay				
9604	Layer		-	Alluvium – mid orange brown light blue grey				

Trench 9	rench 97							
General	descrip	tion	Orientation	N-S				
			Avg. depth (m)	1m				
Trench d	evoid of	archaeo	Width (m)	2.2				
ueposits.			Length (m)	50				
Contexts	5							
context no	type	Width (m)	Depth (m)	comment	finds	date		
9700	Layer	-	0.2	Topsoil – dark brown silty clay.				
9701	Layer	-	0.35- 0.15	Subsoil – mid brown silty clay				
9702	Layer	-	>0.5	Alluvium – mottled orange brown blue clay				

Trench 9	8					
General	descrip	otion	Orientation	NE-SW		
			Avg. depth (m)	1m		
Trench d	evoid o	f archaeo	Width (m)	2.2		
ueposits.					Length (m)	50
Contexts	5					
context no	type	Width (m)	Depth (m)	comment	finds	date

Trench 98						
9800	Layer	-	0.2	Topsoil – dark brown silty clay.		
9801	Layer	-	0.4	Subsoil – mid brown silty clay		
9802	Layer	-	>0.4	Alluvium – mottled orange brown blue clay		

Trench 9	9					
General	descrip	tion	Orientation	NW-SE		
			Avg. depth (m)	1m		
Trench d	evoid of	archaec	Width (m)	2.2		
ueposits.			Length (m)	50		
Contexts	5					
context no	type	Width (m)	Depth (m)	comment	finds	date
9900	Layer	-	0.2	Topsoil – dark brown silty clay.		
9901	Layer	-	0.15	Subsoil – mid brown silty clay		
9902	Layer	-	>0.65	Alluvium – mottled orange brown blue clay		

Trench 1	French 100						
General	descrip	tion	Orientation	NW-SE			
			Avg. depth (m)	1m			
Trench de	evoid of	archaec	logy. Co	nsists of topsoil overlying subsoil and alluvial	Width (m)	2.2	
ueposits.					Length (m)	50	
Contexts	6						
context no	type	Width (m)	Depth (m)	comment	finds	date	
10000	Layer	-	0.25	Topsoil – dark brown silty clay.			
10001	Layer	-	0.05	Subsoil – mid brown silty clay			
10002	Layer	-	>0.7	Alluvium – mottled orange brown blue clay			
10003	Cut	2	>1	Palaeochannel			
10004	Fill	2	-	Fill of 10003 – mid to dark grey brown silt.			
10005	Fill	2	-	Fill of 10003 – mottled dark orange brown clay silt			

Trench 1	01					
General	descrip	tion		Orientation	NE-SW	
			Avg. depth (m)	1m		
Trench d	evoid of	archaec	Width (m)	2.2		
ueposits.			Length (m)	50		
Contexts	5					
context no	type	Width (m)	Depth (m)	comment	finds	date
10100	Layer	-	0.3	Topsoil – dark brown silty clay.		
10101	Layer	-	0.1	Subsoil – mid brown silty clay		
10102	Layer	-	>0.6	Alluvium – mottled orange brown blue clay		

Trench 102		
General description	Orientation	NE-SW
Trench devoid of archaeology. Consists of topsoil overlying subsoil and Alluvial	Avg. depth (m)	1m
deposits.	Width (m)	2.2

Trench 1	French 102								
					Length (m)	50			
Contexts	5								
context no	type	Width (m)	Depth (m)	comment	finds	date			
10200	Layer	-	0.2	Topsoil – dark brown silty clay.					
10201	Layer	-	0.05	Subsoil – mid brown silty clay					
10202	Layer	-	>0.75	Alluvium – mottled orange brown blue clay					

Trench 1	03					
General	descrip	tion			Orientation	NW-SE
					Avg. depth (m)	1m
Trench d	evoid of	archaec	ology. Co	nsists of topsoil overlying subsoil and alluvial	Width (m)	2.2
ueposits.					Length (m)	50
Contexts	5					
context no	type	Width (m)	Depth (m)	comment	finds	date
10300	Layer	-	0.25	Topsoil – dark brown silty clay.		
10301	Layer	-	0.05	Subsoil – mid brown silty clay		
10302	Layer	-	>0.75	Alluvium – mottled orange brown blue clay		

Trench 1	rench 104								
General	descrip	tion			Orientation	NE-SW			
					Avg. depth (m)	1m			
Trench de	evoid of	archaeo	logy. Co	nsists of topsoil overlying subsoil and alluvial	Width (m)	2.2			
ueposits.					Length (m)	50			
Contexts	5								
context no	type	Width (m)	Depth (m)	comment	finds	date			
10400	Layer	-	0.2	Topsoil – dark brown silty clay.					
10401	Layer	-	0.05	Subsoil – mid brown silty clay					
10402	Layer	-	>0.75	Alluvium – mottled orange brown blue clay					

Trench 1	French 105							
General	descrip	tion			Orientation	NW-SE		
					Avg. depth (m)	1m		
Trench d	evoid of	archaeo	logy. Co	nsists of topsoil overlying subsoil and Alluvial	Width (m)	2.2		
ueposits.					Length (m)	50		
Contexts	5				-			
context no	type	vpe Width De (m) (m		Width Depth (m) (m) comment	finds	date		
10500	Layer	-	0.2	Topsoil – dark brown silty clay.				
10501	Layer	-						
10502	Layer	-	>0.6	Alluvium – mottled orange brown silty clay				
10503	Layer	-	-	Alluvium – light blue grey silty clay				

Trench 106		
General description	Orientation	NE-SW
Trench devoid of archaeology. Consists of topsoil overlying subsoil and Alluvial deposits.	Avg. depth (m)	1m

Trench 1	French 106								
					Width (m)	2.2			
					Length (m)	50			
Contexts	;								
context no	type	Width (m)	Depth (m)	Comment	finds	date			
10600	Layer	-	0.2	Topsoil – dark brown silty clay.					
10601	Layer	-	0.3	Subsoil – mid brown silty clay					
10602	Layer	-	>0.45	Alluvium – light grey brown silty clay					
10603	Layer	-	-	Alluvium – mottled orange brown blue silty clay					

Trench 1	07					
General	descrip	tion			Orientation	NE-SW
					Avg. depth (m)	1m
Trench d	evoid of	archaec	ology. Co	nsists of topsoil overlying subsoil and Alluvial	Width (m)	2.2
ueposits.					Length (m)	50
Contexts	5					
context no	type	Width (m)	Depth (m)	comment	finds	date
10700	Layer	-	0.25	Topsoil – dark brown silty clay.		
10701	Layer	-	0.1	Subsoil – mid brown silty clay		
10702	Layer	-	>0.65	Alluvium – mottled orange brown blue clay		

Trench 1	Trench 108								
General	descrip	tion			Orientation	NE-SW			
					Avg. depth (m)	1m			
Trench de	evoid of	archaeo	ology. Co	nsists of topsoil overlying subsoil and alluvial	Width (m)	2.2			
ueposits.					Length (m)	50			
Contexts	5								
context no	type	Width (m)	Depth (m)	comment	finds	date			
10800	Layer	-	0.25	Topsoil – dark brown silty clay.					
10801	Layer	-	0.3	Subsoil – mid brown silty clay					
10802	Layer	-	>0.45	Alluvium – mottled orange brown blue clay					

Trench 1	09						
General description Orientation NW							
					Avg. depth (m)	1m	
Trench de	evoid of	archaeo	ology. Co	nsists of topsoil overlying subsoil and alluvial	Width (m)	2.2	
deposits.					Length (m)	50	
Contexts	5						
Context no	type	Width (m)	Depth (m)	comment	finds	date	
10900	Layer	_	0.15	Topsoil – dark brown silty clay.			
10901	Layer	-	0.15	Subsoil – mid brown silty clay			
10902	Layer	-	>0.7	Alluvium – mottled orange brown blue clay			

Trench 110		
General description	Orientation	NE-SW

Trench 1	10					
					Avg. depth (m)	1m
Trench de	evoid of	archaeo	logy. Co	nsists of topsoil overlying subsoil and Alluvial	Width (m)	2.2
ueposits.	raiaeu	Inamen		in nom Sw end.	Length (m)	50
Contexts						
Context no	type	Width (m)	Depth (m)	comment	finds	date
11000	Layer	-	0.3	Topsoil – dark brown silty clay.		
11001	Layer	-	0.15	Subsoil – mid brown silty clay		
11002	Layer	-	>0.55	Alluvium – mottled orange brown blue clay		
11003	Cut	32	>1	Palaeochannel		
11004	Fill	32	>1	Fill of 11003 – mottled dark grey brown silty clay.		

Trench 1	11					
General	descrip	tion			Orientation	E-W
					Avg. depth (m)	1m
Trench denosits	evoid of	archaec	ology. Co	nsists of topsoil overlying subsoil and Alluvial	Width (m)	2.2
ueposits.					Length (m)	50
Contexts	5					
context no	type	Width (m)	Depth (m)	comment	finds	date
11100	Layer	-	0.2	Topsoil – dark brown silty clay.		
11101	Layer	-	0.1	Subsoil – Mid brown silty clay		
11102	Layer	-	0.6	Alluvium – mottled orange brown blue clay		
11103	Layer		0.3	Palaeochannel		
11104	Fill	4	>1	Fill of 11105 – mottled dark grey brown silty clay.		
11105	Cut	4	>1	Palaeochannel		

Trench 1	12					
General	descrip	tion		Orientation	N-S	
					Avg. depth (m)	1m
Trench de	evoid of	archaeo	logy. Co	nsists of topsoil overlying subsoil and alluvial	Width (m)	2.2
ueposits.	raiaeou			N enu.	Length (m)	50
Contexts	5					
context no	type	Width (m)	Depth (m)	comment	finds	date
11200	Layer	-	0.3	Topsoil – dark brown silty clay.		
11201	Layer	-	0.2	Subsoil – mid brown silty clay		
11202	Layer	-	>0.5	Alluvium – mottled orange brown blue clay		
11203	Cut	11	>1	Palaeochannel		
11204	Fill	11	>1	Fill of 11203 – mottled grey brown silty clay with orange patches.		

Trench 113		
General description	Orientation	N-S
	Avg. depth (m)	1m
Trench devoid of archaeology. Consists of topsoil overlying subsoil and alluvial	Width (m)	2.2
	Length (m)	50

Trench 1	rench 113									
Contexts	5									
context no	type	Width (m)	Depth (m)	comment	finds	date				
11300	Layer	_	0.2	Topsoil – dark brown silty clay.						
11301	Layer	-	0.2	Subsoil – mid brown silty clay						
11302	Layer	-	0.4	Alluvial - mid orange brown						
11303	Layer	-	-	Alluvial – light grey brown silty clay						
11304	Layer	-	-	Alluvial – light bluey grey silty clay						
11305	Layer	-	-	Alluvial – mid orange brown silty clay						
11306	Cut	-	-	Shallow ditch						
11307	Fill	_	-	Fill of 11306	3 wader bones					

Trench 1	14					
General	descrip	tion			Orientation	N-S
					Avg. depth (m)	1m
Trench d	evoid of	archaeo	ology. Co	nsists of topsoil overlying subsoil and alluvial	Width (m)	2.2
ueposits.					Length (m)	50
Contexts	5					
context no	type	Width (m)	Depth (m)	comment	finds	date
11400	Layer	-	0.2	Topsoil – dark brown silty clay.		
11401	Layer	-	0.6	Channel fill – mottled mid orange brown light blue grey silty clay		
11402	Layer	-	>0.2	Alluvium – mottled orange brown blue clay		

Trench 1	18					
General	descrip	tion		Orientation	N-S	
					Avg. depth (m)	1m
Trench d	evoid of	archaeo	logy. Co	nsists of topsoil overlying subsoil and alluvial	Width (m)	2.2
ueposits.					Length (m)	50
Contexts	5					
context no	type	Width (m)	Depth (m)	comment	finds	date
11800	Layer	_	0.25	Topsoil – dark brown silty clay.		
11801	Layer	-	0.15	Subsoil – mid brown silty clay		
11802	Layer	_	>0.6	Alluvium – mottled orange brown blue clay		

Trench 1	19					
General	descrip	tion			Orientation	NW-SE
					Avg. depth (m)	1m
Trench de	evoid of	archaeo	logy. Co	nsists of topsoil overlying subsoil and Alluvial	Width (m)	2.2
deposits.	Palaeo	channel	at invv er		Length (m)	50
Contexts	5				• =	
context no	type	Width (m)	Depth (m)	comment	finds	date
11900	Layer	-	0.2	Topsoil – dark brown silty clay.		
11901	Layer	-	0.1	Subsoil – mid brown silty clay		
11902	Layer	-	>0.7	Alluvium – mottled orange brown blue clay		
11903	Cut	7	>1	Palaeochannel		

Trench 119							
11904	Layer	7	>1	Fill of 11903 – mottled dark grey brown orange clay silt.			

Trench 1	20					
General	descrip	tion			Orientation	NW-SE
					Avg. depth (m)	1m
Trench de	evoid of	archaeo	logy. Co	nsists of topsoil overlying subsoil and alluvial	Width (m)	2.2
ueposits.	raiaeu		at 121111	on nw end.	Length (m)	50
Contexts	;					
context no	type	Width (m)	Depth (m)	comment	finds	date
12000	Layer	-	0.25	Topsoil – dark brown silty clay.		
12001	Layer	-	0.35	Subsoil – mid brown silty clay		
12002	Layer	-	>0.4	Alluvium – mottled orange brown blue clay		
12003	Cut	12	>1	Palaeochannel		
12004	Layer	12	>1	Fill of 11903 – mottled dark grey brown orange clay silt.		

Trench 1	21					
General	descrip	tion		Orientation	NW-SE	
					Avg. depth (m)	1m
Trench de	evoid of	archaeo	logy. Co	nsists of topsoil overlying subsoil and alluvial	Width (m)	2.2
deposits.					Length (m)	50
Contexts	;				-	
context no	type	Width (m)	Depth (m)	comment	finds	date
12100	Layer	-	0.25	Topsoil – dark brown silty clay.		
12101	Layer	-	0.25	Subsoil – mid brown silty clay		
12102	Layer	-	>0.5	Alluvium – mottled orange brown blue clay		

Trench 1	22					
General	descrip	tion			Orientation	NE-SW
					Avg. depth (m)	1m
Trench de	evoid of	archaeo	logy. Co	nsists of topsoil overlying subsoil and alluvial	Width (m)	2.2
ueposits.					Length (m)	50
Contexts	;					
context no	type	Width (m)	Depth (m)	comment	finds	date
12200	Layer	-	0.25	Topsoil – dark brown silty clay.		
12201	Layer	-	0.20	Subsoil – mid brown silty clay		
12202	Layer	-	>0.55	Alluvium – mottled orange brown blue clay		

Trench 123		
General description	Orientation	N-S
	Avg. depth (m)	1m
Trench devoid of archaeology. Consists of topsoil overlying subsoil and alluvial	Width (m)	2.2
	Length (m)	50
Contexts		
context type Width Depth comment	finds	date

Trench 123								
no		(m)	(m)					
12400	Layer	-	0.25	Topsoil – dark brown silty clay.				
12301	Layer	-	0.25	Subsoil – mid brown silty clay				
12302	Layer	-	>0.5	Alluvium – mottled orange brown blue clay				

Trench 1	24									
General	descrip	tion			Orientation	NE-SW				
					Avg. depth (m)	1m				
Trench d	evoid of	archaec	ology. Co	nsists of topsoil overlying subsoil and alluvial	Width (m)	2.2				
ueposits.					Length (m)	50				
Contexts	6									
context no	type	type	ext type	ext type (m	ontext type	Width (m)	Depth (m)	comment	finds	date
12400	Layer	-	0.25	Topsoil – dark brown silty clay.	1 shrapnel fragment	20 <sup>th</sup> century				
12401	Layer	-	0.1	Subsoil – mid brown silty clay						
12402	Layer	-	>0.65	Alluvium – mottled orange brown blue clay						

Trench 1	25					
General	descrip	tion			Orientation	NW-SE
					Avg. depth (m)	1m
Trench d	evoid of	archaec	ology. Co	nsists of topsoil overlying subsoil and alluvial	Width (m)	2.2
ueposits.				Length (m)	50	
Contexts	3					
context no	type	Width (m)	Depth (m)	comment	finds	date
12500	Layer	-	0.1	Topsoil – dark brown silty clay.		
12501	Layer	-	0.1	Subsoil – mid brown silty clay		
12502 Layer - >0.8 Alluvium – mottled orange brown blue clay						

Trench 1	26					
General	General description					NE-SW
					Avg. depth (m)	1m
Trench de	evoid of	archaeo	logy. Co	nsists of topsoil overlying subsoil and alluvial	Width (m)	2.2
ueposits.	raiaeou				Length (m)	50
Contexts	5					
context no	type	ype Width Depth (m) (m) comment		finds	date	
12600	Layer	-	0.15	Topsoil – dark brown silty clay.		
12601	Layer	-	0.15	Subsoil – mid brown silty clay		
12602	Layer	-	0.3	Alluvium – mid orange brown clay		
12603	Layer	-	>0.4	Alluvium – light blue grey clay		
12604	Cut	25	>1	Palaeochannel		
12605	Fill	25	>1	Fill of 12604 – pale blue clay, glade		

Trench 1	27					
General o	General description					NE-SW
Trench de	evoid of	archaeo	logy. Cor	nsists of topsoil overlying subsoil and alluvial	Avg. depth (m)	1m
aeposits.					Width (m)	2.2
					Length (m)	50
Contexts						
context no	type	Width (m)	Depth (m)	comment	finds	date
12700	Layer	_	0.2	Topsoil – dark brown silty clay.		
12701	12701 Layer - 0.05 Subsoil – mid brown silty clay					
12702	12702 Layer - >0.75 Alluvium – mottled orange brown blue clay					

Trench 1	28					
General	descrip	tion			Orientation	NE-SW
					Avg. depth (m)	1m
Trench d	evoid of	archaeo	logy. Co	nsists of topsoil overlying subsoil and alluvial	Width (m)	2.2
ueposits.				Length (m)	50	
Contexts	6					
context no	type	Width (m)	Depth (m)	comment	finds	date
12800	Layer	-	0.25	Topsoil – dark brown silty clay.		
12801	Layer	-	0.05	Subsoil – mid brown silty clay		
12802	Layer	-	>0.75	Alluvium – mottled orange brown blue clay		

Trench 1	29					
General o	descrip	tion			Orientation	SW-NE
					Avg. depth (m)	1m
Trench de	evoid of	archaeo	logy. Co	nsists of topsoil overlying subsoil and alluvial	Width (m)	2.2
deposits.					Length (m)	50
Contexts	;					
context no	type	Width (m)	Depth (m)	comment	finds	date
12900	Layer	-	0.2	Topsoil – dark brown silty clay.		
12901	Layer	-	0.1	Subsoil – mid brown silty clay		
12902	Layer	-	>0.7	Alluvium – mottled orange brown blue clay		

Trench 13	0					
General d	General description					E-W
				Avg. depth (m)	1m	
Trench de	void of	archaeo	logy. Cor	nsists of topsoil overlying subsoil and Alluvial	Width (m)	2.2
deposits.					Length (m)	50
Contexts						
context no	type	Width (m)	Depth (m)	comment	finds	date

Trench 1	French 130							
13000	Layer	-	0.2	Topsoil – dark brown silty clay.				
13001	Layer	-	0.1	Charcoal dump.				
13002	Layer	-	>0.7	Alluvium – mottled orange brown blue clay				

# **APPENDIX B - FINDS REPORTS**

### A.1 The Roman pottery

Paul Booth (OA)

A.1.1 The three Roman sherds recovered are all residual in later contexts.

#### Table 1: Roman Pottery spot dates

Context	Description	Date
3004	Single North Kent BB2 rim sherd with wavy line on body wall, dish, 13g	Mid 2nd -3rd century AD
3205	Single sherd South Gaulish samian ware, 3g	Mid-late 1st century AD
3210	Single very abraded/water worn North Kent grey ware beaded rim sherd, ?bowl, 15g	2nd - 3rd century AD

## A.2 The Post-Roman Pottery

John Cotter (OA)

- A.2.1 A total of 693 sherds of pottery weighing 10.470kg was recovered from 31 contexts. All of the pottery was examined and spot-dated for assessment purposes. 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 dateable types were also recorded, usually with mention of vessel form (jugs, bowls etc.) and any other attributes worthy of note (eg. decoration etc.).
- A.2.2 Fabric codes referred to in the comments field are either those of the Kent or London fabric type series.
- A.2.3 Codes used for local medieval Kentish wares (alpha-numeric) are those of the Kent fabric type series housed at Canterbury Archaeological Trust (Cotter 2001; 2006). Medieval pottery from the London area (apart from Kent), and most post-medieval wares are referred to by the system of codes used by the Museum of London (LAARC 2007) which have a wide application in south-east England. The pottery types present are summarised below in Table 1 and detailed in the spreadsheet.

Fabric	Name	Date	Approx no sherds
EM35	NW Kent shelly ware	c 1050-1225	3
EM36	NW Kent shelly-sandy ware	c 1100-1350	479
LOND	London-type ware	c 1140-1375	7
SHER	South Hertfordshire greyware	c 1170-1350	1
M38B	NW Kent sandy greyware	c 1175-1400	56
KING	Kingston-type ware (Surrey)	c 1240-1400	4
MG	Mill Green ware (Essex)	c 1270-1350	12
MG COAR	Mill Green coarseware (Essex)	c 1270-1400	1

Table 2: Post-Roman pottery fabrics in approximate chronological order

Fabric Name		Date	Approx no sherds
CBW	Coarse Surrey-Hants border ware	c 1270-1500	4
SAIP	Saintonge polychrome ware (SW France)	c 1280-1350	2
DUTR	Dutch red earthenware	c 1300-1650	4
CHEA	Cheam whiteware	c 1350-1500	1
LM34A	Medway hard silty-sandy ware	c 1450-1550	2
LM18T	Hareplain/Biddenden-type sandyware	c 1475-1550	2
PMR	Post-medieval redwares	c 1550-1800	11
PM64	Calcareous flecked smooth ware (Medway?)	c 1550-1725	2
OLIV	Spanish olive jar	c 1550-1750	2
СНРО	Chinese porcelain	c 1580-1900	2
STSL	Staffs-type combed slipware	c 1660-1870	4
LONS	London stoneware	c 1670-1926	1
NOTS	Nottingham stoneware	c 1700-1800	1
SWSG	Staffs white salt-glazed stoneware	c 1720-1780	2
LPM100	Misc. modern wares	c 1775-1900	90
Total			693

- A.2.4 Overall the pottery assemblage is in a fragmentary condition, although many large fresh sherds are present particularly amongst the local medieval coarsewares (mainly EM36). A few vessel profiles are also present amongst the 'Victorian' wares. Ordinary domestic pottery types are represented ranging probably from the 12th to the early 20th century. The range of wares present is very similar to that from recent excavations along the route of the A2 between Pepperhill and Cobham in north-west Kent where all these types are discussed in more detail (Cotter 2012). The Site X pottery falls fairly conveniently into broad chronological groups which are largely confined to specific trenches in the research area. The main chronological groups are considered below.
- A.2.5 The earliest possible post-Roman pottery type is north-west Kent shelly ware (EM35, c 1050-1225). An isolated sherd of this occurs in Trench 30 (3009) and a couple of sherds also occur in Trench 32 (3210) with pottery of c 1150-1250? On balance however it seem likely that the earliest post-Roman occupation in the area commenced around c 1150 or slightly later in the 12th century. A related pottery type - north-west Kent shelly-sandy ware (EM36) - is by far the predominant pottery type from the site (479 sherds, or 69% of the site assemblage). This has a broad date range of c 1100-1350 but on the basis of rim and decoration typology the assemblage here probably dates from the mid 12th century onwards. No production sites are known for EM36 and related early medieval shelly ware in north-west Kent but they were probably made at a number of locations over several centuries using either fossil or contemporary marine sources of shell. The commonest vessel form in EM36 is the jar/cooking pot with a wide body and a sagging base. Most EM36 vessels are sooted from use as cooking vessels. A few bowls also occur. Only three trenches produced medieval pottery (up to c 1480), namely Trenches 30, 32 and 34.
- A.2.6 Trench 32 produced most of the medieval pottery from the site (512 sherds, 7.548kg) including most of the shelly-sandy EM36 assemblage. The pottery comes from a series of dump deposits (layers) and the fills of palaeochannels. Some contexts in this trench contain pottery with early-looking features suggesting a 12th-

or early 13th-century date. These include the related and very similar dump deposits (Ctx 3210) and (3211) with a combined 79 sherds of pottery suggesting a date of c 1150-1250? Both contexts contain sherds of the same glazed jug in London-type ware (LOND) - probably an early rounded jug form (c 1140-1200). They also contain a sherd from a grey sandy (M38B) spouted pitcher with rouletted decoration - a typically 12th-century form. The rim forms of EM36 cooking pots including thumbed rims - are also 'early looking'. On their own the predominant EM36 shelly-sandy ware cooking pots are sometimes difficult to closely date. Context (3205) contains only this fabric (167 sherds) some with early features (rims with inner-edge thumbed decoration and vertical necks) and some more developed squared/flanged cooking pot rims suggesting an early 13th-century date. Collectively a date bracket of c 1175/1200-1300 is suggested for (3205) as it may contain a mixture of older (redeposited) and more recent vessels. Other Trench 32 deposits contain more developed later-looking EM36 rims and in several cases the presence of glazed jug sherds in Mill Green ware dates these contexts to c 1270-1350 while a sherd of a glazed Kingston-type ware jug also confirms a date after c 1240 (Ctxs 3204, 3206, 3212). A few jug sherds in local grey sandy M38B, including a decorated handle in (3203), also support a late 13th- to 14th-century dating for some of these contexts. The whole Trench 32 pottery assemblage therefore appears to fall entirely within a two-century date range of c 1150-1350.

- A.2.7 Trench 34 produced only two smallish sherds of medieval pottery, including a sherd of glazed London-type ware jug and a sherd of EM36. These suggest a date of c 1170-1350.
- A.2.8 Trench 30 produced a medium-sized assemblage of 52 sherds (710g) of medieval pottery. This is probably of 14th- to 15th-century date. The two main pottery bearing contexts here both contained a small sherd from the same Saintonge polychrome ware jug from Gascony in south-west France (c 1280-1350). The smaller assemblage in Context (3003) contained other wares compatible with the date of the Saintonge jug but the larger assemblage in (3004) is more mixed in nature as it also contained some (residual?) EM36 shelly-sandy ware sherds but also later-style wares including parts of a coarse border ware (CBW) jar/cooking pot with a distinctive bifid or internally lid-seated rim which dates after c 1380 and is common in early 15th-century contexts in London (Pearce and Vince 1988, 85, fig. 115, 476-8). A Cheam whiteware (CHEA) jug base also suggests a similar late medieval dating for this context probably within c 1380-1450?
- A.2.9 Trench 56 is the only trench to have produced pottery from the late medieval/early post-medieval transition c 1475-1550 (Ctx 5605). The ten sherds in this context include a dish profile in Dutch red earthenware (DUTR) and a few sherds of Medway-type fabrics. Context (5602) produced only 19th-century pottery.
- A.2.10 The remaining trenches contained only common 18th- or 19th-century pottery types which are detailed in the spreadsheet. These are of lesser significance although two sherds of Spanish olive jar, from two separate vessels, in Trench 16 are of some note. These occurred in association with 18th-century pottery types in Context (1613). The later pottery (LPM100) comprises a range of mass-produced Staffordshire-type table wares including transfer-printed wares (mainly after c 1830) and modern English stoneware. A small piece of an electrical insulator in white porcelain or stoneware may be as late as c 1900-2000 (Trench 20).
- A.2.11 In general the range of medieval wares present is what one would expect from a coastal site in north-west Kent. These are mainly of fairly local origin with a sprinkle of regional English glazed wares commonly found in the Thames estuary area. The presence of a Saintonge polychrome jug imported from south-west France also

shows that the occupants of this site had access to some imported finewares, possibly re-distributed from London or Sandwich where imports were commoner.

A.2.12 Unless as part of a wider regional study in the future, or unless further large-scale excavations take place on the site, no further work on the assemblage is recommended.

## A.3 The ceramic building material (CBM)

John Cotter (OA)

- A.3.1 A total of 14 pieces of ceramic building material (CBM) weighing 7.776kg was recovered from 8 contexts. This was examined and spot-dated during the present assessment stage following standard Oxford Archaeology procedures and the data recorded on an Excel spreadsheet. A range of material dating from the late 14th or 15th century to the 19th century is present. Full details may be consulted in the spreadsheet.
- The only pieces from one of the trenches containing medieval pottery are from A.3.2 Trench 30 (3004). One of the two pieces here appears to be from a very worn Flemish-style quarry (floor) tile dating from the late 14th to 16th century - which fits neatly with the pottery date of c 1380-1450. The wear pattern on the tile suggests it was set on edge (perhaps reused). The other piece in this context is a very battered fragment of thick tile which could either be Roman or medieval (perhaps from a ridge tile). Six other contexts producing CBM are all from Trench 16 - which produced only 18th- and 19th-century pottery. These produced four bricks, two of which are complete (sampled). The earliest piece is a sandy red 'Tudor' brick end of late 15th- to 16th-century date (1622), possibly used for paving. Two other bricks (including one complete) are of late 16th- to 17th-century date (1617 and 1618). The brick from (1617) bears a couple of small possible cat paw-prints on its upper surface. The other complete brick is a frogged yellow 'stock' brick from the 19th century (1602). Contexts (1612) and (1613) produced a few pieces of red sandy 18th-19th century pan tiles. Otherwise the site produced no examples of medieval or post-medieval peg tiles - which are normally very common in Kent. Trench 24 produced two items of 19th- or 20th-century stoneware including a piece of drainpipe and the rim of a white stoneware object which may be from a chimney pot or part of a stove or a water filter (2402). No further work on the CBM is recommended.

# A.4 The clay pipe

John Cotter (OA)

A.4.1 Seventeen pieces of clay pipe weighing 57 g were recovered from four contexts. These have been recorded on an Excel spreadsheet in a similar way to the post-Roman pottery. In general the assemblage is quite worn and scrappy with no very large pieces present. Three pieces of pipe bowl and fourteen pieces of stem are present. Some of the earliest pieces are residual in 19th-century contexts. These include a fairly fresh bowl profile of c 1680-1710 in Context (5401) and a very worn piece of 17th-century stem in Context (1612). The other two pieces of pipe bowl date to the 18th century. The latest pieces are seven small stem fragments of 19th-century date. No further work on the assemblage is recommended.

## A.5 The metal finds

Ian R. Scott (OA)

- A.5.1 The metals assemblage comprises 32 objects (35 fragments) excluding 100+ fragments of metal waste and 11 undiagnostic fragments (Tables 1 2). The metal waste comprises tiny iron fragments possibly including hammerscale and comes from context 3204. The undiagnostic fragments come from contexts 3005, 3204, 3205 and 3216 (see Table 2) and include some pieces which may not be metallic iron (fe? in Table 1). The assemblage is dominated by iron and has only 2 copper alloy objects and a single piece of lead.
- A.5.2 The assemblage has recorded onto an Excel spreadsheet. The finds are quantified by object and fragment count. Nails are quantified by counting complete nails and nail heads only as objects and counting nails, nail heads and pieces of stem to give a fragment count. Undiagnostic objects and waste have only been counted as fragments.
- A.5.3 The assemblage has a limited range of finds (Table 2) and is dominated by nails (n = 14; no fragts = 17). There is a single very worn copper alloy disc which may have been a coin but which is now certainly illegible (context 5400). There are eight pieces of shrapnel all from topsoil contexts and a single tool, a spade of modern type, from context 3008. The only item relating to transport is a fullered horseshoe from topsoil (context 8300).
- A.5.4 There are two personal items. From context 1613 there is part of the iron ring from a wooden patten, and from topsoil (context 5400) a plain flat shanked copper alloy button, probably of 19th-century date.
- A.5.5 From context 2904 there is a heavy circular iron object, flat bottomed with low vertical sides. It could be a heavy iron dish, but it seems unlikely. It is perhaps more likely that its is a pivot lining or pivot base for a door too heavy to hang on wrought iron hinges. Context 5403 produce a small scrap of lead window came. This is the only piece of lead.
- A.5.6 There is a single piece of iron bar under Miscellaneous (topsoil, context 7300) and two objects of uncertain identification, one a bar-like object (context 3004) and the other a possible modern crank handle, or possibly a piece of structural ironwork (topsoil, context 1700).
- A.5.7 Just over half the finds (n = 19) by number are from topsoil contexts and include the horseshoe (context 8300), the possible crank handle (context 1700), the button and worn coin (context 5400) and all eight pieces of shrapnel (contexts 7300, 8300, 8600, 9500 and 12400).
- A.5.8 Apart from topsoil contexts the only context that produced more one or two finds was 5403. The finds comprise 4 nails and a piece of lead window came.
- A.5.9 Context 1613 produced an iron patten ring and a nail, context 2904 a possible door pivot lining and context 3008 a spade blade. Context 3004 produced an unidentified corrosion encrusted iron fragment and context 3204 produced nail fragments some tiny undiagnostic iron fragments including possible hammerscale. Other non topsoil contexts produced a small number of nails.
- A.5.10 None of the metal finds need date earlier than the 19th century. The material is very limited in quantity and in the range of objects present.

	Metal					
Context	fe	cu alloy	pb	fe?	Totals	
1613	2				2	
1700	1				1	
2904	1				1	
3004	1				1	
3005	1			*	1	
3008	1				1	
3200	1				1	
3201	1				1	
3204	1				1	
3205				*	*	
3216	*				*	
5400		2			2	
5403	4		1		5	
7300	8				8	
8300	2				2	
8600	1				1	
9500	3				3	
12400	1				1	
Totals	29	2	1		32	

# Table 3: Metals: Count by Context and Metal (object count only)

# **APPENDIX C - ENVIRONMENTAL REPORTS**

#### A.6 Environmental samples

Sharon Cook (OA)

- A.6.1 This report describes seven samples taken from the evaluation at London Gateway, Site X, in May 2013.
- A.6.2 Sample <1001> (1203) was taken from the fill of a posthole in Trench 12. Samples <1002> (8003) and <1003> (8008) were taken from the fill of postholes in Trench 80. Sample <1004> (8204) was a possibly natural feature within Trench 82 and the sample was taken to ascertain if any evidence of human activity was present. Sample <1005> (3306) was a possible charcoal dump within Trench 33. Sample <1006> (3204) was a potential shell midden of medieval date within Trench 32 and sample <1007> (11902) was believed to be a dump of burnt material within Trench 119.
- A.6.3 Sampling was undertaken to:
  - 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.
- A.6.4 Sub-samples, each of 1L, were taken from the four clay-rich samples (<1001>, <1002>, <1003> and <1004>) and were processed primarily for the recovery of anaerobically preserved material, using gentle hand flotation. The remaining three samples (<1005>, <1006> and <1007>), as well as the remaining sediment from sample <1004> were processed in their entirety for the recovery of charred plant remains (CPR), shells, bones and artefacts by water flotation using a modified Siraf style flotation machine. All flots were collected on a 250µm mesh and the heavy residues sieved to 500µm; flots and residues were dried in a heated room, after which the residues were sorted by eye for artefacts and ecofactual remains.
- A.6.5 The flots were scanned using a binocular microscope at approximately x10 magnification. Seed identifications were made with guidance from K. Hunter and with reference to Oxford Archaeology's reference collection. Nomenclature for the plant remains follows Stace (2010). Animal bone identifications were made with the guidance of L. Strid.
- A.6.6 Sample <1001> (1203) was a light brownish grey clay. No artefacts were present within the residue. The sample yielded approximately 10ml of flot material which was largely composed of fragments of waterlogged roots and leaves. Few seeds were present; those observed were in a good state of preservation although almost all noted were rush type (*Juncus* sp). A few fragments were identified as members of the Asteraceae family although their condition made it impossible to further identify to genus or species. Occasional small fragments (<2mm) of charcoal were noted. These were in good condition although too small to be used for species identification. No charred seeds were observed.

- A.6.7 Sample <1002> (8003) was a light yellowish brown clay. No artefacts were present within the residue. The sample yielded approximately 10ml of flot material which similarly comprised fragments of waterlogged roots and leaves. Few seeds were present, those observed were in a good state of preservation although all complete seeds noted were rush type (*Juncus* sp). Occasional small fragments (<2mm) of charcoal were noted, which were in good condition although too small to be used for species identification. No charred seeds were observed.
- A.6.8 Sample <1003> (8008) was a grey clay. No artefacts were present within the residue. The sample yielded approximately 10ml of flot material which was again comprised fragments of waterlogged roots and leaves for the most part. Few seeds were present, those observed were in a good state of preservation and as for samples <1002> and <1003> the only complete seeds noted were rush type (*Juncus* sp). No charred seeds were observed.
- A.6.9 Sample <1004> (8204) was a grey clay. No artefacts were present within the residue either of the 1L sub-sample or of the remaining 30L. The sample yielded approximately 400ml of flot material which was again mainly composed of fragments of waterlogged roots and leaves, with a few seeds of rush type (*Juncus* sp). A few fragments of wood were observed but were too small to identify to species. Occasional small fragments (<2mm) of charcoal were noted. These were in good condition although too small to be used for species identification. No charred seeds were observed.
- A.6.10 Sample <1005> (3306) was a brown silty clay. 8L was processed for the recovery of CPR, shell, bones and artefacts, but no artefacts were present. The sample yielded <10ml of flot material, and this mostly consisted of modern roots. Occasional small fragments (<2mm) of charcoal were noted; these were in good condition although too small to be used for species identification. A single charred seed was observed but was too degraded to identify.
- A.6.11 Sample <1006> (3204) was a brown silty clay. 40L was processed for the recovery of CPR, shell, bones and artefacts. The sample yielded approximately 150ml of flot material of which 25% was scanned. The finds retrieved from the residues comprised a large number of marine shells, as well as pottery, iron fragments, fish bone and a small quantity of animal bone. The majority of the marine shell was identified as common mussel, *Mytilus edulis* (see specialist report for further details). The animal bone from this sample was fragmented and the majority could not be identified to species. Three bones were identified as bird bones, of which two belonged to a small passerine, while a third was a long bone with no distinguishing characteristics. Three bone fragments could not be further identified. The remainder of the animal bones were from medium-sized mammals, two skull fragments from a juvenile, three long bone fragments and part of a scapula. One pig (*Sus domesticus*) metatarsal (unfused) and a lateral phalanx (unfused) possibly also pig, were the only complete bones in the sample.
- A.6.12 The flot for this sample largely comprised modern roots. Occasional small fragments (<2mm) of charcoal were noted, these were in good condition although too small to be used for species identification. Few charred seeds were observed. Two capsules from thrift (*Armeria maritima* Willd.) were noted together with a complete seed and a small seed fragment. Three grass seeds (Poaceae) were also present together with two unidentifiable seed fragments.
- A.6.13 Sample <1007> (11902) was a light yellowish brown silty clay. 8L was processed for the recovery of CPR and artefacts, but no artefacts were present within the residue. The sample yielded <10ml of flot material, but again this was mainly

modern root. Occasional small fragments (<2mm) of charcoal were noted, these were in good condition, but too small to be used for species identification. Few charred seeds were observed. A single thrift seed (*Armeria maritima* Willd.) was positively identified and a single brome type (cf. *Bromus L.*) was also identified together with another grass seed that was not identifiable to species. A single goosegrass seed (cf. *Chenopodium L.*) was too badly fragmented to further identify, and a single possible sea beet seed (cf. *Beta vulgaris maritima* (L.) *Arcang.*) was also present.

- A.6.14 Several samples included well preserved, if not abundant, waterlogged seeds, indicating that this is a site with good potential for the recovery of waterlogged remains, although in the case of samples <1001>, <1002>, <1003> and <1004> the seeds may be unrelated to the sampled feature, reflecting instead material transported by flooding. Although the seeds noted were those commonly found in wetland areas, the state of preservation of the majority of charred and uncharred seeds would indicate that further sampling of significant archaeological deposits in any later investigations should be encouraged.
- A.6.15 Charred *Armeria maritima* Willd. (thrift) was found in abundance in Iron Age and Roman contexts in the London Gateway excavation at Stanford Wharf Nature Reserve, on the opposite bank of the Thames estuary from Site X. On that site the presence of large quantities of charred thrift was believed to be related to the fuel used during salt production (Hunter 2012); however the amount found during this evaluation would seem insufficient to reach any such conclusion. Thrift is a common plant around the coasts of the British Isles and the other plant remains recovered from these samples would also be expected in this type of location.
- A.6.16 Sample <1006>, from a medieval mound deposit, was the only sample to contain artefacts and bone.
- A.6.17 Apart from sample <1006> the samples were fairly barren and did not provide useful evidence to help interpret the features/deposits. Nevertheless, it is clear that both charred and anaerobically preserved organic material survive in good condition. If further excavations are carried out on this site, standard 40L bulk samples should be taken from a range of potentially datable features across the site and in addition, consideration should be given to sampling for molluscs and anaerobically preserved remains in accordance with the most recent sampling guidelines (e.g. Oxford Archaeology, 2005) and following English Heritage (2011).

#### A.7 *Marine shell and fish remains*

Rebecca Nicholson (OA)

- A.7.1 Marine shell was recovered from the dried residues of processed bulk samples and by hand collection on site. Only the hinges of bivalve molluscs were extracted from the sample residues. Sample 1006 from dump deposit 3204 included 110g of fragments from c. 220 valves identifiable as from the peppery furrow shell *(Scrobicularia plana (de Costa), a mollusc which is commonly found in buried in sand or mud around Northern European coasts and inter-tidal estuaries. Also extracted from this sample was 434g of identifiable mussel shell <i>Mytilus edulis L.* representing c 600 valves, all of which were broken.
- A.7.2 Hand collected shell comprise 6 valves of peppery furrow shell and two oyster *(Ostrea edulis)* valves from context 3201 (55g) total) as well as 2 oyster valves, 7 mussel valves, 2 peppery furrow shell valves and two cockle valves (*Cerastoderma edule*) (37g total).

- A.7.3 Mussel beds can be found along the estuary close to London Gateway and cockles are today dredged in quantity from locations along the Essex shoreline. Native oysters, although now scarce, formerly formed extensive beds around the Essex coast and were commercially exploited from at least the Roman period. All the shells from this site are likely to derive from shellfish deliberately gathered for human consumption.
- A.7.4 Fish bones were recovered from the residue of sample 1006 (3204) and include 16 vertebrae from small flatfish, herring (*Clupea harengus*) and *eel (Anguilla anguilla*). All these fish could have been caught in the outer Thames estuary using traps and nets. They are much more likely to represent dumped domestic waste than remains accumulated through a natural mechanism such as flood stranding.

#### A.8 Animal bone

Lena Strid (OA)

- A.8.1 The faunal remains from London Gateway Site X comprise a total of 475 bones. The bone condition was good to fair, suggesting the bones had not been lying on the surface for long periods of time before being disposed of. Only 13 fragments showed carnivore gnaw marks, probably from dog or fox. A single bone had been gnawed by a rodent. Burnt bones were absent.
- A.8.2 The animal bone assemblage is dominated by bones from sheep/goat (Table 1). Since thirteen bones could be identified to sheep and none to goat, it is likely that most or all of the sheep/goat bones belong to sheep. The sheep/goat remains were mostly found in channel fills, and their semi-articulate state suggest that they represent natural mortalities. Sheep were kept at Halstow and Cooling marshes in the medieval and post-medieval periods ("Assessment" p.12-15) and the size of several of the sheep remains suggest that these animals are post-medieval in date.
- A.8.3 The rest of the assemblage comprise a small number of bones from domestic mammals, as well as one rabbit femur and three wing bones from a wader. It is uncertain to what extent the bones are directly related to human activity. The only butchery mark in the assemblage was found on a medium mammal rib from layer 3205 (an artefact-rich medieval deposit at Site 1), which had been chopped off mid-rib. The wader bones may represent natural mortality, since wings often detach from a floating decomposing carcass (Schäfer 1972).

	Pit	Pond	Field drain	Ditch/ channel	Channel	Layer	Alluvial	Top-soi	Sub- soil
Cattle					1		1		
Sheep/goat	3	7			145	7		1	1
Sheep		2			13				
Pig					1	3			1
Horse					3			1	1
Dog					1				
Rabbit					1				
Wader				3					
Passerine						2			
Indet. bird	1					1			
Medium mammal					149	14			5
Large mammal	1				40				1

Table 4. Bones per taxon and feature type.
Indeterminate			1		61	3			
TOTAL	5	9	1	3	415	30	1	2	9
Weight (g)	92	476	1	0	4358	110	49	318	57

Table 5. Remains from sheep and sheep/goats recovered from channels and pond. Vertebrae, ribs, sternum and long bones could only be identified to medium mammal, but are most likely sheep/goat. Age estimation follows epiphyseal fusion and tooth wear (Habermehl 1975; Payne 1973).

	Channel						Pond	
	3005	3208	3303	5404	5506	5607	2202	
Skull	17	5	3	1	3	1		
Mandible	9	5	2		1	2		
Loose teeth	6		1	2	13			
Atlas	2		1					
Axis	2		1					
Vertebra	6	8	1	5	1	14		
Sacrum	1							
Rib	3	7		55		34		
Sternum				2		4		
Scapula	2			1	2		1	
Humerus	3	2			1	1	1	
Radius	1	2	2	1			1	
Ulna	1						1	
Carpals					1			
Metacarpal	1	4		1	2		1	
Pelvis	2	3			4			
Femur	1	1			5		1	
Tibia		3	1	1	6	1	2	
Calcaneus	1				2			
Astragalus					1			
Tarsals								
Metatarsal		4	1	2	3			
Phalanx 1	1	3			1		1	
Phalanx 2		1			1			
Phalanx 3								
Indet. metapodial		1			2			
Long bone	3			1	2			
TOTAL	62	51	13	72	51	57	9	
MNI	2	4	1	2	4	1	1	
Age estimate	1 sub-adult, 1 adult	1 sub-adult, 2 adults, 1 indet.	1 sub- adult/ adult*	1 neonatal, 1 adult	1 juvenile, 2 sub-adults, 1 adult	1 adult	1 adult	

\*: Fusion data suggests a slightly younger age than the dental wear. Either the context contains more than one individual, or the animal is a castrate with a longer skeletal development.

Table 6. Dental wear stages of sheep/goat mandibles from channel fills, using Grant's (1982) tooth wear stages. Estimated age according to Payne (1973).

Channel	Tooth	wear stage	es		Mandible Wear Stage	Estimated age group	
	dp4	M1	M2	М3			
3005		g	е	E	25	1-2 years	
3005			g	g	36-41	4-6 years	
3208	g	f	E		14-15	0.5-1 year	
3208		k	g	g	39	4-6 years	
3303		m	j	g	43	6-8 years	
5607		k	g	g	39		

## **APPENDIX D - BIBLIOGRAPHY AND REFERENCES**

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Figure 1: Site location



1:5,000

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Figure 2: Trench layout on modern basemap



LiDAR data supplied by DP World

1:5,000

Figure 3: Trench layout overlaid on Lidar and interpreted geophysics









overlaid on interpreted magnetometer plot

1:1,000 @ A4



Figure 7: Site 1: Trenches 30 - 34 overlaid on 1898 OS Map



Figure 8: Site 1: Trenches 30 - 34 overlaid on 1961 aerial photo



0 25 m 1:1,000 @ A4


Figure 10: Site 1: a) Trench 30 - Reddish possible saltern deposit 3004



b) Trench 32 – Medieval dump deposits







Figure 11: Site 1: Trench 32 - Section drawing





Figure 12: Site 2: Trenches 54 - 56 overlaid on Lidar and interpreted geophysics

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25 m



Figure 13: Site 2: Trenches 54 - 56 overlaid on 1961 aerial photo

1:1,000 @ A4



25 m 1:1,000 @ A4

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Figure 15: Site 3: Trench 16 overlaid on 1961 aerial photo

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Figure 16: Site 3: Trench 22 - Pond overlaid on 1961 aerial photo

1:1,000 @ A4



Figure 17: Site 3: a) Trench 16 – a) Photographs of sheep dip 1611, made from 16th-17th century bricks.



b) Trench 18 - Brick surface 1809



Figure 18: Site 4: Trench 24 overlaid on 1961 aerial photo



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