

**VANGE MARSH NORTH**

**VANGE**

**ESSEX**

**ARCHAEOLOGICAL MONITORING**



**Essex County Council**  
**Field Archaeology Unit**

**JUNE 2006**

**VANGE MARSH NORTH**  
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**VANGE MARSH NORTH**  
**VANGE, ESSEX**  
**ARCHAEOLOGICAL MONITORING**

Client: RSPB

NGR: TQ 731 872

Site Code: BAVM06

Oasis No.: essexcou1-14844

Dates of Fieldwork: 25th to 26th October 2005 and 21st March to 3rd April 2006

**SUMMARY**

The monitoring of the groundworks associated with the formation of a new wildlife reserve at Vange Marsh North has revealed archaeological features dating to the Roman, medieval and modern periods.

Two features, a possible red hill and a pit, may both be associated with salt extraction activities located on the marsh edge. Although neither feature contained dating evidence it is likely that they are of Roman origin. Medieval layers and water channels were identified indicating localised activity, including arable farming and perhaps nearby occupation, during the 12th to 13th century. An extensive carbonised grain deposit was investigated that might represent the remains of a burnt wheat field or the result of the accidental combustion of a timber grain store. The proximity of several contemporary water channels suggests that the grain and other commodities may have been transported by water.

Other infilled water channels were undated or else date to the modern period. One corresponds to a channel linking a drainage ditch and an open water channel depicted on the 1st edition Ordnance Survey map (c. 1875). Also on the map was a track, identified on the ground, which led across the marsh to a small building next to Pitsea Creek. The building was probably used for the storage of coal which had arrived by sea. Other cartographic research indicated that the sea bank to the north-east of the site was created after the mid-1930s and is therefore not archaeologically significant.

## **1.0 INTRODUCTION**

This report describes the results of archaeological monitoring of groundworks associated with the construction of a new wildlife reserve at Vange Marsh North. The new reserve is being created as part of the Thames Gateway South Essex Greengrid partnership scheme. The groundworks comprised the cut for a new sluice through the sea bank and a linking ditch to the north-east of the marsh and the excavation of a major new boundary ditch along the western edge of the marsh. The fieldwork was carried out by the Essex County Council Field Archaeology Unit (ECC FAU) on behalf of the RSPB, under the terms of an archaeological condition placed on planning consent in accordance with Planning Policy Guideline note 16 (PPG16). The archaeological work followed a brief produced by ECC HEM (2005) and a written scheme of investigation prepared by ECC FAU (2006).

The site archive will be deposited in Southend-on-Sea Museum. A digital version of this report will be submitted, along with a project summary, to the Online Access to the Index of Archaeological Investigations (OASIS) (<http://ads.ahds.ac.uk/project/oasis>).

## **2.0 BACKGROUND (Fig. 1)**

### **2.1 Topography and Geology**

The new wildlife reserve is situated on Vange Marsh North (NGR TQ 731 872), between the A13 and London to Southend railway line to the north and Pitsea Creek to the south and east. Vange Marsh North straddles the boundary between the parishes of Vange and Pitsea. Vange Marsh lies on the alluvial plain of the Thames estuary and solid geology consists of London Clay overlain by tidal flat deposits. Currently the land is divided between dry rough grassland in the north and wetter marshland in the south, with the two areas divided by a water-filled drainage ditch. Evidence of 'Stetch' ploughing in the rough grassland to the north of the ditch indicates that this land has formerly been used for arable farming (Medlycott and Gascoyne 2005, 70). The ground surface height ranges from 5m OD in the north to less than 3m OD in the marsh.

### **2.2 Archaeological and Historical Background**

The archaeological background for this and other parts of the Essex coastal marshland has previously been given extensive discussion by Medlycott and Gascoyne (2005) and Rippon (2000). In view of this, only a summary of the most pertinent information is presented here.

Essex holds an abundance of archaeological evidence for the exploitation of its coastal marshland from the Mesolithic, now buried under many metres of alluvium, to the present day. It is clear that what might otherwise be regarded as marginal land has in fact been a valued and managed resource throughout time.

During the Neolithic the coastal regions of Essex began to approximate their present day shape, and environmental evidence suggests that the upper dryland slopes started to be cleared of the dominating lime and oak (Hunter 1999). Further archaeological remains suggesting activity beyond this initial stage of landscape management have not yet been discovered.

During the Bronze and Iron Ages, geological and environmental evidence suggests the inter-tidal zone was unsuitable for permanent settlement. However, exploitation of natural resources did occur as evidenced by wooden structures comprising platforms of brushwood and timber together with hurdle bridges and lengths of trackway (Wilkinson and Murphy 1995), which survive below later alluvial deposits. By the latter stages of the Bronze Age tangible archaeological remains indicate settlement and agriculture expanding along the higher ground of creeks and estuarine terraces (Brown 1996; Meddens 1996) and the utilisation of the surrounding marshland resources at the same time.

The transition between the Iron Age and Roman periods brought with it an expansion of settlement activity and the extensive production of salt, a marshland industry that has its origins in the middle Bronze Age (Fawn *et al* 1990; Wilkinson and Murphy 1995). Features known as red hills are believed to represent the remains of salt production sites. Salt production seems to centre on the Blackwater and Colne estuaries of North East Essex (Rippon 2000). However, further red hills survive along a significant portion of the Thames estuary and the quiet waters of its creeks though, due to coastal erosion or rise in sea levels, these are less frequent.

Reclamation of the marsh does not seem to have taken place during the Roman period and salt production appears to have virtually disappeared by the mid to late Roman period, moving inland as sea levels rise (Rippon 2000, 142-143) and alternative resources became available, such as the salt water springs of the Droitwich area (Going 1996, 101).

There is considerable evidence for Saxon sea borne activity along the Thames estuary as well as the creation of the major settlement site at Mucking and a cluster of Minster, royal *vill* and

burgh sites (Medlycott and Gascoyne 2005, 8). Fish traps were constructed in the Blackwater estuary in the middle Saxon period (Strachan 1998), a feature that was also likely present around the Thames Estuary. By the late Saxon period the coastal marshes appear to have principally been used for sheep-pasturage (Medlycott and Gascoyne 2005, 8) which had become a communal right (Rippon 1996, 124).

The location and extent of Medieval exploitation of the marsh is difficult to establish. There are two potential indicative place names associated with grazing and dairy production on the Essex marshes: 'cote' and 'wick'. Cotes were dairies, raised refuges for sheep or salt producing sites. Wicks could be dairies, cheese-making sheds or shepherds huts from which Vange Wick, located 1km to the south, may have derived its name. These structures were often located on slightly raised ground and could be situated upon Roman red hill deposits (Rippon 2000, 204-5).

Entries in the Domesday Book for Essex indicate that the carrying capacity of the Essex marshland for grazing was over 18,000 head of sheep (Grieve 1959, 5). These were primarily used for wool and dairy products which were supplied to the surrounding towns. Throughout the medieval period the Essex marshland sheep were an important source of dairy produce, particularly cheese, which was popular amongst the poor and was used extensively on ships (Medlycott and Gascoyne 2005, 9).

The construction of sea defences and reclamation of the Essex marsh is thought not to occur until between the 12th and 14th centuries, though precise dating is difficult until the 16th century when documentary evidence begins to appear. However, extensive areas of Thames Estuary saltmarsh remained un-banked and used as sheep pasture until the whole area was embanked certainly by the post-medieval period, c.1770s. The marshland seems to have been predominantly used for grazing sheep throughout antiquity, though economic factors have occasionally brought about a rise in favour of cattle as occurred in the 17th century. At times, areas have been given over to cultivation, specifically during the 19th and 20th centuries.

In the 19th century Vange Marsh North was used for agriculture. The wet marsh was used as pasture and the dry land for arable. The land was divided between Kiln Farm (see below) and Shonks Farm (located north-west of the marsh) on the 1839 Tithe map (ERO D/CT 394B). Later the marsh was separated from the village of Vange by the construction of the railway and further divorced by the construction, in the later 20th century, of the A13. By the end of the 20th century Kiln Farm and Shonks Farm were no longer extant.



London has been extremely influential over the marshes in recent times and documentary evidence shows the city received the produce of the farmland, marshland pastures, fisheries, decoy ponds and oyster beds situated along this estuarine system. In return, barges brought manure to fertilise the fields. This indicates that widely-established and varying activity would once have existed associated with these industries, though as with many periods of antiquity on the marsh known/ recorded evidence is as yet limited.

Three monuments in the area of the new wildlife reserve at Vange Marsh North are recorded in the Historic Environment Record (HER) held at Essex County Council, County Hall, Chelmsford. HER 45740 is the site of Kiln Farm, which was sited on the edge of the marsh and is believed to have been in existence prior to 1681 (Medlycott and Gascoyne 2005, 22). HER 45741 refers to the sea wall along the south-eastern edge of the marsh and HER 45742 to a relict section of sea wall in the reed beds to the north. The majority of the sea wall was constructed prior to 1777 (Medlycott and Gascoyne 2005, 23). No known sites of greater antiquity lie within the development area.

### **3.0 AIMS AND OBJECTIVES**

Generally, the aim of the work was to determine the location, extent, date, character, condition, significance and quality of any surviving archaeological remains along the length of the new ditch.

More specific project aims included:

- Establishing the date of the extant drainage features affected by the scheme
- Obtaining a section through the sea wall in order to understand its construction
- Identification of peat deposits
- Retrieval of samples for the scientific dating of structures and deposits, where appropriate

#### **4.0 METHOD**

The machine excavation of a cut for a new sluice through the sea bank at the north-east side of the marsh and a cut for a short linking ditch was monitored by a professional archaeologist in October 2005.

In March 2006, two 360° tracked mechanical excavators fitted with toothless ditching buckets commenced the excavation of the major new boundary ditch along the western side of the marsh. During the machining, the top of a possible red hill was uncovered and left for archaeological investigation. A section across the end of the red hill was cleaned and drawn. After consultation between ECC HEM and the RSPB it was agreed that the red hill would be left *in situ* and the ditch diverted around it. The excavation of this diversion and the removal of overburden from above part of a black deposit (7) located further along the ditch was undertaken under full archaeological supervision.

The remainder of the ditch was regularly examined for the presence of archaeological features. Where present, these were photographed and recorded and their positions located using GPS equipment. All work was carried out in accordance with IFA (Institute of Field Archaeologists) by-laws and guidelines. Standard ECC FAU excavation, artefact collection and recording methodologies were employed where practicable.

#### **5.0 FIELDWORK RESULTS**

Monitoring of the construction of a new sluice through the sea bank at the east side of the marsh and the excavation of a short length of linking drainage ditch was undertaken in October 2005. Monitoring of the excavation of the new boundary ditch was undertaken in March/April 2006. The results of this fieldwork are described below, with further context information presented in Appendix 1.

##### **5.1 Sea bank and linking ditch (Fig. 1)**

The ground works for the new sluice and linking ditch extended for an approximate length of 30m. The sea bank was 1.3m high and composed of mixed clay and subsoil. The bank sealed a mixed black organic deposit which overlay blue grey clay. No finds were recovered. The black organic deposit was seen to continue in the sides of the ditch and is believed to represent the remains of a buried land surface. The sea bank was very straight and was clearly later than the more sinuous field layout. Subsequent cartographic research indicates

that the construction of the sea bank post-dates 1936/47. The sealed organic deposit is most probably of a similar vintage.

## **5.2 Major boundary ditch (Figs 1–3)**

The new boundary ditch was monitored along a length in excess of 700m. The entire length of the ditch was observed apart from two small stretches located towards its north-east end. One unobserved stretch involved the re-excavation of a short length of existing silt-filled water channel and the other was the excavation of a small ditch through the reed marsh to the north.

The new boundary ditch was generally excavated to between 8 to 10m wide and approximately 2m deep. The northern slope was steep with a more-gentle slope on the south side. A bank was formed from the up-cast material along the south (seaward) side. Archaeological features and deposits were identified along the length of the new boundary ditch and are described from west to east below.

### **5.2.1 Red hill remains**

At the west-end of the ditch excavation a large spread of red baked clay was revealed by machine (Fig. 1) approximately 1m below the ground surface. The spread was left in situ for archaeological investigation and was thought to possibly be the remains of a Roman red hill (a mound of debris associated with extraction of salt from sea water). The site was visited by the ECC HEM monitoring officers who advised that the section across the end of the possible red hill should be recorded and requested that the remainder of the monument be preserved. The RSPB kindly agreed to this request and the ditch was subsequently re-routed, around the possible red hill, under archaeological supervision.

As exposed in the new ditch, the baked clay deposits were 4m wide and visible in plan for a length of some 10m. At the base of the deposits was an undulating layer of mid grey brown silty clay (4) that was distinguishable from the brown natural clay by its slightly dirty appearance and the presence of occasional flecks of baked clay and charcoal (Fig. 2, Section 1; Plate 1). It is possible, though far from certain, that the undulations in the base of this deposit actually represent the position of infilled features underlying the red hill. Layer 4 was sealed by a deposit of dark grey clay silt (3), 0.2m thick, which contained frequent 2mm to 5mm-sized pieces of baked clay, coloured from red to black, together with occasional charcoal flecks. This deposit was well-defined and had a 'bitty' appearance due to the numerous small baked clay inclusions. In section, layer 3 dipped below a layer or lens of yellow brown clay (2). Both deposits were sealed beneath a layer of mid to dark grey-brown silty clay (1), up to 0.5m thick, containing occasional pieces of orange and black baked clay. At the southern

edge of the section, layers 1 and 3 were overlain by a deposit of clean yellowish brown clay (5). No diagnostic or dateable finds were recovered from any of these deposits.

### **5.2.2 Medieval and later remains**

In the north-west facing side of the new ditch was an infilled channel (32) approximately 6.7m wide. The upper fill, a dark grey-brown organic clay silt (33), contained numerous sherds of modern pottery and bottle glass (not retained). No finds were evident in the lower fills which comprised mixed grey-brown clay (34) above mid grey clay with (naturally deposited) shell fragments (35). Channel 32 was not clearly defined in the opposing section and is believed to have terminated before reaching this point.

Also only visible in the north-west facing section was a 3.5m-wide layer of dark grey silt (16) that contained sherds of 12th-13th century pottery. The layer was only 0.03m thick and was situated on the interface between a 0.5m thick deposit of grey-brown clay (15) and the underlying brown clay natural. The topsoil above layer 16 had been truncated by machining but the layer is estimated to have been approximately 0.7m below the ground surface.

Channel 29 (Fig. 4, Section 4) was visible in both sides of the ditch. It was up to 8m in width and 2m deep and contained two fills. The upper part of the channel had been deliberately backfilled with light brown clay (30) and the lower part contained grey-brown clay (31) with a thick lens of dark grey organic matter. Fragments of sawn timber and a frogged brick in the base of the channel suggest it was of recent origin. This was further confirmed by its position directly between the end of an existing drainage ditch to the north and a water channel in the marsh to the south (Fig. 3).

The eastern edge of channel 29 cut an earlier infilled channel (28), again visible on both sides of the new ditch. Channel 28 was 7.2m wide and 1.8m deep. The top of the channel contained greyish brown clay (10) 1m+ thick and the base a 0.4m thick dark grey clay (Fig. 4, Section 4; Plate 3). This latter deposit was initially split into three contexts (11, 12 and 13) to differentiate between separate finds locations, but on closer analysis appeared to be all one fill. Medieval pottery was recovered from all four contexts indicating that the channel was most probably infilled in the 13th century.

Channel 28 appeared to have been cut into the natural brown clay from about 0.7m below the present ground surface. This depth corresponded with the base of a layer of greyish brown clay (14) overlying the natural clay to the east of the channel. About 1.8m from the eastern edge of the channel, layer 14 and the natural clay were separated by a band of black

charcoally silt (7) from which 29 sherds of mainly 12th century pottery were retrieved and which may represent evidence of a buried medieval land surface. Layer 7 appeared as a 0.05m to 0.10m deep seam that was only visible in the south-east facing section (Fig. 4, Section 4) that deepened to 0.2m deep (Plate 4) where excavated in plan. As exposed in the ditch it was 4m wide and extended for a length of 12.5m. Part of overlying deposit 14 was hand-excavated and five sherds of medieval pottery (numbered as context 6) were recovered sitting directly upon the interface between layers 14 and 7. A 3m square area of layer 7 was exposed in plan and a 1m square test pit was excavated through it revealing a clean layer of light grey clay (8) beneath. Layer 8 was 0.3m deep in section and was separated from the brown natural clay by a 5mm thin deposit of dark grey silt. No finds were recovered from layer 8 and 9 and they may both be of natural origin.

To the east of layer 7 (Fig. 3) was a poorly-defined channel (36) infilled with grey to brownish grey clay. This channel was c.5m wide and 1.8m deep and was visible in both sides of the ditch. A large lens of charcoal was noted close to the edge of the channel in the northwest facing section. No finds were recovered and the feature is undated.

Drainage channel 22 was approximately 12m wide by 1.8m deep and was aligned north-west/south-east. The channel was mainly filled with brownish grey clay (19), apart from a 0.2m thick deposit of dark grey clay silt that contained medieval pottery and lay on its eastern slope. This silt was recorded as context 20 in the south-facing section (Fig. 4, Section 3; Plate 5) and context 21 in the north-facing section. Channel 22 was visible on both sides of the ditch and, prior to excavation, had appeared as a slight hollow in the field surface leading towards an existing channel of water in the marsh (Fig. 3).

Channel 24 was aligned north-south and was visible in both sides of the new ditch. It measured 4.5m wide by 2m deep. The top half of the ditch was filled with greyish brown clay and the lower half with dark grey silty clay (Plate 6). The only finds recovered were three small fragments of medieval/post-medieval roofing tile.

Channel 38 was a small backfilled channel or drainage ditch located approximately 35m to the east of the main concentration of features (Fig. 3). It was 2.5m wide and 1.2m deep and was filled with grey brown clay (39). No finds were recovered and it is therefore undated. It was visible as a dip in the ground surface to the north of the newly excavated ditch and continuation of its alignment (NNE/SSW) would link it with a bend in an existing watercourse in the marsh to the south.

### **5.2.3 Pit remains**

An irregular pit (18), 1.8m long and 0.21m deep, was exposed in plan some 280m to the northeast of the red hill (Figs 1 and 2). The pit was filled with brownish grey silty clay (17) interspersed with patches of red baked clay. A band of dark grey silt visible on the western side of the section (Fig. 2; Plate 2) appeared to be the result of intrusive root activity, rather than part of the original fill, and matched similar sinuous banding around the edges of the pit and in the top of the surrounding clay. The pit was sealed beneath grey/brown clay approximately 1m below the current ground surface. This depth of overburden was similar to that above the red hill. Further similarities with the red hill were found amongst the recovered fragments of baked clay suggesting that the two features may have been broadly contemporary and associated with the same type of activities. No other features were identified in the vicinity of pit 18. However, it is considerably distant from the red hill, which suggests that it may be a small part of a separate focus of salt-making activity and that there might be further red hills in the vicinity.

The eastern end of the ditch cut through a track (26), 3.5m wide, composed of pebbles, chalk and shell with occasional fragments of brick and tile and numerous sherds of modern pottery. The base of the track appeared to undulate with the deposits varying in depth between 0.4 to 0.6m. The undulations probably represent the position of in-filled wheel ruts. Track 26 was aligned north-west/south-east (Fig. 1) and was partially visible on the surface, extending across the marsh in a straight line towards the sea wall alongside Pitsea Creek.

## **6.0 FINDS** by Joyce Compton

### **6.1 Introduction**

Small groups of finds were recovered from a total of sixteen contexts. All of the material has been recorded by count and weight, in grams, by context. Full details can be found in Appendix 2. The largest assemblage component is pottery, total weight 1186g, which forms the subject of a separate report, see below. The descriptions for the remaining categories follow the pottery report.

### **6.2 Medieval pottery** by Helen Walker

A small but interesting assemblage, totalling 104 sherds weighing just over 1kg, was excavated from thirteen contexts (Appendix 3). The pottery (apart from modern sherds in context 26) spans the 12th to 13th centuries. Layer 7 produced the earliest pottery, a shell-tempered ware beaded cooking pot rim, showing faint dimpling around the inner edge, datable to the 12th century.

The remaining contexts are datable to the early to mid 13th century, with the possible exception of layer 16, which could be late 12th century. Datable fine wares (for table use and for display) from these features comprise London-type ware, Hedingham ware (made in north Essex), and Rouen-type ware, imported from Northern France during the late 12th to 13th centuries. London-type ware, which was widely traded from the later 12th to mid 13th centuries, is the commonest fine ware and the remains of three jugs are present, each showing a different style of decoration. The most closely datable is an example showing North French-style decoration, belonging to the early to mid 13th centuries. There is also a sherd of Hedingham ware showing Rouen-style decoration (*i.e.* copying the imported French ware) dating to the early to mid 13th century.

Coarse wares (in which vessels for kitchen use were made) comprise mainly shell-tempered wares, which are very common at sites close to the River Thames and continue well into the 13th century. There are also examples of early medieval ware and medieval coarse ware, sometimes with inclusions of crushed flint as well as sand. Coarse ware vessel forms comprise fragments from cooking pots, jugs and bowls. Two of the shelly cooking pots are water-worn, although this may have happened after burial, not during use. The cooking pots can be dated by rim type; there is one H2-type rim datable to the early to mid 13th century, and a couple of H1-type rims, which were current throughout the 13th century. These dates are consistent with those of the fine wares.

Traded wares and imports such as London-type ware and Rouen-type ware are common on rural sites bordering the River Thames, and imply that pottery was transported by small boats navigating their way along the various creeks and inlets. Perhaps the traders were fishermen selling pottery as a sideline.

### **6.3 Other finds**

#### *Baked clay*

Small fragments of baked clay (total weight 382g) were recovered from four contexts. The occasional pieces from layer 7 and the fill of channel 22 were accompanied by medieval pottery and are likely to be incidental in their contexts. Larger quantities were recovered from layer 3 (120g) and the fill of pit 18 (202g), both unfortunately undated. All of the pieces from both contexts are rounded with no surfaces or diagnostic features, and are mainly reddish-buff in colour with few inclusions. Several fragments from layer 3 are hard-fired and reduced.

#### *Tile*

Small flat tile fragments, weighing a total of 124g, were recovered from three contexts. The fragment from track 26 is modern and is associated with modern pottery. Those from layer 6 were found together with medieval pottery, but are unlikely to be of the same date. No full thicknesses survive on any fragment, however, and at least one may be baked clay rather than tile. Three further fragments were found in infilled channel 24. These are thin, maximum thickness 8-10mm, and in a brown sandy fabric. It is possible that these fragments are medieval, although roofing tile is difficult to date empirically.

#### *Environmental material*

A single bulk soil sample was collected from layer 7 for the purposes of environmental analysis. The sample was processed by wet-sieving with flotation using a 0.5mm mesh and collecting the flotation fraction (flot) on a 0.5mm sieve. The residue was then dried and separated into coarse and fine fractions using 2mm and 4mm sieves. The material in the coarse fraction (>4mm) was sorted by eye and artefacts and environmental material extracted and bagged separately. The flot was also dried and bagged by context. Retrieved artefacts were recorded by count and weight, where practicable, and these details added to the finds table in Appendix 2.

The dried flot (total weight 115g) contained a large amount of charcoal, and the presence of carbonised seeds was also noted. The fine fraction also contained much fine charcoal. The flot has been examined by Val Fryer who reports:

“The dried flot was scanned under a binocular microscope at magnifications up to x16, and the plant macrofossils and other remains noted were listed. Nomenclature follows Stace (1997). All plant remains were charred. Modern fibrous roots were present within the assemblage.

#### Plant macrofossils

Cereal grains/chaff and seeds of common field weeds were common or abundant within the assemblage. Preservation was moderately good, although a proportion of the grains were puffed and distorted, possibly as a result of combustion at very high temperatures. Oat (*Avena* sp.), barley (*Hordeum* sp.) and wheat (*Triticum* sp.) grains were recorded, with wheat being predominant. Rachis nodes of both bread wheat (*T. aestivum/compactum*) and rivet wheat (*T. turgidum*) types were also present. Seeds of common segetal weeds were moderately common, with stinking mayweed (*Anthemis cotula*), including semi-intact seed heads (capitulae), occurring most frequently. Other taxa noted included corn cockle (*Agrostemma githago*), brome (*Bromus* sp.), small legumes (Fabaceae), grasses (Poaceae), knotgrass (*Polygonum aviculare*) and



vetch/vetchling (*Vicia/Lathyrus* sp.). A single possible small fragment of hazel (*Corylus avellana*) nutshell was also recovered. Charcoal fragments were abundant, along with small pieces of charred root/stem and indeterminate culm nodes. Other plant macrofossils were scarce, although indeterminate inflorescence fragments and seeds were recorded.

#### Other materials

The only other materials recorded were fragments of black porous and tarry material and siliceous globules, all of which are probable residues of the combustion of organic remains (including cereal grains and straw) at very high temperatures.

#### Conclusion

In summary, the composition of the assemblage indicates that the material is derived from a batch of charred prime wheat; the abundance of stinking mayweed indicating that this grain was grown on the local heavy clay soils. Although contaminants are present, most are of a similar size to the grains; these would not have been removed during winnowing, and while some may have been hand picked at a very late stage during processing, others would have remained as contaminants of the fully processed grain. Why this particular batch of grain became charred is not known. However, spillage during culinary preparation or the accidental combustion of stored grain would both create similar assemblages.”

### **6.4 Recommendations for further work**

No further work is required on any of the finds. The pottery is well documented elsewhere and the diagnostic sherds are paralleled in the published literature. The tile is present in too small a quantity and most of the baked clay is from undated contexts. The lack of medieval pottery in these contexts, however, may imply a date earlier than medieval for this baked clay. Although the plant macrofossil assemblage contains sufficient material for quantification (*i.e.* 100+ specimens), the analysis of a single sample in isolation may add little to the information provided above. All of the finds should be retained.

## **7.0 DISCUSSION**

### **7.1 Roman**

The archaeological monitoring has revealed two features possibly associated with salt-making processes. In the west of the site was a spread of baked clay fragments believed to represent part of a possible Roman red hill. However, no dating evidence was recovered from this

feature and there was no overall red-brown discolouration of the clay which would appear to be a distinguishing feature of other red hill sites (Fawn et al 1990, 6). The area of exposed deposits was also small (40 sq m) in comparison with other red hills, which generally range from 200 sq m upwards (Fawn et al 1990, 6), although the deposits probably did extend to the south of the ditch. No signs of in situ burning were evident, nor any other features associated with salt processing, such as tanks and hearths. Two potential features were evident in the lower part of the section but these were far from convincing.

Given the position of the feature on the edge of the former tidal marsh and its undoubted antiquity, sealed beneath 1m of deposits, it still seems likely that it was associated with salt production activities. Perhaps the exposed deposits are only on the periphery of a production or dump area or represent the remains of a working area which was abandoned after only a short period of use.

The second feature, pit 18, in the east of the site was more convincing as a feature associated with salt-making activities with a brightly coloured red/orange baked clay fill, though again, no dating evidence was recovered and no other features were identified in the vicinity. The distance (280m) between the two features would suggest separate areas of salt production along the edge of the marsh.

## **7.2 Medieval**

The archaeological monitoring identified evidence of medieval activity in an 80m stretch, mid-way along the length of the newly-excavated ditch. Pottery dating from the 12th to 13th century was recovered from a small number of layers and two infilled drainage channels. The pottery may have accumulated as a result of rubbish disposal, be breakages associated with the transport of pottery or indicate the existence of an occupation site in the vicinity. The top of the cuts of the two medieval channels (22 and 28) and the two main pot-bearing layers (7 and 16) all occurred at a similar depth (c.0.7m) below the present ground surface, suggesting that the former medieval ground surface was at this lower depth. A change in clays at the 0.7m level was noticeable in much of the length of the ditch, indicating that the former surface, though not necessarily the medieval activity, extended across most of the northern end of the marsh.

Layers 7 and 16 represent medieval activity upon the former ground surface. Layer 7 was extensive and contained an unusually high quantity of charcoal and burnt grain. The reason for the quantity of burnt material is unclear. It may have resulted from the burning of a wheat field or, perhaps, the accidental combustion of a near-by grain store. At least it testifies to

arable farming in the medieval period. Both layer 17 and layer 7 were separated by channel 28 which contained contemporary medieval pottery and was clearly an open water channel at this time. Further contemporary medieval pottery was recovered from deposit 20/21 which had accumulated on the east side of channel 22. This channel was larger and clearly also open at this time. These channels would have had a drainage function, but it is also possible that they were of sufficient size for the movement of produce and goods by boat, perhaps with grain being exported and pottery imported.

Water channels 22, 28 and 24, which may also be medieval in date, were all broadly aligned with parts of the open water channel system existing today that extends across the centre of the marsh. Prior to the construction of the sea wall this channel would have linked directly with Pitsea Creek and ultimately with the Thames Estuary and the markets of London.

### **7.3 Modern**

The modern and undated channels (29, 32, 36 and 38) are also aligned with existing water channels (Fig. 3) and may be later replacements for medieval channels that had silted-up or some may even be medieval channels with post-medieval/modern infill. Channel 29 is aligned with an open water channel to the south and an existing drainage ditch to the north. On the 1st edition Ordnance Survey map (c. 1875) these two bodies of water are drawn as linked. Also depicted on this map is a track leading northwards from this point to Shonks Farm which was located to the north of the railway line. This track is also shown on the 1841 Vange Tithe map (D/CT 374B) and may have its origins in the medieval period.

Towards the northeastern end of the new ditch was track 26 (Fig. 1) the composition of which included a number of modern finds. A track in an almost identical position to track 26 is shown on the 1st edition Ordnance Survey map (c.1875) running from Kiln Farm in the north (no longer extant) across the marsh to a square structure adjacent to the sea wall bordering Pitsea Creek. It is highly probable that this structure was used for the storage of coal transported by sea, given that the surrounding marsh was known as 'Coal House Marsh'.

Monitoring of the sluice through the sea bank to the north-east of the marsh and subsequent cartographic research indicated that the sea bank was not constructed until after the mid 1930s.

## **8.0 ASSESSMENT OF RESULTS**

Monitoring of the groundworks associated with the formation of the new wildlife reserve has revealed significant information about the past utilisation of the marsh. A probable date in the Roman period has been established for the earliest known usage of the marsh. At this time, the marsh-edge was used for activities associated with the extraction of salt from sea water. It is likely that further remains of this nature lie buried in the marsh to the south-east of the new ditch and elsewhere along the marsh edge.

The evidence indicates that the marsh was next utilised in the medieval period, during the 12th to 13th century, when a number of water channels were open and there was contemporary activity on the near-by ground surface, perhaps including small-scale occupation. The water channels would have helped drain the marsh and may also have been used as a way of transporting produce and goods to and from Vange via the Thames Estuary. If this is so, it would indicate that the seawall separating the marsh from Pitsea Creek must post-date the 13th century. The presence of charred grain indicates that arable farming was taking place, probably on the higher ground to the north-west, with the lower-lying marsh used for pasture.

The medieval remains are important as dateable deposits of this nature are seldom found or recorded on saltmarsh sites. The remains provide a firm date for the utilisation of the agricultural potential of the marsh beyond use as simple pasture land, which may not have had any discernable impact on the ground.

The medieval activity appears short-lived and no evidence was found extending beyond the end of the 13th century. However, agricultural activity in the form of animal grazing is likely to have continued. The silting-up of medieval drainage channels and the cutting of replacement channels suggests that the marshland continued to be actively managed throughout the post-medieval period. Tithe map and Ordnance Survey map evidence indicates that the land was farmed in the 19th century and that the process of replacing infilled channels continued.

The main aim of the project was to determine and characterise archaeological remains affected by the ground works. This has been achieved along with the more specific aim of establishing a date for the extant drainage features. It was not necessary to record in detail the post-1930s sea wall and no peat deposits of any antiquity were identified that were conducive to further analysis.

Burial of the speculative Roman and dated medieval features at Vange Marsh North is relatively deep and serves to illustrate depositional sequences to be expected in the

marshland environment and it is clear deposits may mask other archaeological remains in the vicinity. The monitoring of the groundworks has provided a useful window through the masking deposits and has highlighted the archaeological potential of saltmarshes, particularly along their landward margin.

### **ACKNOWLEDGEMENTS**

Thanks are due to Chris Tyas for commissioning the fieldwork on behalf of the RSPB. The archaeological monitoring was undertaken by Trevor Ennis, Ellen Heppell and Matt Pocock of Essex County Council Field Archaeology Unit. Additional fieldwork assistance was received from Chris Down of ECC FAU. The project was managed by Mark Atkinson of ECC FAU and monitored by Pat Connell and Richard Havis of ECC HEM.

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## APPENDIX 1: CONTEXT DATA

All dimensions given in metres

Context	Type	Description	Period
01	Red hill layer	Mid-dark grey clay silt, 0.5m thick	Roman?
02	Red hill layer	Mid yellow brown clay, 0.17m thick	Roman?
03	Red hill layer	Dark grey clay silt, 0.47m thick	Roman?
04	Red hill layer	Mid grey brown clay silt, 0.43m thick	Roman?
05	Red hill layer	Mid yellow brown clay, 0.33m thick	Roman?
06	Layer	Interface	Medieval
07	Buried surface	Black silt, 0.2m thick	Medieval
08	Layer	Light grey clay, 0.3m thick	Medieval
09	Layer	Dark grey silt, 5mm thick	Medieval
10	Fill of 28	Greyish brown clay, 1m thick	Medieval
11	Fill of 28	Dark grey clay, 0.4m thick	Medieval
12	Fill of 28	Dark grey clay, 0.4m thick	Medieval
13	Fill of 28	Dark grey clay, 0.4m thick	Medieval
14	Layer	Grey brown clay, 0.4m thick	Medieval
15	Layer	Grey brown clay, 0.5m thick	Undated
16	Buried surface	Dark grey silt, 0.03m thick	Medieval
17	Fill of 18	Red, grey brown silty clay	Roman?
18	Pit	Irregular, 1.8m x 0.66m x 0.21m deep	Roman?
19	Fill of 22	Brownish grey clay, 1.5m thick	Undated
20	Fill of 22	Dark grey clay silt, 0.2m thick	Medieval
21	Fill of 22	Dark grey clay silt, 0.2m thick	Medieval
22	Channel	Infilled water channel, 15m wide x 1.8m deep	Medieval
23	Fill of 24	Greyish brown to dark grey silty clay, 0.2m thick	Post-med
24	Channel	Infilled water channel, 4.5m wide x 2m deep	Post-med
25	Unstrat	Surface finds	Medieval
26	Track	Chalk, pebble and shell, 3.5m wide x 0.6m deep	Modern
27	Fill of 28	Dark grey brown clay	Medieval
28	Channel	Infilled water channel, 7.2m wide x 1.7m deep	Medieval
29	Channel	Infilled water channel, 8m wide x 2m deep	Modern
30	Fill of 29	Light brown clay (mixed grey/brown in opposing sect.)	Modern
31	Fill of 29	Grey-brown clay with dark grey lens	Modern
32	Channel	Infilled water channel, 6.7m wide	Modern
33	Fill of 32	Dark grey-brown organic clay silt	Modern
34	Fill of 32	Mixed grey-brown clay	Undated
35	Fill of 32	Mid grey clay with (natural) shell	Undated
36	Channel	Dubious Infilled water channel, 5m wide x 1.8m deep	Undated
37	Fill of 36	Grey to brownish grey clay	Undated
38	Channel	Small infilled water channel, 2.5m wide x 1.2m deep	Undated
39	Fill of 38	Grey brown clay	Undated



## APPENDIX 2: FINDS DATA

All weights in grams

Context	Feature	Count	Weight	Description	Date
3	Layer	17	120	Baked clay fragments, some reduced	-
6	Layer	3 5	34 18	Tile/baked clay, no surviving thicknesses Pottery; body sherds, one glazed	- Medieval
7	Layer	78 39 5 - 29	58 1 8 32 122	Baked clay, inc. 77/52g from sample 1 Animal bone fragments, some burnt, from sample 1 Burnt flints from sample 1 (Discarded) Charcoal fragments from sample 1 Pottery; rim and body sherds, inc. 22/80g from sample 1	- - - - Medieval
10	28	2	58	Pottery; body sherds, both glazed, one with handle springing	Medieval
11	28	15	332	Pottery; rim and body sherds, three glazed	Medieval
12	28	3	68	Pottery; joining rim and body sherds	Medieval
13	28	20	72	Pottery; base and body sherds	Medieval
14	Layer	1	2	Pottery; glazed body sherd	Medieval
16	Layer	15	258	Pottery; rim and body sherds, some glazed, one with handle springing	Medieval
17	18	10	202	Baked clay fragments	-
20	22	3	66	Pottery; rim sherds and joining base sherds	Medieval
21	22	2 1	2 2	Baked clay (crumbs) Pottery; body sherd	- Medieval
23	24	3	38	Tile fragments, one could be medieval	Med/post med.
25	u/s	4	122	Pottery; rim and body sherds, one with handle springing	Medieval
26	Track	1 3	52 24	Tile fragment Pottery; rim and body sherds, modern ceramics	Modern Modern
27	28	3	42	Pottery; body sherds, one glazed	Medieval

### APPENDIX 3: POTTERY DATA

All weights in grams

Context	Feature	Count	Weight	Description	Date
6	Layer	1	1	Hedingham ware, honey glaze, creamy orange fabric	13th C
		3	11	Shell-tempered ware, abraded	10th to 13th C
		1	5	Early medieval ware	10th to 13th C
7	Layer	18	76	Shell-tempered ware including beaded cooking pot rim with slight dimpling on inner edge (quantification includes 14 sherds weighing 44g from sample 1)	12th C
		7	41	Early medieval ware, abraded (quantification includes 4 sherds weighing 30g from sample 1)	10th to 13th C
		4	6	Unidentifiable - surfaces missing (from sample 1)	-
10	28	1	55	London-type ware, lower handle attachment from jug, strap handle, very abraded but showing traces of white and red slip and green glaze	later 12th to mid 13th C
		1	2	Rouen-type ware showing applied strip in grey-firing clay, beneath a plain lead glaze giving an olive green colour to the strip and a pale yellow background	Late 12th to mid 13th C
11	28	1	3	Hedingham ware showing applied pellets, ?Rouen-style decoration, abraded	early to mid 13th C
		1	13	Unidentified fine ware, from shoulder of jug, dark green glaze	?13th C
		9	194	Shell-tempered ware, joining sherds from upper half of cooking pot with slightly hooked H2 rim (North Shoebury type), all surfaces extremely abraded - water worn	early to mid 13th C
		1	48	Shell-and-sand-tempered ware H1 cooking pot rim, water worn on internal surface, patches of sooting externally	13th C
		1	9	Early medieval ware	10th to 13th C
		1	7	Medieval coarse ware, flinty, oxidised	12th to 13th C
		1	60	Medieval coarse ware, sagging base	12th to 13th C
12	28	3	68	Medieval coarse ware joining sherds from H1 cooking pot rim showing typical sooting around shoulder	13th C
13	28	20	72	Shell-tempered ware, sherd family from sagging base, fire-blackened	10th to 13th C
14	Layer	1	2	Rouen-type ware with pale yellow glaze, from same vessel as in context 10?	late 12th to mid 13th C
16	Layer	7	117	London-type ware joining sherds from fragment of jug with strap handle and showing rows of applied scales under a green-glaze, an example of early style decoration found on a variety of jug forms (Pearce et al. 1985, fig.17.28, fig.24.50, fig. 46.153)	later 12th to earlier 13th C
		2	17	Shell-tempered ware	10th to 13th C
		2	28	Shell-and-sand-tempered ware	10th to 13th C
		1	26	Early medieval ware beaded rim from large bowl or cooking pot	12th C
		1	1	Early medieval ware, flinty	10th to 13th C
		2	66	Medieval coarse ware, flinty from ?jug with pulled spout, very robust thick-walled fabric with buff surfaces and ill-defined grey core	12th to 13th C
20	22	2	38	Shell-tempered ware joining base sherds	10th to 13th C
		1	29	Medieval coarse ware B2 rim from rounded bowl	13th C

Context	Feature	Count	Weight	Description	Date
21	22	1	2	Early medieval ware, abraded	10th to 13th C
25	u/s	3	106	Early medieval ware from lower handle attachment of jug showing stabbed decoration	12th to 13th C
		1	16	Medieval coarse ware, flinty, oxidised, squared rim ?from cooking pot	13th C
26	Track	3	24	Rim and body sherds, modern ceramics	Modern
27	28	1	20	London-type ware showing two vertical applied red slip stripes under a green glaze, one is thumbbed, probably an example of North French style decoration	early to mid 13th C
		2	23	Medieval coarse ware	12th to 13th C
		<b>104</b>	<b>1186</b>		

## **APPENDIX 4: CONTENTS OF ARCHIVE**

**SITE NAME: Vange Marsh North**

**SITE CODE: BAVM06**

### **Index to Archive:**

**1. Introduction**

1.1 Publication Report

**2. Research Archive**

2.1 Client Report

2.2 Finds Reports

**3. Site Archive**

3.1 Context Record Register

3.2 Context Records (1 to 39)

3.3 Section Register

3.4 1 x A4 plan sheets

3.5 4 x A4 section sheets

3.6 Trench location plans

3.7 Photographic Registers

3.8 Site Photographic Record (1 set of Colour and Black & White prints, 1 Set of digital images on disk)

3.9 Miscellaneous notes/plans

### **Not in File**

One large section sheet

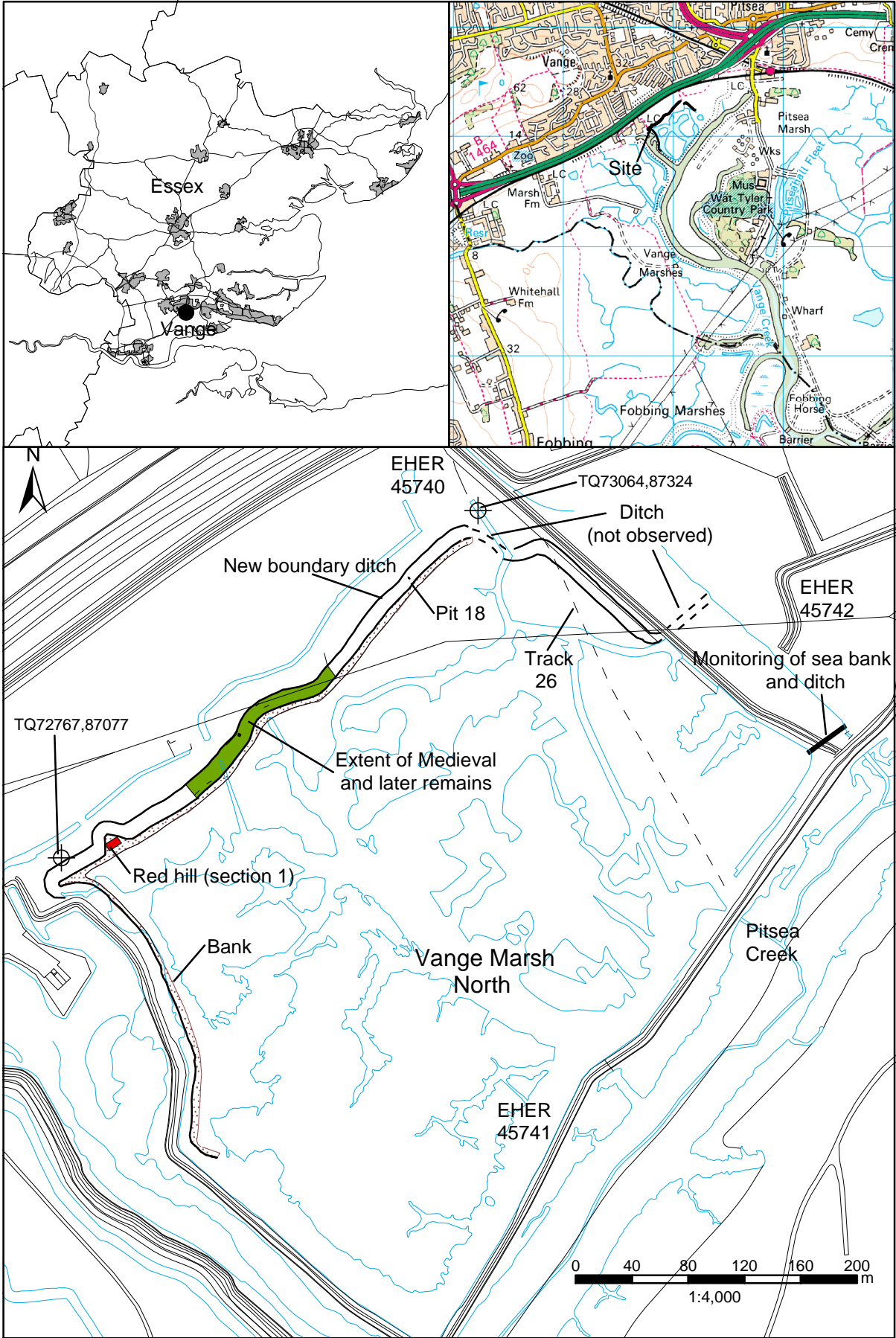
### **Finds**

The finds occupy one box

## APPENDIX 5: EHER SUMMARY SHEET

### EHER SUMMARY SHEET

<b>Site name/Address:</b> Vange Marsh North, Essex	
<b>Parishes:</b> Pitsea and Vange	<b>District:</b> Basildon
<b>NGR:</b> TQ 731 872	<b>Site Code:</b> BAVM06
<b>Type of Work:</b> Archaeological Monitoring	<b>Site Director/Group:</b> T. Ennis ECC Field Archaeology Unit
<b>Date of Work:</b> 25th to 26th October 2005 and 21st March to 3rd April 2006	<b>Size of Area Investigated:</b> c. 5600 sq m
<b>Location of Finds/Curating Museum:</b> Southend-on-Sea	<b>Funding source:</b> RSPB
<b>Further Seasons Anticipated?:</b> No	<b>Related HER Nos.:</b> 45740, 45741, 45742
<b>Final Report:</b> EAH round-up	
<b>Periods Represented:</b> Roman? Medieval, modern	
<p><b>SUMMARY OF FIELDWORK RESULTS:</b></p> <p>Monitoring of ground works associated with the formation of the new wildlife reserve was undertaken at Vange Marsh North. The ground works comprised the excavation of a new sluice and linking ditch to the north-east of the marsh and the excavation of a major boundary ditch (c.8m wide by 700m long) around the western side of the marsh. A range of archaeological features dating to the Roman, medieval and modern periods were revealed:</p> <p><b>Roman</b></p> <p>Part of a possible red hill was exposed and preserved in situ. It was comprised of layers containing frequent small fragments of baked clay and occasional flecks of charcoal. The possible red hill was probably associated with salt extraction activities. A pit, located 280m to the east, may also have been involved in this activity. Although neither feature contained dating evidence it is likely that they are of Roman origin.</p> <p><b>Medieval</b></p> <p>Layers and infilled water channels containing medieval pottery were identified indicating localised activity upon buried land surfaces, perhaps including near-by occupation, during the 12th to 13th century. An extensive carbonised grain deposit was investigated, perhaps the result of accidental combustion of a wheat field or grain store. The grain indicated arable farming in the vicinity, probably on the drier land in the north of the marsh. The proximity of several contemporary water channels suggests that grain, pottery and other commodities may have been transported by water.</p> <p><b>Post-medieval/undated</b></p> <p>Other infilled water channels were undated or date to the modern period. Some of these were replacements for infilled medieval channels. One was shown linking a drainage ditch and an open water channel on the 1st edition (c. 1875) Ordnance Survey map. Also on the map was a track, identified on the ground, which led across the marsh to a small building next to Pitsea Creek. The building was probably used for the storage of coal which had arrived by sea. Other cartographic research indicated that the sea bank to the north-east of the site was created after the mid 1930s.</p>	
<b>Previous Summaries/Reports:</b>	
<b>Author of Summary:</b> T. Ennis	<b>Date of Summary:</b> June 2006



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Fig.1. Location plan

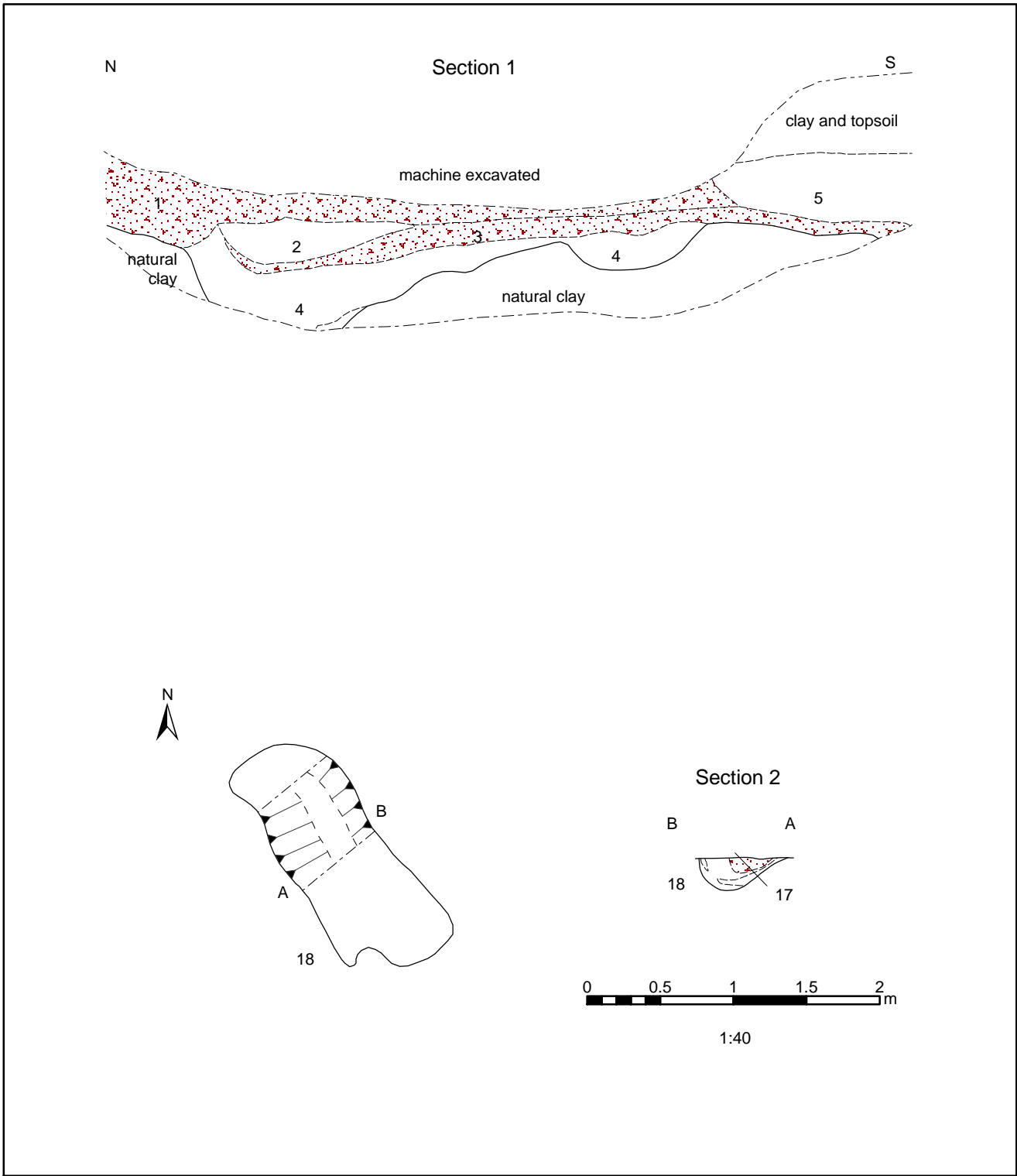
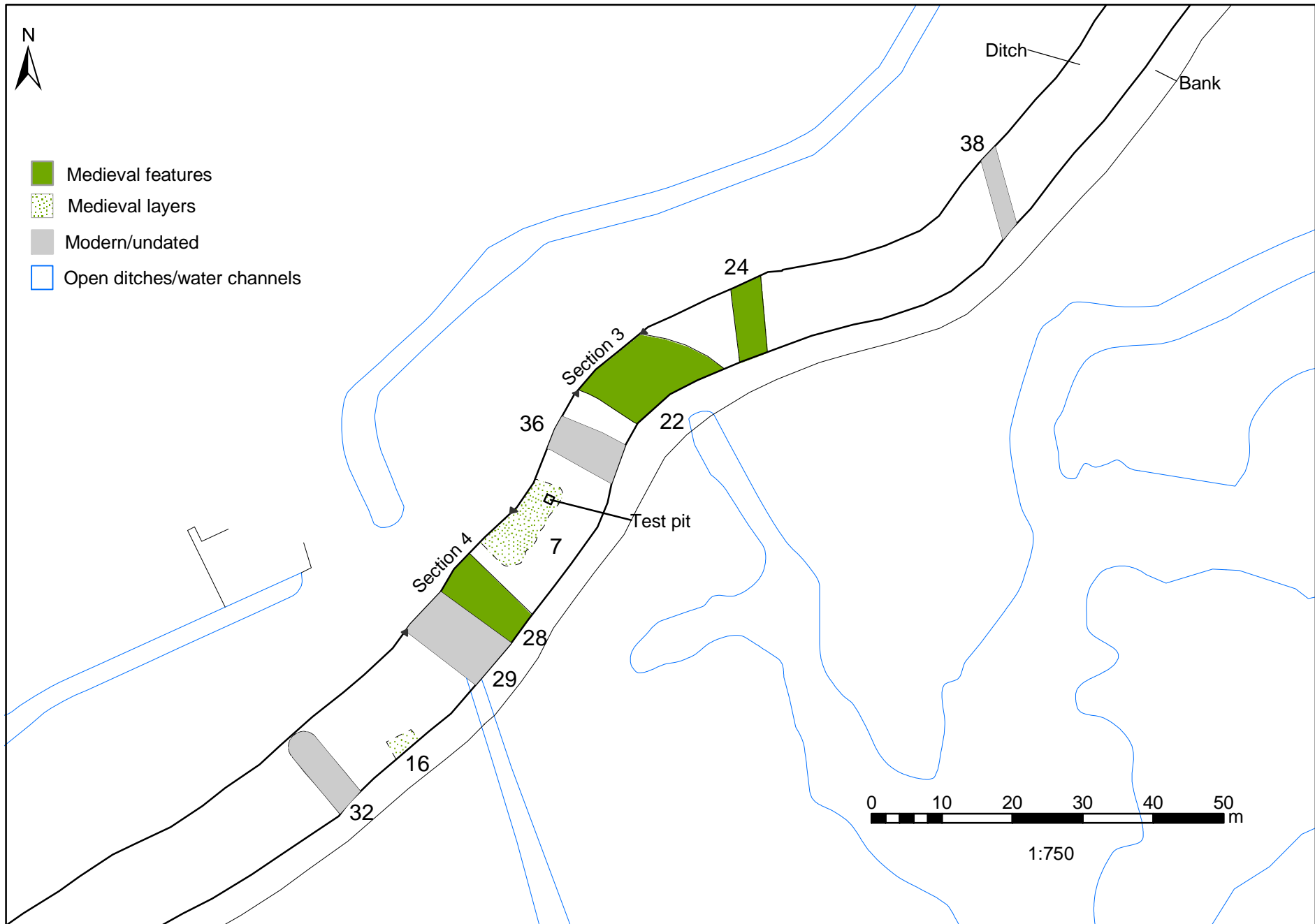


Fig.2. Possible Roman features



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Fig.3. Medieval and undated features



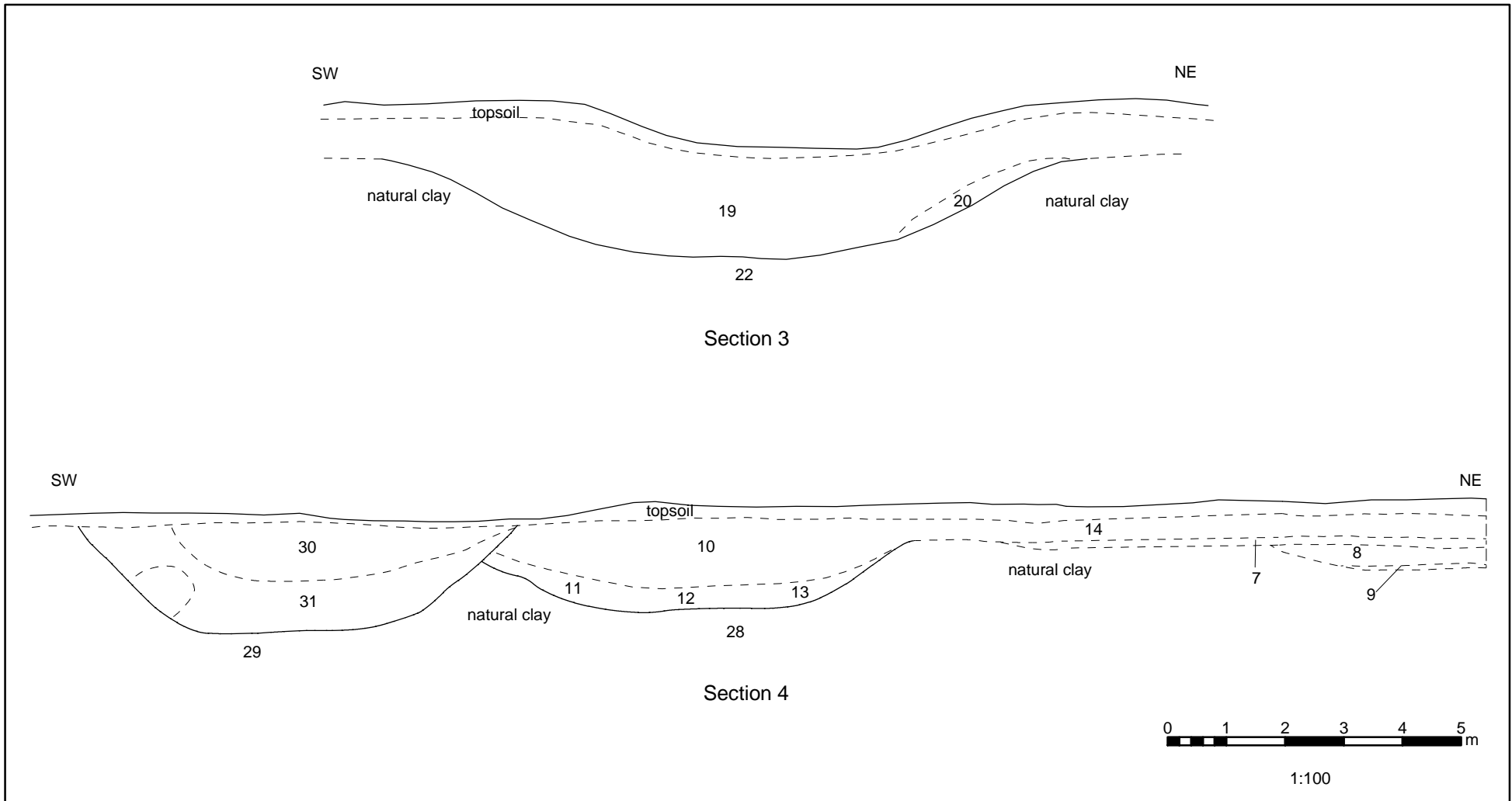


Fig.4. Medieval sections

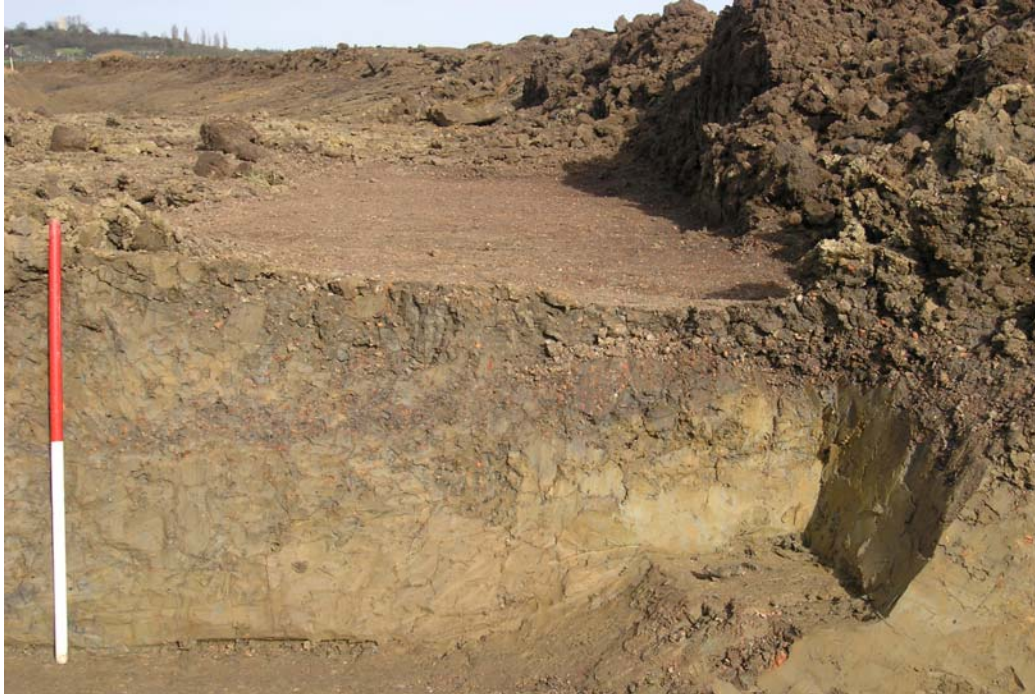


Plate 1. Possible Red Hill



Plate 2. Section of pit 18



Plate 3. Infilled channel 28



Plate 4. Layer 7



Plate 5. Fill 20, infilled channel 22



Plate 6. Infilled channel 24