

Margate and Broadstairs
Urban Wastewater Treatment Scheme
Kent

Archaeological Assessment Report
and
Updated Project Design for Analysis and Publication



Margate and Broadstairs Urban Wastewater Treatment Scheme

**Archaeological Assessment Report
and
Updated Project Design for Analysis and Publication**

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Margate and Broadstairs Urban Wastewater Treatment Scheme

Archaeological Assessment Report

SUMMARY

Wessex Archaeology was commissioned by Southern Water to undertake archaeological recording in advance of the construction of an underground wastewater pipeline crossing the district of Thanet, Kent. The route extended in two directions from the Margate Headworks on Foreness Point (National Grid Reference (NGR) 638400 17160) towards the Weatherlees Hill Wastewater Treatment Works (NGR 633250 162920) to the SW, and the Broadstairs Headworks (NGR 640109 169817) to the SE. The pipeline length was approximately 12.5 km and the easement was usually 20m wide.

Archaeological investigations varied from watching brief, evaluation, strip and record, to full-scale excavation depending on the archaeological potential, risk of damage to archaeological material and other mitigating circumstances. Thirteen areas contained archaeological material of significance (1-2, 3, 7, 8, 9, Manston Airport, 14, 15, 16, Compound 16, 1-D, D, Joss Bay).

There were two main periods of excavation: the first from May to August 2005 and the second from October 2005 to January 2006. In September 2005, February and June 2006 high level monitoring (watching brief) was maintained to record any archaeology encountered during the pipe installation.

In total 619 features were recorded along the route of the pipeline, of which 300 could be dated. Features from all periods from the Neolithic to World War II were encountered. The most abundant periods were the late prehistoric, Late Iron Age and Romano-British periods. Less frequently recorded were features dated as medieval, early Romano-British and Iron Age. Only a few features from the rest of the periods were observed.

The most frequently recorded features were ditches, which accounted for half the total. These were the least likely to contain dating evidence, but inferences based on alignment and form, in association with dated elements could be made. Pits were the next most prevalent feature type, accounting for nearly a quarter of the total features.

Of regional significance are the 31 Late Iron Age and Romano-British graves, of which 15 contained cremation burials. The graves were located in three cemeteries in Areas 9, 14 and 15 and several single findspots in Area 16 and Compound 16.

Other regionally significant features include a possible Late Neolithic mortuary enclosure in Area 3 and two Late Bronze Age hoards found during the evaluation, with further pieces of Hoard 1 discovered during the excavation. A medieval sunken

featured building in Area 8, probably used as a bakery, is equally of regional significance, while a Saxon sunken featured building in Area 14 is of more local interest. In the context of the defensive structures erected during World War II, features discovered in Areas 1-2, 1-D, 16 and possibly Manston Airport are of local significance.

It is currently proposed to publish the results of the excavations along the pipeline route as a monograph or as part of a monograph series comprising other sites from the region.

Margate and Broadstairs Urban Wastewater Treatment Scheme

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Finds were assessed by Lorraine Mepham with Nicholas Cooke (coins), Grace Jones (prehistoric and Roman pottery), Jessica Grimm (animal bone), Matt Leivers (flint) and Jackie McKinley (human bone). The charred plant remains and charcoal were assessed by Chris J. Stevens with Sarah F. Wyles. The sediments and soils were assessed by Catherine Chisham, the molluscs by Sarah F. Wyles and Michael J. Allen. Illustrations were prepared by Linda Coleman, assisted by Martyn Norris.

This report was prepared by Angela Batt, Kirsten Egging and Jörn Schuster.

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Margate and Broadstairs Urban Wastewater Treatment Scheme

Archaeological Assessment Report

1 INTRODUCTION

1.1 Project Background

- 1.1.1 Wessex Archaeology was commissioned by Southern Water Services to undertake archaeological recording in advance of the construction of an underground wastewater pipeline on the Isle of Thanet, Kent
- 1.1.2 The pipeline construction was part of a larger scheme including the refurbishment, improvement and extension of the existing wastewater treatment facilities (Southern Water Services Ltd 2005).
- 1.1.3 Previous archaeological work for this project includes desk-based assessments and a fieldwork evaluation of the Weatherlees Wastewater treatment works (Wessex Archaeology 1992; 2004).
- 1.1.4 Geophysical survey and analysis of aerial photography was carried out on a number of areas along the course of the pipeline route.

1.2 Site location and description

- 1.2.1 The pipeline comprises two branches crossing the district of Thanet, Kent, from the Margate Headworks on Foreness Point (centred on NGR 638400 17160). The twin pipeline extends towards the Weatherlees Hill WTW (centred on National Grid Reference (NGR) 633250 162920) to the SW and the single pipeline continues towards the Broadstairs Headworks (NGR 640109 169817) to the SE. The easement for the pipeline was approximately 12.5 km in length and generally 20m wide. This will be referred to as the Site (Figure 1).
- 1.2.2 The District of Thanet was formerly an island, separated from the North Kentish Plain by the Wantsum Channel. The island is now a promontory and the Wantsum has been silted up since the medieval period. The topography generally slopes down from the cliffs along the North Sea coastline to the west and low-lying marshlands around Pegwell Bay (to the south on the Channel coast). Three low hills rise above this flat alluvial plain, namely Cottington, Ebbsfleet and Weatherlees, all three at the southern end of the Site (Fig. 1 and 8). The former two would have formed a peninsula, the latter a small island, when the Wantsum was still flowing.

- 1.2.3 Upper Chalk is the main underlying geology along the course of the Site, overlain in locally extensive patches with fine sand, silt and clay Thanet Beds, particularly towards the south of the Site. The drift geology overlying the Thanet beds and chalk is a mixture of Head Brickearth and alluvium silts, the latter occurring within the limits of the Wantsum Channel. Colluvial deposits were also present along the route of the pipeline.
- 1.2.4 Area specific locations and descriptions are included in the area introductions in the ‘Archaeological Features Discovered’ section.

1.3 Archaeological and historical background

- 1.3.1 An extensive synthesis of the archaeological and historical background of the Site and the wider, surrounding landscape has been produced in previous desk-based assessments, evaluation and assessment reports for this project, and for other projects in the immediate vicinity by Wessex Archaeology (1992, 1998, 2004, and 2005a-c). These reports should be referred to for a detailed discussion of the archaeological and historical background of the pipeline route and its vicinity. The finds and sites recorded within the areas examined for these studies range from the Palaeolithic (500 000 – 10 000 BC) to modern times.
- 1.3.2 Thanet became an island following the last Ice Age, cut off from the mainland by the Wantsum Channel (from the Old English *waedsum*: winding) which was at least 1km wide. The Ebbsfleet and Cottington peninsula formed two havens for coastal and cross-channel traffic whilst the Wantsum Channel still flowed (at least up until the late medieval period), resulting in prolonged occupation of the area. The difference in sea level between the modern and the postulated Roman shoreline in the area of the Ebbsfleet peninsula is shown in Fig. 8.

1.4 Aims and objectives

Aims of the excavation

- 1.4.1 The aim of the excavation was to establish the location, identify, investigate and record the presence/absence, extent, condition, character, quality and date of any archaeological features or deposits within the easement area potentially affected by pipeline construction (Wessex Archaeology 2005c).
- 1.4.2 While each archaeological feature and site is of interest in itself, the overall significance of the archaeological deposits in an area is augmented by consideration of the relationships between the deposits and the surrounding topographical and palaeo-environmental features. In this respect, the potential of the pipeline routes needs to be understood in its wider context, as a series of past landscapes.

2 FIELDWORK PROCEDURES AND RECORDING

2.1 Site Preparation

- 2.1.1 The stripping of topsoil and subsoil was carried out by a 360° tracked excavator equipped with a toothless bucket. The work was performed under the supervision of an archaeologist.
- 2.1.2 During topsoil removal, the extent and depth of subsoil and/or colluvium was assessed. Where they were less than 0.4m thick over the natural geology, the entire area was stripped to the natural geology or archaeology. If the depth exceeded 0.4m, the underlying archaeological deposits were deemed protected outside the location of the pipe trench.
- 2.1.3 A series of trenches or a continuous trench were opened along the length of the pipe trench, down to natural or archaeology. Where archaeological features were encountered, the area was stripped as fully as was practicable. Where there were colluvial deposits, archaeological features could be present on different levels. Once the later features were fully recorded, the colluvium was in some cases removed in a hand dug trench to investigate underlying material. It was necessary to re-strip small areas with a machine where substantial quantities of colluvium covered earlier archaeology.

2.2 Excavation and Recording

- 2.2.1 The fieldwork was carried out in stages. The majority of areas were investigated between May and August 2005. In September 2005 the pipe installation process in certain areas was subject to archaeological watching brief as required by the County Archaeologist after initial evaluation. The northern end of the pipeline and most of the Margate to Broadstairs branch was excavated between October 2005 and January 2006. The Manston Airport section was monitored by archaeologists in February 2006. The final area along the footpath west of the Captain Digby Public House, Kingsgate, was subject to a watching brief on the 12th June 2006.
- 2.2.2 The entire length of the Site was subject to archaeological monitoring. Along the Site, 13 areas containing archaeological features were identified: Areas 1-2, 3, 7, 8, 9, Manston Airport, 14, 15, 16 and Compound 16; 1-D, D and Joss Bay. As the entire route was monitored archaeologically, it can therefore be stated with reasonable certainty that the lengths of the pipeline between the areas described above were found to be devoid of archaeological features.
- 2.2.3 Depending on the circumstances, the range of archaeological investigations included watching briefs (low archaeological potential, mainly assessed during evaluation; restricted access and time constraints), evaluation (trial trenching where overlying deposits were substantial), strip and record and full scale excavation (where overlying deposits were less than 0.4m deep or expansion of trenches where concentrations of archaeological material were identified or large areas of significant archaeological remains).

- 2.2.4 Archaeological features were hand-excavated, with larger and linear features and any termini sectioned. Most other features were half-sectioned, although if of particular interest they were fully excavated. All graves were fully excavated. Single context recording was necessary in the excavation of more complicated features such as the bakery structure in Area 8.
- 2.2.5 All recording utilised Wessex Archaeology *pro forma* sheets. A photographic record using 35mm monochrome and colour film and digital images was produced. A digital survey was created using a Leica GPS and TST. The survey included the outlines of features, location of interventions and site extents.
- 2.2.6 A brief summary of variations in site preparation will be given in the individual area introductions.

3 ARCHAEOLOGICAL FEATURES DISCOVERED

3.1 Introduction

3.1.1 As this project covers a substantial distance, with concentrations of archaeological features along its length, the results will be presented by area then by feature types and date. The branch of the pipeline route from the Margate Headworks towards the Weatherlees Hill Wastewater Treatment Works will be discussed first, followed by the branch towards the Broadstairs Headworks.

Margate Headworks to Weatherlees Hill Wastewater Treatment Works

For practical reasons Area 1-2 is discussed under the section Margate Headworks to Broadstairs Headworks.

3.2 Area 3

Introduction

3.2.1 Area 3 comprised an area of 0.26 hectares which lies to the east of Broadley Road, centred at NGR 637703 169810 (Fig. 2). The excavation was targeted on an area where there was not sufficient subsoil or colluvium cover to preserve any archaeology *in situ*. The ground sloped gently down to the south from *c.* 44m (aOD) in the north to *c.* 41m (aOD) in the south.

Soil sequence

3.2.2 The soil sequence for the area consisted of a 0.20-0.30m thick layer of topsoil which overlay red-brown subsoil between 0.05m and 0.10m thick. This deposit became thicker down the slope to the south, and a sequence of colluvial deposits at the base of this slope, which have derived from the erosion of soils in post-glacial times, had formed to a thickness of over 1m and was therefore not stripped. The natural geology of the area was characterised by chalk and clay with flints.

Table 1: General feature types in Area 3

Feature	Total	No. sections	Prehistoric	R-B	Medieval	Undated
<i>Ditches</i>	20	30	2	1	1	16; several pre-date the prehistoric ring-ditch
<i>Postholes</i>	3	0	0	0	0	3
<i>Tree throws</i>	3	2	0	0	0	3
Total	26	32	2	1	1	22

The archaeology

3.2.3 A number of features were recorded in the area, which included ditches, postholes and tree throws. Overall the majority of these features were

undated, although elements of ditch systems date to the Romano-British and medieval periods. There was a possibly early prehistoric ring-ditch, overlying an earlier rectilinear mortuary enclosure, possibly of Neolithic date. The ditches were spread widely across the area, most on a north-west/south-east alignment spaced at regular intervals, with several interesting exceptions discussed below.

Ditches

- 3.2.4 A total of 20 ditches (or segments thereof) were recorded in the area. Of particular interest was the centrally located rectilinear enclosure and associated ring-ditch.

Rectilinear enclosure

- 3.2.5 The rectilinear enclosure (**8928**) comprised three enclosing linear features, two internal postholes and two internal linear features. No corners were observable; two were obscured or cut by a later ring-ditch, whilst the others were outside the easement. It measured approximately 20m x 10m and was aligned north east/south west, as were the internal elements.
- The southern side comprised a series of at least three intercutting ditch segments with rounded termini (**7452** and **7454**). Generally these were of moderate size but fairly shallow, i.e. between 0.52m and 0.76m wide by 0.14m and 0.29m deep, and had moderate, convex sides and a flat to concave base.
 - The eastern side (**7436**) appears to comprise at least two stages of construction to different depths, i.e. 0.13m and 0.65m, indicating that this was also excavated in segments.
 - The northern side (**7433**, Plate 3) did not appear to have been constructed in a series of segments, however the termini seem to have been two-phased. The earliest phase of the eastern terminus was only 0.05m deep, and extended beyond the re-cut by approximately 0.5m. The re-cut was up to 0.31m deep. The opposing, western terminus projected from the edge of the easement, creating an entrance approximately 2m wide. The western terminus also appears to have had a small, narrow projection from the end, suggesting that there was some symmetry. Set back into the enclosure by 2m, in line with the termini were two possible postholes, approximately 2m apart and approximately 0.3m to 0.45m in diameter. Essentially there seems to be a 2m square entrance feature.
 - The other internal features included two parallel ditches at the north east end of the enclosure (**7436** and **7439**). These were *c.* 6.5m long and up to 1m wide. They were 0.60m to 0.71m deep and contained evidence for at least three postholes (Plates 1 and 2) suggesting some sort of structure. The parallel ditches were approximately 1.7m apart and 3.5m from the enclosure sides. Between these two features was a curvilinear gully that appears to post-date but respect them. It is possible that this complex of features represents a focal point in the enclosure, possibly a structure such as a roof or raised platform.

- Most of the features had some degree of naturally accumulated backfill. The exceptions were the internal linear features which contained postholes which had been deliberately packed.

Ring-ditch

- 3.2.6 Sometime after the ditches had naturally silted up, possibly a fairly short period, a ring-ditch was cut to encircle completely and accurately the rectilinear enclosure. This was represented by two curvilinear, fairly substantial ditches (**7430** and **7458**, Plates 4 and 5), which are likely to represent one circular feature. The ditches were between 0.71m and 1.72m wide and 0.54m – 0.96m deep. The sides were in general moderately sloping and convex, becoming steeper halfway down. The base was concave to flat. The diameter of this ring-ditch was approximately 20m. The size and form of the feature suggests this was part of an Early Bronze Age round barrow. The dating evidence (pottery from fill **7016**) suggested a prehistoric date, possibly early. The fills, between two and four of which were seen in the different sections, were generally naturally accumulated. Other archaeological components from the fills included animal bone and shell.
- 3.2.7 The rectilinear enclosure and ring-ditches may part of a mortuary enclosure of Late Neolithic/Early Bronze Age date. Similar but not identical features have been recorded elsewhere in England, e.g. Aldwinckle, Grendon and Tansor, all in Northamptonshire (A. Barclay pers. comm. Chapman 1999, 10).
- 3.2.8 At the south west end of the area, three ditches (**7070**, **7072** and **7095**) formed part of a rectilinear field system with parallel, narrowly spaced ditches defining an access route. A further ditch (**7456**) might be part of the same pattern of land division, as it is on the same alignment as the latter two.
- 3.2.9 On a slightly more east–west alignment, towards the north of the area, were five similar ditches (**7034**, **7039**, **7040**, **7085** and **7427**). These ranged in width from 0.60m to 1.00m with wide shallow concave profiles only 0.10–0.30m in depth. The fills of the ditches were all naturally derived, mainly from the erosion of the surrounding ground surfaces. One of the ditches (**7427**) was of medieval date. It is likely that the other four ditches are of a similar date.
- 3.2.10 A single ditch dated by pottery broadly to the Romano-British period (**7037**) was in the north of area. It curved quite sharply to the north north-west and was filled with naturally accumulated deposits. No associated features of the same date or form were apparent.

Other features and finds

- 3.2.11 Other features included three tree throws, neither of which contained any artefacts.

3.3 Area 7

Introduction

3.3.1 Area 7 comprised an area of *c.* 1.2 hectares laying between Dane Valley Road to the north and Sloe Lane to the south, centred at NGR 636678 168775 (Fig. 2). The excavation targeted an area where the stripping of the topsoil had revealed natural chalk geology through which archaeological features had been cut. At the southern end of the area trenches were excavated through a subsoil colluvium in order to assess the possibility of archaeological features having been sealed below it. The area sloped gently from south to north, rising from 30.20m (aOD) to 38.30m (aOD) over a distance of *c.* 730m. The area also sloped from east to west where the farmland located on the western side of the easement had been artificially terraced.

Soil sequence

3.3.2 The soil sequence for the area differed from north to south. At the northern end 0.30m of topsoil overlay chalk bedrock. The geology of the area changed to the south where a colluvium, ranging in depth from 0.20m to 1m, was revealed and only partially stripped in a series of six trenches. Sealed below this two ditches were recorded. Along the western edge of the easement the natural geology was not revealed as most had been truncated by a series of modern terraces, containing brick and concrete.

Table 2: General feature types in Area 7

Feature	Total	No. sections	Late prehistoric	LIA/E R-B	Medieval/post-medieval	Undated
<i>Ditch</i>	6	9	1	1	1	3
<i>Wall</i>	1	1	0	0	1	0
Total	7	10	1	1	2	3

The archaeology

3.3.3 Six ditches were recorded within the area. These formed no coherent pattern. Two crossed the easement on a roughly east–west alignment (**7473** and **7167**). A further three (**7125/7648** and **7471**) were on a roughly northwest–southeast alignment. Part of a north–south aligned ditch (**7477**) was seen in a trench, and a possible pen/croft or garden wall (**7152**) was observed running north–south.

3.3.4 The depths and sizes of the ditches varied from feature to feature, ranging from 1.40m in width and 0.90m in depth to 0.60m in width and 0.30m in depth. The fills of the ditches were all naturally formed by the erosion of the surrounding soils. Only seven sherds of pottery were recovered from the ditches, two ditches and the wall have been dated to the medieval or post-medieval period (**7471** and **7167**) and one to the late prehistoric period (**7477**). Ditch **7125** and re-cut **7468** ran parallel to **7471** and has been

assigned to the Late Iron Age to Early Romano-British period. It is possible that these were contemporary with 7471, with residual earlier pottery.

3.4 Area 8

Introduction

3.4.1 Area 8 comprises an area of approximately 0.5 hectares between Star Lane and Manston Court Road, centred on NGR 635984 167839 (Fig. 3). Trenches were excavated through the subsoil at regular intervals of 20m; where archaeological features were revealed the excavation area was opened up and the full extent recorded. The area was aligned approximately north-east/south-west. The north-east end of the area lay at 42.21m (aOD) and rose gently to the south-west at approximately 48m (aOD).

Soil sequence

3.4.2 The soil sequence for the area consisted of 0.30m of topsoil overlying a red-brown silty subsoil of approximately 0.15m in depth. The natural geology of the area was characterised by degraded chalk, clay and flint. None of the features were discernible until the subsoil had been stripped.

Table 3: General feature types in Area 8

Feature	Total	No. sections	M-LBA	Medieval	Undated
<i>Ditch/gullies</i>	20	37	0	6	14; at least 3 quite early by association and flint
<i>Oven/Bakery</i>	1	100% (1)	0	1	0
<i>Pits</i>	5	5	1	1	3
Total	22	43	1	8	17

The archaeology

3.4.3 Features recorded within the area included ditches/gullies, pits and a sub-rectangular bakery structure. Elements of the ditch system date to the medieval period. The oven/bakery structure dates to the earlier medieval period (11th – 12th centuries) and is enclosed within a ditch of the same date. One of the pits (7228) was dated to the medieval period and may be associated with the bakery enclosure. A single pit with charcoal rich fills was dated to the Late Bronze Age/Early Iron Age at the north east end of the area.

Ditches

3.4.4 Twenty ditches were recorded, mainly forming part of a rectilinear pattern of land division on a north-west/south-east alignment. A number of ditches represent the re-working of these field boundaries. At least four phases of the rectilinear field enclosures were recorded. Its ditches had a variety of profiles although mainly of a moderately sloped angle. The fills of the ditches were all naturally derived from the surrounding geology. These were predominantly dated by pottery to the medieval period and can be compared to similar features in Compound 16 (see below). A number of the pits were related to the enclosure system and considered to be modifications of the

boundaries in some of the enclosure system. One of the field enclosures (**7489**) appears to be associated with the bakery feature **7258** (see below).

- 3.4.5 There were a number of undated (but some are earlier) gullies on various alignments. These extend beyond the trench edges and suggest at least two phases of field systems. These minor ditches and gullies were 0.20 - 0.60m in width, with moderate and shallow concave profiles, only 0.09 – 0.15m deep. The fills of the ditches were all naturally formed from the erosion of the surrounding ground surfaces.
- 3.4.6 To the south west, pre-dating the medieval ditches, was a curvilinear ditch (**7508**). This was 1.17m wide and 0.24m deep, with a single fill in which some worked flint was found. It could represent part of a ring or penannular-ditch, particularly if terminus **7524** is associated with it. Neither contained securely datable finds, although residual Early Neolithic flint artefacts were recovered from the medieval ditch.

Oven/bakery structure

- 3.4.7 A large sub-rectangular structure (**7250**, see front cover), cut into the natural geology, was recorded in the western corner of an enclosure (**7489**). This sunken featured structure measured 3.60m and 2.90m in extent, 0.30m in depth and was aligned north-east/south-west.
- 3.4.8 The overall structure was first quadrant sectioned and then fully excavated and recorded, with composite stratigraphic plans being compiled as the structure was excavated. Charcoal was sub-sampled from each quadrant to provide evidence of spatial patterning of the use of the structure. The lack of evidence of smithing or smelting waste material or intense heating associated with metalworking or other pyrotechnical crafts such as pottery production, suggests this was a bakery installation.
- 3.4.9 Structure **7250** (see front cover) contained four major features which are thought to be broadly contemporary, dating to the earlier medieval period. The four features included a small key-hole shaped oven (**7258**) located on the west side of the structure, aligned roughly north – south with a possible entrance at the northern end. A fragment of the superstructure was still extant on the western side. A posthole and a pit were also located within the structure. The major oven feature (**7314**) was situated on the southern side of the structure; the oven was formed by a large circular clay lined structure on a base of flint cobbles and shell. Two large stones formed an entrance on the northern edge of the oven. An upstanding structure formed by clay with a shell and flint temper still remained *in situ* to a height of 0.26m. This rose at an angle, indicating that it may once have formed the domed roof of the oven. The flint and shell base showed some evidence of firing, and charcoal remained within the structure. Evidence of raking was located at the oven opening. The structure was sunk into the ground, making it reminiscent of sunken featured building. A number of similar features have been excavated in Kent, including one at West Malling (Wessex Archaeology 2006) and one near Ramsgate (Boast in Perkins et al. 1998, 235 ff.).

- 3.4.10 The environmental evidence, i.e. the charred plant remains from the posthole/pit associated with the structure, appear to represent the rakings of the oven. The high amount of grain may indicate waste from food processing used as fuel, but equally could represent corn-drying.

Pits

- 3.4.11 Five pits were recorded within the area. They were between 0.64m and 3.20m in width and 0.16 and 1.58 in depth. The largest of these was located at the corner point of an enclosure and may have been excavated as a later undated addition to the boundary, or perhaps a waterhole (7499). The fills of all the pits were naturally formed by erosion of the surrounding geology.
- 3.4.12 Pit 7187 in the northern part of Area 8 was isolated from other features apart from a north–south aligned ditch (7479) which may be quite early (see below). More than one ceramic vessel was located within the pit, providing Middle to Late Bronze Age dates. One of the vessels, initially assumed to be a cremation urn, contained a large quantity of wood charcoal but as no bone was present it may only be a cremation-related deposit.

Other finds and features

- 3.4.13 Other finds of note include a large, possibly Early Neolithic scraper from ditch 7479; another elongated scraper, two blade cores and a scraper were found in medieval ditch 7536 are more definitely Early Neolithic. The medieval ditch cuts through an earlier, although undated feature 7524.

3.5 Area 9

Introduction

- 3.5.1 This area comprised *c.* 0.50ha and lies to the south of Manston Court Road, centred on NGR 635665 167221 (Fig. 3, and 4). It is bisected in three areas by two farm tracks and Coldswood Road. A series of trenches were excavated through the subsoil at regular intervals of 20m; where archaeological features were revealed the excavation area was opened up and the full extent recorded. The area is aligned roughly north–south but mid way turns slightly to the west. The terrain is generally flat: the northern end of the area lies at approximately 49m (aOD) and the southern end at 50m (aOD).

Soil sequence

- 3.5.2 The soil sequence for Area 9 consists of 0.30m of topsoil overlying red-brown silty clay subsoil. The natural geology was changeable along the easement but generally consisted of degraded chalk, clay and flint.

Table 4: General feature types in Area 9

Feature	Total	No. sections	Late IA/ Early R-B	Early R-B	R-B	Medieval	Undated
<i>Cremation graves</i>	7	100% (7)	0	7	0	0	0
<i>Ditches/ gullies</i>	44	67	7	2	1	10	24; At least 4 LIA-E R-B by association
<i>Holloway/ spreads</i>	2	2	0	0	0	1	1; post-dates LIA-E R-B features
<i>Pits</i>	14	14	1	0	3	3	8; 1 waterhole pre-dates LIA- E R-B ditch
<i>Postholes</i>	4	4	0	0	0	0	4; 1 pre-dates holloway/spread
<i>Tree throws</i>	3	3	0	0	0	0	3; 1 pre-dates R-B pit; 1 pre-dates medieval ditch;
Total	63	96	4	8	7	11	38

The archaeology

3.5.3 The archaeology in Area 9 was predominantly in the form of ditches, including field systems and enclosures dated by pottery evidence to the Late Iron Age to Early Romano-British as well as medieval periods. Other features included an Early Romano-British cremation cemetery and a possible holloway, pits, postholes and tree throws.

Ditches

3.5.4 In the southern part of Area 9 (Fig. 4) was a rectilinear field system, aligned north – south and including access routes (**8375** and **8448**). A number of elements (**8455**, **8459**, **8375** and **8467**) were dated by pottery to the Late Iron Age to Early Romano-British periods, suggesting a similar date for the undated ones. The widths of the ditches were between 0.60m and 1.15m and varied in depth between 0.10 and 0.25m. They were filled with naturally formed deposits derived from the erosion of the surrounding area. Within one section of the field system was a contemporaneous cremation cemetery and a possible holloway, discussed below.

3.5.5 To the north (Fig. 3), the ditches represented at least two phases of medieval field enclosure system, aligned north – south (**8415**) and north east - south west (**8420** and **8407**). These were generally more substantial than the Romano-British field boundary ditches and comparable to other medieval field systems encountered in a number of areas along the pipeline route.

3.5.6 There were a number of field boundary ditches that crossed the easement, but were not necessarily part of the field systems already described. The alignments of these ditches varied from north west – south east through to north east – south west. Several were dated by pottery, including Late Iron Age to Early Romano-British and medieval. A single curvilinear ditch (**8441**) of similar proportions to the field boundary ditches was situated near to

Coldswood Road. This ditch gently curved up to the north and cut a gully (**8439**). At the southernmost end of Area 9 (Fig. 4) were three undated ditches that were clearly associated. All were on a north-north west/south south east orientation. Together they appear to be part of a passage or access route, with the western side comprising two terminating ditches (**8474** and **8476**) forming a staggered entrance. The eastern ditch (**8471**) pre-dates an element of the Late Iron Age – Early Romano-British field system.

- 3.5.7 The environmental evidence supports the dating evidence, suggesting that the samples taken from a number of ditches and pits were later than Romano-British.

Cremation cemetery

- 3.5.8 Within a field enclosed by the rectilinear Late Iron Age to Early Romano-British field system were seven cremation burials. Two internal field divisions were represented by three shallow linear features. These cross the enclosed area diagonally, although offset from the corners, and divided the graves into a northern and a southern group, with four graves in the north (**8202**, **8195**, **8206** and **8198**) and three in the south (**8208**, **8273** and **8199**). All the graves were dated to no later than the second century AD, and five are more firmly dated to the first century AD.

- 3.5.9 Five graves were circular or sub-circular. In the southern division, one was square and a second was sub-square. The graves varied in depth between 0.07m and 0.40m as some had been truncated. The circular graves were between 0.42m to 0.80m wide, the squarer graves were 0.83m – 0.85m long by 0.64m to 0.69m wide. The bases of all graves were fairly flat and the sides were moderate to steep where observable.

- Accessory pottery vessels (jars, flagons and plates/bowls) were found in all graves; three had one vessel, three had two, and one had three vessels (**8273**).
- Boxes were indicated by iron and copper alloy fittings and were found in four graves. In one case the box contained animal bones, in two cases the human cremated bone was inside the box, possibly within a further, organic container (**8199** and **8208**). In a single case, the box seemed to have contained an accessory vessel as well, although this may originally have been placed on top of the box.
- The cremated bone deposits appear to have been placed in organic containers, such as a bag, in most of the graves. One of these containers seems to have been closed with a metal fitting, seen in Grave **8273**, which also had three vessels and no box. Two large iron artefacts in Grave **8199** may indicate a second box within which were a jar and a plate, although this does appear to be the base of the same box, just twisted slightly during decomposition.

- A number of graves contained animal bone, including Grave **8202** which contained a neonatal dog placed in its own casket within the grave (Plate 6).
- There are certainly some patterns regarding grave form, contents and spatial positioning that can be investigated during analysis.
- The relative absence of wood charcoal in the cremation burials suggests that much of the pyre material was removed prior to burial. An exception was grave **8206** which contained a high quantity of wood charcoal.

Other features and finds

- 3.5.10 A large spread deposit (**8457**), possibly representing a holloway, was situated adjacent to and slightly overlapping the cremation cemetery enclosure. This material accumulated in a hollow next to the cemetery, which is an association repeated in Area 14. Romano-British cemeteries are frequently located outside settlements, alongside a road or thoroughfare.
- 3.5.11 A number of pits were also recorded within the field system. These appear to be part of the boundaries within the landscape. One of these appears to be a waterhole (**8375**), located in the corner of a field, the re-cut ditch of which was dated by pottery to the Late Iron Age to Early Romano-British periods. Other pits were dated to the Romano-British and medieval periods.
- 3.5.12 An undated keyhole shaped kiln/oven (**8194**) was uncovered in the centre of Area 9, c. 50m north of Coldswood Road.
- 3.5.13 Residual finds recovered in Area 9 include a small Palaeolithic handaxe from the subsoil surface and other flint objects of broadly late prehistoric date.

3.6 Manston Airport

Introduction

- 3.6.1 Manston Airport is situated on a high point, the landscape sloping down moderately towards the coast to the south and east (Fig. 4). The easement crossed Manston Airport in a north-easterly direction from Canterbury Road (A299) towards Manston Road (reaching compound 12). This stretch of the route comprised an area of approximately 0.19ha. The land rose moderately towards the north with the runway occupying the highest point, within the 50m contour line. The ground then dropped away to the north east.
- 3.6.2 The archaeologically significant area was restricted to a 35m x 15m section, situated on the north-east downward slope. The area, centred on NGR 634714 165479 was subject to an archaeological watching brief. The topsoil was stripped and trenches were cut into the subsoil by machine immediately prior to the installation of the pipeline, the time allowed for archaeological investigation was therefore extremely limited. When archaeology was identified, the trench was widened to record the extent. Excavation was rapid and minimal due to time restrictions.

Soil sequence

- 3.6.3 The soil sequence in the area comprised a layer of topsoil, 0.30m deep. Below the topsoil was a layer of mid orange-brown silty clay of probable colluvial nature. This subsoil deposit was only observed at the north-east end of the easement on the down-slope. The natural geology consisted of orange-brown silty clay overlying chalk.

Table 5: General feature types, Manston Airport

Feature	Total	No. sections	Late prehistoric	LIA/ER-B	R-B	Medieval	WWII
<i>Cobbled surface</i>	1	1	0	0	0	1	0
<i>Ditches</i>	2	2	0	0	2	0	0
<i>Pits</i>	3	2	2	1	0	0	0
<i>Quarries</i>	2	2	0	0	1	1	0
<i>Other</i>	1	0	0	0	0	0	1
Total	9	7	2	1	3	2	1

The archaeology

- 3.6.4 Only a small section contained archaeological features, the rest of the area was heavily disturbed by modern activity associated with the airport and WWII. The features comprised ditches, a spread and pits of probable Romano-British date.

Ditches

- 3.6.5 There were two ditches: ditch **2007** was 2m wide and extended approximately 14m in a NW–SE direction. The other ditch (**2003**) was 0.80m wide and extended approximately 11m NE-SW. The ditches appear to create a right angle to the north, although they differ in morphology. The initial fills of the ditches were probably naturally formed from the erosion of the surrounding surfaces which may have included archaeological material. The second fill of ditch **2007** was darker and at least partially deliberately deposited, with typical domestic debris present. The archaeological material recovered suggests the ditches were filled in the Romano-British period.

Spread

- 3.6.6 Close to the ditches was an irregular spread of dark silty clay with common flint nodules and domestic debris (pottery, oyster shell and bone). It extended *c.* 2.8m x 1.7m and was up to 0.2m thick. This was probably a midden spread of medieval date, with significant quantities of residual Romano-British pottery.

Pits

- 3.6.7 Three pits were recorded in the area, all of which were situated to the east of the ditches. Two adjacent pits (**2009** and **2012**) were sub-circular with concave bases, measuring 1.1 – 1.5m in diameter. These pits have been dated by pottery to the late prehistoric period. The third pit (**2013**) was further east and only recorded in the pipe trench section. This pit was approximately 2m in diameter and at least 0.5m deep, dated as Romano-British. All three pits

showed evidence for episodes of deliberate backfill with domestic debris components including mussel and oyster shells.

Other features and finds

- 3.6.8 Two large features may represent backfilled quarries (**2018** and **2020**). Both contained large quantities of Romano-British material, although one also contained medieval pottery.
- 3.6.9 A large rectangular feature (**2016**), measuring *c.* 4m x 3.5m and at least 0.52m deep, was observed to the east of the ditches. The fill of the steep-sided feature was sterile and similar to the natural geology and subsoil. The function and date of this feature are unknown, although it was suggested that this may have been an air raid shelter.

3.7 Area 14

Introduction

- 3.7.1 This area comprised 0.6ha located between Cottington Road and Canterbury Road West, centred on NGR 634012 164328 (Fig. 5). The area sloped steeply from the north at Canterbury Road West to the south where it turned to the west and ran on a north-east/south-west alignment. At the top of the hill, where no archaeological features were recorded, the site lay generally at 36.20m (aOD), at the base of the slope generally at 10.33m (aOD).

Soil sequence

- 3.7.2 The soil sequence for the area consisted of 0.30m of topsoil overlying a 0.15m deep mid red-brown silty clay subsoil. The natural geology changed from the north to the south. At the north end of the area, the subsoil overlay a colluvial hill wash through which a number of evenly spaced trenches were excavated to reveal any possible archaeology. At the southern end of the area, where it turns to the south-west, the natural geology was red-brown sandy clay. None of the features were discernible until the subsoil had been stripped. On the corner where the site turns, a large modern quarry pit had completely truncated any possible archaeology.

Table 6: General feature types in Area 14

Feature	Total	No. sections	Late Neolithic	M/L BA	Late prehist.	Late IA/ E R-B	E R-B	R-B	Saxon	Undated
<i>Cremations</i>	8	100%	0	0	0	1	2	5	0	0
<i>Graves</i>	10	100%	0	0	0	0	2	8	0	0
<i>Ditches/ gullies</i>	31	45	0	1	5	2	0	2	1	20; 1 probably LIA-ER-B
<i>Pits</i>	16	16	4	0	1	0	0	3	0	8
<i>Postholes</i>	6	6	0	0	1	0	0	2	2	3
<i>SFB</i>	1	100%	0	0	0	0	0	0	1	0
<i>Tree throws</i>	13	13	0	0	1	1	0	0	0	12
Total	82	99	4	1	7	2	4	25	2	43

The archaeology

3.7.3 A large number of features were recorded on this site, including ditches, pits, postholes, tree throws, a sunken featured building and a cemetery with both inhumation and cremation graves. Elements of the ditches appear to date to the Middle to Late Bronze Age, and late prehistoric to Saxon periods. The cemetery dates to the Romano-British period, and the possible sunken featured building was dated by pottery as Saxon. Three pits date to the Late Neolithic, with others from the Late Iron Age to Romano-British periods.

Ditches

3.7.4 A total of 31 ditches were recorded on the site. Ditches **6441**, **6439** and **6434** in the SW-end of Area 14 form the corner of a late prehistoric field enclosure, possibly with an access route on the eastern side. Two of the ditches appear to have been re-cut, and the earliest ditch contained material of a Middle to Late Bronze Age date. A large pit feature (**6110**) may be a waterhole, an interpretation which is supported by its location in the corner of a field enclosure.

3.7.5 At least two phases of late prehistoric/Late Iron Age to Romano-British rectilinear field systems were observed in Area 14. One was oriented approximately east–west (**6427**, **6409** and **6425**; also possibly **6411** and **6403**), whilst a second included a possible road and mortuary enclosure, oriented north-west/south-east. These ditches varied in size from 0.7m – 1.05 wide and 0.20m to 0.46m deep with steep concave sides and flat bases; some were much smaller gullies e.g. 0.26m wide x 0.15m deep. The northern terminus of ditch **6425**, which stops c. 3.5m south of cemetery enclosure ditch **6422**, suggests that elements of the N–S/E–W field system postdate the cemetery which is aligned obliquely to it.

Track/Holloway

3.7.6 The sequence of events in this small section was difficult to establish but can be broadly interpreted as follows:

- A trackway crossed the easement in a north-west/south-east direction as shallow linear feature **6091**. This was 1.57m wide and 0.20m deep, with concave sides and a flat base. This trackway probably developed into a holloway which backfilled in the late prehistoric period, based on pottery dates.
- Pits were then excavated in an approximately north-east/south-west alignment and slightly to the south east. Most of these (**6066**, **6056**, **6083**, **6102** and **6138**) have been dated by pottery evidence to the Late Iron Age to early Romano-British periods and more generally as late prehistoric and Romano-British. These pits varied in form and size; three were between 1.3m and 2.5m in diameter, and at least one may have been a bell or beehive pit. It is possible that these were contemporaneous, occurring between the silting of the holloway and the creation of the mortuary enclosure. The creation of at least one of these pits (**6083**) would have hindered the passage of traffic along the holloway, although it had silted up substantially by this time.
- A ditch (**6053**) flanking the western side of the holloway, immediately adjacent to two of the pits, was partially identified, and pre-dates the enclosure ditch **6050**. This ditch may be contemporaneous with ditch **6417**, which flanks the holloway to the east. The resulting access route or 'road' would have been approximately 7m wide. It would seem that the large pits were by this time backfilled to again allow access along the route.
- The next phase of activity seems to be the construction of the mortuary enclosure. The western corner, **6422**, was the first element constructed, followed by **6420** and **6050**, creating the southern and eastern corners. It is possible that these represent a later internal division within the mortuary enclosure, particularly as **6422** appears to continue to the south east into the section. Ditch section **6050** post dates the western flanking ditch.
- The western flanking ditch appears to have been re-established slightly to the north east, as represented by **6042**. In plan this was recorded as later than the enclosure ditch **6050**. It is possible that they were almost contemporaneous.
- Ditch **6042** appears to continue as part of the enclosure and 'road' for some time. After this ditch had naturally filled, burial continued in the enclosure, as illustrated by inhumation grave **6169**, which clearly cut the ditch fills.
- A possible explanation for the large features backfilled naturally and re-cutting in a relatively short space of time was the location of the enclosure at the bottom of a reasonably steep slope. There were substantial deposits of colluvium along Area 14, and particularly across the enclosure, which was removed during the excavations to locate the inhumation burials (see below).

Dual-rite cemetery

- 3.7.7 A dual-rite cemetery with eleven inhumation burials in ten graves (**6056**, **6060**, **6165**, **6093**, **6049**, **6154**, **6166**, **6176**, **6162/6214**, **6169**) and eight cremation graves (**6003**, **6006**, **6009**, **6012**, **6015**, **6019**, **6022**, **6025**) was recorded within the SW–NE oriented mortuary enclosure described above.
- 3.7.8 Both the inhumation and cremation burials were located in an area of approximately 210m², enclosed by ditches **6420**, **6422** and **6042**. The cremation graves were clearly cut through the colluvial deposits in this area, while the majority of the inhumations graves only became evident after the removal of this deposit. However, this was due to conditions of visibility and contrast since at least one grave was definitely cut through the colluvium. At present it appears that both burial rites were carried out concurrently, as the date range for the pottery vessels and other grave goods contained within the graves and forming the cremation urns overlaps and/or is broadly contemporary. However, the situation of grave **6169**, which was cut into ditch **6042**, suggests that the north-eastern boundary of the enclosure was no longer in use by the time this grave was dug, as discussed above. The dates for the cremations range from the first to third centuries AD, with some more specifically dated. The inhumation burials appear to cover the entire Romano-British period.
- 3.7.9 Four inhumation graves were orientated north-east/south-west, four north-west/south-east, and two were aligned north-north-east/south-south-west. The graves were of different sizes and depths. The largest (**6214**) was 2.36m long and 1.12m deep and the smallest (**6176**) 1.05m long and 0.10m deep. The human bone was poorly preserved in each grave; however, preservation was better from deeper graves. A number of grave goods were associated with the inhumations, including whole pottery vessels and a copper alloy buckle. A number of graves also contained iron coffin nails. All the bodies were deposited in an extended, supine position.
- 3.7.10 One grave (**6214**) contained an adult inhumation, followed by a child inhumation, both with the head to the south-west. The adult was clearly buried in a coffin of which stains and nails survived. Neatly packed in around the coffin were the disarticulated remains of at least one other individual.
- 3.7.11 Eight cremation graves were also located within the enclosed area. The cremated bone was mostly contained within amphorae (Plate 7 and 8). Most of the cremation burials were within a single vessel, although a couple of secondary pots were placed in some of the graves. Some graves may contain the remains of more than one individual, e.g. cremation grave **6012**.
- 3.7.12 One cremation burial was found in pit **6025** to the east of the enclosure and immediately south-west of ditch **6042**. Compared to the other urned burials this grave contained only a small number of sherds, which may represent either plough damage or an unurned burial with ancillary vessel.
- 3.7.13 Grave **6025** was the only grave outside the internal division (**6420** and **6050**), along with a number of possible votive pits, distinguished by their lack of

cremated bone and inclusion of hobnails in one. The rest of the pits were devoid of finds.

- 3.7.14 Possible cremation grave **6027**, located in the cemetery enclosure, contained late 2nd/early 3rd-century pottery and the remains of what may have been a wooden box but no human bone was recovered.
- 3.7.15 The environmental evidence was very similar to that from Area 9. Certain richer deposits indicated that onion couch and hawthorn may have been used for tinder. A grave, a pit and postholes contained material suggestive of settlement in the vicinity, or perhaps midden material was used to backfill. Charcoal was generally infrequent in the cremation burials, suggesting that much of the pyre material was removed prior to burial. An exception was grave **6009**, which was somewhat richer in wood charcoal.

Sunken featured building

- 3.7.16 A sunken featured building (**6383**) was aligned east–west and measured 3.21 x 2.34m and 0.31m in depth. Two postholes were located at the east and west end of the feature. There were two episodes of infilling within the feature: a natural silting layer that was derived from the erosion of the surrounding ground surface and a layer of deliberate backfilling that contained archaeological components indicative of activity within the surrounding area. Pottery provides a broadly Saxon date and also includes residual Roman wares.

Pits and postholes

- 3.7.17 Sixteen pits and six postholes were recorded in Area 14. The majority of these are undated and form no pattern within the site. Their size ranges from 0.70 to 2.51m in diameter and 0.30 to 1.00m in depth. The majority of the pit fills have formed naturally and derived from the erosion of the surrounding geology.
- 3.7.18 Pits **6219**, **6232**, **6247** and 6330 are dated to the Middle/Late Neolithic period but do not relate to any discernible structures. The Late Iron Age/Early Romano-British ditch **6394** probably cut through another of these pits as it contained similar residual material. The presence of such material in this region is significant, due to its relative rarity. The flint assemblage from these pits is also worthy of further detailed analysis. Two of the pits were sampled for environmental evidence. These produced very little cereal remains and a prevalence of hazelnuts, typical of feature of this period. Pit **6219** also produced a similar assemblage, suggesting a similar date.

Tree throws

- 3.7.19 Thirteen tree throws were investigated to assess their potential for prehistoric finds; however there were few finds from the fills and little which could be diagnostic. Only the upper fill of tree throw **6371** contained the skeletons of three partial pigs/piglets. Pottery found in the fill suggests a Late Iron Age/Early Romano-British date for their deposition.

3.8 Area 15

Introduction

3.8.1 The area is located on the south side of Cottington Road and runs along Cottington Lane, parallel to the St. Augustine’s golf club on the eastern side, centred on NGR 633850 163989 (Fig. 6). The site comprised an area of 0.34ha at a height of 8.88m (aOD) in the north, rising to the south to a height of 10.94m (aOD).

Soil sequence

3.8.2 The soil sequence for this area consisted of 0.25m of topsoil overlying a 0.15m thick deposit of mid red-brown subsoil. The natural geology was characterised by changes on different parts of the area. At the northern end the geology consisted of red-brown silty clay, at the southern end of much paler brown sandy clay. None of the features were discernible until the subsoil had been stripped.

Table 7: General feature types in Area 15

Feature	Total	No. sections	Late prehistoric	L IA/ E R-B	E R-B	R-B	L R-B	Medieval	Undated
<i>Chalk & flint track</i>	1	2	0	0	0	0	0	1	0
<i>Ditches</i>	34	52	2	1	0	8	1	9	13
<i>Inhumation Burials</i>	3	100%	0	0	2	0	0	0	1
<i>Hearth/oven</i>	1	100%	0	0	1	0	0	0	0
<i>Palaeochannels</i>	2	2	1	0	0	0	0	0	1
<i>Pits</i>	5	5	0	0	0	0	1	1	3
<i>Tree throws</i>	2	2	0	0	0	0	0	1	1
Total	48	66	3	1	3	8	2	12	19

The archaeology

3.8.3 In Area 15 there were a variety of features. The most common features were ditches (34 in total) of varying functions and ranging in date from the late prehistoric to the medieval periods. There were also three inhumation burials, two of Early Romano-British date; five pits, two tree throws, two palaeochannels and a Romano-British oven.

Ditches

3.8.4 A total of 34 ditches and a number of re-cuts were located in this area. It comprised a network of medieval field boundaries and/or deliberately cut ditches for drainage from the slope located to the west. These appear to form a north-east/south-west field system, with a number of possible bedding trenches (e.g. 5339 and 5337). The bedding trenches were notable for their chalk content. It appeared that chalk was incorporated into the dark deposits of black clayey, boggy ground into which the features were cut. According to local knowledge, seaweed was frequently collected from the shore to use as

fertiliser, but due to the acidic nature, crushed chalk was mixed in to neutralise it. The fills of the ditches were mainly naturally formed although large quantities of pottery and shell were found within the fill indicating that they were within an area of activity. The evidence provided by the land snails collected for analysis suggests that the possible bedding trench **5337** contained water at least semi-permanently. The ditches ranged in width from 0.57m to 2.80m and in depth from 0.25m to 1.25m.

- 3.8.5 Three fairly substantial ditches (**5094**, **5157** and **5057**), aligned approximately east–west, were located either side of the central blank area; these were dated to the Romano-British period, as were a rectilinear enclosure ditch (**5300**) and a further ditch terminus (**5033**). Several other ditches on various orientations, sizes and dates crossed the southern part of the area. These do not appear to form any coherent field systems or enclosures within the limits of the excavation.

Pits

- 3.8.6 Five pits were observed in Area 15. The pits ranged in size from 0.78m to 1.78m and 0.71 to 0.18m in depth. The fills of the pits were all naturally derived from the erosion of the surrounding geology. They were mainly in the northern part of the site. Only two were datable (see below).

Oven

- 3.8.7 A single oven or hearth (**5089**) was recorded in this area. It was partially truncated on the eastern side by a modern pipe trench. The oven was constructed by a layer of flint cobbles over which a series of burnt deposits of fired clay and charcoal were still located *in situ*. Pottery was recovered from the top fill of the oven, indicating a Romano-British date; it is also important to note that it cuts a Late Romano-British refuse pit, and is very close to two Early Romano-British inhumation burials (see below).

Inhumation Burials

- 3.8.8 Two extended inhumation burials (graves **5166** and **5163**) were located in the north of the site, close to the edge, partially truncated by a modern pipe trench. Both of these graves were accompanied by pottery vessel, dated to the Early Romano-British period. Two of the vessels were lifted prior to the full excavation of burial **5166** as the site was regularly visited by thieves. Another inhumation was located at the base of an east–west ditch terminus (**5104**, Plate 9). The feet of the skeleton were placed on the slope of the terminus and the head was placed to the west. A pit was also dug into the ditch base, only a metre or so from the burial. None of the features or fills contained datable finds. For this reason, it would be worthwhile subjecting a sample of the human bone to radiocarbon dating.

Other features and finds

- 3.8.9 An area of rammed chalk and flint was recorded at the northern end of the area. This surface was placed in this location to consolidate an area of boggy, marshy and wet ground. Two rut marks (**5261**) are apparent, suggesting this was used as a track for wheeled vehicles. Two ditches were located beneath

this rammed chalk surface, probably located here as a measure of drainage. All the features at the north of the site were medieval, dated by pottery. The pottery type was fairly uncommon and worthy of note (see Finds section).

- 3.8.10 Two possible palaeochannels (**5281** and **5284**) were identified in the southern half of the area. One has been dated to the late prehistoric period, and the other pre-dates a Romano-British enclosure ditch.
- 3.8.11 Of interest was a 'y' shaped flint tool of possibly Early Neolithic date. The rest of the flint appears to be Late Neolithic to Early Bronze, including a distinctive spurred piercer.
- 3.8.12 Environmental evidence supports the dating evidence in a number of features, again suggesting a date later than Romano-British, even though the features were initially thought to be that date. There was no indication to suggest that the oven **5089** was used for activities involving cereals or food preparation. The ditch terminal **5104** containing the undated burial provided cereal grains suggestive of a Saxon or later date.

3.9 Area 16

Introduction

- 3.9.1 This site comprised a 0.90ha rectangular area, centred on NGR 633504 163493 (Fig. 7 and 9), lying to the north of Ebbsfleet Lane and to the south of area 15. The northern extent of the area lies at a height of 10.93m (aOD) and slopes down gently for 725m to a height of 2.73m (aOD).
- 3.9.2 At the southern end of the site, the alignment of the area changes and runs parallel to Ebbsfleet Lane then crosses the road after 75m into Weatherlees compound (see Compound 16).

Soil sequence

- 3.9.3 The soil sequence for the area consisted of *c.* 0.25m of topsoil overlying a *c.* 0.15m thick deposit of mid-brown silty clay subsoil. A change in the natural geology was noticeable as the excavation area went from the north to the south. At the northern extent of the site the underlying geology was characterised by pale yellow-brown sandy clay; the southern end of the area changed to a red-brown silty sandy clay. None of the features were discernible until the subsoil had been stripped. At the southern end of the slope an alluvial deposit, through which a number of the archaeological deposits were cut, covered the area.

Table 8: General feature types in Area 16

Feature	Total	No. sections	Early prehistoric	Middle Bronze Age	Late prehistoric	Iron Age	LIA/ER-B	ER-B	R-B	WWII/modern	Undated
<i>Ditches</i>	51	78	2 (strat.)	1	7	2	14	5	9	0	9; 4 strat. Below LP features
<i>Grave/burials</i>	2	100%	0	0	0	0	1	1	0	0	0
<i>Pits</i>	76	76	2	0	8	9	27	4	4	0	22
<i>Postholes</i>	6	6	0	0	1	0	1	0	0	0	4
<i>Tree throws</i>	6	5	0	0	2	0	0	0	0	0	4
<i>Midden/alluvial spreads</i>	2	Incorporated into other sections, & 5 test pits	0	0	0	2	0	0	0	0	0
<i>Other</i>	2	2	0	0	0	0	0	0	0	1	1 (possible kiln?)
Total	145	174	4	1	18	13	43	10	13	1	40

The archaeology

- 3.9.4 There were a large number of archaeological features on this site, including ditches, pits, tree throws, a possible WWII feature and two inhumation burials. The ditches and many of the features date to the Late Iron Age to Early Romano-British period although a number of early prehistoric and late prehistoric features were also recorded, dated by pottery and the stratigraphic sequence. Many of the ditches appeared to be part of field systems and boundary markers.
- 3.9.5 Fifty-one ditches were recorded on the site. Their alignment and function changed along the length of the easement and appeared to represent activity from the early and late prehistoric, Iron Age, and Late Iron Age to Early Romano-British and the Romano-British periods.
- 3.9.6 Seventy-four pits were recorded on the site (Plate 10). Most of the pits were dated by pottery as late prehistoric to Romano-British. These were mainly located at the southern end of the area and appear to have been deliberately dug in to the area within an enclosure ditch. Many form linear ‘chains’ of pits, suggesting that they followed some kind of boundary.
- 3.9.7 A single flexed inhumation grave (**1110**) was recorded in the top of a large Late Iron Age to Early Romano-British ditch (**1384**, Plate 11). The grave contained pottery of Early Romano-British date; although this could well be residual, it is suggested that the grave is of a similar date. A further inhumation burial was recorded, located at the base of a Late Iron Age to

Early Romano-British ditch (**1892**); however this skeleton was only partially articulated.

Spreads

- 3.9.8 At the south-west and southernmost end of the site were large deep deposits, into which a number of archaeological features were cut, and sealed by. These appear to have been boggy, wet areas at least as far back as the Iron Age. The deposits contained large amounts of animal bone and shell, indicative of settlement activity in the immediate area. It is possible that these areas were used as middens, at the same time raising the ground level so that it was less boggy. The environmental evidence suggests that sediments from uphill were re-lain by water, possibly from seasonal flow, and collected within a hollow. The sediments subsequently dried out and stabilised, allowing soil formation.
- 3.9.9 A series of test pits and slots were excavated by hand, which revealed that there were at least two phases of spread accumulation during the Iron Age, according to pottery evidence, although the environmental evidence suggests that the lowest deposits are likely to have been re-worked. The test pits also showed that there was evidence for Late Iron Age settlement (and activity of similar dates) in between and under the deposits. *See also the soils and sediments section in the environmental chapter.*

Ditches

- 3.9.10 The ditch system can be divided into two main areas, those at the northern end of the site, and those located at the southern end of the site. These appear to be of different date and for different purposes.
- 3.9.11 At the north eastern end, closest to Area 15 (Fig. 7), several late prehistoric ditches represent a field system and a rectilinear enclosure with a slightly staggered entrance. This enclosure (**1548, 1922, 1861, 1545** and probably **1525**) appears to have been re-cut and modified at least twice, the latest date being late prehistoric; unfortunately the earlier cuts did not contain any pottery. Immediately to the south-west were two ditches (**1864** and **1405**), neither of which contained closely datable pottery. These were, however, cut by two pits (**1407** and **1476**) dated broadly as Early Prehistoric, suggesting a similar date or earlier for the ditches. These ditches were all filled with naturally formed deposits derived from the erosion of the surrounding geology, (*a comprehensive geoarchaeological explanation of the sequence of backfilling events in the largest ditch 1385 can be found in the soils and sediments section of the environmental chapter*). They varied in size from 0.45m-1.10m and in depth from 0.20-0.47m. These were heavily truncated by a modern artificial ditch and bank which ran down the eastern side of the area.
- 3.9.12 An east-west aligned, fairly substantial ditch (**1574**) was located to the south of the early prehistoric features. This has been closely dated to the Middle Bronze Age by pottery. Also of note were a group of flint scrapers and a scraper/knife found in fill 1518 of ditch **1574**.

- 3.9.13 At the southern end of the site (Fig. 9) there were a large number of ditches that were all on the same north–south alignment. The ditches were all located within an area that was covered by an alluvial deposit. The features were only located by a series of sondages excavated across the area to establish relationships between the ditches. Some of significant features were revealed. One very large ditch (**1384**) was *c.* 7.50m in width and 1.75m in depth; there was little variation in the size of the ditch in the three interventions excavated across it. The fills of the ditch indicate that they would have formed in wet conditions, and it is possible that this ditch was originally a boundary marker and a drainage ditch. The lowest fill of the ditch contained a large number of archaeological components and fragments of a human skull (Plate 12). A number of other ditches located within the area all appear to be re-working of the same boundary, of which **1384** was one of the earliest in the sequence (Late Iron Age/Early Romano-British). The size and depth of the ditch may also indicate that it was a defensive (or military?) boundary, especially considering the proximity of the (debated) Roman Invasion landing areas and thousands of troops purported to have crossed the Isle of Thanet in the Late Iron Age/Early Roman period. The ditch sequence in the northern section of Compound 16 (Fig. 10) was very similar to this sequence, and their possible association should be considered in any further interpretation.
- 3.9.14 Several less substantial ditches were observed in this concentration of boundary ditches. These tend to decrease in size and significance through time, although the time scale is still fairly short, *i.e.* from the Late Iron Age to the Romano-British periods.
- 3.9.15 Noteworthy is the palaeochannel **1890** (Fig. 9), an approximately north–south aligned, wide and fairly shallow linear feature. It is described as slightly meandering with diffuse edges, and the pottery retrieved from the fills dates it to the Iron Age, predominantly the middle Iron Age. It appears that this is the earliest linear feature within this sequence of boundary ditches and re-cuts, and probably represents the original boundary location upon which the others were based.
- 3.9.16 By comparison, the section of the area next to Ebbsfleet Lane (Fig. 9) contained a series of moderate to fairly insubstantial ditches ranging from 0.80-1.36m in width and 0.11-0.53m in depth. These are mainly dated to the Late Iron Age/Early Romano-British periods, and less specifically the Romano-British period. The alignment of the ditches suggests at least one phase of field systems, approximately north-west/south-east oriented. This field system appears to have developed over time, with the insertion of new elements. Following this system, a north-south aligned ditch (**1902**), with a small terminus at the northern end, indicative of a field system or enclosure, was constructed. This is on a comparable orientation to some of the large boundary ditches.
- 3.9.17 A curvilinear ditch (**1353**), probably the north-east corner of an enclosure of Late Iron Age to early Romano-British date, was identified to the west of the large boundaries. There is no obvious counterpart to this ditch.

- 3.9.18 Two curvilinear ditch/gully features were located at the southernmost end of Area 16. One (**1918**) appears to be a Late Iron Age to early Romano-British ring-gully, the other was dated as Romano-British and was probably a returning ditch. A number of postholes were associated with these two features. It suggests that there was settlement activity at the southern end of Area 16.

Pits

- 3.9.19 A large number of pits were identified in Area 16. Most of these were located in the section of site next to Ebbsfleet Road (Fig. 9). They ranged in size from 0.96-2.18, in length to 0.11-0.53m in depth. The fills were in the main naturally derived from the erosion of the surrounding ground surface, although there were instances of deliberate backfilling. Pottery dates indicate that most pits were dug in the Late Iron Age to Early Romano-British period. Several have been broadly dated to the late prehistoric and a few to the Iron Age. The pits form linear patterns, and in places intercutting chains. These seem to correlate with the field system alignment, some may be enclosed by or lie between **1908** and **1716**, but a fair proportion are cut by or unrelated to them.

Other features and finds

- 3.9.20 There were a number of postholes across the area, particularly in association with the pits, and with a Late Iron Age to Early Romano-British ring-gully.
- 3.9.21 The earliest element of the flint assemblage was an Early Neolithic axe thinning flake. Other items included a Late Neolithic to Early Bronze Age axe flake trimmed to form a knife, a scraper and flake and blade debitage. There was also a pyramidal core. The assemblage was mainly residual in later IA and RB features. Other finds of note were a dog or wolf tooth pendant and a worked horse metapodial.
- 3.9.22 The environmental evidence from Area 16 was generally quite rich and the composition of the charred plant assemblages is in keeping with the general date range seen within the pottery evidence.
- 3.9.23 Three of the large boundary ditches clearly correlate with geophysical linear anomalies.

3.10 Compound 16

Introduction

- 3.10.1 Centred on NGR 633348 163032, Compound 16 comprised a 0.30ha rectangular area lying to the west of Ebbsfleet Lane and was bisected by the east/west entrance way into Weatherlees Waste Water Treatment Works (Fig. 10 and 11). The north-west of the area lies at 4.74m (aOD) and the south-east at 3.84m (aOD).

Soil sequence

3.10.2 The soil sequence for the area consists of *c.* 0.32m of topsoil overlying *c.* 0.20m of red-brown silty clay subsoil. The natural geology in this area consists of a pale yellow-brown sandy silty clay. None of the features were discernible until the subsoil had been stripped.

Table 9: General feature types in Compound 16

Feature	Total	No. sections	Late Bronze Age/ Early Iron Age	Late prehistoric	Iron Age	Late IA/ Early R-B	R-B	Medieval	Medieval/ post-med.	Undated
<i>Ditches</i>	61	85	1	19	0	5	5	9	1	21; 2 likely to be medieval/ p-m; 1 LP under LBA/EIA deposit
<i>Grave/ burials</i>	2	100%	0	0	0	1	0	0	0	1 likely to be R-B or later
<i>Spreads</i>	3	9	1	0	0	1	0	0	0	2; 1 probably medieval/p-m
<i>Pits</i>	11	11	2	1	1	1	0	0	0	7; 1 post dates IA feature
<i>Postholes</i>	45	45	1	4	0	0	0	0	0	40
<i>Tree throws</i>	3	3	0	1	0	0	0	0	0	2
<i>Tracks</i>	1	2	0	0	0	0	0	0	0	1; likely to be medieval or later.
Total	126	157	5	25	1	8	5	9	1	74

The archaeology

3.10.3 Features recorded in this area included ditches, spreads, inhumation burials, pits and postholes. The ditches ranged in date from between the Late Bronze Age/Early Iron Age to post medieval periods. The most frequent date of the ditches (and most other features) was late prehistoric. The pits and postholes were dated to the late prehistoric period, with some dated more accurately to the Late Bronze Age to Early Iron Age. The two skeletons were located within graves cut into the top fills of Late Iron Age/Early Romano-British ditches. The spreads ranged in date from between the Late Bronze Age to the early Romano-British periods.

Ditches

3.10.4 The 61 ditches identified in Compound 16 dated from between the Late Bronze Age/Early Iron Age to post medieval periods (see table above), and comprised boundaries, enclosures, gullies and drainage ditches.

3.10.5 The earliest ditch feature was a gully (**3513**), dated to the late prehistoric period, but clearly under large Late Bronze Age to Early Iron Age spread **3768** (Fig. 11). This was a curvilinear gully associated with postholes. A linear ditch/gully (**3708**) projects south-east from under the same spread and has been dated generally as late prehistoric, thus **3513** can also be assumed to be Late Bronze Age to Early Iron Age. Such evidence suggests settlement

activity predating the spread, although this area was likely to have been prone to frequent inundation.

- 3.10.6 The north-east corner of enclosure at the southern end of the area was on an east–west alignment (**3689**, **3694**, **3697** and **3702**, Fig. 11). It appears that the ditch was re-cut within the same date range. These were dated generally to the late prehistoric period, as were the features under the large spread. This enclosure ditch sequence is notable as it encloses the large spread (**3768**) and/or the settlement beneath. To the south was an east-west aligned ditch and re-cut (**3558** and **3556**), with two postholes suggesting a palisade internal to the enclosure. The lack of continuation of the north–south ditch **3697** may indicate an entrance at the south-east; however, this could also be misleading as this part of the Site was quite heavily disturbed. Earlier (but still late prehistoric) ditch **3680** projected north from the enclosure ditches, and three ditches (**3718**, **3720** and **8906**) in the extended area to the south could well be associated with the enclosure. A Late Bronze Age to Early Iron Age pit (**3601**) cuts two of the late prehistoric north–south ditches (**3718** and **3720**) suggesting an early date for them.
- 3.10.7 Late prehistoric and Late Iron Age to Early Romano-British ditches form the largest contingent of the ditches (Fig. 10). The majority of them were aligned north-east/south-west, re-working the same boundaries several times over in a fairly narrow time band. The complex of ditches and re-cuts should be compared to those found to the north-east in Area 16, the size and depth of the largest of these ditches being broadly similar. When observed together, these ditches potentially form a right-angled, south-east corner of an enclosure. This is likely to have been a boundary, perhaps between dry and wet land, which was frequently re-cut after flooding episodes. Such flooding or inundation was clearly indicated by deposits in Area 16, at points during the Iron Age and Early Romano-British periods. It is also possible that the ditches formed defensive or military boundaries (see Area 16), although the largest of the ditches (**1384**, Fig. 9) in Area 16 does not appear to have an equivalent in Compound 16. The ditches ranged from 1.02 to 4.43m in width and 0.11 to 1.39m in depth. The largest and deepest of these contained two deliberately cut graves, excavated into the top fills of the ditch. The burials were unaccompanied by grave goods but are thought to be broadly contemporary with the latest fills.
- 3.10.8 Further ditches enclosing the landscape were constructed in the medieval period, of which there were nine examples in this area, mostly aligned north-west/south-east. Later enclosures (**3669**, Fig. 10 right) and possible trackways (**3633** and **3360/3654**, Fig. 10 centre) or access routes are likely to date to the late medieval or post-medieval periods.

Spreads

- 3.10.9 Three spreads were encountered in this area. The most interesting was **3768** (Fig. 11 centre); a dark brownish black silt (loam?) spread of Late Bronze Age to Early Iron Age date (Plate 13). This extensive spread measured over 31m x 11m, disappearing into the western edge of the excavation area. Three large slots were excavated through it, producing over 1000 sherds of pottery.

This is also the spread from which two *Carp's Tongue* hoards were collected in the previous evaluation (Wessex Archaeology 2004. P. Andrews pers. comm.). Indeed, two further copper alloy ingots were recovered from the same location and have been added to one of the hoards. A third hoard was located in the 1992 evaluation, a few metres to the west of the excavation area. These hoards form part of a concentration of such Bronze Age deposits on the Ebbsfleet peninsula (Fig. 8). Spread **3768** covered postholes and gullies (one ring-gully), suggesting settlement prior to the development of this deposit. Also of note was a rammed chalk band underneath the dark material, in the northern end of the largest slot (Plate 14). As the natural in this location was deep brickearth, the chalk is likely to have been imported; it may represent a form of boundary marker. A further boundary was represented by a rectilinear enclosure ditch (discussed below).

- 3.10.10 Other spreads included alluvial deposits collected in hollows: one (**3002**) dated to the Late Iron Age to Early Romano-British period while the other (**3674**) had no dating evidence; however, it appears to post-date a medieval ditch/gully. These spreads were naturally formed, probably by puddling and/or inundation. The formation of thick silty deposits was also notable during the excavations after heavy rain caused erosion and puddles.

Inhumation burials

- 3.10.11 Two inhumation burials were located within graves **3121** and **3308** cut into the top fills of large ditches on a north-east/south-west alignment (Fig. 10 centre). Pottery recovered from the backfill of **3121** provides a Late Iron Age/early Romano-British *terminus post quem* for the grave, while **3308** is undated but of probable Romano-British or later date. Both burials were extended and supine. Similar to another burial in Area 16, both were cut into the top of ditches backfilled in the Late Iron Age to Early Romano-British periods.

Pits

- 3.10.12 Eleven pits were recorded in this area. The pits range in size and shape, and had mainly moderate angled slopes with concave bases; the fills of the pits were generally naturally formed although there were a few exceptions. In one, dated to the Iron Age, a complete dog skeleton and a broken quern stone were located (**3506** and **3535**, Plate 15). In another two pits (**3499** and **3502**) covered by spread **3768** (Fig. 11 centre), large sherds of pottery were deliberately placed, which were probably complete when deposited. These pottery sherds were of Late Bronze Age/Early Iron Age date, the same as the spread into which they are cut. A small possible 'bell pit' (**3519**) was excavated to the east of the late prehistoric enclosure ditch **3702**, and dates to the Late Iron Age to Early Romano-British periods. A second, much larger pit (**3601**, Fig. 11 right) of the same period was recorded in the southern extension of the area.

Other features and finds

- 3.10.13 A total of 45 postholes were recorded in the area, a number of these were located within an area of 18m², but formed no coherent patterns. Elsewhere

in the area, four postholes were dated to the late prehistoric period and one was Late Bronze Age to Early Iron Age. Several more postholes were below the LBA/EIA spread **3768** and can be assumed to be of a similar or earlier date, as was a curvilinear ditch/gully (**3513/3528**). The fills of the postholes were all naturally formed. A number of them did contain pottery sherds and can be securely dated.

- 3.10.14 Finds of note include a flint blade with retouch and an assemblage of Late Neolithic to Early Bronze Age flint objects, including a blade, flake debitage and a scraper. Most were recovered from the Late Bronze Age features and spreads. The *Carp's Tongue* hoards are of significant interest as their provenance and context have been recorded as part of an archaeological excavation. A fragment of a possible Roman shale vessel was also recovered.
- 3.10.15 The environmental evidence from this area was quite rich from the Bronze Age features, but poor from the possible Iron Age features.

Margate Headworks to Broadstairs Headworks

3.11 Area 1-2

Introduction

- 3.11.1 Area 1-2 comprised an area of 0.62 hectares, centred on NGR 638260 171417 (Fig. 12). It was located to the north of Palm Bay Avenue and across the miniature golf course towards the Margate Headworks (Compound 1). The area sloped gently from 18.28m Ordnance Datum (aOD) at the SW end (Compound 2) to 15.98m aOD at the NE end (compound 1), with localised undulations due to the landscaping of the golf course. As the subsoil was sufficiently deep to preserve any underlying archaeology, a 1.8m wide trench was machine excavated along the line of the pipe trench. Where archaeological features were encountered the trench was widened to allow further investigation. Where the access shaft for directional drilling was to be situated in Compound 2, an 8m diameter trench was stripped to the natural.

Soil sequence

- 3.11.2 The soil sequence comprised a 0.20m-0.25m thick layer of well-maintained, almost certainly imported topsoil. Below the topsoil was a layer of re-deposited yellowish-brown silty clay subsoil with mainly post-medieval and later archaeological components throughout. The subsoil varied in depth (0.20m – 0.77m) along c.240m of the easement. A dark reddish-brown, sandy/silty clay layer was present below the topsoil for c. 93m, generally where the re-deposited subsoil was absent. This may represent recently formed subsoil. The natural geology comprised chalk with wide clay and flint banding across the trench, which are likely to have created the geophysical and cropmark anomalies.
- 3.11.3 The area has been subject to agricultural activity and landscaping, probably removing discrete features and truncating more substantial ones.

Table 10: General feature types in Area 1-2

Feature	Total	No. sections	Romano-British	19th c. / WWII
<i>Ditch</i>	1	2	1	0
<i>Other</i>	2	0	0	2
Total	3	2	1	2

The archaeology

- 3.11.4 The only feature of archaeological interest was **7608**, recorded in the SW half of the area. The feature was a ditch dated to the Romano-British period. It was aligned N-S, with shallow, irregular sides and concave base (6.80m x 1.20m wide, 0.13m deep). The single fill of this probable field boundary was deposited naturally but also indicates domestic activity in the vicinity (pottery and flint).
- 3.11.5 Two other features were of 19th-century or later date. The foundations of a small, brick built, rectangular building (approximately 8m x 9m) was located to the SW. A circular feature was located 50m from the NE end of the easement and contained burnt material, modern bricks and metal. This feature was probably constructed in the 20th century for defensive purposes during WWII.
- 3.11.6 Several flint flakes, dated broadly as prehistoric, were found in the subsoil and residually in the ditch.

3.12 Area 1-D

Introduction

- 3.12.1 Area 1-D extended NW–SE from the Margate headworks (Compound 1) to Botany Bay, and parallel to the cliff edge (approximately 100m away). The area comprised 1.02 hectares and centred on NGR 638681 171288 (Fig. 12). Initially, the ground rose moderately towards the south, from 15.42m to 18.05m aOD to the first turn, continuing to rise to 20m aOD halfway along the length. Here, the ground begins to drop to the south, increasing in gradient. Towards Botany Bay, the last 100m dropped by 4m. As with Area 1-2, a trench was excavated through the subsoil along the pipe trench route, following the comprehensive topsoil removal within the easement.

Soil sequence

- 3.12.2 The soil sequence in this area consisted of a layer of topsoil, 0.05m-0.22m thick. This area was outside the bounds of the miniature golf course and the topsoil was notably different, i.e. more clayey, and part of the naturally occurring soil sequence. Below the topsoil was a layer of pale yellowish-brown silty clay with chalk flecks. The thickness of this subsoil varied across site, with a general depth between 0.22m and 0.55m. At the brow of the slope (c. halfway along) the subsoil was absent for a short distance, increasing again as the slope continued down to Botany Bay. The last c. 40m at the Botany Bay end revealed a substantial build-up of (post-glacial) colluvial deposits. A number of features were observed at a depth of c. 1m below the

ground surface. The slope continued sharply, and the depth of the colluvium increased making it impossible to continue to the required level safely.

Table 11: General feature types in Area 1-D

Feature	Total	No. sections	Late Neolithic	Late prehistoric	LIA/ER-B	WWII	Undated
<i>Ditches</i>	25	43	0	1	1	0	23
<i>Geological</i>	1	1	0	0	0	0	1
<i>Pits</i>	2	2	0	0	0	0	1
<i>Postholes</i>	3	3	0	0	0	0	3
<i>Tree throws</i>	11	7	1	0	0	0	10
<i>WWII</i>	>4	4	0	0	0	4	0
Total	43	58	1	1	1	4	36

The archaeology

3.12.3 Features recorded along the easement, comprised a series of ditches, pits and tree throws. Many of the features were heavily truncated (probably by agricultural activity). Most of the features were located in the NW half of the easement, with only a few ditches being observed at the SW end. Dating evidence was sporadic, with only a few ditches containing pottery, in four of which the pottery was in too poor condition to record the date. There is evidence of Neolithic activity. The ditches were intermittently positioned and on various alignments. Some associations and patterns were observable, although all of the ditches extended outside the excavation area.

Ditches and pits

3.12.4 A total of 25 ditches were recorded in the area. A number of these were components of field systems, with orientation and morphology indicating at least three phases, but the shape of the landscape must also have had a bearing on them. Only two ditches contained datable pottery, i.e. ditch **7882**: late prehistoric, and ditch **7775**: Late Iron Age/Early Iron Age. A prehistoric date is suggested for the other features but only based on poor quality pot crumbs (**7725**, **7859**, **7874** and **7885**); flint evidence from **7855** suggests a similar date.

3.12.5 Two parallel ditches (**7874** and **7876**) probably represent the remnants of a trackway or access route between fields, leading to the sea (now a cliff edge). A single pottery sherd was too degraded for recovery.

3.12.6 Two ditches or a possible corner of an enclosure was represented by features **7775** and **7898**. The former has been dated to the Late Iron Age/Early Romano-British periods. There was a large elongated pit or short section of ditch cutting these ditches. This pit (**7895**) contained a number of flint tools and flakes of early prehistoric date, presumably residual due to stratigraphic position. A tree throw (**7783**) dated to the Late Neolithic period was only a few metres away.

3.12.7 At the base of the slope into Botany Bay was a series of four parallel ditches (one a terminus) (**7840**, **7882**, **7885** and **7888**). These were cut and re-cut

within a short time period and then buried below substantial deposits of colluvium. It appears that these ditches follow the edge of the slope down to the Bay. Ditch **7882** was dated to the late prehistoric period.

- 3.12.8 A further two small pits and three postholes were recorded in the area. These were generally isolated or located next to unphased field boundaries; all remain unphased.

Other features and finds

- 3.12.9 All 11 tree throws were investigated and half were recorded. Of those only one had finds (**7783** see above).
- 3.12.10 Of note was the flint assemblage from the subsoil. This comprised 45 flakes; nine tools including six scrapers and four blades. The assemblage is predominantly Early Bronze Age.
- 3.12.11 Of interest were the numerous and substantial remains of WWII structures. These were represented by platforms of rammed chalk to the north, various foundation trenches with fills of chalk, brick rubble and/or very coarse gravel/pebbles. Depths varied, with some very substantial. Metal fence posts with lattice wire fencing still attached were sunk deep into the foundations. Some of the features can clearly be related to the aerial photography evidence.
- 3.12.12 Further correlations with cropmarks were minimal.

3.13 Area D

Introduction

- 3.13.1 Area D began at Botany Bay and continued towards Neptune's Tower to the east (Fig. 13). Again the easement was parallel to the cliff edge and along the north of Marine Drive. The area was divided into three sections by Princes Walk, (west, central and east. NGR 639200 171057). The west end rose moderately steep from the west at 12.05m aOD to 15.76m aOD, the central area rose more gently up to 18.07m. The eastern area was fairly level, rising gently towards the east to 20.9m aOD. The area of excavation covered approximately 0.55 hectares. Again a trench was stripped, and where the subsoil was too thin or archaeology was observed, the trench was widened.

Soil sequence

- 3.13.2 The soil sequence in Area D consisted of a 0.20m thick layer of topsoil, overlying a dark reddish-brown silty sandy clay subsoil. The natural geology was mainly chalk, with bands of reddish-brown clay with flint at the east end. There was an accumulation of material (mid-reddish-brown silty clay), immediately overlying the features in the eastern section.

Table 12: General feature types in Area D

Feature	Total	No. sections	Late prehistoric	L IA/E R- B	Modern	Undated
<i>Ditches</i>	7	13	0	1	0	6
<i>Geological</i>	>9	8	0	0	0	0
<i>Pits</i>	15	15	6	3	0	6
<i>Postholes</i>	4	2	0	0	2	2
<i>Spreads</i>	3	3	2	0	0	1
<i>Tree throws</i>	9	3	0	0	0	9
Total	37	46	8	4	2	24

The archaeology

3.13.3 The subsoil in this area, particularly in the eastern section, contained a large and varied assemblage of worked flint. The western section contained only two ditches, very similar to those observed in Area 1-D. The central area had only two pits, whereas the eastern area was more interesting, with a concentration of features including a few ditches and a pit cluster.

Area of stratified archaeology

3.13.4 At the western end of the eastern section in Area D was a concentration and sequence of archaeological features:

- A linear depression (**8519**), possibly a holloway, crossed the trench in a north east/south west direction, heading towards the cliff edge. The eastern side of the depression rose notably by approximately 0.4m, the extent of the depression was fairly flat. The land sloped down to the west.
- The first in the sequence of events, following the development of the depression, was erosion of the surface and creation of solution hollow **8607**. This feature was concave and rounded, filled with compact dissolved chalk, indicative of water erosion. Within the solution material was a reasonable quantity of late prehistoric pottery, probably washed in from settlement to the south-west.
- A fairly insubstantial deposit of colluvial nature (**8523**) accumulated in the linear depression. This was a mid brownish yellow mixture of clay and chalky silt. It is possible that this occurred at the same time as the solution hollow.
- A series of 15 pits were cut into the colluvial deposit, as well as several tree throws (nine investigated; three recorded). The pits were commonly slightly sub-circular, fairly shallow with two fills. The upper fills were frequently very loose, very dark brown silty clay and organic and charcoal rich loam. Pottery and burnt flint were recovered. The lower fills were loose dark brown silty clay (loam). Another pit cut an earlier posthole. Six pits were dated as late prehistoric; three were dated as Late Iron Age/Early Romano-British, and the remaining six were devoid of dating material (see also environmental section).

- Following at least some of the pits, two parallel ditches were constructed, apparently following the initial possible holloway edges. The western ditch (**8620**) was 0.7m wide and 0.26m deep. The sides were moderately steep and concave, as was the base. Up to three fills were seen, and these have been dated to the Late Iron Age/Early Romano-British periods. The eastern Late Iron Age/Early Romano-British ditch (**8624**) seems to be a re-cut of a predecessor on the same alignment.
- A substantial colluvial deposit covered both backfilled ditches and most of the pits. This deposit (**8503**) was a 0.2m deep, mid reddish brown silty clay with chalk and small flint inclusions. Flint and pottery of late prehistoric date were recovered. This deposit was limited to the area of the initial possible holloway and probably represents the accumulation of material washed down from the south-west.

Other features and finds

- 3.13.5 To the west of the pit cluster was a possible boundary ditch (**8601**) or natural water run-off channel. The form of this feature was ephemeral and it was mainly a shallow depression filled with sharp, angular flints. A small quantity of late prehistoric material was recovered from the very top. The alignment at 90 degrees to ditch 8620 suggests that this was a field boundary, and possibly a run-off route as well.
- 3.13.6 A short ditch (**8626**) section was located in the centre of the eastern section of Area D. It was aligned east–west; 6.72m long with an unclear terminus at the eastern end. The western end disappears into the clay geology and a possible tree throw, where it presumably terminates. Worked flint in the fills suggests a prehistoric date. This was an isolated feature but could be part of a segmented ditch of unknown proportions.
- 3.13.7 Some geological features were investigated, as the upper fill was slightly darker than similar features further to the north (e.g. Area 1-D). All were convincingly geological. These were generally 2m bands of reddish-brown silty clay, sometimes with flint.
- 3.13.8 Most flint finds came from subsoil, suggesting substantial prehistoric activity in the vicinity. The assemblage of flint has been recommended for further analysis in order to establish any chronological traits.
- 3.13.9 The samples taken from the pits contained high quantities of wood charcoal, reminiscent of Early Bronze Age pits; however, these are dated to the late prehistoric to Romano-British periods.
- 3.13.10 The pits seem to correlate with crop mark anomalies which are somewhat unclear, but these anomalies may also coincide with the wide geological banding.

3.14 Joss Bay

Introduction

3.14.1 The area between Elmwood Avenue and the Broadstairs headworks was named Joss Bay (Fig. 13). It comprised four sections: one (A) along the western side of North Foreland Hill, a second (B) perpendicular to that, parallel with the Joss Bay car park, leading to a small compound area (C). The fourth section (D) projected towards the south-east, to the Broadstairs headworks, along the line of the 1980s pipe trench. The area was approximately 0.66 hectares, centred on NGR 639978 169952. Section A was fairly flat, with a level at approximately 13.6m aOD. Section B rose gently from a height of 13.4m aOD at the west end to 14.2m aOD at the east end. The compound (C) was fairly flat at 13.80m aOD. Section D started at the north-west at 15.5m aOD, rising sharply to 19.1m aOD halfway along, and then levelled off. The whole area of the easement was stripped, except under topsoil spoil.

Soil sequence

3.14.2 The soil sequence varied between the sections. Topsoil overlay the entire area at an average depth of 0.25m. The Subsoil was a mid to dark reddish-brown silty clay and had an average depth of 0.25m. Section D was regularly and recently ploughed, resulting in a complete lack of subsoil. Frequent plough scars were observed, particularly in sections A and D. In section A, the subsoil became much deeper, up to 0.80m at the northern end. The natural geology was chalk with narrow bands and patches of clay with flint.

Table 13: General feature types, Joss Bay

Feature	Total	No. sections	Late prehistoric	R-B	Medieval	Modern	Undated
<i>Ditches/gullies</i>	6	13	3	0	0	0	3
<i>Geological</i>	>1	1	0	0	0	0	1
<i>Pits</i>	3	4	1	1	1	0	0
<i>Post-holes</i>	1	1	0	0	0	1	0
<i>Tree throws</i>	2	2	0	0	0	0	2
Total	12	19	4	1	1	1	6

The archaeology

3.14.3 The archaeological features in this area were located at irregular intervals and comprised ditches/gullies, pits and tree throws. The dates of the features ranged from the late prehistoric to medieval periods.

Ditches

3.14.4 Six ditches were recorded in the area. One (**8873**) was a well defined ditch running approximately 15m east–west across Section D. It was 0.94m wide and 0.48m deep with steep, straight sides and a flat base. It was dated to the late prehistoric period and had several naturally deposited fills, with some indicative of a possible bank. In Section B, there were two intercutting

ditches (**8881** and **8926**) which were quite shallow and irregular, similar to the field boundary ditches seen in Areas 1-2 and 1-D. No finds were recovered from these ditches. A ditch terminus (**8819**) on a similar alignment to **8881**, **8926** and **8920** was seen projecting a short distance out of the southern section of Section B. Finds from this feature suggest a late prehistoric date.

- 3.14.5 In Section C there were three features, possible shallow ditches that were short and slightly curved, with rounded termini. Only one (**8920**, Plate 17) contained pottery, indicating a date in the late prehistoric period. Their function remains unclear.

Pits

- 3.14.6 A notable feature was an enormous sub-circular pit (**8885**, Plate 16) in section B. The initial pit had steep to vertical straight sides and a flat base and was 7.8m x 6.7m, and 1.7m deep. The pit was allowed to backfill naturally, indicated by numerous tiplines and fills, alternating between loose chalk rubble, presumably from spoil heap or bank erosion, and silty build-up from the erosion of the sides and surrounding material. The upper parts of the sides were pock-marked with small solution hollows and slightly less steep, clearly indicating that they had been allowed to erode. The initial fills have been attributed to the late prehistoric period, perhaps contemporary with previously found evidence of activity in the area.
- 3.14.7 After substantial natural infilling, a fairly deep, sub-rectangular pit (**8868**; Romano-British) was dug into the side of the larger pit. Later, the large pit was re-cut, particularly accurately and to approximately half the original depth. Very quickly the re-cut was backfilled; the deposit was homogenous and contained material of several dates, the latest being medieval.
- 3.14.8 A land snail column sample was taken from the pit fills and produced a good quantity of viable material. The potential for the analysis for such material is explained in the environmental potential section 6.5.6.

Other features and finds

- 3.14.9 Other features in Joss Bay included geological variations, tree throws of unknown date, a modern pit and modern disturbance including the 1980s pipe trench and haul road.
- 3.14.10 It was expected that evidence for an Iron Age hillfort might be found in this area, but none was located during the excavations. More recent investigations by the Thanet Archaeological Trust concluded that the hillfort did not exist on the Joss Bay site, but was more likely to be in the vicinity of the lighthouse – on much higher ground than the Site (Emma Boast pers. comm.)
- 3.14.11 The boundary ditch and large pit excavated at Joss Bay clearly correlate with some of the cropmarks and geophysical anomalies recorded during earlier investigations.

4 FINDS

4.1 Introduction

4.1.1 This section discusses the finds recovered from all stages of fieldwork on the Margate to Broadstairs Wastewater Treatment Scheme. Within the overall length of the pipeline, finds were recovered from various areas, but with a concentration in the southern part of the route. Some unstratified material was also collected, but this has been retained only on the grounds of intrinsic interest. All have been quantified by material type within each context – totals by material type and by site Area are presented in **Table 15**. Finds from the evaluation stage of the project are included here with Compound 16. The overall date range of the assemblage is from early prehistoric to medieval, with an emphasis on the later prehistoric and Late Iron Age/Romano-British periods. The following elements of interest within the overall finds assemblage can be highlighted:

- Lower Palaeolithic flint handaxe (Area 9);
- rare occurrence of early prehistoric (Middle/Late Neolithic) ceramics in Area 14;
- early prehistoric (Neolithic/Early Bronze Age flintwork (Area 14 and Compound 16);
- two discrete metalwork hoards, and a small group of other metal objects, including ingots, other waste fragments, socketed axes, a spearhead and part of a cast sword blade, all probably of Late Bronze Age date (Compound 16);
- significant later prehistoric (Late Bronze Age/Early Iron Age) ceramic assemblage, concentrated in the southern part of the pipeline route (Areas 14-16);
- significant Late Iron Age/Romano-British ceramic assemblage, again concentrated in Areas 14-16;
- human remains and associated grave goods (pottery, glass, metalwork), deriving from Romano-British cemeteries in Areas 9, 14 and 15 (including both inhumation and cremation);
- small medieval ceramic assemblages from Area 15 and Compound 16, including uncommon occurrence of imported early medieval Pingsdorf ware.

4.2 Pottery

4.2.1 A total of 11,997 sherds of pottery, weighing 154,465g, were recovered. The assemblage ranges in date from the late Neolithic to the post-medieval period, with the greatest emphasis on the late Iron Age to early Roman period. The material was recovered from 719 contexts, with all of the investigated sites/areas along the route represented. The majority of layers produced small groups of pottery; only 67 contained more than 30 sherds whilst 511 contained ten sherds or less. Areas 9, 15, 14, 16 and Compound 16 produced significant quantities of material, the latter three each with over 3000 sherds (see **Table 15**).

4.2.2 All contexts have been spot dated and quantified by count only. The material has been characterised on the basis of broad fabric groups, such as grog-tempered wares, and assigned to a specific period where possible (**Table 16**). At this stage the phasing is necessarily broad due to the longevity of the flint-tempered fabrics which are often present only as body sherds. Crushed, burnt flint was used as temper in this area from the Neolithic to the early Roman period, and without detailed fabric analysis undiagnostic sherds cannot be assigned to a phase. The condition of the assemblage is quite poor with high levels of surface abrasion. The mean sherd weight is 12.9g; however, this is partly due to the presence of a number of large amphora sherds. Burnt sherds of pottery were recognised from contexts across the sites.

Breakdown by area

Area 9

4.2.3 Area 9 produced Roman and medieval pottery, including a number of complete, or nearly complete, vessels of 1st century AD date from a cremation cemetery. Two abraded form 15/17 samian platters were recovered from cremation pits **8208** and pit **8206** respectively. One is stamped TERTIVS, and was accompanied by sherds from an oxidised, thin-walled vessel, possibly a copy of a butt-beaker. Cremation pit **8273** contained a group of four vessels: two imitation Gallo-Belgic platters, an imitation Gallo-Belgic cup and a butt-beaker. One of the platters may be classified as a Cam. 24, current during the Claudian to Flavian periods (Symonds and Wade 1999), while the other is a variant on this theme. The cup is a Cam. 56, usually dated to the Augustan to Claudian periods (*ibid.*), and is stamped. The beaker is probably a Cam. 113, of pre-Conquest to early Flavian date. A similar group was found in cremation pit **8202**, comprising a Cam. 56 cup with illegible stamp, and an imitation platter, again on the theme of a Cam. 24. A whiteware butt beaker was also recovered from cremation pit **8199**. A complete, or nearly complete, whiteware collared flagon from ditch **8455** is 1st century AD in date (post-Conquest). Cremation pit **8195** contained most of a Verulamium-region whiteware flagon. A ring-necked flagon in an oxidised fabric was recovered from cremation pit **8198**.

Area 14

4.2.4 Area 14 produced 3303 sherds, predominantly of late Iron Age and Roman date, however later Neolithic and Saxon material was also identified. The later Neolithic material includes 116 sherds from a Mortlake style bowl (context **6248**). Small quantities of Peterborough Ware were also identified (contexts **6234**, **6331** and possibly **6221**). Six sherds of flint-tempered pottery may be of middle to late Bronze Age date. The late Iron Age and Roman material includes similar fabrics and forms to that seen from Area 16 and Compound 16, and this includes a number of complete or nearly complete vessels from the inhumation and cremation cemeteries.

4.2.5 Dressel 20 amphorae had been used as cremation urns in five graves (**6009**, **6012**, **6015**, **6019**, and **6022**). The use of amphorae as funerary urns is not common in this country, but there is a concentration of the known examples

within Kent. The most notable example here is the Ospringe cemetery, in use from the mid 2nd century to the early 4th century AD, where 38 examples of amphorae were recorded – the type is unknown but the majority are assumed to be Dressel 20 types (Pollard 1988, 105).

4.2.6 A complete colour-coated ware jug accompanied an inhumation burial (**6049**). The fabric is bright orange and soft, and the vessel is now very abraded and powdery. Bands of rouletting are present on the cordon around the top and the base of the neck. The source of the vessel is unknown, it may be an East Gaulish samian vessel, possibly a Rheinzabern piece (Joanna Bird pers. comm.) and therefore 2nd to 3rd century in date. A complete profile of a small, squat jar with everted rim in a grog-tempered fabric was recovered from inhumation grave **6166**. Two samian vessels were also present in this area, an 18/31 form (Dragendorff series) from cremation grave **6003** and a highly abraded platter from cremation grave **6027** (SF 431). The latter vessel is not exactly paralleled in the Dragendorff series, but is closest to a shallow form 32. Other nearly complete vessels include upright-necked jars in sandy fabrics from cremation graves **6003** and **6006**, and a small everted rim jar in a white-slipped redware, probably of 2nd century date, from inhumation grave **6060**.

4.2.7 Area 14 was also notable for the presence of organic-tempered and sandy Saxon pottery from three contexts.

Area 15

4.2.8 A total of 656 sherds of pottery were recovered from Area 15. Although many are late Iron Age to Roman in date (425 sherds), a significant quantity (194 sherds) are medieval. Many of the contexts were quite mixed, containing both Roman and medieval material. Of note amongst the early Roman assemblage are several complete vessels. A grog-tempered, narrow-necked, small and squat jar with low waist, recovered from inhumation grave **5163**, resembles Thompson's form E3-6 and is probably 1st century AD in date (Thompson 1982). Two greyware vessels from inhumation grave **5166** are also of this date, the former a bead-rimmed beaker, similar to a CAM 93, the latter a carinated bowl with flanged rim. This area also produced small quantities of late Roman colour-coated ware from the Oxford industry.

4.2.9 Amongst the medieval assemblage a limited range of wares is apparent – sandy/shelly and sandy coarsewares wares of 12th/early 13th century date, Tyler Hill wares (mostly glazed) of 13th/14th century date, and four sherds of imported early medieval Pingsdorf ware from the Meuse-Rhine area, with characteristic red-painted decoration. In London this ware occurs sporadically from the late 9th century, but is frequent only from the 11th century; it appears to have gone out of use by the mid 13th century (Vince and Jenner 1991, 102). In this instance it was associated with sandy wares of probable 12th or 13th century date.

Area 16

4.2.10 Area 16 produced 3064 sherds of pottery, predominantly from the late Iron Age to early Roman period. The assemblage is dominated by flint-tempered

fabrics (47%), sandy wares (28%) and grog-tempered fabrics (15%). The most frequently occurring forms from this period are bead-rimmed jars, everted rim jars and upright-necked jars. Scoring or combing of the exterior surfaces is commonplace and seen on all three of the dominant fabric groups, especially the grog-tempered wares.

- 4.2.11 The flint temper is calcined and angular, mostly moderate to common in frequency, although it sometimes occurs in rare to sparse quantities in fabrics with a silty matrix. For the most part this fabric occurs in late Iron Age and early Roman forms; however, flint was also used as temper for earlier fabrics. This is evidenced by the presence of flint-gritted base fragments, indicating a late Bronze Age/early Iron Age date, and several upright necked flat-topped jars and slack-shouldered jars which are probably middle to late Iron Age in date.
- 4.2.12 The sandy fabrics tend to be quite fine and silty and are again primarily of late Iron Age to early Roman date; however, middle to late Iron Age elements are present in the form of proto bead-rim jars, a lid-seated jar and a jar with externally expanded rim. Vessel surfaces are often scored or furrowed, two vessels are decorated with burnished lattice, one displays a herringbone pattern, another has tooled zigzag style decoration and another has deep impressions resembling fish scales.
- 4.2.13 By and large the grog-tempered material is all late Iron Age to early Roman, with the possible exception of a small number of sherds (from contexts **1409**, **1448** and **1478**) which may be Collared Urn or Beaker (late Neolithic/early Bronze Age). Of note is a fine, oxidised fabric used for a barbotine dot decorated beaker, of 1st to early 2nd century AD date.
- 4.2.14 Romanised fabrics occur less commonly, with only 94 greyware sherds recorded. These are mostly fine, micaceous fabrics, often beaker forms including carinated beakers, dating to the 1st century AD. Oxidised and whiteware vessels include one pulley rim flagon and two ring-necked flagons (one from the Verulamium region), all of 1st to early 2nd century date. Two Terra Nigra vessels were also present, a CAM 16 and part of a CAM 7 or 8, both of mid to late 1st century AD date. There is nothing to suggest that any of the contexts are later in date than the 2nd century, with the marked exception of three sherds from an Oxford mortarium. Organic tempered briquetage also occurs in small quantities in this area.
- 4.2.15 The Area 16 Car Park (Fig. 7) produced 64 sherds, mostly contemporary with Area 16 although several medieval and post-medieval sherds were also recorded.

Compound 16

- 4.2.16 The assemblage from Compound 16 is again dominated by flint-tempered pottery, but in higher quantities than Area 16, accounting for 92% (by number) of the 3620 sherds. Diagnostic sherds indicate that the pottery from this area is primarily of late Bronze Age/early Iron Age date. These indicators include fingertip decoration on vessel rims or shoulders, carinated

jar forms and flint-gritted bases. Middle Bronze Age pottery is also present (contexts **3160**, **3484**, **3488** and **3509**).

- 4.2.17 Smaller quantities of late Iron Age/early Roman pottery are present, including flint- and grog-tempered fabrics, sandy wares, whitewares, greywares and single sherds of white-slipped redware and samian. Eighty-three medieval sherds and four post-medieval sherds were also recorded.

Other areas

- 4.2.18 Areas 1-D, D, 3, 7, 8, Joss Bay and Manston Airport produced small quantities of pottery which generally replicated the larger assemblages from elsewhere on the route. The only items of note are a small group (82 sherds) of Middle/Late Bronze Age flint-tempered ware displaying a finger-impressed cordon (Area 8); and two sherds of probable Late Neolithic Peterborough ware from Area 1-D.

4.3 Ceramic Building Material

- 4.3.1 With the exception of a few pieces of medieval and post-medieval brick and roof tile from Compound 16, all of the small assemblage of ceramic building material recovered is of Romano-British date, although no identifiable forms (such as *tegula* or *imbrex* roof tiles) have been identified.

4.4 Fired Clay and Ceramic Objects

- 4.4.1 Three spindlewhorls (two from Compound 16, one unstratified) and two loomweight fragments (Area 16 and Compound 16) were noted amongst the fired clay, but no other ceramic objects. The remainder comprises small, abraded and featureless fragments, probably of structural origin. These occurred mainly in Areas 15 and 16, in association with both later prehistoric and Late Iron Age/Roman pottery.

4.5 Glass

- 4.5.1 Seven glass beads were recovered from two burials in Area 14 – one melon bead, two clear segmented globular, three globular probably also originally from segmented forms, and one blue-green segmented cylindrical. All are well documented Roman types. Melon beads are more common in the 1st or 2nd centuries AD, while the segmented forms are largely a late Roman (3rd/4th century) phenomenon (Guido 1978, 91-102).
- 4.5.2 In addition, four small fragments of Roman vessel glass were recovered, two from one of the cremation burials containing beads, and two from contexts in Area 9. All are tiny fragments and cannot be assigned to specific vessel form. One is in a strong blue colour with fine applied decoration.

4.6 Worked Flint

Raw materials

- 4.6.1 Raw materials include chalk nodules, tabular pieces, Bullhead flint and gravel pebbles, all of which are probably locally sourced. A single flake has been struck from a polished axe.

Condition

- 4.6.2 Condition varies from fresh to heavily patinated and/or rolled. Together with the chronological mixing of types this suggests that much of the material is not *in situ*, although more detailed analysis would be required to identify stratigraphically secure groups.

Composition of assemblage

- 4.6.3 The majority of the assemblage consists of unretouched flake debitage; cores and retouched pieces are somewhat under-represented. Consequently chronologically diagnostic elements are scarce – debitage primarily falls into two categories: irregular crude pieces which are probably later prehistoric (Late Bronze Age) and a much finer element of predominantly short, squat flakes which are probably Late Neolithic/Early Bronze Age.
- 4.6.4 This basic division predominates across all areas. A breakdown of the whole assemblage is as in **Table 18**.

Breakdown by Area

- 4.6.5 Struck flint was recovered from 15 areas (Areas 1-2 and 1D, 3, 7, 8, 9, 10, 11, 14, 15 and 16, Compounds 11-12 and 16, D, Joss Bay and Manston Airport. Most produced only very limited quantities of material (as in **Table 19**), but some had more sizeable assemblages.

Area 14

- 4.6.6 The earliest element in this group is a fragment of a microlith and a group of probably Early Neolithic blade and blade-like flakes from pit fill 6248. This pit contains a group of 61 cores, core fragments, flakes and flake fragments which could derive from a single knapping event.

Area 16

- 4.6.7 Approximately a quarter of the entire assemblage was recovered from this area. The earliest element in this assemblage is probably Early Neolithic – a fragment of an axe thinning flake with much edge damage and a secondary notched blade with microdenticulate retouch. Noteworthy Late Neolithic/Early Bronze Age pieces include an axe flake trimmed to form a knife; a scraper; and an assemblage of flake and blade debitage which also contains a pyramidal core and a scraper.
- 4.6.8 A group of five scrapers and a combination scraper/knife from 1518 are apparently late prehistoric forms.

- 4.6.9 Much of this material appears to be residual in later Iron Age and/or Romano-British features (primarily pits and ditches).

Compound 16

- 4.6.10 A blade with microdenticulate retouch and an assemblage of Late Neolithic/Early Bronze Age blade and flake debitage containing a scraper were among the more notable pieces.
- 4.6.11 Much of material was recovered from features and spreads of probable Late Bronze Age date, suggesting relatively intensive settlement.

Area D

- 4.6.12 The bulk of pieces (247/318) from this area were recovered from the subsoil. Analysis of form and technology will reveal any chronological traits.

Other areas

Areas 1, 2 and 1-D

- 4.6.13 Notable elements included a single platform blade core and five blades, which may be Early Neolithic. Most scrapers and other tools are predominantly Early Bronze Age. The majority of the pieces came from the subsoil.

Area 8

- 4.6.14 A very large sub-circular scraper from context 7239 in ditch **7480** may be Early Neolithic; a second elongated example, two blade cores and a scraper from 7352 in ditch **7536** are more definitely so. All are residual in later features.

Area 9

- 4.6.15 A small Lower Palaeolithic handaxe was recovered from the subsoil surface. Other finds span late prehistory and are similarly residual.

Areas 3, 7, 10-11, Compounds 11-12, Joss Bay and Manston Airport

- 4.6.16 No significant material was recovered from these areas.

Area 15

- 4.6.17 A crude 'Y'-shaped tool may be Early Neolithic; the rest of the diagnostic pieces appear to be Late Neolithic/Early Bronze Age and include a distinctive spurred piercer.

4.7 Slag

- 4.7.1 The small quantity of slag recovered is insufficient to postulate metalworking, or other industrial activity, on any scale within the pipeline route (although there is indirect evidence for bronze-working amongst the copper alloy assemblage: see below). A proportion of this material (all from

Area 16) comprises light, vesicular, white/grey slag whose origin is unknown.

4.8 Metalwork

- 4.8.1 A controlled metal detector survey significantly augmented the metalwork assemblage, with a number of finds from the topsoil, largely in Areas 15 and 16. Much of the ironwork is in a poor, corroded condition, and identification has therefore been undertaken in conjunction with X-radiographs of the objects.

The coins and tokens

- 4.8.2 Twenty-one coins or tokens were recovered from the excavations, ranging in date from the Late Iron Age to the post-medieval period. Eighteen of these are copper alloy coins or tokens, with the remaining three being potin. The majority of the coins recovered date to the Late Iron Age or Roman-British periods, with the only exceptions being two post-medieval coins. Both of these were found within unstratified material, as were a number of the Roman coins, using a metal detector. In general, the condition of the coins is poor, with many showing signs of corrosion as well as wear.

Area 9

- 4.8.3 Two Roman copper alloy coins (Objects 660 and 661) were recovered from layer 8001, the subsoil layer on the site. The first of these is an As/Dupondius of Marcus Aurelius, whilst the other is a badly corroded As/Dupondius dated to the 1st – 3rd century AD.

Area 14

- 4.8.4 Two coins were recovered from the excavations in Area 14. Both came from the same layer – a layer of backfill separating the burials of an adult and an infant in the same grave (Objects 421 and 422, layer 6185 in grave **6214**). Both were small copper alloy issues of the House of Valentinian dated to between AD 364 and 378. It is not clear whether these were accidental losses, or whether they were placed within the grave as grave goods with the initial burial.

Area 15

- 4.8.5 Twelve coins were found in Area 15. Eight of these were recovered from layer 5001 (Objects 205, 206, 207, 208, 209, 211, 215 and 217). Seven of these are Roman in date, whilst the eighth (Object 205) is an extremely worn post-medieval coin. The Roman coins were all 4th century issues. The earliest of these were two ‘Gloria Exercitus’ issues of the House of Constantine (Objects 207 and 211), dated to between AD 330 and 345. Two were contemporary copies of ‘Fallen Horseman’ issues, minted between AD 350 and 360 (Objects 206 and 208). One coin (Object 217) was a ‘Securitas Republicae’ issue minted by the Emperor Valentinian I in AD 367. The two latest Roman coins from the site were two ‘Victoria Augg’ issues of the House of Theodosius, minted between AD 388 and 402. These coins were the last issues of Roman coinage to be supplied to Britain.

- 4.8.6 Four Roman coins were recovered from stratified deposits on the site. A copper alloy As of Faustina (Object 224) – dated between AD 161 and 175 – was recovered from layer 5114, the fill of a Romano-British ditch. An irregular copy of a radiate Antoninianus (Object 201), likely to date to AD 270 – 296 was found in layer 5262, the fill of a cultivation trench. The two remaining coins were a coin of the House of Constantine dated to between AD 341 and 348 (Object 228 from layer 5152, the fill of a ditch) and a ‘Securitas Republican’ type of Valentinian I dated to between AD 364 and 375 (Object 216, layer 5237, the fill of a boundary/irrigation ditch).

Area 16

- 4.8.7 Three coins were recovered from the excavations at Area 16. One of these, from the subsoil (Object 32, layer 1001) is a contemporary copy of a ‘Fallen Horseman’ issue of the House of Constantine, dating to AD 350 – 360. The other two coins recovered were badly corroded Late Iron Age coins. Both are made of potin (bronze with a high tin content), and are typical of issues struck between the late second century BC and the first half of the first century BC. These are common finds on Late Iron Age sites in Kent. Both were recovered from layers of alluvial silting cut by a number of layer features (Object 18, layer 1046 and Object 64, layer 1799).

Compound 16

- 4.8.8 One coin was recovered from the excavations on compound 16. A single Late Iron Age potin coin was recovered from the fill of a Romano British ditch (Object 322, Context 3351).

Unstratified

- 4.8.9 A single coin – a ‘cartwheel’ penny of George III, issued in AD 1797 – was recovered unstratified.

Discussion

- 4.8.10 The assemblage of Roman and post-medieval coins from these excavations is too small to be worthy of detailed comparison with other sites in the area. They do however provide a chronological outline for the sites. The three Late Iron Age potin coins point to Late Iron Age activity in the area before the Roman conquest.
- 4.8.11 The Roman coins recovered point to activity during the 2nd, 3rd and 4th centuries AD. Most of the coins recovered date to the 4th century, and suggest significant occupation at this time, although 1st and 2nd century coins are less common as site finds than those of the late 3rd or 4th century. All of the Roman coins recovered were small denomination copper alloy coins and are likely to have been in widespread circulation. All probably represent accidental losses, apart from the pair of coins recovered from the grave in Area 14, which may have been used as grave goods.
- 4.8.12 The assemblage contained a number of contemporary copies of ‘official’ issues. These may have been struck to compensate for gaps in supply of coinage to Britain and to supply sufficient small change for the province’s

needs. It is unclear whether these copies were officially sanctioned, if at all, but they are not uncommon as site finds and seem to have circulated in the same fashion as officially struck coins.

- 4.8.13 The presence of three Late Iron Age potin coins from adjacent sites – Area 16 and compound 16 – appears to indicate some Late Iron Age activity in the vicinity in the 2nd or 1st century BC, although two appear to be associated with layers of alluvial build up, and the possibility that these may have suffered some translocation cannot be discounted.
- 4.8.14 The greatest single concentration of coins was recovered from Area 15. Although the majority of these were recovered unstratified from the subsoil, they can provide some information regarding the chronology of the site. All the coins recovered from this site date to the 4th century AD and indicate activity throughout the 4th century and possibly into the early 5th century.

Copper alloy

- 4.8.15 Of interest amongst the copper alloy assemblage are two discrete hoards (recovered during the evaluation. Wessex Archaeology 2004, 13), and a small group of other objects comprising ingots, other waste fragments, seven socketed axes, a small ‘anvil’, a chisel, a gouge, a spearhead, and part of a cast sword blade, all probably of Late Bronze Age date, all from Compound 16. Two lead objects were also associated with the hoards (see below). These two hoards and objects can be added to the significant concentration of Late Bronze Age (*Carp’s Tongue*) metalwork hoards already recorded around the Isle of Thanet – two more were recently uncovered at Cliffs End, Ramsgate (Wessex Archaeology 2005b). Many of the Thanet hoards contain ingots and provide evidence for an efficient industry producing quantities of weapons and tools, but also recycling scrap metal, probably from both sides of the Channel. A date range around the 8th century BC is indicated by the poor quality casting and the presence of more massive axes.
- 4.8.16 Other identifiable copper alloy objects include four Roman brooches (three from one cremation burial), two armlets, toilet implements, a buckle/belt plate and a patera handle – the latter, an unstratified metal detector find from Area 16, is an unusual find, normally associated with hoards or funerary contexts.

Iron

- 4.8.17 Iron coffin nails were recorded in several of the Romano-British inhumation burials, and a group of hobnails in at least one burial. Other iron objects appear to consist largely of nails; further identifiable objects include a spearhead (unstratified, Area 9), a bone-handled knife blade, and three other possible blades, although a number of objects remain unidentified at this stage. A small medieval key was found during the evaluation in Compound 16.

Lead

- 4.8.18 Apart from the lead token, other objects of lead comprise one shot, three weights, five waste pieces or offcuts (none chronologically distinctive), and

two small objects associated with the Late Bronze Age hoards found during the evaluation in Compound 16. One is perforated, but neither is of known function.

4.9 Shale

- 4.9.1 A single piece of shale was recovered, which appears to be a vessel fragment, of Roman type (Compound 16).

4.10 Worked Bone

- 4.10.1 Two worked bone objects were identified, both from Area 16. The first is a pendant, made from a dog or wolf tooth, polished and with a single drilled hole. The second is a worked horse metapodial.

4.11 Human Bone

- 4.11.1 Cremated and/or unburnt human bone was recovered from five areas along the pipeline route, including a mixed cremation and inhumation cemetery (Area 14), a cremation cemetery (Area 9), singleton or small groups of inhumation burials and redeposited human bone (Areas 9, 15, 16 and Compound 16). The *in situ* deposits all appear to be of Romano-British date, but some of the redeposited material may be Middle/Late Iron Age.
- 4.11.2 Unburnt human bone was recovered from 31 contexts including a minimum of 17 *in situ* burials (Table 20); 31 contexts also contained cremated bone, representing the remains of a minimum of 17 burials (Table 21).

4.12 Animal Bone

Introduction

- 4.12.1 Animal bone material was present for the following areas: 8, 9, 14, 15, and 16, Compound 16, Area D, Manston Airport and Joss Bay. The hand collected material was complemented by soil samples. Animal bone from the evaluation in Compound 16 has been scanned, but is not included here in the quantified data (Table 22, Table 23, Table 24).
- 4.12.2 The potential of the assemblage to provide information about husbandry patterns, population structures and consumption practices was ascertained from the number of bones that could give information on the age and sex of animals as well as butchery, burning and breakage patterns. The number of bones that could provide metrical information was also counted.
- 4.12.3 Conjoining fragments that were demonstrably from the same bone were counted as one bone in order to minimise distortion, and therefore specimen counts (NISP) given here may differ from the absolute raw fragment counts in the finds table. There may also be some discrepancies when bone is fragile and may fragment further after initial quantification. No fragments were

recorded as 'medium mammal' or 'large mammal'; these were instead consigned to the unidentified category.

- 4.12.4 Whole animal skeletons were given a count of 1 to avoid over-representation, although the bone elements present and total number of fragments was noted.
- 4.12.5 The extent of mechanical or chemical attrition to the bone surface was recorded, with 1 indicating very poor condition, 2 poor, 3 fair, 4 good and 5 excellent. The numbers of gnawed bone were also noted. Marks from chopping, sawing, knife cuts and fractures made when the bone was fresh were recorded as butchery marks.

Condition and preservation

- 4.12.6 The condition of the animal bone material from Areas 15, 16, Compound 16 and Manston Airport is fair. The bones from Areas 8, 9, 14, D and Joss Bay have mainly a deeply pitted powdery surface hindering identification (**Table 22**).
- 4.12.7 The low number of gnawed bones indicates that canid scavenging was not a significant biasing factor. Burnt bones are absent in the Area 8, Area D, Manston Airport and Joss Bay material. Only the material from Area 14 and Compound 16 yielded significant numbers of burnt material. This might indicate cooking activities or the use of bone material as fuel.
- 4.12.8 The number of loose teeth overall is low; this factor, and the number of loose but matching epiphyses in the Area 16 and Compound 16 assemblages in particular indicates that these assemblages were not extensively reworked.

Species proportions

- 4.12.9 The low number of identified bones for Area 8, 14, D, Manston Airport and Joss Bay make these assemblages less suitable for further analysis. The material from Area 9, 15, 16 and Compound 16 is dominated by cattle and sheep/goat with small proportions of pig, horse and dog (**Table 23**).
- 4.12.10 The assemblage from Area 9 contained the remains of a neonate dog, a bronze-stained sheep/goat bone and a foetal sheep bone, as well as chicken and passeriformes bones. The bones from Area 14 contained a heavily fragmented pig skull (6260), the bone of a small duck (6312) and three (partial) pig skeletons (6372). One pig was (much) older than 36 months, with the other pigs being 10-12 and 12-16 months of age respectively. Area 15 contained a heavily fragmented dog skull with mandibles and first vertebra, large bird bone, cat bone, common frog and hare. The assemblage from Area 16 contained chicken, unidentifiable rodent, a heavily fragmented incomplete horse skull, and a partial fragmented skeleton of cattle, an articulating talus and calcaneus of cattle, a bronze-stained cattle rib, a large bird and a common frog. Compound 16 contained a heavily fragmented skull of horned cattle, chicken, mallard, and large bird, remains of a calcined-carbonised lamb, shrew, common frog and a complete dog skeleton.

- 4.12.11 Remains of duck and hare suggest some hunting activities. The bones of passeriformes and common frog are less suitable as environmental indicators as these animals are very common.

Population characteristics

- 4.12.12 The bone from Areas 9, 15, 16 and Compound 16 in particular can inform about population characteristics. The high number of ageable bones in these assemblages will provide information on husbandry practices (**Table 24**).
- 4.12.13 Eight skull and horn core fragments of sheep/goat found in the Area 16 assemblage indicate that the principal breed around the site was horned. Furthermore, the assemblage contained eight cattle, five horse, seven sheep/goat and five dog bones suitable for estimations of height at the withers. One sheep/goat skull fragment from the Compound 16 assemblage indicates that the principal breed around this site was horned. Three cattle and one dog bone from this area are suitable for estimations of height at the withers. The bone material from Joss Bay permits a height estimation at the withers for horse.

Butchery

- 4.12.14 Only a very small percentage of the bone material bears signs of butchery practices. This may be due to the high skill of the butcher who avoided damaging the bone with his implements so that they would not go blunt, or alternatively, butchery marks might have been lost as a large amount of the bone material is in a poor condition.

4.13 Marine Shell

- 4.13.1 The marine shell consists largely of oyster, although other species – limpet, periwinkle, whelk and mussel – are present in smaller quantities. Both left and right oyster valves are represented, in other words, both preparation and consumption waste. Only three contexts produced more than 100 shells: one in Area 8 (largely limpet), one in Area 9 (largely periwinkle), and one in Area 15 (largely periwinkle).
- 4.13.2 Overall, the shell was concentrated in Areas 9, 15 and 16 and is likely to be associated with Romano-British activity in each case.

5 ENVIRONMENTAL EVIDENCE

5.1 Aims

5.1.1 Samples were taken from excavated features from 7 areas along the pipeline. Samples were processed and assessed to evaluate preservation of palaeo-environmental remains to aid in determining the significance of the sites.

5.2 Samples taken and palaeo-environmental evidence

5.2.1 A series of 299 bulk samples were taken from a range of feature types from each area and were processed for the recovery of charred plant remains and charcoals. 158 of these samples came from cremation-related deposits and were also processed specifically for the recovery of human bone, in addition to the charred remains.

5.2.2 The bulk samples break down into the following area groups:

Table 14: Bulk sample breakdown by area

Area	Phase	no of cremation related samples	volume (L)	no of other samples	volume (L)	Total no of samples	Total vol. (L)
3	Possibly Neolithic	0	0	2	48	2	48
	<i>sub total</i>	<i>0</i>	<i>0</i>	<i>2</i>	<i>48</i>	<i>2</i>	<i>48</i>
8	Bronze Age	0	20	1	0	1	20
	Late Saxon/Early medieval	0	0	14	171	14	171
	Undated	0	0	1	16.5	1	16.5
	<i>sub total</i>	<i>1</i>	<i>20</i>	<i>15</i>	<i>187.5</i>	<i>16</i>	<i>207.5</i>
9	Roman	76	609.3	9	179	85	788.3
	<i>sub total</i>	<i>76</i>	<i>609.3</i>	<i>9</i>	<i>179</i>	<i>85</i>	<i>788.3</i>
14	Neolithic	0	0	3	70	3	70
	Iron Age/Roman	0	0	2	37	2	37
	Roman	81	750.1	21	178.9	102	929
	Late Saxon/Early medieval	0	0	2	80	2	80
	Undated	0	0	4	31	4	31
	<i>sub total</i>	<i>81</i>	<i>750.1</i>	<i>32</i>	<i>396.9</i>	<i>113</i>	<i>1147</i>
15	Iron Age/Early Roman	0	0	2	19	2	19
	Roman	0	0	11	111	11	111
	Undated	0	0	5	43	5	43
	<i>sub total</i>	<i>0</i>	<i>0</i>	<i>18</i>	<i>173</i>	<i>18</i>	<i>173</i>
16	Late Bronze Age/Early Iron Age	0	0	5	50	5	50
	Early/Middle Iron Age	0	0	2	60	2	60
	Prehistoric	0	0	5	32	5	32
	Late Iron Age/Early Roman	0	0	4	73	4	73
	Roman	0	0	8	177	8	177
	Undated	0	0	14	130	14	130
	<i>sub total</i>	<i>0</i>	<i>0</i>	<i>38</i>	<i>522</i>	<i>38</i>	<i>522</i>
C16	Bronze Age	0	0	2	35	2	35
	?Iron Age	0	0	2	18.5	2	18.5
	Undated	0	0	3	22.5	3	22.5
	<i>sub total</i>	<i>0</i>	<i>0</i>	<i>7</i>	<i>76</i>	<i>7</i>	<i>76</i>
D	Undated	0	0	15	366	15	366
	<i>sub total</i>	<i>0</i>	<i>0</i>	<i>15</i>	<i>366</i>	<i>15</i>	<i>366</i>
Joss Bay	Iron Age	0	0	5	95.5	5	95.5
	<i>sub total</i>	<i>0</i>	<i>0</i>	<i>5</i>	<i>95.5</i>	<i>5</i>	<i>95.5</i>
Total		157	1379.4	142	2044	299	3423.4

5.2.3 Two monoliths were taken from Area 16 to augment field descriptions and interpretation and to facilitate subsampling for pollen; these are described in **Table 26**. Forty-three samples were processed specifically for the recovery of molluscs. These were taken from Areas 3, 9, 15, 16 and Joss Bay from a range of features (**Table 27** and **Table 28**).

5.2.4 Categories of palaeo-environmental evidence:

- charred plant remains
- charcoal
- sediment descriptions
- land snails

5.3 **Assessment Results: methods and data**

Charred Plant Remains and Charcoals

5.3.1 The bulk samples were processed by standard flotation methods; the flot retained on a 0.5 mm mesh and the residues fractionated into 4 mm, 2 mm and 1 mm fractions and dried. The coarse fractions (>4 mm) were sorted, weighed and discarded.

5.3.2 The flots were scanned under a x10 – x40 stereo-binocular microscope and presence of charred remains quantified (**Table 25**), to record the preservation and nature of the charred plant and charcoal remains.

5.4 **Charred plant remains**

5.4.1 A total of 299 samples were assessed for charred plant remains. Many of the flots were relatively small, especially those from cremations. While roots only dominated a few samples, most contained a small proportion suggesting that intrusive or reworking of material may have occurred on occasion.

Summary by Area

Area 3

5.4.2 Only two samples were examined from a possible late Neolithic mortuary enclosure and ring-ditch, and both produced a few fragments of cereal grain. Neolithic features, especially those associated with monuments rarely produce cereal grains, and as such these elements may be intrusive.

Area 8

5.4.3 One sample from a Bronze Age pit with a complete pot was examined, producing only fragments of cereal grain. A further Middle to late Bronze Age sample from the pot fill produced little to no remains, but was high in wood charcoal.

5.4.4 The remaining 15 samples came from Late Saxon/early medieval features. Those from oven **7314** produced low densities of free-threshing wheat (*Triticum aestivum* *sl*) and barley (*Hordeum* *sp.*) grain, with small numbers

of weed seeds. These included in one sample *Anthemis* (*Anthemis cotula*), characteristic of the cultivation of heavy clay soils, and oats (*Avena* sp.). The oven **7314** was located on the southern side of structure 7250, a possible sunken-featured building. While the oven samples contained little charcoal and cereal remains, those outside it, including posthole/pit **7254**, were rich in both cereal and charcoal. The eight samples from structure **7250** had quite large numbers of free-threshing wheat grains, barley and smaller numbers of rye (*Secale cereale*). These samples also contained some chaff of barley (*Hordeum vulgare* sl) and free-threshing wheat (*Triticum aestivum* sl). Of the weed seeds large seeded species predominated, including oats (*Avena* sp.), brome grass (*Bromus* sp.), vetches/wild pea (*Vicia/Lathyrus* sp.), knotgrass (*Polygonum aviculare*) and black bindweed (*Fallopia convolvulus*). Smaller seeds included several of stinking mayweed (*Anthemis cotula*) and scentless mayweed (*Tripleurospermum inodorum*). More unusual finds included a charred stone of sloe (*Prunus spinosa*) and seeds of elder (*Sambucus nigra*). The samples would appear to represent the rakings of the oven and given the high amount of grain may be related to food processing.

Area 9

- 5.4.5 A total of 76 samples came from nine cremation-related deposits (**Table 25**). Most of the cremation flots were very small and contained some remnants of cereal grains, a small amount of chaff and occasional weed seeds, e.g. vetches/wild pea (*Vicia/Lathyrus* sp.), brome grass (*Bromus* sp.) and/or oats (*Avena* sp.). Of the slightly richer samples, remains of glume chaff often outnumbered grains of hulled wheat. They can then be seen as representative of processing waste rather than whole spikelets or clean grain.
- 5.4.6 Such waste often accumulates as ‘background noise’, signifying either the proximity and intensity of nearby settlement, or are, as the remains from a farmed landscape, inadvertently included in the pyre. In other words, it is possible that the cereal remains are derived from settlement waste reworked into the deposits rather than being directly related to the cremations themselves, as for example pyre, or burnt, offerings. This might indicate that in many cases where the cremations had little wood charcoal, the cremated bone had been removed from the pyre site. No correlation was seen between the amount of pyre waste (represented by wood charcoal) and the number of cereal remains, and this would also suggest that this material may not be directly associated with the cremations themselves.
- 5.4.7 Many of the other features in this area demonstrated similar composition, and these may also be ‘background noise’. These included three ditches, four pits and a tree throw. At least one pit (**8243**) and one ditch (8310 in group **8445**) had quite substantial dumps of material within them. The former sample had hazelnut fragments, as well as possible grains of pea/bean (*Pisum sativum/Vicia faba*). That it contained barley and free-threshing wheat with no glume chaff may suggest that it is not Romano-British, but rather of Saxon, medieval or later date. This may also be true of ditch 8310 that produced samples of similar composition.

- 5.4.8 No other features were sampled from the southern part of Area 9, while the cremations from here had generally less material within them and are likely to be related to less settlement activity within this part of the area prior to the cremations being deposited.

Area 14

- 5.4.9 This was the only area to produce any samples of certain Neolithic date. Two pits (**6247** and **6330**) were sampled. As with many British Neolithic samples, cereal remains were almost totally absent while hazelnuts were highly prevalent (cf. Moffett *et al.* 1989), with other wild food resources represented by a single stone of sloe (*Prunus spinosa*). A further pit (**6219**), probably of similar late Neolithic date, also produced quite high numbers of hazelnut fragments (*Corylus avellana*).
- 5.4.10 Two late Iron Age/Romano-British contexts (6270 and 6259 in ditch group **6394**) had samples that were relatively devoid of cereal remains. That from context 6270 did though contain quite a few hazelnut shells, and given the number in the above mentioned pits it would seem possible that these were reworked from Neolithic activity in the area.
- 5.4.11 Of the remaining samples some 80 were from cremation deposits and highly similar in character to those from Area 9. Occasionally these did produce slightly richer deposits, while evidence for hawthorn (*Crataegus monogyna*) and onion couch grass (*Arrhenatherum elatius* subsp. *bulbosum*) may indicate their use as tinder.
- 5.4.12 Several samples from grave **6049** were quite rich in cereal grain (barley and hulled wheat) and chaff (mainly glume bases) as well as weed seeds. This latter group was represented by similarly large seeded species to those seen above, e.g. vetches/wild pea (*Vicia/Lathyrus* sp.), brome grass (*Bromus* sp.), oats (*Avena* sp.), and knotgrass/bindweed (*Polygonum/Fallopia* spp.). The richness of this sample suggests that reworked material from settlement activity in close proximity to the grave or midden material was used in its infilling.
- 5.4.13 The remaining Romano-British samples from Area 14 included a pit and postholes. These all contained similar material to that seen from the grave above, although in less density.
- 5.4.14 Two samples came from a sunken feature building of Saxon date. These contained barley and wheat grains and a similar array of weed seeds. The presence of glume chaff may suggest that some of this material was residual.
- 5.4.15 Two unphased pits also came from this area, but contained generally little material.

Area 15

- 5.4.16 The samples from this area were often richer than those in the other areas. Two samples came from a possible Early Romano-British ditch (**5057**). These contained clean barley grain and large weed seeds, including oats

(*Avena* sp.) and black bindweed (*Fallopia convolvulus*). While a possible grain of hulled wheat was seen, the presence of some free-threshing wheat grains may suggest a possible medieval date for this feature or the presence of intrusive material.

- 5.4.17 Eleven samples came from features phased to the Romano-British period. Those from ditch **5157** contained high amounts of glume chaff and a range of weed species. These included seeds of stinking mayweed (*Anthemis cotula*), a species indicative of the cultivation of clay soils, that, while not unknown in the later Romano-British period, is more commonly found in the Saxon and later periods (Greig 1991).
- 5.4.18 A sample from a pit (5146) also contained stinking mayweed (*Anthemis cotula*). However, this sample, while dominated by barley, is unlikely to be Romano-British, but rather Saxon or later because it also contained some free-threshing wheat (*Triticum aestivum* sl).
- 5.4.19 Of the remaining Romano-British samples those from ditches 5201, 5225 and 5079 contained remnants of glume chaff. The latter also contained a seed of elder (*Sambucus nigra*), and a possible stone of sloe (*Prunus spinosa*). Oven **5094** produced very few cereal remains, despite containing high amounts of wood charcoal, and might therefore be associated with non-cereal activities.
- 5.4.20 A number of samples came from unphased ditches. Most contained small amounts of chaff and grain. Ditch 5257 contained quite high numbers of elder seeds (*Sambucus nigra*), unfortunately the other remains were too few to suggest a positive date. A sample taken from an unphased ditch (5143) was particularly rich in charred plant remains, including many grains of barley and culm nodes. It also contained free-threshing wheat, rye (*Secale cereale*) and fragments of bean (*Vicia faba*). The high presence of barley with free-threshing wheat and rye suggest that the sample is likely to be of Saxon to post-medieval date. More unusually was a single seed of sainfoin (*Onobrychis viciifolia*), a species of chalk and limestone grassland.

Area 16

- 5.4.21 A single Middle Bronze Age feature, pit 1513, was sampled and produced a relatively rich assemblage, with remains of hulled wheats, barley, and hazelnut.
- 5.4.22 The late Bronze Age/Early Iron Age features produced quite rich deposits including remains of hulled wheats (*Triticum dicoccum/spelta*), both grains and glumes, and also celtic bean (*Vicia faba* var. *minor*). The range of weed seeds was similar to those seen for the Romano-British periods, comprising mainly of larger seeded species, oats (*Avena* sp.), brome grass (*Bromus* sp.), vetches/wild pea (*Vicia/Lathyrus* sp.) and Polygonaceae. While many of the glumes from all these samples were not well enough preserved to identify to species, those that were demonstrated the presence of both spelt and emmer. Two Middle Iron Age samples from ditch 1195 were also examined and again similar in composition, although containing relatively more glumes than grain.

- 5.4.23 Of the later prehistoric features, test pit 4 and ditch 1444 contained few remains. The remaining samples from ditches 1555, 1551, and pit/tree throw 1412 had grains and glumes of hulled wheats (*Triticum dicoccum/spelta*), which is in keeping with a later prehistoric date, Late Bronze Age to Iron Age.
- 5.4.24 Two of four samples from Late Iron Age/Early Romano-British features (ditch 1158 and pit 1217) produced relatively rich samples with both glumes and grain well represented, and a similar array of weed seeds.
- 5.4.25 Of eight samples from Romano-British features (mainly ditches), several were very rich in comparison to the rest of the Site. These contained remains of celtic bean (*Vicia faba* var. *minor*) and possibly garden pea (*Pisium sativum*) along with glume chaff and hulled wheats.
- 5.4.26 Some 12 samples from this area were unphased. Of the ten from ditches all but that from ditch 1492, contained glume bases and hulled wheats, suggesting a late prehistoric to Romano-British date. Three samples were quite rich in glumes and grain (ditches 1486, 1513, and 1564). Kiln **1402** produced relatively poor samples and only one contained some grain and a glume fragment although the latter may be intrusive. A further sample from an unphased pit contained few remains.

Compound 16

- 5.4.27 Two Bronze Age features produced quite rich deposits, including remains of hulled wheats (*Triticum dicoccum/spelta*), both grains and glumes, and also celtic bean (*Vicia faba* var. *minor*). The weed seeds were dominated by the larger seeded species, oats (*Avena* sp.), brome grass (*Bromus* sp.), vetches/wild pea (*Vicia/ Lathyrus* sp.), Polygonaceae and in one case also ribwort plantain (*Plantago lanceolata*). Samples from a further two possible Iron Age ditches were also assessed but produced relatively few remains. The three unphased pits contained few remains, although that from pit **3499** produced a tuber of false-oat grass (*Arrhenatherum elatius* ssp. *bulbosum*).

Area D

- 5.4.28 Samples from 11 unphased pits and a pit/tree throw all contained quite high amounts of wood charcoal, but otherwise only produced occasional fragments of unidentifiable grains. Early Bronze Age pits sometimes produce such charcoal rich assemblages with often no other remains, and the samples may be of some interest if phased. Two ditches were also sampled and produced little in the way of charred plant remains, although one did and as with the pits contained quite high numbers of wood charcoal fragments.

Joss Bay

- 5.4.29 The five samples from the Iron Age pit 8846 generally produced few remains, although sample 902 contained some fragments of hawthorn stones (*Crataegus* sp.) and seeds vetches/wild pea (*Vicia/ Lathyrus* sp.).

5.5 Summary of the plant remains

- 5.5.1 The assessment allows the remains to be characterised from four phases: Neolithic, Late Bronze Age/Early Iron Age, Late Iron Age to Roman and Saxon/medieval periods. While two samples were phased to the Early/Middle Iron Age these were from a single ditch, while further Iron Age samples from Compound 16 and Site D contained few remains, and were only provisionally phased.
- 5.5.2 The few Neolithic samples examined are in keeping with other Neolithic sites in Britain in being dominated by remains of wild foods, in particular hazelnut, while few cereal remains are present, and possibly even intrusive. Further examination of the samples can provide evidence for Neolithic subsistence activities and utilisation of wild resources in this part of Kent, associated with these isolated or small clusters of pits, and short-lived encampments.
- 5.5.3 The Late Bronze Age/Early Iron Age samples show the continuance of emmer wheat at a time when many areas of Britain demonstrate the predominance of spelt wheat (*Triticum spelta*). In addition there is some evidence for the cultivation of legumes, in particular celtic bean (*Vicia faba* var. *minor*), but possibly also garden pea (*Pisum sativum*). Further examination of the samples can thus provide evidence not only for the range of crops cultivated at this time, but also the nature of their processing and potentially information on their cultivation, contributing to our knowledge of activities conducted both within and away from settlement during this period.
- 5.5.4 The Late Iron Age/Early Romano-British to later Roman samples show a predominance of spelt wheat (*Triticum spelta*), with some barley (*Hordeum vulgare* s.l), the weed flora however remains broadly unchanged from the earlier periods, being dominated by larger seeded common arable species. Further examination can reveal the nature of crop-husbandry at this time, but also continuity and changes compared to earlier periods.
- 5.5.5 The cremations on the whole seemed to contain similar types of settlement waste to that found in the other features. Wood charcoal was also absent from all but a few (see below). It is suggested that most of the material within them is likely therefore to be residual, reworked and/or representative of background material. However, examination may shed light on how such waste became incorporated and whether such cremations were lit close to settlements and incorporated such material perhaps as tinder, or whether already charred waste from middens and hearths relating to nearby settlement became incorporated within the burials themselves.
- 5.5.6 While most of the samples of Saxon/medieval date come from a single feature in Area 8, there are several samples from other areas that might also be ascribed to this period. The assessment of the samples showed clear distinctions compared to the preceding phases, e.g. the cultivation of free-threshing wheat (*Triticum aestivum* s.l) and possibly also rye (*Secale cereale*). Barley (*Hordeum vulgare* s.l) would also seem to gain a higher prominence than seen in the previous phases. The size of many of the oat grains might

also suggest the cultivated variety. Examination of these features then can provide evidence for changes in cultivation practices occurring during the Saxon period including the introduction of new crops, and changes in cultivation practices that may have led to new weed floras.

5.6 Charcoal

5.6.1 Charcoal was noted from the flots of the bulk samples and is recorded in **Table 25**. Wood charcoal was generally fairly poor in the samples, but did occur in high quantities in a few samples. Most notable were those from the Late Saxon/early medieval structure **7250**, where they can be associated with the use and cleaning of oven **7314**. The Late Saxon/early medieval ditch sample from this same area was also relatively rich and it is possible that this material is from this same source.

5.6.2 The Romano-British cremation features produced relatively little charcoal suggesting that much of the pyre material was removed prior to burial. Those from 8206 in Area 10 and 6009 in Area 14 were somewhat richer in wood charcoal and may therefore be seen to contain more pyre material.

5.6.3 A single Roman pit from Area 9 (8163) while producing few other remains did produce quite high quantities of wood charcoal. The possible Romano-British ditches (8310, 8254) and pit (8243) from Areas 9/10 were also rich in wood charcoal, with many thorns and larger fragments present. However, as noted above the plant remains suggest that these may rather be of a Saxon to post-medieval date.

5.6.4 The Neolithic samples contained reasonable quantities of wood charcoal, although never in great quantity. The two samples from the Romano-British oven 5094 in Area 15 were relatively rich in wood charcoal that can be associated with their use.

5.6.5 Of some interest are the 11 unphased pits within Area D. All these samples contained quite high amounts of wood charcoal, but little other material in the way of phasing evidence. It would seem probable that the pits are of similar phase and hence may relate to some specific activity or possibly phase.

5.7 Soils and sediments

5.7.1 Monoliths of undisturbed sediment collected during excavation of Area 16 were examined at Wessex Archaeology. The surface was cleaned prior to recording and standard descriptions followed Hodgson (1976), see **Table 26**.

Area 16; test pit 4

5.7.2 The sedimentary sequence from Area 16 test pit 4, as described in **Table 26**, is of the heavily bioturbated modern soil profile formed on a sequence of slightly calcareous colluvium (or hillwash) reworked and relain by water (possibly seasonal flow, e.g. in a gully or heavy run-off). This is suggested by the mixed nature of the sediments and the inclusion of rare angular gravel

due to colluvial input and conversely the relatively consistent, homogenous particle size. The deposit is consistent with the sites topographic location at the base of a hill (Cottingham Hill) and adjacent to lowland marsh by Pegwell Bay. The sediments have collected in this area within a low-lying hollow and subsequently stabilised and dried out allowing soil (brown earth) formation. Artefacts within this profile, (occasional pottery, bone and struck flint were noted in context 1794, common in 1795) particularly the lower profile, are likely to be reworked, rather than in-situ.

Area 16; ditch 1195

- 5.7.3 A longer sequence was collected as two overlapping monoliths from a deep Iron Age - Romano-British Age ditch (1195, cut 1372 in group **1384**) in Area 16. A total 1.64m of fine sediments are described in **Table 26**. A large number of individual contexts were defined on-site, indicating a number of in-wash events (each potentially rapid). They can however be grouped and summarised with the sequence comprising the following:
- 5.7.4 The basal fill (context 1365, 1368) is of waterlain in-washed sediment. This was most likely alluvium (fine overbank sedimentation from local flooding of the River Stour), and the sediments are fine sand and silt with low clay content, which ultimately derive from the underlying Tertiary Thanet Beds and from weathering of Thanet Beds through which the ditch was cut. Some stabilisation and weathering is indicated in the basal fill by formation of granular-small blocky structure but no defined stases were observed. Context 1364 interrupts the waterlain sequence and is a more mixed deposit, comprising clay silts with small fragments of chalk and likely represents the slump or dump of mixed site material into the ditch. The overlying band of greasy clay of context 1362 is alluvial but finer grained than the primary fill, indicating relatively low energy flow; the abrupt boundary indicates this alluviation either eroded or rapidly sealed the underlying.
- 5.7.5 The further subsequent secondary fills (contexts 1357-1362, 1370) are of soft friable silts and very fine sands. Weak ped formation was noted throughout although no individual stases were discerned. Relatively rapid accumulation with regular input of water sorted colluvial and perhaps alluvial wash is indicated, with all displaying characteristics of the natural (Thanet Beds) from which they derive. Pollen samples (as detailed in **Table 26**) were taken at generally 8cm intervals given the thick and possibly rapidly deposited nature of the fills.

5.8 Land snails

- 5.8.1 Shells of land snails were only preserved from a few samples and sites. 43 samples of between 1000-2000g were processed by standard methods (Evans 1972) for land snails. The flots (0.5mm) were rapidly assessed by scanning under a x10 - x40 stereo-binocular microscope to provide some information about shell preservation and species representation. The numbers of shells and the presence of taxonomic groups were quasi quantified (**Table 27** and **Table 28**). With the exception of Joss Bay (**Table 28**), only two of the samples contained enough shells to comment upon (**Table 27**).

Areas 3, 9, 15 and 16 (Table 27)

- 5.8.2 While shells were only recovered in quantity from a prehistoric ditch in Area 3 and a medieval ditch from Area 15 (5229 in group **5337**), the majority of samples relate to a single large Iron Age (with later medieval re-cut) feature, pit 8846 in group **8885**, in which they occurred in some number, and from which multiple samples were taken.
- 5.8.3 In Area 3, a single spot sample from context 7091 in ‘prehistoric’ ring-ditch **7458** contained a mixed assemblage. If this is a Late Neolithic mortuary enclosure, then the local environment and land-use associated with it are important. The large numbers indicate that whilst palaeo-environmental analysis is viable here, the single sample is of little value in determining *change* in land-use. The sample itself tends to indicate a mixed local environment containing very open dry grassland or arable conditions (*H. itala*, *Truncatellina*), but with some local shade (*Carychium* Zonitids and Clausiliidae). These latter taxa may represent either long herbaceous and shrubby vegetation within the ditch (as at Balksbury; Allen 2001), or possibly on an adjacent bank (e.g. Allen 1995; Allen *et al.* 1995). Analysis of this assemblage has the potential to define this local and monument-contemporary environment, but the lack of a sequence of samples hinders both the resolution of interpretation and the wider picture
- 5.8.4 In contrast, a single spot sample from Area 15 from medieval ditch 5229 in group **5337** contains a rich fresh-water assemblage indicating the presence of water, probably semi-permanent, in the ditch. Analysis has the potential to identify the permanency and nature of the water body, i.e. stagnant, muddy, clear, or flowing and its general vegetative state if this is of value. Refining the local environment here is of value, but is limited to a single instance rather than a time sequence.
- 5.8.5 It is of interest to note that medieval ditch **5253**, also from Area 15, contained freshwater taxa (Planorbids).
- 5.8.6 The Romano-British pit **8056** in Area 9 contained an exclusively open country assemblage.

Joss Bay

- 5.8.7 A column of contiguous samples was taken from Iron Age (with medieval re-cut) pit 8846 in group **8885**, and this is the only sampled feature to contain a sequence of persevered assemblages. Shell numbers in the flots are good and numbers are suitable for statistically viable analysis. The assemblages indicate that the ditch was built in typical open conditions, with the possibility of very open dry grassland as indicated by the rare species *Truncatellina cylindracea*. However the main fills (contexts 8849 and 8850) show shading over with the presence of a number of shade-loving species (*Carychium tridentatum*, *Acanthinula aculeata*, *Oxychilus cellarius*, *Aegopinella nitidula* and *Vitrea* spp.), together catholic with species typical of longer shady herbaceous vegetation and of vegetation regeneration (e.g. *Punctum pygmaeum*, *Vitrina pellucida*). Unfortunately this pit was isolated

with only three ditches in the vicinity, and thus the palaeo-environmental evidence cannot be related to significant human activity in the vicinity.

5.9 Palaeo-environmental summary

- 5.9.1 Overall the palaeo-environmental remains are variable in the preservation, occurrence and potential. There are, however, well preserved charred remains from some areas which are potentially of great value in understanding the nature and activities on site, the function of specific features and the role and economy of the sites. Land snail and soil/sediments evidence is feature specific. The combination of the data from the sites will however, allow some general comment to be made on a wider regional and chronological basis, and to compare this with other important palaeo-environmental databases being generated for Kent.

6 STATEMENT OF POTENTIAL

6.1 Potential of the archaeological features

6.1.1 Although archaeological features from all periods ranging from the Neolithic to WWII were encountered along the route of the pipeline, the most abundant were the late prehistoric, Late Iron Age and Romano-British periods. Considered on a scheme-wide level, the excavation results will contribute towards a rather broad discussion of landscape development on the Isle of Thanet from the Neolithic to the present day. Individual aspects of the evidence uncovered in a number of areas will however allow more detailed contributions to be made to a variety of research questions which are presented by period in the following sections.

Neolithic

6.1.2 The possible mortuary enclosure in Area 3 requires further analysis and comparison with other features in the vicinity. The stratigraphic relationships and dating evidence suggests that the rectilinear enclosure may be Neolithic in date, although probably late. Neolithic activity in the surrounding area includes settlement features in Northwood School and a pit not far from the easement (Wessex Archaeology 2004). Undated ring-ditches, barrows and maculae are also recorded from aerial photographs in the immediate and wider vicinity, such as the small henge monument of Late Neolithic/Early Bronze Age date at Lord of the Manor, Ramsgate, which was subsequently used for a burial in the Bronze Age. Similar features with associated ring-ditches have also been recorded in Aldwinkle, Grendon and Tansor, all in Northamptonshire (A. Barclay pers. comm. Chapman 1999, 10). These are not identical to the features discussed above, but certainly elements and associations from each are worthy of further examination, such as the central entrance, internal features, the later enclosing ring-ditch, and the presence/absence of burials. To provide information on the contemporary land-use in the vicinity, the environmental land snail spot sample taken from the ring-ditch should be analysed (see 5.8.3, above). Although the dating evidence from this complex is limited, considered together these aspects might provide a better chronological understanding which in turn would allow for a better assessment of its local and regional significance. This is of regional importance.

Bronze Age

6.1.3 Of particular regional importance are the material spreads and features related to the *Carp's Tongue* hoards excavated during the evaluation at Wetherlees Hill WTW, with subsequent additions made during the excavation at Compound 16. The hoards' recovery in a controlled, modern excavation will allow analysis of the character of their deposition and wider landscape setting, which can then be compared with other such hoards discovered in Thanet in recent years, e.g. at Cliffs End, Ramsgate (Wessex Archaeology 2005b; Haselgrove et al. 2001, 31; Williams and Brown 1999, 33).

- 6.1.4 Pit **7187** in the northern part of Area 8 may be a cremation-related deposit. Further analysis of its relation to other features in its vicinity will allow comparison to possible parallels which have been found in the periphery of Middle to Late Bronze Age cremation burials, e.g. Twyford Down, Hants (Walker and Farwell 2000, 24 ff. Fig. 10; 117).

Later prehistory, Iron Age and Romano-British period

- 6.1.5 The Late Iron Age/Romano-British cemeteries recorded in Areas 9 and 14, in conjunction with the more isolated burials in Areas 15, 16 and Compound 16, have great potential to inform a discussion of the variations in burial rites within each cemetery and between cemeteries as well as in Thanet and within the wider region. In Kent, evidence of burial of these periods has so far been dominated by individual or small groups of burials (Parfitt 2004, 16-17; McKinley, forthcoming). The only larger Iron Age cemetery within the region is at Mill Hill, Deal (Parfitt 1995); larger Romano-British cemeteries have in recent years been excavated at Pepper Hill in west Kent during work along the route of the Channel Tunnel Rail Link, and at Clubb's Pit, Isle of Grain (Cameron 1985). The only two sites closer to Thanet are Cranmer House, Canterbury, (Frere *et al* 1987); and St. Dunstan's, Canterbury (M. Diack *pers. comm.*). Given the proximity to the Roman fort at Richborough, it is of interest to examine whether the main periods of activity there are reflected in the assemblages from the cemeteries and the enclosures and field systems associated with them. Indirectly, this might allow to address some of the objectives of the research framework for the Greater Thames Estuary directed at an understanding of the hierarchy of Roman settlement in relation to communications, centres of administration and the utilisation of the rural landscape (Williams and Brown 1999, 33 e.g. 3.6.1.2).
- 6.1.6 Further analysis of the stratigraphic relationships of the ditches, field systems, pits and enclosures in areas 9, 14, 15, and especially those in Area 16 and Compound 16, which may relate to similar or the same events, will provide a better framework for the analysis of the material assemblages, particularly the pottery, recovered from them. Since well dated larger assemblages are still comparatively rare within eastern Kent, this is of regional significance (Haselgrove et al. 2001, 31). Further analysis should also examine the landscape development of the Ebbsfleet peninsula and consider the possibility of a defensive use of some of the ditches in Area 16 and Compound 16, which may have contributed to cut off access to the peninsula from the north. Consideration will also be possible of the significance of burials placed in or near ditches, boundaries or other liminal markers.

Saxon

- 6.1.7 The sunken featured building discovered in close proximity to the dual-rite Late Iron Age/Romano-British cemetery in Area 14 adds a further settlement site to only two so far recorded in the Isle of Thanet, at Manston Road and Oakland's Nursery, both Ramsgate. As such, this structure is of local importance and should be included in the proposed publication; however, the scope for further analysis is limited due to the small size of material assemblage associated with this structure.

Medieval

- 6.1.8 A medieval sunken featured building, possibly a bakery, was excavated in Area 8. The good stratigraphic sequence, together with the material and especially the environmental assemblages recovered from this structure will allow further analysis into its use and function. A number of similar features have in recent years been excavated in Kent, including one on the Isle of Thanet near Ramsgate (Boast in Perkins et al. 1998, 235 ff.); two others were recently excavated by Wessex Archaeology, one at West Malling (Wessex Archaeology 2006) and another one at Fulston Manor near Sittingbourne. Combined analysis of these structures would be of regional significance. It should try to establish their function and examine whether they may in fact be a type of building/installation specific to Kent, or whether further examples are known in the wider region.
- 6.1.9 The remainder of the medieval features is dominated by ditches and parts of enclosures or field systems which are only of local interest.

Post-medieval and modern

- 6.1.10 The few post-medieval features recovered along the pipeline route comprise individual ditch segments, postholes and the foundations of a small, brick built, rectangular building in Area 1-2 with no potential for further analysis.
- 6.1.11 Evidence related to defences installed prior or during WWII were discovered in Areas 1-2, 1-D, 16 and possibly Manston Airport. Limited scope for further analysis of their function exists for the features from Area 1-D, which can clearly be related to the aerial photography evidence. This will contribute to some of the objectives concerning historic defences of the research framework for the Greater Thames Estuary (Williams and Brown 1999, 34 e.g. 3.6.3.2).

6.2 Potential of the finds

- 6.2.1 Fieldwork along the pipeline route has produced an assemblage of significant size, with a wide chronological range. In terms of the size of site assemblages, those from Areas 9, 14, 15 and 16 (including Compound 16) are the most significant, and the chronological emphasis is on the Late Iron Age and Romano-British periods.
- 6.2.2 Certain site assemblages may not warrant further analysis, except as part of project-wide research objectives. Likewise, further examination may not be considered worthwhile for certain material types, by reason of their small quantities and/or lack of intrinsic interest; for these categories, information gathered as part of the assessment phase may be utilised in any publication text. The following categories of material are recommended for further analysis.

Potential of the pottery

- 6.2.3 The occurrence of Middle/Late Neolithic Peterborough ware in Area 14 is interesting; this is a relatively uncommon pottery type in the region and any such occurrence is significant.
- 6.2.4 The later prehistoric and Roman ceramic assemblage, concentrated in the southern part of the route, is also significant by virtue of the quantities of material recovered. Much of the assemblage belongs to the 1st century BC to the 1st century AD and detailed analysis of the fabrics and forms, with reference to other sites in the region, will tighten this chronology, and provide information on patterns of production and distribution. Until recently there has been a dearth of publication of pottery from Kent, but recent work along the route of the Channel Tunnel Rail Link has provided new comparative data, including a suite of radiocarbon dates. However, the late Iron Age is still poorly understood and publication of assemblages of this date is important. Part of the Roman assemblage is also relevant to a discussion of the cemeteries in Areas 9, 14 and 15 (see below).
- 6.2.5 The post-Roman assemblage is small, but the occurrence of early medieval imported Pingsdorf ware in Area 15 is worthy of further comment as a relatively uncommon type.

Potential of the worked flint

- 6.2.6 The majority of the lithic assemblage consists of unretouched flake debitage, and chronologically diagnostic elements are scarce. Debitage primarily falls into two categories: irregular crude pieces which are probably later prehistoric, and a finer element of predominantly short, squat flakes which are probably Late Neolithic/Early Bronze Age. The assemblage has the potential to provide further chronological information through more detailed analysis.
- 6.2.7 Analysis of form and technology is required to identify any earlier prehistoric groups in otherwise undated features and to distinguish between truly residual earlier lithics and possible Late Bronze Age/Iron Age technologies in later prehistoric features. This latter component can then usefully be placed in its local context through comparison with similar local assemblages, such as that from Cliff's End Farm, Ramsgate (Wessex Archaeology 2005). The possible Early Neolithic pit group from Area 14 should be fully analysed in order to ascertain if the material derives from a single knapping event (or series of events) or is a collection of more general refuse.

Potential of the metalwork

- 6.2.8 Of particular interest amongst the metalwork assemblage are the two discrete hoards and other objects of Late Bronze Age date from Compound 16, which can be added to the concentration of *Carp's Tongue* metalwork hoards already recorded around the Isle of Thanet, which provide evidence for an industry producing quantities of weapons and tools and also recycling scrap metal.

- 6.2.9 Other objects, in particular a small group of personal items and iron coffin furniture, are also relevant to a discussion of the Romano-British cemeteries in Areas 9, 14 and 15 (see below). The patera handle, although an unstratified find, is unusual and warrants further comment for its potential original provenance.

6.3 Potential of the human remains and associated grave goods

- 6.3.1 Human remains, both burnt and unburnt, derived from Romano-British cemeteries in Areas 9, and 14, with two further burials from Area 15. These were accompanied by grave goods in the form of pottery vessels, glass beads and other personal items. Together, these can inform a discussion of demography and burial rites. Additionally, unaccompanied inhumation graves were cut into Late Iron Age/early Romano-British ditches in Area 16 and Compound 16, and a further skeleton was buried in a ditch terminus in Area 15.

- 6.3.2 Analysis will provide more detailed demographic data with regard to the number, age and sex of individuals. With limited reconstruction, metric data – including stature estimates and cranial indices - can be recovered. This data will assist in assessing intra- and infra-cemetery homogeneity and broad genetic links between individuals, and may reflect health and status. A study of the pathological lesions will enable assessment of the health and, by inference, potentially the status of individuals. Some areas of data recovery will be limited by the poor condition of some of the bone (Table 20). The number of contemporaneous regional cemeteries from which comparative data is available is limited (Mays and Anderson 1995; McKinley 2006) but data from the site can be set in its wider national context and will, in turn, contribute to the broader temporal data-base for such small, rural cemeteries (Roberts and Cox 2005).

- 6.3.3 Data from the analysis of the cremated remains, used in corroboration with the site data and that from the environmental analysis, should inform on the deposit types (some of which are currently unclear) and aspects of the mortuary rite. The form and nature of the cremation-related deposits will be considered in their regional and national contexts.

6.4 Potential of the animal bone

- 6.4.1 The animal bone can provide information on animal husbandry, population structures and consumption practices, through analysis of the age and sex of animals, butchery, burning and breakage patterns. The bone from Areas 9, 15, 16 and Compound 16 has the highest potential for this analysis, due to the larger quantities of bone represented, the high proportion of identifiable bones, and the high number of ageable bones. The complete skulls and partial skeletons recovered from these areas also warrant further investigation as possible special deposits.

6.5 Potential of the environmental evidence

Charred plant remains

- 6.5.1 The charred plant remains have the potential to characterise and examine changes in agricultural husbandry from the Bronze Age to the Roman and Saxon/medieval period. This includes the nature and changes in the range of crops under cultivation as well as the types of soils under cultivation.
- 6.5.2 They can identify activities (processing storage, consumption) on site and together help in defining the role and function of the site.

Charcoal

- 6.5.3 The charcoal samples have the potential to provide evidence for the selection and use of woodland resources for fuel from the Bronze Age to the Saxon/medieval period. In the case of at least some of the cremation burials analysis of the wood charcoal may allow the characterisation of species selected for use in the pyre. In the case of the ovens the analysis of the charred plant remains may allow demonstrate deliberate selection of species according to their burning properties that in turn may relate to the ovens' use.

Soils and sediments

- 6.5.4 The recovered sediments have been fully described, sampled and interpreted here, there is no further potential for these sediments, the description provides the analytical and interpretive data required.

Land snails

- 6.5.5 The overall value of the spot samples is limited as individual spot samples do not provide any evidence of changes in the local environment and land-use. Undoubtedly the most significant is the sample associated with the possible Late Neolithic mortuary enclosure and ring ditch **7458** in Area 3. Of local value is the identification of the presence and nature of the water body in medieval ditch group **5337** in Area 15 as it will allow insight into the local environment.
- 6.5.6 The suite of samples from pit 8846 in group **8885** at Joss Bay indicates changing local environment and land-use, and this may be related to abandonment, reduced activity in the vicinity, or natural pit microhabitats during the formation of the secondary fills.
- 6.5.7 The suite of well-preserved assemblages from pit 8846 (Joss Bay) was the only good snail sequences in the whole project, and although it can provide a detailed local land-use history, which would also enhance the limited palaeo-environmental information derived from snails from the county, it cannot be related to any settlement, or be related to much activity beyond the pit. As such its potential is limited.

6.6 Potential of Radiocarbon Analysis

- 6.6.1 A series of undated or poorly dated events were considered for radiocarbon (AMS) dating to provide a chronological time frame for the activity associated with them and facilitate comparison with other similar events within this project, in the county and within southern England.

Neolithic/Bronze Age ring ditch and enclosure 7458, Area 3

- 6.6.2 This ‘monument’, as discussed above, is morphologically similar to Late Neolithic mortuary enclosures found elsewhere in Britain, but this example is undated. If it is a Late Neolithic mortuary enclosure complex then this would be of great regional importance. However, examination of the faunal remains as well as the charred and charcoal remains indicate that there is little material present, and none can be securely related to either construction or use of the monument. Therefore, no radiocarbon dating is proposed.

Burial 5104, Area 15

- 6.6.3 An extended burial in ditch 5104 is undated, and the lack of any finds means that it is left uncertain whether it is prehistoric or historic, and if it relates, chronologically, to other burials recovered along the pipeline. This burial could be dated to:

a) indicate which period it belongs to,

b) compare this with burials in Area 16, assumed to be of Late Iron Age/Early Romano-British date (100 BC – AD 150), the well dated cremation cemetery (Area 9) and the Late Iron Age/Early Romano-British cemetery (Area 14),

c) undated burials 3121 and 3305 in Compound 16, which are indicated to be later than Late Iron Age/Early Romano-British (100 BC – AD 150), and probably Romano-British.

Burials in Area 16 and Compound 16

- 6.6.4 Two burials were present in Area 16. Both were inserted into upper Late Iron Age or Romano-British ditches fills, and their backfills contained Romano-British pottery. Both burials were probably formerly flexed; while one was flexed (1111), the other was disturbed (1033). These must post-date the Late Iron Age/ Romano-British fills which they cut. On archaeological grounds, these burials are most probably Romano-British, but they could be even younger.

- 6.6.5 Two burials were present in Compound 16 (3121 and 3308). Both were extended, unaccompanied, and inserted into undated ditches. The ditches are likely to belong to the same phase as those in Area 16 (i.e. Late Iron Age/ Romano-British), so these burials could be contemporary with those in Area 16.

- 6.6.6 Apart from burial 5104 (Area 15), two cemeteries were recorded. That in Area 14 dates to the Late Iron Age to Late Romano-British period (100 BC –

AD 400) while that in Area 9 is a later Iron Age to 2nd century AD cremation cemetery.

- 6.6.7 Dating these burials would indicate if they all belong to one phase of burial activity, and if that phase of activity is contemporary with the two cemeteries (Area 9 and Area 14)

Unphased charcoal-rich pits

- 6.6.8 A series of six unphased pits in Area D contained rich and dumped charcoal deposits (**Table 25**). If these pits are archeologically significant, or the dumping of charcoal is seen as significant, these could be radiocarbon dated. However, since other pits in the vicinity of the possible holloway between ditches **8620** and **8624** were dated to the late prehistoric or Late Iron Age to Romano-British periods, it is assumed that the undated pits fall within a similar date range. Charcoal would need to be identified and appropriate (non heartwood) pieces selected. A radiocarbon result would heighten the significance of the features and their charcoal assemblages may then warrant analysis.

6.7 Updated research aims and objectives

- 6.7.1 On the basis of the above recommendations the updated research aims and objectives can be summarised as follows:
- 6.7.2 Analyse the character, date and setting of the possible mortuary enclosure in Area 3.
- 6.7.3 Publish material assemblages of intrinsic interest recovered along the pipeline route.
- 6.7.4 Analyse the type of deposition, components, date range and setting of the hoards discovered on the Ebbsfleet peninsula.
- 6.7.5 Establish the character of the cremation-related deposit in Area 8 and compare this with similar features in southern England.
- 6.7.6 Fully describe and analyse the burials and cemeteries recovered along the pipeline route, compare their range of burial rites, and consider these in the wider context of occupation evidence in Thanet.
- 6.7.7 Publish a plan of the Saxon sunken featured building in Area 14 and consider its relation to Romano-British features in the vicinity, especially the dual-rite cemetery.
- 6.7.8 Analyse the possible bakery structure in Area 8 and how it relates to the medieval food economy.

7 METHOD STATEMENT

7.1 The Site

7.1.1 In order to address the updated research aims it is proposed that further analysis of the relevant features and their stratigraphic sequence should be carried out. The results of the various specialist analyses suggested in the sections below will be combined in order to produce detailed phased descriptions of the developments of the Sites and the uses of the various features. An important aspect of this will be the analysis of the spatial distribution of small finds, human and animal bones and environmental remains. Where feasible, this will be carried out by querying the data set with the help of GIS. On the basis of this the evidence from the sites will then be discussed in their regional and wider setting.

7.1.2 Additional analysis of the stratigraphic relations of other features will be carried out as necessary for the interpretation of significant finds assemblages. However, in most of these cases, the information available at assessment stage will be sufficient for inclusion in the publication.

7.2 The Finds

Pottery

7.2.1 It is recommended that, with the exception of the post-medieval pottery, the complete assemblage is recorded at least to minimum archive standards, following nationally recommended guidelines (PRCG 1997, SGRP 1994, MPRG 2001). Analysis of fabric and form will follow the standard Wessex Archaeology recording system for pottery (Morris 1994). Fabrics will be correlated with local and regional type series where appropriate (e.g. the CAT type series for Roman and post-Roman wares). Details of the vessels from the Romano-British cemeteries will be incorporated into the grave catalogue. The period assemblages will be described (with supporting tabulated data) and discussed within their local and regional context, with reference to chronological sequence, range of potential sources, and any functional and/or socio-economic implications. An example of each prehistoric form should be illustrated, along with the 1st century AD groups from the cemeteries. It is anticipated that this would total a maximum of 50 sherds/vessels.

Worked Flint

7.2.2 The assemblages from Areas 14, 16, D and Compound 16 should be subjected to further analysis. Mostly this will involve division of debitage into chronologically distinctive types and (where possible) the identification of tool type chronologies. Metrical analysis of the scrapers may allow the application of a typology such as Riley's. A small selection of diagnostic tools may be illustrated.

- 7.2.3 The material from other areas does not warrant further work, and can be adequately treated through summaries of basic types and notable individual instances.

Metalwork

Coins

- 7.2.4 Eighteen of the 22 coins have been selected for further cleaning, as an aid to identification. A short publication report will be prepared, based on the existing catalogue.

Other metalwork

- 7.2.5 Altogether, 17 copper alloy, 1 lead and 6 iron objects have been selected for conservation treatment. Once this is completed, catalogue entries for all objects other than nails/hobnails will be checked and enhanced where necessary. Some of these will be extracted to form part of the grave catalogue for the Romano-British cemeteries.
- 7.2.6 Objects from the cemeteries will be discussed within the subdivisions of grave goods and grave furniture; other objects will be briefly discussed within chronological and/or functional groups. A small selection of objects (maximum 15) will be illustrated (the Late Bronze Age ingots and other metalworking debris may be photographed).

Other finds

- 7.2.7 Further analysis is not proposed for other finds categories (fired clay, CBM, glass, shale, worked bone, slag), either through lack of intrinsic interest, or because all relevant details have already been recorded. Some objects (glass and shale) will form part of the grave catalogue for the Romano-British cemeteries; relevant details can be extracted from the existing database catalogue. These objects will be illustrated.

7.3 Human Bone

- 7.3.1 Analysis of the cremated bone will follow standard procedure (McKinley 1994, 5-6; 2004a). All unsorted <4mm residues will be subject to a rapid scan to extract any identifiable material, osseous or artefactual.
- 7.3.2 Taphonomic factors potentially affecting differential bone preservation will be assessed. The minimum number of individuals (cremated and inhumed) will be assessed following McKinley 2004b. The age of individuals will be assessed using standard methodologies (Brothwell 1972; Beek 1983; Buikstra and Ubelaker 1994; Scheuer and Black 2000). Sex will be ascertained from the sexually dimorphic traits of the skeleton (Bass 1987; Buikstra and Ubelaker 1994). Where possible a standard suite of measurement will be taken (Brothwell and Zakrzewski 2004) and non-metric traits recorded (Berry and Berry 1967; Finnegan 1978).
- 7.3.3 Pathological lesions are recorded in text and via digital photography; several lesions are likely to warrant photographing for publication purposes. It will

be necessary to make X-radiographs of skeletal elements showing evidence of trauma and infection to ascertain as far as possible the full nature of the lesions.

7.4 Animal Bone

7.4.1 The animal bone material from Area 9, 15 and 16 as well as Compound 16 should be further analysed in order to provide information on animal husbandry and food practices. The complete skulls and partial skeletons will be examined in context in an attempt to determine whether these represent special deposits. Due to the low number of identified bones, Areas 8, 14, D, Manston Airport and Joss Bay should be excluded from further analysis.

7.4.2 With only 215 and 245 (respectively) identifiable bones, the assemblages from Area 9 and 15 are not suitable for further intra-site subdivision. The larger assemblages of Compound 16 and Area 16 might permit such a subdivision.

7.5 Environmental evidence

Charred plant remains

7.5.1 A total of 62 samples (20% of the total) have been selected for the analysis of charred plant remains. **Table 25** and **Table 29**). All but three come from well phased features. The three exceptions are a probable Neolithic pit 6219 in Area 14, and an unphased ditch from Area 15 that is believed to be Late Saxon/medieval. A further pit (5146) from Area 15 is also believed to be of this date. A selection from a further six samples within Area 16 presently dated to the prehistoric may be worth further consideration if more specific phasing is forthcoming. It is not anticipated that the inclusion of a small selection of these samples would impact greatly upon the charred plant remains program.

Charcoal

7.5.2 Twenty contexts will be analysed and selected from 51 samples (17% of the total) selected (**Table 25** and **Table 29**). Nineteen of these samples come from general settlement features, covering the Neolithic, Bronze Age, Roman and Late Saxon/Early medieval period. The further 32 samples relate specifically to Romano-British cremation burials from Area 9 and 14. Five contexts from three cremation burials which are richer in wood charcoal were chosen for analysis, 8206 (context 8207) and from Area 14 cremation burial 6009 (contexts 6010, 6011) and 6015 (contexts 6016, 6017). While 32 samples have been chosen, many constitute single contexts, and it is proposed that only sufficient numbers of these samples are examined to produce meaningful viable charcoal counts for each context.

7.5.3 No provision has been made to examine charcoal from pits **1486**, **1513** and **1564** within Area 16, which are likely to range in date between the late prehistoric and early Romano-British periods. Should charcoal analysis from these pits be deemed to provide a significant contribution then it is

anticipated to add a further 3-4 samples. The additional time expenditure would be a further three days under Task 106.

Soils and sediments

- 7.5.4 No further work is required. The findings presented here should be included in the final report.

Land snails

- 7.5.5 The spot samples from the Neolithic ring ditch/enclosure 7458 (Area 3) should be analysed for snails. The spot samples from medieval ditch group 5337 (Area 15) should be examined if the presence and nature of water in this feature is deemed of interest.
- 7.5.6 Analysis of the sequence of 17 samples from pit 8846 is possible, but the interpretation cannot be related to other local activity and thus is limited in its archaeological value.

7.6 Radiocarbon analysis

- 7.6.1 It is proposed that the burial in ditch 5104 is dated.
- 7.6.2 It is assumed that the two burials in Area 16 are broadly contemporary with each other and, equally, that the burials in Compound 16 are contemporary with each other. On this assumption it is proposed to date one burial from each area, to answer the question whether all these burials were interred at more or less the same period.
- 7.6.3 Burials proposed for Radiocarbon dating

Area	Burial	Query
Area 15	5104	What period is this?
Area 16	1111	Is this Romano-British and contemporary with those in Compound 16?
Compound 16	3121 or 3308	Is this Romano-British and contemporary with 1111?

8 PROGRAMME OF POST-EXCAVATION ANALYSIS AND PUBLICATION

8.1 Designated Project Team

8.1.1 The team consists primarily of internal Wessex Archaeology staff, with a limited input by a small number of external consultants. Wessex Archaeology reserves the right to replace any member of the named team at its discretion. The project will be managed by Jörn Schuster, who will be responsible to the Head of Specialist Services.

8.1.2 The following staff and external specialists are provisionally scheduled for the programme:

Head of Specialist Services	Karen E Walker BA MPhil, MIFA
Project Manager Post-Excavation	Jörn Schuster MA Dr phil, MIFA
Senior Technical Manager Publications	Julie P Gardiner BA PhD, FSA MIFA
Senior Technical Manager Finds	Lorraine Mephram BA, MIFA
Technical Manager Environmental	Michael J Allen BSc PhD, FSA FLS MIFA
Senior Project Officer Finds	Rachael H Seager Smith BA, MIFA
Senior Project Officer Human Bones	Jacqueline I McKinley BTech, MIFA
Senior Project Officer Environmental	Chris Stevens BSc PhD, MIFA
Senior Project Officer Environmental	Catherine Chisham BSc MSc PhD, MIFA MIEEM
Project Officer	Kirsten Egging BA MA, AIFA
Project Officer Finds	Kayt Brown, BA MA, AIFA
Project Officer Finds	Jessica Grimm MA, AIFA
Project Officer Finds	Grace P. Jones BA MA, AIFA
Project Officer Finds	Matthew Leivers BA PhD, AIFA
Project Officer Environmental	Sarah F Wyles BA, PIFA
External Charcoal Specialist	Rowena Gale BSc
External Animal Bone Specialist	Sheila Hamilton-Dyer BSc, AIFA
External Geologist	Kevin MJ Hayward BSc MSc PhD, PIFA

8.1.3 Further qualification details and experience of project team members will be provided if required.

8.2 Management Structure

8.2.1 Wessex Archaeology operates a project management system. The team will be headed by the Post-Excavation Manager, in this instance Jörn Schuster, who will assume ultimate responsibility for the implementation and execution of the Project Specification, and the achievement of performance targets, be they academic, budgetary, or scheduled.

8.2.2 The Post-Excavation Manager may delegate specific aspects of the project to other key staff, who both supervise others and have a direct input into the compilation of the report. They may also undertake direct liaison with external consultants and specialists who are contributing to the publication report, and the museum named as the recipient of the project archive. The

Post-Excavation Manager will have a major input into the writing of the publication report. He will define and control the scope and form of the post-excavation programme.

8.3 Performance Monitoring and Quality Standards

8.3.1 The Project Manager is assisted by the Reports Manager, who will help to ensure that the report meets internal quality standards as defined in Wessex Archaeology's guidelines. The overall progress will be monitored internally by the Operations Director.

8.3.2 Communication between all team members is essential and will be facilitated by project meetings at key points during the project.

8.4 Work Programme

8.4.1 The table below lists the main tasks required to achieve the project objectives and states the personnel required to achieve each task.

Task	Staff	Scheduled Work
Pre-analysis tasks		
Finds and Enviro: Identify illustration requirements	LN Mepham, MJ Allen	2 d
Site archive and database preparation		5 d
Scope data entry requirement	KL Egging	1 d
Order network files/archive	KL Egging	1 d
Order paper archive	KL Egging	1 d
Order survey data	KL Egging	1 d
Order drawing files	KL Egging	1 d
Management	J Schuster	2 d
Project Team Meeting		1.75 d
Report and Digi Archive format liaison	JS, LNM, JPG, MJA, KLE	1.88 d
<i>Environmental Pre-Analysis</i>		
Extraction of charred plants and charcoal + selection	SF Wyles	20 d
Extraction of land snails	SF Wyles	1 d
Management	MJ Allen	1 d
Analysis		
Management P/X	J Schuster	5 d
Project Team Meeting		0.88 d
<i>Finds analysis:</i>		
Management Finds	LN Mepham	5 d
Early Prehistoric pottery	MJ Leivers	2 d
Late Prehistoric and R-B pottery	GP Jones	45 d
Post-Roman pottery	LN Mepham	3 d
Fired clay and CBM - reporting only	GP Jones	0.5 d
Flint	MJ Leivers	10 d
Stone	MJ Leivers	1 d
Geological Analysis	K Hayward	1 d
Geological Analysis expenses		Costs
Metalwork	K Brown	5 d
Metalwork - Bronze Hoard	GP Jones	2 d
Slag - reporting	PEFAndrews	0.5 d
Shale - reporting	K Brown	0.5 d

Task	Staff	Scheduled Work
Shell - reporting	K Brown	0.5 d
Glass - reporting	RH Seager Smith	0.5 d
Coins	NM Cooke	2 d
Animal bone	J Grimm, J Neuberger	18 d
Bird/small mammals/fish bone	S Hamilton Dyer	5 d
Worked bone - reporting	MJ Leivers	0.5 d
Human bone (uncremated and cremated)	JI McKinley	26 d
<i>Conservation</i>		
Conservation of c. 30 objects		Costs
X-raying	A Britten	3 d
X-raying costs		Costs
<i>Finds illustration</i>		
Pottery	Drawing Office	4 d
Small finds	Drawing Office	2 d
Human bone	Drawing Office	3 d
Animal bone	Drawing Office	1 d
<i>Environmental analysis:</i>		
Management Enviro	MJ Allen	4 d
Charred plants	CJ Stevens	15 d
Charcoal	CM Chisham	15 d
Molluscs (Identification, tabulation, database entry and graph)	SF Wyles	2 d
Molluscs (Checking and report writing)	MJ Allen	1 d
Sediment descriptions	CM Chisham	3 d
Report preparation:		
Project Team Meeting		1.75 d
Amend/edit site illustrations	Drawing Office	10 d
Drawing management	LJ Coleman	1 d
Background research PO	KL Egging	7 d
Background research PM	J Schuster	5 d
Edit finds reports	LN Mephram	3 d
Edit environmental reports	MJ Allen	3 d
Stratigraphic analysis	KL Egging	10 d
Site descriptions (text)	KL Egging	10 d
<i>Overview / discussions</i>		
Main text	KL Egging	7 d
Environmental text	MJ Allen	2 d
Finds text	LN Mephram	2 d
<i>Synthesis (main text)</i>		
Drafting	KL Egging, J Schuster	10 d
Proofing	J Schuster	3 d
QA	KE Walker	2 d
Site illustrations	Drawing Office	4 d
Photographs	EA Wakefield	3 d
Digi Archive text/images preparation	JPG, LNM, MJA	4 d
Management	J Schuster	5 d
<i>Editing</i>		
Internal editing, final revisions	KLE, JS, MJA, JPG, KEW	11 d
Academic referral		Costs
Management	J Schuster	2 d
<i>Publication</i>		
Production costs		Costs
Design	JP Gardiner	5 d
Typesetting	JP Gardiner	8 d

Task	Staff	Scheduled Work
Print proofs	JP Gardiner	0.5 d
<i>Proof reading</i>		
Proof reading	CM Chisham	0.06 d
Proof reading	SF Wyles	0.06 d
Proof reading	MJ Allen	0.13 d
Proof reading	RH Seager Smith	0.06 d
Proof reading	MJ Leivers	0.25 d
Proof reading	J Grimm	0.13 d
Proof reading	JI McKinley	0.25 d
Proof reading	LN Mephram	0.5 d
Proof reading	KL Egging	1 d
Proof reading	J Schuster	1 d
Corrections	JP Gardiner	2 d
Checking image formats	Drawing Office	2 d
Indexing	External Indexer	1 d
PDF output	Drawing Office	1 d
Translate abstract (German)	J Schuster	0.5 d
Translate abstract (French)		Costs
Management	J Schuster, JP Gardiner	1 d
Submit Publication		
Archive		
Final archive ordering/indexing	CA Butterworth	1 d
Microfilm job-sheets/checking	CA Butterworth	1 d
Microfilm preparation costs		Costs
Archive Storage Grant		Costs
Archive deposition	CA Butterworth	1 d
Archive deposition car hire		Costs
Management	J Schuster	1 d
Outreach (may occur at various stages of programme)		5.5 d

8.5 Publication synopsis

8.5.1 It is proposed that the results of the excavations along the pipeline route are published as a stand-alone monograph or as part of a monograph comprising other sites from the region.

8.5.2 The proposed format for the publication is laid out below. This will be reviewed once the analysis stage is completed and all relevant information is available.

Section Heading	Page length @ 1000 words per page	Figures and Plates	Tables
<i>Preliminary Sections</i>			
Title and Cover Pages	4		
Foreword and Acknowledgements	1		
Summary (English, French, German)	2		
Table of Contents	3		
<i>Introduction</i>			
Project Background	0.5		
Site Location/Geology	0.5	1 Location Map	
Archaeological Background	1		

Section Heading	Page length @ 1000 words per page	Figures and Plates	Tables
Aims of the Excavation	0.5		
Methods of excavation and recording of the various specialist subjects	1		
Results			
Introduction	0.5		
Neolithic			
Stratigraphy, chronology and discussion of mortuary enclosure	3	2 Plans/sections, 4 photos	
Finds	2		
Environment	2		2
Bronze Age			
The Hoards on the Ebbsfleet peninsula	6	2 plans, 6 figures, 4 plates	1
Cremation related deposit	1	1 plan	
Finds	1	1 figure	
Environment	1		3
Iron Age and Romano-British			
Cemetery in Area 9	4	1 plan, 4 figures, 4 plates	2
Cemetery in Area 14	6	1 plan, 6 figures, 6 plates	2
Burials in Areas 15, 16 and Compound 16	2	3 plans,	
Other finds assemblages	2	1 figure	2
Animal Bones	2	4 plates	2
Cemeteries, enclosures and their wider landscape setting	1	1 plan	
Saxon			
SFB in Area 14	0.5	1 plan	
Medieval			
Bakery in Area 8	1	2 plans, 3 plates	2
Finds and environmental	1		1
Other finds assemblages	1	1 figure	
Medieval enclosures and land-use	1		
2nd World War			
Defensive structures along the pipeline route	2	2 plans, 2 plates	
Discussion			
The pipeline route and its contribution to the landscape history of Thanet	1		
Endnote			
Medieval bakeries in Kent	5	4 plans, 3 plates, 1 reconstruction?	
Bibliography	4		
Index	2		
Total (c. 124 pages)	61.5	(c. 45 pages)	17

9 STORAGE AND CURATION

9.1 Museum

9.1.1 It is recommended that the project archive resulting from the excavation be deposited with an appropriate museum in east Kent. No such museum has at this stage been identified. Deposition of the finds with the museum will only be carried out with the full agreement of the landowner.

9.2 Conservation

9.2.1 No immediate conservation requirements were noted in the field. Finds which have been identified as of unstable condition and therefore potentially in need of further conservation treatment comprise the shale and metal objects.

9.2.2 Metal objects have been X-radiographed as part of the assessment phase, as a basic record and also to aid identification. On the basis of the X-rays, the range of objects present and their provenance on the Site, 42 objects (18 coins; 17 copper alloy, 1 lead and 6 iron) have been selected for further conservation treatment, involving investigative cleaning and stabilisation.

9.3 Storage

9.3.1 The finds are currently stored in perforated polythene bags in 85 cardboard or airtight plastic boxes, ordered by material type, following nationally recommended guidelines (Walker 1990).

9.4 Discard Policy

9.4.1 Wessex Archaeology follows the guidelines set out in *Selection, Retention and Dispersal* (Society of Museum Archaeologists 1993), which allows for the discard of selected artefact and ecofact categories which are not considered to warrant any future analysis. In this instance, burnt, unworked flint has already been discarded. Further discard could target the undiagnostic fired clay.

9.4.2 The discard of environmental remains and samples follows the guidelines laid out in Wessex Archaeology's 'Archive and Dispersal Policy for Environmental Remains and Samples'. The archive policy conforms to nationally recommended guidelines (SMA 1993; 1995; English Heritage 2002) and is available upon request.

9.5 Archive

9.5.1 The complete site archive, which will include paper records, photographic records, graphics, artefacts and ecofacts, will be prepared following nationally recommended guidelines (SMA 1995).

9.6 Copyright

- 9.6.1 The full copyright of the written/illustrative archive relating to the Site will be retained by Wessex Archaeology Ltd under the Copyright, Designs and Patents Act 1988 with all rights reserved. The recipient museum, however, will be granted an exclusive licence for the use of the archive for educational purposes, including academic research, providing that such use shall be non-profitmaking, and conforms to the Copyright and Related Rights regulations 2003.

9.7 Security Copy

- 9.7.1 In line with current best practice, on completion of the project a security copy of the paper records will be prepared, in the form of microfilm. The master jackets and one diazo copy of the microfilm will be submitted to the National Monuments Record Centre (English Heritage), a second diazo copy will be deposited with the paper records, and a third diazo copy will be retained by Wessex Archaeology.

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11 APPENDICES

Appendix I: Finds Tables

Table 15: Finds totals by material type and by trench (number / weight in grammes) CBM = ceramic building material

Material	1, 2 & D	3, 6 & 7	8	9	14	15	16	C.16	Joss Bay	Manston	unstrat.	TOTAL
Pottery	162/1198	18/192	132/1703	795/5559	3303/64,020	656/8613	3127/36,069	3620/34,884	24/79	163/2148	-	11,997/154,465
<i>Early prehist.</i>	2	-	-	-	161	-	10	-	-	-	-	173
<i>Late prehist.</i>	93	3	82	19	71	36	637	3176	8	9	-	4134
<i>LIA/Roman</i>	49	3	4	682	3018	423	2470	352	12	145	-	7158
<i>Saxon</i>	-	-	-	-	53	-	-	-	1	-	-	54
<i>medieval</i>	-	9	46	93	-	194	2	83	2	6	-	435
<i>Post-med</i>	16	1	-	-	-	1	3	4	-	-	-	25
<i>Undated</i>	2	2	-	1	-	2	5	5	1	-	-	18
CBM	-	1/1	-	1/20	-	12/1494	28/1180	42/1668	1/47	-	-	85/4410
Mortar/Plaster	-	-	-	-	-	-	4/66	8/1188	-	-	-	12/1254
Fired Clay	-	-	-	36/377	3/92	236/2655	175/1885	184/1796	1/2	4/35	8/43	647/6885
Stone	-	-	-	23/15162	8/8852	148/5513	82/13662	42/10151	-	2/2261	1/1572	306/57,173
Flint (no. only)	435	45	63	66	337	79	546	518	100	1	5	2195
Burnt Flint	13/227	41/785	15/280	408/2866	673/9195	98/2773	1025/50,495	664/25,062	12/572	3/99	-	2952/92,354
Glass	5/199	-	-	2/4	9/11	-	-	-	-	-	-	16/214
Slag	-	-	-	-	8/177	-	16/477	-	-	-	-	24/654
Metalwork (no. objs)	8	2	-	133	631	77	83	72	-	9	2	1017
<i>Coins</i>	-	-	-	2	2	7	3	1	-	-	1	16
<i>Copper alloy</i>	3	2	-	16	7	10	23	36	-	1	-	98
<i>Iron</i>	-	-	-	109	622	54	52	32	-	8	1	878
<i>Lead</i>	5	-	-	-	-	6	5	3	-	-	-	19
<i>Other Metal</i>	-	-	-	6	-	-	-	-	-	-	-	6
Shale	-	-	-	-	-	-	-	1/12	-	-	-	1/12
Worked Bone (no. objs)	-	-	-	-	-	-	2	-	-	-	-	2
Human Bone	-	-	-	-	-	-	-	-	-	-	-	-
<i>Unburnt</i>	-	67g redep.	-	-	11 inhum. 804g redep.	3 inhum.	1 inhum. 2442g redep.	2 inhum. 284g redep.	-	-	-	17 inhum. 3597g redep.
<i>Burnt</i>	-	-	-	2438g burnt	4393g burnt	-	-	-	-	-	-	6831g burnt
Animal Bone	7/5	49/74	26/153	368/1087	1581/1929	1206/7045	3442/43663	2222/11140	72/297	34/280	204/3772	9211/69,445
Shell	5/21	1/1	296/723	710/2334	78/710	419/3448	415/4786	31/260	3/3	18/295	-	1976/12,581

Table 16: Breakdown of pottery assemblage by ware type

Date Range	Ware Type	No. sherds
Early Prehistoric	Flint-tempered wares	39
	Grog-tempered wares	10
	Peterborough Ware	124
	<i>sub-total early prehistoric</i>	<i>173</i>
Later prehistoric	Deverel-Rimbury	10
	Flint-tempered wares	3819
	Grog-tempered wares	89
	Sandy wares	200
	Coarse, gritty sandy wares	6
	Glauconitic sandy wares	3
	Shell-tempered wares	7
	<i>sub-total later prehistoric</i>	<i>4134</i>
LIA/Roman: imports	Amphora	2484
	Central Gaulish colour-coated ware	2
	Moselkeramik	1
	Pompeian-red ware	1
	Samian	67
	N French/SE Eng mortaria	5
	Terra Nigra	2
LIA/Roman: British finewares	Colour-coated wares, unassigned	25
	Imitation Gallo-Belgic	9
	Oxford colour-coated ware	13
LIA/Roman: coarsewares	Flint-tempered wares	1300
	Greywares	254
	Grog-tempered wares	995
	Hoo ware	1
	Oxford mortaria	4
	Oxidised wares	447
	Patchgrove ware	2
	Misc sandy wares	1224
	Shell-tempered wares	23
	Mortaria, unassigned	4
	Verulamium region whiteware	7
	White-slipped redware	5
	Whitewares	283
	<i>sub-total LIA/Roman</i>	<i>7158</i>
	Saxon	Organic tempered ware
Sandy ware		1
<i>sub-total Saxon</i>		<i>54</i>
medieval	Pingsdorf ware	4
	Shell-tempered wares	3
	Whitewares	17
	Misc. sandy wares	287
	Shell-tempered wares	53
	Tyler Hill ware	71
<i>sub-total medieval</i>	<i>435</i>	

Date Range	Ware Type	No. sherds
Post medieval	Redwares	7
	Stoneware	1
	Yellow ware	1
	Refined whitewares	14
	Porcelain	2
	<i>sub-total post-medieval</i>	<i>25</i>
Undated	Flint-tempered wares	2
	Oxidised ware	1
	Sandy wares	10
	Shell-tempered wares	4
	Uncertain	1
	<i>sub-total undated</i>	<i>18</i>
	OVERALL TOTAL	11,997

Table 17: Pottery by area (number of sherds)

Date Range	1-2	1-D	D	3	7	8	9	14	15	16	Comp. 16	Joss Bay	Manston	TOTAL
Early Prehistoric								37		10				47
Late Neolithic		2						124						126
Middle/Late Bronze Age						82		6		12	78			178
Late Bronze Age/Early Iron Age										9	2448			2457
Iron Age									2	380	94			476
Late Prehistoric		1	92	1	2		19	65	34	236	556	8	9	1023
LIA/Roman	1	2	46	1	2	4	682	3018	423	2470	352	12	145	7158
Saxon								53				1		54
medieval				4	5	46	93		194	2	83	2	6	435
Post medieval	13	1	2		1				1	3	4			25
Unknown		2		2			1		2	5	5	1		18
TOTAL	14	8	140	8	10	132	795	3303	656	3127	3620	24	160	11,997

Table 18: Breakdown of the flint assemblage

Flint Types	No.	% of assemblage
<i>Retouched tools:</i>		
Microliths	1	0.05
Scrapers	84	3.82
Piercers	5	0.23
Core Tools	2	0.09
Microdenticulates	4	0.18
Knives	2	0.09
Fabricators	1	0.05
Notched pieces	23	1.05
Misc. retouched pieces	51	2.32
<i>Retouched tools sub-total</i>	<i>173</i>	
<i>Other tools:</i>		
Hammerstones	3	0.14
<i>Debitage:</i>		
Flakes (incl. broken)	1781	81.14
Blades (incl. broken)	31	
Bladelets (incl. broken)	6	0.27
<i>Utilized flakes, blades, bladelets</i>	<i>(67)</i>	<i>(3.05)</i>
Core preparation / rejuvenation pieces	2	0.09
Cores / core fragments	139	6.33
Chips / microdebitage	1	0.05
Irregular debitage	59	2.69
Total	2195	100.0%

Table 19: Worked flint by area

Site	Debitage	Tools
Areas 1-2, 1D	102	15
Area 3	39	1
Area 7	6	1
Area 8	63	6
Area 9	66	13
Area 10	0	2
Area 11	1	1
Compound 11-12	4	8
Area 14	337	14
Area 15	79	13
Area 16	546	47
Compound 16	276	17
D	318	18
Joss Bay	100	2
Manston Airport	1	0
Various unstrat.	90	9
TOTAL	2028	167

Table 20: Results from scan of unburnt human bone

KEY: amtl - *ante mortem* tooth loss; op – osteophytes; mv - morphological variation; C – cervical; T – thoracic; L – lumbar; bsm - body surface margins; dl - destructive lesion

context	cut	deposit type	date	quantification	age/sex	pathology	comment
1029	1028	redep.; ditch fill	RB	c. 5% a.u.	subadult c. 15-17 yr.		old breaks, abraded (1); joins 1032
1032	1028	redep.; ditch fill	RB	3 frags. u.l.	subadult c. 15-17 yr.		old breaks, abraded (1); joins 1033
1033	1028	redep. (looks disarticulated); ditch fill	RB	c. 25% a.u.l.	subadult c. 15-17 yr.		abraded & eroded (1-4); old breaks. Some mixing; few articulating parts. Some metrics with reconstruction.
1088	1208	redep.; ditch fill		c. 3% s.	subadult/adult c. 14-30 yr. ??female		old & fresh breaks
1111	1110	<i>in situ</i> burial	RB	c. 98%	adult >50 yr. male	amtl; caries; calculus; abscess; sinusitis; op – knees, tarsals, right hand, T bsm; dl – right hand; fracture – ribs; osteoarthritis – costo-vertebral; degenerative disc disease – L; Schmorl’s node – T	1-3 (skull); most metrics with some reconstruction (esp. skull, some fresh breaks), some mixing; some rewashing needed (esp. a. & l.)
1127	1195	redep.; ditch fill	?M/LIA	1 frag. l.	adult		abraded & polished (2-3)
1184	1195	redep.; ditch fill	?M/LIA	c. 25% s.l.	adult c. 18-30 yr. male	calculus; mv – wormians	skull (1) stained, will reconstruct, deposited dry bone; long bone (2)
3122	3121	?coffined burial	RB	c. 99%	adult >50 yr. male	amtl; abscess; calculus; caries; osteoarthritis – L, T, C; degenerative disc disease – L, T, C; ankylosis – C6-78; calcified cartilage – rib & thyroid.; enthesophytes – femora, calcanea, iliac crests; exostoses – l. humerus	2-4 eroded; metric with slight reconstruction
3137	3131	redep; ditch fill	?	1 frag. a.	adult >45 yr. male		eroded & abraded (2)
3138	3131	redep. ; ditch fill	?	6 frags. a.	adult >25 yr.		1-2; ?= 2137

context	cut	deposit type	date	quantification	age/sex	pathology	comment
3139	3131	redepos.; ditch fill	?	1 frag. l.	adult >18 yr.		1
3309	3308	<i>in situ</i> burial	RB	c. 97%	adult >50 yr. male	amtl; degenerative disc disease – C, T, L; ankylosis – L-S, ?osteomalacia; osteoarthritis – right knee, right shoulder; periosteal new bone – tibiae; enthesophytes – femora; mv – metopic suture	variable erosion 1-4; most metrics, some reconstruction
3810		wrongly numbered!		1 frag. u.	adult >18 yr.		abraded (2); stained (crowns); longitudinal splitting
5123	?	?	?	c. 1% s.	subadult/adult >13 yr. ??female		abraded (2)
5135	?	articulated/ <i>in situ</i> on ditch base	?	c. 80%	adult >50 yr. male	calculus; periodontal disease; porotic hyperostosis; enthesophytes – patellae; op – T, L	heavily fragmented; some metrics with reconstruction (not cranium) Abraded/eroded (2-4).
5164	5163	<i>in situ</i> burial	RB	c. 80%	adult >45 yr. ??male (contro. traits)	amtl; abscesses; calculus; enthesophytes – calcanea; osteoarthritis – C, hips; Schmorl's node – T; op – T; degenerative disc disease – T, L	Eroded (2-4);. Fragmented; some metrics with reconstruction. Feet mixed.
5209	5166	<i>in situ</i> burial	RB	c. 10% l.	infant/juvenile c. 4-6 yr.		Eroded (5-5+); heavily truncated
6048	6049	<i>in situ</i> burial	RB	c. 6% s.u.l.	adult > 30 yr. ?male	calculus	eroded (5-5+) & heavily fragmented. No metrics
6063	6060	coffined burial	RB	c. 15% s.u.l.	infant c. 2-3 yr.		Eroded (4) & heavily fragmented. + 2 frags. cremated bone.
6151	6150	??ditch fill	?	c. 15%	infant c. 2 yr.		check no. – no arch. components in this fill, looks like remains of articulated deposit. Abraded (3-4) & heavily fragmented. .
6158	6156	coffined burial	RB	c. 25%	adult >45 yr. male	abscess; osteoarthritis - hip	eroded (3-4); heavily fragmented, no metrics. Some rewashing required.

context	cut	deposit type	date	quantification	age/sex	pathology	comment
6161	?6162/ ?6124	? <i>in situ</i> burial	RB	c. 5% s.a.	infant c. 1-3 yr.		eroded (4-5) & heavily fragmented. Context description not clear as to form of this deposit.
6164	6093	coffined burial	RB	c. 85%	adult c. 30-45 yr. male	calculus; amtl; abscess	eroded (3-4). Some metrics with reconstruction, not much skull.
6168	6166	coffined burial	RB	c. 35%	infant c. 3-4 yr. + some intrusive adult teeth.		eroded (3-4); fragmented. requires some rewashing
6171	6169	coffined burial	RB	c. 90%	adult c. 30-45 yr. ??female (acute gsn but rest F)	amtl; calculus; abscess; periosteal new bone – left ribs (visceral surface)	eroded (2-5); limited metrics; needs some rewashing – esp. maxilla/mandible.
6172	6154	coffined burial	RB	c. 8%	subadult/adult c. 15-25 yr.		eroded 5-5+, mostly dust & scraps.
6174	6176	coffined burial	RB	c. 1% s.	infant c. 4-5 yr.		tooth crowns only
6177	6165	<i>in situ</i> burial	RB	c. 3% s.u.l.	adult >30 yr.		eroded/degraded (4-5+).
6185	6214	redep. in grave fill	RB	1) c. 36% 2) c. 10% s.	1) juvenile c. 5-8 yr. u.l. 2) subadult/adult c. 15-20 yr.		eroded (2-3); dark staining, longitudinal splitting.
6186	6214	?coffined burial	RB	c. 85%	adult c. 30-50 yr. male	calculus; caries	eroded/degraded (2-5); fragmented; few metrics; skull may reconstruct (mostly fresh breaks).
7175	7173	redep.; ditch fill		7 frags. s.u.l.	subadult/adult >16 yr.		stained/?scorched; eroded (4); some odd horizontal marks on humerus shaft (?fungus/root etching stained black)

Table 21: Results from scan of cremated bone

KEY: rpd - redeposited pyre debris

context	cut	deposit type	bone weight	age/sex	pyre goods/comment
6004	6003	?rpd in grave fill	28g	subadult/adult >13 yr.	
6005	6003	urned burial	688g	adult	bird bone + other animal. 5 spits & quads.; some trabecular
6008	6008	urned burial	205.0g	subadult/adult >13yr.	some variation
6010	6009	rpd in grave fill	13g	subadult/adult >13 yr.	quadrants
6011	6009	urned burial	295g	adult >18 yr.	4 spits, spit 4 split.; Some trabecular. Some variation.
6013	6012	rpd in grave fill	17g	>infant	no trabecular; some variation.
6014	6012	urned burial	603g	adult >23 yr.	bird bone; some trabecular; some variation
6016	6015	rpd in grave fill	28g	subadult/adult >13 yr.	spitted & quadranted; no trabecular; some variation
6017	6015	urned burial	843g	adult >18 yr.	bird bone. 2 spits – to top of bone & bone. Some trabecular, some variation.
6018	6012	?urned burial/ ?accessory	10g	infant/juvenile c. 4-6 yr. + subadult/adult	no trabecular; some variation
6020	6019	grave fill	5g	subadult/adult >13 yr.	no trabecular; worn & chalky
6021	6019	urned burial			Some animal. 2 spits; backfill-bone & bone, latter quads. Some variation. Little trabecular.
6023	6022	grave fill	20g	subadult/adult >18 yr.	no trabecular, worn & chalky
6024	6022	urned burial	1400g	adult >35 yr.	Bird bone. 3 spits, lower one (with bone) quads. some variation; some trabecular.
6026	6025	?unurned burial	200g	subadult/adult >13 yr.	Spits (2) and quads. Some blue/black. No much trabecular
6034	6033	?rpd in ?post hole	6g	subadult/adult	worn; no trabecular
6036	6035	?in situ or rpd? (??poss. pyre site)	10g	>infant	No trabecular bone
6048	6049	rpd inh. grave fill	22g	adult >18 yr.	
8196	8195	grave fill + ?unurned burial (records unclear)	214g	adult >21 yr.	u/b pig tooth (?grave good). quads., 3 SF bits and some from a vessel; some trabecular
8197	8198	unurned burial	86g	subadult/adult >15 yr.	quads.; no trabecular; some blue
8200	8199	grave fill	2.8g	subadult/adult >13 yr.	u/b pig tooth (grave good?). little trabecular;
8201	8208	unurned burial + rpd	155.3g	adult >18 yr.	quads. & ?spits - will need enviro. info.; eroded; little trabecular bone
8203	8202	grave fill	89g	subadult/adult >15 yr.	quad. & 2 spits; slightly eroded; little trabecular; rare variation.

context	cut	deposit type	bone weight	age/sex	pyre goods/comment
8204	8199	?casket burial	440g	adult >18 yr.	slightly abraded; some trabecular, some variation.
8205	8202	urned burial	548g	adult >23 yr.	slightly eroded; some trabecular.
8207	8206	grave fill	32g	subadult/adult >13 yr.	3 spits, all in quads. No trabecular.
8209	8273	urned burial + grave fill	143.8g	adult >18 yr.	9 bags – exc. 4 spits all quads.; burial (ON 654) much trabecular.; some variations
8211	8199	?grave fill	19g	subadult/adult .13yr	some variation.
8212	8209	casket burial	256g	adult >18 yr,	little trabecular; some variation
8223	8206	urned burial	227g	adult >18 yr.	little trabecular
8272	8273	urned burial	224.7g	subadult 16-18 yr.	some trabecular

Table 22: Condition and preservation of animal bone by area (N)

Area	8	9	14	15	16	Area D	Com. 16	Manston	Joss Bay
N	3	215	156	245	2109	1	928	7	30
Condition	Very poor	Poor	Poor	Fair	Fair	Very poor	Fair	Fair	Poor
Gnawing	-	1	-	4	112	-	21	2	-
Burnt	-	9	47	6	4	-	34	-	-
Loose teeth	-	11	16	9	28	-	58	1	-

Table 23: Animal bone species list and percentages per area (NISP)

Species	Area 8		Area 9		Area 14		Area 15		Area 16		Com. 16		Manston		Joss Bay	
	NISP	%	NISP	%	NISP	%	NISP	%	NISP	%	NISP	%	NISP	%	NISP	%
Equid	1	33	1	0	1	1	2	1	56	3	19	2	1	14	5	17
Cattle	2	66	31	14	9	6	33	13	676	32	212	23	2	29		
Sheep/Goat			41	19	6	4	33	13	650	31	171	18	3	43		
Pig			5	2	22	14	8	3	69	3	23	2				
Dog			25	12			13	5	36	2	193	21				
Bird			23	11	1	1	2	1	8	0	6	1				
Small mammal									5	0	2	0				
Fish			8	4			76	31	1	0						
Amphibian							6	2	3	0	20	2				
Other							2	1								
Indet			81	38	121	76	70	29	605	29	282	30	1	14	25	83
Total	3	99	215	100	160	102	245	99	2109	100	928	99	7	100	30	100

Table 24: Number of bones with potential to inform on population characteristics and butchery

Area	8	9	14	15	16	Com. 16	Manston	Joss Bay
NISP	3	134	35	175	1504	646	6	5
Age	-	18	6	18	404	143	-	1
Measure	-	15	3	12	223	89	-	1
Butchery	-	1	-	2	20	6	-	-
Pathology	-	-	-	-	3	-	-	-

Appendix II: Environmental Tables

Table 25: Charred Plant and Wood Charcoal Remains

Feature No	Context	Sample	Size (L)	Flot Size ml	Root s ml	Grain	Chaff	Cereal Notes	Charred Other	Notes for Table	Charcoal
Area 3											
Late Neolithic											
Mortuary Enclosure Ditch											
7021	7023	601	10	10	70	C	-	grain fragments	-		C
Early Bronze Age											
Ring-ditch											
7091	7069	600	38	125	10	C	-	grain fragment	-		-
Area 8											
Bronze Age											
Pit (possible cremation related deposit)											
7187	7188	602	20	10	50	C	-	grain fragment	C	Chenopodium	C
Late Saxon/Early medieval											
Oven											
7314	7264	608	9	30	40	B	-	free-threshing wheat and barley grain fragments	A	Vicia/Lathyrus, Avena/Bromus, Anthemis, Chenopodium	C
	7259	613	9	20	25	B	-	free-threshing wheat and barley grains	C	Chenopodium	C
	7260	615	10	10	75	C	-	grain fragments	C	Avena/Bromus, Chenopodium	C
	7293	616	30	40	50	B	-	?free-threshing wheat grain fragments	B	Vicia/Lathyrus, Euphorbia, Chenopodium	-
Posthole											
7254	7255	607	10	60	40	A*	B	free-threshing wheat and barley grain fragments, ?rye grain fragments, free-threshing wheat and barley rachis fragments	A	Vicia/Lathyrus, Avena/Bromus, Poaceae, Chenopodium	B

P

P

Feature No	Context	Sample	Size (L)	Flot Size ml	Root s ml	Grain	Chaff	Cereal Notes	Charred Other	Notes for Table	Charcoal	
SFB												
7250	7276	604	6	80	20	A*	A	free-threshing wheat and barley and ?rye grains, free-threshing wheat and barley chaff	A*	Avena/Bromus, Vicia/Lathyrus, Poaceae, Anthemis	A*	PC
	7271	605	10	40	60	A*	B	free-threshing wheat, barley and ?rye grains, free-threshing wheat and barley chaff	A*	Avena/Bromus, Vicia/Lathyrus, Euphorbia, elder, Polygonaceae, Poaceae, Anthemis, Tripleurospermum, Stellaria, Chenopodium	B	
	7268	606	7	75	30	A*	C	free-threshing wheat and barley grain fragments, ?rye grains, barley rachis fragments	A*	Avena/Bromus, Vicia/Lathyrus, Polygonaceae, Poaceae, Chenopodium	-	
	7265	609	10	40	60	C	-	grain fragments	A	Avena/Bromus, elder, Vicia/Lathyrus, Chenopodium (probably modern)	B	
	7251	610	10	80	30	A*	C	free-threshing wheat, barley and ?rye grains, barley chaff	A*	Avena/Bromus, Vicia/Lathyrus, Polygonaceae, Stellaria, elder, Tripleurospermum, Anthemis, Poaceae, Chenopodium	A	PC
	7256	611	10	20	60	A	C	Free-threshing wheat and barley grains, barley chaff fragment	A	Avena/Bromus, Vicia/Lathyrus, Plantago, Anthemis	C	
	7253	612	10	40	60	A	-	free-threshing wheat and barley grains	A	Avena/Bromus, Vicia/Lathyrus, Euphorbia, Chenopodium	B	
	7261	614	20	150	60	A**	C	barley, free-threshing wheat and ?rye grains, chaff fragments	A**	sloe fragment, Avena/Bromus, Vicia/Lathyrus, Poaceae, Centaurea, Anthemis, Polygonaceae, Chenopodium	B	P
Ditch												
7242	7244	603	20	60	50	A**	-	free-threshing wheat and barley grain fragments, ?rye grains	A**	Vicia/Lathyrus, Polygonaceae, Avena/Bromus, hazelnut fragment, parenchyma, Poaceae, Chenopodium	A	P
Undated												
Pot Fill												
7187	7202	619	16.5	40	10	-	-		C	Chenopodium	A	C

Feature No	Context	Sample	Size (L)	Flot Size ml	Root s ml	Grain	Chaff	Cereal Notes	Charred Other	Notes for Table	Charcoal	
Area 9												
Romano-British												
Cremation related deposits and pot fills												
8208	8201	717	27	60	70	A	A	hulled wheat and barley grain fragments, glume fragments	A	Euphorbia, Vicia/Lathyrus, Poaceae, Chenopodium	C	P
	8201	718	18	15	50	C	-	hulled wheat and barley grain fragments	C	Euphorbia, Chenopodium	C	
	8201	719	18	10	50	C	C	grain fragments, glume fragment	C	Vicia/Lathyrus, hazelnut fragment, Chenopodium	C	
	8201	725	18	30	50	A	B	hulled wheat and barley grain fragments, glume fragments	B	Polygonaceae, Chenopodium	B	P
	8201	726	19	10	30	B	C	hulled wheat grain fragments, glume fragment	C	Poaceae, Chenopodium	C	
	8201	727*	12	10	50	C	-	grain fragments	C	Avena/Bromus, Chenopodium	C	
	8201	738	10	30	60	C	-	grain fragments	B	Vicia/Lathyrus, Chenopodium (probably modern)	B	
	8201	739	10	30	50	C	C	grain fragments, glume fragments	C	Avena/Bromus, Chenopodium	C	
	8201	740	10	30	50	C	C	wheat grain fragments, glume fragments	C	Chenopodium	B	
	8201	752	17	40	40	C	C	grain fragments, glume fragments	C	Chenopodium	B	
	8201	753	10	30	35	C	-	grain fragments	C	Chenopodium	C	
	8201	754	16	15	30	C	C	hulled wheat grain fragments, glume fragments	C	Chenopodium	B	
	8212	756	4	5	60	C	C	wheat grain fragments, glume fragment	-			
	8201	755	1	1	40	C	-	grain fragment	-		-	
	8201	789	0.6	1	50	-	-		-		C	
8195	8196	703	7	10	70	C	C	hulled wheat and barley grain fragments, glume fragments	B	Avena/Bromus, Chenopodium	-	P
	8196	704	6	5	70	C	C	grain fragments, glume fragments	B	Vicia/Lathyrus, Euphorbia, Chenopodium (probably modern)	C	
	8196	709	10	15	80	C	C	grain fragments, glume fragments	C	Euphorbia, Chenopodium	-	
	8196	710	9	10	80	C	C	grain fragments, glume fragments	C	Euphorbia, Avena/Bromus, Chenopodium	-	
	8196	790	0.8	3	50	C	-	grain fragment	C	Chenopodium (probably modern)	C	

Feature No	Context	Sample	Size (L)	Flot Size ml	Roots ml	Grain	Chaff	Cereal Notes	Charred Other	Notes for Table	Charcoal
8199	8200	711	2	2	75	-	-	none	-		-
	8200	716	2	3	75	-	C	glume fragment	C	Chenopodium	-
	8200	720	5	10	75	B	C	wheat grain fragments, glume fragments	C	Poaceae, Chenopodium	-
	8211	732	10	10	75	C	B	hulled wheat and barley grain fragments, glume fragments	C	Avena/Bromus, Euphorbia	C
	8204	735	2.2	5	50	C	C	grain fragment, glume fragment	-		-
	8200	751	5	5	65	C	C	?wheat grain fragments, glume fragments	C	Poaceae, Chenopodium	-
	8200	791	0.8	1	60	C	C	grain fragment, glume fragment	-		-
8202	8203	712	10	10	70	B	A	grain fragments, glume fragments	C	Chenopodium	C
	8203	713	7	10	80	B	A	?barley grain fragments, glume fragments	C	Polygonaceae, Euphorbia, Chenopodium	C
	8203	714	9	10	60	C	C	wheat grain fragments, glume fragments	C	Chenopodium	-
	8203	715	7	3	70	C	C	grain fragments, glume fragments	C	Chenopodium	-
	8203	721	10	10	75	B	A	grain fragments, glume fragments	C	Chenopodium	-
	8203	722	4	5	75	C	B	hulled wheat grain fragments, glume fragments	C	Avena/Bromus, Euphorbia, Arrhenatherum elatius	-
	8203	723	10	10	80	B	B	?hulled wheat grain fragments, glume fragments	B	Avena/Bromus, Vicia/Lathyrus, Chenopodium	C
	8203	724	8	5	60	B	-	grain fragments	C	Euphorbia, Chenopodium	-
	8205	737	3	2	65	C	C	grain fragments, glume fragments	C	Euphorbia, Vicia/Lathyrus	-
	8203	787	0.3	1	50	-	-		C	Chenopodium (probably modern)	-
	8203	792	2	1	70	-	-	none	-	none	-
8273	8209	733	9	5	70	C	C	grain fragments, glume fragments	C	Poaceae, Chenopodium	-
	8209	736	9	5	50	C	C	grain fragments, glume fragments	C	Chenopodium	-
	8209	741	12	25	70	C	C	grain fragments, glume fragments	C	Chenopodium	C
	8209	749	10	10	60	B	A	hulled wheat and barley grain fragments, glume and barley rachis fragments	B	Avena/Bromus, Vicia/Lathyrus, Chenopodium	-
	8209	750	5	2	60	C	-	grain fragments	C	Chenopodium	-
	8209	758	9	10	40	C	C	barley grain fragments, glume base fragment	A	Chenopodium (probably modern)	C

Feature No	Context	Sample	Size (L)	Flot Size ml	Root s ml	Grain	Chaff	Cereal Notes	Charred Other	Notes for Table	Charcoal
8273	8209	760	10	10	50	B	B	wheat grain fragments, glume and culm node fragments	C	Vicia/Lathyrus, Chenopodium	-
	8209	776	7	5	60	C	C	hulled wheat grain fragments, glume fragments	B	Avena/Bromus, Chenopodium (probably modern)	-
	8209	777	4	2	50	C	B	grain fragments, glume fragments	C	Chenopodium	-
	8209	778	6	5	70	C	C	barley and wheat grain fragments, glume and barley chaff fragments	C	Avena/Bromus, hazelnut fragment, Chenopodium	-
	8209	779	4	5	70	C	-	wheat grain fragments	C	Chenopodium	-
	8209	780	5	5	60	C	C	grain fragments, glume fragments	-		-
	8209	781	5	3	50	B	C	hulled wheat fragments, glume fragments	C	Chenopodium	-
	8209	782	3	2	70	C	C	grain fragment, glume fragment	C	Vicia/Lathyrus, Chenopodium	C
	8209	781	5	3	50	B	C	hulled wheat fragments, glume fragments	C	Chenopodium	-
	8209	782	3	2	70	C	C	grain fragment, glume fragment	C	Vicia/Lathyrus, Chenopodium	C
	8209	783	5	5	70	B	B	barley and hulled wheat grain fragments, glume fragments	C	Euphorbia, Vicia/Lathyrus, Chenopodium	-
	8272	785	3	5	35	-	C	glume fragment	-		-
	8209	788	2	5	75	C	-	wheat grain fragments	C	Euphorbia, Chenopodium	-
	8209	794	0.1	1	10	C	C	grain fragments, glume base fragment	C	Anthemis	-
	8209	795	1	1	30	-	C	glume base	-		-
8209	796	3	5	20	-	-	none	-	none	-	
8197	8198	705	5	5	50	-	-		C	Chenopodium (probably modern)	C
	8198	706	5	5	60	C	C	grain fragments, glume fragments	C	Euphorbia	C
	8198	707	3	3	65	C	C	grain fragments, glume fragments	C	Chenopodium	-
	8198	708	3	3	80	-	C	glume fragments	C	Polygonaceae	-
8206	8207	727	10	10	25	C	C	grain fragments, glume bases	C	Vicia/Lathyrus, Chenopodium	B
	8207	728	10	15	50	B	C	hulled wheat and barley grain fragments, glume fragments	C	Chenopodium	C
	8207	729	20	70	25	C	C	wheat grain fragments, glume base fragment	C	Chenopodium	A
	8207	730	20	40	30	B	C	wheat and ?barley grain fragments, glume and barley rachis fragments	B	Avena/Bromus, Vicia/Lathyrus, Polygonaceae, Chenopodium	A

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C P

Feature No	Context	Sample	Size (L)	Flot Size ml	Roots ml	Grain	Chaff	Cereal Notes	Charred Other	Notes for Table	Charcoal	
8206	8207	731	8	10	40	-	B	glume fragments	C	Vicia/Lathyrus, Avena/Bromus, Chenopodium	C	C
	8207	742	18	150	15	C	C	grain fragments, glume base	-		A*	C
	8207	743	8	50	10	C	C	grain fragments, glume base	C	Chenopodium	A*	C
	8207	744	6	45	10	-	C	glume bases	C	Chenopodium	A*	C
	8207	745	20	30	65	C	B	grain fragments, glume fragments	B	Vicia/Lathyrus, Chenopodium (probably modern)	C	C
	8207	746	17	40	35	C	C	grain fragments, glume fragments	C	Avena/Bromus	A	C
	8207	747	12	40	20	C	C	hulled wheat and barley grains, glume fragments	C	Vicia/Lathyrus	A*	C
	8207	748	6	10	50	C	B	?hulled wheat grain fragments, glume fragments	-		B	C
	8223	770	5	5	30	-	C	glume base	C	Polygonaceae, Vicia/Lathyrus	B	
8207	793	0.6	5	30	C	-	wheat grain fragment	C	Euphorbia, Chenopodium	-		
Ditches												
8145	8148	701	20	40	80	A	-	hulled wheat and ? Barley grains	C	Avena/Bromus	-	
8310	8311	784	20	100	40	A*	C	hulled wheat and barley grain fragments, barley rachis	A	Avena/Bromus, Galium, Vicia/Lathyrus, Chenopodium	A	P
8213	8214	757	20	15	65	C	C	grain fragments, glume fragments	C	hazel nut fragments, Chenopodium	-	
8254	8255	774	17	25	50	A	-	?hulled wheat grain fragments	B	Vicia/Lathyrus, Avena/Bromus, hazelnut fragments, Chenopodium	A	P
Pits												
8163	8161	702	20	90	10	C	-	grain fragment	A	Chenopodium (probably modern)	A*	
8251	8246	771	20	10	35	A	C	hulled wheat and barley grain fragments, glume fragments	B	Avena/Bromus, Vicia/Lathyrus, Chenopodium (probably modern)	B	
8243	8244	772	40	275	25	A***	C	free-threshing wheat and barley grains, barley chaff. Free-threshing wheat	A**	hazel nut fragments, Avena/Bromus, peas/beans, Euphorbia, Vicia/Lathyrus, Tripleurospermum, Polygonaceae, Chenopodium	A*	C P
8240	8241	773	4	10	50	A	C	wheat and barley grain fragments, glume base	C	Tripleurospermum	C	P
Tree throw												
8056	8055	700	18	50	80	A	B	?hulled wheat grain fragments, glume fragments	C	Avena/Bromus, Poaceae	-	

Feature No	Context	Sample	Size (L)	Flot Size ml	Root s ml	Grain	Chaff	Cereal Notes	Charred Other	Notes for Table	Charcoal	
Area 14												
Neolithic												
Pits												
6247	6248	863	28	50	10	C	C	grain fragment, glume fragments	A*	sloe stone, hazelnut fragments	A	C P
	6264	866	25	15	20	-	-		A	hazelnut fragments	B	
6330	6331	870	17	100	10	-	-		A*	hazelnut fragments	B	C P
6219	6220	860	7	60	5	-	-		A**	hazelnut fragments	B	
	6221	861	6	50	20	-	-		A*	hazelnut fragments	B	
Iron Age/Romano-British												
Ditches												
6270	6272	869	17	10	60	-	-		A	hazel nut fragments	C	
6259	6262	867	20	10	65	C	C	grain fragments, glume base fragments	C	Polygonaceae, Avena/Bromus, hazelnut fragment, unidentified spiky ?	-	
Romano-British												
Cremation related deposits and pot fills												
6003	6004	500	18	10	40	C	-	grain fragments	-		C	
	6005	581	10.2	15	50	B	C	hulled wheat and ?barley grain fragments, glume fragments	C	Vicia/Lathyrus, Avena/Bromus	C	
6006	6008	580	20	20	50	B	B	hulled wheat and barley grains, glume fragments	B	Vicia/Lathyrus, Avena/Bromus, Veronica	B	P
6009	6010	516	8	60	5	C	-	hulled wheat grain fragments	C	Vicia/Lathyrus	A	C
	6010	517	5	20	25	C	C	hulled wheat grains, glume fragments	B	Vicia/Lathyrus, Avena/Bromus	C	C
	6010	518	9	30	10	C	-	grain fragments	C	Vicia/Lathyrus	B	C
	6010	519	7	40	7	B	-	wheat grain fragments	B	Avena/Bromus, Vicia/Lathyrus	A	C
	6011	576.1	25	15	50	A	B	wheat grains, glume fragments	C	Vicia/Lathyrus	A	C
	6011	576.2	20	100	3	A	B	hulled wheat and barley grains, glume fragments	B	Vicia/Lathyrus, Avena/Bromus, Polygonaceae, Chenopodium	A*	C P
6011	576.3	10	25	10	B	C	wheat and ?barley grain fragments, glume fragment	C	Arrhenatherum, Avena/Bromus	B	C	

Feature No	Context	Sample	Size (L)	Flot Size ml	Root s ml	Grain	Chaff	Cereal Notes	Charred Other	Notes for Table	Charcoal	
6009	6011	576.4A	3	5	10	C	-	wheat grain fragments	C	Vicia/Lathyrus	B	C
	6011	576.4B	4	15	10	C	-	wheat grain fragments	C	Vicia/Lathyrus	A	C
	6011	576.5	8	10	20	-	-		C	Vicia/Lathyrus	B	C
6012	6013	501	4	5	50	B	B	?hulled wheat grain fragments, glume frags.	-		-	P
	6013	502	3.5	5	50	C	C	grain fragments, glume bases	C	Vicia/Lathyrus	-	
	6013	503	4.5	5	70	C	C	hulled wheat and barley grains, glume frags.	C	Vicia/Lathyrus	-	
	6013	504	4	5	75	-	-		C	Avena/Bromus	C	
	6013	510	2	2	75	C	C	grain fragments, glume base	-		-	
	6013	511	2.5	2	75	-	C	glume bases	-		-	
	6013	512	4.5	5	60	C	-	grain fragment	-		C	
	6013	513	2	2	65	-	-		C	Chenopodium	-	
	6018	514	1.2	2	60	-	C	glume bases	-		-	
	6014	579	24	15	70	B	C	hulled wheat grains, glume fragments	C	Avena/Bromus, Galium, Vicia/Lathyrus	B	
	6014	864	1.8	1	20	C	C	hulled wheat grain fragments, glume fragment	C	Avena/Bromus	-	
6015	6016	505	6	5	40	C	C	?wheat grain fragments, glume bases	C	Chenopodium (prob. modern)	B	C
	6016	506	6	5	50	C	C	?hulled wheat grain fragments, glume frags.	C	Chenopodium, Vicia/Lathyrus	C	C
	6016	507	15	20	25	C	-	grain fragment	C	Galium	B	C
	6016	508	18	15	25	B	B	hulled wheat grains, glume frags, Avena awn	C	Galium, Avena/Bromus	B	C P
	6016	509	8	5	30	C	-	grain fragments	C	Vicia/Lathyrus, Arrhenatherum elatius	B	C
	6016	515	7	5	30	C	C	hulled wheat grain fragments, glume fragments	-		B	C
	6016	520	10	10	60	C	-	grain fragments	C	Polygonaceae	C	C
	6016	521	17	10	50	B	-	?hulled wheat grain fragments	-		C	C
	6016	530	9	5	60	C	C	hulled wheat grain fragments, glume frags.	-		C	C
	6016	531	10	5	25	C	-	hulled wheat grain	B	hazelnut, Avena/Bromus, Chenopodium, Polygonaceae	B	C
	6017	577.1A	20	30	40	B	B	wheat grain fragments, glume fragments	B	hazelnut fragment, Polygonaceae, Avena/Bromus	B	C

Feature No	Context	Sample	Size (L)	Flot Size ml	Root s ml	Grain	Chaff	Cereal Notes	Charred Other	Notes for Table	Charcoal	
6015	6017	577.1B	24	30	30	A	B	hulled wheat and ?barley grains, glume fragments	B	Galium, Crataegus frag, Poaceae, Vicia/Lathyrus	C	C P
	6017	577.2	11.5	40	15	B	C	hulled wheat and ?barley grain fragments, glume fragments	C	Vicia/Lathyrus, Galium	A*	C
	6017	577.3	20	5	40	C	-	grain fragment	C	hazelnut frag, Poaceae	C	C
6019	6020	522	6	5	40	C	C	Hulled wheat grain, glume base	C	Avena/Bromus, Chenopodium	-	
	6020	523	8	5	60	B	C	?hulled wheat grain fragments, glume fragments	-		C	
	6020	528	8	3	75	C	C	?wheat grain fragments, glume fragments	C	Polygonaceae	-	
	6020	529	5	3	65	C	-	grain fragments	-		C	
	6020	533	8	5	60	B	B	Hulled wheat grains, glume bases	C	Chenopodium	C	P
	6020	534	7	5	80	C	-	grain fragments	-		C	
	6020	535	5	3	25	C	-	wheat grain fragment	C	Chenopodium	C	
	6020	536	5	5	30	C	C	grain fragment, glume fragment	C	Avena/Bromus	B	
	6021	582	22	10	75	B	A	?wheat grain fragments, glume fragments	C	Chenopodium	C	
	6021	582.1	20	5	50	C	C	grain fragments, glume base fragments	B	Chenopodium, Vicia/Lathyrus, Avena/Bromus	C	
6019	6021	582.2A	4	3	10	C	C	grain fragments, glume fragments	B	Vicia/Lathyrus, Poaceae, Chenopodium	C	
	6021	582.2B	4	3	20	C	C	wheat grain fragments, glume base fragments	C	Vicia/Lathyrus	-	
	6021	582.2C	4	3	10	C	C	wheat grain fragments, glume base fragments	C		B	
	6021	582.2D	5	5	20	C	C	?wheat and barley grain fragments, glume fragments	C	Chenopodium	C	
6022	6023	524	12	5	80	C	C	grain fragment, glume fragment	C	Avena/Bromus, Vicia/Lathyrus	-	
	6023	525	4	3	65	C	C	grain fragment, glume base	-		-	
	6023	526	10	5	50	B	C	hulled wheat grains, glume fragments	C	Vicia/Lathyrus, Avena/Bromus, Chenopodium	-	P
	6023	527	3	1	50	-	-	none	-	none	-	
	6023	538	10	5	80	C	-	grain fragments	C	Avena/Bromus	-	
	6023	539	4	3	65	-	C	glume base	-		-	
	6023	540	15	5	40	C	C	grain fragment, glume fragment	C	Chenopodium (probably modern)	C	

Feature No	Context	Sample	Size (L)	Flot Size ml	Roots ml	Grain	Chaff	Cereal Notes	Charred Other	Notes for Table	Charcoal
6022	6023	541	3	1	80	-	-	none	-	none	-
	6024	578.1	45	15	75	A	B	hulled wheat and barley grains, glume fragments	A	Vicia/Lathyrus, Chenopodium, Polygonaceae, hazelnut fragment, Avena/Bromus	C
	6024	578.2	13.9	15	65	A	A	hulled wheat and ?barley grains, glume fragments	C	Avena/Bromus, Chenopodium	C
6025	6026	542	11	5	65	B	C	hulled wheat grain fragments, glume fragments	-		-
	6026	543	10	5	65	C	C	grain fragments, glume fragments	-		C
	6026	546	2	2	20	C	C	grain fragment, glume base	C	Avena/Bromus, Vicia/Lathyrus	-
	6026	547	1.5	3	20	C	C	grain fragments, glume fragment	-		B
	6026	548	7	5	60	B	B	?hulled wheat grain fragments, glume fragments	C	Polygonaceae	-
	6026	549	9	5	50	C	B	grain fragments, glume bases	-		C
	6026	553	11	5	60	C	C	?barley and wheat grain fragments, glume fragments	C	Avena/Bromus	-
	6026	554	8	5	60	B	B	wheat grain fragments, glume fragments	-		C
	6026	555	2	2	50	C	C	grain fragments, glume fragment	C	Vicia/Lathyrus	-
	6026	556	2	2	25	C	C	hulled wheat grains, glume fragments	-		-
	6026	557	4	1	40	C	-	grain fragments	C	Vicia/Lathyrus	-
	6026	558	7	2	70	C	C	wheat grain fragments, glume fragment	-		-
6027	6028	544	10	15	40	B	-	wheat grain fragments	-		A
	6028	545	9	10	50	C	C	grain fragments, glume fragments	C	Vicia/Lathyrus	B
	6028	550	10	15	65	B	B	hulled wheat grain fragments, glume fragments	C	Avena/Bromus, Vicia/Lathyrus	A
	6028	551	18	15	40	A	B	?wheat grain fragments, glume fragments	C	Polygonaceae, Avena/Bromus, Vicia/Lathyrus	B
	6028	552	7	10	40	B	C	hulled wheat grain fragments, glume frags	C	Poaceae	B
6033	6034	564	4	1	65	-	C	glume fragments	-		C
	6034	568	4	2	40	C	C	grain fragments, glume fragments	C	Vicia/Lathyrus, Avena/Bromus	-

Feature No	Context	Sample	Size (L)	Flot Size ml	Root s ml	Grain	Chaff	Cereal Notes	Charred Other	Notes for Table	Charcoal	
Grave												
6049	6048	583	1.5	5	10	A	A	hulled wheat and barley grains, glume fragments, barley chaff	A	Avena/Bromus, Polygonaceae, Vicia/Lathyrus	C	P
	6048	584	10	3	10	C	C	grain fragments, glume fragments	C	Vicia/Lathyrus, Polygonaceae	-	
	6048	588	9	3	40	C	B	hulled wheat and barley grains, glume fragments, barley chaff	C	Avena/Bromus	-	
	6059	589	10	45	5	A*	A*	hulled wheat and barley grains, glume fragments and barley chaff and Avena awns	A*	Avena/Bromus, Vicia/Lathyrus, Polygonaceae, Poaceae	C	P
	6048	865	2.2	2	60	-	C	glume fragment	C	Vicia/Lathyrus, Chenopodium	-	
6093	6099	806	0.2	2	50	-	-	none	-	none	-	
Pit												
6031	6032	559	10	2	35	C	C	wheat grain fragments, glume fragment	C	Vicia/Lathyrus, Poaceae	-	
	6032	560	8	1	25	C	C	grain fragments, glume fragments	-		C	
	6032	561	8	2	60	B	B	grain fragments, glume fragments	C	Vicia/Lathyrus	C	P
	6032	562	5	1	35	C	C	grain fragments, glume fragment	-		-	
Postholes												
6033	6034	563	4	3	50	C	B	grain fragments, glume fragments	C	Vicia/Lathyrus	C	
	6034	565	5	3	40	C	C	wheat grain fragments, glume fragments	C	Avena/Bromus, Vicia/Lathyrus	-	
	6034	566	6	5	50	C	B	grain fragments, glume fragments	C	Avena/Bromus	C	
	6034	567	7	5	25	C	B	hulled wheat grains, glume fragments	C	Avena/Bromus, Vicia/Lathyrus, hazelnut fragment	C	
	6034	569	6	5	30	C	B	grain fragments, glume fragments	C	Avena/Bromus, Polygonaceae	C	
	6034	570	5	1	20	C	C	grain fragment, glume fragments	C	Vicia/Lathyrus, Avena/Bromus, Polygonaceae	-	P
6035	6036	571	24	5	75	B	A	hulled wheat grain fragments, glume frags	C	Vicia/Lathyrus, Galium	C	P
	6036	572	10	5	75	C	A	grain fragments, glume fragments	C	Vicia/Lathyrus, Avena/Bromus	-	
	6036	573	8	2	50	C	C	grain fragments, glume fragments	C	Avena/Bromus	C	
	6036	574	20	10	60	B	B	hulled wheat fragment, glume fragments	C	Avena/Bromus, Polygonaceae	C	
	6036	575	20	15	0	B	B	?hulled wheat grain fragments, glume frags	C	Avena/Bromus	B	

Feature No	Context	Sample	Size (L)	Flot Size ml	Root s ml	Grain	Chaff	Cereal Notes	Charred Other	Notes for Table	Charcoal	
Late Saxon/Early medieval												
SFB												
6311	6312	871	40	40	10	A	C	wheat and barley grain fragments , glume base fragment	B	Vicia/Lathyrus, Galium, Polygonaceae	A	C P
	6313	872	40	25	20	A	C	wheat and barley grain fragments, glume base fragments	A	Vicia/Lathyrus, hazelnut fragment, Chenopodium, Avena/Bromus	B	C P
Undated												
Pits												
6138	6143	591	10	10	10	C	C	grain fragments, glume base fragments	C	Vicia/Lathyrus, Poaceae	A	
6265	6266	868	8	15	35	A	-	hulled wheat and barley grain fragments	C	Chenopodium, Vicia/Lathyrus	C	
Area 15												
Iron Age/Early Romano-British												
Ditches												
5057	5062	402	10	20	15	A*	-	mainly barley grains. 1x cf. hulled wheat. 2x f-t wheat	A*	Avena/Bromus, Vicia/Lathyrus, Fallopia Polygonaceae, Chenopodium	B	P
5274	5273	435	9	15	50	A	-	wheat grain fragments	C	Vicia/Lathyrus, Polygonaceae, Chenopodium	B	
Romano-British												
Ditch												
5079	5080	403	9	25	30	B	B	?hulled wheat grain fragments, glume fragments	A	fruit stone fragment (?sloe), Polygonaceae, elder, Avena/Bromus, Chenopodium	A	P
5157	5155	417	4	50	5	A*	A**	hulled wheat and barley grain fragments, glume fragments , barley rachis, Avena chaff	A*	Avena/Bromus, Vicia/Lathyrus, Polygonaceae, Poaceae, Tripleurospermum, Anthemis	C	P
	5151	418	8	10	8	A	A*	hulled wheat and barley grain fragments, glume fragments	A	Avena/Bromus, Vicia/Lathyrus, Polygonaceae, Tripleurospermum	C	
5201	5202	424	18	30	65	A	C	hulled wheat and barley grain fragments, glume base fragments	B	hazelnut fragment, Avena/Bromus, Vicia/Lathyrus	C	P
5225	5224	430	10	5	10	C	C	grain fragments, glume fragments	C	Avena/Bromus, Chenopodium	C	

Feature No	Context	Sample	Size (L)	Flot Size ml	Root s ml	Grain	Chaff	Cereal Notes	Charred Other	Notes for Table	Charcoal
5229	5228	431	8	20	1	A	-	hulled wheat grain fragments	A	Avena/Bromus, Vicia/Lathyrus, hazelnut fragments, Euphorbia	C
Oven											
5094	5097	405	10	50	2	C	C	grain fragments, glume base fragments	C	Chenopodium	A*
	5096	406	10	125	2	C	-	grain fragment	C	Polygonaceae	A*
Pits											
5146	5145	416	7	120	3	A**	-	4-5 f-t wheat wheat. The rest barley grain fragments with large oats (<i>Avena</i> sp.)	A*	hazelnut fragments, Vicia/Lathyrus (including Vicia faba), Avena/Bromus, Polygonaceae, Anthemis, Chenopodium	A
5139	5140	407	18	50	7	A	A	hulled wheat and barley grain fragments, glume base fragments	A	Avena/Bromus, Vicia/Lathyrus, Polygonaceae, Chenopodium, Tripleurospermum	A
Layer											
	5172	428	9	5	10	C	-	wheat grain fragments	C	Chenopodium	-
Undated											
Ditches											
5143	5120	425	10	400	2	A**	C	barley oats rye wheat grain fragments, barley rachis, culm node SAXON	A*	Avena/Bromus, Vicia/Lathyrus including Vicia faba, Brassicaceae, Polygonaceae, Anthemis, Carex, Chenopodium. Onobrychis	A*
5253	5255	432	8	3	20	C	C	grain fragments, glume base fragment	C	Avena/Bromus, Polygonaceae	-
	5254	433	7	5	40	C	C	?wheat grain fragments, glume fragments	A	Vicia/Lathyrus, Avena/Bromus, Chenopodium, elder (lots uncharred)	C
5257	5259	434	8	1	25	C	-	grain fragments	C	Vicia/Lathyrus, hazelnut fragment	-
Layer											
	5002	429	10	1	40	C	C	grain fragment, glume fragment	C	Anthemis, Chenopodium	C
Area 16											
Middle Bronze Age											
Ditches											
1513	1514	038	10	2	40	C	-	grain fragments	-		-
	1518	039	20	10	10	A*	C	hulled wheat and barley grain fragments, glume base fragments	B	hazel nut fragments, Avena/Bromus, Polygonaceae, Vicia/Lathyrus, Chenopodium	C

C
C
C?
P
P
C?
P
P

Feature No	Context	Sample	Size (L)	Flot Size ml	Root s ml	Grain	Chaff	Cereal Notes	Charred Other	Notes for Table	Charcoal
Late Bronze Age/Early Iron Age											
1278	1279	017	10	10	60	A	A	hulled wheat and barley grain fragments, glume fragments. emmer grain and 1x glume	C	Vicia/Lathyrus, Avena/Bromus, Chenopodium	C
Pits											
1280	1282	018	10	40	65	A	A	hulled wheat and barley grains, spelt & emmer glumes? emmer grain	A	Vicia/Lathyrus, Avena/Bromus, Polygonaceae, Chenopodium. Pisium?	C
1274	1275	019	10	5	40	B	B	hulled wheat and barley grain fragments, glume fragments	B	Vicia/Lathyrus, Avena/Bromus, Galium, Chenopodium	C
Posthole											
1270	1273	016	10	50	75	A	A	hulled wheat and barley grains, glume fragments and barley rachis. spelt	A	Vicia/Lathyrus Avena/Bromus Polygonaceae Tripleurospermum, Poaceae, Chenopodium	C
1321	1322	020	10	10	60	B	A	?hulled wheat grains, glume fragments. cf. 1 emmer most fragmentary.	B	Avena/Bromus, Polygonaceae, Vicia/Lathyrus, Chenopodium	-
Early /Middle Iron Age											
Ditch											
1195	1184	022	40	40	5	B	A	?barley grain fragments, glume fragments	B	Vicia/Lathyrus, Avena/Bromus, Chenopodium	C
	1155	028	20	5	10	C	B	grain fragments, glume fragments	B	Avena/Bromus, Poaceae, Polygonaceae	C
late prehistoric											
Test pit											
TP 4	1792	049	7	15	65	C	-	wheat grain fragments	C	Polygonaceae, Avena/Bromus, Chenopodium	C
Ditches											
1444	1445	034	4	40	5	B	-	grain fragments	C	hazel nut fragment, Vicia/Lathyrus	A*
1449	1452	041	10	10	10	A	B	hulled wheat and barley grain fragments, glume fragments	A	Vicia/Lathyrus, Avena/Bromus, Polygonaceae, Chenopodium	B
1555	1557	045	6	10	0	B	C	hulled wheat and barley grain fragments, glume fragments	B	Polygonaceae, Vicia/Lathyrus, hazel nut fragments, Chenopodium	C
1551	1553	046	7	5	10	B	C	wheat and barley grain fragments, glume base fragment	C	Avena/Bromus	C
Pit/tree throw											
1412	1414	030	8	15	50	A	B	hulled wheat and barley grain, glume fragments	C	Avena/Bromus, Vicia/Lathyrus	C

Feature No	Context	Sample	Size (L)	Flot Size ml	Root s ml	Grain	Chaff	Cereal Notes	Charred Other	Notes for Table	Charcoal
Late Iron Age/Early Romano-British											
Ditch											
1158	1160	024	40	125	5	A*	A	hulled wheat and barley grains, glume fragments and Avena awns	A	hazel nut frags, Avena/Bromus, Vicia/Lathyrus, Polygonaceae, Chenopodium	A
Hearth											
1214	1215	012	10	50	10	C	C	grain fragments, glume base fragment	C	Avena/Bromus, Chenopodium	-
Pit											
1217	1218	013	20	10	40	A	A	hulled wheat and barley grain fragments, glume fragments	B	Vicia/Lathyrus, Polygonaceae, Chenopodium	-
8743	8744	901	3	50	10	B	A	wheat grain fragments, glume fragments, barley rachis	B	Avena/Bromus, Vicia/Lathyrus	A*
Romano-British											
Ditches											
1007	1008	026	20	40	5	A*	A*	hulled wheat and barley grain fragments, glume fragments	A*	Vicia/Lathyrus, Avena/Bromus, Polygonaceae, Chenopodium	C
1028	1029	025	40	60	5	A	A*	hulled wheat and barley grain fragments, glume fragments and barley chaff	A*	Vicia/Lathyrus, Avena/Bromus, Plantago, Polygonaceae, Chenopodium	A
1118	1119	023	40	250	2	A*	A*	hulled wheat and barley grain fragments, glume fragments	A*	peas/beans, Avena/Bromus, Polygonaceae, Vicia/Lathyrus, Chenopodium	A*
1286	1287	021	10	40	60	C	C	?hulled wheat grain fragments, glume base fragments	C	Vicia/Lathyrus, Chenopodium	C
1325	1326	014	10	20	10	A	A	hulled wheat and barley grains, glume fragments	B	Avena/Bromus, Polygonaceae, Chenopodium	B
	1327	015	10	5	30	B	B	hulled wheat and barley grain, glume fragments	C	Vicia/Lathyrus, Avena/Bromus	C
8707	8708	900	40	200	80	A	A	hulled wheat and barley grain fragments, glume fragments	A	Vicia/Lathyrus, Avena/Bromus, Chenopodium	C
Test pit											
TP 4	1796	048	7	30	25	A	A	hulled wheat and barley grain fragments, glume fragments and barley rachis	A	Avena/Bromus, hazel nut fragemnts, Polygonaceae, Vicia/Lathyrus, Anthemis, Chenopodium	A

C P

P

P

P

C P

P

P

Feature No	Context	Sample	Size (L)	Flot Size ml	Root s ml	Grain	Chaff	Cereal Notes	Charred Other	Notes for Table	Charcoal
Undated											
Ditches											
1456	1458	042	10	3	25	C	C	wheat and barley grain fragments, glume fragments	C	Avena/Bromus, Chenopodium	-
1486	1487	035	17	40	15	A*	A	hulled wheat and barley grain fragments, glume fragments	A*	Vicia/Lathyrus, Polygonaceae, Galium, Chenopodium	-
1492	1494	040	10	10	50	C	-	grain fragments	A	Vicia/Lathyrus, Avena/Bromus, Chenopodium (probably modern)	B
1495	1496	043	10	3	30	B	-	Barley and ?wheat grain fragments	A	Chenopodium (possibly modern)	-
1503	1504	036	10	5	10	C	B	grain fragments, glume base fragments	C	Avena/Bromus, Vicia/Lathyrus, Chenopodium	-
1531	1533	037	10	10	50	B	C	?barley grain fragments, glume base fragment	B	Vicia/Lathyrus, Chenopodium (probably modern)	C
1564	1565	044	10	20	10	A*	B	Barley and hulled wheat grain fragments, glume fragments	A	Avena/Bromus, Polygonaceae, Chenopodium, Veronica	B
Kiln/oven											
1402	1403	031	0.5	1	20	-	C	glume fragment	-		-
	1403	031*	0.5	1	20	-	-	none	-	none	-
	1404	032	2	3	10	A	C	hulled wheat and grain fragments, glume fragment	C	Galium, Vicia/Lathyrus	C
Pit											
1410	1411	033	10	1	35	-	-	-	B	Chenopodium (probably modern)	-
COMPOUND 16											
Bronze Age											
Animal burial											
3535	3534	320	21	20	25	A*	A*	hulled wheat and barley grain fragments, glume fragments (emmer and spelt)	A	Avena/Bromus, Plantago, Vicia/Lathyrus, Polygonaceae, Chenopodium	C
Ditch											
3294	3299	308	14	50	75	B	B	wheat grain fragments, glume fragments	A	Vicia/Lathyrus (including Vicia faba), Polygonaceae	-

C P

P

Feature No	Context	Sample	Size (L)	Flot Size ml	Root s ml	Grain	Chaff	Cereal Notes	Charred Other	Notes for Table	Charcoal
?Iron Age											
Ditches											
8906	8905	951	9	5	70	-	-	none	C	Avena/Bromus, Chenopodium	-
8901	8900	950	9.5	5	50	C	C	indeterminate grain fragments, glume base	C	Polygonaceae	C
Undated											
Pits											
3499	3500	318	8	3	40	C	C	hulled wheat grain fragments, glume base fragments	C	Arrhenatherum, Poaceae	-
3499	3501	321	1.5	1	35	-	-	none	-	none	-
3502	3503	317	13	10	15	B	B	hulled wheat grain fragments, glume fragments	A	Avena/Bromus, Vicia/Lathyrus, Polygonaceae, Chenopodium	C
AREA D											
Late prehistoric to early Romano-British											
Pits											
8517	8518	51	20	250	50	-	-	none	-	none	A
8522	8521	52	40	250	40	-	-	none	-	none	A
8524	8525	53	10	60	75	C	-	indeterminate grain fragment	-	none	A
8550	8549	54	40	230	40	-	-	none	-	none	A*
8560	8561	58	30	140	70	C	-	indeterminate grain fragment	C	Vicia/Lathyrus	A
8526	8527	59	20	250	30	C	-	indeterminate grain fragment	C	hazelnut fragment	A*
	8529	60	20	250	35	C	-	indeterminate grain fragment	-	none	A*
8573	8575	61	40	200	70	-	-	none	-	none	A

Feature No	Context	Sample	Size (L)	Flot Size ml	Root s ml	Grain	Chaff	Cereal Notes	Charred Other	Notes for Table	Charcoal
Pits											
8576	8577	63	20	100	75	C	-	indeterminate grain fragment	-	none	A
8602	8603	65	10	50	75	-	-	none	C	Chenopodium	B
Pit/Tree throw											
8532	8533	55	16	80	40	-	-	none	-	none	A
	8534	56	20	80	35	C	-	indeterminate grain fragment	-	none	A
Ditches											
8589	8591	64	10	20	85	-	-	none	-	none	-
Joss Bay											
Late prehistoric to medieval											
Ditches											
8885	8886	62	40	200	55	-	-	none	-	none	A
Pits											
8839	8842	57	30	100	50	-	-	none	-	none	A
8846	8849	902	37	100	10	C	C	indeterminate grain fragment, glume fragments	A	Crategus fragments, Vicia/Lathyrus	B
	8847	903	37.5	150	80	C	C	wheat grain fragments, glume fragment	C	Euphorbius, Chenopodium (probably modern)	-
	8863	944	8	3	25	-	C	glume fragments	-	none	-
	8864	945	5	2	25	C	-	wheat grain fragments	-	none	-
	8865	946	8	2	10	-	C	glume fragment	-	none	-

KEY: A** = exceptional, A* = 30+ items, A = ≥10 items, B = 9 - 5 items, C = < 5 items: End column shows selection of samples for analysis: - C = selected for charcoal analysis, P = selected for charred plant remains. N.B. No molluscs, small mammal or fish bones were recovered from any of the samples, but those presented within Tables 3 and 4 below.

Table 26: Soil and sediment descriptions

Monolith 50, Area 16 Test Pit 4 [1793] dwg 131? Depth¹=0m/ top of sediment in monolith and stripped ground surface/2.76m aOD (but note monolith not marked on section and is 43cm empty monolith at top i.e. total monolith length=1.05m, sediments=0.62m, have assumed levels taken in this case on the top of the sediments)				
<i>Depth¹ (m)</i>	<i>Sub-samples taken</i>	<i>Context</i>	<i>Description</i>	<i>Interpretation</i>
0-0.28	none	1796	0-0.03m 10YR 3/2 very dark greyish brown dry compacted humic silt loam, well-developed small blocky structure, abundant macropores, fine roots and common CBM 0.03-0.28m 10YR 3/1 very dark grey highly humic silty clay loam, well-developed granular and small blocky structure. Occasional fine rootlets, rare rounded chalk up to 1.5cm. Rare angular flints and specks of CBM. Clear (but bioturbated) boundary	Modern soil A horizon
0.28-0.49		1795	0.28-0.38m As below, very abundant mottling with dark humic silt loam due to very abundant worm burrows filled with overlying, heavily bioturbated. Well-developed medium blocky structure. Clear boundary	B1 horizon
			0.38-0.49m 10YR 4/2 dark greyish brown fine slightly humic silt loam. Common worm burrows filled with overlying, mixed and mottled as below. CBM <2mm and 0.5cm wood charcoal at 0.45m. Gradual boundary	B2 horizon (formed in waterlain colluvium)
0.49-0.62		1794	10YR 4/3 brown gleyed massive silt loam mottled with common fine Fe (10YR 4/6 dark yellowish brown), abundant fine pockets of Fe stained fine sand (10YR 5/6 yellowish brown). Rare angular-sub-angular gravel <0.5cm. Medium blocky structure. Few mollusc fragments and fine rootlets. Abundant worm burrows filled with dark humic clay (10YR 2/2 very dark brown) from overlying.	The mixed nature and inclusions suggest this is slightly calcareous colluvium reworked and relain by water

Monolith 29 A&B Area 16 Feature 1195, ?IA-RB ditch, cut 1372, dwg 51				
Depth ¹ =0m/ top of sediment in monolith and stripped ground surface/4.18m aOD				
Depth ¹ (m)	Sub-samples taken	Context	Description	Interpretation
0.0-0.07		1369	10YR 3/2 very dark greyish brown slightly humic silt loam-very fine sand. Friable, common macropores and few fine rootlets. No discernible structure (massive), however, horizontal crack at 7cm (unit base) may indicate large blocky/columnar structure (larger than the monolith). Gradual bioturbated boundary	?tertiary fill of ditch, likely undergoing alteration into modern soil B horizon
0.07-0.27	0.14	1357	0.07-0.19m 10YR 3/2 very dark greyish brown slightly humic fine sandy clay silt. Weak small blocky structure, numerous macropores. Common worm burrows. Clear boundary 0.19-0.27m 10YR 4/3 brown soft clay silt-very fine sand. Common macropores and worm burrows filled with overlying. Very weak blocky structure. Gradual boundary	Secondary fill of inwashed fine water sorted colluvium, heavily bioturbated
0.27-0.57	0.30 0.46	1370	2.5Y 4/3 olive brown soft friable clay silt loam. Few <1cm pockets of pale (2.5Y 6/4) light yellowish brown clean silt-very fine sand. Very abundant macropores and root voids. Abundant humic clay-lined worm burrows traceable to top of monolith. Weak blocky structure. Slightly Fe stained throughout. Diffuse boundary	
0.57-0.91	0.62 0.78	1358	2.5Y 4/4 olive brown with abundant faint coarse Fe mottles. Soft friable clean silt, few rounded (fluvially) small stones. Diffuse boundary	Secondary fill of inwashed and water sorted colluvium and alluvium
0.91-0.98	0.94	1362	As above, slightly cleaner massive silt-very fine sand with few molluscs fragments and faint medium Fe mottles, common macropores. Diffuse boundary	
0.98-1.21	1.02 1.10 1.18	1359 1361	2.5Y 5/3 light olive brown friable clay silt, weak medium blocky peds. Common flecks of charcoal. Moderate fine Fe along common voids and macropores (10YR 5/6 yellowish brown). Clear boundary	
1.21-1.25	1.22	1362	2.5Y 4/3 olive brown massive greasy clay, no inclusions. Abrupt (erosional/ rapid sealing) boundary	Alluvium
1.25-1.29	1.26	1364	2.5Y 5/6 light olive brown soft Fe stained clay silt with streaks and mottles of white chalk and 2.5Y 4/3 olive brown soft silt. Clear-abrupt boundary	Mixed layer, likely slump (or dump) of ditch edge material
1.29-1.41	1.34	1367	2.5Y 5/3 light olive brown, soft clean very fine sand, few faint Fe mottles, few molluscs, no other inclusions. Rare specks of charcoal. Clear boundary	Waterlain, likely alluvial.
1.41-1.64m	1.42 1.50 1.58 1.62	1368 1365	1.41-1.49m 2.5Y 4/3 olive brown soft moist friable massive silt-very fine sand, slightly higher clay content than overlying layer. Abundant moderate medium Fe mottles. Diffuse boundary 1.49-1.64m as above but few faint medium Fe mottles, moderately well-developed large granular-small blocky structure, occasional macropores NB cut and underlying natural not collected by monolith	Waterlain primary fill, likely alluvial.

Table 27: Assessed Mollusc Samples from Areas 3, 9, 15 and 16

AREA	3	9	15	15	16	16	16
SITE PHASE	Prehistoric	Roman	Medieval	Medieval	Prehistoric	Iron Age	Roman
FEATURE TYPE	ditch	pit	ditch	Ditch	pit/tree throw	test pit	test pit
GROUP	7458		5337				
FEATURE	7091	8056	5229	5253	1412	tp4	tp4
CONTEXT	7069	8055	5228	5254	1414	1792	1796
SAMPLE	600	700	431	433	30	49	48
DEPTH (m)	spot	spot	spot	Spot	spot	spot	spot
WEIGHT (g)	2000	2000	1500	1500	2000	2000	2000
Open country species							
<i>Pupilla muscorum</i>	A	C	-	-	-	-	-
<i>Vertigo</i> spp.	B	-	-	-	-	-	-
<i>Helicella itala</i>	C	C	-	-	-	-	-
<i>Vallonia</i> spp.	A	C	-	-	-	-	-
<i>Truncatellina</i>	B	-	-	-	-	-	-
Intro. Helicellids	-	C	-	-	-	-	-
Catholic species							
<i>Trichia hispida</i>	-	-	B	C	-	-	-
<i>Pomatias elegans</i>	C	-	-	-	-	-	-
<i>Cochlicopa</i> spp.	C	-	-	-	-	-	-
<i>Punctum pygmaeum</i>	C	-	-	-	-	-	-
<i>Nesovitrea</i>							
Shade-loving species							
<i>Carychium</i>	A	-	-	-	-	-	-
<i>Acanthinula</i>	C	-	-	-	-	-	-
<i>Oxychilus</i>	C	-	C	-	-	-	-
<i>Aegopinella</i>	C	-	-	-	-	-	-
Clausiliidae	C	-	-	-	-	-	-
Fresh and brackish water species							
<i>Planorbids</i>	-	-	A	B	-	-	-
<i>Lymnaea/Bithynia</i>	-	-	A	-	-	-	-
<i>Pisidium</i>	-	-	C	-	-	-	-
Burrowing species							
<i>Cecilioides acicula</i>	A	-	C	-	C	-	-
Approx totals	100 +	7	80	10	0	0	0

KEY: A = ≥10 items, B = 9 - 5 items, C = < 5 items, (+) = present

Table 28: Assessed Mollusc Samples from Joss Bay

AREA	Joss Bay																
SITE PHASE	Iron Age																
FEATURE TYPE	Pit																
GROUP	8885																
FEATURE	8846																
COLUMN	932					904											
CONTEXT	8862	8854	8853	8852	8851			8849			8850	8847					
SAMPLE	933	934	935	936	937	905	906	907	908	909	910	911	912	913	914	915	916
DEPTH (m)	1.6-1.7	1.5-1.6	1.4-1.5	1.3-1.4	1.2-1.3	1.0-1.1	0.9-1.0	0.9-1.0	0.8-0.9	0.7-0.8	0.6-0.7	0.5-0.6	0.4-0.5	0.3-0.4	0.2-0.3	0.1-0.2	0-0.1
WEIGHT (g)	1800	1875	1500	1700	1950	1900	925	1650	1900	2000	2000	2000	2000	2000	2000	2000	2000
Open country species																	
<i>Pupilla muscorum</i>	B	A	B	A	A	A	A	A	A	A	A	A	A	A	A	A	A
<i>Vertigo</i> spp.	-	B	-	C	C	B	B	A	A	A	A	A	A	A	A	A	A
<i>Helicella itala</i>	B	A	B	A	A	A	A	A	C	B	B	B	A	B	A	B	B
<i>Vallonia</i> spp.	C	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
<i>Truncatellina</i>	-	-	-	C	-	-	-	-	-	-	-	-	-	-	-	-	-
Intro. <i>Helicellids</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	C	-	C	C
Catholic species																	
<i>Trichia hispida</i>	-	C	-	C	C	C	C	C	C	C	B	C	C	C	C	C	C
<i>Pomatias elegans</i>	-	-	-	C	-	-	-	C	C	C	A	B	C	C	C	C	-
<i>Cochlicopa</i> spp.	-	-	-	C	-	-	-	-	-	-	C	C	C	C	C	C	C
<i>Cepaea</i> spp	-	-	-	-	-	-	-	C	C	C	C	C	C	C	+	C	-
<i>Helix aspersa</i>	-	-	-	-	-	-	-	-	-	C	-	-	+	-	-	-	-
<i>Punctum pygmaeum</i>	-	-	-	C	-	-	-	C	A	A	B	B	C	C	-	C	-
<i>Vitrina pellucida</i>	-	-	-	C	-	-	-	-	-	-	-	-	-	-	-	-	-
Shade-loving species																	
<i>Carychium</i>	-	-	-	C	-	-	-	-	A	A	A	B	-	C	C	-	-
<i>Acanthinula</i>	-	-	-	-	-	-	-	-	C	C	-	-	-	-	-	-	-
<i>Oxychilus</i>	-	-	-	C	C	-	-	-	-	C	B	-	-	-	-	-	-
<i>Aegopinella</i>	-	-	-	-	-	-	-	-	C	B	C	-	C	C	-	-	-
<i>Vitrea</i>	-	-	-	C	-	-	-	-	C	C	-	C	-	-	-	-	-
Burrowing species																	
<i>Cecilioides acicula</i>	C	B	B	A	B	B	B	A	A	A	A	A	A	A	A	A	A
Approx totals	13	85	30	90	100	70	75	100	100	100	100	100	80	100	100	80	50

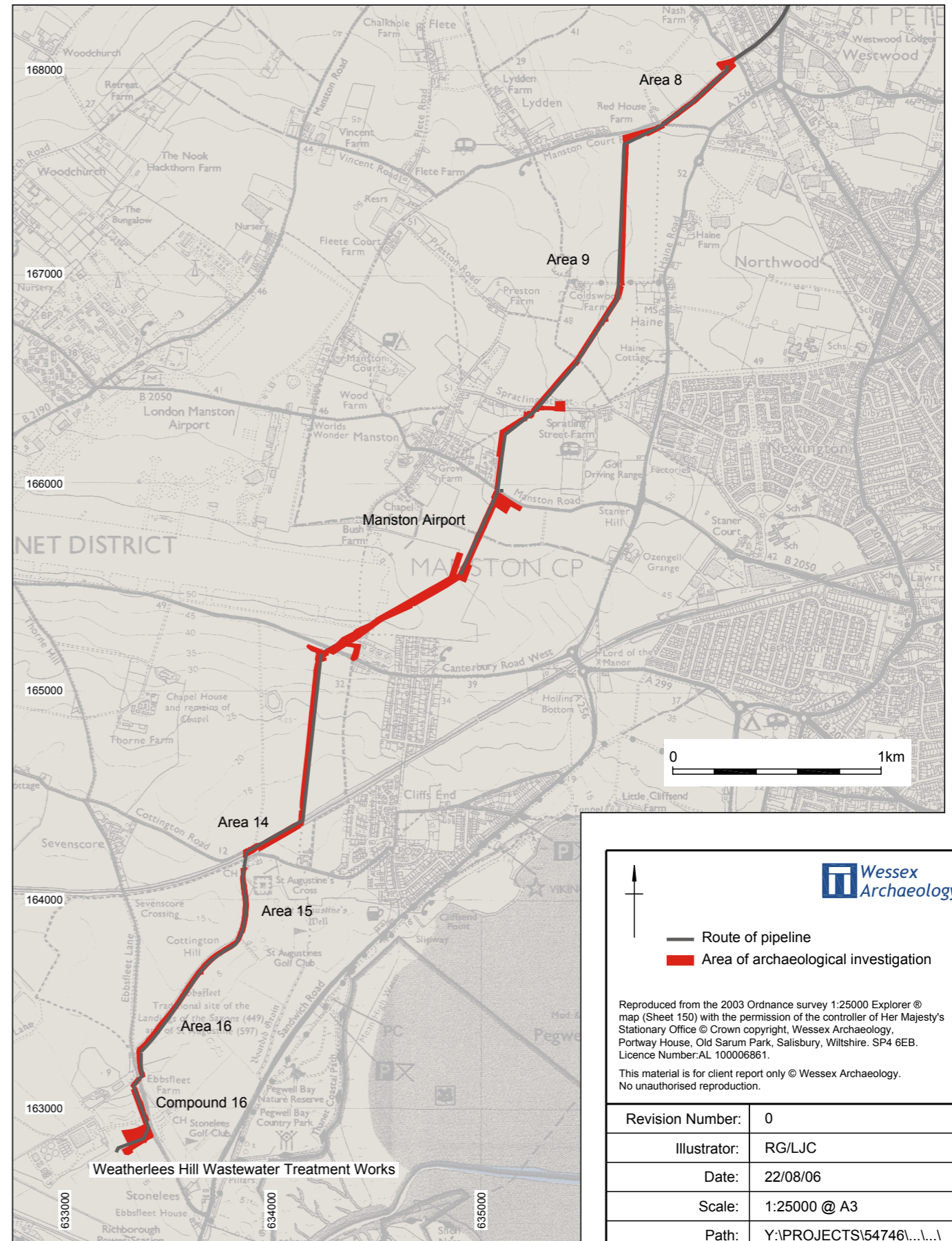
Table 29: Charred plant remains and charcoal summary table outlining samples selected for analysis

ASSESSED SAMPLES				ANALYSIS				RESIDUES EXTRACTION	
AREA	PHASE	Total	Features	CPR	Charcoal (max)	Settlement/Cremation	Queries and comments	Extraction	cremations
3	undated	2	2	0	0	ditches	-	0	0
8	BA	1	1	0	0	cremation	-	0	0
8	LS/Emed	14	4	6	2	settlement	Is the posthole from the SFB?	6	0
8	undated	1	1	0	1	pot?	Is there a date for the pot?	1	0
9	RB	76	7	8	12 (=2 contexts)	cremations	cremations to be sorted for charcoal until A**	8	11
9	RB	9	9	4	1	settlement	1 ditch or 1 pit for charcoal	4	0
14	Neo	3	2	2	2	Pits	-	2	0
14	IA/RB	2	2	0	0	Ditches	-	0	0
14	RB	87	12	12	24 (= 3 contexts)	2 graves + 10 cremations	cremations to be sorted for charcoal until A**	12	21
14	RB	15	3	3	0	settlement	-	3	0
14	LS/Emed	2	1	2	2	settlement	-	2	0
14	undated	4	3	1	0?	pits (including 1 poss. Neo)	pit 6219 is thought to be Neolithic	1	0
15	IA/ERB	2	2	1	0	ditches	-	1	0
15	RB	11	9	5	2* (oven)	settlement	* may add 1 as 5146 is probably Saxon or do	7	0
15	undated	5	4	1	1*	ditches/layer	1 from unphased ditch 5143 also ?Saxon	1	0
16	LBA/EIA	5	5	5	0	settlement	-	5	0
16	E/MIA	2	1	2	0	settlement	-	2	0
16	prehistoic	6	6	0	0	if dates for	poss. Pit 8743. ditch 1444	0	0
16	LIA/ERB	3	3	2	1	settlement?	-	2	0
16	RB	8	7	5	1	settlement?	-	5	0
16	undated	14	11	0	0	9 ditches 1 oven 1 pit	3 are quite rich (1486, 1513, 1564)	0	0
COM16	BA	2	2	2	1	animal burial + ditch	Only charcoal from animal burial	2	0
COM16	?IA	2	2	0	0	? 2 ditches	-	0	0
COM16	unphased	3	3	0	0	3 pits	-	0	0
Area D	unphased	15	14	0	0 (5)*	12 pits, 2 ditches	*Pits - charcoal rich. ?EBA will need to add C	0	0
Joss Bay	IA	5	1	0	0	1 large pit	Contains molluscs but little charcoal/cpr	0	0
TOTALS		299	117	61	51	-	-	64	32

Appendix III: Context Information

Table 30: Concordance context numbers – area and area – context numbers

Context Numbers	Area	Area	Context Numbers
1000 – 1926	16	1-2	7600 – 7609
2000 – 2021	Manston Airport	3	7000 – 7115
3000 – 3767	Compound 16	3	7139 – 7145
5000 – 5340	15	3	7160 – 7166
6000 – 6438	14	3	7173 – 7175
7000 – 7115	3	3	7189 – 7193
7116 – 7138	7	3	7427 – 7462
7139 – 7145	3	7	7116 – 7138
7146 – 7159	7	7	7146 – 7159
7160 – 7166	3	7	7167 – 7172
7167 – 7172	7	7	7182
7173 – 7175	3	7	7463 – 7478
7176 – 7181	8	8	7176 – 7181
7182	7	8	7183 – 7188
7183 – 7188	8	8	7194 – 7426
7189 – 7193	3	8	7479 – 7539
7194 – 7426	8	9	8000 – 8479
7427 – 7462	3	Manston Airport	2000 – 2021
7463 – 7478	7	14	6000 – 6438
7479 – 7539	8	15	5000 – 5340
7600 – 7609	1-2	16 (car park)	8700 – 8769
7700 – 7946	1-D	16	1000 – 1926
8000 – 8479	9	Compound 16	3000 – 3767
8500 – 8630	D	Compound 16 (final bit)	8900 – 8915
8700 – 8769	16 (car park)	1-D	7700 – 7946
8861 – 8899	Joss Bay	D	8500 – 8630
8900 – 8915	Compound 16 (final bit)	Joss Bay	8861 – 8899
8920 – 8923	Joss Bay	Joss Bay	8920 – 8923



Wessex Archaeology

Route of pipeline
 Area of archaeological investigation

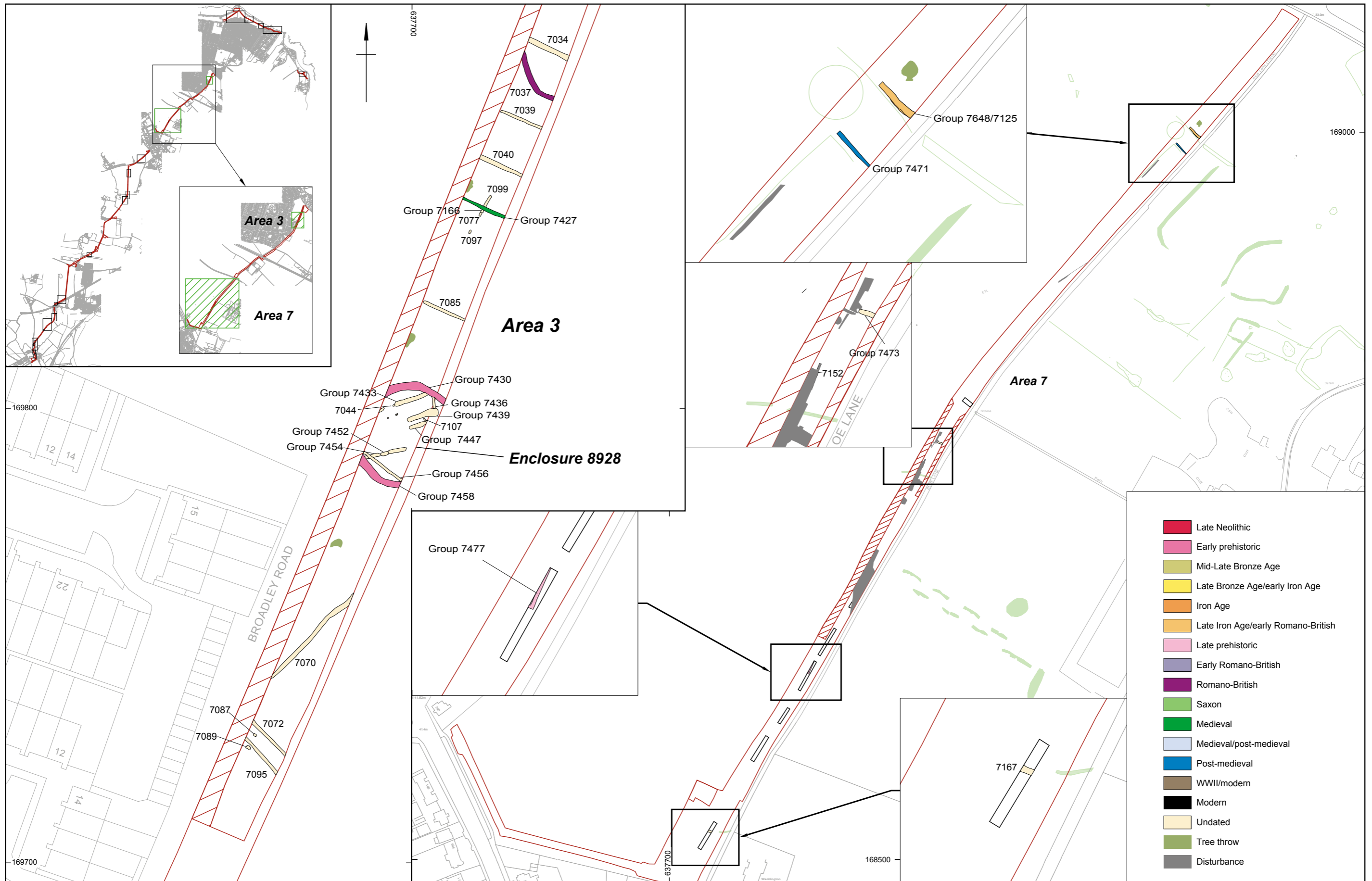
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Pipeline route and excavation areas

Figure 1

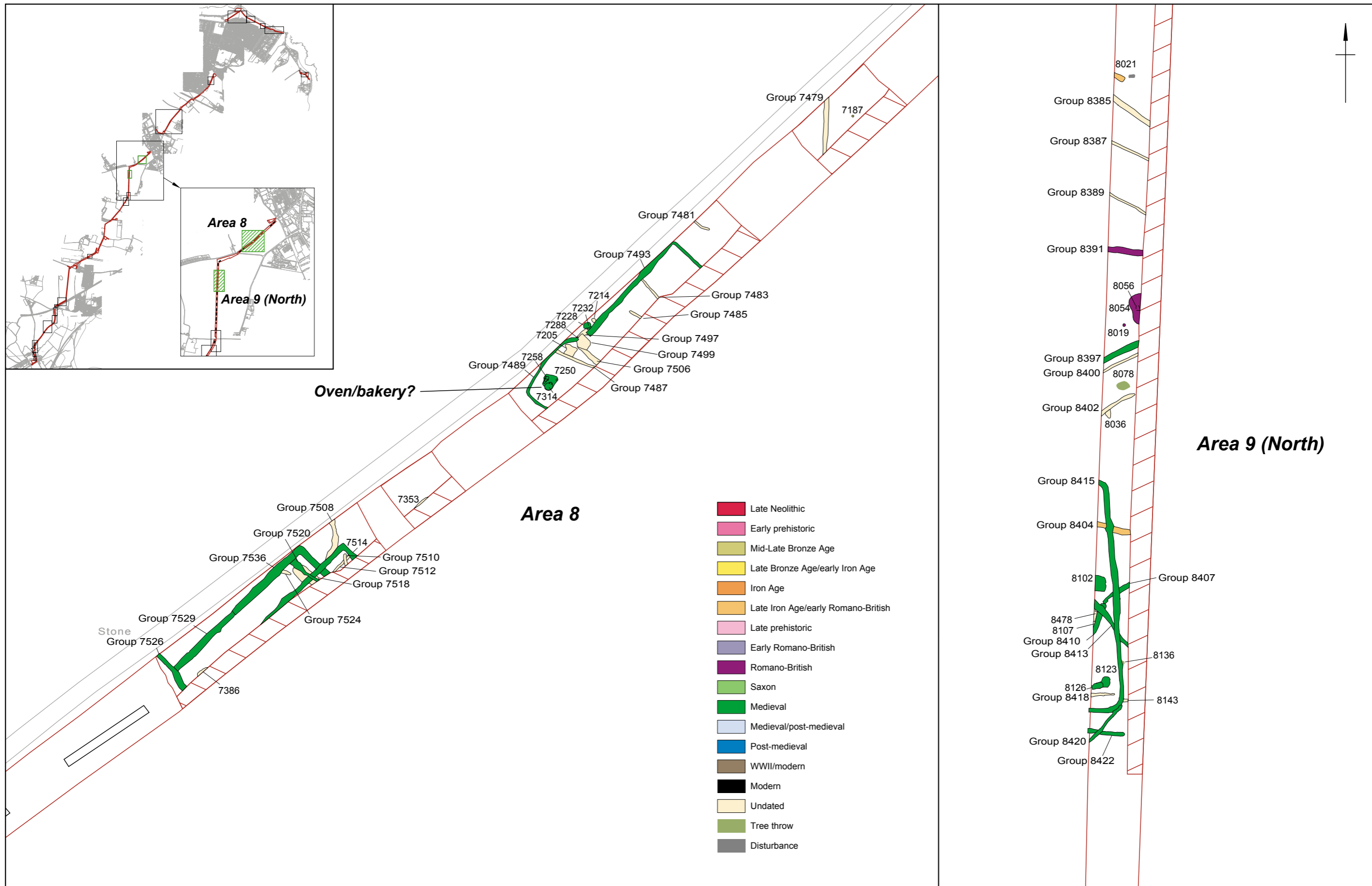





- Late Neolithic
- Early prehistoric
- Mid-Late Bronze Age
- Late Bronze Age/early Iron Age
- Iron Age
- Late Iron Age/early Romano-British
- Late prehistoric
- Early Romano-British
- Romano-British
- Saxon
- Medieval
- Medieval/post-medieval
- Post-medieval
- WWII/modern
- Modern
- Undated
- Tree throw
- Disturbance

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Phased plans of the archaeology in Area 3 and Area 7

Figure 2



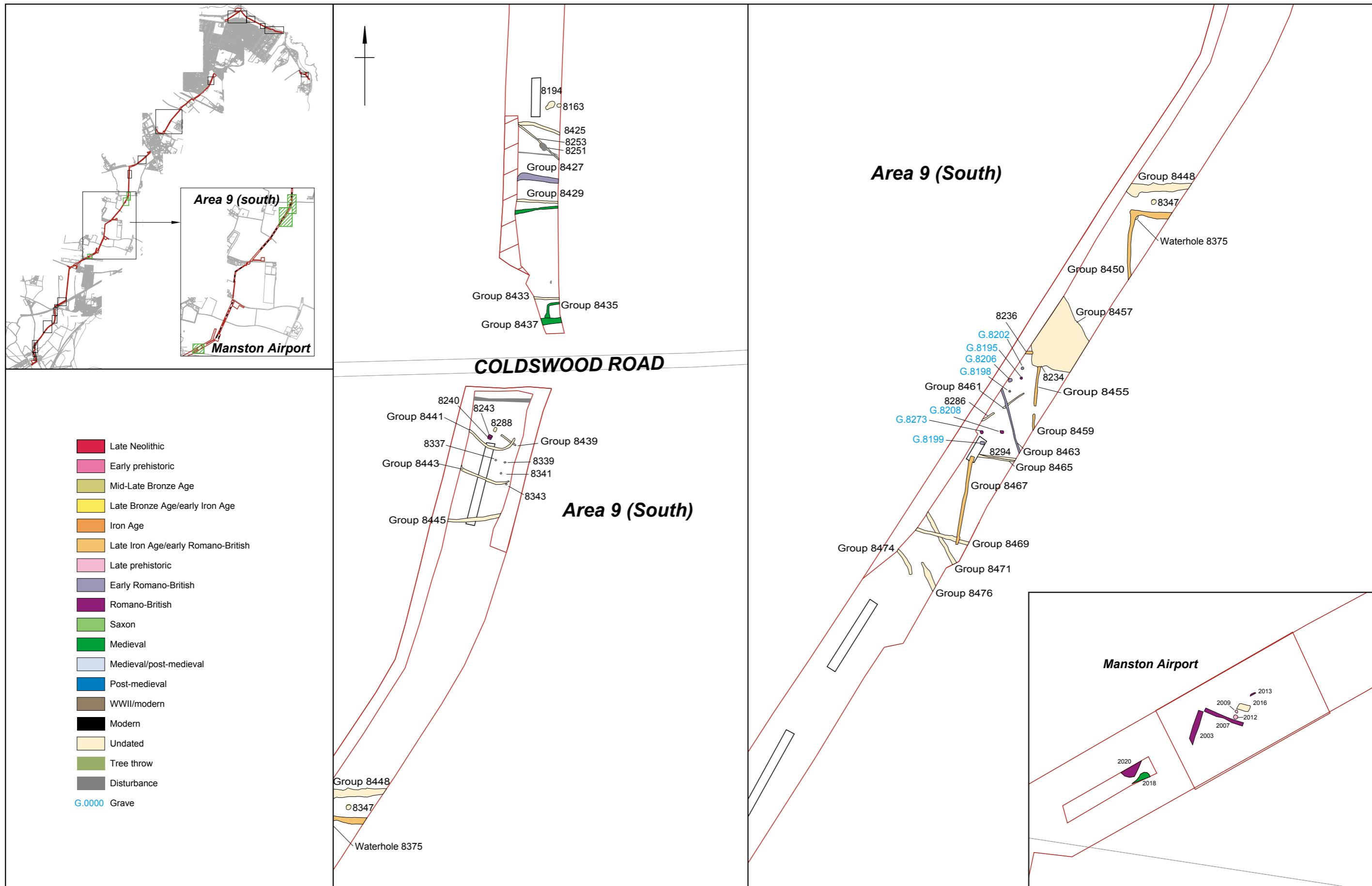
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Phased plans of the archaeology in Area 8 and Area 9

Figure 3



- Late Neolithic
- Early prehistoric
- Mid-Late Bronze Age
- Late Bronze Age/early Iron Age
- Iron Age
- Late Iron Age/early Romano-British
- Late prehistoric
- Early Romano-British
- Romano-British
- Saxon
- Medieval
- Medieval/post-medieval
- Post-medieval
- WWII/modern
- Modern
- Undated
- Tree throw
- Disturbance
- G.0000 Grave

Cropmarks

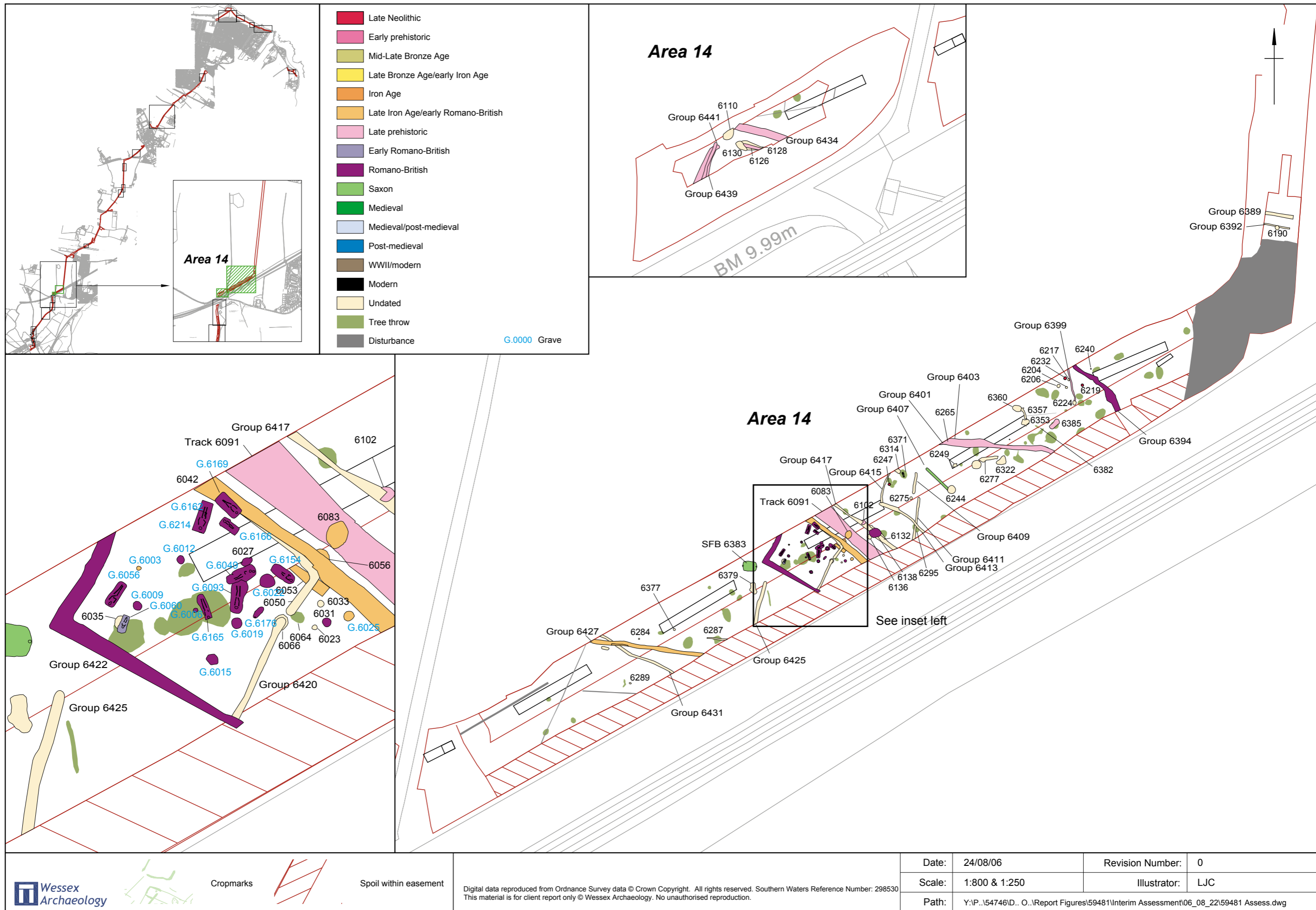
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Phased plans of the archaeology in Area 9 and Manston Airport

Figure 4



Cropmarks
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Phased plans of the archaeology in Area 14

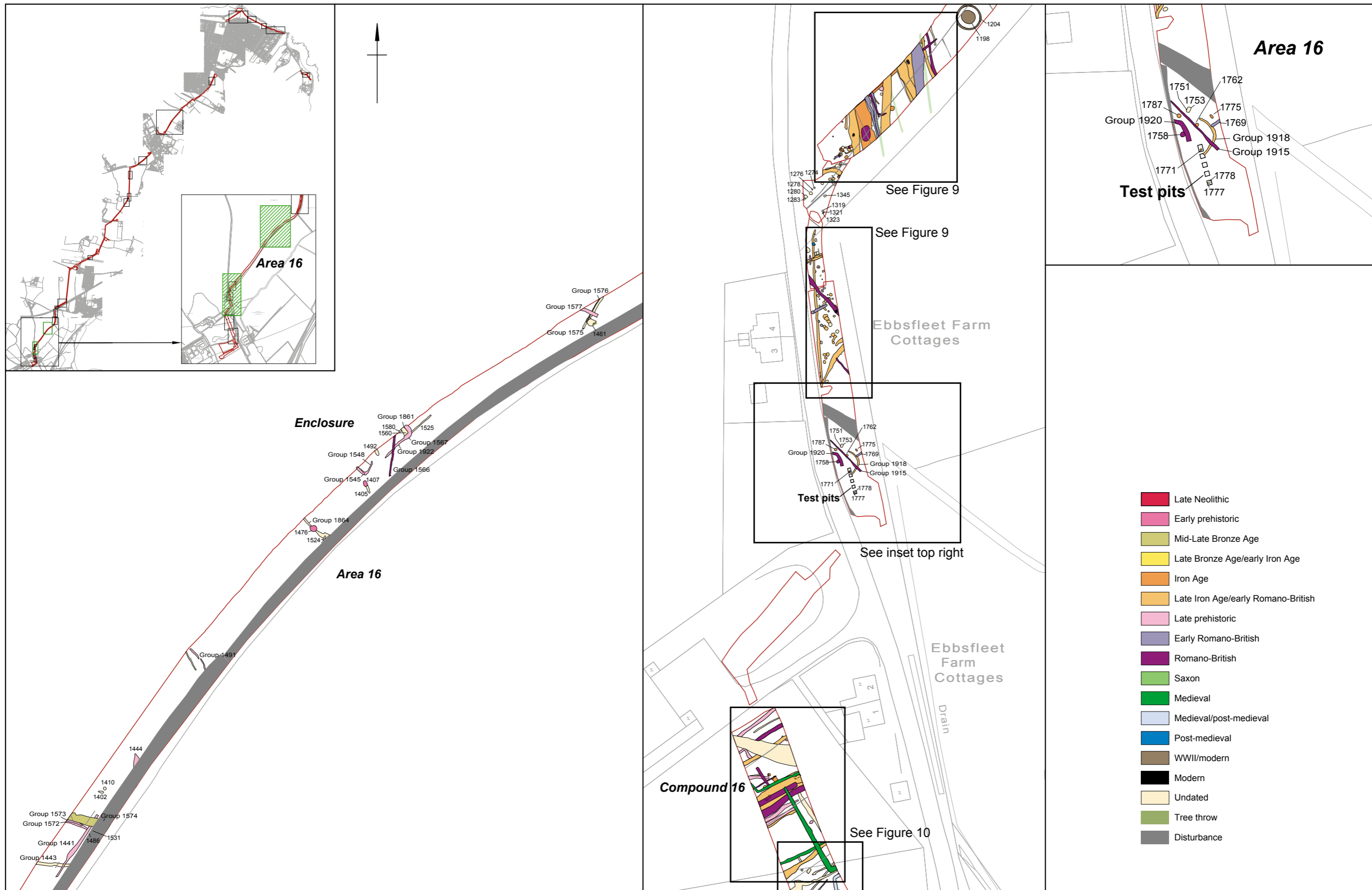
Figure 5



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Phased plans of the archaeology in Area 15

Figure 6



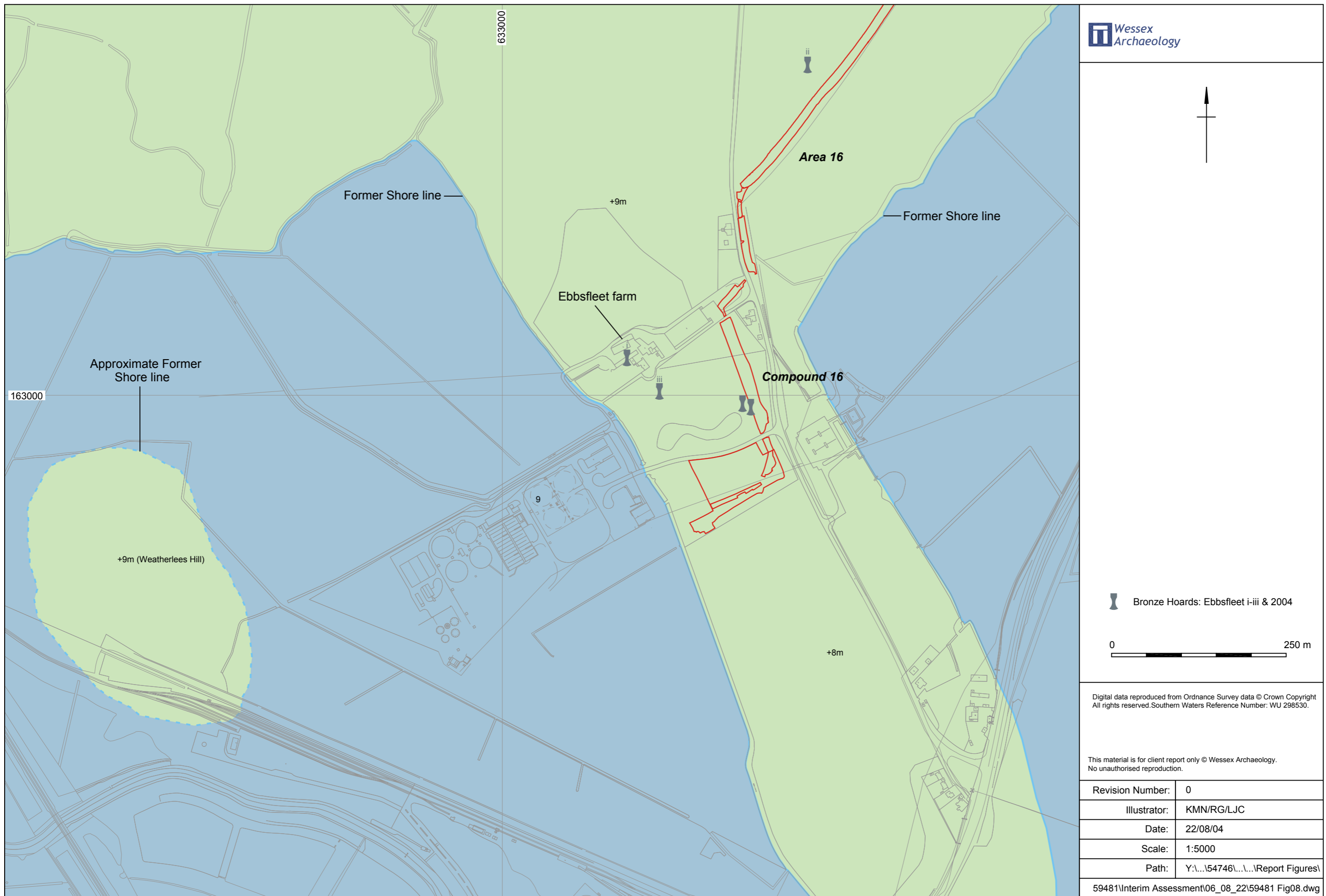
Cropmarks
 Spoil within easement

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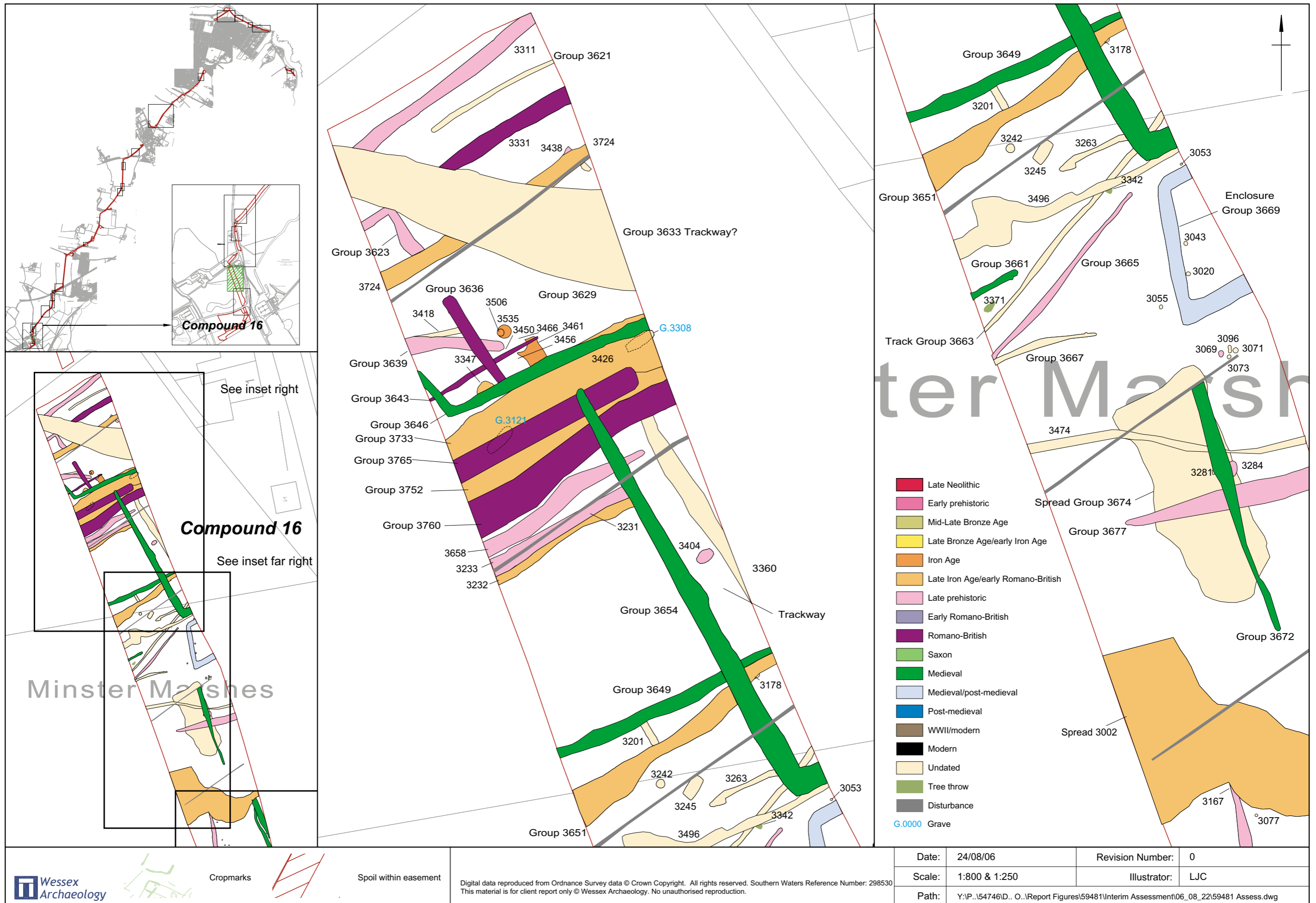
Phased plans of the archaeology in Area 16 and Compound 16

Figure 7



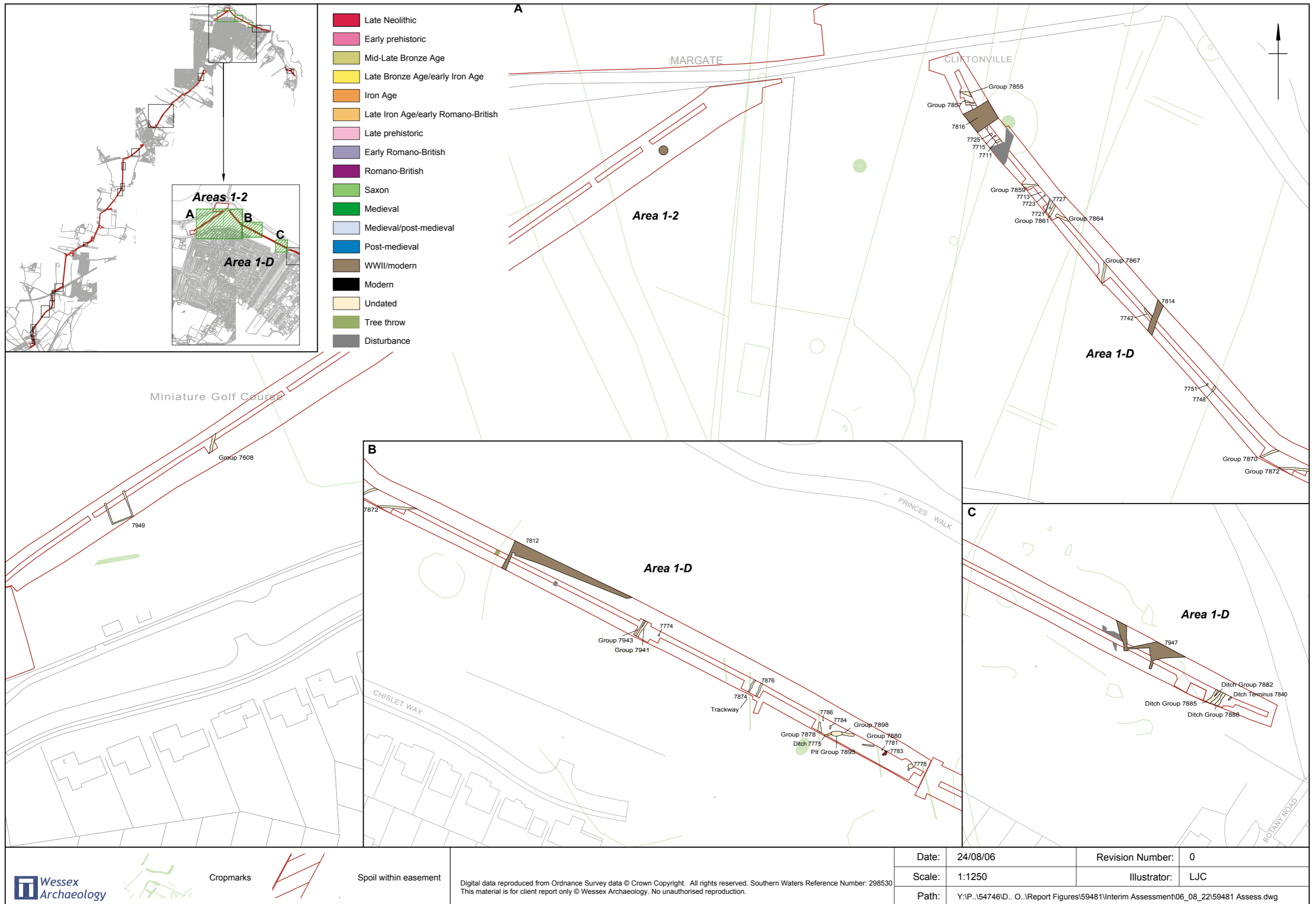
Area 16 and Compound 16 showing previous archaeological findspots and former shoreline

Figure 8



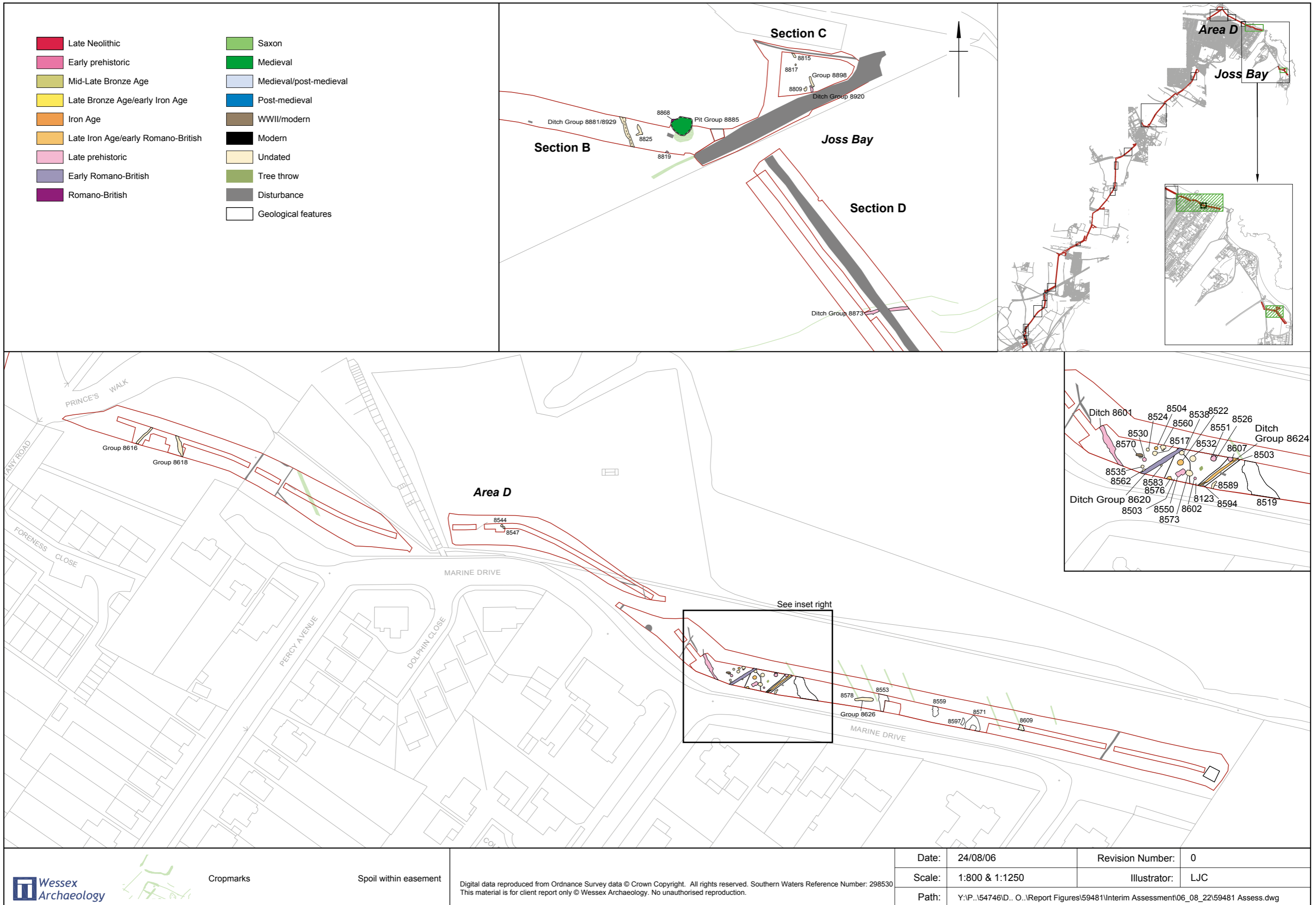
Phased plans of the archaeology in Compound 16

Figure 10



Phased plans of the archaeology in Area 1-2 and Area 1-D

Figure 12



Phased plans of the archaeology in Area D and Joss Bay

Figure 13



Plates 1 & 2; Section through internal feature of possible Early Prehistoric mortuary enclosure, showing posts decayed *in situ*, Area 3

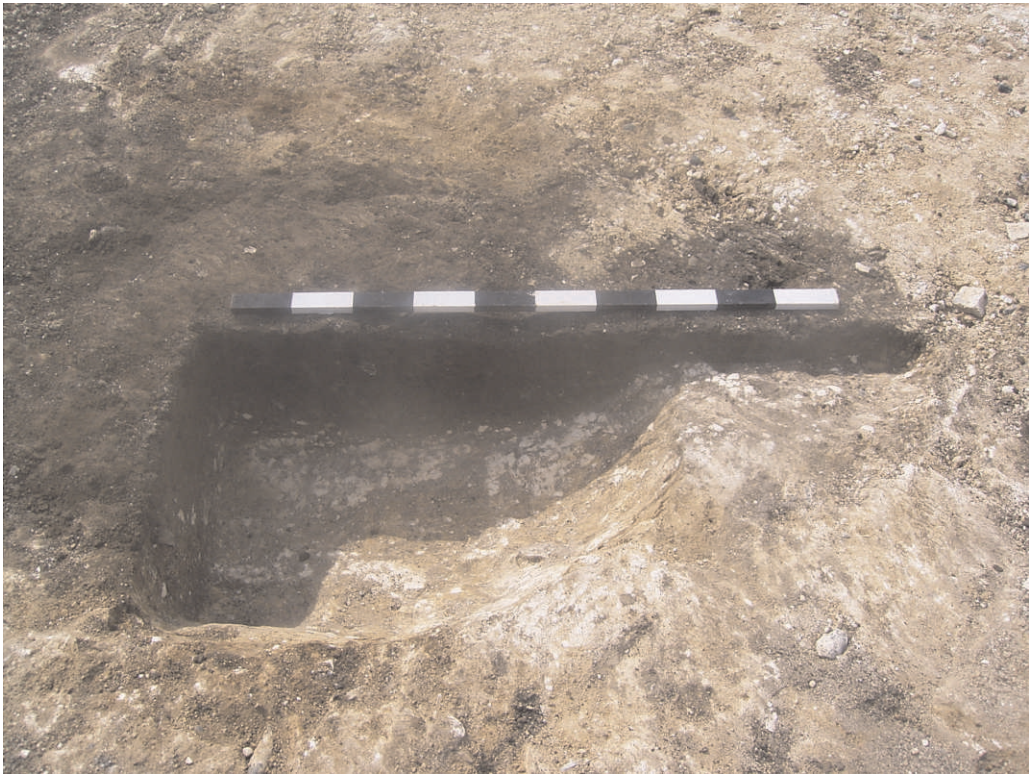
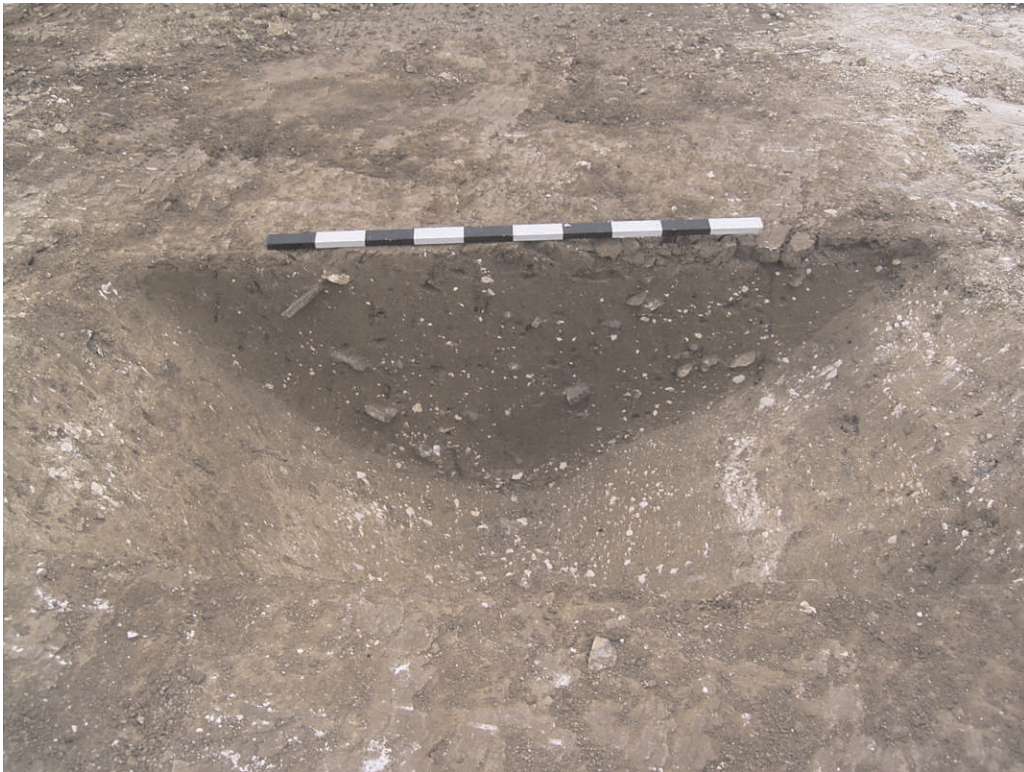


Plate 3; Section through mortuary enclosure entrance terminus and post, Area 3



Plates 4 & 5; Section through Early Prehistoric ring-ditch , Area 3



Plate 6; Early Romano-British cremation burial in Area 9, including a neonatal dog in a small casket



Plate 7; Excavating a Romano-British cremation burial in Area 14

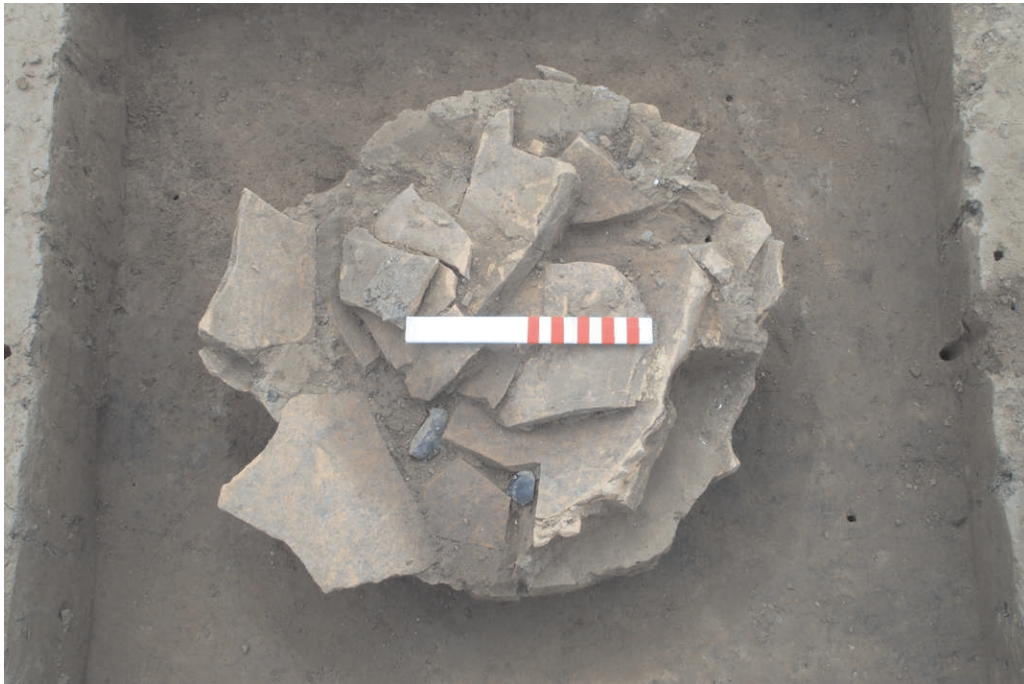


Plate 8; Romano-British cremation burial in Area 14



Plate 9; A section through re-cut of ditch terminus 5104.
The original ditch terminus contained an inhumation burial, all undated, Area 15



Plate 10; Intercutting pits of Late Prehistoric to Early Romano-British date, Area 16



Plate 11; A section through a series of intercutting Late Iron Age to Early Romano-British boundary ditches and a later grave cut, Area 16



Plate 12; Human skull at the base of a large enclosure ditch shown in Plate 10, Area 16



Plate 13; Late Bronze Age/ Early Iron Age spread with rammed chalk edge,
location of one *Carp's Tongue* hoard, Compound 16

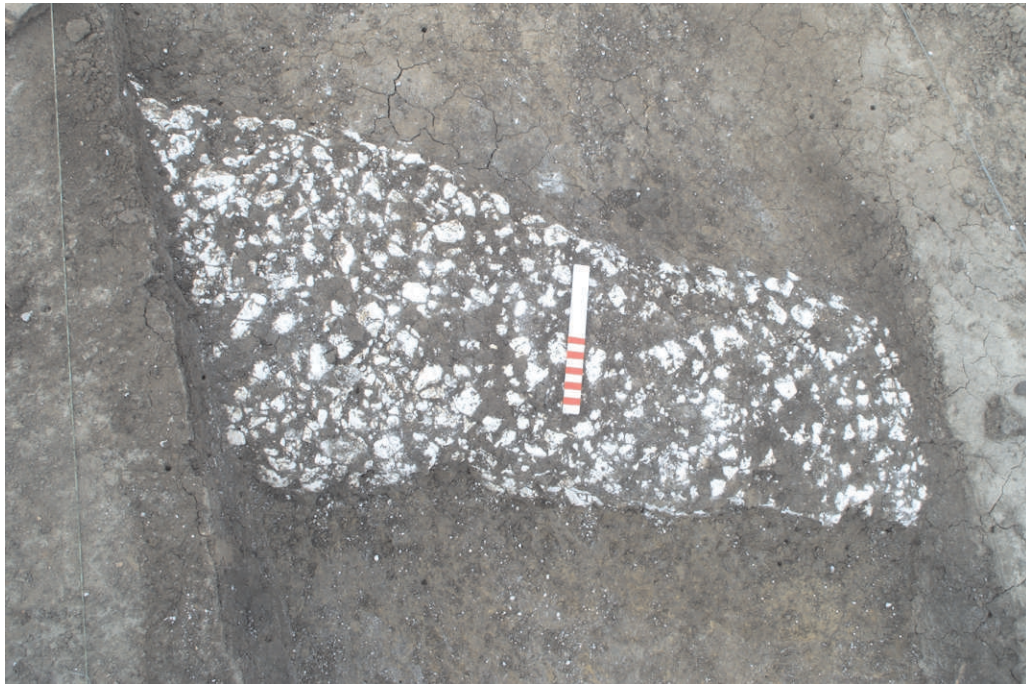


Plate 14; Detail of rammed chalk edge of spread in Compound 16



Plate 15; Iron Age dog burial in Compound 16



Plate 16; Working shot of large pit (Iron Age and Medieval) in Joss Bay



Plate 17; Late Prehistoric ditch 8920 in Joss Bay



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