

# Kemsley Paper Mill, Sittingbourne, Kent

Archaeological Watching Brief Report on Geotechnical Works



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## KEMSLEY PAPER MILL, SITTINGBOURNE, KENT

# Archaeological Watching Brief Report on Geotechnical Works

Prepared for:

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On behalf of: **E.ON** 

By:

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#### **QUALITY ASSURANCE**

| SITE CODE                 | 78250 | ACCESSION CODE | CLIENT CODE   |
|---------------------------|-------|----------------|---------------|
| PLANNING APPLICATION REF. |       | NGR            | 592170 166640 |

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\* I= INTERNAL DRAFT E= EXTERNAL DRAFT F= FINAL



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**Front** Site shot, view from north-east



## **Summary**

Wessex Archaeology was appointed by RPS Planning and Development on behalf of E.ON, to carry out an archaeological watching brief during geotechnical works on land at Kemsley Paper Mill, Sittingbourne, Kent, centred on National Grid Reference (NGR) 592170 166640 (hereafter 'the Site'). The watching brief forms part of a continuing programme of geotechnical site investigations on the Site.

The Site lies on the edge of the tidal water courses of The Swale and Milton Creek, immediately north-east of the existing paper mill, within Kemsley Marshes. This type of habitat increases the potential for the recovery of deposits associated with river exploitation (e.g. hunting, transportation and settlement) and management (e.g. flood defences and crossing sites) from the prehistoric period onwards.

The watching brief comprised the excavation of nine trial pits and eight window samples, under constant archaeological supervision. The fieldwork took place between the 31<sup>st</sup> May and 3<sup>rd</sup> June 2011.

Evidence for buried topsoil was encountered within WS10 at a depth of 4.6m below ground level but no features, deposits or artefacts of archaeological or palaeo-environmental significance were encountered within the trial pits or window samples. No further work is recommended.



## Acknowledgements

The project was commissioned by RPS Planning and Development acting on behalf of E.ON and Wessex Archaeology is grateful to Richard Graham of RPS in this regard. Wessex Archaeology would also like to thank Ben Found, the Kent County Council Archaeological Advisor to the Swale District Council.

The report was prepared by Sarah Mounce and David Norcott. The illustrations were prepared by Rob Goller and Elizabeth James. The project was managed on behalf of Wessex Archaeology by Mark Williams.



## KEMSLEY PAPER MILL, SITTINGBOURNE, KENT

## **Archaeological Watching Brief Report on Geotechnical Works**

#### 1 INTRODUCTION

#### 1.1 Project Background

- 1.1.1 Wessex Archaeology was commissioned by RPS Planning and Development on behalf of E.ON to carry out an archaeological watching brief during geotechnical works on land at Kemsley Paper Mill, Sittingbourne, Kent (NGR 592170 166640) hereafter 'the Site' (**Figure 1**).
- 1.1.2 The watching brief formed part of continuing geotechnical site investigations on the Site.
- 1.1.3 The watching brief was undertaken in accordance with a *Written Scheme of Investigation* (WSI) (Wessex Archaeology 2011), which was agreed in advance of the fieldwork by the Kent County Council (KCC) Archaeological Advisor to Swale District Council.
- 1.1.4 The fieldwork was conducted between the 31<sup>st</sup> May and 3<sup>rd</sup> June 2011.

## 1.2 Site Location, Topography and Geology

- 1.2.1 The Site is located immediately north-east of the existing paper mill, within Kemsley Marshes, to the north of Sittingbourne. The Site lies on the edge of The Swale and Milton Creek, both tidal water courses.
- 1.2.2 The Site is situated on generally flat land with an elevation of approximately 5m above Ordnance Datum (aOD) and occupies an area of c. 5 hectares.
- 1.2.3 The geological sequence underlying the Site is mapped as London Clay overlain by superficial deposits of alluvium. Previous site investigations (reported in RPS 2009; section 2.2) identified significant depths of made ground across the Site.

#### Current land use

1.2.4 The Site currently comprises an area of rough marshland pasture, a contractor's laydown area and a stockpile area. From 1978 the area has been used for the disposal of spoil from the paper mill.

#### 2 ARCHAEOLOGICAL AND PALAEOENVIRONMENTAL BACKGROUND

#### 2.1 Introduction

2.1.1 The Site is located in an area of archaeological potential, notably relating to the potential for environmental remains within the alluvial deposits.



- 2.1.2 The Site is situated on the Kemsley Marshes on the edge of The Swale and Milton Creek. This location increases the potential for the recovery of deposits associated with river exploitation (e.g. hunting, transportation and settlement) and management (e.g. flood defences and crossing sites) from the prehistoric period onwards.
- 2.1.3 Previous geotechnical site investigations (RPS 2009) have identified peat and alluvial clay deposits which may provide archaeologically significant information.

#### 3 AIMS AND OBJECTIVES

## 3.1 Archaeological Watching Brief

- 3.1.1 The aims of the archaeological watching brief, as specified in the Written Scheme of Investigation (WSI) (Wessex Archaeology 2011), were:
  - To determine the presence or absence of archaeological remains and, should remains be found to be present, to ensure their preservation by record to the highest possible standard;
  - To determine or confirm the approximate date or date range of any remains, by means of artefactual, sedimentological, environmental or other evidence where development is proposed:
  - To ascertain the condition and state of preservation of the remains;
  - To determine the degree of complexity of the horizontal and/or vertical stratigraphy present;
  - To establish the potential for geoarchaeological information preserved within the Site; and
  - To inform and provide information for any future mitigation that may be required.

#### 4 METHODOLOGY

#### 4.1 Introduction

4.1.1 The following methodology was proposed in order to meet the aims of the watching brief. All fieldwork was conducted in accordance with the methodology set out in the WSI (Wessex Archaeology 2011) and carried out in compliance with the standards outlined in the Institute for Archaeologists' Standards and Guidance for an Archaeological Watching Brief (2008).

#### 4.2 Service location

4.2.1 Prior to the commencement of the exploratory investigations a service survey was undertaken by RPS.



## 4.3 Trial Pitting

- 4.3.1 The watching brief comprised the excavation of nine trial pits (**Figure 1**; TP 17-23 and 25-26). These were excavated using a 360° tracked mechanical excavator to a maximum depth of 4.3m.
- 4.3.2 Trial Pit 26 was located to the southwest of the Site within the stockpile area, with the remaining eight Trial Pits located across the marsh land.
- 4.3.3 The machine excavated arisings were stored adjacent to the trial pits and spoil heaps were routinely inspected for artefacts and ecofacts of archaeological interest.

#### 4.4 Window Sampling

- 4.4.1 A total of eight exploratory boreholes using window sampling techniques were monitored (**Figure 1**; WS 9-14 and 16-17). The boreholes were hand dug to a depth of 1.2m below ground level and then advanced to a maximum depth of 5m below ground level.
- 4.4.2 Five of the Window Samples were positioned across the marsh land with WS12 and WS13 located within the contractor's laydown area and WS14 positioned within the stockpile area towards the south-western end of the Site.
- 4.4.3 All window samples were marked out on the ground by RPS, using a Global Positioning System (GPS) prior to the commencement of work.

#### 4.5 Recording

- 4.5.1 All recording was undertaken using Wessex Archaeology's *pro forma* recording system.
- 4.5.2 Photographs were taken as appropriate, providing a record of the excavated trial pits and window sample cores, and images of the Site overall. The photographic record comprises digital photography. A photographic register of all photographs taken is contained within the project archive.

#### 4.6 Health and Safety

- 4.6.1 All work was carried out in accordance with the Health and Safety at Work Act 1974, the Management of Health and Safety regulations 1992 and Health and Safety in Field Archaeology 1997, and all other relevant Health and Safety legislation, regulations and codes of practice in force at the time.
- 4.6.2 A Health and Safety Risk Assessment was carried out by Wessex Archaeology (2011), which was read and understood by all staff attending the Site before groundwork commenced.



#### 5 FIELDWORK RESULTS

#### 5.1 Introduction

5.1.1 This section presents the results of the archaeological watching brief.

Detailed descriptions of the contexts recorded are included in **Appendix 1**. **Figure 1** presents the Site, and the trial pit and window sample locations.

#### 5.2 Natural deposits and soil sequences

- 5.2.1 A series of made ground layers with a maximum depth of 4.6m below ground level (identified at WS 10) were recorded across the Site. The made ground mainly comprised orangey brown and brownish grey clayey silts and gravelly clays with varying amounts of modern debris including brick, concrete, plastics, metal and wood.
- 5.2.2 A black sandy gravel containing clinker was recorded in Trial Pits 17, 20-23, 25 and Window Samples 10, 14 and 17, and a thick deposit of coal dust was noted in TP 26.
- 5.2.3 A thin layer of topsoil comprising mid brown clayey silt was recorded within TP 18-21 and 25 and WS 9-11 and 16.
- 5.2.4 Alluvial deposits were encountered beneath the made ground layers across the Site. These typically comprised of mid grey soft to firm clays.
- 5.2.5 From the evidence provided by the borehole logs, made ground appears to extend to a depth of between 0.9m and 3.7m below ground level. Beneath the made ground a series of alluvium deposits extend to a maximum depth of 12.5m below ground level; these are described as black grey or grey orange clay. London Clay was encountered below the alluvium deposits at a minimum depth of 6m (BH9) down to a maximum depth of 15.7m (BH8). The London Clay overlay the Woolwich Formation which comprised dense grey to brown silty sand. This material contained white shell fragments at an average depth of 16m below ground level.

## 5.3 Archaeological Results

- 5.3.1 No archaeological features or deposits were recorded within the trial pits or window samples.
- 5.3.2 Within WS10, a thin layer comprising of black organic silty loam containing numerous fine roots was recorded between 4.6-4.7m below ground level. This represents peaty topsoil sealed by the deposition of the made ground.

#### 6 ARTEFACTS

6.1.1 No artefactual evidence was recovered from the trial pits, window samples or from the excavated spoil. Modern artefacts were noted but not collected.



#### 7 ENVIRONMENTAL EVIDENCE

7.1.1 No features or deposits suitable for environmental sampling were identified during the archaeological watching brief.

#### 8 CONCLUSIONS

- 8.1.1 The Trial Pits and Window Samples revealed a significant amount of made ground across the Site with a minimum depth of 1.4m (TP 19) down to a maximum depth of 4.6m below ground level (WS 10). Some of the earlier made ground deposits consisted of degraded wood and paper (TP 17, 19 and 21 and WS 11 and 17), with even earlier deposits consisting of black gravels with clinker (TP 17, 20-23 and 25 and WS 10, 14 and 17).
- 8.1.2 Window Sample 10 produced a thin layer of peaty topsoil overlying the alluvium at 4.6-4.7m below ground level. This buried topsoil can only be dated from the deposition of the made ground above.
- 8.1.3 No features, deposits or artefacts of archaeological or palaeo-environmental significance were encountered and no further works are recommended.

#### 9 ARCHIVE

#### 9.1 Preparation and Deposition

9.1.1 The complete project archive will be prepared in accordance with Wessex Archaeology's *Guidelines for Archive Preparation* and in accordance with *Guidelines for the Preparation of Excavation Archives for Long-Term Storage* (Walker 1990) and following nationally recommended guidelines (SMA 1995). On completion of the project, the archive will be deposited with the County Museum Service or similar repository to be agreed with the Historic Environment Officer (KCC).

#### 9.2 Archive

- 9.2.1 Following the fieldwork the archive were subsequently transported to Wessex Archaeology's Rochester office. The documentary records from the works have been compiled into a stable fully cross-referenced and indexed archive in accordance with Appendix 6 of Management of Archaeological Projects (English Heritage 1991).
- 9.2.2 The contents of the project archive, comprises an A4 ring-bound file containing the following (as further detailed in **Appendix 1**):
  - 9 Trial Pit Record Sheets and 8 Window Sample Records
  - 1 Photographic Record
  - A copy of the WSI



9.2.3 The project archive including plans, photographs and written records are currently held at Wessex Archaeology's Rochester office under the Site code **78250**. The project archive will be deposited with an appropriate local museum in the Kent area as agreed with KCC. As no artefactual evidence was recovered no agreement from the landowner is required in relation to the deposition of the archive.

## 9.3 Copyright

9.3.1 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 license for the use of the archive for educational purposes, including academic research, providing that such use shall be non-profit making, and conforms to the Copyright and Related Rights regulations 2003.

## 9.4 Security Copy

9.4.1 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 (NMR) (English Heritage) in Swindon; a second diazo copy will be deposited with the paper records at the appropriate local museum, and a third diazo copy will be retained by Wessex Archaeology.



## 10 REFERENCES

English Heritage 1991 *Management of Archaeological Projects*. London, English Heritage

Institute for Archaeologists 2008 Standard and Guidance for an Archaeological Watching Brief

RPS 2009 Phase 2 Intrusive Site Investigation, Kemsley Paper Mill, Sittingbourne, Kent

SMA 1995 Towards an Accessible Archaeological Archive. Society of Museum Archaeologists

Walker K. 1990 Guidelines for the Preparation of Excavation Archives for Long-Term Storage. UKIC Archaeology Section

Wessex Archaeology 2011 Phase 2 Intrusive Site Investigation, Kemsley Paper Mill, Sittingbourne, Kent. Method Statement: Project Design for an Archaeological Watching Brief. Ref. no. 14762

Wessex Archaeology 2011 Phase 2 Intrusive Site Investigation, Kemsley Paper Mill, Sittingbourne, Kent a Project Health and Safety Risk Assessment. Ref. no. T14762



## **APPENDIX 1: SEDIMENT DESCRIPTIONS**

All archaeological deposits/features shown in **bold** All (+) indicate deposits/features not fully excavated 'Depth' equals depth from present ground surface

| Trial Pit 17 | Depth: 3.2m (abandoned due to rising ground water) |  |           |  |
|--------------|--|--|-----------|--|
| Context      | Category   | Description  | Depth     |  |
| 1701         | Layer  | Made Ground – Mottled mid and dark brown sandy silt with moderate red brick, wood fragments, metal, plastic and concrete rubble  | 0.00-0.7m |  |
| 1702         | Layer  | Made Ground – Bands of mid orange brown<br>and dark brown sandy silt with abundant wood<br>fragments, shredded paper, plastic and metal  | 0.7-1.3m  |  |
| 1703         | Layer  | Made Ground – Dark brown sandy silt with abundant wooden planks and chippings and general rubbish  | 1.3-3.2m  |  |
| 1704         | Layer  | Made Ground – Dark grey sandy gravels with moderate wood chippings and glass, common clinker fragments and abundant small coarse flint gravels. Layer contaminated with hydrocarbons | 3.2m+     |  |

| Trial Pit 18 | Depth: 2.8m (abandoned due to rising ground water) |  |           |  |
|--------------|--|--|-----------|--|
| Context      | Category   | Description  | Depth     |  |
| 1801         | Layer  | Topsoil – Mid brown sandy silt   | 0.00-0.1m |  |
| 1802         | Layer  | Made Ground – Light yellow brown sandy silt with abundant medium flint nodules, moderate concrete rubble, plastic pipe and red brick | 0.1-0.74m |  |
| 1803         | Layer  | Made Ground – Mid brown silty clay with common concrete rubble, brick and metal  | 0.74-2.3m |  |
| 1804         | Layer  | Made Ground – Fine dark brown black sand and gravels with occasional brick   | 2.3m+     |  |

| Trial Pit 19 | Depth: 4.2m |   |            |  |
|--------------|-------------|---|------------|--|
| Context      | Category    | Description   | Depth      |  |
| 1901         | Layer       | Topsoil – Mid brown sandy silt  | 0.00-0.09m |  |
| 1902         | Layer       | Made Ground – Light chalky brown sandy silt with common chalk lumps and flint nodules   | 0.09-0.3m  |  |
| 1903         | Layer       | Made Ground – Mid orange brown slightly clayey silt with common bricks, plastic and metal   | 0.3-0.8m   |  |
| 1904         | Layer       | Made Ground – Dark grey brown clayey silt with occasional ceramic, brick, plastic and wood  | 0.8-1.2m   |  |
| 1905         | Layer       | Made Ground – Mottled light to dark yellow grey and brown clayey sands and gravels with occasional plastic and a lens of degraded wood  | 1.2-1.4m   |  |
| 1906         | Layer       | Alluvium – soft mid grey sandy clay with occasional degraded wood and charcoal above very soft light grey organic clay (unable to determine horizon between these two layers) | 1.4m+      |  |

| Trial Pit 20 | Depth: 4m (abandoned due to rising ground water) |  |            |  |
|--------------|--|--|------------|--|
| Context      | Category   | Description  | Depth      |  |
| 2001         | Layer  | Topsoil – Mid yellow brown sandy silt with moderate sub-angular stones                     | 0.00-0.12m |  |
| 2002         | Layer  | Made Ground – Light yellow brown sandy silt with moderate brick, concrete rubble and metal | 0.12-0.44m |  |



| 2003 | Layer | Made Ground – Mottled mid yellow brown silty clay with common brick and concrete lumps   | 0.44-0.9m |
|------|-------|--|-----------|
| 2004 | Layer | Made Ground – Mottled mid orange brown slightly silty clay with occasional brick   | 0.9-1.75m |
| 2005 | Layer | Made Ground – Dark brown clayey silt with grey mottles and moderate concrete and brick fragments, and common chalk lumps   | 1.75-2.8m |
| 2006 | Layer | Made Ground – Compacted black sandy gravels with occasional clinker and chalk. Mid grey organic clay observed towards base of this layer but unable to determine depth due to rising water level | 2.8m+     |

| Trial Pit 21 | Depth: 4.2m (abandoned due to rising ground water) |   |            |  |
|--------------|--|---|------------|--|
| Context      | Category   | Description   | Depth      |  |
| 2101         | Layer  | Topsoil – Mid brown sandy silt  | 0.00-0.15m |  |
| 2102         | Layer  | Made Ground – Mid orange brown silty clay with common brick, concrete rubble, wood and plastic  | 0.15-0.8m  |  |
| 2103         | Layer  | Made Ground – Dark grey brown silty clay with orange brown clay lumps with moderate brick, flint nodules, degraded wood, plastic and metal. Layer contaminated with hydro-carbons | 0.8-2.8m   |  |
| 2104         | Layer  | Made Ground – Light grey soft degraded paper – waste product from recycled paper  | 2.8-3.1m   |  |
| 2105         | Layer  | Made Ground – Black sandy gravels with grey brown clays lumps, clinker and occasional yellow brick  | 3.1-3.5m   |  |
| 2106         | Layer  | Alluvium – Mottled light orange grey clay   | 3.5m+      |  |

| Trial Pit 22 | Depth: 4.3m |  |           |  |
|--------------|-------------|--|-----------|--|
| Context      | Category    | Description  | Depth     |  |
| 2201         | Layer       | Made Ground – Mid grey brown clayey silt with moderate brick and concrete lumps  | 0.00-0.6m |  |
| 2202         | Layer       | Made Ground – Dark brown sandy silt with brick, wood, plastic and concrete rubble  | 0.6-1m    |  |
| 2203         | Layer       | Made Ground – Mid brown sandy silt with abundant broken and degraded wood  | 1-1.2m    |  |
| 2204         | Layer       | Made Ground – Grey clay with abundant brick and chalk  | 1.2-1.5m  |  |
| 2205         | Layer       | Made Ground – Mid brown clay with orange mottles, with abundant brick, plastic, concrete lumps, wood, metal pipes and chalk lumps  | 1.5-2.7m  |  |
| 2206         | Layer       | Made Ground – Mid brown grey silty clay with abundant chalk, common brick, plastic and concrete rubble. Layer tipped in from NW. Thin lens of black gravels with clinker towards base of horizon | 1.6-3.6m  |  |
| 2207         | Layer       | Alluvium – Mottled dark and mid grey clay with orange mottles  | 3.6m+     |  |

| Trial Pit 23 | Depth: 3.6m |   |           |  |
|--------------|-------------|---|-----------|--|
| Context      | Category    | Description   | Depth     |  |
| 2301         | Layer       | Made Ground – Mottled orange grey brown silty clay with common brick, concrete lumps and rubble   | 0.00-0.7m |  |
| 2302         | Layer       | Made Ground – Mottled dark brown grey clayey silt with common brick, coal, concrete rubble and chalk rubble, with lenses of light grey brown clay | 0.7-2.8m  |  |
| 2303         | Layer       | Made Ground – Black sandy gravels with clinker  | 2.8-3.4m  |  |



| 2304 | Layer | Alluvium – Mottled mid orange grey organic clay with occasional flints and very fine roots | 3.4m+ |
|------|-------|--|-------|
|------|-------|--|-------|

| Trial Pit 25 | Depth: 3.8m (rising water at 3.7m)  |  |            |  |
|--------------|---|--|------------|--|
| Context      | Category  | Description  | Depth      |  |
| 2501         | Layer Topsoil – Mid brown clayey silt with occasional small sub-rounded stones 0.00                       |  | 0.00-0.15m |  |
| 2502         | Made Ground – Mid brown clayey silt with common brick, wood, concrete lumps, ceramic pipe and chalk lumps |  | 0.15-2.5m  |  |
| 2503         | Layer Made Ground – Black and dark brown sandy gravels with moderate clinker, brick and wood 2            |  | 2.5-3.3m   |  |
| 2504         | Layer   | Alluvium – Mid grey organic clay with orange mottles and a green hue | 3.3m+      |  |

| Trial Pit 26 | Depth: 2.5m |   |           |
|--------------|-------------|---|-----------|
| Context      | Category    | Description   | Depth     |
| 2601         | Layer       | Made Ground – Light grey sub-angular stones (Type 1)  | 0.00-0.3m |
| 2602         | Layer       | Made Ground – Black silty sand with abundant coal dust. Becomes gravelly towards base of horizon but depth unclear in section | 0.3-2.3m  |
| 2603         | Layer       | Alluvium – Mottled mid grey and orange clay with green hue  | 2.3m+     |

| Window Sample 9  |  |                |  |
|--|--|----------------|--|
| Depth  | Description  | Interpretation |  |
| 0.00-0.1m  | Mid brown clayey silt  | Topsoil        |  |
| 0.1-0.6m   | Mid brown clayey silt with moderate brick, concrete and sub-angular stones     | Made Ground    |  |
| 0.6-1m   | Mid brown clayey silt with moderate brick and chalk fragments                  |                |  |
| 1-1.5m   | Mid grey brown silty clay with moderate brick and chalk fragments  Made Ground |                |  |
| 1.5-1.9m   | Concrete rubble within mid grey brown clayey silt                              | Made Ground    |  |
| Mid grey slightly silty clay with black organic  1.9-3.6m mottles, moderate small to medium sub- angular stones and chalk flecks |  | Made Ground    |  |
| 3.6-4.4m   | Fine black sand and gravels  | Alluvium       |  |
| 4.4-4.85m  | Soft mid grey organic clay with green hue                                      | Alluvium       |  |
| 4.85-5m Very soft light brown clay   |  | Alluvium       |  |

| Window Sample 10   |  |                       |  |
|--|--|-----------------------|--|
| Depth  | Description  | Interpretation        |  |
| 0.00-0.1m  | Mid brown clayey silt  | Topsoil               |  |
| 0.1-0.4m   | Mid grey brown clayey silt with moderate small<br>sub-rounded and sub-angular flints and stones,<br>chalk flecks, brick and ceramic pipe | Made Ground           |  |
| 0.4-0.8m   | Dark brown sandy clay with moderate brick and concrete fragments   | Made Ground           |  |
| 0.8-1.55m  | Firm brownish grey clay with occasional small sub-rounded stones   | Made Ground           |  |
| 1.55-1.9m  | Black sandy gravel with degraded wood at base of horizon (1.85-1.9m)   | Made Ground           |  |
| 1.9-4.6m   | Black gravel with occasional clinker and sub-<br>angular stones. Finer black gravels towards<br>base of horizon                          | Made Ground           |  |
| 4.6-4.7m Black organic silty loam with common fine roots |  | Peat / Buried Topsoil |  |
| 4.7-5m   | Mid grey organic clay with black mottles.  | Alluvium              |  |



| Common fine roots towards top of horizon and common crushed shell towards base of sample (c. 1.95m) |  |
|---|--|
| Comment: Gap between 3m and 3.5m  |  |

| Window Sample 11   |  |                |  |
|--|--|----------------|--|
| Depth  | Description  | Interpretation |  |
| 0.00-0.05m   | Mid brown clayey silt  | Topsoil        |  |
| 0.05-1.55m   | Mid grey brown clayey silt with orange clay mottles, moderate brick and chalk fragments, occasional plastic and large sub-rounded flint nodules  Made Ground |                |  |
| 1.55-1.75m   | Light orange brown stiff clay with occasional small angular grit  Made Ground (Redeposited Clay)   |                |  |
| 1.75-2m  | Dark black brown soft clay with abundant degraded wood chippings and occasional paper  Made Ground   |                |  |
| 2-2.4m   | Fine black sandy gravels with occasional medium sub-rounded and sub-angular stones   | Made Ground    |  |
| 2.4-2.6m   | Yellow sandy gravels with common sub-<br>rounded flints and occasional large yellow brick  | Made Ground    |  |
| 2.6-2.8m   | Mid grey organic clay with abundant black mottles  | Alluvium       |  |
| 2.8-3m Mid grey organic clay with moderate black mottles and a green hue |  | Alluvium       |  |

| Window Sample 12                |   |   |  |
|---------------------------------|---|---|--|
| Depth                           | Description   | Interpretation                            |  |
| 0.00-0.3m                       | Type 1 stone  | Made Ground                               |  |
| 0.3-1.3m                        | Very compacted flint, granite and chalk hardcore Made Ground  |   |  |
| 1.3-1.8m                        | Dark brown grey fine silty clay with occasional white ceramic, chalk lumps and very occasional fine gravels | ceramic, chalk lumps and very Made Ground |  |
| 1.8-2.25m                       | 8-2.25m Black coarse sand with moderate small charcoal/coal lumps Made Ground                               |   |  |
| 2.25-285m                       | 2.25-285m Mid grey organic clay with abundant black mottles Alluvium  |   |  |
| 2.85-4m                         | 2.85-4m Light orange grey clay Alluvium   |   |  |
| Comment: 50% recovery from 3-4m |   |   |  |

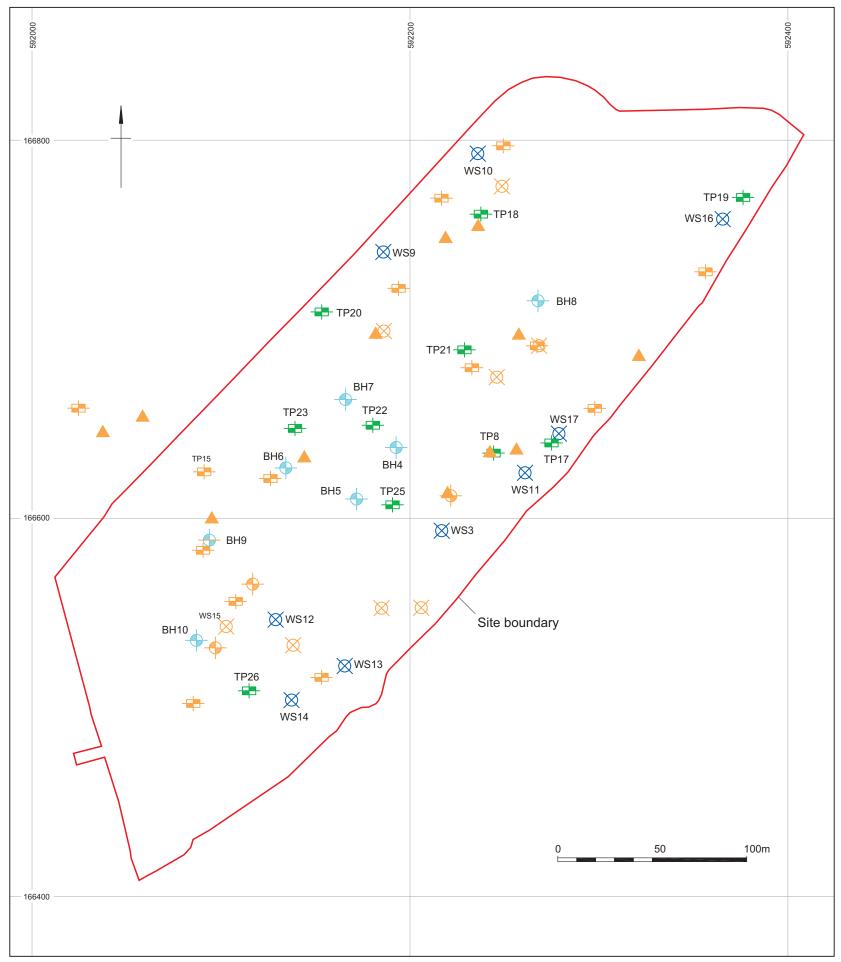
| Window Sample 13                           |  |                |
|--|--|----------------|
| Depth                                      | Description  | Interpretation |
| 0.00-0.2m                                  | Type 1 stone   | Made Ground    |
| 0.2-1.1m                                   | Mid to dark grey brown gravelly sandy silt with  1.1m moderate concrete lumps, sub-angular and sub-rounded flints  Made Ground   |                |
| 1.1-1.75m                                  | Mid grey brown gritty clay with moderate chalk flecks and small brick fragments  | Made Ground    |
| 1.75-2.3m                                  | Black sandy gravel with occasional small red brick fragments. Slightly clayey towards top of horizon  Black sandy gravel with occasional small red brick fragments. Slightly clayey towards top of |                |
| 2.3-2.6m                                   | Dark grey slightly silty clay with abundant clack organic mottles  | Alluvium       |
| 2.6-2.8m                                   | Mid grey organic clay with occasional black mottles  | Alluvium       |
| 2.8-3.6m                                   | Soft mid orangey brown sandy clay with occasional very small grit  | Alluvium       |
| 3.6-5m Stiff mid orange grey clay Alluvium |  | Alluvium       |
| Comment: 20% recovery from 4-5m            |  |                |

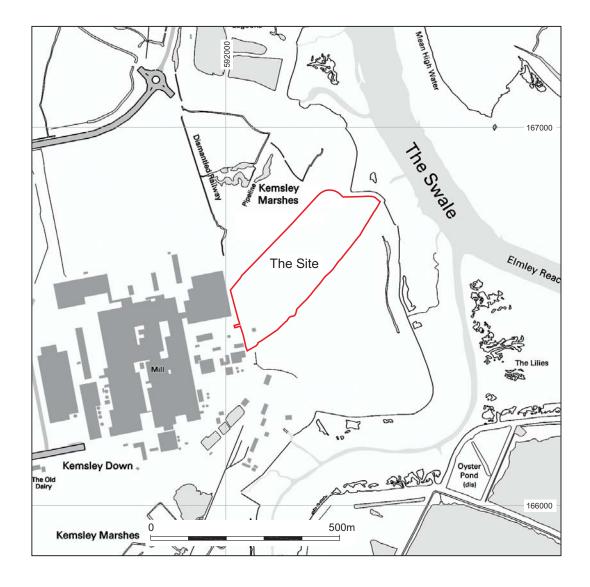


| Window Sample 14  |  |                |
|---|--|----------------|
| Depth   | Description  | Interpretation |
| 0.00-0.2m   | Type 1 stone   | Made Ground    |
| 0.2-0.5m  | .2-0.5m Mid grey brown gravelly clayey silt with common small chalk, brick and concrete rubble Made Ground |                |
| 0.5-1.9m  | Very fine black sandy silt (coal dust)   | Made Ground    |
| 1.9-2.35m Black sandy gravel with moderate small sub-<br>rounded flint gravels and occasional clinker |  | Made Ground    |
| 2.35-2.7m   | Mid grey organic clay with common black mottles  | Alluvium       |
| 2.7-3.75m   | Soft mid orange brown slightly sandy clay  | Alluvium       |
| 3.75-5m   | Mid grey organic clay with moderate small to medium calcareous races                                       | Alluvium       |
| Comment: Gap between 2.1m and 2.35m   |  |                |

| Window Sample 16                         |   |                |  |
|--|---|----------------|--|
| Depth                                    | Description   | Interpretation |  |
| 0.00-0.05m                               | Mid brown slightly clayey silt  | Topsoil        |  |
| 0.05-0.35m                               | Mid brown clayey silt with light yellow brown mottles, moderate small sub-rounded and sub-angular stones, common chalk fragments and occasional brick fragments | Made Ground    |  |
| 0.35-0.5m                                | Dark brown silty clay with occasional glass, plastic, fibre glass and very small sub-angular stones   | Made Ground    |  |
| 0.5-0.7m                                 | Mid to dark grey coarse sandy gravels with moderate small to medium crushed brick   | Made Ground    |  |
| 0.7-1.8m                                 | Black sandy gravel with abundant small to medium sub-rounded and sub-angular gravels  | Made Ground    |  |
| 1.8-2.65m                                | Dark grey organic clay with abundant black mottles  | Alluvium       |  |
| 2.65-3.4m                                | Soft light brown grey organic clay (becomes softer with depth)  | Alluvium       |  |
| 3.4-5m                                   | Very soft dark grey organic clay  | Alluvium       |  |
| Comment: 50% recovery from 3-4m and 4-5m |   |                |  |

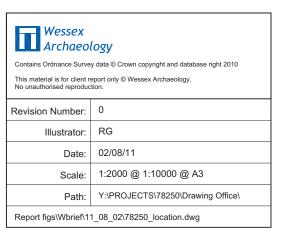
| Window Sample 17                         |   |                |
|--|---|----------------|
| Depth                                    | Description   | Interpretation |
| 0.00-0.4m                                | Dark brown grey clayey silt with light orange<br>brown mottles, moderate small to medium sub-<br>angular and sub-rounded stones, plastic and<br>chalk fragments | Made Ground    |
| 0.4-1.5m                                 | Dark brown clayey silt with orange mottles,   |                |
| 1.5-1.65m                                | Mottled grey orange brown silty clay  | Made Ground    |
| 1.65-3.3m                                | Dark brown and dark blackish brown degraded wood chippings within very fine clayey silt   | Made Ground    |
| 3.3-3.5m                                 | Mid brown fine wood chippings   | Made Ground    |
| 3.5-3.8m                                 | Black slightly sandy gravels. Contaminated with hydro-carbons   | Made Ground    |
| 3.8-4m                                   | Mid grey organic clay   | Alluvium       |
| Comment: 50% recovery from 3-4m and 4-5m |   |                |







Key:



Site location plan with position of trial pits and window samples

Figure 1





WS 09



WS 12



WS 10



WS 13



WS 16



WS 11



WS 14



WS 17

| Date:  | 3/08/11                   | Revision Number:           | 0                          |
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