Archaeology South-East

ASE

A geoarchaeological watching brief at Testwood Water Supply Works, Hampshire.

NGR: 435377 115089
(SU35377 15089)

ASE Project No: 170137
Site Code: TTS17

ASE Report No: 2017095
OASIS id: 277749

Kristina Krawiec

Illustrations by Justin Russell

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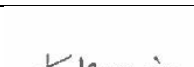
Prepared by:	Kristina Krawiec	Senior Archaeologist	
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Abstract

This report presents the results of a geoarchaeological watching brief carried out at Testwood Water Supply Works, Hampshire on behalf of Southern Water in advance of the installation of a solar panel array. The window sample survey was carried out initially with a terrier rig but ground conditions made this method unsuitable and the remainder of the survey was carried out with a Cobra-type power auger. Each hole was drilled to 3m below ground level to determine the ground make up for the installation of the solar panels.

The survey demonstrated that the site is likely to have been levelled during the construction of the water supply works. Due to the shallow nature of the holes it was not possible to confirm whether the ground had been built up or truncated. The deposits encountered were mainly an orange clayey coarse sand and gravel overlain by topsoil. The proposed works are not likely to penetrate below this level and therefore no further work is recommended.

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TABLES

FIGURES

1.0 INTRODUCTION

1.1 Site Background

1.1.1 Archaeology South-East was commissioned by Southern Water to undertake a watching brief of a window sample survey at Testwood Water Supply Works (WSW), Hampshire in advance of a proposed solar panel array (NGR; Figure 1). The proposed array is to be constructed on shallow 3m deep piles and the aim of the survey was to determine the nature of the ground make-up prior to the commencement of piling.

1.2 Geology and Topography

1.2.1 According to the British Geological Survey website, the underlying bedrock geology of the site comprises the Wittering Formation with overlying superficial River Terrace deposits and potentially Alluvium deriving from the River Test (BGS 2017).

1.2.2 The site is located to the north of Totton and is bounded by the water supply works to the south and west; and the River Test to the north and east. The aerial imagery of the site demonstrated that upstanding earthworks relating to the former use of the site as part of the WSW are still extant. The site is currently overgrown with oak, willow and birch trees and grass.

1.3 Planning Background

1.3.1 The installation of the solar array is part of a permitted works scheme and Southern Water in consultation with ASE determined a watching brief during the site investigation works would allow a better understanding of the likely impacts form the development.

1.4 Scope of Report

1.4.1 This report presents the results of the watching brief carried out during the window sample survey. The fieldwork was undertaken by Kristina Krawiec (Senior Archaeologist). The project was managed in the field by Jon Sygrave and by Jim Stevenson (Post-Excavation Manager).

2.0 BACKGROUND

2.1 Introduction

2.1.1 The site was subject to a Southern Water initial consultation checklist which summarised the likely risk of archaeological remains at the site.

2.1.2 There are no designated Heritage Assets within the site however 500m to the north is the nationally important Testwood Lakes causeway. This comprises upright wooden stakes interpreted as several phases of bridge dating to the middle Bronze Age (http://www.wessexarch.co.uk/book/export/html/354). In addition to the wooden remains several items of Bronze Age weaponry were also recovered. The site remains unpublished but demonstrates the preservation potential of the Test Valley.

2.1.3 In the wider area two Palaeolithic implements are recorded within 100m of the works area, within the river terrace gravels. A Mesolithic site is recorded within 1km of works area and a possible Iron Age hillfort north of the Test valley.

2.1.4 The site lies adjacent to the south side of the River Test. A small pumping station was extant at the site by 1960, sludge beds are indicated to the east of the footpath that passes though the works area. The WTW had been extended to the existing layout by 1970.

2.2 Project Aims and Objectives

2.2.1 The broad aims of the watching brief were:

- To assess the character and extent of the depositional sequence, including the presence of waterlogged peat deposits.
- To assess how these deposits might be affected by the development of the site.
- To establish the state of the sediments in order to characterise the potential of the burial environment.

2.2.2 The main objectives were:

- To monitor and record 10 boreholes carried out to 3mbgl at the site
- To interpret the observed deposits to allow a report of the site to be produced.

2.2.3 The survey has the potential to address the following research priority identified by Solent-Thames Research Agenda:

10.4.4 Farming and clearance should be explored through studies of alluvial and colluvial deposits

10.10.4 More evidence for waterside activities and structures needs to be identified.

3.0 ARCHAEOLOGICAL METHODOLOGY

3.1 Fieldwork Methodology

3.1.1 The window sample survey was initially carried out using a terrier rig (WS001-005), however the topography and condition of the site made this unfeasible and therefore the remainder of the survey was carried out with a Cobra power auger (WS006-010). The lithology of the cores was logged on site using the Troels-Smith classification system (1955). The scheme breaks down a sediment sample into four main components and allows the inclusion of extra components that are also present, but that are not dominant. Key physical properties of the sediment layers are also identified according to darkness (Da), stratification (St), elasticity (El), dryness of the sediment (Dr) and the sharpness of the upper sediment boundary (UB) (Appendix 1). The logs were supplemented with digital photography on site.

3.2 Archive

3.2.1 The site archive is currently held at the offices of ASE. The contents of the archive are tabulated below (Table 1).

Context sheets	0
Section sheets	0
Plans sheets	0
Colour photographs	0
B&W photos	0
Digital photos	14
Context register	0
Drawing register	0
Watching brief forms	0
Core logs	10

Table 1: Quantification of site paper archive

Bulk finds (quantity e.g. 1 bag, 1 box, 0.5 box 0.5 of a box)	0
Registered finds (number of)	0
Flots and environmental remains from bulk samples	0
Palaeoenvironmental specialists sample samples (e.g. columns, prepared slides)	0
Waterlogged wood	0
Wet sieved environmental remains from bulk samples	0

Table 2: Quantification of artefact and environmental samples

4.0 RESULTS

4.1 Window sampler and cobra power auger

4.1.1 The full core logs can be found in the Appendix 1 along with the Troels-smith scheme classification tables. The locations of the holes were not located using survey equipment and therefore the locations are approximate (Figure 2).

4.1.2 The shallow nature of the survey prevented definitive classification of the deposits. The main unit underlying the topsoil (c0.10-0.2m thick) was an orange sandy clayey gravel c.1.00-2.00m thick. The recovery below this depth was extremely variable due to the non-cohesive nature of the sediment and the height of the water table. In WS010 recovery was slightly better and this unit overlay an orange fine sand with occasional silt laminations.

4.1.3 All locations achieved 3m below ground level (bgl) except WS009 which was obstructed at 0.70mbgl which may be due to the presence of the base of a redundant sludge tank. Made ground was recorded in WS004 to a depth of 1.950m, this was similar in composition to the orange sandy clay gravel seen elsewhere but at this location ceramic building material, coal and glass were recorded. This made ground deposit overlay a 5cm thick layer of blue-yellow disturbed alluvial silt clay which in turn overlay the same laminated sand as that recorded in WS010.

4.1.4 The site topography was extremely uneven and boggy in places, with an upstanding rectangular bank occupying a large part of the site. The edges of the site and the interior of the banked area were colonised by willow, birch and oaks with 30 years growth.

6.0 DISCUSSION AND CONCLUSIONS

6.1 Overview of stratigraphic sequence

6.1.1 The window sample survey was undertaken to a depth of 3mbgl which allowed the superficial sequence of deposits to be characterised. The topsoil was underlain by an orange sandy clayey gravel which, where recovery was possible, overlay a laminated sand. It is not clear if this represents the truncated river terrace or a made ground layer as the base of the sequence was not investigated. To the east a made ground deposit was identified which was similar in character to the orange clayey gravel with the exception of the inclusion of ceramic building material and coal.

6.2 Deposit survival and existing impacts

6.2.1 The survey did not identify any deposits of palaeoenvironmental potential and did not record any archaeological remains within the upper 3m of ground at the site. The solar array will be installed on small diameter piles which will not penetrate below this depth.

6.2.2 The presence of a large rectangular banked area indicates that the site has been substantially altered by the earlier phases of the water supply works. It is assumed that the bank surrounded a former sludge tank, which seems to be confirmed by the presence of an obstruction in WS009, most likely representing the base of the tank.

6.3 Potential impact on archaeological remains

6.3 The installation of the array is unlikely to impact on any archaeological or palaeoenvironmental deposits. The survey was too shallow to definitively classify the deposits at the site but it is likely that the underlying laminated sand is part of the terrace deposit sequence and that the overlying clayey gravel is a disturbed surface relating to the former use of the site.

6.4 Consideration of research aims

6.4 The lack of any *in situ* waterlogged deposits at the depths investigated indicates that the site has a low potential for archaeological and palaeoenvironmental remains in the upper 3m of ground. Deeper boreholes would be required to determine if the deposits recorded are in fact river terrace or if the site has been substantially built-up. However, as the piles for the solar panels are unlikely to penetrate below 3mbgl then any more deeply buried deposits will be protected from the impacts of the works.

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ACKNOWLEDGEMENTS

ASE would like to thank Southern Water for commissioning the work and for their assistance throughout the project.

HER Summary

HER enquiry no.	N/A					
Site code	TTS17					
Project code	170137					
Planning reference						
Site address	Testwood water supply works, Nutsey close, Totton					
District/Borough	Hampshire					
NGR (12 figures)	435377 115089					
Geology	River Terrace: Wittering formation					
Fieldwork type	Eval	Excav	**WB**	HBR	Survey	**Other**
Date of fieldwork	Feb 2017					
Sponsor/client	Southern Water					
Project manager	Jon Sygrave					
Project supervisor	Kristina Krawiec					
Period summary	Palaeolithic	Mesolithic	Neolithic	Bronze Age	Iron Age	
	Roman	Anglo-Saxon	Medieval	Post-Medieval	**Other**	
Project summary **(100 word max)**	Something like: A geoarchaeologucal watching brief was carried out during a window sample survey at Testwood water supply works, Hampshire. The survey comprised 10 window sample holes undertaken to a depth of 3mbgl. The deposits recorded were likely to be disturbed river terrace gravels and sand. No further work was recommended.					
Museum/Accession No.	**N/A**					

OASIS Form

OASIS ID: archaeol6-277749

Project details

Project name	a geoarchaeological watching brief at Testwood WSW, hampshire
Short description of the project	A geoarchaeological watching brief during a window sample survey at Testwood wsw, hamphire.
Project dates	Start: 14-02-2017 End: 15-02-2017
Previous/future work	No / No
Type of project	Recording project
Current Land use	Transport and Utilities 3 - Utilities
Investigation type	"Watching Brief"
Prompt	Planning condition

Project location

Country	England
Site location	HAMPSHIRE TEST VALLEY STOCKBRIDGE Testwood WSW
Postcode	SO40 3NB
Site coordinates	SU 35377 15089 50.933613587932 -1.496504269854 50 56 01 N 001 29 47 W Point

Project creators

Name of Organisation	Archaeology South East
Project brief originator	Archaeology South East
Project design originator	ASE
Project director/manager	JON SYGRAVE
Project supervisor	Kristina Krawiec
Type of sponsor/funding body	Southern Water

Project archives

Digital Archive recipient	Hampshire County Council Museums Service
Digital Media available	"Images raster / digital photography","Text"

Project bibliography 1

Publication type	Grey literature (unpublished document/manuscript)
Title	A Geoarchaeological watching brief at Testwood Water Supply Works, Hampshire.
Author(s)/Editor(s)	Krawiec, K
Other bibliographic details	2017095
Date	2017
Issuer or publisher	ASE
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Appendix 1: 170137 Testwood WSW window sample logs

Terrier rig to 3mbgl only

WS001

0-0.30m	Topsoil				
0.30-1.20m	DA	ST	EL	SICC	UB
	2	0	0	3	4
	Ag1 As1 Gmaj1 Gmin1				
	Clayey sand and gravel, angular flint gravel, coarse sand				
1.20-2.00m	Fine grey sand occasional clay laminations				
2.00-3.00m	shattered liner no recovery				

WS002

0-0.30m Topsoil					
0.30-0.90m	Clayey orange sand and gravel				
0.90-2.50m	DA	ST	EL	SICC	UB
	3	0	0	3	4
	As2 Gmaj+ Gmin2				
	Grey Clayey sand occasional gravel				
2.50-3.00m	Buff wet sand				

WS003

0-0.10m	Topsoil
0.10-0.50m	Clayey orange sand and gravel
0.50-0.70m	Orange coarse sand and gravel
0.70-3.00m	Grey brown sand with clay laminations and iron staining

WS004

0-0.20m	Topsoil				
0.20-1.90m	Clayey orange sand and gravel made ground, coal and brick				
1.90-1.95m	DA	ST	EL	SICC	UB
	3	0	0	3	4
	As2 Ag2				
	Disturbed alluvial silt clay				
1.95-2.40m	Coarse flint gravel and sand				
2.40-3.00m	Laminated sand and clay				

WS005

0-0.20m	Topsoil
0.20-0.75m	Clayey orange sand and gravel, possibly made ground
0.75-1.00m ground?	Orange occasionally gravelly sandy clay, grey mottling. Made
1.00-2.00m	Poor recovery, wet orange clayey sand and gravel
2.00-3.00m	Poor recovery, grey trending into buff sand

Cobra-type power auger

WS006

0-0.20m	Topsoil				
0.20-0.80m	Clayey orange sand and gravel				
0.80-1.90m	DA	ST	EL	SICC	UB
	3	0	0	3	4
	As1 Gmaj1 Gmin2				
	Grey sand with occasional gravel, clayey with depth, occ charcoal				

1.90-2.00m	Sandy clayey orange gravel
2.00-2.50m	No recovery
2.50-2.80m	Laminated sand and silt, very mixed
2.80-3.0m	Grey sand

WS007

0-0.20m	Topsoil
0.20-1.95m	Clayey orange sand and gravel
1.95-2.50m	Coarse sand and gravel
2.50-2.70m	Orange coarse sand
2.70-3.00m	Grey sand with silt laminations

WS008

0-0.20m	Topsoil
0.20-1.8m	Clayey orange sand and gravel, rooty at base
1.80-2.00m	DA ST EL SICC UB 4 0 0 3 4 As2 Gmaj1 Gmin1 Sh+ Black grey sandy gravelly organic clay, well humified
2.00-3.0m	Poor recovery, wet orange sand and gravel

WS009

0-0.20m	Topsoil
0.20-0.70m	Grey brown sandy silt clay, rooty, obstructed at base, tank fill?

WS010

0-0.20m	Topsoil
0.20-148m	Clayey orange sand and gravel, rooty at base
1.40-1.60m	Grey sand and gravel
1.60-3.00m	Orange fine sand occasional silt laminations

Appendix 2

Degree of Darkness	
nig.4	black
nig.3	
nig.2	
nig.1	
nig.0	white

Degree of Stratification	
strf.4	well stratified
strf.3	
strf.2	
strf.1	
strf.0	no stratification

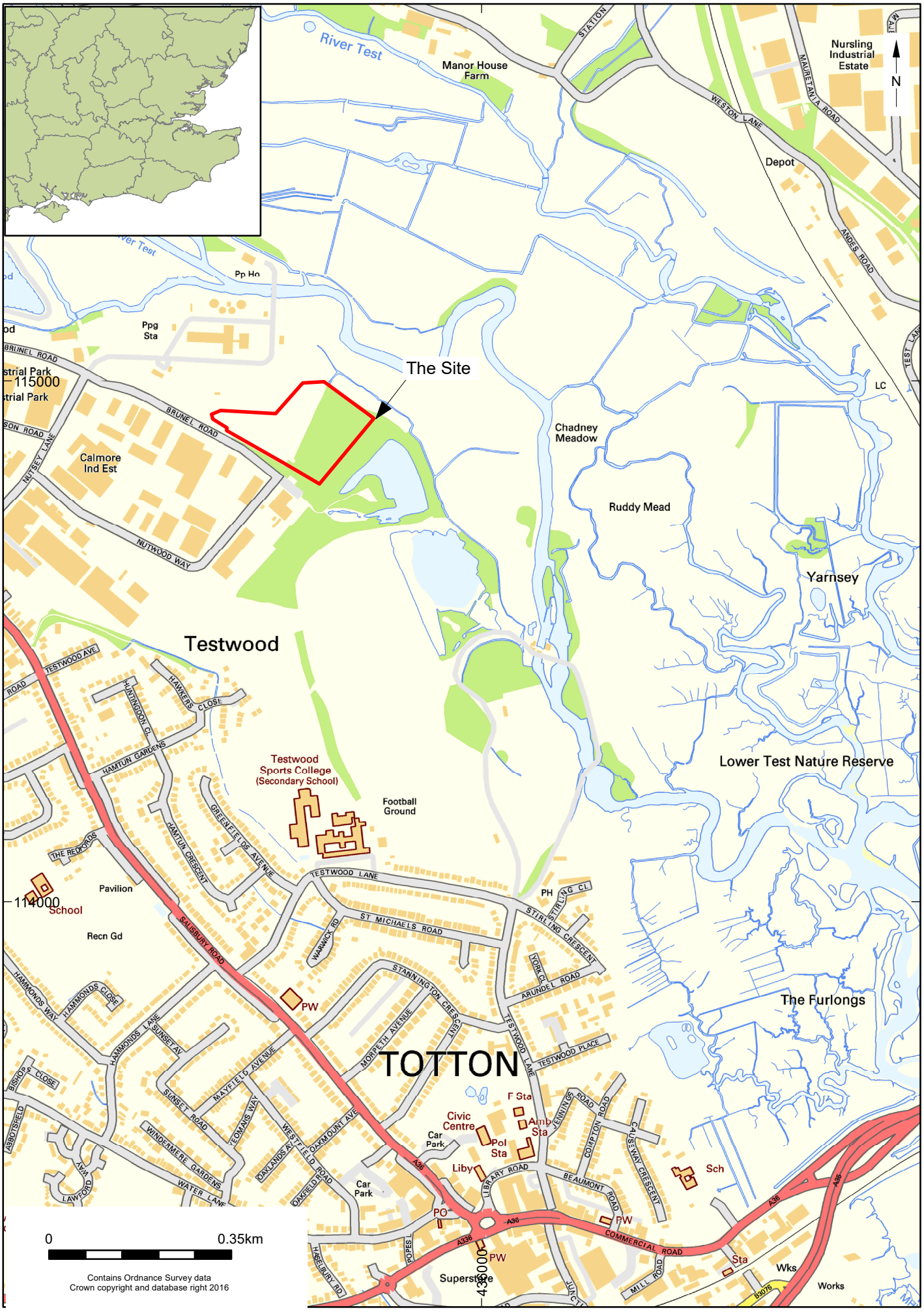
Degree of Elasticity	
elas.4	very elastic
elas.3	
elas.2	
elas.1	
elas.0	no elasticity

Degree of Dryness	
sicc.4	very dry
sicc.3	
sicc.2	
sicc.1	
sicc.0	water

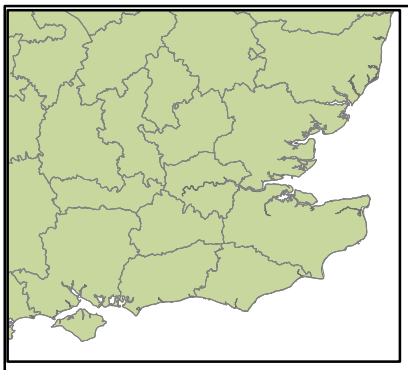
	Sharpness of Upper Boundary
lim.4	< 0.5mm
lim.3	< 1.0 & > 0.5mm
lim.2	< 2.0 & > 1.0mm
lim.1	< 10.0 & > 2.0mm
lim.0	> 10.0mm

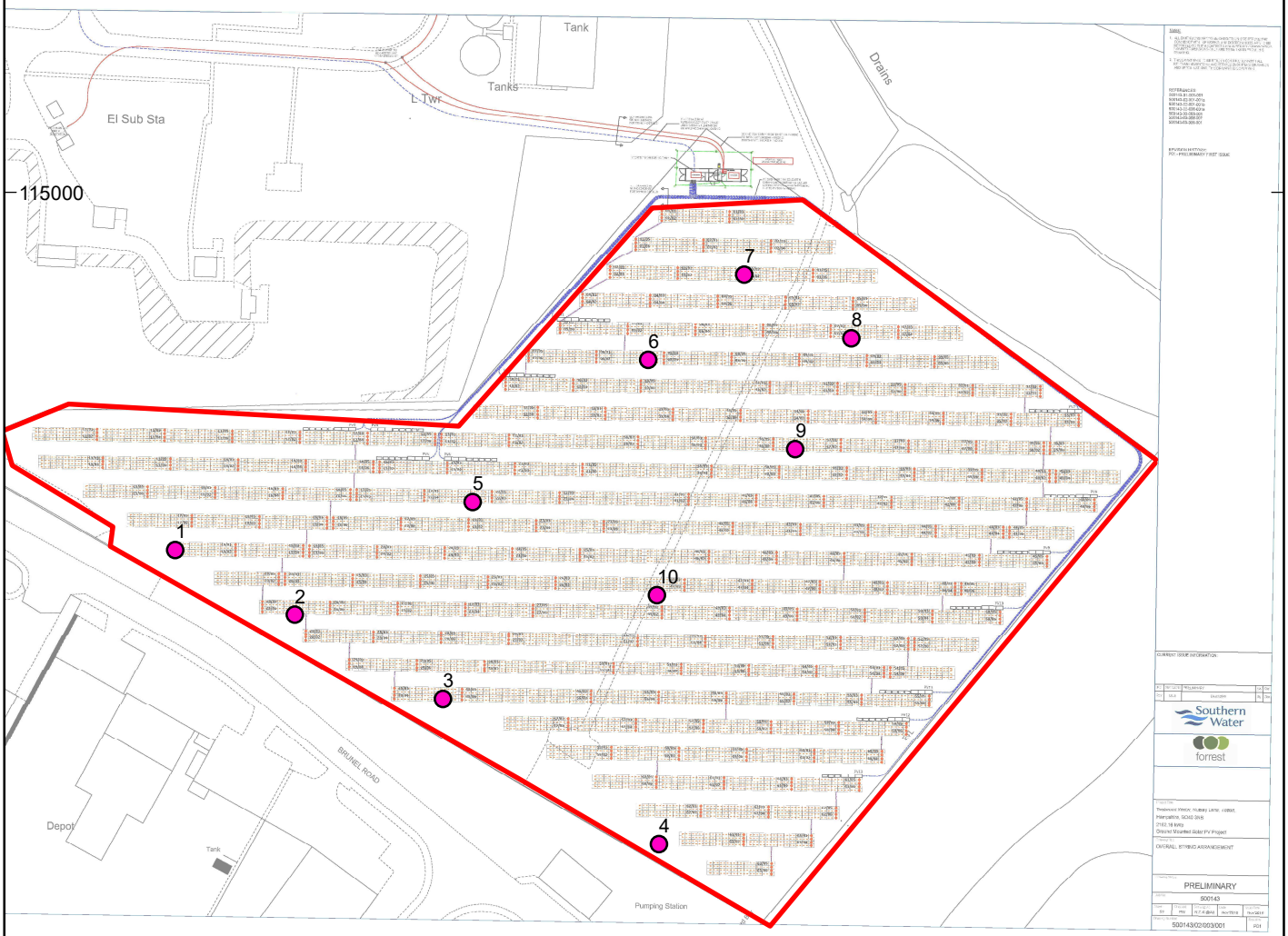
	Sh	*Substantia humosa*	Humous substance, homogeneous microscopic structure
I Turfa	*Tb*	*T. bryophytica*	Mosses +/- humous substance
	Tl	*T. lignosa*	Stumps, roots, intertwined rootlets, of ligneous plants
	Th	*T. herbacea*	Roots, intertwined rootlets, rhizomes of herbaceous plants
II Detritus	*Dl*	*D. lignosus*	Fragments of ligneous plants >2mm
	Dh	*D. herbosus*	Fragments of herbaceous plants >2mm
	Dg	*D. granosus*	Fragments of ligneous and herbaceous plants <2mm >0.1mm
III Limus	*Lf*	*L. ferrugineus*	Rust, non-hardened. Particles <0.1mm
IV Argilla	*As*	*A.steatodes*	Particles of clay
	Ag	*A. granosa*	Particles of silt
V Grana	*Ga*	*G. arenosa*	Mineral particles 0.6 to 0.2mm
	Gs	*G. saburralia*	Mineral particles 2.0 to 0.6mm
	Gg(min)	*G. glareosa minora*	Mineral particles 6.0 to 2.0mm
	Gg(maj)	*G. glareosa majora*	Mineral particles 20.0 to 6.0mm
	Ptm	*Particulae testae molloscorum*	Fragments of calcareous shells

Physical and sedimentary properties of deposits according to Troels-Smith (1955)



© Archaeology South-East		Testwood Water Supply Works	Fig. 1
Project Ref: 170137	2016	Site location	
Report Ref:2017095	Drawn by: KK		





© **Archaeology South-East**		Testwood Water Supply Works	Fig. 2
Project Ref: 170137	2016	Window sample locations	
Report Ref:2017095	Drawn by: KK		

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