

## Archaeological Observation



Shoeburyness Sea Defences  
MOD Shoeburyness  
Foulness Island  
Southend-on-Sea  
Essex  
SS3 9SR

On behalf of

QinetiQ

December 2021

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## 1 Non-Technical Summary

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*Border Archaeology (BA) was instructed by QinetiQ to undertake a programme of Archaeological Observation (AO; controlled watching brief) on the ground works proposed to inform future sea defence works at the MOD Shoeburyness site in Essex.*

*Archaeological Monitoring was carried out between the 8<sup>th</sup> and 9<sup>th</sup> November 2021.*

*The works comprised the excavation of eight trial pits in previously undisturbed ground. This was completed under archaeological supervision, using a mechanical excavator fitted with a toothless grading bucket. All of the trial pits revealed a similar sequence of deposits, namely topsoil and subsoil overlying two alluvial layers.*

*No features, finds or deposits of archaeological significance were identified.*

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## 2 Introduction

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Border Archaeology (BA) was instructed by QinetiQ to undertake a programme of Archaeological Observation (AO; controlled watching brief) on the ground works proposed to inform future sea defence works at the MOD Shoeburyness site in Essex (*fig. 1*). The proposed works were phased along transects within three reaches of the sea defence. These had been divided into categories A to F with varying levels of investigation associated with each category.

It was originally envisioned that the works would comprise of:

- Concrete coring on the embankment crest;
- 127 static cone penetration (SCP) tests;
- Excavation of 38 trial pits;
- 92 window sample boreholes;
- 20 pick-up towed cable percussion boreholes;
- And three rotary boreholes (Category C – dam investigation works).

Of these, the *Written Scheme of Investigation* (WSI) highlighted only the excavation of the trial pits as appropriate for AO, as these had the potential to encounter unknown archaeological remains (BA 2021a). However, prior to commencement, the methodology of the work was altered to reduce the intended number of trial pits and replace them with additional boreholes. As such, only eight trial pits within Reach 2 (NGR: TR 03647 93280 – TQ 97178 88526; *fig. 2*) required observation, this taking place between the 8<sup>th</sup> and 9<sup>th</sup> November 2021.

## 3 Site Description

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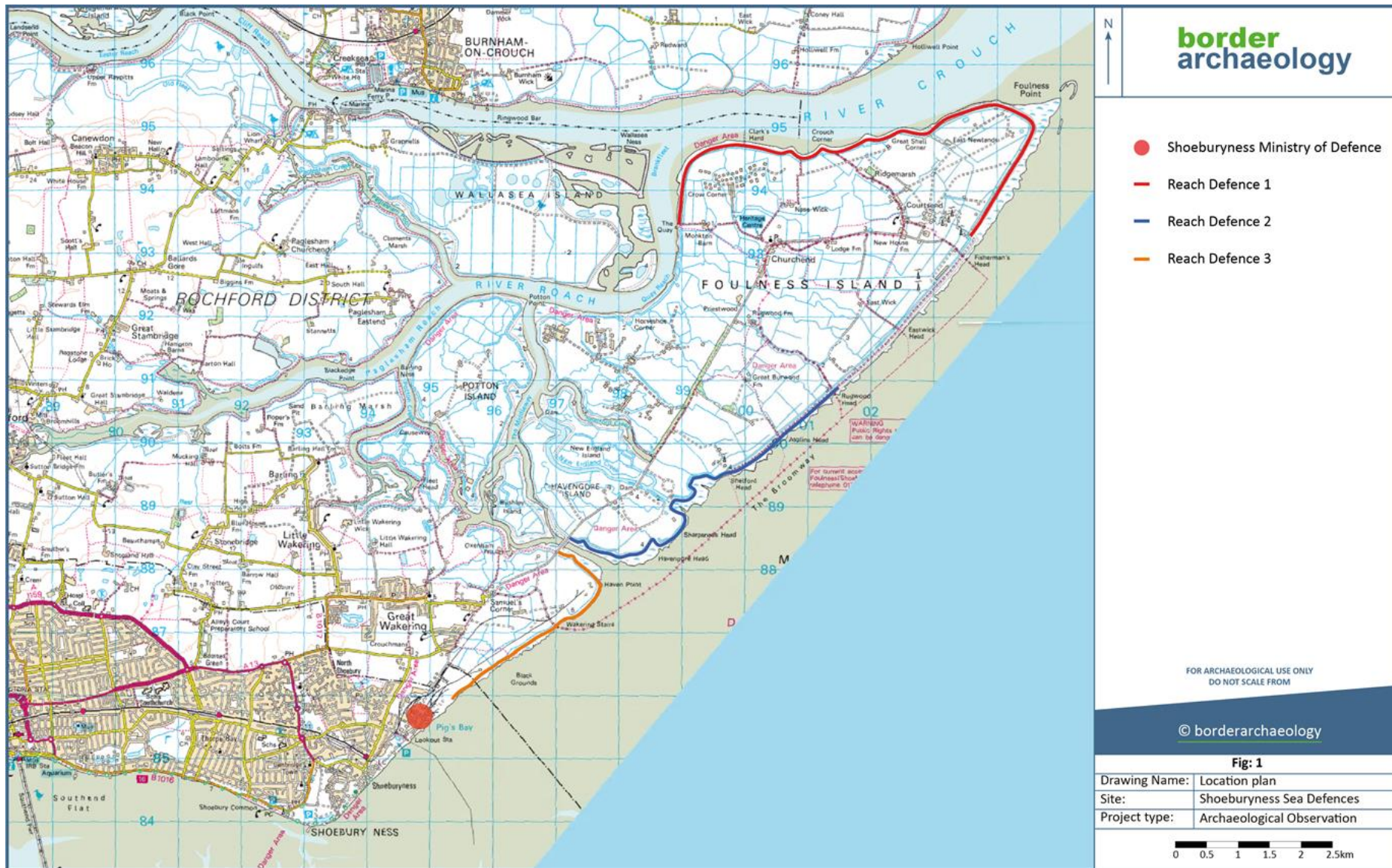
MOD Shoeburyness is located approximately 5km from Southend-On-Sea on the Foulness archipelago, a collection of low-lying islands situated between the Rivers Roach and Crouch on the N side of the Thames estuary in Essex. These islands comprise areas of grazing marsh, saltmarsh, intertidal sand-silt flats, beaches, cockleshell banks, rough grass, scrubland and farmland. The groundworks took place within Reach 2 of the proposed sea defences (*fig. 1*).

## 4 Soils & Geology

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The British Geological Society (BGS) identified bedrock of the London Clay Formation, which formed approximately 48 to 56 million years ago in a local environment previously dominated by deep seas. The superficial material is recorded as Alluvium, comprising clay, silt and sand deposits that formed up to 2 million years ago in the Quaternary Period (BGS 2021).

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- Shoeburyness Ministry of Defence
- Reach Defence 1
- Reach Defence 2
- Reach Defence 3

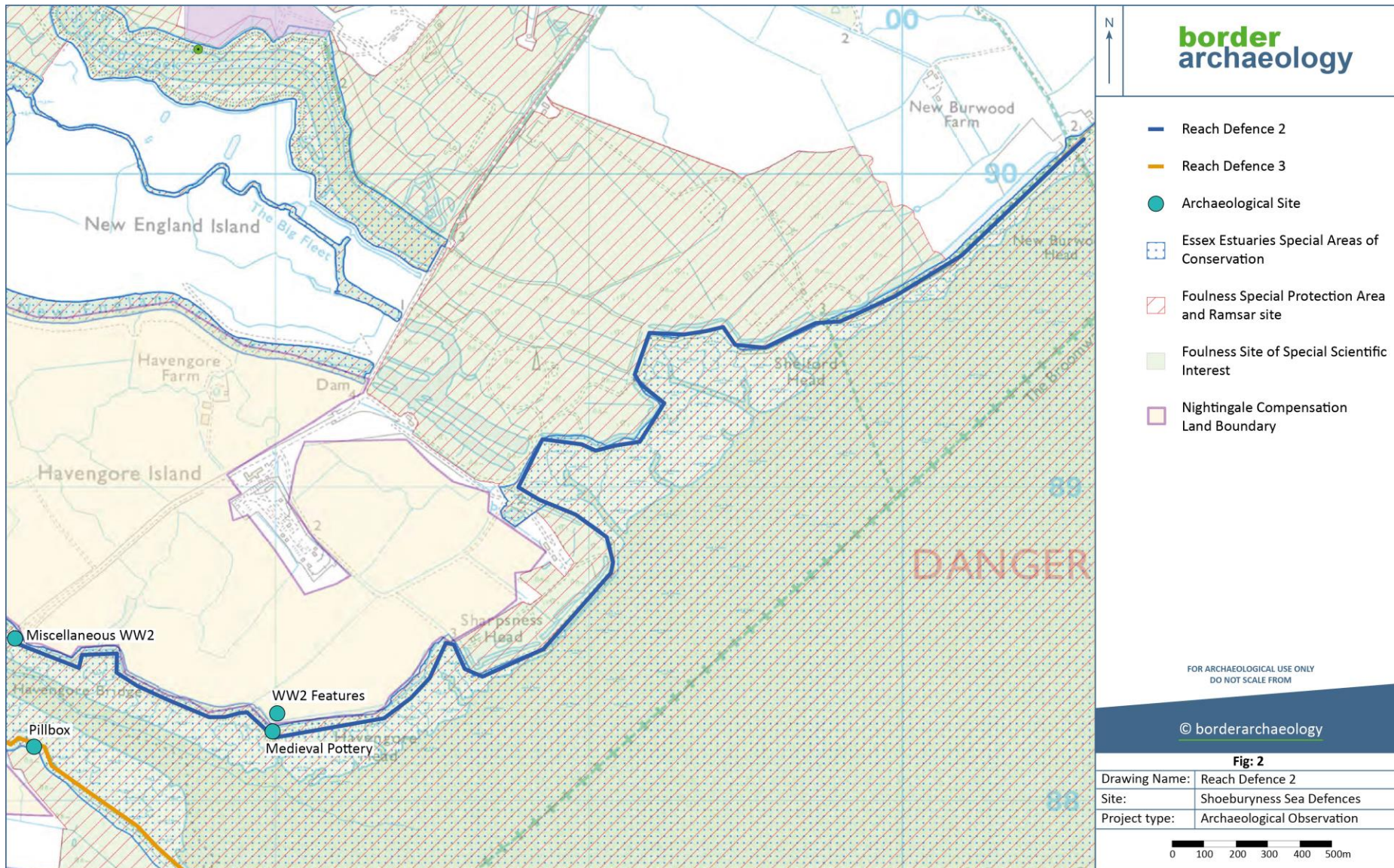
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Fig: 1

Drawing Name:	Location plan
Site:	Shoeburyness Sea Defences
Project type:	Archaeological Observation







## 5 Historical and Archaeological Background

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The previously submitted WSI (BA 2021a) outlined the historic and archaeological background of the development area, the results of which are summarised below.

### 4.1 Reach Defence 1

Located along the northern extent of the development area, three sites are situated in close proximity to Reach Defence 1: Romano-British burnt mounds, identified in the NW part of the Reach, and a WW2 concrete pillbox along with the ramparts of a similarly dated gun battery at Foulness Point in the NE.

### 4.2 Reach Defence 2

Reach Defence 2 extends along the eastern coastline of Foulness Island. Medieval pottery sherds, a miscellaneous WW2 site/feature, along with further features dated to WW2 have been identified in the vicinity of the development area at the entrance to Havengore Creek.

### 4.3 Reach Defence 3

Reach Defence 3 encompasses the southernmost extent of the development area. Finds dating to the Iron Age and Romano-British period have been found in the vicinity, while three pillboxes and two anti-tank features are situated along the length of the Reach.

### 4.4 Scheduled Monuments and Listed Buildings

Two Scheduled Monuments are situated within 2km of the proposed works:

- An Atomic Weapons Research Establishment (List Entry Number: 1411759; NGR: TQ 97734 91504), which encompasses 11 buildings and infrastructure of a former Explosives Storage Area, is located c. 1.8km from Reach Defence 1.
- A burial site (SMR No: 11222 NGR: TQ 980905), which produced several vessels of Romano-British date, is located at Little Shelford c. 2km from Reach 2.

Numerous listed buildings are also recorded across Foulness Island, including those at Monkton Barn, Churchend, Ridgemarsh, Curtsend and Rugwood Farm.

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## 6 Aims & Objectives

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The aim of the AO was to locate and record any archaeological finds, features or deposits within the ground works area, assessing the character, extent and quality of the resource and establishing their importance within a local, regional and national context.

Additionally, the work aimed to address specific areas of interest as set out in *The East of England Regional Research framework for the Historic Environment* (ALGAO 2021).

## 7 Methodology

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The programme of archaeological work was carried out in accordance with *Standard and Guidance for an archaeological watching brief* (ClfA 2020a) and *Standard and Guidance for the collection, documentation, conservation and research of archaeological materials* (ClfA 2020b). BA adheres to the ClfA Code of conduct (2019) and is cognisant of the *Management of Research Projects in the Historic Environment: The MoRPHE Project Managers' Guide* (Lee 2015).

ClfA states (2020a, 4) that the purpose of a watching brief (AO) is:

- a) *To allow, within the resources available, the preservation by record of archaeological deposits, the presence and nature of which could not be established (or established with sufficient accuracy) in advance of development or other potentially disruptive works.*
- b) *To provide an opportunity, if needed, for the watching archaeologist to signal to all interested parties, before the destruction of the material in question, that an archaeological find has been made for which the resources allocated to the watching brief itself are not sufficient to support treatment to a satisfactory and proper standard.*

### 6.1 Site Specific

All of the groundworks were carried out by machine using a toothless ditching bucket operating under strict and continuous archaeological supervision. All stripped material was routinely checked for significant finds (where practicable). Excavations did not exceed the safe working depth or limit of the Scheme groundworks (1.5m).

### 6.2 Recording

This programme of works was recorded under the Site Code SHO21.

An OASIS online record has been initiated and the OASIS number assigned is: borderar1-503528.

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Full written, graphic and photographic records were made in accordance with BA's *Archaeological Field Recording Manual* (2021b) and as outlined in the WSI (BA 2021a, section 6.2).

## 8 Results

A total of eight trial pits (TP001-TP008) were excavated within Reach 2 during the course of the AO (*table 1*).

TP No.	Length (m)	Width (m)	Depth (m)
001	3	0.5	1.5
002	2	0.5	1.5
003	2.5	0.5	1.5
004	2	0.5	1.5
005	2	0.5	1.5
006	2	0.5	1.5
007	2.5	0.5	1.5
008	2	0.5	1.5

*Table 1: Dimensions of the trial pits excavated in Reach 2*

Each excavated trial pit revealed the same sequence of deposits, namely topsoil and subsoil overlying two alluvial layers (*plate 1*); no features of archaeological significance were identified (see Appendix 1 for full context descriptions).

The topsoil within Reach 2 comprised a loosely compacted, dark brown grey clayey silt with a thickness of 0.1m on average; this was situated above a loosely compacted, mid brown orange silty sand subsoil, which measured 0.13m thick (avg.).

The underlying alluvial layer varied from a mid pink/light brown grey clayey silt to a mid to dark orange brown silty clay with an average thickness of 0.33m; in the majority of trial pits this overlay a dark grey blue clayey sand.



*Plate 1: Trial pit showing the sequence of deposits*

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## 9 Significance of Results

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No features, finds or deposits of archaeological significance were encountered during the course of the AO within Reach 2 of the Shoeburyness Sea Defences.

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- Border Archaeology td, 2021b *Archaeological Field Recording Manual*.
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- Lee, E., 2015, *Management of Research Projects in the Historic Environment: The MoRPHE Project Managers' Guide*, Historic England.
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## 12 Appendix 1: Context Tables

TP No.	Context	Type	F/B	F/O	Description	Interpretation	Finds	Sample No	Provisional Date
001	(1001)	Deposit	-	-	Loosely compacted dark brown grey clayey silt; frequent stone inclusions; T: 0.1m; overlies (1002).	Topsoil	-	-	Modern
	(1002)	Deposit	-	-	Loosely compacted mid brown orange silty sand; frequent stone inclusions T: 0.25m; overlies (1003); underlies (1001).	Subsoil	-	-	Modern
	(1003)	Deposit	-	-	Moderately compacted mid pink grey clayey silt; occasional stone inclusions; T: 0.25m; overlies (1004); underlies (1002).	Alluvium	-	-	Unknown
	(1004)	Deposit	-	-	Firmly compacted dark grey blue clayey sand; very occasional chalk flecks and shell inclusions; T: >1m; underlies (1003).	Alluvium	-	-	Unknown
002	(2001)	Deposit	-	-	Loosely compacted dark brown grey clayey silt; frequent stone inclusions; T: 0.15m; overlies (2002).	Topsoil	-	-	Modern
	(2002)	Deposit	-	-	Loosely compacted mid brown orange silty sand; frequent stone inclusions; T: 0.2m; overlies (2003); underlies (2001).	Subsoil	-	-	Modern
	(2003)	Deposit	-	-	Moderately compacted light brown grey clayey silt; T: 0.25m; underlies (2002); overlies (2004).	Alluvium	-	-	Unknown
	(2004)	Deposit	-	-	Moderately compacted mid blue grey clayey silt: very occasional stone inclusions; T: >0.45m; overlies (2005); underlies (2003).	Alluvium	-	-	Unknown
003	(3001)	Deposit	-	-	Loosely compacted dark brown grey clayey silt; frequent stone inclusions; T: 0.1m; overlies (3002).	Topsoil	-	-	Unknown
	(3002)	Deposit	-	-	Loosely compacted mid brown orange silty sand; frequent stone inclusions; T: 0.1m; overlies (3003); underlies (3001).	Subsoil	-	-	Modern
	(3003)	Deposit	-	-	Moderately compacted light brown grey clayey silt; T: 0.15m; underlies (3002); overlies (3004).	Alluvium	-	-	Unknown
	(3004)	Deposit	-	-	Moderately compacted dark orange brown silty clay; T: >0.25m; overlies (3005); underlies (3003).	Alluvium	-	-	Unknown

TP No.	Context	Type	F/B	F/O	Description	Interpretation	Finds	Sample No	Provisional Date
004	(4001)	Deposit	-	-	Loosely compacted dark brown grey clayey silt; frequent stone inclusions; T: 0.05m; overlies (4002).	Topsoil	-	-	Modern
	(4002)	Deposit	-	-	Loosely compacted mid brown orange silty sand; frequent stone inclusions; T: 0.15m; overlies (4003); underlies (4001).	Subsoil	-	-	Modern
	(4003)	Deposit	-	-	Moderately compacted dark orange brown silty clay; T: 0.2m; overlies (4004); underlies (4002).	Alluvium	-	-	Unknown
	(4004)	Deposit	-	-	Firmly compacted dark grey blue clayey sand; very occasional chalk flecks and shell inclusions; T: >0.9m; underlies (4003); overlies (4005).	Alluvium	-	-	Unknown
005	(5001)	Deposit	-	-	Loosely compacted dark brown grey clayey silt; frequent stone inclusions; T: 0.1m; overlies (5002).	Topsoil	-	-	Modern
	(5002)	Deposit	-	-	Loosely compacted mid brown orange silty sand; frequent stone inclusions; T: 0.1m; overlies (5003); underlies (5001).	Topsoil	-	-	Modern
	(5003)	Deposit	-	-	Moderately compacted dark orange brown silty clay; T: 0.3m; overlies (5004); underlies (5002).	Alluvium	-	-	Unknown
	(5004)	Deposit	-	-	Firmly compacted dark grey blue clayey sand; very occasional chalk flecks and shell inclusions; T: >0.75m; underlies (5003); overlies (5005).	Alluvium	-	-	Unknown
006	(6001)	Deposit	-	-	Loosely compacted dark brown grey clayey silt; frequent stone inclusions; T: 0.1m; overlies (6002).	Topsoil	-	-	Modern
	(6002)	Deposit	-	-	Loosely compacted mid brown orange silty sand; frequent stone inclusions; T: 0.1m; overlies (6003); underlies (6001).	Subsoil	-	-	Modern
	(6003)	Deposit	-	-	Moderately compacted dark orange brown silty clay; T: 0.55m; overlies (6004); underlies (6002).	Alluvium	-	-	Unknown
	(6004)	Deposit	-	-	Firmly compacted dark grey blue clayey sand; very occasional chalk flecks and shell inclusions; T: >0.85m; underlies (6003).	Alluvium	-	-	Unknown
007	(7001)	Deposit	-	-	Loosely compacted dark brown grey clayey silt; frequent stone inclusions; T: 0.15m; overlies (7002).	Topsoil	-	-	Modern



TP No.	Context	Type	F/B	F/O	Description	Interpretation	Finds	Sample No	Provisional Date
007	(7002)	Deposit	-	-	Loosely compacted mid brown orange silty sand; frequent stone inclusions; T: 0.1m; overlies (7003); underlies (7001).	Subsoil	-	-	Modern
	(7003)	Deposit	-	-	Firmly compacted mid orange brown silty clay; very occasional stone inclusions; T: 0.6m; underlies (7002); overlies (7004).	Alluvium	-	-	Unknown
	(7004)	Deposit	-	-	Firmly compacted dark grey blue clayey sand; very occasional chalk flecks and shell inclusions; T: >0.7m; underlies (7003).	Alluvium	-	-	Unknown
008	(8001)	Deposit	-	-	Loosely compacted dark brown grey clayey silt; frequent stone inclusions; T: 0.05m; overlies (8002).	Topsoil	-	-	Modern
	(8002)	Deposit	-	-	Loosely compacted mid brown orange silty sand; frequent stone inclusions; T: 0.05m; overlies (8003); underlies (8001).	Subsoil	-	-	Modern
	(8003)	Deposit	-	-	Firmly compacted mid orange brown silty clay; very occasional stones and modern CBM inclusions; T: 0.35m; overlies (8004); underlies (8002).	Alluvium	-	-	Unknown
	(8004)	Deposit	-	-	Firmly compacted dark grey blue clayey sand; very occasional chalk flecks and frequent shell inclusions; T: >1.15m; underlies (8003).	Alluvium	-	-	Unknown

Report Title		Report Reference	
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