

Archaeological Services & Consultancy Ltd

ARCHAEOLOGICAL EVALUATION: ISLAND SITE REINFORCEMENT MAIN LITTLE PAXTON CAMBRIDGESHIRE

NGR TL 1890 6195 (CENTRE)

on behalf of Anglian Water Services Ltd.



Karin Semmelmann MA PIFA

July 2005

ASC: 685/LPI/02

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Site Data

ASC project code:	LPI		ASC Project No:	685			
Event No:	ECB 1924		Accession No:				
County:		Cambrid	geshire				
Village/Town:		Little Par	xton				
Civil Parish:		St. Neots	5				
NGR (to 8 figs): (cer	itre)	TL 1890	6195				
Present use:		Pasture					
Planning proposal:		Installati	on of water main				
Planning application	n ref/date:	N/A					
Local Planning Auth	ority:	Cambridgeshire					
Date of fieldwork:		24-26 th May 2005					
Client: Anglian Water Services Ltd Pitsford – Networks Engineering Office Grange Lane Pitsford Northampton NN6 9AP							
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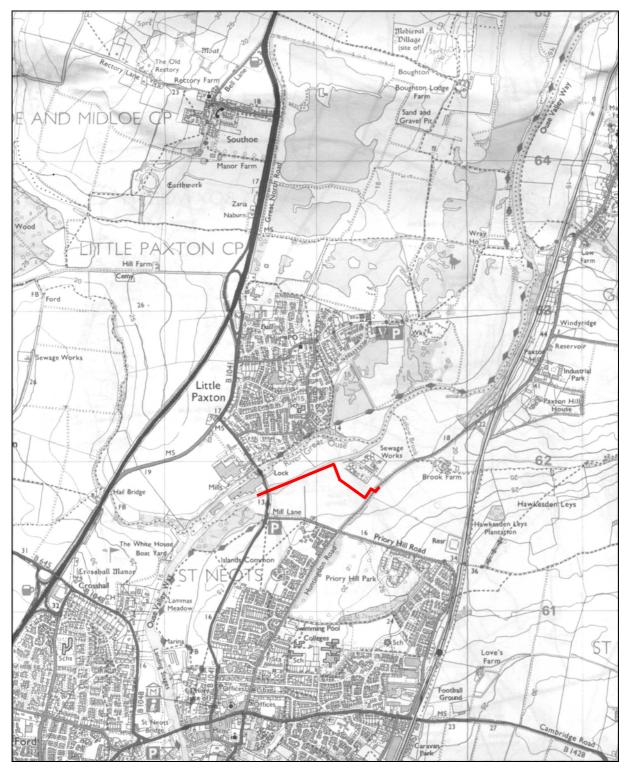


Figure 1: General location (scale 1:25,000)

Summary

During May 2005, an archaeological evaluation was undertaken on the route of a proposed pipeline at Little Paxton.

An initial desk based assessment concluded parts of the line of the route may pass through archaeological remains and that the area appeared to have remained in agricultural use from at least the Romano-British period.

The evaluation consisted of seventeen trenches, of which nine were excavated on an island in the river and yielded only modern ploughmarks and re-deposited, probably dredged riverine deposits. The trenches to the south of the island revealed small drainage features, a posthole and a probable medieval furrow. With the exception of modern debris, no artefacts were present in the trenches.

1 Introduction

In May 2005 Archaeological Services and Consultancy Ltd (ASC) carried out an evaluation at Little Paxton, Cambridgeshire (NGR TL 1890 6195 (centre): (Fig. 1). The project, which was defined in discussions with the Principal Archaeologist (PA), Cambridgeshire County Council, was commissioned by Anglian Water Services Ltd (AWSL), and was carried out according to a project design prepared by ASC (Zeepvat, 2005).

1.2 *Planning Background*

The work was commissioned by AWSL in line with their statutory obligations.

1.3 *Location and description (Figure 2)*

The proposed pipeline traverses relatively level ground, which lies at an elevation of c.15m AOD. It runs southwest – northeast on an island in the River Great Ouse then crosses the southern river channel to follow the southwestern and southeastern boundaries of the St Neots Sewage Works through agricultural fields. The centre of the pipeline is located c.0.8 km south of the historic core of Little Paxton, at NGR TL 5189 2619.

1.5 *Geology & Topography*

Soils in the wider area belong to the Efford 1 Association, described as "well drained fine loamy soils often over gravel, associated with similarly permeable soils variably affected by groundwater" and the underlying geology comprises "river terrace gravels" (Soil Survey 1983, 571s).

On the island and immediately adjacent to the southern river channel the route of the pipeline traverses alluvium of the Fladbury 1 Association (*ibid*, 813b). Further away from the river, Efford 1 Association soils developed on the first terrace gravels likely exist, the presence of a system of infilled palaeochannels cut into these soils and gravels is noted by the aerial photographic assessment (Palmer, 2005).

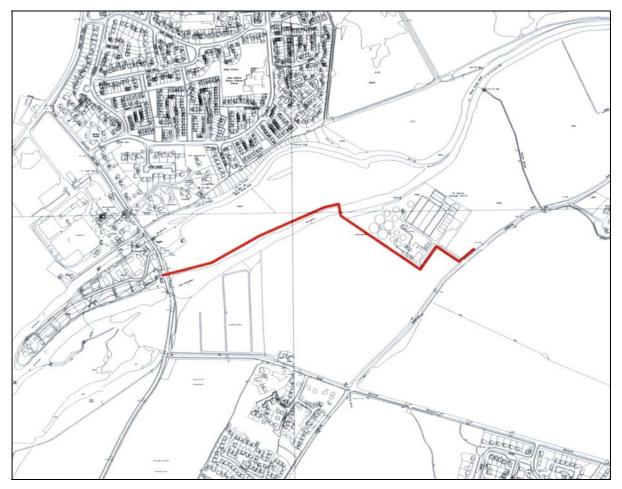


Figure 2: Proposed route of pipeline (scale 1:10,000)

2 Aims & Methods

2.1 *Aims*

As described in the Project Design (Section 2.1), the aims of the evaluation were:

• To determine the location, extent, date, character, condition, significance and quality of any surviving archaeological remains, which are liable to be threatened by the development.

2.2 Standards

The work conformed to the project design, to the relevant sections of the Institute of Archaeologists' *Code of Conduct* (IFA 2000) and *Standard & Guidance Notes* (IFA 2001), to the Association of Local Government Archaeological Officers East of England Region *Standards for Field Archaeology in the East of England* (ALGAO 2003), and to the relevant sections of ASC's own *Operations Manual*.

2.3 *Methods*

In line with the requirements agreed with the PA, the methods adopted for this project were:

- Trial trenching of the pipeline route, amounting to a 5% sample of the area of the pipeline corridor
- Sampling of any waterlogged deposits revealed by trenching, with appropriate analysis and assessment
- Preparation of a detailed report on the results of the above

3 Archaeological & Historical Background

A detailed desk-based assessment of the pipeline route and surrounding area (Hancock 2005), including an assessment of available air photograph evidence for the same area (Palmer 2005) was commissioned by ASWL. The findings of the above are briefly outlined below.

3.1 Prehistoric (*before 600BC*)

Although there is no archaeological evidence from the Mesolithic period, the recovery of flint implements of the preceding Paleolithic period would suggest a degree of human activity in the area prior to the introduction of farming in the Neolithic period.

It is thought that the Little Paxton area provided optimum conditions for Neolithic / Bronze Age settlement (Alexander 1992b) and settlement evidence for these periods is known from archaeological investigation on the northern bank of the river (Addyman 1969) and from aerial photography (Palmer 2005).

3.2 Iron Age (600BC-AD43)

Iron Age remains that include enclosures, ring ditches, pit and a late Iron Age settlement / farmstead are known to the north and east of the present study area.

3.3 Roman (AD43-c.450)

The areas of Iron Age activity also produced evidence for the Romano-British period, with a cremation cemetery to the east and two settlements / farmsteads on the northern side of the river (Greenfield, 1969). In addition, structural remains and Romano-British artefacts recovered by dredging in the southern channel of the river close to the pipeline route may suggest the presence of a boat quay. Further waterside structural remains have been recovered from a silted up channel of the river at the western end of the island.

3.4 Saxon (*c.450-1066*)

At least two phases of late Saxon occupation have been identified on the northern side of the river (Addyman 1969), whilst a second, broadly contemporaneous settlement lay to the south of the study area.

3.5 Medieval (1066-1500)

At the time of the Domesday survey Little Paxton was a berewick of Great Paxton and was held by Countess Judith. It would appear that the focus of the settlement shifted westwards and that the medieval village of Little Paxton had its centre at the current High Street. Whilst three areas of ridge and furrow strip field systems have been identified on the southern side of the river (Palmer, 2005), the exact location of the deserted medieval village of Sudbury and the 14th century deer park established by Robert le Moyne remain unclear.

3.6 Post-Medieval (1500-1900)

The Manor of Little Paxton was held by the Ferrers family until the Civil War and subsequently changed hands several times during the late 17^{th} and 18^{th} centuries (Broad 1989). The 19^{th} century saw the introduction of gravel pits to the north and a paper mill at the western end of the island, but there was little development otherwise before the 20^{th} century.

3.7 Modern (1900-present)

The second half of the 20th century saw extensive residential development to the south and southwest of the historic core of Little Paxton and further gravel extraction to the east and north. At the same time St Neots expanded northwards and the sewage works were constructed on the southern bank of the River Great Ouse to serve the growing population.

On the route of the pipeline a field boundary was established to divide the island into two parcels of land, while inclosure boundaries on the southern bank of the river were grubbed out, and new boundaries established to delimit a western allotment area and the sewage works to the east. The pipeline route is currently sandwiched between the southern limit of Little Paxton and the northern limit of St Neots.

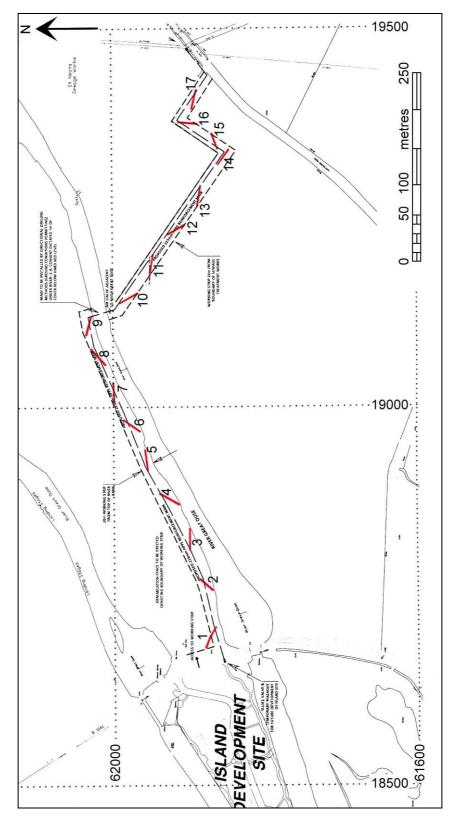


Figure 3: Trench locations (scale 1:5000)

4 **Results**

4.1 General

Seventeen trenches were mechanically excavated using two tracked excavators fitted with a 0.90m and a 1.50m wide toothless bucket according to the size of the machine operating under archaeological supervision (Fig. 3).

Natural strata was reached in each trench, and comprised yellowish brown sandy clay on and immediately south of the island, and orange-brown gravelly sand at the eastern end of the pipeline route. The alluvial deposits in the trenches on the island were investigated to a depth of 1.70m and found to be homogenous, consisting of finegrained sandy clay, which would suggest successive periods of standing or extremely slow moving water.

The stratigraphy was uniform across the site, with a layer of topsoil, approximately 0.30m deep, overlying the sandy clay and gravelly sand subsoils.

4.2 *Trenches* **1-9**

The features revealed in the trenches on the island included modern ploughmarks in Trenches 1, 3 and 7 and areas of re-deposited clay with flint, gravel and mussel shells in Trenches 2, 3, 4, 5 and 6 (Plate 2). That these clay deposits are modern was indicated by the fact that they lie on the interface between the top and the subsoils, and were associated with car tyres and modern timbers in Trenches 2 and 5. The neighbouring ends of Trenches 7 and 8 contained a layer of flint and gravel in a sandy matrix, between 0.25 and 0.30m deep. This also lay at the interface between the topsoil and subsoil and, like the clay deposits, was probably re-deposited material, possibly from dredging activity.

4.3 Trenches 10-11

Seven features were excavated in the trenches to the south of the island, of which two ([1003] in Trench 10 and [1103] in Trench 11) were found to have been a naturally cut gully and a tree bole respectively. Two linear features were revealed in Trench 11. Feature [1101] was straight-sided, orientated east to west and was approximately 0.40m wide x 0.19m deep (Plate 3). It contained a mid brown sand fill [1102]. No finds were recovered from this feature, which appeared to have been a land drain. Feature [1105], which was approximately 0.30m wide x 0.04m deep, was orientated north-east to south-west and lay adjacent to a layer of re-deposited gravel with patches of orange-brown clay and light yellow sand [1107] (Plate 4). The stratigraphic relationship between the two features was unclear, but it appeared that feature [1105] could have served as a drainage gully.

4.4 *Trench 13*

A linear feature [1303], approximately 1.90m wide x 0.08m deep and orientated northwest to south-east, was excavated in Trench 13. It contained a mid brown, slightly clayey sand that was devoid of artefacts [1304]. This feature was probably a medieval furrow and may have been part of the medieval agricultural system identified in the aerial photos.

4.5 *Trench* 15

A probable drainage gully [1503], approximately 0.50m wide x 0.25m deep and orientated north to south, was revealed in Trench 15.

4.6 *Trench 16*

Two modern sewer pipe trenches, two undated ditches [1603 & 1605] and a posthole [1607] were revealed in Trench 16. Ditch [1603] was orientated south-west to northeast and was approximately 0.80m wide x 0.30m deep. It contained a mid brown silty clay that was devoid of artefacts. Ditch [1605] was orientated north-west to south-east and was approximately 1.28m wide x 0.40m deep. No datable artefacts were recovered from the pale reddish brown sandy silt fill. Posthole [1607] was approximately 0.72m in diameter x 0.22m deep and contained a yellow brown sandy silt fill with occasional stones but no artefacts. It was cut by ditch [1603], which in turn was cut by the modern sewer trenches and ditch [1605].

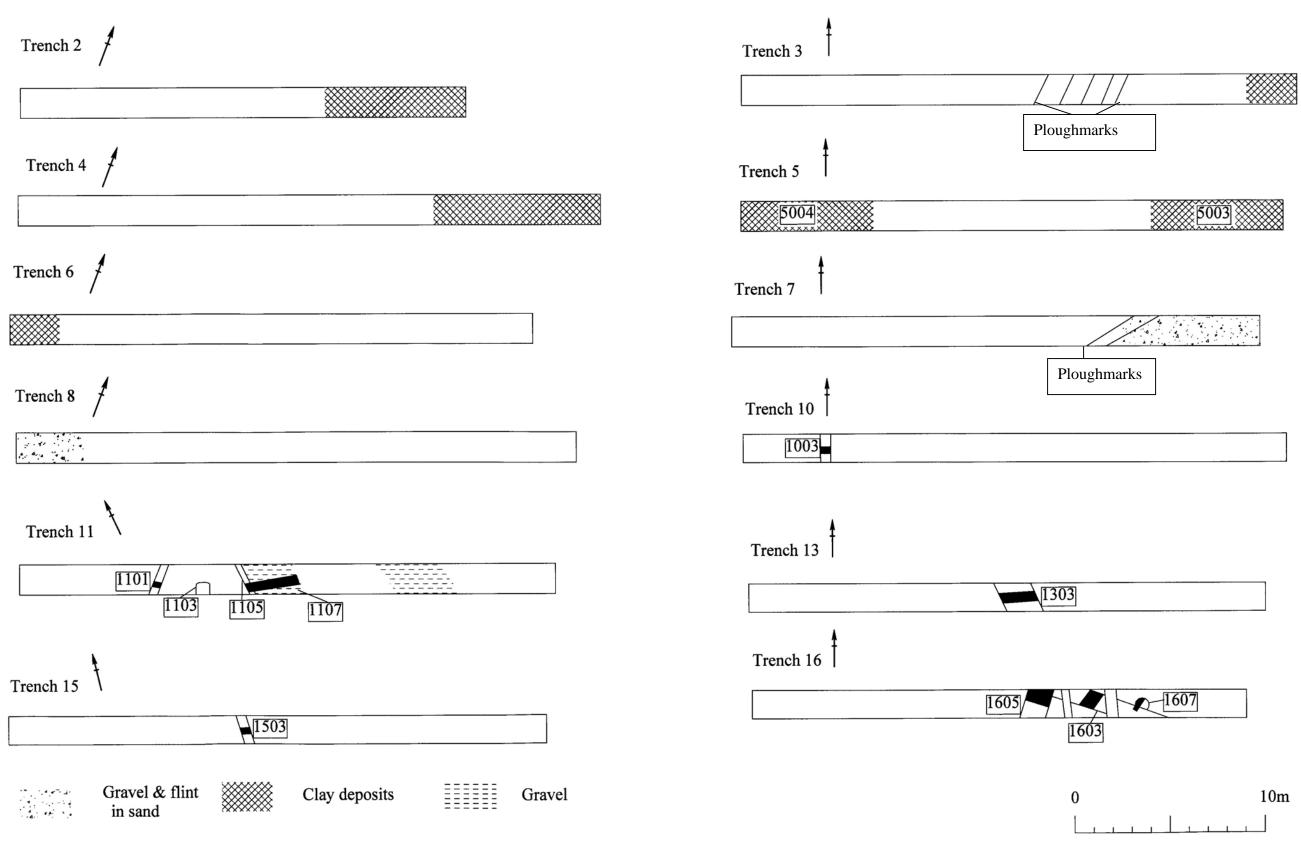


Figure 4: Trench Plans (scale 1:200)

Archaeological Evaluation

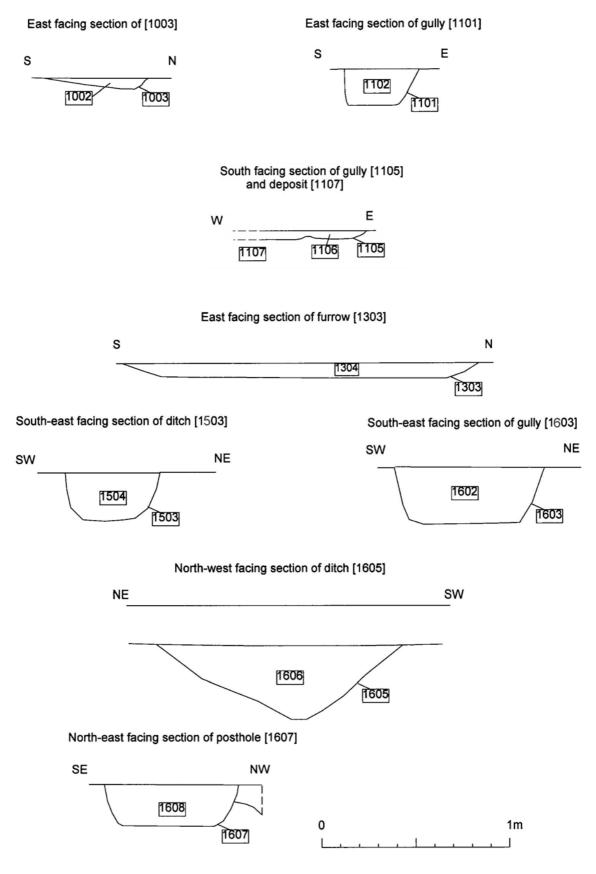


Figure 5: Sections (scale 1:20)

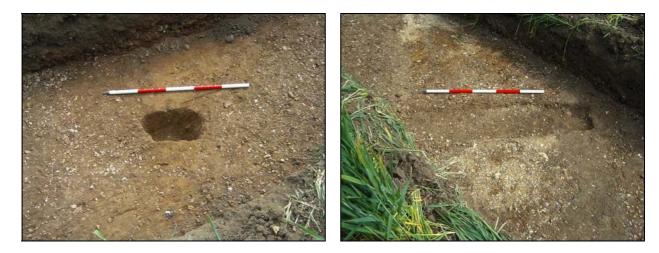


Plate 1: Land drain [1101]

Plate 2: Drainage gully [1105] & deposit [1107]



Plate 3: Medieval furrow [1303]

Plate 4: Ditch [1603]



Plate 5: Ditch [1605]

Plate 6: Posthole [1607]

5. Conclusions

- 5.1 The desk-based assessment had indicated the presence of Romano-British structural remains on the banks of the southern channel of the River Ouse and further archaeological remains, in the form of pre-medieval cropmarks, and Romano-British cremation vessels in the field to the south of the island. In contrast, no archaeological finds or features were known on the island itself. The evidence from the evaluation trenches substantiated this pattern of archaeological distribution in that no further evidence for early archaeological remains were revealed. Indeed, the only archaeological remains that were encountered were modern ploughmarks and modern debris mixed with clay that had been deposited during dredging programmes.
- 5.2 The alluvial deposits within the trenches on the island were deep, homogenous and clean, and as such were indicative of frequent, slow-moving flooding events. This as well as the low-lying nature of the island and its known propensity to flooding into modern times may well suggest that the island would have only been utilised for transitory activity and that that the alluvial deposits are unlikely to mask archaeological remains.
- 5.3 The archaeological remains encountered in Trenches 11, 13, 15 and 16, to the south of the island consisted primarily of drainage features, a posthole and a probable furrow. The presence of the furrow indicates that during the medieval period this was part of one of the three areas of open field system identified on the southern side of the river in Little Paxton.
- 5.4 The other features produced no dating evidence although a sequential narrative was discernible in Trench 16 where the posthole [1607] was cut by ditch [1603], which in turn was truncated by the sewer trench and ditch [1605]. The area has probably been in agricultural use since at least the Romano-British period, which is not altogether surprising given the quality of the soil and the obvious disadvantages of settling in such close proximity to a major, flood prone watercourse. However, despite the archaeological evidence for farming activity in the area since the Neolithic period, there was nothing to suggest that these features were other than post-medieval in date.
- 5.5 No significant archaeological features were observed during the evaluation. While the survival of occasional isolated archaeological features cannot be entirely excluded, it is unlikely that large numbers of archaeological features or artefacts are present along the pipeline route.

5.6 *Confidence Rating*

The work was carried out under good weather conditions and the results can thus be given a high confidence rating.

6. Acknowledgements

ASC would like to express its thanks to Anglian Water Services Ltd. for funding the evaluation, and to the staff of the County Archaeology Office, Cambridgeshire County Council and the staff of the Huntingdonshire Record Office for their co-operation and assistance in the execution of this project.

The project was undertaken under the overall management of Bob Zeepvat BA MIFA, by Alastair Hancock, Nigel Wilson and Karin Semmelmann. The report was written and illustrated by Karin Semmelmann and Nigel Wilson and edited by David Fell.

7. Archive

- 7.1 The project archive will comprise:
 - 1. Desk based assessment
 - 2. Project Design
 - 3. Initial Report
 - 4. Clients site plans
 - 5. Site records
 - 6. List of photographs
 - 7. B/W prints & negatives
 - 8. CDROM with copies of all digital files.
- 7.2 The archive will be deposited with the Cambridgeshire Sites & Monuments Record.

8. References

Standards & Specifications

- ALGAO 2003 Standards for Field Archaeology in the East of England. East Anglian Archaeology Occasional Paper 14.
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- Palmer, R.. 2005 Little Paxton Pipeline, Area Centred TL 191618, Cambridgeshire: Aerial Photographic Assessment. Air Photo Services; Unpublished report (No: 2005/8).
- Soil Survey 1983 1:250,000 Soil Map of England and Wales, and accompanying legend (Harpenden).

Appendix 1: Trench Summary Tables

			Tre	nch 1					
					Max I	Dimension	S		
		The second	Length	31.69	Width	1.90	Depth	1.50	
	a la la				I	Levels			
AL IN	-		Trench	base north	n-west	12.87m (DD		
		WH THESE	Trench	top north-	west	13.11m (DD		
			Trench	base south	i-east	13.23m (DD		
			Trench	top south-	east	13.56m OD			
			NGR Co-ordinates						
A CONTRACTOR		aic.	E 18709			Ν	61865		
1. A.			Ε	16861		Ν	61879		
			Orienta	ation		NW-SE			
			Reason	for Tren	ch	Test wes route	tern end of	pipeline	
Context	Context Type Description and Interpretation					Max Width (mm)	Max Thckn (mm)	Depth BGL (mm)	
1001	Layer	Dark yellowish (Topsoil)	brown s	silty loan	1	1.90m	0.30m	0m	
1002	Layer	Yellowish brow gravel (Subsoil	•	v clay wit	h	1.90m	1.20m	0.30m	

			Tre	nch 2				
-		the malls			Max I	Dimensior	IS	
	Contraction of the	All the second second	Length	23.54	Width	1.45	Depth	0.55
-					I	Levels		
A DES		Canal I	Trench	base south	-west	12.74mC)D	
			Trench	top south-	west	13.37mC)D	
			Trench	base nort	h-east	7.80OD		
			Trench	top north-	east	12.75OE)	
	We at				NGR C	o-ordina	tes	
			Е	18751		Ν	61869	
			Ε	18772		Ν	61887	
			Orienta	ation		SW-NE		
			Reason	for Tren	ch	Test wes route	tern end of	pipeline
Context	Туре	Description and	Interpret	ation		Max Width (mm)	Max Thckn (mm)	Depth BGL (mm)
2001	Layer	Dark yellowish (Topsoil)	n brown	silty loan	1	1.45m	0.30m	0m
2002	Layer	Small random clay, timber ren	wn sandy clay subsoil. patches of blue-grey mains and two car tyres at the south-western end			1.45m	0.25m	0.30m

			Tre	nch 3				
- Aler	AND ME	* ****			Max I	Dimensior	ıs	
			Length	29.45	Width	1.60	Depth	1.60
		The seal		I	Ι	Levels		
5 2	N.C.		Trench	base west		12.71m0)D	
			Trench	top-west		13.10mC	DD	
	And the second		Trench	base-east		12.76m0)D	
			Trench	top-east		13.36m0)D	
ALL AND	. M. 198				NGR C	Co-ordina	tes	
	and the the	CO _ NA	E	18810		Ν	61899	
· The s	The day		Е	1884		Ν	61899	
			Orientation			E-W		
			Reason for Trench Test western end of pip route				f pipeline	
Context	Туре	Description and	Interpreta	ation		Max Width (mm)	Max Thckn (mm)	Depth BGL (mm)
3001	Layer	Dark yellowish (Topsoil)	brown	silty loar	n	1.55m	0.20m	0
3003	Deposit	Blue-grey clay and gravel. Thi approximately the eastern end	Blue-grey clay interspersed with flint and gravel. This deposit was approximately 2.70m long and lay at the eastern end of the trench. It appears to have been the result of			1.55m	0.25m	0.20m
3004	Agricul	Modern plough	marks, o			0.20m	-	0.20m
	tural	NE, were observed 14.0m from the			•			
3002	Layer	Yellowish brow			U	1.55m	1.40m	0.20m

			Tre	nch 4				
	and the second	- Martin			Max I	Dimensior	IS	
		Est.	Length	30.88	Width	1.60	Depth	1.60
					I	evels		
18× 1		A MARTIN	Trench	base north	i-east	12.53mC)D	
	WELL	C. C	Trench	top north-	east	12.78mC	DD	
	Concerne -		Trench	base south	-west	12.85mC	D	
	Harry .		Trench	top south-	west	13.22mC)D	
		·			NGR C	o-ordina	tes	
	the tranks	and the second	Ε	18870		Ν	61913	
A REAL	and the second	Terne !!!	Ε	18886		Ν	61940	
Soft	an alto	T. DELL	Orienta	ation		NE-SW		
A Car	1999 J		Reason	for Tren	ch	Test wes route	tern end of	f pipeline
Context	Туре	Description and	Interpreta	ation		Max Width (mm)	Max Thckn (mm)	Depth BGL (mm)
4001	Layer	Dark yellowish (Topsoil)	brown s	silty loan	1	1.40m	0.45m	0
4003	Deposit	Blue-grey clay with flint, grav was observed a from the south- was approxima appeared to ha	y deposit interspersed avel and mussel shells approximately 4.75m h-western trench edge. It nately 8.85m long and ave been a dump deposit, result of dredging.			1.40m	0.33m	0.43m
4002	Layer	Yellowish brow It was approxin 1400m (w) x 0	nately 8.	.85m (l) x		1.40m	1.15m	0.43m

			Tre	nch 5				
	Set The				Max I	Dimensior	IS	
		Length	28.75	Width	1.60	Depth	1.60	
A STATE		All Harris			Ι	evels	11	
	F	No. 2 Contraction	Trench	base east		12.42mC)D	
	and the second	The service	Trench	top east		12.79mC)D	
			Trench	base west		12.56mC)D	
			Trench	top west		13.02mC)D	
	23				NGR C	o-ordina	tes	
			E	18915		Ν	61954	
NAC	and the second of	and love	E	18944		N 61958		
		A HOURS	Orient	ation		E-W		
			Reason	for Tren	ch	Test western end of pipeline route		
Context	Туре	Description and	Interpret	ation		Max Width (mm)	Max Thckn (mm)	Depth BGL (mm)
5001	Layer	Dark yellowish (Topsoil)	brown	silty loar	n	1.50m	0.30m	0
5003	Deposit	Grey-blue clay mussel shells. ' occasional frag	This dep	osit conta	ained	1.50m	0.40m	0.30m
5004	Deposit	Grey-blue clay	Grey-blue clay with flint, gravel and mussel shells. A car tyre was found			1.50m	0.30m	0.30m
5002	Layer	Yellowish brown sandy clay subsoil. Two areas of re-deposited observed at either end of the trench. These were c.0.20-0.40m deep and contained modern brick and car tyres.			ved at vere	1.50m	1.30m	0.30m

			Tre	nch 6				
and the second	Mar - allah				Max D	Dimensior	IS	
	ACI		Length	27.69	Width	1.60	Depth	1.70
		Call Lan			L	evels		
			Trench	base north	-east	12.22mC)D	
			Trench	top north-	east	12.69mC)D	
	NZ-		Trench	base south	-west	12.65mC)D	
			Trench	top south-	west	13.18mC)D	
	and the second				NGR C	o-ordina	tes	
	Line min		E 18967			N	61964	
the season			E 18983			Ν	61987	
			Orienta	ation		SW-NE		
			Reason	for Tren	ch	Test wes route	tern end of	pipeline
Context	Туре	Description and	Interpret	ation		Max Width (mm)	Max Thckn (mm)	Depth BGL (mm)
6001	Layer	Dark yellowish (Topsoil)	h brown	silty loar	n	1.50m	0.30m	0
6003	Deposit	A 2.60m long of	deposit c	of grey-bl	ue	1.50m	0.25m	0.30m
		clay intersperse	rspersed with gravel, flint and					
			in a sandy matrix was					
		revealed at the						
		the trench. This			been			
		the result of dre	edging a	ctivities.				
6002	Layer	Yellowish brow	vn sandy	/ clay sub	soil.	1.50m	1.40m	0.30m

			Tre	nch 7				
					Max D	imensior	ns	
240			Length	27.98	Width	1.60	Depth	1.60
							1	
Notes -			Trench	base east		12.49mC)D	
and the			Trench	top east		12.80mC)D	
A CAL		and light	Trench	base west		12.41mQ)D	
			Trench	top west		12.92m0)D	
	the states				NGR C	o-ordina	tes	
	2454	AND LAND	Ε	19005		Ν	61998	
1 Alexandre		and a start	Ε	19033		Ν	61999	
		To I we wanted	Orienta	ntion		E-W		
			Reason	for Tren	ch	Test centroute	tral area of	pipeline
Context	Туре	Description and	Interpret	ation		Max Width (mm)	Max Thckn (mm)	Depth BGL (mm)
7001	Layer	Dark yellowish (Topsoil)	n brown	silty loar	n	1.50m	0.32m	0
7003	Agricul	Two modern p				0.20m	-	0.32m
	tural	revealed at the trench.	eastern	end of the	e			
7004	Deposit	Flint and grave				1.50m	0.25m	0.32m
		the trench.	eastern	most 7.30				
7002	Layer	Yellowish brow	vn sandy	clay sub	soil.	1.50m	1.28m	0.32m

		Tre	nch 8				
State 1				Max I	Dimensior	IS	
		Length	29.63	Width	1.60	Depth	1.60
	Res 20		1	Ι	Levels	-11	
	15mg	Trench	base nort	h-east	12.31mC)D	
10 2	17	Trench	top north-	east	12.83mQ)D	
		Trench	base south	-west	12.22mQ)D	
	JE MA	Trench	top south-	west	12.82mQ)D	
	1 1			NGR C	o-ordina	tes	
May Add			19056		Ν	62009	
the states	The state is a	Е	19078		Ν	62029	
LAST REAL		Orienta	tion		SW-NE		
		Reason	for Tren	ch		tral area of	pipeline
Туре	Description and	Interpreta	ation		Max Width	Max Thckn (mm)	Depth BGL (mm)
Layer	•	brown	silty loar	n	1.50m	0.40m	0m
Deposit	A gravel depos				1.50m	0.30m	0.20m
			-				
				' clay			
	-			1.			
		s to have	been the	result			
Laver		vn sandv	clay sub	soil	1 50m	1 20m	0.40m
	Layer	LayerDark yellowish (Topsoil)DepositA gravel depos first 3.50m from trench edge, pro- south-east facin a few small poor and frequent m deposit appears of dredging.	Image: Second	Type Description and Interpretation Layer Dark yellowish brown silty loar (Topsoil) Deposit A gravel deposit was present in the first 3.50m from the south-wester trench edge, predominantly in the south-east facing section. It conta a few small pockets of blue-grey and frequent mussel shells. This deposit appears to have been the of dredging.	Max ILength29.63WidthILength29.63WidthITrench base north-eastTrench top north-eastTrench base south-westTrench base south-westTrench base south-westTrench base south-westTrench base south-westTrench top south-westTrench base south-westTrench top south colspan="2">Mark yellowish brown silty loam(Topsoil)DepositA gravel deposit was present in the first 3.50m from the south-western trench edge, predominantly in the south-east facing section. It contained a few small pockets of blue-gr	Max DimensionLength29.63Width1.60Length29.63Width1.60LevelsTrench base north-east12.31mOTrench base north-east12.31mOTrench base south-west12.22mOTrench top north-east12.22mOTrench base south-west12.22mOTrench top south-west12.22mOTrench top south-west12.22mOTrench top south-west12.82mOMGR Co-ordinatEE19056NE19078NOrientationSW-NEReason for TrenchTest centrouteTypeDescription and InterpretationMax Width (mm)LayerDark yellowish brown silty loam (Topsoil)1.50mDepositA gravel deposit was present in the first 3.50m from the south-western trench edge, predominantly in the south-east facing section. It contained a few small pockets of blue-grey clay and frequent mussel shells. This deposit appears to have been the result of dredging.1.50m	Max DimensionsLength29.63Width1.60Depth29.63Width1.60DepthLength29.63Width1.60DepthLength29.63Width1.60DepthLength29.63Width1.60DepthLength29.63Width1.60DepthTrench base north-east12.31mODTrench top north-east12.22mODTrench top south-west12.22mODTrench top south-west12.82mODTench top south-west12.82mODOrientationSW-NEE19078N62009E19078N62029OrientationSW-NEReason for TrenchTest central area of routeTypeDescription and InterpretationMax Width (mm)LayerDark yellowish brown silty loam (Topsoil)LayerDark yellowish brown silty loam (Topsoil)DepositA gravel deposit was present in the first 3.50m from the south-western trench edge, predominantly in the south-east facing section. It contained a few small pockets of blue-grey clay and frequent mussel shells. This deposit appears to have been the result of dredging.0.30m

			Tre	nch 9					
	Ser De		Max Dimensions						
	1	(Partie	Length	26.57	Width	1.60	Depth	1.60	
1	1	1 4 State			L	<i>evels</i>			
			Trench	base nort	h-west	12.37mC	D		
		Sta an	Trench	top north-	west	12.74mC	D		
			Trench	base south	-east	12.43mC	D		
			Trench	top south-	east	-OD			
		达 带 机 梁			NGR C	o-ordinat	es		
4			E E	19095		N N	62035		
			Orienta	ation		NW-SE			
			Reason	for Tren	ch	Test cent route	ral area of	pipeline	
Context	Туре	Description and	Interpret	ation		Max Width (mm)	Max Thckn (mm)	Depth BGL (mm)	
9001	Layer	Dark yellowish (Topsoil)	ı brown	silty loar	n	1.50m	0.30m	0	
9002	Layer	Yellowish brow	vn sandy	clay sub	osoil.	1.50m	1.30m	0.30m	

			Tren	ch 10					
	The seat	A started			Max I	Dimensior	IS		
- Carto	AL AND	E.R.	Length 28.77 Width			1.50	Depth	0.50	
		- Receiver			Ι	evels			
			Trench	base NNV	V	13.26mC)D		
	Colorante.		Trench top NNW			13.72mC)D		
No.			Trench	base SSE		13.71mC)D		
			Trench	top SSE		14.0mOl)		
					NGR C	o-ordina	tes		
			E 19137 N 61991						
			Е	19151		N 61966			
10 1/2			Orienta	tion		NNW-S	SE		
			Reason	for Tren	ch	Test central area of pipeline route, S of river			
Context	Туре	Description and	Interpreta	ation		Max Width (mm)	Max Thckn (mm)	Depth BGL (mm)	
1001	Layer	Dark yellowish (Topsoil)	h brown	silty loar	n	1.50m	0.30m	0	
1003	Cut	Linear feature indistinct south of the feature s natural deposit undulations in	ern edge uggest th followir	e and the nat this is ng the	depth a	0.55m	0.04m	0.30m	
1004	Fill	Mid brown san	dy silt.			0.55m	0.04m	0.30m	
1002	Layer	becoming prog	own sandy clay subsoil, ogressively ore gravelly outh-western end of the			1.50m	0.20m	0.30m	

			Trer	nch 11				
					Max E	Dimension	ns	
A PARTIE		1 Sinks	Length	28.42	Width	1.50	Depth	0.53
ALL DE				-	Ι	evels	-	
			Trench	base east		14.16m0	DD	
	of the second		Trench	top east		14.44m0	DD	
	A Comments		Trench	base west		13.78m0	DD	
	K.W.		Trench	top west		14.53m0	DD	
	A LA	116			NGR C	o-ordina	tes	
Nº AL	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		E	19173		N	61950	
14 LA			Е	19201		Ν	61946	
	Mar.	- martin	Orienta	ation		E-W		
			Reason	for Tren	ch	Test cen	tral area of	pipeline
						route		
Context	Туре	Description and	Interpret	ation		Max Width (mm)	Max Thckn (mm)	Depth BGL (mm)
1108	Layer	Dark yellowish (Topsoil)	n brown	silty loam	1	1.50m	0.28m	0
1101	Cut	E-W orientated drain.	l linear, j	probably	a land	0.40m	0.19m	0.28m
1102	Fill	Mid brown san	d. Fill o	f 1101.		0.40m	0.19m	0.28m
1103	Cut	Tree bole, 0.74	m long.			0.64m	0.09m	0.28m
1104	Fill	Mid-dark brow 1103	n sandy	clay. Fill	of	0.64m	0.09m	0.28m
1105	Cut	N-S orientated drainage gully. present.	-	-		0.30m	0.04m	0.28m
1106	Fill	Greyish brown 1105.	sandy c	lay. Fill c	of	0.30m	0.04m	0.28m
1107	Deposit	Gravel with patches of orange-brown reseposited clay and light yellow sand, probably a levelling deposit.				3.0m	0.04m	0.28m
1109	Layer	Yellowish brow			soil.	1.50m	0.25m	0.28m
A secon	d levelling	deposit that lay				rench wa	s not inve	stigated.

			Tren	ch 12							
	States and the states	STOR STORAGE	Max Dimensions								
		2 Char	Length	26.73	Width	1.50	Depth	0.80			
		3.8//			L	evels	1 1				
and a state	A gran		Trench	base NNV	V	14.17mO	D				
and a lot			Trench	top NNW		14.46mO	D				
			Trench	base SSE		13.87mO	D				
and the second	C. Maria	La P	Trench	top SSE		14.36mO	D				
1					NGR C	o-ordinat	es				
	The states		E	19227		Ν	61927				
N/S	1. The	SAN ALS	Ε	19240		Ν	61904				
112			Orienta	tion		NNW-SS	SE				
			Reason	for Tren	ch	Test easternot	ern end of	pipeline			
Context	Туре	Description and	Interpret	ation		Max Width	Max Thckn	Depth BGL			
						(mm)	(mm)	(mm)			
1201	Layer	Dark yellowish (Topsoil)	n brown	silty loar	n	1.50m	0.30m	0			
1202	Layer	Mid brown gra	velly sar	nd subsoi	1.	1.50m	0.50m	0.30m			

			Tren	nch 13							
		A THERE	Max Dimensions								
Starts 1			Length	27.38	Width	1.50	Depth	0.80			
		1100			I	Levels					
No 2			Trench base west)D				
			Trench	top west		14.19m0)D				
			Trench	base east		14.00m0)D				
			Trench	top east		14.29m0)D				
	Conter-	La La			NGR C	o-ordina	tes				
	and the		Ε	19265		Ν	61887				
			Ε	19292		Ν	61883				
			Orienta	ation		E-W					
			Reason	for Tren	ch	Test east route	tern end of	pipeline			
Context	Туре	Description and	Interpret	ation		Max Width	Max Thckn	Depth BGL			
						(mm)	(mm)	(mm)			
1301	Layer	Dark yellowish (Topsoil)	h brown	silty loan	1	1.50m	0.30m	0			
1303	Cut	NW-SE orienta probably a furr		ar feature	,	1.90m	0.08m	0.30m			
1304	Fill		fid brown slightly			1.90m	0.08m	0.30m			
1302	Layer	Mid brown gra	velly sau	nd subsoi	l.	1.50m	0.50m	0.30m			

			Trer	nch 14							
and the second second	AND THE	NA TRANSPORT	Max Dimensions								
	Nick I	- Aller	Length 25.47 Width			1.50	Depth	0.70			
			Levels								
			Trench	base nort	h-west	13.93mC	D				
	Red -		Trench	top north-	west	14.37mC	D				
			Trench	base south	i-east	13.63mC	D				
JNL.			Trench	top south-	east	14.25mC	D				
					NGR C	o-ordinat	es				
			Е	19319		Ν	61859				
	ALCONTRACTOR		Е	19340		Ν	61844				
			Orienta	ation		NW-SE					
			Reason	for Tren	ch	Test east route	ern end of	pipeline			
Context	Туре	Description and	Interpret	ation		Max Width	Max Thckn	Depth BGL			
						(mm)	(mm)	(mm)			
1401	Layer	Dark yellowish (Topsoil)	sh brown silty loam 1.50m 0.30m					0			
1402	Layer	Yellowish brow	vn sandy	clay sub	soil.	1.50m	0.40m	0.30m			

			Tren	ch 15				
in the second	an Katar	The second second			Max I	Dimensior	IS	
	ANR I	Care and	Length	23.04	Width	1.50	Depth	0.65
		N. Baur			I	Levels		
	June -		Trench	base west		13.89m0)D	
			Trench	top west		14.50m0	DD	
			Trench	base east		13.67m0)D	
			Trench	top east		14.28m0)D	
		1/1/1/200			NGR C	co-ordina	tes	
		· · · · · · · ·	Е	19340		Ν	61860	
		1200	E	19361		Ν	61867	
ALCONT NO.			Orienta	tion		E-W		
			Reason	for Tren	ch		tern end of	pipeline
Context	Tours	Description and		4.0-		route	Max	Donth
Context	Туре	Description and	Interpreta	luon		Max Width (mm)	Thckn (mm)	Depth BGL (mm)
1501	Layer	Dark yellowish (Topsoil)	n brown	silty loar	n	1.50m	0.30m	0
1503	Cut	NW-SE orienta		ır, probal	bly a	0.50m	0.25m	0.30m
1504	Fill	drainage gully. Fill of 1503.				0.50m	0.25m	0.30m
1504	Layer	Yellowish brow	wn sandv	clay sub	soil.	1.50m	0.25m	0.30m

			Tren	ch 16						
and a state	Real Property lines	A CONTRACTOR OF	Max Dimensions							
			Length	26.17	Width	1.50	Depth	0.70m		
Sim					I	Levels				
			Trench	base nort	h	14.06mC	D			
			Trench	top north		14.69mC	D			
			Trench	base south	l	13.87mC	D			
	and a second		Trench	top south		14.38mC	D			
					NGR C	Co-ordinates				
			Е	19373		Ν	61886			
AN ST			Ε	19376		Ν	61912			
			Orienta	ntion		N-S				
			Reason	for Tren	ch	Test east route	ern end of	pipeline		
Context	Туре	Description and	Interpreta	ation		Max Width (mm)	Max Thckn (mm)	Depth BGL (mm)		
1601	Layer	Dark yellowish (Topsoil)	n brown	silty loar	n	1.50m	0.30m	0		
1603	Cut	Cut of NW-SE ditch.	orientat	ed, mode	rn	0.80m	0.30m	0.30m		
1604	Fill	Mid brown silt	y clay. F	ill of 160)3	0.80m	0.30m	0.30m		
1602	Layer	Yellowish brow				1.50m	0.40m	0.30m		

			Tren	nch 17					
COLUMN THE	Converting the second				Max E	imension	s		
ALASTA			Length 26.80 Width			1.50	Depth	0.65	
	R. N.				I	evels	1 1		
			Trench	base west		13.86mO	D		
			Trench	top west		14.43mO	D		
			Trench	base east		13.38mO	D		
	n. H.		Trench	top east		14.06mO	D		
	En truck				NGR C	o-ordinat	es		
			Е	19393.66	5	Ν			
			Е	19419.70)	Ν	61887.70)	
			Orienta	ation		E-W			
			Reason	for Tren	ch	Test east route	ern end of	pipeline	
Context	Туре	Description and	Interpret	ation		Max Width	Max Thckn	Depth BGL	
1701	Lovor	Dark yellowish	brown	ailty loor		(mm) 1.50m	(mm) 0.30m	(mm) ()	
1701	Layer	(Topsoil)	I DIOWII	sitty ioall	1	1.30111	0.3011	U	
1702	Layer	Yellowish brow	vn sandy	v clay sub	osoil.	1.50m	0.35m	0.30m	