

# Lincoln Water Treatment Works Newton-on-Trent Lincolnshire



Archaeological  
Watching Brief Report



September 2011

Client: Anglian Water

OA East Report No: 1273

OASIS No: oxfordar3-109403

NGR: SK 828 736

**Watching Brief at Lincoln Water Treatment Works, Newton-on-Trent,  
Lincolnshire**

*Watching Brief*

*Site Code:* LWTN 11  
*Accession No.* LCNCC 2011:51  
*Date of Works:* 06/06/11  
*Report No:* 1273  
*Excavator:* Matthew Lees  
*Client:* Anglian Water  
*Report Date:* August 2011  
*Author:* Matthew Lees and Nick Gilmour  
*Illustrator:* Nick Gilmour

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## **Summary**

*In June 2011, Oxford Archaeology East (OA East) carried out an archaeological watching brief at the proposed site of Lincoln Water Treatment Works, close to Newton-on-Trent, Lincolnshire (SK 828 736). The monitoring was carried out during the machine excavation of geological test pits and the levelling of ground for a bore hole drilling rig.*

*The watching brief revealed an undated buried soil, potentially associated with an immediately adjacent scheduled Roman vexillation fortress (SM 174). A feature that could not be characterised but contained an Early-neolithic flint blade-like flake.*



## 1 GEOLOGY AND TOPOGRAPHY

- 1.1.1 The area is situated to the east of the A1133 which runs south from Newton-on-Trent towards Newark, East of the River Trent and south of the A57. The area comprises pastoral and arable land which rises west from the A1133 and south from the A57 to an escarpment overlooking the River Trent, known as Newton Cliffs.
- 1.1.2 Newton Cliffs are part of a series of scarps on the east side of the valley of the River Trent, where the river has incised its course across the Mercia Mudstone dip slope. The surface of the mudstone was also littered with pieces of sandstone deriving from the sandstone bands occurring within it (Garton, Phillips and Henson 1989, 83-5).
- 1.1.3 The valley floor beside the River Trent is sealed by alluvium. From the cliff-top, which rises to 29m OD, the land falls away gently to the east, to c.12m OD on the east side of the A1133. North of the county/parish boundary the cliffs are precipitous.

## 2 ARCHAEOLOGICAL BACKGROUND

- 2.1.1 A full assessment of the archaeology in the surrounding area, including details of records from the Historic Environment Record (HER), together with features identified through aerial photography, can be found in the desk based assessment (Woodhouse and Hopper 2011) and is not repeated here.
- 2.1.2 Fieldwalking and excavations were carried out to the south, during the 1970s and 1980s. These recovered substantial quantities of worked flint of Mesolithic to Bronze Age date, along with earlier prehistoric pottery (Phillips 1989). To the immediate south and east is a Scheduled Monument (SM) encompassing the site of a Roman vexillation fortress (SM 174, Fig. 2).
- 2.1.3 Fieldwalking, geophysical survey and an archaeological evaluation were carried out (by OA East) to the south and south-east in May 2011, either side of the A1133 (Gilmour 2011). This revealed several archaeological features including Neolithic and Bronze Age pits, a probable Iron Age boundary ditch and a group of Early Roman, potentially military, bread ovens, of which one was excavated.

## 3 METHODOLOGY

- 3.1.1 The objective of this watching brief was to determine as far as reasonably possible the presence/absence, location, nature, extent, date, quality, condition and significance of any surviving archaeological deposits within the development area.
- 3.1.2 The Brief required that any archaeological features exposed during ground works would be recorded and interpreted to acceptable standards in accordance with IfA guidelines.
- 3.1.3 The test pits (TH401 and TH4080) were excavated with a wheeled JCB type excavator, using a toothed bucket. The area levelled to accommodate a bore hole drilling rig (R104) was excavated with a toothless ditching bucket.
- 3.1.4 All archaeological features and deposits were recorded using OA East's *pro-forma* sheets. Trench locations, plans and sections were recorded at appropriate scales digital photographs were taken of all relevant features and deposits.
- 3.1.5 Site conditions were good, mostly overcast with some bright sun. Ground conditions were dry.



## 4 RESULTS

### 4.1 Introduction

4.1.1 Two geological Test Pits and a c.22m by 3m area were opened along the proposed route of a pipe trench. This proposed route runs south to north and then west to east, between a proposed reservoir to the south around the base of a slope (on top of which sits the scheduled Roman fort) to the River Trent. For clarity, the intervention numbers are the same as those used on the engineers site drawings.

### 4.2 BHR104 (S.10 Fig. 3)

4.2.1 An area measuring c.22m by 3m was machine excavated in order to level the ground for a bore hole drilling rig. The excavated area was on a north-east to south-west alignment.

4.2.2 The geological horizon (63) was a firm dark orange-brown sandy-clay with blue-grey mudstone inclusions. This was overlain by 0.1m thick soft very dark grey clayey-silt layer (65). Deposit 65 did not contain any datable finds but did contain degraded animal bone, it was possibly a buried soil and may relate to activity at the top of the slope associated with the fort. Deposit 65 was overlain by a 0.46m thick firm dark reddish-brown sandy-clay with very pale grey sandy clay inclusions: subsoil 64. The subsoil (64) had been formed by colluvial action as a result of the steep south-to-north slope at this location. The subsoil was overlain by a 0.2m thick soft dark greyish-brown clayey-silt topsoil (62).

### 4.3 TH408 (S.12 Fig. 3)

4.3.1 A geological test pit measuring c.0.7m by 2.6m was machine excavated to a depth of c.4.5m on a north-west to south-east alignment .

4.3.2 The geological horizon (68) was a firm dark orange-brown sandy-clay with blue-grey mudstone inclusions. This was overlain by subsoil (67), a 0.16m thick firm dark reddish-brown sandy-clay with very pale grey sandy clay inclusions. The subsoil was overlain by 0.2m thick soft dark greyish-brown clayey-silt topsoil (66).

4.3.3 No archaeological features or deposits were recognised in TP408.

### 4.4 TH401 (S.13 Fig. 3)

4.4.1 A geological test pit measuring c.0.7m by 2.8m was machine excavated to a depth of c.4.5m on a N-S alignment.

4.4.2 The geological horizon (72) comprised a firm dark orange-brown sandy-clay with blue-grey mudstone inclusions. This was overlain by a 0.3m thick firm brown sandy-clay deposit (73). Deposit 73 contained no finds and is potentially the primary fill of a feature that could not be characterised due to the depth and narrowness of the test pit. Deposit 73 was overlain by a c.0.6m thick soft mid brown sandy-clay-silt deposit (71). This deposit contained a small Early-Neolithic flint blade-like flake and is potentially the fill of a feature that cannot be characterised due to the depth and narrowness of the test pit. Deposit 71 was overlain by a 0.5m thick, firm dark reddish-brown sandy-clay with light whitish-grey sandy clay inclusions; subsoil 70. The subsoil, which contained fragments of possible Roman ceramic tile and fired clay, was overlain by a 0.2m thick soft dark greyish-brown clayey-silt topsoil (69).

- 4.4.3 Deposits 73 and 71 are potentially fills within the same feature that could not be characterised; perhaps the remains of a boundary or enclosure ditch on an east to west alignment.

## 5 DISCUSSION AND CONCLUSIONS

- 5.1.1 Deposit 65 in BHR104 represents a buried turf and soil layer. No datable finds were recovered from this deposit, however, degraded animal bone was noted. It appears to represent a former land surface that was sealed by thick layers of colluvium (64). It is difficult to date either the colluvium or deposit 65, given the lack of datable finds, or relationship to archaeological features. However, it seems most likely that the colluvium resulted from medieval or post-medieval ploughing on the slope above the site. The remains of a ridge and furrow cultivation system were visible on the surface at the top of the slope during the watching brief and have been detected by both areal photography and geophysical survey (Gilmour 2011).
- 5.1.2 The possible feature located in TP401 is difficult to interpret, given the small size of the intervention and the fact that its shape, or extent, in plan are unknown. The presence of a struck flint, likely to be of Early Neolithic date, in the fill of this possible feature does not provide secure dating for it, as this small object could easily be residual. No other significant archaeological finds or features were identified.

## 6 ACKNOWLEDGEMENTS

- 6.1.1 The author would like to thank Mott MacDonald, who commissioned the work on behalf of Anglia Water. The project was managed by Richard Mortimer and Matthew Lees carried out the fieldwork.

## BIBLIOGRAPHY

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- Garton, D. Phillips, P. and Henson D. 1989 Newton Cliffs: a Flint-Working and Settlement site in the Trent Valley. In Phillips, P, 1989 *Archaeology and Landscape studies in North Lincolnshire*, BAR, British series 208, 81-163.
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- Woodhouse, T. and Hopper, M. 2011. *Lincoln Water Treatment Works; Desk-Based Assessment*.

## APPENDIX A. OASIS REPORT FORM

All fields are required unless they are not applicable.

### Project Details

OASIS Number	oxfordar3-109403			
Project Name	Lincoln Water Treatment Works			
Project Dates (fieldwork)	Start	06-06-2011	Finish	30-12-1899
Previous Work (by OA East)	Yes	Future Work	Unknown	

### Project Reference Codes

Site Code	LWTN 11	Planning App. No.	n/a
HER No.		Related HER/OASIS No.	n/a

### Type of Project/Techniques Used

Prompt

### Please select all techniques used:

<input type="checkbox"/> Field Observation (periodic visits)	<input type="checkbox"/> Part Excavation	<input type="checkbox"/> Salvage Record
<input type="checkbox"/> Full Excavation (100%)	<input type="checkbox"/> Part Survey	<input type="checkbox"/> Systematic Field Walking
<input type="checkbox"/> Full Survey	<input type="checkbox"/> Recorded Observation	<input type="checkbox"/> Systematic Metal Detector Survey
<input type="checkbox"/> Geophysical Survey	<input type="checkbox"/> Remote Operated Vehicle Survey	<input type="checkbox"/> Test Pit Survey
<input type="checkbox"/> Open-Area Excavation	<input type="checkbox"/> Salvage Excavation	<input checked="" type="checkbox"/> Watching Brief

### Monument Types/Significant Finds & Their Periods

List feature types using the [NMR Monument Type Thesaurus](#) and significant finds using the [MDA Object type Thesaurus](#) together with their respective periods. If no features/finds were found, please state "none".

Monument	Period	Object	Period
	Select period...	flint	Neolithic -4k to -2k
	Select period...		Select period...
	Select period...		Select period...

### Project Location

County	Lincolnshire	Site Address (including postcode if possible)	
District	West Lindsey	Land West of A1133 South of Newton on Trent and A57 Lincolnshire	
Parish	Newton on Trent		
HER	Lincolnshire		
Study Area	100sqm	National Grid Reference	SK 828 736

### Project Originators

Organisation	OA EAST
Project Brief Originator	Louise Jennings
Project Design Originator	Richard Mortimer
Project Manager	Richard Mortimer
Supervisor	Mathew Lees

### Project Archives

Physical Archive	Digital Archive	Paper Archive
lincolnshire county store	OA East office, Bar Hill	lincolnshire county store
LCNCC 2011:51	XLILWT11	LCNCC 2011:51

### Archive Contents/Media

	Physical Contents	Digital Contents	Paper Contents
Animal Bones	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ceramics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Environmental	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Glass	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Human Bones	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Industrial	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Leather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Metal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stratigraphic		<input type="checkbox"/>	<input type="checkbox"/>
Survey		<input type="checkbox"/>	<input type="checkbox"/>
Textiles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wood	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Worked Bone	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Worked Stone/Lithic	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
None	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Digital Media	Paper Media
<input type="checkbox"/> Database	<input type="checkbox"/> Aerial Photos
<input type="checkbox"/> GIS	<input checked="" type="checkbox"/> Context Sheet
<input type="checkbox"/> Geophysics	<input type="checkbox"/> Correspondence
<input checked="" type="checkbox"/> Images	<input type="checkbox"/> Diary
<input checked="" type="checkbox"/> Illustrations	<input type="checkbox"/> Drawing
<input type="checkbox"/> Moving Image	<input type="checkbox"/> Manuscript
<input type="checkbox"/> Spreadsheets	<input type="checkbox"/> Map
<input checked="" type="checkbox"/> Survey	<input type="checkbox"/> Matrices
<input checked="" type="checkbox"/> Text	<input type="checkbox"/> Microfilm
<input type="checkbox"/> Virtual Reality	<input type="checkbox"/> Misc.
	<input type="checkbox"/> Research/Notes
	<input type="checkbox"/> Photos
	<input checked="" type="checkbox"/> Plans
	<input checked="" type="checkbox"/> Report
	<input checked="" type="checkbox"/> Sections
	<input type="checkbox"/> Survey

**Notes:**



*Contains Ordnance Survey data © Crown copyright and database right 2011*

**Figure 1: Site location**

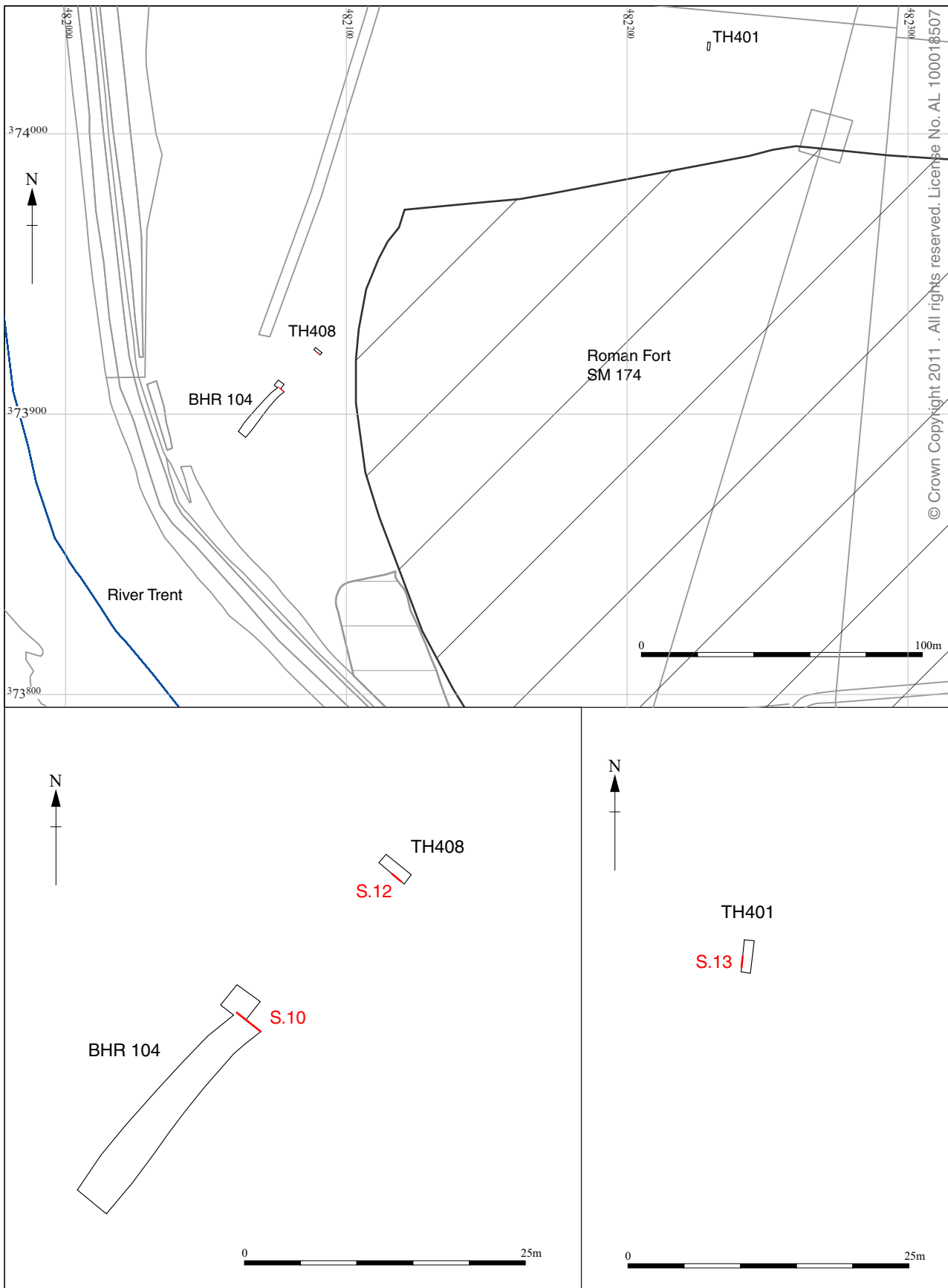


Figure 2: Plan of areas of intervention



Figure 3: Selected sections