WREST PARK HYDROLOGY RESTORATION PROJECT SILSOE BEDFORDSHIRE

ARCHAEOLOGICAL WATCHING BRIEF

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Preface

Every effort has been made in the preparation of this document to provide as complete a summary as possible within the terms of the method statement. All statements and opinions in this document are offered in good faith. Albion Archaeology cannot accept responsibility for errors of fact or opinion resulting from data supplied by a third party, or for any loss or other consequence arising from decisions or actions made upon the basis of facts or opinions expressed in this document.

This report has been prepared by Christiane Meckseper (Project Officer). Joan Lightning (CAD Technician) digitised the plans and produced the figures. The observation and recording was undertaken by Christiane Meckseper and Alison Bell (Archaeological Supervisor). The project was managed by Jeremy Oetgen (Project Manager). Drew Shotliff (Operations Manager) was responsible for quality control.

Albion Archaeology is grateful to Edmund Hobday (BEA Landscapes) for commissioning this report on behalf of English Heritage for commissioning the project. Albion Archaeology would also like to acknowledge the assistance and cooperation of John Etté (Inspector of Ancient Monuments for Bedfordshire) and the staff of Haycock Associates.

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12th October 2007

Structure of the Report

After the introductory Section 1, there is a summary of the results of the archaeological watching brief in Section 2, followed by a brief conclusion (Section 3). Section 4 is a bibliography. The subsequent appendices contain diagrams of the deposit sequence of each borehole and summary information of the contexts that were encountered in each borehole and equipment box.



Key Terms

Throughout this report the following terms or abbreviations are used:

Albion Archaeology

BCAS Bedfordshire County Archaeological Service

BCC Bedfordshire County Council

Client English Heritage

GPS Global Positioning System

IFA Institute of Field Archaeologists

Procedures Manual Volume 1 Fieldwork, 2nd Edition 2001.

Bedfordshire County Council



Non-Technical Summary

Bea Landscape Ltd is currently involved in the restoration of Wrest Park Gardens, Silsoe, Bedfordshire, on behalf of English Heritage. The restoration of the park's lakes and canals is key to the overall restoration of the gardens, and Bea Landscape Design has therefore undertaken a strategic and comprehensive review of the park hydrology. As a result of auguring to facilitate the installation of hydrology monitoring apparatus, a number of core samples have been obtained from various locations across the site.

In November 2006 and January 2007 Albion Archaeology undertook a watching brief on the installation of monitoring equipment for the hydrology survey. Due to difficult ground conditions, only 11 of the proposed 56 boreholes were actually executed within that period.

Wrest Park was the home of the De Grey family from the 13th century until 1917. The present Wrest Park house was completed by 1834, replacing an earlier manor house that was located further to the south. The formal gardens date to the early 18th century, and were later modified by Capability Brown. Subsequent generations added garden buildings and landscape features but retained the 18th-century garden layout.

Varying deposits of made ground, peat and natural clay soils were encountered during the auguring. The cores gave some indication of the deposits below ground, but may have been spaced too far apart to establish a reliable deposit model throughout the park.



1 INTRODUCTION

1.1 Background

Bea Landscape Ltd is currently contributing to the restoration of Wrest Park Gardens, Silsoe, Bedfordshire, on behalf of English Heritage. The restoration of the park's lakes and canals is key to the overall restoration of the gardens, and Bea Landscape Design is therefore undertaking a strategic and comprehensive review of the park hydrology. As a result of auguring to facilitate the installation of hydrology monitoring apparatus, a number of core samples have been obtained from various locations across the site.

The house and gardens of Wrest Park are a scheduled ancient monument (Bedfordshire monument no. BD48) and the park and surrounding land have been designated as a conservation area by Mid Bedfordshire District Council. To cover the restoration works within the park, English Heritage issued a brief (0571/EH/AB002) that required a desk-based assessment of all available documentary, cartographic and aerial photographic evidence relating to the historic weirs and associated features at Wrest Park, plus a detailed descriptive record of the archaeological features and any related observations.

In November 2006, as part of the archaeological investigations, Albion Archaeology was commissioned by Bea Landscape Ltd, on behalf of English Heritage, to undertake an archaeological watching brief during the hand auguring of a number of boreholes for the installation of the monitoring equipment for the hydrological survey.

1.2 Site Location and Description

Wrest Park is located on the eastern edge of the village of Silsoe in south-central Bedfordshire, approximately 15 kilometres south of Bedford. It is centred at TL 09100 35100.

Silsoe is located on the Greensand Ridge and the geology of the site is Gault Clay overlying Upper Greensand formations.

1.3 Archaeological Background

Wrest Park was the home of the De Grey family from the 13th century until 1917. The present Wrest Park house was completed by 1834 and replaced an earlier manor house that was located further to the south. The formal gardens consisting of wooded walks and canals date to the early 18th century, and were later modified by Capability Brown. Subsequent generations added garden buildings, such as the Bath House and Chinese Pavilion, but essentially retained the 18th-century garden layout.

Previous archaeological investigations within the Wrest Park Gardens include a watching brief on the installation of a fountain pipe trench (Albion Archaeology 2006), a survey of garden features and archaeology (Albion Archaeology 2002) and several excavations and geophysical survey carried out by BCAS between 1988 and 1991, prior to restoration work on the Gardens.



2 RESULTS OF THE WATCHING BRIEF

2.1 Introduction

The hydrology monitoring data was to be collected by three methods:

- standard groundwater monitoring wells;
- automated groundwater monitoring wells;
- automated lake-level monitoring installations.

The standard wells were intended to be distributed in a grid pattern throughout Wrest Park, while the automated wells and lake-level monitoring installations were to be situated in strategic positions that would allow adequate monitoring of the key hydrological structures of the park.

Due to difficult ground conditions, none of the proposed standard wells were undertaken and only the 11 automated groundwater wells were completed (Figure 2). The auguring for the latter was undertaken by Haycock Associates (Figure 3) and recorded by Albion staff between 13th and 17th November 2006.

The lake monitoring structures were put in place without archaeological supervision.

On 8th January 2007, a further watching brief was undertaken for the installation of the boxes for the digital monitoring equipment (Figure 4). The installation of equipment box AG56 was delayed due to the waterlogging of the site.

2.2 Methodology

Because Wrest Park Gardens are a scheduled ancient monument, scheduled monument consent (an SMC6 Licence) was obtained to allow the works to proceed. Under the terms of this licence, the contractors had to be monitored by an archaeologist during any ground disturbance that was taking place within the park gardens.

During the installation of the wells the following was undertaken:-

- 1 All boreholes were cored by hand using an auger of 20mm diameter.
- 2 Each borehole consisted of 10–15 cores, *c*. 200mm in length. Each core was individually sealed and logged. The maximum depth of the boreholes was 2.0m.
- 3 A box measuring 0.30 x 0.30 x 0.20m was excavated by hand, close to each borehole for the installation of the digital monitoring equipment. After installation of the equipment it was covered with the excavated turfs.
- 4 The nature of deposits encountered in each borehole and equipment box and their depth below ground level was recorded in accordance with Albion Archaeology's *Procedures Manual*.
- 5 All disturbed soil was scanned for artefacts.
- 6 All archaeological observations were recorded at a scale of 1:10 on base plans that were tied in to the OS national grid using a handheld GPS device.



All deposits were recorded using a unique number sequence commencing at 500 for borehole 50, 510 for borehole 51, etc.

Throughout the project the standards set out in the following documents were also adhered to:

- IFA's Codes of Conduct and Standards and Guidance for Archaeological Watching Brief and draft Standard and Guidance for Archaeological Finds Work (2000);
- English Heritage's Management of Archaeological Projects (1991);
- Albion Archaeology's Procedures Manual: Volume 1 Fieldwork, (2nd edn, 2001);
- Preparing Archaeological Archives for Deposition with Registered Museums in Bedfordshire (1998), and the Society of Museum Archaeologists' Preparation of Archaeological Archives: Selection Retention and Dispersal of Archaeological Collections (1993).

2.3 Deposit Model

The automated groundwater wells were situated in three main locations: near the Bath House Pond in the north-west, near the Ladies Lake in the centre-east, and the Atlas Pond in the north-east of the park (Figure 2).

Throughout the park the auguring revealed a layer of humic topsoil that was c. 0.10-0.25m thick. The boxes for the digital monitoring equipment generally did not extend below the subsoil and confirmed the nature of the deposits encountered within the boreholes.

2.3.1 Bath House Pond area

The area to the west of the bath house, outside the limits of the Wrest Park Gardens, consists of disturbed ground and has been used for dumping of material over the last few decades (Chris Slatcher, pers. comm.). Several cores had to be abandoned due to the compacted nature of the ground or bricks obstructing the auger. The one successful core (GW60) showed a succession of man-made dump layers with frequent inclusions of brick, stones and charcoal, interspersed with thin layers of re-deposited peat and orange clay. The core reached the natural bluish-grey Gault Clay at a depth of 1.70m

The other cores in the area of the Bath House Pond (AG52, AG53 and AG54) showed a succession of mid-orange and grey-brown silty clay subsoils before reaching a layer of peat at an average depth of 0.80m below ground level. The deepest borehole (AG52), adjacent to the Bath House Pond, indicated that the layer of peat was c. 0.60m deep and overlay the bluish-grey Gault Clay.

2.3.2 Ladies Lake area

The boreholes near the Ladies Lake (AG47, AG48, AG49, AG50, AG51) showed a layer of mid orange-brown sandy clay subsoil of varying depth, overlying the bluish-grey Gault Clay. Borehole AG50, adjacent to one of the present footpaths, revealed a layer of made ground, c 0.35m deep, overlying Gault Clay.



2.3.3 Atlas Pond area

Two cores were excavated near the former Atlas Pond, now infilled, in the north-eastern part of Wrest Park gardens (AG55 and AG56). Borehole AG55, immediately adjacent to the pond, revealed several thin layers of mixed manmade dumped material overlying Gault Clay at a depth of 0.60m below ground level. Borehole AG56 to the north of the Atlas Pond revealed a thick layer of peat at a depth of 0.55m below ground level. The peat was *c*. 1.0m thick and overlay the bluish-grey Gault Clay at a depth of 1.50m below ground level.

The equipment box associated with Borehole 55, located adjacent to the Atlas Pond, revealed a thin band of redeposited blue clay, which could have been part of the puddled-clay lining of the pond.



3 CONCLUSIONS

3.1 Synthesis

Varying deposits of made ground, peat deposits and natural clay soils were encountered during the auguring. The peat was mainly observed in the northern part of Wrest Park Gardens. Layers of made ground with inclusions of brick fragments and charcoal flecks, most likely to have been associated with various phases of construction of ponds, footpaths and other earth moving within the park, were observed in several of the boreholes and equipment boxes. The equipment box close to the Atlas Pond revealed a thin layer of redeposited blue clay that may have been part of the puddled-clay lining of the pond. The natural deposits all consisted of orange sandy clay overlying bluish-grey Gault Clay.

3.2 Significance and Limitations of the Results

The boreholes undertaken to date have been too widely spaced to allow the establishment of a reliable deposit model for the whole of Wrest Park. The cores give some indication of the presence of below-ground deposits of made ground, peat and natural clays. However, they do not add substantially to existing knowledge of ground conditions at the park.



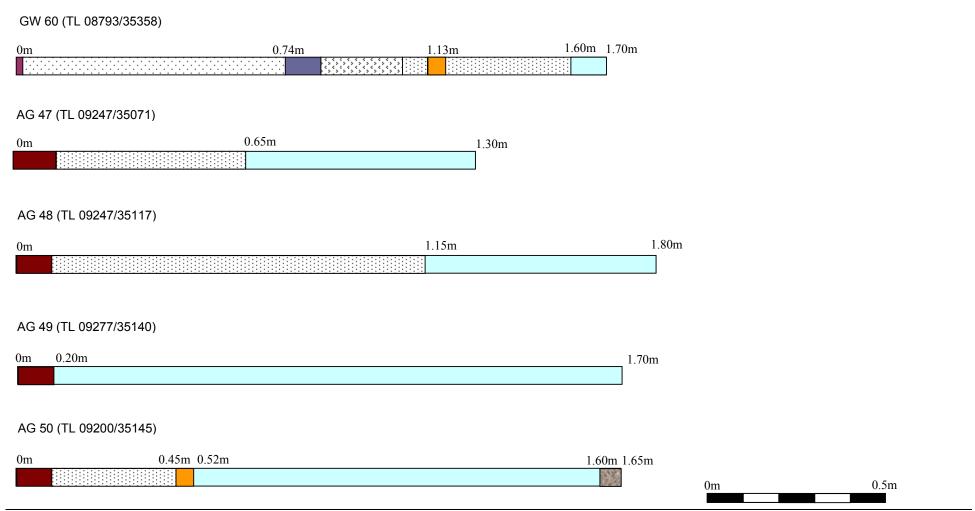
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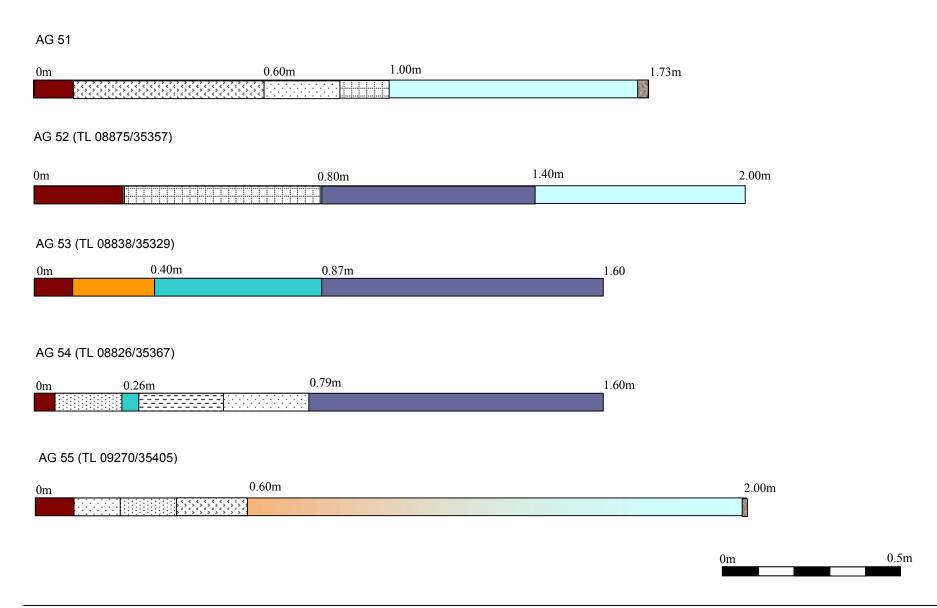




5 APPENDIX 1 – BOREHOLE DIAGRAMS









AG 56 (TL 09282/35429)

0m	0.55m	1.50m	1.80m 1.90m

Key to borehole diagrams



Various anthropogenic soils (mainly mid to dark orange brown sandy clays with varying inclusions of small stones, chalk and charcoal flecks and small fragments of brick.)





6 APPENDIX 2 – CONTEXT SUMMARY



Max Dimensions: Length: m. Width: m. Depth to Archaeology Min: m. Max: m.

Co-ordinates: OS Grid Ref.: TL0924735071

Context	: Type:	Description:	Excavated: Finds Prese	nt:
470	Topsoil	Friable dark yellow brown silty clay occasional small stones	✓	
471	Layer	Friable mid yellow brown sandy clay	\checkmark	
472	Natural	Compact mid grey sandy clay moderate flecks chalk, moderate small chalk	\checkmark	
4700	Topsoil	Friable dark brown silty clay occasional small stones	✓	



Max Dimensions: Length: m. Width: m. Depth to Archaeology Min: m. Max: m.

Co-ordinates: OS Grid Ref.: TL0924735117

Context:	Type:	Description:	Excavated: Finds Present	:
480	Topsoil	Friable dark yellow brown sandy clay occasional small stones	✓	
481	Natural	Friable mid orange brown sandy clay moderate flecks chalk, occasional small sto	nes 🗸	
482	Natural	Friable mid grey sandy clay moderate flecks chalk, moderate small chalk	✓	
4800	Topsoil	Friable dark brown silty clay occasional small stones	V	



Max Dimensions: Length: m. Width: m. Depth to Archaeology Min: m. Max: m.

Co-ordinates:

Context:	Type:	Description:	Excavated: Finds Pr	esent:
490	Topsoil	Friable dark yellow brown sandy clay occasional small stones	\checkmark	
491	Layer	Friable dark orange brown sandy clay moderate small ceramic building material, frequent flecks chalk, occasional flecks charcoal, moderate small stones	\checkmark	
492	Natural	Friable mid orange brown sandy clay moderate flecks chalk	✓	
4900	Topsoil	Friable dark red brown silty clay occasional small stones	✓	
4901	Subsoil	Firm mid yellow brown silty clay moderate small stones	✓	



Max Dimensions: Length: m. Width: m. Depth to Archaeology Min: m. Max: m.

Co-ordinates: OS Grid Ref.: TL0920035145

Context:	Type:	Description:	Excavated: Finds Pr	esent:
500	Topsoil	Friable dark yellow brown sandy clay occasional small stones	✓	
501	Layer	Friable mid orange brown sandy clay moderate small ceramic building material, moderate flecks charcoal, moderate small stones	✓	
502	Layer	Friable mid orange brown sandy clay moderate flecks chalk	\checkmark	
503	Natural	Firm mid grey clay	\checkmark	
504	Natural	Loose mid green clay frequent small stones	\checkmark	
5000	Topsoil	Friable dark yellow brown silty clay occasional small stones	✓	



Max Dimensions: Length: m. Width: m. Depth to Archaeology Min: m. Max: m.

Co-ordinates: OS Grid Ref.: TL0927735140

Context:	Type:	Description:	Excavated: Finds Pr	esent:
510	Topsoil	Friable dark yellow brown sandy clay occasional small stones	\checkmark	
511	Natural	Friable mid grey grey sandy clay occasional flecks chalk	✓	
5100	Topsoil	Friable dark red brown silty clay occasional small stones	✓	



Max Dimensions: Length: m. Width: m. Depth to Archaeology Min: m. Max: m.

Co-ordinates: OS Grid Ref.: TL0927035405

Context:	Type:	Description:	Excavated: Finds Present:
520	Topsoil	Friable dark yellow brown sandy clay occasional small stones	
521	Layer	Friable mid orange brown sandy clay	
522	Layer	Friable mid orange brown sandy clay moderate small ceramic building material, moderate flecks chalk, moderate small stones	
523	Layer	Friable mid orange brown sandy clay occasional flecks chalk, occasional small st	ones 🔽
524	Natural	Firm mid orange grey clay	
525	Natural	Loose mid grey sandy clay frequent small stones	
5200	Topsoil	Friable dark yellow brown silty clay occasional small stones	



Max Dimensions: Length: m. Width: m. Depth to Archaeology Min: m. Max: m.

Co-ordinates: OS Grid Ref.: TL0883835329

Context:	Type:	Description:	Excavated: Finds Pr	esent:
530	Topsoil	Friable dark yellow brown silty clay occasional small stones	✓	
531	Layer	Friable mid grey brown silty clay	\checkmark	
532	Layer	Firm mid blue peat	~	
5300	Topsoil	Friable dark yellow brown silty clay occasional small stones	✓	



Max Dimensions: Length: m. Width: m. Depth to Archaeology Min: m. Max: m.

Co-ordinates: OS Grid Ref.: TL0882635367

Context:	Type:	Description:	Excavated:	Finds Present:
540	Topsoil	Friable dark yellow brown silty clay occasional small stones	✓	
541	Layer	Friable mid orange brown sandy clay moderate small ceramic building material, occasional flecks charcoal, moderate small stones	✓	
542	Layer	Compact mid grey grey clay	~	
543	Layer	Friable dark brown sandy clay moderate small ceramic building material, moderat flecks charcoal, moderate small charcoal	te 🗸	
544	Layer	Friable mid grey brown sandy clay frequent flecks charcoal	~	
545	Layer	Friable black silty peat	~	
5400	Topsoil	Friable dark yellow brown silty clay occasional small stones	✓	
5401	Make up layer	Friable mid orange brown sandy clay moderate small ceramic building mater occasional flecks charcoal, occasional small-medium stones	rial,	



Max Dimensions: Length: m. Width: m. Depth to Archaeology Min: m. Max: m.

Co-ordinates:

Context:	Type:	Description:	Excavated: Finds P	Present:
550	Topsoil	Friable dark yellow brown sandy clay occasional small stones	\checkmark	
551	Layer	Friable dark orange brown silty clay occasional small stones	✓	
552	Layer	Friable mid orange brown sandy clay moderate small stones	✓	
553	Layer	Friable mid orange brown sandy clay moderate small ceramic building material, moderate flecks charcoal	✓	
554	Natural	Firm blue grey clay	✓	
555	Natural	Loose green gravel	\checkmark	
5500	Topsoil	Friable dark yellow brown silty clay occasional small stones	✓	
5501	Make up laver	Firm mid blue grey clay	✓	



Max Dimensions: Length: m. Width: m. Depth to Archaeology Min: m. Max: m.

Co-ordinates: OS Grid Ref.: TL0928235429

Context:	Type:	Description:	Excavated:	Finds Present:
560	Topsoil	Friable dark yellow brown sandy clay occasional small stones	✓	
561	Layer	Plastic mid orange brown sandy silt	✓	
562	Layer	Friable mid grey brown sandy clay occasional small stones	✓	
563	Layer	Spongy dark black peat	✓	
564	Natural	Plastic mid grey blue clay	✓	
565	Natural	Loose mid grey sandy clay frequent small stones	✓	



Max Dimensions: Length: m. Width: m. Depth to Archaeology Min: m. Max: m.

Co-ordinates: OS Grid Ref.: TL0879335358

Context:	Type:	Description:	Excavated: Finds Preser	nt:
600	Topsoil	Friable dark yellow brown sandy clay occasional small stones	✓	
601	Layer	Firm mid green grey sandy clay moderate small stones	\checkmark	
602	Layer	Loose dark red brown silty peat	✓	
603	Layer	Friable mid grey silty clay	✓	
604	Layer	Friable dark black sandy clay occasional small ceramic building material, occasional small ceramic building material small ceramic building materi	onal 🗸	
605	Layer	Friable mid orange brown sandy clay	\checkmark	
606	Layer	Friable dark black sandy clay occasional small ceramic building material, occasional charcoal	onal 🗸	
607	Natural	Compact mid grey blue clay	\checkmark	

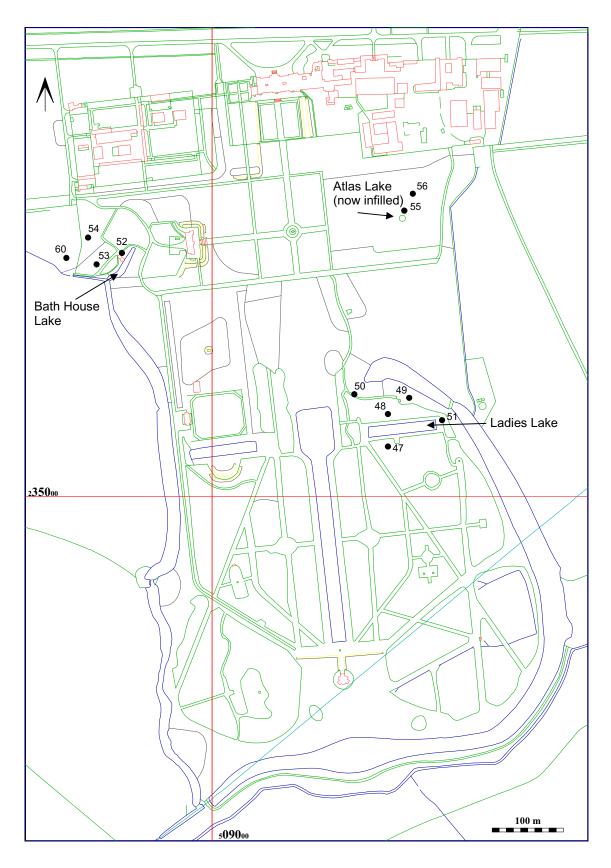




Figure 1: Site location map

Base map reproduced from the Ordnance Survey Land-line Map (2004), with the permission of the Controller of Her Majesty's Stationery Office, by Bedfordshire County Council, County Hall, Bedford. OS Licence No. 076465(LA). © Crown Copyright.





 $\label{Figure 2: Location of boreholes} Base map reproduced from the Ordnance Survey Land-line Map (2004), with the permission of the Controller of Her Majesty's Stationery Office, by Bedfordshire County Council, County Hall, Bedford. OS Licence No. 076465(LA). © Crown Copyright.$





Figure 3: Auguring in progress, November 2006



Figure 4: Installation of monitoring equipment, January 2007