Manhole Reference	Liquid Type	Cover Level	Invert Level	Depth to Invert
5800	E	25	19.284	5.716
6800	E	24.09	19.366	4.724
7700	E	23.83	19.464	4.366
8800	E	-	-	-
8801	E	-	-	-
8802	E	-	-	-
0500	F	22.9	21.4	1.5
0600	F	-	-	-
0601	F	22.55	20.325	2.225
0602	F	22.81	20.655	2.155
0700	F	22.6	18.951	3.649
0701	F	23	19.419	3.581
0702	F	22.7	20.132	2.568
0703	F	22.9	19.832	3.068
0800	F	23.584	20.199	3.385
0801	F	23.5	21.46	2.04
1501	F	22.87	20.138	2.732
1602	F	22.35	21.106	1.244
6500	F	-	-	-
6501	F	-	-	-
6600	F	-	-	-
6601	F	-	-	-
7503	F	-	-	-
7504	F	-	-	-
7505	F	-	-	-
7600	F	-	-	-
7601	F	-	-	-
8500	F	-	-	-
8501	F	-	-	-
8502	F	-	-	-
8600	F	-	-	-
8601	F	-	-	-
8602	F	-	-	-
8603	F	-	-	-
8604	F	-	-	-
8605	F	-	-	-
8606	F	-	-	-
9503	F	23.34	21.478	1.862
9600	F	22.94	21.215	1.725
9601	F	-	-	-
9602	F	-	-	-
9603	F	-	-	-
9604	F	-	-	-
9605	F	-	-	-
9700	F	23.495	20.971	2.524
9701	F	23.27	20.462	2.808
9702	F	-	-	-
9703	F	-	-	-
9704	F	-	-	-
9800	F	24	22.4	1.6
9801	F	23.76	21.856	1.904
9802	F	23.8	21.972	1.828
0551	S	22.819	21.087	1.732
0651	S	22.934	20.098	2.836
0652	S	22.81	20.474	2.336
0653	S	22.576	20.27	2.306
0654	S	22.358	20.35	2.008
0751	S	23.108	20.582	2.526
0752	S	23.206	19.935	3.271
0753	S	22.849	20.069	2.78
0851	S	23.575	20.1	3.475
0852	S	23.5	19.856	3.644
0853	S	23.294	20.499	2.795
0854	S	23.584	20.967	2.617
1651	S	22.545	21.298	1.247
1652	S	22.682	21.414	1.268
1653	S	22.45	20.582	1.868
1753	S	22.576	20.192	2.384
9651	S	23.234	19.954	3.28
9652	S	22.973	20.835	2.138
9751	S	23.434	19.823	3.611

Manhole Reference	Liquid Type	Cover Level	Invert Level	Depth to Invert
9752	S	23.7	19.591	4.109
9753	S	23.8	19.56	4.24
9851	S	23.768	20.85	2.918
9852	S	24.006	20.269	3.737
9853	S	23.753	19.656	4.097

Manhole Reference	Liquid Type	Cover Level	Invert Level	Depth to Invert

Manhole Reference	Liquid Type	Cover Level	Invert Level	Depth to Invert

Pre-Planning Assessment Report

Gardenia Close, Rendlesham

Section 1: Proposed Development

Thank you for submitting a pre-planning enquiry. This has been produced for Amazi Consulting Ltd. Your reference number is **00025173**. If you have any questions upon receipt of this report, please contact the Pre Development team on 0345 606 6087 or email planningliaison@anglianwater.co.uk.

The response within this report has been based on the following information which was submitted as part of your application:

List of Planned Developments	
Type of Development	No. Or Units
C3 Dwellings	75

The anticipated residential build rate is:

Year	2017	2018
Build Rate	50	25

- The grid reference for the site is TM3375053800.
- The site currently does not have planning permission and is located on a greenfield site.

Disclaimer: The accuracy of this report is therefore not guaranteed and does not obviate the need to make additional appropriate searches, inspections and enquiries. You are advised therefore to renew your enquiry should there be a delay in submitting your application for water supply/sewer connection to re-confirm the situation.

Section 2: Assets Affected

Our records indicate that we have the following types of assets within or overlapping the boundary of your development site as listed in the table below.

Additionally, it is highly recommended that you carry out a thorough investigation of your proposed working area to establish whether any unmapped public or private sewers and lateral drains are in existence. We are unable to permit development either over or within the easement strip without our prior consent. The extent of the easement is provided in the table below. Please be aware that the existing water mains/public sewers should be located in highway or open space and not in private gardens. This is to ensure available access for any future maintenance and repair and this should be taken into consideration when planning your site layout.

Water and Used Water Easement Information		
Asset Type	Pipe Size (mm)	Total Easement Required (m)
Surface Water Sewer	750	4.0 m either side of the centre line
Public Foul Sewer	150	3.0 m either side of the centre line
Public Foul Sewer	250	3.0 m either side of the centre line
Public Foul Sewer	Unknown	3.0m either side of the centre line

If it is not possible to avoid our assets then the water main/sewer may need to be diverted in accordance with Section 185 of the Water Industry Act (1991). We have a duty to divert our sewerage infrastructure if requested to do so although this would be at your expense. You will need to make a formal application if you would like a diversion to be considered. A copy of the section 185 diversion application form can be found at www.anglianwater.co.uk/developers

Rendlesham water recycling centre (WRC) is in close proximity to the proposed development and our typical associated operations could potentially cause a nuisance for future residents.

Initial odour risk assessments suggest that there could be negative impacts from our operations at the WRC on properties with in the proposed development, including the potential for loss of amenity.

Our initial odour risk assessment indicates that there is potential for loss of amenity at sensitive property within the proposed development due to odour emissions from the operation of the WRC. We operate the WRC in compliance with the highest appropriate regulatory standards and best practice. However, there is always an inherent possibility of short periods of potentially strong odours for which there is little practical mitigation.

Therefore, we ask that the proposed lay out maintains an effective distance of more than 400m between the WRC and the sensitive properties in order to minimise inconvenience to nearby dwellings and to allow the continuity of our operations. In addition to this, we recommend that an odour dispersion model is produced to establish the range at which neighbouring properties could be impacted.

The results of any odour modelling can be reviewed in further consultation

Due to the private sewer transfer in October 2011 many newly adopted public used water assets and their history are not indicated on our records. You also need to be aware that your development site may contain private water mains, drains or other assets not shown on our records. These are private assets and not the responsibility of Anglian Water but that of the landowner.

Section 3: Water Recycling Services

In examining the used water system we assess the ability for your site to connect to the public sewerage network without causing a detriment to the operation of the system. We also assess the receiving water recycling centre and determine whether the water recycling centre can cope with the increased flow and influent quality arising from your development.

Water Recycling Centre

The foul drainage from the proposed development is in the catchment of Rendlesham Park Water Recycling Centre, which currently has capacity to treat the flows from your development site. Anglian Water cannot reserve capacity and the available capacity at the water recycling centre can be reduced at any time due to growth, environmental and regulation driven changes.

Used Water Network

As per your request we have assessed the impact of a pumped solution to the public foul sewerage network. We can confirm that this is acceptable as the foul sewerage system, at present, has available capacity for your site. The connection point will be via a connection to Rendlesham Park Water Recycling Centre at NGR TM3383053919 at a discharge rate of 3.80l/s.

Surface Water Disposal

We have examined your development site for available surface water discharge options. It is our understanding that the evidence to confirm your compliance with the surface water hierarchy is not currently available. However once the evidence has been confirmed, then a connection point may be made to manhole 6800 in the existing on site public sewer at NGR TM3363953802 at a rate of 13.7l/s.

It is your responsibility to provide the evidence to confirm that all alternative methods of surface water disposal have been explored and these will be required before your connection can be agreed. This is subject to satisfactory evidence which shows the surface water management hierarchy as outlined in Building Regulations Part H has been explored. This would encompass the results from the site specific infiltration testing and/or confirmation that the flows cannot be discharged to a watercourse.

Anglian Water's surface water policy follows the Surface Water hierarchy, outlined in Part H of the Building Regulations. Should your assumptions or evidence change then an alternative solution, connection point or flow rate may be required. You are therefore advised to update Anglian Water with the key supporting evidence at your earliest convenience.

As you may be aware, Anglian Water will consider the adoption of SuDs provided that they meet the criteria outline in our SuDs adoption manual. This can be found on our website at http://www.anglianwater.co.uk/developers/suds.aspx. We will adopt features located in public open space that are designed and constructed, in conjunction with the Local Authority and Lead Local Flood Authority (LLFA), to the criteria within our SuDs adoption manual. Specifically, developers must be able to demonstrate:

1. Effective upstream source control,
2. Effective exceedance design, and
3. Effective maintenance schedule demonstrating than the assets can be maintained both now and in the future with adequate access.

If you wish to look at the adoption of any SuDs then an expression of interest form can be found on our website at: http://www.anglianwater.co.uk/developers/suds.aspx

Trade Effluent

We note that you do not have any trade effluent requirements. Should this be required in the future you will need our written formal consent. This is in accordance with Section 118 of the Water Industry Act (1991).

Used Water Budget Costs

It has been assumed that the onsite used water network will be provided under a section 104 Water Industry Act application. It is recommended that you also budget for both infrastructure charges and connection costs. The 2017/18 charges are:

Infrastructure Charge	£361.00 per connection

Please note that we offer alternative types of connections depending on your needs and these costs are available in our annual charges booklet, which can be downloaded from www.anglianwater.co.uk/developers/charges.

Section 4: Map of Proposed Connection Points

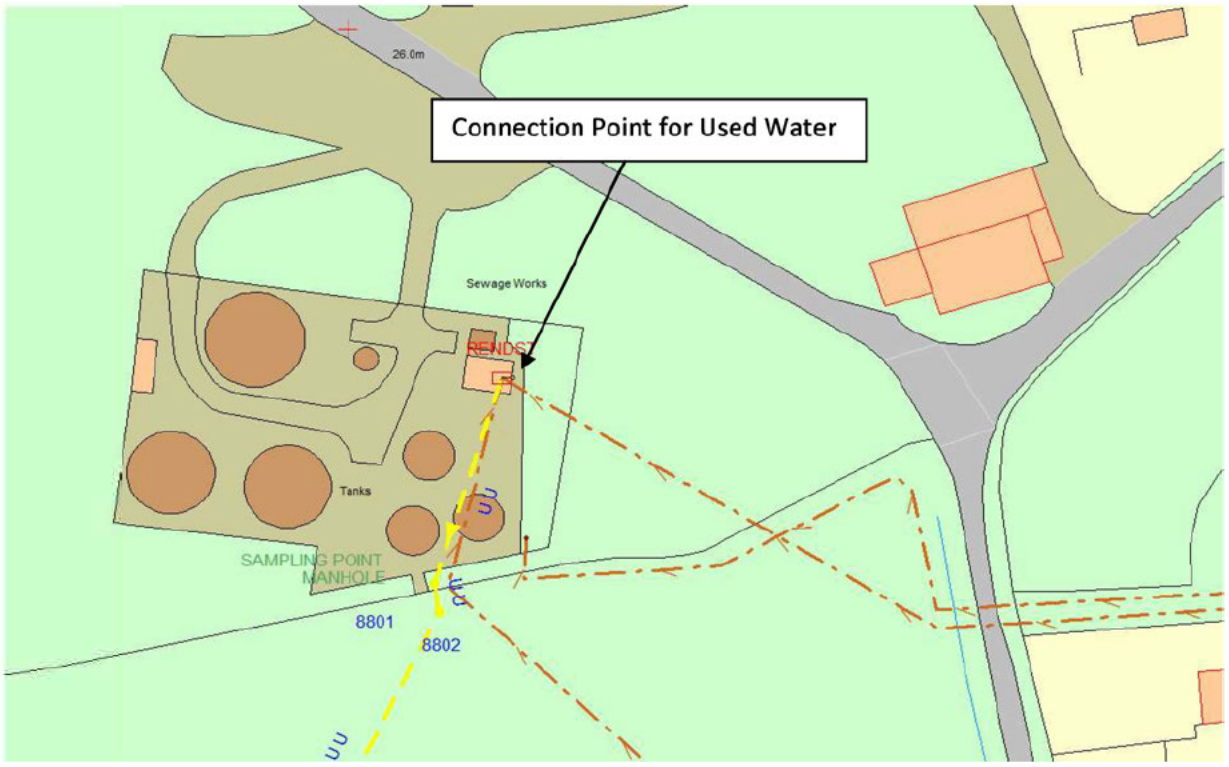


Figure 1: Showing your used water point of connection via a connection to Rendlesham Park Water Recycling Centre

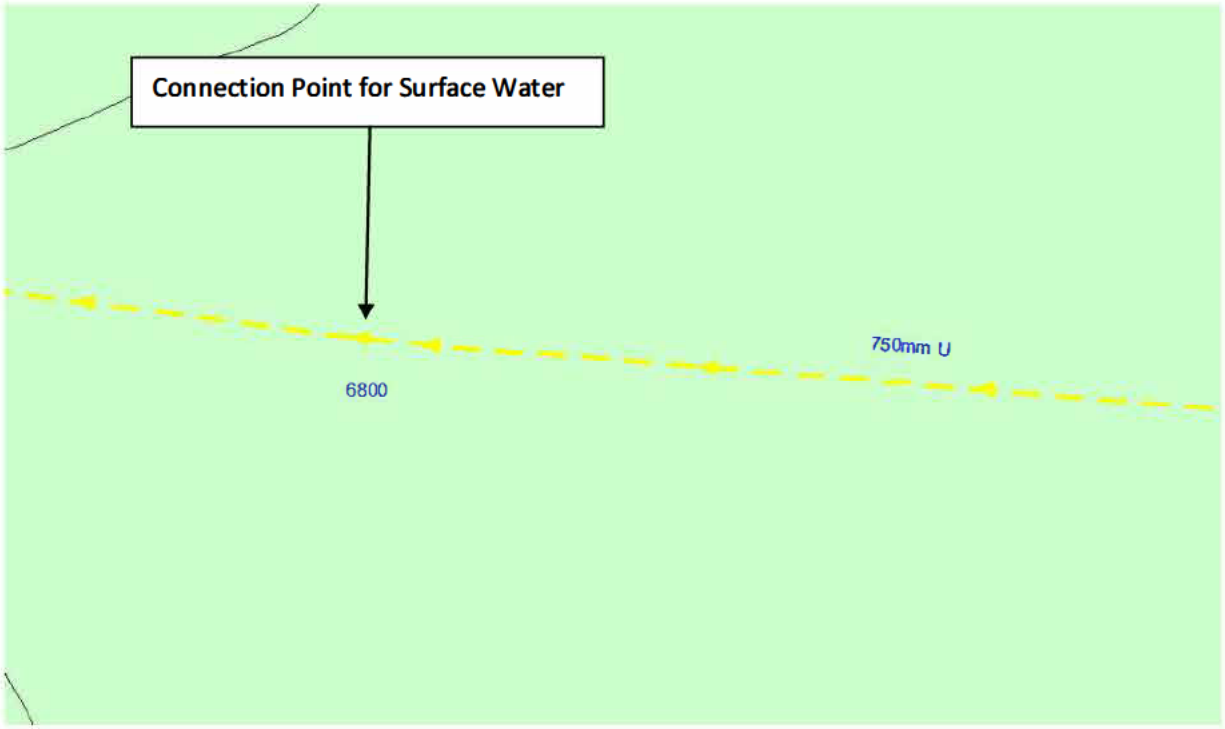


Figure 2: Showing your surface water point of connection to the manhole 6800 with the Cover Level of 24.09m and an Invert Level 19.37m

Section 5: Useful Information

Water

Water Industry Act – Key Water Sections:

- Section 41: This provides you with the right to requisition a new water main for domestic purposes to connect your site to the public water network.
- Section 45: This provides you with the right to have a connection for domestic purposes from a building or part of a building to the public water main.
- Section 51A: This provides you with the right to provide the water main or service connection yourself and for us to vest them into our company.
- Section 55: This applies where you request a supply of water for non domestic premises.
- Section 185: This provides you with the right to make a reasonable request to have a public water main, sewer or public lateral drain removed or altered, at your expense. Details on how to make an application and the s185 form is available on our website at http://www.anglianwater.co.uk20/developers or via our Developer Services team on 08457 60 66 087.

Details on how you can make a formal application for a new water main, new connection or diversion are available on from our Developer Services team on 08457 60 66 087 or via our website at www.anglianwater.co.uk/developers

If you have any other queries on the rights to requisition or connect your housing to the public water and sewerage infrastructure then please contact our developer services team at: Developer Services, Anglian Water, PO Box 495, Huntingdon, PE29 6YY or Telephone: 0845 60 66 087 or Email: developerservices@anglianwater.co.uk

Water pressure and flow rate: The water pressure and consistency that we must meet for your site is laid out in the Water Industry Act (1991). This states that we must supply a flow rate of 9 litres per minute at a pressure of 10 metres of head to the external stop tap. If your water pressure requirements exceed this then you will need to provide and maintain any booster requirements to the development site.

Self Lay of Water Mains: A list of accredited Self Lay Organisations can be found at www.lloydsregister.co.uk/schemes/WIRS/providers_list.aspx.

Used Water

Water Industry Act – Key Used Water Sections:

- Section 98: This provides you with the right to requisition a new public sewer. The new public sewer can be constructed by Anglian Water on your behalf. Alternatively, you can construct the sewer yourself under section 30 of the Anglian Water Authority Act 1977.

- Section 102: This provides you with the right to have an existing sewerage asset vested by us. It is your responsibility to bring the infrastructure to an adoptable condition ahead of the asset being vested.
- Section 104: This provides you with the right to have a design technically vetted and an agreement reached that will see us adopt your assets following their satisfactory construction and connection to the public sewer.
- Section 106: This provides you with the right to have your constructed sewer connected to the public sewer.
- Section 185: This provides you with the right to have a public sewerage asset diverted.

Details on how to make a formal application for a new sewer, new connection or diversion are available on our website at www.anglianwater.co.uk/developers or via our Developer Services team on 08457 60 66 087.

Sustainable Drainage Systems:
Many existing urban drainage systems can cause problems of flooding, pollution or damage to the environment and are not resilient to climate change in the long term. Therefore our preferred method of surface water disposal is through the use of Sustainable Drainage Systems (SuDS). SuDS are a range of techniques that aim to mimic the way surface water drains in natural systems within urban areas. For more information on SuDS, please visit our website at http://www.anglianwater.co.uk/developers/suds.aspx . We also recommend that you contact the Local Authority and Lead Local Flood Authority (LLFA) for the area to discuss your application.

Private Sewer Transfers: Sewers and lateral drains connected to the public sewer on the 1 July 2011 transferred into Water Company ownership on the 1 October 2011. This follows the implementation of the Floods and Water Management Act (FWMA). This included sewers and lateral drains that were subject to an existing Section 104 Adoption Agreement and those that were not. There were exemptions and the main non-transferable assets were as follows:

- Surface water sewers and lateral drains that did not discharge to the public sewer, e.g. those that discharged to a watercourse.
- Foul sewers and lateral drains that discharged to a privately owned sewage treatment/collection facility.
- Pumping stations and rising mains will transfer between 1 October 2011 and 1 October 2016.

The implementation of Section 42 of the FWMA will ensure that future private sewers will not be created. It is anticipated that all new sewer applications will need to have an approved section 104 application ahead of a section 106 connection.

Encroachment: Anglian Water operates a risk based approach to development encroaching close to our used water infrastructure. We assess the issue of encroachment if you are

planning to build within 400 metres of a water recycling centre or, within 15 metres to 100 metres of a pumping station. We have more information available on our website at http://anglianwater.co.uk/developers/encroachment.aspx

Locating our assets: Maps detailing the location of our water and used water infrastructure including both underground assets and above ground assets such as pumping stations and recycling centres are available from www.digdat.co.uk. All requests from members of the public or non statutory bodies for maps showing the location of our assets will be subject to an appropriate administrative charge. We have more information on our website at: www.anglianwater.co.uk/developers/our assets/

Summary of charges: A summary of this year's water and used water connection and infrastructure charges can be found at http://www.anglianwater.co.uk/developers/charges/

Disclaimer: The information provided within this report is based on the best data currently recorded, recorded within the last 12 months or provided by a third party. The position must be regarded as approximate. If there is further development in the area or for other reasons the position may change.

The accuracy of this report is therefore not guaranteed and does not obviate the need to make additional appropriate searches, inspections and enquiries. You are advised therefore to renew your enquiry should there be a delay in submitting your application for water supply/sewer connection to re confirm the situation.

Any cost calculations provided within the report are estimated only and may be subject to change.

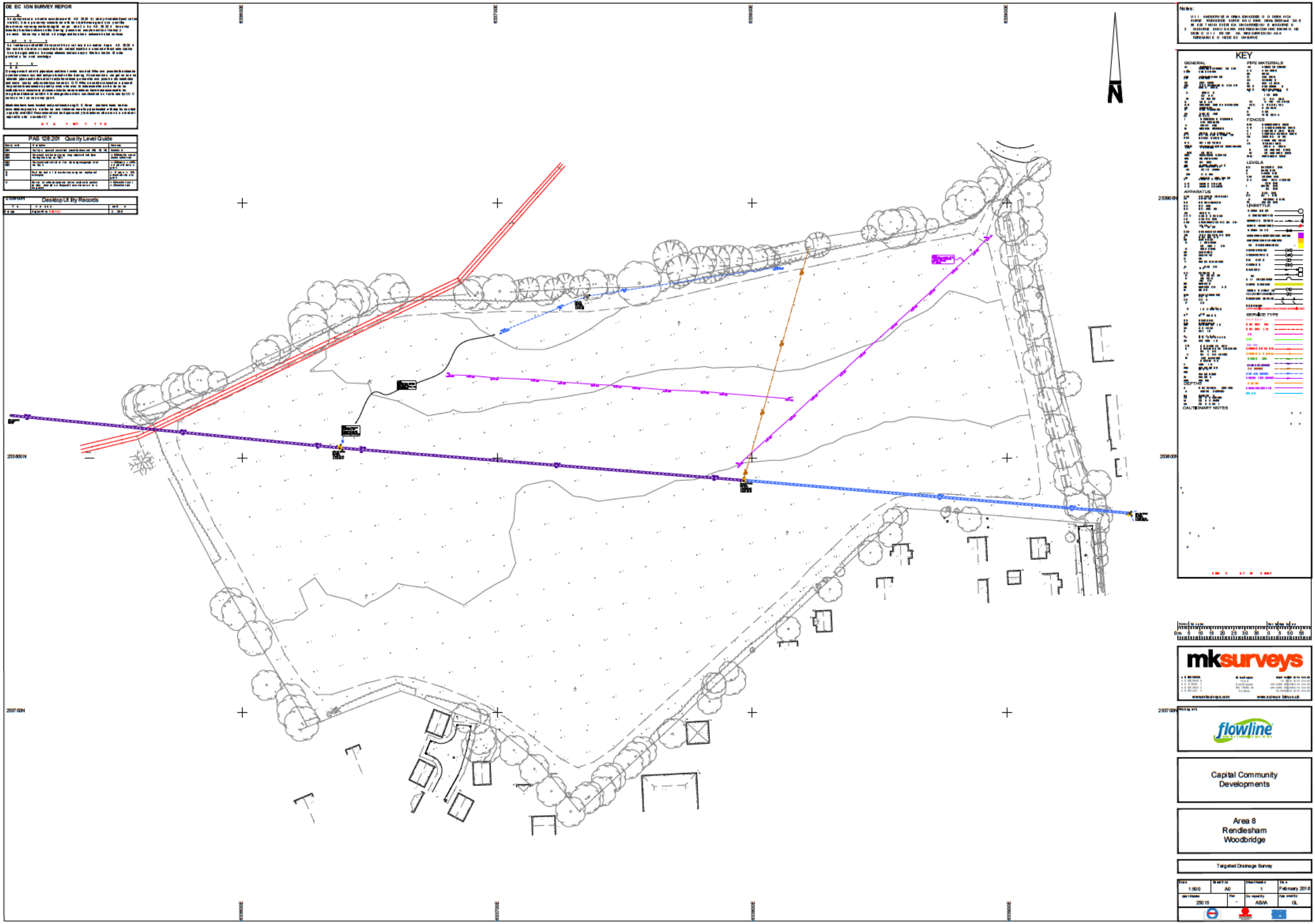
The responses made in this report are based on the presumption that your proposed development obtains planning permission. Whilst this report has been prepared to help assess the viability of your proposal, it must not be considered in isolation. Anglian Water supports the plan led approach to sustainable development that is set out in the National Planning Policy Framework (NPPF). As a spatial planning statutory consultee, we assist planning authorities in the preparation of a sustainable local plan on the basis of capacity within our water and water recycling (formerly referred to as wastewater) infrastructure. Consequently, any infrastructure needs identified in this report must only be considered in the context of up to date, adopted or emerging local plans. Where local plans are absent, silent or out of date these needs should be considered against the definition of sustainability set out in the NPPF as a whole.

No liability whatsoever including liability for negligence is accepted by Anglian Water Services Limited for any error or inaccuracy or omission including the failure to accurately record or record at all, the location of any water main, discharge pipe, sewer, or drain or disposal main or any item of apparatus.

F
Additional Survey

25015-01 Targeted Drainage Survey

Amazi working sketch 27 Feb 2018 (Summary of manhole data)


DE EC ION SURVEY REPOR
PAS 128:201 Quality Level Guide
Desktop Utility Records
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GENERAL
PIPE MATERIALS
FENCES
LEVELS
APPARATUS
MANHOLE TYPE
SERVICE TYPE
DEPTHS
CAUTIONARY NOTES
2539000N
2538000N
2537000N
mksurveys
flowline
Capital Community Developments
Area 8
Rendlesham
Woodbridge
Targeted Drainage Survey
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February 2018
29015
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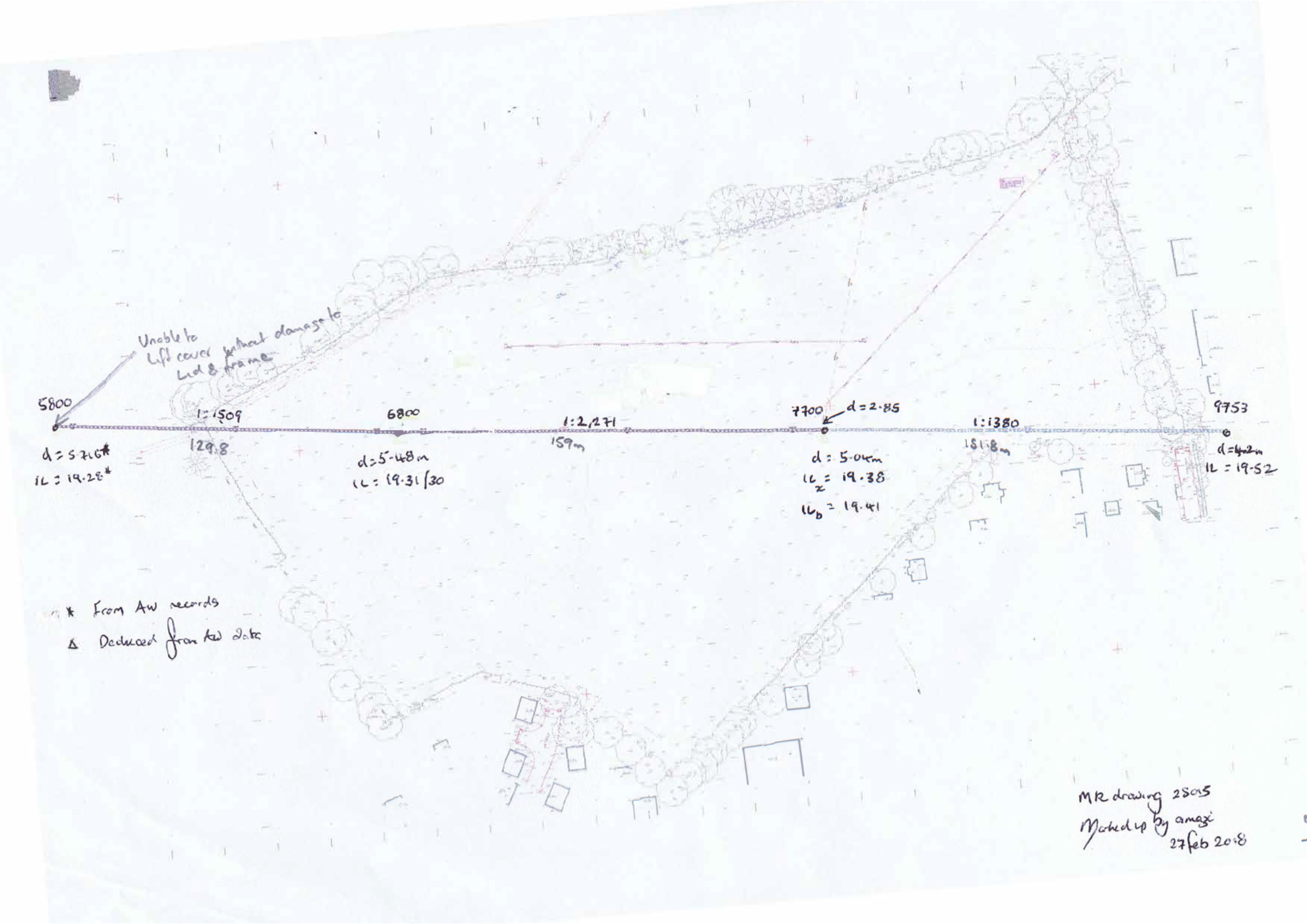
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129.8
6800
1:2,271
159m
7700
d = 2·85
1:1380
181·8m
9753
d = 4·42m
IL = 19·52
d = 5·716*
IL = 19·28*
d = 5·48m
IL = 19·31 Δ30
d = 5·04m
IL2 = 19·38
ILb = 19·41
* From AW records
Δ Deduced from AW data
MK drawing 2505
Marked up by amgi
27 Feb 2018

G

Harrison Geotechnical Outline Site Investigation, May 2018

Document: Outline Site Investigation Report

Project: Area 8, Rendlesham

Project No.: GC21420_SI

Date: May 2018

Prepared for: Capital Community Developments

harrisongeotechnical
ENGINEERING

A division of Harrison Group Environmental Ltd.

HARRISON GROUP ENVIRONMENTAL LIMITED

Document: **Outline Site Investigation**

Project: **Area 8, Rendlesham**

Reference No.: **GC21420_SI**

Date: **May 2018**

Prepared For: **Capital Community Developments**

REPORT STATUS:

Revision	Comments	Prepared By	Approved By	Issued By	Audited By
Draft		INIT IH SIGN COMMENTS DATE 03/05/2018	INIT JAU SIGN COMMENTS DATE 04/05/2018	INIT IH SIGN COMMENTS DATE 18/05/2018	INIT JAU SIGN COMMENTS DATE 18/05/2018
		INIT SIGN COMMENTS DATE	INIT SIGN COMMENTS DATE	INIT SIGN COMMENTS DATE	INIT SIGN COMMENTS DATE
		INIT SIGN COMMENTS DATE	INIT SIGN COMMENTS DATE	INIT SIGN COMMENTS DATE	INIT SIGN COMMENTS DATE
		INIT SIGN COMMENTS DATE	INIT SIGN COMMENTS DATE	INIT SIGN COMMENTS DATE	INIT SIGN COMMENTS DATE

CONTENTS

FOREWORD

General Conditions Relating To Site Investigation

This investigation has been devised to generally comply with the relevant principles and requirements of B.S.10175, 'Investigation of potentially contaminated sites - Code of practice'. The recommendations made and opinions expressed in this report are based on the information obtained from the sources described using a methodology intended to provide reasonable consistency and robustness.

The opinions expressed in this report are based on the ground conditions revealed by the site works, together with an assessment of the site and of laboratory test results. Whilst opinions may be expressed relating to sub-soil conditions in parts of the site not investigated, for example between exploratory positions, these are only for guidance and no liability can be accepted for their accuracy.

Boring and sampling procedures are undertaken in accordance with B.S.5930, 'Code of Practice for Site Investigations'. Likewise in-situ and laboratory testing complies with B.S.1377, 'Methods of Tests for Soils for Civil Engineering Purposes', unless stated otherwise in the text. Chemical Testing has been undertaken by a UKAS/MCerts accredited laboratory using the methodologies quoted on the appended results sheets.

The groundwater conditions entered on the boring records are those observed at the time of investigation. The normal rate of boring usually does not permit the recording of an equilibrium water level for any one water strike. Moreover, groundwater levels are subject to seasonal variation or changes in local drainage conditions.

Some items of the investigation have been provided by third parties and whilst Harrison Group have no reason to doubt the accuracy, the items relied on have not been verified. No responsibility can be accepted for errors within third party items presented in this report.

This report is produced for the benefit of the client alone. No responsibility can be accepted for any consequences of this information being passed to a third party who may act upon its contents/recommendations.

OUTLINE SITE INVESTIGATION FACTUAL REPORT

FOR

AREA 8, RENDLESHAM

1 TERMS OF REFERENCE & INTRODUCTION

The work covered by this report was undertaken on behalf of Capital Community Developments in accordance with Harrison Group Environmental Limited's quotation ref. GC21420_Q_IH dated 18th October 2017 and emailed instruction from the client dated 25th November 2017. The investigation The report was undertaken in order to assess geotechnical issues on the site prior to development involving the construction of residential housing with associated infrastructure.

2 SITE DESCRIPTION

The area of investigation comprised a plot of land designated as Area 8, located north of Gardenia Close, Rendlesham. The site location is shown on drawing GC21420-DR001 presented in Appendix A.

Access to the site was gained via an unnamed private road believed to be owned by Stokes Sauces, present to the east. The centre of the site can be identified by National Grid Reference 633744, 253800 and by examination of online resources, the elevation of the site is estimated at approximately 25 to 27m above Ordnance Datum (maOD).

The site comprised open land presumably used for agriculture. The surrounding area appeared to comprise arable farmland and residential housing, and a sewage treatment works was located to the immediate north.

3 INTRUSIVE INVESTIGATION

3.1 General

The scope of the site works was generally in accordance with that proposed by the client and comprised the following:

- Window Sampling (WS) Boreholes (4 no. to depths of up to 5.45m; including installation of one monitoring well to a depth of 4.0m).
- Machine Excavated Trial Pits (9 no. to depths of up to 3.3m).
- Soil Infiltration Tests (4 no. between depths of 1.2m to 3.0m).
- Monitoring ground gas concentrations and groundwater level on one occasion.

The intrusive fieldworks were carried out on the 12th and 13th of April 2018 at the locations shown on drawing GC21420–DR002 presented in Appendix A. Following completion of fieldwork, one ground gas and groundwater monitoring event was carried out on April 19th 2018.

Near surface soil samples and those identified to potentially include olfactory or visual evidence of contamination were field screened and submitted for laboratory analyses. Environmental samples were scheduled immediately following completion of field activities, and were subsequently dispatched under full chain of custody for laboratory analysis in cool boxes with refrigerant blocks.

Details of the site investigation methods employed have been presented on the appended data sheet and a summary of the fieldwork and laboratory testing has been included below.

3.2 Window Sampling Boreholes

Four dynamic sampler boreholes (DCS01 to DCS04) were drilled on April 13th 2018 using a dual-purpose tracked rig to depths of up to 5.45m. Experienced field technicians undertook the drilling and collected samples within plastic liners, which were later examined, described and sub-sampled for laboratory testing.

Upon completion, three of the boreholes (DCS01, DCS03 & DCS04) were backfilled with spoil/ballast, whilst one borehole (DCS02) was installed with a gas monitoring well to a depth of 4.0m.

A detailed description of all the strata encountered, in-situ testing undertaken, position and types of samples taken along with any groundwater observations made at the time of drilling are included on the window sample borehole records presented in Appendix B.

3.3 Machine Excavated Trial Pits

Trial pits were excavated using a JCB 3CX excavator at 9no. locations across the site to depths of up to 3.3m in positions specified by the client prior to start of the investigation. The soils encountered were described by an experienced engineer and soil samples were taken for laboratory analysis.

Soakaway testing was undertaken in TP01, TP03, TP05, and TP08 following the placement of gravel to maintain stability. The remaining trial pits were backfilled with nominally compacted arisings on completion.

A detailed description of strata encountered, position and types of samples taken along with any groundwater observations made at the time of excavation are included on the trial pit records presented in Appendix B.

4 GROUND CONDITIONS ENCOUNTERED

4.1 Introduction

Reference should be made to the appended exploratory hole records for full details of the ground conditions recorded; however the relevant features with regard to the geology and hydrogeology of the site are summarised below.

4.2 Ground Conditions

Made ground was recorded from 0.3m to 0.4m depth and was only encountered in two locations. Made Ground soils typically consisted of brown slightly silty sandy gravelly clay, and in one instance were observed to contain occasional anthropogenic material.

The shallow geology encountered throughout the site consisted of cohesive soils of the Lowestoft Formation (diamicton). This was generally underlain by granular soils of the Chillesford Church Sand Member, which was generally encountered between 2.0m and 4.0mbgl.

The ground conditions encountered during the intrusive works undertaken are summarised in Table 4.2 below.

Depth (mbgl) encountered (upper boundary)	Thickness encountered (Min/Max in metres)	Geology
0.0	0.3/0.4	Made Ground
0.0	0.2/0.4	Topsoil
0.2 – 0.4	1.6/3.7	Lowestoft Formation (Diamicton)
2.0 – 4.0	Base not encountered	Chillesford Church Sand Member

Table 4.2: Summary of Ground Conditions Encountered

4.3 Groundwater

Groundwater was not encountered in any of the exploratory holes during this investigation.

5 IN-SITU TESTING AND MONITORING

5.1 Soakaway Testing

Four soakaway tests were conducted at the designated positions. Two test locations (TP03 & TP05) were conducted within the deeper granular soils (Chillesford Church Sand Formation) encountered in the western portion of the site. The remaining two locations (TP01 & TP08) were conducted within the cohesive soils (Lowestoft Formation) encountered in the eastern portion of the site.

The results are given in Table 5.1 below and have generally been calculated in accordance with BRE Digest 365 'Soakaway Design'.

Test location	Test no.	Test depth (m)	Strata	Infiltration rate (max.) (m/s)	Recommended infiltration rate (m/s)
TP01	1	1.2	Lowestoft Formation	N/A	**N/A**
TP03	1	2.5	Chillesford Church Sand Formation	*≥1.27 x 10^{2}	***≥1.27 x 10^{-2}**
TP05	1	2.0 – 2.5	Chillesford Church Sand Formation	3.25 x 10^{5}	**2.53 x 10^{-5}**
	2			3.96 x 10^{5}	
	3			2.53 x 10^{5}	
TP08	1	1.7	Lowestoft Formation	N/A	**N/A**

Table 5.1: Soakaway test results

*Soil infiltration rate is greater than or equal to, based on measured maximum infilling rate from water bowser used during testing.

The infiltration testing indicates moderate soakage characteristics in the deeper granular soils of the Chillesford Church Sand formation. No infiltration rate was calculated for the testing completed in the soakaways placed in the Lowestoft Formation as a minimum 75% drainage was not achieved during testing. Very slow infiltration was observed in the cohesive Lowestoft Formation soils.

It should be noted that infiltration rates were observed to exceed achievable infilling rates in the soakaway installed in TP03; however, an estimated minimum infiltration rate was inferred based on maximum test pit infilling rate achieved from the water bowser as measured during the field work.

5.2 Environmental In-situ Monitoring

Gas monitoring was undertaken using a GA5000 infrared gas analyser and groundwater monitoring was carried out using an electronic dip meter. The results are presented in Appendix D and are summarised in Table 6.2 below:

Gas Concentration					Maximum Flow Rate (l/hr)	Depth to Groundwater (mbgl)
CH_4 (%)	$C0_2$ (%)	0_2 (%)	H_2S (ppm)	CO (ppm)		
0.0	0.5	19.9	0	2	0.1	Dry (>4.0m)
Typical Accuracy (GA5000, 0-5% Vol.) CO_2 ±0.5% (vol), CH_4 ±0.5% (vol), O_2 ±1.0% (vol), CO ±10.0% of reading or 15ppm, whichever is greater. Flow pod +/- 0.3l/hr.						

Table 6.2: Summary of Gas Concentrations and Flow Rates

6 CONTAMINATION INVESTIGATION

6.1 Contamination Observations

Samples recovered from the exploratory holes were examined for potential contamination. Olfactory and visual evidence of potential contamination is included on the records where observed.

6.2 Environmental Laboratory Testing

Four samples of the near surface made ground and/or topsoil (depth ranging 0.2m to 0.6m) were submitted to a UKAS/MCERTS accredited laboratory for a general suite of analytes to identify the

chemical characteristics of the soils encountered. The results of this work are presented in Appendix C and are summarised below (Table 6.2).

Test Type	Number of tests
Soil	
Soil Suite HSS 5a: As, Cd, Cr (Total and VI), Cu, Ni, Zn, Pb, Hg, Se, B, pH, TOC, TPH 8 Band, PAH USEPA16, asbestos screen (with ID where found)	4

Table 6.2: Summary of Environmental Testing

We trust this report provides the information required at this stage. However, if you have any queries please feel free to contact the undersigned.

Report prepared by:

Iain Hall BSc (Hons) MEnvSc
Geoenvironmental Engineer

[redacted] Au[redacted]n BSc (Hons) MSc FGS CGeol
Principal Geotechnical Engineer

REFERENCES

BS 1377: 1990, *'Methods of Tests for Soils for Civil Engineering Purposes'.*

BS EN 1997-1: 2004, *Eurocode 7 Part 1 'General Rules'.*

BS EN 1997-2: 2007, *Eurocode 7 Part 2, 'Ground Investigation and Testing'*.

BS 5930: 2015, *'Code of Practice for Site Investigations'.*

BS EN 10175: 2011 + A1: 2013, *'Investigation of Potentially Contaminated Sites Code of Practice'.*

BS EN ISO 14688-2:2004, 'Geotechnical investigation and testing – Identification and classification of Soil. Principles for a Classification'.

BS EN ISO 22475-1:2006 & 22475-2/3:2011, '*Geotechnical investigation and testing. Sampling methods and groundwater measurements'.*

BS EN ISO 22476-1:2012, '*Geotechnical investigation and testing – Field Testing – Part 1: Electrical cone and piezocone penetration test'.*

BS EN ISO 22476-2:2005+A1:2011, '*Geotechnical investigation and testing Field Testing Part 2: Dynamic probing'.*

Building Research Establishment, 2005. Special Digest 1:2005, *'Concrete in Aggressive Ground'*.

LIST OF APPENDICES

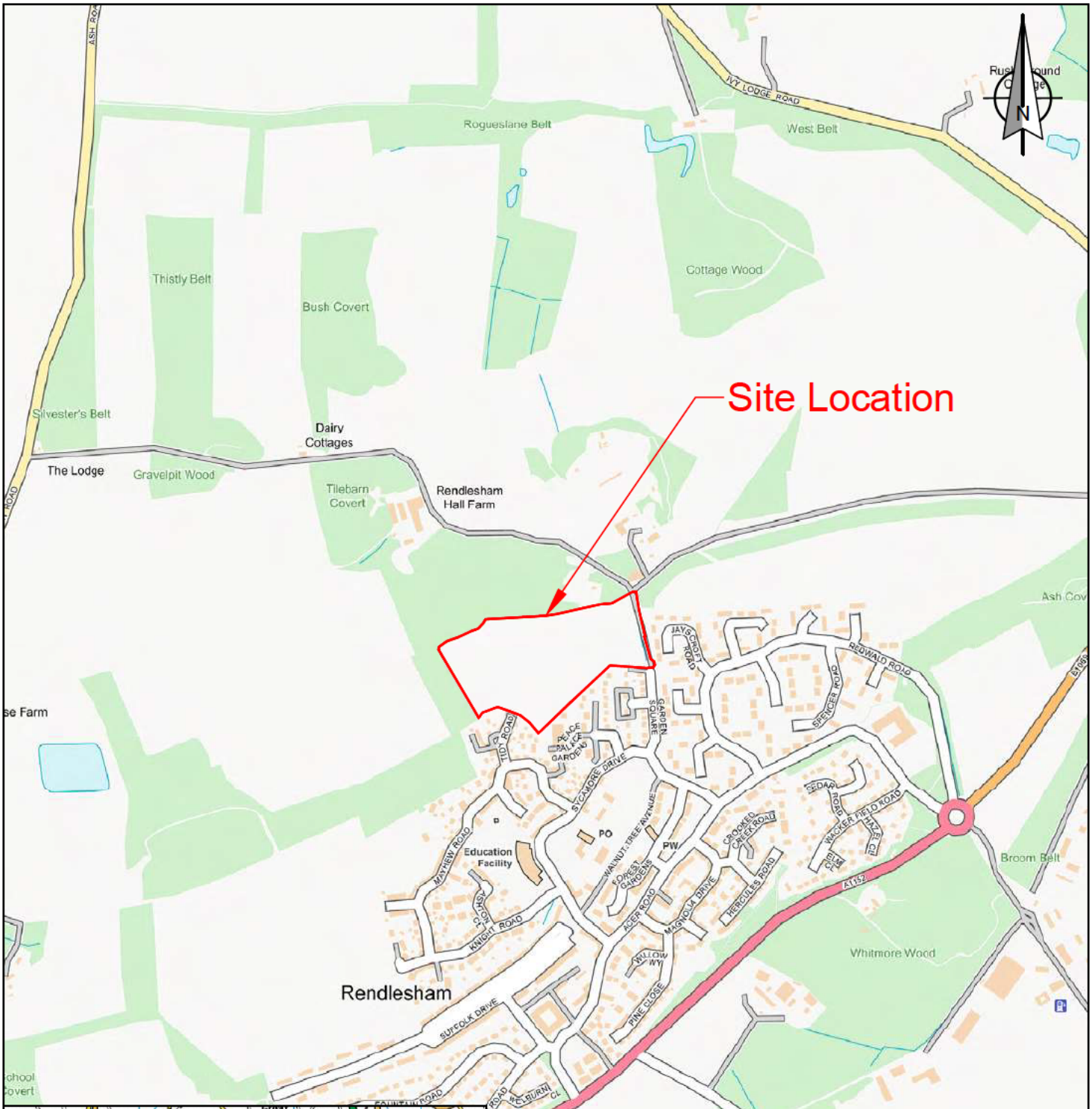
APPENDIX A

DRAWINGS

Site Location Plan (GC21420 – DR001)

Exploratory Hole Location Plan (GC21420 – DR002)

FM-Hn-D-104 Rev B N:\Norwich\Projects\Jobs 21000s\21400\GC21420 Area 8, Rendlesham\Drawings\CAD Files\GC21420 – DR001.dwg



Client : Capital Community Developments	
Project : Area 8, Rendlesham	
Job No : GC21420	Date : April 2018
Drawing No : GC21420 - DR001	
Scale : 1:10000 @ A4	
Drawn by : CS	Checked by : IH
Eastings : 633760	Northings : 253795

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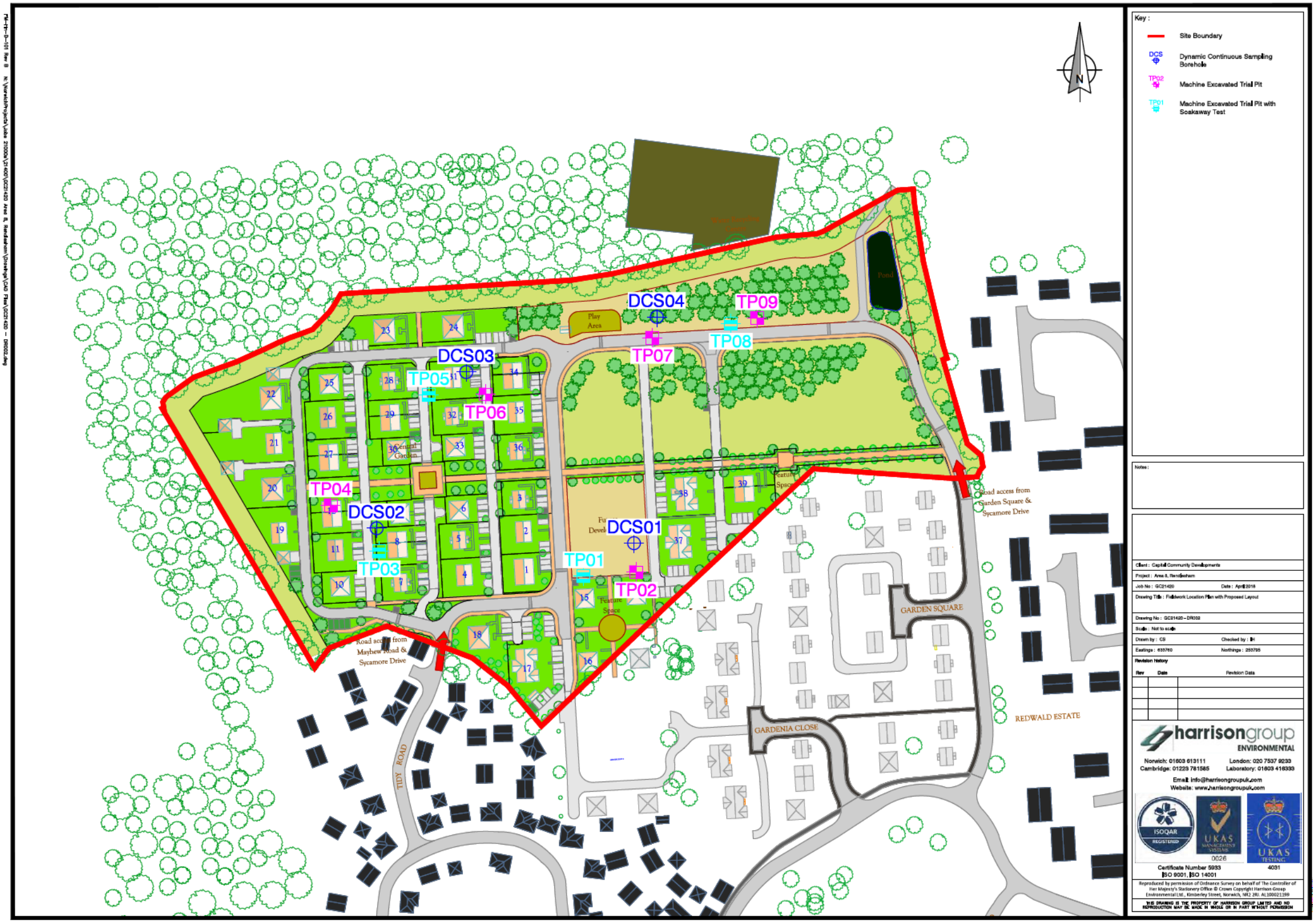
UKAS MANAGEMENT SYSTEMS
UKAS TESTING 4031
Certificate Number 5933
ISO 9001, ISO 14001



Key :

- Site Boundary
- DCS — Dynamic Continuous Sampling Borehole
- TP02 — Machine Excavated Trial Pit
- TP01 — Machine Excavated Trial Pit with Soakaway Test

Notes :

Client : Capital Community Developments

Project : Area 8, Rendlesham

Job No : GC21420 Date : April 2018

Drawing Title : Fieldwork Location Plan with Proposed Layout

Drawing No : GC21420 – DR002

Scale : Not to scale

Drawn by : CS Checked by : IH

Eastings : 633760 Northings : 252795

Revision history

Rev	Date	Revision Data

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UKAS TESTING 4091

APPENDIX B

EXPLORATORY HOLE RECORDS

Data Sheet: Site Investigation Methods

Window Sample Borehole Records

Machine Dug Trial Pit Records

Soakaway Test Records

DATA SHEET: SITE INVESTIGATION METHODS

This datasheet provides basic details of the methods employed during the undertaking of site investigations. Detailed method statements may be provided if requested or further information may be obtained from the relevant British Standards or other quoted publications. Investigations are generally carried out in accordance with BS 5930:2015, "Code of practice for site investigations", BS 10175:2011+A1:2013, "Investigation of potentially contaminated sites – Code of Practice, and BS EN ISO 1997-2:2007, "Eurocode 7 – Geotechnical design – Part 2: Ground investigation and testing".

Prior to any excavation being undertaken, service plans are obtained and/or a service tracing team may be employed to locate and mark up service locations. A surface sweep using a cable avoidance tool (CAT) is undertaken, in order to avoid services and service inspection pits are generally hand excavated prior to commencing work with any mechanical plant.

DYNAMIC CONTINUOUS SAMPLING (WINDOW SAMPLER) BOREHOLES

The window sampler system comprises a series of varying diameter (100mm down to 36mm) steel tubes of either 1m length, and in the case of window (rather than windowless) having a slot or window cut along the side. The tubes are driven into the ground using a light percussive hammer attached to solid rods, and withdrawn by use of a jack. The hammer may be machine mounted (wheeled or tracked) or for restricted access work, hand held. The soil sample is forced up into the tube during the driving, samples being obtained directly through the slot or window, or in the case of windowless, in plastic liners in the steel tube. The sampler generally achieves depths of around 5m in favourable soils. Use of a super heavy tracked rig allows samples to be retrieved in liners to depths of up to 10m in suitable ground conditions.

Sampling can be carried out from the boreholes in accordance with BS EN ISO 22475-1:2006 and SPT testing can be undertaken in accordance with BS EN ISO 22476-3:2005+A1:2011. In addition small diameter standpipes/monitoring wells can be installed to facilitate the sampling and monitoring of gas and groundwater.

MONITORING WELL INSTALLATIONS

All types of boreholes can be fitted with monitoring wells to enable subsequent sampling and monitoring of groundwater and ground gas levels. Monitoring wells are usually of upvc or hdpe material, although steel may also be used in certain circumstances. Various diameters are available from 19mm upwards, depending upon the size of the borehole. 38mm or 50mm diameter wells are the most commonly used. Wells generally have slotted lower sections which may have a geomesh filter and then are surrounded with a filter medium such as single sized gravel. The upper sections are generally solid casing which is usually grouted to produce a seal with the surrounding ground. The top of the well is generally fitted with a removable cap that may include a gas valve to enable future gas monitoring. The installation is usually protected by a lockable cover set in a concrete base. Details of monitoring well installations and associated backfill are given on the relevant borehole records.

GROUNDWATER MONITORING

Groundwater monitoring is undertaken using an electronic dip meter, which records the depth to water in a standpipe or monitoring well. Alternatively, down-hole pressure transducers cab be utilised which can record variations over an extended period, which is particularly useful in monitoring variations due to tidal influences or when undertaking permeability tests or draw down tests or when undertaking soakaway testing. Where a non-aqueous phase liquid (e.g. floating hydrocarbon layer) is present, an interface meter is utilised to measure the thickness.

GROUND GAS MONITORING

Ground gas composition and flow monitoring may be undertaken where monitoring wells have been installed. Both flow (litres per hour) and composition (%) are measured using a portable infra-red multi-gas meter, calibrated for methane, carbon dioxide, carbon monoxide, hydrogen sulphide and oxygen. Records are also taken of atmospheric pressure, and relative pressure. The results are presented in the appendix of the report on the relevant records.

Ground gas monitoring can also be undertaken on a continuous basis using in-situ GasClam instrumentation where specific projects warrant accurate identification and quantification of the ground gas regime.

MACHINE EXCAVATED TRIAL PITS

Machine excavated trial pits are undertaken using a wheeled back-hoe or tracked 360 excavator. The hole is progressed, with the supervising Geotechnical Engineer taking samples and/ or carrying out in-situ testing as appropriate. No access may be made in to unstable/ contaminated pits, or into pits greater than 1.20m deep. Where man access is required, shoring can be provided and installed to maintain stability of the excavation. The trial pits are backfilled in compacted layers, with spoil heaped up in order to allow for future settlement. Pits may be taken to a maximum of 4.50m depth in favourable conditions.

Machine excavated trial pits require relatively large clear working areas in which to be carried out and can cause considerable disturbance to the ground surface.

TRIAL PIT SOAKAWAY TESTING

Soakaway tests are undertaken in machine excavated trial pits to determine the infiltration rate of the soils on a site in accordance with BRE Digest 365, "Soakaway design". The trial pit is excavated using a mechanical excavator and vertical sides are trimmed square and accurate measurements of the pit dimensions are made. In granular soils the pit is backfilled with coarse single size gravel to the top of the natural soils to prevent collapse of pit sides upon filling with water. Where granular fill is used a temporary perforated monitoring well is installed over the depth of the trial pit prior to backfilling. This allows monitoring of the water level by an electronic dip-meter or pressure transducer. In cohesive soils, granular fill may not be required and a monitoring installation is replaced by a fixed datum bar placed across one end of the pit. The water level is monitored using a tape or dip-meter. The pit is rapidly filled with water from a bowser / tanker to fill the pit to its maximum effective depth in a short time. Care is taken to prevent the collapse of pit walls. The pit is filled and allowed to drain three times to 25% full where ground conditions and time constraints allow. The water level is recorded at intervals sufficiently close to define water level versus time. The three fillings should be on the same or consecutive days. The soil infiltration rate (f) is calculated from the time taken for the water level to fall from 75% to 25% effective storage depth in the pit, using the lowest f value the three tests for design.

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Dynamic Continuous Sampling Borehole Record

DCS01

Sheet 1 of 2

Project ID: **GC21420**	Client: Capital Community Developments	E: 633774.32	N: 253746.61
Location: Area 8, Rendlesham	Consultant:	Date: 13/04/2018	
	Plant used: Archway Tracker	SPT Hammer Serial No: DART 350 (ER: 78%)	

Geology Description	Legend	Depth (m)	Elevation (maOD) 25.00	Sample / In-Situ Test Information: Type	Depth	Results / Remarks	Casing (Water)	Installation & Backfill
TOPSOIL (Dark brown slightly silty sandy gravelly CLAY. Gravel is fine to medium subangular to rounded flint).								
Firm orangish brown silty sandy CLAY with occasional gravel of fine to medium angular flint. Occasional brown specks of organic material present.		0.40	24.60					
				SPT(C)	1.00	N=10 (2,2/3,2,3,2)	- (Dry)	
From 1.30m: Becoming very sandy.								
From 1.70m: Becoming soft to firm.				SPT(C)	2.00	N=8 (1,2/2,2,2,2)	- (Dry)	
From 2.50m: Frequent pockets of orange silt.								
Orange slightly gravelly clayey SILT with occasional pockets of soft grey clay. Gravel is fine to medium subangular to subrounded flint.		2.90	22.10	SPT(C)	3.00	N=8 (4,3/2,2,2,2)	- (Dry)	
Light brown slightly silty fine to coarse SAND.		3.90	21.10	SPT(C)	4.00	N=28 (7,5/6,6,8,8)	- (Dry)	
				SPT(C)	5.00	N=66 (10,11/14,15,18,19)	- (Dry)	

Window or Windowless Sampling Run Details

Diameter (mm)	Top Depth (m)	Base Depth (m)	Sample Length (m)	Recovery (%)
87	0.00	1.00	1.00	100
77	1.00	2.00	1.00	100
67	2.00	3.00	0.70	70
57	3.00	4.00	1.00	100
57	4.00	5.00	0.70	70

Water Strike

Date	Strike Depth (m)	Depth Sealed (m)	Casing Depth (m)	Time Elapsed (mins)	Standing Level (m)	Remarks
						No groundwater encountered

Remarks:

1. Backfill: GL to 5.45m arisings.
2. Approximate coordinates and elevation.

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Dynamic Continuous Sampling Borehole Record

DCS01

Sheet 2 of 2

Project ID: **GC21420**	Client: Capital Community Developments	E: 633774.32	N: 253746.61
Location: Area 8, Rendlesham	Consultant:	Date: 13/04/2018	
	Plant used: Archway Tracker	SPT Hammer Serial No: DART 350 (ER: 78%)	

Geology Description	Legend	Depth (m)	Elevation (maOD) 25.00	Sample / In-Situ Test Information: Type	Depth	Results / Remarks	Casing (Water)	Installation & Backfill
Light brown slightly silty fine to coarse SAND.								
Borehole completed at 5.45m.		5.45	19.55					

Window or Windowless Sampling Run Details

Diameter (mm)	Top Depth (m)	Base Depth (m)	Sample Length (m)	Recovery (%)
87	0.00	1.00	1.00	100
77	1.00	2.00	1.00	100
67	2.00	3.00	0.70	70
57	3.00	4.00	1.00	100
57	4.00	5.00	0.70	70

Water Strike

Date	Strike Depth (m)	Depth Sealed (m)	Casing Depth (m)	Time Elapsed (mins)	Standing Level (m)	Remarks
						No groundwater encountered

Remarks:

1. Backfill: GL to 5.45m arisings.
2. Approximate coordinates and elevation.

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Dynamic Continuous Sampling Borehole Record

DCS02

Sheet 1 of 1

Project ID: **GC21420**	Client: Capital Community Developments	E: 633654.11	N: 253753.59
Location: Area 8, Rendlesham	Consultant:	Date: 13/04/2018	
	Plant used: Archway Tracker	SPT Hammer Serial No: DART 350 (ER: 78%)	

Geology Description	Legend	Depth (m)	Elevation (maOD) 26.00	Sample / In-Situ Test Information: Type	Depth	Results / Remarks	Casing (Water)	Installation & Backfill
TOPSOIL (Dark brown slighty silty slightly gravelly sandy CLAY. Gravele is fine to coaorse angular to subrounded flint. Occasional rootlets present).								
		0.30	25.70					
Firm orangish brown silty sandy CLAY with occasional gravel of fine to medium angular flint. Occasional brown specks of organic material present.								
From 0.80m: Becoming very sandy.				SPT(C)	1.00	N=8 (1,3/2,2,2,2)	- (Dry)	
From 1.15m: Frequent gravel of fine to medium subangular to rounded chalk and flint.		1.30	24.70					
Firm to stiff light brown sandy very gravelly CLAY. Gravel is fine to medium subangular to rounded chalk and flint.								
From 1.80m: Frequent orange staining on chalk.				SPT(C)	2.00	N=12 (3,3/3,2,3,4)	- (Dry)	
		2.25	23.75					
Orange slightly gravelly clayey SILT with occasional pockets of soft grey clay. Gravel is fine to medium subangular to subrounded flint.		2.50	23.50					
Light brown slightly silty fine to coarse SAND.				SPT(C)	3.00	N=33 (5,6/8,8,8,9)	- (Dry)	
				SPT(C)	4.00	N=64 (8,11/14,16,17,17)	- (Dry)	
Borehole completed at 4.45m.		4.45	21.55					

Window or Windowless Sampling Run Details

Diameter (mm)	Top Depth (m)	Base Depth (m)	Sample Length (m)	Recovery (%)
87	0.00	1.00	1.00	100
87	1.00	2.00	1.00	100
77	2.00	3.00	1.00	100
77	3.00	4.00	1.00	100

Water Strike

Date	Strike Depth (m)	Depth Sealed (m)	Casing Depth (m)	Time Elapsed (mins)	Standing Level (m)	Remarks
						No groundwater encountered

Remarks:

1. Installation: 63mm standpipe GL to 1.00m plain, 1.00m to 4.00m slotted, fitted with gas tap, bung and flush cover.
2. Backfill: GL to 4.45m arisings.
3. Approximate coordinates and elevation.

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Dynamic Continuous Sampling Borehole Record

DCS03

Sheet 1 of 1

Project ID: **GC21420**	Client: Capital Community Developments	E: 633695.95	N: 253826.60
Location: Area 8, Rendlesham	Consultant:	Date: 13/04/2018	
	Plant used: Archway Tracker	SPT Hammer Serial No: DART 350 (ER: 78%)	

Geology Description	Legend	Depth (m)	Elevation (maOD) 26.00	Sample / In-Situ Test Information: Type	Depth	Results / Remarks	Casing (Water)	Installation & Backfill
MADE GROUND (Brown slightly silty sandy gravelly CLAY. Gravel is fine to coarse angular to subrounded flint, brick, concrete and clinker. Occasional rootlets present).								
		0.30	25.70					
Firm to stiff grey mottled orangish brown slightly silty slightly sandy gravelly CLAY. Gravel is medium to coarse angular to subangular flint. Frequent black specks of organic matter present).								
				SPT(C)	1.00	N=13 (2,2/3,3,3,4)	- (Dry)	
From 1.05m: Becoming stiff to very stiff and very gravelly. Gravel is fine to coarse subangular to rounded chalk and flint.								
From 1.70m: Frequent orange staining on chalk.				SPT(C)	2.00	N=26 (4,4/5,6,7,8)	- (Dry)	
				SPT(C)	3.00	N=17 (2,4/3,4,5,5)	- (Dry)	
Brown slightly silty gravelly fine to coarse SAND. Gravel is fine to medium angular to subrounded flint.		3.65	22.35					
				SPT(C)	4.00	N=49 (9,10/11,13,12,13)	- (Dry)	
Borehole completed at 4.45m.		4.45	21.55					

Window or Windowless Sampling Run Details

Diameter (mm)	Top Depth (m)	Base Depth (m)	Sample Length (m)	Recovery (%)
87	0.00	1.00	1.00	100
77	1.00	2.00	1.00	100
67	2.00	3.00	1.00	100
57	3.00	4.00	1.00	100

Water Strike

Date	Strike Depth (m)	Depth Sealed (m)	Casing Depth (m)	Time Elapsed (mins)	Standing Level (m)	Remarks
						No groundwater encountered

Remarks:

1. Backfill: GL to 4.45m arisings.
2. Approximate coordinates and elevation.

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Dynamic Continuous Sampling Borehole Record

DCS04

Sheet 1 of 1

Project ID: **GC21420**	Client: Capital Community Developments	E: 633784.98	N: 253852.30
Location: Area 8, Rendlesham	Consultant:	Date: 13/04/2018	
	Plant used: Archway Tracker	SPT Hammer Serial No: DART 350 (ER: 78%)	

Geology Description	Legend	Depth (m)	Elevation (maOD)	Sample / In-Situ Test Information			Casing (Water)	Installation & Backfill
			26.00	Type	Depth	Results / Remarks		
TOPSOIL (Dark brown slightly silty sandy gravelly CLAY. Gravel is fine to medium subangular to rounded flint).								
Stiff light brown sandy very gravelly CLAY. Gravel is fine to medium subangular to rounded chalk and flint. Frequent orange staining on chalk.		0.40	25.60					
Stiff dark orangish brown sandy gravelly CLAY. Gravel is fine to medium subangular to rounded chalk and flint. Frequent black specks of organic matter present.		0.70	25.30					
From 1.10m: Gravel becoming fine to coarse.				SPT(C)	1.00	N=9 (1,2/2,2,3,2)	- (Dry)	
From 1.70m: Becoming very stiff.				SPT(C)	2.00	N=12 (2,2/2,3,3,4)	- (Dry)	
				SPT(C)	3.00	N=36 (6,8/8,8,10,10)	- (Dry)	
Orange slightly gravelly clayey SILT with occasional pockets of soft grey clay. Gravel is fine to medium subangular to subrounded flint.		3.20	22.80					
Light brown slightly silty fine to coarse SAND.		3.95	22.05	SPT(C)	4.00	N=47 (6,10/10,13,12,12)	- (Dry)	
Borehole completed at 4.45m.		4.45	21.55					

Window or Windowless Sampling Run Details

Diameter (mm)	Top Depth (m)	Base Depth (m)	Sample Length (m)	Recovery (%)
87	0.00	1.00	1.00	100
77	1.00	2.00	1.00	100
67	2.00	3.00	1.00	100
57	3.00	4.00	1.00	100

Water Strike

Date	Strike Depth (m)	Depth Sealed (m)	Casing Depth (m)	Time Elapsed (mins)	Standing Level (m)	Remarks
						No groundwater encountered

Remarks:

1. Backfill: GL to 4.45m arisings.
2. Approximate coordinates and elevation.

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Trial Pit Record

TP01

Sheet 1 of 1

Project ID: **GC21420**	Client: Capital Community Developments	E: 633750.58	N: 253731.25
Location: Area 8, Rendlesham	Consultant:		
	Plant used: JCB 3CX	Date: 12/04/2018	

Geology Description	Legend	Depth	Elevation (maOD) 25.00	Sample / In Situ Test Information			Installation & Backfill
				Type	Depth	Results / Remarks	
TOPSOIL (Soft to firm brown to light brown slightly silty slightly sandy gravelly CLAY. Gravel is fine to coarse subangular to subrounded flint and sandstone).		0.30	24.70	D1	0.20		
Soft to firm brown to reddish brown slightly gravelly sandy CLAY with occasional pockets of greyish mottling. Gravel is fine to coarse subangular to subrounded chalk and flint.				D2	0.80		
From 2.00m: Occasional pockets of brown to greyish brown sand. Gravel becoming fine to medium subangular to subrounded chalk.				D3	2.00		
Trial pit terminated at 3.00m.		3.00	22.00	D4	3.00		

Weather: Cloudy and dry

Pit Stability: Stable

Shoring Used:

Pit Dimensions: L 2.40m x W: 0.70m

Water Strike

Date	Strike Depth (m)	Time Elapsed (mins)	Standing Level (m)	Remarks
				No groundwater encountered

Remarks

1. Backfill: GL to 0.80m arisings, 0.80m to 3.00m gravel.
2. Approximate coordinates and elevation.

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Trial Pit Record

TP02

Sheet 1 of 1

Project ID: **GC21420**	Client: Capital Community Developments	E: 633775.30	N: 253733.03
Location: Area 8, Rendlesham	Consultant:		
	Plant used: JCB 3CX	Date: 12/04/2018	

Geology Description	Legend	Depth	Elevation (maOD) 25.00	Sample / In Situ Test Information Type	Depth	Results / Remarks	Installation & Backfill
TOPSOIL (Soft to firm brown to greyish brown slightly silty slightly sandy slightly gravelly CLAY. Gravel is fine to medium subangular to subrounded flint and chalk).				ES1	0.20		
		0.30	24.70				
Firm to stiff light brown to orangish brown slightly silty slightly sandy gravelly CLAY with occasional pockets of greyish brown. Gravel is fine to coarse subangular to subrounded chalk and occasional flint.				B1	1.00		
From 2.00m: Occasional pockets of brown to reddish brown sand.				D1	2.00		
		2.70	22.30				
Trial pit terminated at 2.70m.							

Weather:	Cloudy and dry
Pit Stability:	Stable
Shoring Used:	
Pit Dimensions:	L 2.40m x W: 0.70m

Water Strike

Date	Strike Depth (m)	Time Elapsed (mins)	Standing Level (m)	Remarks
				No groundwater encountered

Remarks

1. Backfill: GL to 2.70m arisings.
2. Approximate coordinates and elevation.

Norwich Office: 01603 613111
London Office: 020 7537 9233
Cambridge Office: 01223 781585
Testing Services: 01603 416333
E mail: info@harrisongroupuk.com
Website: www.harrisongroupuk.com

Logged by: IH | Checked by: JAu | Fm-Hn-R-3069-Rev C

harrisongroup ENVIRONMENTAL

Trial Pit Record

TP03

Sheet 1 of 1

Project ID: **GC21420**	Client: Capital Community Developments	E: 633655.19	N: 253742.80
Location: Area 8, Rendlesham	Consultant:		
	Plant used: JCB 3CX	Date: 12/04/2018	

Geology Description	Legend	Depth	Elevation (maOD)	Sample / In Situ Test Information			Installation & Backfill
			26.00	Type	Depth	Results / Remarks	
TOPSOIL (Soft to firm brown to dark brown slightly silty slightly gravelly CLAY. Gravel is fine to coarse subangular to subrounded flint and chalk).				ES1	0.20		
		0.30	25.70				
Soft to firm light brown to orangish brown slightly silty sandy gravelly CLAY with occasional pockets of greyish brown clay. Gravel is fine to medium subangular to subrounded chalk. Occasional cobbles of flint.				D1	0.50		
				D2	1.00		
From 1.50m: Becoming slightly sandy.				D3	1.50		
Orangish brown slightly silty SAND with occasional pockets of clayey sand.		2.40	23.60	D4	2.50		
Trial pit terminated at 3.00m.		3.00	23.00				

Weather: Cloudy and dry

Pit Stability: Stable

Shoring Used:

Pit Dimensions: L: 1.80m x W: 0.70m

Water Strike

Date	Strike Depth (m)	Time Elapsed (mins)	Standing Level (m)	Remarks
				No groundwater encountered

Remarks

1. Backfill: GL to 1.00m arisings, 1.00m to 3.00m gravel.
2. Approximate coordinates and elevation.

Norwich Office: 01603 613111
London Office: 020 7537 9233
Cambridge Office: 01223 781585
Testing Services: 01603 416333
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harrisongroup ENVIRONMENTAL

Trial Pit Record

TP04

Sheet 1 of 1

Project ID: **GC21420**	Client: Capital Community Developments	E: 633632.63	N: 253764.37
Location: Area 8, Rendlesham	Consultant:		
	Plant used: JCB 3CX	Date: 12/04/2018	

Geology Description	Legend	Depth	Elevation (maOD) 26.00	Sample / In Situ Test Information			Installation & Backfill
				Type	Depth	Results / Remarks	
TOPSOIL (Soft to firm brown slightly sandy silty CLAY).				ES1	0.20		
		0.30	25.70				
Firm to stiff light brown to orangish brown slightly silty sandy gravelly CLAY with occasional pockets of orangish brown sand. Gravel is fine to coarse subangular to subrounded chalk with occasional flint.				B1	1.00		
				D1	2.00		
Trial pit terminated at 2.80m.		2.80	23.20				

Weather: Cloudy and dry

Pit Stability: Stable

Shoring Used:

Pit Dimensions: L: 2.00m x W: 0.70m

Water Strike				
Date	Strike Depth (m)	Time Elapsed (mins)	Standing Level (m)	Remarks
				No groundwater encountered

Remarks

1. Backfill: GL to 2.80m arisings.
2. Approximate coordinates and elevation.

Norwich Office: 01603 613111
London Office: 020 7537 9233
Cambridge Office: 01223 781585
Testing Services: 01603 416333
E mail: info@harrisongroupuk.com
Website: www.harrisongroupuk.com

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harrisongroup ENVIRONMENTAL

Trial Pit Record

TP05

Sheet 1 of 1

Project ID: **GC21420**	Client: Capital Community Developments	E: 633678.41	N: 253815.95
Location: Area 8, Rendlesham	Consultant:		
	Plant used: JCB 3CX	Date: 12/04/2018	

Geology Description	Legend	Depth	Elevation (maOD) 26.00	Sample / In Situ Test Information Type	Depth	Results / Remarks	Installation & Backfill
TOPSOIL (Soft to firm brown to dark brown slightly sandy slightly gravelly silty CLAY. Gravel is fine to medium subangular to subrounded flint and chalk).				ES1	0.20		
		0.30	25.70				
Firm to stiff brown to orangish brown slightly silty slightly sandy gravelly CLAY. Gravel is fine to coarse subangular to subrounded chalk with occasional flint. Rare cobbles of flint.				D1	0.50		
				D2	1.00		
				D3	1.50		
		2.10	23.90				
Orangish brown SAND with pockets of greyish brown sandy clay.				D4	2.50		
		3.10	22.90				
Trial pit terminated at 3.10m.							

Weather: Cloudy and dry

Pit Stability: Stable

Shoring Used:

Pit Dimensions: L: 1.90m x W: 0.70m

Water Strike

Date	Strike Depth (m)	Time Elapsed (mins)	Standing Level (m)	Remarks
				No groundwater encountered

Remarks

1. Backfill: GL to 1.00m arisings, 1.00m to 3.10m gravel.
2. Approximate coordinates and elevation.

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London Office: 020 7537 9233
Cambridge Office: 01223 781585
Testing Services: 01603 416333
E mail: info@harrisongroupuk.com
Website: www.harrisongroupuk.com

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harrisongroup ENVIRONMENTAL

Trial Pit Record

TP06

Sheet 1 of 1

Project ID: **GC21420**	Client: Capital Community Developments	E: 633705.04	N: 253816.12
Location: Area 8, Rendlesham	Consultant:		
	Plant used: JCB 3CX	Date: 12/04/2018	

Geology Description	Legend	Depth	Elevation (maOD) 26.00	Sample / In Situ Test Information Type	Depth	Results / Remarks	Installation & Backfill
MADE GROUND (Soft to firm brown to dark brown slightly silty slightly sandy gravelly CLAY. Gravel is fine to coarse subangular to subrounded flint and chalk).				ES1	0.20		
Firm to stiff greyish brown to orangish brown slightly silty slightly sandy gravelly CLAY with occasional pockets of sand. Gravel is fine to coarse subangular to subrounded chalk with occasional flint.		0.40	25.60	B1	1.00		
Orangish brown slightly gravelly SAND with occasional pockets of very sandy clay. Gravel is fine to medium subangular to subrounded chalk.		2.00	24.00	D1	2.00		
Trial pit terminated at 2.80m.		2.80	23.20				

Weather: Cloudy and dry

Pit Stability: Stable

Shoring Used:

Pit Dimensions: L: 1.90m x W: 0.70m

Water Strike

Date	Strike Depth (m)	Time Elapsed (mins)	Standing Level (m)	Remarks
				No groundwater encountered

Remarks

1. Backfill: GL to 2.80m arisings.
2. Approximate coordinates and elevation.

Norwich Office: 01603 613111
London Office: 020 7537 9233
Cambridge Office: 01223 781585
Testing Services: 01603 416333
E mail: info@harrisongroupuk.com
Website: www.harrisongroupuk.com

Logged by: IH | Checked by: JAu | Fm-Hn-R-3069-Rev C

harrisongroup ENVIRONMENTAL

Trial Pit Record

TP07

Sheet 1 of 1

Project ID: **GC21420**	Client: Capital Community Developments	E: 633782.83	N: 253842.59
Location: Area 8, Rendlesham	Consultant:		
	Plant used: JCB 3CX	Date: 12/04/2018	

Geology Description	Legend	Depth	Elevation (maOD)	Sample / In Situ Test Information			Installation & Backfill
			25.00	Type	Depth	Results / Remarks	
TOPSOIL (Soft to firm brown to dark brown slightly silty slightly gravelly CLAY. Gravel is fine to coarse subangular to subrounded flint).				ES1	0.20		
		0.40	24.60				
Firm to stiff light brown to orangish brown slightly silty slightly sandy gravelly CLAY with occasional pockets of light brown to reddish brown sandy clay. Gravel is fine to medium subangular to subrounded chalk with occasional flint.				D1	0.80		
				D2	1.00		
From 1.40m: Gravel becoming fine to medium subangular to subrounded chalk and flint.				D3	1.50		
From 2.40m: Rare cobbles of chalk and flint.				D4	2.50		
		2.80	22.20				
Orangish brown slightly silty SAND.							
		3.10	21.90				
Trial pit terminated at 3.10m.							

Weather: Cloudy and dry

Pit Stability: Stable

Shoring Used:

Pit Dimensions: L: 1.80m x W: 0.70m

Water Strike

Date	Strike Depth (m)	Time Elapsed (mins)	Standing Level (m)	Remarks
				No groundwater encountered

Remarks

1. Backfill: GL to 3.10m arisings.
2. Approximate coordinates and elevation.

Norwich Office: 01603 613111
London Office: 020 7537 9233
Cambridge Office: 01223 781585
Testing Services: 01603 416333
E mail: info@harrisongroupuk.com
Website: www.harrisongroupuk.com

Logged by: IH | Checked by: JAu | Fm-Hn-R-3069-Rev C

harrisongroup ENVIRONMENTAL

Trial Pit Record

TP08

Sheet 1 of 1

Project ID: **GC21420**	Client: Capital Community Developments	E: 633819.58	N: 253849.18
Location: Area 8, Rendlesham	Consultant:		
	Plant used: JCB 3CX	Date: 12/04/2018	

Geology Description	Legend	Depth	Elevation (maOD) 25.00	Sample / In Situ Test Information: Type	Depth	Results / Remarks	Installation & Backfill
TOPSOIL (Soft to firm brown to dark brown slightly gravelly silty fine to coarse subangular to subrounded flint and chalk).		0.30	24.70	ES1	0.40		
Firm to stiff light brown to orangish brown slightly silty slightly gravelly CLAY. Gravel is fine to medium subangular to subrounded chalk and flint.				B1	1.00		
From 1.20m: Becoming greyish brown and gravelly.				D1	2.00		
Trial pit terminated at 2.30m.		2.30	22.70				

Weather: Cloudy and dry

Pit Stability: Stable

Shoring Used:

Pit Dimensions: L: 2.00m x W: 0.60m

Water Strike

Date	Strike Depth (m)	Time Elapsed (mins)	Standing Level (m)	Remarks
				No groundwater encountered

Remarks

1. Backfill: GL to 0.30m arisings, 0.30m to 2.30m gravel.
2. Approximate coordinates and elevation.

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London Office: 020 7537 9233
Cambridge Office: 01223 781585
Testing Services: 01603 416333
E mail: info@harrisongroupuk.com
Website: www.harrisongroupuk.com

Logged by: IH | Checked by: JAu | Fm-Hn-R-3069-Rev C

harrisongroup ENVIRONMENTAL

Trial Pit Record

TP09

Sheet 1 of 1

Project ID: **GC21420**	Client: Capital Community Developments	E: 633831.83	N: 253851.81
Location: Area 8, Rendlesham	Consultant:		
	Plant used: JCB 3CX	Date: 12/04/2018	

Geology Description	Legend	Depth	Elevation (maOD) 25.00	Sample / In Situ Test Information: Type	Depth	Results / Remarks	Installation & Backfill
TOPSOIL (Soft to firm brown to dark brown silty gravelly CLAY. Gravel is fine to coarse subangular to subrounded flint).							
		0.30	24.70				
Firm to stiff light brown to orangish brown slightly silty slightly gravelly CLAY. Gravel is fine to coarse subangular to subrounded chalk with occasional flint.							
Trial pit terminated at 3.30m.		3.30	21.70				

Weather: Cloudy and dry

Pit Stability: Stable

Shoring Used:

Pit Dimensions: L: 2.00m x W: 0.70m

Water Strike

Date	Strike Depth (m)	Time Elapsed (mins)	Standing Level (m)	Remarks
				No groundwater encountered

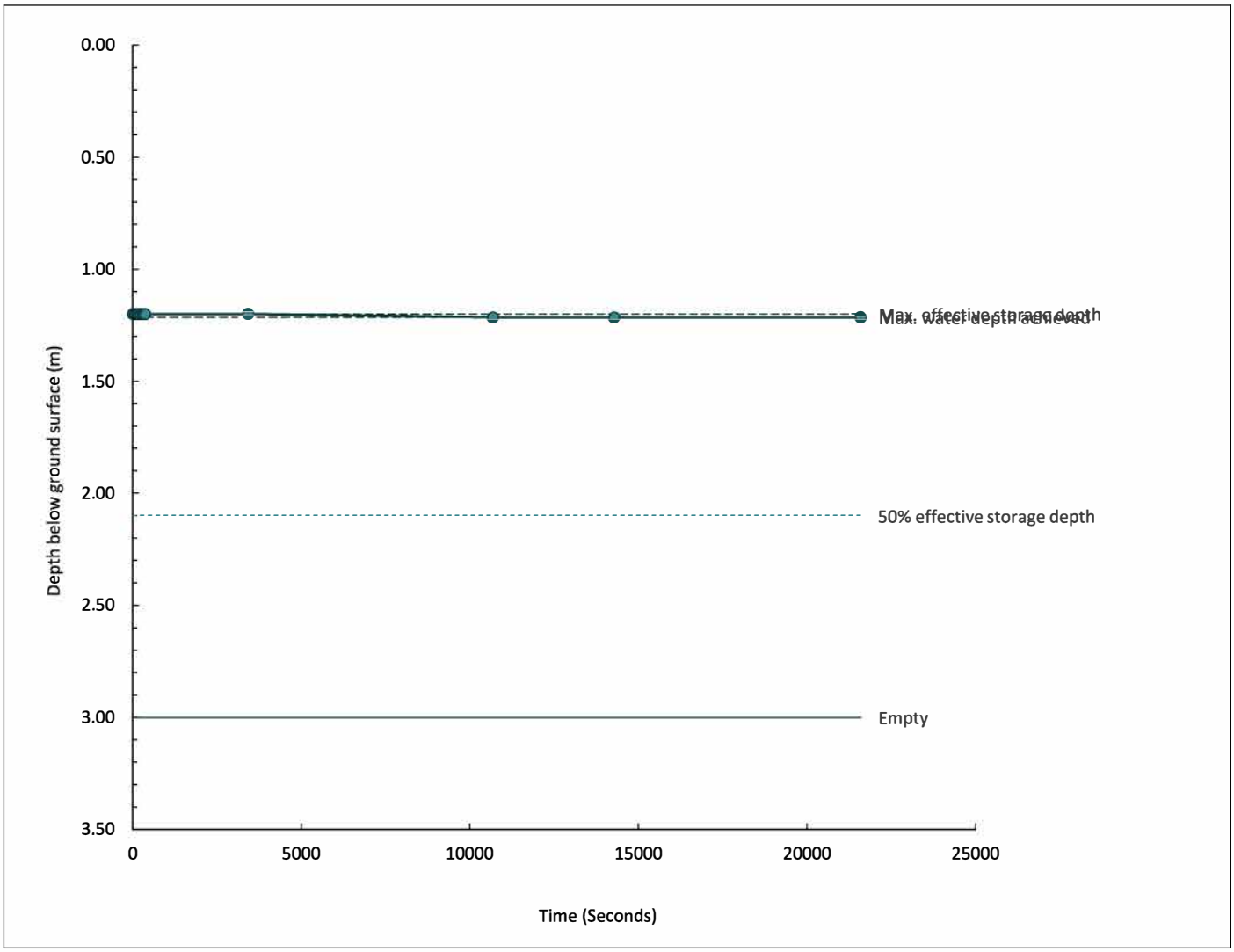
Remarks

1. Backfill: GL to 3.30m arisings.
2. Approximate coordinates and elevation.

Norwich Office: 01603 613111
London Office: 020 7537 9233
Cambridge Office: 01223 781585
Testing Services: 01603 416333
E mail: info@harrisongroupuk.com
Website: www.harrisongroupuk.com

Logged by: IH | Checked by: JAu | Fm-Hn-R-3069-Rev C

harrisongroup ENVIRONMENTAL	Soakaway Test	Location ID - Test Number
		TP01
Project ID: GC21420	Client: Capital Community Developments	E: 633750.58 N: 253731.25
Location: Area 8, Rendlesham	Consultant:	Ground Level: 25.00
	Infilling 1	Test Date: 13/04/2018



Soil Infiltration Rate: N/A

Pit Dimensions			
Length (m)	Width (m)	Depth at Start of Test (m)	Depth at End of Test (m)
2.40	0.70	3.00	3.00

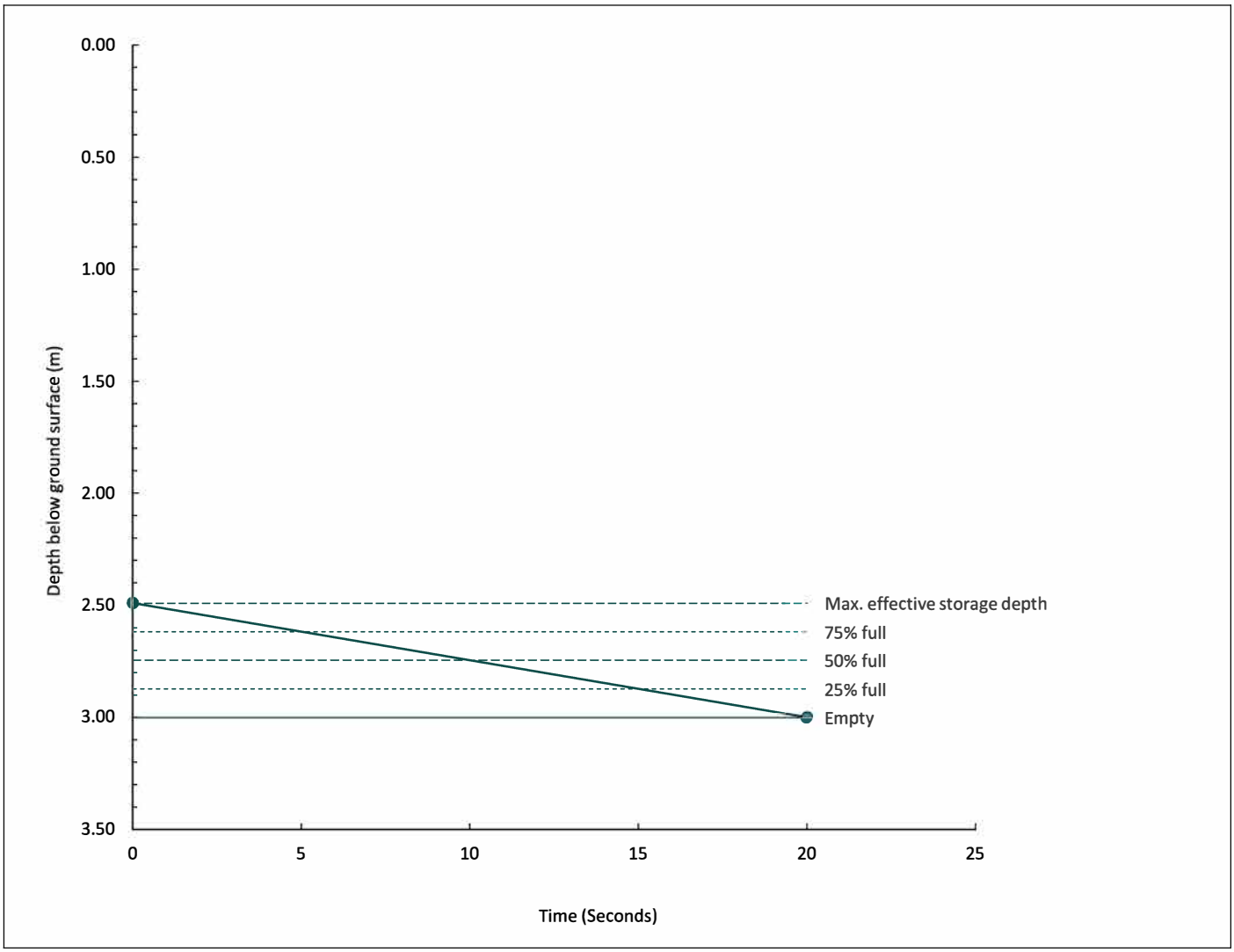
Fill Porosity: 30%	Test Duration (hh:mm): 06:00	Soakaway Construction: Vertical sides trimmed square with granular fill and observation tube

Norwich Office: 01603 613111
London Office: 020 7537 9233
Cambridge Office: 01223 781585
Testing Services: 01603 416333

E mail: info@harrisongroupuk.com
Website: www.harrisongroupuk.com

Water measuring device: Dip Meter	Remarks:		
Weather conditions: Cloudy and dry			
Test in accordance with BRE DG 365 Revised 2016			
Operator: IH	Checked by: JAu	Approved by: JAu	Fm-Hn-R-3064-Rev B

harrisongroup ENVIRONMENTAL	Soakaway Test	Location ID - Test Number
		TP03
Project ID: GC21420	Client: Capital Community Developments	E: 633655.19 N: 253742.80
Location: Area 8, Rendlesham	Consultant:	Ground Level: 26.00
	Infilling 1	Test Date: 13/04/2018



Soil Infiltration Rate: 1.27E-2 m/second

Pit Dimensions			
Length (m)	Width (m)	Depth at Start of Test (m)	Depth at End of Test (m)
1.80	0.70	3.00	3.00

Fill Porosity: 30%	Test Duration (hh:mm): 00:00	Soakaway Construction: Vertical sides trimmed square with granular fill and observation tube

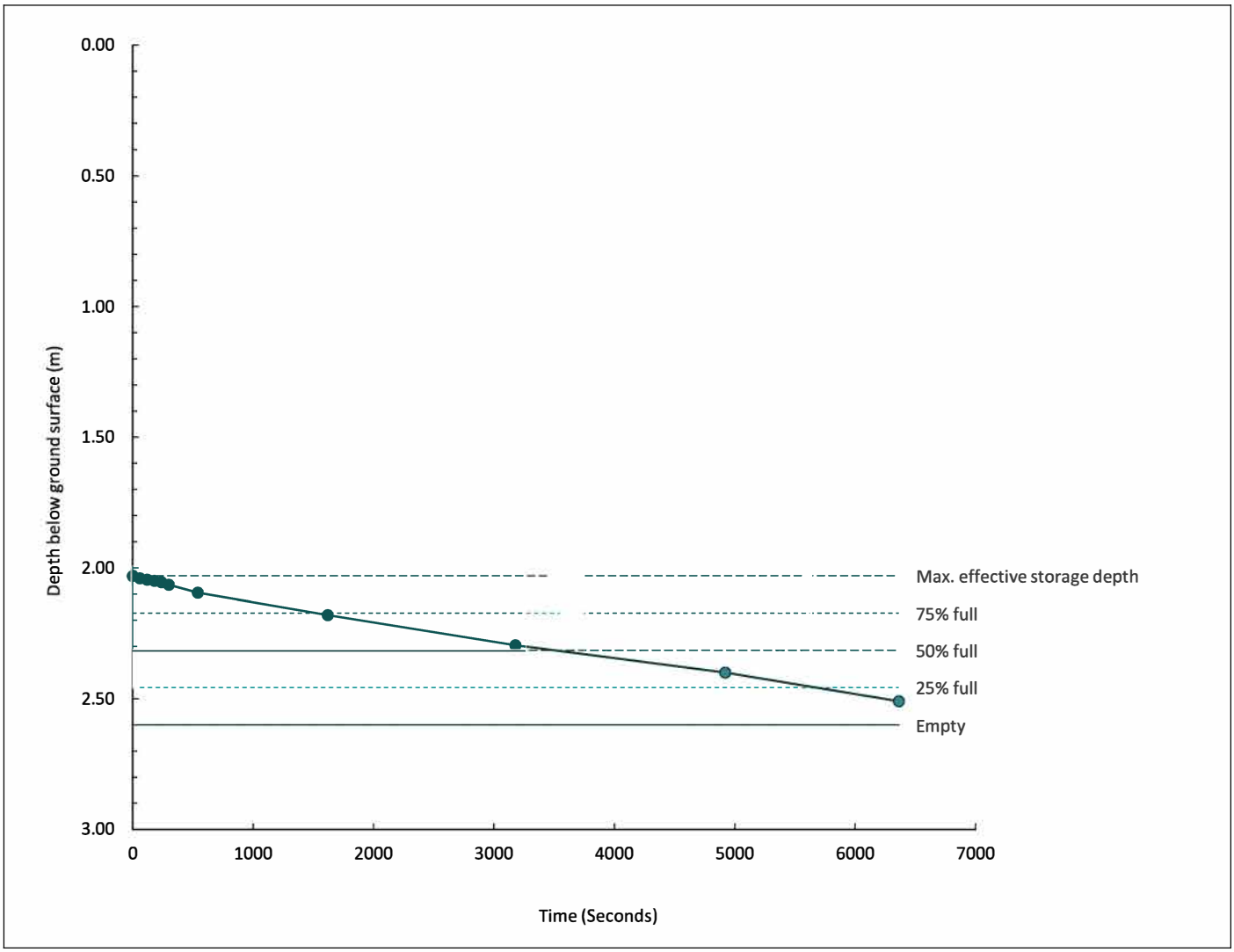
Norwich Office: 01603 613111
London Office: 020 7537 9233
Cambridge Office: 01223 781585
Testing Services: 01603 416333

E mail: info@harrisongroupuk.com
Website: www.harrisongroupuk.com

Water measuring device: Dip Meter	Remarks: 1. Water draining faster than bowser could infill for test.
Weather conditions: Cloudy and dry	
Test in accordance with BRE DG 365 Revised 2016	

Operator: IH	Checked by: JAu	Approved by: JAu	Fm-Hn-R-3064-Rev B

harrisongroup ENVIRONMENTAL	Soakaway Test	Location ID - Test Number
		TP05
Project ID: GC21420	Client: Capital Community Developments	E: 633678.41 N: 253815.95
Location: Area 8, Rendlesham	Consultant:	Ground Level: 26.00
	Infilling 1	Test Date: 13/04/2018



Soil Infiltration Rate: 3.25E-5 m/second

Pit Dimensions			
Length (m)	Width (m)	Depth at Start of Test (m)	Depth at End of Test (m)
1.90	0.70	2.60	2.60

Fill Porosity: 30%	Test Duration (hh:mm): 01:46	Soakaway Construction: Vertical sides trimmed square with granular fill and observation tube

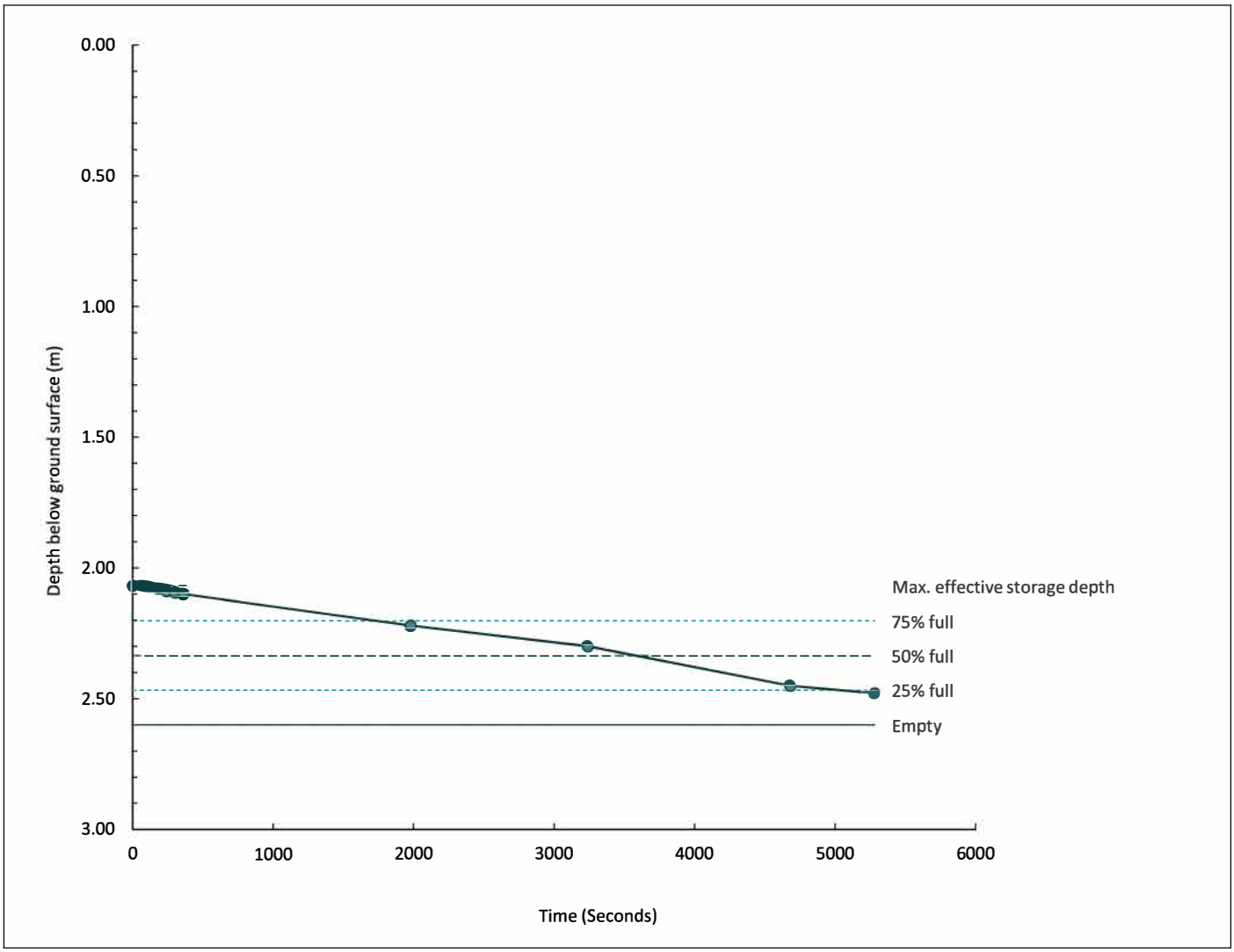
Norwich Office: 01603 613111
London Office: 020 7537 9233
Cambridge Office: 01223 781585
Testing Services: 01603 416333

E mail: info@harrisongroupuk.com
Website: www.harrisongroupuk.com

Water measuring device: Dip Meter	Remarks:
Weather conditions: Cloudy and dry	
Test in accordance with BRE DG 365 Revised 2016	

Operator: IH	Checked by: JAu	Approved by: JAu	Fm-Hn-R-3064-Rev B

harrisongroup ENVIRONMENTAL	Soakaway Test	Location ID - Test Number
		TP05
Project ID: GC21420	Client: Capital Community Developments	E: 633678.41 N: 253815.95
Location: Area 8, Rendlesham	Consultant:	Ground Level: 26.00
	Infilling 2	Test Date: 13/04/2018



Soil Infiltration Rate: 3.96E-5 m/second

Pit Dimensions			
Length (m)	Width (m)	Depth at Start of Test (m)	Depth at End of Test (m)
1.90	0.70	2.60	2.60

Fill Porosity: 30%	Test Duration (hh:mm): 01:28	Soakaway Construction: Vertical sides trimmed square with granular fill and observation tube

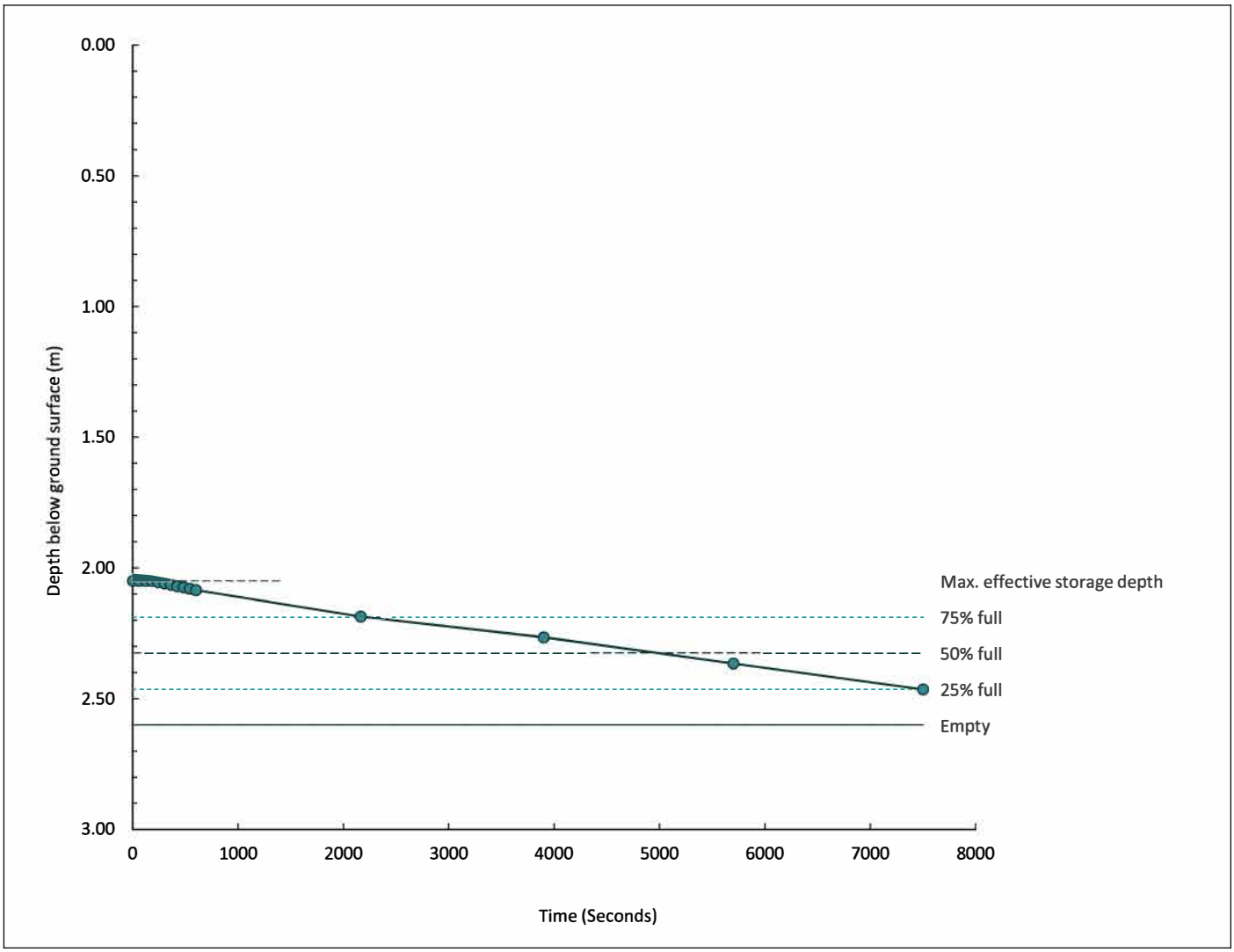
Norwich Office: 01603 613111
London Office: 020 7537 9233
Cambridge Office: 01223 781585
Testing Services: 01603 416333

E mail: info@harrisongroupuk.com
Website: www.harrisongroupuk.com

Water measuring device: Dip Meter	Remarks:
Weather conditions: Cloudy and dry	
Test in accordance with BRE DG 365 Revised 2016	

Operator: IH	Checked by: JAu	Approved by: JAu	Fm-Hn-R-3064-Rev B

harrisongroup ENVIRONMENTAL	Soakaway Test	Location ID - Test Number
		TP05
Project ID: GC21420	Client: Capital Community Developments	E: 633678.41 N: 253815.95
Location: Area 8, Rendlesham	Consultant:	Ground Level: 26.00
	Infilling 3	Test Date: 13/04/2018



Soil Infiltration Rate: 2.53E-5 m/second

Pit Dimensions			
Length (m)	Width (m)	Depth at Start of Test (m)	Depth at End of Test (m)
1.90	0.70	2.60	2.60

Fill Porosity: 30%	Test Duration (hh:mm): 02:05	Soakaway Construction: Vertical sides trimmed square with granular fill and observation tube

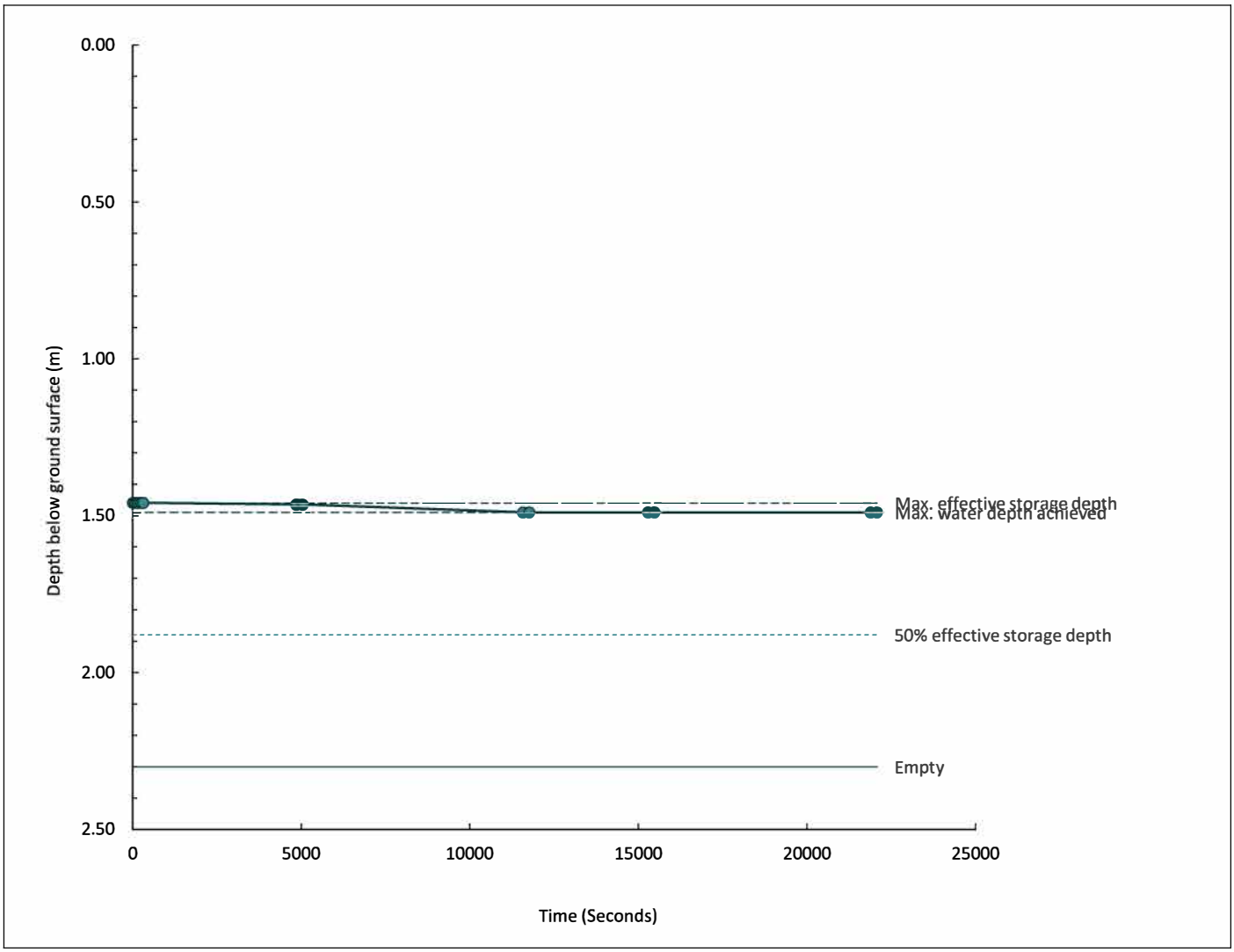
Norwich Office: 01603 613111
London Office: 020 7537 9233
Cambridge Office: 01223 781585
Testing Services: 01603 416333

E mail: info@harrisongroupuk.com
Website: www.harrisongroupuk.com

Water measuring device: Dip Meter	Remarks:
Weather conditions: Cloudy and dry	
Test in accordance with BRE DG 365 Revised 2016	

Operator: IH	Checked by: JAu	Approved by: JAu	Fm-Hn-R-3064-Rev B

harrisongroup ENVIRONMENTAL	Soakaway Test	Location ID - Test Number
		TP08
Project ID: GC21420	Client: Capital Community Developments	E: 633819.58 N: 253849.18
Location: Area 8, Rendlesham	Consultant:	Ground Level: 25.00
	Infilling 1	Test Date: 13/04/2018



Soil Infiltration Rate: N/A

Pit Dimensions			
Length (m)	Width (m)	Depth at Start of Test (m)	Depth at End of Test (m)
2.00	0.60	2.30	2.30

Fill Porosity: 30%	Test Duration (hh:mm): 06:05	Soakaway Construction: Vertical sides trimmed square with granular fill and observation tube

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London Office: 020 7537 9233
Cambridge Office: 01223 781585
Testing Services: 01603 416333

E mail: info@harrisongroupuk.com
Website: www.harrisongroupuk.com

Water measuring device: Dip Meter

Weather conditions: Cloudy and dry

Test in accordance with BRE DG 365 Revised 2016

Remarks:

Operator: IH	Checked by: JAu	Approved by: JAu	Fm-Hn-R-3064-Rev B

APPENDIX C

LABORATORY TESTING

Chemical Laboratory Test Results

Iain Hall
Harrison Group
Future Business Centre
King's Hedges Road
Cambridge
CB4 2HY

e: iainh@harrisongroupuk.com

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 18-82550

Project / Site name:	Rendlesham	**Samples received on:**	19/04/2018
Your job number:	GC21420	**Samples instructed on:**	19/04/2018
Your order number:	GC21420-31414-IH	**Analysis completed by:**	25/04/2018
Report Issue Number:	1	**Report issued on:**	25/04/2018
Samples Analysed:	4 soil samples		

Signed: [redacted]

Jordan Hill
Reporting Manager
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

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Analytical Report Number: 18-82550

Project / Site name: Rendlesham
Your Order No: GC21420-31414-IH

Lab Sample Number				945171	945172	945173	945174	
Sample Reference				TP02	TP03	TP05	TP08	
Sample Number				ES1	ES1	ES1	ES1	
Depth (m)				0.20-0.30	0.50-0.60	0.20-0.30	0.40-0.50	
Date Sampled				12/04/2018	12/04/2018	12/04/2018	12/04/2018	
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	19	< 0.1	
Moisture Content	%	N/A	NONE	15	15	11	12	
Total mass of sample received	kg	0.001	NONE	0.49	0.48	0.55	0.50	
Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Chrysotile- Loose Fibres	-	-	-	
Asbestos in Soil	Type	N/A	ISO 17025	Detected	Not-detected	Not-detected	Not-detected	
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	7.2	7.3	7.7	8.1	
Total Organic Carbon (TOC)	%	0.1	MCERTS	1.2	1.2	0.9	1.7	
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.34	
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	0.31	
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	< 0.80	< 0.80	< 0.80	

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Lab Sample Number				945171	945172	945173	945174	
Sample Reference				TP02	TP03	TP05	TP08	
Sample Number				ES1	ES1	ES1	ES1	
Depth (m)				0.20-0.30	0.50-0.60	0.20-0.30	0.40-0.50	
Date Sampled				12/04/2018	12/04/2018	12/04/2018	12/04/2018	
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	11	13	12	10	
Boron (total)	mg/kg	1	MCERTS	13	13	13	11	
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	20	18	16	17	
Copper (aqua regia extractable)	mg/kg	1	MCERTS	15	14	13	14	
Lead (aqua regia extractable)	mg/kg	1	MCERTS	22	24	23	32	
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	18	18	18	15	
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	49	47	45	49	
Petroleum Hydrocarbons								
TPH (C5 - C6)	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	
TPH (C6 - C7)	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	
TPH (C7 - C8)	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0	< 1.0	
TPH (C8 - C10)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	
TPH (C10 - C12)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	
TPH (C12 - C16)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	
TPH (C16 - C21)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	
TPH (C21 - C35)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	

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* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
945171	TP02	ES1	0.20-0.30	Brown clay and loam.
945172	TP03	ES1	0.50-0.60	Brown clay and sand with gravel.
945173	TP05	ES1	0.20-0.30	Brown clay and sand with stones.
945174	TP08	ES1	0.40-0.50	Brown loam and clay with brick and vegetation.

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Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests""	L009-PL	D	MCERTS
TPH 8 Band (Soil)	Determination of extractable petroleum hydrocarbons in soil.	In-house method	L064/076PL	D	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

APPENDIX D

MONITORING RECORDS

Ground Gas and Groundwater Monitoring Record

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Gas Monitoring Field Record

FM-Hn-G-0123-REVC

Client:	CCD	Site Name:	Rendlesham	Job No:	GC21420

Equipment	Model	Serial No.	Cal Due Date:
Land Gas Analyser	GA5000	G501751	
PID	Tiger VOC detector	T-108346	12/07/2017

Date and Weather Conditions

Borehole I.D.	Date	Time (hhmmss)	Monitoring Engineer	Baro (mBar)	Relative Pressure (mBar)	Flow Rate (l/Hr)		Methane CH_4 (%)	Carbon Dioxide CO_2 (%)	Oxygen O_2 (%)	Carbon Monoxide CO (ppm)	Hydrogen Sulphide H_2S (ppm)	PID IBL (ppm)		PID HEX (ppm)		Water level (mbgl)	Well Base (mbgl)
						Peak	Mean						Peak	Mean	Peak	Mean		
DCS03	19/03/2018	12:30	JW	1022	-0.02	0.1	0.0	0.0	0.5	19.9	2	0	-	-	-	-	Dry	3.92

Other Remarks:

H

Extracts from Geophysical Survey, Suffolk Archaeological, November 2017

Figure 4

Figure 6