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# GEO-ENVIRONMENTAL & GEOTECHNICAL ASSESSMENT (GROUND INVESTIGATION) REPORT

EGLEY ROAD, WOKING, GU22 0AF



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	Egley Road, Woking, GU22 0AF			
Report Status:	Final v1.2			
Job No:	P1381J1549/AMM			
Date:	21st November 2019			
OUALITY CONTROL – PREVIOUS RELEASE				
QUALITY CONT	ROL – PREVIOUS REI	EASE		
QUALITY CONT	ROL – PREVIOUS REI	EASE Date	Issued By	
QUALITY CONT Version Final v1.1	ROL – PREVIOUS REI	EASE Date 12th November 2019	Issued By AM	
QUALITY CONT Version Final v1.1 Final v1.0	ROL – PREVIOUS REI	EASE Date 12th November 2019 11th April 2019	AM AM	

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## **EXECUTIVE SUMMARY**

Woking Football Club commissioned Jomas Associates Ltd to undertake a Geo-environmental and Geotechnical ground investigation at the site located at Egley Road, Woking, GU22 0AF.

The principle objectives of the study were as follows:

- To determine the nature and where possible, the extent of contaminants potentially present at the site;
- To establish the presence of significant pollutant linkages, in accordance with the procedures set out within the Environment Agency (EA) report R&D CLR11 and relevant guidance within the National Planning Policy Framework (NPPF);
- To assess whether the site is safe and suitable for the purpose for which it is intended, or can be made so by remedial action; and,
- To obtain geotechnical parameters to inform preliminary foundation design.

It should be noted that the table below is an executive summary of the findings of this report and is for briefing purposes only. Reference should be made to the main report for detailed information and analysis.

	Site History and Ground Investigation			
Current Site Use	Unoccupied modern barn situated within a larger piece of land.			
Proposed Site Use	Mixed use development comprising residential dwellings and leisure facility.			
Desk Study Overview	A Desk Study report has been produced for the site and issued separately (Jomas – August 2018). A brief overview of the desk study findings is presented below. Reference should be made to the full report for detailed information.			
	A review of earliest available (1871) historical maps indicates that the site comprised undeveloped and/or agricultural land. On the plan dated 1897 the southern half of site is identified as a nursery. No other significant changes are noted from the historical plans. During the Jomas walkover development on site was noted as a new barn and access road within the north east corner.			
	The site vicinity on the earliest available map comprised predominately agricultural land. A railway line is noted on the western boundary on the 1871 plan until modern day. The area of Mayford towards the south east shows residential buildings and a large garden centre directly east of site. During the Jomas walkover an off-site development identified as a large school and an electrical substation was noted towards the north of site.			
	The British Geological Survey indicates that the site is directly underlain by solid sand deposits of the Bagshot Formation. There are no superficial or artificial deposits within the site area.			
	The solid deposits directly underlying the site are identified as a Secondary A Aquifer.			
	There are no source protection zones within 500m of the site. There are no groundwater, surface water or potable water abstractions reported within 1km of the site. The nearest detailed river entry is reported 1949m east of the site, identified as an inland river.			
Intrusive Investigation	The ground investigation was undertaken in two phases on 12 <sup>th</sup> to 13 <sup>th</sup> February and 06 <sup>th</sup> to 7 <sup>th</sup> March 2019 , and consisted of the following:			
	• 8No window sampling boreholes, drilled up to 5.45m below ground level (bgl), with associated in situ testing and sampling;			
	• 3No cable percussive boreholes, drilled up to 15.00m bgl, with associated in situ testing and sampling;			
	• 2No mechanically excavated trial pits, completed up to 1.50m bgl with associated sampling;			



	Site History and Ground Investigation
	<ul> <li>2No hand dug trial pits, completed up to 1.00m bgl with associated sampling;</li> <li>5No combined soil gas and groundwater monitoring wells, targeted response zone within sand deposits;</li> <li>California Bearing Ratio tests completed at 5No exploratory hole locations;</li> <li>4No. return visits to monitor ground gas concentrations and groundwater levels;</li> <li>Laboratory analysis for chemical and geotechnical purposes.</li> </ul>
Ground Conditions	The results of the ground investigation revealed a ground profile comprising Topsoil and Made Ground over sand deposits considered to represent the Bagshot Formation. During the intrusive works groundwater was reported in a singular exploratory hole WS9 as s seepage at 0.40m bgl. Groundwater was not reported in any of the other exploratory holes during the intrusive investigation. 4No groundwater monitoring visits were undertaken between 14 <sup>th</sup> March 2019 and 2nd April 2019. Groundwater strikes were reported between 1.78m and 3.94m bgl.
Environmental Considerations	<ul> <li>Following generic risk assessments, no elevated concentrations were detected in soils in excess of generic assessment criteria for the protection of human health within a residential with plant uptake end-use scenario.</li> <li>No asbestos fibres were detected in the samples analysed in the laboratory.</li> <li>Risks to controlled waters are not considered to be significant.</li> <li>The water supply pipe requirements should be discussed at an early stage with the relevant utility provider.</li> <li>Following gas monitoring, the wider site can been characterised as Characteristic Situation 1, where gas protection measures are not required. However, it is recommended that additional monitoring well installations be installed and subsequent return gas monitoring are recommended within the area of the former contractors compound. The objective would to determine whether the concentrations of methane and carbon dioxide detected in WS2 are representative of this area, which would likely necessitate gas protection measures complying with a CS2 classification, or whether they are localised to the vicinity of WS2, in which case a CS1 classification would be considered appropriate.</li> <li>As with any ground investigation, the presence of further hotspots between sampling points cannot be ruled out. Should any contamination be encountered, a suitably qualified environmental consultant should be informed immediately, so that adequate measures may be recommended.</li> </ul>
Geotechnical Considerations	<ul> <li>Based on the findings of this investigation, it is considered that traditional strip footings of 1m breadth formed at a depth in the order of 1.5-2m bgl within the underlying sands could be designed with an allowable bearing capacity of 175kPa. Alternatively, if greater bearing capacities are required a piled foundation solution has been considered.</li> <li>Foundations should not be formed in the granular materials until the granular materials have been proof compacted. Given the depth and likely size of these foundations it is considered that this could be undertaken using a hydraulic "elephants foot" or if the whole basement founding layer is compacted at the same time a vibrating roller or "whacker plate" if the machinery can be easily taken into the excavation and the stability of the excavation / safety of any workers entering the excavation can be assured.</li> <li>Excavations during the intrusive works, although open for a relatively short period of time remained reasonably stable. However, it is recommended that the stability of all excavations should be assessed during construction. Attention is also drawn to the provisions of the Health and Safety at Work Regulations, which state that the sides of any excavations greater than 1.2m</li> </ul>



Site History and Ground Investigation			
	depth, into which personnel are required to enter, should be fully supported or battered back to a safe angle.		
	Based on the results of chemical testing, the required concrete class for the site is DS-2 assuming an Aggressive Chemical Environment for Concrete classification of AC-2 in accordance with the procedures outlined in BRE Special Digest 1.		
	Interim Advice Note 73/06 Revision 1 Design Guidance for Road Pavement Foundations, suggest that a minimum permitted design CBR of 1.5% is used. Where a subgrade has a lower CBR, it is considered unsuitable support for a pavement foundation. It must therefore be permanently improved.		



## 1 INTRODUCTION

#### 1.1 Terms of Reference

- 1.1.1 Woking Football Club ("The Client") has commissioned Jomas Associates Ltd, to assess the risk of contamination posed by the ground conditions at a site referred to as Egley Road, Woking, GU22 OAF and to provide indicative recommendations for foundation design prior to the redevelopment of the site.
- 1.1.2 To this end a Desk Study has been produced for the site and issued separately (Jomas, August 2018), followed by an intrusive investigation (detailed in this report).
- 1.1.3 A full list of previous reports undertaken for the site by Jomas are detailed in Table 1.1:

August 2019
August 2010

1.1.4 The intrusive investigation was undertaken in accordance with Jomas proposal dated 08 February 2019.

#### 1.2 Proposed Development

1.2.1 The proposed development comprises the following:

'Redevelopment of the site, following the demolition of the existing building, to provide a health club building (Class D2) incorporating an external swimming pool and tennis/sports courts, the provision of 36 dwelling houses (Class C3) up to a maximum of 3 storeys in height, associated landscaping and car parking and new vehicular access from an existing road servicing Hoe Valley School.'

- 1.2.2 For the purposes of the contamination risk assessment, the proposed development is classified as 'Residential with plant uptake'.
- 1.2.3 For the purpose of geotechnical assessment, it is considered that the project could be classified as a Geotechnical Category (GC) 2 site in accordance with BS EN 1997. GC 2 projects are defined as involving:
  - Conventional structures.
  - Quantitative investigation and analysis.
  - Normal risk.
  - No difficult soil and site conditions.
  - No difficult loading conditions.
  - Routine design and construction methods.



## 1.3 Objectives

1.3.1 The objectives of Jomas' investigation were as follows:

- To conduct an intrusive investigation, to determine the nature and extent of contaminants potentially present at the site;
- To establish the presence of significant pollutant linkages, in accordance with the procedures set out within Part IIA of the Environmental Protection Act 1990, associated statutory guidance and current best practice including the EA report R&D CLR 11; and,
- To obtain geotechnical parameters to inform preliminary foundation design.

## 1.4 Scope of Works

- 1.4.1 The following tasks were undertaken to achieve the objectives listed above:
  - Intrusive ground investigation to determine shallow ground conditions, and potential for contamination at the site;
  - Undertaking of laboratory chemical and geotechnical testing upon samples obtained;
  - The compilation of this report, which collects and discusses the above data, and presents an assessment of the site conditions, conclusions and recommendations.

#### 1.5 Supplied Documentation

1.5.1 Jomas Associates were not supplied with any previously produced reports at the time of writing this report.

#### 1.6 Limitations

- 1.6.1 Jomas Associates Ltd has prepared this report for the sole use of Woking Football Club, in accordance with the generally accepted consulting practices and for the intended purposes as stated in the agreement under which this work was completed. This report may not be relied upon by any other party without the explicit written agreement of Jomas Associates Limited. No other third party warranty, expressed or implied, is made as to the professional advice included in this report. This report must be used in its entirety.
- 1.6.2 The records search was limited to information available from public sources; this information is changing continually and frequently incomplete. Unless Jomas Associates Limited has actual knowledge to the contrary, information obtained from public sources or provided to Jomas Associates Limited by site personnel and other information sources, have been assumed to be correct. Jomas Associates Limited does not assume any liability for the misinterpretation of information or for items not visible, accessible or present on the subject property at the time of this study.
- 1.6.3 Whilst every effort has been made to ensure the accuracy of the data supplied, and any analysis derived from it, there may be conditions at the site that have not been disclosed by the investigation, and could not therefore be taken into account. As with any site, there may be differences in soil conditions between exploratory hole positions. Furthermore, it should be noted that groundwater conditions may vary due to seasonal and other effects and may at times be significantly different from those measured by the investigation. No liability can be accepted for any such variations in these conditions.



- 1.6.4 Any reports provided to Jomas Associates Limited have been reviewed in good faith. Jomas Associates Limited cannot be held liable for any errors or omissions in these reports, or for any incorrect interpretation contained within them.
- 1.6.5 This investigation and report has been carried out in accordance with the relevant standards and guidance in place at the time of the works. Future changes to these may require a re-assessment of the recommendations made within this report.
- 1.6.6 This report is not an engineering design and the figures and calculations contained in the report should be used by the Structural Engineer, taking note that variations may apply, depending on variations in design loading, in techniques used, and in site conditions. Our recommendations should therefore not supersede the Engineer's design.



## 2 SITE SETTING

#### 2.1 Site Information

2.1.1

The site location plan is appended to this report in Figure 1.

#### Table 2.1: Site Information

Name of Site	Land Adjacent to Egley Road
Address of Site	Egley Road Woking GU22 ONJ
Approx. National Grid Ref.	499416 156437
Site Area (Approx)	4.1ha
Site Occupation	Unoccupied land with single barn
Local Authority	Woking Borough Council
Proposed Site Use	Demolition of existing buildings for the construction of new buildings for commercial and residential use.

#### 2.2 Desk Study Overview

- 2.2.1 A Desk Study report has been produced for the site and issued separately (Jomas August 2018). A brief overview of the desk study findings is presented below. Reference should be made to the full report for detailed information.
- 2.2.2 A review of earliest available (1871) historical maps indicates that the site comprised undeveloped and/or agricultural land. On the plan dated 1897 the southern half of site is identified as a nursery. No other significant changes are noted from the historical plans. During the Jomas walkover development on site was noted as a new barn and access road within the north east corner.
- 2.2.3 The site vicinity on the earliest available map comprised predominately agricultural land. A railway line is noted on the western boundary on the 1871 plan until modern day. The area of Mayford towards the south east shows residential buildings and a large garden centre directly east of site. During the Jomas walkover an off site development identified as a large school and an electrical substation was noted to the north of site.
- 2.2.4 The British Geological Survey indicates that the site is directly underlain by solid sand deposits of the Bagshot Formation. There are no superficial or artificial deposits within the site area.
- 2.2.5 The solid deposits directly underlying the site are identified as a Secondary A Aquifer.
- 2.2.6 There are no source protection zones within 500m of the site. There are no groundwater, surface water or potable water abstractions reported within 1km of the site. The nearest detailed river entry is reported 1949m east of the site, identified as an inland river.
- 2.2.7 Recommendations of the preliminary risk assessment included an intrusive investigation. This was recommended to further assess the potential pollution linkages identified.

The conceptual site model is reproduced in Table 2.2 overleaf.



Sources	Pathways (P)	Receptors	Consequence of Impact	Probability of Impact	Risk Estimation	Hazard Assessment
<ul> <li>Potential for Made Ground associated with previous development operations – on site (S1)</li> <li>Barn development,</li> </ul>	<ul> <li>Ingestion and dermal contact with contaminated soil (P1)</li> <li>Inhalation or contact with potentially contaminated dust and vapours (P2)</li> </ul>	<ul> <li>Construction workers (R1)</li> <li>Maintenance workers (R2)</li> <li>Neighbouring site users (R3)</li> <li>Future site users (R4)</li> <li>Building foundations and on site</li> </ul>	Medium	Low	Moderate	GI – Ground Investigation
<ul> <li>contractors compound and track (north east)</li> <li>Potential for contamination associated with previous development operations – off site (S2)</li> </ul>	<ul> <li>contractors compound and track (north east)</li> <li>Potential for contamination associated with previous development operations – off site (S2)</li> <li>Permeation of water pipes and attack on concrete foundations by aggressive soil conditions (P6)</li> </ul>	buried services (water mains, electricity and sewer) (R5)	Severe for Asbestos	Low	Moderate	
<ul> <li>Rail track (west)</li> <li>Potential for contaminated ground from historic use as a nursery – southern half of site</li> </ul>	<ul> <li>Accumulation and migration of soil gases (P5)</li> </ul>		Severe	Unlikely	Low	
(53)	<ul> <li>Leaching through permeable soils, migration within the vadose zone (i.e., unsaturated soil above the water table) and/or lateral migration within surface water, as a result of cracked hardstanding or via service pipe/corridors and surface water runoff. (P3)</li> <li>Horizontal and vertical migration of contaminants within groundwater (P4)</li> </ul>	<ul> <li>Neighbouring site users (R3)</li> <li>Controlled Waters – secondary (A) aquifer, Hoe Stream (R6)</li> <li>Building foundations and on site buried services (water mains, electricity and sewer) (R5)</li> </ul>	Medium	Unlikely	Low	



## **3 GROUND INVESTIGATION**

#### 3.1 Rationale for Ground Investigation

- 3.1.1 The site investigation has been undertaken generally in accordance with Contaminated Land Report 11, BS10175, NHBC Standards Chapter 4.1, and other associated Statutory Guidance. If required, further targeted investigations and remedial option appraisal would be dependent on the findings of this site investigation.
- 3.1.2 The soil sampling rationale for the site investigation was developed with reference to EA guidance 'Secondary Model Procedure for the Development of Appropriate Soil Sampling Strategies for Land Contamination' (Technical Report P5-066/TR).
- 3.1.3 The sampling proposal was designed in order to gather data representative of the site conditions particularly targeting the sources identified in Table 2.1.

#### 3.2 Scope of Ground Investigation

- 3.2.1 The ground investigation was undertaken in two phases on 12th February and 06th March 2019.
- 3.2.2 The work was undertaken in accordance with BS5930 'Code of Practice for Site Investigation' and BS10175 'Investigation of Potentially Contaminated Sites'. All works were completed without incident.
- 3.2.3 The investigation focused on collecting data on the following:
  - Quality of Made Ground/natural ground within the site boundaries;
  - Presence of groundwater beneath the site (if any), perched or otherwise;
  - Determination of the presence or absence of hazardous ground gases
  - Obtaining geotechnical parameters to allow initial design to take place.
- 3.2.4 A summary of the fieldwork carried out at the site, with justifications for exploratory hole positions, are offered in Table 3.1 below.

#### Table 3.1: Scope of Intrusive Investigation

Investigation Type	Number of Exploratory Holes Achieved	Exploratory Hole Designation	Depth Achieved (m BGL)	Justification
Window Sample Boreholes	8	WS2 – WS10	Up to 5.45mbgl	Obtain shallow samples for laboratory contamination and geotechnical testing. To allow in-situ geotechnical testing. WS2 – Positioned adjacent to 'fire pit' WS7 – Positioned adjacent to barrel storage area

## SECTION 3 GROUND INVESTIGATION



Investigation Type	Number of Exploratory Holes Achieved	Exploratory Hole Designation	Depth Achieved (m BGL)	Justification
Cable Percussion Boreholes	3	BH1 – BH3	Up to 15.00mbgl	Obtain deeper samples for laboratory contamination and geotechnical testing. To allow in-situ geotechnical testing.
Monitoring Wells	5	WS2, WS4, WS5, WS7, WS10	Up to 4.96mbgl	Combined soil gas and groundwater monitoring wells, targeted response zone within sand deposits.
Mechanically Excavated Trial Pits	2	TP1 – TP2	Up to 1.50mbgl	Obtain samples for laboratory contamination testing.
Hand Dug Trial Pits	2	HDP1 – HDP2	Up to 1.00mbgl	Obtain samples for laboratory contamination testing.
California Bearing Ratio Tests	5	CBR1, CBR2, CBR5, CBR7, CBR10	Up to 1.00mbgl	To inform roadway design.

- 3.2.5 The exploratory holes were completed to allow soil samples to be taken in the areas of interest identified in Table 3.1 above. In all cases, all holes were logged in accordance with BS5930:2015.
- 3.2.6 Exploratory hole positions were located approximately with reference to known features on site as shown in the exploratory hole location plan presented in Figure 2. The exploratory hole records are included in Appendix 2.
- 3.2.7 Where monitoring well installations were not installed, the exploratory holes were backfilled with the arisings (in the reverse order in which they were drilled) and the ground surface was reinstated so that no depression was left.

## 3.3 In-situ Geotechnical Testing

- 3.3.1 In-situ geotechnical testing included Standard Penetration Tests. The determined 'N' values have been used to determine the relative density of granular materials and have been used with standard correlations to infer various other derived geotechnical parameters including the undrained shear strength of the cohesive strata. The results of the individual tests are on the appropriate exploratory hole logs in Appendix 2.
- In-situ California Bearing Ratio (CBRs) were determined across the site using the dynamic probe methodology using a Perth Penetrometer Probe and the methodology laid out in IAN 73/06. Copies of the results and calculations are provided in Appendix 6.

## 3.4 Sampling Rationale



- 3.4.1 Our soil sampling rationale for the site investigation was developed with reference to EA guidance 'Secondary Model Procedure for the Development of Appropriate Soil Sampling Strategies for Land Contamination' (Technical Report P5-066/TR).
- 3.4.2 The exploratory holes were positioned by applying a combined non-targeted sampling strategy, as well as sample locations positioned with reference to sources identified from the desk study.
- 3.4.3 Soil samples were taken from across the site at various depths as shown in the exploratory hole logs.
- 3.4.4 Jomas Associates Limited's engineers normally collect samples at appropriate depths based on field observations such as:
  - appearance, colour and odour of the strata and other materials, and changes in these;
  - the presence or otherwise of sub-surface features such as pipework, tanks, foundations and walls; and,
  - areas of obvious damage, e.g. to the building fabric.
- 3.4.5 A number of the samples were taken from the top 0-1m to aid in the assessment of the pollutant linkages identified at the site. In addition, some deeper samples were taken to aid in the interpretation of fate and transport of any contamination identified.
- 3.4.6 Soil samples were taken from across the site at various depths as shown in the exploratory hole logs (copies of which are provided in Appendix 2). The methodology used and type of samples taken were chosen to allow the Sampling category to be A or B according to EN ISO 22475-1. This in turn allows suitable geotechnical testing to be carried out.
- 3.4.7 Groundwater strikes noted during drilling, are recorded within the exploratory hole records in Appendix 2.
- 3.4.8 Samples were stored in cool boxes (<4°C) and preserved in accordance with laboratory guidance.

#### 3.5 Sampling Limitations

- 3.5.1 WS1 was substituted with a mechanically excavated trial pit (TP2) due to site and time constraints.
- 3.5.2 WS3 was substituted with a hand dug trial pit due to time constraints.
- 3.5.3 Exploratory boreholes WS6, WS8 and WS9 were terminated at 4.45m bgl due to time constraints.
- 3.5.4 The remaining boreholes were completed in their proposed locations to the proposed depths.

## 3.6 Laboratory Analysis

3.6.1 A programme of laboratory testing, scheduled by Jomas Associates Limited, was carried out on selected samples of Made Ground and natural strata.



## Chemical Testing

- 3.6.2 Soil samples were submitted to i2 Analytical (a UKAS and MCerts accredited laboratory), for analysis.
- 3.6.3 The samples were analysed for a wide range of contaminants as shown in Table 3.2 below:

	No. of tests			
Test Suite	Topsoil	Made Ground		
Basic Suite S3	5	3		
Basic Suite S5	1	1		
TPHCWG (inc BTEX)	1	1		
VOC/SVOC	1	1		
Total Organic Content	2	2		
Pesticides	2	0		
Asbestos Screen & ID	6	4		

#### Table 3.2: Chemical Tests Scheduled

#### 3.6.4

The determinands contained in the basic suite are as detailed in Table 3.3 below:

#### Table 3.3: Basic Suite of Determinands

DETERMINAND	LIMIT OF DETECTION (mg/kg)	UKAS ACCREDITATION	TECHNIQUE
Arsenic	1	Y (MCERTS)	ICPMS
Cadmium	0.2	Y (MCERTS)	ICPMS
Chromium	1	Y (MCERTS)	ICPMS
Chromium (Hexavalent)	4	Y (MCERTS)	Colorimetry
Lead	1	Y (MCERTS)	ICPMS
Mercury	0.3	Y (MCERTS)	ICPMS
Nickel	1	Y (MCERTS)	ICPMS
Selenium	1	Y (MCERTS)	ICPMS
Copper	1	Y (MCERTS)	ICPMS
Zinc	1	Y (MCERTS)	ICPMS
Boron (Water Soluble)	0.2	Y (MCERTS)	ICPMS
pH Value	0.1 units	Y (MCERTS)	Electrometric
Sulphate (Water Soluble)	0.0125g/l	Y (MCERTS)	Ion Chromatography
Total Cyanide	1	Y (MCERTS)	Colorimetry
Speciated/Total PAH	0.05/0.80	Y (MCERTS)	GCFID
Phenols	1	Y (MCERTS)	HPLC
Total Petroleum Hydrocarbons (banded)	-	N Y (MCERTS)	Gas Chromatography



3.6.5 To support the selection of appropriate tier 1 screening values, 4No samples were analysed for total organic carbon. Laboratory test results are summarised in Section 6, with raw laboratory data included in Appendix 3.

#### Geotechnical Laboratory Testing

- 3.6.6 In addition to the contamination assessment, soil samples were submitted to the UKAS Accredited laboratory of i2 Analytical Ltd. for a series of analyses.
- 3.6.7 This testing was specifically designed to:
  - to classify the samples; and
  - to obtain parameters (either directly or sufficient to allow relevant correlations to be used) relevant to the technical objectives of the investigation.

3.6.8 The following laboratory geotechnical testing (as summarised in Table 3.4) was carried out:

BS 1377 (1990) Test Number	Test Description	Number of tests
Part 2		
3.2	Moisture Content Determination	6
4.3 and 5.3	Liquid and Plastic Limit Determination (Atterberg Limits)	2
9.2 and 9.3	Particle Size Distribution - Sieving	9

## Table 3.4 Laboratory Geotechnical Analysis

- 3.6.9 The water soluble sulphate and pH results obtained as part of the chemical analysis was used in combination with BRE Special Digest 1 to allow buried concrete to be classified.
- 3.6.10 The results of the geotechnical laboratory testing are presented as Appendix 4 and discussed in Section 9 of this report.



## 4 GROUND CONDITIONS

## 4.1 Soil

4.1.1 Ground conditions were logged in accordance with the requirements of BS5930:2015. Detailed exploratory hole logs are provided in Appendix 2. The ground conditions encountered are summarised in Table 4.1 below, based on the strata observed during the investigation.

**Table 4.1: Ground Conditions Encountered** 

Stratum and Description	Encountered from (m bgl)	Base of strata (m bgl)	Thickness range (m)
Soft consistency* brown sandy slightly gravelly clay with roots and rootlets. Sand is fine. Gravel consists of occasional brick fragments. (MADE GROUND - Topsoil)	0.00	0.30 - 0.70	0.30 – 0.70
Soft consistency* brown sandy CLAY with roots and rootlets. Sand is fine. (TOPSOIL)	0.00	0.30 - 0.60	0.30 - 0.60
Brown to orange silty clayey slightly gravelly SAND. Sand is fine to medium. Gravel consists of fine to coarse, sub- rounded flint. (BAGSHOT FORMATION - Residual)	0.30 - 0.70	0.60 - 1.00	0.30 – 0.60
Medium becoming very dense brown to orange silty slightly clayey SAND. Sand is fine to medium. (BAGSHOT FORMATION)	0.60 - 1.00	4.45 – 15.00	3.85 - 14.60

\*Field description

## 4.2 Hydrogeology

- 4.2.1 During the intrusive works groundwater was reported in a singular exploratory hole WS9 as seepage from 0.40m bgl.
- 4.2.2 Groundwater was not reported in any of the other exploratory holes during the intrusive investigation.
- 4.2.3 4No return groundwater monitoring visits were undertaken between 14th March 2019 and 2nd April 2019. The results are summarised below in Table 4.2.



Exploratory Hole ID	Depth Encountered	Depth to Base of Well	Strata targeted by response zone
	(m bgl)	(m bgl)	
WS2	1.78 - 2.14	4.04	Sand - Bagshot Formation
WS4	2.90 - 3.12	3.90	Sand - Bagshot Formation
WS5	3.18 - 3.54	4.84	Sand - Bagshot Formation
WS7	3.87 – 3.94	4.96	Sand - Bagshot Formation
WS10	3.71 – 3.77	4.88	Sand - Bagshot Formation

#### Table 4.2: Groundwater Monitoring Records

4.2.4 It is noted that there is only slight variation in the observed groundwater levels. It is therefore considered likely that the observed variations are likely to be due to changes in the ground elevation rather than a significant difference in depth to groundwater.

#### 4.3 Physical and Olfactory Evidence of Contamination

4.3.1 A 'fire pit', ca 2m x 2m in area was identified towards the west of the barn development on site. The fire contained ashes and the remains of burnt waste materials including furniture. Borehole location WS2 was positioned adjacent to this feature. No physical or olfactory evidence of contamination was noted within this borehole, or any other exploratory locations.



## 5 RISK ASSESSMENT – ANALYTICAL FRAMEWORK

#### 5.1 Context and Objectives

- 5.1.1 This section seeks to evaluate the level of risk pertaining to human health and the environment which may result from both the existing use and proposed future use of the site. It makes use of the site investigation findings, as described in the previous sections, to evaluate further the potential pollutant linkages identified in the desk study. A combination of qualitative and quantitative techniques is used, as described below.
- 5.1.2 The purpose of generic quantitative risk assessment is to compare concentrations of contaminants found on site against screening level generic assessment criteria (GAC) to establish whether there are actual or potential unacceptable risks. It also determines whether further detailed assessment is required. The approaches detailed all broadly fit within a tiered assessment structure in line with the framework set out in the Department of Environment, Food and Rural Affairs (DEFRA), EA and Institute for Environment and Health Publication, Guidelines for Environmental Risk Assessment and Management.
- 5.1.3 It should be noted that the statistical tests carried out in this report in accordance with CL:AIRE and CIEH (2008) recommendations, are for guidance purposes only and the conclusions of this report should be approved by the local authority prior to any redevelopment works being undertaken.

#### 5.2 Analytical Framework – Soils

- 5.2.1 There is no single methodology that covers all the various aspects of the assessment of potentially contaminated land and groundwater. Therefore, the analytical framework adopted for this investigation is made up of a number of procedures, which are outlined below. All of these are based on a Risk Assessment methodology centred on the identification and analysis of Source Pathway Receptor linkages.
- 5.2.2 The CLEA model provides a methodology for quantitative assessment of the long term risks posed to human health by exposure to contaminated soils. Toxicological data have been used to calculate Soil Guideline Values (SGV) for individual contaminants, based on the proposed site use; these represent minimal risk concentrations and may be used as screening values.
- 5.2.3 In the absence of any published SGVs for certain substances, or where the assumptions made in generating the SGVs do not apply to the site, Jomas Associates Limited have obtained Tier 1 screening values for initial assessment of the soil, based on available current UK guidance including the LQM/CIEH S4ULs and DEFRA C4SL. Site-specific assessments are undertaken wherever possible and/or applicable. All assessments are carried out in accordance with the CLEA protocol.
- 5.2.4 CLEA requires a statistical treatment of the test results to take into account the normal variations in concentration of potential contaminants in the soil and allow comparisons to be made with published guidance.
- 5.2.5 The assessment criteria used for the screening of determinands within soils are identified within Table 5.1.



Substance Group	Determinand(s)	Assessment Criteria Selected
Organic Substances		
Non-halogenated Hydrocarbons	Total Petroleum Hydrocarbons (TPHCWG banded)	S4UL
	Total Phenols	S4UL
Polycyclic Aromatic Hydrocarbons (PAH-16)	Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenzo(a,h)anthracene, Benzo(ghi)perylene	S4UL
Volatile Organic Compounds (VOCs/sVOCs).	Toluene, Ethylbenzene, Benzene, Xylenes	S4UL
Inorganic Substances		
Heavy Metals and Metalloids	Arsenic, Cadmium, Chromium, Lead, Mercury, Nickel, Selenium, Copper, Zinc	S4UL
	Copper, Zinc, Nickel	BS: 3882 (2015).
Cyanides	Free Cyanide	CLEA v1.06
Sulphates	Water Soluble Sulphate	BRE Special Digest 1:2005

#### Table 5.1: Selected Assessment Criteria – Contaminants in Soils

- 5.2.6 As the published reports only offer the option of selecting a SOM value of 1%, 2.5% or 6%, a SOM value of 1% has been used for the selection of generic assessment criteria, as 1.20% was the mean value obtained from laboratory analysis.
- 5.2.7 It is understood that the site is to be converted to provide residential units with associated communal soft landscaping. As a result, the site has been assessed with regards to a residential with plant uptake end use scenario.

## 5.3 BRE

5.3.1 The BRE Special Digest 1:2005, 'Concrete in Aggressive Ground' is used with soluble sulphate and pH results to assess the aggressive chemical environment of future underground concrete structures at the site.



## 6 GENERIC QUANTITATIVE RISK ASSESSMENT

## 6.1 Screening of Soil Chemical Analysis Results – Human Health Risk Assessment

6.1.1 Laboratory analysis for soils are summarised in Tables 6.1 to 6.3. Raw laboratory data is included in Appendix 7.

Determinand	Unit	No. samples tested	Screenin	g Criteria	Min	Max	No. Exceeding
Arsenic	mg/kg	10	S4UL	37	2.2	14	0
Cadmium	mg/kg	10	S4UL	11	15	6.1	0
Chromium	mg/kg	10	S4UL	910	24	72	0
Lead	mg/kg	10	C4SL	200	48	110	0
Mercury	mg/kg	10	S4UL	40	<0.3	0.7	0
Nickel	mg/kg	10	S4UL	180	4.8	12	0
Copper	mg/kg	10	S4UL	2400	27	71	0
Zinc	mg/kg	10	S4UL	3700	55	170	0
Total Cyanide <sup>A</sup>	mg/kg	10	CLEA v 1.06	33	<1	4	0
Selenium	mg/kg	10	S4UL	250	<1.0	<1.0	0
Boron Water Soluble	mg/kg	10	S4UL	290	0.3	1.2	0
Phenols	mg/kg	10	S4UL	120	<1.0	<1.0	0

#### Table 6.1: Soil Laboratory Analysis Results – Metals, Metalloids, Phenol, Cyanide

**Notes:** <sup>A</sup> Generic assessment criteria derived for free inorganic cyanide.

#### Table 6.2: Soil Laboratory Analysis Results – Polycyclic Aromatic Hydrocarbons (PAHs)

Determinand	Unit	No. Samples Tested	Screening	Criteria	Min	Max	No. Exceeding
Naphthalene	mg/kg	10	S4UL	2.3	<0.05	<0.05	0
Acenaphthylene	mg/kg	10	S4UL	170	<0.05	<0.05	0
Acenaphthene	mg/kg	10	S4UL	210	<0.05	<0.05	0
Fluorene	mg/kg	10	S4UL	170	<0.05	<0.05	0
Phenanthrene	mg/kg	10	S4UL	95	<0.05	0.34	0
Anthracene	mg/kg	10	S4UL	2400	<0.05	0.13	0
Fluoranthene	mg/kg	10	S4UL	280	<0.05	0.77	0
Pyrene	mg/kg	10	S4UL	620	<0.05	0.99	0
Benzo(a)anthracene	mg/kg	10	S4UL	7.2	<0.05	0.58	0
Chrysene	mg/kg	10	S4UL	15	<0.05	0.66	0



Determinand	Unit	No. Samples Tested	Screening	Criteria	Min	Мах	No. Exceeding
Benzo(b)fluoranthene	mg/kg	10	S4UL	2.6	<0.05	0.93	0
Benzo(k)fluoranthene	mg/kg	10	S4UL	77	<0.05	0.36	0
Benzo(a)pyrene	mg/kg	10	S4UL	2.2	<0.05	0.83	0
Indeno(123-cd)pyrene	mg/kg	10	S4UL	27	<0.05	0.41	0
Dibenzo(ah)anthracene	mg/kg	10	S4UL	0.24	<0.05	<0.05	0
Benzo(ghi)perylene	mg/kg	10	S4UL	320	<0.05	0.54	0
Total PAH	mg/kg	10	-	-	<0.80	6.84	-

## Table 6.3: Soil Laboratory Analysis Results – Total Petroleum Hydrocarbons (TPH)

TPH Band	Unit	No. Samples Tested	Screening Criteria		Min	Max	No. Exceeding
C <sub>8</sub> -C <sub>10</sub>	mg/kg	8	S4UL	27	<0.1	<0.1	0
>C <sub>10</sub> -C <sub>12</sub>	mg/kg	8	S4UL	74	<2.0	9.0	0
>C <sub>12</sub> -C <sub>16</sub>	mg/kg	8	S4UL	140	<4.0	12	0
>C <sub>16</sub> -C <sub>21</sub>	mg/kg	8	S4UL	260	<1.0	20	0
>C <sub>21</sub> -C <sub>35</sub>	mg/kg	8	S4UL	1100	<10	95	0
Total TPH	mg/kg	8	-	-	17.1	136.1	-

Note: \*The lower value of guidelines for Aromatic/Aliphatics has been selected

## Table 6.4: Soil Laboratory Analysis Results – Total Petroleum Hydrocarbons (TPHCWG)

TPH Band	Unit	No. Samples Tested	Screening (	Screening Criteria		Мах	No. Exceeding
>C5-C6 Aliphatic	mg/kg	2	S4UL	42	<0.001	<0.001	0
>C <sub>6</sub> -C <sub>8</sub> Aliphatic	mg/kg	2	S4UL	100	<0.001	<0.001	0
>C8-C10 Aliphatic	mg/kg	2	S4UL	27	<0.001	<0.001	0
>C10-C12 Aliphatic	mg/kg	2	S4UL	130	<1.0	<1.0	0
>C12-C16 Aliphatic	mg/kg	2	S4UL	1100	<2.0	<2.0	0
>C <sub>16</sub> -C <sub>35</sub> Aliphatic	mg/kg	2	S4UL	65000	<16.0	21	0
>C5-C7 Aromatic	mg/kg	2	S4UL	70	<0.001	<0.001	0
>C7-C8 Aromatic	mg/kg	2	S4UL	130	<0.001	<0.001	0
>C <sub>8</sub> -C <sub>10</sub> Aromatic	mg/kg	2	S4UL	34	<0.001	<0.001	0
>C <sub>10</sub> -C <sub>12</sub> Aromatic	mg/kg	2	S4UL	74	<1.0	<1.0	0
>C <sub>12</sub> -C <sub>16</sub> Aromatic	mg/kg	2	S4UL	140	<2.0	<2.0	0
>C <sub>16</sub> -C <sub>21</sub> Aromatic	mg/kg	2	S4UL	260	<10	12	0



TPH Band	Unit	No. Samples Tested	Screening Criteria		Min	Max	No. Exceeding
>C <sub>21</sub> -C <sub>35</sub> Aromatic	mg/kg	2	S4UL	1100	43	49	0
Total TPH (Ali/Aro)	mg/kg	2	-	-	54	59	-

#### 6.2 Volatile Organic Compounds

6.2.1 In addition to the suites outlined previously, 2No samples were tested for the presence of volatile organic compounds including BTEX compounds (benzene, toluene, ethylbenzene, xylene). No VOCs were reported above the laboratory detection limit within any tested sample.

#### 6.3 Pesticides

- 6.3.1 In addition to the suites outlined previously, 2No samples were tested for the presence of pesticides within the southern half of site due to its historic use as a nursery.
- 6.3.2 A single sample from WS9 (0.25m) reported organochlorine pesticides, no organonitrogen or organophosphorus pesticides were detected. The results are summarised in Table 6.5 below; only compounds reported above detection limit have been included.

Table 6.5: Soil Laboratory	/ Analysi	s Results –	Organochlorine	Pesticides
	/ Analysi	3 Nesuns	organocinorine	resticides

TPH Band	Unit	No. Samples Tested	Screening	Criteria	Min	Max	No. Exceeding
DDD-o,p'	μg/kg	1	EPA RSL*	1900+	7.9	7.9	0
DDD-p,p'	μg/kg	1	EPA RSL*	1900	74	74	0
DDE-p,p'	μg/kg	1	EPA RSL*	2000	130	130	0
DDT-o,p'	μg/kg	1	EPA RSL*	1900+	5.3	5.3	0
DDT-p,p'	µg/kg	1	EPA RSL*	1900+	30	30	0

\*In the absence of British Standard screening criteria, values have been obtained from the US Environmental Protection Agency Regional Screening Levels documentation

<sup>+</sup>In the absence of isomer-specific screening values, the most conservative criteria for another isomer of the same compound has been used.

6.3.3 As summarised in the table above, none of the organochlorine pesticides reported above laboratory detection limit exceeded their respective screening criteria.

#### 6.4 Controlled Groundwater Risk Assessment

6.4.1 A potential pollutant linkage was not considered to exist following the desk study, and following the ground investigation, given the lack of evidence of potential contamination at the site, this conclusion is considered to remain valid.

#### 6.5 Screening of Soil Chemical Analysis Results – Potential Risks to Plant Growth

6.5.1 Zinc, copper and nickel are phytotoxins and could therefore inhibit plant growth in soft landscaped areas. Concentrations measured in soil for these determinands have been compared with the pH dependent values given in BS: 3882 (2015).



6.5.2 Adopting a pH value of greater than 7, as indicated by the results of the laboratory analysis, the following is noted;

Table 6.6:	Soil Laboratory	Analysis Results	- Phytotoxic Determinan	ds
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Determinand	Threshold level (mg/kg)	Min (mgkg)	Max (mg/kg)	No. Exceeding
Zinc	300	55	170	0
Copper	200	27	71	0
Nickel	110	4.8	12	0

#### 6.6 Screening for Water Pipes

6.6.1 The results of the analysis have been assessed for potential impact upon water supply pipes. Table 6.7 below summarises the findings of the assessment:

	No. of	Threshold	Value for sit	te data (mg/kg)	
Determinand	tests	adopted for PE (mg/kg)	Min	Мах	No of Exceedances
Total VOCs	2	0.5	<0.056	<0.056	0
BTEX	2	0.1	<0.001	<0.001	0
MTBE	2	0.1	<0.001	<0.001	0
EC5-EC10	8	1	<0.1	<0.1	0
EC10-EC16	8	10	<6.0	21	2No exceedances WS4 (0.25m) WS6 (0.25m)
EC16-EC40	8	500	<17	115	0
Naphthalene	10	5	<0.05	<0.05	0
Phenols	10	2	<1.0	<1.0	0

#### Table 6.7: Screening Guide for Water Pipes

\*Laboratory detection limit

- 6.6.3 The above suggests that upgraded pipe work may be required.
- 6.6.4 It may be possible to utilise other protection methods including (but not limited to):
  - diversion of the pipe,
  - localised remediation
  - embedding the pipe in a sufficient thickness of clean granular material
- 6.6.5 The water supply pipe requirements for this site should be discussed at an early stage with the relevant Utility provider.

#### 6.7 Waste Disposal

6.7.1 The classification of materials for waste disposal purposes was outside the scope of this report. Should quantities of material require off-site disposal, Waste Acceptance Criteria testing will be required.



## 7 SOIL GAS RISK ASSESSMENT

#### 7.1 Soil Gas Results

- 7.1.1 Four return monitoring visits have been undertaken from 14 March 2019 to 02 April 2019, to monitor wells installed within boreholes at the site for soil gas concentrations and groundwater levels.
- 7.1.2 During these visits atmospheric pressure ranged between 1000mb and 1035mb. During these visits pressure trends observed were falling and steady.
- 7.1.3 The results of the monitoring undertaken are summarised in Table 7.1 below, with the monitoring records presented in Appendix 6.

Hole No.	CH₄ (%)	CO2 (%)	O2 (%)	H₂S (ppm)	VOCs (ppm)	Steady Flow Rate (l/hr)	Peak Flow Rate (l/hr)	Depth to water (mbgl)	Depth of installation (mbgl)
WS2	< 0.1 - 0.5	1.4 - 17.2	3.4 - 20.0	0	<1.0	0.0 - 0.2	0.0-0.2	1.78 – 2.14	4.04
WS4	<0.1	0.9 – 2.0	18.9 – 19.8	0	<1.0	0.0	0.0	2.90 - 3.12	3.90
WS5	<0.1	0.8 – 0.9	19.9 – 20.2	0	<1.0	0.0-0.1	0.0-0.1	3.18 - 3.54	4.84
WS7	<0.1	3.4 – 4.4	16.3 – 16.7	0	<1.0	0.0-0.1	0.0-0.1	3.91 – 3.94	4.96
WS10	<0.1	2.5 – 3.0	17.9 – 18.9	0	<1.0	0.0 - 0.2	0.0-0.2	3.71 – 3.78	4.88

#### Table 7.1: Summary of Gas Monitoring Data

#### 7.2 Screening of Results

- 7.2.1 As shown in Table 7.1, methane has been reported at a maximum concentration of 0.5% v/v at a single borehole location (WS2). Carbon dioxide has been reported to a maximum concentration of 17.2% v/v at the same single location. Screening of the monitoring well headspaces with a photo-ionisation detector (PID) has detected maximum Volatile Organic Compound (VOC) concentration to maximum levels of <1ppm. A maximum flow rate of 0.2l/hr has been reported.
- 7.2.2 In the assessment of risks posed by hazardous ground gases and selection of appropriate mitigation measures, BS8485 (2015) identifies four types of development, termed Type A to Type D.
- 7.2.3 The majority of the site (consisting of the residential housing) is considered as to be a Type A structure which is defined as:

"private ownership with no building management controls on alterations to the internal structure, the use of rooms, the ventilation of rooms or the structural fabric of the building. Some small rooms present. Probably conventional building construction (rather than civil engineering). Examples include private housing and some retail premises."

7.2.4 In addition, there is a commercial gym / sports centre proposed on the site. This potentially may be considered as a Type B building. These are defined as:



"private or commercial property with central building management control of any alterations to the building or its uses but limited or no central building management control of the maintenance of the building, including the gas protection measures. Multiple occupancy. Small to medium size rooms with passive ventilation of rooms and other internal spaces throughout ground floor and basement areas. May be conventional building or civil engineering construction. Examples include managed apartments, multiple occupancy offices, some retail premises and parts of some public buildings (such as schools, hospitals, leisure centres) and parts of hotels."

- 7.2.5 For an initial review Type A has been adopted as the relevant category for the proposed development as this provides the most conservative assessment.
- 7.2.6 The soil gas assessment method is based on that proposed by Wilson & Card (1999), which was a development of a method proposed in CIRIA publication R149 (CIRIA, 1995). The method uses both gas concentrations and borehole flow rates to define a characteristic situation based on the limiting borehole gas volume flow for methane and carbon dioxide. In both these methods, the limiting borehole gas volume flow is renamed as the Gas Screening Value (GSV).
- 7.2.7 The Gas Screening Value (litres of gas per hour) is calculated by using the following equation

## GSV = (Concentration/100) X Flow rate

Where concentration is measured in percent (%) and flow rate is measured in litres per hour (I/hr)

- 7.2.8 The Characteristic Situation is then determined from Table 8.5 of CIRIA C665.
- 7.2.9 To accord with C665, worst case conditions are used in the calculation of GSVs for the site.
- 7.2.10 A worst-case flow rate of 0.2/hr (maximum reported) will be used in the calculation of GSVs for the site. The Characteristic Situation is then determined from Table 8.5 of CIRIA C665.
- 7.2.11 To accord with C665, worst case conditions are used in the calculation of GSVs for the site. These have been summarised below in Table 7.2.

Gas	Concentration (v/v %)	Peak Flow Rate (l/hr)	GSV (l/hr)	Characteristic Situation (after CIRIA C665)
CO2	17.2	0.2	0.0344	1
CH <sub>4</sub>	0.5	0.2	0.001	1

#### Table 7.2: Summary of Gas Monitoring Data

- 7.2.12 The methodology set out in BS 8485 (2015) has been used for determining the required gas protection measures. For a Type A development on a CS1 site no gas protection measures are required.
- 7.2.13 Although classification of the according the GSVs lead to a CS1 classification, due to the concentrations of CO<sub>2</sub> over 5%, consideration should be given to increasing this to CS2, in accordance with BS8485 guidance. This was noted at one location (WS2) on two occasions (21st and 28th March) at levels of 8.3% and 17.2% v/v respectively. The elevated concentrations of CO<sub>2</sub> were reported in a single monitoring well (WS2) in the north eastern part of site, located adjacent to a surface fire pit.



- 7.2.14 Local authority correspondence from the former Desk Study Report (Jomas August 2018) has identified that part of the site was used as a contractors compound associated with construction at an adjacent site, as a result this was identified as a potential source (S1) of Made Ground as detailed in Table 2.2. Publicly available satellite imagery shows that in March 2017 the north eastern part of the site (comprising exploratory locations TP1, TP2, HDP1, BH1, HDP2 and WS2) appears to represent the contractors compound, as the school directly north of site is being developed at this date. It is noted that in TP1 and TP2, slightly deeper made ground was encountered in comparison with elsewhere on site. The made ground in this area was found to contain anthropogenic materials comprising brick, concrete, ceramic and plastic, which was not observed elsewhere on site.
- 7.2.15 It is considered unlikely, however, that this made ground could comprise a significant ground gas generation source.
- 7.2.16 It is possible that the elevated concentrations of CO<sub>2</sub> reported in WS2 are as a result of the adjacent surface fire pit. It is possible that petrol or other hydrocarbons could have been used as a lighting aid in the fire pit, with residual contaminants producing methane and carbon dioxide during degradation. It should be noted that no visual or olfactory evidence of hydrocarbon contamination were encountered in WS2, nor were elevated concentrations of any contaminants detected.
- 7.2.17 No other potential sources of ground gases are known within the CSM.
- 7.2.18 It is recommended that additional monitoring well installations be installed and subsequent return gas monitoring are recommended within the area of the former contractors compound. The objective would to determine whether the concentrations of methane and carbon dioxide detected in WS2 are representative of this area, which would likely necessitate gas protection measures complying with a CS2 classification, or whether they are localised to the vicinity of WS2, in which case a CS1 classification would be considered appropriate.



## 8 SUMMARY OF RESULTS

#### 8.1 Land Quality Impact Summary

- 8.1.1 Following the ground investigation, the following is noted:
  - The proposed development comprises the following:
    - 'Redevelopment of the site, following the demolition of the existing building, to provide a health club building (Class D2) incorporating an external swimming pool and tennis/sports courts, the provision of 36 dwelling houses (Class C3) up to a maximum of 3 storeys in height, associated landscaping and car parking and new vehicular access from an existing road servicing Hoe Valley School.'
  - Following generic risk assessments, no elevated concentrations were detected in soils in excess of generic assessment criteria for the protection of human health within a residential with plant uptake end-use scenario.
  - No asbestos fibres were detected in the samples analysed in the laboratory.
  - Risks to controlled waters are not considered to be significant.
  - The water supply pipe requirements should be discussed at an early stage with the relevant utility provider.
  - Following gas monitoring, the wider site can been characterised as Characteristic Situation 1, where gas protection measures are not required. However, it is recommended that additional monitoring well installations be installed and subsequent return gas monitoring are recommended within the area of the former contractors compound. The objective would to determine whether the concentrations of methane and carbon dioxide detected in WS2 are representative of this area, which would likely necessitate gas protection measures complying with a CS2 classification, or whether they are localised to the vicinity of WS2, in which case a CS1 classification would be considered appropriate.
  - As with any ground investigation, the presence of further hotspots between sampling points cannot be ruled out. Should any contamination be encountered, a suitably qualified environmental consultant should be informed immediately, so that adequate measures may be recommended.
- 8.1.2 The above conclusions are made subject to approval by the statutory regulatory bodies.

#### 8.2 Review of Pollutant Linkages Following Site Investigation

8.2.1 The site CSM has been revised and updated from that suggested in the desk study in view of the ground investigation data, including soil laboratory analysis results. Table 8.1 highlights whether pollutant linkages identified in the original CSM are still relevant following the risk assessment, or whether pollutant linkages, not previously identified, exist.



Potential Source (from desk study)	Pathway	Receptor	Relevant Pollutant Linkage?	Comment
<ul> <li>Potential for Made Ground associated with previous development operations – on site (S1)         <ul> <li>Barn development, contractors compound and track (north east)</li> </ul> </li> <li>Potential for contamination associated with previous development operations – off</li> </ul>	<ul> <li>Ingestion and dermal contact with contaminated soil (P1)</li> <li>Inhalation or contact with potentially contaminated dust and vapours (P2)</li> <li>Permeation of water pipes and attack on concrete foundations by aggressive soil conditions (P6)</li> </ul>	<ul> <li>Construction workers (R1)</li> <li>Maintenance workers (R2)</li> <li>Neighbouring site users (R3)</li> <li>Future site users (R4)</li> <li>Building foundations and on site buried services (water mains, electricity and sewer) (R5)</li> </ul>	Ν	see 9.1 above for remedial measures. The findings of this report should be included in the construction health and safety file, with adequate measures put in place for the protection of construction and maintenance workers.
site (S2) - Rail track (west)	<ul> <li>Accumulation and migration of soil gases (P5)</li> </ul>		?	Further gas monitoring recommended.
<ul> <li>Rail track (west)</li> <li>Potential for contaminated ground from historic use as a nursery – southern half of site (S3)</li> </ul>	<ul> <li>Leaching through permeable soils, migration within the vadose zone (i.e., unsaturated soil above the water table) and/or lateral migration within surface water, as a result of cracked hardstanding or via service pipe/corridors and surface water runoff. (P3) Horizontal and vertical migration of contaminants within groundwater (P4)</li> </ul>	<ul> <li>Neighbouring site users (R3)</li> <li>Controlled Waters – secondary (A) aquifer, Hoe Stream (R6)</li> <li>Building foundations and on site buried services (water mains, electricity and sewer) (R5)</li> </ul>	Y	Remedial measures required and set out in Section 9.1. Contact should be made with relevant utility providers to confirm if upgraded materials are required.

## Table 8.1: Plausible Pollutants Linkages Summary (Pre Remediation)



## 9 **GEOTECHNICAL ENGINEERING RECOMMENDATIONS**

#### 9.1 Ground Investigation Summary

- 9.1.1 No detailed structural engineering design information, with respect to the type of construction and associated structural loadings, was provided at the time of preparing this report. Consequently, a detailed discussion of all the problems that may arise during the proposed redevelopment scheme is beyond the scope of this report.
- 9.1.2 Practical solutions to the difficulties encountered, both prior to, and during construction, are frequently decided by structural constraints or economic factors. For these reasons, this discussion is predominantly confined to remarks of a general nature, which are based on site conditions encountered during the intrusive investigations.
- 9.1.3 The proposed development comprises the following:

'Redevelopment of the site, following the demolition of the existing building, to provide a health club building (Class D2) incorporating an external swimming pool and tennis/sports courts, the provision of 36 dwelling houses (Class C3) up to a maximum of 3 storeys in height, associated landscaping and car parking and new vehicular access from an existing road servicing Hoe Valley School.'

#### 9.2 Geotechnical Classification

- 9.2.1 At the Desk Study stage this development was deemed to be a GC2 development in accordance with BS: 1997.
- 9.2.2 The findings of the investigation undertaken and discussed previously do not change this assessment.

#### 9.3 Data Summary

- 9.3.1 The results of the ground investigation revealed a ground profile comprising a variable thickness of Made Ground (up to 0.70m bgl depth) and Topsoil, overlying slightly gravelly sand considered to represent weathered residual deposits of the Bagshot formation. This was reported to be underlain by sand deposits considered to represent the Bagshot Formation proven to a maximum depth of 15.00m bgl.
- 9.3.2 A summary of ground conditions obtained from the ground investigation and the derived geotechnical parameters, is provided in Table 9.1 below.
- 9.3.3 The predominant soil type encountered at site was reported as sand. The geotechnical analysis reported samples obtained at 1.50m, 8.50m and 10.00m bgl as clays. The sample obtained from 1.50m bgl is considered to represent weathered deposits of the Bagshot Formation. The deeper samples that were reported as clays is likely to either represent clay bands/pockets within the Bagshot Formation, or were recovered as such due to the percussive nature of the drilling equipment further disturbing the samples.

Strata	Depth Encountered (from-to) (mbgl)	SPT 'N' Value	Inferred Shear Strength (kPa)	Moisture content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (corrected plasticity) (%)	NHBC Volume Change Classification
Soft consistency* brown sandy slightly gravelly clay with roots and rootlets. Sand is fine. Gravel consists of occasional brick fragments. (MADE GROUND - Topsoil)	GL to 0.30 – 0.70	-	-	-	-	-	-	-
Soft consistency* brown sandy CLAY with roots and rootlets. Sand is fine. (TOPSOIL)	GL to 0.30 – 0.60	-	-	-	-	-	-	-
Brown to orange silty clayey slightly gravelly SAND. Sand is fine to medium. Gravel consists of fine to coarse, sub- rounded flint. (BAGSHOT FORMATION - Residual)	0.30 – 0.70 to 0.60 – 1.00	-	-	-	-	-	-	-
Medium becoming very dense brown to orange silty slightly clayey SAND. Sand is fine to medium. (BAGSHOT FORMATION)	0.60 - 1.00 to 4.45 - 15.00	9 – 129	-	23 – 29	37 – 52	19 – 25	18 – 27 (18 – 27)	Low to Medium

## Table 9.1: Ground Conditions and Derived Geotechnical Parameters



## 9.4 Standard Penetration Tests

- 9.4.1 Standard Penetration Tests were undertaken at regular intervals throughout the window sampler holes and cable percussive borehole. The results of the SPTs recorded within the Bagshot Formation are plotted against depth in Figure 1 below.
- 9.4.2 N<sub>equi</sub> results have been calculated for both strata where the SPT crossed strata boundaries or where the full 300mm of penetration could not be achieved for 50 or fewer blows.



Figure 1: SPT 'N' Value v Depth

9.4.3 The results for the Bagshot Formation show a generally consistent increase with depth.

## 9.5 Building Near Trees

- 9.5.1 The underlying soil conditions have been shown to be of medium volume change potential. However, these samples were taken at depths (8.50m and 10.00m bgl) where the shrink/swell potential is unlikely to affect shallow soils.
- 9.5.2 Assuming that due to the natural variation of the weathered materials the results from the deeper soils could be present higher up (summarised in Table 9.1) and with reference to NHBC Chapter 4.2, a minimum founding depth of 1.25m bgl is recommended to provide the most conservative assessment. This would allow for restricted new planting.



- 9.5.3 Presence of existing and proposed trees may increase this minimum depth. It is recommended that a tree survey that should include: location, species and height of all trees on and near to the proposed development is recommended.
- 9.5.4 Guidance is also given in relation to other aspects of construction where the shrink / swell potential of the soils may be needed to take into consideration. This guidance is summarised in the appropriate sections below.

#### 9.6 Foundations

- 9.6.1 Foundations should not be formed in either the Made Ground or the Topsoil due to the unacceptable risk of total and differential settlement.
- 9.6.2 It should be noted that the demolition and removal of existing structures, foundations and services may increase the depth of Made Ground on the site.
- 9.6.3 The comments below are indicative only based on limited ground investigation data. Foundations should be designed by a suitably qualified Engineer. Once structural loads have been fully determined a full design check in accordance with BS EN 1997 should be undertaken to confirm suitability of foundation choice.

#### **Traditional Shallow Foundations**

- 9.6.4 It is likely that traditional shallow foundations would be appropriate to support the majority of the proposed structures. However, the location of previous, existing and proposed trees must be taken into consideration in the design of foundations.
- 9.6.5 Based on the findings of this investigation, it is considered that traditional strip footings of 1m breadth formed at a depth in the order of 1.25m bgl within the underlying sands could be designed with an allowable bearing capacity of 110kPa.
- 9.6.6 If greater allowable carrying capacities re required then foundations of a similar size but deepened to 1.5m could be designed on an allowable bearing capacity of 150kPa whilst 200kPa could be achieved at 2m bgl.
- 9.6.7 Foundations formed in suitably compacted granular materials do not generally experience any consolidation settlements.
- 9.6.8 It is recommended that excavations to form the foundations should be undertaken using a toothless bucket to reduce the potential for disturbance of the underlying granular strata.
- 9.6.9 Formations of the structures should be inspected by a competent person. Any loose or soft material should be removed and replaced with well-graded, properly compacted granular fill or lean mix concrete. The formation should be blinded if left exposed for more than a few hours or if inclement weather is experienced.
- 9.6.10 Foundations should not be formed in the granular materials until the granular materials have been proof compacted. Given the depth and likely size of these foundations it is considered that this could be undertaken using a hydraulic "elephants foot" or if the whole basement founding layer is compacted at the same time a vibrating roller or "whacker plate" if the machinery can be easily taken into the excavation and the stability of the excavation / safety of any workers entering the excavation can be assured.



- 9.6.11 It should be noted that deeper "pockets" of the Bagshot Formation were noted to locally be cohesive. If such a "pocket" is noted during excavation of the foundations it is recommended that the foundations are deepened through it.
- 9.6.12 Where foundations are locally deepened the foundation would need to be stepped with each step no more than 150mm and the foundation suitably reinforced, to prevent unacceptable differential settlement.

**Piled Foundation Design** 

- 9.6.13 If greater allowable carrying capacities are required, a piled foundation solution could be adopted within the underlying sand deposits.
- 9.6.14 The piled foundations will carry their working load in a combination of skin friction along the sides of the pile and end bearing at the base of the pile. The piles should be designed by a suitably qualified and experienced piling specialist using a suitable factor of safety with the settlement at working load specified to meet any structural requirements. Table 9.2 provides some indicative capacities for a single pile for the diameter and depths shown.

	Diameter of Pile (m)									
Toe Depth (m bgl)	0.3	0.45	0.6	0.75	0.9					
(	Indicative Total Pile Carry Capacity (kN)									
4	90	195	345	540	770					
5	145	315	545	840	1200					
6	230	485	835	1285	1825					
7	345	715	1220	1855	2620					
8	475	965	1625	2450	3440					
9	590	1160	1915	2850	3970					
10	740	1410	2275	3340	4600					

## Table 9.2: Indicative Piles Capacities (kN)

- 9.6.15 It should be noted that the above assumes a bored piling system. Other methods of piling and equipment may provide different results.
- 9.6.16 Should any loading be placed directly on the ground which cause the ground to settle relative to the piles then additional negative skin friction loads could be imposed on the piles.
- 9.6.17 The use of a piling foundation solution will require the emplacement of an engineered granular piling mat to support the piling rig and prevent overturning. This should be designed and constructed in accordance with BRE 470.

## 9.7 Concrete in the Ground

9.7.1 Sulphate attack on building foundations occurs where sulphate solutions react with the various products of hydration in Ordinary Portland Cement (OPC) or converted High-Alumina Cement (HAC). The reaction is expansive, and therefore disruptive, not only due to the formation of minute cracks, but also due to loss of cohesion in the matrix.


9.7.2 In accordance with BRE Special Digest 1, as there are less than 10 results in the data set the highest value has been taken.

<sup>9.7.3</sup> Table 9.3 summarises the analysis of the aggressive nature of the ground for each of the strata encountered within the ground investigation.

Stratum	No. Samples	pH range	Highest WS Sulphate (mg/l)	Design Sulphate Class	ACEC Class
Made Ground	4	7.4 – 7.9	422	DS-2	AC-2
Topsoil	7	5.8 – 6.9	16	DS-1	AC-1
Bagshot Formation	4	7.6 – 8.4	220	DS-1	AC-1

#### Table 9.3: Concrete in the Ground Classes

#### 9.8 Ground Floor Slabs

- 9.8.1 The ground has been noted to be overwhelmingly granular with only a few pockets of cohesive material noted at depth. It is therefore considered that following proof compaction a ground bearing floor slab would be appropriate.
- 9.8.2 Formations of the structures should be inspected by a competent person. Any loose or cohesive material should be removed and replaced with well-graded, properly compacted granular fill or lean mix concrete. The formation should be blinded if left exposed for more than a few hours or if inclement weather is experienced
- 9.8.3 If extensive cohesive materials are encountered a ground bearing floor slab, could still be used if emplaced on a blanket of suitable granular materials. The granular blanket should be at least 50% of the foundation depth and no more than 1.25m deep (measured from ground level). Assuming that there the proposed and current trees do not increase the required depth for shallow foundations this would mean a blanket of granular material between 0.5m and 1.25m thick
- 9.8.4 The granular blanket should extend beyond the edge of the foundation by a distance equal to its natural angle of repose, plus 0.5m. The angle of repose will depend on the material used.
- 9.8.5 If a ground bearing floor slab is used then, ground gas ventilation / drains may need to be incorporated into the underside of the slab. These are usually put in either the granular blanket or in granular filled trenches.
- 9.8.6 Alternatively, if cohesive materials are encountered a suspended floor slab could be used. In accordance with NHBC chapter 4.2 the depth of clear void beneath the suspended floor slab will be dependent on the floor type used.
- 9.8.7 If the development adopts a piled foundation solution suspended floor slabs will be required.
- 9.8.8 Under suspended in-situ concrete ground floor a minimum void of 150mm is required. Whilst under suspended precast concrete and timber floors a minimum of 300mm is required.
- 9.8.9 This void could be used as part of the ground gas protection measures if designed appropriately.



9.8.10 The loadings from the suspended floor slab will need to be carried by the foundations, which will need to be designed to not only carry the structural loadings but the additional floor loadings.

#### 9.9 Excavations

- 9.9.1 It is likely that some shallow excavations will be required at the site for services etc, in addition to larger excavations during the remediation and construction works. These are anticipated to remain stable for the short term only.
- 9.9.2 The stability of all excavations should be assessed during construction. The sides of any excavations into which personnel are required to enter, should be assessed and where necessary fully supported or battered back to a safe angle.
- 9.9.3 If battering is used then the effects of adverse weather conditions should be considered.
- 9.9.4 Any vertically sided excavations require support to provide safe man access and to support the sides of the excavation. Supports should be installed as excavation proceeds. For service excavations, overlapping trench sheets could be used as close support in the Made Ground deposits to minimise ground loss. Alternatively, consideration could be given to the use of trench boxes provided excavations take place within the boxes.
- 9.9.5 Attention is also drawn to the provisions of the Health and Safety at Work Regulations, which state that the sides of any excavations greater than 1.2m depth, into which personnel are required to enter, should be fully supported or battered back to a safe angle.

#### 9.10 In-Situ CBR Measurements

- 9.10.1 California Bearing Ratio tests were undertaken using a perth penetrometer probe at 5No positions as shown on the exploratory hole location plan presented as Figure 2.
- 9.10.2 The results have been used to calculate CBR values using the methodology outlined in Interim Advice Notice 73/06.
- 9.10.3 The recorded penetration and calculated CBR values from each position are provided in Appendix 7.
- 9.10.4 The results are summarised in Table 9.4 below:

Position	Initial-Final Depth (mm bgl)	CBR (%)
	200 – 300	2.3
<b>TD1</b>	300 – 600	5.7
IPI	600 – 850	24.3
	850 - 1000	10.1
WCD	150 – 450	1.5
VV32	450 – 600	41.6

#### Table 9.4: CBR Results



Position	Initial-Final Depth (mm bgl)	CBR (%)
	600 – 900	17.3
	900 - 1000	4.8
WEE	150 – 450	4.8
VV35	450 - 1000	3.0
	100 – 250	4.8
14/67	250 – 450	8.7
VV37	450 – 750	4.0
	750 – 1000	22
	100 – 350	1.8
WS10	350 - 800	3.7
	800 - 1000	10.1

- 9.10.5 It is recommended that a value of 1.5% is adopted for the purpose of initial road design. It would appear that higher results could also be achieved by lowering formation level slightly.
- 9.10.6 Proof rolling of granular materials (both natural and Made Ground) is likely to be required to provide a consistent formation base. These works are likely to improve the CBR that could be used for design purposes.
- 9.10.7 Further CBR testing should be undertaken following proof rolling/ground improvement to confirm that suitable improvement was achieved.

#### 9.11 Groundwater Control

- 9.11.1 During the investigation groundwater was reported as seepage within borehole WS9 at 0.40m bgl depth. Groundwater was not reported within the remaining boreholes.
- 9.11.2 During return monitoring groundwater was reported at depths of between 1.78m and 3.94m bgl.
- 9.11.3 Subject to seasonal variations, any groundwater encountered during site works could be readily dealt with by conventional pumping from a sump used to collate waters.
- 9.11.4 Surface water or rainfall ingress is likely to freely drain through the granular materials. If this does not occur then they too could be dealt with by traditional sump and pump.



### 10 REFERENCES

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**APPENDICES** 



**APPENDIX 1 – FIGURES** 



## JOMAS ASSOCIATES LTD T: 0843 289 2187

Project Name	Egley Road, Woking	Client	Woking Football Club
Project No.	P1381J1459	Date	15/08/2018
Title	Site Location Plan	Figure No	1





JOMAS ASSOCIATES LTD T: 0843 289 2187

Project Name	Egley Road, Woking	Client	Woking Football Club	
Project No.	P1381J1459	Date	07/02/2019	
Title	Completed Exploratory Hole Plan	Prepared By	AM	
	BH2 WS5 BH3 BH3 S8 WS7 WS7 WS7 WS7 WS7 WS7 WS7 WS9 WS7 WS9 WS9 WS10 WS10 WS10 WS10 WS10 WS10 WS10 WS10	TP2		Borehole Installs: WS2 WS4 WS5 WS7 WS10 CBR Testing: TP1 WS2 WS5 WS7 WS10

Jomas Report P1381J1459 - Proposed Ground Floor Development (Figure 3)







# LEGEND

SITE BOUNDARY

(Leisure Site Area: 22,303sqm) (Residential Site Area: 9,161sqm)

RESIDENTIAL: 0.91 hectares 36no. houses

05 x House Type 1
13 x House Type 2
16 x House Type 3
02 x House Type 4

Gross density: 39 dwellings/ha 58,366 sqft saleable area 90 parking spaces provided

House Type 1 2/3 BEDROOM (4 PEOPLE) TOWNHOUSE (123.2sqm /1326sqft)

House Type 2 3 BEDROOM (6 PEOPLE) TOWNHOUSE (145sqm /1560sqft)

House Type 3 4 BEDROOM (8 PEOPLE) TOWNHOUSE (162.3sqm /1747sqft)

House Type 4 5 BEDROOM (9 PEOPLE) TOWNHOUSE (162.3sqm /1747sqft)

o 10 20

40m

SCALE @ 1:500



**APPENDIX 2 – EXPLORATORY HOLE RECORDS** 

						_		-	-				CABLE PE	RCUSSIC	N BOREHOLE	RECORD	
					J	•]	Ē					Explora	tory Hole No:			BH1	
Site Address:			Egle	ey Roa	d Woki	ng GU2	22 OAF					Project	No:			P1381J1459	1
Client:			Gol	dev Wo	king L	td						Ground	Level:				
Logged By:			BD		-							Date Co	mmenced:			12/02/2019	
Checked By:			PSv	v								Date Co	mpleted:			13/02/2019	
Type and diame	eter of equipr	ment:	Cat	ole Perc	ussive							Sheet N	0:			1 Of 3	
Water levels r	ecorded du	ring bo	oring,	m													
Date:			15/	02/201	9												
Hole depth:			15.	00													
Casing depth:			6.0	0													
Level water on	strike:		7.2	0													
Water Level aft	er 20mins:																
Remarks																	
1: Water strike	at 7.20m bg	gl rising	to 6.8	80 mbg	l after	5min											
2:																	
3:																	
4:			-														
		Sampl	e or I	ests					-		Strata		_				
<b>T</b>	Depth				Result	t				I constant	Depth	Water		Strata De	escription		Installation
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		/5	/5	/5	/5	/5	/5	IN	0.00 -			-					
D ES ES B	0.10 0.20 0.30								0.50 -	<u>x · · · x</u>	0.50		Dark brown sand	ty slightly	gravelly clay.	(TOPSOIL).	
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S B	2.50	1	2	4	4	5	6	19	2.50								
S B	3.50	2	2	4	5	7	7	23	3.50								
S B	4.50	2	5	3	7	9	9	28	4.50	· · · · · · · · · · · · · · · · · · ·	4.80		Very dense grey FORMATION).	clayey sil	ity SAND. (BAC	GSHOT	
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								_	_				CABLE PERCUSSI	N BOREHOLE	E RECORD		
					J		¥ É					Explora	tory Hole No:		BH1		
Site Address:			Egle	ey Roa	d Woki	ng GU2	22 OAF					Project	No:		P1381J1459	1	
Client:			Gol	dev Wo	oking L	td						Ground	Level:				
Logged By:			BD									Date Co	mmenced:		12/02/2019		
Checked By:			PSv	v								Date Co	mpleted:	13/02/2019			
Type and diame	eter of equipr	ment:	Cab	ole Pero	cussive							Sheet N	lo:		2 Of 3		
Water levels r	ecorded du	ring bo	oring,	m			1										
Date:			15/	02/201	19		_										
Hole depth:			15.0	00													
Level water on	striko		7.20	0			-										
Water Level after	er 20mins		7.2	0			-										
Remarks	51 20111101						_										
1: Water strike	at 7.20m bg	gl rising	to 6.8	80 mbg	l after	5min											
3:																	
4:																	
		Sampl	e or T	ests							Strata						
	Denth				Posul	+					Denth	Water	Strata D	escription		Installation	
Туре	(mbgl)				, resul					Legend	(mbgl)	Strikes	Strata D	escription			
		75	75	75	75	75	75	N				(mbgi)					
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													••				
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Logged By:			BD		JKIIIY L	lu						Date Co	Level.			12/02/2010	•
Checked By:			PSv	v								Date Co	ompleted:			13/02/2019	
Type and diame	ter of equipr	nent:	Cab	ole Perc	ussive							Sheet N				3 Of 3	
Water levels r	ecorded du	ring bo	oring,	m											1		
Date:			15/	02/201	19												
Hole depth:			15.0	00													
Casing depth:			6.0	0													
Level water on	strike:		7.20	0													
Water Level after	er 20mins:																
Remarks																	
1: Water strike	at 7.20m bg	I rising	to 6.8	30 mbg	l after	5min											
2:																	
3:																	
4.		Samnl	e or T	ests							Strata						
				0313							50.40	Water	-				
Type	Depth				Resul	t				Legend	Depth	Strikes		Strata De	escription		Installation
	(mbgl)	75	75	75	75	75	75	N	1		(mbgl)	(mbgl)					
									10.00	v· · · v·			Vory donso gro	v clavov si	Ity SAND (PA	CSUOT	××××××××
										~^. (×			FORMATION).	y claycy si	rty 3, 110. (b) 1	001101	
										; . · × . · •	1						
S	10.50	9	13	19	20	11		50	10.50	x · · · x							
	11 blows in	R5 for	46mm	penet	ration.				-		1						
В										(·.^.·.×.	1						
									-[	××.							
										(×	•						
									11.00	x. <sup>.</sup> .x.							
									-	· · · × · · · ·	1						
										(·.··.×.	]						
										<u>^:::</u> .^:							
c	11 50		17	21	20			- FO	11 50	(·.×.·.×.							
5	0 blours in F	8	16	21	20	9		50	11.50	хх.	1						
D	9 DIOWS IN F	tor I	smm l	penetra	ation.					; : · × : · 、·	1						
в										XX.							
									· ·		1						
									12 00	(·.^×.	1						
									12.00	×.:×.	1						
										· · × · · ·							
s	12.30	9	16	20	18	12		50		х х.	•						
	12 blows in	R5 for	18mm	penet	ration.				_{	. · · x · · · ·	1						
В									12.50	· · · · · · · · · · · · · · · · · · ·							
										××.							
									-	(·:×:.×:	•						
									-{	×. : . : × .	1						
										· · × · · *							
									13.00	х х							
									-	· · · · · · · ·							
										(`.^ <b>`.</b> `.¥.	1						
									-[	××.							
										(×	1						
S	13.50	10	15	22	24	4		50	13.50	x. <sup>.</sup> .x.	•						
	4 blows in F	R5 for 6	3mm	penetra	ation.					x	1						
В										· · · · · · · · · · · ·	]						
										<u> </u>	-						
									14 00	(·.^.`.×.	1						
									14.00	хх.	1						
										; . · X <sup>.</sup>	]						
										××.							
										· · x · · ·	1						
S	14.50	11	18	23	22	5		50	14.50	( X.	]						
5	18 blows in	R2 for	16mm	penet	ration	5 blow	s in R	for 6	4mm pene	××.	1						
В				1						×.,							
									-	х х.							
									-[	; : · × : · •							
									15.00	· · · ·^.	15.00						
		,	Samel	na Carl	0.11	Indict	rbod	D		ad D Cm	all Dicturber	\A/ \A/a+a-	(11*) Nor	ionu of Car	mplo		
		1	Jampill	ny cua	ເຮ. ປ- ໄ ໄລຫ	nuistu	n Ded	Làl - ت امغا	ye Disturb			vv - vvaler		ery ur San	nhie		

Jomas Associates Ltd - Lakeside House, 1 Furzeground Way, Stockley Park, UB11 1BD T: 0843 289 2187 E: info@jomasassociates.com W: www.jomasassociates.com

													CABLE PERCUSSI	ON BOREHOLE RECORD	
					J	<b>O</b>						Explora	tory Hole No:	BH2	
Site Address:			Eale	v Roa	d Woki	na GU2	2 0AF					Project	No	P13811145	9
Client:			Gold	dev Wr	a woki	td	2 0AI					Ground	l evel:	113013143	/
Logged By:			BD		JKIII G L	iu -						Date Co	mmenced:	12/02/201	9
Checked By:			PSw	/								Date Co	ompleted:	13/02/201	9
Type and diame	ter of equipr	nent:	Cab	Ile Perc	ussive							Sheet N	lo.	1 Of 3	
Water levels re	ecorded du	ring bo	rina	m	assire							onoot n		1 010	
Date:		ing be	l lig,							1					
Hole depth:															
Casing depth:															
Lovel water on c	trikov														
Water Level after	r 20mins:														
Domorko	2011113.														
	om 6 20m 1	15.00ml	ad roc	overer	t oc do	mn									
2. No water rep	orted	15.0011	Jyrrec	.overet	a as ua	mp.									
2. NO Water rep	or teu.														
3.															
4:		Communit		eete							Ctrata				
		Sample	eorie	ests							Strata	10/	-		
-	Depth				Resul	t					Depth	Strikes	Strata [	Description	Installation
Туре	(mbgl)	<u> </u>								Legend	(mbgl)	(mbal)			
		75	75	75	75	75	75	N	0.00			( ))			
									0.00				Grass over dark brown s	andy slightly gravelly clay.	
D	0.10												(TOPSOIL).		
ES	0.20														
											0.40				
										Х.	0.10		Medium dense becoming	dense and very dense	
ES	0.50								0.50	· · · · · · ·			orange to brown silty SA	ND. (BAGSHOT	
В									-X	X.			FORMATION).		
										· · · · × ·					
										· × · ×.					
										x					
									1.00 -						
									-X.	·.^×.					
									-[;	:.:.×:.					
										. × . <sub>*</sub> .					
										· · · x					
S	1.50	1	3	3	5	6	8	22	1.50 —						
В									-X	·. ^. ·.×.					
										×.					
										· ×					
									2.00 —	· · · · ^ ·					
									-X	· × · ×.					
									>	:. <sup>.</sup> ×					
									l _(·	· ×					
S	2.50	2	4	5	5	9	9	28	2.50 -	··· · · · · ·					
В									—×	· × · ×					
									_``	:. <sup>.</sup> ×					
									_j.	· x · · ·					
										*.					
									3.00 -	· · · × ·					
									_x.	· × · ×					
										: · · х .					
										· · <del>x</del> · · · ·					
									×.	· . ^ X.					
s	3 50	3	6	6	7	g	10	31	3 50 - )	· · · · × ·					
P	5.50	5	0		<i>'</i>		10	51	J.50	· ×					
В										· · · x					
									· ·						
									X	·.^×.					
									1.00 7.3	:. <sup>.</sup> ×					
									4.00	·×··					
									-x	· · · ×·					
									1 7.						
									X	· . ^ . · .×.					
c	4 50		7		11	10	14	A.		:×					
5	4.50	3	/	9		12	14	46	4.50	∵x∵.					
В										· · · ·					
									⊣?	· · · · · · ·					
									⊤x	· × · ×					
									- · ·	x.					
									5.00						
			amelli		- ۱۱ ۰	Indictor	rhod	B. I.c.	na Disturba	. D Sm-	all Disturbod	W. Woto-	(11*) Non recovery of Co	mple	
		5	anpill	iy cua	с. U-l Jon	nas Ass	sociates	o-∟ar sltd-	Jakeside Ho	use, 1 Furz	earound Wav	. Stockley Pa	ark. UB11 1BD	inhic	
					101	T: 084	13 289	2187	E: info@iom:	isassociate	s.com W: www	w.jomasasso	ociates.com		
												,			

									_				CABLE PERCUSSI	ON BOREHOLE	E RECORD	
					J		¥ F					Explora	tory Hole No:		BH2	
Site Address:			Egle	ey Roa	d Woki	ng GU2	22 OAF					Project	No:		P1381J1459	
Client:			Gol	dev Wo	oking L	td						Ground	Level:			
Logged By:			BD									Date Co	mmenced:		12/02/2019	
Checked By:			PSv	v								Date Co	mpleted:	13/02/2019		
Type and diam	eter of equipr	nent:	Cab	ole Pero	cussive							Sheet N	lo:	2 Of 3		
Water levels i	recorded du	ring b	oring,	m											1	
Date:																
Hole depth:																
Level water on	strike															
Water Level aft	er 20mins:															
Remarks			-				-									
1: Silty SAND	from 6.30m-1	5.00m	nbgl red	covered	d as da	mp.										
2: No water re	ported.															
3:																
4:																
	:	Sampl T	e or T	ests							Strata		_			
Turne	Depth				Resul	t				Lonopol	Depth	Water Strikes	Strata D	escription		Installation
Туре	(mbgl)	75	75	75	75	75	75	N		Legend	(mbgl)	(mbgl)				
		75	75	75	75	75	75	IN	5.00 -							
S B	5.50 14 blows in	3 <mark>R6 for</mark>	9 <mark>15mm</mark>	10 <mark>) penet</mark>	12 <mark>ration.</mark>	14	14	50	5.50 —				Medium dense becoming orange to brown silty SA FORMATION).	dense and ver ND. (BAGSHOT	y dense	
S	6.50 15 blows in	3 R5 for	5 17mm	10 penet	15 ration.	15		40	6.00	× × × ×	6.30		Dense becoming very de (BAGSHOT FORMATION)	nse grey silty S	AND.	-
S	7.50 20 blows in	4 25 for	6	13	17	20		50	7.00 — 							
В										× · · × × · · × × · · × × · · × × · · ×						
S	8.50	5	6	14	20	16		50	8.50 —	×.	1					
	16 blows in	R5 for	32mm	penet	ration.				-	×. ×.	-					
В									9.00 —	· · · · · · · · · · · · · · · · · · ·						
S	9.50	5	7	13	19	18		50	9.50 —		1					
В	18 blows in	R5 for	22mm	<mark>penet</mark>	ration.				  10.00	× · · · × · · × · · × · · × · · × · · × · · × · · × · · × · · · × · · · · × ·						
		:	Samplii	ng Cod	le: U- l Jon	Jndistu nas Ass T: 084	rbed sociate	B - Lar s Ltd - 2187	rge Disturb Lakeside H E: info@jor	d D - Sm ouse, 1 Furz asassociate	all Disturbed zeground Way es.com W: ww	W - Water , Stockley Pa w.jomasasso	(U*) Non recovery of Sa ark, UB11 1BD pciates.com	mple		

					J		<b>X</b>				Explora	tory Hole No:		BH2	
Cite Address			Eal	Dee	al 14/al d		22.045				Droinet	Ne		D1201 I1 450	
Client:			Egi	dov W		ng GU₂ td	22 UAF				Ground			P1381J1459	
Logged By:			BD		oking L						Date Co	mmenced:		12/02/2019	
Checked By:			PSv	N							Date Co	mpleted:		13/02/2019	
Type and diam	eter of equipr	ment:	Cat	ole Pero	cussive						Sheet N	0:		3 Of 3	
Water levels i	recorded du	ring b	oring,	m											
Date:															
Hole depth:															
Casing depth:															
Level water on	strike:														
Water Level aft	ter 20mins:														
Remarks															
1: Silty SAND	from 6.30m-1	15.00m	nbgl red	covered	d as da	imp.									
2: No water re	portea.														
3. 4:															
4.		Samp	le or T	ests						Strata					
				0313							Water	-			
Туре	Depth				Resul	t			Legend	Depth	Strikes	Strata D	escription		Installation
51	(ingi)	75	75	75	75	75	75	N		(iigam)	(mbgl)				
									10.00			Dense becoming very der	se arev silty S		×××××××
									``````````````````````````````````			(BAGSHOT FORMATION).	ise grey sinty a	, IND.	
									x x .	1					
									×	1					
S	10.50	6	7	15	21	14		50	10.50						
	14 blows in	R5 for	18mm	penet	ration.				- <u>^ ^ : : · ^ :</u>	-					
В									-×`.^.`.×.	1					
										1					
									- <u>x</u> ×	1					
									<sup>11.00</sup> × · · × .	-					
										1					
									-X X.	]					
									<u>⊐.^:.:</u> .^:	-					
c.	11 50	-		17		10		-	X	1					
3	10 blows in	P5 for	9 26mm		zs	10		50	····×·	1					
в		101	201111	ipener					_x · · × · · x	1					
Б										-					
									X	İ I					
									12.00						
									XX.						
									_x · . × · . ×						
									_ × ×.	1					
									- X X X						
S	12.50	6	11	16	23	11		50	12.50						
	11 blows in	R5 for	22mm	penet	ration.				- <u>^ ^ </u>	1					
В									-x·.^x.	1					
									- × · · · × ·						
									×··×·×:						
									<sup>13.00</sup> × · · × ·						
									×	1					
				1					XX.						
										1					
S	13 50	7	10	18	22	10		50	13 50-X · . ^ · . X.	1					
3	10 blows in	R5 for	27mm	penet	ration	10		50		1					
В	10 010403 111			Periet					× · · × · ×						
									_ × . · . × .	1					
									X	1					
									14.00						
									×. · . ×. ·						
									-x · . × x.						
									_ × ×.	1					
									××*						
S	14.50	8	15	23	26			49	14.50						
	26 blows in	R4 for	39mm	penet	ratiion				- ^ · · · · ^ ·						
В									-x · . <sup>x</sup> · .x.	1					
									- × · · · × ·	1					
									× × ×	15.00					
									15.00						
			Sampli	ng Cod	le: U- I	Jndistu	irbed	B - Lai	ge Disturbed D - Sm	all Disturbed	W - Water	(U*) Non recovery of Sar	nple		
			•		Jor	nas Ass	sociate	s Ltd -	Lakeside House, 1 Furz	eground Way,	Stockley Pa	ark, UB11 1BD			
						T: 084	43 289	2187	: info@jomasassociate	s.com W: www	.jomasasso	ociates.com			

									_				CABLE F	ERCUSSIC	ON BOREHOLE	E RECORD	
					J	0]						Explorat	ory Hole No:			BH3	
Site Address:			Egle	ey Roa	d Woki	ng GU2	22 OAF					Project I	No:			P1381J1459	
Client:			Gol	dev Wo	oking L	td						Ground	Level:				
Logged By:			BD									Date Co	mmenced:			12/02/2019	
Checked By:												Date Co	mpleted:			13/02/2019	
Type and diame	ter of equipr	nent:	Cab	le Peru	ucssive							Sheet N	o:			1 Of 4	
Water levels re	ecorded du	ring bo	ring,	m													
Date:																	
Hole depth:																	
Casing depth:																	
Level water on s	trike:																
Water Level afte	r 20mins:																
Remarks																	
1: Water seepa	ge reported	betweer	า 2.15	m-2.30	Ombgl.												
2:																	
3:																	
4:																	
		Sample	e or T	ests							Strata		1				
	Depth				Resul	t					Depth	Water		Strata D	escription		Installation
Туре	(mbgl)				T					Legend	(mbgl)	Strikes (mbal)		Strata D	comption		
		75	75	75	75	75	75	N			_	(mbgi)					
									0.00				Grass over da	k brown sa	ndy slightly gr	avelly clay.	××××××
D	0.10												(TOPSOIL).				
ES	0.20																
ES	0.30										0.40						
В										. X.	0.40		Medium dense	becoming	dense orange f	to brown	
									0.50	· · · · · ·			silty SAND. (B	AGSHOT FC	RMATION).		
									-X	· · · . X.							
									_[×	· · · × ·							
										. ×							
										· · · x							
									1.00								
									-X.	· . <sup>·</sup> . · .×.							
S	1.20	1	2	3	4	5	5	17	_{'×	× .							
В									_[.∙	· ×							
									1.50 -	· · · ^ · ·							
									X.	×							
									_;×	. · . · × .							
									_j.	·×· ·							
									X	· · · X.							
S	2.00	3	3	5	6	8	9	28	2.00 - 7	× .							
В		-		-	-					. ×. ×.							
									X	· · · × .							
									<u> </u> .	· 🗴 · 🖓							
									X	X.							
									2.50	· × .							
									_x.	×							
									×	· · · × .							
									_[.	· x · · ·							
										· · · · . X.							
s	3 00	2	4	6	7	9	10	32	3.00	× .							
R	5.00	-	·		·	`				· × · * .							
-									L L	· · · x							
									_1	· x · · ·							
									×	· · · · . ×.							
									3 50 7	. ×.							
									3.50	· × . 🖓							
									· x	· · · x							
									1 7.								
									X	·. ^. · .×.							
c	4.00		-	_	_				×	× .							
5	4.00	3	5	5	/	9	9	30	4.00	· x							
В										· · · X.							
									→'	· · · ·							
										× · .×.							
									<u>,                                   </u>	. · . · x .							
									4.50	· x							
									- X.	· X.							
										×.							
									×.	×							
									 x	· · · x							
S	5.00	4	6	7	9	10	11	37	5.00								
В																	
		S	amplii	ng Cod	e: U- l Jon	Jndistu nas Ass T: 084	rbed sociate: 13 289	B - Lar s Ltd - 2187	ge Disturbed Lakeside Ho E: info@ioma	D - Sma use, 1 Furz sassociates	all Disturbed eground Way, s.com W: www	W - Water Stockley Pa	(U*) Non reco ark, UB11 1BD ciates.com	very of Sar	nple		

								_	-					CABLE F	PERCUSSIC	N BOREHOLI	E RECORD	
					J	•]	¥ ľ						Explora	tory Hole No:			BH3	
Site Address:			Egle	ey Roa	d Woki	ng GU2	22 OAF						Project	No:			P1381J1459	9
Client:			Gol	dev Wo	oking L	td							Ground	Level:				
Logged By:			BD										Date Co	ommenced:			12/02/2019	)
Checked By:													Date Co	ompleted:			13/02/2019	)
Type and diame	eter of equipn	nent:	Cab	ole Peru	ucssive								Sheet N	lo:			2 Of 4	
Water levels r	ecorded dur	ring bo	oring,	m			-								1			
Date:			_										_					
Casing donth:			_															
Level water on	strike		_															
Water Level after	er 20mins:																	
Remarks							-											
1: Water seepa	ge reported I	petwee	en 2.15	5m-2.3	0mbgl.													
2:																		
3:																		
4:																		
		Sampl I	e or T	ests					-			Strata	10/	-				
Turno	Depth				Resul	t					agond	Depth	Water Strikes		Strata De	escription		Installation
туре	(mbgl)	75	75	75	75	75	75	N	-	Le	egena	(mbgl)	(mbgl)					
S	5.00	4	6	7	9	10	11	37	5.00 -									
В										_:×:·	: : × .			silty SAND. (B	e becoming ( AGSHOT FC	dense orange ' RMATION).	to brown	
										-x``.	×							
										· ¥·	· · · · · ·	5.30		Dense ranidly	hecomina v	erv dense are	v slightly	
										- î:	. · · · ·			clayey silty SA	ND. (BAGSI	HOT FORMATI	ON).	
									5.50 -	×.	^.·.×.							
										¬.^:								
										χ.	×							
										·×.	:.:×.							
s	6.00	4	6	8	10	12	14	44	6.00 -	<u>_x</u> .:	×							
В			_							_ × .	· · × .							
										_(∵	×							
										-^.·	· · · · · ·							
										÷ĉ:								
									6.50 -	×.	^ x.							
										-[×:•	× .							
										-x∵	×							
										·×.	· . · × .							
c	7.00	2	7	10	15	14	7	E0	7 00 -	<u>`</u> .``	×							
5	7 blows in R	6 for 4	8mm	nenetra	ation.	10	'	50	7.00	_`x`.	· · x .							
В									· .	_j.∵.	×							
										<u> </u>								
										- <u>.</u> ?:	· · · · · ·							
									7.50 -	×.	×. · .×.							
										-:×:•	× .							
										-x∵.	×							
										·×.	·.·×.							
s	8.00		Q	12	16	21		50	8.00 -	<u>.</u>	×							
5	21 blows in	R5 for	52mm	nenet	ration	21		50	8.00	_`x`.	· · x .							
В	21 510115 111		02	ponor					· .	_ <u>:</u> .:.	x							
											· · · X.							
										×:	×.							
									8.50 -	-x · .	×							
										- × .	× .							
										- <u>k</u> ∵	×							
										·×.	· . · x .							
-			_							†.∴	×							
S	9.00	5	9	15	18	17		50	9.00 -	- X · .	· · · ×							
D	I / DIOWS IN	R5 TOF	14mm	penet	ration.					] ^ :								
Б										_×`.	·^. · .×.							
										_:×:-	. ×.							
									9.50 -	x.	×							
										×.	: :×.							
										-(.:.·	х							
										- x.	· · · ×							
										+?:	¥							
S	10.00	5	8	17	22	11		50	10.00-	~ ·	.^ . v							
	11 blows in	R5 for	58mm	penet	ration.													1
В		ç	Sampli	ng Cod	le: U- l	Jndistu	rbed	B - Lar	ge Distu	rbed	D - Sma	all Disturbed	W - Water	(U*) Non reco	overy of San	nple		
					Jor	nas Ass	sociate	s Ltd -	Lakeside	Hous	e, 1 Furz	eground Way,	Stockley Pa	ark, UB11 1BD				
						1: 084	+3 289	218/	⊑: into@j	urnasa	associate	S.COTTI W: WWW	.jumasasso	Julates.com				

				CABLE P	PERCUSSIC	N BOREHOLE	E RECORD	
		1A5		Exploratory Hole No:			BH3	
Site Address:	Egley Road Woking GU22	2 OAF		Project No:			P1381J1459	
Client:	Goldev Woking Ltd			Ground Level:				
Logged By:	BD			Date Commenced:			12/02/2019	
Checked By:				Date Completed:			13/02/2019	
Type and diameter of equipment:	Cable Perucssive			Sheet No:			3 Of 4	
Water levels recorded during bor	ring, m							
Date:								
Hole depth:								
Casing depth:								
Level water on strike:								
Water Level after 20mins:								
Remarks								
1: Water seepage reported between	2.15m-2.30mbgl.							
2:								
3:								
4:								
Sample	or Tests		Strata					

Туре	Depth (mbgl)	Result 75 75 75 75 75 75 N							Legend	Depth (mbgl)	Water Strikes (mbgl)	Strata Description	Installation
	10.00	75	75	75	75	75	75	N	10.00		(		
5	11 blows in	D P5 for	58mm	nenet	22	11		50	<u> </u>			Dense rapidly becoming very dense grey slightly	
В	TT DIOWS III	K3 101	561111	penet					_x			Clayey silty SAND. (BAGSHUT FORMATION).	
									10 50-X				
										1			
									_ ××.	•			
S	11.00	7	9	18	24	8		50	11.00 × · · · × .	1			
В	O DIOWS III R			Jeneti a					× × · ×				
									_ × ×.				
									× · × · ×				
									<sup>11.50</sup> ×···×·				
									_x · · × · · x				
									- × · · · × ·				
c	12.00		10	15		10		F.0	12 00 X X X				
3	13 blows in	R5 for	54mm	penet	ation.	13		50	××.				
В									-x · · ×				
									12.50				
									-x · . × . ×.				
									- * * .				
S	13.00	9	11	19	22	9		50	13.00				
	9 blows in R	R5 for 3	37mm	enetra	tion.				XX.				
В									-×·.^×.				
									13.50				
									-\^`.∵.^:				
									_X`.``.X. _`X`.`X				
									X				
S	14.00	10	12	22	22	8		52	14.00				
	8 blows in R	R5 for 1	1 <mark>6mm  </mark>	enetra	tion.								
В									XX.				
									×				
									<sup>14.50</sup> x x				
									_`×. · . · × .				
									-x · · × · · x				
S	15.00	9	14	23	20	7		50	15.00				
			Sampliı	ng Cod	e: U- L	Jndistu	rbed	B - Lar	ge Disturbed D - Sm	all Disturbed	W - Water	(U*) Non recovery of Sample	
					501	T: 084	13 289	2187	: info@jomasassociat	es.com W: ww	/w.jomasasso	ciates.com	

		CABLE PERCUSSI	ON BOREHOLE RECORD
	<b>CIOMAS</b>	Exploratory Hole No:	BH3
Site Address:	Egley Road Woking GU22 0AF	Project No:	P1381J1459
Client:	Goldev Woking Ltd	Ground Level:	
Logged By:	BD	Date Commenced:	12/02/2019
Checked By:		Date Completed:	13/02/2019
Type and diameter of equipment:	Cable Perucssive	Sheet No:	4 Of 4
Water levels recorded during bor	ring, m		
Date:			
Hole depth:			
Casing depth:			
Level water on strike:			
Water Level after 20mins:			
Remarks			
1: Water seepage reported between	2.15m-2.30mbgl.		
2:			
3:			
4:			

	e or T	ests							Strata					
Туре	Depth (mbgl)	Result           75         75         75         75         75         1           9         14         23         20         7         5								Legend	Depth (mbgl)	Water Strikes (mbgl)	Strata Description	Installation
S	15.00	9	14	23	20	7	,5	50	15.00				Dance repidly becoming your dance may all that	*****
									-	×. ×. ×. ×. ×.			clayey silty SAND. (BAGSHOT FORMATION).	
									- 15.50-	x	15.45			
									-					
									-					
									16.00	-				
									-					
									16.50—					
									-	-				
									- 17.00—					
									-					
									-					
									-					
									-					
									18.00—					
									-					
									 18.50					
									_					
									-					
									-					
									19.50					
									–					
									20.00-					
	<u> </u>	<u> </u>	Samplii	ng Cod	e: U- U Jom	Indistu nas Ass T: 084	rbed sociates 13 289	L - Lar s Ltd - 2187 I	ge Disturk Lakeside E: info@jo	Ded D - Sma House, 1 Furz masassociate:	all Disturbed eground Way s.com W: ww	W - Water , Stockley Pa w.jomasasso	U*) Non recovery of Sample rk, UB11 1BD ciates.com	1

								-	-			V	/INDOW/WINDOWLES	S SAMPLING B	OREHOLE RE	ECORD	
						0]	¥ P		5			Explora	tory Hole No:		WS2		
Site Address:			Egle	ey Roa	d, Wok	ing, Gl	J22 ON	IH				Project	No:		P1381J1459		
Client:			Gol	dev Wo	oking L	td						Ground	Level:				
Logged By:			AM									Date Co	mmenced:		07/03/2019		
Checked By:			PSv	v								Date Co	mpleted:		07/03/2019		
Type and diame	ter of equipr	ment:	Win	ndowles	ss Sam	pler						Sheet N	lo:		1 Of 2		
Water levels re	ecorded du	ring bo	oring,	m											1		
Date:			_				-										
Hole depth:																	
Casing depth:	stalles -		_														-
Water Level after	ar 20mins																
Remarks	20111113.																
1: No water rep	orted.																
2: *Field descri	ption																
3:																	
4:																	
		Sampl	e or T	ests							Strata						
	Denth				Result	t					Depth	Water	Strata	Description		Insta	lation
Туре	(mbgl)				T Cour					Legend	(mbgl)	Strikes (mbal)	501818	Description			ation
		75	75	75	75	75	75	N				(ingi)					
									0.00 -		X		Soft consistency* brow	n sandy slightly	gravelly clay		1-1-1
											X		with roots and rootlets	Sand is fine. Gr	ROUND -	FEE	
ES	0.25										0.30		Topsoil)	menta: (m/DE 0	ROOND	FI	E.E.
										0	•		Recovered as loose* b	own to orange s	ilty clayey	EE	83
FS	0.50								0.50 -				Gravel consists of fine	to coarse, sub-ro	ounded flint.	E-3-3	12-2-
										° °	·		(RESIDUAL BAGSHOT	ORMATION)		는크	12-23
										× · · · × ·	0.60		Medium dense brown r	nottled orange si	Ity clavey	133	
										x · . × x.			SAND. Sand is fine to r	nedium. (BAGSH	OT	F====	===
										·× ×.	1		FORMATION)			FIRE	===
ES	1.00								1.00 -	x · · × · · x						[]	
SPT		2	2	2	3	3	3	11		·x.·.x.							<u></u>
										· · · x · · ·							ģ. :
										X X.							1
									1 50	$\cdot$	•						
									1.50 -	X · . ^ · . X.	1						
										·×. · . · × .							
										x · · × · · x							1
										· x . · . · x .							
SPT	2.00	3	4	5	5	6	6	22	2.00 -	x	1						
										X, X.							1
										× ×.							<u></u>
										x · . × . ×.	•						<u></u>
										××.	1						
D	2.50								2.50 -	x · · × · · x							1
										· x · · · x .							1
										· · · x · · ·	1						ģ :
										X X.	1						1
CDT	2.00			-	_		-	0.0	0.00	12.12	•						
SPI	3.00	2	4	5	5	6	/	23	3.00 -	X · . <sup>X</sup> . · .X.							
										·×··×·							
										x · · × · · x							1
										· x . · . · x .	•						
D	3.50								3.50 -	x	1						ģ
_										X X.							
										× · · · × ·							1
										x · . × x							1
										× ×.	1						
SPT	4.00	4	5	5	9	10	11	35	4.00 -	x · · × · · *							****
										~ · · · · ^·							****
										122	4.20						****
										× × · · · × ·	4.30		Very dense brown silty	SAND. Sand is f	ine to		***
										· · · · · ·	•		medium. (BAGSHOT FO	ORMATION)			***
D	4.50								4.50 -	× · . ^ · . ×.	1						***
									1	×. ×.							***
									1	x · · × · . x							$\otimes$
										·×.·.×.							>>>>
CDT	E OO	4	7		10	10	10	40	5.00	<u>,×</u>							***
571	5.00	0	/	8		12	12	42	3.00 -								
		1	1														
		9	Sampli	ng Cod	le: U- l	Jndistu	rbed	B - Lar	rge Distu	bed D-Sm	nall Disturbed	W - Water	(U*) Non recovery of S	Sample			
					Jon	nas Ass T: 084	sociate 13 289	s Ltd - 2187	Lakeside E: info@i	House, 1 Fur	zeground Way es.com W· www	, Stockley Pa w.iomasasso	ark, UBTT 1BD ociates.com				
							0 /		J			.,					

													V	VI NDOW/WI NI	DOWLESS S	SAMPLING B	OREHOLE R	ECORD
					J	0	M						Explora	tory Hole No:			WS2	
Site Address:			Egle	ey Road	d, Wok	ing, Gl	J22 ON	Н					Project	No:			P1381J1459	
Client:			Gold	dev Wa	king L	td							Ground	Level:				
Logged By:			AM										Date Co	ommenced:			07/03/2019	
Checked By:			PSw	/									Date Co	ompleted:			07/03/2019	
Type and diame	ter of equipn	nent:	Win	dowles	s Sam	pler							Sheet N	No:			2 Of 2	
Water levels re	ecorded dui	ring bo	ring, i	m														
Hole depth:																		
Casing depth:																		
Level water on s	strike:																	
Water Level after	er 20mins:																	
Remarks																		
1: No water rep	ntion																	
3:	ption																	
4:																		
	1	Sample	e or Te	ests								Strata	•					
	Depth				Result	t						Depth	Water		Strata D	escription		Installation
Туре	(mbgl)	75	75	75	75	75	75		-	Le	egend	(mbgl)	(mbgl)					
SPT	5.00	6	75	8	10	12	12	42	5.00 -									
										- × .	· · · ·			medium. (BAC	own slity SA SSHOT FORM	MATION)	ine to	
									-	Χ.	× ×.							
									-	· × ·	:.:×.							
									5 50 -	x · ·	X. X	5.45						******
									-									
									-	-								
										-								
									-									
									6.00 -									
									-	-								
										-								
									-	-								
									6.50 -	-								
									-									
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									7.00 -	-								
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									-	1								
										]								
									-	4								
									10.00-	-								
		S	amplir	ng Code	e: U- L	Jndistu	rbed	B - La	rge Distur	bed	D - Sma	all Disturbed	W - Water	(U*) Non reco	overy of Sar	nple		

Jomas Associates Ltd - Lakeside House, 1 Furzeground Way, Stockley Park, UB11 1BD T: 0843 289 2187 E: info@jomasassociates.com W: www.jomasassociates.com

												W	INDOW/WINDOWLESS	SAMPLING BC	REHOLE RI	ECORD	
					J		<u>i</u>					Explorat	ory Hole No:		WS4		
Cite Address			Eal	Dee.	d Mak	ing Cl	122.01					Decident	Ma.		0120111450		
Site Address:			Egle		a, wok	ing, GL	J22 UN	н				Project		· · · · ·	P1381J1459		
Loggod Du			GOI		JKIIIY L	lu						Doto Co	mmoncodi		04/02/2010		
Chockod By:			DSv									Date Co	mplotod:		06/03/2019		
Type and diame	tor of oquip	mont	F 3V	v	s Sam	plor						Shoot N	o:		1 Of 2		
Water levels r		ring bo	ring	m	s Jam	piei						Sheet N	0.		1012		
Date:	ecolueu uu	ning be	ning,	111													
Hole depth:																	
Casing depth:			_														
Level water on s	trike		-														
Water Level afte	r 20mins																
Remarks	20111101		_														
1: No water rep	orted.																
2: *Field descri	otion																
3:																	
4:																	
		Sample	e or T	ests							Strata						
	Donth				Deeul				1 [		Danath	Water	Ctroto D			Inote	lation
Туре	(mbal)				Resul	L				Legend	(mbal)	Strikes	Strata D	escription		Insta	lation
	(	75	75	75	75	75	75	N			(	(mbgl)					
									0.00				Soft consistency* brown	sandy CLAY wit	h roots and	1-1-1	12-2-
									-				rootlets. Sand is fine. (TC	PSOIL)		는근	1222
PIV	0.25								-							는그그	12-23
150	0.20								-							는그그	12-23
									-		0.50					1	1222
									0.50 -	00.	0.50		Recovered as brown to or	ange silty clave	ey slightly	눈크	12-23
									-	· · · · · · ·			gravelly SAND. Sand is fir	ne to medium.	Gravel	는그그	12-23
PJV	0.70								-	۵. <sup>.</sup> . <sup>°</sup> .			CONSISTS OF FINE TO COARSE,	SUB-rounded fl	lint.	는그그	12-23
									-	°. · . · . · . ·			(RESIDUAL BAGSHOTTO	NIATION)		1	1222
D	0.90								-	۰ <sup>۰</sup> ۰٬۰٬۰	1.00					1	1222
SPT	1.00	1	3	3	4	5	5	17	1.00 -	x · · · x	1.00		Medium dense to dense b	rown mottled o	range silty		
									-		•		clayey SAND. Sand is fine	e to medium. (E	BAGŠHOT		
									_'	···^··×.	1		FORMATION)				
									-[	××.							§
									-,	· · × · · ×							
D	1.50								1.50 —	x x.							
									-								
									י –	×.	1						
									-:	××.							
										· × · ×							
SPT	2.00	3	4	7	7	8	9	31	2.00 —	x. · · x							
									-		•						
									- Y	. · . · . · . ×.							
									-	××.							
									l –	. ×	2.50						
									2.50	x. <sup>.</sup> .x.	2.00		Medium dense brown silty	/ SAND. Sand is	s fine to		
									1 -	· · · <del>x</del> · · · ·			medium. (BAGSHOT FOR	MATION)			
									I –?	· · · · · · · · · · · · · · · · · · ·							
									-	××.							
									-	· · × · · ×.							
SPT	3.00	4	6	8	7	9	10	34	3.00 -	××.							
D									1 1	· · x · · ·							
									- <u></u> ?	· · · · · · · · · · · · · · · · · · ·							
										<u></u>							
									_	×							
									3.50 -	×. <sup>.</sup> .×.							
									-	· · · <del>x</del> · · · ·							
									_?	····×.							
									-	<u></u>							
									-	· · × · · ×							
SPT	4.00	2	3	4	5	5	7	21	4.00 -	x.·.×.	•						
D									1 -	· · · <del>x</del> · · · ·							>>>>
									−?	X.							****
									-	××.							****
									-	· × · ×							***
									4.50	×. <sup>.</sup> .×.							$\otimes$
									-	· · · x · · ·							$\otimes$
									_!	X.							***
									-	<u> </u>							***
			_			_	-		¬	× . ×							$\otimes$
SPT	5.00	4	5	6	6	8	9	29	5.00								
		1															
		S	Sampli	ng Cod	e: U- l	Jndistu	rbed	B - Lar	ge Disturbe	d D - Sma	all Disturbed	W - Water	(U*) Non recovery of Sar	nple			
					Jon	nas Ass	sociate:	s Ltd -	Lakeside H	ouse, 1 Furz	eground Way,	Stockley Pa	irk, UB11 1BD				
						1. U84	rJ 289	210/1	∟. mno@jon	usassuCid(e	S.COTT W: WWV	w.juiiid58550	010103.0011				

												V	/INDOW/WINDOW	/LESS S	AMPLING B	OREHOLE R	ECORD
						O]						Explora	tory Hole No:			WS4	
Site Address:			Egle	ey Roa	d, Wok	ing, Gl	J22 ON	Н				Project	No:			P1381J1459	)
Client:			Gold	dev Wo	oking L	td						Ground	Level:				
Logged By:			AM									Date Co	mmenced:			06/03/2019	)
Checked By:			PSw	/								Date Co	mpleted:			06/03/2019	)
Type and diame	ter of equipr	ment:	Win	dowles	s Sam	pler						Sheet N	lo:			2 Of 2	
Water levels re	ecorded du	ring bo	oring,	m						1		1					
Date:																	
Casing depth:			-				-			-		-					
Level water on s	strike		-														
Water Level after	er 20mins:																
Remarks			_							1							
1: No water rep	orted.																
2: *Field descri	ption																
3:																	
4:		C l -	T								Churche						
		Sample	e or Te	ests					-		Strata	Wator	-				
Type	Depth				Result	t				Legend	Depth	Strikes	Str	rata De	escription		Installation
Type	(mbgl)	75	75	75	75	75	75	N	1	Legena	(mbgl)	(mbgl)					
SPT	5.00	4	5	6	6	8	9	29	5.00				Modium donso brow	wp cilty	SAND Sand	is fino to	
										···· · · · · · · · · · · · · · · · · ·			medium. (BAGSHO	DT FORM	IATION)	is fine to	
									-X	· · · · · ×.							
									-;>	×.							
										· . x *.	5.45						
									5.50								
									6.00 —								
									-								
									-								
									6.50								
									7.00 —								
									-								
									-								
									7.50								
									8.00 —								
									-								
									-								
									-								
									8.50								
									9.00 —								
									-								
									9.50								
									10.00-								
		S	amplir	ng Cod	e: U- L Jon	Jndistu nas Ass	rbed sociate	B - Lar s Ltd -	ge Disturbed Lakeside Ho	d D - Sma use, 1 Furz	all Disturbed	W - Water Stockley Pa	(U*) Non recovery ark, UB11 1BD	of Sam	ple		

					-							V	VINDOW/WINDOWLESS	SAMPLING BOREHOLE R	ECORD	
						0]	<b>F</b>		5			Explora	tory Hole No:	WS5		
Site Address:			Egle	ey Road	d, Wok	ing, Gl	J22 ON	Н				Project	No:	P1381J1459	)	
Client:			Gol	dev Wo	oking L	td						Ground	Level:			
Logged By:			AM									Date Co	ommenced:	06/03/2019		
Checked By:			PSv	v								Date Co	ompleted:	06/03/2019		
Type and diame	ter of equipr	ment:	Win	ndowles	ss Sam	pler						Sheet N	lo:	1 Of 2		
Water levels re	ecorded du	ring bo	oring,	m									F			
Date:																
Hole depth:																
Casing depth:																
Level water on s	strike:															
Water Level after	er 20mins:															
Remarks																
1: No water rep	orted.															
2: *Field descri	ption															
3:																
4:																
		Sample	e or T	ests							Strata					
									1			Water				
Type	Depth				Resul	t				Legend	Depth	Strikes	Strata D	escription	Insta	llation
.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	(mbgl)	75	75	75	75	75	75	N		Logona	(mbgl)	(mbgl)				
		75	75	7.5	/3	75	75		0.00 -							
													Soft consistency* brown	sandy CLAY with roots and		1
													rootiets, sand is line. (10	JPSUIL)	E===	1
PJV	0.25														F===3	1777.
															F===	1
															F===	
									0.50 -		0.60				F===1	1====
										00.			Recovered as loose* brow	wn to orange silty clayey	+	1
									-	·	4		slightly gravelly SAND. S	and is fine to medium.	E-1-1	====
PJV	0.80								-	۵. <sup>.</sup> . <sup>°</sup> .			Gravel consists of fine to	COArse, sub-rounded flint.	1	12-2-
											1.00				1-1-1	
SPT	1.00	2	1	2	2	3	2	9	1.00 —	<u>xx.</u>	1.00		Loose rapidly becoming n	nedium dense brown	1	0
											1		mottled orange silty claye	ey SAND. Sand is fine to		Ø
										×.	1		medium. (BAGSHOT FOR	MATION)		0
										××.	1					g
										· X	1					
									1.50 —	· · · · · · ·						8
									_	<u>^^</u> .	-					0
										. ×	1					
										хх.	1					8
										· · · x · · · ·	1					0
SPT	2.00	2	4	5	6	l o	g	27	2 00 -	×.	1					0:
	2.00	2	-				0	21	2.00	× ×.	1					
D										· · × · •	]					g
										x x · · · x	1					0
										<u>^</u> ^.	-					0
										×	1					0
									2.50 —	xx.	1					8
										· · · · · · · · ·	1					0
										x.	1					0
									-	×.:×.	1					0
									-	· . ×						g
SPT	3.00	3	3	6	6	7	4	23	3.00 -	· · · · · · · · · · · · · · · · · · ·	3.00		Madium danca basoming	donce brown cilty SAND	-1::	8
									_	<u>^^</u> .	-		Sand is fine to medium.	(BAGSHOT FORMATION)	1	0
										· · × · · ×	1					0
										хх.	1					8
										· · · x · · ·	1					0
р	3 50								3 50 -	· · · · · X.	1					0
D	5.50								5.50	×. : . : ×.	1					0
										· · × · •	]					0
										x x · · · x						
										<u> </u>	-					0
										· × · ×	1					0
SPT	4.00	3	4	5	7	8	10	30	4.00 —	хх.	1					0
										· · · · · · · ·	1					8
										×.	1					0
									-	×.:×.	1					0
									-	· X *.	1					0
D	4.50								4.50 —	· · · · · · ·						8
									_	^×.	ł					
										. × . ×	1					
										х х.	ł					
										· · · x	1					8
SPT	5.00	6	7	9	10	12	13	44	5.00	Х.						0
511	3.00		,		'0	' <sup>2</sup>	13		5.00							
															1	
		5	Samplii	ng Cod	le: U- l	Jndistu	irbed	B - Lar	ge Disturb	ed D - Sma	all Disturbed	W - Water	(U*) Non recovery of Sar	mple		
				-	Jor	nas Ass	sociate	s Ltd -	Lakeside H	ouse, 1 Furz	eground Way	, Stockley Pa	ark, UB11 1BD			
						T: 084	43 289	2187	E: info@jor	nasassociate	s.com W: ww	w.jomasasso	ociates.com			

													W	/INDOW/WINE	DOWLESS	SAMPLING BO	DREHOLE RE	ECORD
					J			7					Explorat	tory Hole No:			WS5	
Site Address:			Eale	ev Roar	d Wok	ina GL	122 ON	н					Project	No			P1381 I1459	
Client:			Gold	dev Wo	king L	td	22 011						Ground	Level:			1.00101107	
Logged By:			AM										Date Co	mmenced:			06/03/2019	
Checked By:			PSw	/									Date Co	mpleted:			06/03/2019	
Type and diame	eter of equipn	nent:	Win	dowles	s Sam	pler							Sheet N	lo:			2 Of 2	
Water levels r	ecorded dui	ring bo	pring,	m			1											
Hole depth:																		
Casing depth:																		
Level water on	strike:																	
Water Level after	er 20mins:																	
Remarks																		
1: No water rep	oorted.																	
3:	μιση																	
4:																		
	:	Sample	e or Te	ests					-			Strata		_				
Tupo	Depth				Resul	t					edend	Depth	Water Strikes		Strata D	escription		Installation
туре	(mbgl)	75	75	75	75	75	75	N	-		egena	(mbgl)	(mbgl)					
SPT	5.00	6	7	9	10	12	13	44	5.00 —	· ×:	· · ×			Medium dense	becomina	dense brown s	ilty SAND.	
									-	÷	· · · · · ·			Sand is fine to	medium. (	BAGSHOT FOR	MATION)	
									-	× . ×	· · · X.							
										· .^	:î	F 4F						
									5.50 -	v ·	.^. ¥	5.45						···· · · · · · · · · · · · · · · · · ·
									-	-								
										-								
									-	-								
									6.00 -									
									-									
										-								
									6.50 —	-								
									-	-								
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									7.00 —	-								
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									7.50 -									
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									8.00 -	]								
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									9.00 —	-								
										]								
									-									
									-	-								
									9.50 —	1								
									-	1								
									]									
									-	-								
									10.00-	-								
		S	Samplir	ng Cod	e: U- l	Jndistu	rbed	B - Lar	ge Distur	bed	D - Sma	all Disturbed	N - Water	(U*) Non reco	overy of Sar	nple		
					Jor	nas Ass T: 084	ociates	s Ltd - 2187	Lakeside	Hous	se, 1 Furz	eground Way, S s.com W: MMMM	Stockley Pa	ark, UB11 1BD ociates com				
						501	/											

						_		_	-			W	VINDOW/WINDOWLESS	SAMPLING BOREHOLE	RECORD
					J	9]	è ľ		5			Explora	tory Hole No:	WS6	
Site Address:			Fale	ev Roa	d. Wok	ina. Gl	J22 0N	IH				Project	No:	P1381J145	9
Client:			Gol	dev W	oking L	td	022 011					Ground	Level:		
Logged By:			AM									Date Co	ommenced:	06/03/201	9
Checked By:			PSv	v								Date Co	ompleted:	06/03/201	9
Type and diame	ter of equip	ment:	Win	ndowles	ss Sam	pler						Sheet N	lo:	1 Of 1	
Water levels r	ecorded du	iring bo	oring,	m											
Date:															
Hole depth:															
Lavel water on	strikov		_												
Water Level after	ar 20mins		-												
Remarks	20111113.						_								
1: No water reg	orted.														
2: *Field descri	ption														
3:															
4:															
		Sampl	e or T	ests					_		Strata		_		
_	Depth				Resul	t					Depth	Water	Strata D	escription	Installation
Гуре	(mbgl)	75	75	75	75	75	75	N	_	Legend	(mbgl)	(mbgl)			
									0.00 —				Soft consistency* brown	sandy CLAY with roots and	
													rootlets. Sand is fine. (TC	PSUIL)	
ES	0.25								_						
											0.40		Decement of the set \$ here.		
ES	0.50								0.50 —	. • . • . • . •			slightly gravelly SAND. Sa	and is fine to medium.	
									-				Gravel consists of fine to	coarse, sub-rounded flint	
									-	. • •	0.90		(RESIDUAL BAGSHUT FU	RMATION)	
									-	· · · · · · · · · · · · · · · · · · ·	0.80		Medium dense brown mo	ttled orange silty clayey	-******
			_				_		-	· · · x · · ·			SAND. Sand is fine to me	dium. (BAGSHOT	
SPI	1.00	2	3	3	4	4	5	16	1.00 -	x x. · x · · · x			FORMATION)		
ES										· · · · ·					
									_	X · . ^ · . X.					
										××.					
									1.50 —	x · . × x.					
										×. · . × .					
										x · · × · · x					
									-	· x · · · x					
									-	· · · x					
SPT	2.00	3	2	4	5	6	8	23	2.00 -	X X.					
									-	· · · · · · · ·					
										X · . <sup>X</sup> · .X.					
										. х х.					
D	2.50								2.50 -	x · · × · · x					
_										· x . · . x .					
										, x					
									-	~ · · · · ^·					
									-		2 00				
SPT	3.00	4	5	6	8	9	10	33	3.00 -	×.·.×.	3.00		Dense brown silty SAND.	Sand is fine to medium.	
									-	···×···			(BAGSHOT FORMATION)		
									-	x x. · x · · · x					
р	3 50								3 50 -	X · . · . · . X.					
D	5.50									× ×.					
										x · × · x					
										·×···×·					
										, ×					
SPT	4.00	6	5	7	9	9	10	35	4.00 -	~ · · · · ~·					
									-						
									-	XX.					
									-	××.					
									-	x . X . x	4.45				
									4.50						
									_						
									5.00 -						
			Samel			Indicto	irhed	B - L ~	rae Dietur	hed D Smith	all Disturbod	W - Mator	(II*) Non recovery of Co-	nnle	
			Sampii		Jor	nas As	sociate	s Ltd -	Lakeside	House, 1 Furz	eground Way	, Stockley Pa	ark, UB11 1BD	ipic	
						T: 084	43 289	2187	E: info@jo	masassociate	s.com W: ww	w.jomasasso	ociates.com		

												Ŵ	INDOW/WINDOWLESS	SAMPLING B	OREHOLE RI	ECORD	
<i>JOMAS</i>												Explorat	tory Hole No:		WS7		
Site Address:			Eale	-v Roa	d Wok	ing GL	122 ON	Н				Project	No <sup>.</sup>		P1381 J1459		
Client:			Gol	dev Wr	a, mon	td	722 014					Ground	l evel:		1100131437		
Logged By:					Jining L							Date Co	mmenced:		07/03/2019		
Checked By:			PSv	v								Date Co	mpleted:		07/03/2019		
Type and diamet	ter of equipr	ment <sup>.</sup>	Win	Idowles	ss Sam	pler						Sheet N	0.		1 Of 2		
Water levels re	ecorded du	rina ba	prina.	m	Jo Guin	p101						onoorn	<u>.</u>		1012		
Date:		<u> </u>															
Hole depth:																	
Casing depth:																	
Level water on s	trike:																
Water Level afte	r 20mins:																
Remarks							-										
1: No water rep	orted.																
2: *Field descrip	otion																
3:																	
4:																	
		Sample	e or T	ests							Strata						
									1			Water					
Туре	(mbal)				Resul	t				Legend	(mbgl)	Strikes	Strata	Description		Insta	llation
	(mbgi)	75	75	75	75	75	75	N	1		(mogr)	(mbgl)					
									0.00 —				Soft consistency* brown	sandy CLAY wi	th roots and	1	12-2-
									-				rootlets. Sand is fine. (T	OPSOIL)		는크	1
ES	0.20										0.30					는크	12-22
									-	00.	0.30		Recovered as brown to	prange silty clay	vev sliahtlv	는크	1
										· · · •			gravelly SAND. Sand is	ine to medium.	Gravel	는크	12-22
ES	0.50								0.50 —	.«۹			(RESIDUAL BACSHOT F	e, sub-rounded	flint.	는근	122
									-	· · · · · · · · ·	0.70			DRMATION		는크	1
									-	<u></u>	0.70		Medium dense becoming	dense brown r	nottled	는크	1
									-				orange silty clayey SAN	D. Sand is fine t	o medium.	는근	12-22
									-	(·.^×.			(BAGSHOT FORMATION)			E===]	E.E.
ES	1.00								1.00 —	××.						1	
SPT		3	3	4	5	5	7	21		. ×						1	§ : : :
									-	x · · x							
									-								
									-	(·.*×.							
									1.50 —	×.:.×.							
									-	· · × · · *							
									-	v							
									-	$\hat{\cdot}$							§
									-	(· . ×	•						§
D	2.00								2.00 —	хх.							g
SPT		3	3	5	6	7	7	25	-	; : · x : ·							
									-	· · · · · · · · · · · · · · · · · · ·							
									-	<u>^</u> ^							
										(·:×:							
									2.50 —	хх.							
										; : · x : · ; ·							
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D	3.00								3.00 —	хх.	•						
SPT		2	4	5	7	8	5	25		; : · x : ·	1						
									-	××.							
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									-	(×							
									3,50 -	хх.							
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										××.							
									_	· · × · · *							
D	4.00								4 00 -	xx.							
SDT	4.00	2	6	7		10	10	25	4.00		•						
581		3	0	'	l °		10	35		(·.^×.	1						
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									4.50	v							g
									4.50 -	· · · · · ·							
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										x. <sup>.</sup> .x.							8
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	·		_	_	_		-			V							
SPT	5.00	6	7	9	8	10	11	38	5.00 -	~ X						1	
																1	
		5	Samplii	ng Cod	le: U- l Jon	Jndistu nas Ass T: 084	rbed ociate 13 289	B - Lar s Ltd - 2187 I	ge Disturb Lakeside I E: info@jo	ed D - Sma ouse, 1 Furz nasassociate	all Disturbed eground Way, s.com W: www	W - Water Stockley Pa w.jomasasso	(U*) Non recovery of Sa ark, UB11 1BD pciates.com	Imple			

														WINDOW/WINI	DOWLESS S	SAMPLING B	OREHOLE RE	ECORD
					J	0]							Explor	atory Hole No:			WS7	
Site Address:			Egle	ey Road	d, Wok	ing, Gl	J22 ON	Н					Projec	t No:			P1381J1459	
Client:			Gold	Jev Wc	king L	td							Groun	d Level:				
Logged By:			AM										Date 0	Commenced:			07/03/2019	
Checked By:			PSw	/									Date 0	Completed:			07/03/2019	
Type and diame	ter of equipn	nent:	Win	dowles	s Sam	pler							Sheet	No:			2 Of 2	
Water levels re	ecorded dur	ring bo	ring,	m									1		T			
Date:													_					
Casing depth:																		
Level water on s	strike:												-					
Water Level after	er 20mins:						1											
Remarks							-										1	
1: No water rep	orted.																	
2: *Field descri	ption																	
3:																		
4:		C l -	T									Churche						
		Sample	eorie	ests					-			Strata	Water	-				
Type	Depth				Result	t -				Le	egend	Depth	Strikes		Strata D	escription		Installation
Type	(mbgl)	75	75	75	75	75	75	N		LC	genu	(mbgl)	(mbgl)					
SPT	5.00	6	7	9	8	10	11	38	5.00 -	×.				Modium dons	bosoming	donso brown r	mottlod	·····
									-	<u>^</u> :				orange silty cl	ayey SAND.	Sand is fine t	o medium.	
									-	κ.	×			(BAGSHOT FC	RMATION)			
									-[	×.	:.:×:.							
											×	5.45						
									5.50 -									
									6.00 —									
									-									
									-									
									-									
									6.50									
									_									
									7.00 —									
									-									
									-									
									-									
									7.50									
									7.50									
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									-									
									-									
									8.50 -									
									9.00 —									
									-									
									-									
									-									
									0.50									
									9.50									
									10.00									
		S	amplir	ng Cod	e: U- L Jon	Jndistui nas Ass	rbed	B - Lar s Ltd -	ge Disturb Lakeside H	ed lous	D - Sma e, 1 Furz	all Disturbed eground Way,	W - Wate Stockley	r (U*) Non reco Park, UB11 1BD	overy of San	nple		

									-			V	INDOW/WINDOWLES	S SAMPLING B	OREHOLE R	ECORD	
(JOMA)												Explora	tory Hole No:		WS8		
Site Address:			Egle	ey Roa	d, Wok	ing, Gl	J22 0N	IH				Project	No:		P1381J1459	)	
Client:			Gol	dev Wo	oking L	td						Ground	Level:				
Logged By:			AM									Date Co	mmenced:		06/03/2019	)	
Checked By:	tor of oquip	mont	PSv	V	e Sam	plor						Date Co	impleted:		06/03/2019	)	
Water levels r	ecorded du	ring bo	pring,	m	33 3411	ipici						Sheet N	0.		1011		
Date:		5															
Hole depth:																	
Casing depth:	atallea :																
Water Level aft	er 20mins:		_														
Remarks													I				
1: Water seepa	ige noted fro	m 0.40	m bgl.														
2: *Field descr	iption																
3:																	
<u></u>		Sample	e or T	ests							Strata						
	Dopth				Posul	+					Dopth	Water	Strata	Description		Installation	
Туре	(mbgl)				T	1				Legend	(mbgl)	Strikes (mbal)	Strate	Description		Installation	
		75	75	75	75	75	75	N	0.00			(mogr)					
ES	0.25								0.50	<u>.</u>	0.50		Soft consistency* brow rootlets. Sand is fine.	vn sandy CLAY w (TOPSOIL)	ith roots and	_	
ES	0.75										0.90		gravelly SAND. Sand is consists of fine to coar (RESIDUAL BAGSHOT	dense brown mottled orange silty clayey and is fine to medium. (BAGSHOT ION)			
SPT	1.00	2	3	4	4	5	4	17	1.00 —	×			SAND. Sand is fine to FORMATION)	N)			
D	1.50								1.50 — - <b>X</b> -	× · · × ·							
SPT	2.00	3	4	5	6	6	7	24	2.00	<u> </u>	2.00		Medium dense becomi Sand is fine to medium	ng dense brown s n. (BAGSHOT FOI	silty SAND. RMATION)		
D	2.50								2.50 — X	· · · · ×.							
SPT	3.00	3	5	6	6	7	8	27	3.00 - X - X 3.50 - X	×. ×. ×. ×. ×. ×. ×. ×.							
D SPT	4.00	5	6	7	8	9	11	35	4.00 - X	· · · · · · · · · · · · · · · · · · ·	4.45						
			Sampli	ng Cod	le: U- l Jor	Jndistu nas Ass	rbed	B - Lar s Ltd -	4.50 — - - 5.00 — ge Disturbe Lakeside Ho	d D - Sm use, 1 Furz	all Disturbed	W - Water y, Stockley Pa	(U*) Non recovery of : ark, UB11 1BD	Sample			
						T: 084	13 289	2187 8	E: info@jom	asassociate	s.com W: ww	w.jomasasso	ociates.com				

								-	-			M	VINDOW/WINDOWLESS	SAMPLING BOREH	ole re	ECORD
					J	0]	i F					Explora	tory Hole No:	v	/S9	
Site Address:			Egl	ey Roa	d, Wok	ing, GL	J22 ON	IH				Project	No:	P138	1J1459	
Client:			Gol	dev W	oking L	.td						Ground	Level:			
Logged By:			AM		-							Date Co	ommenced:	07/0	3/2019	
Checked By:			PSv	N								Date Co	ompleted:	07/0	3/2019	
Type and diame	ter of equip	ment:	Wir	ndowles	ss Sam	pler						Sheet N	lo:	1	Of 1	
Water levels re	ecorded du	iring bo	oring,	m			1									
Date:																
Hole depth:																
Lovel water on s	triko						-									
Water Level after	r 20mins:															
Remarks	2011110		_				_									
1: No water rep	orted.															
2: *Field descri	otion															
3:																
4:																
		Sampl	e or T	ests					-		Strata		_			
Туре	Depth (mbgl)	75	75	75	Resul	t 75	75			Legend	Depth (mbgl)	Water Strikes (mbgl)	Strata D	escription		Installation
		75	75	75	75	75	75	IN	0.00 —							
									_				rootlets. Sand is fine. (TC	sandy CLAY with roc DPSOIL)	ots and	
50	0.05															
ES	0.25								-	0 · · o	0.30		Recovered as brown to o	range silty clavey sli	ahtly	
											¢		gravelly SAND. Sand is fi	ne to medium. Grave	el	
ES	0.50								0.50 -	.º			(RESIDUAL BAGSHOT FO	RMATION		
									-	·×.·.×.	0.60					
									_	· · · × · · •	1		Medium dense brown mo	ttled orange silty cla	yey	
										×			FORMATION)	CIUTE (BAGSHOT		
SPT	1.00	2	2	3	3	4	4	14	1.00 -	· · · x · · ·						
D			_						-	X X.						
										×. ×.						
									-	x×						
										×.:.×.	1					
									1.50 —	x · · × · . x.						
										·x.·.x.						
										· · · x · · ·						
									-	XX.	]					
CDT	2.00		_		-	-	0	20	-	$\cdot$						
D	2.00	3	5	0	'	'	8	28	2.00 -	x·*×.	1					
D									_	·×··×·	1					
										x · · × · · x						
									-	·×.·.×.						
									2.50 —	· . · . <u>·</u> . · . · .	2.50		Dense brown silty SAND	Sand is fine to med	ium	
									-	$\cdot$	-		(BAGSHOT FORMATION)	Sund is fine to filed	iunn.	
									-	X · . <sup>*</sup> . · .X.	1					
									-	××.						
										x · . × x.						
SPT	3.00	3	4	8	7	9	10	34	3.00 -	·×.·.×.						
										, ×	1					
										^ · · · · ^.						
									_	· · · x · · ·						
D	3.50								3.50 —	X X.						
									-	×. ×.						
										x · . × x.						
									-	××.	1					
										x · · × · . x						
SPT	4.00	5	6	8	9	10	11	38	4.00 —	·x.·.x.						
									-	x	1					
									_	xx. ·x· · ·x						
										· · · · · · · · ·	4 45					
									4.50 -	y · ··· y	4.45					XXXXXXXXX
									_							
									-							
									-							
									5.00 —							
							<u> </u>									
		9	Sampli	ng Coc	le: U- I	Jndistu	rbed	B - La	rge Disturl	oed D - Sm	all Disturbed	W - Water	(U*) Non recovery of Sa	mple		
					Jor	nas Ass	sociate	s Ltd -	Lakeside	House, 1 Fur	eground Way	, Stockley Pa	ark, UB11 1BD			
						1: 084	+3 289	2187	⊑: into@jo	masassociate	s.com W: WW	w.jumasasso	ociates.com			

(IAN IP										V	VINDOW/WIND	OWLESS S	SAMPLING BO	DREHOLE RE	ECORD			
												Explora	tory Hole No:			WS10		
Site Address:			Egl	ey Roa	d, Wok	ing, Gl	J22 ON	IH				Project	No:			P1381J1459		
Client:			Gol	dev Wo	okina L	td						Ground	Level:					
Logged By:			AM									Date Co	ommenced:			07/03/2019		
Checked By:			DSV	v								Date Co	ompleted:			07/03/2019		
Type and diamet	tor of oquip	mont	Wir	dowlos	e Sam	nlor						Shoot N	lo:			1 Of 1		
Water levels re		ring b	oring	m	ss Jain	piei						Sheet in	NO.			TOTT		
	ecolueu uu	ning be	or mg,													1		
Date:																		
Hole depth:																		
Casing depth:																		
Level water on s	strike:																	
Water Level afte	r 20mins:																	
Remarks																		
1: No water rep	orted.																	
2: *Field descrip	ption																	
3:																		
4:																		
		Sampl	e or T	ests							Strata							
									1			Water	_					
Type	Depth				Result	t				Leaend	Depth	Strikes		Strata De	escription		Instal	llation
5100	(ingam)	75	75	75	75	75	75	N	1		(Igam)	(mbgl)						
			, 0						0.00 —									1
									_				Soft consistence	:y* brown s is fing. (TO	sandy CLAY wit	th roots and	는근	E-2-
									_				Tootlets. Sand	is line. (10	(P301L)		는그그	12-22
D	0.25										0.30							
										00			Recovered as b	prown to or	ange silty clay	ey slightly	FEE	
-										· · · · ð · · · · ·	re d		gravelly SAND.	Sand is fir	ne to medium.	Gravel	FIFI	
D	0.50								0.50 -				(RESIDUAL BA	GSHOT FOR	RMATION)	mm.	E===1	
										x.·.×.	0.60						11	
										· · · · · · · · ·			Medium dense	becoming	dense brown n	nottled	논크	1-1-1-
										K	1		orange silty cla	yey SAND.	Sand is fine to	o medium.	L===]	1222
										××.	1		(BAGSHOT FOR	RMATION)			F===]	(F.F.
SPT	1.00	2	3	4	4	5	7	20	1.00 —	, . · × . · .	1							
D										· · · · · · ·	]							g
									-	××.	1							
									_	×	•							8
									_	хх.	1							8:::
									1 50 -		1							
									1.50 -	K	1							8
										хх.	1							8
									-	· · · x · · ·	1							
										K	]							8
										××.	1							8
SPT	2.00	4	8	6	7	8	8	29	2.00 —	×	•							8 · · ·
D									-	x · · · x								<u></u>
									-	<u></u>	1							<u> </u>
										K . X . X.	1							8 .
									-	хх.	1							8
									2.50 -	x	1							8
									_	K X.	1							8
									_	××.	1							
										, . · X	1							<u>.</u>
										∧∧. xx.								Ŋ
0.07										<u> </u>	•							8
SPI	3.00	3	6	8	8	8	9	33	3.00 -	κ·×.	1							8
D									-	x. <sup>.</sup> .x.	1							
										· · · v· · · · ·	1							8
										KX.	1							
									-	××.	1							Ø
									3.50 —	, . · x . · . ·	1							8
									-	<u>.</u>								g
									-	××.								
									_	×	•							8
									_	x. · · x.	-							
CDT	4.00		7	0	10	10	10	20	4 00 -		1							8
581	4.00	4		9		10	10	39	4.00 -	K	1							8
D										х х .	1							§
									-	· · · <u>x</u> · · · ·	1							
										K	]							8
		1	1				]		-	^×.	1							g : : :
		1	1				]		4.50 -	. ×	-							8
		1	1				]		-	x · · · ·	1							
		1	1				]		-	<u></u>	1							<b>1</b>
			1						-	K . X . X.	1							1
		1	1				]		-	хх.	1							8
SPT	5.00	5	8	9	11	10	12	42	5.00 -		5.00						1	8
		1	1				]										1	
			Sampli	ng Cod	le: U- L Jon	Jndistu nas Ass T: 084	rbed sociate	B - Lar s Ltd - 2187 I	ge Disturi Lakeside	ed D - Sm louse, 1 Furz	all Disturbed zeground Way	W - Water , Stockley Pa	(U*) Non recov ark, UB11 1BD ociates com	very of San	nple			

								TRIAL F	PIT RECORD
			MAS				Exploratory Ho	le No:	TP1
Site Address:		Ealey Road, Woking	GU22 ONH				Project No:		P138111459
Client:		Goldev Woking Ltd	0022 0111				Ground Level:		1130131437
Logged By:		AM					Date Comment	ed:	07/03/2019
Checked By:		PSw					Date Complete	d:	07/03/2019
Type and diame	eter of equipme	nt: JCB 3CX					Sheet No:		1 Of 1
Pit Dimension:		Length: 1	.50	Wid	th:	0.45		Depth:	1.50
1: No water re	ported								
2: *Field descr	iption								
3:									
4:									
		Sample or Tests				Strata			
Туре	Depth (mbgl)	Result			Legend	Depth (mbgl)	Water Strikes (mbgl)		Strata Description
ES	0.25		2 1 1 2 2 3 3 4 4			0.70		Soft consistency* b Gravel consists of f fragments. (MADE of Recovered as loose SAND. Sand is fine FORMATION)	rown to orange sandy gravelly clay. lint, brick, concrete and plastic GROUND - Topsoil) * brown mottled orange silty clayey to medium. (RESIDUAL BAGSHOT
		Sampling Code: U- Undi	sturbed B - Large Distur	5.00 —	) - Small Distu	rbed W	- Water (U*)	Non recovery of San	nple
		Jomas J T: (	Associates Ltd - Lakeside 1843 289 2187 E: info@jc	House, masass	1 Furzegroun sociates.com V	d Way, St V: www.jo	ockley Park, UB	11 1BD com	

				7				TRI AL F	PITRECORD
			<i>( JOMAS</i>				Exploratory Ho	le No:	TP2
Site Address:			Ealey Road, Woking, GU22 ONH				Project No:		P1381J1459
Client:			Goldev Woking Ltd				Ground Level:		
Logged By:			AM				Date Comment	ced:	07/03/2019
Checked By:			PSw				Date Complete	ed:	07/03/2019
Type and diame	eter of equipm	nent:	JCB 3CX				Sheet No:		1 Of 1
Pit Dimension:			Length:	Wic	ith:			Depth:	0.70
1. No water re	norted								
2: *Field descr	iption								
3:									
4:								-	
		Sam	ple or Tests			Strata	1	-	
Туре	Depth (mbgI)		Result		Legend	Depth (mbgl)	(mbgl)		Strata Description
ES	0.40					0.70		Soft consistency* b Gravel consists of f fragments. (MADE	rown to orange sandy gravelly clay. lint, brick, concrete, ceramic and plastic GROUND - Topsoil)
				4.50					
		Sa	ampling Code: U- Undisturbed B - Lar Jomas Associates Ltd - T: 0843 289 2187 E	ge Disturbed I Lakeside House, :: info@jomasas	D - Small Distu , 1 Furzegroun sociates.com \	urbed W d Way, St N: www.j	/ - Water (U*) tockley Park, UB omasassociates.	Non recovery of San 11 1BD com	nple

				2				TRI AL F	PITRECORD
			<i>( JOHA</i> :				Exploratory Ho	ble No:	HDP1
Site Address:			Egley Road, Woking, GU22 0NH				Project No:		P1381J1459
Client:			Goldev Woking Ltd				Ground Level:		
Logged By:			AM				Date Commen	ced:	07/03/2019
Checked By:							Date Complete	ed:	07/03/2019
Type and diam	eter of equipm	nent:	Hand Excavated				Sheet No:		1 Of 1
Pit Dimension:			Length: 0.15	Wid	th:	0.15		Depth:	1.00
Remarks									
1: No water re	ported.								
2: *Field descr	ription								
3: Hand dug p	it to obtain sha	allow sa	imples in the proposed position of WS	s1, which could no	t be undertak	en due to	time constraint	S.	
4.		Sami	nle or Tests			Strata			
							Water	1	
Туре	Depth (mbgl)		Result		Legend	Depth (mbgl)	) Strikes (mbgl)		Strata Description
ES	0.25					0.30		Soft consistency* to rootlets. Sand is fir Recovered as loose gravelly SAND. Sar fine to coarse, sub- FORMATION) Medium dense* bro Sand is fine to med	rown sandy CLAY with roots and he. (TOPSOIL) * brown to orange silty clayey slightly id is fine to medium. Gravel consists of rounded flint. (RESIDUAL BAGSHOT wn mottled orange silty clayey SAND. fium. (BAGSHOT FORMATION)
		Sa	ampling Code: U- Undisturbed B - La Jomas Associates Ltd	4.00	D - Small Distr	urbed W d Way, St	/ - Water (U*) tockley Park, UE	Non recovery of San 11 IBD	nple

Injustive         Injustin         Injustin							TRI AL F	PIT RECORD			
State Allower         Table of two and				(JOMAS				Exploratory Ho	le No:	HDP2	
Glass         Galaxy Watking in U         Taxan I and I         Taxan I an	Site Address:			Egley Road, Woking, GU22 0NH				Project No:		P1381J1459	
ingent register         MA         Image All of the set or equation of the set	Client:			Goldev Woking Ltd				Ground Level:			
Original distributional at the complexity of the flow of a large of the flow of a large of the second at	Logged By:			AM				Date Comment	ced:	07/03/2019	
Type and source of capany of a long to long to long to a long t	Checked By:			PSw				Date Complete	:d:	07/03/2019	
Bit Norman + 1     Length     0.15     Mepth     0.20       1 - No add raphid	Type and diame	eter of equipm	nent:	Hand Excavated				Sheet No:		1 Of 1	
Note with the property profile of MS7 with the property	Pit Dimension:			Length: 0.15	Wid	th:	0.15		Depth:	0.30	
1: No start register : 3: Produktion provide or reals	Remarks										
<ul> <li>Provide a register of the source of the sourc</li></ul>	1: No water rep	ported.									
3 interior term         interior term           interior term           interior term           interior term           interior term           interior term           interior term           interior term           interior term           interior term           interior term           interior term           interior term           interior term           interior term           interior term           interior term           interior term           interior term           interior term <th col<="" td=""><td>2: *Field descri</td><td>ption</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th>	<td>2: *Field descri</td> <td>ption</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	2: *Field descri	ption								
4. Subset of the second secon	3: Hand dug pit	t to obtain sh	allow sa	mples in the proposed position of WS2 which	n could not	be undertake	n due to t	time constraints			
Standbe of Taylo       ive     Statute       ive     Statute       ive     Statute       P5     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20     0.20	4:										
Type     Depth (mage)     Water (mage)     Water (mage)     Water (mage)     Water (mage)     Water (mage)       FS     0.00     0.00     0.00     5410.00     5410.00     0.00     0.00       FS     0.00     0.00     0.00     0.00     5410.00     5410.00     0.00     0.00       FS     0.00     0.00     0.00     0.00     0.00     0.00     0.00     5410.00       FS     0.00     0.00     0.00     0.00     0.00     0.00     0.00     5410.00       FS     0.00     0.00     0.00     0.00     0.00     0.00     0.00     5410.00       FS     0.00     0.00     0.00     0.00     0.00     0.00     0.00     5410.00       FS     0.00     0.00     0.00     0.00     0.00     0.00     0.00     0.00       FS     0.00     0.00     0.00     0.00     0.00     0.00     0.00     0.00       FS     0.00     0.00     0.00     0.00     0.00     0.00     0.00     0.00       FS     0.00     0.00     0.00     0.00     0.00     0.00     0.00     0.00       FS     0.00     0.00     0.00     0.00			Samp	ole or Tests	-		Strata		-		
	Туре	Depth (mbgl)		Result		Legend	Depth (mbgl)	Water Strikes (mbgl)		Strata Description	
	ES	0.20			0.00		0.30		Soft to firm consist clay. Gravel consist fragments. (MADE	ency* brown to orange sandy gravelly s of flint, brick, concrete and ceramic GROUND - Topsoil)	
					2.00						
					2.50 —						
					-						
					3.50 — – – –						
					4.00						
					4.50 —						
Sampling Code: U- Undisturbed B - Large Disturbed D - Small Disturbed W - Water (U*) Non recovery of Sample			Sa	impling Code: U- Undisturbed B - Larce Dis	5.00 — turbed [	) - Small Distu	rbed W	- Water (U*)	Non recovery of San	nple	

Jomas Associates Ltd - Lakeside House, 1 Flurzeground Way, Stockley Park, UB11 1BD T: 0843 289 2187 E: info@jomasassociates.com W: www.jomasassociates.com


**APPENDIX 3 – CHEMICAL LABORATORY TEST RESULTS** 



Emma Hucker Jomas Associates Ltd Lakeside House 1 Furzeground Way Stockley Park UB11 1BD



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

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

e: Jomas Associates -

# Analytical Report Number : 19-32464

Replaces Analytical Report Number : 19-32464, issue no. 1

Project / Site name:	Egley Road, Woking, GU22 0AF	Samples received on:	08/03/2019
Your job number:	JJ1459	Samples instructed on:	11/03/2019
Your order number:	P1381JJ1459.7	Analysis completed by:	28/03/2019
Report Issue Number:	2	Report issued on:	28/03/2019
Samples Analysed:	11 soil samples		

Signed:

Rexona Rahman Head of Customer Services 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

Excel copies of reports are only valid when accompanied by this PDF certificate.





#### Project / Site name: Egley Road, Woking, GU22 0AF Your Order No: P1381JJ1459.7

Tour order No. F1581551455.

ab Sample Number				1174604	1174605	1174606	1174607	1174608
Sample Reference				WS2	WS4	WS5	WS6	WS7
Sample Number				None Supplied				
Depth (m)				0.25	0.25	0.25	0.25	0.20
Date Sampled				07/03/2019	06/03/2019	06/03/2019	06/03/2019	07/03/2019
Time Taken	-			None Supplied				
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	15	12	19	13	14
Total mass of sample received	kg	0.001	NONE	0.54	0.41	0.54	0.49	0.48
			-					
Asbestos in Soil	Туре	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	7.6	5.8	6.0	5.9	5.9
Total Cyanide	mg/kg	1	MCERTS	< 1	4	3	4	< 1
Total Sulphate as SO <sub>4</sub>	mg/kg	50	MCERTS	400	400	310	380	290
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.047	0.015	0.0092	0.014	0.014
Water Soluble SO4 16hr extraction (2:1 Leachate		1.05		46 5	14.6	0.2		14.2
Equivalent) Tetal Organia Carbon (TOC)	mg/i	1.25	MCERTS	40.5	14.0	9.2	14.1	14.2
Total Organic Carbon (TOC)	%	0.1	MCERTS	1.1	1.3	-	-	-
Total Phenois								
Total Phenols (monohydric)	ma/ka	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Theneis (monorifyane)		-	HOLITO	110	1 110	110	1 110	. 110
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.22	0.24	< 0.05	0.28	0.35
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.62	0.77	0.38	0.70	0.54
Pyrene	mg/kg	0.05	MCERTS	0.54	0.68	0.34	0.62	0.49
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.35	0.42	0.24	0.34	0.30
Chrysene	mg/kg	0.05	MCERTS	0.34	0.36	0.20	0.41	0.24
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0.50	0.53	0.38	0.58	0.37
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.27	0.23	0.14	0.22	0.16
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.51	0.47	0.31	0.47	0.28
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.27	0.26	< 0.05	0.26	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(gni)perviene	mg/kg	0.05	MCERTS	0.34	0.25	< 0.05	0.30	< 0.05
Total PAH								
Speciated Total EPA-16 PAHs	ma/ka	0.8	MCERTS	3,96	4,21	1.99	4,18	2,73
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	8.0	7.5	5.9	14	6.2
Boron (water soluble)	mg/kg	0.2	MCERTS	0.7	0.8	0.3	0.5	0.5
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	2.0	5.8	4.7	6.1	1.7
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	35	71	50	72	38
Copper (aqua regia extractable)	mg/kg	1	MCERTS	35	71	57	73	33
Lead (aqua regia extractable)	mg/kg	1	MCERTS	62	89	81	110	56
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.4	0.7	0.5	0.7	0.6
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	7.9	12	9.9	11	4.8
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	85	160	130	170	55





Project / Site name: Egley Road, Woking, GU22 0AF Your Order No: P1381JJ1459.7

Lab Sample Number	1174604	1174605	1174606	1174607	1174608			
Sample Reference			WS2	WS4	WS5	WS6	WS7	
Sample Number			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)				0.25	0.25	0.25	0.25	0.20
Date Sampled			07/03/2019	06/03/2019	06/03/2019	06/03/2019	07/03/2019	
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					

#### **Monoaromatics & Oxygenates**

Benzene	ug/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	ua/ka	1	MCERTS	< 1.0	-	-	-	< 1.0

Petroleum Hydrocarbons								
Petroleum Range Organics (C6 - C10)	mg/kg	0.1	MCERTS	-	< 0.1	< 0.1	< 0.1	-
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	< 0.001	-	-	-	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	< 0.001	-	-	-	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	-	-	-	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	-	-	-	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	< 8.0	-	-	-	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	< 8.0	-	-	-	13
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	< 10	-	-	-	13
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	< 0.001	-	-	-	< 0.001
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	< 0.001	-	-	-	< 0.001
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	< 0.001	-	-	-	< 0.001
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	< 2.0	-	-	-	< 2.0
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	12	-	-	-	< 10
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	37	-	-	-	33
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	49	-	-	-	41
TPH (C10 - C12)	mg/kg	2	MCERTS	-	6.4	< 2.0	9.0	-
TPH (C12 - C16)	mg/kg	4	MCERTS	-	7.9	7.8	12	-
TPH (C16 - C21)	mg/kg	1	MCERTS	-	8.9	11	20	-
TPH (C21 - C40)	mg/kg	10	MCERTS	-	46	51	95	-





l ah Sample Number		1174604	1174605	1174606	1174607	1174608		
Sample Reference				WS2	1174003 WS4	1174000 WS5	1174007 WS6	WS7
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.25	0.25	0.25	0.25	0.20
Date Sampled				07/03/2019	06/03/2019	06/03/2019	06/03/2019	07/03/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
								Hone Supplied
		응 드						
Analytical Parameter	Uni	tec	ot a f					
(Soil Analysis)	its	tio	tus					
			ion					
VOC	-							
Chloromethane	ua/ka	1	ISO 17025	< 1.0	_	_	_	< 1.0
Chloroethane	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
Bromomethane	µg/kg	1	ISO 17025	< 1.0				< 1.0
Vinyl Chloride	ua/ka	1	NONE	< 1.0	_	_	_	< 1.0
Trichlorofluoromethane	ua/ka	1	NONE	< 1.0	-	-	-	< 1.0
1.1-Dichloroethene	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	ua/ka	1	ISO 17025	< 1.0	-	-	-	< 1.0
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
1,1-Dichloroethane	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
2,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
Trichloromethane	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
1,1,1-Trichloroethane	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
1,2-Dichloroethane	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
1,1-Dichloropropene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
Trans-1,2-dichloroethene	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
Benzene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
Tetrachloromethane	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
1,2-Dichloropropane	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
Trichloroethene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
Dibromomethane	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
Bromodichloromethane	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
	µg/kg	1	150 17025	< 1.0	-	-	-	< 1.0
Trans-1,3-dichloropropene	µg/kg	1	ISO 1/025	< 1.0	-	-	-	< 1.0
I 1 2 Trichloroothana	µg/kg		MCERTS	< 1.0	-	-	-	< 1.0
	µg/kg	1	TEO 1702E	< 1.0	-	-	-	< 1.0
Dibromochloromethane	µg/kg	1	ISO 17025	< 1.0	-	-	-	< 1.0
Tetrachloroethene	µg/kg	1	NONE	< 1.0	_	_		< 1.0
1 2-Dibromoethane	µg/kg	1	ISO 17025	< 1.0				< 1.0
Chlorobenzene	ua/ka	1	MCERTS	< 1.0	_	_	_	< 1.0
1.1.1.2-Tetrachloroethane	ua/ka	1	MCERTS	< 1.0	-	-	-	< 1.0
Ethylbenzene	ua/ka	1	MCERTS	< 1.0	-	-	-	< 1.0
p & m-Xylene	ua/ka	1	MCERTS	< 1.0	-	-	-	< 1.0
Styrene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
Tribromomethane	µg/kg	1	NONE	< 1.0	-	-	-	< 1.0
o-Xylene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
Isopropylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
Bromobenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
n-Propylbenzene	µg/kg	1	ISO 17025	< 1.0	-	-	-	< 1.0
2-Chlorotoluene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
4-Chlorotoluene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	< 1.0	-	-	-	< 1.0
tert-Butylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
1,2,4- I rimethylbenzene	µg/kg	1	ISO 17025	< 1.0	-	-	-	< 1.0
sec-Butylbenzene	µg/kg	1	MCERTS	< 1.0	-	-	-	< 1.0
	µg/kg		150 17025	< 1.0	-	-	-	< 1.0
p-isopropyitoluene	µg/kg	1	150 17025	< 1.0	-	-		< 1.0
1,2-Dichlorobenzene	µg/kg	1	MCERTS	< 1.0	-	-		< 1.0
1,4-Dichilofoberizene Butylbanzana	µg/kg	1	MCEDIC	< 1.0	-	-	-	< 1.0
1 2-Dibromo-3-chloropropano	µy/Ky ua/ka	1	ISO 17025	< 1.0	_	-		< 1.0
1 2 4-Trichlorohenzene	P9/N9	1	MCEDIC	< 1.0	-			< 1.0
Hexachlorobutadiene	µg/kg	1	MCERTS	< 1.0				< 1.0
1,2,3-Trichlorobenzene	ua/ka	1	ISO 17025	< 1.0	-	-	-	< 1.0





#### Project / Site name: Egley Road, Woking, GU22 0AF Your Order No: P1381JJ1459.7

Tour Order No. F1381331439

Lab Sample Number		1174604	1174605	1174606	1174607	1174608		
Sample Reference				WS2	WS4	WS5	WS6	WS7
Sample Number				None Supplied				
Depth (m)				0.25	0.25	0.25	0.25	0.20
Date Sampled				07/03/2019	06/03/2019	06/03/2019	06/03/2019	07/03/2019
Time Taken				None Supplied				
			Ac					
Analytical Parameter	<u> </u>	Lin	St G					
(Soil Analysis)	nits	nit e	atu					
		on	s					
Pesticide and Herbicide Screen								
Pesticides/Herbicides Screen in Soil	P/A	N/A	NONE	-	-	-	-	-
Organochlorine Pesticides (OCP)								
Aldrin	ug/kg	10	NONE	-	-	-	-	-
BHC-alpha (benzene hexachloride)	ug/kg	10	NONE	-	-	-	-	-
BHC-beta	ug/kg	10	NONE	-	-	-	-	-
BHC-delta	ug/kg	10	NONE	-	-	-	-	-
BHC-gamma (Lindane, gamma HCH)	ug/kg	10	NONE	-	-	-	-	-
Chlordane-cis	ug/kg	10	NONE	-	-	-	-	-
Chlordane-trans	ug/kg	10	NONE	-	-	-	-	-
Chlorothalonil	ug/kg	10	NONE	-	-	-	-	-
DDD-o,p'	ug/kg	1	NONE	-	-	-	-	-
DDD-p,p'	ug/kg	1	NONE	-	-	-	-	-
DDE-o, p'	ug/kg	1	NONE	-	-	-	-	-
DDE-p,p'	ug/kg	1	NONE	-	-	-	-	-
DDT-o,p'	ug/kg	1	NONE	-	-	-	-	-
DDT-p,p'	ug/kg	1	NONE	-	-	-	-	-
Dichlorobenzonitrile, 2,6-	ug/kg	10	NONE	-	-	-	-	-
Dieldrin	ug/kg	10	NONE	-	-	-	-	-
Endosulfan I (alpha isomer)	ug/kg	10	NONE	-	-	-	-	-
Endosulfan II (beta isomer)	ug/kg	10	NONE	-	-	-	-	-
Endosulfan sulfate	ug/kg	10	NONE	-	-	-	-	-
Endrin	ug/kg	10	NONE	-	-	-	-	-
Endrin aldehyde	ug/kg	10	NONE	-	-	-	-	-
Endrin ketone	ug/kg	10	NONE	-	-	-	-	-
Heptachlor	ug/kg	10	NONE	-	-	-	-	-
Heptachlor exo-epoxide	ug/kg	10	NONE	-	-	-	-	-
Hexachlorobenzene	ug/kg	10	NONE	-	-	-	-	-
Hexachlorobutadiene	ug/kg	10	NONE	-	-	-	-	-
Isodrin	ug/kg	10	NONE	-	-	-	-	-
Methoxychlor, p,p'-	ug/kg	10	NONE	-	-	-	-	-
Pentachlorobenzene	ug/kg	10	NONE	-	-	-	-	-
Tecnazene	ug/kg	10	NONE	-	-	-	-	-
Tetrachlorobenzene, 1,2,4,5-	ug/kg	10	NONE	-	-	-	-	-
Trichlorobenzene, 1,2,3-	ug/kg	10	NONE	-	-	-	-	-
Trichlorobenzene, 1,3,5-	ug/kg	10	NONE	-	-	-	-	-
Trifluralin	ug/kg	10	NONE	-	-	-	-	-





#### Project / Site name: Egley Road, Woking, GU22 0AF Your Order No: P1381JJ1459.7

Tour order No. F1581551455.

ah Sample Number				1174609	1174610	1174611	1174612	1174613
Sample Reference				WS8	WS9	TP1	TP2	HDP2
Sample Number				None Supplied				
Depth (m)				0.25	0.25	0.25	0.40	0.20
Date Sampled				06/03/2019	07/03/2019	07/03/2019	07/03/2019	07/03/2019
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	25	17	16	19	12
Total mass of sample received	kg	0.001	NONE	0.49	0.47	0.45	0.61	0.49
Asbestos in Soil	Туре	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	6.4	6.9	7.9	7.7	7.4
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	< 1
Total Sulphate as SO <sub>4</sub>	mg/kg	50	MCERTS	380	310	1000	590	410
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.015	0.016	0.42	0.20	0.080
Water Soluble SO4 16hr extraction (2:1 Leachate		1.05	MOSBER	145	16.4	422	107	70.0
Equivalent)	mg/l	1.25	MCERTS	14.5	16.4	422	197	/9.8
	%	0.1	MCERTS	-	1.4	1.0	-	-
Total Phenois	1							
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Speciated PAHS		0.05		0.05	0.05	0.05	0.05	0.05
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Anthra cono	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.34	0.32	< 0.05
Aluliacelle	mg/kg	0.05	MCEDIC	< 0.05	< 0.05	0.15	0.15	< 0.05
Privorantinene	mg/kg	0.05	MCERTS	0.57	< 0.05	1.1	1.1	0.44
Pyrelle Benze(a)anthracene	mg/kg	0.05	MCERTS	0.53	< 0.05	0.98	0.99	0.41
Chrysone	mg/kg	0.05	MCEDIC	0.30	< 0.05	0.55	0.56	0.33
CIII yselle Bonzo(b)fluoranthono	mg/kg	0.05	MCEDIC	0.35	< 0.05	0.58	0.00	0.24
Benzo(k)fluoranthono	mg/kg	0.05	MCEDIC	0.40	< 0.05	0.08	0.95	0.44
Benze(a)pyropo	mg/kg	0.05	MCEDTS	0.31	< 0.05	0.55	0.30	0.10
Indeno(1, 2, 3-cd)pyrene	mg/kg	0.05	MCEDTS	0.42	< 0.05	0.07	0.65	0.41
Dibenz(a h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(abi)pervlene	mg/kg	0.05	MCERTS	0.28	< 0.05	0.41	0.54	0.05
	iiig/kg	0.05	PICEICIS	0.20	× 0.05	0.11	0.51	0.20
Speciated Total EDA-16 DAHs	malka	0.0	MCEDTC	2 20	< 0.90	6 10	6.94	2.02
Specialeu Tolai EPA-16 PARS	тту/ку	0.0	PICERTS	3.39	< 0.60	0.10	0.04	2.92
Heavy Metals / Metalloids								
Arsenic (agua regia extractable)	ma/ka	1	MCERTS	2.2	4.4	4.8	5.0	7.9
Boron (water soluble)	ma/ka	0.2	MCERTS	0.4	0.4	1.2	0.8	0.6
Cadmium (agua regia extractable)	ma/ka	0.2	MCERTS	2.2	2.5	1.6	1.5	1.7
Chromium (hexavalent)	ma/ka	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
Chromium (agua regia extractable)	ma/ka	1	MCERTS	24	41	35	33	32
Copper (agua regia extractable)	mg/ka	1	MCERTS	27	33	30	29	29
Lead (aqua regia extractable)	mg/kq	1	MCERTS	56	53	57	48	50
Mercury (aqua regia extractable)	ma/ka	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	0.6
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	5.6	6.3	7.5	9.8	7.8
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	68	74	84	81	80





Lab Sample Number		1174609	1174610	1174611	1174612	1174613		
Sample Reference				WS8	WS9	TP1	TP2	HDP2
Sample Number				None Supplied				
Depth (m)				0.25	0.25	0.25	0.40	0.20
Date Sampled				06/03/2019	07/03/2019	07/03/2019	07/03/2019	07/03/2019
Time Taken				None Supplied				
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Monoaromatics & Oxygenates								
Benzene	ug/kg	1	MCERTS	-	-	-	-	-
Toluene	µg/kg	1	MCERTS	-	-	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
p & m-xylene	µg/kg	1	MCERTS	-	-	-	-	-
o-xylene	µg/kg	1	MCERTS	-	-	-	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	-	-	-
Petroleum Hydrocarbons Petroleum Range Organics (C6 - C10)	mg/kg	0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	-	-	-	-
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	-	-
			-					
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	-	-	-	-
TPH-CWG - Aromatic (EC5 - EC35)	mg/kg	10	MCERTS	-	-	-	-	-
The the Alonade (Les - Less)	iiig/kg	10	MULINIS		-	-	_	-
TPH (C10 - C12)	ma/ka	2	MCERTS	< 20	< 2.0	< 20	< 20	< 20
TPH (C12 - C16)	ma/ka	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	< 4.0
TPH (C16 - C21)	ma/ka	1	MCERTS	10	7.9	11	8.2	< 1.0
TPH (C21 - C40)	mg/kg	10	MCERTS	17	25	27	56	< 10





Lab Sample Number		1174600	117/610	117/611	117/612	117/612		
Lab Sample Number				11/4009	11/4010	11/4011 TD1	117401Z	11/4013
Sample Reference				WS8	W59	IPI Nana Cumplied	IPZ Nana Cumplied	HDP2
						None Supplied	None Supplied	None Supplied
Depth (m)				0.25	0.25	0.25	0.40	0.20
Date Sampled				06/03/2019	0//03/2019	0//03/2019	0//03/2019	0//03/2019
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
VOCs								
Chloromethane	ua/ka	1	ISO 17025	-	_	_	_	_
Chloroathana	ug/kg	1	NONE	_	-	-	-	-
Bromomothano	µg/kg	1	TEO 17025	-	-	-	-	-
Visud Chlavida	µg/kg	1	130 17023		-	-	-	-
Vinyi Chioride	µg/kg	1	NONE	-	-	-	-	-
	µg/kg	1	NONE	-	-	-	-	-
1,1-Dichloroethene	µу/ку	1		-	-	-	-	-
	µg/kg	1	ISO 1/025	-	-	-	-	-
CIS-1,2-CICHIOFOECHENE	µg/kg	1	MCEDIC	-	-	-	-	-
INDE (Metry) Teruary Butyl Ether)	μ <u>γ</u> /κg	1	MCEPTC		-	-	-	-
1,1-Dichloroethane	µg/кд	1	MCERTS	-	-	-	-	-
	µg/Kg	1	MCEDTC	-	-	-	-	-
Irichloromethane	µg/кg	1	MCERTS	-	-	-	-	-
1,1,1-1 richloroethane	µg/кд	1	MCERTS	-	-	-	-	-
	µg/кд	1	MCERTS	-	-	-	-	-
	µg/кg	1	MCERTS	-	-	-	-	-
Irans-1,2-dichloroethene	µg/kg	1	NONE	-	-	-	-	-
Benzene	µg/kg	1	MCERTS	-	-	-	-	-
letrachloromethane	µg/kg	1	MCERTS	-	-	-	-	-
1,2-Dichloropropane	µg/kg	1	MCERTS	-	-	-	-	-
Trichloroethene	µg/kg	1	MCERTS	-	-	-	-	-
Dibromomethane	µg/kg	1	MCERTS	-	-	-	-	-
Bromodichloromethane	µg/kg	1	MCERTS	-	-	-	-	-
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-	-
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-	-	-	-	-
Toluene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-	-	-	-	-
1,3-Dichloropropane	µg/kg	1	ISO 17025	-	-	-	-	-
Dibromochloromethane	µg/kg	1	ISO 17025	-	-	-	-	-
Tetrachloroethene	µg/kg	1	NONE	-	-	-	-	-
1,2-Dibromoethane	µg/kg	1	ISO 17025	-	-	-	-	-
Chlorobenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
p & m-Xylene	µg/kg	1	MCERTS	-	-	-	-	-
Styrene	µg/kg	1	MCERTS	-	-	-	-	-
Tribromomethane	µg/kg	1	NONE	-	-	-	-	-
o-Xylene	µg/kg	1	MCERTS	-	-	-	-	-
1,1,2,2-Tetrachloroethane	µg/kg	1	MCERTS	-	-	-	-	-
Isopropylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
Bromobenzene	µg/kg	1	MCERTS	-	-	-	-	-
n-Propylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
2-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	-	-
4-Chlorotoluene	µg/kg	1	MCERTS	-	-	-	-	-
1,3,5-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
tert-Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,2,4-Trimethylbenzene	µg/kg	1	ISO 17025	-	-	-	-	-
sec-Butylbenzene	µg/kg	1	MCERTS	-	-	-	-	-
1,3-Dichlorobenzene	µg/kq	1	ISO 17025	-	-	-	-	-
p-Isopropyltoluene	µg/kq	1	ISO 17025	-	-	-	-	-
1,2-Dichlorobenzene	µg/ka	1	MCERTS	-	-	-	-	-
1,4-Dichlorobenzene	µg/ka	1	MCERTS	-	-	-	-	-
Butylbenzene	µg/ka	1	MCERTS	-	-	-	-	-
1.2-Dibromo-3-chloropropane	µg/kg	1	ISO 17025	-	-	-	-	-
1.2.4-Trichlorobenzene	ua/ka	1	MCERTS	-	-	-	-	-
Hexachlorobutadiene	ua/ka	1	MCERTS	-	-	-	-	-
1.2.3-Trichlorobenzene	ua/ka	1	ISO 17025	-	-	-	-	-





#### Project / Site name: Egley Road, Woking, GU22 0AF Your Order No: P1381JJ1459.7

Tour Order No. F1381331439

Lab Sample Number	1174609	1174610	1174611	1174612	1174613			
Sample Reference				WS8	WS9	TP1	TP2	HDP2
Sample Number			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)				0.25	0.25	0.25	0.40	0.20
Date Sampled				06/03/2019	07/03/2019	07/03/2019	07/03/2019	07/03/2019
Time Taken			None Supplied	None Supplied	None Supplied	None Supplied	None Supplied	
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Pesticide and Herbicide Screen								
Pesticides/Herbicides Screen in Soil	P/A	N/A	NONE	-	Present	-	-	-

#### **Organochlorine Pesticides (OCP)**

Aldrin	ug/kg	10	NONE	-	< 10	-	-	-
BHC-alpha (benzene hexachloride)	ug/kg	10	NONE	-	< 10	-	-	-
BHC-beta	ug/kg	10	NONE	-	< 10	-	-	-
BHC-delta	ug/kg	10	NONE	-	< 10	-	-	-
BHC-gamma (Lindane, gamma HCH)	ug/kg	10	NONE	-	< 10	-	-	-
Chlordane-cis	ug/kg	10	NONE	-	< 10	-	-	-
Chlordane-trans	ug/kg	10	NONE	-	< 10	-	-	-
Chlorothalonil	ug/kg	10	NONE	-	< 10	-	-	-
DDD-o,p'	ug/kg	1	NONE	-	7.9	-	-	-
DDD-p,p'	ug/kg	1	NONE	-	74	-	-	-
DDE-o, p'	ug/kg	1	NONE	-	< 1.0	-	-	-
DDE-p,p'	ug/kg	1	NONE	-	130	-	-	-
DDT-o,p'	ug/kg	1	NONE	-	5.3	-	-	-
DDT-p,p'	ug/kg	1	NONE	-	30	-	-	-
Dichlorobenzonitrile, 2,6-	ug/kg	10	NONE	-	< 10	-	-	-
Dieldrin	ug/kg	10	NONE	-	< 10	-	-	-
Endosulfan I (alpha isomer)	ug/kg	10	NONE	-	< 10	-	-	-
Endosulfan II (beta isomer)	ug/kg	10	NONE	-	< 10	-	-	-
Endosulfan sulfate	ug/kg	10	NONE	-	< 10	-	-	-
Endrin	ug/kg	10	NONE	-	< 10	-	-	-
Endrin aldehyde	ug/kg	10	NONE	-	< 10	-	-	-
Endrin ketone	ug/kg	10	NONE	-	< 10	-	-	-
Heptachlor	ug/kg	10	NONE	-	< 10	-	-	-
Heptachlor exo-epoxide	ug/kg	10	NONE	-	< 10	-	-	-
Hexachlorobenzene	ug/kg	10	NONE	-	< 10	-	-	-
Hexachlorobutadiene	ug/kg	10	NONE	-	< 10	-	-	-
Isodrin	ug/kg	10	NONE	-	< 10	-	-	-
Methoxychlor, p,p'-	ug/kg	10	NONE	-	< 10	-	-	-
Pentachlorobenzene	ug/kg	10	NONE	-	< 10	-	-	-
Tecnazene	ug/kg	10	NONE	-	< 10	-	-	-
Tetrachlorobenzene, 1,2,4,5-	ug/kg	10	NONE	-	< 10	-	-	-
Trichlorobenzene, 1,2,3-	ug/kg	10	NONE	-	< 10	-	-	-
Trichlorobenzene, 1,3,5-	ug/kg	10	NONE	-	< 10	-	-	-
Trifluralin	ug/kg	10	NONE	-	< 10	-	-	-





				4474644			
Lab Sample Number				11/4614			
Sample Reference				None Supplied			
Sample Number							
Depth (III)				0.25			
Time Taken				None Supplied			
	1	-		None Supplieu			
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status				
Stone Content	%	0.1	NONE	< 0.1			
Moisture Content	%	N/A	NONE	12			
Total mass of sample received	ka	0.001	NONE	0.47			
	Ng	0.001	NONE	0.17			
Ashestos in Soil	Type	N/A	ISO 17025	-			
	Турс	14/11	150 17025				
General Inorganics							
pH - Automated	pH Units	N/A	MCERTS	-			
Total Cvanide	ma/ka	1	MCERTS	-			
Total Sulphate as SO <sub>4</sub>	mg/kg	50	MCERTS	-			
Water Soluble SO4 16hr extraction (2:1 Leachate	1						
Equivalent)	g/l	0.00125	MCERTS	-			
Water Soluble SO4 16hr extraction (2:1 Leachate							
Equivalent)	mg/l	1.25	MCERTS	-			
Total Organic Carbon (TOC)	%	0.1	MCERTS	-			
Total Phenois	-	-	-				
Total Phenols (monohydric)	mg/kg	1	MCERTS	-			
Speciated PAHs							
Naphthalene	mg/kg	0.05	MCERTS	-			
Acenaphthylene	mg/kg	0.05	MCERTS	-			
Acenaphthene	mg/kg	0.05	MCERTS	-			
Huorene	mg/kg	0.05	MCERTS	-			
Phenanthrene	mg/kg	0.05	MCERTS	-			
Anthracene	mg/kg	0.05	MCERTS	-			
Huoranthene	mg/kg	0.05	MCERTS	-			
Pyrene	mg/kg	0.05	MCERTS	-			
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-			
Chrysene	mg/kg	0.05	MCERTS	-			
Benzo(b)fluorantnene	mg/kg	0.05	MCERTS	-			
Benzo(k)fluorantnene	mg/kg	0.05	MCERTS	-			
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-			
Dihena(a, k)anthracene	mg/kg	0.05	MCERTS	-			
Dibenz(a,n)anthracene	mg/kg	0.05	MCERTS	-			
Benzo(gni)perylene	mg/kg	0.05	MCERIS	-			
Total DAH							
IOTAL MAM	ma - 11	0.0	MCEDIC				
Speciated Total EPA-16 PAHS	mg/kg	0.8	MCERTS	-		 	
Henry Matela / Matellaida							
Arconic (agua rogia avtrastable)	mallia	1	MCEDIC				
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	-			
Cadmium (agua rogia ovtractable)	mg/kg	0.2		-	L		
Cauniium (aqua regia extractable)	mg/kg	0.2	MCEDIC	-			
Chromium (agua ragia astrostable)	mg/Kg	4	MCEDIC	-			
	mg/kg	1	MCEDIC	-	L		
Loopper (dyud regid extractable)	mg/kg	1		-	L		
Leau (ayud Teyld exil dudule) Marcum (agua ragia aytractabla)	mg/kg	1		-	L		
Nickel (agua regia extractable)	mg/kg	0.3		-			
Selenium (aqua regia extractable)	mg/kg	1	MCEDTC	-			
Zinc (aqua regia extractable)	mg/kg	1	MCEDTC	-			
בוויב (מקום וכקום כאנומנומטול)	iiig/Kg	1	PICERTS	-			





Lab Sample Number				1174614		
Sample Reference				HDP1		
Sample Number				None Supplied		
Depth (m)				0.25		
Date Sampled				07/03/2019		
Time Taken				None Supplied		
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			
Monoaromatics & Oxygenates						
Benzene	ug/kg	1	MCERTS	-		
Toluene	µg/kg	1	MCERTS	-		
Ethylbenzene	µg/kg	1	MCERTS	-		
p & m-xylene	µg/kg	1	MCERTS	-		
o-xylene	µg/kg	1	MCERTS	-		
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-		
Petroleum Hydrocarbons Petroleum Range Organics (C6 - C10)	mg/kg	0.1	MCERTS	-		
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	-		
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	-		
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	-		
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-		
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-		
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-		
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-		
TPH-CWG - Aliphatic (EC5 - EC35)	mg/kg	10	MCERTS	-		
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	-		
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	-	 	
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	 	
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-		
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-		
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-		
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-		
IPH-CWG - Aromatic (ECS - ECSS)	тg/кĝ	10	MULERIS	-		
	ma duc	2	MCEDITO			
TPH (C12 - C16)	mg/kg	<u> </u>	MCEDIC	-		
TPH (C16 - C21)	mg/kg	1	MCERTS			
TPH (C21 - C40)	ma/ka	10	MCERTS	-		





Lab Sample Number		1174614					
Sample Reference				HDP1			
Sample Number				None Supplied			
Depth (m)				0.25			
Date Sampled				07/03/2019			
Time Taken				None Supplied			
			A				
the ball of December 1	_	de	ŝ				
Analytical Parameter	Uni	tec mit	edi				
(Soil Analysis)	ts.	ti of	us				
		-	on				
VOCs							
Chloromethane	ua/ka	1	ISO 17025	-			
Chloroethane	ua/ka	1	NONE	-			
Bromomethane	ua/ka	1	ISO 17025	-			
Vinyl Chloride	ua/ka	1	NONE	-			
Trichlorofluoromethane	µg/kg	1	NONE	-			
1,1-Dichloroethene	µg/kg	1	NONE	-			
1,1,2-Trichloro 1,2,2-Trifluoroethane	ua/ka	1	ISO 17025	-			
Cis-1,2-dichloroethene	µg/kg	1	MCERTS	-			
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-			
1,1-Dichloroethane	µg/kg	1	MCERTS	-			
2,2-Dichloropropane	µg/kg	1	MCERTS	-			
Trichloromethane	µg/kg	1	MCERTS	-			
1,1,1-Trichloroethane	µg/kg	1	MCERTS	-			
1,2-Dichloroethane	µg/kg	1	MCERTS	-			
1,1-Dichloropropene	µg/kg	1	MCERTS	-			
Trans-1,2-dichloroethene	µg/kg	1	NONE	-			
Benzene	µg/kg	1	MCERTS	-			
Tetrachloromethane	µg/kg	1	MCERTS	-			
1,2-Dichloropropane	µg/kg	1	MCERTS	-			
Trichloroethene	µg/kg	1	MCERTS	-			
Dibromomethane	µg/kg	1	MCERTS	-			
Bromodichloromethane	µg/kg	1	MCERTS	-			
Cis-1,3-dichloropropene	µg/kg	1	ISO 17025	-			
Trans-1,3-dichloropropene	µg/kg	1	ISO 17025	-			
Toluene	µg/kg	1	MCERTS	-			
1,1,2-Trichloroethane	µg/kg	1	MCERTS	-			
1,3-Dichloropropane	µg/kg	1	ISO 17025	-			
Dibromochloromethane	µg/kg	1	ISO 17025	-			
Tetrachloroethene	µg/kg	1	NONE	-			
1,2-Dibromoethane	µg/kg	1	ISO 17025	-			
Chlorobenzene	µg/kg	1	MCERTS	-	 		
1,1,1,2-Tetrachloroethane	µg/kg	1	MCERTS	-	 		
Ethylbenzene	µg/kg	1	MCERTS	-			
p & m-Xylene	µg/kg	1	MCERTS	-			
Styrene	µg/kg	1	MCERTS	-			
	µg/kg	1	NONE	-	 		
0-Xylene	µg/kg	1	MCERTS	-	 		
1,1,2,2-1 etrachioroethane	µg/kg	1	MCERTS	-			
Bromohonzono	µg/Kg	1		-		L	
p propulsence	µg/kg	1	MCERTS	-			
11-PTOPyldelizelle	µg/kg	1	150 17025 MCEDTC	-			
2-Chlorotoluene	µg/kg	1	MCEDIC	-			
1 3 5-Trimethylbenzene	µg/kg	1	TEO 17025				
tort Butylbonzono	µg/kg	1	150 17025 MCEDTC				
1 2 4-Trimethylbenzene	ug/kg	1	ISO 17025	-	 		
sec-Butylbenzene	µg/kg	1	MCEDIC	-			
1.3-Dichlorobenzene	ua/ka	1	ISO 17025	-			
p-Isopropyltoluene	ug/kg	1	ISO 17025	_			
1.2-Dichlorobenzene	ua/ka	1	MCEBLE	-			
1.4-Dichlorobenzene	ug/kg	1	MCFRTS	_			
Butylbenzene	ua/ka	1	MCFRTS	-			
1.2-Dibromo-3-chloropropape	µg/ka	1	ISO 17025	-			
1.2.4-Trichlorobenzene	ua/ka	1	MCERTS	-			
Hexachlorobutadiene	ua/ka	1	MCERTS	-			
1,2,3-Trichlorobenzene	µg/kg	1	ISO 17025	-			





#### Project / Site name: Egley Road, Woking, GU22 0AF Your Order No: P1381JJ1459.7

Tour Order No: P1381331439

Lab Sample Number				1174614		
Sample Reference				HDP1		
Sample Number		None Supplied				
Depth (m)		0.25				
Date Sampled		07/03/2019				
Time Taken	None Supplied					
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status			
Pesticide and Herbicide Screen						
Pesticides/Herbicides Screen in Soil	P/A	N/A	NONE	Absent		

#### **Organochlorine Pesticides (OCP)**

Aldrin	ug/kg	10	NONE	-		
BHC-alpha (benzene hexachloride)	ug/kg	10	NONE	-		
BHC-beta	ug/kg	10	NONE	-		
BHC-delta	ug/kg	10	NONE	-		
BHC-gamma (Lindane, gamma HCH)	ug/kg	10	NONE	-		
Chlordane-cis	ug/kg	10	NONE	-		
Chlordane-trans	ug/kg	10	NONE	-		
Chlorothalonil	ug/kg	10	NONE	-		
DDD-o,p'	ug/kg	1	NONE	-		
DDD-p,p'	ug/kg	1	NONE	-		
DDE-o, p'	ug/kg	1	NONE	-		
DDE-p,p'	ug/kg	1	NONE	-		
DDT-o,p'	ug/kg	1	NONE	-		
DDT-p,p'	ug/kg	1	NONE	-		
Dichlorobenzonitrile, 2,6-	ug/kg	10	NONE	-		
Dieldrin	ug/kg	10	NONE	-		
Endosulfan I (alpha isomer)	ug/kg	10	NONE	-		
Endosulfan II (beta isomer)	ug/kg	10	NONE	-		
Endosulfan sulfate	ug/kg	10	NONE	-		
Endrin	ug/kg	10	NONE	-		
Endrin aldehyde	ug/kg	10	NONE	-		
Endrin ketone	ug/kg	10	NONE	-		
Heptachlor	ug/kg	10	NONE	-		
Heptachlor exo-epoxide	ug/kg	10	NONE	-		
Hexachlorobenzene	ug/kg	10	NONE	-		
Hexachlorobutadiene	ug/kg	10	NONE	-		
Isodrin	ug/kg	10	NONE	-		
Methoxychlor, p,p'-	ug/kg	10	NONE	-		
Pentachlorobenzene	ug/kg	10	NONE	-		
Tecnazene	ug/kg	10	NONE	-		
Tetrachlorobenzene, 1,2,4,5-	ug/kg	10	NONE	-		
Trichlorobenzene, 1,2,3-	ug/kg	10	NONE	-		
Trichlorobenzene, 1,3,5-	ug/kg	10	NONE	-		
Trifluralin	ug/kg	10	NONE	-		





#### Project / Site name: Egley Road, Woking, GU22 0AF

\* 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 *
1174604	WS2	None Supplied	0.25	Brown loam and clay with gravel and vegetation.
1174605	WS4	None Supplied	0.25	Brown loam and sand with gravel and vegetation.
1174606	WS5	None Supplied	0.25	Brown loam and clay with gravel and vegetation.
1174607	WS6	None Supplied	0.25	Brown loam and sand with gravel and vegetation.
1174608	WS7	None Supplied	0.20	Brown loam and sand with gravel and vegetation.
1174609	WS8	None Supplied	0.25	Brown loam and sand with gravel and vegetation.
1174610	WS9	None Supplied	0.25	Brown loam and sand with gravel and vegetation.
1174611	TP1	None Supplied	0.25	Brown loam and clay with gravel and vegetation.
1174612	TP2	None Supplied	0.40	Brown loam and clay with gravel and vegetation.
1174613	HDP2	None Supplied	0.20	Brown loam and sand with gravel and vegetation.
1174614	HDP1	None Supplied	0.25	Brown loam and sand with gravel and vegetation.





Project / Site name: Egley Road, Woking, GU22 0AF

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
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC- MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
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
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Organochlorine Pesticides in soil by GC MS/MS	Detemination of Pesticides in soil by GC MS/MS	Organochlorine Pesticides in soil by GC MS/MS	L055B-PL	D	NONE
Pesticides and Herbicides in soil screening	In-house method	In-house method		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
PRO (Soil)	Determination of hydrocarbons C6-C10 by headspace GC-MS.	In-house method based on USEPA8260	L088-PL	W	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
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP- OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP- OES.	L038-PL	D	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
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
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	MCERTS

Iss No 19-32464-2 Egley Road, Woking, GU22 0AF JJ1459

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Project / Site name: Egley Road, Woking, GU22 0AF

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
TPH in (Soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	D	MCERTS
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L088/76-PL	W	MCERTS
Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	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.



Emma Hucker Jomas Associates Ltd Lakeside House 1 Furzeground Way Stockley Park UB11 1BD



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e: Jomas Associates -

## Analytical Report Number : 19-29684

Project / Site name:	Egley Road, Woking, GU22 0AF	Samples received on:	18/02/2019
Your job number:	JJ1459	Samples instructed on:	18/02/2019
Your order number:	P1381JJ1459.4	Analysis completed by:	01/03/2019
Report Issue Number:	1	Report issued on:	01/03/2019
Samples Analysed:	4 soil samples		

Signed:

Rexona Rahman Head of Customer Services 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
Excel copies of reports are only valid when accompanied by this PDF certificate.		





Project / Site name: Egley Road, Woking, GU22 0AF Your Order No: P1381JJ1459.4

Lab Sample Number				1160077	1160078	1160079	1160080	
Sample Reference				BH1	BH1	BH2	BH3	
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)				7.50	12.50	5.50	9.00	
Date Sampled				13/02/2019	13/02/2019	13/02/2019	13/02/2019	
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	< 0.1	< 0.1	
Moisture Content	%	N/A	NONE	21	27	21	19	
Total mass of sample received	kg	0.001	NONE	2.0	2.0	2.0	2.0	

#### **General Inorganics**

pH - Automated	pH Units	N/A	MCERTS	8.4	8.1	8.0	7.6	
Water Soluble SO4 16hr extraction (2:1 Leachate								
Equivalent)	g/l	0.00125	MCERTS	0.094	0.081	0.020	0.22	





#### Project / Site name: Egley Road, Woking, GU22 0AF

\* 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 *
1160077	BH1	None Supplied	7.50	Grey clay and sand.
1160078	BH1	None Supplied	12.50	Grey clay.
1160079	BH2	None Supplied	5.50	Brown sandy clay.
1160080	BH3	None Supplied	9.00	Grey sandy clay.





Project / Site name: Egley Road, Woking, GU22 0AF

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
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
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
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP- OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP- OES.	L038-PL	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 4 – GEOTECHNICAL LABORATORY TEST RESULTS

## **Particle Size Distribution**

Tested in Accordance with: BS 1377-2: 1990

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



Client: Jomas Associates Ltd Client Reference: JJ1459 **Client Address:** Job Number: 19-32327 Lakeside House, 1 Furzeground Way, Date Sampled: Not Given Stockley Park, UB11 1BD Date Received: 08/03/2019 Date Tested: 18/03/2019 Contact: Emma Hucker Site Name: Egley Road, Woking GU22 0AF Sampled By: Not Given Site Address: Egley Road, Woking GU22 0AF **Test Results:** Laboratory Reference: 1173817 Depth Top [m]: 4.50 WS2 Depth Base [m]: Not Given Hole No.: Sample Reference: Not Given Sample Type: D Greyish brown clayey SAND Sample Description:



	•
Particle	Size

% Passing

Sedimentation

Particle Size mm

Dry Mass of sample [g]:

218

Sample Proportions	% dry mass
Very coarse	0.00
Gravel	0.00
Sand	74.10
Fines <0.063mm	25.90

Grading Analysis		
D100	mm	2
D60	mm	0.108
D30	mm	0.0672
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

	0.063	26	
Note:	Tested in Accorda	ance with BS1377:	Part 2:1990, clause 9.2

## Remarks:

4041

Approved:	Dariusz Piotrowski						
$\bigcirc$ $\square$ $\square$	PL Geotechnical Laboratory Ma	anager					
Yiotuli	Date Reported: 22/03/2019						

Sieving

% Passing

100

100

100

100

100

100 100

100 100

100

100

100

100

100

98

94

91

85

83

81

Particle Size mm

125

90

75

63

50

37.5

28 20

> 14 10

6.3

5

3.35

2

1.18

0.6

0.425

0.3

0.212

0.15

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## Particle Size Distribution

7 Woodshots Meadow Croxley Green Business Park Watford Herts WD18 8YS

i2 Analytical Ltd



Tested in Accordance with: BS 1377-2: 1990

Co	ntact:			Emma Huc	ker									Date	e Tes	ted: 18/	03/2019	
Site	e Narr	ne:		Egley Road	d, Woking	GU22 (	DAF							San	npled	By: Not	Given	
Site	e Add	ress:		Egley Roac	d, Woking	GU22 (	DAF											
Те	st Re	sults:																
Lat	oorato	ry Refer	ence:	1173818										Depth	Тор	[m]: 1.5	0	
Но	le No.	:		WS4										Depth E	Base	[m]: Not	Given	
Sa	mple l	Reference	ce:	Not Given										Sam	ple T	vpe: B		
Sa	, mple l	Descripti	on:	Mottled bro	wn sandy	CLAY								'		, i		
	•	· .			-													
		CLAY		SILT				S	AND				GRAVEL		_ co	BBLES	BOULDEF	RS
			Fine	Mediui	m Coa	arse	Fine	Me	dium	Coarse	<u> </u>	e	Medium	Coarse				<u> </u>
	100								j							1		
	90																	
	00																	
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%	10																	
ng	60	}}																
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	0	Ļ																
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									Partic	sie Size	mm							
			Siev	ving			Sedime	ntatio	n		Dry Ma	ass of	sample [g	g]:			227	
	Pa	rticle Siz	ze mm	% Passi	ing Pa	article Si	ze mm	%	Passing									
		105		100					-		Some	lo Dro	nortions		<u> </u>	0	/ drumon	0
		90		100						_	Verv c	oarse	portions		_	/	0.00	3
		75		100							Grave	04.00					0.50	
		63		100							Sand						37.20	
		50		100														
		37.5		100							Fines -	<0.063	3mm				62.30	
		28		100														
		20		100							Gradi	ng An	alysis					
	$\vdash$	14		100						_	D100			m	m m		5	
		6.3		100	——  —					-	D30			m	m			
		5		100	——  —						D10			m	m			
		3.35		100							Unifor	nity C	oefficient					
		2		100							Curvat	ure C	oefficient					
		1.18		99														
		0.6		97														
		0.425	5	97														
		0.3	2	86														
		0.212	<u>^</u>	11 88	———————————————————————————————————————													
		0.063	3	62														
No	te: Te	sted in A	- Accorda	ince with BS	1377:Pa	rt 2:199	0, claus	e 9.2										
J							,											
ке	тагк	5.																
Ар	prove	ed:	Darius	sz Piotrowsl	ki						Signe	d:	Dar	ren Berrill				
$\mathbb{Q}$	1.		PL Ge	eotechnical	Laborator	ry Mana	ger				Dit	2	Gec	technical	Gene	ral Mana	ager	
4.5	u	5	Date	Reported:	22/03/20	019					2		_				G	if 100.10

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4041 Client: Client Address:

С

Jomas Associates Ltd

Stockley Park, UB11 1BD

Lakeside House, 1 Furzeground Way,

Job Number: 19-32327 Date Sampled: Not Given Date Received: 08/03/2019

Client Reference: JJ1459

## **Particle Size Distribution**

Tested in Accordance with: BS 1377-2: 1990

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



Client Reference: JJ1459 Job Number: 19-32327 Date Sampled: Not Given Date Received: 08/03/2019 Date Tested: 18/03/2019 Sampled By: Not Given

Depth Top [m]: 3.50

Sample Type: D

Depth Base [m]: Not Given



**Client Address:** 

4041 Client:

## **Test Results:**

Laboratory Reference: 1173819 WS5 Hole No.: Sample Reference: Sample Description:

Not Given Brown clayey SAND

Jomas Associates Ltd

Emma Hucker

Stockley Park, UB11 1BD

Egley Road, Woking GU22 0AF

Egley Road, Woking GU22 0AF

Lakeside House, 1 Furzeground Way,



Particle	Size

% Passing

Sedimentation

Particle Size mm

Dry Mass of sample [g]:

247

Sample Proportions	% dry mass
Very coarse	0.00
Gravel	0.00
Sand	73.00
Fines <0.063mm	27.00

Grading Analysis		
D100	mm	2
D60	mm	0.142
D30	mm	0.0679
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

	0.063	27	
Note:	Tested in Accorda	ance with BS1377:	Part 2:1990, clause 9.2

## Remarks:

Approved:	Dariusz Piotrowski
011.	PL Geotechnical Laboratory Manager
Tiotule	Date Reported: 22/03/2019

Sieving

% Passing

100

100

100

100

100

100 100

100 100

100

100

100

100

100

100

100

100

96

75

62

Particle Size mm

125

90

75

63

50

37.5

28 20

> 14 10

6.3

5

3.35

2

1.18

0.6

0.425

0.3

0.212

0.15

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Darren Berrill Geotechnical General Manager

## **Particle Size Distribution**

Tested in Accordance with: BS 1377-2: 1990

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



Client Reference: JJ1459 Job Number: 19-32327 Date Sampled: Not Given Date Received: 08/03/2019 Date Tested: 18/03/2019 Sampled By: Not Given

Depth Top [m]: 2.50

Sample Type: D

Depth Base [m]: Not Given

## Site Name: Site Address:

4041

Client: **Client Address:** 

Contact:

**Test Results:** Laboratory Reference: 1173820 WS6 Hole No.: Sample Reference: Sample Description:

Not Given Brown clayey SAND

Jomas Associates Ltd

Emma Hucker

Stockley Park, UB11 1BD

Egley Road, Woking GU22 0AF

Egley Road, Woking GU22 0AF

Lakeside House, 1 Furzeground Way,



Particle	Size

% Passing

Sedimentation

Particle Size mm

Dry Mass of sample [g]:

217

Sample Proportions	% dry mass
Very coarse	0.00
Gravel	0.00
Sand	60.70
Fines <0.063mm	39.30

Grading Analysis		
D100	mm	2
D60	mm	0.0889
D30	mm	
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

39 Note: Tested in Accordance with BS1377:Part 2:1990, clause 9.2

## Remarks:

Approved: Dariusz Piotrowski PL Geotechnical Laboratory Manager Rioty U. Date Reported: 22/03/2019

Sieving

% Passing

100

100

100

100

100

100 100

100 100

100

100

100

100

100

100

100

99

99

97

91

Particle Size mm

125

90

75

63

50

37.5

28 20

> 14 10

6.3

5

3.35

2

1.18

0.6

0.425

0.3

0.212

0.15

0.063

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Darren Berrill Geotechnical General Manager

## **Particle Size Distribution**

Tested in Accordance with: BS 1377-2: 1990

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



Client Reference: JJ1459 Job Number: 19-32327 Date Sampled: Not Given Date Received: 08/03/2019 Date Tested: 18/03/2019 Sampled By: Not Given

Depth Top [m]: 3.00

Sample Type: B

Depth Base [m]: Not Given

## Site Address:

4041

Client: **Client Address:** 

Contact:

Site Name:

**Test Results:** Laboratory Reference: 1173821 WS7 Hole No.: Sample Reference: Sample Description:

Not Given Brown clayey SAND

Emma Hucker

Jomas Associates Ltd

Stockley Park, UB11 1BD

Egley Road, Woking GU22 0AF

Egley Road, Woking GU22 0AF

Lakeside House, 1 Furzeground Way,



Particle Size
---------------

% Passing

Sedimentation

Particle Size mm

Dry Mass of sample [g]:

267

Sample Proportions	% dry mass
Very coarse	0.00
Gravel	0.00
Sand	67.00
Fines <0.063mm	33.00

Grading Analysis		
D100	mm	2
D60	mm	0.114
D30	mm	
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

33 Note: Tested in Accordance with BS1377:Part 2:1990, clause 9.2

## Remarks:

Approved: Dariusz Piotrowski PL Geotechnical Laboratory Manager Rioty U. Date Reported: 22/03/2019

Sieving

% Passing

100

100

100

100

100

100 100

100 100

100

100

100

100

100

100

100

100

100 96

72

Particle Size mm

125

90

75

63

50

37.5

28 20

> 14 10

6.3

5

3.35

2

1.18

0.6

0.425

0.3

0.212 0.15

0.063

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Darren Berrill Geotechnical General Manager

GF 100.10



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



Tested in Accordance with: BS 1377-2: 1990: Clause 4.3 and 5

Client: Client Address:			Jomas Associates Ltd									Client Reference: JJ1459 Job Number: 19-29674						
Chorn			Lakeside House, 1 Furzeground Way, Stockley Park, UB11 1BD									Date Sampled: 13/02/2019 Date Received: 18/02/2019						
Conta	ct:		Emma	Hucker	r										Date 7	Fested: 2	28/02/20	19
Site N	Name: Egley Road, Woking GU22 0AF											Samp	led By: I	Not Giver	า			
Site A	ddres	S:	Egley	Road, V	Voking	GU22 (	DAF											
est	Resu	l <b>its</b>	11600	23											Donth T	on [m]· \$	3 50	
lole N	No ·	vererence.	BH1	20										г	Depth Ba	se [m]:	Not Giver	า
amp	le Ref	erence:	Not Gi	ven										-	Sample	e Type: I	3	
oil D	escrip	tion:	Brown	ish grey	' sandy	/ CLAY										,,		
amp	le Pre	paration:	Testec	d in natu	iral cor	ndition												
As	Rece Cor	ived Moist	ure		Liquic [؟	d Limit %]			Pla	astic Li [%]	mit		Plas	ticity Ind [%]	lex	%	BS Test	g 425µm : Sieve
		29			3	37				19				18		100		
-	100 -															-		
	90 -											_				[	A line	
	80 -						_					_						_
	70 -						_					-	CE		$\left  \right $			
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INDE)	50 -										cv							
CITY	40												IVIE					
ASTI	40 -							C⊦										
PL	30 -				+		+-				MV	+						
	20 -						$\checkmark$	MF										
	10			CL														
	10 -			MI		мі												
	0 -					10				10					120	120		
	(	0 10	20	30	0	40	50	60	110	יט ו מוטכ	80 IMIT	90	100	110	120	130	140	150
			I	Legend,	based	d on BS	5930:2	2015 (	Code o	f practic	ce for si	te inves	stigations					
								Plas	ticity	-			Liquid	d Limit				
C Clay L Low						· · · · ·	below 35											
				M S	silt			I U	Med	um		35 to 50						
								П V	Verv	hiah			50 to 70 to	90				
								Ē	Extre	emely h	igh		excee	eding 90				
				O	rganic			0	appe	and to c	lassifica	ation for	organic	material	( ea CH(	2)		
					0			-	appe		103311100		organic	matomai	( 09 0	.,		

# Approved: Dariusz Piotrowski Signed: Darren Berrill Quick PL Geotechnical Laboratory Manager Signed: Darren Berrill Date Reported: 04/03/2019 Signed: Geotechnical General Manager "bis roport may to be provided torbe thrain full work to be provided torbe thrain full work to approval of the UKA Accreditation." GF 236.3

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4041

for and on behalf of i2 Analytical Ltd



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



Tested in Accordance with: BS 1377-2: 1990: Clause 4.3 and 5

Client:	Jomas Associates Ltd	Client Reference:	JJ1459	
Client Address:	Lakeside House, 1 Furzeground Way, Stockley Park, UB11 1BD	Job Number: Date Sampled:	19-29674 13/02/2019	
		Date Received:	18/02/2019	
Contact:	Emma Hucker	Date Tested:	28/02/2019	
Site Name:	Egley Road, Woking GU22 0AF	Sampled By:	Not Given	
Site Address:	Egley Road, Woking GU22 0AF			
Test Results				
Laboratory Reference:	1160027	Depth Top [m]:	10.00	
Hole No.:	BH3	Depth Base [m]:	Not Given	
Sample Reference:	Not Given	Sample Type:	В	
Soil Description:	Greyish brown slightly sandy CLAY			
Sample Preparation:	Tested in natural condition			



## Remarks:

4041

Approved:	Dariusz Piotrowski	Signed:	Darren Berrill	
011.	PL Geotechnical Laboratory Manager	778	Geotechnical General Manager	
Rioluli	Date Reported: 04/03/2019	- the second		GF 236.3
"Opinions and interpretations exp	ressed here in are outside of the scope of the UKAS Accreditation.			
This report may not be reproduced	d other than in full without the prior written approval of the issuing laboratory.			

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## SUMMARY REPORT

## **Summary of Classification Test Results**

#### Tested in Accordance with:



4041 Client: Client Address:	Jomas Associates Ltd Lakeside House, 1 Furzeground Way, Stockley Park, UB11 1BD	MC by BS 1377-2: 1990: Clause 3.2; Atterberg by BS 1377-2: 1990: Clause 4.3, Clause 4.4 and 5; PD by BS 1377-2: 1990: Clause 8.2
Contact:	Emma Hucker	
Site Name:	Egley Road, Woking GU22 0AF	

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



Client Reference: JJ1459 Job Number: 19-29674 Date Sampled: 13/02/2019 Date Received: 18/02/2019 Date Tested: 28/02/2019 Sampled By: Not Given

## Site Address: **Test results**

Sample					Atter	berg#		Der	nsity								
Laboratory Reference	Hole No.	Reference	Depth Top m	Depth Base m	Туре	Description	Remarks	MC#	% Passing 425um %	LL %	PL	PI	bulk Mg/m2	PD	ر Total Rorosit		
1160022	BH1	Not Given	3.50	Not Given	В	Brown very clayey SAND		24	70	70	70	70	1016/1113	1016/1113	76		
1160023	BH1	Not Given	8.50	Not Given	В	Brownish grey sandy CLAY	Atterberg 4 Point	29	100	37	19	18					
1160024	BH2	Not Given	4.50	Not Given	В	Brown very clayey SAND		26									
1160025	BH2	Not Given	10.50	Not Given	В	Greyish brown clayey SAND		40*									
1160026	BH3	Not Given	4.00	Not Given	В	Brown very clayey SAND		23									
1160027	BH3	Not Given	10.00	Not Given	В	Greyish brown slightly sandy CLAY	Atterberg 4 Point	25	100	52	25	27					

Note: # UKAS accredited; NP - Non plastic

Comments:

\*Sample is wet

Approved:

Dariusz Piotrowski PL Geotechnical Laboratory Manager

Egley Road, Woking GU22 0AF

04/03/2019 Date Reported:

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Signed:

Darren Berrill Geotechnical General Manager

GF 238.5

## **Particle Size Distribution**

Tested in Accordance with: BS 1377-2: 1990

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



Client Reference: JJ1459 Job Number: 19-29674 Date Sampled: 13/02/2019 Date Received: 18/02/2019 Date Tested: 28/02/2019 Sampled By: Not Given



4041

Client:

#### Contact: Emma Hucker Site Name: Egley Road, Woking GU22 0AF Site Address: Egley Road, Woking GU22 0AF

## **Test Results:**

Laboratory Reference: 1160022 BH1 Hole No.: Sample Reference: Sample Description:

Not Given Brown very clayey SAND

Jomas Associates Ltd

Stockley Park, UB11 1BD

Lakeside House, 1 Furzeground Way,

Depth Top [m]: 3.50 Depth Base [m]: Not Given Sample Type: B



Particle Size
---------------

% Passing

Sedimentation

Particle Size mm

Dry Mass of sample [g]:

256

Sample Proportions	% dry mass
Very coarse	0.00
Gravel	0.40
Sand	62.70
Fines <0.063mm	36.90

Grading Analysis		
D100	mm	3.35
D60	mm	0.0971
D30	mm	
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

	0.063	37	
Note:	Tested in Accorda	ance with BS1377:	Part 2:1990, clause 9.2

## Remarks:

Approved: Dariusz Piotrowski PL Geotechnical Laboratory Manager Riotu Date Reported: 04/03/2019

Sieving

% Passing

100

100

100

100

100

100 100

100 100

100

100

100

100

100

99

99

96

91 89

83

Particle Size mm

125

90

75

63

50

37.5

28 20

> 14 10

6.3

5

3.35

2

1.18

0.6

0.425

0.3

0.212 0.15

0.063

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Darren Berrill Geotechnical General Manager

## **Particle Size Distribution**

7 Woodshots Meadow Croxley Green Business Park Watford Herts WD18 8YS Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd



Jomas Associates Ltd Client Reference: JJ1459 Client: **Client Address:** Job Number: 19-29674 Lakeside House, 1 Furzeground Way, Date Sampled: 13/02/2019 Stockley Park, UB11 1BD Date Received: 18/02/2019 Date Tested: 28/02/2019 Contact: Emma Hucker Site Name: Egley Road, Woking GU22 0AF Sampled By: Not Given Site Address: Egley Road, Woking GU22 0AF **Test Results:** Laboratory Reference: 1160024 Depth Top [m]: 4.50 BH2 Depth Base [m]: Not Given Hole No.: Sample Reference: Not Given Sample Type: B Sample Description: Brown very clayey SAND SILT GRAVEL SAND COBBLES BOULDERS CLAY Fine Medium Coarse Fine Medium Coarse Fine Medium Coarse 100 90 ł 80 70 % Percentage Passing 60 50 40 30 20 10

> 0.01 0.1 Sieving Sedimentation

> > Particle Size mm

% Passing

100

100

100

100

100

100 100

100 100

100

100

100

100

100

100

100

100

96

76

62

1 Particle Size mm

% Passing

Dry Mass of sample [g]:

10

268

1000

Sample Proportions	% dry mass
Very coarse	0.00
Gravel	0.00
Sand	69.60
Fines <0.063mm	30.40

100

Grading Analysis		
D100	mm	2
D60	mm	0.141
D30	mm	
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

	0.063	30	
Note:	Tested in Accorda	ance with BS1377:	Part 2:1990, clause 9.2

## Remarks:

0 0.001

Particle Size mm

125

90

75

63

50

37.5

28 20

> 14 10

6.3

5

3.35

2

1.18

0.6

0.425

0.3

0.212

0.15

0.063

Approved: Dariusz Piotrowski PL Geotechnical Laboratory Manager Risty U. Date Reported: 04/03/2019

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Page 1 of 1

Darren Berrill Geotechnical General Manager

GF 100.10

for and on behalf of i2 Analytical Ltd







## Particle Size Distribution

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



Tested in Accordance with: BS 1377-2: 1990

Clie	ent Ado	dress:		Lakes Stockl	ide Hous ey Park,	se, 1 F UB11	Furze 1 1BD	grou )	und \	Vay,													Da Dat	lob te S te R	Nui Sam Rece	mb Iple eive	er: 1 ed: 1	19-2 13/0 18/0	'9674 )2/20 )2/20	1 19 19			
Co Site Site	ntact: e Name e Addre	e: ess:		Emma Egley Egley	a Hucker Road, W Road, W	/oking /oking	g GU2 g GU2	22 0. 22 0.	AF AF														ם נו נו	Date San	e Te nple	ste d E	;d: 2 3y: №	28/0 Not	12/20 Give	19 n			
Te Lat Ho Sa Sa	st Res porator le No.: mple R mple D	<b>sults:</b> ry Refere Reference Descriptio	ence: e: on:	11600 BH2 Not Gi Greyis	25 iven sh brown	claye	ey SA	ND														I	De Dep Sa	pth th E ami	Toj Base ple <sup>-</sup>	p (n e (n Typ	n]: 1 n]: 1 be: E	10.5 Not B	i0 Give	'n			
	-				SILT						S		)						G	RA	VEL					COB	BLES	;	BO		RS		-
	_	CLAT	Fine		Medium	Co	arse		Fine	;	M	ediur	n	С	oarse		Fine	;	N	/ledi	um	(	Coar	se									_
	100									T												1					ļ						1
	90 -		_							-	$\checkmark$			+++		+					-	_	-		_			_	_		$\rightarrow$		
	80 -																								_				_				
	70 -				_																												
g %	60																																
assin	50																																
je Pa	50 -																																
entaç	40 -								/																								
Derce	30 -							1														+											
_	20 -							/		-						+									_						+		
	10 -								_	-			++	+++		+						+		-					-	_	+	+++	
	0								Ц,						Ļ					Ц							ĻĻ						
	0.0	001			0.01				0.1			Р	artic	cle S	1 Size	mm				10						1(	00					10	00
			Siev	vina				5	Sedir	nen	tatic	on			1	Drv	/ Ma	ss (	of sa	amı	ole (	al:							496				
	Par	ticle Size	e mm	%	Passing	Pa	article	e Siz	ze m	m	%	Pas	sing	J		,				1		31.											
		125			100											Sa	mple	e Pr	op	orti	ons							%	dry	/ ma	SS		
		90			100										]	Vei	ry co	bars	е										0.0	00			
		75			100											Gra	avel									L			0.1	10			
	63 100								_						Sai	nd									┝──			80.	.10				
		50			100											Lin		0.0	62-										10	70			
		37.5			100					_						FIN	es <	0.0	631	nm									19.	.70			
		20			100					_						Gra	adin	a A	nal	vei					1								
	-	14			100											D1	00	y n	IIIai	yən	5			m	m				3 :	35			
		10			100										1	D6	0							m	m				0.1	27			
		6.3			100										1	D3	0							m	m				0.0	753			
		5			100										1	D10	0							m	m								
		3.35			100										1	Uni	iform	nity	Coe	effic	ient												
	2 100														1	Curvature Coefficient																	

Remarks:	
Approved:	Dariusz Piotrowski
$O \sqcup I$	PL Geotechnical Laboratory Manager
Notwy	Date Reported: 04/03/2019

99

99

97

95

92 70

20 Note: Tested in Accordance with BS1377:Part 2:1990, clause 9.2

1.18

0.6

0.425

0.3

0.212

0.15 0.063

Date Reported: 04/03/2019

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Darren Berrill Geotechnical General Manager

GF 100.10

Page 1 of 1

4041 Client: Client Address:

Jomas Associates Ltd

Client Reference: JJ1459 Job Number: 19-29674



## Particle Size Distribution

Tested in Accordance with: BS 1377-2: 1990

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



Client:	Jomas Associates Ltd	Client Reference: JJ1459
Client Address:	Lebraide Herrer d. Francessed Werr	Job Number: 19-29674
	Lakeside House, 1 Furzeground way, Stockley Park LIB11 1BD	Date Sampled: 13/02/2019
	Slockley Faik, OBTT TBD	Date Received: 18/02/2019
Contact:	Emma Hucker	Date Tested: 28/02/2019
Site Name:	Egley Road, Woking GU22 0AF	Sampled By: Not Given
Site Address:	Egley Road, Woking GU22 0AF	
Test Results:		
Laboratory Reference:	1160026	Depth Top [m]: 4.00
Hole No .	BH3	Denth Base [m]. Not Given

L Hole No .: внз Sample Reference: Sample Description:

4041

Not Given Brown very clayey SAND



op [m]: 4.00 Depth Base [m]: Not Given Sample Type: B



Siev	ving	Sedimentation								
Particle Size mm	% Passing	Particle Size mm	% Passing							
125	100									
90	100									
75	100									
63	100									
50	100									
37.5	100									
28	100									
20	100									
14	100									
10	100									
6.3	100									
5	100									
3.35	100									
2	100									
1.18	100									
0.6	100									
0.425	99									
0.3	95									
0.212	66									
0.15	52									
0.063	26									

mm

Dry Mass of sample [g]:

321

Sample Proportions	% dry mass
Very coarse	0.00
Gravel	0.00
Sand	74.30
Fines <0.063mm	25.70

Grading Analysis		
D100	mm	2
D60	mm	0.182
D30	mm	0.0726
D10	mm	
Uniformity Coefficient		
Curvature Coefficient		

Note: Tested in Accordance with BS1377:Part 2:1990, clause 9.2

#### Remarks:

Approved: Dariusz Piotrowski PL Geotechnical Laboratory Manager Roth h Date Reported: 04/03/2019

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Darren Berrill Geotechnical General Manager

GF 100.10



**APPENDIX 5 – SOIL GAS MONITORING TEST RESULTS** 

GAS AND GROUNDWATER MONITORING BOREHOLE RECORD SHEET										
Site: Egley Road	Operative(s): JLW	Date: 14/03/2019	Time: 09:25		Round: 1		Page: 1			
MONITORING EQUIPMENT										
Instrument Type	Instrument Make	Serial No.		Date Last Calibrated						
Analox	GA5000	G501805		30/01/2019						
PID	Phocheck tiger	T-106448		04/10/2018						
Dip Meter	GeoTech									
MONITORING CONDITIONS										
Weather Conditions: Grey/Dri:	zzling	Ground Conditions: Wet		Temper	ature: 10°C					
Barometric Pressure (mbar):	1000 <b>F</b>	Barometric Pressure Trend (24hr): Steady			Ambient Concentration: 0.0%CH <sub>4</sub> , 0.1%CO <sub>2</sub> , 21.0%O <sub>2</sub>					

MONITORING RESULTS														
Monitoring Point Location	Flow		Atmospheric	CH4	CH₄ %	<u> </u>		VOC (ppm)		H₂S	со	Depth to	Depth to	Depth to Base of
	Peak	Steady	(mbar)	%	LEL		02 %	Peak	Steady	(ppm)	(ppm)	(ppm) (mbgl)	(mbgl)	well (mbgl)
WS2	0.0	0.0	1000	0.1	/	1.4	20.0	/	/	0	1	/	1.78	4.04
WS4	0.0	0.0	1000	0.0	/	1.2	19.8	/	/	0	0	/	2.90	3.90
WS5	+0.1	+0.1	1000	0.0	/	0.8	20.2	/	/	0	0	/	3.18	4.84
WS7	0.0	0.0	1000	0.0	/	3.9	16.3	/	/	0	0	/	3.94	4.96
WS10	0.0	0.0	1000	0.0	/	2.6	18.9	/	/	0	0	/	3.72	4.88
	GAS AND	D GROUNDWATER MONITORIN	NG BOREHOLE R	RECORD	SHEET									
------------------------------	-------------------	-----------------------------------	---------------	--------	-----------------------	----------------------------	---------------------							
Site: Egley Road	Operative(s): JLW	Date: 21/03/2019	Time: 11:45		Round: 2	Page: 1								
Instrument Type	Instrument Make		Serial No.		Date Last Calibrated									
Analox	GA5000		G501805		30/01/2019									
PID	Phocheck tiger		T-106448		04/10/2018									
Dip Meter	GeoTech													
			NDITIONS											
Weather Conditions: Overcast	t	Ground Conditions: Damp		Temper	ature: 13°C									
Barometric Pressure (mbar):	1031 I	Barometric Pressure Trend (24hr):	: Steady	Ambien	t Concentration: 0.0%	CH4, 0.1%CO <sub>2</sub> ,	20.9%O <sub>2</sub>							

						MONIT	ORING RES	ULTS						
Monitoring	F	low	Atmospheric	CH₄	CH₄ %		0.11	voc	(ppm)	H₂S	со	Depth to	Depth to	Depth to Base of
Location	Peak	Steady	(mbar)	%	LEL		02 %	Peak	Steady	(ppm)	(ppm)	(mbgl)	(mbgl)	well (mbgl)
WS2	-0.2	-0.2	1032	0.5	/	8.3	11.8	0.1	0.1	0	0	/	1.89	4.04
WS4	0.0	0.0	1031	0.0	/	1.7	19.0	0.5	0.4	0	0	/	3.03	3.90
WS5	+0.	+0.1	1032	0.0	/	0.9	19.9	0.2	0.2	0	0	/	3.29	4.84
WS7	+0.1	+0.1	1032	0.0	/	3.4	16.7	0.2	0.2	0	0	/	3.93	4.96
WS10	+0.2	+0.2	1032	0.0	/	2.5	18.5	0.1	0.1	0	0	/	3.78	4.88

	GAS AND (		IG BOREHOLE R	ECORD	SHEET		
Site: Egley Road	Operative(s): JLW	Date: 28/03/2019	Time: 09:15		Round: 3	Page: 1	
Instrument Type	Instrument Make		Serial No.		Date Last Calibrated		
Analox	GA5000		G501805		30/01/2019		
PID	Phocheck tiger		T-106448		04/10/2018		
Dip Meter	GeoTech						
		MONITORING CO	NDITIONS				
Weather Conditions: Cloudy	Gre	round Conditions: Moist		Temper	ature: 12°C		
Barometric Pressure (mbar):	1035 Ba	arometric Pressure Trend (24hr):	Falling	Ambien	t Concentration: 0.0%Cl	H <sub>4</sub> , 0.1%CO <sub>2</sub> ,	20.8%O <sub>2</sub>

						MONIT	ORING RES	ULTS						
Monitoring	F	low	Atmospheric	CH4	CH₄ %	<b>CO</b> . %	0.9/	VOC	(ppm)	H₂S	со	Depth to	Depth to	Depth to Base of
Location	Peak	Steady	(mbar)	%	LEL		02 %	Peak	Steady	(ppm)	(ppm)	(mbgl)	(mbgl)	well (mbgl)
WS2	+0.1	+0.1	1035	0.0	/	17.2	3.4	0	0	0	0	/	2.14	4.03
WS4	0.0	0.0	1035	0.0	/	2.0	18.9	0	0	0	0	/	3.12	3.87
WS5	0.0	0.0	1035	0.0	/	0.9	19.9	0	0	0	0	/	3.54	4.83
WS7	0.0	0.0	1035	0.0	/	3.8	16.4	0	0	0	0	/	3.91	4.91
WS10	+0.1	+0.1	1035	0.0	/	2.7	18.0	0	0	0	0	/	3.77	4.86

	GAS AND		IG BOREHOLE R	RECORD	SHEET		
Site: Egley Road	Operative(s): JJPB	Date: 02/04/2019	Time: 09:00		Round: 4	Page: 1	
			UIPMENT				
Instrument Type	Instrument Make		Serial No.		Date Last Calibrated		
Analox	GA5000		G501805		30/01/2019		
PID	Phocheck tiger		T-106448		04/10/2018		
Dip Meter	GeoTech						
			NDITIONS				
Weather Conditions: Overcast	t (	Ground Conditions: Dry		Temper	ature: 7°C		
Barometric Pressure (mbar):	1002 <b>F</b>	Barometric Pressure Trend (24hr):	Falling	Ambien	t Concentration: 0.0%C	H <sub>4</sub> , 0.1%CO <sub>2</sub> ,	20.9%O <sub>2</sub>

						MONIT	ORING RES	ULTS						
Monitoring	F	low	Atmospheric	CH₄	CH₄ %	<b>60</b> %	0.11	voc	(ppm)	H₂S	со	Depth to	Depth to	Depth to Base of
Location	Peak	Steady	(mbar)	%	LEL		02 %	Peak	Steady	(ppm)	(ppm)	(mbgl)	(mbgl)	well (mbgl)
WS2	0.0	0.0	1002	0.0	/	2.4	18.8	0	0	0	0	/	2.13	3.98
WS4	0.0	0.0	1002	0.0	/	0.9	20.0	0	0	0	0	/	3.09	3.88
WS5	0.0	0.0	1002	0.0	/	0.9	20.0	0	0	0	0	/	3.32	4.84
WS7	0.0	0.0	1002	0.0	/	4.4	15.9	0	0	0	0	/	3.87	4.90
WS10	0.0	0.0	1002	0.0	/	3.0	17.9	0	0	0	0	/	3.71	4.87



**APPENDIX 6 – CALIFORNIA BEARING RATIO (CBR) TEST RESULTS** 

Jomas Job:Egley Road, WokingJomas Job No.:P1381J1459



TP1 08/03/2019

**Test Location:** 

Date of test:

<b>Depth</b> (mm) 50	Nr Blow 0	Cumulative blows 0	Calculat	ing Engineer: Approved by	CLP PS	Date: Date:	04/04/2 08/04/2	019 019	
150	0	0		Initial Depth	Final Depth	mm /	CBR*	- (11)	1
200	0	0	lest	(mm)	(mm)	blow	(%)	E (MPa)	
250	1	1	TP1-Test 1	200	300	100.0	2.3	29.99	1
300	0	1	TP1-Test 2	300	600	42.9	5.7	53.61	]
350	1	2	TP1-Test 3	600	850	10.9	24.3	135.61	
400	1	3	TP1-Test 4	850	1000	25.0	10.1	77.32	
450	1	4	* CBR calculat	ed using methe	od outlined in	IAN 73/06			•
500	1	5							
550	1	6	Test Notes:						
600	2	8	Test carried ou	it using a Perth	n Probe type o	dynamic co	ne probe	e consistin	ng of a 8 kg free fall
650	4	12	hammer lifted	and dropped th	nrough a heigh	nt of 575m	m		
700	4	16	Colour of text I	efers to the mo	odelled gradie	ent on grap	h below		
750	6	22	GL - 0.70m: Br	own to orange	sandy gravel	ly clay. Gra	avel cons	sists of flin	nt, brick, concrete ar
800	5	27	plastic fragmer	nts. (MADE GF	ROUND)				
850	4	31	0.70m - 1.00m	: Brown mottle	d orange silty	clayey SA	ND. San	d is fine to	o medium. (BAGSH
900	2	33	FORMATION)						
950	2	35	,						
1000	2	37							



Jomas Job:Egley Road, WokingJomas Job No.:P1381J1459

Specialists in the investigation & reclamation of brownfield sites

**Test Location:** 

Date of test:

WS2

08/03/2019

Depth (mm)	Nr Blow	Cumulative blows	Calculat	ing Engineer: Approved by	CLP PS	Date: Date:	04/04/2 08/04/2	019 019	
50 100	0	0							
100	0	0		Initial Denth	Final Denth	mm /	CBR*		1
200	1	1	Test	(mm)	(mm)	blow	(%)	E (MPa)	
250	0	1	WS2-Test 1	150	450	150.0	1.5	22.81	
300	Õ	1	WS2-Test 2	450	600	6.5	41.6	191.31	
350	0	1	WS2-Test 3	600	900	15.0	17.3	109.11	
400	0	1	WS2-Test 4	900	1000	50.0	4.8	48.03	
450	1	2	* CBR calculat	ed using methe	od outlined in	IAN 73/06			1
500	6	8							
550	8	16	Test Notes:						
600	9	25	Test carried ou	it using a Perth	n Probe type o	dynamic co	ne probe	e consistin	ng of a 8 kg free fall
650	3	28	hammer lifted	and dropped th	rough a heigl	nt of 575m	m		
700	2	30	Colour of text I	efers to the mo	odelled gradie	ent on grap	h below		
750	4	34	GL - 0.30m: Br	own sandy slig	htly gravelly	clay with ro	oots and	rootlets. S	Sand is fine. Gravel
800	4	38	consists of brid	k fragments.	MADE GROL	JND - Tops	soil)		
850	4	42	0.3 - 1.0m Bro	wn to orange s	iltv clavev slic	htlv aravel	lv SAND	. Sand is f	fine to medium. Grave
900	3	45	consists of flin	. (BAGSHOT I	FORMATION	)	<b>,</b> -		
950	1	46				/			
1000	1	47							



Jomas Job:Egley Road, WokingJomas Job No.:P1381J1459



**Test Location:** 

Date of test:

WS5

08/03/2019

Depth (mm)	Nr Blow	Cumulative blows	Calculat	ing Engineer: Approved by	CLP PS	Date: Date:	04/04/2 08/04/2	019 019
50 100	1	0						
100	0	1		Initial Denth	Final Denth	mm /	CBR*	
200	1	2	Test	(mm)	(mm)	blow	(%)	E (MPa)
250	1	2	WS5-Test 1	150	450	50.0	4.8	48.03
300	1	4	WS5-Test 2	450	1000	78.6	3	35.55
350	1	5					-	
400	1	6						
450	1	7	* CBR calculat	ed using metho	od outlined in	IAN 73/06		
500	0	7		-				
550	1	8	Test Notes:					
600	1	9	Test carried ou	it using a Perth	Probe type	dynamic co	ne probe	e consistir
650	0	9	hammer lifted	and dropped th	rough a heig	ht of 575m	m	
700	1	10	Colour of text I	efers to the mo	odelled gradie	ent on grap	h below	
750	1	11	GL - 0.60m: Br	own samdy CL	AY with root	s and rootle	ets. Sand	l is fine. (
800	0	11	0.60 - 1.00m: E	Brown to orang	e silty clayey	slightly gra	velly SA	ND. Sand
850	1	12	Gravel consist	s of flint. (BAG	SHOT FORM	IATION)	,	
900	0	12		( -		- /		
950	1	13						
1000	1	14						



Jomas Job:Egley Road, WokingJomas Job No.:P1381J1459



WS7 08/03/2019

Test Location:

Date of test:

Depth (mm)	Nr Blow	Cumulative blows	Calculat	ing Engineer: Approved by	CLP PS	Date: Date:	04/04/2 08/04/2	2019 2019
100	0	0						
150	1	1	Test	Initial Depth	Final Depth	mm /	CBR*	
200	1	2	Test	(mm)	(mm)	blow	(%)	
250	1	3	WS7-Test 1	100	250	50.0	4.8	48.03
300	2	5	WS7-Test 2	250	450	28.6	8.7	70.28
350	1	6	WS7-Test 3	450	750	60.0	4	42.74
400	2	8	WS7-Test 4	750	1000	11.9	22	127.25
450	2	10	* CBR calculat	ed using metho	od outlined in	IAN 73/06		
500	1	11						
550	1	12	Test Notes:					
600	1	13	Test carried ou	ut using a Perth	Probe type of	dynamic co	one probe	e consisti
650	1	14	hammer lifted	and dropped th	rough a heigl	ht of 575m	m	
700	0	14	Colour of text	refers to the mo	delled gradie	ent on grap	h below	
750	1	15	GL - 0.30m: Bi	rown sandy CL	AY with roots	and rootle	ts. Sand	is fine. (1
800	3	18	0.30 - 1.00m: I	Brown to orang	e silty clayey	slightly gra	velly SA	ND. Sand
850	3	21	Gravel consist	s of flint. (BAG	SHOT FORM	IATION)	•	
900	4	25		,		,		
950	5	30						
1000	6	36						



Jomas Job:Egley Road, WokingJomas Job No.:P1381J1459



WS10

08/03/2019

**Test Location:** 

Date of test:

<b>Depth</b> (mm) 50	Nr Blow 0	Cumulative blows	Calculati	ng Engineer: Approved by	CLP PS	Date: Date:	04/04/2 08/04/2	019 019	
100	0	0		Initial Donth	Einal Donth	mm /			
200	0	1	Test	(mm)	(mm)	blow	(%)	E (MPa)	
200 250	1	2	WS10-Test 1	100	350	125 0	1.8	25.64	
300	0	2	WS10-Test 2	350	800	64.3	3.7	40.66	
350	Õ	2	WS10-Test 3	800	1000	25.0	10.1	77.32	
400	1	3							
450	1	4	* CBR calculat	ed using metho	od outlined in	IAN 73/06			
500	1	5		•					
550	0	5	Test Notes:						
600	1	6	Test carried ou	it using a Perth	n Probe type o	dynamic co	ne probe	e consistin	g of a 8 k
650	0	6	hammer lifted a	and dropped th	rough a heigl	ht of 575m	m .		-
700	1	7	Colour of text r	efers to the mo	odelled gradie	ent on grap	h below		
750	1	8	GL - 0.50m: Br	own sandy CL	AY with roots	and rootle	ts. Sand	is fine. (To	OPSOIL)
800	1	9	0.50m - 1.00m	Brown to orar	nge silty clave	ev slightly g	ravelly S	AND. San	d is fine t
850	2	11	Gravel consists	s of flint. (BAG	SHOT FORM	IATION)	<b>,</b> -		
900	2	13							
950	2	15							
1000	2	17							





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