

Royal Mail Group Limited

Royal Mail Mount Pleasant Sorting Office – Calthorpe Site

Interpretative Geotechnical Report

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RSK GENERAL NOTES

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1 INTRODUCTION

RSK Environment Limited (RSK) was commissioned by The Livemore Partnership LLP, on behalf of Royal Mail Group Limited (the 'Client') to carry out a geotechnical assessment of the land at Mount Pleasant Sorting Office (Clathorpe Street Site), London. It is understood the site is being considered for mixed-use redevelopment with the construction of high-rise residential tower blocks and commercial properties, and structural refurbishment of the existing Royal Mail main sorting office building.

This report is subject to the RSK service constraints given in Appendix A.

1.1 Objective

The objective of the work is to provide information on ground conditions beneath the site to assist the geotechnical design of the proposed development.

1.2 Scope

The project was carried out to an agreed brief as set out in RSK's proposal (ref: BoQ Clathorpe Site - 28549 07, dated 16th September 2016). The scope of works for the assessment included:

- i. Intrusive investigation, including:
 - deep boreholes by rotary and cable percussive methods, with the installation of shallow and deep groundwater monitoring wells;
 - shallow drive-in sampling boreholes, with the installation of shallow groundwater monitoring wells;
 - o machine excavated trial pits;
 - o hand excavated trial pits
 - self-boring pressuremeter testing within three cable percussive borehole locations;
 - o an UXO watching brief and down-hole magnetometer survey;
 - an archaeological watching brief (carried out by others and reported directly to the client);
- ii. off site analysis for geotechnical purposes;
- iii. a ground investigation report (GIR) including:
 - a description of the site and the works carried out, the exploratory hole logs, in-situ and laboratory testing results;
 - a presentation of all appropriate geotechnical information including geological features and relevant data;
 - a geotechnical evaluation of the information;
- iv. interpretive geotechnical report including:



- a review of geotechnical data and recommendations on characteristic soil parameters for geotechnical design in relation to the proposed development;
- o results of a preliminary numerical analysis on piled foundations;
- a discussion and recommendations on relevant geotechnical matters in relation to the proposed development, including ground and basement floors, retaining wall design parameters, and chemical attack on buried concrete.

Other than an inspection of geological maps, no comprehensive desk study has been undertaken as part of this investigation. A Preliminary Risk Assessment been completed by Waterman Infrastructure & Environment and their report was made available prior these works.

The chemical testing of samples of soil and water for contamination including testing to detect the presence of gas in the ground has not formed part of this investigation, and was carried out by Waterman Infrastructure & Environment.

The factual element of the investigation (items i to iii) has been covered by RSK's "Royal Mail Mount Pleasant Sorting Office – Calthorpe Site Ground Investigation Report (GIR)", ref: 28549-GIR01(00). Section 2 provides an overview of the findings contained within this report.

1.3 Limitations

The comments given in this report and the opinions expressed are based on the ground conditions encountered during the site work and on the results of tests made in the field and in the laboratory. However, there may be conditions pertaining to the site that have not been disclosed by the investigation and therefore could not be taken into account. In particular, it should be noted that there may be areas of made ground not detected due to the limited nature of the investigation or the thickness and quality of made ground across the site may be variable. In addition, groundwater levels and ground gas concentrations and flows may vary from those reported due to seasonal, or other, effects.



2 SUMMARY OF THE GROUND IINVESTIGATION (GIR) REPORT

2.1 Site location and description

The Clathorpe Site is located at National Grid reference 531250^E, 181850^N, as shown on Figure 1. Farringdon Road bounds the site to the east and north east, the southern boundary is formed by Rosebery Avenue and Mount Pleasant, while Phoenix Place (Street) and Clathorpe Street bound the site to the west and south west, and north, respectively.

The site covers an area of approximately 4.8 hectares, and comprises the main sorting office building to the south, and an external area in the central and northern portions of the site (known as the 'Bathtub'). The latter is used as loading bays and a car-park for Royal Mail vehicles, with access roads at the northern, eastern and western perimeters of the site (Figure 2 and Figure 4). The 'Bathtub' lies at around 14.5mAOD, surrounded by up to 5m high concrete retaining structures at its northern, eastern and western boundaries, with the remainder of the site and surrounding perimeter roads at 19mAOD.

The majority of the site is covered with buildings and bituminous/concrete hardstanding, with small soft landscaping areas only present along the northern boundary. A fuel filling station and a vehicle washing area are present in the northern part of the 'Bathtub', with the fuel storage tanks located on plinths beneath the northern concrete ramp.

Post Office Railway ('Mail Rail') tunnels running in the north-south direction and station are located beneath the centre of the site, with the rail maintenance depot close to the south western boundary. A combined sewer, (River Fleet Sewer branch) runs east to west beneath the northern part of the site, connecting with the culverted River Fleet, which runs north to south, beneath Phoenix Place. The LUL Metropolitan Lane tunnels run beneath Farringdon Road to the east.

The site surroundings comprise mixed residential / commercial properties, typical for the urban area of central London.

2.2 Proposed development

The proposed development of the site will comprise the demolition of existing buildings and structures in the central and northern part of the site to make way for six new buildings ranging from three to twelve storeys providing residential, office and retail space, with associated energy centre, waste and storage areas, and vehicle and cycle parking. Areas of hard and soft landscaping are also proposed to provide public and private areas of open space.

The main sorting office building will be retained and refurbished with construction of an acoustic roof deck over the existing servicing yard to the south. In addition, the proposals include alterations to the public highway and the construction of a new dedicated vehicle ramp to basement level in order to service Royal Mail operations.

The planned layout of the site is shown on Figure 3.



2.3 **Preliminary Geotechnical Category**

Based on the available information on the existing site conditions and the proposed development, a Geotechnical Category 2 has been assumed for structures outside zones of the Mail Rail tunnels and River Fleet sewer branch. An increased (Geotechnical Category 3) was assumed for structures proposed within these areas.

2.4 Anticipated Geology, hydrogeology and hydrology

Published records (British Geological Survey) for the area indicate that the superficial geology of the site is characterised by the Hackney Gravel Member of the River Terrace Deposits, with alluvial deposits associated with the historical course of the River Fleet also shown to the west and south west of the site. The underlying solid geology comprises a sequence of the London Clay Formation, the Lambeth Group and the Thanet Sand Formation, with the White Chalk Subgroup at depth.

Information available from the previous investigation confirms the predicted succession, revealing that the site is underlain by up to 9.2m of made ground, over between 0.8m to 2.2m of soft to firm alluvial clays and silts found in the southern part of the site. The Hackney Gravel Member beneath was encountered as loose to medium dense clayey, gravelly sand with thickness of between 0.2m to 3.1m. Towards the north western portion of the site, sandy gravel, sandy clay with occasional sand lenses, and clayey gravelly sand soils extended to a depth of 22.0m, indicating the potential presence of a drift filled hollow feature in this area of the site. Apart from the location of the drift filled hollow feature, the London Clay was present at all other locations, at depths of between 3.0m to 11.1m, comprising firm to stiff and very stiff, silty clay with sand lenses. The Lambeth Group soils comprised stiff to very stiff mottled clays with silt and sand lenses, and medium dense to dense (locally very dense) sandy gravels and silty sands encountered to depths of between 28.0m to 35.0m. This was followed by very dense grey sand of the Thanet Sand Formation to depths of 35.5m and 41.2m, with the White Chalk Sub-group at depth.

In addition, it is considered likely that the foundations of the Coldbath Field Prison and the former Royal Mail building previously occupying the site may not have not been removed prior to the construction of the current structures, and may still be encountered.

Based on the published geological information and Waterman's Preliminary Environmental Risk Assessment, the hydrogeology of the site is likely to be characterised by the presence of an unconfined shallow Secondary A Aquifer comprising the Alluvium and the Hackney Gravel Member, overlying the London Clay Formation, which is classified as an Unproductive Strata.

Confined by the London Clay Formation, are deep Secondary A Aquifers comprising the Lambeth Group and the Thanet Sand Formation, with the White Chalk Sub-group (Principal Aquifer), at depth. These units are expected to be in hydraulic continuity.

It is also possible that localised perched water may also be present in the made ground.

As defined within CIRIA Special Publication 69 (Simpson et al., 1989), the site lies within the 'Critical Area' of the London Basin in which deep structures are potentially at risk



from the rising groundwater levels in the deep aquifer. Deep structures include basements deeper than about 20m and other structures whose foundations extend to between 30m and 50m below ground level.

The Environment Agency (EA) status report issued in 2016 'Management of the London Basin Chalk Aquifer' indicates that the piezometric surface of the groundwater in the deep aquifer in the site area in January 2016 was at approximately -35mAOD, i.e. approximately between 49m and 54m below existing ground levels.

There are no ponds, streams or drainage ditches on or adjacent to the site. The nearest identified surface feature to the site is the Regents Canal, located approximately 1.1km to the north of the site. The River Thames is some 1.6km to the south.

Reference to '*The Lost Rivers of London*' (Barton, 1992) and '*London's Lost Rivers*' (Talling, 2011), indicates that the River Fleet historically flowed southwards (just to the west of the site). The current information confirms that this watercourse has been culverted in a sewer flowing beneath Phoenix Place, however, the alluvial tract of the original watercourse is expected to extend beneath the footprint of the site.

The indicative floodplain map for the area, published by the EA, shows that the site does not lie within the designated floodplain of the River Thames.

2.5 Site investigation, soil sampling and laboratory testing

The intrusive investigation was carried out between 26th September and 10th November 2016. The locations of the investigation points were pre-determined by the Engineer and the Designer to obtain geotechnical data below the footprints of the proposed buildings and in the area of the Royal Mail tunnel. Due to its location affecting the daily operations of the Royal Mail staff, the drilling of borehole BH02 (proposed to be carried out within the centre of the northern basement) has not been undertaken.

The ground investigation has been carried out using intrusive ground investigation techniques considering the anticipated ground conditions, existing land use, access constraints and the proposed development, in general accordance with the recommendations of BS5930: 2015 Code of practice for ground investigations, which maintains compliance with BS EN 1997-1 and 1997-2 and their related standards.

The sampling and insitu testing (including the self-boring pressuremeter testing) has been carried out in accordance with the requirements provided within the SI specification and agreed with the Engineer and the Designer.

Depths to groundwater were recorded by RSK on a single occasion, using an electronic dip meter. Further groundwater monitoring has been carried out by the Engineer and the results made available for comment.

The locations of the intrusive investigation are shown in Figure 4, and the rationale for these locations is given in Table 1.



Table 1:	Exploratory h	ole location	rationale
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Exploratory hole number	Investigation Type	Rationale	
All borehole locations	Diamond coring	To create openings in the surface hardstanding for follow-on drilling work	
BH01 and BH03	Rotary coring method	To prove the geological succession	
BH04 to BH10 & BH16 to BH18	Light cable percussive method	 beneath the site and obtain data for the purpose of geotechnical design. To enable installation of shallow and deep ground-gas and groundwater monitoring wells 	
WS01 to WS12 & Drive-in sampling method WS19 to WS30		To prove shallow ground conditions beneath the site and obtain data for the purpose of contamination analysis. To enable installation of shallow ground-gas and groundwater monitoring wells	
TP11 to TP17	Machine excavated trial pits	To prove shallow ground conditions	
HP01 to HP07	Hand excavated trial pits	and obtain data for the purpose of contamination analysis and waste disposal purposes.	
BH05; BH06 & BH18	Self boring pressuremeter testing	To provide soil parameters for the purpose of geotechnical design	
WS01 to WS12; BH05 to BH07 & Down-hole UXO BH16 to BH17 magnetometer survey		To confirm absence of unexploded ordnance to enable advancing exploratory holes	
All BH's WS02 to WS12; WS19; WS21; WS23; WS24; WS26 & WS27	Monitoring well installations	To enable measurement of ground gas and groundwater levels	

The exploratory holes were logged by an engineer in general accordance with the recommendations of BS 5930:2015 (which incorporates the requirements of BS EN ISO 14688-1, 14688-2 and 14689-1) and 'CIRIA C574 Engineering in Chalk'. (CIRIA 2002). Whilst every attempt was made to record full details of the strata encountered in the exploratory holes, techniques of hole formation and sampling will inevitably lead to disturbance, mixing or loss of material in some soils and rocks.

The sampling and in-situ testing strategy was designed to characterise the made ground and natural strata beneath the site, and to provide information on the mechanical characteristics of the underlying soils for the purpose of geotechnical design.

Standard penetration tests (SPTs) were carried out within the made ground and the natural strata, at regular intervals of approximately 1m in the initial 5m depths, and then at 1.5m intervals to the terminal depth of the boring. The tests were undertaken in



accordance with BS EN ISO 22476-3:2005 using a hammer, which had been calibrated for efficiency.

In cohesive strata the SPT tests were alternated with collecting undisturbed 'thin wall' UT100 samples. In addition, Category A Class 1 undisturbed samples were obtained by sub-sampling the rotary core in BH03, and preserved in accordance with BS 5930:2015. Further small and bulk disturbed samples were taken from each strata encountered to facilitate subsequent geotechnical classification analysis.

The testing was undertaken in accordance with BS 1377:1990 Method of Tests for Soils for Civil Engineering Purposes or, where superseded, by the relevant part of BS EN ISO 17892:2014 Geotechnical investigation and testing – Laboratory Testing of Soil. The tests were carried out within RSK's UKAS accredited laboratory

The site work, in-situ and laboratory testing are detailed in the Ground Investigation (GIR) Report.



3 GROUND CONDITIONS AND GEOTECHNICAL PARAMETERS

3.1 Stratigraphy

The exploratory holes revealed that the site is initially underlain by a variable thickness of made ground over the Alluvium and Hackney Gravel Member (River Terrace Deposits). The solid geology was encountered as a succession comprising the London Clay Formation, the Lambeth Group and the Thanet Sand Formation, with the White Chalk Sub-group encountered at depth. For the purpose of discussion, the ground conditions are summarised in Table 2.

Table 2: General succession of strata encountered

Strata	Exploratory holes encountered	Depth to top of stratum m bgl (mAOD)	Thickness (m) ¹⁾
Made ground	All	Ground Level (14.44 to 19.95)	0.42 to 10.50 (not proven in WS01; WS03; WS07; WS10; WS11; WS25; WS28 to WS30; TP11; TP16 and all HPs)
Alluvium	BH06 to BH08; WS12; WS19 and TP12	3.40 to 10.50 (7.93 to 11.14)	0.50 to 2.50 (not proven in WS12; WS19 and TP12)
Hackney Gravel Member	BH08; BH09: BH18; WS09; WS27; TP13 and TP14	1.20 to 13.00 (5.43 to 13.36)	0.20 to 12.00 (not proven in WS09)
London Clay Formation	All (except BH08; BH09, and all locations where the superficial deposits were not proven)	0.42 to 11.00 (7.15 to 14.85)	3.30 to 12.20 (not proven in all WS BHs; TPs and HPs)
Lambeth Group	All (except all WS BHs; TPs and HPs)	9.80 to 19.50 (-1.13 to 2.65)	11.60 to 18.80 (not proven in BH07)
Thanet Sand Formation	All (except in BH07, and all WS BHs, TPs and HPs)	24.00 to 35.40 (-16.92 to -9.27)	4.00 to 6.50 (not proven in BH01; BH08 and BH09)
White Chalk Sub-group	All (except BH01; BH07 to BH09, and all WS BHs, TPs and HPs)	35.30 to 39.50 (-22.68 to -19.45)	proven to 40mbgl (-25.28mAOD)



As shown on the investigation hole logs (Appendix B) and cross sections given in Appendix C, the made ground was of mixed lithology, its base (where proven) at between 7.65mAOD and 14.85mAOD. The alluvial deposits were only encountered towards the western portion of the site as predominantly soft, low strength silts and clays, with thickness of between 0.5m to 2.5m (base at between 5.43mOAD to 8.27mOAD). The medium dense (locally dense) sands and gravels of the Hackney Gravel were proven to levels of between 7.15mAOD and 13.16mOAD, with the exception of the north western part of the site (BH08 and BH09), where its base was confirmed at between -1.13mOAD to -0.57mAOD, indicating the presence of drift filled hollow in this area.

Apart from the area of the drift filled hollow, the London Clay Formation was encountered across the entire site comprising, generally high to very high strength, high to very high plasticity, silty clays with thickness of between 3.3m and 12.2m (base at between -1.13mAOD to 2.65mOAD). The Lambeth Group was encountered as predominantly high and very high strength, high to very high plasticity, silty clays, locally intebedded with dense to very dense sands, proven to levels between -16.92mAOD to -9.27mAOD. This was followed by the very dense, silty sands of the Thanet Sand Formation, to levels of between -22.68mAOD to -19.45mAOD, and the and basal beds of chalky flint pebbles and White Chalk recovered as sandy silt with flints to proven to the deepest level of investigation at -25.28mAOD.

Detailed descriptions of the strata encountered is given in the Ground Investigation (GIR) Report.

3.2 Characteristic geotechnical parameters

The characteristic geotechnical parameters for each stratum have been assessed by a combination of in-situ and laboratory test results and published correlations, statistical methods, and where no testing is available from tables with standard characteristic values and by well established experience.

3.2.1 Made ground

The made ground was encountered with variable thickness, ranging from 0.42m to 10.50m, and was found to generally comprise a silty, gravelly sand, with variable proportions of gravel and cobble size brick and concrete fragments, and rare to occasional anthropogenic materials such as glass, slate, ash, clinker, coal and metal fragments. In the boreholes which proved a greater thickness of made ground (situated at ground level outside of the Bathtub), the made ground generally became more cohesive with depth.

It is very likely that the made ground is site derived demolition rubble from former structures historically present at the site, used as a fill during different phases of development at the site.

No laboratory testing was carried out within this stratum due to the highly heterogeneous nature of the materials. The In-situ SPT testing returned highly variable SPT N_{60} values in the range of 0 to 49, indicating significant both vertical and lateral variability of the



stratum. A moderately conservative characteristic N value of 5 may be taken for the made ground.

In the absence of laboratory testing for the predominantly granular made ground materials, the following characteristic parameters are based on correlations with the in situ testing results and previous experience.

3.2.1.1 Bulk Unit Weight

A characteristic unit weight ($\gamma_{,k}$) of 18kN/m² (moist) to 19kN/m² may be taken for the made ground.

3.2.1.2 Strength parameters

Given the variability of the made ground a moderately conservative characteristic critical angle of effective friction ($\phi'_{cv,k}$) of 28° with a cohesion of c'_{,k}=0kN/m² are recommended for design purposes.

3.2.1.3 Deformation and settlement parameters

A drained Young's modulus (E', $_k$) of 5MN/m² is assumed for Made Ground with a Poisson's ratio (v') of 0.3.

3.2.1.4 Earth Pressure Coefficients

For normally consolidated sands the coefficient of earth pressure at rest (k_0) may be calculated approximately using the Jaky's formula $k_0=1-\sin\varphi'$. A coefficient of earth pressure at rest (k_0) of 0.530 can taken as the characteristic design value.

The active and passive earth pressure coefficients (k_a & k_p) have been derived from BS EN 1997-1: 2007 based on $\varphi'_{cv,k}$ for the made ground of 25° and assuming a horizontal ground surface (β =0) and wall adhesion equal to 2/3. $\varphi'_{cv,k}$. This gives characteristic values of k_{a,k}=0.354 and k_{p,k}=3.413. Based on guidance given in 'BRE Eurocode 7 a commentary' (1998) a minimum earth pressure coefficient for serviceability checks may be taken as K_{SLS}=1/2(ka+k_{nc,k}), where k_{nc,k}=1-sin ϕ , which gives k_{SLS}=0.388.

3.2.2 Alluvium

The alluvial deposits were encountered beneath the made ground generally towards the western boundary of the site, at a depth of 3.40mbgl to 10.50mbgl (7.93mAOD to 11.14mAOD). The stratum comprised a layer of soft to firm, silty clay or sandy silt, and in one location (WS12) silty sand. The full extent of the Alluvium was proven in three locations ranging between 0.50m to 2.50m thickness.

3.2.2.1 Bulk Unit Weight and Classification

The single measured bulk density for the material of $1.96Mg/m^3$ (unit weight of $19.6kN/m^3$) was considered uncharacteristically high for alluvial clays, therefore a conservative characteristic unit weight ($\gamma_{,k}$) for the Alluvium can be taken as γ =18.5kN/m³.



The moisture content ranges from 20% to 34%, with an average of approximately 26%. The plastic limit ranges from 20% to 27% with an average of 23%. The liquid limit ranges between 34% and 51% with an average of 42%. The plasticity index varies from 14% to 24% with an average of 19%. The consistency index varies from -0.22 to 0.98, which is indicative of a 'very soft to stiff' consistency.

The classification test results indicate that the Alluvium comprise low to high plasticity clay soils with natural moisture contents closer to its plastic limit.

3.2.2.2 Stress history - Overconsolidation Ratio (OCR)

One oedometer test result is available within the Alluvium at a depth of 12.5mbgl. Using the Casagrande graphical technique, a preconsolidation pressures (σ_p ') in the range of 180kN/m² is estimated from the oedometer result and comparison with the existing overburden pressure indicates an OCR value in the order of 1, which is indicative of normally consolidated soils.

3.2.2.3 Strength parameters

In the absence of laboratory testing, the undrained (short term) strength data has been derived from the in situ testing using the empirical correlation with SPT 'N' value and plasticity index using the relationship described by Stroud (1989) of $c_u=f_1\times N$, with 'f₁' equal to 6 considered to provide a best fit based on the materials encountered.

In-situ SPT testing on the stratum indicates SPT N₆₀ values of 6 and 7, which infers an undrained shear strength of the material (c_u) of 36kN/m² to 42kN/m². The undrained strength profile for the stratum is presented in Appendix D.

Given the limited data available for the made ground a conservative characteristic undrained strength ($c_{u,k}$) of 30kN/m² is recommended for the Alluvium.

Drained (long term) strength data has been obtained using empirical correlations between effective friction angles (peak and critical) and plasticity indices in the absence of drained laboratory strength tests.

A correlation between effective friction angle and plasticity index for normally consolidated marine clays has been reported by *Bowles, J.E* (1987). Using this correlation, and for an upper bound plasticity index for the Alluvium of 24%, a peak effective friction angle (ϕ'_{pk}) of 30° was obtained for undisturbed clays.

The fully softened effective friction angle can be estimated using a relationship with liquid limit, clay fraction and effective stress (after *Stark and Ei*d 1997), where less scatter occurs compared with correlations using plasticity index. An average effective normal stress is taken to be 100kPa, and a clay fraction of >20% is assumed based logging descriptions. Using the average liquid limit for the Alluvium of 42%, a fully softened friction angle of 27° is indicated from the *Stark and Eid* plot, with c'=0.

Effective strength parameters may also be corroborated by the use of empirical correlations published in PD 6694-1:2011. For an upper bound plasticity index of 24%, a conservative value of the critical angle of effective shearing resistance (ϕ'_{cv}) of 27° may be derived, with c'_k=0 kN/m².



A characteristic peak effective friction angle ($\phi'_{pk,k}$) of 30° and critical angle of effective shearing resistance ($\phi'_{cv,k}$) of 27° with an effective cohesion (c'_k) of 0kN/m² are recommended for design purposes.

3.2.2.4 Deformation and settlement parameters

One sample of Alluvium has been tested in a one dimensional oedometer consolidation machine. The results of the test are summarised in Table 3.

Table 3: Summary of oedometer testing – Alluvium

Sample	Pressure (kN/m ²)	m _∨ (m²/MN)	c _v (root) (m²/year)	
BH08 at 12.5mbgl	125 to 250	0.18	6.0	

The single oedometer test result available for the Alluvium indicates that it is of medium compressibility and a coefficient of compressibility (m_v) in the order of 0.2m²/MN and c_v value of $6m^2$ /year.

Empirical correlation of coefficient of compressibility (m_v) with SPT 'N' values and average plasticity index using $m_v = 1/N \times f_2$ as described by Stroud infers m_v values in the range of 0.28 to 0.33 m²/MN, which are higher than determined by the single laboratory test. Given the limited data available a conservative characteristic $m_{v,k}$ value of 0.25MN/m² is recommended.

Empirical correlation published by Lambe and Whitman (1979) has been referenced to corroborate the single c_v value of $6m^2$ /year obtained in the laboratory test. Lambe and Whitman correlate c_v values with the liquid limit and based on the measured range of Liquid Limits for the Alluvium this correlation indicates typical c_v values in the range of 7 to $10m^2$ /year. The laboratory result therefore lies just outside of the lower end of the typical range of c_v values expected for the soil type.

Young's modulus has also been derived from correlations with laboratory oedometer test data, directly from in situ testing using the pressuremeter testing and Standard Penetration Tests (SPT 'N'), and correlation between undrained strength (c_u) and index testing.

The estimation of Young's modulus (E_{oed}) from oedometer test has been made from the constrained modulus (M=1/m_v), with E related to M using a correction for Poisson's ratio v' = 0.2:

$$E = M. \left[\frac{(1+v).(1-2.v)}{(1-v)} \right]$$

A drained Young's modulus of $E' = 5MN/m^2$ has been derived from the above correlation.

Using the correlations suggested in CIRIA Report 143 (1995) [$E_u = 1.2 \times N_{60}$ and E'=0.9×N₆₀], an undrained Young's modulus E_u =7.2 to 8.4MN/m² and drained Young's modulus E'=5.4 to 6.3MN/m² are derived directly from the in-situ SPT 'N' testing.



Correlation of undrained strength (c_u) and undrained stiffness (E_u) with plasticity indices and over consolidation ratio (OCR) is considered (Duncan & Buchignani, 1976). Adopting $E_u=300 \times c_u$ and $c_{u,k}$ above gives an estimated of $E_u=9MN/m^2$. The drained stiffness (E') can then been approximated using the correlation E'=0.8. E_u . and a drained stiffness E'=7.2MN/m² is derived.

From consideration of the above, a conservative characteristic undrained Young's modulus ($E_{u,k}$) of 7MN/m² and drained Young's modulus ($E'_{,k}$) of 5.5MN/m² is recommended for the Alluvium. From reference to published data an undrained Poisson's ratio (v_u) of 0.5 and drained Poisson's ratio (v') of 0.2 may be assumed for design.

The drained Young's modulus profile derived from the insitu and laboratory testing have been plotted and summarised in Appendix D.

3.2.2.5 Earth Pressure Coefficients

A coefficient of earth pressure at rest (k_0) of 0.50 is recommended as the characteristic value for the Alluvium.

Based on $\varphi'_{cv,k}$ for the Alluvium of 27° and deriving values using the approach and assumptions outlined in Section 3.1.2.4. earth pressure coefficients of $k_{a,k} = 0.325$ and $k_{p,k}=3.834$ may be calculated. Similarly a minimum earth pressure coefficient for serviceability checks may be taken as $k_{SLS}=0.436$.

3.2.3 Hackney Gravel Member

This Hackney Gravel was encountered directly beneath the made ground (with the exception of BH8, where it was overlain by Alluvium), at a depth of between 1.2mbgl to 13.0mbgl (5.43mAOD to 13.36mAOD) and ranged in thickness between 0.2m to 12.0m. The stratum generally comprised greenish brown near surface, becoming yellow orangish brown, gravelly, fine to coarse sand or sandy gravel of flint, locally clayey or silty.

In BH08 and BH09 (located along the north perimeter road) a possible drift filled hollow was encountered with the depth of Hackney Gravel encountered to between 13.0mbgl to 19.0mbgl (5.43mAOD to -0.57mAOD) and 10.87mbgl to 19.50mbgl (7.50mAOD to -1.13mAOD) respectively.

3.2.3.1 Bulk Unit Weight and Classification

Based on the stratum descriptions and guidance given in BS 8004:2015, characteristic unit weights ($\gamma_{,k}$) of 19kN/m² (moist) to 21kN/m² (saturated) are recommended for the Hackney Gravel Member.

Particle size distribution tests show that the Hackney Gravel soils have variable fines content ranging from 1% to 23%, sand content ranging from 14% to 52%, and gravel content between 47% and 70%, indicating variably clayey, silty, sandy GRAVEL.

The in-situ SPT testing on the stratum indicates SPT N_{60} values ranging from 19 to 36, giving the material a medium dense to dense relative density. The SPT N_{60} values exhibit a general linear increase with depth. A constant characteristic value of N=24 is



recommended or alternatively N=18 +1.8N \times z (where z is depth below the surface of the stratum)

Given the predominantly granular nature of the stratum, no index properties were determined.

3.2.3.2 Strength parameters

The effective friction angle for the Hackney Gravel has been derived using correlations with the in-situ SPT 'N' test by *Peck et al.* (1974) and *Michell et al.* (1974), the latter recognising the influence of vertical effective stress.

Using these correlations, and adopting a constant characteristic SPT N₆₀ value of 24, peak effective friction angles of ϕ '=35° and ϕ '=38° were obtained respectively.

Parameters for the calculation of earth pressures may also be corroborated by the use of empirical correlations published in BS8002:2015 Code of Practice for Earth Retaining Structures. Using this approach a peak angle of effective shearing resistance $\Phi'_{pk,k}$ of 38° may be anticipated and for the Hackney Gravel Member and at constant volume a critical angle of shearing resistance $\phi'_{cv,k}$ of the order of 35° may be derived.

A characteristic peak effective friction angle $\phi'_{pk,k}=38^{\circ}$ and critical angle of shearing resistance $\Phi'_{cv,k}$ of the order of 35°, with effective cohesion of c'_{,k}=0kN/m² are recommended.

3.2.3.3 Deformation and settlement parameters

For the purpose of establishing a Young's modulus for the Hackney Gravel, the correlation with the in-situ SPT 'N' test presented by Stroud (1989), contained within CIRIA Publication 143 was used. The correlation E' = N_{60} (MN/m²) is considered a reasonable approximation for normally consolidated sands and gravels, resulting in a constant characteristic value of the Young's modulus E',_k=24MN/m². Alternatively, a linear increase in depth may be adopted of E',_k=18MN/m² at surface, increasing to 36MN/m² at the base may be used.

From published data a Poisson's ratio (v') of 0.3 is recommended for the Hackney Gravel Member.

The deformation parameters derived from the above have been plotted and summarised in Appendix D.

3.2.3.4 Earth Pressure Coefficients

For normally consolidated sands the coefficient of earth pressure at rest (k_0) may be calculated approximately using the Jaky's formula $k_0=1-\sin\varphi'$. Using $\varphi'_{cv,k}$ for the Hackney Gravel Member in this equation gives a recommended $k_{0,k}$ value of 0.43.

Using the approach and assumptions outlined in Section 3.1.2.4 earth pressure coefficients of $k_{a,k} = 0.229$ and $k_{p,k} = 6.487$ may be adopted. A minimum earth pressure coefficient for serviceability checks may be taken as $k_{SLS}=0.328$.



3.2.4 London Clay Formation

The London Clay Formation was encountered across the entire site, apart from the locations of BH08 and BH09, either beneath the Alluvium or the Hackney Gravel, at depths of between 0.42mbgl and 11.0mbgl (7.15mAOD to 14.85mAOD). This stratum can be described as a firm (occasionally soft near surface) to stiff, medium strength, brown, weathered silty clay, locally near surface, slightly sandy slightly gravelly, becoming stiff to very stiff, high to very high strength, fissured, brown, grey silty clay with occasional fine sand sized selenite crystals.

3.2.4.1 Bulk Density and Classification

The measured bulk densities for the material range between 1.95 Mg/m³ and 2.05Mg/m³ (unit weights of 19.5kN/m³ and 20.5kN/m³), and a characteristic unit weight ($\gamma_{,k}$) for the London Clay Formation can be taken as 20kN/m³.

The moisture content ranges from 18% to 34%, with an average of approximately 27%. The plastic limit ranges from 19% to 32% with an average of 26%. The liquid limit ranges between 52% and 78% with an average of 63%. The plasticity index varies from 26% to 53% with an average of 37%. The consistency index varies from 0.81 to 1.10, which is indicative of a 'stiff to very stiff' consistency.

The classification test results indicate that the London Clay Formation comprises high to very high plasticity clay soils with natural moisture contents close to its plastic limit.

Particle size distribution tests on samples of the London Clay Formation indicate that the fine soils have a clay content ranging from 39% to 49%, a silt content ranging from 24% to 42%, sand content ranging from 7% to 37% and generally no gravel, occasionally up to 6%. These results indicate that the fine soils comprise locally sandy, silty CLAY/sandy, clayey SILT. Sandier layers (band of sand) within the London Clay Formation comprise 14% clay, 20% silt, 61% sand, and 5% gravel, indicating variably clayey, silty SAND.

3.2.4.2 Stress history - Overconsolidation Ratio (OCR)

The stress history and OCR for the London Clay Formation has been assessed from insitu self boring pressuremeter (SBP) testing results.

The OCR values derived from in-situ SBP test carried out at depths between 10.5mbgl and 12.5mbgl generally range from 2.6 to 2.9, up to a maximum of 5.7 indicating lightly to heavily overconsolidated clays.

3.2.4.3 Strength parameters

The undrained (short term) strength data (c_u) has been obtained from the in situ testing using the empirical correlation with SPT 'N' value, the in-situ self boring pressuremeter testing, and the laboratory quick undrained triaxial test (UU100).

The undrained shear strength (c_u) obtained by empirical correlation with SPT 'N' and plasticity index use the relationship described by Stroud (1989) of $c_u=f_1\times N$, with 'f₁' equal to 5 considered to provide a best fit based on the materials encountered. The in-situ SPT N₆₀ values range between 8 and 51. This infers that c_u of the material ranges from



 $c_u=34$ kN/m² to $c_u=219$ kN/m² and generally shows an increasing trend in strength with depth. The lower bound values of undrained strength inferred from this empirical correlation are considered uncharacteristically low and have not been considered when determining the characteristic design line.

The SPB testing was carried out at three locations and returned undrained shear strengths (c_u) of 103kN/m² to 197kN/m².

A total of 13No. quick unconsolidated undrained triaxial strength (UU) tests carried out on undisturbed samples of the London Clay Formation indicate undrained shear strengths ranging from $c_u=61$ kN/m² to $c_u=177$ kN/m². The lower bound value of undrained strength determined by the laboratory triaxial test in BH06 at 6.5mbgl is considered uncharacteristically low, probably as a result of disturbance caused during the sampling process, and has not been considered when determining the characteristic design line.

A characteristic design profile of $c_{u,k}=80kN/m^2$ at the surface of the stratum at (12.5mAOD), increasing linearly to $c_u=120kN/m^2$ at the base (2.5mAOD) is recommended, i.e. $c_{u,k} = 80kN/m^2+4.21kN/m^2xz$ (where z is depth below the surface of the stratum).

The results of all the undrained strength data have been plotted together and are presented in Appendix D.

Drained (long term) strength data has been obtained using a combination of empirical correlations between effective friction angles (peak and critical) and plasticity indexes and direct measurements by laboratory testing.

The empirical correlations discussed in Section 3.2.2.3 taking the average values returns a peak effective friction angle $\varphi'_{pk,k}$ of $\varphi'=25^{\circ}$ and critical angle of shearing resistance $\varphi'_{cv,k}$ of the order of 23° with effective cohesion of c'_{,k}=0kN/m² are recommended for design purposes.

3.2.4.4 Deformation and settlement parameters

One sample of the London Clay Formation has been tested in a one dimensional oedometer consolidation machine. The results of the test are summarised in Table 4.

Sample	Pressure (kN/m ²)	m _v (m²/MN)	c _v (root) (m²/year)
BH01 at 6.5mbgl	130 to 260	0.17	0.35

Table 4: Summary of oedometer testing – London Clay Formation

The single oedometer test result indicates that the London Clay Formation is of medium compressibility with a coefficient of compressibility (m_v) in the order of $0.2m^2/MN$ and coefficient of consolidation (c_v) of $0.4m^2/year$.

Empirical correlation of coefficient of compressibility (m_v) with SPT 'N' values and average plasticity index using $m_v = 1/N \times f_2$ as described by Stroud infers m_v values in the range of 0.046 m²/MN to 0.29 m²/MN, with the m_v measured by laboratory test falling within this range. On that basis a characteristic $m_{v,k}$ value of 0.2MN/m² is recommended.



The empirical correlations described in Section 3.2.2.4 and based on the measured range of Liquid Limits for the London Clay indicates typical c_v value around 2 to $6m^2/year$. The laboratory result therefore lies outside of the lower end of the typical range of c_v values expected for the soil type.

Deformation and settlement parameters have also been derived from correlations with laboratory oedometer test data, directly from in situ testing using the Standard Penetration Tests (SPT 'N') and SBP testing, and correlation between undrained strength (c_u) and index testing, as described in Section 3.2.2.4.

The estimation of Young's modulus (E_{oed}) from oedometer test gives a drained stiffness of E'=5.29 MN/m².

Using the direct correlation with in-situ SPT N_{60} values, the undrained Young's modulus (E_u) ranges between 9.6MN/m² and 61.2MN/m², while the drained stiffness (E') is between 8.6MN/m² and 55MN/m².

The undrained secant Young's modulus (E_s) at 1% shear strain measured directly by the self boring pressuremeter testing ranges between 17MN/m² and 41.9MN/m².

Correlation of undrained shear strength (c_u) and undrained stiffness (E_u) with plasticity indices and over consolidation ratio (OCR) for the London Clay of E_u=400×c_u gives an undrained stiffness between E_u=32MN/m² and E_u=48MN/m², and drained stiffness between E'=26MN/m² and E'=38MN/m².

From consideration of the above, a characteristic undrained Young's modulus ($E_{u,k}$) of 28MN/m² +1.68MN/m²×z (where z is depth below the surface of the stratum) and drained Young's modulus ($E'_{,k}$) of 22.4MN/m² +1.34MN/m²×z is recommended for the London Clay.

From reference to published data an undrained Poisson's ratio (v_u) of 0.5 and drained Poisson's ratio (v_i) of 0.2 may be assumed for design.

The deformation parameters derived from the above have been plotted and summarised in Appendix D.

3.2.4.5 Earth Pressure Coefficients

The coefficient of earth pressure at rest (k_0) measured directly by the self boring pressuremeter testing ranges between 0.84 and 1.2. A coefficient of earth pressure at rest $(k_{0,k})$ of 1.2 can taken as the characteristic design value.

Based on a $\varphi'_{cv,k}$ for the London Clay of 23° and deriving values using the approach and assumptions outlined in Section 3.1.2.4. earth pressure coefficients of $k_{a,k} = 0.384$ and $k_{p,k} = 3.039$ may be adopted. A minimum earth pressure coefficient for serviceability checks may be taken as $k_{SLS} = 0.497$.

3.2.5 Lambeth Group

The soils representative of the Lambeth Group were encountered at depths of 9.80mbgl to 19.00mbgl (-1.13mOAD to 2.65mAOD), with distinct cohesive and granular portions. The cohesive portion of the stratum formed the majority of the stratum, and was found to directly underlie the London Clay Formation, comprising stiff to very stiff, high to very



high and extremely high strength, multicoloured, silty, locally slightly sandy clay. The predominantly granular soils were encountered in BH04, BH05 and BH09, mostly towards the base of the stratum, and generally consist of very dense, grey, green, silty, clayey, locally very clayey, gravelly, fine to medium sand with gravel of black rounded fine to coarse pebbles.

3.2.5.1 Bulk Density and Classification

The measured bulk densities for the material range between 2.00 Mg/m³ and 2.25Mg/m³ (unit weights of 20.0kN/m³ and 22.5kN/m³), and a characteristic unit weight for the Lambeth Group can be taken as $\gamma_{,k}$ =20.0kN/m³.

The moisture content ranges from 2% to 35%, with an average of approximately 22%. The plastic limit ranges from 16% to 33% with an average of 24%. The liquid limit ranges between 27% and 86% with an average of 58%. The plasticity index varies from 14% to 56% with an average of 35%. The consistency index varies from 0.81 to 1.54, which is indicative of a 'stiff to very stiff' consistency.

The classification test results indicate that the cohesive portion of the Lambeth Group comprise low to very high plasticity clay soils with natural moisture contents below its plastic limit.

Particle size distribution tests on samples of the cohesive Lambeth Group indicate that the fine soils have a clay content ranging from 20% to 81%, a silt content ranging from 16% to 63%, sand content ranging from 0% to 61% and generally no gravel, occasionally up to 6%. These results indicate that the fine soils comprise locally sandy, silty CLAY/sandy, clayey SILT. The granular portion of the stratum comprise 14% to 30% clay, 15% to 24% silt, 46% to 73% sand, and up to 4% gravel, indicating variably clayey, silty SAND.

3.2.5.2 Stress history - Overconsolidation Ratio (OCR)

The stress history and OCR for the Lambeth Group has been assessed from the in-situ self boring pressuremeter (SBP) testing results.

The OCR derived from in-situ SBP test carried out at depths between 15.5mbgl and 27.3mbgl range 2.0 to 6.3 indicating lightly to heavily overconsolidated clays.

3.2.5.3 Strength parameters

The undrained (short term) strength data (c_u) for the cohesive portion of the Lambeth Group has been obtained from the in situ testing using the empirical correlation with SPT 'N' value, the in-situ self boring pressuremeter testing, and the laboratory quick undrained triaxial test (UU100).

The c_u obtained by empirical correlation with SPT 'N' and plasticity index use the relationship described by Stroud (1989) of $c_u=f_1\times N$, with 'f_1' equal to 4.6 considered to provide a best fit based on the materials encountered. The in-situ SPT N₆₀ values range between 24 and 360 (extrapolated) at depth. This infers that the in-situ undrained strength of the material ranges from $c_u=90kN/m^2$ to $c_u>500kN/m^2$, typically 120kN/m² to 250kN/m² and generally shows an increasing trend in strength with depth.



The SPB testing was carried out at three locations, returned undrained shear strengths of c_u =134kN/m² to c_u =339kN/m².

A total of 23No. quick unconsolidated undrained triaxial strength (UU) tests carried out on undisturbed samples of the London Clay Formation indicate undrained shear strengths ranging from approximately $c_u=22kN/m^2$ to $c_u=780kN/m^2$, but more typically 106kN/m² to 310kN/m². The lower and upper bound values of undrained shear strength determined by the laboratory triaxial tests are considered uncharacteristic and have not been considered when determining the characteristic design line.

A characteristic design profile of $c_{u,k}=120kN/m^2$ at the surface of the stratum at (2.5mAOD), increasing linearly to $c_{u,k}=220kN/m^2$ at the base of the stratum (-15.0mAOD) is recommended.

Drained (long term) strength data has been obtained using a combination of empirical correlations between effective friction angles (peak and critical) and plasticity indexes and direct measurements by laboratory testing.

The empirical correlations discussed in Section 3.2.2.3 taking into account the average values returns a peak effective friction angle ϕ_{pk} of $\phi'=26^{\circ}$ and critical angle of shearing resistance ϕ'_{cv} of the order of 24° with effective cohesion of c'=0kN/m².

Three consolidated undrained triaxial compression tests carried out on the cohesive Lambeth Group at depths on 12.7mbgl, 20.1mbgl and 30.5mbgl returned peak effective friction angles of between φ'_{pk} =10.5° and φ'_{pk} =26.5°, and effective cohesion of c'=0 to c'=40kPa. The lower bound value of φ'_{pk} =10.5° is considered uncharacteristically low when compared to the values derived with empirical correlations above.

The effective friction angle measured by the in-situ SBP testing range from ϕ '=23.1° to ϕ '=30.6°, while the effective cohesion measured by the same method is between c'=64kPa to c'=153kPa.

Considering all of the above results moderately conservative characteristic values of peak effective friction angle $\varphi'_{pk,k}$ of 26° and critical angle of shearing resistance $\varphi'_{cv,k}$ of 24° with effective cohesion of c'_{,k}=0kN/m² are recommended.

Using correlations described in Section 3.2.3.2 for the sand horizons encountered towards the base of the stratum, characteristic peak effective friction angle $\phi'_{pk,k}$ of 38° and critical angle of shearing resistance $\phi'_{cv,k}$ of 32° with effective cohesion of c'_{.k}=0kN/m² are recommended.

The results of undrained strength data have been plotted together and are presented in Appendix D.

3.2.5.4 Deformation and settlement parameters

Three samples of the cohesive Lambeth Group have been tested in a one dimensional oedometer consolidation machine. The results of the test are summarised in Table 5.



Sample	Pressure (kN/m ²)	m _v (m²/MN)	c _v (root) (m²/year)	
BH01 at 14.4mbgl	150 to 300	0.080	0.78	
BH04 at 30.6mbgl	300 to 600	0.032	24	
BH16 at 23.1mbgl	460 to 920	0.021	7.7	

Table 5: Summary of oedometer testing – cohesive Lambeth Group

The oedometer test results indicate that the Lambeth Group is of low compressibility with a coefficient of compressibility (m_v) in the order of $0.08m^2/MN$ towards the surface of the stratum, reducing to 0.02 to 0.03 m²/MN with depth, and a highly variable coefficient of consolidation (c_v) between $0.78m^2/year$ and $24m^2/year$.

Empirical correlation of coefficient of compressibility (m_v) with SPT 'N' values and average plasticity index using $m_v = 1/N \times f_2$ as described by Stroud infers m_v values in the range of 0.006m²/MN to 0.097m²/MN. The laboratory results are therefore within the typical range of c_v values expected for the soil type.

The empirical correlations described in Section 3.2.2.4 and based on the measured range of Liquid Limits for the Lambeth Group indicates typical c_v values of 1.6 to $17m^2/year$. The laboratory results are therefore within the typical range of c_v values expected for the soil type.

Deformation and settlement parameters have also been derived from correlations with laboratory oedometer test data, directly from in situ testing using the Standard Penetration Tests (SPT 'N') and SBP testing, and correlation between undrained strength (c_u) and index testing, as described in Section 3.2.2.4.

The estimation of Young's modulus (E_{oed}) from oedometer test gives a drained stiffness of E'=11MN/m² to 43MN/m².

Using the direct correlation with in-situ SPT N_{60} values, the undrained Young's modulus (E_u) ranges between 20MN/m² at surface to 240MN/m² towards the base, with moderately conservative values of 34MN/m² at surface to 60MN/m² towards the base. This gives derived drained stiffness (E') values between 27MN/m² and 72MN/m².

The Secant Young's modulus (E_s) at 1% shear strain measured directly by the self boring pressuremeter testing ranges between 31.3MN/m² and 248MN/m².

Correlation of undrained strength (c_u) and undrained stiffness (E_u) with plasticity indices and over consolidation ratio (OCR) gives an undrained stiffness between $E_u=48MN/m^2$ and $E_u=88MN/m^2$, with resulting drained stiffness between of E'=38.4MN/m², E'=70.4MN/m².

From consideration of the above, a characteristic undrained Young's modulus ($E_{u,k}$) of 32MN/m²+2.74MN/m²×z (where z is depth below the surface of the stratum) and drained Young's modulus (E',_k) of 25.6MN/m²+2.19MN/m²×z is recommended for the Lambeth Group clays.

From reference to published data an undrained Poisson's ratio (v_u) of 0.5 and drained Poisson's ratio (v_i) of 0.2 may be assumed.



The deformation parameters for the granular soils of the Lambeth Group are obtained using the correlation $E'=2\times N_{60}$ (MN/m²) for overconsolidated sands presented by Stroud (1989), resulting in a moderately conservative constant characteristic value of the Young's modulus $E'_{,k}=110$ MN/m². From published data a Poisson's ratio (v') of 0.3 is recommended.

The deformation parameters derived from the above have been plotted and summarised in Appendix D.

3.2.5.5 Earth Pressure Coefficients

The coefficient of earth pressure at rest (k_0) measured directly by the self boring pressuremeter testing ranges between 0.83 and 1.33. A coefficient of earth pressure at rest $(k_{0,k})$ of 1.2 at the surface of the stratum, reducing to 1.0 at the base, can taken as the characteristic design values.

Based on a $\varphi'_{cv,k}$ for the Lambeth Group of 24° and deriving values using the approach and assumptions outlined in Section 3.1.2.4. earth pressure coefficients of $k_{a,k} = 0.368$ and $k_{p,k} = 3.215$ may be adopted. A minimum earth pressure coefficient for serviceability checks may be taken as $k_{SLS} = 0.481$.

3.2.6 Thanet Sand Formation

The Thanet Sand Formation was encountered in all deep boreholes, beneath the Lambeth Group, its thickness was proven to be between 4.00m to 6.50m described as very dense, green, grey, silty clayey, fine to medium sand, locally grading into sandy silt.

3.2.6.1 Bulk Density and Classification

The measured remoulded bulk densities for the material range between 1.87 Mg/m³ and 1.99Mg/m³ (unit weights of 18.7kN/m³ and 19.9kN/m³), and a characteristic unit weight for the Thanet Sands can be taken as $\gamma_{,k} = 20.0$ kN/m³.

Particle size distribution tests show that the Thanet Sand Formation has a variable clay content ranging from 7% to 18%, silt content between 9% to 70%, sand content ranging from 30% to 84%, and gravel between 0% and 4%, indicating silty, clayey, SAND, locally grading onto clayey, sandy, SILT.

The in-situ SPT testing on the stratum indicates SPT N_{60} values ranging from 60 to 360 (extrapolated), giving the material a very dense relative density.

Given the predominantly granular nature of the stratum, no index properties were determined.

3.2.6.2 Stress history - Overconsolidation Ratio (OCR)

The OCR of 2.1 was derived from in-situ self boring pressuremeter (SBP) testing at a depth of 31.5mbgl, indicating lightly overconsolidated sands.

3.2.6.3 Strength parameters

The effective friction angle for the Thanet Sand Formation has been derived using correlations described in Section 3.2.3.2, derived from the in-situ self boring



pressuremeter testing, and measured in the laboratory by consolidated drained shear box test.

Using the empirical correlations, a peak effective friction angle of $\varphi'=43^{\circ}$ was obtained, the SBP test returned effective friction angle of $\varphi'=38.7^{\circ}$ and $\varphi'_{cv}=32^{\circ}$ with effective cohesion of c'=76kN/m², while the shear box test returned effective friction angle of between $\varphi'=33^{\circ}$ to $\varphi'=34^{\circ}$ and effective cohesion of c'=20kN/m² to c'=30kN/m². However, due to the nature of the material the particulate cementation will result in the effective friction angles determined by the shear box testing being highly conservative.

Based on the above, a characteristic effective friction angle of $\phi'_{pk,k}$ =38° and critical angle of shearing resistance $\phi'_{cv,k}$ of 32° with effective cohesion of c'=0kN/m² are recommended for design purposes

3.2.6.4 Deformation and settlement parameters

Using the correlation described in Section 3.2.5.4, gives values of drained Young's modulus (E') in the range of 120 to 600 MN/m².

The secant Young's modulus (E_s) at 1% shear strain inferred from in-situ self boring pressuremeter testing range between 202.4MN/m² and 275.1MN/m².

A constant characteristic value of the Young's modulus $E'_{,k}=200MN/m^2$. From published data a Poisson's ratio (v') of 0.3 is recommended.

The deformation parameters derived from the above have been plotted and summarised in Appendix D.

3.2.6.5 Earth Pressure Coefficients

For overconsolidated sands the coefficient of earth pressure at rest (k₀) may be calculated approximately using the Mayne and Kulhawy's formula $k_{0OC}=k_{0NC}\times OCR^{sin\phi'}$, where $k_{0NC}=1-sin\phi'$ using Jaky's formula. Using $\phi'_{cv,k}$ and OCR for the Thanet Sand Formation in this equation gives a recommended $k_{0,k}$ value of 0.69.

Using the approach and assumptions outlined in Section 3.1.2.4 earth pressure coefficients of $k_{a,k} = 0.262$ and $k_{p,k} = 5.267$ may be adopted. A minimum earth pressure coefficient for serviceability checks may be taken as $k_{SLS}=0.396$.

3.2.7 White Chalk Sub-group

The White Chalk was encountered at depths of between 35.3mbgl to 39.5mbgl (-22.68mAOD to -19.45mAOD) and was proven to 40.0mbgl (-25.28mAOD). As a result of the percussive drilling technique adopted, the stratum was recovered as a structureless melange of sandy silty gravel of chalk with frequent flints.

3.3 Summary of geotechnical design parameters

The geotechnical design parameters presented in Table 6 are based on the results of the fieldwork, in situ and laboratory testing and derived values summarised above, and reflect RSK's understanding of the proposed construction at the time this report was written. The designer should assess the applicability of the characteristic values



provided below for the design situation under consideration and to ensure that it is a cautious estimate of the value affecting the occurrence of the relevant limit state(s).

	Stratum					
Design parameter	Made ground	Alluvium	Hackney Gravel	London Clay Formation	Lambeth Group	Thanet Sand
Unit weight - γ _{,k} (kN/m ³)	18.0 ¹⁾	18.5	19.0 (moist) 21.0 (sat) ¹⁾	20.0	20.0	20.0 ¹⁾
SPT N ₆₀ value	5	6	24 or 18+1.8N×z	8 to 51	24 to 360	Av. 125
Undrained shear strength – c _{u,k} (kN/m²)	-	30	-	80@ 12.5mOD increasing to 120@ 2.5mOD	120@ 2.5mOD increasing to 220@ -15mOD	-
OCR	1 ¹⁾	1	1 ¹⁾	3.0	3.0@ surface to 2.0@ base	2.1
Peak Effective Angle of Friction - φ' _{pk,k} (°)	-	30	38	25	26 (38 sand)	38
Critical State Angle of Friction - φ' _{cv,k} (°)	28 ¹⁾²⁾	27	35	23	24 (32 sand)	32
Effective cohesion - c',k (kN/m ²)	0	0	0	0	0	0
Earth pressure coefficient at rest - k _{0,k}	0.53	0.50	0.43	1.20	1.20 @ surface to 1.00 @ base	0.69
Active earth pressure coefficient at rest - k _{a,k}	0.354	0.325	0.229	0.384	0.368	0.262
Passive earth pressure coefficient at rest – k _{p,k}	3.413	3.834	6.487	3.039	3.215	5.267

Table 6: Summary of geotechnical design parameters



		Stratum					
Design parameter	Made ground	Alluvium	Hackney Gravel	London Clay Formation	Lambeth Group	Thanet Sand	
Coefficient of volume compressibility - m _{v,k} (m ² /MN)	-	0.25	-	0.2	0.08@ 2.5mOD to 0.03@- 15mOD	-	
Coefficient of consolidation - c _{v,k} (m ² /yr)	-	6	-	0.4 to 2.0	0.8 to 2.0	-	
Young's modulus – E _u ,k (MN/m²) ³⁾	-	7	-	28@ 12.5mOD increasing to 44.8@ 2.5mOD	32@ 2.5mOD increasing to 80@ -15.0mOD	-	
Young's modulus - E',ĸ (MN/m²) ³⁾	5 ¹⁾	5.5	24 or 18@surface to 36@ base	22.4@ 12.5mAOD increasing to 35.8@ 2.5mAOD	25.6@ 2.5mAOD increasing to 64@ -15mAOD (110 sand)	200	

1) assumed empirical values in the absence of testing

²⁾ assumed predominantly granular soils

It should also be noted that the stiffness adopted for the design of structures is entirely dependant on the magnitude of strain expected during loading and unloading. It is therefore important to determine / reassess the stiffness for every stratum on a proposal specific basis.

3.4 Groundwater

Hydrogeological properties of the strata, as encountered during the site investigation are summarised in Table 7.

BH Strata	_	Strike or	Monitoring Results (mbgl) (mAOD)				
	(mbgl)	RSK	Levels provided by Waterman		aterman		
		(mAOD)	28/11/16	GW level 1	GW level 2	GW level 3	
BH1	MG	ND	2.84 (11.89)	3.41 (11.32)	-	-	
BH3	MG	ND	Dry	1.56 (13.17)	-	-	

Table 7: Summary of hydrogeology



		Strike or	or Monitoring Results (mbgl) ge (mAOD)				
BH	Strata	(mbgl)	RSK	Levels p	provided by W	aterman	
		(mAOD)	28/11/16	GW level 1	GW level 2	GW level 3	
	LG	ND	Dry	18.66 (-3.93)	-	-	
вци	MG	ND	4.48 (15.47)	4.51 (15.44)	-	-	
DII4	LCF	14.0	10.81 (9.14)	-	-	-	
BH5	MG	ND	1.23 (13.36)	-	-	-	
БПЗ	LG	ND	19.31 (-4.72)	-	-	-	
BH6	MG / AL	ND		3.66 (11.11)	-	-	
BH7	MG / AL	5.0	3.70 (11.03)	3.70 (11.03)	3.71 (11.02)	3.66 (11.07)	
вня	MG	8.0	7.38 (11.05)	7.36 (11.07)	7.39 (11.13)	-	
БПО	AL	13.0	7.32 (11.11)	10.44 (7.99)	7.35 (11.08)	-	
вно	MG	6.8	7.28 (11.09)	7.02 (11.35)	6.69 (11.68)	-	
BHS	LG	22	7.00 (11.37)	7.09 (11.28)	10.22 (8.15)	-	
BH10	MG	5.5	5.10 (13.55)	5.25 (13.40)	5.28 (13.37)	-	
BITTO	LC	14	7.45 (11.20)	7.45 (11.20)	7.45 (11.20)	-	
BH16	MG	4	2.67 (12.15)	2.88 (11.94)	2.59 (12.23)	-	
BITTO	LG	20.5	19.38 (-4.56)	19.36 (-4.54)	19.04 (-4.22)	-	
BH17	MG	ND	1.32 (13.20)	1.32 (13.20)	-	-	
BH18	MG / HG	10.5	8.28 (9.87)	8.28 (9.87)	8.26 (9.89)	-	
WS02	MG	ND	Dry	Dry	Dry	Dry	
WS03A	MG	ND	-	-	-	-	
WS04	MG	ND	1.34 (13.26)	1.36 (13.24)	1.32 (13.28)	-	



	_	Strike or	or Monitoring Results (mbgl) ge (mAOD)				
BH	BH Strata	(mbgl)	RSK	Levels p	provided by Wa	ed by Waterman	
		(mAOD)	28/11/16	GW level 1	GW level 2	GW level 3	
WS05	MG	ND	1.29 (13.26)	1.30 (13.25)	1.29 (13.26)	-	
WS06	MG	ND	1.44 (13.25)	1.43 (13.26)	-	-	
WS07A	MG	ND	-	1.47 ¹⁾	1.46 ¹⁾	-	
WS08	MG / LCF	ND	1.44 (13.27)	1.46 (13.25)	-	-	
WS09	MG	ND	2.89 (11.96)	2.9 (11.95)	2.96 (11.89)	-	
WS10	MG	ND	Dry	Dry	Dry	Dry	
WS11	MG	ND	Dry	Dry	Dry	Dry	
WS12	MG	ND	3.98 (10.96)	4.00 (10.94)	3.99 (10.95)	3.98 (10.96)	
WS19	MG	ND	Dry	Dry	Dry	Dry	
WS20	MG/ LCF	ND	2.84 (11.89)	3.36 (11.37)	-	-	
WS21	MG/LCF	ND	2.34 (12.39)	3.77 (10.96)	2.56 (12.17)	2.41 (12.32)	
WS23	MG/LCF	ND	Dry	1.37 (13.35)	1.37 (13.35)	1.40 (13.32)	
WS24	MG/LCF	ND	Dry	Dry	Dry	-	
WS26	MG	ND	1.38 (13.09)	1.38 (13.09)	1.37 (13.10)	1.38 (13.09)	
WS27	MG	ND	Dry	-	-	-	

MG= Made Ground; AL = Alluvium; HG= Hackney Gravel; LCF = London Clay Formation; LG= Lambeth Group ND = not determined during drilling;

 $^{(1)}$ well level not determined

¹⁾ well level not determined

It can be inferred from the groundwater monitoring results that the general groundwater table in the made ground, Alluvium and Hackney Gravel is resting at levels of between 7.99mAOD and 15.47mAOD, but generally around 11.00 to 12.00mAOD, and is likely to be in hydraulic continuity. In addition, small rates of groundwater seepage were noted within the Lambeth Group at levels of between -3.93mAOD and -4.72mAOD.

It should be noted that groundwater levels might fluctuate for a number of reasons including seasonal variations.



4 ENGINEERING CONSIDERATIONS

4.1 **Proposed construction**

It is understood that the proposed development is to involve the demolition of existing buildings and structures in the central and northern part of the site, and construction of six new buildings ranging from three to twelve storeys, with associated infrastructure and car parks. Areas of hard and soft landscaping are also proposed to provide public and private areas of open space.

The main sorting office building will be retained and refurbished with a construction of an acoustic roof deck over the existing servicing yard to the south. In addition, the proposals include alterations of the public highway and the construction of a new dedicated vehicle ramp to basement level to service Royal Mail operations.

At this stage no specific information relating to building loads has been provided, however, it is likely that the proposed structures will be framed, with variable and generally relatively high column loads anticipated.

4.2 Geotechnical hazards

A summary of commonly occurring geotechnical hazards is given in Table 8 together with an assessment of whether the site may be affected by each of the stated hazards.

Hazard category	Hazard status based on investigation findings and proposed development			Engineering	
(excluding contamination issues)	Found to be present on site	Could be present but not found	Unlikely to be present and/or affect site	considerations if hazard affects site	
Sudden lateral changes in ground conditions	¥	Significant variability in the thickness of the made ground and superficial deposits across the site A drift filled hollow encountered in boreholes BH08 and BH09, in the northern part on the site Interbedded cohesive and granular deposits within the Lambeth Group		Likely to affect ground engineering and foundation design and construction	
Shrinkable clay soils			¥	Design to NHBC Standards Chapter 4 or similar	
Highly compressible and	\checkmark	Soft / loose n	on-engineered	Likely to affect ground	

Table 8: Summary of main potential geotechnical hazards that may affect site



Hazard category	Hazard status based on investigation findings and proposed development			Engineering
(excluding contamination issues)	Found to be present on site	Could be present but not found	Unlikely to be present and/or affect site	considerations if hazard affects site
low bearing capacity soils, (including peat and soft clay)		made ground Alluvial se consistency relatively s	across entire site oils with soft / low strength at hallow depths	engineering and foundation design and construction
Silt-rich soils susceptible to loss of strength in wet conditions	~	Variable and I silt content i units er	ocally significant n all geological acountered	Likely to affect ground engineering and foundation design and construction
Running sand at and below water table		¥	Likely in sands/gravels below the water table in open excavations and pile bores	Likely to affect ground engineering and foundation design and construction
Karstic dissolution features (including 'swallow holes' in Chalk terrain)			~	May affect ground engineering and foundation design and construction – refer to Section 4.1.2
Evaporite dissolution features and/or subsidence			~	May affect ground engineering and foundation design and construction
Ground subject to or at risk from landslides			~	Likely to require special stabilisation measures
Ground subject to peri- glacial valley cambering with gulls possibly present	~	A drift filled hollow encountered in boreholes BH08 and BH09, in the northern part on the site likely to have originated as peri- glacial feature		Likely to affect ground engineering and foundation design and construction
Ground subject to or at risk from coastal or river erosion			~	Likely to require special protection/stabilisation measures
High groundwater table (including waterlogged ground)	V	Locally h groundwater ground and a generally with Gravel River	igh perched within the made illuvial deposits; hin the Hackney Ferrace Deposits	May affect temporary and permanent works
Rising groundwater table	~	See Se	ction 3.2.2	May affect deep



Hazard category	Hazard status based on investigation findings and proposed development			Engineering	
(excluding contamination issues)	Found to be present on site	Could be present but not found	Unlikely to be present and/or affect site	considerations if hazard affects site	
due to diminishing abstraction in urban area				foundations, basements and tunnels	
Underground mining			\checkmark	Likely to require special stabilisation measures	
Existing sub-structures (e.g. tunnels, foundations, basements, and adjacent sub-structures)	✓	Foundations of historical buildings, and existing buildings and other structures on site Royal Mail tunnel and Thames Water sewer beneath the site LUL District Line tunnel and culverted River Fleet adjacent to site (see Section 4.2.1 and RSK Utility Survey Report, ref:191747 R09(00))		Likely to affect ground engineering and foundation design and construction	
Filled and made ground (including embankments, infilled ponds and quarries)	~	Variable and lethickness of m as also high comp	ocally significant ade ground, also nly variable in position	Likely to affect ground engineering and foundation design and construction	
Adverse ground chemistry (including expansive slags and weathering of sulphides to sulphates)	~	Sect	ion 4.6	May affect ground engineering and foundation design and construction	
Note: Seismicity is not included in the	he above table	as this is not no	rmally a design co	nsideration in the UK	

4.3 Ground Model

The preliminary ground model summarised in Table 9 has been adopted for the purpose of the preliminary foundation design recommendations.

Table 9: Ground model derived from site investigation

Strata	Level at top of stratum (mAOD)	Level at base of stratum (mAOD)
Made ground	14.50 – in the Bathtub area 20.00 – around the perimeter	12.50 – in the Bathtub area 10.00 – around the perimeter
Alluvium ¹⁾	8.50	7.50
Hackney Gravel Member ¹⁾	7.50	7.00 (-0.75 – at the location of the



Strata	Level at top of stratum (mAOD)	Level at base of stratum (mAOD)
		drift filled hollow)
London Clay Formation	12.50	2.50
Lambeth Group ²⁾	2.50 (-0.75 – at the location of the drift filled hollow)	-15.00
Thanet Sand Formation	-15.00	-22.50
White Chalk Sub-group	-22.50	proven to -25.30mAOD

¹⁾ where present

²⁾ assumed cohesive soils throughout entire thickness of the stratum

The general groundwater table appears to be 'resting' within the made ground and superficial deposits at a typical level of circa 11mAOD.

4.4 Foundations

4.4.1 General suitability

In view of the significant depth of low strength/compressible made ground and alluvial deposits encountered across the site and the anticipated high loading from the proposed development, it is considered that pile foundations would be the most suitable foundation option. The pile design and layout will need to take account of the Post Office Tunnels/Thames Water sewer located beneath the site and ensure these are not adversely affected. It is understood that others will be undertaking a detailed assessment of the potential ground movements/increase in stress associated with the proposed development to inform the foundation design.

4.4.2 Piled foundations

Recommendations for the design and construction of pile foundations in relation to the ground conditions are set out in Table 10.

Design/construction considerations	Design/construction recommendations
Pile type and possible constraints on the pile type	The construction of rotary bored and CFA is considered technically feasible at this site.
	Given the close proximity of the tunnels and other infrastructure, it is considered that the use of driven piles will not be acceptable due to the vibration, noise and heave associated with pile driving.
Temporary casing	Given the presence of groundwater strikes over the depth of the investigation bored piles will require either temporary casing throughout their depth or some form of support fluid. Alternatively, the use of continuous-flight-auger (CFA) injected bored piles usually overcomes this issue.

Table 10: Design and construction of piled foundations



Design/construction considerations	Design/construction recommendations			
Man-made obstructions	The presence of buried sub-structures or other obstructions within made ground may lead to some difficulty during piling. It is recommended that once the proposed pile layout has been determined, pre-pile probing be carried out at each of the pile positions. Reference should also be made to RSK Geophysical Investigation Report, ref: 191747 R09(00), for likely obstruction locations. Where buried obstructions are encountered, it will be necessary to either relocate the pile(s) or make allowance for removing the obstruction.			
Hard strata	An allowance should be made for chiselling thin 'rock' bands (claystone, cemented sandstone) within the London Clay Formation and the Lambeth Group.			
Pile design parameters for made ground and Alluvium	Ignored			
Pile design parameters for granular deposits	Shaft friction factor (k _s ×tan δ)	0.1 – Hackney Gravel 0.36 – Thanet Sand Formation		
	End bearing factor N _q	45 – Thanet Sand		
Pile design parameters for cohesive deposits	Undrained shear strength c _u (kN/m ²)	London Clay Formation	80 – at surface 120 – at base	
		Lambeth Group	120 – at surface 220 – at base	
	Adhesion factor α	0.5 – London Clay Formation 0.4 – Lambeth Group		
	Bearing capacity factor N_c	9.0		
General parameters	Maximum Limiting Shaft Friction	140 kN/m ²		
	Average Limiting Shaft Friction	110 kN/m ²		
	Limiting concrete stress ¹⁾ (R _{c,pl,d})	10 N/mm ²		
	Model factor (γ_{Rd})	1.4		
	SLS Partial Factor on Ultimate Shaft Friction	1.2		
Special precautions relating to bored pile	Bored pile concrete should be cas as possible and in any event the s	at as soon after ame day as bo	completion of boring ring.	
Shans and dases	Prior to casting the base of the pile bore should be clean, otherwise a reduced safe working load will be required. Similarly, if the pile bore is left open the shaft walls may relax/soften, leading to a reduced safe working load.			

¹⁾ assuming C35 concrete used for piles ($f_{ck}=28N/mm^2$)



The design resistance has been calculated in accordance with BS EN 1997-1 and the UK National Annex, using partial resistance factors for bored piles, given in Table 11.

Table	11:	Partial	resistance	factors	(v⊳)	۱
IUNIC		i ui tiui	resistance	1001015	(JR)	,

Posistanoo	Set			
Resistance	DA1 C1	DA1 C2 ¹⁾		
Base - γ_{b}	1.0	2.0		
Shaft (compression) - γ_s	1.0	1.6		
Total (compression) - γ_t	1.0	2.0		

¹⁾ no serviceability verification

The design procedure for piles varies considerably, depending on the proposed type of pile. However, for illustrative purposes, based on the design parameters outlined in above tables, Table 12 and Table 13 give likely pile design resistances for the Bathtub and the northern perimeter area, respectively for bored, cast-in-situ concrete piles of various diameters and lengths.

It is recommended, however, that the detailed advice of a specialist-piling contractor be sought as to the most suitable type of pile for the prevailing ground conditions and as to their lengths and diameters to support the required design loads.

Typical Design resistance for DA1 – Combinations C1 & C2 (kN)									
Pile toe level (mAOD)	Pile diameter								
	450mm		600mm		750mm		900mm		
	C1	C2	C1	C2	C1	C2	C1	C2	
-5.0	1099	666	1540	925	2018	1203	2532	1499	
-7.0	1247	757	1742	1049	2277	1361	2851	1693	
-9.0	1404	854	1957	1181	2552	1529	3189	1898	
-11.0	1571	956	2184	1320	2842	1706	3545	2115	
-13.0	1590 ¹⁾	1065	2423	1467	3148	1893	3919	2343	
-15.0		1179	2675	1622	3469	2090	4312	2583	
-17.0		1590 ¹⁾	28271)	2718	4417 ¹⁾	3513	6361 ¹⁾	4500 ²⁾	

Table 12: Typi	ical pile design	resistances	for bored	cast-in-situ	piles –	Bathtub a	rea

¹⁾ limited by maximum concrete stress

²⁾ limited by SLS partial factor on the ultimate shaft resistance


Ту	Typical Design resistance for DA1 – Combinations C1 & C2 (kN)												
	Pile diameter												
Pile toe level (mAOD)	450	mm	600	mm	750	mm	900mm						
	C1	C2	C1	C2	C1	C2	C1	C2					
-5.0	628	373	905	531	1216	707	1562	899					
-7.0	769	459	59 1099 6		1467	859	1872	1087					
-9.0	921	553	1309	778	1737	1023	2206	1288					
-11.0	1085	653	1534	915	2026	1198	2562	1503					
-13.0	1260 ¹⁾	731	1773	1062	2334	1385	2941	1733					
-15.0	1446	876	2028	1217	2660	1585	3342	1977					
-17.0	1590 ¹⁾	1527	28271)	2245 ²⁾	4417 ¹⁾	2807 ²⁾	6361 ¹⁾	3368 ²⁾					

Table 13: Typical pile design resistances for bored cast-in-situ piles – northern perimeter (area of drift filled hollow)

1) limited by maximum concrete stress

²⁾ limited by SLS partial factor on the ultimate shaft resistance

When dimensioning a pile the design load must be multiplied by the appropriate partial factor, $\gamma_{\text{G.}}$

It should be stressed that the above capacities do not take into consideration pile group effects which is more pronounced for a large number of closely spaced piles. To take account of the pile group effects, an efficiency factor (η) may be applied to the pile working loads given above for a single pile.

The Converse Labare Formula is one of the most widely used formulas and is expressed as:

 $(\eta) = 1 - \theta\{[(n - 1) \times m + (m - 1)n]/90 \times m \times n\}$

Where:

- m = number of rows in a group
- n = number of piles in a row
- $\theta = \tan^{-1}(d/s)$
- d = diameter of the piles
- s = spacing of the piles

Using the above, the following efficiency factors given in Table 14 are calculated for a range of pile spacing to diameter ratios and pile group types.



Table 14: Pile group efficiency factors

Efficiency factor (η)												
Pile group	d/s = 2.0	d/s = 2.5	d/s = 3.0									
2 pile group (2 by 1)	0.85	0.88	0.90									
4 pile group (2 by 2)	0.70	0.76	0.80									
6 pile group (3 by 2)	0.66	0.72	0.76									
9 pile group (3 by 3)	0.61	0.68	0.73									

4.5 Floor slabs

The site is generally underlain by a significant thickness of made ground and due to the variable nature of the fill materials it is recommended that for the proposed office and residential blocks suspended floor slabs are adopted.

Re-use of parts of existing slab within the proposed podium area could be considered subject to further investigation works and confirmation of performance.

4.6 Retaining wall design parameters

It is likely that the proposed development will include some retaining structures to achieve the proposed finished levels. Furthermore, the retaining structures to the current basement level will presumably be retained where possible for reuse in the new development. On the basis of the ground investigation information, the following soil parameters in Table 15 may used for preliminary retaining wall design purposes.

Soil type	Unit	Short Paran	Term neters	Long Paran	Term neters	Earth Pressure Coefficients			
Son type	weight γ _k (kN/m ³)	с _{и,к} (kN/m²) ф'с _{v,k} (°)		c', _k (kN/m²)	c', _k φ' _{cv,k} (°)		K _{ac,k} / K _{pc,k}	K _{a,k} / k _{p,k}	
Made Ground	18.0	N/A ¹⁾	28	0	28	0.53	-	0.354/ 3.413	
Alluvium	18.5	30	-	0	27	0.50	-	0.325/ 3.834	
Hackney Gravel	19 (moist) 21 (sat.)	N/A ¹⁾	35	0	35	0.43	-	0.229/ 6.487	
London Clay Formation	20.0	80 + 4.z	-	0	23	1.20	2.39	0.384/ 3.039	
Lambeth Group - cohesive	20.0	120 + 5.71.z	-	0	24	1.2 – 1.0	2.39	0.368/ 3.215	

Table 15: Retaining wall design parameters

¹⁾ assumed predominantly granular soils



Groundwater was encountered at levels of between 7.99mAOD to 15.47AOD, therefore allowance should be made for hydrostatic pressures acting behind retaining structures. Furthermore, any new basement construction must be designed to be fully sealed to prevent any future groundwater ingress.

In order to prevent damage to adjacent structures, the design of the retaining wall must address the risk of excessive deformation of the wall. Bracing, both in the temporary and permanent condition will therefore be required, to ensure that the horizontal and vertical soil movement around and below the excavation remain within acceptable levels.

4.7 Chemical attack on buried concrete

This assessment of the potential for chemical attack on buried concrete is based on current BRE guidance. The available information for the site indicates that for the purposes of this assessment of the aggressive chemical environment, the site should be considered as a brownfield development / site where disturbance of pyrite-bearing ground could result in additional sulphate. An extended suite of chemical analyses appropriate to this site classification was carried out on soil samples by RSK.

"Characteristic value" is the highest result, or mean of the two highest if you have 5 to 9 readings from one area. Based on testing results, Table 16 gives the characteristic water-soluble sulphate content values soil for each of the geological units encountered on site.

Soil type	Water Soluble Sulphate (mg/l)	Characteristic Value of Water Soluble Sulphate (mg/l)
Made Ground	13 to 1180	1175
Hackney Gravel	<10 to 15	15
London Clay Formation	26 to 972	885
Lambeth Group	9.8 to 1380	1163
Thanet Sand Formation	150 to 1490	891
White Chalk Sub-group	73	73

Table 16: Characteristic WSO₄ values for soils beneath the site

Based on the results above and following the steps outlined in the BRE guidance, the Design Sulphate Classes and Chemical Environment for Concrete classifications are summarised in Table 17 for each stratum.

Table 17: DS and ACEC-AC Classification

Soil type	Design Sulphate Class	Aggressive Chemical Environment for Concrete Class
Made Ground	DS-2	AC-2
Hackney Gravel	DS-1	AC-1



Soil type	Design Sulphate Class	Aggressive Chemical Environment for Concrete Class
London Clay Formation	2 20	
Lambeth Group	03-2	A0-2
Thanet Sand Formation	DS-2	AC-2
White Chalk Sub-group	DS-1	AC-1

The recommended ACEC Classification is therefore AC-2 with a Design Sulphate Class for the site of DS-2.

However, if the proposals include the reuse of the pyritic London Clay Formation, the recommended ACEC Classification will increase to AC-4 with a Design Sulphate Class for the site of DS-4.



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FIGURES





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Rev.	Date		Amendm	nent	Drawn	Chkd.	Appd.
	18 Hi Hi Ui	B Frogmor emel Hem ertfordshir P3 9RT nited King	e Road pstead e l dom	Tel: +44 (0) Fax: +44 (0) Email: info@rs Web: www.rs	1442 43750 1442 43758 k.co.uk k.co.uk	00 50	
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Drav AS	vn Date C 05.1	2.16	Checked I ST C	Date 05.12.16	Approved ST	Date 05.1	2.16
Scal	гs		Orig Size A3		Dimensior M	าร	
Proj 28	9549 - F	R01 (0)0)	Drawing File 28549 (R	:01-00) F	-ig 2.0	dwg
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	Rev.	Date		Amendr	nent	Drawn	Chkd.	Appd.
No.							I	
NAME IN		18	Frogmor	e Road	Tel: +44 (0)	1442 43750	00	
		He HF Ur	ertfordshir 23 9RT lited King	e dom	Email: info@rs Web: www.rs	k.co.uk k.co.uk	50	
	Client	ROYA	AL M	1AIL G	ROUP	LIM	ΤE	D
	Projec R	at Title OYAL	- MA SO - CA	AIL MC RTING	DUNT F G OFFI DRPE S	PLEA ICE SITE	SA	NT
	Drawi	ng Title	DE	PROP EVEL(PL	POSED DPMEN AN) NT		
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a martine	Scale NT	S		Orig Size A3		Dimensior M	IS	
2	Project 285	^{51 No.} 549 - R	.01 (0)0)	Drawing File 28549 (R	:01-00) F	ig 3.c	dwg
	Drawi	^{ng No.}	3					^{Rev.} P1



Site Boundary Rotary Borehole Location Cable Percussive Borehole Location Machine Excavated Trial Pit Location Hand Excavated Trial Pit Location ---- Section Line Drawn Chkd. Rev. Date Amendment Appd. Tel: +44 (0) 1442 437500 Fax: +44 (0) 1442 437550 18 Frogmore Road Hemel Hempstead Hertfordshire HP3 9RT Email: info@rsk.co.uk Web: www.rsk.co.uk United Kingdom Client

ROYAL MAIL GROUP LIMITED

Project Title

ROYAL MAIL MOUNT PLEASANT SORTING OFFICE - CALTHORPE SITE

Drawing Title

EXPLORATORY HOLE LOCATION PLAN

Drawn Date ASC 05.12.16	Checked [ST 0	Date 5.12.16	Approved D ST 0	^{ate} 5.12.16		
^{Scale} 1:800	Orig Size A2		Dimensions M			
Project No. 28549 - R01 (0	00)	Drawing File 28549 (R	(01-00) Fig 4.dwg			
Drawing No. FIGURE 4				Rev. P1		
	Scale 1 20 3	1 : 800 80 40	50 60m			



APPENDIX A SERVICE CONSTRAINTS

- 1. This report and the site investigation carried out in connection with the report (together the "Services") were compiled and carried out by RSK Environment Limited (RSK) for Royal Mail Group Limited (the "client") in accordance with the terms of a contract between RSK and the "client", dated 8th November 2016. The Services were performed by RSK with the skill and care ordinarily exercised by a reasonable environmental consultant at the time the Services were performed. Further, and in particular, the Services were performed by RSK taking into account the limits of the scope of works required by the client, the time scale involved and the resources, including financial and manpower resources, agreed between RSK and the client.
- 2. Other than that expressly contained in paragraph 1 above, RSK provides no other representation or warranty whether express or implied, in relation to the Services.
- 3. Unless otherwise agreed in writing the Services were performed by RSK exclusively for the purposes of the client. RSK is not aware of any interest of or reliance by any party other than the client in or on the Services. Unless expressly provided in writing, RSK does not authorise, consent or condone any party other than the client relying upon the Services. Should this report or any part of this report, or otherwise details of the Services or any part of the Services be made known to any such party, and such party relies thereon that party does so wholly at its own and sole risk and RSK disclaims any liability to such parties. Any such party would be well advised to seek independent advice from a competent environmental consultant and/or lawyer.
- 4. It is RSK's understanding that this report is to be used for the purpose described in the introduction to the report. That purpose was a significant factor in determining the scope and level of the Services. Should the purpose for which the report is used, or the proposed use of the site change, this report may no longer be valid and any further use of or reliance upon the report in those circumstances by the client without RSK 's review and advice shall be at the client's sole and own risk. Should RSK be requested to review the report after the date of this report, RSK shall be entitled to additional payment at the then existing rates or such other terms as agreed between RSK and the client.
- 5. The passage of time may result in changes in site conditions, regulatory or other legal provisions, technology or economic conditions which could render the report inaccurate or unreliable. The information and conclusions contained in this report should not be relied upon in the future without the written advice of RSK. In the absence of such written advice of RSK, reliance on the report in the future shall be at the client's own and sole risk. Should RSK be requested to review the report in the future, RSK shall be entitled to additional payment at the then existing rate or such other terms as may be agreed between RSK and the client.
- 6. The observations and conclusions described in this report are based solely upon the Services which were provided pursuant to the agreement between the client and RSK. RSK has not performed any observations, investigations, studies or testing not specifically set out or required by the contract between the client and RSK. RSK is not liable for the existence of any condition, the discovery of which would require performance of services not otherwise contained in the Services. For the avoidance of doubt, unless otherwise expressly referred to in the introduction to this report, RSK did not seek to evaluate the presence on or off the site of asbestos, electromagnetic fields, lead paint, heavy metals, radon gas or other radioactive or hazardous materials.
- 7. The Services are based upon RSK's observations of existing physical conditions at the Site gained from a walk-over survey of the site together with RSK's interpretation of information including documentation, obtained from third parties and from the client on the history and usage of the site. The Services are also based on information and/or analysis provided by independent testing and information services or laboratories upon which RSK was reasonably entitled to rely. The Services clearly are limited by the accuracy of the information, including documentation, reviewed by RSK and the observations possible at the time of the walk-over survey. Further RSK was not authorised and did not attempt to independently verify the accuracy or completeness of information, documentation or materials received from the client or third parties, including laboratories and information services, during the performance of the Services. RSK is not liable for any inaccurate information or conclusions, the discovery of which inaccuracies required the doing of any act including the gathering of any information which was not reasonably available to RSK and including the doing of any independent investigation of the information provided to RSK save as otherwise provided in the terms of the contract between the client and RSK.
- 8. The intrusive environmental site investigation aspects of the Services is a limited sampling of the site at pre-determined borehole and soil vapour locations based on the operational configuration of the site. The conclusions given in this report are based on information gathered at the specific test locations and can only be extrapolated to an undefined limited area around those locations. The extent of the limited area depends on the soil and groundwater conditions, together with the position of any current structures and underground facilities and natural and other activities on site. In addition chemical analysis was carried out for a limited number of parameters [as stipulated in the contract between the client and RSK] [based on an understanding of the available operational and historical information,] and it should not be inferred that other chemical species are not present.
- 9. Any site drawing(s) provided in this report is (are) not meant to be an accurate base plan, but is (are) used to present the general relative locations of features on, and surrounding, the site. Features (boreholes, trial pits etc) annotated on site plans are not drawn to scale but are centred over the approximate location. Such features should not be used for setting out and should be considered indicative only.



APPENDIX B EXPLORATORY HOLE RECORDS



Contract:							(Client:					Boreho	le:	
Μοι	ınt F	Plea	sant \$	Sorti	ng Of	fice			Ro	yal	Mail Group I	_imited			BH01
Contract Re	f:			Star	t: 24.1 ().16	Ground	Level:			National Grid Co-	-ordinate:	Sheet:		
	2854	49		End	: 03.1′	1.16		14.73	14.73 E:531080.9 N:182339		9 N:182339.3		1	of 5	
Me	echan	ical Lo	og		Sample	es & Te	sting	ill & u- tion	er				ced	Depth	Material
Depth	TCR	SCR	RQD	lf m) No	туре	Re	esults	Backf Instr nenta	Wat		Description	of Strata	tedu	(Thick ness)	Graphic
-	(70)	(70)	(70) (11	,						MA	DE GROUND: Co	ncrete slab.		(0.50)	
-													14.23	0.50	
0.50				1	PID	0.0	Dppm			MA	DE GROUND:	Dark brown silty	-	(0.50)	
0.80				2	ES	J+	-V+T			sub	rounded to suban	gular fine to coarse	13.73	1.00	
- 1.00-2.00 [1.00-1.45				1	SPT	3,3/4	4,1,1,1				DE GROUND: D	ark reddish brown	-	(0.50)	
- [1 00	100			3	FS	۱ +۱.	N=7 ⊦V+T			silty \Gra	very sandy fine to	o medium GRAVEL. ar fine flint with	13.23	1.50	
1.00					PID	0.0	Oppm			frec	uent brick, concre	te and mortar.	-	- (0.50)	
1.50	╞╋			4	ES	J+	-V+T			MA ∖gre	DE GROUND: S yish black sandy s	oft dark brown to slightly gravelly silty	12.73	2.00	
- 1.50 - 1.80				2		0.0	Jppm			CLA	AY. Gravel is angular fine to	s subrounded to coarse flint with	-	(0.60)	
2.00-3.00	100			3	D					occ	asional brick, cond	crete and chalk.	12.13	2.60	
2.00				5	ES PID	J+	-V+T Doom			bro	wn slightly sand	y slightly gravelly	-	-	
2.20-2.65				2	SPT	2,2/	3,2,3,3 1–11			CLA	۲. Gravel is angular fine to	s subrounded to coarse flint with		(1.00)	
2.50	100			6	ES	J+	 -V+T				asional brick and o	coal.	11.13	3.60	
- 2.50 - 2.80				4		0.0	Jppm			ora	ngish brown to c	ark brown slightly	-	-	× ··· ×
_ 3.00-4.00 - 3.00-3.45	╞╋			3	SPT	1,1/	1,3,2,3			san sub	dy very gravelly angular to subrou	CLAY. Gravel is nded fine to coarse	-	-	x
- 3.00				7	FS	۱ +ا.	N=9 -V+T			flint	with occasional crete and mortar.	I brick fragments,		-	
3.00	100			5	PID	0.0	Oppm			Stif	f light orangish b	prown mottled dark	-	-	
- 3.50				8	ES	J+	-V+T			Wit	h rare relict root	s, shell fragments	-	(2.70)	×
4.00-5.00				6						LO	NDON CLAY FOR	crystais. RMATION)	-	-	××
[4.00-4.60 - 4.00				9	ES	100%	recove -V+T	ery					Ę	-	××
4.00 4.50	100			10	PID ES	0.0 J+)ppm -V+T						-	-	<u>x. </u>
-4.50 4 90				7		C	J = 62	/////					-	-	x . X
5.00-6.50				1		2.2/				Stif	f greyish brown	extremely closely	- 8.43	- 6.30 -	<u> </u>
- - - -						N	L=11			spa relia	ced fissured silty t roots, shell frag	CLAY. With rare ments and possible	-	-	××
5.00 5.00					PID	0.0	Dppm			sele	enite crystals.		-	(1.40)	
- 5.01-5.45 [5.50	100			9										-	
- 6.00 - 6.00				12	ES V	J+	-V+T _=75						- 7.02	- 7 70	
- 6.00 - 6.40				10	PID D	0.0	Oppm			Stif	f dark greyish b	rown very closely	- 0.70	7.70	× · · ×
6.50-8.00	┢╋			2		100%	recove			∣ spa ∖CLA	ced tissured sli AY. Sand is coarse	igntiy sandy silty e quartz.	0.73	0.00	<u>+ +</u>
7.00				11		100 %					NDON CLAY FOR	RMATION)	-	-	
7.00	100			13	PID	0.0	Oppm						F - -	-	
- 7.30						C	J=95						-	-	<u> </u>

C	Drilling Progress and Water Observations							<u> </u>	noral	Domorko			
Date	Time	Borehole	Casing	Borehole Diameter	Water	General Remarks							
Duto	TIMO	Depth	Depth	(mm)	Depth 1 200mm concrete core to E00mm followed by hand due increation nit to 1 2							1.20m	
24/10/16	09:39		None	146	-	bal	hal						
24/10/16	17:00	2.45	2.00	146	-	2. Clear	n drillina t	echniques a	dopted. E	Bentonite seal cre	ated befor	e reducti	ion in
25/10/16	08:00		None	146	-	casing size.							
25/10/16	18:00	9.50	None	146	2.36	6 3. Borehole cored to 22.10m in 146mm core barrel casing in SW; from 22.10r							.10m
26/10/16	06:00	9.50	None	146	2.97	to 25	.00m in 1	16mm core b	parrel cas	sing in PW and o	pen hole d	rilling in	
26/10/16	18:00	15.20	None	146	-	100m	nm diame	ter to 36.40n	٦.				
27/10/16	06:00	15.20	None	146	2.76								
27/10/16	18:00	22.10	22.10	146	0.00	Α	II dimens	ions in metre	es	Scale:	1:50		
Method Used:	thod Concrete coring Plant ed: (300mm) + Used: Comacchio G		cchio GEC	250	Drilled By:	DM	Logged By:	JTownsend	Checked By:	ST	AGS		
	Rota	ry Cored											

GINT_LIBRARY_V8_06.GLB LibVersion: v8_06_014 PŋVersion: v8_06 - Core+Logs - 002 | Log ROTARY COMPOSITE LOG - A4P | 28549_MOUNT PLEASANT.GPJ - v8_06. RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tei: 01442 437550, Fax: 01442 437550, Web: www.rsk.co.uk | 11/01/17 - 13:58 | GB1 |



Contract:								C	Client:					Borehole:			
Mou	nt F	Plea	sant	Sc	ortin	ig Off	ice			Ro	yal	Mail Group Li	mited			BH01	
Contract Ref					Start:	24.10	.16 Grou	ind	Level:			National Grid Co-or	dinate:	Sheet:			
	285	49			End:	03.11	.16		14.73	;		E:531080.9	N:182339.3		2	of 5	
Ме	chan	ical L	og			Samples	s & Testing	g	ru- ation	er				iced el	Depth	Material	
Depth	TCR (%)	SCR (%)	RQD (%) (lf (mm) No	Туре	Result	ts	Backf Insti menta	Wat		Description of	f Strata	Redu Lev	(Thick ness)	Legend	
- 8.00-9.50 - 8.00-8.45	 100 ▼				5	SPT	1,2/2,4,5 N=16	5,5 S			Stiff extr CL/	 high strength dar emely closely spac With occasiona 	k greyish brown ed fissured silty I shell fragments		-	xx	
- 8.00 - 8.00 - 8.00 - 8.01-8.45 - 9.00 - 9.00 - 9.00	100				14 12 15	ES V PID D ES V PID	J+V+1 c _u =76 0.0ppn c _u =98 0.0ppn	T S m S m			and (LO <i>(stra</i> prev	possible selenite. NDON CLAY FORM atum copied from vious sheet)	IATION) n 8.00m from		-(4.90)		
9.50-11.00 9.50-9.95	_				6	SPT	3,3/3,4,5 N=19	5,7)						-	-	 	
9.50 9.50-9.95 10.00 10.00 10.50 10.50 10.50	100				13 14 16 15	D D ES PID D V	J+V+1 0.0ppn c _u =10 ⁷	T m 1							-		
11.00-11.60 12.00 12.00 12.00 12.50-12.90	100				3 16	U D V	100% reco c _u =108	ove 8	ry					- 1.83	12.90		
-12.90-14.40 12.90-13.35					7	SPT	6,6/6,6,6 N=24	6,6			Stiff orar fiss	becoming very stift ngish brown mottled ured silty CLAY, with	f with depth light light bluish grey h rare relict roots.	- - - -	-	xx x	
12.91-13.35 13.00 13.50	 100				17 18	D V D	c _u =>12	20			Fiss plar (LA	sures are randomly har with occasional p MBETH GROUP	orientated and olished surfaces.	- - -	(1.70)	xx	
14.00	_¥_					V	c _u =>12	20			WO			- - - -	-	 	
- 14.40-15.20 [14.40-15.00	100				4	U	100% reco	ove	ry		Stiff blui	to very stiff reddis sh grey fissured silty	h brown mottled CLAY. Fissures	0.13	14.60	×× ××	
- 15.00 - 15.00 - 15.20-15.60	100				19	D V	c _u =>12	20			are and (LA MO	horizontal to sub-l occasionally polishe MBETH GROUP TTLED BEDS)	horizontal planar ed. - UPPER		(1.40)		
- 15.60-17.10					47	50		Ŧ						- -1.27	- 16.00	 	
- 16.00 - 16.00 - 16.00 	 100				17 20	ES D PID	0.0ppr	n			Ver light occ Muc frag orie (LA	y stiff light greenisi t bluish grey fissured asional subangular Istone gravel. \ ments , relict rootle ntated fissuring. MBETH GROUP	n brown mottled d silty CLAY with fine to medium With rare shell ts and randomly - UPPER		- - - - - - -		
- 17.10-18.50 - 17.10-17.55 -	100				8	SPT	6,5/7,9,9 N=38),13 }	5		MO	TTLED BEDS)			(3.50)		

C	Drilling Pro	ogress and	Water Ob	servations	6			<u>C</u> _	noral	Domorko			
Date	Time	Borehole	Casing	Borehole Diameter	Water			Ge	nerai	Remarks			
Duic	TITIC	Depth	Depth	(mm)	Depth	4 Moni	toring wol	installation	Dino 1		000000 70	no hotu	000
28/10/16	06:00	22.10	22.10	116	-	4. 1001	nd 4 0mb	n installations nl	s. Fipe i		sponse zu	Die Delw	een
28/10/16	18:00	23.50	22.10	116	3.12	5. Bore	hole back	filled with 3rr	nm shina	le gravel filter bet	ween 1.0m	n to 4.0m	nbal:
01/11/16	06:00	23.50	22.10	116	-	sand	filter from	0.8m to 1.0	m bgl &	bentonite seal/gro	outing betw	veen 0.2	and
01/11/16	18:00	25.00	22.10	100	-	1.0m	& 4.0m b	gl to base of	borehol	e with flush cover	concreted	l at surfa	ice.
02/11/16	18:00	36.40	22.10	100	-	6. Grou	ndwater le	evel not obse	erved acc	curately during dr	illing due to	o additio	n of
						water	r flush for	coring.					
							Il dimonoi	ono in motro		Caalay	1.50		
						P	ui uimensi	ons in metre	:5	Scale:	1.50		
Method	Concre	ete coring	Plan	t			Drilled		Logged		Checked		
Used:	(30	0mm) +	Used	d: Coma	cchio GEC	250	By:	DM	By:	JTownsend	By:	21	AGS
	Rota	rv Cored											

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Contract:			C	Client:				Boreho	le:	
Mount Pleasant S	Sorting	g Office	e		Ro	yal	Mail Group Limited			BH01
Contract Ref:	Start:	24.10.16	Ground	Level:			National Grid Co-ordinate:	Sheet:		
28549	End:	03.11.16	5	14.73			E:531080.9 N:182339.3		3	of 5
Mechanical Log	f m) No ⁻	amples &	Testing Results	Backfill & Instru- nentation	Water		Description of Strata	keduced Level	Depth (Thick ness)	Material Graphic Legend
	21	D		E		Ver ligh occ	y stiff light greenish brown mottled t bluish grey fissured silty CLAY with asional subangular fine to medium detono			
18.50-20.00 - 18.50 - 19.00 -	5 18	U 100)% recover	ry		frag orie (LA	ments , relict rootlets and randomly intated fissuring. MBETH GROUP - UPPER	- · ·	- - - - -	xx x
19.00 100		PID	0.0ppm			MO (stra \prev Ver	atum copied from 16.00m from vious sheet) y stiff light greyish brown extremely	-4.77	 	xx ; x x
20.00-21.50	9	SPT 8,9/	/10,12,12,1 N=49	15		clos occ frag (LA BEI	sely spaced silty CLAY. With asional silty horizons with rare shell ments and lignitic bands. MBETH GROUP - LAMINATED DS)		 -(1.50)	
20.85	22	D				Ver	v stiff to hard light green mottled	-6.27	21.00	xx x _x0x
21.20	23	D					enish brown slightly gravelly silty AY. Gravel is subrounded fine to rse Calcrete nodules With	- 6.67 -	21.40	<u> </u>
21.50-22.10 T 21.50-21.94 100	10	SPT 6,10	0/9,11,15,1 for 63mm N=52*	15		occ (LA MO	Asional shell fragments. MBETH GROUP - LOWER TTLED BEDS)		 (1.20)	
21.50 22.10-22.20 22.20-23.50	24	D				Ver brov slig	y stiff light green mottled light reddish wn very closely spaced friable silty htly sandy CLAY. With rare shell	-7.87	22.60	×- ×- ·- × • · × ·
	25	D				(LA MO Bec	MBETH GROUP - LOWER TTLED BEDS) comming dark grey		 (1.40)	
23.50-25.00 23.50-23.68	11	SPT 1	7,8/31,19 for 20mm				sh grey fissured slightly sandy silty AY.	- - -9.27	24.00	××
24.20 40	26	D	N=158*			MO Der fine (LA	TTLED BEDS) To coarse quartz SAND. MBETH GROUP - UPNOR MATION	-9.77	(0.50) 24.50	× × ×
						Poc Ligi (TH	or recovery nt greyish brown fine SAND. IANET SAND FORMATION)		- - - - - - - - -	
									- - - - - - -	
Drilling Progress and V	Vater Obs	servations Borehole	Water				General Remarks			

	L		gress and	water Ot	servations	S			\mathbf{C}	noral	Domorko			
	Date	Time	Borehole	Casing	Borehole Diameter	Water			Ge	nerai	Remarks			
	Dute	11110	Depth	Depth	(mm)	Depth		- Photo io	nisation det	actor with	10.6e\/ bulb			
							1.10		iisation det					
Í														
!														
							A	II dimensi	ons in metre	es	Scale:	1:50		
i	Method	Concre	ete coring	Plan	t			Drilled		Logged		Checked		
i	Used:	_(300)mm) + _	Use	d: Coma	cchio GEC	250	By:	DM	By:	JTownsend	By:	21	AGS
		Rota	w Cored					-						

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Contract:		Client:			Boreho	le:	
Mount Pleasant S	orting Office	•	Roya	I Mail Group Limited			BH01
Contract Ref:	Start: 24.10.16	Ground Level:		National Grid Co-ordinate:	Sheet:		
28549	End: 03.11.16	14.7	'3	E:531080.9 N:182339.3		4	of 5
Mechanical Log	Samples & T	Testing ≝ ≟	ter		lced /el	Depth	Material
Depth TCR SCR RQD If (%) (%) (%) (mr	_{n)} No Type I	Results	Wa	Description of Strata	Redu	(Thick ness)	Legend
				ght greyish brown fine SAND. HANET SAND FORMATION) tratum copied from 24.50m from evious sheet) At 36.40m bgl driller indicated ouncing of drill rods on flints (WHITE HALK SUBGROUP).		(11.90)	

	Drilling Pro	ogress and	Water Ob	oservations	6			Co	noral	Domorko		
Date	Time	Borehole	Casing	Borehole Diameter	Water			Ge	nerai	Remarks		
Dute		Depth	Depth	(mm)	Depth							
							ll dimensi	ons in metre	20	Scale:	1.20	
						,				ocaic.		
Method	Concr	ete coring	Plan	t			Drilled		Logged		Checked	
Used:	(30	0mm) +	Use	d: Coma	cchio GEC	250	By:	DM	Ву:	JTownsend	By: 31	AGS



Contract:										Clie	ent:						Boreho	ole:	
M	ount	Ple	eas	sant	t So	rtin	g Off	ice				Ro	yal	Mail Group I	_imited				BH01
Contract	Ref:				5	Start:	24.10	.16	Ground	d Le	vel:			National Grid Co-	-ordinate:		Sheet:		
	28	549)		E	End:	03.11	.16		1	4.73			E:531080.9	9 N:18233	9.3		5	of 5
	Mecha	inica	al Lo	g			Samples	s & Te	esting	0 13	rill & rru- ation	ter		Description	- f Otrada		uced vel	Depth	Material
Depth	TC (%	R S0) (9	CR∥ %) ∣	RQD (%)	lf (mm)	No	Туре	R	esults	-	Back Inst ment	Wa		Description	of Strata		Zedu	ness)	Legend
Depth				RQD (%)	If (mm)	No	Type	R	esults		Backfill Instru- mentatic	Water	Ligh (TH) (<i>str</i> _i) Bor	Description	of Strata ne SAND. RMATION) om 24.50m at 36.40m bgl.	from			Graphic Legend
-																	-	-	
 - -																	-		
 - -																		 - -	
-																	-	-	
- - -																	- -		
-																	_	-	
[Drilling	Pro	gres	s and	d Wa	ter Ol	oservatio	ons						0		nlee			
Date	Time	ə	Bor	ehole	Ca	sing	Boreho Diamet	le er	Water					Genera	ai kema	rks			
			De	epth	De	pth	(mm)		Jepth	$\left\ \right\ $									

[Drilling Pro	ogress and	Water Ob	servations	6			Ca	noral	Domorko		
Date	Time	Borehole	Casing	Borehole Diameter	Water			Ge	nerai	Remarks		
Duic	TITIC	Depth	Depth	(mm)	Depth							
										<u> </u>	4.50	
						F	almensior	ns in metre	es	Scale:	1:50	
Method	Concre	ete coring	Plan	t			Drilled		Logged		Checked	
Used:	(300)mm) +	Used	d: Coma	cchio GEC	250	By:	DM	By:	JTownsend	By: S	/ AGS
	Rota	rv Cored										



1:50

By:

Checked

ST

AGS

Scale:

JTownsend

Logged By:

Contract:							С	lient:					Boreho	ole:	
Мо	unt F	Plea	sant	t Sortir	ng Off	ice			R	oya	al I	Mail Group Limited			BH03
Contract R	ef:			Start	03.11	.16 Grou	nd L	_evel:		_		National Grid Co-ordinate:	Sheet:		
	2854	19		End:	07.11	.16		14.7	3			E:531080.5 N:182416.1		1	of 5
N	lechani	cal L	og		Samples	s & Testing	J	≪ = ⇒	er lion				sed	Depth	Material
Depth	TCR	SCR	RQD	If No	Type	Result	s	ackfi Instri	Wate			Description of Strata	Feve	(Thick	Graphic Legend
Bopin	(%)	(%)	(%)	(mm) 110	Турс		<u> </u>	250 I	E Na		/ΔΓ	DE GROUND: Concrete	<u>r</u>	11655)	
-									4		/// (L		-	(0.85)	
0.35				1	ES PID	J+V+T 0.0ppm	- n						E	[(0.00)	
-						0.0001							13.88	0.85	
10.85 0.85				2	ES PID	J+V+T 0 0ppm	n	<u>.</u>	•	N	/IAE siltv	DE GROUND: Dark reddish brown	F		\otimes
1.00-1.40	100				0.07	0.000	-			G	Gray	ivel is subangular to rounded fine to	F	(0.90)	\otimes
- 1.00-1.23	A				SPT	25/25,2 for 75m	:5 im	•;•		m	nea Vith	h occasional whole bricks and	E		\otimes
	100					N=100	*			<u>\</u>		asional soft light brown clay.	<u>- 12.98</u> F	- 1.75	
1.40-2.00	X			3	ES	J+V+T	-			b	row	n to stiff high strength dark greyish wn extremely closely spaced fissured	F	-	
- 1.50 - 1.80				1	PID D	0.0ppm	n			si	ilty	CLAY. With rare shell fragments	-	-	
2.00-3.00	100									(L	LOI	NDON CLAY FORMATION)	E	(1.75)	× ×
- 2.00-2.45				2	SPT	1,1/1,2,2 N=8	2,3						F	-	<u>xx</u>
-2.00	X			4	ES	J+V+T	-						-	-	××
2.50				5	ES	J+V+T	-						-		
- 2.50 - 2.85	100				PID V	0.0ppm c.=98	n			s	Stiff	f dark greyish brown extremely	-	- 3.50	<u> </u>
2.90				2	D	oli oo				cl	lose	sely spaced fissured silty CLAY. With	E		
3.00-4.00				3	U	100% reco	over	y		S	ele	enite crystals.	-	-	
3.00	A			6	ES	J+V+T	- n			(L	LOI	NDON CLAY FORMATION)	E		É
3.50				7	ES	J+V+T	-						-	-	X
- 3.50 - 3.70				3	PID D	0.0ppm	n						E		xx
3.85	100				V	c _u =110)						F	-	xx
- 4.00-4.45				3	501	1,1/3,4,5 N=17	0,5						E		
4.00				8	ES PID	J+V+T 0.0ppm	- n						F	-	
4.20-5.70	A					0.000							E		
-4.45-4.70 [4.50				9	C ES	J+V+T	-						E	- [(5 50)	××
4.50				1	V	c _u =90							Ę	[(0.00) [<u></u>
4.85-5.20	100			2	C								E		
- 5.00 - 5.00				10	ES V	J+V+T c =120)						F	-	xx
5.00	V				PID	0.0ppm	n						E		
5.70-7.20				4	SPT	4,4/4,6,6	6,7						-	-	
6.00				11	FS	N=23	-						Ē		
6.00	67				PID	0.0ppm	n						F	-	××
-6.15-6.40 - 6.50	07			3	C V	c.=>12	0						E	-	xx
6.55-6.75				4	C	-u							F	-	xx
7.00	Y			12	ES	J+V+T	-						Ę	Ę	
7.00	100			5	D								5.73	9.00	
-															
	rilling P	rogre	ss and	Water C	bservati	ons le write						General Remarks			
Date	Time	ם BOI	enole epth	Denth	Diamet	er Vvater	י 								
03/11/16	06:00).00	None	146	-	·	1. 300 bal	0mm	con	cre	ete core to 850mm followed by hand di	ig inspec	ction pit	to 1.20m
03/11/16	18:00	2	2.00	None	146	-		2. Cle	an d	rilling	ig te	echnques adopted. Bentonite seal cre	ated befo	ore redu	ction in
04/11/16	18:00		9.70	4.00	146	2.20		cas 3. Bo	sing : rehol	size. e co	bred	d to 24.50m in 146mm core barrel cas	ng in SV	/; from 2	24.50m
05/11/16	06:00	9	9.70	4.00	146	-		to	30.50)m in	n 11	16mm core barrel casing in PW and o	pen hole	drilling	n

100mm diameter to 40.0m.

Drilled

By:

All dimensions in metres

DM

GINT LIBRARY V8 06.GLB LIbVersion: V8 06.014 PŋVersion: V8 06 - Core+Logs - 002 | Log ROTARY COMPOSITE LOG - A4P | 28549. MOUNT PLEASANT.GPJ - V8 06. RSK Environment Lid, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tei: 01442 437500, Fax: 01442 437550, Web: www.īsk.co.uk. | 11/01/17 - 13:58 | CB1 |

05/11/16

06/11/16

06/11/16

Method

Used:

18:00

06:00

18:00

17.20

17.20

23.45

Concrete coring

(300mm) +

None

None

3.87

Plant

Used:

146

146

146

4.40

3.85

Comacchio GEO 205



Contract:								Client:									Boreho	le:	
Mou	ınt F	Plea	sant	t So	ortin	ig Off	fice		F	Ro	yal	Mail G	Group	Limite	d				BH03
Contract Re	f:				Start:	03.11	I .16 Groun	nd Level:				Nationa	al Grid Co	-ordinate	e:		Sheet:		
	285	49			End:	07.11	.16	14.7	73			E:53	31080.	5 N:18	32416	5.1		2	of 5
Me	chan	ical L	og			Sample	s & Testing	ru- &	ation	ter		_					iced /el	Depth	Material
Depth	TCR (%)	SCR (%)	RQD (%)	lf (mm) No	Туре	Results	Backt	menta	Mai		De	escription	of Strat	ta		Redu Lev	(Thick ness)	Legend
- 7.00 7.20-8.70						PID	0.0ppm				Stiff	to ver ured si	ry stiff d Itv sliah	ark gre	yish br dv Cl	own AY	-	-	× <u>···×</u>
7.20-7.65	100				5	SPT	4,4/6,7,7 N=29	,9			Fiss	sures are		y orienta	ited.	_,	-	-	<u>x. </u>
8.00 8.00 8.00 8.00 - 8.70-9.70					13	ES V PID	J+V+T c_=>120 0.0ppm)			(20				,		-	- - - -	
8.70-9.10 9.00 9.00 9.00 9.70-11 20	100				6 14	C ES PID	J+V+T 0.0ppm										-	- - - - - (3.80)	
-9.70-10.15					6	SPT	5,6/6,7,10 N=33	,10									-		
10.00 10.00 10.15-10.40 10.50-10.75					15 7 8	ES PID C C	J+V+T 0.0ppm										-	-	
- 10.75-11.00 - 10.80 - 11.00 - 11.20-12.70	100				6	V D	c _u =>120)									-	-	
11.20-11.65					7	SPT	6,8/8,9,10 N=38	,11									- 1.93	- 12.80	x <u>··</u> x
- 11.70-12.10 - 12.50 - 12.70-14.20 - 12.70-13.15					10 7 8	C D SPT	10 9/10 10 1	14 14			Very mot	y stiff tled ligh \Y. МВЕТН	high str it bluish	ength li grey fis	ight br ssured	rown silty	-	- - -	xx
13.00 13.00	100				16	ES PID	N=49 J+V+T 0.0ppm	1			MO	TTLED E	BEDS)	01 -	011		-	(2.20)	xx
- 13.50-13.90 14.00 14.20-15.70 14.20-14.65					11 8 9	C D SPT	5 5/5 8 9	10									-		xx
- 14,70-14,95					12	C	N=32										-	-	×
-14.90	100					V	c _u =>120)		-	Stiff mot	to ver tled ligh	y stiff d t bluish Fissures	ark redo grey fis s are	dish br ssured rando	rown silty omly	-0.27	<u>15.00</u>	
- 15.50-15.75 15.60 15.70-17.20					13 9	C D					orie (LAI MO	ntated. MBETH TTLED B	GRO BEDS)	UP -	UPI	PER	-	- - - -	xx
15.70-16.15					10	SPT	6,8/8,10,11 N=42	,13									-	-	<u> </u>
- 16.00 - 16.50-16.75 -	100				17 14	ES C	J+V+T										- - - -	(3.20)	
17.00						PID	0.0ppm										-	-	
- 17.20-18.50 - 17.20-17.65 -	100				11	SPT :	5,10/10,10,1 N=45										-	- - - - -	

	0	Drilling Pro	ogress and	Water Ob	oservations	6			Ca	noral	Domorko			
	Date	Time	Borehole	Casing	Borehole Diameter	Water			Ge	neral	Remarks			
	Duic	Tine	Depth	Depth	(mm)	Depth	4 Monit		linetallations	· Dino 1	33mm D\/C res	00000 7000	botwoo	n
	07/11/16	06:00	23.00	24.50	146	4.28	1 0m	and 1 5m	hal: Pine 2	- 50mm l	HDPF response 7	one hetwe	en 18 Or	m and
	07/11/16	18:00	26.00	24.50	116	-	22.0r	n bal.	i bgi, i ipe z	Commit			011 10.01	in and
'	08/11/16	06:00	26.00	24.50	116		5. Borel	nole backl	filled with 3m	nm shing	le gravel filter bet	ween 1.0m	to 1.5m	bgl &
	08/11/16	06:00	26.00	24.50	116		18.0r	n to 22.0n	n bgl; sand fi	ilter from	17.5m to 18.0m l	bgl & bento	nite	-
	08/11/16	09:00	26.00	24.50	116		seal/	grouting b	etween 0.2 a	and 1.0m	1.5m to 17	.5m bgl & 2	22.0m bạ	gl to
	08/11/16	13:00	40.00	24.50	100		base	of boreho	le with flush	cover co	oncreted at surfac	e.		
								II allian a ca a l		_	0	4.50		
							A	li dimensi	ons in metre	s	Scale:	1:50		
	Method	Concr	ete coring	Plan	t			Drilled		Logged		Checked		
	Used:	_(300	0mm) + _	Use	d: Coma	cchio GEO	205	By:	DM	By:	JTownsend	By:	21	AGS
		Rota	rv Cored											

GINT LIBRARY V8_06.GLB LibVersion: v8_06_014 PŋVersion: v8_06 - Core+Logs - 002 | Log ROTARY COMPOSITE LOG - A4P | 28549_MOUNT PLEASANT.GPJ - v8_06. RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tei: 01442 437500, Fax: 01442 437550, Web: www.rsk.co.uk, | 11/01/17 - 13:58 | CB1 |



Contract:								(Client:						Boreho	le:	
M	ou	nt F	Plea	asant	t Sc	ortin	g Off	ice		R	So	yal	Mail Group Li	mited			BH03
Contract I	Ref	:				Start:	03.11	.16 Ground	Level:				National Grid Co-o	rdinate:	Sheet:		
	2	2854	19			End:	07.11	.16	14.7	73			E:531080.5	N:182416.1		3	of 5
	Ме	chani	cal L	_og			Samples	s & Testing	&	tion	ы.				ced	Depth	Material
Depth		TCR	SCF	R RQD	lf (mm)	No	Туре	Results	3ackfi Instr	nenta Wat	wat		Description o	f Strata	Lev	(Thick ness)	Graphic Legend
-		(70)	(70)	(70)	(IIIII)	/									-3.47	18.20	xx
18.20		100				10	D				Ī	Ver	y stiff high stren	igth light brown	È.	-	<u>x </u>
18.50-20	.00						0.0.7					CLA	AY.	ley issured sity	E	(1.00)	
18.50-18	.92					12	SPT	for 40mm				(LA MO	MBETH GROUF TTLED BEDS)	P - UPPER	F	-	xx
18 60							v	N=57* c =>120					-,		-4.47	19.20	<u> </u>
18.95-19	.20	100				15	Č					Ver	y stiff light greenis t grevish blue fiss	sh brown mottled ured silty CLAY.	E	- - 	××
- 19.00						18	ES PID	0.0ppm				Wit	h rare relict roots	s and randomly		-	
19.75-20	.00	Y				16	C D				+	۱LA (LA	MBETH GROUF	P - UPPER	<u>† -5.17</u> –	- <u>19.90</u> 	××
20.00-21	.50	Î				12	- -				+	∖МО]Ver	V stiff light greenish		-5.47	20.20	x <u>^x</u>
20.00-20	.33					13	SPT	11,14/20,22	2,8 👯			clay	ey SILT.Sand is fine	e quartz.	F	-	
		100						for 30mm N=83*				MO	TTLED BEDS)	- UPPER	E	-	<u> </u>
20.00						19	ES	J+V+T				Ver	y stiff dark brownish	grey to light grey	F	(1.70)	× ×
20.00								0.0ppm				silty	CLAY. Sand is fi	ne (sand: 0.063 -	F	-	
21.40	00	_ V _				13	D					0.∠r silty	sand, shell fragme	ents and layers of	Ę	-	<u>x x</u>
21.50-23	.95					14	SPT	8,7/11,13,12,	,14 <mark>;</mark> €			lign - (I A	ite. MBFTH GROUP	- LAMINATED	-7.17	21.90	x <u> </u>
-								N=50	<u>.</u>	°.°		BEI	DS)		F	_ [(0 70)	
Ē												Ver	y stiff light greenish owish brown fissure	blue mottled light	Ę	-	
Ē											-	silty	CLAY. Gravel is	s angular coarse	-7.87	22.60	
22.80						14	D					(LA	MBETH GROUF	- LOWER	F	-	<u> </u>
23.00-24	.50					15	SDT	4 7/10 10 14	13			Ver	I I LED BEDS) v stiff light reddish b	rown mottled light	F	-	
23.00-23						13	011	N=47	, 10			blui	sh green fissure	ed silty CLAY.	Ę	-	<u> </u>
E		100										(LA	MBETH GROUF	- LOWER	E	(2.40)	××
-		100										МО	TTLED BEDS)		F	-	××
															Ę	-	xx
24 50 26	00	<u> </u>													E	-	×
-	.00														F	-	xx
- 25.00						20	ES	J+V+T			+	Der	nse areenish brow	n to bluish arev	-10.27	25.00	<u>×</u>
25.00		100				15	PID	0.0ppm				very	/ clayey very silty fin	e quartz SAND.	-	- (0.50)	
25.20						15	D				ł	\MO	TTLED BEDS)	- LOWER	- <u>10.77</u> -	25.50	× · · · · · · · · · · · · · · · · · · ·
25.80						16	D					Stif	to very stiff light ted bluish arev of	t greyish brown	Ę	(0.80)	<u> </u>
26.00-27	.50						_					spa	ced fissured silty CL	AY.			<u> </u>
-											ł	(LA ∖MO	MBETH GROUP TTLED BEDS)	· - LOWER	-11.57 -	20.30	* <u>*</u>
26.50-26	.81	87				16	SPT	6,6/15,25,1	0			Ver	y dense greenish b	rown silty slightly	E	(0.70)	· · · · · · · · · · · · · · · · · · ·
-								N=94*	I			Gra	vel is subrounded c	oarse Flint.	-12.27	- 27.00	×°×
									11								
	Jrilli	ng Pi	rogre	ess and	a Wa	ter O	bservati Boreho		-				Genera	I Remarks			
Date	Т	ime		Depth		epth	Diamet (mm)	ber Depth			d	otor '	oval not choose of the		illing due	to!-!	tion of
			T		1				1 0. GI	ounc	uwa	ateri	ever not observed a	couracely during dr	ming ade	เบ สนนไ	ເບເເບ

GINT_LIBRARY_V8_06.GLB LibVersion: v8_06_014 PŋVersion: v8_06 - Core+Logs - 002 | Log ROTARY COMPOSITE LOG - A4P | 28549_MOUNT PLEASANT.GPJ - v8_06. RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tei: 01442 437550, Fax: 01442 437550, Web: www.rsk.co.uk | 11/01/17 - 13:58 | GB1 |

Method Used:

					All dimensi	ions in metre	es	Scale:	1:50		
Concrete coring (300mm) + Rotary Cored	Plant Used	: Coma	icchio GEC	205	Drilled By:	DM	Logged By:	JTownsend	Checked By:	ST	AGS

water flush for coring. 7. PID = Photo ionisation detector with 10.6eV bulb



1:50

AGS

Scale:

JTownsend

Logged By:

C	Contract:									Clie	ent:					Boreho	le:	
	Мо	unt F	Plea	sant	So	ortin	g Off	ice				Ro	yal	Mail Group Limite	d			BH03
C	Contract R	ef:			5	Start:	03.11	. 16 Gr	ound	d Le	evel:			National Grid Co-ordinate	:	Sheet:		
		2854	49		E	End:	07.11	.16		1	4.73			E:531080.5 N:18	2416.1		4	of 5
	N	echan TCR	ical L SCR	og	lf		Samples	s & Test	ing		ckfill & istru- ntation	/ater		Description of Strata	a	duced evel	Depth (Thick	Material Graphic
	Depth	(%)	(%)	(%) ((mm)	No	Туре	Res	ults		ше Ше	\$				Re	ness)	Legend
	26.80 27.40 27.50-29.0 28.50-28.7 28.80 29.00-30.5 29.50 30.00 30.00-30.4 30.00 30.50-30.6	(73) 87 0 100 5 73 0 73 0 73 0 73 0 73 100 5 100 5 100 5 100 5 100 100				17 18 17 19 20 21 22 17	D D D ES B PID SPT	J+\ 0.0p 255 N=3	/+T opm 50 0mm 600*				(LA MO Ver brow (LA MO Ver brow (LA MO Ver san (LA MO Ver san (LA MO Ver to frag (LA FOF Ver trow (LA MO Ver to to (LA MO Ver to to (LA MO Ver to to (LA MO Ver to (LA Ver to (LA MO Ver to (LA NO Ver to (LA NO Ver to (LA NO Ver to (LA NO Ver to (LA NO Ver to (LA NO Ver to (LA NO Ver to (LA NO Ver to (LA NO Ver to (LA NO Ver to (LA NO Ver to (LA NO Ver to (LA NO NO NO NO NO NO NO NO NO NO NO NO NO	MBETH GROUP - TTLED BEDS - SAND CH/ y stiff greenish brown mottl wn fissured sandy slight r CLAY. Sand is fine rtz. Gravel is rounded r rse flint. With rare shell fra MBETH GROUP - TTLED BEDS) y dense bluish green mottl wn silty fine to medium qua MBETH GROUP - TTLED BEDS) y stiff light grey mottled emely closely spaced fissu dy silty CLAY. MBETH GROUP - TTLED BEDS) y dense dark greenish rey slightly gravelly fine rtz SAND. Gravel is well ro medium flint. With r ments. MBETH GROUP - RMATION) y dense light grey quartz S/ ANET SAND FORMATION	LOWER ANNEL) ed reddish ly gravelly to coarse medium to gments. LOWER ed reddish rtz SAND. LOWER black silty to coarse unded fine rare shell UPNOR AND. I)		(0.80) <u>27.80</u> (0.80) <u>28.60</u> <u>28.90</u> (1.60) <u>30.50</u> (6.50)	
Ŀ	Drilling Progress and Water Observations Date Time Borehole Casing Borehole Diameter													General Re	marks	<u>-</u>	-	
	Date	Time	Bo D	rehole epth	Ca De	epth	(mm)		ater									

All dimensions in metres

DM

Drilled

By:

GINT LIBRARY V8_06.GLB LibVersion: v8_06_014 PŋVersion: v8_06 - Core+Logs - 002 | Log ROTARY COMPOSITE LOG - A4P | 28549_MOUNT PLEASANT.GPJ - v8_06. RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tei: 01442 437500, Fax: 01442 437550, Web: www.rsk.co.uk, | 11/01/17 - 13:58 | CB1 |

Concrete coring (300mm) + Rotary Cored

Method Used:

Plant

Used:

Comacchio GEO 205



1:50

AGS

Scale:

JTownsend

Logged By:

Contract:	:								(Client:				Boreho	ole:	
M	oui	nt P	lea	san	t So	ortin	g Offi	ce			Ro	yal	Mail Group Limited			BH03
Contract	Ref:				5	Start:	03.11.	. 16 G	round	Level:			National Grid Co-ordinate:	Sheet:		
	2	854	9		E	End:	07.11.	.16		14.7	3		E:531080.5 N:182416.1		5	of 5
	Mec	hanic	al Lo	og			Samples	& Tes	ting	ill & din &	er			ced	Depth	Material
Depth	٦ ١	CR (%)	SCR	RQD	lf (mm)	No	Туре	Res	sults	Backf Instr	Wat		Description of Strata	Redu	(Thick ness)	Legend
Depth			SCR (%)	RQD (%)	If (mm)	No	Type	Res	sults			Ver (TH (str. pre Cut (WI	Description of Strata y dense light grey quartz SAND. IANET SAND FORMATION) atum copied from 30.50m from vious sheet) tings indicate presence of chalk. HITE CHALK SUBGROUP) ehole completed at 40.0m bgl.	Test in the second seco	(1 nick ness) 37.00 (3.00)	
				•							•					
Data	Drilling Progress and Water Observations Date Time Borehole Casing Borehole Diameter Water							ons le W	ater				General Remarks			
Date	Date Time Depth Depth Depth Depth Depth							De	epth							
	te Time Borehole Casing Depth Depth Depth (mm) Common Comm															

All dimensions in metres

DM

Drilled

By:

GINT LIBRARY V8_06.GLB LibVersion: v8_06_014 PŋVersion: v8_06 - Core+Logs - 002 | Log ROTARY COMPOSITE LOG - A4P | 28549_MOUNT PLEASANT.GPJ - v8_06. RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tei: 01442 437500, Fax: 01442 437550, Web: www.rsk.co.uk, | 11/01/17 - 13:58 | CB1 |

Concrete coring (300mm) + Rotary Cored

Plant

Used:

Comacchio GEO 205

Method

Used:



Contract:							Client:				Boreho	ole:	
Μοι	Int	Pleas	ant Sortir	ng Of	fice		R	oyal	Mail Group Limit	ed			BH04
Contract Re	f:		Start:	08.1	1.16	Grour	nd Level:		National Grid Co-ordina	te:	Sheet:		
	285	49	End:	10.1	1.16		19.95		E:531078.9 N:1	82435.4		1	of 5
Samp	oles a	and In-si	itu Tests	Vater	ckfill & nstru- ntation			Des	cription of Strata		duced evel	Depth (Thick	Material Graphic
Depth	No	Type	Results	>							Re	ness)	Legend
- 0.00-0.50 -	1					MAL	DE GROUND:	Concr	ete.		19.65	0.30	
0.40-0.50 0.40	1	ES PID	J+V+T 0.0ppm			MAE coar brick	DE GROUND: se SAND. (k, concrete, w	: Dark Gravel /ith occ	reddish brown gravelly is subangular to subr casional coal, wire and	silty fine to ounded flint, fragments of	19.15	(0.50) 0.80	
- 0.80-1.00 - 0.80 - 1.00-1.50	2	ES PID LB	0.0ppm			MAE	DE GROUND	cobbles	crete and brickwork ro 3.	ecovered as	- - - -	 	
- - 1.60 - 1.60	3	ES PID	J+V+T 0.0ppm								-	-	
- 2.00-2.50	3	LB						Drown	to dork brown alightly a		-17.85	2.10	
2.10 2.10	4	ES PID	J+V+T 0.0ppm			grav coar	elly CLAY.	Gravel ick with	is subrounded to subar rare oyster shells.	igular fine to	-	(1.00)	
2.60		PID	0.0ppm			'.					Ę	Ę	
- 3.00-3.45	1	SPT(c)	1,1/1,1 N=2			MAE	DE GROUND:	Dark b	prown to black gravelly c	layey SAND.	- <u>16.85</u> -	- <u>3.10</u> -	
- 3.00-3.50 - 3.10 - 3.10 - 3.10	4 6	LB ES PID	J+V+T 0.0ppm			San suba shel	d is fine to c angular fine t ls.	oarse o coa	with ash. Gravel is sure flint and brick with	ibrounded to rare oyster	-	-	
- 3.80 - 4.00-4.45	1 2	D SPT(c)	1/,1 N=1			• • •						[[(2.00)	
- 4.00-4.50 - 4.00 - 4.00 - 4.50	5 7 8	LB ES PID ES	J+V+T 0.0ppm J+V+T			• • •					-	-	
_4.50 - 4.80	2	PID D	0.1ppm			•				<u> </u>	14.85	5.10	
5.00-5.45	3	SPT(c)	1,2/2,1,2,3 N=8			stin	righ to very i ced fissured si	hign st Ity CLA	rength brownish grey to	grey closely	- - -	-	
5.00-5.50 5.00 5.00	6 9	LB PID ES	0.2ppm J+V+T			• (LOI	NDON CLAY F	-ORM/	ATION)		- - - -	-	
- 6.00 - 6.00 - 6.00	3 10	D ES PID	J+V+T 0.0ppm				At 6.0m pocke	ets of fi	ne to coarse sand				xx
- 6.50-6.95 -	4	SPT	2,2/3,4,4,5 N=16								-	- - -	
- 7.00 - 7.00	11	ES PID	J+V+T 0.0ppm								- - - -		
7.50	4	D									- - - -	- - -	
8.00-8.45	1	U	55 blows								 - -	- - -	
8.00 8.00 8.50	12 5	ES PID D	J+V+T 0.0ppm	y							- - - -	- - - -	
-						8					-	-	<u> </u>

GIN RSK	Used:	Cable	percu	ssion	Usec	l: Da	ando 200	00	By:	Hutson	By: JBarron	By:	57	AGS
Envil	Method	Inspe	ection	pit +	Plant	:			Drilled	Dave	Logged	Checke	ed	
BRARY ironmen											All dimensions in metres	Scale:	1:50	-
V8_06 Tt Ltd, 1	10/11/16	11/16 12:51 -					Dry				obstruction from 0.8m 3. Clean drilling technou	to 2.1m es adopt	bgl. ed. Ber	Itonite
.GLB 8 Frc	09/11/16	/11/16 07:54 24:50 24:00 /11/16 18:54 40:00 26:50 /11/16 12:51 12:51					24.50 Drv				excavated pit by JCB	to 3.5m l and brick	ogl due work	to
¦ Lib∖ Dgmo	08/11/16	/11/16 18:54 24.00 24.00 /11/16 07:54 24.50 24.00				200	Dry				2. Borehole progressed	through i	nachine	e
/ersic ore Ro	08/11/16	/11/16 18:54 14.00 9.00 (11/16 18:54 24.00 24.00					14.00	0.80	2.10	04:00	hand dug inspection p	it to 0.80	in 10110\)m bgl.	weu by
on: v8 oad, H∈	Date	Date Time Borehole Casing Depth Depth					Water Depth	From	То	Duration (hh:mm)		to 200		und by
06_0	B	soring F	rogress	and Wat	ter Ob	servations	8	Chisel	ling / Slow	Progress	General	Rema	arks	
14 P Hem	_													
rjVert pstea							38						_	<u> </u>
sion: ad, He	8.50	5	D										-	×
v8_0 ertfor	- 8.00	12	PID	J+V+ 0.0pp	rı om	🗱						-	-	× ×
l6 - C dshir	0.00			100% rec	covery	🗱						-	-	<u> </u>
e, HI	- 8.00-8.45	1	υ	55 blo	ws		3 8					-	-	<u> </u>
Logs P3 9F												[-	<u> </u>
RT. T	- 7.50	4	D									-	-	××
2 L(el: 0	_ 7.00			0.000	,11							-	-	<u> </u>
og C/ 1442	7.00	11	ES	J+V+	+T							E I	-	
ABLE 4375	-				0							-	-	<u> ×-</u> _▼
PER 500, F	6.50-6.95	4	SPT	2,2/3,4 N=1	,4,5 6							-	-	xx
CUS.	6.00		PID	0.0pp	om								-	××
SION 1442	- 6.00 - 6.00	3 10	D ES	J+V+	۰T		A	t 6.0m po	ckets of fir	ne to coarse	sand		-	<u> </u>
L0G 4375	- 5.00	9	E2	J+A+	F I								-	
- A4f 50, V	5.00		PID	0.2pp	om T					(11014)		-	-	<u> </u>
0 28 Veb: ∖	5 00 5 50	6		N=8	3				Silty CLA	Y.			-	xx
549_ www.i	- 4.80 - 5.00-5.45	2	D SPT(c)	1.2/2.1	.2.3		Stiff h	igh to ver	ry high str	ength brow	nish grey to grey closely	-		<u>×××××</u>
MOU rsk.cc	_4.50 _4.50	0	PID	0.1pp	om							-14 85	- 5 10	\boxtimes
NT PI o.uk.	4.00		PID	0.0pp	om T		< • < •					-	-	
LEAS 11/0	- 4.00-4.50 - 4.00	5	LB ES	J+V+	۰T		< •					-	-	
ANT.	- 4.00-4.45	2	SPI(C)	1/,1 N=1	1							Ē	_(,	
GPJ - 13:{	- 3.80	1	D				• •					-	- -(2 00)	
- v8 59 C	3.10		PID	0.0pp	om		shells						-	
06. 11	- 3.00-3.50 - 3.10	4	ES ES	J+V+	۰T		subar	is line to	e to coarse	se flint and	brick with rare oyster	-	-	



Contract:								Client:				Boreho	ole:	
Μοι	int l	Pleas	ant Sort	ing	g Of	fice			Royal	Mail Group	Limited			BH04
Contract Re	f:		Sta	art:	08.1	1.16	Grour	d Level:		National Grid C	Co-ordinate:	Sheet:		
	28549 End: 10.11.16								5	E:531078	8.9 N:182435.4		2	of 5
Samp	oles a	Ind In-si	itu Tests		ter	fill & ru- ation			_			iced 'el	Depth	Material
Depth	No	Туре	Results	;	Ma	Back Inst menta			Des	cription of Strat	а	Sedu	(Thick ness)	Legend
- 9.00	6	D	1+1/+T				Stiff	high to ve	ery high st	rength brownish	n grey to grey closely	-	-	××
9.00	15	PID	0.0ppm				(LOI	NDON CL	AY FORM	ATION)		-		
9.50-9.95	5	SPT	3,3/4,4,4,4 N=17	5			(stra	tum copie	d from 5.1	Om from previou	s sheet)	-	-	<u>xx</u>
-												-	-	
- 10.00 - 10.00	14	ES PID	J+V+T 0.0ppm				X					-	-	
	_	-										Ē	-	
- 10.50	1	D										-	-	<u> </u>
	2		55 blows									-		
-	2	0	100% recov	ery									(12.20) -	xx
- 11 50	8	р					2						-	
-	-											-	-	
_ - 12.00	9	D										-	-	<u></u>
-													-	
- 12.50-12.95	6	SPT	7,7/9,10,10	,12								-	-	
- -			N=41										-	
- 13.00	15	ES	J+V									-	-	<u> </u>
- 13.00		PID	0.0ppm									-	-	
- 13.50	10	D					•						-	xx
-					∿⊮		• •					-	-	
- 14.00-14.45	3	U	60 blows 100% recov	ery			•					-	-	
		-					•						-	xx
- 14.50 -	11	D											-	
-	12	П										-	-	
- 13.00	12	D											-	
- 15 50-15 95	7	SPT	45/677	7									-	<u> </u>
-	-		N=27	-								-	-	
- - 16.00	16	ES	J+V									-	-	xx
16.00		PID	0.0ppm									-	-	
- 16.50	13	D					8					-	-	
-												Ę	-	
17.00-17.45	4	U	65 blows				Š.					- 2 65	- 17 30	
-				ery			Very	stiff high	to very h	igh strength ligh	nt brown mottled light	- 2.05	- 17.30	
- 17.50	14	D					bluis (LAN	h grey fiss ∕IBETH GI	sured silty ROUP - UI	CLAY. PPER MOTTLF	D BEDS)	Ę	F	
-							8				- /	-	-	

LIBRARY_V8_06.G nvironment Ltd, 18												26.5m bgl in 200mm of 5. Monitoring well install HDPE response zone All dimensions in metres	liameter. ations: P betweer Scale:	ipe 1 - 50 n 3.0 and 1:50	0mm J
LB LibVersior Frogmore Ros						(((((((((((((((((((((((((((((((((((((((Deptit				seal created before re 4. Borehole drilled in foll bgl in 250mm; 35.4m in 150mm casing to 7	duction i owing dia bgl in 20 5m bgl ii	n casing ameters: 0mm; 40 n 250mn	y size. 24.0m).0m bgl n and
ad, Hem	Date	Date Time Borehole Cas					le er	Water Denth	From	То	Duration (hh:mm)	General	Rema	arks	
014 F	Вс	oring F	Progress	and Wate	r Obs	ervatio	ons		Chisel	ling / Slow	Progress		D		
^o rjVersion: v8_0 npstead, Hertfo	17.50	14	D					very s bluish (LAME	grey fissu BETH GR	to very hig red silty (OUP - UP	gn strengtn CLAY. PER MOTT	Ilight brown mottled light	- - - - -		×
l6 - Core- dshire, H	17.00-17.45	4	U	65 blow 100% reco	s very							P 1 (1	2.65	17.30	
+Logs - 002 P3 9RT. Te	16.50	13	D										-		x x
Log CAE	16.00 16.00	16	ES PID	J+V 0.0ppm	n										xx
sLE PERCU 37500, Fax	15.50-15.95	7	SPT	4,5/6,7,7 N=27	,7								-		^
SSION LO(01442 437	15.00	12	D										-		
3 - A4P 2 7550, Web	14.50	11	D			•	:::Ħ								xx
8549_MOL www.rsk.c	14.00-14.45	3	U	60 blow 100% reco	s very								-		××
JNT PLEA o.uk. 11.	13.50	10	D			•							-		
SANT.GP 01/17 - 13	13.00 13.00	15	ES PID	J+V 0.0ppm	n								-		xx
J - v8_06. 8:59 CB1	12.50-12.95	6	SPT	7,7/9,10,10 N=41),12								-		×



Contract:						Client:		Boreho	ole:	
Mou	nt F	Pleas	ant Sorting	g Of	fice	Royal	Mail Group Limited			BH04
Contract Ref:	-		Start:	08.1	1.16	Ground Level:	National Grid Co-ordinate:	Sheet:		
2	285	49	End:	10.1	1.16	19.95	E:531078.9 N:182435.4		3	of 5
Sample	es a	nd In-si	tu Tests	ater	cfill & tru- tation	Doo	oriation of Strata	uced	Depth	Material
Depth	No	Туре	Results	Ň	Back Ins	Des		Red	ness)	Legend
- 18.00	15	D				Very stiff high to very h	igh strength light brown mottled light	-	-	xx
- - 18.50-18.95	8	SPT	5,5/7,5,7,9 N=28			(LAMBETH GROUP - U (stratum copied from 17.	PPER MOTTLED BEDS) 30m from previous sheet)	- - - -	-	xx
- 19.00 - 19.00 -	17	ES PID	J+V 0.0ppm					- - - -	- - -	xx
- 19.50	16	D							-	xx
20.00-20.45	5	U	65 blows					-	-	
20.00 20.00 20.50	18 17	ES PID D	J+V 0.0ppm					- - - -	(6.70)	
21.00	18	D						- - - -	-	
-								- - - -	-	
- 22.50	19	D						- - - -	-	
23.00-23.45	6	U	70 blows					- - - -	-	
23.50	20	D							-	
- 24.00	21	D		A .		Stiff to very stiff dark bro CLAY. Sand is fine	wnish grey slightly sandy slightly silty to medium with occasional shell	-4.05 - -	24.00	
24.50-24.95	9	SPT	6,6/9,11,11,13 N=44			light grey silty fine sand (LAMBETH GROUP - L/	and lignitic deposits. AMINATED BEDS)	- - - -	-	
- 25.00 25.00	19	ES PID	J+V 0.0ppm					 - - -	(2.50)	××
26.00-26.45	10	SPT	7,8/11,12,14,13 for 70mm N=51*			Description on next shee	et st	- - 6.55	26.50	
-						,			-	xx

D		Boring Pro	ogress and	Water Ob	servations	5	Chisell	ing / Slow	Progress	Conorol	Domorko
2	Date	Time	Borehole	Casing	Borehole Diameter	Water	Erom	То	Duration	General	Remarks
n an	Dale	TITLE	Depth	Depth	(mm)	Depth		10	(hh:mm)	6 Ombol Pine 2 - 33m	m PVC response zone
מוווופווו בומי וסי וספווסיס וי										 13.5m to 14.5m bgl. 6. Borehole backfilled w filter between 3.0m to 14.5m bgl; sand filter bentonite seal/groutin bgl; 6.0m to 8.0m bgl; 	ith 3mm shingle gravel 6.0mbgl & 13.5m to from 2.5m to 3.0m bgl & g between 0.2 and 2.5m 11.5 to 13.5m bgl;
2		L					L		1	All dimensions in metres	
j	Method Used:	Inspec Cable p	ercussio	Plan	t d: Da	ando 200	0	Drilled By:	Dave Hutson	Logged By: JBarron	By: ST AGS



Contract:							Client:			Boreho	ole:	
Mou	int l	Pleas	ant S	ortin	g Of	fice	Roya	al Mail Grou	up Limited			BH04
Contract Re	f:			Start:	08.1 ′	1.16	Ground Level:	National Grid	d Co-ordinate:	Sheet:		
	285	49		End:	10.1 [°]	1.16	19.95	E:5310	78.9 N:182435.4		4	of 5
Samp	les a	Ind In-si	tu Tests	3	ater	fill & rru- ation				led	Depth	Material
Depth	No	Туре	Res	sults	Na	Back Inst menti	0	escription of St	rata	Redu	(Thick ness)	Legend
27.50-27.95	7	U	70 b 100% r	lows ecovery			Stiff to very stiff light to spaced fissured silty ((LAMBETH GROUP - (stratum copied from 2)	luish grey mottle LAY. LOWER MOTT 6.50m from pres	ed pinkish brown closely LED BEDS) <i>vious sheet)</i>	- - - - - - - - - - - -		
29.00-29.43	11	SPT	7,7/11,1 for 5 N=	13,14,12 33mm 54*								
- 30.00 30.00	20	ES PID	+ل 0.0	⊦V opm			Stiff to very stiff dark g CLAY. Sand is fine to	reen mottled ora	angish purple sandy silty	<u>10.05</u> - -	- <u>30.00</u> - -	
30.50-30.95	8	U	95 b 100% r	lows ecovery			(LAMBETH GROUP -	LOWER MOTT	LED BEDS)		(3.00)	
32.00-32.18	12	SPT	25/3 for 2 N=1	5,15 5mm 150*								
- 33.50-34.00 33.50-33.95	7 9	LB U	110 t 0% rei	blows covery			Dense to very dense gravelly silty fine to me (LAMBETH GROUP -	dark greenish (edium SAND. UPNOR FORM	grey very clayey slightly ATION)	-	-(1.50)	× × × × × × × ×
- - - -							Dark greenish grey	ery gravelly slip	ghtly sandy silty CLAY.	- <u>14.55</u>	34.50	× × × ×
- - 35.00-35.50 - 35.00-35.15	8 13	LB SPT	25/	/50			of black pebbles. (LAMBETH GROUP -	UPNOR FORM	ATION)	- - - - 	(0.90) - - 	
- 35.00	21	ES	N=2	200* FV			Very dense grey fine S (THANET SAND FOR	SAND. MATION)		-	-	**************************************

		Boring Pro	gress and	Water Ob	oservations	6	Chiselli	ng / Slow	Progress	Conorol	Domorko
	Date	Time	Borehole	Casing	Borehole Diameter	Water	From	То	Duration	General	Remarks
	Duic		Depth	Depth	(mm)	Depth			(nn:mm)	14 5m to 16 5m bal &	26 5m to 28 5m bal with
										compacted backfill (sa borehole and installati 7. PID = Photo ionisatior bulb 8. Small rate of groundw by the driller at 14.0m	and/clay) to base of ion of flush cover. In detector with 10.6eV vater seepage observed bgl and 24.5m bgl;
										All dimensions in metres	Scale: 1:50
1	Method Used:	ethod Inspection pit + sed: Cable percussion			t d: Da	ando 200	0	Drilled By:	Dave Hutson	Logged By: JBarron	Checked ST AGS

GINT_LIBRARY_V8_06.GLB LibVersion: v8_06_014 PŋVersion: v8_06-Core+Logs - 002 | Log CABLE PERCUSSION LOG - A4P | 28549_MOUNT PLEASANT.GPJ - v8_06. RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tei: 01442 437500, Fax: 01442 437550, Web: www.rsk.co.uk | 11/01/17 - 13:59 | CB1 |



All dimensions in metres Scale:

JBarron

Logged By: 1:50

ST

AGS

Checked

By:

Contract:								Client:				Boreho	ole:	
Mou	ınt F	Pleas	ant S	Sortin	g Of	fice		F	Royal	Mail Gro	up Limited			BH04
Contract Re	f:			Start:	08.1	1.16	Ground	d Level:	_	National Gr	id Co-ordinate:	Sheet:		
	285	49		End:	10.1	1.16		19.95		E:5310	78.9 N:182435.4		5	of 5
Samp	les a	nd In-si	tu Tes	ts	Vater	ckfill & nstru- ntation			Desc	cription of S	trata	duced evel	Depth (Thick	Material Graphic
Depth	NO	Туре	Re	sults	>		Voru	donao grov	fine CAN			Re	ness)	Legend
36.50-36.63	14	SPT	2 for N=	5/50 50mm =300*			(THA (strat	NET SAND	FORMA rom 35.4	ATION) 40m from pre	evious sheet)	-	- - - - - - - - - - - - - - - - - - -	
38.00-38.15	15	SPT	2 for N=	5/50 70mm =214*										× 0 × 0 × 0 × 0 × 0 × 0 × 0 × 0
-							Paca	very of off	white ci	lty chalky a	ubangular fine to coarse	-19.45	39.40	
- 39.50-39.63	16	SPT	2 for N=	5/50 50mm =300*			GRAV (WHI	VEL of flint. TE CHALK	SUBGR	OUP)	abangular nine to coarse	-20.05	(0.60)	
40.00	22	ES PID		J+V Doom			Boreł	hole comple	ted at 40).0m bgl.		-	-	<u> </u>
	· -				1				10				h	
Date -	ing P Time	Bore	hole	Vater Ob Casing	Boreh Diam	tions nole eter	Water	From	ng / Slow To	Duration	General I	Rema	arks	
		Det	ptn	Depth	(mr	<u>n)</u>	Depth				sealed out at 26.5m by 9. 200L of water added to Thanet Sand.	gl. o drill thi	rough th	ie

Drilled

By:

Dave

Hutson

Inspection pit + Cable percussion

Plant

Used:

Dando 2000

Method

Used:



Contract:							Client:			Boreho	ole:	
Μοι	int l	Pleas	ant Sortin	g Of	fice		Roya	al Mail Gro	up Limited			BH05
Contract Re	f:		Start:	24.1	0.16	Groun	d Level:	National Gri	id Co-ordinate:	Sheet:		
	285	49	End:	07.1	1.16		14.59	E:5310	41.1 N:182418.9		1	of 5
Sam	oles a	nd In-si	itu Tests	ter	fill & ru- ation					ced	Depth	Material
Depth	No	Туре	Results	_ ∧	Backt Insti		D	escription of Si	trata	Sedu	(Thick ness)	Legend
-						MAD	E GROUND: Cor	ncrete.		14.34	0.25	
-						MAD	E GROUND: Lig	ht brown silty (gravelly SAND. Sand is	14.09	0.50	
- 0.50 - 0.50	1	ES PID	J+V+T 0.0ppm			Flint	with frequent bric	k and concrete	fragments.	-	-	
-	2	50			•	MAD sand	DE GROUND: C ly gravel and cobb	oncrete and b bles.	prickwork recovered as	-	- 	
1.00	2	PID	0.0ppm			•				-	-	
- 1.50	3	ES	J+V+T		• • • • • •	0				-	-	
1.50 1 80-2 00	1	PID I B	0.0ppm			Firm	dark brownish a	rev slightly sar	dy slightly gravelly clay	12.79	1.80	
2.00-2.45	2	U	40 blows			Sand	d is fine to mediur	n. Gravel is su	bangular to rounded fine	-	(0.65)	
2.00	4	ES	100% recovery J+V+T				NDON CLAY FOR	MATION)		12.14	2.45	<u></u>
2.00 2.45-2.55	3	D	0.0ppm			Stiff sand	to very stiff higl lv CLAY. Sand is	n strength darl fine to medium	k brownish grey slightly	-	-	
- 2.50-3.00 _2.50	4 5	LB ES	J+V+T			(LON	NDON CLAY FOR	MATION)	-	-	-	
- 2.50 - 3.00	6	PID ES	0.0ppm J+V+T							-	-	
- 3.00	5	PID	0.0ppm							-	-	
3 50	7	FS	N=20							-	-	
-3.50	6	PID	0.0ppm							-	-	
4.00	8	ES	J+V+T							-	-	
4.50-4.95	7	Ű	50 blows							-	-	
4.50	9	ES	J+V+T							-	-	
4.95-5.05	8		0.0ppm							-	-	
5.00-5.50	9 10	ES	J+V+T							-	-	
5.50-5.95	10	SPT	2,2/3,4,4,5							-	-	
- 6.00	11	ES	J+V+T							-	-	
6.00 6.00-6.50	11	PID LB	0.0ppm							-	-	
-										-	-	
-										-	-	<u> -</u>
7.00	12	ES PID	J+V+T 0.0ppm							-	-	
7.00-7.45	12	U	40 blows							-	(10.25)	· · · · · ·
7.45-7.55	13	D								- -	, 	
- 8.00	12	۲Q	_I+\/+T							F		
8.00-8.30	14									ŀ	-	
8.50-8.95	15	SPT	2,3/3,3,4,5							-	-	
			N=15							- -	-	<u> </u>
L			1	1			11			L	L	I
Bo	ring P	rogress	and Water Ob	serva	tions		Chiselling / S	low Progress	General	Rem	arks	
	.	Bore	hole Casing	Durer		Water		Duration	Contrain			

GINT_LIBRARY_V8_06.GLB LibVersion: v8_06_014 PŋVersion: v8_06-Core+Logs - 002 | Log CABLE PERCUSSION LOG - A4P | 28549_MOUNT PLEASANT.GPJ - v8_06. RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tei: 01442 437500, Fax: 01442 437550, Web: www.rsk.co.uk | 11/01/17 - 14:00 | CB1 |

E	Boring Pro	gress and	Water Ob	servation	3	Chisel	ling / Slow	Progress	Conorol	Domarka		
Date	Time	Borehole	Casing	Borehole Diameter	Water	From	То	Duration (hh:mm)	General	Remarks		
		Depth	Depth	(mm)	Depin		_	· · ·	1 300mm concrete core	to 250mm followed by		
24/10/16	18:07	5.05	4.50	250	-	0.50	1.80	01:00	hand dug inspection p	it to 0.50m bal		
25/10/16	18:04	15.50	7.50	250	-				2. Borehole progressed	through machine		
26/10/16	08:04	15.00	7.50	250	10.00				excavated pit by JCB to 1.8m bgl due to			
26/10/16	18:11	26.80	25.00	200	-				excavated pit by JCB to 1.8m bgl due to presence of concrete and brickwork			
27/10/16	17:13	31.50	25.00	200	-				obstruction from 0.5m	to 1.8m bgl.		
28/10/16	17:06	32.00	25.00	200	-				Clean drilling technqu	es adopted. Bentonite		
04/11/16	13:06	40.00	25.00	150	-							
07/11/16	10:30		-						All dimensions in metres	Scale: 1:50		
Method	Inspec	tion pit +	 Plan 	t			Drilled		Logged	Checked		
Used:	Mach	ine dug	Used	d: Da	ando 300	0	By:	M Reeves	By: JSmith	By: ST AGS		



Contract:								Client:					Boreho	le:	
Μοι	int l	Pleas	ant S	ortin	g Of	fice			Royal	Mail G	roup Limite	ed			BH05
Contract Re	f:			Start:		0.16	Groun	d Level:		National	Grid Co-ordinat	e:	Sheet:		
	285	49		End:	07.1	1.16		14.59		E:53	1041.1 N:18	82418.9		2	of 5
Samp	oles a	nd In-si	itu Tests	S	ter	ru- & ru-							ced	Depth	Material
Depth	No	Туре	Res	sults	Wa	Backf Instr mente			Des	cription o	f Strata		Sedu	(Thick ness)	Graphic Legend
9.00	14	ES	J+\	V+T			Stiff	to very s	tiff high	strength o	dark brownish g	grey slightly	_ <u>u</u>		
9.00-9.30	10	PID	0.0	ppm			sand (LON	IDON CLA	Sand is fin	e to medi ATION)	um.		-	-	
							(stra	tum copiec	d from 2.4	5m from p	revious sheet)		-	-	
													-	-	<u> </u>
- 10.00 - 10.00-10.45	15 17	ES U	J+\ 50 b	V+T blows									-	-	
- 10 00		PID	100% r	ecovery									-	-	
10.45-10.55	18	D		FF									-	-	<u> </u>
-													-	-	
		_											-	-	<u> </u>
- 11.30 - 11.50-11.95	19 20	D SPT	3 4/4	556									-	-	- <u></u>
-	20	011	N=	=20									-	-	
													-	-	
													-	-	
-													- 1.89	12.70	
12.70	21	D					Stiff	to very sti	ff high str	ength ligh	nt brown mottled	l light bluish	-	-	xx
13.00	16	ES	J+\	V+T			(LAN	IBETH GF	ROUP - UP	PPER MO	TTLED BEDS)		-	-	
13.00-13.45	22	SPI	7,8/10,* N=	10,12,15 =47									-	-(1.30)	xx
- 13.00 -		PID	0.0	ppm									-	-	
-													0.59	14.00	
- 14.00	23	D					Stiff	to very stif	ff high to v	ery high s	strength dark re	ddish brown	-	-	
							(LAN	1BETH GF	ROUP - UF	PPER MO	TTLED BEDS)		-	-	<u>x</u> x
- 14.50-14.95 -	24	U	60 b 100% r	olows recovery									-	-	
-													-	-	xx
													-	-	×
- 15 50	25	р											-	(3.00)	
-													-	-	
- 16.00	17	ES	J+\	V+T									-	-	
16.00 16.00-16.45	26 27	D SPT	7,8/8,1	0,13,13									-	-	
-			N=	=44									-	-	
													-2 42	17.00	× · · · ×
17.00	28	D					Stiff	to very sti	ff light bro	wn mottle	ed light bluish g	rey fissured		-	× · · ×
Ę							(LAN	1BETH GF	ROUP - UP	PER MO	Sand is fine. TTLED BEDS)		F E	-	×
- 17.50-17.95	29	U	100 100% r	blows ecoverv									-	(1.50)	× · · · ×
ŀ				500101y	1		•						-	È	

06. 781	-												- 1 00	- - - 10 70	
1 - v8 1 - v8	12.70	21	D				Stiff to	very stif	f high str	en	gth light b	rown mottled light bluish	- 1.09	-	X
NT.GF	- 13.00	16	ES	J+V+T	15		(LAME	ssured si BETH GR	OUP - UF	PPI	ER MOTT	LED BEDS)	-	-	X
EASA 11/01	_ 13.00-13.45 - - 13.00	22		N=47	, 15								-	-(1.30) -	xx
NT PL o.uk.	-			0.000									-	-	X
MOL w.rsk.c		23	D				Stiff to	verv stif	f hiah to v	/er	v hiah stre	ength dark reddish brown	- 0.59	14.00	
28549 b: ww	-						mottle	d light blu	ish grey s	silty	y slightly s	andy CLAY.	-	-	·· · · · · · · · · · · · · · · · · · ·
- A4P 50, We	14.50-14.95	24	U	60 blows	anv								-	-	
LOG - 4375	- - 			100 % 1000	ei y								-	-	<u> </u>
SSION 01442	- - -												-	-	······································
ERCU(- 15.50	25	D										-	(3.00)	- <u>*</u> -:- *
BLE PI 137500	- - -												-	-	
og CA 1442 4	- 16.00	17	ES	J+V+T									-	-	
002 L . Tel: 0	16.00-16.45	27	SPT	7,8/8,10,13, N=44	13								-	-	
- ogs - 1 3 9RT	-												-	-	
Core+L ire, HF	- 17.00	28	D				Stiff to	very stif	f light bro	owr	n mottled	light bluish grey fissured	-2.42	<u>- 17.00</u> -	
fordsh	-						slightly (LAME	y silty slig BETH GR	htly sandy OUP - UF	y C PPI	LAY. Sar ER MOTT	nd is fine. 'LED BEDS)	-	-	x
ion: v8 d, Heri	- 17.50-17.95	29	U	100 blows 100% recov	ery								-	-(1.50)	××
^o rjVers npstea							:						_	-	_ · <u>^</u> · <u>×</u>
014 014 014	Bo	ring F	Progress	and Water	Observat	ions		Chisel	ling / Slov	νP	rogress	Oaraaral)		
v8_06 d, Hem	Date	Time	Bore	hole Casin	g Boreh Diame	ole eter	Water	From	То		Duration	General I	Rema	arks	
ersion. e Roa			De	pin Depti	1 (mm	1)	Depth				()	seal created before re	duction i	n casing	g size. · 20.5m
B LibV ogmor												bgl in 250mm; 31.0m k	ogl in 20	0mm; 4	Om bgl
06.GLI , 18 Fr												250mm and 28m bgl in	1 200mm	diame	ter.
Y_V8 ent Ltd												HDPE response zone	betweer	n 1.0 an	d
BRAR												All dimensions in metres	Scale:	1:50)
SKEN	Method Used:	Inspe Mar	ection	pit + Pi	ant sed:	Dan	100 300	0	Drilled By:	м	Reeves	Logged By: ISmith	Checke By:	ST	AGS
OK [ma		ang i		Dui		~	,	141	1100403		,		



Contract:								Client:					Boreho	ole:	
Μοι	int l	Pleas	ant Sorti	ng) Off	fice			Royal	Mail Gro	up Limite	d			BH05
Contract Re	f:		Star	t: 🕻	24.10).16	Grour	d Level:		National Gr	id Co-ordinate	:	Sheet:		
	285	49	End	: (07.11	1.16		14.59		E:5310)41.1 N:18	2418.9		3	of 5
Samp	les a	ind In-s	itu Tests		Vater	ickfill & nstru- entation			Des	cription of S	trata		duced	Depth (Thick	Material Graphic
Depth	N0	Туре	Results	_	>								Re	ness)	Legend
- 17.95	30	D			4		• • •						-3.92	18.50	
- 18.50 -	31	D			4		Dark sligh shel	brownish tly silty Cl	grey exti LAY. Sar	emely close id is fine to	ely spaced slig medium with	htly sandy occasional	- - -	-	
- 19.00 - 19.00-19.45	18 32	ES SPT	J+V+T 3,5/7,7,8,10 N=32)	4 4 4		(LAN	/BETH GF	ROUP - LA	MINATED E	BEDS)		 - - -	 (1.50)	x
- 19.00		PID	0.0ppm		4		• • •							-	× · · · × · · · × · · · ×
- 20.00	19	ES	J+V+T				• • Verv	stiff redu	hish purpl	e mottled li	aht bluish are	ev fissured	-5.42	20.00	× · · · · ·
20.00	33	D PID	0.0ppm		4		sligh (LAN	tly silty CL /IBETH GF	AY. ROUP - LC	OWER MOT	TLED BEDS)		-	(1.00)	
20.50-20.95	34	U	100 blows 90% recove	ry	4		• • •						-642	21.00	
22.00-22.43	35	D SPT	8,10/10,12,15 for 56mm N=53*	,13	4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4		Stiff sanc (LAN	light orar ly CLAY. /BETH GF	ngish brov ROUP - LC	vn mottled	light bluish gi TLED BEDS)	rey slightly	- - - - - - - - - - - - - - - - - - -	(2.00)	
- 23.00	37	D			4		Stiff	dark redo	dish brow	n mottled g	reen sandy s	ilty CLAY.	-8.42	23.00	
- 23.50-23.95	38	SPT	7,7/8,10,15, N=48	15			Sano med (LAN	d is predor ium calcre /IBETH GF	ninately fi te gravel. ROUP - LC	ne with occa	isional subang TLED BEDS)	ular fine to	-	-	
24.30	39	D											-	-	
- 25.00 25.00-25.37	20 40	ES SPT	J+V+T 8,10/16,16,1 for 70mm	8									- - - -	 (4.50)	
25.00		PID	N=68* 0.0ppm										-	- - -	
26.00	41	D											-	-	
26.50-26.95	42	SPT	5,5/10,10,11, N=44	13									-	-	
Boi	ing F	rogress	s and Water	Obs	ervat	ions		Chise	lling / Slov	v Progress	-		_		

I	Boring Pro	gress and	Water Ob	servations	6	Chisel	ling / Slov	w Progress	Conorol	Domorko	
Date	Time	Borehole	Casing	Borehole Diameter	Water	From	То	Duration	General	Remarks	
		Depth	Depth	(mm)	Depth			(nn:mm)	 1.5mbgl. Pipe 2 - 50m 18.0m to 23.0m bgl. 6. Borehole backfilled wi filter between 1.0m to 23.0m bgl; sand filter 8 bentonite seal/grout 	im HDPE response zor ith 3mm shingle gravel 1.5m bgl & 18.0m to from 17.5m to 18.0m bg ing between 0.2 and	ne Igl
									1.0mbg; 1.5m to 17.5i All dimensions in metres	m bgl & 23.0 to 25.0m Scale: 1:50	
Method Used:	Inspection pit + Machine dug			t d: Da	ando 300	0	Drilled By:	M Reeves	Logged By: JSmith	Checked By: ST AG	D iS

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Contract:								Client:				Boreho	ole:	
Μοι	unt	Pleas	ant S	Sortin	g Of	fice		F	Royal	Mail Gro	up Limited			BH05
Contract Re	ef:			Start:	24.1	0.16	Groun	d Level:		National Gr	id Co-ordinate:	Sheet:		
	285	4 9		End:	07.1	1.16		14.59		E:5310)41.1 N:182418.9		4	of 5
Sam	oles a	and In-si	tu Test	S	Vater	ackfill & nstru- entation			Des	cription of S	trata	evel	Depth (Thick	Material Graphic
Depth		туре	Re	suns	-	Ba Ba	2					L R	ness)	
-												-	-	
27.50	43	D					Stiff	greenish bro	own very	sandy sligh	ntly gravelly CLAY. Sand	-12.92	27.50	
-							is fin flint.	e to coarse	quartz.	Gravel is ro	unded medium to coarse	-	$\frac{1}{1}$	<u> </u>
28.00-28.31	44	SPT	10,15/	/21,22,7 10mm			(LAM	IBETH GRO	DUP - LC	WER MOT	TLED BEDS)		L(1.00)	- <u>····</u> ·
- -			N=	=94*								- -13.92	28.50	<u> </u>
•							Very SAN	dense dark D. Gravel is	k grey gr s rounde	avelly slight d fine to coa	tly clayey fine to medium rse black pebbles.		E	
	45						(LAM	IBETH GRO	OUP - UF	NOR FOR	MATION)	-	-	
- 29.00	45													
- - - 29 50-29 73	46	SPT(c)	12 13	3/25 25									-	- <i>0</i>
			for N=	50mm :120*								-		÷.
- 30.00	21	ES	J+	V+T								-	[(3.00) -	
30.00-30.50 30.00	46	LB PID	0.0)ppm								-	-	
-														
- - 												-	-	<u>.</u>
31.00-31.27	48	SPT(c)	10,15 for	5/25,25 60mm								-	-	<u>.</u> 2
-	40		N=	:111*			1					-16.92	31.50	
- 31.50	48						grey	fine silty slift	sandy oghtly clay	ey SAND.	grading in to very dense		-	lî xi
- -							(THA	NET SAND	FORMA	ATION)		-	-	
-													E	×···×
												-	-	×
- - -												-	-	× · · · · · · · ·
33.00-33.11	50	SPT(c)	25 for	5/50 60mm									-	×····
			N=	250*									-	×
												-	(4.60)	×
. 34 00-34 18	51	SPT(c)	15	10/50								-	-	× , , , , , , , , , , , , , , , , , , ,
			for	75mm								-	-	×
•			11-	200								-	-	× · · · · >
-														× ×>
- 35.00	22	ES	J+	V+T								-	-	× · · · · · · · · · · · · · · · · · · ·
_ 35.00-35.11 -	52	SPI(C)	for	60mm								-	-	×
35.00		PID	N= 0.0	250")ppm								Ę	Ę	×
-												-	-	Î ×
Ro	rina F	Progress	and M	/ater Of	Serva	tions		Chiselli	na / Slov	v Progress				
Deta	т:	Bore	hole (Casing	Boreh		Water			Duration	General	Rema	arks	
Date	ime	Dep	oth	Depth	(mn	n)	Depth	From	10	(hh:mm)	bgl with compacted ba	ackfill (cl	ay/sand	I) to
											base of borehole and surface.	flush co	ver insta	alled at
											7. PID = Photo ionisation	n detecto	or with 1	0.6eV
											8. Groundwater seepage	e/ strike	not obse	erved by
											driller due to addtion of	of water	tor in sit	u

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All dimensions in metres Scale: 1:50 Inspection pit + Machine dug Plant Drilled Logged Method Checked AGS ST Used: Used: By: By: By: Dando 3000 **M** Reeves **JSmith**



All dimensions in metres Scale:

JSmith

Logged By: 1:50

ST

AGS

Checked

By:

Contract:							C	Client:				Boreho	ole:	
Μοι	ınt F	Pleas	ant S	orting	g Of	fice		R	loyal	Mail Gro	up Limited			BH05
Contract Re	f:			Start:	24.1	0.16	Ground	Level:		National Gr	id Co-ordinate:	Sheet:		
	285	49		End:	07.1	1.16		14.59		E:5310	41.1 N:182418.9		5	of 5
Samp	les a	nd In-si	tu Test	s	ater	kfill & stru- itation			Des	cription of S	trata	luced evel	Depth (Thick	Material Graphic
Depth	No	Туре	Re	sults	3	Bac In: mer			200			Rec	ness)	Legend
- 36.00-36.02	53	SPT(c)	25 for N=1	5/50 12mm 1250*			Recov (WHIT	ery of off w E CHALK	/hite cha SUBGR	alky gravel of OUP)	f flint.	~21.52 ⁻ - - - -	36.10	
- 37.00-37.24	54	SPT(c)	17,8 for (N=	/25,25 60mm 111*								- - - - - - - -	- - - - - - - -	
- 38.00-38.21	55	SPT(c)	22,3 for 4 N=	/24,26 45mm 125*								- - - - - - - -	(3.90)	× 0 × 0 × 0 × 0 × 0 × 0 × 0 × 0 × 0
- 39.00-39.03	56	SPT(c)	25 for N=	5/50 17mm 882*								- - - - - - - -	- - - - - - - - -	
- 40.00	23	ES	J+	V+T			Boreho	ole comple	ted at 4) ()m bal		-25.42	40.00	
Po	ing P	rogrees	and M	ator Oh	sonia	tions		Chicollir						
Date	Time	Bore		Casing	Boreh	ole eter	Water	From	To	Duration	General	Rema	arks	
		Dej	oth I	Depth	(mn	<u>1)</u>	Depth				pressuremeter testing 9. 89.0mm Digital 3 arm pressuremeter testing 11.0m bgl; 15.5m bgl (test failed). 10. 200L of water added Thanet Sand.	weak ro conduc ; 27.3m to drill tl	ck self l ted at d bgl & 33	ooring epths of 3.0m bgl the

Drilled

M Reeves

By:

Inspection pit + Machine dug

Plant

Used:

Dando 3000

Method

Used:



All dimensions in metres Scale:

JBarron

Logged By:

1:50

ST

AGS

Checked

By:

Contract:							(Client:				Boreho	ole:	
Mo	ount	Pleas	ant Sort	ing	g Of	fice		F	Royal	Mail Gro	up Limited			BH06
Contract F	Ref:		Sta	rt: (02.1	1.16	Ground	Level:		National Gr	id Co-ordinate:	Sheet:		
	285	4 9	End	d: (07.1	1.16		14.77		E:5309	72.0 N:182400.0		1	of 5
Sa	mples a	and In-si	itu Tests		ater	ffill & tru- ation			Dee	aniation of C	trata	uced vel	Depth	Material
Depth	No	Туре	Results		Wa	Back Inst			Des	cription of S	trata	Redu	ness)	Legend
-							MADE): Aspha	lt.		- 14.62	0.15	
- -								GROUND): Concr): Liaht	ete. brown sliaht	/ Iv gravelly fine to coarse	-\14.32	-\U.25/	
- 0.50 [0.50	1	ES PID	J+V+T 0.0ppm				SAND	with a lo	w cobbl	e content.	Gravel is subangular to		-	
- 0.80 - 0.80	2	ES PID	J+V+T 0.0ppm				and sl	ate. Cobbl	es are o	f concrete a	nd brick.		(1.55)	
-												-	-	
- 1.50	3	ES	J+V+T									[
- 1.50 -		PID	0.0ppm				MADE): Dark I	prown grave	lly clayey SAND. Gravel	12.97	<u> </u>	
- 2.00	4	ES	J+V+T				is sub	angular to	roundec te	fine to coar	se with occasional brick,	 - -	-	
2.00			0.000										-	
- 2.50 - 2.50	5	ES PID	J+V+T 0.0ppm									E	-	
-	1	SPT(c)	1 2/1 2 2 4	,								F	-	
3.00	·		N=7	-								-	-	
3.00-3.45	1	LB	.I+V+T									-	- (3.50)	
- 3.50	7	ES	J+V+T										-	
- 3.80	1		1 1/1 1 1										-	
4.00	8		N=3										-	
4.00	2	PID	0.0ppm									-	-	
4.50	9	ES	J+V+T									-	-	
4.80	2		1 1/1 1 2 ²	3			- Firm li	ight group	ottlad a	rangiah brau	un CLAV with appacianal	9.47	5.30	
5.00	10	ES ES	N=7	,			subro	unded to su	ubangula	ar fine to me	dium flint.	-	-	
- 5.00		PID	0.0ppm 0.0ppm] (ALLU	IVIUM)				F	(1.20)	
- 6.00	3	D	.I+V+T				。 。					 - -	 - -	
6.00		PID	0.0ppm				•					8.27	6.50	
- 6.50-6.95	1	U	50 blows 100% recov	ery			Stiff hi silty C	igh strengtl LAY.	h dark b	rownish grey	v closely spaced fissured		-	
- 7 00	4						(LÓNI	DON CLAY	FORM	ATION)		-	-	
7.00	12	ES	J+V+T 0.0ppm				•					E	-	
7.50	5	D	0.000				•					-	-	××
Ę							• •					Ę	-	<u>x </u>
8.00-8.45	4	SPT	2,3/3,2,3,3 N=11	3			• •					F	-	xx
8.00	13	ES	J+V+T				•					Ę	-	
			0.000									ŀ	-	xx
-												Ŀ	-	<u> </u>
E	Boring F	Progress	and Water	Obs	serva	tions		Chisellir	ng / Slov	v Progress				
Date	 Time	Bore	hole Casin	g	Boreh Diame	nole eter	Water	From	То	Duration	General	Rema	arks	
02/11/16	17.24	De 15	pth Deptl	<u>1</u>	(mn 25	n) 0	Depth Drv				1. 300mm concrete core	to 250n		wed by
03/11/16	08:24	20	50 7.50		25	0	20.50				2. Borehole progressed f	n to 1.20 hrough	um ogl. machin	e
03/11/16	18:24 17:24	+ 26. + 31.	.50 22.50 .00 22.50	, (20	0	Dry Dry				excavated pit by JCB potential to encounter	to 3.0m concret	bgl due e and b	to rickwork
07/11/16	17:21	40.	.00 22.50		15	0	15.80				obstructions. 3. Clean drilling technque	es adop	ted. Ber	ntonite

Drilled

By:

Dave

Hutson

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Method

Used:

Inspection pit + Machine dug

Plant

Used:

Dando 2000



4. Borehole drilled in following diameters: 20.5m

Contract:								C	Client:				Boreho	ole:	
Mo	our	nt P	leas	ant	Sortin	g Of	fice		F	Royal I	Mail Gro	up Limited			BH06
Contract I	Ref:				Start:	02.1	1.16	Ground	Level:		National Gr	id Co-ordinate:	Sheet:		
	2	854	9		End:	07.1	1.16		14.77		E:5309	972.0 N:182400.0		2	of 5
Sa	imple	es and	d In-si	tu Te	sts	ater	ffill & tru- ation			Deee	vintion of C	trata	uced	Depth	Material
Depth	1	No 1	Гуре	F	Results	Š	Back Inst			Desc	ription of S	trata	Redu	ness)	Legend
- 9.00		6 14	D FS		J+V+T			Stiff hi	gh strengt	h dark br	ownish gre	y closely spaced fissured	-	-	××
9.00			PID	Ċ).0ppm			(LONE	DON CLAY	FORMA	TION)			- (5.70) -	xx
- 9.50-9.95 -		2	U	5 1009	5 blows % recovery			(stratu	m copiea f	rom 6.50	m trom prev	/IOUS SNEET)	-	-	
-		7	П										-	-	xx
10.00		15	ES		J+V+T									-	<u></u>
- 10.00			PID		J.oppm								-	-	<u> </u>
													-	-	
-													-	-	
11.20		8	D										-	-	
11.50-11.9	95	5	SPT	3,3	3/4,5,4,6								-	-	××
-					IN-19								-	-	
-								Stiff to	von stiff	high to y	on chigh of	angth light brown mattled	2.57	12.20	
			5					light bl	uish grey c	closely sp	baced fissur	red silty CLAY.	-	-	
- 12.50		9	D					(LAME	BETH GRC	0P - UP	PER MOTI	LED BEDS)	-	-	
- 13 00-13 4	45	3	U	6	5 blows								-	-	××
13.00		16	ES	1009	% recovery								-	-	
13.00		10	PID	Ċ).0ppm								-	-	xx
-			D										-	-	xx
14.00		11	D										-	-	xx
														-	
- 14.50		12	D										-	-	xx
								_					-	-	
- 15.00-15.4	45	6	SPT	4,	5/5,4,5,6 N=20			аВе	elow 15.0m	i bgl loca	illy light blui:	sh grey mottled red.	-	-	
-													-	-	
-													-	-	
- 16.00		13	D										-	(7.80)	
16.00 16.00		17	ES PID		J+V+T).0ppm								-	-	××
- 16.50-16.9	95	4	U	6	5 blows								-	-	
				100%	% recovery								-	-	xx
17.00		14	D										-	-	xx
													-	-	××
- 17.50		15	D										-	-	xx
-								8					F	-	
F	Borir	na Pro	oress	and	Water Oh	serva	tions		Chisellir	na / Slow	Progress				
			Bore	hole	Casing	Boreh		Water			Duration	General	Rema	arks	
Date		me	Dep	oth	Depth	(mn	1)	Depth	From	10	(hh:mm)	seal created before re	duction	in casin	g size.

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Used:	Machine dug	Used:	Dando 2000	By:	Hutson	By: JBarron	By: S	T AGS
Method	Inspection pit +	Plant		Drilled	Dave	Logged	Checked	
						All dimensions in metres	Scale: 1:	50
						bgl in 250mm; 31.0m bgl in 150mm casing and 22.5m bgl in 200 5. Monitoring well install HDPE response zone	bgl in 200mm; to 7.5m bgl in 2 mm diameter. ations: Pipe 1 between 5.5 a	40.0m 250mm - 50mm and 8.5m



Contract:						Client:		Boreho	ole:	
Μοι	int l	Pleas	ant Sortin	g O	ffice	Royal	Mail Group Limited			BH06
Contract Re	f:		Start:	02.1	1.16	Ground Level:	National Grid Co-ordinate:	Sheet:		
	285	49	End:	07.1	1.16	14.77	E:530972.0 N:182400.0		3	of 5
Samp	les a	nd In-si	itu Tests	ter	fill & rru- ation			lced /el	Depth	Material
Depth	No	Туре	Results	Ň	Back	Des	cription of Strata	Redu	ness)	Legend
18.00-18.45	7	SPT	5,5/7,8,9,10 N=34			Stiff to very stiff high to	very high strength light brown mottled	F	-	<u>×</u> ×
-						(LAMBETH GROUP - U	PPER MOTTLED BEDS)	Ę	-	<u>x </u>
-						(stratum copied from 12.	20m from previous sneet)	Ę	-	xx
- - 19.00	16	D						F	-	xx
19.00 19.00	18	ES PID	J+V+T 0.0ppm					E	-	xx
19.50-19.95	5	U	75 blows					E	-	xx
-			100% recovery					-5.23	20.00	xx
20.00	17 19	D ES	J+V+T			Stiff dark grey and light (grey silty CLAY. AMINATED BEDS)	-	-	xx
	10	D						F	-	xx
20.50	19	D				At 20.6 m bgl very tl	nin bed of light grey clayey silt.	Ę	(1.50)	xx
-						8		F	-	xx
								-6.73	21.50	<u>x </u>
-						Very stiff very high str	rength light bluish grey and reddish	-	-	xx — x
-		_				(LAMBETH GROUP - LO	OWER MOTTLED BEDS)	Ē	-	xx
- 22.00	20	D						E	-	××
- 22.50-22.95	6	U	75 blows			8		E	-	xx
-			100% recovery					E	-	xx
23.00	21	D							-	xx
-						8		E	- (3.70) [xx
- 23.50	22	D						E	-	xx
-	8	SPT	56/7679					F	-	xx
	Ũ	0.1	N=29			8		E	-	xx
-								E	-	xx
-								Ę	-	xx
- 25.00 - 25.00	20 23	ES D	J+V+T			Vary atiff dark groop	mottled erangish brown condu ailtu	-10.43	25.20	×
25.00	_	PID	0.0ppm			CLAY. Sand is fine to m	edium.	Ē	-	
-						(LAMBETH GROUP - LO	JWER MOTILED BEDS)	Ę	-	
- 26.00	24	D						F	-	
-								Ę	(2.30)	
26.50	25	D				3		Ę	-	
<u> </u>						8		-	-	× × ×

D	E	Boring Pro	gress and	Water C	bservation	S	Chisell	ing / Slow	Progress	Conorol	Domorko
Ē	Data	Timo	Borehole	Casing	Borehole	Water	From	То	Duration	General	Remarks
, ogd	Dale	Time	Depth	Depth	(mm)	Depth	FIOIII	10	(hh:mm)	bal	
шен си, то стодиоте к										 Borehole backfilled w filter between 5.5m to from 5.0m to 5.5m bg seal/grouting betweer to 5.0m bgl; 8.5m to 1 22.50m bgl with comp 	ith 3mm shingle gravel 8.5m bgl; sand filter I & bentonite n 0.3 and 1.3mbg; 4.0m 2.5m bgl & 21.50m to pacted backfill
										All dimensions in metres	Scale: 1:50
	Method Used:	Inspec Mach	tion pit + ine dua	Pla	nt ed: D a	ando 200	00	Drilled By:	Dave Hutson	Logged By: JBarron	Checked ST AGS

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Mount Pleasant Sorting Office Royal Mail Group Limited Bł Contract Ref: Start: 02.11.16 Ground Level: National Grid Co-ordinate: Sheet: 28549 End: 07.11.16 Id.77 E:530972.0 N:182400.0 4 of Samples and In-situ Tests product product Description of Strata product Depth Md Type Depth Md Type Depth Md Type Results product Pro		ole:	Boreho	Client:	Client							Contract:
Contract Ref: Start: 02.11.16 Ground Level: National Grid Co-ordinate: Sheet: 28549 End: 07.11.16 14.77 E:530972.0 N:182400.0 4 of Samples and In-situ Tests in the second seco	3H06	I		Royal Mail Group Limited		Mount Pleasant Sorting Office						
28549 End: 07.11.16 14.77 E:530972.0 N:182400.0 4 of Samples and In-situ Tests is is <th></th> <th></th> <th>Sheet:</th> <th>ound Level: National Grid Co-ordinate:</th> <th>Ground Leve</th> <th>1.16</th> <th>02.1</th> <th>Start:</th> <th></th> <th></th> <th>f:</th> <th>Contract Ret</th>			Sheet:	ound Level: National Grid Co-ordinate:	Ground Leve	1.16	02.1	Start:			f:	Contract Ret
Samples and In-situ Testsin the second of the secon	of 5	4		14.77 E:530972.0 N:182400.0	14	1.16	07.1	End:		49	285	
DepthNoTypeResultsImage: Section of StrateDescription of StrateImage: Section of Strate27.00-27.457U100 blows 100% recovery100% recovery-12.7327.5027.5026DVery stiff dark grey silty CLAY with very closely to closely spaced thin laminations and partings of light grey silty fine sand. (LAMBETH GROUP - UPNOR FORMATION)-12.7327.5028.0027D(LAMBETH GROUP - UPNOR FORMATION)-14.2329.0028.00-29.503LB SPT(c)15,10/50 for 50mm N=300*Dark grey very gravelly sandy CLAY. Gravel is rounded to flat fine to coarse of black pebbles. (LAMBETH GROUP - UPNOR FORMATION)(0.50)29.0028DN=300*Very dense grey fine silty slightly clayey SAND. (THANET SAND FORMATION)-14.7329.50	Materia	Depth	ced el			ill & 'u- ation	ter	Tests	situ Tes	and In-s	oles a	Samp
27.00-27.45 7 U 100 blows 100% recovery	Graph Legen	(Thick ness)	Lev	Description of Strata		Backf Instr nenta	Na	Results	e R	Туре	No	Depth
27.50 26 D -12.73 27.50 -14.23 29.00 -14.23 29.00 -14.23 29.00 -14.23 29.00 -14.23 29.00 -14.23 29.00 -14.23 29	×							100 blows	10	U	7	27.00-27.45
27.5026DVery stiff dark grey silty CLAY with very closely to closely spaced thin laminations and partings of light grey silty fine sand. (LAMBETH GROUP - UPNOR FORMATION)Image: Classical class	<u>x.</u>	27.50	- 12.73		*			J0% recovery	100%			-
28.00 27 D 28.00 27 D 28.50-28.94 9 SPT 8,10/11,12,15,12 for 60mm N=53* (LAMBETH GROUP - UPNOR FORMATION) 29.00-29.50 3 LB 29.00-29.15 15,10/50 for 50mm N=300* Dark grey very gravelly sandy CLAY. Gravel is rounded to flat fine to coarse of black pebbles. (0.50) 29.00 28 D Very dense grey fine silty slightly clayey SAND. (THANET SAND FORMATION) -14.73 29.50	<u> </u>	-	-	ery stiff dark grey silty CLAY with very closely to closely paced thin laminations and partings of light grey silty fine	Very stiff of spaced this					D	26	27.50
28.00 27 D (1.50) (1.50) 28.50-28.94 9 SPT 8,10/11,12,15,12 for 60mm N=53* (1.50) (1.50) 29.00-29.50 3 LB (1.50) (1.50) (1.50) 29.00-29.15 10 SPT(c) 15,10/50 for 50mm N=300* Dark grey very gravelly sandy CLAY. Gravel is rounded to flat fine to coarse of black pebbles. (0.50) (0.50) 29.00 28 D Very dense grey fine silty slightly clayey SAND. (THANET SAND FORMATION) -14.73 29.50	×	-	-	and.	sand.						07	
28.50-28.94 9 SPT 8,10/11,12,15,12 for 60mm N=53* 10 SPT 8,10/11,12,15,12 for 60mm N=53* 10 Dark grey very gravelly sandy CLAY. Gravel is rounded to flat fine to coarse of black pebbles. (LAMBETH GROUP - UPNOR FORMATION) 10.50 10 <td><u>× </u></td> <td>(1.50)</td> <td>-</td> <td>ANIBETH GROUP - UPNOR FORMATION)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>27</td> <td>- 28.00</td>	<u>× </u>	(1.50)	-	ANIBETH GROUP - UPNOR FORMATION)							27	- 28.00
29.00-29.50 3 LB 15,10/50 29.00-29.15 10 SPT(c) 15,10/50 29.00 28 D Dark grey very gravelly sandy CLAY. Gravel is rounded to flat fine to coarse of black pebbles. (LAMBETH GROUP - UPNOR FORMATION) -14.73 -0.50 Very dense grey fine silty slightly clayey SAND. (THANET SAND FORMATION)	×	-	-				2	10/11.12.15.12	8.10/1	SPT	9	- 28.50-28.94
29.00-29.50 3 LB 14.23 29.00	×	-	14.00		*			for 60mm N=53*	fo			[
29.00-29.15 10 SPT(c) 15,10/50 for 50mm N=300* fine to coarse of black pebbles. (LAMBETH GROUP - UPNOR FORMATION) -14.73 29.50 29.00 28 D Very dense grey fine silty slightly clayey SAND. (THANET SAND FORMATION) - -	<u> </u>	29.00	- 14.23	ark grey very gravelly sandy CLAY. Gravel is rounded to flat	Dark grey v					LB	3	- 29.00-29.50
29.00 28 D N=300* Very dense grey fine silty slightly clayey SAND. (THANET SAND FORMATION) Image: Comparison of the silty slightly clayey SAND.	<u> </u>	29.50	-14.73	ne to coarse of black pebbles. _AMBETH GROUP - UPNOR FORMATION)	fine to coar (LAMBETH			15,10/50 for 50mm	c) 15 fo	SPT(c)	10	29.00-29.15
t	× · · ·	-	-	ery dense grey fine silty slightly clayey SAND.	Very dense			N=300*		D	28	29.00
	× . × .			THANET SAND FORMATION)								-
- 30.00-30.13 11 SPT 25/50	×		-					25/50 for 75mm	fo	SPT	11	- 30.00-30.13
21 ES J+V+T	×	-	-					N=200* J+V+T	N J	ES	21	30.00
L 30.00 PID 0.0ppm	×	-	-					0.0ppm	0	PID		_ 30.00 -
F 31.00 29 D F F X	×	-	-							D	29	- 31.00
	× · · · × · ·	-	-									-
31.50-31.65 12 SPT 15,10/50	×							15,10/50	15 fo	SPT	12	31.50-31.65
	× ··×	-	-		*			N=300*	N			-
	× · · · ·		-									-
	×	(0.80)	-								30	32 50
	×.:	-									50	- 52.50
		-	-					25/50	:	SPT	13	- 33.00-33.15
[for 75mm	* 	-	-					for 75mm N=200*	fo N			-
	× · · ·×. ·		-									-
	*	-	-									-
- 34.00 31 D	× 	-	-							D	31	- 34.00
	ו••• • ו•	-						25/50		ODT	14	24 50 24 62
54:00-34:03 14 3F1 20/20	×	-	-					20/00 for 50mm	fo	571	14	- 34.30-34.03 - -
L N=300	×	[]	- -					N=300" J+V+T		ES	22	- 35.00
1 35.00 PID 0.0ppm -20.53 35.30 2 2 Recovery of off white chalky GRAVEL of subangular fine to be an analysis. -20.53 35.30 2	× · · · · · · · · · · · · · · · · · · ·	35.30	-20.53	ecovery of off white chalky GRAVEL of subangular fine to	Recovery			0.0ppm	0	PID		35.00
as.50 32 D Coarse flint.	γU	-					1		1	1	1	
	x C x C	-	-	oarse flint. MHITE CHALK SUBCEOUE)	coarse flint					D	32	35.50

Boring Progress and Water Observations							ing / Slow	Progress	Conoral Domarka			
Date	Timo	Borehole	Casing	Borehole	Water	Erom	То	Duration	General Remarks			
Dale	Time	Depth	Depth	(mm)	Depth	FIOIII	10	(hh:mm)	(clay/sand) between 1 3m to 4 0m bol: 12 50m			
									 to 21.50m bgl & 22.50m bgl to base of borehole with flush cover installed at surface. 7. PID = Photo ionisation detector with 10.6eV bulb 8. Small rate of groundwater seepage observed by driller at 20.50m bgl; sealed out at 22.5m 			
									All dimensions in metres Scale: 1:50			
Method Used:	Inspec Mach	tion pit + ine dug	Plar	nt d: Da	ando 200	0	Drilled By:	Dave Hutson	Logged By: JBarron By: ST			

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All dimensions in metres Scale:

JBarron

Logged

By:

1:50

ST

AGS

Checked

By:

Contract:							(Client:				Boreho	ole:	
Mo	ount	Pleas	ant s	Sortin	g Of	fice		R	Royal I	Mail Gro	up Limited			BH06
Contract F	Ref:			Start:	02.1 [°]	1.16	Ground	Level:		National Gr	id Co-ordinate:	Sheet:		
	285	549		End:	07.1 [°]	1.16		14.77		E:5309	72.0 N:182400.0		5	of 5
Sar	nples :	and In-s	itu Tes	sts esults	Water	ackfill & Instru- entation			Desc	ription of S	trata	educed Level	Depth (Thick	Material Graphic
- 36.00-36.1	8 15	SPT(c)	15	5,10/50			Recov	very of off	white ch	alky GRAV	EL of subangular fine to	<u>م</u> ّ -	- ness)	
- - - - -			for N	r 75mm I=200*			coarse (WHIT <i>(stratu</i>	e flint. ΓΕ CHALK Im copied fi	SUBGR rom 35.3	OUP) 0m from pre	evious sheet)	-	-	
- 37.00	33	D											 - - -	
- 37.50-37.6 -	5 16	SPT(c)	2 for N	25/50 r 75mm I=200*								-	(4.70) 	
	24											-	-	
- 38.50 - - - -	34	D										- - - -	- - - -	
- - - 39.50-39.6	8 17	SPT(c)	15 for	5,10/50 r 70mm								-	- - - -	
			N	I=214*								-25.23	40.00	° ° v
	35	PID	0.	.0ppm						.om by.				
E	oring l	Progres	s and V	Water Ob	serva	tions		Chisellir	ng / Slow	Progress	General	Rem	arke	
Date	Time	Bore De	ehole pth	Casing Depth	Boreh Diame (mn	iole eter 1)	Water Depth	From	То	Duration (hh:mm)	bgl. 9. 89.0mm Digital 3 arm pressuremeter testing 10.5m bgl; 20.9m bgl; to stiff strata) & 31.5m 10. 200L of water added Thanet Sand.	weak ro conduc 25.6m bgl. to drill t	ck self l ted at d bgl (tesi	poring epths of t fail due the

Drilled

By:

Dave

Hutson

Inspection pit + Machine dug

Method

Used:

Plant

Used:

Dando 2000



300mm concrete core to 200mm followed by hand dug inspection pit to 1.20m bgl.
 Clean drilling technques adopted. Bentonite seal created before reduction in casing size.
 Borehole drilled in following diameters: 6.5m bgl in 200mm; 10.0m bgl in 150mm casing to 6.5m bgl in 200mm and 9.0m bgl in 150mm diameter.
 Monitoring well installations: Pipe 1 - 50mm HDPE response zone between 5.0m and 8.5m bgl.
 Borehole backfilled with 3mm response

1:50

ST

Checked

By:

AGS

All dimensions in metres Scale:

JBarron

Logged

By:

Contract:								Client:				Boreho	ole:	
Mo	ount	Pleas	ant S	ortin	g Of	ffice)	F	Royal	Mail Gro	up Limited			BH07
Contract F	Ref:			Start:	29.0	9.16	Grou	nd Level:		National Gri	id Co-ordinate:	Sheet:		
	285	649		End:	30.0	9.16		14.73		E:5309	63.9 N:182426.6		1	of 2
Sar	nples a	and In-si	itu Tests	;	ter	fill & ru- tion			_			iced 'el	Depth	Material
Depth	No	Туре	Res	ults	Na	Back			Desc	cription of St	trata	Sedu	ness)	Legend
0.00-0.50	1	В					MAI	DE GROUNE	D: Aspha	lt.		14.53	0.20	
-							MAI	DE GROUN	D: Brown	nish grey sil	ty fine to coarse SAND	-	-	\boxtimes
0.50	1	ES	J+∨	/+T			sub	rounded to s	ubangula	ar fine to coa	rse of flint, concrete and	-	(1.00)	
0.50	2	PID	0.0p	opm			Dric	K. CODDIES a	are of cor	icrete and br	ICK.	-	-	
- 1.00 - 1.00	2	ES PID	J+∨ 0.0p	/+T maa								13.53	1.20	
- 1.10	1		3 4/4	546			and	GRAVEL	D: Greyis with a	low cobble	e content. Gravel is			
1.20-1.00			N=	:19			sub bric	rounded to s	ubangula	ar fine to coa	rise of flint, concrete and	-	-	
_ 1.20-1.70 _ 1.50	3	ES	J+V	/+T			5110						[
- 1.50 [1.90	2	D PID	0.0p	opm								-		
- 2.00-2.45 -	2	SPT(c)	3,3/5, N=	,4,5,6 :20								-	-	
2.00-2.50	4	B ES	J+∨	/+T								-		
2.00	5	PID ES	0.0p	opm /+T								-	(3.80)	\boxtimes
2.50	3	PID	0.1p	opm								-	-	\boxtimes
3.00-3.45	3	SPT(c)	5,5/6,7	7,9,10								-		
3.00-3.50	5	В	IN=	·32										
_3.00 - 3.00	6	PID	0.0p	/+I opm				. Below 4.0m	n bgl darl	k brown and	occasional fragments of	-	-	
- 3.50 - 3.50	7	ES PID	J+∨ 0.0p	/+T opm			cha	rcoal.	•		-	-		
- 3.80 4.00-4.45	4	D SPT(c)	1,2/2,	1.2.3	ΙŢ		· .					-		
4 00-4 50	6	B	N=	=8	1		·. · ·					9.73	5.00	
- 4.00	8	ES	J+V	/+T	-		MAI		D: Soft da	ark brown ve	ery sandy slightly gravelly	-		
4.50	9	ES	J+V	/+T		ΝĒ.	siity	dium flint and	ravel is fine bric	subrounded k.	to subangular fine to	-	(1.00)	
4.50 4.80	5	D	0.00	, –								Ę		
- 4.80 _5.00-5.45	10 5	ES SPT(c)	J+V 0,1	/+T /,1		記書	• •					- 8.73	6.00	
5.00-5.50	7	В	N=	=1			Soft	: dark greyish UVIUM)	n brown s	ilty CLAY.		-	(0.50)	
- 5.00 - 5.20	11	PID ES	0.0p J+V	opm /+T					hist 1	a side l		8.23	6.50	xx
- 6.00 - 6.20	6 12	D ES	.1+\/	/+T			. ⊢irn •: CLA	n to stiff very	nigh stre	ngth brown	mottled light greyish blue			<u> </u>
6.20	6	PID	0.0p	opm			LO	NDON CLAY	form/	TION)		-	-	
	10		N=	:20 :20			。 。						Ę	<u> </u> :
7 50	13		J+V	/+1			°,					-		[
7.70	14	ES	J+∨	/+T			•] •]					- -	ŀ	<u> </u>
_ 7.70 - 8.00-8.45	1	PID U	0.1p 60 bl	opm Iows									[-(3.30)	<u> </u>
-		_	100% re	ecovery			。 。						È	
8.50	8	D				.•. ⊟ •	<u>`</u>					-	-	<u> </u>
8.70	70 15 ES J+V+T												ļ	
L			1		1							L	L	
В	oring F	Progress	s and Wa	ater Ob	serva	tions		Chiselli	ng / Slow	/ Progress	General	Rem	arke	
Date	Time	Bore	hole C	asing	Diam	ieter	Wate	From	То	Duration (hh:mm)	Ceneral			

GINT LIBRARY V8. 06.GLB LibVersion: V8. 06. 014 PŋVersion: V8. 06 - Core+Logs - 002 | Log CABLE PERCUSSION LOG - A4P | 28549_MOUNT PLEASANT.GPJ - V8. 06. RSK Environment Lid, 18 Frogmore Road, Hemel Hempstead, Hertfördshire, HP3 9RT. Tei: 01442 437500, Fax: 01442 437550, Web: www.rsk.co.uk, | 11/01/17 - 14:00 | CB1 |

30/09/16

29/09/16

30/09/16

30/09/16

30/09/16

Method

Used:

11:48

15:49

06:50

07:50

10:51

Depth

1.20

2.00

2.00

5.00

10.00

Inspection pit +

Hand excavation

Depth

2.00

2.00

4.50

9.00

Plant

Used:

(mm)

300

200

200

200

200

Depth

Dry

Dry

5.00

Dry

Dando 2000

Drilled

By:

Dave

Hutson



All dimensions in metres Scale:

JBarron

Logged By: 1:50

ST

Checked

By:

AGS

Contract:									Client:				Boreho	ole:	
M	ount	PI	eas	ant	Sortin	g Of	fice		F	Royal M	lail Gro	up Limited			BH07
Contract	Ref:				Start:	29.0	9.16	Groun	d Level:	N	lational Gr	id Co-ordinate:	Sheet:		
	28	549	9		End:	30.0	9.16		14.73		E:5309	63.9 N:182426.6		2	of 2
Sa	amples	and	l In-si	tu Te	sts	ater	fill & rru- ation			_			lced /el	Depth	Material
Depth	No	Т	ype	R	esults	Š	Back Inst ment			Descri	iption of S	trata	Redu	ness)	Legend
9.00	9		D					Firm	to stiff very	high stren	gth brown	mottled light greyish blue	-	-	
								(LON	DON CLAY	FORMAT	ION)				
- 9.50-9.95 -	7		SPT	3,3	8/4,5,5,5 N=19			(strai	um copied i	rom 6.50n	n trom prev	/lous sneet)	4.93	9.80	
9.70 9.70	16	1	ES PID	0	J+V+T .0ppm			Stiff I ∖(LAN	light greyish 1BETH GRC	blue mottl UP - UPP	ed red CL	AY. TLED BEDS) /	4.73	10.00	
_ 10.00 _	10		D					Bore	hole comple	eted at 10.0) m bgl.	, , , , , , , , , , , , , , , , , , , ,	-		
-													-	-	
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-													E	-	
1	Boring	Pro	aress	and	Water Oh	serva	tions		Chiselli	na / Slow F	Progress				
			Borel	hole	Casing	Boreh		Water			Duration	General	Rema	arks	
Date	IIM	e	Dep	oth	Depth	(mn	n)	Depth		10	(hh:mm)	to 8.5m bgl; sand filter from 4.5	5m to 5.0m	bgl & ben	tonite
												 seal/grouting between 0.3 and borehole. 7 PID = Photo ionisation datasta 	4.5mbg & 8	8.5m bgl to	o base of
												8. Groundwater strike observed b 4.7m bgl after 20 mins and sea	by driller at aled out at 6	5.0m bgl r 5.5m bgl.	ising to

Drilled

By:

Dave

Hutson

Inspection pit + Hand excavation

Plant

Used:

Dando 2000

Method

Used:



Mount Pleasant Sorting Office Royal Mail Group Limited E Contract Ref: Start: 13.10.16 Ground Level: National Grid Co-ordinate: Sheet: 28549 End: 18.10.16 18.43 E:530951.6 N:182435.5 1 o Samples and In-situ Tests Type Results Type Depth No Type Results Depth Description of Strata Depth Nales and GRAVEL with a medium cobble content. Gravel is subrounded to subangular fine to coarse of flint, concrete and brick. NADE GROUND: Greyish brown clayey gravelly fine to coarse of flint, concrete and brick. NADE GROUND: Greyish brown clayey gravelly fine to coarse of flint, concrete and brick. NADE GROUND: Greyish brown clayey gravelly fine to coarse of flint, concrete and brick. E 1.00 2 ES J+V+T MADE GROUND: Greyish brown clayey gravelly fine to coarse of flint, concrete and brick. E 1.00 2 ES J+V+T MADE GROUND: Greyish brown clayey gravelly fine to coarse of flint, concrete and brick. E 1.00 2 ES J+V+T E Subrounded to subangular fine to coarse of flint, concrete and brick. E 1.00 2 ES J+V+T E Subrounded to subangular fine to coarse of	BH08
Contract Ref:Start:13.10.16Ground Level:National Grid Co-ordinate:Sheet:28549End:18.10.1618.43E:530951.6 N:182435.510Samples and In-situ Testsin the second s	5
28549 End: 18.10.16 18.43 E:530951.6 N:182435.5 1 o Samples and In-situ Tests Image: Samples and In-	f 5
Samples and In-situ Tests by Image: Samples and In-situ Tests by Image: Samples and In-situ Tests by Image: Samples and In-situ Tests Depth Description of Strata Depth Depth Image: Samples and In-situ Tests Depth Image: Samples and In-situ Tests Depth Description of Strata Depth Depth Image: Samples and In-situ Tests Depth Depth Image: Samples and In-situ Tests Image: Sample	
Depth No Type Results Image: Section of Strata Image: Section of Strata <thimage: of="" section="" strata<="" th=""> Image: Section</thimage:>	Material Graphic
MADE GROUND: Decorative block paving. 18.35 0.08 MADE GROUND: Brownish grey silty fine to coarse SAND 18.23 0.20 0.50 1 ES J+V+T 0.50 PID 0.2ppm 18.25 0.20 1.00 2 ES J+V+T 10.3ppm 1.00 2 ES J+V+T MADE GROUND: Greyish brown clayey gravelly fine to coarse SAND with a medium cobble content. Gravel is subrounded to subangular fine to coarse of flint, concrete and brick. 1.00 PID 0.3ppm 0.3ppm 1.40.185 1 SPT(a) 2.3/4.5.5.4	Legend
1 ES J+V+T 0.50 1 ES J+V+T 0.50 PID 0.2ppm 1.00 2 ES J+V+T 1.00 PID 0.3ppm 1.40.185 1 SPT(a) 2.3/4.5.5.4	XXX
ADE GROUND: Greyish brown clayey gravelly fine to 1.00 2 ES J+V+T 1.00 0.3ppm 0.3ppm 140.185 1 SPT(a) 2.3/4.5.5.4 MADE GROUND: Greyish brown clayey gravelly fine to brick. Cobbles are of concrete and brick.	
1 40 1 95 1 SPT(0) 2 2/4 5 5 4 I I I I I I I I I I Cobbles are of concrete and brick.	
N=18	>>>>
1.40-1.90 1 B -	
2.00 1 D 2.00-2.45 2 SPT(c) 1,1/1,1,1 N=3	
2.00-2.50 2 B 2.00 4 ES J+V+T 2.00 PID 0.2ppm	
2.50 5 ES J+V+T 2.50 PID 0.0ppm Below 3.0m bgl clayey to very clayey. [6.20]	>>>>
$\begin{bmatrix} 2.00 \\ 3.00-3.45 \\ \end{bmatrix} \xrightarrow{2} BT(c) = 1,1/1,1,1 \\ N=3 \\ N=3 \\ H = 1 \\ $	
- 3.00-3.50 3 B - 3.00 6 ES J+V+T	
3.50 7 ES J+V+T Image: second	
$\begin{bmatrix} 3.70 \\ 4.00-4.45 \\ 1 \end{bmatrix} \begin{pmatrix} 3 \\ 4 \\ SPT(c) \\ N=9 \end{bmatrix} \begin{bmatrix} 1.2/2, 1, 2, 4 \\ N=9 \end{bmatrix} \begin{bmatrix} 1.2/2, 1, 2, 4 \\ N=9 \end{bmatrix}$	
4.00-4.50 4 B 4.00 8 ES J+V+T 4.00 9 0.000mm	
4.50 9 ES J+V+T 4.50 PID 0.3ppm	
$\begin{bmatrix} 4.80 \\ 5.00-5.45 \end{bmatrix} = \begin{bmatrix} 4 \\ 5 \end{bmatrix} \begin{bmatrix} D \\ 5PT(c) \\ 1,1/1,1 \\ D=2 \end{bmatrix}$	
5.00 10 ES J+V+T ☐ ↓ ↓ 5.00-5.50 5 B	>>>>
5.00 PID 0.0ppm 12.03 6.40 5.50 11 ES J+V+T MADE GROUND: Recovery of wood fragments up to 200mm	>>>>
$\begin{bmatrix} 3.30 \\ -6.00 \\ -6.00 \end{bmatrix}$ $\begin{bmatrix} 5 \\ D \\ -6.00 \end{bmatrix}$ $\begin{bmatrix} 5 \\ -6.00 \\ -5 \end{bmatrix}$ $\begin{bmatrix} 5 \\ -6.00 \\ -5 \end{bmatrix}$ $\begin{bmatrix} -6.00 \\ -6.00 \\ -6.00 \end{bmatrix}$ $\begin{bmatrix} 5 \\ -6.00 \\ -6.00 \end{bmatrix}$ $\begin{bmatrix} 5 \\ -6.00 \\ -6.00 \end{bmatrix}$ $\begin{bmatrix} -6.00 \\ -6.00 \\ -6.00 \\ -6.00 \end{bmatrix}$ $\begin{bmatrix} -6.00 \\ -6.00$	
F6.00 12 ES J+V+T I <thi< th=""> I <thi< th=""> I</thi<></thi<>	
6.00 6.50-6.95 6 SPT(c) 0.1ppm 10.93 7.50 6.50-6.95 6.50-6.95 7.50 0.11/1/1,1 1.11/1,1 MADE GROUND: Medium dense vellowish brown gravelly 6.50 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0	>>>>
6.50-7.00 6 B fine to coarse SAND. Gravel is rounded to subangular fine to coarse fint. (Possibly reworked material)	
$\begin{bmatrix} 7.00 \\ 7.50 \\ 6 \\ D \\ 7.50 \end{bmatrix} = \begin{bmatrix} 0.1ppm \\ 0.1ppm \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ $	>>>>
$\begin{bmatrix} 7.50 \\ 7.50 \\ 8.00-8.45 \\ 7 \\ SPT(c) \\ 0.1ppm \\ 1/1 \\ 1 \\ 1/1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1$	
8.00 13 ES J+V+T	>>>>

Þ	E	Boring Pro	ogress and	Wate	er Obs	servations		Chisell	ing / Slow	Progress	Conorol	Jomor		
2	Date	Time	Borehole	Casi	ing	Borehole Diameter	Water	Erom	То	Duration	General	Remai	KS	
, ad	Dale	TITLE	Depth	Dep	oth	(mm)	Depth	110111	10	(hh:mm)	1 Hand dug inspection n	it to 1 20m	bal	
É D	13/10/16	10:00	8.50	8.0	0	250	8.50				3 Clean drilling technque	es adopted	l Bentoi	nite
2	13/10/16	14:00	10.5	50	250	13.00				seal created before re	duction in	casing s	size.	
5°	13/10/16	(10/16 18:00 21.00 (10/16 10:00 24.80				200	-				4. Borehole drilled in follo	owing diam	neters: 1	2.5m
2	14/10/16	0/16 10:00 24.80 2			00	200	24.80				bgl in 250mm; 26.0m b	ogl in 200n	nm; 40m	ı bgl
Ê	14/10/16	10/16 10:15 24.80 10/16 10:15 34.00		26.5	50	150					in 150mm casing to 12	2.0m bgl in	250mm	and
	17/10/16	14:00	40.00	26.5	50	150	Dry				26.5m bgi in 200mm a	lameter.		
5											All dimensions in metres	Scale:	1.20	
2	Method	Inspec	tion pit +	- 1	Plant			-	Drilled	Dave	Logged	Checked		
	Used:	Cable p	ercussio	n ⁱ	Used	: Da	ndo 200	0	By:	Hutson	By: JBarron	By:	ST	AGS

GINT LIBRARY_V8_06.GLB LibVersion: v8_06_014 PŋVersion: v8_06 - Core+Logs - 002 | Log CABLE PERCUSSION LOG - A4P | 28549_MOUNT PLEASANT.GPJ - v8_06. RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tei: 01442 437500, Fax: 01442 437550, Web: www.rsk.co.uk, | 11/01/17 - 14:00 | CB1 |



Μοι							1	Silent.					Dorenc	JC.	
-	unt	Pleas	ant S	ortin	g Of	ffice		F	Royal N	Mail Gro	up Limit	ted			BH08
Contract Re	ef:			Start:	13.1	0.16	Ground	Level:		National Gr	id Co-ordina	ate:	Sheet:		
	285	4 9		End:	18.1	0.16		18.43		E:5309	51.6 N: 1	82435.5		2	of 5
Sam Depth	ples a	and In-si	itu Tests Res	ults	Water	3ackfill & Instru-			Desc	ription of S	trata		teduced Level	Depth (Thick	Mater Grapi Lege
8.00-8.50 8.50 8.50 9.00 9.00 9.00 9.50-9.95	7 14 7 14 8 15	B PID ES PID D ES PID SPT(c) ES	0.2¢ J+V 0.0¢ J+V 0.1¢ 4,4/6, N=	opm /+T opm /+T opm ,7,7,7 :27 /+T	<u> </u>		MADE and G mediu gravel	E GROUNI BRAVEL. Im of mixed I sized frag	D: Mediur Gravel is d lithologi ments of	m dense da s subrounde es, pebbles red brick.	ark grey ver ed to subar and coarse	y silty SAND ngular fine to a sand to fine		(1.50)	
9.50-10.00 9.50 10.00 10.00 10.50 10.50 10.50 11.00-11.45	8 15 8 16 9	B PID ES PID D ES PID SPT	0.1 J+V 0.2 J+V 0.0 1,2/2, N=	opm /+T opm /+T opm ,1,2,1 =6			Tirm g (ALLU	jrey silty Cl IVIUM)	LAY.				7.93 - - - - - - - - - - - - - - - - - - -	(2.50)	× × × × × × ×
12.00	9	D											- - - -	- - -	
12.50-12.95	1	U	60 b 100% re	lows ecovery	2		•								
13.00 13.00 13.00	10 16	D ES PID	J+\ 0.2p	/+T opm	<u> </u>		Mediu sandy roundo (HACI	m dense t GRAVEL ed to suba KNEY GRA	o dense Sand ngular fin AVEL)	yellowish b is medium e to coarse	rown fine to to coarse flint.	o coarse very e. Gravel is	<u>- 5.43</u> - - - - - -	- <u>13.00</u> - - - - - -	0 . 0 . 0 . 0 . 0 . 0 . 0 . 0 . 0 . 0 .
14.00-14.50 14.00-14.45 14.00 14.00	9 10 17	B SPT(c) ES PID	3,4/4, N= J+∖ 0.0p	,6,6,7 23 /+T opm			9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9							- - - - - - - - - - - - - - - -	0.0.000.0.0.0.0.0.0.0.
15.50-16.00 15.50-15.95 16.00 16.00	10 11 17	B SPT(c) ES PID	4,5/6, N= J+\ 0.0p	,5,6,7 :24 /+T opm										(6.00)	0 00 0 0 00 00 00 00 00 00 00 00 00 00
17.00-17.50 17.00-17.45 17.00 17.00	11 12 18	B SPT(c) ES PID	2,2/5, N= J+\ 0.0p	,6,7,7 :25 /+T opm			sandy Below clayey	below 17.0 silty claye 17.00m s GRAVEL.	0m sand y GRAVE and conte	and conter L. ent decreas	nd decrease es. becomir	es. Becoming ng sandy silty	- - - - - - - - - -	- - - - - - - - - - - - -	$\cdot 0.0.00.00$
Во	ring F	Progress	and Wa	ater Ob	serva	tions	Moto-	Chiselli	ng / Slow	Progress	(General I	Rema	arks	
Date	Time	De	pth D	asing Depth	Diam (mi	n)	Depth	From	То	(hh:mm)	5. Monitor HDPE r 10.5m t zone 12 6. Borehol filter be	ing well installa esponse zone ogl. Pipe 2 - 33 2.5m to 19.0m l le backfilled wit tween 4.0m to pal: cond filtor f	ations: P betweer mm PV(bgl. th 3mm 10.5m b	ipe 1 - 5 n 4.0m a C respons shingle igl & 12.	50mm and nse grave .5m tc
											19.000	lyi, sanu iiitei i	10111 3.5	m to 4.0	nii by
											All dimensi	ons in metres	Scale:	m to 4.0 1:50))

5	I	Boring Pro	gress and	Water C	bservation	6	Chisell	ing / Slow	Progress	Conorol	Domarka
<u>,</u>	Date	Time	Borehole	Casing	Borehole Diameter	Water	From	То	Duration (hh:mm)	General	Remarks
				Берш	(inm)	Deptit				 Monitoring well install. HDPE response zone 10.5m bgl. Pipe 2 - 33 zone 12.5m to 19.0m Borehole backfilled wi filter between 4.0m to 19.0m bgl; sand filter 	ations: Pipe 1 - 50mm between 4.0m and 3mm PVC response bgl. ith 3mm shingle gravel 10.5m bgl & 12.5m to from 3.5m to 4.0m bgl &
										All dimensions in metres	Scale: 1:50
	Method Used:	Aethod Inspection pit +			nt ed: Da	ando 200	0	Drilled By:	Dave Hutson	Logged By: JBarron	Checked By: ST AGS



Contract:							Client:				Boreho	le:	
Mou	nt l	Pleas	ant Sortin	ig Of	ffice		Roy	al	Mail Group Limited				BH08
Contract Ref	:		Start:	13.1	0.16	Groun	d Level:		National Grid Co-ordinate:		Sheet:		
2	285	49	End:	18.1	0.16		18.43		E:530951.6 N:18243	5.5		3	of 5
Samp	les a	nd In-si	tu Tests	ater	fill & rru- ation		-				lced /el	Depth	Material
Depth	No	Туре	Results	Na	Back		L	Jeso	cription of Strata		Redu	(Thick ness)	Legend
- 18.50-19.00 18.50-18.95	12 13	B SPT(c)	5,5/7,7,7,9			Med sanc roun (HA0 <i>(stra</i>	ium dense to de dy GRAVEL. S ded to subangula CKNEY GRAVEL <i>tum copied from</i>	nse and ar fir .) 13.0	yellowish brown fine to coarse is medium to coarse. Grav ne to coarse flint. 20m from previous sheet)	very vel is	- - - - - -	- - - - - - - -	
- 	18	ES PID	J+V+T 0.0ppm		•:•:•‡	Stiff surfa	grey fissured sil aces. Locally lami	ty C inate	CLAY. With light grey silt on find	ssure	-0.57	(0.50)	
- 19.50 19.50	19	ES PID	J+V+T 0.0ppm			_(LAN Stiff (LAN	IBETH GROUP light greyish blue IBETH GROUP	- UF mo - UF	PPER MOTILED BEDS) ttlled reddish brown CLAY. PPER MOTTLED BEDS)		<u>1.07</u>	<u>19.50</u>	
20.00-20.45	14 19	SPT ES	6,5/7,9,10,12 N=38 J+V+T								- - - -	(1.20)	
20.00		PID	0.0ppm			Very roun	v stiff high strengt ded to subrounde	th g ed fi	rey slightly gravelly CLAY. Gra ine to medium black pebbles.	vel is	-2.27	20.70	
- 21.50-21.95	2	U	70 blows			(LAN	/BETH GROUP ·	- UF	PPER MOTTLED BEDS)		- - - -	(1.30)	
-			100% recovery	/							-3.57	22.00	
22.00	17	D				Reco ∏fraor	overy of flat a	ngu	lar coarse gravel to cobble	size	-3.77	22.20	
22.50	18 15	D	6.7/8.9.9.11			Stiff (LAN	brown mottled lig /IBETH GROUP	iht b - UF	PER MOTTLED BEDS)	/	-	(1.20)	
-			N=37								-4.97	23.40	<u> </u>
-						Stiff surfa (LAN	grey fissured sil aces. Locally lami /IBETH GROUP	ty C inate - LA	CLAY. With light grey silt on fi ed. MINATED BEDS)	ssure	- 	(0.50) 23.90	xx x xx
24.00	19	D				Stiff grey infill (LAN	to very stiff very CLAY. Locally s of fissure surface /BETH GROUP	hig silty es. - LC	h strength brown mottled light t and fissured with light grey fine WER MOTTLED BEDS)	oluish sand		 (0.90)	
- 24.50-24.95 - -	3	U	70 blows 100% recovery	/ أ∾		Grey	/ fine SAND.				-6.37	24.80	
- 25.00 - 25.00	20 20	ES D	J+V+T			(LAN		- LC	WER MOTTLED BEDS)	i a b thu	-6.77	25.20	
25.00 25.50	21	PID D	0.0ppm			very sanc (LAN	A stiff light greer ly silty CLAY. Sa ABETH GROUP	igntiy	- - - -	-	 		
26.00-26.45 26.00 26.00	16 20	SPT ES PID	7,7/10,10,12,13 N=45 J+V+T 0.1ppm	3								(1.80)	

	Boring Pro	gress and	Water Ol	oservations	3	Chisell	ing / Slow	Progress	Conorol	Domorko
Date	Time	Borehole	Casing	Borehole Diameter	Water	Erom	То	Duration	General	Remarks
Dale	Time	Depth	Depth	(mm)	Depth	FIOIII	10	(hh:mm)	hentonite seal/aroutin	a between 0.3 and
									3.5mbg; 10.5m and 1: 21.0m bgl backfilling v (clay/sand) to base of cover installed at surf. 7. PID = Photo ionisation bulb	2.5m bgl & 19.0m to with compacted arisings borehole and flush ace. n detector with 10.6eV
									All dimensions in metres	Scale: 1:50
Method Used:	thod Inspection pit +		Plar •n ^{Use}	it d: Da	ando 200	0	Drilled By:	Dave Hutson	Logged By: JBarron	Checked By: ST AGS

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Contract:					-	Clie	nt:			Boreho	ole:	
Mou	nt l	Pleas	ant Sorting	g Of	fice		Royal	Mail Group L	imited			BH08
Contract Re	:		Start:	13.1	0.16	Ground Lev	vel:	National Grid Co-o	ordinate:	Sheet:		
	285	49	End:	18.1	0.16	1	8.43	E:530951.6	N:182435.5		4	of 5
Samp	les a	nd In-si	tu Tests	ater	ffill & tru- ation		Dee	ariation of Strata		uced	Depth	Material
Depth	No	Туре	Results	Ŵ	Back Ins		Des	cription of Strata		Redu	ness)	Legend
- 27.00	22	D				Very stiff	brown closely	spaced fissured s	slightly sandy silty	-	-	××
			70 blaue				H GROUP - LO	OWER MOTTLED	BEDS)	-8.97 -	<u>- 27.40</u> -	<u>× </u>
- 27.50-27.95	4	U	100% recovery			CLAY. Sa	ery stiff high s and is predomin	ately fine.	slightly sandy slity	-	-	xx
- - 28.00	23	D				(LAMBET	'H GROUP - U	PNOR FORMATIO	N)	-	-	× · · ×
- -										-		<u> </u>
28.50	24	D								-	(2.60)	
-										-	-	
29.00-29.44	17	SPT	7,8/11,12,15,12 for 60mm							-	F	
-			N=53*							-	-	
-										-		
- - 30.00	21	ES	J+V+T			Verv stiff	dark greenish	arev mottled close	ly spaced fissured	-11.57	- <u>30.00</u> -	
- 30.00 - 30.00	25	D PID	mqq0.0			slightly sa	andy silty CLAY	. Sand is fine to m	nedium glauconitic.	-	-	
30.50-30.95	5	U	70 blows			sandy silt	infill.			-		× · · · ×
-			100% recovery			(LAMBE I	H GROUP - LU	DWER MOTILED E	BEDS)	-	-	
- 31.00	26	D								-	-	
	07									-	(3.00)	
- 31.50 - -	27	D								-		
- 32.00-32.45	18	SPT	6.6/8.10.10.14							-	-	×× ×
		0. 1	N=42							-	- E	××
-										-	-	××
										-14.57	33.00	× · · · ×
- 33.00	28	D				Stiff to ve sandy Cl	ery stiff dark g	reenish grey mottle	ed gravelly slightly	-	(0.50)	
			00.11			rounded t	o subrounded f	ine to medium of bl	ack pebbles.	-15.07	33.50	 ;;;;;;;
- 33.50-33.95	6	U	90 blows 0% recovery			Stiff to v	ery stiff dark g	reenish grey mottl	led gravelly sandy	-	(0.50)	- <u>°</u> `
- 33.50-34.00	13 29	B D				CLAY.S ∖to subrou	and is fine to me	edium glauconitic.	Gravel is rounded	-15.57	34.00	× · · · · · ×
-		_					H GROUP - U		N)	-		×···×
-						(THANET	SAND FORM	y slity slightly clayey ATION)	y SAND.	-	-	× · · · · · · · · · · · · · · · · · · ·
-										-	-	×
35.00-35.32	19	SPT	12,13/20,20,10 for 20mm							-	F	×
- 35.00	22	FS	N=88*							- -	t F	×
35.00		PID	0.0ppm								F	× · · · · ·
-										-	-	× · · · ×

	I	Boring Pro	gress and	Water Ol	oservations	;	Chisell	ing / Slow	Progress	Conorol	Domorko
	Date	Time	Borehole	Casing	Borehole Diameter	Water	From	То	Duration	General	Remarks
	Date	Time	Depth	Depth	(mm)	Depth	110111	10	(nh:mm)	8 Groundwater strike (n	nedium flow) observed
										by driller at 8.5m bgl r	ising to 8.1m bgl after 20
										mins.	
										9. Groundwater strike (ia driller at 13 0m bol ris	ing to 9.1m bal after 20
										mins.	
										10. Small rate of ground	water seepage observed
										All dimensions in metres	Scale: 1:50
Ī	Method	Inspec	tion pit +	- Plar	it	1		Drilled	Dave	Logged	Checked
	Used:	Cable percussion			d: Da	ando 200	0	By:	Hutson	By: JBarron	By: ST AGS

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All dimensions in metres Scale:

JBarron

Logged By: 1:50

ST

AGS

Checked

By:

Contract:							0	Client:				Boreho	ole:	
Μοι	ınt l	Pleas	ant	Sortin	g Of	fice		F	Royal I	Mail Gro	up Limited			BH08
Contract Re	f:			Start:	13.1	0.16	Ground	Level:		National Gr	id Co-ordinate:	Sheet:		
	285	49		End:	18.1	0.16		18.43		E:5309	51.6 N:182435.5		5	of 5
Sam	les a	nd In-s	itu Tes	sts	ater	cfill & tru- tation			Deer	ription of S	trata	uced	Depth	Material
Depth	No	Туре	Re	esults	Š	Bach			Dest		liala	Red Le	ness)	Legend
- 36.00 - 36.50-36.73	30 20	D SPT	10 for	,11/50 75mm			Very d (THAN <i>(stratu</i>	lense grey NET SAND Im copied f	fine very FORMA rom 34.0	silty slightly TION) 10m from pre	v clayey SAND. evious sheet)	- - - - -	-	
	31	D	N	=200*								- - - - - -	_(6.00)	× × ×
		2										E		×····×
38.00-38.13	21	SPT	2 for N	25/50 • 50mm =300*								-	-	× × ×
-													-	* · · × × · · × × · · ×
39.50-39.68	22	SPT	15 for	,10/50 75mm								-		×
	23	FS	N	=200* +\/+T			Porch		tod at 40	0 m hal		-21.57	40.00	× · · · · ×
Bo	ing P	rogress	s and V	Vater Ob	serva	tions		Chisellir	ng / Slow	Progress	General	Rem	arke	
Date	Date Time Borehole Casir Depth Dept						Water Depth	From	То	Duration (hh:mm)	by the driller at 24.8	m to 25.2	2m bgl.	

Drilled

By:

Dave

Hutson

Inspection pit + Cable percussion

Plant

Used:

Dando 2000

Method

Used:



Contract:							Client:		Boreh	ole:	
Μοι	Int	Pleas	ant Sorting	g Of	fice		Royal	Mail Group Limited			BH09
Contract Re	f:		Start:	06.1	0.16	Groun	d Level:	National Grid Co-ordinate:	Sheet		
	285	49	End:	12.1	0.16		18.37	E:530977.2 N:182461.	1	1	of 5
Samp	les a	and In-si	tu Tests	ater	fill & rru- ation		5		lced /el	Depth	Material
Depth	No	Туре	Results	Ň	Back Inst		Des	scription of Strata	Redu	ness)	Legend
- 0.00-0.50	1	В				\MAD	E GROUND: Deco	rative block paving.		0.08	
- 0.50 - 0.50-1.00	1 2	ES B	J+V+T			MAD and subro brick	GROUND: Brow GRAVEL with a bunded to subangu . Cobbles are of co	whish grey slity fine to coarse SAI medium cobble content. Gravel lar fine to coarse of flint, concrete a oncrete and brick.	ND - is : ind -	- - - - -	
- 1.00 - 1.10 - 1.20-1.65	2 1 1	ES D SPT(c)	J+V+T 2,2/2,3,3,4						- - - -	- - - -	
1.20-1.70	3	B	N=12								
-1.90 2.00-2.45	2 2	D SPT(c)	1,1/1,1,1 N=3						-	-	
2.00-2.50 2.00 2.50 2.80	4 4 5 3	B ES ES D	J+V+T J+V+T						- - - - -		
3.00-3.45	3	SPT(c)	1,1/1,1 N=2			F	Below 3.0m bgl clay	ey to very clayey.	-	(6.32)	
- 3.00-3.50 - 3.00 - 3.50	5 6 7	B ES ES	J+V+T J+V+T						= = = =	- - -	
- 3.80 - 4.00-4.45	4 4	D SPT(c)	1,1/1,1,2,1 N=5						-	-	
4.00-4.50 4.00 4.50	6 8 9	B ES ES	J+V+T J+V+T						-	- - -	
- 4.80 - 5.00-5.45	5 5	D SPT(c)	1/,1 N=1	↓ Ţ					-	-	
- 5.00 - 5.00-5.50 - 5.50 -	10 7 11	ES B ES	J+V+T J+V+T						-	-	
- - 6.00 - 6.00	6 12	D ES	J+V+T						- - - 11.97	- - - 6.40	
6.50-6.95	6	SPT(c)	6,6/7,10,12,12	1		MAD in le	E GROUND: Reconnicted Reconnic	overy of wood fragments up to 200n od obstruction towards base of ma	nm - de I	-	
6.50-7.00	8	в	N=41	<u>₹</u>		grou	nd.		Ē	(1.10)	
-									- 10 87	7 50	
- 7.50 7.50	7 13	D ES	J+V+T			Medi coars	um dense yellowi se SAND. Grave um flint.	sh brown very gravelly medium el is rounded to subangular fine	to - to -	-	× × × × × ×
8.00-8.45	7	SPT(c)	2,3/3,4,5,4 N=16			(HAC	CKNEY GRAVEL)		-	F	. <i>°</i>
8.00-8.50 8.50	9 14	B ES	J+V+T			0 0 0 0				- - - -	000
-					H::1	°			E	È.	

		Boring Pro	gress and	Water	r Obs	servations		Chisel	ling / Slow	Progress	Conorol	Domorko	
Ē	Date	Time	Borehole	Casi	ng	Borehole Diameter	Water	Erom	То	Duration	General	Remarks	
oad,	Date	Time	Depth	Dep	oth	(mm)	Depth	FIOIII	10	(hh:mm)	1 Hand due inspection r	nit to 1.20m bal	\neg
ronment Ltd, 18 Frogmore K											 Clean drilling technqu seal created before re Borehole drilled in foll bgl in 250mm; 22.5m in 150mm casing to 1 22.5m bgl in 200mm & 	es adopted. Bentonite eduction in casing size. owing diameters: 18.5 bgl in 200mm; 40m bg 8.0m bgl in 250mm; & 26m bgl in 150mm Scale: 1.50	m J
	Method	Inspec	tion pit +	F F	Plant	· D-			Drilled	Dave	Logged	Checked	R
Ŷ	Useu.	Caple p	ercussio	n l	Jaeu.	· Da	inao 200	U	Dy.	Hutson	JBarron		·D

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Contract:						Client:				Boreho	ole:	
Μοι	Int	Pleas	ant Sortin	ig Of	fice		Royal	Mail Group	Limited			BH09
Contract Re	f:		Start:	06.1	0.16	Ground Level:		National Grid C	Co-ordinate:	Sheet:		
	285	49	End:	12.1	0.16	18.3	37	E:530977	7.2 N:182461.1		2	of 5
Samp	oles a	and In-si	tu Tests	ater	kfill & stru- tation		Des	cription of Strat	a	uced	Depth (Thick	Material Graphic
Depth	No	Туре	Results	×	Bacl		Des		a	Red Le	ness)	Legend
9.00 9.50-9.95	8 8	D SPT(c)	3,4/4,5,7,8 N=24			Medium der coarse SAN medium flint. (HACKNEY (<i>stratum copi</i>	nse yellowis D. Gravel GRAVEL) Gravel	h brown very is rounded to Om from previou	gravelly medium to subangular fine to s sheet)	- - - - - -	- - - - - -	0.0 0.0
9.50-10.00 9.50	10 15	B ES	J+V+T			~ ` , , , , , , , , , , , , , , , , , ,		,	,		-	0 5 0 0
- 10.50 - 10.50 -	9 16	D ES	J+V+T			0 0 0				-	- - -	
11.00-11.45	11	SPT(c)	3,3/4,5,5,5 N=19		$\mathbb{P}^{\mathbb{N}}$	• •				-	- (7.50)	
- 11.00 - 11.01-11.50	17 11	ES B	J+V+T			9 9 9 9 9				- - - -	-	0. 0 0.
- 12.00	10	D										. 0. s
12.50-12.95	10	SPT(c)	3,3/4,5,6,4 N=19			•				- - -	- -	o
12.50-13.00	12	В				9 9 9 9 9				- - - - - - -	- - - - - - - -	0. 0. 0. 0. 0. 0.
- 13.50						• • •				-	-	а.
- 14.00-14.45	11	SPT(c)	3,4/5,6,7,7 N=25			° •				- -	-	<i>0</i>
- 14.00-14.50 - 14.00 - -	13 18	ES	J+V+T			9 9 9 9 9					15.00	. D . O. O
- 15.00 - -	12	D				Medium der GRAVEL. S subangular fi	nse to de and is med ne to coarse	nse yellowish ium to coarse. e flint.	brown very sandy Gravel is rounded to	- - -	-	
- 15.50-15.95	12	SPT(c)	4,5/6,5,6,7 N=24			(HACKNEY (GRAVEL)			-	-	0.0.0
- 15.50-16.00 - - -	14	В				• • • •				- - - - -	-	
- 16.50 -	13	D				- - - -					- - - -	0.0.0
17.00-17.45 17.00-17.50	13 15	SPT(c) B	5,5/6,7,7,8 N=28			9 9 9 9				- - - -	- (4.50)	
17.00	19	ES	J+V+T			0 0 0				- - - -	- - - -	

5		Boring Pro	gress and	Water C	Observation	5	Chisel	ling / Slow	Progress	Conorol	Domorko
2	Date	Time	Borehole	Casing	Borehole Diameter	Water	From	То	Duration	General	Remarks
2ac	Duic		Depth	Depth	(mm)	Depth			(nn:mm)	diameter	
ווופוון רומי זט דוטאוויטיס ז										 Monitoring well installa HDPE response zone 11.0m bgl. Pipe 2 - 33 zone 22.0m to 23.0m Borehole backfilled wi filter between 8.0m to 	ations: Pipe 1 - 50mm between 8.0m and mm PVC response bgl. th 3mm shingle gravel 20.7m bgl & 22.0m to
										All dimensions in metres	Scale: 1:50
201 111	Method Used:	Inspec Cable p	tion pit + ercussio	F Pla	int ed: Da	ando 200	00	Drilled By:	Dave Hutson	Logged By: JBarron	Checked By: ST AGS

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Contract:								Clie	ent:							Boreho	ole:	
Mou	Int	Pleas	ant So	ortin	g Ot	ffice				Royal	Mail	Grou	ıp Lin	nited				BH09
Contract Re	f:			Start:	06.1	0.16	Grour	nd Le	evel:		Natior	nal Grid	l Co-ord	linate:		Sheet:		
	285	49		End:	12.1	0.16		1	8.37		E:	53097	77.2 N	1:18246	61.1		3	of 5
Samp	les a	and In-si	itu Tests		ater	fill & rru- ation										lced /el	Depth	Material
Depth	No	Туре	Res	ults		Back				Des	criptior	n of Str	ata			Redu	(Thick ness)	Legend
18.00 18.50-18.95	14 14	D SPT(c)	4,5/5,7 N='	7,8,10 30			Med GRA suba (HA	lium AVEL angu CKN	dense . San lar fine EY GR	e to de d is med to coarse AVEL) from 15	ense y lium to e flint.	coarse	h brow e. Grav	n very el is roun	sandy ded to	- - - - -	-	
- 18.50-19.00 	16	В					。 。 。 。		copica	nom ro.		in prov				- - - 1.13	19.50	
- 19.50	15	D	4 5/5	4.5.0			Stiff light greyish blue mottled reddish brown CLAY. (LAMBETH GROUP - UPPER MOTTLED BEDS) Very stiff grey slightly gravelly CLAY. Gravel is rounded to subrounded fine to medium black pebbles. (LAMBETH GROUP - UPPER MOTTLED BEDS)									- - - -	- - -(1.20)	
20.00-20.45 20.00-20.50	15 17 20	B FS	4,5/5,4 N=2	4,5,6 20 +T												-	-	
- 21.00	16	D				<u>,,,,</u>										<u>2.33</u> - - -	20.70	
21.50-21.95	16	SPT	4,5/5,5 N=3	5,6,16 32	₹		Very stiff grey slightly gravelly CLAY. Gravel is rounded to subrounded fine to medium black pebbles. (LAMBETH GROUP - UPPER MOTTLED BEDS)									- 3.63	- 22.00	
-					÷		Rec	over	y of f	lat angu	ılar co	arse g	gravel	to cobble	e size	-3.83	22.00	
22.50	17	D	60 bl	ows			Stiff CLA (LAN	to vo Y. MBE	ts of we ery stif TH GR	eak to me f high str OUP - UI	ength I	trong g prown r MOTTL	rey muc mottled .ED BEI	listone. light bluis DS)	/ h grey	- - - - - -	(1.20)	
			100% re	covery												- 5.03	- 23.40	
- 23.50	18	D					Stiff surfa (LAN	grey aces MBE	y fissur Locall TH GR	ed silty (ly laminat OUP - LA	CLAY. ed. AMINAT	With I	ight gre EDS)	y silt on	fissure	- - 5.53	(0.50)	xx x xx
 24.00	19	D					Stiff silty surfa	to ve and aces	ery stiff I fissur	brown m ed with	ottled I light g	ight blu rey fin	iish grey e sand	/ CLAY. I infill of	_ocally fissure		-	
24.50-24.95	17	SPT	5,5/7,9 N=3	9,9,8 33			(LAN	MBE	TH GR	OUP - LO	OWER	ΜΟΤΤΙ	LED BE	DS)		-	-	
 25.00 	21	ES														- - -	-	
25.50	20	D														- - - -	(3.50)	
 26.00-26.45 	2	U	65 bl 100% re	ows covery												- - -	- - - -	
26.50	21	D														- - - -	-	

l - v8_06. :00 CB1	- 21.50-21.95 -	5 16	SPT	4,5/5,8 N=	5,6,16 32	2										-	- - - -	
.GP,	-					Ŧ	·.•.•.	Deeey	ioni of	flat and	nular		aroual to	aabbla	0170	3.63	22.00	
ANT 1/17	-							\fragm	ents of w	eak to m	nediu	m strong	grev mudste	one.	size	-3.83	- 22.20	
.EAS 11/0	-							Stiff to	very sti	f high s	treng	gth brown	mottled lig	ht bluish	grey		-	
T PL	- 22.50	17	D					CLAY	·						• •		-	
NUN.	-							(LAME	BETH GR	OUP - l	JPPI	ER MOTT	LED BEDS)			(1.20)	
v.rsk	- 23 00-23 45	5 1	υ	60 bl	lows		`.•.•.H.										-	
3545 ww				100% re	ecovery											- 5 02	- 22 40	
- 28 Veb:	-							Stiff a	rev fissu	red siltv	CLA	AY With	light grev	silt on fis	sure	-5.05	23.40	<u></u>
- A4F 50, V	- 23.50	18	D					surfac	es. Local	ly lamina	ated.		light gloy		ouro	-	(0.50)	<u> </u>
0G - 375{	-								BETH GR	OUP - L	AMI	NATED E	BEDS)			-5.53	23.90	<u>× </u>
N L 42 4	- 24.00	19	D					Stiff to	very stif	f brown	mott	led light b	luish grey C	LAY. Lo	cally	-	-	
SSIC 014	-							silly a	ina nissu ies.	eu witi	i ligi	it grey ii	ne sanu in		sure	-	-	
RCU:	-		0.07					(LAME	BETH GR	OUP - L	OW	ER MOT	TLED BEDS	S)		-	-	
PEF 500,	- 24.50-24.95 -	17	SPT	5,5/7, N=	9,9,8 33											-	-	
BLE 4375	-				00											-	-	
1 CA	- 25.00	21	ES													-	-	
: 01	-															-	-	
002 . Tel	-															-	-	
gs - 9RT	- 25.50	20														-	-(3.30)	
HP3	-															-	-	
Core ire, I	- 26.00-26.45	5 2	U	65 bl	lows											-	-	
J6 - I	-			100% re	ecovery											-	-	
v8_(ertfo	26 50	21														-	-	
ion: d, H	- 20.50	21																
Vers stea	-															_	-	
4 Prj lemp																		
0 01 Jel H	Bo	oring F	Progress	s and Wa	ater Ob	servati	ions		Chise	ling / Slo	ow P	rogress					مرادم	
8_0(Hen	Dete	T :	Bore	hole C	asing	Boreho		Water	F			Duration		Gene	rai	Rema	arks	
on: v oad,	Date	Time	De	pth D	epth	(mm)	Depth	From)	(hh:mm)	00.0m		filterf			na hail 0
ersic re Ro					_								23.0m i bentoni	ogi; sano te seal/oi	Tilter T	rom 7.5i i betwee	n to 8.0 en 0.3 ar	m bgi & hd
LibV gmo													7.5mbg	; 20.7m a	and 22	.0m bgl	& 23.0n	n to
Froi													25.0m l	ogl backfi	illing w	ith com	pacted a	arisings
06.(J, 18													(clay/sa	and) to ba installed a	ise of t surfa	porehole	e and flu	isn
T Lto													6. PID = F	Photo ioni	sation	detecto	r with 10	0.6eV
ARY mer																		
IBR/													All dimensi	ons in m	etres	Scale:	1:50	
тч Е Ц	Method	Insp	ection	pit +	Plan		_			Drilled	_	Dave	Logged			Checke	ed CT	
GIN RSI	Usea: C	Cable	percu	ission	Used	1.	Dan	do 200	00	ву:		Hutson	ву:	JBarr	on	ву:	21	AGS



Contract:							Client:			Boreho	ole:	
Μοι	Int	Pleas	ant S	orting	g Of	fice	Roy	yal I	Mail Group Limited			BH09
Contract Re	f:			Start:	06.1	0.16	Ground Level:		National Grid Co-ordinate:	Sheet:		
	285	49		End:	12.1	0.16	18.37		E:530977.2 N:182461.1		4	of 5
Samp	les a	and In-si	itu Tests	6	ater	ffill & tru- ation		Deee	ription of Strata	uced vel	Depth	Material
Depth	No	Туре	Res	sults	Ň	Back Ins		Desc		Red	ness)	Legend
- 27.00	22	D								-	-	
27.50-27.86	18	SPT	7,8/10 N:50 for	,19,21 208mm			Dense to very dense SAND. (LAMBETH GROUP	e light P - LO	t grey slightly silty slightly clayey fine WER MOTTLED BEDS)	9.03 - - -	27.40	
	00										- - - - -	× · · · × · · × · · ×
- 28.50	23										-	××
- 29.00-29.32	19	SPT	10,10/ [,] N:50 for	17,24,9 170mm						-	-	
		50								-	-	× × ×
- 30.00 - 30.00	22	D	J+\	/+1							(5.60) -	×···×
30.50-30.78	20	SPT	10,15 N:50 for	/30,20 ⁻ 125mm							-	
										-	-	
- 31.50	25	D								-	-	× · · · · · · · · · · · · · · · · · · ·
- 32.00-32.32	21	SPT	10,11/ [.] N:50 for	17,24,9 ⁻ 170mm								× · · · × × · · · × · · · ×
-										- -14.63	33.00	····×···· × ···×
- 33.00	26	D					Stiff to very stiff dan sandy CLAY. Sand rounded to subround	urk gre d is fir ded fir	eenish grey mottled gravelly slightly ne to medium glauconitic. Gravel is ne to medium of black pebbles.		-	
- 33.50-33.95	22	SPT(c)	7,8/9,1 N=	1,11,12 -43			(LAMBETH GROUP	P - UP	NOR FORMATION)	-	(1.50)	
-										- 16 10	- 24 50	
34.50	27	D					Very dense grey very (THANET SAND FO	y silty DRMA	r slightly clayey fine SAND. TION)	- 10.13 - - -	- - - -	
- 35.00-35.17	23	SPT	10,1 for 7	5/50 Omm						- - -	- - -	
35.01	23	ES	J+\	214" /+T						- - - - -	- - - -	× × ×

		Boring Pro	ogress and	Water O	bservations	6	Chisell	ing / Slow	Progress	Conoral Domarka
	Data	Time	Borehole	Casing	Borehole	Water	Erom	То	Duration	General Remarks
500	Dale	Time	Depth	Depth	(mm)	Depth	FIOIII	10	(hh:mm)	bulb
1011 Low, 10										 Groundwater strike (medium flow) observed by driller at 6.8m bgl rising to 5.2m bgl after 20 mins. Groundwater strike (large flow) observed by driller at 22.0m bgl rising to 18.1m bgl after 20 mins and sealed out at 20.7m bgl.
										All dimensions in metres Scale: 1:50
	Method Used:	Inspec Cable p	tion pit +	Plai	nt ed: D a	ando 200	0	Drilled By:	Dave Hutson	Logged By: JBarron By: ST AGS



All dimensions in metres Scale:

JBarron

Logged By: 1:50

ST

AGS

Checked

By:

Contract:							(Client:				Boreho	ole:	
Μοι	Int	Pleas	ant S	Sorting	g Of	fice		F	Royal I	Mail Gro	up Limited			BH09
Contract Re	f:			Start:	06.1	0.16	Ground	Level:		National Gr	id Co-ordinate:	Sheet:		
	285	49		End:	12.1	0.16		18.37		E:5309	977.2 N:182461.1		5	of 5
Sam	oles a	ind In-s	itu Test	S	ater	ffill & tru- ation			Deee	ription of C	trata	uced	Depth	Material
Depth	No	Туре	Re	sults	Ň	Back			Desc	inpuon or S	liala	Red	ness)	Legend
- 36.00	28	D					Very d	lense grey	Very silty	slightly clay	yey fine SAND.	F	-	× · · · · ×
		0.07		~- /-			(stratu	im copied f	rom 34.5	0m from pre	evious sheet)	Ę		×··×
- 36.50-36.65	24	SPT	N:50 fc	35,15 or 100mm			8					Ē	-	×···×
-							8					È.		×××
-							8					E	- (5.50) -	×···×
37.50	29	D					8					E	-	×···×
-							8					E	-	×···×
38.00-38.10	25	SPT	2: N:50 f	5/50 or 50mm			8					F	F	×
-							8					Ę	F	×××
-							8						-	×···×
- - 39.00	30	D					8 be	elow 39.00	m becom	ing verv sa	ndv SILT.	F	-	×
-											,	E		× · · · × · · · · ×
- 39.50-39.63	26	SPT	2	5/50 or 75mm			8						-	× ×
-			10:50 1	0175000			8					- -21.63	40.00	×···×···×
- 40.00 - 40.00	23 24	ES D	J+	·V+T			Boreh	ole comple	ted at 40	.0 m bgl.		E	E	
-												-	-	
-												Ę	F	
 -												F	-	
- - -												Ę	F	
-												Ē	-	
-												E	-	
-													-	
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-												Ę	-	
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												E	E	
												E	E	
[<u> </u>		I	I	<u> </u>					<u> </u>	<u> </u>	<u> </u>
Во	ring F	rogres	s and W	/ater Ob	serva	tions		Chiselli	ng / Slow	Progress	General	Rem	arks	
Date	Time	Bore	ehole (oth	Casing Depth	Diam Diam	eter	Water Depth	From	То	Duration (hh:mm)				
			<u></u>		(,					 9. Falling head permeab 7.5m bgl in 250mm di 	ility test ameter c	perform casing.	ed at
													0	
								11						

Drilled

By:

Dave

Hutson

Inspection pit + Cable percussion

Plant

Used:

Dando 2000

Method

Used:



Contract:							Client:			Boreho	ole:	
Μοι	Int	Pleas	ant Sortir	ng Of	fice		Royal	Mail Group Limited				BH10
Contract Re	f:		Start	03.1	0.16	Groun	d Level:	National Grid Co-ordinate:		Sheet:		
	285	49	End:	05.1	0.16		18.65	E:530998.0 N:18247	79.3		1	of 5
Samp	oles a	and In-si	tu Tests	Vater	ckfill & nstru- intation		Des	cription of Strata		duced evel	Depth (Thick	Material Graphic
Depth	No	Туре	Results	>	Ba De L					L Re	ness)	
0.00-0.50 0.50-1.00 0.50 1.00 1.00 1.10 1.20-1.65 1.20-1.70	1 1 2 1 1 3	ES B PID ES PID D SPT(c) B	J+V+T 0.1ppm J+V+T 0.1ppm 3,3/4,4,5,5 N=18			MAL MAE and subr brick	DE GROUND: Decoi DE GROUND: Brown GRAVEL with a rounded to subangul Cobbles are of co	ative block paving. nish grey clayey fine to coarse medium cobble content. Gra ar fine to coarse of flint, concre increte and brick.	SAND avel is ete and	18.57/ - - - - - - - - - - - - - - - - - - -	(1.92)	
1.50 1.90 2.00-2.45 2.00 2.01-2.46 2.50 2.80 3.00-3.45 3.00-3.50 3.00 3.00 3.00 3.00	3 2 4 2 5 3 3 5 6 7	ES D B ES PID SPT(c) ES D SPT(c) B ES PID ES	J+V+T J+V+T 0.2ppm 1/ N=0 J+V+T 1,2/2,3,2,4 N=11 J+V+T 0.1ppm J+V+T			MAE med fine char conc indic	DE GROUND: Greyi ium cobble content. to coarse of flint, coal and clinker. F rete and brick. . Between appro: ates possible void.	sh brown sandy gravelly CLAY Gravel is subrounded to suba concrete and brick and occa Rare oyster shells. Cobbles ximately 2.0m and 3.0m bgl	with a angular asional are of driller	16.65	2.00	
_3.50 - 3.80	7 4	ES D	J+V+T			MAE	E GROUND: Brow	vn sandy gravelly CLAY. Gra	avel is	14.65	4.00	\boxtimes
4.00-4.45	4	SPT(c)	3,4/4,5,4,7 N=20			subr	ounded to subangul	ar fine to coarse of flint, concre	ete and	- 14 15	- (0.50)	
4.00-4.50 4.00 4.00 4.50 5.00-5.45 5.00 5.00 5.00 6.00 6.00	6 8 9 5 5 10 7 6 11	B ES PID ES D SPT(c) ES B PID D ES	J+V+T 0.0ppm J+V+T 1,1/2,3,2,2 N=9 J+V+T 0.1ppm J+V+T	⊥ Ţ		MAE and subr brick MAE GRA of fli	DE GROUND: Greyi GRAVEL with a ounded to subangul Cobbles are of co DE GROUND: Brow VEL. Gravel is sub nt, concrete and bric	sh brown clayey fine to coarse low cobble content. Gra ar fine to coarse of flint, concre ncrete and brick. vn clayey fine to coarse SAN prounded to subangular fine to ck.	SAND vel is ete and D and coarse	14.13	4.80	
6.00		PID	0.0ppm					6 P. 14 1.		12.15	6.50	
- 0.50-6.95 - - 6.50-7.00	8	B	1,1/1,1 N=2			MAL (app	rox. 200mm X 200m	nm X 100mm) strength retained.	gments	- 11.65	(0.50) 7.00	
- 7.50 - 8.00-8.45 - 8.00 - 8.00	7 7 12	D SPT ES PID	3,3/4,4,4,5 N=17 J+V+T 0.1ppm			Firm (LON	to stiff grey fissured	d silty CLAY. ATION)			(2.50)	

E	Boring Pro	ogress and	Water Ob	servations	6	Chisell	ing / Slow	Progress	Conoral Domorka	
Date	Time	Borehole	Casing	Borehole Diameter	Water	From	То	Duration	General Remarks	
		Depth	Depth	(mm)	Depth			(111.1111)	1 Hand dug inspection pit to 1 20m bal	
03/10/16	20:15		-		Dry				2 Clean drilling technques adopted Bentonite	
03/10/16		5.50	5.00	250	5.50				seal created before reduction in casing size	
13/10/16	14:18	12.00	7.00	250	12.00				3. Borehole drilled in following diameters: 30.2	m
03/10/16	08:15	20.00	7.00	250	Dry				bgl in 250mm; 40m bgl in 150mm casing to	
04/10/16	06:56	20.00	7.00	250	18.60				7.0m bgl in 250mm & 31.5m bgl in 150mm	
04/10/16	13:00	30.20	15.00	250	Dry				diameter.	
04/10/16	18:02	34.20	31.50	150	Dry					
05/10/16	07:03	34.20	31.50	150	Dry				All dimensions in metres Scale: 1:50	
Method	Inspec	tion pit +	 Plant 	I			Drilled	Dave	Logged Checked	
Used:	Cable p	ercussio	n ^{Usec}	l: Da	ando 200	0	By:	Hutson	By: JBarron By: ST A	<u>48</u>

GINT_LIBRARY_V8_06.GLB LibVersion: v8_06_014 PŋVersion: v8_06-Core+Logs - 002 | Log CABLE PERCUSSION LOG - A4P | 28549_MOUNT PLEASANT.GPJ - v8_06. RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tei: 01442 437500, Fax: 01442 437550, Web: www.rsk.co.uk | 11/01/17 - 14:01 | CB1 |



Contract:								Client:										Bore	ehole	e:	
Мо	unt	Pleas	ant S	ortin	g Of	fice			R	Royal	Mail	Gro	up	Lim	ited						BH10
Contract Re	ef:			Start:	03.1	0.16	Groun	d Level:			Natio	nal Gri	id C	o-ordi	nate:			Shee	et:		
	285	549		End:	05.1	0.16		18.6	5		E:	5309	98	.0 N	:182	2479	9.3			2	of 5
Sam Depth	ples a	and In-s	itu Tests	sults	Water	ackfill & Instru-				Des	criptio	n of St	trata	a				educed		Depth (Thick	Material Graphic
9.00 9.00 9.00 9.50-9.95	8 8 1	ES D PID U	J+\ 0.0p 55 b	/+T opm lows			Firm (LON (<i>stra</i> t	to stiff g NDON CI <i>tum copie</i> to very s	rey f _AY e <i>d fr</i> stiff	fissured FORM rom 7.00 high to	silty C ATION 0 <i>m fror</i> very h	LAY.) <i>n previ</i> igh str	<i>rious</i> reng	s <i>shee</i> jth gre	<i>t)</i> ey fise	sured	silty	9.1	5	9.50	
- 10.00 - 10.00 - 10.00 - 10.50	9 9 10	D ES PID D	J+\ 0.1	/+T opm			(LON	Y. NDON CI	_AY	FORM	ATION)						- - - - - -	-		xx
- 11.00-11.45 -	8	SPT	3,3/4 N=	,4,4,5 :17			• • • • • •											-			xx xx xx xx xx xx
- - 12.00 -	11	D				***** ****	•											- - - - -	-		
- 12.50-12.95 -	2	U	60 b 100% r	lows ecovery														-	- - - -		xx
- 13.00 - 13.00 - 13.00 - 13.50	12 15 13	D ES PID D	J+\ ا0.0	/+T opm																(8.50)	
- 14.00-14.45	9	SPT	5,5/7, N=	8,8,10 33														- - - - - - -	-		
- 15.00	14	D																- - - -	-		xx
- 15.50-15.95 -	3	U	70 b 100% r	lows ecovery																	xx
- 16.00 16.00 - 16.00 - 16.50	15 16 16	D ES PID D	\+/ 0.0	/+T opm														-	-		
- 17.00-17.45 -	5 10	SPT	5,6/7 N=	,6,7,9 29														- - - - - -	-		
-							8											0.65	5	18.00	
Date Bo	oring F Time	Bore	s and Water	ater Ob asing	Borel Diam	tions nole eter	Water	Chis Fror	sellin m	ng / Slov To	v Progi Du (hh	ress ration .:mm)			Ge	ene	ral I	Ren	na	rks	
05/10/16	13:03	3 40.	00	-	(mr 15	0	Dry					,	4. 5.	Monit HDPE 6.5m 8.0m Boreh filter b 12.0m	oring E resp bgl. P to 12. ole b oetwe n bgl;	well i oonse Pipe 2 .0m b ackfil en 4. sand	nstalla zone gl. gl. led wi 5m to filter f	ations: betwe nm PV th 3mi 6.5m from 4	: Pip een /C ro m sl bgl	be 1 - { 4.5m a espon hingle & 8.0n to 4.5	50mm and se zone gravel n to 5m bgl &
												-	All	dimen	sions	in m	etres	Scale	e:	1:50)
Method Used:	Insp able	ection	pit +	Plan Usec	t d:	Dar	1do 20	000		Drilled By:	Da Hut	IVE Son		Logge By:	d _II	Barr	on	Cheo By:	cked	ST	AGS
		<u>r</u>				- 41												· ·			

5		Boring Pro	ogress and	Water O	oservations	3	Chiselli	ng / Slow	Progress	Conorol Domorko
	Date	Time	Borehole	Casing	Borehole Diameter	Water	From	То	Duration	General Remarks
5	Date	TITLE	Depth	Depth	(mm)	Depth	11011	10	(hh:mm)	4 Monitoring wall installations: Ding 1 50mm
	05/10/16	13:03	40.00	-	150	Dry				 Monitoring weir installations. Pipe 1 - Somm HDPE response zone between 4.5m and 6.5m bgl. Pipe 2 - 33mm PVC response zone 8.0m to 12.0m bgl. Borehole backfilled with 3mm shingle gravel filter between 4.5m to 6.5m bgl & 8.0m to 12.0m bgl; sand filter from 4.0m to 4.5m bgl &
										All dimensions in metres Scale: 1:50
i	Method Used:	Inspec Cable n	tion pit +	⊢ Plar	nt d: Da	ando 200	0	Drilled By:	Dave Hutson	By: JBarron By: ST



	Contract:								Client:					Boreho	le:	
	Mou	nt l	Pleas	ant So	orting	g Off	fice			Royal	Mail Grou	ip Limite	d			BH10
	Contract Ref	:			Start:	03.10).16	Groun	d Level:	_	National Grid	Co-ordinate	:	Sheet:		
		285	49		End:	05.10).16		18.65		E:53099	98.0 N:18	2479.3		3	of 5
	Samp	les a	nd In-si	itu Tests		ter	ill & ru- &							ced el	Depth	Material
	Depth	No	Туре	Res	ults	Ma	Backl Insti menta			Des	cription of Str	ata		Sedu Lev	(Thick ness)	Legend
	- 18.00	17	D					Brow	n mottled	light bluis	n grey CLAY.			-	-	
	-									(OUP - UP		ED BED3)		-	-	
	- 18.50-18.95 -	4	U	70 bl 100% re	ows ecovery									-	(1.50)	
		10	D		-									-	-	
	- 19.00	18	D											-	-	
	- 19.50	19	D					Stiff	verv high	strength	liaht arevist	blue mottle	ed reddish	-0.85 -	19.50	
														-	-	
	- 20.00-20.45	11	SPT	7,7/9,10	0,10,12				IDE I H GF			ED BED3)		-	-	
	20.00	17	ES	N=4 J+V	41 ′+T									-	-	
	20.00		PID	0.0p	pm									-	-	
	-													-	-	
	- 21.00 -	20	D											-	-	
-	21 50 21 05	5		65 bl	0.40									-	(4.00)	
-	- 21.50-21.95	5	U	100% re	ecovery									-	-	
	- 22.00	21	D											-	-	
	-													-	-	
-	- 22.50	22	D											-	-	
	-													-	-	
	23.00-23.45	12	SPT	6,7/7,9	9,9,11 36									-	-	
	-				00									-4.85	23.50	
	-							Very fissu	stiff grey re surface	fissured s. Locally	silty CLAY. laminated.	With light g	rey silt on	-	-	××
	-	23	П					(LAN	IBETH GF	ROUP - LA	MINATED BE	EDS)		-	-	××
	- 24.00	25	D											-		<u>x </u>
	- 24.50-24.95	6	U	65 bl	ows									-	_(2.00) -	<u>x </u>
	-			100% re	ecovery									-	-	xx
	- 25.00	18	ES	J+V	′+T									-	-	xx
	25.00	24	PID	0.0p	pm									- -6.85	25.50	xx
	- 25.50	26	D					Very With	stiff light	bluish gre	y mottled bro s (white dusti	wn fissured s	silty CLAY.	-	-	xx
		10	CDT	4 5/0 0	11 10			matri					,	-	-	xx
	- 20.00-20.45 - -	13	571	4,5/8,9 N=	, 11,13 41									-	(1.50)	xx
	-													-	-	xx
	-													0.05		xx
						L B	~~~~~	4						-0.35	21.00	⊢

D		Boring Pro	ogress and	Water C	bservations	3	Chiselli	ing / Slow	Progress	Conorol	Domorko
D	Data	Timo	Borehole	Casing	Borehole	Water	Erom	То	Duration	General	Remarks
, ad	Dale	Time	Depth	Depth	(mm)	Depth	FIOIII	10	(hh:mm)	hentonite seal/aroutin	a between 0.3 and
		Aothod Inspection nit d								4.0mbg; 6.5m and 8.0 bgl backfilling with con (clay/sand) to base of cover installed at surf. 6. PID = Photo ionisation bulb	borehole and flush ace. n detector with 10.6eV
	Method Used:	Inspec	tion pit +	Pla	nt ed: D:	ando 200	0	Drilled By:	Dave Hutson	Logged By: JBarron	Checked ST AGS



Mount Pleasant Sorting Office Royal Mail Group Limited BH10 Contract Ref: Start: 0.10.16 Ground Level: National Grid Co-ordinate: Sheet: Test start: 0.10.16 Sheet:	Contract:							Client:				Boreho	ole:	
Contract Ref: Start: O3.10.16 Ground Level: National Grid Co-ordinate: Sheet: 28549 End: 05.10.16 18.65 E:530998.0.N:182479.3 4 ord 5 Samples and In-situ Tests and the situe Tests and the site Tests <	Mou	nt l	Pleas	ant Sortin	g Of	fice		R	oyal	Mail Group Limited				BH10
28549 End: 05.10.16 18.65 E:530998.0 N:182479.3 4 d of 5 Samples and In-situ Tests by 2000 by 27.00 Type Results by 28.00 by 100% recovery by 28.00 by 28.00 by 28.00 by 28.00 by 28.00 by 28.00 comparison by 28.00 comparison comparison <thcomparison< th=""> comparison <thcomparis< th=""><th>Contract Re</th><th>:</th><th></th><th>Start:</th><th>03.1</th><th>0.16</th><th>Groun</th><th>d Level:</th><th></th><th>National Grid Co-ordinate:</th><th></th><th>Sheet:</th><th></th><th></th></thcomparis<></thcomparison<>	Contract Re	:		Start:	03.1	0.16	Groun	d Level:		National Grid Co-ordinate:		Sheet:		
Samples and In-situ Tests bg Mo Type Results Bg Character Rept Media Rept Rept Media Rept Rep Rept Rep		285	49	End:	05.1	0.16		18.65		E:530998.0 N:1824	79.3		4	of 5
Depth No Type Results Stiff to very stiff greenish grey very gravelly CLAY. Gravel is 10.00° recovery 100° recovery 28.00 Stiff to very stiff greenish grey very gravelly CLAY. Gravel is 10.00° recovery 100° recovery 28.00 Stiff to very stiff greenish grey very gravelly CLAY. Gravel is 10.00° recovery 100° reco	Samp	les a	nd In-si	itu Tests	ter	fill & ru- ation			_			iced 'el	Depth	Material
27.00 27 D 0 <td>Depth</td> <td>No</td> <td>Туре</td> <td>Results</td> <td>Wa</td> <td>Backi Inst menta</td> <td></td> <td></td> <td>Des</td> <td>cription of Strata</td> <td></td> <td>Lev</td> <td>(Thick ness)</td> <td>Legend</td>	Depth	No	Туре	Results	Wa	Backi Inst menta			Des	cription of Strata		Lev	(Thick ness)	Legend
27.50-27.95 7 U 65 blows 100% recovery (LAMBETH GROUP - LOWER MOTTLED BEDS)	27.00	27	D				Stiff	to very stiff	extrem	nely high strength light grey	mottled		-	
27.50-27.95 7 U 05 blows 28.00 28 D (2.50) 28.00 28 D (2.50) 28.00 28 D (2.50) 29.00-29.45 14 SPT 7.8/9, 10.12, 14 N=45 (2.50) 30.00 30 D (2.50) (0.70) 30.00 30 D (0.70) (1.15,5) 30.00 30 D 0.00pm (LAMEETH GROUP - LOWER MOTTLED BEDS) (1.1,5) 31.50 31 D (LAMEETH GROUP - LOWER MOTTLED BEDS) (1.1,5) (2.0,7) 31.50 31 D (LAMEETH GROUP - LOWER MOTTLED BEDS) (1.1,5) 31.50 31 D (LAMEETH GROUP - LOWER MOTTLED BEDS) (1.1,5) 32.00, 32.45 8 U 90 blows 0% recovery (3.90) (3.90) 33.00 32 D Stiff to very stiff greenish grey very gravelly CLAY. Gravel is 15.85 34.50 34.50 34.60 34 D NStof or 183	-						orano (LAN	IBETH GROU	LAY. JP - LC	OWER MOTTLED BEDS)		-	-	
28.00 28 D	- 27.50-27.95	7	U	65 blows 100% recovery	,							-	-	<u> </u>
22.00 28 D (2.50) (2.50) 28.50 28 D (2.50) (2.50) 29.00-29.45 14 SPT 7.8/9,10,12,14 (1.0.85) (2.50) 30.00 19 ES J+V+T (1.0.85) (2.50) (1.1.5) 30.00 30 D (1.1.5) (1.1.5) (0.70) (1.1.5) 30.00 30 PD 0.0ppm (1.1.5) (1.1.7) (0.70) 30.00 30 D (1.1.7) (1.1.7) (1.1.7) (0.70) 31.50 31 D (1.1.7) (1.1.7) (1.1.7) (1.1.7) 31.50 31 D (1.1.7) (1.4.MBETH GROUP - LOWER MOTTLED BEDS) (1.1.7) 31.50 31 D (1.1.7) (1.1.7) (1.1.7) 33.50 32 D (1.1.7) (1.1.7) (1.1.7) 34.60 33 D (1.1.7) (1.1.7) (1.1.7) 34.60 34		20	D									-	-	<u> </u>
28.50 29 D 29.00-29.45 14 SPT 7.8/9,10,12,14 30.00 39 ES J+V+T 30.00 30 D 0.055 29.50 30.00 30 D 0.055 29.50 30.00 30 D 0.057 11.55 30.20 30.00 30 PID 0.0ppm 11.55 30.20 30.00 30 SPT 7.8/11.12.15.12 Intervention of the tome diam. Multi-coloured staining on fissure surfaces. 11.1.55 30.40 31.50 31 D Stiff to very stiff light green motiled reddish yellow sandy orange motiled glauconitic clay. (LAMBETH GROUP - LOWER MOTTLED BEDS) 33.00 32 D Multi-coloured purple and orange motiled glauconitic clay. 11.56 33.00 32 D Stiff to very stiff greenish grey very gravely CLAY. Gravel is subrounded to rounded medium to coarse of black pebbles. 15.65 34.60 33 D Stiff to very stiff greenish grey very gravely CLAY. Gravel is subrounded to rounded medium to coarse of black pebbles. 15.65	- 28.00	28	D									-	(2.50)	
29.00-29.45 14 SPT 7,8/9.10.12,14 N=45 Image: constraint of the second s	- - 28.50	29	D									-	-	
29.00-29.45 14 SPT 7.8/9; 10.12, 14 N=45 Very stiff grey very closely spaced fissured CLAY. With slight multi-coloured staining on fissure surfaces. (LAMBETH GROUP - LOWER MOTTLED BEDS)	-											-	-	<u> </u>
30.00 19 ES J+V+T -10.85 29.50 30.00 30 D D 0.0ppm -11.55 30.20 -11.55 30.20 30.00 30 D D 0.0ppm -11.55 30.20 -11.55 30.20 30.00 30.00 30 PD 0.0ppm -11.75 30.40 30.50-30.95 15 SPT 7.811.12.15.17 31.50 31 D	- 29.00-29.45	14	SPT	7,8/9,10,12,14								-	-	
30.00 19 ES J+V+T 30.00 30 D 0.0ppm (1.75) 30.20 30.00 30 D 0.0ppm (1.75) 30.20 30.00 30.00 SPT 7.811.12.15.5 30.20 30.00 30.00 SPT 7.811.12.15.1 30.20 30.50-30.95 15 SPT 7.811.12.15.1 30.40 31.50 31 D (1.75) Stiff to very stiff light green mottled redisin yellow sandy orange mottled glauconitic clay. (1.76) 31.50 31 D (3.90) (3.90) (3.90) 33.00 32 D (3.90) (3.90) (3.90) 34.50 33 D Stiff to very stiff greenish grey very gravelly CLAY. Gravel is (LAW BETH GROUP - LOWER MOTTLED BEDS) (1.56) 34.50 34 D (2.90) (3.90) (3.90) 35.00 32 D (2.97) (3.90) (3.90) (3.90) 35.00 34 D (2.90) (2.90	-			N=45								-10.85	29.50	<u> </u>
30.00 19 ES J+V+T	-						Very	stiff grey very	/ close	ly spaced fissured CLAY. Wi	th slight	-	(0.70)	
30.00 30 B J+V+T -11.55 30.20	-						(LAN	IBETH GROU	JP - LC	WER MOTTLED BEDS)		-	-(0.70)	<u> </u>
30.00 PID 0.0ppm 0.17.0 30.40 Image: 11.7.0 30.40	- 30.00 [30.00	19 30	ES D	J+V+T			Brow	n silty fine SA				-11.55	30.20	 × ⋯⋯×
33.00033 10 011 N.50 for 295mm 31.50 31 D 31.50 31 D 32.00-32.45 8 U 90 blows 0% recovery 0% recovery 33.00 32 D 33.00 32 D 34.50 33 D 34.50 33 D 34.60 34 D 35.00 20 ES 20.02 ES N:50 for 183mm J+V+T 0.0ppm	- 30.00 - 30.50-30.95	15	PID SPT	0.0ppm	,			BETH GROL	JP - LC	OWER MOTTLED BEDS)		-11.75	50.40	· <u>····</u> ···
31.50 31 D 31.50 31 D 32.00-32.45 8 U 90 blows 0% recovery 33.00 32 D 33.00 32 D 33.00 32 D 33.50-33.95 16 SPT 6.6/7.9.11.10 N=37 34.60 33 D 34.60 33 D 34.60 34 D 35.00-35.33 17 SPT 10.10/17.20.13 N:50 for 183mm J+V+T 35.00 20 ES J+V+T 0.0ppm	-	10	011	N:50 for 295mn	ז		CLA	to very stiff	light (ine to	green mottled reddish yellow medium. Multi-coloured pur	i sandy ple and	-	-	
31.50 31 D 32.00-32.45 8 U 90 blows 0% recovery 33.00 32 D 33.00 32 D 33.50-33.95 16 SPT 6,6/7,9,11,10 N=37 34.60 33 D 34.60 34 D 35.00 32 P 35.00 20 ES PID 0.0ppm	-						orano (LAN	ge mottled gla IBETH GROL	iuconit JP - LC	ic clay. WER MOTTLED BEDS)		-	-	
31.50 31 D 32.00-32.45 8 U 90 blows 0% recovery 33.00 32 D 33.00 32 D 33.00 32 D 33.00 32 D 34.50 33 D 34.60 33 D 34.60 34 D 35.00-35.33 17 SPT 10.10/17.20.13 J+V+T 35.00 20 ES PID 0.0ppm	-											-	-	
32.00-32.45 8 U 90 blows 0% recovery 33.00 32 D 33.00 32 D 33.50-33.95 16 SPT 6.6/7.9.11.10 N=37 34.50 33 D 34.60 34 D 34.60 34 D 35.00 32 ES N:50 for 183mm 35.00 20 ES PID 0.0ppm	31.50	31	D									-	-	
32.00-32.45 8 U 90 blows 0% recovery (3.90) 33.00 32 D (3.90) (3.90) 33.00 32 D (3.90) (3.90) 33.00 32 D (3.90) (3.90) 33.50-33.95 16 SPT 6,6/7,9,11,10 (3.90) 34.50 33 D (3.90) (3.90) 34.50 33 D (1.90) (1.90) 34.50 34 D (1.90) (1.90) 35.00-35.33 17 SPT 10,10/17,20,13 (1.40MET H GROUP - UPNOR FORMATION) Very dense brown silty slightly clayey fine SAND. (1.4AMET SAND FORMATION) (1.4AMET SAND FORMATION) Very dense brown silty slightly clayey fine SAND. (1.4AMET SAND FORMATION) (1.4AMET SAND FORMATION)	-											-	-	
33.00 32 D 33.00 32 D 33.50-33.95 16 SPT 6,6/7,9,11,10 34.50 33 D 34.60 34 D 35.00-35.33 17 SPT 10,10/17,20,13 35.00 20 ES PID 0.0ppm	- 32.00-32.45	8	U	90 blows 0% recovery								-	- (3 90)	<u> </u>
33.00 32 D 33.00 32 D 33.50-33.95 16 SPT 6,6/7,9,11,10 34.50 33 D 34.60 34 D 35.00-35.33 17 SPT 10,10/17,20,13 Stiff to very stiff greenish grey very gravelly CLAY. Gravel is subrounded to rounded medium to coarse of black pebbles. (LAMBETH GROUP - UPNOR FORMATION) Very dense brown silty slightly clayey fine SAND. (THANET SAND FORMATION) Very dense brown silty slightly clayey fine SAND. (THANET SAND FORMATION)	-												-(0.00)	
33.00 32 D 33.00 32 D 33.00 32 D 33.50-33.95 16 SPT 6,6/7,9,11,10 N=37 N=37 34.50 33 D 34.60 34 D 35.00-35.33 17 SPT 10,10/17,20,13 35.00 20 ES PID 0.0ppm	-											-	-	
33.50-33.95 16 SPT 6,6/7,9,11,10 N=37 Image: state of the	- 33.00	32	D									-	-	
33.50-33.95 16 SPT 6,6/7,9,11,10 N=37	-											-	-	<u></u>
34.50 33 D 34.60 34 D 34.60 34 D 35.00-35.33 17 SPT 10,10/17,20,13 N:50 for 183mm 35.00 20 ES PID 0.0ppm	33.50-33.95	16	SPT	6,6/7,9,11,10								-	-	
34.50 33 D -15.65 34.30	-			N=37								-	-	<u> </u>
34.50 33 D 34.60 34 D 34.60 34 D 35.00 34 D 35.00 20 ES 35.00 20 ES 91D 0.0ppm	-											-15.65	- 34.30	
34.50 33 D 34.60 34 D 35.00-35.33 17 SPT 10,10/17,20,13 N:50 for 183mm N:50 for 183mm 35.00 20 ES J+V+T 0.0ppm			-				Stiff	to very stiff g	reenist	n grey very gravelly CLAY. G	Fravel is	-15.85	34.50	- <u> </u>
35.00-35.33 17 SPT 10,10/17,20,13 N:50 for 183mm 35.00 Very dense brown silty slightly clayey fine SAND. (THANET SAND FORMATION) 35.00 20 ES J+V+T PID 0.0ppm	- 34.50 - 34.60	33 34	D					IBETH GROU	JP - UF	PNOR FORMATION)		E F	-	
35.00 35.00 20 ES PID 0.0ppm	- 35.00-35.33	17	SPT	10,10/17.20,13			Very (THA	dense brown NET SAND F	silty sl ORM/	ightly clayey fine SAND. ATION)		- 	- -	
35.00 PID 0.0ppm	35.00	20	ES	N:50 for 183mn J+V+T	ו		Ì			·		-	-	×···×
	35.00	•	PID	0.0ppm								F	-	× ×
	-											F	-	××

	I	Boring Pro	gress and	Water O	bservations	3	Chisell	ling / Slow	Progress	Conorol	Domorko
	Data	Timo	Borehole	Casing	Borehole	Water	Erom	То	Duration	General	Remarks
	Dale	Time	Depth	Depth	(mm)	Depth	FIOIII	10	(hh:mm)	7. Groundwater strike (m	redium flow) observed
										by driller at 5.5m bgl r	ising to 4.9m bgl after 20
										8. Small rate of groundw	ater seepage observed
										by the driller at approx	kimately 14.0m bgl.
	L									All dimensions in metres	Scale: 1:50
i	Method	Inspec	tion pit +	Plai	nt			Drilled	Dave	Logged	Checked
	Used:	Cable p	ercussio	n ∣ ^{Use}	ed: Da	ando 200	0	By:	Hutson	By: JBarron	By: AGS

GINT LIBRARY_V8_06.GLB LibVersion: v8_06_014 PŋVersion: v8_06 - Core+Logs - 002 | Log CABLE PERCUSSION LOG - A4P | 28549_MOUNT PLEASANT.GPJ - v8_06. RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tei: 01442 437500, Fax: 01442 437550, Web: www.rsk.co.uk, | 11/01/17 - 14:01 | CB1 |



All dimensions in metres Scale:

JBarron

Logged By: 1:50

ST

Checked

By:

AGS

Contract:								Client:				Boreho	ole:	
Μοι	ınt l	Pleas	ant	Sorting	g Of	fice		R	loyal	Mail Gro	up Limited			BH10
Contract Re	f:			Start:	03.1	0.16	Ground	d Level:		National Gr	id Co-ordinate:	Sheet:		
	285	49		End:	05.1	0.16		18.65		E:5309	998.0 N:182479.3		5	of 5
Samp Depth	oles a	nd In-s Type	itu Tes	sts esults	Water	3ackfill & Instru-			Des	cription of S	trata	teduced Level	Depth (Thick	Material Graphic Legend
- 36.00	35	D					Very	dense brow	n silty sl	ightly clayey	fine SAND.	-	-	× · · · ×
- 36.50-36.73 -	18	SPT	12 N:50	2,13/50 for 75mm			(THA (strati	NET SAND um copied fi	FORMA rom 34.8	ATION) 50m from pre	evious sheet)		 (5.00)	
- 37.50	36	D											-	× · · · ×
- 38.00-38.28	19	SPT	10,1 N:50 f	13/28,22 for 126mm	I							 - - - - - - -	- - - - - - - -	× × × × × × × × × × × × × × × × × × ×
- - 39.00 -	37	D										-20.85		× · · × · ×
- 39.50-39.89 -	20	SPT	10,15/: N:50 f	20,12,15,3 for 240mm	3		Reco (WHI	very of off w TE CHALK	/hite silt SUBGR	y chalky GR/ OUP)	AVEL of pebble beds.	-21.35	(0.50) 40.00	
	39.50-39.89 20 SPT 10,15/20,12,15,3 N:50 for 240mm 40.00 31 ES J+V+T 0.0ppm								ted at 4	0.0 m bgl.				
Bor Date	ing P Time	Progress Bore De	s and V hole pth	Water Ob Casing Depth	serva Borel Diam (mr	hole eter n)	Water Depth	Chisellir From	ng / Slov To	v Progress Duration (hh:mm)	General	Rema	arks	
				- 1,		<u>,</u>								

Drilled

By:

Dave

Hutson

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Inspection pit + Cable percussion

Plant

Used:

Dando 2000

Method

Used:



Contract:							Client:			Boreho	ole:	
Μοι	Int	Pleas	ant Sortin	g Of	fice		Royal	Mail Group I	Limited			BH16
Contract Re	f:		Start:	26.1	0.16	Grour	d Level:	National Grid Co	-ordinate:	Sheet:		
	285	49	End:	28.1	0.16		14.82	E:531001.4	4 N:182393.0		1	of 5
Samp	les a	and In-si	tu Tests	Iter	fill & ru- ation		5			lced /el	Depth	Material
Depth	No	Туре	Results	Na	Back Inst menta		Des	cription of Strata		Redu	(Thick ness)	Legend
- 0.10	1	ES	J+V+T			MAE	DE GROUND: Aspha	alt.		 14.57	0.25	
0.15		PID	0.0ppm			MAE	DE GROUND: Light	reddish brown slig Gravel is subrour	htly clayey gravelly	-	- -(0.60)	
- 0.50 [0.50	2	ES PID	J+V+T 0.0ppm			fine	to coarse flint, bri	ck, mortar with o	ccasional ash and	- - 13.97	-`´ - 0.85	
-						MAE	E GROUND: Brick el. cobbles and bou	and concrete red	ecovered as sandy	-		
E						J -	-,			-	-	
- 1.50 [1.50	3	ES PID	J+V+T 0.0ppm							-	(1.75)	
-										-	-	
-						•				-	-	
		50	L1)/1 T							12.22	2.60	
2.60 2.60	4	PID	0.0ppm				Y. Sand is fine to	medium. Grave	el is subrounded to	- 12.02 -	2.80	
- 3.00	1 5	D FS	.I+V+T			angi orga	ular flint with occas nic odour.	ional brick and m	ortar. With strong	-	-	
3.00		PID	0.0ppm	4		MAE arav	DE GROUND: Soft to ellv CLAY. Grave	o firm dark brown t I is subrounded	to black silty slightly to angular fine to	-	-	
- 3.50-3.95	1		1,1/1,1,1 N=3	⊥ ⊉		med	ium flint, brick and c	oncrete. With stro	ong organic odour.	-	(1.90)	
- 3.50	6	ES B	J+V+T	Ē		• •				-	-	
4.00-4.45	2	SPT(c)	3,4/4,5,5,6 N=20			• •				-	-	
- 4.00 - 4.00	7	ES PID	J+V+T 0.0pm					hinh streamth lie		10.12	4.70	<u> XXX</u>
4.01-4.50 4.50	2 8	B ES	J+V+T			mott	led bluish grey sa	ndy slightly grave	ally silty CLAY with	-	-	
[4.70 - 5.00-5.45	3 3	D SPT	2,1/2,3,3,4			0002	sional subrounded	medium to coars	se filnt gravel with	-	-	
- 5.00	9	ES	N=12 J+V+T			(LOI	NDON CLAY FORM	ATION)		-	[[/2 10]	
5.00 -		PID	0.0ppm							-	- (2.10)	
- 6.00 - 6.00	4 10	D ES	J+V+T							F	-	× ×
6 50 6 05	1		55 blows							-	-	
- 0.50-0.95	'		100% recovery			Stiff	becoming yory stiff	with depth high a	strength bluish grov	8.02	6.80	
- 7.00	5	D				clos	ely spaced silty CL	AY. With rare s	hell fragments and	-	-	
7.00 7.00	11	PID	0.0ppm			LOI	NDON CLAY FORM	ATION)			-	<u> </u>
- 7.50-7.95 -	4	U	75 blows 100% recovery							F	-	
- 7.50	6 1	D	22/3445							-	-	
8.00	12		N=16							F	-	
- 0.00	12		5.641							-	-	É
-										Ē	-	

	I	Boring Pro	gress and	Water Ol	oservations	3	Chisell	ing / Slow	Progress	Conorol	Domorko
	Date	Time	Borehole	Casing	Borehole Diameter	Water	From	То	Duration	General	Remarks
	Bato		Depth	Depth	(mm)	Depth		10	(m.mm)	1 200mm concrete core	to 250mm followed by
,	26/10/16	09:30	4.00	4.00	250	4.00	0.85	2.60	06:00	hand dug inspection r	bit to 0.85m bal
	26/10/16	16:30	20.50	5.00	250	20.50				2. Borehole progressed	through machine
	26/10/16	18:00	22.00	5.00	250	Dry				excavated pit by JCB	to 3.5m bgl due to
	26/10/16	18:00	40.00	23.50	200	Dry				presence of concrete	and brickwork
										3. Clean drilling technqu	les adopted. Bentonite
										All dimensions in metres	Scale: 1:50
j	Method	Inspec	tion pit +	Plar	nt			Drilled	Dave	Logged	Checked
	Used:	Cable p	ercussio	n ^{Use}	d: Da	ando 300	0	By:	Hutson	By: JSmith	By: ST AGS

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	Contract:								Client:				Boreho	ole:	
	Mou	nt I	Pleas	ant S	ortin	g Of	fice			Royal	Mail Gro	up Limited			BH16
	Contract Ref	:			Start:	26.10).16	Groun	d Level:		National Gr	id Co-ordinate:	Sheet:		
	2	285	49		End:	28.10).16		14.82		E:5310	01.4 N:182393.0		2	of 5
	Samp	les a	nd In-si	tu Tests	6	ter	fill & ru- ation			_			iced 'el	Depth	Material
	Depth	No	Туре	Res	sults	Ma	Backi Inst menti			Des	cription of S	trata	Lev	(Thick ness)	Legend
	- 9.00	7	D		/+T			Stiff	becoming	very stiff	with depth I	high strength bluish grey		-	××
	9.00	13	PID	0.0p	ppm			poss	ible seleni	te crystals	AY. WITH F	are shell tragments and		-	xx
	- 9.50-9.95 -	2	U	45 b 100% r	lows ecoverv			(LON (stra	NDON CLA tum copied	AY FORM d from 6.8	ATION) Om from prev	vious sheet)	-	- (5.70)	xx
	-	_			,			Ì			,	,	-	-	xx
	10.00	8 14	ES	/+L	/+T								-	-	<u> </u>
	- 10.00	9	PID D	0.0	ppm								-	-	<u> </u>
	-	Ũ	D										-	-	
	 - 11.00-11.45	5	SPT	3,3/4	,5,5,5								-	-	<u> </u>
	-			N=	-19								-	-	<u> </u>
	-												-	-	×× ×
	-												-	-	××
	12.00	10	D										-	-	xx
	- -	_											2.32	12.50	xx
	- 12.50-12.95 -	3	U	60 b 100% r	lows ecovery			mott	to very stif led light b	f high to v Iuish grey	ery high stre fissured si	lty CLAY. Fissures are		-	×
	13.00	11	П					rand	omly orien	tated.	PPER MOTT	I ED BEDS)	-	-	×
	13.00	15	ES	J+\ 0.0r	/+T			(,	-	-	××
	- 13.50	12	D	0.0	ppm								-	-	<u>x x</u>
	-													-	xx
	14.00-14.45	5	SPT	3,4/7	,5,7,8								-	-	xx
	-			IN=	-21								-	-	xx
													-	-	xx
	-		_										-	-	<u> </u>
	- 15.00	13	D										-	-	<u> </u>
	15 50-15 95	А		75 h	lows									-	<u> </u>
	-	-	0	100% r	ecovery								-	-	
	- 16.00	14	D										-	(7.00)	
	16.00 16.00	16	ES PID	,+\ 0.0p	/+T opm								-	-	
	16.50	15	D										-	-	×× ×
	-													-	<u> ×−−×</u>
	17.00-17.45	6	SPT	6,6/8, N=	9,9,10 =36								-	-	xx
	-												Ē	-	xx
	-													-	xx
	-						8888	1					ŀ	_	[<u></u> x
I															

31.	-						×					- 2.32	12.50	<u>××</u>
- 10 0	- 12.50-12.95 -	3	U	60 blo	WS		Stiff to	overy stiff	high to ve	ery high stre	ngth light orangish brown		-	<u>×</u> ×
- L1 4:01	-			100 /0100	overy		moule rando	mly orient	ated.	lissuieu si	illy CLAT. FISSULES ale		-	<u>x </u>
7-1 1.G	- 13.00	11	D				💥 (LAM	BETH GR	OUP - UP	PER MOTT	LED BEDS)	-	-	
SAN 01/1	13.00	15	ES	J+V+	T		**						-	
LEA	- 13.00	12		0.000			**						-	<u>x </u>
D.UK.	- 13.50	12					×					-		<u> </u>
NOU SK.C	-						**					-	<u> </u>	<u>×</u>
49 N	- 14.00-14.45	5	SPT	3,4/7,5	,7,8 7		**					-	-	<u>×</u> ×
285 b: w	-			IN-2	1		**						: [<u>x </u>
44P	-						×						.	<u>×</u>
9 7550	-						×						-	<u></u>
N LC		13					×						-	<u>x </u>
0144	-						**					_		<u></u>
CUS ax:	-						**						:	<u> </u>
PEF	- 15.50-15.95 -	4	U	75 blo 100% rec	WS OVerv		**						.	××
BLE 4375	-				lovery		**						(7.00)	xx
g C⊿ 442	- 16.00	14	D		_		×						-	
91 - Lo	_ 16.00 - 16.00	16	ES PID	J+V+ 0.0pp	-T m		×					_		
T. T€	- 16.50	15	D				×						:	<u>×</u> ×
3 9R	-		_				×						: [xx
HPL,	-		ODT	6 6/9 0/	0.40		×						-	<u>×</u>
- Co	- 17.00-17.45 -	0	501	0,0/8,9,3 N=30	9,10 6		×					-	-	
ford	-						**					_	-	<u>x x</u>
Her %	-						*						-	<u></u>
'ersic tead	-						**						:	<u> </u>
Y I Prj I		_					~~~							x x
el He	Bo	ring F	rogress	and Wat	er Ob	servation	s	Chisel	ling / Slow	Progress		~		
Hem Hem	Dut	T	Bore	hole Ca	sing	Borehole	Water		-	Duration	General F	Rema	arks	
oad,	Date	Iime	De	pth De	pth	(mm)	Depth	From	10	(hh:mm)		du ation i		
/ersic											4. Borehole drilled in follo	uction i wina dia	n casing	22.0m
gmo											bgl in 250mm; 40.0m b	gl in 20	0mm; ca	asing to
GLB 3 Fro											5.0m bgl in 250mm and	d 23.5m	bgl in 2	00mm
, 100 140 140 140											5. Monitoring well installa	tions: Pi	ipe 1 - 5	0mm
int Li											HDPE response zone	betweer	i 2.0 and	d 5.0m
RAR' onme											All dimensions in metres	Scale [.]	1.20	
Envir	Method I	Insp	ection	pit +	Plant		1		Drilled	Dave	Logged	Checke	ed	
RSK	Used: C	able	percu	ssion	Usec	l: D	ando 30	00	By:	Hutson	By: JSmith	By:	ST	AGS



Contract:								Client:					Boreho	le:	
Mou	int I	Pleas	ant Sort	ing	g Of	fice			Royal	Mail Gro	up Limited	b			BH16
Contract Re	f:		Sta	irt: ;	26.1	0.16	Ground	d Level:		National Gr	id Co-ordinate:		Sheet:		
	285	49	End	d: 2	28.1	0.16		14.82		E:5310	01.4 N:18	2393.0		3	of 5
Samp	les a	ind In-si	itu Tests		/ater	kfill & stru- ntation			Des	cription of S	trata		duced evel	Depth (Thick	Material Graphic
Depth	No	Туре	Results		8	Bac							Rec	ness)	Legend
- 18.00 -	16	D					Stiff t mottle	o very stif ed light b	f high to v luish grey	ery high stre / fissured si	ngth light orang Ity CLAY. Fis	gish brown ssures are		-	
- 18.50-18.95 -	5	U	85 blows 100% recov	ery			(LAM (strat	BETH GF um copied	ROUP - UF from 12.	PPER MOTT 50m from pre	LED BEDS) evious sheet)		-	-	
- 19.00 - 19.10 -	17 17	ES D	J+V+T												
- 19.50 	18	D					Very fissur mediu	stiff ligh ed slightl um quartz	nt greyish y gravelly z. With oc	brown ex sandy clay casional sh	tremely close ey SILT. Sand ell fragments	ly spaced is fine to and lignite	-	-	
- 20.00-20.45	7	SPT	6,6/7,7,8,9 N=31	9			· and v (LAM	veak orga BETH GF	nic odour. ROUP - LA	MINATED E	BEDS)		E	-	
20.00 20.00	18	ES PID	J+V+T 0.0ppm		N		• • • •						-	(2.00)	× · ^ · - × × · · · × • · × · · · ×
21.00	21.00 19 D												 	21 50	
21.50-21.95	00 19 D 50-21.95 8 SPT 6,6/8,8,10,10 N=36							stiff to ha bluish gre y silty CLA BETH GF	rd very hi y mottled \Y. Sand ROUP - LC	gh to extrem light orangis is fine glauc WER MOT	nely high streng sh brown fissur conite and calci TLED BEDS)	gth slightly ed slightly te.	-		
22.50	20	D											-	-	× · · · · · · · · · · · · · · · · · · ·
23.00-23.45	6	U	90 blows 100% recov	ery									- - - -	-	× · · · × · · · · · · · · · · · · · · ·
- 23.50	21	D												-	
24.00	22	D											- - - -	-	
24.50-24.78	10	SPT	10,10/26,2 for 52mn N=118*	24 n									-	-	x··> ·×· x·
25.00 19 ES J+V+T 25.00 PID 0.0ppm													- - - -	- (7.50)	×
25.50 23 D														- - -	
26.00-26.45	7 24	U D	95 blows 100% recov	ery											
	inc: 5					107-	<u>م</u>	Ohie						L	<u> }</u> ;

lei		Boring Pro	gress and	Water O	bservations	6	Chisell	ing / Slow	Progress	Conorol	Domor	ko	
, ner	Date	Time	Borehole	Casing	Borehole Diameter	Water	From	То	Duration	General	Reman	KS	
e Koac			Depth	Depth	(mm)	Depth			(111.11111)	bgl. Pipe 2- 33mm HE	PE with ad	aptor ar	ıd
nent Lta, 18 Frogriuu										6. Borehole backfilled wi filter between 2.0m to from 1.5m to 2.0m bg bentonite seal/groutin 1.5mbg; 5.0m to 7.0m	at 21.0m bg ith 3mm shi 5.0m bgl; s I & 20.0m to g between (bgl; 18.0m	ngle gra and filte 22.0m 0.3 and to 20.0	ivel ir bgl & m bgl
										All dimensions in metres	Scale:	1:50	
	Method Used:	Inspec Cable p	tion pit + ercussio	Plar	nt :d: D a	ando 300	0	Drilled By:	Dave Hutson	Logged By: JSmith	Checked By:	ST	AGS



Contract:								Client:				Boreho	ole:	
Mo	unt	Pleas	ant S	Sortin	g Ol	fice		R	Royal	Mail Gro	up Limited			BH16
Contract R	ef:			Start:	26.1	0.16	Ground	d Level:		National Gr	id Co-ordinate:	Sheet:		
	285	49		End:	28.1	0.16		14.82		E:5310	01.4 N:182393.0		4	of 5
San	nples a	and In-s	itu Tes	ts	ater	kfill & stru- itation			Des	cription of S	trata	luced	Depth (Thick	Material Graphic
Depth	No	Туре	Re	sults	3	Bac In: mer			200			Rec	ness)	Legend
- 27.00 - 27.50-27.78 	25 3 11	D SPT	12,1 for N=	3/25,25 50mm =120*			Very light l sandy (LAM <i>(strati</i>	stiff to hard bluish grey y silty CLAY IBETH GRO <i>tum copied fi</i>	very hi mottled . Sand UP - LC rom 21.8	gh to extrem light orangis is fine glauc 0WER MOT⊺ 50m from pre	ely high strength slightly h brown fissured slightly onite and calcite. FLED BEDS) evious sheet)	-	- - - - - - - - - - - - -	
- 28.50	26	D										- - - - 	29.00	× · · · × · · · ×
- 29.00-29.4 - -	5 8	U	110 100%	blows recovery			Very grave subro	stiff to hard elly silty CLA ounded to su	d green \Y. Sar Ibangula	ish brown fr nd is fine to ar fine to coa	iable very sandy slightly coarse quartz. Gravel is rse flint.	14 78	(0.60)	
- 29.50	27		,				Very claye	dense light y SAND.	brown Sanc	to light gree	enish brown silty slightly quartz with occasional	-	-	**************************************
- 30.00 - 30.00	20 28	ES D	+ل _	-v+I			(THA	NET SAND	FORM/	ATION)	alum liint gravel.	Ę		× ·×
- 30.00 - 30.50-30.74 -	4 12	PID SPT	0.(12,1 for N=	0ppm 3/35,15 15mm =167*								-	-	
31.50 32.00-32.1	29 3 13	D SPT	2 for N=	5/50 50mm =300*								-		× 0 _× × 0 × 0 × 10 × 0 × 0 × 0 × 0 × 0 × 0
- 33.00	30	D										- - - - -	_ (0.20) 	× 0 ×
- - 33.50-33.6 - - - - - -	3 14	SPT	2 for N=	5/50 50mm =300*								- - - - - - - -	- - - - - - -	×0. ×0. *0. ×0. **.
- 34.50	31	D											-	× · · · × • × · · · ×
- - 35.00-35.2	5 15	SPT	12,1 for	2/35,15 25mm								- - - -	- - -	× × ·•
35.00 35.00	21	ES PID	N= J+ 0.0	=150* +V+T)ppm			Desc	rintion on pr	avt sher	+		- -20.98	35.80	
L			L				A DOSO			•		L	L	Г <u>а</u>
B	oring F	Progress Bore	s and V shole	Vater Ob Casing	Bore	tions	Water	Chisellir	ng / Slov	v Progress Duration	General	Rema	arks	
Date	ate Time Depth Depth Depth (mm) Depth							From	lo	(hh:mm)	& 22.0m to 24.0m bgl (clay/sand) between 7 24.0m bgl to base of b	with con .0m to 1 orehole	npacted 8.0m bę with flu	l backfill gl & sh cover

Date		Depth	Depth	(mm)	Depth		10	(hh:mm)	8 00 0mm to 04 0mm h m	with a survey a stand large left!
									 & 22.0m to 24.0m bgi (clay/sand) between 7 24.0m bgl to base of l installed at surface. 7. PID = Photo ionisation bulb 8. Groundwater strike (n 	A sector with 10.6eV
									All dimensions in metres	
Method	Inspec	tion pit +	- Plan	t			Drilled	Dave	Logged	Checked
Used:	Cable p	ercussio	n ^{Use}	d: Da	ando 300	0	By:	Hutson	By: JSmith	By: AGS



Contract:								Client:				Boreho	ole:	
Mou	int l	Pleas	ant S	Sortin	g Of	fice		F	Royal	Mail Gro	up Limited			BH16
Contract Re	f:			Start:	26.1	0.16	Ground	Level:		National G	id Co-ordinate:	Sheet:		
	285	49		End:	28.1	0.16		14.82		E:5310	001.4 N:182393.0		5	of 5
Samp	les a	nd In-s	itu Test	s	ater	fill & tru- ation			Dee	aniatian of C		led	Depth	Material
Depth	No	Туре	Re	sults	Na	Back Inst			Des	cription of S	trata	Redu	(Thick ness)	Legend
- 36.00	32	D					Very Sand fine to	dense dar is fine to co coarse flin	k green barse qu t.	ish brown artz. Grave	slightly sandy GRAVEL. I is subangular to angular	-	-	
- 36.50-37.00 36.50-36.77	3 16	B SPT	10,1 ⁻ for N=	1/28,22 47mm :123*			(stratı	um copied fi	rom 35.8	30m from pre	evious sheet)	- - - - - - -	-(1.70) - -	0.0.0. 0.0.0
- 37.50	33	D					Struct slightl	tureless CH	IALK re SILT Gra	covered as vel is subar	off white' slightly sandy gular fine to medium flint.	-22.68	37.50	
- - 38.00-38.13 -	17	SPT	25 for N=	5/50 50mm :300*			(WHI	ŤĒ CHAĽK	SUBGR	OUP)	-	- - - - -	- - - - - -	
- 39.00	34	D										- - - - -	-(2.50) 	
- - 39.50-39.63 -	18	SPT	25 for N=	5/50 50mm :300*								-25 18	40.00	
- 40.00 - 40.00 - 40.00	22 35	es D Pid	J+ 0.0	V+T)ppm			Boreh	nole comple	ted at 40	0.0m bgl.			-	
- - - - - - - - - - - - - - -												- - - - - - - - - - - -	- - - - - - - - - - - -	
Ror	ina P	rooree	s and M	/ater Oh	serva	tions		Chisellin	na / Slov	v Progress				
Date	Time	Bore	hole (Casing	Boreh	nole eter	Water	From	To	Duration (hh:mm)	General	Rema	arks	
	Date Time Depth Depth Depth (mm) Diameter (mm)										by driller at 4.0m bgl ri mins and sealed out a 9. Small rate of groundw by driller at 20.50m to 22.0m bgl. 10. 300L of water added	sing to 3 t 4.6m b ater see 21.0m b to drill tl	3.8m bg ogl. page ol ogl; seal hrough	l after 20 oserved ed out at the

Drilled

By:

Dave

Hutson

Thanet Sand.

Logged

By:

All dimensions in metres Scale:

JSmith

1:50

ST

AGS

Checked

By:

Inspection pit + Cable percussion

Method

Used:

Plant

Used:

Dando 3000



Contract:							(Client:					Boreho	ole:	
Mo	ount	Pleas	ant S	Sorting	g O 1	fice		F	Royal	Mail G	rοι	up Limited			BH17
Contract F	Ref:			Start:	28.1	0.16	Ground	Level:		National	Gric	d Co-ordinate:	Sheet:		
	285	49		End:	01.1	1.16		14.52		E:53	10 [.]	15.2 N:182442.8		1	of 5
Sa	mples a	and In-s	itu Test	S	ater	fill & tru- ation			Dee				lced /el	Depth	Material
Depth	No	Туре	Re	sults	Ň	Back Inst			Des	cription o	1 50	ala	Redu	ness)	Legend
-							MADE	GROUND	: Concr	ete. JCB	bac	kfill.	- 14.22	- 0.30	
0.25 0.25 0.25	1	ES PID	J+ 0.0	V+T)ppm			MADE ∖is fine	E GROUND to coarse.	: Greyis Grave	sh brown : I is subro	SAN	ID and GRAVEL. Sand ed to subangular fine to /	14.02	0.50	
-							. coarse		Concr	ete and co	omo	nted whole bricks	E		
-											enie	nied whole bricks.	- -	L(1.00)	
-							• •						13.02	- 1.50	
- 1.50 [1.50	2	ES PID	J+ 0.0	·V+T)ppm			Firm for angi	to stiff me ish brown s	dium si lightly s	trength lig ilty slightly	ght y sa	brownish grey to dark ndy CLAY. Sand is fine	E	-	× · · · ×
1.50-2.00	1	LB	+	\/+T			to coa	rse. DON CLAY	FORM	ATION)	,	,	-	-	
2.00	1	PID	0.0)ppm blows			(2011						-	- (1.50)	××
2.50	4	ES	100% J+	recovery V+T									F	-	× <u>···</u> ×
- 2.50 _2.80	1	D D											11.52	- - 3.00	×·_·×
- 3.00 3.00	5	ES PID	J+ 0.0	·V+T)ppm			Stiff m	nedium to h	igh stre	ngth dark	gre	yish brown fissured silty	-	-	××
- 3.00-3.45	1	SPT	2,2/3 N	3,4,4,5 =16			(LONE	DON CLAY	FORM	ATION)			E	-	
- 3.50 - 3.70	6 3	ES D	J+	V+T									E		××
4.00-4.45	2	U	50	blows			8						E	[
4.00	7	ES	100%	V+T			8						E		××
4.00	4		0.0	урт уутт			8						E		××
4.80 4.80	5	D	234	1455			8						E	-	××
5 00	9	FS	N	=18 •V+T			8						E		××
5.00		PID	0.0)ppm			8						-	-	××
-							8						-	-	××
- 6.00 - 6.00	6 10	D ES	J+	·V+T									-	-	<u></u>
- 6 50-6 95	3	υ	55	blows			Š.						-	-	
	Ű		100%	recovery			8							-	××
7.00	7	D		\/. T			8						-	-	<u></u>
7.00		PID	0.0)ppm											
- 7.50	8	D					Š.						-	- (9.30) -	××
- 8.00-8.45	3	SPT	3.3/4	4,4,5.7									ŀ	-	
8.00	12	ES	N N	=20 ·V+T			8						È	F	
-							8							-	××
-							8						-	-	
	Roring E	Prograe	s and M	/ater Oh	serva	itione		Chicollin		v Progress	<u> </u>				
Date	Time	Bore	hole (Casing	Bore	hole	Water	From	. у , 5ю	Duratio	on	General I	Rema	arks	
28/10/16	06.57	De	pth	Depth -	(mr	m)	Depth Dry	0.50	1 50	(hh:mn	n) -	1. 300mm concrete core	to 300m	nm follo	wed by
28/10/16	18:00	16	.00	4.00	25	0	Dry		1.50	02.00		hand dug inspection p 2. Borehole progressed i	it to 0.50 hrough	um bgl. machine	e
31/10/16 31/10/16	06:57 09:16	16	.00	4.00 4.00	25	U I	Dry 20.00					excavated pit by JCB presence of concrete	to 1.5m and bric	bgl due kwork	to
31/10/16	18:00	33.	.00	22.50	20	0						obstruction from 0.50r	n to 1.5r	n bgl.	

GINT_LIBRARY_V8_06.GLB LibVersion: v8_06_014 PŋVersion: v8_06-Core+Logs - 002 | Log CABLE PERCUSSION LOG - A4P | 28549_MOUNT PLEASANT.GPJ - v8_06. RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tei: 01442 437500, Fax: 01442 437550, Web: www.rsk.co.uk | 11/01/17 - 14:01 | CB1 |

Used:	Cable p	ercussio	n 🛛	Used:	Da	ando 200	0	By:	Hutson		By:	JSmith	By:	21	AGS
Method	Inspec	tion pit +	⊦ I	Plant				Drilled	Dave		Logged		Checke	d	
01/11/16	12:03	40.00	22.5	50	150					All	dimensio	ons in metres	Scale:	1:50	
01/11/16	09:01	35.40	22.5	50	200										
01/11/16	07:00	33.00	22.5	50	200					3.	Clean dr	illing technqu	es adopte	ed. Bento	onite
31/10/16	18:00	33.00	22.5	50	200						obstructi	on from 0.50r	n to 1.5m	bgl.	
31/10/16	09:16	20.00	4.0	00		20.00					presence	e of concrete	and brick	work	
0.11.01.10	00.0.			-							Chouvan		10 1.0111 0	gi uuc ic	, ,



	Contract:								Client:					Boreho	ole:	
	Mou	nt l	Pleas	ant S	ortin	g Of	fice			Royal	Mail Gr	oup Limit	ed			BH17
	Contract Ref	:			Start:	28.1	0.16	Groun	d Level:		National (Grid Co-ordina	ate:	Sheet:		
		285	49		End:	01.1	1.16		14.52	2	E:531	1015.2 N:1	82442.8		2	of 5
	Samp	les a	nd In-si	tu Tests		ater	cfill & tru- tation			Doc	cription of	Strata		uced vel	Depth (Thick	Material
	Depth	No	Туре	Res	ults	Ň	Bact Ins ment			Des		Sirala		Red Le	ness)	Legend
	- 9.00 9.00	9 13	D ES	J+√	/+T			Stiff I	medium to Y.	o high stre	ngth dark	greyish brown	fissured silty	-	-	××
	- 9.00	4	PID	0.0p	opm			(LON	IDON CL	AY FORM	ATION)			-	-	
	- 9.50-9.95	4	U	60 b 100% re	iows ecovery			(ទំពេង	um copie	2 110111 3.00	Jin nom pr	evious srieel)			-	xx
	-	10	П											_	-	××
	10.00	14	ES	J+\ 0.0‴	/+T										-	xx
	- 10.00 - 10.50	11	PID D	0.0p	pm										-	<u> </u>
	-		D											-	-	
	- - 11 00-11 45	4	SPT	3 4/4	556									_	-	<u> </u>
	-	т	011	N=	20									-	-	xx x
	-													-	_	
	-													-	-	xx
	- 12 00	12	D											_	_	xx
	40.00		5						- 4:66	hinh star		h	al la la dia la consección	- 2.22	12.30	
	- 12.30 - 12.50-12.95	13	U	65 b	lows			slight	sum very	nign stre silty CLAY	. Sand is f	fine to medium	a biuish grey 1.		-	
•	-	0	•	100% re	ecovery			(LĂN	IBETH GF	ROUP - UI	PPER MO	TTLED BEDS)	-	-	
	- 13.00	14	D												-	
	13.00	15	ES	J+\ 0.0r	/+T									-	-	××
	- 13.50	15	D	0.0	рп										-	
	-													-	-	
	- 14.00-14.45	5	SPT	5.5/7.7	7.8.10									-	_	
	-	-		N=	32									-	-	× · · · ×
	-														-	<u>xx</u>
	-													-	-	×
	- 15.00	16	D											_	-	x <u>···</u> x
	-													-	-	
	- 15.50-15.95	6	U	70 b	lows										-	<u> </u>
	-			100% re	ecovery										(7.20)	<u> </u>
	- 16.00	16	ES	J+∖	/+T									-	_	× · · · ×
	16.00 16.00	17	D PID	0 0r	nna										-	x
	16.50	18	D	,											-	xx
	-															× · · · · · ·
	- 17.00-17.45	6	SPT	5,5/7,9	9,9,11									-	-	
				N=	36										-	
	-														-	× ×
																× · · · ×
				l				4								<u> </u>

D		Boring Pro	gress and	Water Ol	oservations	3	Chisell	ing / Slow	Progress	Conorol	Domorko	
2	Date	Time	Borehole	Casing	Borehole Diameter	Water	From	То	Duration	General	Remarks	
Cad Cad	Dale	TITLE	Depth	Depth	(mm)	Depth	110111	10	(hh:mm)	seal created before re	duction in casing	eizo
וווופווו רוח, וס ו וטעווטוב וי										4. Borehole drilled in foll bgl in 250mm; 35.4m in 150mm casing to 4 22.5m bgl in 200mm of 5. Monitoring well installa HDPE response zone	bowing diameters: bgl in 200mm; 40 0m bgl in 250mm diameter. ations: Pipe 1 - 50 between 1.0 and	19.5m m bgl and)mm 1.5m
										All dimensions in metres	Scale: 1:50	
101 101	Method Used:	Inspec Cable p	tion pit + ercussio	⊢ Plar n ^{Use}	t d: Da	ando 200	0	Drilled By:	Dave Hutson	Logged By: JSmith	Checked By: ST	AGS

GINT LIBRARY_V8_06.GLB LibVersion: v8_06_014 PŋVersion: v8_06 - Core+Logs - 002 | Log CABLE PERCUSSION LOG - A4P | 28549_MOUNT PLEASANT.GPJ - v8_06. RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tei: 01442 437500, Fax: 01442 437550, Web: www.rsk.co.uk, | 11/01/17 - 14:01 | CB1 |



Mount Pleasant Sorting Office Royal Mail Group Limited B Contract Ref Samples and In-situ Tests Samples In-situ Tests Samples and In-situ T	Contract:								Client:					Boreho	ole:	
Contract Ref. Start Start Start 18.0.16 Cround Level: National Gind Co-ordinate: Shet: 28549 End 01.11.16 14.52 E:S31015.2 N:182442.8 3 of Depth No Type Results 3 of Description of Strats Bigg Depth Bigg Digg </th <th>Μοι</th> <th>Int</th> <th>Pleas</th> <th>ant S</th> <th>Sortin</th> <th>g O</th> <th>ffice</th> <th></th> <th></th> <th>Royal N</th> <th>Mail Gro</th> <th>oup</th> <th>o Limited</th> <th></th> <th></th> <th>BH17</th>	Μοι	Int	Pleas	ant S	Sortin	g O	ffice			Royal N	Mail Gro	oup	o Limited			BH17
28549 End: 011116 14.52 E:531015.2 N:182442.8 3 0 Depth Molitor	Contract Re	f:			Start:	28.1	0.16	Ground	Level:		National Gr	id (Co-ordinate:	Sheet:		
Samples and In-stu Tests By Samples and In-stu Tests B		285	49		End:	01.1	1.16		14.52		E:5310)1:	5.2 N:182442.8		3	of 5
15:00 19 D Very stiff very high steepin light bown motilest bluish grey L <thl< <="" td=""><td>Samp Depth</td><td>oles a</td><td>and In-s</td><td>itu Test</td><td>s sults</td><td>Water</td><td>Backfill & Instru-</td><td></td><td></td><td>Desc</td><td>ription of S</td><td>stra</td><td>ta</td><td>keduced Level</td><td>Depth (Thick ness)</td><td>Materia Graphic Legenc</td></thl<>	Samp Depth	oles a	and In-s	itu Test	s sults	Water	Backfill & Instru-			Desc	ription of S	stra	ta	keduced Level	Depth (Thick ness)	Materia Graphic Legenc
19:00 20 00 0 </td <td>18.00</td> <td>19 7 17</td> <td>D U ES</td> <td>65 100%</td> <td>blows recovery</td> <td></td> <td></td> <td>Very slightl (LAM (stratu</td> <td>stiff very I y sandy sil BETH GR(<i>um copied</i></td> <td>high stren Ity CLAY. OUP - UP from 12.3</td> <td>gth light br Sand is fin PER MOTT 0m from pre</td> <td>row e to LE evic</td> <td>n mottled bluish grey o medium. D BEDS) <i>ous sheet)</i></td> <td>- LZ - - - - - - - - - -</td> <td></td> <td></td>	18.00	19 7 17	D U ES	65 100%	blows recovery			Very slightl (LAM (stratu	stiff very I y sandy sil BETH GR(<i>um copied</i>	high stren Ity CLAY. OUP - UP from 12.3	gth light br Sand is fin PER MOTT 0m from pre	row e to LE evic	n mottled bluish grey o medium. D BEDS) <i>ous sheet)</i>	- LZ - - - - - - - - - -		
11.3.0 21 D </td <td>19.00</td> <td>20</td> <td>D</td> <td></td> <td>•••</td> <td></td> <td></td> <td>0</td> <td></td> <td><u> </u></td> <td></td> <td></td> <td></td> <td>- -4.98</td> <td>- 19.50</td> <td></td>	19.00	20	D		•••			0		<u> </u>				- -4.98	- 19.50	
20.00 c45 7 SPT 5.577.6.87 JAV-T Stiff to very stiff dark grey to light brownish grey extremely closely spaced silty slightly sandy CLAY. Sand is fine to coarse. With frequent white speckes and thin laminations of light. -	19.50	21						Stiff t Sand (LAM	o very str is fine. BETH GR(ff dark gi DUP - LAI	vey to light	gr BED	ey silty sandy CLAY.	- - -	-	×
21.00 22 D -6.46 21.00 -7.46 21.00 -7.46 21.00 -7.46 21.00 -7.46 22.00 23 D -7.46 22.00 23 D -7.46 22.00 <td< td=""><td>20.00-20.45 20.00 20.00</td><td>7 18</td><td>SPT ES PID</td><td>5,5/7 N J+ 0.0</td><td>7,6,6,8 =27 ∙V+T)ppm</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>-</td><td>(1.50)</td><td></td></td<>	20.00-20.45 20.00 20.00	7 18	SPT ES PID	5,5/7 N J+ 0.0	7,6,6,8 =27 ∙V+T)ppm									-	(1.50)	
21.50-21.95 8 U 85 blows 100% recovery Coarse. With requent white speckes and thin laminations of 100% recovery (1,00)	 - 21.00	22	D					Stiff t closel	o very stif y spaced	f dark gr silty sligh	ey to light htly sandy	bro CL	wnish grey extremely AY. Sand is fine to	<u>-6.48</u>	21.00	× · · · · ·
22.00 23 D -7.48 22.00 27.48 27.49 27.50<	21.50-21.95	8	U	85 100%	blows recovery			coars lignite (LAM	e. With fr BETH GR(equent wr OUP - LAI	nite speckle	es a BED	ind thin laminations of OS)		(1.00)	
22.50 24 D 22.50 24 D 23.00-23.44 8 SPT 7,8/10,12,14,14 for 6 fmm N=52" 24.00 25 D 24.00 25 D 24.50-24.95 9 U 90 blows 100% recovery 100% recovery 25.00 26 D 26.00-26.30 9 SPT 10,10/15.35 for 75mm 726.00-26.30 9 SPT 10,10/15.35 for 75mm 726.00-26.30 9 SPT 10,10/15.35 for 75mm 726.00-26.30 9 SPT 10,10/15.35 for 75mm N=100** Stiff to very stiff dark brownish grey slightly sandy CLAY. Sand is fine to medium. (LAMBETH GROUP - LOWER MOTTLED BEDS) -11.48 26.00-26.30 9 SPT 10,10/15.35 for 75mm N=100** Borehole brokfilled with 3mm shingle grey slightly sandy CLAY. Sand is fine to medium. (LAMBETH GROUP - LOWER MOTTLED BEDS) -11.48 26.00-26.30 9 SPT 10,10/15.35 for 75mm 1	22.00	23	D					Stiff 1	o very st	iff orangis	sh brown r	not	tled light bluish grey	<u>7.48</u> -	22.00	×
23.00-23.44 8 SPT 7.8/10,12,14,14 1	22.50	24	D					extrer (LAM	nely closel BETH GR(y spaced OUP - LO	silty CLAY. WER MOT	TLE	ED BEDS)	-	-	
24.00 25 D Image: Constraint of the second se	23.00-23.44	8	SPT	7,8/10, for N:	12,14,14 61mm =52*									-	(3.50)	
24.50-24.95 9 U 90 blows 100% recovery Image: Constraint of the second s	- 24.00	25	D											- - - -	- - - -	× - ×-
25.00 19 ES J+V+T -10.98 25.50 25.00 26 PID 0.0ppm Stiff to very stiff dark brownish grey slightly sandy CLAY. Sand is fine to medium. (LAMBETH GROUP - LOWER MOTTLED BEDS) -11.48 26.00 26.00-26.30 9 SPT 10.10/15.35 for 75mm N=10* Stiff to very sliff high to very high strength dark reddish brown to bluish grey slightly sandy CLAY. Sand is fine to medium. (LAMBETH GROUP - LOWER MOTTLED BEDS) -11.48 26.00 Sering Progress and Water Observations Chiselling / Slow Progress Date Time Borehole Casing Borehole Water Depth From To Duration (th:mm) 6 Borehole backfilled with 3mm shingle gra filter between 1.0m to 1.5m bgl; sand filte rom 0.7m to 1.0m bgl & bentonite seal/grouting between 3.5m bgl to base of Method Inspection pit + Used: Plant Drilled Dave By; Dave Hutson All dimensions in metres Scale: 1:50 Chicked	24.50-24.95	9	U	90 100%	blows recovery									-	-	x x x
25.00 26 PID 0.0ppm Stiff to very stiff dark brownish grey slightly sandy CLAY. (0.50) 26.00-26.30 9 SPT 10.10/15.35 for 75mm Stiff to very stiff high to very high strength dark reddish brown (1.00) 26.00-26.30 9 SPT 10.10/15.35 for 75mm (1.00) -11.48 26.00 26.00-26.30 9 SPT 10.10/15.35 for 75mm (1.00) -11.48 26.00 -12.48 27.00 -1	- 25.00	19	ES	J+	V+T			8						-	-	×
26.00-26.30 9 SPT 10,10/15,35 for 75mm N=100* Stiff to very stiff dark brownish grey slightly sandy CLAY. Sand is fine to medium. (LAMBETH GROUP - LOWER MOTTLED BEDS) -11.48 26.00 -11.48 26.00 26.00-26.30 9 SPT 10,10/15,35 for 75mm N=100* Stiff to very stiff high to very high strength dark reddish brown to bluish grey slightly sandy CLAY. Sand is fine to medium. (LAMBETH GROUP - LOWER MOTTLED BEDS) -11.48 26.00 26.00-26.30 9 SPT 10,10/15,35 for 75mm N=100* Chiselling / Slow Progress Chiselling / Slow Progress (1.00) -11.48 26.00 26.00-26.30 9 SPT 10,10/15,35 for 75mm N=100* Chiselling / Slow Progress Chiselling / Slow Progress (1.00) -12.48 27.00 26.00 Time Borehole Casing Borehole Chiselling / Slow Progress General Remarks Date Time Borehole Casing Borehole Chiselling / Slow Progress 6. Borehole backfilled with 3mm shingle grading the backfilled with 3mm shingle grading the backfilled with 3mm shingle grading the compacted backfill (clay/sand) between 0.3 and 0.7m bgl a 0.7m	25.00	20	PID	0.0)ppm			§						- -10.98	25.50	×
26.00-26.30 9 SPT 10,10/15,35 for 75mm N=100* Stiff to very stiff high to very high strength dark reddish brown to bluish grey slightly sandy CLAY. Sand is fine to medium. (LAMBETH GROUP - LOWER MOTTLED BEDS) (1.00) Boring Progress and Water Observations Chiselling / Slow Progress Date Time Borehole Casing Depth Borehole Depth Borehole Depth Borehole Depth Borehole Depth Chiselling / Slow Progress General Remarks Boring Progress and Water Observations From To Duration (hh:mm) bgl. 6. Borehole backfilled with 3mm shingle gra filter between 1.0m to 1.5m bgl; sand filte from 0.7m to 1.0m bgl & bentonite seal/grouting between 0.3 and 0.7m bgl a 1.5m to 3.5m bgl with compacted backfill (clay/sand) between 3.5m bgl to base of Method Inspection pit + Used: Plant Drilled Dave By: Dave Hutson Logged By: Scale: 1:50								Stiff t Sand	is fine to n	ff dark b nedium.	WFR MOT	еу ті ғ	slightly sandy CLAY.		(0.50)	
Boring Progress and Water Observations Chiselling / Slow Progress General Remarks Date Time Borehole Casing Borehole Water Date Time Borehole Casing Borehole Water Depth Depth Depth Depth From To Duration Image: Second Seco	26.00-26.30	9	SPT	10,10 for N=	0/15,35 75mm :100*			Stiff to to blu (LAM	o very stiff ish grey sli BETH GRO	high to ve ghtly sand OUP - LO	by high stream by CLAY. S WER MOT	eng San TLE	th dark reddish brown d is fine to medium. ED BEDS)	-	(1.00)	
Boring Progress and Water Observations Chiselling / Slow Progress Date Time Borehole Depth Casing Depth Borehole Depth Water Depth From To Duration (hh:mm) Borehole backfilled with 3mm shingle gra filter between 1.0m to 1.5m bgl; sand filte from 0.7m to 1.0m bgl & bentonite seal/grouting between 0.3 and 0.7m bgl a Method Inspection pit + Used: Plant Dardo 2000 Drilled By; Dave Hutson Logged By; Logged By; Logged By; Checked By; Sr	-													-12.48	27.00	
Date Time Borehole Depth Casing Depth Borehole Depth Water Depth From To Duration (hh:mm) Borehole backfilled with 3mm shingle gratilet from 0.7m to 1.0m bgl & bentonite seal/grouting between 0.3 and 0.7m bgl at 1.5m to 3.5m bgl with compacted backfilled with 3mm shingle gratilet from 0.7m to 1.0m bgl & bentonite seal/grouting between 0.3 and 0.7m bgl at 1.5m to 3.5m bgl with compacted backfill (clay/sand) between 3.5m bgl to base of All dimensions in metres Scale: 1:50 Method Used: Inspection pit + Used: Plant Drilled Drilled Dave Logged Checked By: Checked By: ST	Bo	rina F	Progress	s and M	/ater Oh	serva	tions		Chisell	ina / Slow	Progress					
Method Inspection pit + Plant Drilled Drilled Drilled Dave Logged Checked ST	Date	Time	Bore	hole (Casing	Bore	hole	Water	From	То	Duration (hh:mm)		General I	Rema	arks	
Method Inspection pit + Plant Drilled Dave Logged Checked ST Method Inspection pit + Vsed: Dando 2000 By: Hutson By: ISmith By: ST				PUI	Dehili	(mi		Берш				6	bgl. Borehole backfilled wit filter between 1.0m to from 0.7m to 1.0m bgl seal/grouting between 1.5m to 3.5m bgl with (clay/sand) between 3	th 3mm 1.5m bg & bento 0.3 and compac .5m bgl	shingle I; sand onite 0.7m b ted bac to base	gravel filter gl and kfill of
Used: Cable percussion Used: Dando 2000 By: Hutson By: ISmith By: ST						<u> </u>			Ш			A	dimensions in metres	Scale:	1:50)
	Method Used: Ca	nspe able	ection percu	pit + ission	Plan Useo	t d:	Dar	ndo 200	00	Drilled By:	Dave Hutson		Logged By: JSmith	Check By:	ed ST	AGS

I	Boring Pro	gress and	Water O	bservations	6	Chisell	ing / Slow	Progress	Conorol	Domorko
Date	Time	Borehole	Casing	Borehole Diameter	Water	From	То	Duration	General	Remarks
Date	Time	Depth	Depth	(mm)	Depth	110111	10	(hh:mm)	bal	
									 6. Borehole backfilled w filter between 1.0m to from 0.7m to 1.0m bg seal/grouting between 1.5m to 3.5m bgl with (clay/sand) between 3 	ith 3mm shingle gravel 1.5m bgl; sand filter I & bentonite 0.3 and 0.7m bgl and compacted backfill 3.5m bgl to base of
									All dimensions in metres	Scale: 1:50
Method Used:	Inspec Cable p	tion pit + ercussio	• Plai n Use	nt d: Da	ando 200	0	Drilled By:	Dave Hutson	Logged By: JSmith	Checked ST AGS



	Borehole:	
Mount Pleasant Sorting Office	Royal Mail Group Limited B	H17
Contract Ref: Start: 28.10.16 Ground Level:	National Grid Co-ordinate: Sheet:	
28549 End: 01.11.16 14.5	52 E:531015.2 N:182442.8 4 of	5
Samples and In-situ Tests 펄 🖉 는 털	Beeth M	laterial
Depth No Type Results	Description of Strata 공장 (Thick lo 윤그 ness) L	egend
27.00 27 D Very stiff blue	uish grey mottled dark reddish brown extremely	<u></u>
(LAMBETH C	GROUP - LOWER MOTTLED BEDS)	<u> </u>
27.50-27.95 10 U 100 blows [100% recovery		
		<u> </u>
	(2.50)	<u> </u>
		<u> </u>
		<u> </u>
29.00 2 LB		
29.00-29.15 10 SF1(c) 25/30 for 75mm	-14.98 29.50 -	<u> </u>
Very dense s	slightly clayey SAND. Sand is predominantly fine	· · · × · · ×
(THANET SA	AND FORMATION)	××
30.00 20 ES J+V+1 30.00 29 D	E E 🕅	× ×
- 30.50-30.63 11 SPT 25/50		×
for 50mm N=300*		×
		× ×
	E E ×	····×
1.50 30 D		×
		···*
- 32.00-32.17 12 SP1 15,10/50 for 70mm		×
N=214	[(6.10) ∴ ×	× · · · ×
		· · × · · ·
33.00 31 D		×
		× · · · · · · · · · · · · · · · · · · ·
33.50-33.63 13 SPT 25/50 507 500 25/50		· · × · · · ·
N=200*		×
		×
- 34.50 32 D		×
		×. · *
35.00-35.18 14 SPT 15,10/50		· · · × · · ·
for 75mm N=200*		××
35.00 21 ES J+V+T 35.00 PID 0.0ppm Description c	-21.08 35.60 ½ on next sheet	<u>, , , , , , , , , , , , , , , , , , , </u>
35.50 33 D		 ⊂

Ð	F	Boring Pro	gress and	Water O	bservation	5	Chisell	ing / Slow	Progress	Conorol	Domorko
	Date	Time	Borehole	Casing	Borehole Diameter	Water	From	То	Duration	General	Remarks
т ∟та, т8 ⊢годтоге коаа			Depth	Depth	(mm)	Depth			(nn:mm)	borehole with flush cc 7. PID = Photo ionisation bulb 8. Small rate of groundw by driller at 20.0m bgl bgl. 9. 200L of water added	over installed at surface. n detector with 10.6eV vater seepage observed ; sealed out at 22.0m to drill through the
Kok Environmer	Method Used:	Inspec Cable p	tion pit + ercussio	- Plai n Use	nt d: D i	ando 200	0	Drilled By:	Dave Hutson	All dimensions in metres Logged By: JSmith	Scale: 1:50 Checked By: ST AGS



All dimensions in metres Scale:

JSmith

Logged By: 1:50

ST

Checked

By:

AGS

Contract:							(Client:				Boreho	ole:	
Μοι	int F	Pleas	ant S	Sortin	g Of	fice		F	Royal N	<i>l</i> lail Gro	up Limited			BH17
Contract Re	f:			Start:	28.1	0.16	Ground	Level:	1	National Gri	id Co-ordinate:	Sheet:		
	285	49		End:	01.1	1.16		14.52		E:5310	15.2 N:182442.8		5	of 5
Samp	les a	nd In-si	tu Tes	ts	Vater	ckfill & nstru- ntation			Desci	ription of S	trata	duced evel	Depth (Thick	Material Graphic
Depth	No	Туре	Re	esults	>	Ba Ba Ba		·				Re L	ness)	Legend
- 36.00 - 36.50-36.60	34 15	D	2 for N=	5/50 50mm =300*			Dark GRAV Flint a (WHIT (<i>stratu</i> Recov CLAY (WHIT	greenish g /EL. Grav Ind chalk. IE CHALK Im copied f /ery of off chalk. IE CHALK	SUBGRC SUBGRC rom 35.60 white sil	white slight prounded to DUP) <u>Om from pre</u> ty chalky v DUP)	y sandy slightly clayey angular fine to coarse vious sheet) ery gravelly firm to stiff		(0.90) 36.50	
- 37.50	35	D										-	-	
- 38.00-38.10	16	SPT	2 for N=	5/50 50mm =300*								-	- (3.50)	
- 39.00	36	D										-	-	
- 39.50-39.62 -	17	SPT	2 for N=	5/50 60mm =250*								-25.48	40.00	
	22 37	ES D PID	-ل 0.۱	+V+T Oppm			Boreh	ole comple	ted at 40.	.0m bgl.		-23.40 	40.00 - - - - - - - - - - - - - - - - - -	
Boi	ing P	rogress	and V	Vater Ob	serva	tions		Chisellir	ng / Slow	Progress	General I	Rem	arke	
Date	Date Time Borehole Casing Borehole W Depth Depth Depth Mm) Depth								То	Duration (hh:mm)	Thanet Sand; 150L of 29.5m to 33.0m bgl.	water a	dded fro	om

Drilled

By:

Dave

Hutson

GINT LIBRARY_V8_06.GLB LibVersion: v8_06_014 PŋVersion: v8_06 - Core+Logs - 002 | Log CABLE PERCUSSION LOG - A4P | 28549_MOUNT PLEASANT.GPJ - v8_06. RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tei: 01442 437500, Fax: 01442 437550, Web: www.rsk.co.uk, | 11/01/17 - 14:01 | CB1 |

Inspection pit + Cable percussion

Plant

Used:

Dando 2000

Method

Used:



Contract:				•				Client:				Boreho	ole:	
Mo	bunt	Plea	sant	Sortin	<u>g O</u>	ffice			Royal I	Mail Gro	up Limited			BH18
Contract F				Start:	18.1	0.16	Ground					Sheet:		
	285	49		End:	24.1	0.16		18.15		E:5309	68.1 N:182331.0		1	of 5
Sar Depth	nples a	and In-	situ Te e F	ests Results	Water	Backfill & Instru- mentation			Desc	ription of S	trata	Reducec	Depth (Thick ness)	Mater Graph Leger
							MAD	E GROUN	D: Concre	te.		 	(0.50)	
												17.65	0.50	P. 5. 4 5. 4
0.50 0.50	1	ES PID	(J+V+T D.0ppm			MADI grave subar	E GROUN elly fine to ngular fin	ND: Mediu coarse e and co	im dense l SAND. G oarse flint.	ight reddish brown very bravel is subrounded to With frequent brick	-	- - - - (0.80)	
1.00 1.00	2	ES PID	(J+V+T 0.0ppm			fragm	nents and o	concrete.			16.85	1.30	
							MADI	E GROUN	D: Concre 45m bgl ce	ete. emented gra	anite cobbles.	-	(0.70)	
							8					16 15	- 2 00	
2.00-2.45	1	SPT(c	;) 3,	4/5,6,7,6			MAD	E GROUN	ID: Very I	oose dark	brown silty very gravelly	-	- 2.00	
2.00	3	ES		N=24 J+V+T			fine t	to medium	SAND wi	ith a low co ular fine f	bble content. Gravel is	E	E	
2.00	1	PID	(0.1ppm			concr	rete, chalk	, glass an	d slate. Co	bbles are subrounded to	F	-	
2.01-2.50	4	ES		J+V+T			subar	ngular bric	k and con	crete. Occa	sional sandy clay.	F	-	
2.50	1	PID	(0.0ppm			8					E	E	\bigotimes
3.00-3.45	2	SPT(c	;) 1,	2/2,2,1,2			8					E	[
3.00	5	ES		N=7 J+V+T			8					F	-	
3.00		PID	(0.2ppm			8					F	-	
3.01-3.50	6	ES		J+V+T			8					F	F	
3.50		PID	(0.1ppm			8					Ē	Ē	
3.80 4.00-4.45	3	SPT(c	;)	1,1/1,1			8					F	È.	\bigotimes
4 00	7		<i>.</i>	N=2			8					Ę	Ę	
4.00		PID	(0.0ppm			8					F	Francis	\bigotimes
4.01-4.50	3	B		I+\/+T			8					F	(6.00)	
4.50	Ŭ	PID	(0.1ppm			8					E	E	
4.80 5 00-5 45	3	D SPT(c	3	1/1			8					Ę	Ę	
			.,	N=1			8					F	-	
5.00 5.00	9	I ES		J+V+I D.1ppm			8					F	F	
5.01-5.50	4	B										E	E	\bigotimes
6.00	10	ES		J+V+T								F	F	
6.00	5	PID		0.2ppm								F	-	
0.50-0.95	5	551(0	.)	N=2								F	F	
6.51-7.00	5	B		I+\/+T								F	F	\bigotimes
7.00		PID	(0.0ppm			·					E	E	
							•					F	F	\bigotimes
7.50	5	D					•					F	F	
							•					10.15	8.00	\bigotimes
8.00-8.45	6	SPT(c	;) (0,1/,1,1			MAD	E GROUN	ID: Soft I	ight reddish	brown to dark greyish	E	E	\bigotimes
8.00	12	ES		N=2 J+V+T			 brown subar 	n slightly s naular fine	andy grav	elly CLAY.	Gravel is subrounded to all slate brick concrete	F	+ (1 00)	
8.00	6	PID B	(0.1ppm			and c	chalk.				F	F (1.00)	
2.01 0.00							•					0.15	F 0 00	\bigotimes
		L				<u>_16*4</u> [.e	d					1 9.10	<u> </u>	
В	oring F	Progree	ss and	Water Ob	serva	ations		Chisel	ling / Slow	Progress	General	Rom	arke	
Date	Time	Boi	ehole	Casing	Bore Diam	hole heter	Water	From	То	Duration	Oeneral	Cine	ains	
10/10/10	00.1		epth	Depth	(m	m)	Depth		0.00	(111.1111)	1. 300mm concrete core to 5	00mm foll	lowed by	hand du
18/10/16	06:41		00	- 2 00	25	50	Dry	1.30	2.00	06:00	inspection pit to 1.20m bgl 2 Borehole progressed through	Ioh machi	ine excav	ated nit
19/10/16	06:41		2.00	2.00	25	50	Drv				JCB to 2.0m bgl due to pre	sence of	concrete	from
19/10/16	12:38	3 1	0.50	10.00	25	50	10.50				1.30m to 2.0m bgl.3. Clean drilling technques ad	dopted. Br	entonite :	seal
19/10/16	17:41		5.50	11.00	25	50					created before reduction in 4 Borehole drilled in following	i casing si	ize.	hal in
20/10/16	06:40) 1) 2	5.50	11.00 11.00	25	50	22 00				250mm; 40m bgl in 200mr	n casing t	o 11.0m	bgl in
20/10/16	17:06	, 2 5 2	5.50	<u>1</u> 1.00	25	50	22.00				All dimensions in metres	Scale:	1:50	0
Method	Insp	ectio	n pit +	Plan	t				Drilled	Dave	Logged	Check	ed	8
Used:	<u>Cable</u>	perc	ussio	n ^{Use}	d:	Dar	ndo 20	00	By:	Hutson	By: JBarron	By:	21	AC

E	Boring Pro	ogress and	Water Ob	servations	6	Chisel	ling / Slow	Progress	Conorol Domorko
Date	Time	Borehole	Casing	Borehole Diameter	Water	From	То	Duration (hh:mm)	
18/10/16	06:41	Depth	- Deptil	(mm)	Depth	1.30	2.00	06:00	1. 300mm concrete core to 500mm followed by hand dug
18/10/16	17:41	2.00	2.00	250	Dry				2. Borehole progressed through machine excavated pit by
19/10/16	06:41	2.00	2.00	250	Dry				JCB to 2.0m bgl due to presence of concrete from
19/10/16	12:38	10.50	10.00	250	10.50				3. Clean drilling technques adopted. Bentonite seal
19/10/16	17:41	15.50	11.00	250					created before reduction in casing size.
20/10/16	06:40	15.50	11.00	250					4. Borehole drilled in following diameters: 25.5m bgl in
20/10/16	12:40	22.00	11.00	250	22.00				250mm; 40m bgi in 200mm casing to 11.0m bgi in
20/10/16	17:06	25.50	11.00	250					All dimensions in metres Scale: 1:50
Method	Method Inspection pit + Plant						Drilled	Dave	Logged Checked
Used:	Cable p	ercussio	n ^{Usec}	l: Da	ando 200	0	By:	Hutson	By: JBarron By: SI ACS



Contract:								Client:					Boreho	ole:	
Mou	nt l	Pleas	ant So	ortin	g Of	fice		I	Royal	Mail Gro	up Lin	nited			BH18
Contract Ref:				Start:	18.1	0.16	Ground	d Level:		National Gr	id Co-ord	linate:	Sheet:		
2	85	49		End:	24.1	0.16		18.15		E:5309	68.1 N	1:182331.0		2	of 5
Sample	es a	ind In-si	tu Tests		Vater	ickfill & 1stru- entation			Desc	cription of S	trata		duced	Depth (Thick	Materia Graphic
Deptn 9.00	NO 6	Type D	Res	uits	>		∮ MADI	E GROUN	D: Soft	dark brown	to arevis	h black slightly	- Re	ness)	
9.00 9.00	13	ES PID	J+V 0.1p	/+T pm			sandy	y slightly g	ravelly S	ILT. Gravel	is subar	ngular fine Flint,		-	
9.50-9.95	7	SPT(c)	0, ⁻	1/	ÌŢ		•		With full	onen nagin	511(0.		-	- - - (1.50)	
9.51-10.00	7	В	IN=	=0			•						-	E	
					1		•						-	-	
10.50	7	D			Ţ		• • • Dork	aroonioh	brown	oilty olightly	oondy	fina ta acaraa	7.65	10.50	
10.50	, 14	ES	0.05				GRA	VEL. Grav	vel is sub	rounded to s	subangula	ar fine to coarse	-	(0.50)	0 ×
10.70	8	D	0.0p	μm			flint. ↓(HAC	KNEY GR	AVEL)			/	<u>† 7.15</u> /-	<u>- 11.00</u> -	
11.01	9	D					Stiff I	high to ve	ry high e	extremely high	gh streng	th dark greyish	-	-	<u> </u>
11.50	1	U	65 bl	ows		• • • • • •	occas	sional seler	nite.		suleu sil	LY CLAT. WILL	-	-	<u> </u>
11.50	15	ES	100% re J+V	ecovery '+T			(LON	DON CLA	Y FORMA	ATION)				Ę	
11.50 12.00	10	PID D	0.0p	pm									-	-	
													-	-	
													-	-	
12.00	11	5											-	[
13.00	11	D											-		<u></u>
13 50-13 95	8	SPT	5 5/6	788			8						-	-	
13 50	11	D	N=	29			8						-	E	
10.00		D					Š.						-	-	
							Š.								
14.50	12	D	1.3	· -			8						-	-	<u> </u>
14.50 14.50	16	ES PID	J+V 0.0p	+I pm			8						-	-	
15.00	2	U	75 bl 100% re	ows coverv			0					01. 1 P. 1 (1 1 2 1	2.95	15.20	
		_		,			g Stiff t grey f	fissured silf	ty CLAY.	engtn light b	rown mo	ttied light bluish	-	-	
15.50	13	D					(LAM	BETH GR	OUP - UF	PPER MOTT	LED BEI	DS)	-		
16.00	14	П					8						-	F	
10.00	17	D					8						-	-	
							Š.						-	-	
							8						-	-	
-							8						-	-	
							Š.						-		
17.50-17.94	9	SPT	7,8/10,1 for 6	2,15,13 5mm	;		8						-	[(4.80) -	
			N=5	52*			8						-	-	
Borir	na P	roaress	and Wa	ater Oh	serva	tions		Chisell	ina / Slow	Progress					
Date T	ime	Bore	hole Ca	asing	Boreh	nole	Water	Erom		Duration		General	Rema	arks	
20/10/16 10	3.06	Dep	oth D	epth	(mn	n)	Depth			(nh:mm)	250mr	m and 25.5m bgl in 2	200mm dia	ameter.	
24/10/16 17	7:47	40.	00 2	5.50	20	0					5. IVIONITO	ning well installation ise zone between 7. ole backfilled with 2.	5. Pipe 1 .5 and 11.	- oumm F 5m bgl.	iUPE
											betwee	en 7.5m to 11.5m b	gl; sand fill	ter from 7	.0m to
											1.3m t	ogl; 6.0m to 7.0m bg	jl; 11.5m to	o 13.50m	bgl; clav/sand)
											betwe	en 1.3m to 6.0m bgl	; 13.5m to	23.0m b	gl and
Method In	sne	ection	nit +	Plan	 t			<u> </u>	Drilled	Dave	All dime	nsions in metres	Scale:	1:50 ed)
Used: Ca	ble	percu	ssion	Use	d:	Dar	ndo 20	00	By:	Hutson	By:	JBarron	By:	ST	AGS

E	Boring Pro	gress and	Water Ob	servations	3	Chiselli	ng / Slow	Progress	Conorol	Domarka					
Date	Time	Borehole	Casing	Borehole Diameter	Water	From	То	Duration	General	Remarks					
	-	Depth	Depth	(mm)	Depth		_	(((((((((((((((((((((((((((((((((((((((250mm and 25 5m bol in	200mm diameter					
20/10/16	18:06	25.50	25.50	200					5. Monitoring well installation	ns: Pipe 1 - 50mm HDPE					
24/10/16	17:47	40.00	25.50	200					 c. Working two instantation in the analysis of the transfer of the tr						
									All dimensions in metres	Scale: 1:50					
Method Used:	Inspec Cable p	tion pit + ercussio	- Plan n Use	t d: Da	ando 200	0	Drilled By:	Dave Hutson	Logged By: JBarron	Checked By: ST AGS					



Contract:								Client:					Bor	ehole:		
Mou	nt	Pleas	ant S	ortin	gО	ffice			Royal	Mail Gro	oup	Limited				BH18
Contract Ref	:			Start:	18.1	10.16	Groun	d Level:		National Gr	rid C	o-ordinate:	She	eet:		
	285	49		End:	24.1	10.16		18.15		E:5309	968	.1 N:182331.0		3	6	of 5
Samp	les a	and In-s	itu Tests	6	ter	ill & 'u- tion							ced	De De	oth	Materia
Depth	No	Туре	Res	sults	Wa	Backf Instr			Des	cription of S	Strata	a	Sedu	∂ (Th _ nes	ick is)	Legenc
17.50	17	ES					Stiff	to very stif	f high str	ength light b	orow	n mottled light bluish	<u> </u>	-	, 	<u>×</u>
17.50		PID	0.0	ppm			grey	fissured sil /IBETH GR	ty CLAY. OUP - UF	PPER MOTT	LEC) BEDS)	Ę	-		<u></u>
18.50	15	D					(stra	tum copied	from 15.2	20m from pre	eviol	ıs sheet)	Ē	Ē	ł	<u>×_</u>
							Š.						-	-		<u> </u>
19.00	3	U	75 b	lows			8						-	-		
			100 /01	ecovery			8						-	-		<u> </u>
19.50	16	D					8						Ē	-		<u>× </u>
_							Š.						-1.8	85 20.	00	<u>× </u>
20.00	18	ES	0.0	J			Very	stiff very h	igh streng	gth light bluis	sh gr	ey fissured CLAY.	-	-	-	
20.00	17	D	0.0	ppm					00F - LA			5)	-	-		
20.50-20.95	10	SPT	7,8/10,7	12,14,14 '0mm	•		8						F	F		
			N=	:51*			8						È	È		
-													-	-		
							8						Ē	- (2.8	80)	
21.50	18	D											-	-	ł	
							8						Ē	-	-	
22.00	4	U	70 b	lows ecoverv			fine	Below 22.0)m bgl thi	ickly laminate	ed w	ith partings of brown	-	-		
			100701	0001013				sana.					-	Ē	ł	
22.50	19	D					8						-4.0	65 22.	80	
							Very	stiff light	bluish	grey mottle	d d	ark orangish brown	E			<u>×</u>
23.00	20	D					tissu (LAN	red silty CL IBETH GR	AY. With OUP - LC	n rare nodula	ar ca TLEI	Icrete. D BEDS)	-	-		<u> </u>
							``					,	Ē	Ē		<u>×</u>
23.50-23.91	11	SPT	9,9/12, for 3	15,15,8 30mm									-	-		<u> </u>
			N=	59*			~						Ē	-		<u></u>
													-	-	ł	<u> </u>
							8						Ē	-	ł	<u>× </u>
24.50	21	D											-	-		×
-							8						Ē	_(4.4	0)	
25.00 25.00	19	ES PID	0.0	ppm			8						-	-		<u>×</u>
							8						Ē	-		
25.50	22	D					8						-	-		×
-	~~	_											-	Ē	ŀ	<u>× </u>
26.00	23	D					8						Ē	-		×
													-	-		<u></u>
							8						-	-	ł	<u>×</u>
							8						-	-		<u> </u>
Bor	ina E	Progress	and W	ator Ot	eon/	ations		Chicoll	ing / Slov	v Progress						
	ing r	Bore		ater OL	Bore	hole	Water			Duration		General	Rei	mark	S	
Date	Гime	De	pth [Depth	Dian (m	neter m)	Depth	From	То	(hh:mm)		24 0m hal to have of hereb		ith fluch (installo
												at surface.				instance
											8.	Groundwater strike (mediu	im flow	with 10.66 w) observ	ed by	y driller a
												10.5m bgl rising to 9.7m b out at 11.0m bgl.	gl afte	r 20 mins	and	sealed
											9.	Small rate of groundwater at 22.0m bgl; sealed out a	seepa t 25.0r	ige obser n bgl.	ved I	by driller
											10.	200L of water added to d	rill thro	ough the	Than	et Sand.
Method Ir	nsn	ection	pit +	Plan	l t				Drilled	Dave		ogaed	Che	e: 1 ecked	:50	
Used: Ca	able	percu	ission	Use	d:	Dar	ndo 20	000	By:	Hutson	Ē	^{3y:} JBarron	By:		T	AGS

Ð		Boring Pro	gress and	Water	Obser	vations		Chisel	ing / Slow	Progress	Conoral	Domork	~	
	Date	Time	Borehole	Casin	ng Bo Dia	orehole ameter	Water	From	То	Duration	General	Remark	.5	
רטחווטוב הטאר אטאר אטאר			Depth	Deptl	: <u>h (</u>)	(mm)	Depth				 24.0m bgl to base of boreh at surface. 7. PID = Photo ionisation det 8. Groundwater strike (mediu 10.5m bgl rising to 9.7m bg out at 11.0m bgl. 9. Small rate of groundwater at 22.0m bgl; sealed out at 10. 200L of water added to dat 	iole with flush of ector with 10.60 m flow) observ gl after 20 mins seepage obser ; 25.0m bgl. rill through the Scale: 1	cover ins eV bulb red by dri and sea rved by d Thanet §	talled iller at aled friller Sand.
	Method Used:	Inspec Cable p	tion pit + ercussio	Pi n U	lant Ised:	Da	ndo 200	0	Drilled By:	Dave Hutson	Logged By: JBarron	Checked By:	ST	AGS



Contract:								Client:					Boreho	ole:	
Μοι	int	Pleas	ant S	orting	g Offi	ice			Royal	Mail Gr	oup Lin	nited			BH18
Contract Re	f:			Start:	18.10	.16	Groun	d Level:		National C	Grid Co-ord	linate:	Sheet:		
	285	49		End:	24.10	.16		18.1	5	E:530	968.1 N	1:182331.0		4	of 5
Samp	les a	nd In-si	itu Tests	6	ter 11 &	tion							ced el	Depth	Material
Depth	No	Туре	Res	sults	Wa	Insti menta			Des	cription of	Strata		Redu	(Thick ness)	Legend
-													-9.05	27.20	<u>x </u>
- 27.20	24	D					Very	stiff hig	h strength v closelv sr	light orang	gish browr red silty Cl	n mottled bluish	F	-	
27.50	5	U	80 b	lows			(LAN	IBETH G	ROUP - LO	OWER MO	TTLED BE	DS)	Ę		xx
-			100 /0 1	coovery										-(1.30)	
- 28.00	25	D											F	-	
		-									<u></u>	<i>c</i>	-10.35	28.50	<u> </u>
- 28.50	26	D					Very (LAN	stiff dark IBETH G	i brown sar	DWER MO	AY. Sand II TTLED BE	s fine. DS)		_	
-	12	срт	12.1	3/50									F	-	
- 29.00-29.20	12	511	for 5	50mm									Ę	(1.50)	
-			N-3	500										-	×-···×
-													44.05	-	
- 30.00	20	ES					Very	stiff da	rk greenis	h grey mo	ottled light	reddish brown	-11.85	- 30.00	<u> </u>
1 30.00 - 30.00	27	D PID	0.0p	ppm			sligh (LAN	tly sandy /BETH G	silty CLAY ROUP - LO	. Sand is fi WER MO	ine to medi TTLED BE	um glauconitic. DS)		(1 00)	xx
30.50	6	U	90 b	lows			(,			
-			100%1	ecovery									-12.85	31.00	
- 31.00	28	D					Very med	stiff gre	yish green	sandy silt	ty CLAY.	Sand is fine to	-	-	
-		_					med	ium blac	k pebbles.				Ę	-	×···×
- 31.50	29	D					(LAN	IBETHG	ROUP - UI	NOR FOR	RIVIATION)			-	
-	12	ерт	0.0/2	202									È.	-	××
- 52.00-52.20	13	351	for 5	53mm									F	(2.50)	<u> </u>
-			IN=	117									Ē	-	x
-														-	
- 33.00	30	D											F	-	
-													-15.35	33.50	
33.50-33.75	14	SPT	12,13	/35,15 25mm			Very	dense d	ark grey sil	ty slightly o	clayey fine	SAND. Sand is	-	-	× · · · ×
-			N=1	150*			(THA	ANET SA	ND FORM	ATION)	Ζ.		E	-	×···×
-													F	-	×···×
		-											F	-	×××
- 34.50	31	ט											Ę	-	× · · · × · · · · ×
- 35 00-35 23	15	SPT	12 1	3/50									E	-	× · · · ×
-		0. 1	for 7	75mm 200*									F	-	× ×
35.00	21	ES											Ę	-	
-		U	0.0	Phili									Ę	-	×
h			1		K [×]	$\infty \infty $	11								1X X

		Boring Pro	gress and	Water O	oservations	6	Chiselli	ng / Slow	Progress	Caparal Damarka
5	Date	Time	Borehole	Casing	Borehole Diameter	Water	From	То	Duration	General Remarks
502			Depth	Depth	(mm)	Depth			()	11. 89.0mm Digital 3 arm weak rock self boring
										pressuremeter testing conducted at depths of 12.5m bgl; 16.8m bgl & 26.5m bgl.
5										
2										
2										
5										
) 										All dimensions in metres Scale: 1:50
i	Method Used:	hod Inspection pit + d: Cable percussion			nt d: Da	ando 200	0	Drilled By:	Dave Hutson	By: JBarron By: ST AGS

GINT LIBRARY_V8_06.GLB LibVersion: v8_06_014 PŋVersion: v8_06 - Core+Logs - 002 | Log CABLE PERCUSSION LOG - A4P | 28549_MOUNT PLEASANT.GPJ - v8_06. RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tei: 01442 437500, Fax: 01442 437550, Web: www.rsk.co.uk, | 11/01/17 - 14:01 | CB1 |



All dimensions in metres Scale:

JBarron

Logged By: 1:50

ST

AGS

Checked

By:

Contract:							(Client:				Boreho	ole:	
Мо	unt l	Pleas	sant	Sortin	g Of	fice		F	Royal M	ail Gro	up Limited			BH18
Contract R	ef:			Start:	18.1	0.16	Ground	Level:	N	ational Gr	id Co-ordinate:	Sheet:		
	285	49		End:	24.1	0.16	-	18.15		E:5309	68.1 N:182331.0		5	of 5
Sam	ples a	Ind In-s	situ Tes	sts esults	Water	ackfill & Instru- entation			Descri	ption of S	trata	educed Level	Depth (Thick	Material Graphic
- 36.00	32	D					Vervo	dense dark	arev siltv	slightly cla	vev fine SAND. Sand is	<u> </u>		×····×
- 36.50-36.71 	16	SPT	10 for N	0,11/50 r 60mm =250*			predo (THAN (stratu	minantly fin NET SAND Im copied f	FORMAT FORMAT	m quartz. ION) <i>n from pre</i>	evious sheet)	- - - - - - - - - - - - - -	- (5.50) - - - - - - - - - - - - - - - - -	× × × × × × × × × × × × × × × × × × ×
37.50	33	D										- - - -	- - - -	× · · · · · · · · · · · · · · · · · · ·
- 38.00-38.18 - - -	17	SPT	15 for N	5,10/50 r 75mm =200*								- - - - - - - - - - - - - - - - - - -	- 39.00	× × × × × × × × × × × × × × × × × × ×
39.00	34	D					Very	dense da	rk greeni	sh brown	slightly clayey sandy	-20.05	- 39.00	
- 39.50-39.65	18	SPT	15 for	5,10/50 50mm			round (WHIT	ed to subar FE CHALK	s line in a subscription of the subscription o	to coarse JP)	Flint with CHALK.	- - - -	(1.00)	
- - 40.00	22	ES	N	=300*			Boreh	ole comple	ted at 40.0	m bal.		-21.85	40.00	
40.00		PID	0.	.0ppm										
Во	orina F	roares	s and \	Nater Ob	serva	tions		Chisellir	ng / Slow F	rogress	_			
Date	Time	Bor	ehole	Casing Depth	Boreh Diam (mr	nole eter n)	Water Depth	From	То	Duration (hh:mm)	General I	Rema	arks	
				12		,								

Drilled

By:

Dave

Hutson

GINT LIBRARY_V8_06.GLB LibVersion: v8_06_014 PŋVersion: v8_06 - Core+Logs - 002 | Log CABLE PERCUSSION LOG - A4P | 28549_MOUNT PLEASANT.GPJ - v8_06. RSK Environment Ltd, 18 Frogmore Road, Hemel Hempstead, Hertfordshire, HP3 9RT. Tei: 01442 437500, Fax: 01442 437550, Web: www.rsk.co.uk, | 11/01/17 - 14:01 | CB1 |

Inspection pit + Cable percussion

Plant

Used:

Dando 2000

Method

Used:



WINDOW SAMPLE LOG

Contract:							Client:			Windo	w Samp	ole:
Mou	nt Pleasa	ant S	ortin	g Office	ļ			Roya	al Mail Group Limited			WS01
Contract Ref			Start:	27.09.16	Gr	ound	d Level	:	National Grid Co-ordinate:	Sheet:		
2	8549		End:	28.09.16			14.	92	E:530977.9 N:182426.8		1	of 1
Progress		Sam	ples / ⁻	Fests		er	ill & 'u- ation			iced	Depth	Material
Window Rur	Depth	No	Туре	Results	;	Wat	Backt Insti menta		Description of Strata	Redu Lev	(Thick ness)	Legend
-	-							MADE G	GROUND: Concrete hard standing.		(0.33)	
-	-									14.59	0.33	
-	- 0.35 - 0.35	ES1	ES PID	0.1ppm			•.•□.•.	MADE very gi	ravelly fine to coarse SAND with	/ - 1 -	-	
-	_ 0.50 _ 0.50	ES2	ES PID	0.1ppm				occasior subroun	nal whole bricks. Gravel is fine to coarsonded flint with occasional bric	; _ < _	(0.77)	
-	-							fragmen	its.	-	-	
-	- - 1 00	ES3	FS							13 82	- - 1 10	
-	1.00		PID	0.1ppm				Refused	1 at 1.1m.	-	-	
-	-									-	-	
-	-									F	-	
-	-									-	-	
-										-	-	
-	-									-	-	
-	-									-	-	
-	-									-	-	
_	-									-	-	
-	-									-	-	
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-	-									-	-	
-	-									-	-	
-	ŀ									-	-	
-	-										-	
Drilli	ng Progress	and W	ater O	bservations								
Date T	ime Boreh	ole C h [Casing Depth	Borehole Diameter	Wa De	ater pth			General Remarks			
	(m)		(m)	(mm)	(r	'n)	- 1. Ç	oncrete co	oring to 0.33m followed by an inspection	pit hand (dug to 1	.1m
							2. C	epth. hecks for	buried ferrous objects carried out during	excavati	on by sp	ecialist
							u 3. N	nexploded o groundv	I ordnance (UXO) officer using magneto vater encountered.	neter.		

Method Used:	Tracked window sampling	Plant Used:	Premier 110	<u>А</u>	II dimensior Drilled By:	ns in metres	Logge By:	Scale: d JTownsend	1:31 Checked By:	ST	AGS
			4	1. 50mn 1.0m	n diameter s depth on co	standpipe con ompletion. Re	mplete esponse	with flush protect e zone 0.5m to 1.	tive cover ii .0m.	nstalled	to



WINDOW SAMPLE LOG

Contract:						Client:			Window	w Samp	le:
Moun	t Pleasar	nt S	ortin	g Office			Royal	Mail Group Limited			WS02
Contract Ref:			Start:	27.09.16	Gro	ound Level	:	National Grid Co-ordinate:	Sheet:		
28	3549		End:	28.09.16		14.	53	E:531011.7 N:182467.9		1	of 1
Progress		Sam	oles / 1	Tests		r L- tion			el ced	Depth	Material
Window Run	Depth	No	Туре	Results		Nate Backfi Instri		Description of Strata	Levi	(Thick	Graphic Legend
							MADE GRO	OUND: Concrete hard standing.			
-	-							OUND: Light brown to dark brown	_ 14.31	0.22	
-	- 0.25 - 0.25 -	EST	PID	0.1ppm			slightly silty rare coarse	gravelly fine to coarse SAND with sized concrete. Gravel is fine to	-	-	
-	-						coarse su frequent bri	brounded to subangular flint with ck fragments concrete and coal.	F	-	
-	0.80	ES2	ES						-	_(1.18)	
-	0.80		PID	0.1ppm		•.•₽.•.			F	-	
-	-								Ļ	-	
	1.30	ES3	ES						13.13	1.40	
-	1.30			0.1ppm			Stiff bluish staining and	grey silty CLAY with orange brown d possible selenite crystals.	-	(0.40)	×
-	-					(LONDON	CLAY FORMATION)	12 73	[`	××	
-	-						Stiff firm in	places bluish grey extremely closely	-	-	<u> </u>
-	1.90 1.90	PID	0.1ppm			spaced thir selenite cry	stals.	F	-	xx	
-	1.90 PID 0.1ppi						(LONDON	CLAY FORMATION)	F	-	xx
-	-								F	-	xx
-	- - - 2.60 FS5 FS								F	-	xx
-	2.60	ES5	PID	0.1ppm					F	-	<u> </u>
-	-								-	-	×
-	-								F	-	<u>×</u>
-	-						at 3.20	m silt partings	F		
-	3.40	ES6	ES						F	_(3.20) -	<u> </u>
-	3.40			U. Ippm			at 3.50	m mudstone	E	-	<u> </u>
-	-								-	-	<u> </u>
-	-								F	-	[<u> × </u>
-	-								F	-	
-	-								F	-	
-	-						at 4.50	m silt partings	-	-	
-	4.60 ES7 ES 4.60 PID 0.1ppm						F	-			
-	_ 4.60								-	- -	⊨
-	-						Terminated	at 5.00m.	9.53	5.00	<u> </u>
	-								Ł		
-	-								F	-	
L	L		1	1					L	L	1

	E	Drilling Pro	gress and	Water O	bservation	S	Conoral Domarka								
	Date	Time	Borehole Depth	Casing Depth	Borehole Diameter	Water Depth			Gene	Remarks	IIarks				
• • • • • • • • • • • • • • • • • • •			(m)	<u>(m)</u>	(mm)	(m)	 Concrete cored to 0.22m followed on by an inspection pit hand dug to 1.2m depth. Down borehole checks for buried ferrous objects carried out during drilling by specialist unexploded ordnance (UXO) officer using magnetometer at regular intervals to 5m depth. No groundwater encountered. On completion, borehole backfilled with arisings. 								
							All dimensions in metres Scale: 1:31								
	Method Used:	Tracke	d windov polina	V Plai Use	nt ed: Pr	emier 11	0	Drilled By:	KDS	Logge By:	d JTownsend	Checked By:	ST	AGS	



WINDOW SAMPLE LOG

Contract:									Client:					Window Sample:			
Mount Pleasant Sorting Office									Royal Mail Group Limited					WS03			
Contract	Ref:			Start:	29.09.16	Grou	Ind	Level:		National Grid Co-ordinate:		Sheet:					
	2854		End:	29.09.16	i		14.70		E:531019.9 N:182460.7			1	of 1				
Progre	ess		Sam	ples / T	ests	s	5	III		<u>.</u>		ced	Depth	Material			
Window	/ Run	Depth	No	Туре	Results	10/01	wate	Back		Description of Str	ata	Redu Lev	(Thick ness)	Graphic Legend			
-	-								MADE GR	OUND: Concrete har	d standing.	-	-				
-	ŀ									-	-						
-	L										-	(0.90)					
-	-											-	-	8 4 5 8 8 4 5 6 8 5 8 8			
-	F											13.80	[0 90	9 4 7 6 P 4 7 6			
-	Ļ						ľ	~~~~~	Cored to 0	.90m refusal moved lo	ocation.	-	-	A			
-	Ļ											-	-				
-	Ľ											_	-				
-	-											-	-				
-	Ē											-	-				
-	ŀ											-	-				
-	F											-	-				
-	E											_	-				
-	F											-	-				
-	-											-	-				
-	-											-	-				
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-	E											-	-				
-	F											-	-				
-	F											-	-				
-	ŀ												-				
-	-											-	-				
	Drillina Pr	ogress a	nd W	ater Ol	oservations					• •							
Date	Time	Borehole	Borehole Casing Depth Depth (m) (m)	Casing Depth	Borehole Diameter	Wate Depth	er		General Remarks								
		((1))			(m)		1. C	Concrete coring to 0.9m, borehole refused and moved to alternative location.									
									All dimens	ions in metres	Scale:	1:31					

Drilled

KDS

By:

Logged By: Checked

JTownsend By:

ST

AGS

Tracked window

sampling

Plant

Used:

Premier 110

Method

Used:


Contract:						Client	:			Window	w Samp	le:
Moun	t Pleasa	nt S	ortin	g Office	•		Royal	Mail Group L	imited		W	S03A
Contract Ref:			Start:	30.09.16	Grou	und Leve	1:	National Grid Co-c	ordinate:	Sheet:		
28	3549		End:	30.09.16			-	-			1	of 1
Progress		Sam	ples / 1	Fests		_ ∞ _ u				- eq	Depth	Material
Window Run	Depth	No	Туре	Results	3	Wate Backfil Instru mentat		Description of S	trata	Reduc Leve	(Thick ness)	Graphic Legend
-	-						MADE GRO	OUND: Concrete ha	ard standing.	-	0.23	
-	- 0.25	ES1	ES	0 1000			MADE GR	OUND: Light brown arse SAND with r	silty very gravelly rare cobble sized	-	-	
-	0.50	FS2	FS	0.100			concrete a	nd whole bricks.	Gravel is fine to	-	-	
-	0.50		PID	0.1ppm			occasional	brick fragments and	d concrete.	-	-	
-	-									-	(1.27)	
_	_					·•:=•:	•			-	_	
-	1 20	FS3	FS				•			-	-	
-	1.20		PID	0.1ppm			•			-	-	
	_						Stiff firm i	n places extremel	ly closely spaced		1.50	
-	-						thinly lamin crystals.	ated silty CLAY with	h possible selenite	-	-	
-	1.80	ES4	ES	0.1000			(LONDON	CLAY FORMATION	N)	-	-	
_	_ 1.00			0. ippin			becom	ing stiff from 2.00m	l.	-	_	
-	-									-	-	
-	-									-	-	
_	2.50	ES5	ES							-	-	
-	2.50		PID	0.1ppm						-	(2.50)	
-	-						×			-	-	××
_										-	_	
-	-						*			-	-	
-	-									Ļ	-	<u>x </u>
_	_									-	_	
-	-						*			-	-	<u> </u>
-	3.80	ES6	ES	0.1000						-	4 00	
-				0.10011		*****	Terminated	at 4.00m.		-	4.00	
-	-									-	-	
-	-									-	-	
-	-									-	-	
-	-									-	-	
-	-									-	-	
-	_									-	-	
-	-									-	-	
-	-									-	-	
					I		1			L	L	·
Drillin	g Progress a	and W ble C	ater O	bservations	Wate	er		Genera	I Remarks			
Date Tir	me Depth (m)	ן ו 	Jepth (m)	Diameter (mm)	Deptl (m)	n	concrete core	d to 0.23 followed b	v an inspection pit b	hand due	n to 1 2r	n denth
					2. E s ir 3. N	own borehole pecialist unex ntervals to 4m lo groundwate	e checks for buried ploded ordnance (l depth. er encountered.	ferrous objects carr JXO) officer using r	ied out o nagnetor	during d meter a	rilling by t regular	
					4.5 1	0mm diamete .5m depth on	er standpipe comple completion. Respo	ete with flush protect onse zone 0.5m to 1	tive cove .0m.	er instal	led to	
							All dimens	ions in metres	Scale:	1:31		

Drilled

KDS

By:

Logged By: Checked

JTownsend By:

ST

AGS

Tracked window

sampling

Method

Used:

Plant

Used:

Premier 110



Contract:				Client:			Window	<i>w</i> Samp	ole:		
Moun	nt S	ortin	g Office			Royal	Mail Group Limited			WS04	
Contract Ref:			Start:	27.09.16	Grou	und Level		National Grid Co-ordinate:	Sheet:		
28	3549		End:	28.09.16		14.0	60	E:531020.3 N:182452.8		1	of 1
Progress		Samp	oles / T	Tests		er fill & ation			iced	Depth	Material
Window Run	Depth	No	Туре	Results		Wat Backi Inst menta		Description of Strata	Lev	(Thick ness)	Legend
-	-						MADE GR	OUND: Concrete hard standing.	14 30	0.21	
-	- 0.25	ES1	ES				MADE GR	OUND: Light brown silty gravelly fine	-	- 0.21	××××
-	- 0.25		PID	0.1ppm			to coarse subangular	to subrounded flint with occasional	-	-	
-	0.50 0.50	ES2	ES PID	0.1ppm			cobble size	ed concrete and brick with occasional rick coal clinker and ceramics.		-	
84	-								-	-(1.24)	
-	-	E93	ES			•.•⊟.•.			-	-	
-	1.00		PID	0.1ppm					-	-	
-	-								- 13 15	- 145	
-	1.40 1.40	ES4	ES PID	0.1ppm			Stiff firm in	n places bluish grey silty CLAY with	- 12 05	- 1 65	× × ×
-	-						Stiff firm in	n places bluish grey closely spaced	12.35	-	xx
-	1.80 1.80	ES5	ES PID	0.1ppm			finely ceme fragments a	and occasional silt partings.		-	xx
-	-						(LONDON	CLAY FORMATION)	-	-	
-	-								-	-	
-	-								-	-	
-	2.50 2.50	ES6	ES PID	0.1ppm						-	
a.	-								-	-	
-	-									_	
	-								-	-	
-	-								-	-(3.35) -	
-	3.50	ES7	ES						-	-	
-	3.50		PID	0.1ppm					-	-	
-	-									-	
-	-								-	-	
-	-								-	-	xx
-	-								-	-	
-	4.50 4.50	ES8	ES PID	0.1ppm						-	
-	-									-	
-	-						Terminated	l at 5.00m.	9.60	5.00	ţ
-	-								-	-	
-	- -									-	

	E	Drilling Pro	gress and	Water O	bservation	S			Con	aral	Domorko			
	Date	Time	Borehole Depth	Casing Depth	Borehole Diameter	Water Depth			Gene	erai	Remarks			
>			(m)	<u>(m)</u>	(mm)	(m)	 Conc Dowr speci interv No gi Somr 1.5m 	rete cored t n borehole c alist unexpl vals to 5m d roundwater n diameter depth on co	to 0.2m follow checks for bu oded ordnan- epth. encountered standpipe co ompletion. Re	ved by i ried fer ce (UX) mplete esponse	nspection pit han rous objects carri O) officer using m with flush protect e zone 1.0m to 1.	d dug to 1 ed out du nagnetome ive cover 5m.	I.2m dep ring drillir eter at re installed	th. ng by gular to
							A	II dimensior	ns in metres		Scale:	1:31		
	Method Used:	ethod Tracked window Plant sed: sampling ^{Used:} Premie				emier 11	0	Drilled By:	KDS	Logge By:	d JTownsend	Checked By:	ST	AGS



JTownsend By:

Contract:						Client:				Window	w Samp	le:
Mour	it Pleasai	nt S	ortin	g Office			Royal	Mail Grou	p Limited			WS05
Contract Ref:			Start:	27.09.16	Gro	und Level		National Grid	Co-ordinate:	Sheet:		
2	8549		End:	28.09.16		14.	55	E:53102	3.9 N:182441.7		1	of 1
Progress		Sam	oles / T	ests		er ill & ru- ation				iced el	Depth	Material
Window Run	Depth	No	Туре	Results		Wat Backf Instr menta		Description	of Strata	Redu Lev	(Thick ness)	Legend
-	-						MADE GRO	OUND: Concre	te hard standing.	14 32	0.23	
-	- 0.25 - 0.25 -	ES1	ES PID	0.1ppm			MADE GR gravelly fin sized conc	OUND: Light b e to coarse S rete and whole	AND with rare cobble bricks. Gravel is fine conjuncted flint with	-	-	
-	0.70 0.70	ES2	ES PID	0.1ppm			occasional clinker.	brick fragm	ients, concrete and	-	(1.07)	
-	1.20 1.20	ES3	ES PID	0.1ppm			Stiff firm	in places blu	ish arev sliahtly silty	13.25	1.30	
-	1.50 1.50	ES4	ES PID	0.1ppm			slightly san staining wi possible se	ndy CLAY an th randomly or lenite crystals.	d with orange brown ientated fissuring with	-	(0.60)	
-	- 1.60 - 1.60 -	ES5	PID	0.1ppm			(LONDON Stiff bluish	grey extremel	rion)	12.65	<u>1.90</u>	
-	-						crystals and (LONDON	slity CLAY V d rare shell frag CLAY FORMA	gment. TION)	-	-	
-	2.70 2.70 2.70	ES6	ES PID	0.1ppm						-	- - - (2.10)	
-	-									-	-	
-	3.50 3.50	ES7	ES PID	0.1ppm						-	-	
- -	-						Terminated	at 4.00m.		10.55	4.00	<u>x </u>
-	-									-	-	
-	- - -									-	-	
-	-									-	-	
-	-									-	-	
Drillin	g Progress a	nd W	ater O	oservations				Car	oral Domarka			
Date Ti	Date Time Borehole Depth Depth (m) Casing Depth Diameter (m) (m)					er th) 1. Co 2. Do	ncrete cored to wn borehole ch	0.23m followed b necks for buried fe	oy an Inspection pit hand dug	to 1.2m o	depth.	ialist
							exploded ordna groundwater e nm diameter s npletion. Resp	nce (UXO) office incountered. tandpipe completionse zone 0.5m to	using magnetometer at regine with flush protective cover to 2m. Borehole backfilled with	ular intervi installed to th arisings	als to 4m o 2m dep from 2.0	depth. th on m to 4.0m
							All dimens	ions in metres	Scale:	1:31		
Method Tra Used:	cked wind	ow	Plar Use	it d: Pre	mie	r 110	Drilled By:	KDS	Logged By: JTownsend	Checke By:	ed ST	AGS

sampling



Contract:	Contract:									Windo	w Samp	le:
Moun	t Pleasan	t So	ortin	g Office			Royal	Mail Grou	p Limited			WS06
Contract Ref:			Start:	30.09.16	Grou	nd Level:	:	National Grid	Co-ordinate:	Sheet:		
28	3549		End:	30.09.16		14.0	69	E:53103	5.6 N:182442.2		1	of 1
Progress Window Run	Depth	Samp	oles / T	ests Results	Nater	ackfill & Instru- ientation		Description	of Strata	educed Level	Depth (Thick	Material Graphic
	L		.) po	- Robulto	+	3 10 2	MADE GR	OUND: Concre	te hard standing.	<u>r</u>	11655)	
-	- - 0.25 - 0.25 - -	ES1	ES PID	0.1ppm			MADE GF sandy GF subrounded fragments.	ROUND: Light AVEL. Grave d to subangula	t brown slightly silty I is fine to coarse ar flint with rare brick	_ 14.48 - - - -	_ 0.21 - - -	
- - - - -	- _ 0.90 _ 0.90 - -	ES2	ES PID	0.1ppm						- - - -	- (1.29) - - - -	
-	1.40 1.40	ES3	ES PID	0.1ppm			Soft to firm selenite cry	bluish grey si stals.	Ity CLAY with possible	13.19	1.50	
- - -	 1.80 1.80	ES4	ES PID	0.1ppm			(LONDON	CLAY FORMA	TION)	-	[(0.60) 	xx
	- - - 2.50	ES5	ES				Stiff bluis laminated s (LONDON	h grey extre ilty CLAY. CLAY FORMA	emely spaced thinly TION)	12.59 - - -	2.10	
- - - - - - - -	2.50		PID	0.1ppm						- - - - - -	- - - -(1.90) - - -	
- - - -	3.50 3.50 - -	ES6	ES PID	0.1ppm			Terminated	at 4 00m		- - - 10.69	- - - - 4.00	
- - - - - - - - - -	- - - - - - - - - -									-		
Drillin	a Progress and	d Wa	ater OF	oservations								
Date Time Borehole Depth Depth Depth (m)						1. Co 2. Do 0. une 3. No 4. 501 cor 4.0	ncrete cored to wn borehole ch exploded ordna groundwater e mm diameter s mpletion. Resp m	Gene 0.21m followed of necks for buried fe ince (UXO) office ncountered. tandpipe complet onse zone 1.0m t	eral Remarks on by Inspection pit hand dug errous objects carried out dur r using magnetometer at reg e with flush protective cover o 1.5m. Borehole backfilled	g to 1.2m o ring drilling ular interv installed to with arising	depth. g by spec als to 4m o 1.5m de gs from 1	ialist depth. epth on .5m to
							All dimens	ions in metres	Scale:	1:31		
Method Tra	cked windo	w	Plan	t d: Dre	mier	110	Drilled By:	KDe	Logged By:	Check	ed ST	

sampling



Contract:						-	Client:				Window	w Samp	le:
Moun	t Pleasa	int S	ortin	g Office	•			Royal	Mail Group Lin	nited			WS07
Contract Ref:			Start:	27.09.16	Gro	ound	l Level	:	National Grid Co-orc	linate:	Sheet:		
28	3549		End:	28.09.16			14.	71	E:531039.8 N	1:182443.9		1	of 1
Progress		Sam	ples / T	ests		ater	ckfill		Description of Stra	ata	luced	Depth (Thick	Materia Graphic
Window Run	Depth	No	Туре	Results	;	Ň	Ba				Red Le	ness)	Legend
		ES1 ES2	ES PID ES PID	0.1ppm 0.1ppm				MADE GR fine to co sized conc to coarse occasional Terminated	OUND: Concrete hard OUND: Dark brown s arse SAND with oc rete and whole bricks subrounded to an brick, concrete and c	I standing. Ity very gravelly casional cobble S. Gravel is fine gular flint with oal.	<u>r</u>		
-												-	
	g Progress Boreh	and W	ater Ol Casing	Borehole	Wa	ter	$\left \right $		General	Remarks			
Date Tir	ne Dept (m)		(m)	(mm)	Det (m) 1)	1. C 2. B th	oncrete core orehole refus ick.	d to 0.25m Inspection sed at 1.1m due to cor	pit hand dug to 1 acrete obstruction	.1m dep approxi	th. mately	0.4m
								All dimens	ions in metres	Scale:	1:31		

Drilled

KDS

By:

Logged By: Checked

JTownsend By:

ST

AGS

Tracked window

sampling

Plant

Used:

Premier 110

Method

Used:



JTownsend By:

Contract:						Client:				Windo	w Samp	le:
Moun	t Pleasar	nt S	ortin	g Office			Royal	Mail Grou	p Limited		W	S07A
Contract Ref:			Start:	27.09.16	Groun	d Level:		National Grid	Co-ordinate:	Sheet:		
28	3549		End:	28.09.16			•				1	of 1
Progress		Sam	oles / T	ests	e	ill & 'u- ition				ced	Depth	Material
Window Run	Depth	No	Туре	Results	Wat	Backf Insti menta		Description	of Strata	Sedu	(Thick ness)	Legend
-	-						MADE GRO	OUND: Concre	te hard standing.	-	-	
-	-							OLIND: Light h	rown slightly silty very	-	0.26	
-	0.30 0.30	ES1	ES PID	0.1ppm			gravelly fin	e to coarse S	SAND with occasional	+	-	
-	0.60	ES2	FS				is fine to c	ed concrete an oarse subroun	d whole bricks. Gravel ded to subangular flint	F	(0.84)	
-	0.60		PID	0.1ppm			with occasi and possibl	ional bricks, h le bituminous n	ard concrete, tile, coal naterial.		Ĺ	
-	-									-	-	
-	1.00 1.00	ES3	ES PID	0.1ppm			MADE GF	ROUND: Light	t brown slightly silty		1.10	
	-						sandy GR	AVEL. Grave	el is fine to coarse	-	(0.50)	
-		504					fragments a	and concrete.				
-	1.50	^{ES4}	PID	0.1ppm			Stiff firm in	places bluish	grey extremely closely	1	1.60	<u>kxxxx</u> <u>* </u>
-	1.80	ES5	ES				spaced thir selenite cry	nly laminated s stals and occa	ilty CLAY with possible sional shell fragments.	-	-	××
-	1.80		PID	0.1ppm			(LONDON	CLAY FORMA	TION)	F	-	××
-	-										-	 x
	-									Ł	Ł	<u> </u>
-	-									-	-	— <u>×</u> — ×
-	2.60	ES6	ES	0 1nnm						-		
-				0.10011						-	(2.40)	
-	_									+	-	××
-	-									-	-	
-	-									-	-	××
	_									Ł	Ł	××
-	-									-	-	××
-	3.80	ES7	ES	0 1nnm						-	1 00	××
-				0.10011			Terminated	at 4.00m.		-	- 4.00	
	-									Ł	Ľ	
-	-									F	-	
-	-									-	-	
-	-									-	-	
-	-									+	-	
-	-									F	F	
-	-									ţ	ŀ	
-	_									-	-	
Drillin	n Progress a	nd M/	ater O	servations								
Date Tir	Borehol ne Depth		ater Of Casing Depth	Borehole Diameter	Water Depth			Gen	eral Remarks			
	(m)		(m)	(mm)	(m)	- 1. Co	ncrete cored to wn borehole ch	0.26m followed onecks for buried fe	on by an inspection pit hand errous objects carried out du	dug to 1.2 ring drilling	m depth. g by spec	ialist
						une 3. No	exploded ordna groundwater e	nce (UXO) officer ncountered.	using magnetometer at reg	ular interv	als to 4m	depth.
						4. 50r	nm diameter sinpletion. Resp	tandpipe complete onse zone 1m to	e with flush protective cover 1.5m. Borehole backfilled wi	installed to the temperature the temperature temperature temperature temperature temperature temperature temper temperature t	o 1.5m de from 1.5	epth on to 4.0m
							All dimens	ions in metres	Scale:	1:31		
Method Tra Used:	cked wind	ow	Plan Use	it d: Pro	mier	110	Drilled Bv:	KUS	Logged By: ITownsond	Check Bv:	ed ST	

sampling



Contract:						Client:					Windo	w Samp	le:
Moun	t Pleasa	nt S	ortin	g Office			Royal	Mail Grou	p Limi	ted			WS08
Contract Ref:			Start:	29.09.16	Grour	nd Level:		National Grid	Co-ordina	ate:	Sheet:		
28	3549		End:	29.09.16		14.7	1	E:53103	1.2 N:	182436.3		1	of 1
Progress Window Run	Depth	Sam	ples / 1	Tests Results	Vater	ackfill & Instru- ientation		Description	of Strata		educed Level	Depth (Thick	Materia Graphic
							MADE GRO	OUND: Concre	te hardst	anding.	<u>~</u> 14.51	0.20	
	- 0.25 - 0.25 -	ES1	ES PID	0.1ppm			MADE GRO fine to co bricks. Gra	OUND: Light bi arse SAND w avel is fine to	rown silty vith occa coarse	very gravelly sional whole subangular to	-	-	
· · · -	0.60 0.60	ES2	ES PID	0.1ppm			rounded filr Bituminous	nt with occasion material.	nai drick,	concrete and	-	- - - (1.30) - -	
	- - - 1.40 - 1.40	ES3	ES PID	0.1ppm			Stiff bluish	grey slighty	silty extr	emely closely	13.21	- - - <u>1.50</u>	
-	1.70 1.70 	ES4	ES PID	0.1ppm			spaced thir (LONDON	CLAY FORMA	LAY. TION)		-	- - - -	
	2.60 2.60 2.60	ES5	ES PID	0.1ppm							-	- - - (2.50) - -	
	- - - 3.60 - 3.60	ES6	ES PID	0.1ppm							-	-	
· _ · ·	- - - - -						Terminated	l at 4.00m.			<u>10.71</u> - - -	<u>4.00</u>	<u>x </u>
- - - -	- - - -											- - - -	
	-										-	-	
, ,	- - -										-	-	
D-:111			ator O								<u> </u>	L	
Drillin Date Tir	ne Boreho (m)		ater Ol Casing Depth (m)	Borehole Diameter (mm)	Water Depth (m)		croto corod to	Gene		emarks		donth	
						2. Dow unex 3. No g 4. 50m com	n borehole ch ploded ordna groundwater e m diameter s pletion. Resp	necks for buried of necks for buried fe nnce (UXO) officer ncountered. tandpipe complete onse zone 1m to 2	e with flush 2m. Boreho	protection pit nand du cts carried out duri gnetometer at regu protective cover in ole backfilled with a	ng drilling Ilar interva Installed to arisings fr	by spec als to 4m 2 2m dep om 2m to	ialist depth. th on o 4m
							All dimens	ions in metres	S	cale:	1:33		
Method Tra	cked wind	low	Plan	nt –			Drilled		Logged		Checke	ed st	
Jseu:	sampling		Use	u: Pre	mier	110	ву:	KDS	ву:	J Fownsend	ву:	01	<u>AU</u>



Contract:						Client:			Windov	w Samp	ole:
Moun	t Pleasar	nt Se	ortin	g Office			Royal	Mail Group Limited			WS09
Contract Ref:			Start:	03.10.16	Gro	ound Level	:	National Grid Co-ordinate:	Sheet:		
28	3549		End:	03.10.16		14.	85	E:530999.5 N:182383.2		1	of 1
Progress		Samp	oles / ٦	Fests		Er fill & ru- ation			lced /el	Depth	Material
Window Run	Depth	No	Туре	Results		Wat Backt Inst menta		Description of Strata	Redu	(Thick ness)	Legend
-	-						MADE GR	OUND: Bitimous hard standing.	14.75	0.10	
-	- 0.15 - 0.15 -	ES1	ES PID	0.1ppm			MADE GRO fine to co bricks and	OUND: Light brown silty very gravelly arse SAND with occasional whole cobble sized concrete. Gravel is fine subapqular to rounded flipt with	- -	-	
-	0.50 0.50	ES2	ES PID	0.1ppm			frequent br	ick, mortar and concrete.	-	-	
-	1.00 1.00 -	ES3	ES PID	0.1ppm					-	 (2.40)	
-	1.50 1.50 	ES4	ES PID	0.1ppm					-	-	
-	2.00	ES5	ES PID	0.1ppm					- - - -	-	
-	2.60 2.60 2.60	ES6	ES PID	0.1ppm			MADE GR brown mc gravelly C subangular fragments	OUND: Soft dark brown with greyish bitling slightly silty sandy slightly DLAY. Gravel is fine to coarse to rounded flint with occasional brick concrete coal and ash	12.35 - - -	2.50 - - -	
-	3.00 3.00	ES7	ES PID	0.1ppm			naginenta,			_ _ _(1.60)	
-	3.50 3.50	ES8	ES PID	0.1ppm					-	-	
- - -	4.00 4.00	ES9	ES PID	0.1ppm			Greenish	brown slightly silty very sandy Gravel is fine to coarse subangular	10.75	4.10 4.20	
-	4.30 4.30	ES10	ES PID	0.1ppm			flint. (HACKNE) Firm orang	(GRAVEL) ge brown with bluish grey mottling	-	 (0.80)	
-	4.70	ES11	ES				slightly silty Gravel is fii (HACKNE)	v slightly sandy slightly gravelly CLAY. ne to coarse subrounded flint. (GRAVEL)	- - 9.85	5.00	
- - -	- - - -								-	- - -	

	Drilling Pro	ogress and	Water Ol	oservations	S			Con	aral	Domorko		
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter	Water Depth			Gene	erai	Remarks		
		(m)	(m)	(mm)	(m)	1. Concre 2. Down unexpl 3. No gro 4. 50mm comple	ete cored to 0.1 porehole check oded ordnance undwater enco diameter stand etion. Respons	m followed on s for buried fe (UXO) officer untered. Ipipe complete e zone 1m to 4	n by an in errous obj · using m e with flue 4m. Bore	spection pit hand du jects carried out duri agnetometer at regu sh protective cover in shole backfilled with a	ig to 1.2m depth. ing drilling by special ilar intervals to 4m de nstalled to 4m depth arisings from 4m to 5	ist ∌pth. on im.
						A	II dimension	s in metres		Scale:	1:31	
Method Used:	ethod Tracked window Plant ed: sampling ^{Used:} Premier				emier 11	0	Drilled By:	KDS	Logge By:	d JTownsend	Checked By: ST	AGS



1:31

Checked

ST

AGS

Scale:

JTownsend By:

Logged By:

Contract:	Contract: Mount Pleasant Sorting Office						Client:	_		Windo	w Samp	ole:
Moun	t Pleasa	nt S	ortin	ig Office				Roya	I Mail Group Limited	01		WS10
Contract Ref:	0540		Start:	28.09.16	Gr	ounc		:		Sneet:		
20	549		End:	28.09.16			14.	53	E:530990.8 N:182353.6		1	of 1
Progress Window Run	Depth	Sam No	Type	Results	;	Water	Backfill & Instru- mentatior		Description of Strata	Reduced	Depth (Thick ness)	Material Graphic Legend
-	-							_ MADE GF	ROUND: Bituminous hard standing.	14.43	0.10	
-	- 0.15 - 0.15 -	1	ES PID	0.1ppm				MADE GI silty very of fine to co with occ	ROUND: Dark brown to black slightly gravelly fine to coarse SAND. Gravel is parse subangular to subrounded flin asional brick fragments, concrete	- 14.28	- 0.25 - -	
- - - - -	0.50 0.50 - - - -	1	ES PID	0.1ppm				ceramics MADE GF gravelly fi sized co subrounde brick fragr	and coal. ROUND: Light brown slightly silty very ine to coarse SAND with rare cobble increte. Gravel is fine to coarse ed to subangular flint with occasional ments and concrete.]	[(1.25) 	
-	1.40	1	ES							13.03	1.50	
Drillin	g Progress a	and W	ater O	bservations					General Pemarka			
Date Tir	me Boreho Depth (m)	ble C n I	Casing Depth (m)	Borehole Diameter (mm)	Wa De (n	ater pth n)	1. C	oncrete con	ed to 0.1m followed on by an inspectio	n pit hang	dua to	1.2m
							d 2. B 3. N 4. 5 1	epth. orehole refu o groundwa 0mm diame 5m depth o	used at 1.5m ater encountered. ter standpipe complete with flush prote n completion. Response zone 1m to 1	ctive cov	er instal	led to

All dimensions in metres

KDS

Drilled

By:

Tracked window

sampling

Method

Used:

Plant

Used:

Premier 110



Contract:						Client:			Windo	w Samp	ole:
Moun	t Pleasar	nt S	ortin	g Office			Royal	Mail Group Limited			WS11
Contract Ref:			Start:	03.10.16	Ground	d Level	:	National Grid Co-ordinate:	Sheet:		
28	3549		End:	03.10.16		14.8	83	E:530978.5 N:182390.5		1	of 1
Progress		Sam	ples / ٦	Fests	er	ill & 'u- ttion			ced	Depth	Material
Window Run	Depth	No	Туре	Results	Wat	Backf Instr menta		Description of Strata	Redu	(Thick ness)	Graphic
-	-						MADE GR	OUND: Bitimous hard standing.	14.60	0.22	
-	- 0.15 - 0.15 - 0.25 - 0.25 -	ES1	PID ES PID	0.1ppm 0.1ppm			MADE GF gravelly fir whole bri subangular fragments a	ROUND: Light brown slightly silt re to coarse SAND with occasiona cks. Gravel is fine to coars to rounded flint with occasional bric and concrete.	y - al - e - k -	(0.97)	
-	- _ 0.90 _ 0.90 -	ES3	ES PID	0.1ppm		* • • - • • • • • • - • • • • • • - • • • •			- - - 13.63	- - 1.20	
-	- - - 1.50 - 1.50 -	ES4	ES PID	0.1ppm			MADE GF sandy GRA CLAY. Gra angular flin concrete.	ROUND: Light brown slightly silt AVEL with occasional pockets of so avel is fine to coarse subrounded t t with occasional brick fragments an	y _ ft _ d _ - -	- - - (0.90) -	
-	2.00 2.00	ES5	ES PID	0.1ppm			MADE GR	OUND: Soft dark brown to black ver htly gravelly CLAY with rare roots	12.73 y _ 3	2.10	
-	2.50 2.50 2.50	ES6	ES PID	0.1ppm			flint with concrete ar	ine to coarse subrounded to angula occasional brick fragments, coa nd mortar.	ır , _ - -	- - (0.90) -	
-	- 3.00 3.00	ES7	ES PID	0.1ppm			MADE GF sandy GR rounded to bricks and	ROUND: Light brown slightly silf AVEL. Gravel is fine to coars o subangular flint with occasiona concrete.	y _ e _ al _ 11.83	3.00 (0.40)	
-	- 3.50 3.50 -	ES8	ES PID	0.1ppm			MADE GRU slightly sar fine to coa occasional	OUND: Soft dark brown to black silt ady slightly gravelly CLAY. Gravel irse subrounded to angular flint wit brick, concrete and mortar.	y _ s _ h _ -	-	
-	- 4.00 4.00	ES9	ES PID	0.1ppm					- - - -	- (1.10) - - -	
-	4.50 4.50	ES10	ES PID	0.1ppm			MADE GR sandy sligt coarse sul coal.	OUND: Dark brown to black slight htly gravelly SILT. Gravel is fine t bangular flint with brick, glass an	<u>10.33</u> y - o - d -	4.50 (0.50)	
	4.90 4.90 -	ES11	ES PID	0.1ppm			Terminated	l at 5.00m.	9.83	5.00	
L	L									L	

[Drilling Pro	gress and	Water O	oservations	S			Con	oral	Domorko		
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter	Water Depth			Gene	erai	Remarks		
	(m)			(mm)	(m)	 Concre from 0. Down I unexpl No gro S0mm comple 	ete cored to (9m to 1.2m oorehole che oded ordnan undwater en diameter sta etion. Respor	0.23m followed c icks for buried fe ce (UXO) officer countered. indpipe complete ise zone 1m to 5	errous ob rusing m e with flu 5m.	inspection pit hand c jects carried out duri agnetometer at regu sh protective cover in	lug to 0.9, concre ng drilling by spe Ilar intervals to 4r nstalled to 5m de	te cored cialist n depth. pth on
						A	II dimensic	ons in metres		Scale:	1:31	
Method Used:	Trackee san	d windov npling	V Plar Use	it d: Pr	emier 11	0	Drilled By:	KDS	Logge By:	d JTownsend	Checked By: S	T AGS



Contract.						Client:			Windo	w Samp	le:
Mount	t Pleasant	t So	ortin	g Office			Royal	Mail Group Limited			WS12
Contract Ref:			Start:	28.09.16	Gro	und Level	:	National Grid Co-ordinate:	Sheet:		
28	Mount Pleasar ontract Ref: 28549 Progress indow Run 0.35 0.35 0.35 1.00 1.00 1.00 1.50 1.50			28.09.16		14.	94	E:530955.0 N:182402.5		1	of 1
Progress	S	amp	oles / T	ests		er u- & tion			ced	Depth	Material
Window Run	Depth	No	Туре	Results		Wate Backfi Instr menta		Description of Strata	Redu	(Thick ness)	Graphic Legend
	-						MADE GR	OUND: Bituminous hard standing.	-	(0.33)	
									14.61	0.33	
	0.35 0.35	ES1	ES PID	0.1ppm			MADE GR gravelly fin medium su fragments	OUND: Dark brown slightly silty very e to coarse SAND. Gravel is fine to Jbangular flint with occasional brick and concrete.	- 14.44 - -	0.50	
	- - 1.00	ES2	ES				MADE GR to coarse concrete. C rounded flir	OUND: Light brown silty gravelly fine SAND with rare cobble sized Gravel is fine to coarse subangular to ht, brick, concrete and clinker.	-	- - (1.20)	
	1.00		PID	0.1ppm					-	-	
-	1.50 1.50	ES3	ES PID	0.1ppm					13.24	1.70	
							MADE GR slightly sill	OUND: Dark brown to black clayey ty slightly gravelly fine to medium	-	-	
	2.00	ES4	ES	0 1000			SAND. Gi ∖occasional	brick fragments, concrete, coal and	12.94	2.00	
				0. 19911			MADE GR	OUND: Light brown silty gravelly fine	12.54	2 40	
	2.40 2.40	ES5	ES PID	0.1ppm			subrounded fragments MADE GR	d to angular flint with occasional brick concrete and coal. OUND: Soft dark brown slightly silty tilv gravelly CLAY, Gravel is fine to	-	-	
	_2.90 _2.90	ES6	ES PID	0.1ppm			coarse si occasional slate.	ubangular to rounded flint with brick fragments, concrete, coal,	-	-	
	3.20 3.20	ES7	ES PID	0.1ppm					- - -	- -(1.90) -	
	3.80 3.80	ES8	ES PID	0.1ppm					- - - -	- - - -	
	4.30 4.30	ES9	ES PID	0.1ppm			Dark brow occasional (ALLUVIUM	n to black silty fine SAND with pockets of silt. /)	<u>10.64</u> - -	4.30	
	4.70 E 4.70	ES10	ES PID	0.1ppm					- - 9.94	5.00	× × × ×
	- - -						Terminated	l at 5.00m.	-	-	

	[Drilling Pro	ogress and	Water Ob	oservation	IS			Con	oral	Domorko			
	Date	Time	Borehole Depth	Casing Depth	Borehole Diameter	Water Depth			Gen	erar	Remarks			
'			(m)	(m)	(mm)	(m)	 Concre Down I unexpl No gro 50mm comple 	ete cored to 0 borehole cher oded ordnand undwater end diameter star stion. Respon	.33m followed o cks for buried fe ce (UXO) officer countered. ndpipe complet ise zone 1m to	on by an i errous obj r using m e with flus 4m. Bore	nspection pit hand c ects carried out duri agnetometer at regu sh protective cover in hole backfilled with a	lug to 1.2m de ng drilling by s ilar intervals to nstalled to 4m arisings from 4	pth. specialist 4m dep depth oi Im to 5m	t oth. n n.
							A	II dimensio	ns in metres		Scale:	1:31		
	Method Used:	Tracke san	d windov	V Plan Used	t d: Pi	remier 11()	Drilled By:	KDS	Logge By:	d JTownsend	Checked By:	ST	AGS



Contract:						C	Client:				Window	<i>w</i> Samp	le:
Moun	Mount Pleasant Sorting O Intract Ref: Start: 10. 28549 End: 10.							Royal	Mail Group Limited				WS19
Contract Ref:		Start:	10.10.16	Gro	ound	Level	:	National Grid Co-ordinate:		Sheet:			
28	3549		End:	10.10.16			14.	74	E:531020.2 N:182	326.9		1	of 1
Progress		Samp	oles / T	ests		er	tion &				ced	Depth	Material
Window Run	Depth	No	Туре	Results		Wat	Backt Instr menta		Description of Strata		Redu Lev	(Thick ness)	Legend
-	Samples / Tests Jun Depth No Type Re - </td <td></td> <td></td> <td></td> <td>MADE GRO</td> <td>OUND: Concrete hard standi</td> <td>ng.</td> <td>-</td> <td>(0.40)</td> <td></td>							MADE GRO	OUND: Concrete hard standi	ng.	-	(0.40)	
-	- 0.45 ES1 ES - 0.90 ES2 ES - 1.50 ES3 ES PID 0.2										14.34	0.40	
-	- - 0.45 - -	ES1	ES					MADE GR gravelly fin coarse sub and concre	OUND: Orange brown slig e to coarse SAND. Gravel prounded flint with occasio te.	htly silty is fine to nal brick	14.14	0.60	
- - - -	- 0.90 - -	ES2	ES			• • • •		MADE GRO fine to med subangular concrete, a	DUND: Dark brown very silty lium SAND. Gravel is fine t flint with occasional brick fr nd mortar with rare shell frag	y gravelly o coarse agments, ment.	- - - -	- - - -	
- - -	- 1.50 1.50 -	ES3	ES PID	0.2ppm		• • • • • •					-	_ (2.00) _	
-	2.00	ES4	ES PID	0.4ppm		0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0					- - -	-	
-	2.50	ES5	ES PID	0 2nnm		0 0 0			OLIND: Plack condy sightly	arovolly	12.14	2.60	
-	2.80	ESA	FS	0.20011		0 0 0		SILT. Grav	el is subangular flint with r	are brick	-	-	
-	- 2.80 		PID	0.3ppm		0 0 0 0 0 0 0 0 0 0 0 0 0 0		inaginente			-	- _(1.00) -	
-	3.40	ES7	ES			• • «×					11.14	3.60	
- - -	3.70 3.70 -	ES8	ES PID	0.2ppm		****		Soft bluish gravelly CL is fine to co (ALLUVIUM	n grey silty slightly sandy AY with slight organic odou arse subrounded flint. /)	/ slightly r. Gravel	-	(0.60)	
-	-					XXXXX		Firms a off i		th hluigh	10.54	4.20	
- - - -	- - - 4.50 -	ES9	ES			*****		Grey mottl GLAY with subangular (ALLUVIUN	in places orange brown wi ing slightly sandy slightly occasional relict roots. Grav flint. /)	gravelly grainel is fine	- - - -	- - - (0.80) -	
-	-							Terminated	at 5.00m.		9.74	5.00	<u> </u>
- - -	- - -										-	- - -	

	Drilling Pro	gress and V	Vater Ob	oservations	3			Con	oral	Domorko			
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter	Water Depth			Gen	erarr	Remarks			
		(m)	(m)	(mm)	(m)	 Concra 2. Down unexpl No grc 50mm completion 	ete cored to 0.4 borehole check loded ordnance bundwater enco diameter stan- etion. Respons	Im followed or s for buried fe (UXO) officer puntered, strata dpipe completer e zone 1m to 2	n by an ins errous obj · using ma a damp fr e with flus 2.5m. Bor	spection pit hand du ects carried out duri agnetometer at regu om 2.6m the protective cover in h protective cover in ehole backfilled with	g to 1.2m dep ng drilling by s Ilar intervals to nstalled to 3.5 h arisings from	th. specialis 4m dep m depth 1 3.5m to	t oth. ⊧on o 5m.
						A	Il dimension	s in metres		Scale:	1:31		
Method Used:	Tracked sam	l window pling	Plan Used	t d: Archw a	ay Comp	etitor	Drilled By:	???	Logged By:	J JTownsend	Checked By:	ST	AGS



Contract:						Client:				Window	<i>w</i> Samp	le:
Moun	t Pleasar	nt S	ortin	g Office			Royal	Mail Group Limite	d			WS20
Contract Ref:			Start:	04.10.16	Groun	d Level	:	National Grid Co-ordinate	9:	Sheet:		
28	3549		End:	06.10.16		14.	73	E:531027.8 N:18	32345.6		1	of 1
Progress		Sam	oles / T	Tests	er	fill & ru- ation				iced /el	Depth	Material
Window Run	Depth	No	Туре	Results	Wat	Backi Inst menta		Description of Strata		Sedu	(Thick ness)	Legend
-	-						MADE GRO	OUND: Concrete hard star	nding.	-	(0.30)	
-	-									-		
-	0.40 0.40	ES1	ES PID	0.1ppm			MADE GR slightly gra	OUND: Orange brown s velly fine to coarse SANE	slightly silty D. Gravel is _/	- 14.34 - 14.18 -	- 0.39 - 0.55 -	
-	0.70 0.70	ES2	ES PID	0.1ppm			MADE GF	ROUND: Light brown s to coarse SAND with	lightly silty occasional [- - <u>13.88</u> - 13.78	- - <u>0.85</u> - 0.95	
-	1.00 E 1.00 I 1.50 E 1.50 E		ES PID	3.0ppm			pockets of subangular and concre	soft clay. Gravel is fine to rounded flint with occa te.	e to coarse sional brick	-13.73-	- <u>1.00</u> / - -	
-							MADE GR GRAVEL. flint with fre	COUND: Light brown slig Gravel is fine to coarse equent concrete.	ghtly sandy subangular	-	-	
-	1.50 1.50 -	E54	PID	2.3ppm			MADE GR sandy GR subangular	OUND: Reddish brown s AVEL. Gravel is fine flint with frequent brick.	silty slightly to coarse	-	(1.40)	
-	- 2.00 2.00	ES5	ES PID	2.1ppm			MADE GR grey slightl to coarse occasional	OUND: Light brown red y silty sandy GRAVEL. G subangular to rounded brick, concrete and ash.	dish brown ravel is fine I flint with	-	- -	
-	2.30 2.30	ES6	ES PID	0.8ppm			Firm orang	e brown sandy CLAY w	ith possible Llenses.	12.33 -	2.40	
-	2.70 2.70	ES7	ES PID	0.1ppm			(LONDON	CLAY FORMATION)		-	-	
- - - - - - - - - - - -	- - - 3.50 - 3.50 - - -	ES8	ES PID	0.1ppm						-	- - - - - - - - -	
- - - - - - - - - - - -	- - - - - - - - - - - - - - - - -	ES9	ES PID	0.1ppm			Terminated	l at 5.00m.		9.73	5.00	

C	Drilling Pro	ogress and	Water Ob	oservations	5			Con	aral	Domorko		
Date	Time	Borehole Depth	Casing Depth	Borehole Diameter	Water Depth			Gene	erai	Remarks		
		(m)	(m)	(mm)	(m)	1. Concre 2. Down unexpl 3. No gro 4. 50mm comple	ete cored to to borehole che oded ordnar undwater en diameter sta etion. Respo	0.39m followed c scks for buried fe ice (UXO) officer icountered. andpipe complete nse zone 1m to 4	on by an i rrous obj · using m e with flue 4m. Bore	inspection pit hand c jects carried out duri agnetometer at regu sh protective cover in shole backfilled with a	lug to 1.2m depth. ing drilling by specia ilar intervals to 4m nstalled to 3.5m de arisings from 4m to	alist depth. pth on 5m.
						A	II dimensio	ons in metres		Scale:	1:31	
Method Used:	Tracke san	d windov opling	V Plan Use	t ^{d:} Archw	ay Comp	etitor	Drilled By:	Cowan	Logge By:	d JTownsend	Checked By: ST	AGS



Contract:									Client	:			Windo	w Samp	ole:
Mo	ount	Plea	asant	S	ortin	g Office				Roya	al N	Mail Group Limited			WS21
Contract F	Ref:				Start:	05.10.16	Gr	ound	d Leve	l:		National Grid Co-ordinate:	Sheet:		
	28	549			End:	06.10.16			14	73		E:531038.0 N:182354.8		1	of 1
Progres	s		Sa	amp	oles / 1	Fests		er	ti &				ced	Depth	Material
Window F	Run	Dep	th I	١o	Туре	Results		Wat	Backf			Description of Strata	Redu	(Thick ness)	Legend
-										MADE G	GRO	OUND: Concrete hard standing.	-		
-													L	[(0.40) [
-	-	0 40			PID	0.100m				MADE (GRO	OUND [.] Orange brown slightly silty	14.33	0.40	
-	Ē	0.45	E	S1	ES					sandy (GR/	AVEL. Gravel is fine to coarse	-	(0.35)	
-		0 75		:62	FS							OUND: Firm light grevish brown	- 13.98		
	-	0.75		.02	PID	0.1ppm				slightly s	sand	dy slightly gravelly CLAY. Gravel is	13.73	1.00	
-	1.00 1.00 1.25 1.25 1.25 1.25 1.80 1.80		S3	ES	0.6000				brick frag	coar Igme	rse subrounded to angular filnt with ents and glass.	-	-		
-	1.00 1.00 1.25 1.25 1.25 1.80 1.80		F	S4	FS	0.000				MADE (GRO	OUND: Greyish brown slightly silty	13.43	1.30	
-	1.00 1.25 1.25 1.80 1.80 1.80 1.80			PID	0.4ppm				MADE	GR	OUND: Light brown slightly silty	-	-		
-	Mount Pleasant Sorting Office Start: 05.10.16 Intract Ref: Start: 05.10.16 Progress Samules / Tests Indow Run Depth No Type Results 0.40 0.45 ES1 PID 0.1ppm 0.75 ES2 ES PID 0.1ppm 1.00 ES3 ES PID 0.4ppm 1.25 ES4 ES PID 0.4ppm 1.80 ES5 ES PID 0.1ppm 1.80 ES5 ES PID 0.1ppm 1.80 ES5 ES PID 0.1ppm 1.80 ES6 FS PID 0.1ppm 1.80 ES6 FS PID 0.1ppm 1.80 ES6 PID 0.1ppm 1.80 ES6 PID 0.1ppm 1.80 ES7 FS PID 0.1ppm 1.80 ES7 FS PID 0.1ppm 1.90						gravelly subangu	SA Jar	AND. Gravel is fine to coarse flint with occasional brick and	-	-				
-						concrete	e.			-					
-	Outract: Classes of the second				brown v	with	bluish grey mottling silty slightly	Ł	-						
-							sandy Cl	SLAY	(with possible selenite crystals. CLAY FORMATION)	F	F				
-										° °		,	È.	-	
	-									0 0			Ł	(2.45)	
-	-									•			F	-	
a.		2.70	E	S6	ES	0.1000				•			È.	-	
-		2.70				0. ippin				•			-	-	
-	F									•			-	-	
-	Ē									•			-	-	
-										0 0				-	
-	-									•			-	0.75	
-	-									; Firm blui	iish	grey extremely closely spaced thinly	- 10.98	- 3.75	
-		3.90	E	S7	ES					laminate	ed s	slightly silty CLAY with possible stals and rare shell fragments	10.73	4.00	<u> </u>
-	-	3.90				0.1ppm						CLAY FORMATION)	-	-	
a.	-									Termina	ated	at 4.00m.	-	-	
-													F	-	
-	-												+	-	
-	F												F	F	
-	Ļ	_											F	F	
-	ŀ												+	-	
-	F												F	-	
-													<u>F</u>	-	
	rilling	Progra	ace and	\\/	ater O	hservations									
			orehole	<u> </u>	asing	Borehole	Wa	ater	-			General Remarks			
Date	Time	e [Jepth (m)		epth (m)	(mm)	De (n	pth n)	- 1. C	oncrete core	ed to (0.40m followed on by an inspection pit hand	dug to 1.2	m depth	
									2. D	own borehole	e che	ecks for buried ferrous objects carried out du	ring drilling	g by spec	cialist

 Lown bore note creates to buried terrous objects carried out during drining by specialist unexploded ordnance (UXO) officer using magnetometer at regular intervals to 4m depth.
 No groundwater encountered.
 50mm diameter standpipe complete with flush protective cover installed to 4m depth on completion. Response zone 2m to 4m.

Logged

By:

Scale:

JTownsend By:

1:31

Checked

ST

AGS

completion. Response zone 2m to 4m.

All dimensions in metres

Cowan

Drilled

By:

Tracked window

sampling

Plant

Used: Archway Competitor

Method

Used:



Contract:							Client:				Window	w Samp	le:
Mour	nt Pleas	ant S	ortin	g Office	•			Royal	Mail Group Li	nited			WS22
Contract Ref:	contract Ref:			07.10.16	Gro	und	l Level	:	National Grid Co-or	dinate:	Sheet:		
2	8549		End:	07.10.16			14.	74	E:531067.1	N:182370.7		1	of 1
Progress	Denth	Sam	ples / ⁻	Fests		/ater	ackfill		Description of Str	ata	duced	Depth (Thick	Materia Graphic
	Depth		Туре	Results	5	5			NIND: Conoroto har	detanding	Re	ness)	
-	-							WADE GRO	JOND. COncrete har	ustanding.	-	(0.37)	
-	-								DUND: Gravel sub b	ase. /	14.37	0.37	<u>XXXX</u>
-	0.50 0.50	ES1	ES PID	0.1ppm				Soft to fire CLAY with (LONDON	m dark greyish bro possible selenite cry CLAY FORMATION	own slightly silty stals.)		(0.58)	×
-	-										13 74	1 00	
- - -	1.00 1.00	ES2	ES PID	0.1ppm				Firm dark randomly o and possib	greyish brown s rientated fissuring ar e selenite crystals.	ilty CLAY with ad rare mudstone	-	-	x x
-	1.50	ES3	ES					(LONDON	CLAY FORMATION)	-	-(1.10)	
- -	1.50 - -		PID	0.1ppm							-	-	<u> </u>
_	-										12.64	2.10	×
-	2.50	ES4	ES PID	0.1ppm				Stiff dark g spaced thir fissuring sl possible se mudstone l (LONDON	reyish brown silty e ly laminated with rar ghtly silty slightly gra lenite crystals. Grav ithorlics and rare she CLAY FORMATION	extremely closely domly orientated avelly CLAY with el is subrounded ell fragments.	-	-	
- - - -	- - - -										- - - -	- -(1.90) - - -	
- - - -	3.50 3.50	ES5	ES PID	0.1ppm							10.74	- - - -	
	-						××××××	Terminated	at 4.00m.		-	- - - -	
-	-										-	-	
- - -	-										- - -	- - -	
				_									
Drillir Date Ti	ig Progress Bore me De	s and W phole (ater O Casing Depth	bservations Borehole Diameter	Wat Dep	er			General	Remarks			
	(r	n)	<u>(m)</u>	(mm)	<u>(m</u>))	1. C de 2. D sp in 3. N 4. O	oncrete core epth. own borehole becialist unex tervals to 4m o groundwate n completion	d to 0.37m followed of e checks for buried fe ploded ordnance (U) depth. er encountered. , borehole backfilled	on by an inspection errous objects carr XO) officer using r with arisings.	n pit han ied out c nagneto	d dug to during d meter a	o 1.2m rilling by t regular
								All dimens	ions in metres	Scale:	1:31		

Drilled

Cowan

By:

Logged By: Checked

JTownsend By:

ST

AGS

Tracked window

sampling

Plant

Used: Archway Competitor

Method

Used:



Contract:						Client	:				Window	<i>w</i> Samp	le:
Mour	it Pleasar	nt S	ortin	g Office			Royal	Mail Grou	p Limit	ed		1	WS23
Contract Ref:			Start:	07.10.16	Grou	nd Leve	el:	National Grid	Co-ordina	ite:	Sheet:		
2	8549		End:	07.10.16		14	.72	E:53107	9.6 N:1	82401.4		1	of 1
Progress Window Run	Depth	Sam No	oles / T Type	ests Results	Water	vvater Backfill & Instru- mentation		Description	of Strata		keduced Level	Depth (Thick ness)	Material Graphic Legend
-		ES1	ES				MADE GR	OUND: Concre	te hard st	anding. prown slightly	14.42	0.30	
-	0.30 0.50 0.50	ES2	PID ES PID	0.4ppm 0.2ppm			silty sandy clay. Grav subangular mortar, ash	GRAVEL with rel is fine to o r flint with occa n and coal.	occasior coarse su sional br	al pockets of ibrounded to ck, concrete,		(0.60)	
	- 1.00 1.00	ES3	ES PID	0.2ppm			MADE GR sandy GF subrounde brick and c	ROUND: Reddig RAVEL. Grave d to subangul concrete.	sh brown I is fine ar flint v	slightly silty e to coarse with frequent	 	 - - (0.50) -	
- - -	1.30 1.30	ES4	ES PID	0.1ppm			Firm greyi	ish brown slig elenite crystals. CLAY FORMA	htly silty	CLAY with	13.32 - -	<u>1.40</u>	
- - -	1.70 1.70	ES5	ES PID	0.1ppm			Stiff grevi	sh brown slig	htly silty	CLAX with	12.72	2.00	
-	2.50	ES6	ES				possible se (LONDON	elenite crystals. CLAY FORMA	TION)		-	- - - -	
-	_ 2.50 _ _ _ _ _		PID	0.1ppm							-	- - _(2.00) -	
-	- 3.40 3.40	ES7	ES PID	0.1ppm							-	-	
- - - -	- - - -						Terminated	d at 4.00m.			10.72	4.00 - -	xx
-	-										-	-	
-	-										-	-	
	-										-	_	
Deille		nd 141											
Date Ti	me Borehol (m)	e C	asing Depth (m)	Borehole Diameter (mm)	Water Depth (m)		oncrete cored to			ection pit hand du	ug to 1.2m	1 denth	
						1. 0 2. D 13. N 4. 50 0	own borehole ch nexploded ordna o groundwater e Omm diameter s ompletion. Resp	hecks for buried of hecks for buried fe ance (UXO) officer encountered, perch standpipe complete oonse zone 1m to 2	rrous objec using mag ned water e with flush 2.5m. Borel	ts carried out duri netometer at regu ncountered within protective cover i hole backfilled wit	ng drilling lar interva the Made nstalled to h arisings	by spec als to 4m e Ground o 1.5m de from 2.5	ialist depth. epth on m to 4m.
							All dimens	ions in metres	S	cale:	1:31		
Method Tra Used:	cked wind	ow	Plan Use	it d: Δrchwa		mnotit	Drilled Bv:	Cowan	Logged Bv:	ITownsond	Checke Bv:	ed ST	AGS
	Jamping		1000	AICIWa	y cui	nherin		Guwali	- ,.	- ownsend			- 1990



Contract:						Cli	ient:				Windo	w Samp	ole:
Moun	t Pleasa	nt S	ortin	g Office)			Royal	Mail Group	Limited		,	WS24
Contract Ref:			Start:	07.10.16	Grou	und L	evel:	-	National Grid Co	o-ordinate:	Sheet:		
28	8549		End:	07.10.16			14.7	/2	E:531091	.7 N:182414.8		1	of 1
Progress		Sam	ples /	Fests		er fill &	ru- ation				iced /el	Depth	Materia
Window Run	Depth	No	Туре	Results		Wat Back	menta		Description of	Strata	Redu	ness)	Legenc
-	-							MADE GRO	DUND: Concrete	hard standing.	-	(0.40)	
-	-										È	(0.40) -	
-	-							MADE GR	OUND: Light b	rown clayey slightly	14.32	0.40	
ī F	0.50	ES1	ES PID	0.1ppm		*** ***		silty sandy	GRAVEL with	rare cobble sized	<u>- 14.17</u>	- 0.55	
-						•`• •`•	創	rounded flin	it with occasiona	l brick, concrete and	-	-	
-	0.80	E52	PID	0.1ppm				Firm to st	ff greyish brow	n extremely closely	-	-	
-	-							spaced thin possible	ily laminated slig selenite crystal	s and rare shell	-	-	
-	-							fragments.	CLAY FORMATI	ON)	-	-	
-	-							Longon				-	
-	1.50 1.50	ES3	PID	0.1ppm							-	-	
-	-										-	-	
-	-										-	-	
-	-											-	
-	-										-	(3.45)	
-	2 50	ES4	FS								-	-	
-	2.50		PID	0.1ppm							È.	-	
	-										-	-	×
_	_										-	-	
-	-										F	F	
-	-										-	-	
-	3.50	ES5	ES								-	-	
-	3.50		PID	0.1ppm							-	-	
a.	-										10.72	1 00	
-	-					~~~	~~~~	Terminated	at 4.00m.		-		
-	-										Ł	E	
-	-										F	-	
-	-										-	-	
-	-										-	-	
-	-										F	-	
-	-										F	F	
-	-											-	
-	-										-	-	
Drillin	a Progress :	and W	ater O	bservations									
	Boreho		Casing Depth	Borehole	Wate	er			Gene	ral Remarks			
	(m)		(m)	(mm)	(m)		1. Cor 2. Do une 3. No 4. 50r cor 4m	ncrete cored to wn borehole ch exploded ordna groundwater e nm diameter s npletion. Resp	0.4m followed on b ecks for buried ferro nce (UXO) officer us ncountered, slight s andpipe complete v onse zone 0.5m to 1	y an inspection pit hand d ous objects carried out du sing magnetometer at reg eepage at 3.0 vith flush protective cover .0m. Borehole backfilled	ug to 1.2n ring drilling ular interv installed t with arisin	n depth. g by spec als to 4m o 1m dep gs from 1	cialist depth. oth on I.0m to
								All dimens	ons in metres	Scale:	1:31		

Drilled

Cowan

By:

Logged By: Checked

JTownsend By:

ST

AGS

Tracked window

sampling

Method

Used:

Plant

Used: Archway Competitor



1:31

Checked

ST

AGS

Scale:

JTownsend By:

Logged By:

Contract:						Clie	ent:				Windo	w Samp	ole:
Moun	t Pleasa	nt S	ortin	g Office)			Royal	Mail Group I	_imited			WS25
Contract Ref:			Start:	04.10.16	Grou	nd Lev	evel:		National Grid Co	-ordinate:	Sheet:		
2	8549		End:	07.10.16		1	4.5	52	E:531014.	9 N:182441.7		1	of 1
Progress Window Run	Depth	Sam No	ples / ⊺ Type	Fests Results	Water	Backfill	Dackill		Description of	Strata	keduced Level	Depth (Thick ness)	Material Graphic Legend
Window Run	Depth	No ES1 ES2	ES PID ES PID	0.1ppm 0.1ppm	3 ≥			MADE GR MADE GF gravelly fin coarse si occasional cobble size	DUND: Concrete f ROUND: Dark b e to coarse SAN Jbangular to ro brick, concrete, c d bricks.	hardstanding. rown slightly silty D. Gravel is fine to bunded flint with oal and mortar with	<u>w</u> 14.32 - 14.32 - 13.67 	ness) 0.20 (0.65) - 0.85 	Legend
	g Progress a Boreho Boreho (m)	and W	ater O Casing Depth (m)	bservations Borehole Diameter (mm)	Water Depth (m)		. Co	ncrete core	Gener d to 0.2m followed	al Remarks	- - - - - - - - - - - - - - - - - - -	- - - - - - - - - - - - - - - - - - -	0.85m
	(m)		(11)		(11)	- 1. 2.	. Co dej 2. Bo	ncrete core pth. rehole refus	d to 0.2m followed ed at 0.85m	on by an inspection	pit hand	dug to	0.85m

All dimensions in metres

Cowan

Drilled

By:

Tracked window

sampling

Method

Used:

Plant

Used:

Premier 110



1:31

Checked

ST

AGS

Scale:

JTownsend By:

Logged By:

Contract:							Client:			Windo	w Samp	ole:
Moun	t Pleasa	nt S	ortin	g Office				Royal	Mail Group Limited			WS26
Contract Ref:			Start:	28.09.16	Gr	ound	d Level		National Grid Co-ordinate:	Sheet:		
28	3549		End:	28.09.16			14.4	47	E:531035.4 N:182395.3		1	of 1
Progress		Sam	oles / T	Fests		er	fill & ru- ation			iced	Depth	Material
Window Run	Depth	No	Туре	Results		Wat	Backt Instr menta		Description of Strata	Redu	(Thick ness)	Legend
-	-							MADE GR	OUND: Concrete hard standing.	14.27	0.20	
-	- 0.25 - 0.25 - -	ES1	ES PID	0.1ppm				MADE GR to coarse S fine to coa brick, conc	OUND: Light brown silty gravelly fine SAND with rare whole brick. Gravel is arse subangular flint with occasional rete, ceramic mortar.	-	-	
- - - -	- - - 0.85 0.85 -	ES2	ES PID	0.1ppm						- - - -	- (1.30) - -	
-	- 1.40 1.40	ES3	ES PID	0.1ppm				Firm stiff slightly sa	in places light brown slightly silty ndy CLAY with orange brown and	- 12.97	1.50	
-	- 1.80 1.80 -	ES4	ES PID	0.1ppm				bluish gre crystals. (LONDON	y mottling and possible selenite CLAY FORMATION)	-	- - - - (1 50)	
- - - - - - - -	2.70	ES5	ES PID	0.1ppm				Stiff bluish	grey extremely closely spaced thinly	- - - - 11.47		
- - - - - -	3.40 3.40	ES6	ES PID	0.1ppm				laminated s	SIITY CLAY. CLAY FORMATION)	-	(1.00)	
 - - - - - -	- - - - - - -							Terminated	i at 4.00m.	10.47 - - - - - - - - - - - - -	<u>4.00</u> - - - - - - -	<u>x </u>
- - - -	- - - -									- - - -		
Drillin Date Tir	g Progress a Boreho ne Deptr	and W	ater O Casing Depth	bservations Borehole Diameter	Wa De	ater pth			General Remarks			
	(m)		<u>(m)</u>	(mm)	(n	n)	- 1. Co 2. Do un 3. No 4. 50 co	ncrete cored to wn borehole cl exploded ordna groundwater e nm diameter s npletion. Resp	0.2m followed on by an inspection pit hand c necks for buried ferrous objects carried out du ance (UXO) officer using magnetometer at reg encountered. tandpipe complete with flush protective cover onse zone 1m to 1.5m. Borehole backfilled w	ug to 1.2n ring drilling ular interv installed to th arisings	n depth. g by spec als to 4m o 1.5m de s from 1.5	ialist depth. epth on m to 4m.

All dimensions in metres

KDS

Drilled

By:

Tracked window

sampling

Method

Used:

Plant

Used:

Premier 110



1:31

Checked

ST

AGS

Scale:

JTownsend By:

Logged By:

Contract:							Client:			Windo	w Samp	le:
Moun	t Pleasa	nt S	ortin	g Office				Royal	Mail Group Limited			WS27
Contract Ref:			Start:	29.09.16	Gr	ound	d Level	:	National Grid Co-ordinate:	Sheet:		
28	3549		End:	29.09.16			14.	58	E:531013.3 N:182375.5		1	of 1
Progress		Sam	oles / T	Fests		er	fill & ru- ation			iced	Depth	Materia
Window Run	Depth	No	Туре	Results		Wat	Backt Insti menta		Description of Strata	Redu	(Thick ness)	Legend
-	-							MADE GF	ROUND: Concrete hard standing.	14.46	0.12	
- - - -	- 0.15 - 0.15 - - -	ES1	ES PID	0.1ppm				MADE GF fine to co sized co subangula fragments	COUND: Light brown slity very gravely parse SAND with occasional cobble ncrete. Gravel is fine to coarse ar to rounded flint with occasional brick and concrete.		-	
- -	0.80 0.80 -	ES2	ES PID	0.1ppm						- - - -	- (1.48) - - -	
-	1.40	ES3	ES							L	-	
ſ	1.40		PID	0.1ppm				MADE GF	ROUND: Soft dark brown slightly sandy	12.98	1.60	\bigotimes
-	1.80	ES4	ES					slightly gr subangula	avelly CLAY. Gravel is fine to coarse ar to subrounded flint with occasional	-	(0.40)	
-	1.80 -		PID	0.1ppm				brick and	concrete.	12.58	2.00	
-	2.10	ES5	ES PID	0.1ppm				(HACKNE	Y GRAVEL)	-	-(0.50)	0.0.0 0.0.0
-	-							Firm stiff	in places orange brown slightly silty	12.08	2.50	p
- - - - - - - - - -	2.90 2.90 3.50 3.50	ES6 ES7	ES PID ES PID	0.1ppm 0.1ppm				slightly sa and occas crystals. (LONDON	andy CLAY with bluish grey mottling sional relict roots and possible gypsum I CLAY FORMATION)	- - - - - - - - - - - - - -	- - - - - (1.50) - - - -	
+	-									-	-	
 - - -	- - - -							Terminate	d at 4.00m.	10.58 	<u>4.00</u> - - - -	<u> </u>
	- -									-	-	
-	-									F	-	
-	- -									F F F	-	
Drillin			ater O	hearvations		I	1				L	
	Borehol		ater Of Casing	Borehole	Wa	ater	+		General Remarks			
	(m)		(m)	(mm)	(r	n)	- 1. Co 2. Do un 3. No 4. 50 co	oncrete cored own borehole o exploded ordro groundwater mm diameter mpletion. Res	to 0.12m followed on by an inspection pit hand checks for buried ferrous objects carried out du nance (UXO) officer using magnetometer at re- encountered. standpipe complete with flush protective cover ponse zone 1m to 2m. Borehole backfilled with	dug to 1.2 Iring drilling Jular interv installed to arisings fi	m depth. g by spec als to 4m o 2m dep rom 2m to	ialist depth. th on o 4m.

All dimensions in metres

KDS

Drilled

By:

Tracked window

sampling

Method

Used:

Plant

Used:

Dando Terrier



1:31

Checked

ST

AGS

Scale:

JTownsend By:

Logged By:

Contract:							Client:			Windo	w Samp	ole:
Moun	t Pleasai	nt S	ortin	g Office				Royal	Mail Group Limited			WS28
Contract Ref:	540		Start:	29.09.16	Gr	ounc		: Fa	National Grid Co-ordinate:	Sheet:		
28	3549		End:	29.09.16			14.	51	E:531003.7 N:182368.2		1	of 1
Progress Window Run	Depth	Sam No	ples / 1 Type	Results	;	Water	Backfill		Description of Strata	Reduced	Depth (Thick ness)	Material Graphic Legend
-	-							MADE GR	OUND: Bituminous hardstanding.	- 14.00	- 0.10	
- - - - -	0.20 0.20	ES1	ES PID	0.1ppm				MADE G gravelly fir coarse sub concrete, b	ROUND: Light brown slightly silty the to coarse SAND. Gravel is fine to bangular to rounded flint with frequent prick fragments and coal.	-	(1.01)	
- - - - -	- - - 1.00 - -	ES2	ES PID	0.1ppm				Refused a	t 1.20m.	- - <u>13.31</u> -	- - 1.20	
	g Progress a Borehol	Ind W	ater Ol Casing Depth	Borehole Diameter	Wa	ater pth	$\left\ \right\ $		General Remarks			
	(m)		(m)	(mm)	(n	n)	1. C di 2. B	oncrete core epth. orehole refus	ed to 0.19m followed on by an inspection sed at 1.2m due to concrete obstruction	n pit har	nd dug to	o 1.2m

All dimensions in metres

KDS

Drilled

By:

Tracked window

sampling

Method

Used:

Plant

Used:

Dando Terrier



1:31

Checked

ST

AGS

Scale:

JTownsend By:

Logged By:

Contract:							Client	:		Windo	w Samp	le:
Moun	it Pleasar	nt S	ortin	g Office				Royal	Mail Group Limited			WS29
Contract Ref:			Start:	07.10.16	Gr	ound	d Leve	l:	National Grid Co-ordinate:	Sheet:		
28	8549		End:	07.10.16			14.	51	E:531021.2 N:182445.7		1	of 1
Progress		Sam	oles / T	Fests		ter	kfill			lced	Depth	Material
Window Run	Depth	No	Туре	Results		Wa	Bac		Description of Strata	Redu	ness)	Legend
-	- 0.25	ES1	ES					MADE GR	OUND: Concrete hard standing.	- - 14.28	- 0.23	
-	- 0.25		PID	0.1ppm				sandy grav subangulai and bitumii	velly CLAY. Gravel is fine to coarse flint with occasional brick, concrete nous material.	- - -	(0.62)	
-	0.80 0.80	ES2	ES PID	0.1ppm				Refused at	0.5m due to concrete obstruction.	<u>- 13.66</u> - -	- 0.85 - -	
-	-									-	-	
-	-									-	-	
-	-									-	-	
-	 - -									-	-	
-	- - -									-	-	
-	-									-	-	
-	-									-	-	
-										-	-	
-	-									-	-	
-	-									-	-	
- - -	- - -									-	-	
-	-									-	-	
-	-										-	
-	-									-	-	
-	-										- - -	
-	-									ŀ	-	
Drillin	g Progress al	nd W	ater Ol Casing	bservations Borehole	Wa	ater			General Remarks			
Date Tir	me Depth (m)		Depth (m)	Diameter (mm)	De (n	pth n)	1. 0	Concrete core	d to 0.23m followed on by an inspection	n pit han	nd dug to	o 0.85m
							2. E	corehole refus	sed at 0.85m due to concrete obstructi	on		

All dimensions in metres

COWAN

Drilled

By:

Tracked window

sampling

Method

Used:

Plant

Used: Archway Competitor



JTownsend By:

Checked

ST

AGS

Logged By:

Contract:							Client:				Window	w Samp	le:
Moun	t Pleasa	ortin	g Office				Royal	Mail Group Li	mited			WS30	
Contract Ref:			Start:	07.10.16	Gro	ounc	l Level	:	National Grid Co-or	dinate:	Sheet:		
28	3549		End:	07.10.16			14.	65	E:531026.1	N:182451.0		1	of 1
Progress Window Pup	Depth	Sam	ples / T	Tests Results		Vater	sackfill		Description of Str	ata	evel	Depth (Thick	Material Graphic
	Deptil		Туре	Results		>		MADE GR	OUND: Concrete har	d standing	<u>8</u> _	ness)	XXXX
- - - - -	- - 0.25 - 0.25 - -	ES1	ES PID	0.1ppm				MADE GR silty very gr fine to coa occasional	OUND: Light brow ravelly fine to coarse irse subangular to r brick, concrete and r	n clayey slightly SAND. Gravel is ounded flint with nortar.	- <u>14.42</u> - -	0.23 (0.67)	
-	- 0.85	ES2	ES	0.1000				Refused at	0.90m due to concre	ete obstruction.	13.75	0.90	
Drillin	g Progress a	nd W	ater O	bservations					General	Remarke			
Date Tir	ne Depth (m)		Casing Depth (m)	Borehole Diameter (mm)	Wa Dep (m	ter oth 1)	- 1. C d(2. B	oncrete core epth. orehole refus	d to 0.23m followed o	on by an inspection	n pit han	d dug to	o 0.9m
								All dimens	ions in metres	Scale:	1:31		

Drilled

COWAN

By:

Tracked window

sampling

Method

Used:

Plant

Used: Archway Competitor



Contract:								Client:					Trial Pi	it:	
Mor	unt	Pleasa	ant S	ortin	g Of	fice		R	oyal	Mail Gro	oup Limite	ed			TP11
Contract Re	ef:			Start:	04.1	0.16	Grour	d Level:	-	National G	rid Co-ordinate	e:	Sheet:		
	285	49		End:	04.1	0.16		14.92		E:5309	976.8 N:18	32368.4		1	of 1
Sam	ples a	nd In-sit	u Tests		л.								e d	Depth	Material
Depth	No	Туре	Res	ults	Wate	Backt			De	scription of S	Strata		Seduc	(Thick ness)	Graphic Legend
								E GROUND	: Bitun	ninous hardst	anding.		- 14 77	- 0 15	
0.10 0.10	ES1	ES PID	0.2p	opm			MAE		D: Ora	angish brown	n black bitur	ninous silty	-	-	
0.30	ES2	ES PID	0.1	maa			Grav	elly SAND wi	coars	e subrounde	d to angular	flint, bricks,	14.47	0.45	
0.50	ES3	ES	0.1				ash MAE	and clinker. C	Cobble D: Cla	s of concrete	and brick.	/	-	-	
0.50		FID	0.1	рп			cobb	ole content. S	and is	fine to coars	e. Gravel is fir	ne to coarse	_	_	
							Cob	bles of concre	ete bri	cks and whole	e bricks.	and chinker.	-	-	
1.00	ES4	ES PID	0 1r	maa									-	-	
			0.1										-	-	
							8								
1.50 1.50	ES5	ES PID	0.1	opm									-	-	
													F	(2.95)	\bigotimes
-0.00		F.2											-	- (2.03) -	
2.00	E20	PID	0.1p	opm			8						_	-	
													-	-	
2 50	FS7	FS											-	-	
2.50		PID	0.1p	opm			8						-	-	
													-	-	
3.00	ES8	ES					8						_	_	
3.00		PID	0.1p	opm									11.62	3.30	
3.30 3.30	ES9	ES PID	0 1r	nm			Tern	ninated at 3.3	80m.				-	-	
0.00		110	0.1	-pin									-	-	
													_	-	
													-	-	
-													F		
													-	-	
													-	ŀ	
													F	Ł	
													-	-	
-													-	-	
													-	-	
													L	L	
Plan (Not to	Scal	e)							(General	Remark	S			
	-	<u>, , , , , , , , , , , , , , , , , </u>	י -	-	1. 0	Check	s for bu	ried ferrous o	objects	s carried out o	during excava	tion by specia	list une:	xploded	
		2.50	-	7	2. T	rdnar rial pi	ice (UX it remai	(O) officer usi ned dry durin	ing ma Ig exca	ignetometer. avation.					
0.70					3. 0 4. 0	On coi Concre	npletio ete slab	n, trial pit bac encountered	kfilled d at 0.4	with arisings. 4m					
	• ∟			-	5. A	t 0.8r	n brick	wall encounter	ered						
				-			All d	imensions in	metre	3	Scale:		1:31		
Method Used:	Mac	hine d	ua	Plan Use	it d:		JCE	3-3CX		Logged By:	JTownsend	Checke	d	ST	AGS



Contract:								Client:					Trial P	it:	
Мо	unt l	Pleas	ant S	ortin	g Of	fice		F	Roya	Mail Gro	oup Limite	d			TP12
Contract R	ef:			Start:	07.1	0.16	Grour	id Level:		National G	rid Co-ordinate	:	Sheet:		
	285	49		End:	07.1	0.16		14.12		E:5309	993.4 N:18	2353.3		1	of 1
Sam Depth	nples a	nd In-sit	tu Tests Res	sults	Water	Backfill			De	scription of S	Strata		Reduced	Depth (Thick ness)	Material Graphic Legend
								DE GROUNE	D: Bitun	ninous hardst	anding.		- 13.97	0.15	
0.30 0.30 0.50 0.50	ES1 ES2	ES PID ES PID	0.1 0.1	opm opm			MAE San coar clink	DE GROUNI d is fine to co se brick, fli er.	D: Dark oarse. (int, cor	c brown sligh Gravel is sub ncrete, meta	tly clayey grav rounded to ang with frequer	elly SAND. Jular fine to t ash and	- - - - 13.32	(0.65) 0.80	
1.00 1.00	ES3	ES PID	0.2	opm			MAE occa Sand angu angu	DE GROUN asional ash, d is fine to c ular flint brid ular brick, co	D: Dar clinker coarse. cks and oncrete	k brown cla and mediun Gravel is fine d metal. Col and a mix of	yey gravelly s to high cobb to coarse sub bbles are sub mortar and brid	SAND with le content. rounded to rounded to ck.	-	-	
1.50 1.50	ES4	ES PID	0.1	opm									- - -	-	
2.00 2.00	ES5	ES PID	0.2	opm									-	- -(2.60)	
2.50 2.50	ES6	ES PID	0.1	opm									-	-	
3.00 3.00	ES7	ES PID	0.3	opm									10 72		
3.50 3.50	ES8	ES PID	0.4	opm			∑Dark Sano (ALL Tern	c grey black and is fine to co UVIUM) ninated at 3.	slightly oarse w 50m.	sandy SILT v vith clay inclus	with strong org sions.	anic odour.	10.62	3.50	× ·×·
-													- - - -	- - - -	
-													-	-	
													-	-	
Plan (Not to	o Scal	e)							(General	Remarks	6			
0.70	▲ ↓	2.50) —•		1. 0 2. T 3. 0	Check ordnar Trial pi On cor	s for bu nce (UX it remai mpletio	uried ferrous (O) officer us ined dry duri n, trial pit ba	objects sing ma ng exca ckfilled	s carried out o agnetometer. avation. with arisings	during excavati	on by specia	alist une:	xploded	
							All d	imensions in	metre	S	Scale:		1:31		
Method	M			Plan	it d:		105			Logged	IOme it in	Checke	ed 📘	ST	
	iviac	anne d	ug	0.500	u.		JUE	っしん		<i>Dy</i> .	Jomith	Dy.			



Mount Pleasant S 28549 Samples and In-situ Tests Depth No Type Res 0.30 ES1 ES PiD 0.1 0.30 ES1 ES PiD 0.1 0.30 ES1 ES PiD 0.1 0.30 ES3 ES PiD 0.1 1.00 ES3 ES PiD 0.1 1.00 ES4 ES PiD 0.1 1.00 ES4 ES PiD 0.1 2.00 ES5 ES PiD 0.1 2.00 ES6 ES PiD 0.1 3.00 ES7 ES PiD 0.1 3.30 ES8 ES PiD 0.1 3.30 ES8 ES Output Output Plan (Not to Scale) Interval Interval Interval					Client:				Trial Pi	it:	
28549 Samples and In-situ Tests Depth No Type Res 0.30 ES1 ES PID 0.1 0.30 ES1 ES PID 0.1 0.30 ES2 PID 0.1 0.30 ES2 PID 0.1 0.50 ES3 ES PID 0.1 1.00 ES3 ES PID 0.1 1.50 ES4 ES PID 0.1 2.00 ES5 ES PID 0.1 2.00 ES5 FS 0.1 0.1 3.00 ES7 PID 0.1 0.1 3.30 ES8 PID 0.1 0.1 3.30 ES8 PID 0.1 0.1 3.30 ES8 PID 0.1 0.1 PID 0.1 0.1 0.1 0.1 3.00 ES8 PID 0.1 0.1 PID 0.1 0.1 0.1 0.1 D	orti	ing O	fice		Roya	I Mail Gro	up Limited				TP13
28549 Samples and In-situ Tests Depth No Type Res 0.30 ES1 ES PiD 0.1 0.30 ES1 ES PiD 0.1 0.30 ES1 ES PiD 0.1 0.50 ES2 ES PiD 0.1 1.00 ES3 ES PiD 0.1 1.50 ES4 ES PiD 0.1 2.00 ES5 ES PiD 0.1 2.00 ES5 ES PiD 0.1 2.00 ES6 ES PiD 0.1 3.00 ES7 ES PiD 0.1 3.30 ES8 ES PiD 0.1 3.30 ES8 ES 0.1 0.1 PiD 0.1 0.1 0.1 0.1 3.00 ES8 ES D.1 0.1 3.30 ES8 ES D.1 0.1 PiD 0.1 0.1 0.1 0.1	Star	rt: 07.1	0.16	Groun	nd Level:	National Gr	id Co-ordinate:		Sheet:		
Samples and In-situ Tests Depth No Type Res 0.30 ES1 ES2 ES1 0.11 0.50 ES2 ES2 PID 0.11 1.00 ES3 ES1 PID 0.11 1.00 ES3 ES1 PID 0.11 1.00 ES3 ES1 PID 0.11 1.50 ES4 ES PID 0.11 2.00 ES5 ES1 PID 0.11 2.00 ES5 ES1 PID 0.11 3.00 ES7 ES1 PID 0.11 3.00 ES7 ES1 PID 0.11 3.30 ES8 ES1 0.11 0.11 3.30 ES8 PID 0.11 0.11 PID 0.11 0.11 0.11 0.11 3.00 ES8 ES1 0.11 0.11 PID 0.11 0.11 0.11 0.11 PID 0.11 0.11 0.11 0.11	End	: 07.1	0.16		14.56	E:5310	30.2 N:1824	02.6		1	of 1
0.30 ES1 ES1 ES PID 0.1 0.50 ES2 ES PID 0.1 1.00 ES3 ES PID 0.1 1.00 ES3 ES PID 0.1 1.50 ES4 ES PID 0.1 2.00 ES5 ES PID 0.1 2.00 ES5 ES PID 0.1 2.50 ES6 PID 0.1 0.1 3.00 ES7 ES PID 0.1 3.30 ES8 PID 0.1 0.1 3.30 ES8 PID 0.1 0.1 PID 0.1 0.1 0.1 0.1 3.30 ES8 PID 0.1 0.1 PID 0.1 0.1 <	s sults	Water	Backfill		De	scription of S	trata		keduced Level	Depth (Thick ness)	Materia Graphic Legenc
0.30 0.30 0.50 ES1 ES2 ES PID ES2 0.11 0.11 1.00 ES3 ES PID 0.11 1.00 ES3 ES PID 0.11 1.50 ES4 ES PID 0.11 2.00 ES5 ES PID 0.11 2.00 ES5 ES PID 0.11 2.00 ES5 ES PID 0.11 3.00 ES7 ES PID 0.11 3.30 ES8 ES PID 0.11 3.30 ES8 ES PID 0.11 PID 0.11 0.11 <td></td> <td></td> <td></td> <td>MAC</td> <td>DE GROUND: Rein</td> <td>forced concret</td> <td>te hardstanding.</td> <td></td> <td>- 14 31</td> <td>- 0.25</td> <td></td>				MAC	DE GROUND: Rein	forced concret	te hardstanding.		- 14 31	- 0.25	
1.00 ES3 ES 0.1 1.50 ES4 ES 0.1 1.50 ES4 ES 0.1 2.00 ES5 ES 0.1 2.00 ES5 ES PID 0.1 2.00 ES5 ES PID 0.1 2.00 ES6 ES PID 0.1 3.00 ES7 ES PID 0.1 3.30 ES8 ES PID 0.1 3.30 ES8 ES PID 0.1 Plan (Not to Scale) PIA PIA PIA PIA	ppm ppm			MAE SAN subr MAE	DE GROUND: Darl ID. Sand is fine ounded to angular DE GROUND: Foo	k brown slight to coarse. G flint brick and ptings made f	ly clayey slightly ravel is fine to concrete. rom concrete ar	gravelly coarse	-14.26- - - -	- 0.30 	
1.50 ES4 ES PID 0.1 2.00 ES5 ES PID 0.1 2.50 ES6 ES PID 0.1 3.00 ES7 ES PID 0.1 3.30 ES8 ES PID 0.1 3.30 ES8 ES PID 0.1 3.30 ES8 ES PID 0.1 PID 0.1 0.1 0.1 0.1 3.00 ES7 ES PID 0.1 3.30 ES8 ES PID 0.1 PID 0.1 0.1 0.1 0.1 3.30 ES8 ES D.1 0.1 PID 0.1 0.1 0.1 0.1 PID 0.1 0.1 0.1 0.1 So ES8 ES PID 0.1 PID 0.1 0.1 0.1 0.1 PID 0.1 0.1 0.1 0.1 PID 0.1 0.1 0.1 0.1	ppm			high to co brick conc	cobble content and parse. Gravel is find and concrete. Co crete and bricks.	d frequent ash to coarse su obbles are su	and clinker. San brounded to anguibrounded to sub	d is fine ular flint, bangular	- - - 13.36	(0.90) - - - 1.20	
1.50 ES4 ES PID 0.1 2.00 ES5 ES PID 0.1 2.00 ES6 ES PID 0.1 2.50 ES6 ES PID 0.1 3.00 ES7 ES PID 0.1 3.30 ES8 ES PID 0.1 3.30 ES8 ES PID 0.1 91D 0.1 0.1 0.1 0.1 3.30 ES8 ES PID 0.1 91D 0.1 0.1 0.1 0.1 91D 0.1 0.1 0.1 0.1 3.30 ES8 ES PID 0.1 91D 0.1 0.1 0.1 0				Dark Grav	t brown clayey sau vel is fine to coarse CKNEY GRAVEL)	ndy GRAVEL. rounded to ar	Sand is fine to ngular flint.	coarse.	13.16	1.40	; -P _ (; (;
2.00 ES5 ES PID 0.1 2.50 ES6 ES PID 0.1 3.00 ES7 ES PID 0.1 3.30 ES8 ES PID 0.1 3.30 ES8 PID 0.1 3.30 ES8 PID 0.1 PID 0.1 0.1 <td< td=""><td>ppm</td><td></td><td></td><td>Firm (LON</td><td>to stiff dark grey C NDON CLAY FORM</td><td>LAY. /IATION)</td><td></td><td></td><td>-</td><td>- - (0.60) -</td><td></td></td<>	ppm			Firm (LON	to stiff dark grey C NDON CLAY FORM	LAY. /IATION)			-	- - (0.60) -	
2.50 ES6 ES PID 0.1	ppm			Stiff weat (LON	slightly sandy C thering. Sand is find NDON CLAY FORM	LAY with oc e to medium. //ATION)	casional orange	brown	_12.56 - -	2.00 - -	
3.00 ES7 ES 0.1p 3.30 ES8 ES 0.1p 3.30 ES8 PID 0.1p Image: Second state s	ppm								-	[- [(1.30)	
3.30 ES ES 0.1; PID 0.1; 	ppm			Tam	ningtod of 2 20m				- - - 11.26	- - - 3.30	
Plan (Not to Scale)	ppm										
◄ 2.50 →					(General	Remarks				
06:0		1. (2. 3. (4. (Checks ordnar Frial pi On cor Concre	s for bu ice (UX t remai npletion ete and	uried ferrous object (O) officer using ma ned dry during exc n, trial pit backfilled brick obstructions	s carried out d agnetometer. avation, seepa with arisings. encountered a	uring excavation age at 1.2m at 0.7m	by specia	ilist une	kploded	
				All di	imensions in metre	S	Scale:		1:31		
Method Used: Machina dua	Pla	ant sed:			2-30¥	Logged Bv:	ISmith	Checke Bv:	d	ST	



Contract:								Client:					Trial Pi	it:	
Мо	unt	Pleas	ant S	ortin	g Of	fice		F	Royal	Mail Gro	oup Limited				TP14
Contract Re	ef:			Start:	06.1	0.16	Grour	nd Level:		National G	Frid Co-ordinate:		Sheet:	_	
	285	49		End:	06.1	0.16		14.45		E:531	039.6 N:182	409.2		1	of 1
Sam Depth	ples a	nd In-sit	tu Tests Res	sults	Water	Backfill			Des	scription of \$	Strata		Reduced	Depth (Thick ness)	Material Graphic Legend
							MAE	DE GROUNE	D: Reinf	orced concre	ete hardstanding.		-	-	
0.50 0.50	ES1	ES PID	0.1p	opm			MAE San brick MAE reco	DE GROUNE d is fine to d and mudsto DE GROUN vered as da	D: Dark coarse. one. ID: Bri ark brov	brown claye Gravel is s ck and co vn slightly c	ey slightly gravel ubrounded to an ncrete mix hard layey gravelly S/	y SAND. gular flint dstanding AND with	14.15 14.05 - - -	0.30	
1.00 1.00	ES2	ES PID	0.2	opm			subr	ounded to su	angula ubangul	r flint brick lar bricks an	d concrete morta	bles are r.	13.25	1.20	
1.30 1.30	ES3	ES PID	0.1	maa			Dark coar	k brown slig se. Gravel i	htly cla is fine	yey sandy (to coarse s	GRAVEL. Sand subrounded to su	is fine to Ibangular	13.05	1.40	
1.50 1.50	ES4	ES PID	0.1p	opm			(HA) Soft in pl	CKNEY GRA dark grey sli aces.	AVEL) ightly sa	andy CLAY.	Sand is fine to co	arse firm	-	- - (0.60)	
2.00	ES5	ES					(LOI Tern	NDON CLAY	7 FORM 00m.	IATION)			12.45	2.00	
-											Demorto				
Plan (Not to ® ö	Scal	e) 2.4()		1. C c 2. C 3. E 4. T	Checks ordnan On cor Brick a Trial pi	s for bu ce (UX npletio nd con t termir	uried ferrous (O) officer us n, trial pit ba locrete obstru nated due to	objects sing ma ckfilled ctions a rising v	General carried out gnetometer. with arisings at 0.53m. vater and co	Remarks during excavation s. llapse	n by specia	alist une	xploded	
Mother				- יח			All d	imensions in	metres	S Lograd	Scale:	Charl	1:31		
Wethod Used:	Mac	<u>:hine d</u>	lug	Use	n d:		JCE	B-3CX		Logged By:	JTownsend	Ву:	a	ST	AGS



Contract:								Client:					Trial Pi	it:	
Мо	unt l	Pleas	ant S	ortin	g Of	fice		F	Royal	Mail Gro	oup Limited				TP15
Contract Re	ef:			Start:	11.1	0.16	Groun	d Level:		National G	rid Co-ordinate:		Sheet:		
	285	49		End:	11.1	0.16		14.49		E:5310)52.3 N:1824	132.3	-	1	of 1
Sam Depth	ples a	nd In-sit	tu Tests Res	ults	Water	Backfill			De	scription of S	strata		Reduced Level	Depth (Thick ness)	Material Graphic Legend
							MAE)E GROUNI	D: Reinf	orced concre	te hardstanding.		- - - 14.24	0.25	
0.50 0.50	ES1	ES PID	0.1p	opm			MAE GRA Sano (angu MAE	DE GROUI VEL/gravell d is fine to c lar flint. DE GROUNE	ND: D ly SAN coarse. D: Brick	ark brown D with occa Gravel is fine and concrete	slightly clayey asional ash and to coarse subrou e obstruction.	sandy clinker. unded to	- - - 13.94 - -	- - - 0.55 - -	
1.00 1.00	ES2	ES PID	0.1p	opm									-	(0.85) 	
1.45	ES3	ES					MAE	E GROUN	D: Dar	k brown slig	htly clayey very	gravelly	13.09 12.99	1.40 1.50	
1.45 1.60 1.60	ES4	PID ES PID	0.1p 0.1p	אסט pm			SAN Grav conc Soft cryst	D with stror vel is fine to crete. to firm dark tals.	ng hydro coarse grey sl	subrounded	ir. Sand is fine to to angular flint b AY with potential	coarse. rick and selenite	- 12.84 - - -	- <u>1.65</u> - - -	<u>x </u>
						(LONDON CLAY FORMATION)							-		
-														- - - - -	
													-	-	
													-	-	
-													-	-	
Plan (Not to									(Conoral	Pomarks				
6. 0		=) 2.50	0•	•]	1. C 0 2. C 3. S 4. E	Checks Irdnan On cor Seepa Brick a	s for bu ce (UX npletion ge at 1 nd con	rried ferrous (O) officer us n, trial pit ba .4m. crete hardst	objects sing ma ckfilled	s carried out o gnetometer. with arisings. at 0.55m	Juring excavation	by specia	ilist une	<ploded< td=""><td></td></ploded<>	
							All d	imensions ir	metres	6	Scale:		1:31		
Method Used:	Mar	:hine d	lua	Plan Use	nt d:		.ICF	3-3CX		Logged By:	Townsend	Checke By:	d	ST	AGS
			~3									-			فكالا ا



Contract:								Client:						Tria	al Pi	t:	
Μοι	unt	Pleas	ant Sort	ting	j Of	fice		R	oyal	Mail Gr	oup Lin	nited					TP16
Contract Re	ef:		Sta	art: 1	10.0	9.16	Ground	d Level:		National G	Grid Co-ord	nate:		Sh	eet:		
	285	49	En	nd: 1	10.0	9.16		14.81		E:530	992.9 N	:1824	21.4			1	of 1
Samp	oles a	and In-si	tu Tests		er	III								ced	<u>a</u>	Depth	Materia
Depth	No	Tvpe	Results	s	Wat	Back			Des	scription of	Strata			edu	Lev	(Thick	Graphi
		J1* *		-			MAD	E GROUND:	Bitum	inous hards	standing.				66	0.45	
							MAD	E GROUND:	Conc	rete hardsta	anding.			- 14	.00	0.15	
							MAD	E GROUNE	D: Mi	x of brick	s, concret	e and	mortar	- 14	.51	- 0.30	
0.50		PID	0.1ppm	ı			frequ	ent ash and	clinke	r and mediu	im cobble of to angula	ontent.	Sand is	-		-	
							of fli	nt, brick an	id coi	ncrete. Cot	obles are	subrou	nded to	È		-	
							angu	lar bricks and	a conc	rete.				-		-	
1.00		PID	0.1ppm	ı										-		-	
														È		-	\boxtimes
							8							-		-	\bigotimes
1.50		PID	0.1ppm	1			8									-	\bigotimes
														-		-	
							8							-		-(3.20)	
2.00		PID	0.1ppm	ı										F		-	
														-		-	\bigotimes
							8							-		-	\bigotimes
2.50		PID	0.1ppm	1										-		-	
														-		-	
							8							-		-	
3.00		PID	0.1ppm	1										-		_	
														-		-	
							8									-	\bigotimes
3.50		PID	0.1ppm				Term	inated at 3.5	0m.					11	.31	3.50	
														-		-	
														-		-	
														-		-	
														Ē		-	
														E		_	
														-		-	
														È		-	
														-		-	
														F		_	
																-	
														-		-	
Plan (Not to	Scal	e)							(General	Rema	rks					
				F	1 (heck	s for hu	ried ferrous o	hiecto		during evo	avation	hyeneci	aliet		nloded	
	-	- 2.30	0			rdnar	ice (UX	O) officer usi	ng ma	gnetometer		avation	by speci	anət	une)	.pioueu	
50	•				2.S 3.C	eepa In coi	ge at 3.9 npletion	om. ı, trial pit bacł	kfilled	with arising	S.						
					4. C	Concre	ete slab	encountered	at 1.1	m							
Mothad							All di	mensions in r	netres	Logged	Scale:		Charl	1:3	31		
Used:	Mad	chine d	lug ^P	Jsed:			JCB	-3CX		By:	JTownse	end	By:	eu		ST	AG



Contract:								Client:					Trial Pi	it:	
Мо	unt l	Pleasa	ant S	ortin	g Of	fice			Royal	Mail Gro	oup Limited	k			TP17
Contract R	ef:			Start:	17.1	0.16	Groun	d Level:		National G	Grid Co-ordinate:		Sheet:		
	285	49		End:	17.1	0.16		14.59		E:531	051.5 N:182	2423.4		1	of 1
Sam Depth	ples a	nd In-sit	u Tests Res	ults	Water	Backfill			De	scription of s	Strata		educed Level	Depth (Thick	Material Graphic
		.) p c						E GROUNI	D: Reinf	orced concr	ete hardstanding].	Ľ Ľ	-	
							8						14.29	0.30	
							MAE cont	E GROUN	D: Dark is fine	brown grave to coarse.	elly SAND with I Gravel is fine	ow cobble to coarse	14.09	0.50	
0.50 0.50	ES1	ES PID	0.1r	maa			subr	ounded to isional ash a	angul and clini	ar flint bri ker Cobbles	icks and conc are subangular	rete with	-	-	
							MAE	E GROUNI	D: Brick	and concret	te obstruction.		-	- [(0,70)	
1.00	500						8						-	-	
1.00	ES2	ES PID	0.1p	opm			8			<u> </u>			13.39	1.20	
							MAE sligh	E GROUN	D: Mixe ry sand	d concrete a y GRAVEL.	and bricks and d Sand is fine f	ark brown to coarse.	F	-	
1.50	ES3	ES					Gra	el is fine to	coarse	subrounded	to angular flint a	ind brick.	-	(0.50)	
1.50		PID	0.1p	opm			Stiff	to verv stiff	dark or	ev silty CI AN	(12.89	1.70	
								NDON CLAY	Y FORM	IATION)			F	-	
2.00	ES4	ES	0.1-	nm			8						 -	-	
2.00		ייי	0.1	וויקי									ŀ	-	
							8						F	L	
2.50 2.50	ES5	ES PID	0.1p	opm			8						F	- (1.80)	<u> </u>
													-	-	
3 00	FS6	FS											-	F	
3.00	230	PID	0.1p	opm			8						- -	-	
							8							-	<u> </u>
3.50	ES7	ES					Tern	ninated at 3	.5m.				11.09	3.50	×
3.50		PID	0.1p	opm			1						F	ŀ	
													F	-	
													F	F	
													- -	-	
							1						ŀ	-	
													F	ŀ	
							1						F	L	
													-	╞	
													F	-	
							1						Ę	F	
Plan (Not to	o Scal	e)							(General	Remarks				
	-	— 2.00) —-•	-	1.0	heck	s for bu	ried ferrous	sing ma	carried out	during excavatio	on by specia	alist une	xploded	
õ	S 2.00 ordnance (UXU) ordnance (UXU) ordnance S 2. Trial pit remained 3. On completion, trial									vation.					
0.9	↓				3.0		inhierioi	n, mai pit da	CKIIIEO	with ansings	5.				
													4.04		
Method				Plan	 t		All d	imensions ir	n metres	Logaed	Scale:	Checke	1:31		
Used:	Mac	hine d	ug	Use	d:		JCE	B-3CX		By:	JTownsend	By:		ST	AGS



Contract:								Client:						Trial Pit:				
Мо	unt	Pleas	ant S	ortin	g Of	fice		F	Royal	Mail Gro	oup Limit	ed			HP01			
Contract Re	ef:			Start:	26.0	9.16	Groun	d Level:		National G	Grid Co-ordinat	e:	Sheet:					
	285	49		End:	26.0	9.16		19.02		E:531	002.2 N:1	82500.1		1	of 1			
Sam Depth	ples a	nd In-sit	u Tests Res	ults	Water	Backfill			De	scription of S	Strata		tevel Level	Depth (Thick ness)	Material Graphic Legend			
0.20 0.20	ES1	ES PID	0.1p	opm			MAE coar suba cera	DE GROUNI se SAND wi angular to s mics.	D: Darl ith occa subroun	k brown slig asional roots ded with o	ghtly silty gra s. Gravel is fir ccasional bric	velly fine to ne to coarse ks, tile and	- - - -	- (0.60)				
0.50 0.50	ES2	ES PID	0.1p	pm				at 0.50m cor E GROUNE	ncrete c D: Light	bstruction	silty gravelly fi	ne to coarse	18.42	0.60				
1.00	ES3	ES					SAN to c bitun	D with occa oarse subai ninous mate	ngular rial, sla	flint with or te, plastic ar	el concrete. G ccasional bric nd metal.	k, concrete,	-	- - (0.60) 				
1.00	E93	PID	0.1p	pm			§						17.82	1.20				
													-	-				
													-	-				
													-	-				
													-	-				
													-	-				
													-	-				
-													-	-				
													-	-				
													-	-				
													-	-				
-													-	-				
													-	-				
Plan (Not to Scale)									(General	Remark	S						
0.50	▲ ↓	— 0.50)		1. N 2. N 3. E	/loved lo gro }ackfil	slightly undwat led upo	y to the south ter encounte on completion	h due to ered. n.) work.								
							All di	imensions in	metres	3	Scale:		1:25					
Method				Plan	it d:					Logged	I T	Checke	d	ST				
USEU.	g	Use	u.		Hand	tools		Ъy.	JIOWNSENC	Dy:		9 1	Aud					



Contract:							Client:				Trial P	it:		
Μοι	Int	Pleasa	ant S	ortin	g Of	g Office Royal Mail Group Limited							HP02	
Contract Re	f:			Start:	26.0	9.16	Ground Level:	National G	Grid Co-ordinate:		Sheet:	Sheet:		
	285	49		End:	26.0	9.16	18.63 E:530994.9 N:182476.2					1	of 1	
Samp	oles a	nd In-sit	u Tests Res	ults	Nater	Backfill	De	escription of	Strata		educed Level	Depth (Thick	Materia Graphic	
		турс		uno	<u> </u>		MADE GROUND: Bric	c gravel sub t	base.		<u>Ř</u> 1853	0.10		
0.15 0.15	ES1	ES PID	0.1	opm			MADE GROUND: Lig SAND with occasional bricks. Gravel is fir occasional brick fragm	ht brown silt al cobble size to coars ents and cond	ty gravelly fine to zed concrete and se subangular fl crete.	o coarse d whole int with	- - - - -	- - - (0.80) -		
0.90	ES2	ES PID	0.1	opm			Terminated due to con	crete obstruc	tion at 0.90m.			0.90		
Plan (Not to	Scale ,	e) 0.50)	-	1. N 2. E	lo gro Backfil	undwater encountered. led with arisings upon cor	General npletion.	Remarks					
Method				Plan			All dimensions in metre	S	Scale:	Checko	1:25			
Used:	Ha	and du	g	Used	d:		Hand tools	By:	JTownsend	By:	u	ST	AGS	



Contract:							Client:						Trial P	it:	
Mount	Pleas	ant S	ortin	g Of	g Office Royal Mail Group Limited								HP03		
Contract Ref:			Start:	26.0	9.16	Ground	Level:		National G	Grid Co-or	dinate:		Sheet:		
285	549		End:	d: 26.09			18.53 E:530983.0 N:182475.2					1	of 1		
Samples a	and In-sit	tu Tests Res	sults	Water	Backfill		Description of Strata						educed	Depth (Thick	Material Graphic Legend
	71					MADE	E GROUND:	Brick	gravel sub l	base.			<u>∩</u> 18.43	0.10	
0.15 ES1 0.15	ES PID	0.1p	opm			MADE fine to is fine fragm	E GROUND: coarse SAI to coarse su ents, concre	: Ligh ND wi ubang te anc	t to dark bi th rare cobl ular to round plastic.	rown sligf ble sized ded flint w	ntly silty concrete. ith freque	gravelly Gravel nt brick	-	- (0.80)	
0.80 0.80 ES2	ES PID	0.1	opm			Tormi	nated at 0.00	<u>)</u> m					17.63	0.90	
Plan (Not to Sca	le) 0.50) — •		1. N 2. E	No gro	undwate	er encountere arisings upol	ed. n com	Seneral pletion.	Rema	arks				
- ♥ ∟_															
						All din	nensions in r	netres	3 	Scale:			1:25		
Used: H	and du	g	Use	n d:		Hand	tools		Logged By: JTownsend			Спеске Ву:	ed .	ST	AGS



Contract:								Client:					Trial P	it:	
Мо	unt	Pleas	ant S	ortin	g Of	fice		F	Royal	Mail Gr	oup Limit	ed			HP04
Contract R	ef:			Start:	26.0	9.16	Groun	d Level:		National G	Grid Co-ordina	ite:	Sheet:		
	285	49		End:	26.0	9.16		18.43		E:530	956.7 N:1	82450.4		1	of 1
Sam	ples a	Ind In-si	tu Tests	5	/ater	ackfill			De	scription of	Strata		duced evel	Depth (Thick	Materia Graphic
Depth	No	Туре	Res	sults	5	ů XXXXX							Re	ness)	Legend
0.15 0.15	ES1	ES PID	0.1p	opm			MAD base MAD SAN occa	E GROUNE). E GROUN D. Gravel sional brick	D: Yello D: Ligh is fin , concr	w brick over t brown sili e to coars ete and me	ty gravelly firse subangul tal and occa	e SAND (sub ne to coarse ar flint with sional cobble	18.33	0.10	
0.50 0.50	ES2	ES PID	0.1p	opm			sized	l concrete fr	agment	S.			-	- (0.80) - -	
- 1.00 1.00	ES3	ES PID	0.1p	opm			MAD coars Grav fragr	E GROUNE se SAND v el is fine to nents and co	D: Light with rai coars oncrete	brown grey re cobble s e subangula	clayey very g sized concret ar flint with f	ravelly fine to e and brick. requent brick	17.53	0.90 (0.30) 1.20	
	Do Scal	e) — 0.5	0•		1. N 2. E	lo gro	undwat led with	er encounte n arisings up	ered.	General pletion.	Remar	< <u>s</u>			
							All di	mensions in	metres	3	Scale:		1:25		
Method				Plan	nt		01			Logged	20010.	Check	ed		
Used:	Ha	and du	g	Use	d:		Hand	l tools		By:	JTownsen	d ^{By:}		21	AG



Contract:							Client:				Trial Pi	it:	
Moun	nt F	Pleasa	ant S	ortin	g Of	fice	Roya	al Mail Gr	oup Limited				HP05
Contract Ref:				Start:	26.0	9.16	Ground Level:	National G	Grid Co-ordinate:		Sheet:		
28	854	49		End:	26.0	9.16	18.81	18.81 E:530931.2 N:182421.1				1	of 1
Sample Depth N	s ar Io	nd In-sit Type	tu Tests Res	ults	Water	Backfill	D	escription of	Strata		keduced Level	Depth (Thick ness)	Material Graphic Legend
0.15 Es	S1	ES PID	0.1	opm			MADE GROUND: V gravelly fine to mediu fine to medium subar concrete.	egetation ove m SAND with gular flint with	er dark brown w n frequent roots. C n rare brick fragme	ery silty Gravel is ents and	- - - 18.61 -	0.20	
0.50 E: 0.50	S2	ES PID	0.1p	opm			MADE GROUND: Lig medium SAND with ra to coarse subrounded fragments and concre	nt brown to gre are cobble size to subangula te.	ey very silty gravel ed concrete. Grav r flint with occasio	ly fine to el is fine nal brick	-	- (0.60)	
1.00 E	S3	ES PID	0.1	mqq			MADE GROUND: Da medium SAND. Gra subrounded flint with chalk and coal.	rk brown to vel is fine to occasional b	black silty gravelly o medium suban prick fragments, c	y fine to gular to concrete,	<u>18.01</u> - -	0.80	
			0.1	·P···			Terminated at 1.20m.				17.61	1.20	
-												-	
											- - - - - -	- - - - -	
-											- - - - -	- - - - -	
								Concret	Domortes		L		
Plan (Not to So G G O	cale	e) 0.50) —•		1. N 2. E	lo gro Backfil	undwater encountered. led with arisings upon cc	General					
							All dimensions in metr	es	Scale:		1:25		
Method Plan Used: Hand dug Use					lt d·		Hand tools	Logged By:	ITownsend	Checke Bv:	d	ST	



Mc Contract F							Client:	Client:								
Contract F	bunt	Pleas	ant S	ortin	g Of	fice		Royal	Mail Gro	oup Limited				HP06		
	Ref:	••		Start:	26.09	ə.16	Ground Level:		National G	rid Co-ordinate:		Sheet:		4		
	285	49		End:	26.09	9.16	18.72		E:530	930.3 N:1824	407.2	~	1	of 1		
Sar Depth	nples a	nd In-sit	u Tests Res	ults	Water	Backfill		Des	cription of S	Strata		keducec Level	Depth (Thick ness)	Material Graphic Legend		
0.20 0.20	ES1	ES PID	0.1p				MADE GROU SAND with of subangular to concrete, chall	ND: Gras occasional rounded f and bitun	s over silty roots. Gr flint with oc ninous mate	/ gravelly fine to avel is fine to casional brick fra rial.	coarse coarse igments, -	18.32	-(0.40)			
0.50 0.50	ES2	es Pid	0.1p	pm			MADE GROU SAND with ra coarse subang fragments, cor	ND: Light are cobble gular to su crete and	brown silty sized cor ubrounded f slate.	y gravelly fine to acrete. Gravel is flint with occasior	fine to nal brick	17 02	- - (0.40) - 0.80			
1.00 1.00	ES3	ES PID	0.1p	opm			MADE GROU fine to coarse with frequent b	ND: Dark SAND. Gra rick, conci	brown to b avel is fine to rete and coa	lack slightly silty o medium subang al fragments.	gravelly jular flint	17.52	- 0.80 - -(0.40) - 1 20			
							Terminated at	1.20m.			-	17.52	-	KXXXX		
											-		-			
											-		-			
											-		-			
											-		-			
											-		-			
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											-		-			
											-	·	-			
													-			
Plan (Not to Scale)							<u> </u>	G	eneral	Remarks				l		
Plan (Not	_	— 0.50) ——>	•	1. N 2. B	lo gro ackfil	undwater encoun ed with arisings u	tered. Jpon comp	bletion.							
Plan (Not Science Scie																
Plan (Not	↓						All dimensions	in metres		Scale:	1	:25				


TRIAL PIT LOG

Contract:								Client:					Trial Pi	it:	
Мо	unt	Pleas	ant S	ortin	g Of	fice		6	Royal	Mail Gr	roup Limi	ted			HP07
Contract Re	ef:			Start:	27.0	9.16	Groun	d Level:	-	National	Grid Co-ordin	ate:	Sheet:		
	285	49		End:	27.0	9.16		18.80		E:530	0938.1 N:	182394.8		1	of 1
Sam	ples a	and In-sit	tu Tests	ulte	Nater	Backfill			Des	scription of	Strata		evel	Depth (Thick	Material Graphic
0.15 0.15	D1	D PID	0.1				MAE SAN suba	E GROUN D with oc angular flint	D: Dark casiona with occ	c brown si I roots. C asional bri	ilty gravelly f Gravel is fir ck fragments	ine to coarse ne to coarse concrete and	18.60	0.20	Legend
0.50 0.50	D2	D PID	0.1p	opm			MAE med to co fragr	E GROUN ium SAND v parse suban ments.	ID: Ligh with rare gular to	nt brown e cobble siz subrounde	very silty grazed concrete. ad flint with oc	avelly fine to Gravel is fine casional brick	- - - 18 10	(0.50) 0.70	
1.00	D3	D					MAD coar to co fragr	DE GROUN se SAND w parse subrou ments, conc	D: Dark vith rare unded to rete, cha	c brown sl cobble siz subangula alk and coa	lightly silty gi ed concrete. ar flint with oc al.	ravelly fine to Gravel is fine ccasional brick	-	(0.50)	
1.00		PID	0.1p	pm									17.60	1.20	
													-	-	
													-	-	
													-	-	
													-	-	
												-	-		
												-	-		
													-	-	
,													-	-	
													-	-	
													-	-	
													-	-	
													-	-	
														-	
												ko			
	Jocal	e)							C	Sellera		ND			
0.50						lo gro ackfil	undwat led with	ter encounte n arisings up	ered. oon com	pletion.					
								imonoiono ir	motros		Saalai		1.25		
Method				Plan	l I		All U		rinettes	Logged	Scale:	Check	ed		
Used:	ed: Hand dug Use				d:		Hand	tools		By:	JTownser	nd ^{By:}		21	AGS

Exploratory	Depth	Hole	Casing	Water	Seating	g Drive	Τe	est Drive		Hammer	Calibration	Eneray		
Position ID	(m)	Dia (mm)	Depth (m)	Depth (m)	Blows	Pen (mm)	Blows	R (mm)	Result	ID	Date	Ratio (%)	N ₆₀	Comments
BH01	1.00				3,3	150	4,1,1,1		3,3/4,1,1,1	EQU004	22/12/2016	61.88	7	
									N=7					
	2.20				2,2	150	3,2,3,3		2,2/3,2,3,3	EQU004	22/12/2016	61.88	11	
									N=11					
	3.00				1,1	150	1,3,2,3		1,1/1,3,2,3	EQU004	22/12/2016	61.88	9	
									N=9					
	5.00				2,2	150	2,3,3,3		2,2/2,3,3,3	EQU004	22/12/2016	61.88	11	
									N=11					
	8.00				1,2	150	2,4,5,5		1,2/2,4,5,5	EQU004	22/12/2016	61.88	17	
									N=16					
	9.50				3,3	150	3,4,5,7		3,3/3,4,5,7	EQU004	22/12/2016	61.88	20	
									N=19					
	12.90				6,6	150	6,6,6,6		6,6/6,6,6,6	EQU004	22/12/2016	61.88	25	
									N=24					
	17.10				6,5	150	7,9,9,13		6,5/7,9,9,13	EQU004	22/12/2016	61.88	39	
									N=38					
	20.00				8,9	150	10,12,12,15	8	,9/10,12,12,15	EQU004	22/12/2016	61.88	51	
									N=49					
Notes: 1. Tests carried of 2. Reported blow 3. Where full test 4. Tests carried of 5. Entries in the	out in gene s are for 7 drive was out using a water depti	ral acco 5mm per not ach split sp	rdance with netration u ieved, actu oon sample n reflects th	h BS EN IS nless indi al penetra er unless ne measure	SO 22476- cated "+". ition (R) a noted as s	3:2005, in nd extrap SPT(c) (d	ncluding amendr polated N value (enotes use of so	ment A1 (2 N*) reporte lid cone n	2011). ed. nethod) in the co	mments column		N ₆₀ = (Measi	ured hammer	energy ratio / 60) x N value

RSK Environment I td	Comp	biled By	Date	Contract Re	f:	
18 Frogmore Road	Con Partor	CBAKER	19.01.17		28549	
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Hertfordshire HP3 9RT	Mount F	Pleasant Sorting Office		1	of	28 🔲 AGS

Exploratory	Depth	Hole	Casing	Water	Seatin	g Drive	T€	est Drive	e	Hammer	Calibration	Energy		
Position ID	(m)	Dia (mm)	Depth (m)	Depth (m)	Blows	Pen (mm)	Blows	R (mm)	Result	ID	Date	Ratio (%)	N ₆₀	Comments
BH01	21.50				6,10	150	9,11,15,15+	288	5,10/9,11,15,15	EQU004	22/12/2016	61.88	54	
									for 63mm					
									N=52*					
	23.50				17,8	85	31,19+	95	17,8/31,19	EQU004	22/12/2016	61.88	163	
									for 20mm					
									N=158*					
BH03	1.00				25	75	25,25	150	25/25,25	EQU004	22/12/2016	61.88	103	
									for 75mm					
									N=100*					
	2.00				1,1	150	1,2,2,3		1,1/1,2,2,3	EQU004	22/12/2016	61.88	8	
									N=8					
	4.00				1,1	150	3,4,5,5		1,1/3,4,5,5	EQU004	22/12/2016	61.88	18	
									N=17					
	5.70				4,4	150	4,6,6,7		4,4/4,6,6,7	EQU004	22/12/2016	61.88	24	
									N=23					
	7.20				4,4	150	6,7,7,9		4,4/6,7,7,9	EQU004	22/12/2016	61.88	30	
									N=29					
	9.70				5,6	150	6,7,10,10		5,6/6,7,10,10	EQU004	22/12/2016	61.88	34	

Tests carried out in general accordance with BS EN ISO 22476-3:2005, including amendment A1 (2011).
 Reported blows are for 75mm penetration unless indicated "+".
 Where full test drive was not achieved, actual penetration (R) and extrapolated N value (N*) reported.
 Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.

5. Entries in the water depth column reflects the measured water depth at time of test.

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18 Frogmore Road	Con Partor	CBAKER	19.01.17		28549	
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Hertfordshire HP3 9RT	Mount F	Pleasant Sorting Office		2	of	28 📕

 N_{60} = (Measured hammer energy ratio / 60) x N value

m) Dia (mr	ia Depth m) (m)	Depth (m)	Blows	Pen	Blows	R	Result	ID	Date	Ratio	N ₆₀	Comments
				(1111)		(mm)				(%)		
							N=33					
1.20			6,8	150	8,9,10,11		6,8/8,9,10,11	EQU004	22/12/2016	61.88	39	
							N=38					
2.70			10,9	150	10,10,14,15	1	0,9/10,10,14,15	EQU004	22/12/2016	61.88	51	
							N=49					
4.20			5,5	150	5,8,9,10		5,5/5,8,9,10	EQU004	22/12/2016	61.88	33	
							N=32					
5.70			6,8	150	8,10,11,13		6,8/8,10,11,13	EQU004	22/12/2016	61.88	43	
							N=42					
7.20			5,10	150	10,10,11,14	5	10/10,10,11,14	EQU004	22/12/2016	61.88	46	
							N=45					
8.50			10,15	150	15,13,15,7+	265 1	0,15/15,13,15,7	EQU004	22/12/2016	61.88	59	
							for 40mm					
							N=57*					
0.00			11,14	150	20,22,8+	180	11,14/20,22,8	EQU004	22/12/2016	61.88	86	
							for 30mm					
							N=83*					
1.50			8,7	150	11,13,12,14	8	,7/11,13,12,14	EQU004	22/12/2016	61.88	52	
2. 4. 5. 7. 8. 0.	70 20 70 20 70 20 50 00 50	70	70	70 10,9 20 5,5 20 5,5 70 6,8 70 6,8 20 5,10 20 5,10 50 10,15 00 11,14 50 8,7	70 10,9 150 20 5,5 150 20 5,5 150 70 6,8 150 70 6,8 150 20 5,10 150 20 5,10 150 20 5,10 150 50 10,15 150 00 11,14 150 50 11,14 150 50 8,7 150	70 10,9 150 10,10,14,15 20 5,5 150 5,8,9,10 20 5,5 150 5,8,9,10 70 6,8 150 8,10,11,13 70 5,10 150 10,10,11,14 20 5,10 150 10,10,11,14 50 10,15 150 15,13,15,7+ 00 11,14 150 20,22,8+ 50 8,7 150 11,13,12,14	70 10,9 150 10,10,14,15 1 20 5,5 150 5,8,9,10	70 10,9 150 10,10,14,15 10,9/10,10,14,15 20 5,5 150 5,8,9,10 5,5/5,8,9,10 20 5,5 150 5,8,9,10 N=32 70 6,8 150 8,10,11,13 6,8/8,10,11,13 20 5,10 150 10,10,11,14 5,10,11,13 20 5,10 150 10,10,11,14 5,10,11,13 20 5,10 150 10,10,11,14 5,10/10,10,11,14 20 5,10 150 10,10,11,14 5,10/10,10,11,14 20 5,10 150 10,10,11,14 5,10/10,10,11,14 20 5,10 150 15,13,15,7+ 265 10,15/15,13,15,7 50 10,15 150 15,13,15,7+ 265 10,15/15,13,15,7 00 11,14 150 20,22,8+ 180 11,14/20,22,8 00 11,14 150 20,22,8+ 180 11,14/20,22,8 10 1 1 1 1 1 1 10 1 1 1 1 1 1	70 10,9 150 10,10,14,15 10,9/10,10,14,15 EQU004 20 5,5 150 5,8,9,10 5,5/5,8,9,10 EQU004 20 5,5 150 5,8,9,10 5,5/5,8,9,10 EQU004 70 6,8 150 8,10,11,13 6,8/8,10,11,13 EQU004 70 6,8 150 8,10,11,13 6,8/8,10,11,13 EQU004 70 6,8 150 10,10,11,14 5 10/10,10,11,14 EQU004 20 5,10 150 10,10,11,14 5 10/10,10,11,14 EQU004 20 5,10 150 15,13,15,7+ 265 10,15/15,13,15,7 EQU004 50 10,15 150 15,13,15,7+ 265 10,15/15,13,15,7 EQU004 60 11,14 150 20,22,8+ 180 11,14/20,22,8 EQU004 61 11,14 150 20,22,8+ 180 11,14/20,22,8 EQU004 60 11,14 150 11,13,12,14 8,7/11,13,12,14 EQU004	70 10,9 150 10,10,14,15 10,9/10,10,14,15 EQU004 22/12/2016 20 5,5 150 5,8,9,10 5,5/5,8,9,10 EQU004 22/12/2016 20 6,8 150 5,8,9,10 5,5/5,8,9,10 EQU004 22/12/2016 70 6,8 150 8,10,11,13 6,8/8,10,11,13 EQU004 22/12/2016 70 6,8 150 8,10,11,13 6,8/8,10,11,13 EQU004 22/12/2016 70 6,8 150 10,10,11,14 5 10/10,10,11,14 EQU004 22/12/2016 70 5,10 150 10,10,11,14 5 10/10,10,11,14 EQU004 22/12/2016 70 10,15 150 15,13,15,7+ 265 10,15/15,13,15,7 EQU004 22/12/2016 70 10,15 150 15,13,15,7+ 265 10,15/15,13,15,7 EQU004 22/12/2016 70 11,14 150 20,22,8+ 180 11,14/20,22,8 EQU004 22/12/2016 70 11,14 150 20,22,8+ 180 11,14/20,22,8 EQU004 22/12/2016 <tr< td=""><td>70 10,9 150 10,10,14,15 10,9/10,10,14,15 EQU004 22/12/2016 61.88 20 5,5 150 5,8,9,10 5,5/5,8,9,10 EQU004 22/12/2016 61.88 20 5,5 150 5,8,9,10 5,5/5,8,9,10 EQU004 22/12/2016 61.88 20 6,8 150 8,10,11,13 6,8/8,10,11,13 EQU004 22/12/2016 61.88 70 6,8 150 8,10,11,13 6,8/8,10,11,13 EQU004 22/12/2016 61.88 20 5,10 150 10,10,11,14 5 10/10,10,11,14 EQU004 22/12/2016 61.88 20 5,10 150 10,10,11,14 5 10/10,10,11,14 EQU004 22/12/2016 61.88 50 10,15 150 15,13,15,7+ 265 10,15/15,13,15,7 EQU004 22/12/2016 61.88 60 10,15 150 20,22,8+ 180 11,14/20,22,8 EQU004 22/12/2016 61.88 60 11,14 150 20,22,8+ 180 11,14/20,22,8 EQU004 22</td><td>70 10,9 150 10,10,14,15 10,9/10,10,14,15 EQU004 22/12/2016 61.88 51 20 5,5 150 5,8,9,10 5,5/5,8,9,10 EQU004 22/12/2016 61.88 33 20 6,8 150 8,10,11,13 6,8/8,10,11,13 EQU004 22/12/2016 61.88 43 70 6,8 150 8,10,11,13 6,8/8,10,11,13 EQU004 22/12/2016 61.88 43 20 5,10 150 10,10,11,14 5 10/10,10,11,14 EQU004 22/12/2016 61.88 46 20 5,10 150 10,10,11,14 5 10/10,10,11,14 EQU004 22/12/2016 61.88 46 20 5,10 150 15,13,15,7+ 265 10,15/15,13,15,7 EQU004 22/12/2016 61.88 59 50 10,15 150 15,13,15,7+ 265 10,15/15,13,15,7 EQU004 22/12/2016 61.88 86 00 11,14 150 20,22,8+ 180 11,14/20,22,8 EQU004 22/12/2016 61.88<!--</td--></td></tr<>	70 10,9 150 10,10,14,15 10,9/10,10,14,15 EQU004 22/12/2016 61.88 20 5,5 150 5,8,9,10 5,5/5,8,9,10 EQU004 22/12/2016 61.88 20 5,5 150 5,8,9,10 5,5/5,8,9,10 EQU004 22/12/2016 61.88 20 6,8 150 8,10,11,13 6,8/8,10,11,13 EQU004 22/12/2016 61.88 70 6,8 150 8,10,11,13 6,8/8,10,11,13 EQU004 22/12/2016 61.88 20 5,10 150 10,10,11,14 5 10/10,10,11,14 EQU004 22/12/2016 61.88 20 5,10 150 10,10,11,14 5 10/10,10,11,14 EQU004 22/12/2016 61.88 50 10,15 150 15,13,15,7+ 265 10,15/15,13,15,7 EQU004 22/12/2016 61.88 60 10,15 150 20,22,8+ 180 11,14/20,22,8 EQU004 22/12/2016 61.88 60 11,14 150 20,22,8+ 180 11,14/20,22,8 EQU004 22	70 10,9 150 10,10,14,15 10,9/10,10,14,15 EQU004 22/12/2016 61.88 51 20 5,5 150 5,8,9,10 5,5/5,8,9,10 EQU004 22/12/2016 61.88 33 20 6,8 150 8,10,11,13 6,8/8,10,11,13 EQU004 22/12/2016 61.88 43 70 6,8 150 8,10,11,13 6,8/8,10,11,13 EQU004 22/12/2016 61.88 43 20 5,10 150 10,10,11,14 5 10/10,10,11,14 EQU004 22/12/2016 61.88 46 20 5,10 150 10,10,11,14 5 10/10,10,11,14 EQU004 22/12/2016 61.88 46 20 5,10 150 15,13,15,7+ 265 10,15/15,13,15,7 EQU004 22/12/2016 61.88 59 50 10,15 150 15,13,15,7+ 265 10,15/15,13,15,7 EQU004 22/12/2016 61.88 86 00 11,14 150 20,22,8+ 180 11,14/20,22,8 EQU004 22/12/2016 61.88 </td

PSK Environment Ltd	Comp	iled By	Date	Contract Ref	•	
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Exploratory	Depth	Hole	Casing	Water	Seatin	g Drive	Τe	est Drive	e	Hammer	Calibration	Enerav		
Position ID	(m)	Dia (mm)	Depth (m)	Depth (m)	Blows	Pen (mm)	Blows	R (mm)	Result	ID	Date	Ratio (%)	N ₆₀	Comments
									N=50					
	23.00				4,7	150	10,10,14,13		1,7/10,10,14,13	EQU004	22/12/2016	61.88	48	
									N=47					
	26.50				6,6	150	15,25,10+	160	6,6/15,25,10	EQU004	22/12/2016	61.88	97	
									for 10mm					
									N=94*					
	30.50				25	75	50+	50	25/50	EQU004	22/12/2016	61.88	309	
									for 50mm					
									N=300*					
BH04	3.00				1,1	150	1,0,1,0		1,1/1,1	AR1323	13/04/2016	72	2	SPT(c)
									N=2					
	4.00				1,0	150	0,0,1,0		1/,1	AR1323	13/04/2016	72	1	SPT(c)
									N=1					
	5.00				1,2	150	2,1,2,3		1,2/2,1,2,3	AR1323	13/04/2016	72	10	SPT(c)
									N=8					
	6.50				2,2	150	3,4,4,5		2,2/3,4,4,5	AR1323	13/04/2016	72	19	
									N=16					
	9.50				3,3	150	4,4,4,5		3,3/4,4,4,5	AR1323	13/04/2016	72	20	

Tests carried out in general accordance with BS EN ISO 22476-3:2005, including amendment A1 (2011).
 Reported blows are for 75mm penetration unless indicated "+".
 Where full test drive was not achieved, actual penetration (R) and extrapolated N value (N*) reported.
 Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.

5. Entries in the water depth column reflects the measured water depth at time of test.

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18 Frogmore Road	Con Partor	CBAKER	19.01.17		28549	
Hemel Hempstead	Contract:			Page:		
Hertfordshire HP3 9RT	Mount P	Pleasant Sorting Office		4	of	28 🔲 AG

 N_{60} = (Measured hammer energy ratio / 60) x N value

Exploratory	Depth	Hole	Casing	Water	Seating	g Drive	Те	st Drive	e	Hammer	Calibration	Energy		
Position ID	(m)	Dia (mm)	Depth (m)	Depth (m)	Blows	Pen (mm)	Blows	R (mm)	Result	ID	Date	Ratio (%)	N ₆₀	Comments
									N=17					
	12.50				7,7	150	9,10,10,12		7,7/9,10,10,12	AR1323	13/04/2016	72	49	
									N=41					
	15.50				4,5	150	6,7,7,7		4,5/6,7,7,7	AR1323	13/04/2016	72	32	
									N=27					
	18.50				5,5	150	7,5,7,9		5,5/7,5,7,9	AR1323	13/04/2016	72	34	
									N=28					
	24.50				6,6	150	9,11,11,13		6,6/9,11,11,13	AR1323	13/04/2016	72	53	
									N=44					
	26.00				7,8	150	11,12,14,13+	295	,8/11,12,14,13	AR1323	13/04/2016	72	61	
									for 70mm					
									N=51*					
	29.00				7,7	150	11,13,14,12+	278	,7/11,13,14,12	AR1323	13/04/2016	72	65	
									for 53mm					
									N=54*					
	32.00				25	75	35,15+	100	25/35,15	AR1323	13/04/2016	72	180	
									for 25mm					
									N=150*					
tes: Tests carried Reported blow Where full tes Tests carried	out in gene vs are for 7 t drive was out using a	ral acco 5mm pei not ach split sp	rdance with netration un ieved, actu oon sample	h BS EN IS nless indi al penetra er unless	SO 22476- cated "+". ition (R) a noted as \$	3:2005, ii nd extrap SPT(c) (d	ncluding amendm polated N value (N enotes use of sol	nent A1 (/ N*) report lid cone r	2011). ed. nethod) in the co	omments column	1	N ₆₀ = (Meas	ured hamm	ner energy ratio / 60) x N va
Entries in the	water dept	n columi	n reflects th	ne measu	red water	depth at	time of test.		Compiled By				Data	Contract Ref
RSK Environment Ltd				1 -		(ex	Parter			CBAK	ER		9 01 17	28549
Hemel Hempstead					Contract:	25-11-52		<u> </u>					5.01.17	Page:
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Exploratory	Depth	Hole	Casing	Water	Seating	g Drive	Т	est Drive		Hammer	Calibration	Energy		
Position ID	(m)	Dia (mm)	Depth (m)	Depth (m)	Blows	Pen (mm)	Blows	R (mm)	Result	ID	Date	Ratio (%)	N ₆₀	Comments
BH04	35.00				25	75	50	75	25/50	AR1323	13/04/2016	72	240	
									for 75mm					
									N=200*					
	36.50				25	75	50+	50	25/50	AR1323	13/04/2016	72	360	
									for 50mm					
									N=300*					
	38.00				25	75	50+	70	25/50	AR1323	13/04/2016	72	257	
									for 70mm					
									N=214*					
	39.50				25	75	50+	50	25/50	AR1323	13/04/2016	72	360	
									for 50mm					
									N=300*					
BH05	3.50				5,6	150	5,5,5,5		5,6/5,5,5,5	JB6	24/06/2016	54	18	
	_								N=20					
	5.50				2,2	150	3,4,4,5		2,2/3,4,4,5	JB6	24/06/2016	54	14	
									N=16					
	8.50				2,3	150	3,3,4,5		2,3/3,3,4,5	JB6	24/06/2016	54	14	
									N=15					
Notes: 1. Tests carried 2. Reported blow 3. Where full tes 4. Tests carried 5. Entries in the	out in gene vs are for 7 t drive was out using a water dept	eral acco 5mm pe not ach split sp h colum	rdance with netration u ieved, actu oon sample n reflects th	h BS EN IS nless indi al penetra er unless ne measu	SO 22476 cated "+" ation (R) a noted as red water	-3:2005, in Ind extrap SPT(c) (d depth at	ncluding amend polated N value enotes use of so time of test.	ment A1 (2 (N*) reporte olid cone n	2011). ed. nethod) in the c	omments column.		N ₆₀ = (Meas	sured hamm	ner energy ratio / 60) x N value
F	RSK En	vironn	nent I to	, L					Compiled By				Date	Contract Ref:
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Exploratory	Depth	Hole	Casing	Water	Seating	g Drive	Те	st Drive)	Hammer	Calibration	Enerav		
Position ID	(m)	Dia (mm)	Depth (m)	Depth (m)	Blows	Pen (mm)	Blows	R (mm)	Result	ID	Date	Ratio (%)	N ₆₀	Comments
BH05	11.50				3,4	150	4,5,5,6		3,4/4,5,5,6	JB6	24/06/2016	54	18	
									N=20					
	13.00				7,8	150	10,10,12,15	-	,8/10,10,12,15	JB6	24/06/2016	54	42	
									N=47					
	16.00				7,8	150	8,10,13,13		7,8/8,10,13,13	JB6	24/06/2016	54	40	
									N=44					
	19.00				3,5	150	7,7,8,10		3,5/7,7,8,10	JB6	24/06/2016	54	29	
									N=32					
	22.00				8,10	150	10,12,15,13+	281 8	10/10,12,15,13	JB6	24/06/2016	54	48	
									for 56mm					
									N=53*					
	23.50				7,7	150	8,10,15,15		7,7/8,10,15,15	JB6	24/06/2016	54	43	
									N=48					
	25.00				8,10	150	16,16,18+	220	8,10/16,16,18	JB6	24/06/2016	54	61	
									for 70mm					
									N=68*					
	26.50				5,5	150	10,10,11,13		,5/10,10,11,13	JB6	24/06/2016	54	40	
									N=44					
Notes: 1. Tests carried of 2. Reported blow 3. Where full test 4. Tests carried of 5. Entries in the v	out in gene rs are for 7 t drive was out using a water deptl	ral acco 5mm per not ach split sp า columi	rdance with netration u ieved, actu oon sample n reflects th	h BS EN I nless indi al penetra er unless he measu	SO 22476- cated "+". ation (R) a noted as s red water	3:2005, in nd extrar SPT(c) (d depth at	ncluding amendm polated N value (N enotes use of sol time of test.	nent A1 (/ l*) report id cone r	2011). ed. nethod) in the co	mments column.	1	N ₆₀ = (Meas	sured hamme	er energy ratio / 60) x N value
	SK En	vironn	nent I to	4					Compiled By				Date	Contract Ref:
	18 Frogmore Road		1		(ex	Porter			CBAK	ER		19.01.17	28549	
Hemel Hempstead Hertfordshire HP3 9RT					Contract:			Мо	unt Pleasant	Sorting Off	fice	I		Page: 7 of 28

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Exploratory	Depth	Hole	Casing	Water	Seatin	g Drive	Т	est Drive	•	Hammer	Calibration	Energy		
Position ID	(m)	Dia (mm)	Depth (m)	Depth (m)	Blows	Pen (mm)	Blows	R (mm)	Result	ID	Date	Ratio (%)	N ₆₀	Comments
BH05	28.00				10,15	150	21,22,7+	160	10,15/21,22,7	JB6	24/06/2016	54	85	
									for 10mm					
									N=94*					
	29.50				12,13	105	25,25+	125	12,13/25,25	JB6	24/06/2016	54	108	SPT(c)
									for 50mm					
									N=120*					
	31.00				10,15	138	25,25+	135	10,15/25,25	JB6	24/06/2016	54	100	SPT(c)
									for 60mm					
									N=111*					
	33.00				25	45	50+	60	25/50	JB6	24/06/2016	54	225	SPT(c)
									for 60mm					
									N=250*					
	34.00				15,10	100	50	75	15,10/50	JB6	24/06/2016	54	180	SPT(c)
									for 75mm					
									N=200*					
	35.00				25	50	50+	60	25/50	JB6	24/06/2016	54	225	SPT(c)
									for 60mm					
									N=250*					
Notes: 1. Tests carried of 2. Reported blow 3. Where full test 4. Tests carried of 5. Entries in the v	out in gene s are for 7 drive was out using a water dept	ral acco 5mm per not ach split sp h colum	rdance with netration un ieved, actu oon sample n reflects th	h BS EN IS nless indi al penetra er unless ne measure	SO 22476 cated "+" ation (R) a noted as red water	-3:2005, in und extrap SPT(c) (d depth at	ncluding amend polated N value (enotes use of so time of test.	ment A1 (; N*) report blid cone i	2011). ed. nethod) in the co	omments column		N ₆₀ = (Meas	ured hamm	ner energy ratio / 60) x N value
		dino in a							Compiled By				Date	Contract Ref:
	18 Fro	gmore	e Road	· -		(ex)	Patter			CBAK	ER	1	9.01.17	28549
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GINT_LIBRARY_V8_06.GLB : G - SUMMARY OF SPT TESTS - V2 - A4L : 28549_MOUNT PLEASANT.GPJ : 19/01/17 17:26 : CB1 :

HP3 9RT

Exploratory	Depth	Hole	Casing	Water	Seatin	g Drive	Τe	est Drive	;	Hammer	Calibration	Energy		
Position ID	(m)	Dia (mm)	Depth (m)	Depth (m)	Blows	Pen (mm)	Blows	R (mm)	Result	ID	Date	Ratio (%)	N ₆₀	Comments
BH05	36.00				25	10	50+	12	25/50	JB6	24/06/2016	54	1125	SPT(c)
									for 12mm					
									N=1250*					
	37.00				17,8	105	25,25+	135	17,8/25,25	JB6	24/06/2016	54	100	SPT(c)
									for 60mm					
									N=111*					
	38.00				22,3	86	24,26+	120	22,3/24,26	JB6	24/06/2016	54	112	SPT(c)
									for 45mm					
									N=125*					
	39.00				25	12	50+	17	25/50	JB6	24/06/2016	54	794	SPT(c)
									for 17mm					
									N=882*					
BH06	3.00				1,2	150	1,2,2,2		1,2/1,2,2,2	AR1323	13/04/2016	72	8	SPT(c)
									N=7					
	4.00				1,1	150	1,0,1,1		1,1/1,1,1	AR1323	13/04/2016	72	4	SPT(c)
									N=3					
	5.00				1,1	150	1,1,2,3		1,1/1,1,2,3	AR1323	13/04/2016	72	8	SPT(c)
									N=7					
Notes: 1. Tests carried of 2. Reported blow 3. Where full tes 4. Tests carried of 5. Entries in the	out in gene /s are for 7 t drive was out using a water dept	eral acco 5mm pe not ach split sp h colum	ordance wit netration u lieved, actu ooon sampl n reflects t	h BS EN I nless indi al penetra er unless he measu	SO 22476 cated "+" ation (R) a noted as red water	-3:2005, in and extrap SPT(c) (d depth at	ncluding amendi polated N value (enotes use of so	ment A1 (2 N*) report blid cone r	2011). ed. nethod) in the ca	omments column		N ₆₀ = (Meas	ured hamn	ner energy ratio / 60) x N value
					Su Hatel	aopinat			Compiled By				Date	Contract Ref:
	18 Fro	vironn amore	nent Lto e Road	א ר		(en	Pater			CBAK	ER	1	9.01.17	28549
NCM	Hemel	Hem	pstead	- F	Contract:	25.4112-02	100 March 100 Ma	<u> </u>	I			I •		Page:
	Her	tfords	hire					Мо	unt Pleasar	t Sorting Of	fice			9 of 28

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Exploratory	Depth	Hole	Casing	Water	Seatin	g Drive	Те	st Drive	;	Hammer	Calibration	Energy		
Position ID	(m)	Dia (mm)	Depth (m)	Depth (m)	Blows	Pen (mm)	Blows	R (mm)	Result	ID	Date	Ratio (%)	N ₆₀	Comments
BH06	8.00				2,3	150	3,2,3,3		2,3/3,2,3,3	AR1323	13/04/2016	72	13	
									N=11					
	11.50				3,3	150	4,5,4,6		3,3/4,5,4,6	AR1323	13/04/2016	72	23	
									N=19					
	15.00				4,5	150	5,4,5,6		4,5/5,4,5,6	AR1323	13/04/2016	72	24	
									N=20					
	18.00				5,5	150	7,8,9,10		5,5/7,8,9,10	AR1323	13/04/2016	72	41	
									N=34					
	24.00				5,6	150	7,6,7,9		5,6/7,6,7,9	AR1323	13/04/2016	72	35	
									N=29					
	28.50				8,10	150	11,12,15,12+	285 8	,10/11,12,15,12	2 AR1323	13/04/2016	72	64	
									for 60mm					
									N=53*					
	29.00				15,10	100	50+	50	15,10/50	AR1323	13/04/2016	72	360	SPT(c)
									for 50mm					
									N=300*					
	30.00				25	50	50	75	25/50	AR1323	13/04/2016	72	240	
									for 75mm					
lotes: . Tests carried 2. Reported blow 3. Where full tes 4. Tests carried 5. Entries in the	out in gene vs are for 7 t drive was out using a water deptl	ral acco 5mm pe not ach split sp h colum	ordance with netration u lieved, actu looon sample n reflects th	h BS EN I nless indi Ial penetra er unless he measu	SO 22476 cated "+" ation (R) a noted as red water	-3:2005, in and extrap SPT(c) (d depth at	ncluding amendm polated N value (N enotes use of sol time of test.	nent A1 (2 I*) report id cone r	2011). ed. nethod) in the co	omments column.		N ₆₀ = (Meas	sured hamn	ner energy ratio / 60) x N valu
F		vironn	nent I tr	1 L					Compiled By				Date	Contract Ref:
	18 Fro	gmore	Road			(ex	Parker	1		CBAK	ER		19.01.17	28549
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Exploratory	Depth	Hole	Casing	Water	Seatin	g Drive	Т	est Drive		Hammer	Calibration	Energy			
Position ID	(m)	Dia (mm)	Depth (m)	Depth (m)	Blows	Pen (mm)	Blows	R (mm)	Result	ID	Date	Ratio (%)	N ₆	0	Comments
									N=200*						
	31.50				15,10	100	50+	50	15,10/50	AR1323	13/04/2016	72	360)	
									for 50mm						
									N=300*						
	33.00				25	75	50	75	25/50	AR1323	13/04/2016	72	240)	
									for 75mm						
									N=200*						
	34.50				25	75	50+	50	25/50	AR1323	13/04/2016	72	360)	
	_								for 50mm						
									N=300*						
	36.00				15,10	100	50	75	15,10/50	AR1323	13/04/2016	72	240) SPT(c)
									for 75mm						
									N=200*						
	37.50				25	75	50	75	25/50	AR1323	13/04/2016	72	240) SPT(c)
									for 75mm						
									N=200*						
	39.50				15,10	110	50+	70	15,10/50	AR1323	13/04/2016	72	25	7 SPT(c)
									for 70mm						
Notes: 1. Tests carried 2. Reported blow 3. Where full tes 4. Tests carried	out in gene vs are for 7 t drive was out using a	ral acco 5mm pei not ach split sp	rdance with netration un ieved, actu oon sample	h BS EN IS nless indi al penetra er unless	SO 22476 cated "+" ation (R) a noted as	-3:2005, in and extrap SPT(c) (d	ncluding amend polated N value (enotes use of so	ment A1 (2 (N*) reporte	011). ed. nethod) in the c	omments column.		N ₆₀ = (Me	asured h	ammer ene	ergy ratio / 60) x N value
5. Entries in the	water dept	h colum	n reflects th	ne measu	red water	depth at	time of test.								han at Diefe
F	RSK En	vironn	nent Ltd	ı -		6	-n v						Date		
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Exploratory	Depth	Hole	Casing	Water	Seatin	g Drive	Te	est Drive	9	Hammer	Calibration	Eneray		
Position ID	(m)	Dia (mm)	Depth (m)	Depth (m)	Blows	Pen (mm)	Blows	R (mm)	Result	ID	Date	Ratio (%)	N ₆₀	Comments
									N=214*					
BH07	1.20				3,4	150	4,5,4,6		3,4/4,5,4,6	AR1323	13/04/2016	72	23	SPT(c)
									N=19					
	2.00				3,3	150	5,4,5,6		3,3/5,4,5,6	AR1323	13/04/2016	72	24	SPT(c)
									N=20					
	3.00				5,5	150	6,7,9,10		5,5/6,7,9,10	AR1323	13/04/2016	72	38	SPT(c)
									N=32					
	4.00				1,2	150	2,1,2,3		1,2/2,1,2,3	AR1323	13/04/2016	72	10	SPT(c)
									N=8					
	5.00				0,1	150	0,0,1,0		0,1/,1	AR1323	13/04/2016	72	1	SPT(c)
									N=1					
	6.50				3,3	150	4,5,5,6		3,3/4,5,5,6	AR1323	13/04/2016	72	24	
									N=20					
	9.50				3,3	150	4,5,5,5		3,3/4,5,5,5	AR1323	13/04/2016	72	23	
									N=19					
BH08	1.40				3,3	150	4,5,5,4		3,3/4,5,5,4	AR1323	13/04/2016	72	22	SPT(c)
									N=18					
	2.00				1,1	150	1,0,1,1		1,1/1,1,1	AR1323	13/04/2016	72	4	SPT(c)

Notes:

Tests carried out in general accordance with BS EN ISO 22476-3:2005, including amendment A1 (2011).
 Reported blows are for 75mm penetration unless indicated "+".

Where full test drive was not achieved, actual penetration (R) and extrapolated N value (N*) reported.
 Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.

5. Entries in the water depth column reflects the measured water depth at time of test.

RSK Environment I td	Comr	iled By	Date	Contract Ref:		
18 Frogmore Road	Con Partor	CBAKER	19.01.17		28549	
Hemel Hempstead	Contract:			Page:		
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HP3 9RT		-				AGS

 N_{60} = (Measured hammer energy ratio / 60) x N value

Exploratory	Depth	Hole	Casing	Water	Seating	g Drive	Τe	est Drive	!	Hammer	Calibration	Enerav		
Position ID	(m)	Dia (mm)	Depth (m)	Depth (m)	Blows	Pen (mm)	Blows	R (mm)	Result	ID	Date	Ratio (%)	N ₆₀	Comments
									N=3					
	3.00				1,1	150	1,1,0,1		1,1/1,1,1	AR1323	13/04/2016	72	4	SPT(c)
									N=3					
	4.00				1,2	150	2,1,2,4		1,2/2,1,2,4	AR1323	13/04/2016	72	11	SPT(c)
									N=9					
	5.00				1,1	150	1,0,0,1		1,1/1,1	AR1323	13/04/2016	72	2	SPT(c)
									N=2					
	6.50				1,1	150	1,1,0,0		1,1/1,1	AR1323	13/04/2016	72	2	SPT(c)
									N=2					
	8.00				0,1	150	0,0,1,0		0,1/,1	AR1323	13/04/2016	72	1	SPT(c)
									N=1					
	9.50				4,4	150	6,7,7,7		4,4/6,7,7,7	AR1323	13/04/2016	72	32	SPT(c)
									N=27					
	11.00				1,2	150	2,1,2,1		1,2/2,1,2,1	AR1323	13/04/2016	72	7	
									N=6					
	14.00				3,4	150	4,6,6,7		3,4/4,6,6,7	AR1323	13/04/2016	72	28	SPT(c)
									N=23					
	15.50				4,5	150	6,5,6,7		4,5/6,5,6,7	AR1323	13/04/2016	72	29	SPT(c)

Tests carried out in general accordance with BS EN ISO 22476-3:2005, including amendment A1 (2011).
 Reported blows are for 75mm penetration unless indicated "+".
 Where full test drive was not achieved, actual penetration (R) and extrapolated N value (N*) reported.
 Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.

5. Entries in the water depth column reflects the measured water depth at time of test.

RSK Environment I to	Comr	iled By	Date	Contract Ref:		
18 Frogmore Road	Con Partor	CBAKER	19.01.17		28549	
Hemel Hempstead	Contract:			Page:		
Hertfordshire	Mount F	Pleasant Sorting Office		Contract Ref	of	28
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 N_{60} = (Measured hammer energy ratio / 60) x N value

Exploratory	Depth	Hole	Casing	Water	Seatin	g Drive	Те	st Driv	e	Hammer	Calibration	Energy		
Position ID	(m)	Dia (mm)	Depth (m)	Depth (m)	Blows	Pen (mm)	Blows	R (mm)	Result	ID	Date	Ratio (%)	IN ₆₀	Comments
									N=24					
	17.00				2,2	150	5,6,7,7		2,2/5,6,7,7	AR1323	13/04/2016	72	30	SPT(c)
									N=25					
	18.50				5,5	150	7,7,7,9		5,5/7,7,7,9	AR1323	13/04/2016	72	36	SPT(c)
									N=30					
	20.00				6,5	150	7,9,10,12		6,5/7,9,10,12	AR1323	13/04/2016	72	46	
									N=38					
	23.00				6,7	150	8,9,9,11		6,7/8,9,9,11	AR1323	13/04/2016	72	44	
									N=37					
	26.00				7,7	150	10,10,12,13		7,7/10,10,12,13	AR1323	13/04/2016	72	54	
									N=45					
	29.00				7,8	150	11,12,15,12+	285	7,8/11,12,15,12	AR1323	13/04/2016	72	64	
									for 60mm					
									N=53*					
	32.00				6,6	150	8,10,10,14		6,6/8,10,10,14	AR1323	13/04/2016	72	50	
									N=42					
	35.00				12,13	150	20,20,10+	170	12,13/20,20,10	AR1323	13/04/2016	72	106	
									for 20mm					
Notes: 1. Tests carried 2. Reported blov 3. Where full tes 4. Tests carried 5. Entries in the	out in gene ws are for 7 at drive was out using a water dept	eral acco 5mm pe 5 not ach 5 split sp 6 colum	ordance with netration u lieved, actu loon sample	h BS EN I nless indi al penetra er unless	SO 22476 cated "+" ation (R) a noted as red water	-3:2005, in Ind extrap SPT(c) (d	ncluding amendn polated N value (N enotes use of sol	nent A1 (N*) repor lid cone	2011). ted. method) in the co	omments column		N ₆₀ = (Meas	ured hamr	mer energy ratio / 60) x N value
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Dia Depth (mm) (m)	n Depth (m)	Blows 10,11	Pen (mm) 150	Blows 50	R (mm)	Result N=88*	ID	Date	Ratio (%)	N ₆₀	Comments
		10,11	150	50	75	N=88*					
		10,11	150	50	75						
					10	10,11/50	AR1323	13/04/2016	72	240	
						for 75mm					
						N=200*					
		25	75	50+	50	25/50	AR1323	13/04/2016	72	360	
						for 50mm					
						N=300*					
		15,10	100	50	75	15,10/50	AR1323	13/04/2016	72	240	
						for 75mm					
						N=200*					
		2,2	150	2,3,3,4		2,2/2,3,3,4	AR1323	13/04/2016	72	14	SPT(c)
						N=12					
		1,1	150	1,0,1,1		1,1/1,1,1	AR1323	13/04/2016	72	4	SPT(c)
						N=3					
		1,1	150	1,0,0,1		1,1/1,1	AR1323	13/04/2016	72	2	SPT(c)
						N=2					
		1,1	150	1,1,2,1		1,1/1,1,2,1	AR1323	13/04/2016	72	6	SPT(c)
						N=5					
al	accordance w m penetration t achieved, ac	accordance with BS EN Is m penetration unless indit t achieved, actual penetra	2,2 1,1 1,1 1,1 1,1 1,1 1,1 1,1	13,10 100 2,2 150 1,1 150 1,1 150 1,1 150 1,1 150 1,1 150 1,1 150 1,1 150 1,1 150 1,1 150 1,1 150 1,1 150 1,1 150 1,1 150 1,1 150	13,10 100 30 13,10 100 30 2,2 150 2,3,3,4 1,1 150 1,0,1,1 1,1 150 1,0,0,1 1,1 150 1,0,0,1 1,1 150 1,1,2,1 1,1 150 1,1,2,1 accordance with BS EN ISO 22476-3:2005, including amend mpnetration unless indicated "+".	13,10 100 30 73 2,2 150 2,3,3,4 1 1,1 150 1,0,1,1 1 1,1 150 1,0,0,1 1 1,1 150 1,0,0,1 1 1,1 150 1,1,2,1 1 1,1 150 1,1,2,1 1 1,1 150 1,1,2,1 1 1,1 150 1,1,2,1 1 1,1 150 1,1,2,1 1 1,1 150 1,1,2,1 1	13,10 100 30 73 13,10/30 100 50 73 13,10/30 100 50 73 13,10/30 100 50 73 13,10/30 100 50 73 13,10/30 100 2,2 150 2,3,3,4 N=200* 2,2 150 2,3,3,4 2,2/2,3,3,4 N=12 1,1 150 1,0,1,1 1,1/1,1,1 N=3 1,1 150 1,0,0,1 1,1/1,1,1 N=2 1,1 150 1,1,2,1 1,1/1,1,2,1 N=5 accordance with BS EN ISO 22476-3:2005, including amendment A1 (2011). m penetration unless indicated "+". N=12	13,10 100 30 73 13,10/30 AR1323 i i i i i iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii	13,10 100 30 73 13,10/30 AR1323 13/04/2018 1 1 1 100 30 73 13,10/30 AR1323 13/04/2018 1 1 1 1 100 30 73 13,10/30 AR1323 13/04/2018 1 2,2 150 2,3,3,4 2,2/2,3,3,4 AR1323 13/04/2016 1 1,1 150 1,0,1,1 1,1/1,1,1 AR1323 13/04/2016 1 1,1 150 1,0,0,1 1,1/1,1 AR1323 13/04/2016 1 1,1 150 1,0,0,1 1,1/1,1 AR1323 13/04/2016 1 1 150 1,0,0,1 1,1/1,1 AR1323 13/04/2016 1 1 150 1,1,2,1 1,1/1,1,2,1 AR1323 13/04/2016 1 1 150 1,1,2,1 1,1/1,1,2,1 AR1323 13/04/2016 1 1 1 150 1,1,2,1 1,1/1,1,2,1 AR1323 13/04/2016 1 1 1 1 <t< td=""><td>13,10 100 30 73 13,10/30 AR1323 13/04/2016 72 i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i<td>13,10 100 30 73 13,030 AR1323 13/04/2016 72 240 1 1 1 1 1 1 100 30 73 13,030 AR1323 13/04/2016 72 240 1 2,2 150 2,3,3,4 2,2/2,3,3,4 AR1323 13/04/2016 72 14 1 2,2 150 2,3,3,4 2,2/2,3,3,4 AR1323 13/04/2016 72 14 1 1,1 150 1,0,1,1 1,1/1,1,1 AR1323 13/04/2016 72 4 1 1,1 150 1,0,0,1 1,1/1,1 AR1323 13/04/2016 72 2 1 1,1 150 1,0,0,1 1,1/1,1 AR1323 13/04/2016 72 2 1 1,1 150 1,0,0,1 1,1/1,1,2,1 AR1323 13/04/2016 72 2 1 1,1 150 1,1,2,1 1,1/1,1,2,1 AR1323 13/04/2016 72 6 N=5 N=5 N=5</td></td></t<>	13,10 100 30 73 13,10/30 AR1323 13/04/2016 72 i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i i <td>13,10 100 30 73 13,030 AR1323 13/04/2016 72 240 1 1 1 1 1 1 100 30 73 13,030 AR1323 13/04/2016 72 240 1 2,2 150 2,3,3,4 2,2/2,3,3,4 AR1323 13/04/2016 72 14 1 2,2 150 2,3,3,4 2,2/2,3,3,4 AR1323 13/04/2016 72 14 1 1,1 150 1,0,1,1 1,1/1,1,1 AR1323 13/04/2016 72 4 1 1,1 150 1,0,0,1 1,1/1,1 AR1323 13/04/2016 72 2 1 1,1 150 1,0,0,1 1,1/1,1 AR1323 13/04/2016 72 2 1 1,1 150 1,0,0,1 1,1/1,1,2,1 AR1323 13/04/2016 72 2 1 1,1 150 1,1,2,1 1,1/1,1,2,1 AR1323 13/04/2016 72 6 N=5 N=5 N=5</td>	13,10 100 30 73 13,030 AR1323 13/04/2016 72 240 1 1 1 1 1 1 100 30 73 13,030 AR1323 13/04/2016 72 240 1 2,2 150 2,3,3,4 2,2/2,3,3,4 AR1323 13/04/2016 72 14 1 2,2 150 2,3,3,4 2,2/2,3,3,4 AR1323 13/04/2016 72 14 1 1,1 150 1,0,1,1 1,1/1,1,1 AR1323 13/04/2016 72 4 1 1,1 150 1,0,0,1 1,1/1,1 AR1323 13/04/2016 72 2 1 1,1 150 1,0,0,1 1,1/1,1 AR1323 13/04/2016 72 2 1 1,1 150 1,0,0,1 1,1/1,1,2,1 AR1323 13/04/2016 72 2 1 1,1 150 1,1,2,1 1,1/1,1,2,1 AR1323 13/04/2016 72 6 N=5 N=5 N=5

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18 Frogmore Road	Con Partor	CBAKER	19.01.17		28549	
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Exploratory	Depth	Hole	Casing	Water	Seating	g Drive	Т	est Drive	e	Hammer	Calibration	Eneray		
Position ID	(m)	Dia (mm)	Depth (m)	Depth (m)	Blows	Pen (mm)	Blows	R (mm)	Result	ID	Date	Ratio (%)	N ₆₀	Comments
BH09	5.00				1,0	150	0,0,0,1		1/,1	AR1323	13/04/2016	72	1	SPT(c)
									N=1					
	6.50				6,6	150	7,10,12,12		6,6/7,10,12,12	AR1323	13/04/2016	72	49	SPT(c)
									N=41					
	8.00				2,3	150	3,4,5,4		2,3/3,4,5,4	AR1323	13/04/2016	72	19	SPT(c)
									N=16					
	9.50				3,4	150	4,5,7,8		3,4/4,5,7,8	AR1323	13/04/2016	72	29	SPT(c)
									N=24					
	11.00				3,3	150	4,5,5,5		3,3/4,5,5,5	AR1323	13/04/2016	72	23	SPT(c)
									N=19					
	12.50				3,3	150	4,5,6,4		3,3/4,5,6,4	AR1323	13/04/2016	72	23	SPT(c)
									N=19					
	14.00				3,4	150	5,6,7,7		3,4/5,6,7,7	AR1323	13/04/2016	72	30	SPT(c)
									N=25					
	15.50				4,5	150	6,5,6,7		4,5/6,5,6,7	AR1323	13/04/2016	72	29	SPT(c)
									N=24					
	17.00				5,5	150	6,7,7,8		5,5/6,7,7,8	AR1323	13/04/2016	72	34	SPT(c)
									N=28					

Reported blows are for 75mm penetration unless indicated "+".
 Where full test drive was not achieved, actual penetration (R) and extrapolated N value (N*) reported.
 Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.
 Entries in the water depth column reflects the measured water depth at time of test.

Comp	biled By	Date	Contract Ref:		
Con Partor	CBAKER	19.01.17		28549	
Contract:			Page:		
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	Comp Contract: Mount F	Contract: Mount Pleasant Sorting Office	Comparison Date Contract: Date Mount Pleasant Sorting Office	Common Series Date Contract Ref: Contract: CBAKER 19.01.17 Page: Mount Pleasant Sorting Office 16	Compiled By Date Contract Ref: Contract: CBAKER 19.01.17 Page: Mount Pleasant Sorting Office 16 of

Exploratory	Depth	Hole	Casing	Water	Seating	g Drive	Te	est Drive	e	Hammer	Calibration	Energy		
Position ID	(m)	Dia (mm)	Depth (m)	Depth (m)	Blows	Pen (mm)	Blows	R (mm)	Result	ID	Date	Ratio (%)	N ₆₀	Comments
BH09	18.50				4,5	150	5,7,8,10		4,5/5,7,8,10	AR1323	13/04/2016	72	36	SPT(c)
									N=30					
	20.00				4,5	150	5,4,5,6		4,5/5,4,5,6	AR1323	13/04/2016	72	24	SPT(c)
									N=20					
	21.50				4,5	150	5,5,6,16		4,5/5,5,6,16	AR1323	13/04/2016	72	38	
									N=32					
	24.50				5,5	150	7,9,9,8		5,5/7,9,9,8	AR1323	13/04/2016	72	40	
									N=33					
	27.50				7,8	150	10,19,21+	208	7,8/10,19,21	AR1323	13/04/2016	72	60	
								1	1:50 for 208mm					
	29.00				10,10	150	17,24,9+	170	10,10/17,24,9	AR1323	13/04/2016	72	60	
								1	1:50 for 170mm					
	30.50				10,15	150	30,20+	125	10,15/30,20	AR1323	13/04/2016	72	60	
								1	1:50 for 125mm					
	32.00				10,11	150	17,24,9+	170	10,11/17,24,9	AR1323	13/04/2016	72	60	
								1	1:50 for 170mm					
	33.50				7,8	150	9,11,11,12		7,8/9,11,11,12	AR1323	13/04/2016	72	52	SPT(c)
									N=43					
Notes: 1. Tests carried of 2. Reported blow 3. Where full tes 4. Tests carried of 5. Entries in the	out in gene /s are for 7 t drive was out using a water dept	ral acco 5mm pe not ach split sp h colum	rdance with netration u ieved, actu oon sample n reflects th	h BS EN I nless indi al penetra er unless	SO 22476 cated "+" ation (R) a noted as	-3:2005, in	ncluding amendr polated N value (enotes use of so time of test	ment A1 (; N*) report Ilid cone i	2011). ed. nethod) in the co	omments column		N ₆₀ = (Meas	ured hamn	ner energy ratio / 60) x N value
						ut			Compiled By				Date	Contract Ref:
	18 Fro	vironn gmore	ent Lto Road)		(ASS	Pater	_		CBAK	ER	1	19.01.17	28549
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Exploratory	Depth	Hole	Casing	Water	Seatin	g Drive	т	est Drive		Hammer	Calibration	Energy		
Position ID	(m)	Dia (mm)	Depth (m)	Depth (m)	Blows	Pen (mm)	Blows	R (mm)	Result	ID	Date	Ratio (%)	N ₆₀	Comments
BH09	35.00				10,15	100	50+	70	10,15/50	AR1323	13/04/2016	72	257	
									for 70mm					
									N=214*					
	36.50				25	50	35,15+	100	25/35,15	AR1323	13/04/2016	72	60	
								N	1:50 for 100mm					
	38.00				25	50	50+	50	25/50	AR1323	13/04/2016	72	60	
								I	N:50 for 50mm					
	39.50				25	50	50	75	25/50	AR1323	13/04/2016	72	60	
								1	N:50 for 75mm					
BH10	1.20				3,3	150	4,4,5,5		3,3/4,4,5,5	AR1323	13/04/2016	72	22	SPT(c)
									N=18					
	2.01				1,0	150	0,0,0,0		1/	AR1323	13/04/2016	72	0	SPT(c)
									N=0					
	3.00				1,2	150	2,3,2,4		1,2/2,3,2,4	AR1323	13/04/2016	72	13	SPT(c)
									N=11					
	4.00				3,4	150	4,5,4,7		3,4/4,5,4,7	AR1323	13/04/2016	72	24	SPT(c)
									N=20					
	5.00				1,1	150	2,3,2,2		1,1/2,3,2,2	AR1323	13/04/2016	72	11	SPT(c)

Tests carried out in general accordance with BS EN ISO 22476-3:2005, including amendment A1 (2011).
 Reported blows are for 75mm penetration unless indicated "+".
 Where full test drive was not achieved, actual penetration (R) and extrapolated N value (N*) reported.
 Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.

5. Entries in the water depth column reflects the measured water depth at time of test.

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18 Frogmore Road	Con Partor	CBAKER	19.01.17		28549	
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 N_{60} = (Measured hammer energy ratio / 60) x N value

Exploratory	Depth	Hole	Casing	Water	Seatin	g Drive	Τe	est Drive	e	Hammer	Calibration	Energy		
Position ID	(m)	Dia (mm)	Depth (m)	Depth (m)	Blows	Pen (mm)	Blows	R (mm)	Result	ID	Date	Ratio (%)	N ₆₀	Comments
									N=9					
	6.50				1,1	150	1,0,1,0		1,1/1,1	AR1323	13/04/2016	72	2	SPT(c)
									N=2					
	8.00				3,3	150	4,4,4,5		3,3/4,4,4,5	AR1323	13/04/2016	72	20	
									N=17					
	11.00				3,3	150	4,4,4,5		3,3/4,4,4,5	AR1323	13/04/2016	72	20	
									N=17					
	14.00				5,5	150	7,8,8,10		5,5/7,8,8,10	AR1323	13/04/2016	72	40	
									N=33					
	17.00				5,6	150	7,6,7,9		5,6/7,6,7,9	AR1323	13/04/2016	72	35	
									N=29					
	20.00				7,7	150	9,10,10,12		7,7/9,10,10,12	AR1323	13/04/2016	72	49	
									N=41					
	23.00				6,7	150	7,9,9,11		6,7/7,9,9,11	AR1323	13/04/2016	72	43	
									N=36					
	26.00				4,5	150	8,9,11,13		4,5/8,9,11,13	AR1323	13/04/2016	72	49	
									N=41					
	29.00				7,8	150	9,10,12,14		7,8/9,10,12,14	AR1323	13/04/2016	72	54	

Tests carried out in general accordance with BS EN ISO 22476-3:2005, including amendment A1 (2011).
 Reported blows are for 75mm penetration unless indicated "+".
 Where full test drive was not achieved, actual penetration (R) and extrapolated N value (N*) reported.
 Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.

5. Entries in the water depth column reflects the measured water depth at time of test.

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18 Frogmore Road	Con Portor	CBAKER	19.01.17		28549	1
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Hertfordshire	Mount F	19	of	28		
HP3 9RT						

 N_{60} = (Measured hammer energy ratio / 60) x N value

Exploratory	Depth	Hole	Casing	Water	Seating	g Drive	Те	st Drive		Hammer	Calibration	Energy		
Position ID	(m)	Dia (mm)	Depth (m)	Depth (m)	Blows	Pen (mm)	Blows	R (mm)	Result	ID	Date	Ratio (%)	N ₆₀	Comments
									N=45					
	30.50				7,8	150	11,12,15,12+	295 7	,8/11,12,15,12	AR1323	13/04/2016	72	60	
								N	1:50 for 295mm					
	33.50				6,6	150	7,9,11,10		6,6/7,9,11,10	AR1323	13/04/2016	72	44	
									N=37					
	35.00				10,10	150	17,20,13+	183	10,10/17,20,13	AR1323	13/04/2016	72	60	
								N	1:50 for 183mm					
	36.50				12,13	150	50	75	12,13/50	AR1323	13/04/2016	72	60	
									N:50 for 75mm					
	38.00				10,13	150	28,22+	126	10,13/28,22	AR1323	13/04/2016	72	60	
								N	1:50 for 126mm					
	39.50				10,15	150	20,12,15,3+	240 1	0,15/20,12,15,3	AR1323	13/04/2016	72	60	
								N	1:50 for 240mm					
BH16	3.50				1,1	150	1,0,1,1		1,1/1,1,1	AR1323	13/04/2016	72	4	SPT(c)
									N=3					
	4.00				3,4	150	4,5,5,6		3,4/4,5,5,6	AR1323	13/04/2016	72	24	SPT(c)
									N=20					
	5.00				2,1	150	2,3,3,4		2,1/2,3,3,4	AR1323	13/04/2016	72	14	

Notes:

Tests carried out in general accordance with BS EN ISO 22476-3:2005, including amendment A1 (2011).
 Reported blows are for 75mm penetration unless indicated "+".
 Where full test drive was not achieved, actual penetration (R) and extrapolated N value (N*) reported.
 Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.

5. Entries in the water depth column reflects the measured water depth at time of test.

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18 Frogmore Road	Con Parker	CBAKER	19.01.17		28549	
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Hertfordshire	Mount F	Pleasant Sorting Office		20	of	28 🛄
HP3 9RT		-				AGS

 N_{60} = (Measured hammer energy ratio / 60) x N value

Exploratory	Depth	Hole	Casing	Water	Seatin	g Drive	Te	est Drive	e	Hammer	Calibration	Energy		
Position ID	(m)	Dia (mm)	Depth (m)	Depth (m)	Blows	Pen (mm)	Blows	R (mm)	Result	ID	Date	Ratio (%)	N ₆₀	Comments
									N=12					
	8.00				2,2	150	3,4,4,5		2,2/3,4,4,5	AR1323	13/04/2016	72	19	
									N=16					
	11.00				3,3	150	4,5,5,5		3,3/4,5,5,5	AR1323	13/04/2016	72	23	
									N=19					
	14.00				3,4	150	7,5,7,8		3,4/7,5,7,8	AR1323	13/04/2016	72	32	
									N=27					
	17.00				6,6	150	8,9,9,10		6,6/8,9,9,10	AR1323	13/04/2016	72	43	
									N=36					
	20.00				6,6	150	7,7,8,9		6,6/7,7,8,9	AR1323	13/04/2016	72	37	
									N=31					
	21.50				6,6	150	8,8,10,10		6,6/8,8,10,10	AR1323	13/04/2016	72	43	
									N=36					
	24.50				10,10	150	26,24+	127	10,10/26,24	AR1323	13/04/2016	72	142	
									for 52mm					
									N=118*					
	27.50				12,13	150	25,25+	125	12,13/25,25	AR1323	13/04/2016	72	144	
									for 50mm					
Notes: 1. Tests carried (2. Reported blow 3. Where full tes 4. Tests carried (5. Entries in the	out in gene /s are for 7 t drive was out using a water dept	eral acco 5mm pe 5 not ach 1 split sp h colum	rdance with netration u ieved, actu oon sample n reflects th	h BS EN I nless indi al penetra er unless he measu	SO 22476 cated "+" ation (R) a noted as red water	-3:2005, in and extrap SPT(c) (d depth at	ncluding amendr polated N value (enotes use of so time of test.	ment A1 (N*) report Ilid cone i	2011). ted. method) in the ca	omments column.		N ₆₀ = (Meas	ured hamm	ner energy ratio / 60) x N value
F	SK En	vironn	nent I to	1 L					Compiled By				Date	Contract Ref:
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Exploratory	Depth	Hole	Casing	Water	Seatin	g Drive	Те	est Drive	;	Hammer	Calibration	Enerav		
Position ID	(m)	Dia (mm)	Depth (m)	Depth (m)	Blows	Pen (mm)	Blows	R (mm)	Result	ID	Date	Ratio (%)	N ₆₀	Comments
									N=120*					
	30.50				12,13	150	35,15+	90	12,13/35,15	AR1323	13/04/2016	72	200	
									for 15mm					
									N=167*					
	32.00				25	75	50+	50	25/50	AR1323	13/04/2016	72	360	
									for 50mm					
									N=300*					
	33.50				25	75	50+	50	25/50	AR1323	13/04/2016	72	360	
									for 50mm					
									N=300*					
	35.00				12,12	150	35,15+	100	12,12/35,15	AR1323	13/04/2016	72	180	
									for 25mm					
									N=150*					
	36.50				10,11	150	28,22+	122	10,11/28,22	AR1323	13/04/2016	72	148	
									for 47mm					
									N=123*					
	38.00				25	75	50+	50	25/50	AR1323	13/04/2016	72	360	
									for 50mm					
Notes: 1. Tests carried 2. Reported blov 3. Where full tes 4. Tests carried 5. Entice in the	out in gene ws are for 7 st drive was out using a	ral acco 5mm pe not ach split sp	rdance with netration u ieved, actu oon sample	h BS EN I nless indi al penetra er unless	SO 22476 cated "+" ation (R) a noted as	-3:2005, in	ncluding amend polated N value (enotes use of so	ment A1 (2 N*) report blid cone r	2011). ed. nethod) in the co	omments column		N ₆₀ = (Meas	sured hamm	ier energy ratio / 60) x N value
o. Entries in the	water dept		n reflects ti	ne measu	reu water	depth at	ume of test.		Compiled Bv				Date	Contract Ref:
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GINT_LIBRARY_V8_06.GLB : G - SUMMARY OF SPT TESTS - V2 - A4L : 28549_MOUNT PLEASANT.GPJ : 19/01/17 17:26 : CB1 :

HP3 9RT

Exploratory	Depth	Hole	Casing	Water	Seatin	g Drive	Т	est Drive		Hammer	Calibration	Eneray		
Position ID	(m)	Dia (mm)	Depth (m)	Depth (m)	Blows	Pen (mm)	Blows	R (mm)	Result	ID	Date	Ratio (%)	N ₆₀	Comments
									N=300*					
	39.50				25	75	50+	50	25/50	AR1323	13/04/2016	72	360	
									for 50mm					
									N=300*					
BH17	3.00				2,2	150	3,4,4,5		2,2/3,4,4,5	AR1323	13/04/2016	72	19	
									N=16					
	5.00				2,3	150	4,4,5,5		2,3/4,4,5,5	AR1323	13/04/2016	72	22	
									N=18					
	8.00				3,3	150	4,4,5,7		3,3/4,4,5,7	AR1323	13/04/2016	72	24	
									N=20					
	11.00				3,4	150	4,5,5,6		3,4/4,5,5,6	AR1323	13/04/2016	72	24	
									N=20					
	14.00				5,5	150	7,7,8,10		5,5/7,7,8,10	AR1323	13/04/2016	72	38	
									N=32					
	17.00				5,5	150	7,9,9,11		5,5/7,9,9,11	AR1323	13/04/2016	72	43	
									N=36					
	20.00				5,5	150	7,6,6,8		5,5/7,6,6,8	AR1323	13/04/2016	72	32	
									N=27					

Reported blows are for 75mm penetration unless indicated "+".
 Where full test drive was not achieved, actual penetration (R) and extrapolated N value (N*) reported.
 Tests carried out using a split spoon sampler unless noted as SPT(c) (denotes use of solid cone method) in the comments column.
 Entries in the water depth column reflects the measured water depth at time of test.

RSK Environment I to	Comp	iled By	Date	Contract Ref:	-	
18 Frogmore Road	Con Partor	CBAKER	19.01.17]	28549	
Hemel Hempstead	Contract:			Page:		
Hertfordshire	Mount F	Pleasant Sorting Office		23	of	28
HP3 9R I						А

Exploratory	Depth	Hole	Casing	Water	Seating	g Drive	Те	st Drive	e	Hammer	Calibration	Eneray		
Position ID	(m)	Dia (mm)	Depth (m)	Depth (m)	Blows	Pen (mm)	Blows	R (mm)	Result	ID	Date	Ratio (%)	N ₆₀	Comments
BH17	23.00				7,8	150	10,12,14,14+	286	7,8/10,12,14,14	AR1323	13/04/2016	72	62	
									for 61mm					
									N=52*					
	26.00				10,10	150	15,35	150	10,10/15,35	AR1323	13/04/2016	72	120	
									for 75mm					
									N=100*					
	29.00				25	75	50	75	25/50	AR1323	13/04/2016	72	240	SPT(c)
									for 75mm					
									N=200*					
	30.50				25	75	50+	50	25/50	AR1323	13/04/2016	72	360	
									for 50mm					
									N=300*					
	32.00				15,10	100	50+	70	15,10/50	AR1323	13/04/2016	72	257	
									for 70mm					
									N=214*					
	33.50				25	50	50	75	25/50	AR1323	13/04/2016	72	240	
									for 75mm					
									N=200*					
Notes: 1. Tests carried 2. Reported blow 3. Where full tes 4. Tests carried 5. Entries in the	out in gene vs are for 7 t drive was out using a water dept	ral acco 5mm pe not ach split sp h colum	ordance with netration un ieved, actuno oon sample n reflects th	h BS EN IS nless indi al penetra er unless he measu	SO 22476- cated "+" ation (R) a noted as	-3:2005, i Ind extrap SPT(c) (d depth at	ncluding amendm polated N value (N enotes use of sol time of test	nent A1 (I*) report id cone i	2011). ted. method) in the co	omments column		N ₆₀ = (Meas	ured hamr	ner energy ratio / 60) x N value
		dinore							Compiled By				Date	Contract Ref:
	RSK Environment Ltd	'		(And	Porter	-		CBAK	ER	1	9.01.17	28549		
	Hemel	Hem	pstead		Contract:				I			I		Page:
	Hertfordshire							Мо	unt Pleasan	t Sorting Of	fice			24 of 28

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Exploratory	Depth	Hole	Casing	Water	Seatin	g Drive	Т	est Drive	9	Hammer	Calibration	Energy		
Position ID	(m)	Dia (mm)	Depth (m)	Depth (m)	Blows	Pen (mm)	Blows	R (mm)	Result	ID	Date	Ratio (%)	N ₆₀	Comments
BH17	35.00				15,10	100	50	75	15,10/50	AR1323	13/04/2016	72	240	
									for 75mm					
									N=200*					
	36.50				25	50	50+	50	25/50	AR1323	13/04/2016	72	360	
									for 50mm					
									N=300*					
	38.00				25	50	50+	50	25/50	AR1323	13/04/2016	72	360	
									for 50mm					
									N=300*					
	39.50				25	60	50+	60	25/50	AR1323	13/04/2016	72	300	
									for 60mm					
									N=250*					
BH18	2.00				3,4	150	5,6,7,6		3,4/5,6,7,6	AR1323	13/04/2016	72	29	SPT(c)
									N=24					
	3.00				1,2	150	2,2,1,2		1,2/2,2,1,2	AR1323	13/04/2016	72	8	SPT(c)
									N=7					
	4.00				1,1	150	1,0,1,0		1,1/1,1	AR1323	13/04/2016	72	2	SPT(c)
									N=2					
Notes: 1. Tests carried (2. Reported blow 3. Where full tes 4. Tests carried (5. Entries in the	out in gene /s are for 7 t drive was out using a water dept	eral acco 5mm per not ach split sp h colum	rdance with netration u ieved, actu oon sample n reflects tl	h BS EN I nless indi al penetra er unless he measu	SO 22476 cated "+" ation (R) a noted as red water	-3:2005, in and extrap SPT(c) (d depth at	ncluding amend polated N value lenotes use of so time of test.	ment A1 (2 (N*) report blid cone r	2011). ed. nethod) in the c	omments column		N ₆₀ = (Meas	ured hamr	ner energy ratio / 60) x N value
E.		vironn	nent I to	4		-			Compiled By				Date	Contract Ref:
DCL	18 Frogmore Road		1		(ASS	Barter	¥		CBAK	ER	1	9.01.17	28549	
Hemel Hempstead Hertfordshire HP3 9RT					Contract:			Мо	unt Pleasar	nt Sorting Of	fice	1		Page: 25 of 28

Exploratory	Depth	Hole	Casing	Water	Seating	g Drive	Те	st Drive	e	Hammer	Calibration	Enerav		
Position ID	(m)	Dia (mm)	Depth (m)	Depth (m)	Blows	Pen (mm)	Blows	R (mm)	Result	ID	Date	Ratio (%)	N ₆₀	Comments
BH18	5.00				1,0	150	0,0,1,0		1/,1	AR1323	13/04/2016	72	1	SPT(c)
									N=1					
	6.50				1,1	150	1,0,1,0		1,1/1,1	AR1323	13/04/2016	72	2	SPT(c)
									N=2					
	8.00				0,1	150	0,1,0,1		0,1/,1,1	AR1323	13/04/2016	72	2	SPT(c)
									N=2					
	9.50				0,1	150	0,0,0,0		0,1/	AR1323	13/04/2016	72	0	SPT(c)
									N=0					
	13.50				5,5	150	6,7,8,8		5,5/6,7,8,8	AR1323	13/04/2016	72	35	
									N=29					
	17.50				7,8	150	10,12,15,13+	290	7,8/10,12,15,13	AR1323	13/04/2016	72	62	
									for 65mm					
									N=52*					
	20.50				7,8	150	10,12,14,14+	295	,8/10,12,14,14	AR1323	13/04/2016	72	61	
									for 70mm					
									N=51*					
	23.50				9,9	150	12,15,15,8+	255	9,9/12,15,15,8	AR1323	13/04/2016	72	71	
									for 30mm					
Notes: 1. Tests carried 2. Reported blow 3. Where full tes 4. Tests carried 5. Entries in the	out in gene vs are for 7 t drive was out using a water depti	ral acco 5mm pe not ach split sp n colum	rdance with netration u ieved, actu oon sample n reflects th	h BS EN I nless indi al penetra er unless he measu	SO 22476- cated "+". ation (R) a noted as S red water	3:2005, in nd extrap SPT(c) (d depth at	ncluding amendm polated N value (N enotes use of sol time of test.	nent A1 (/ I*) report lid cone r	2011). ed. nethod) in the co	mments column	1	N ₆₀ = (Meas	ured hamr	ner energy ratio / 60) x N value
F	RSK Env	vironn	nent Lto	4					Compiled By				Date	Contract Ref:
DCK	18 Frogmore Road		-		6 m	Bartos			CBAK	ER	1	9.01.17	28549	
Hemel Hempstead Hertfordshire				(Contract: Mount Pleasant Sorting Office							Page: 26 of 28		

GINT_LIBRARY_V8_06.GLB : G - SUMMARY OF SPT TESTS - V2 - A4L : 28549_MOUNT PLEASANT.GPJ : 19/01/17 17:26 : CB1 :

Exploratory	Depth	Hole	Casing	Water	Seatin	g Drive	Т	est Drive	e	Hammer	Calibration	Energy		
Position ID	(m)	Dia (mm)	Depth (m)	Depth (m)	Blows	Pen (mm)	Blows	R (mm)	Result	ID	Date	Ratio (%)	N ₆₀	Comments
									N=59*					
	29.00				12,13	150	50+	50	12,13/50	AR1323	13/04/2016	72	360	
									for 50mm					
									N=300*					
	32.00				9,9	150	27,23+	128	9,9/27,23	AR1323	13/04/2016	72	140	
									for 53mm					
									N=117*					
	33.50				12,13	150	35,15+	100	12,13/35,15	AR1323	13/04/2016	72	180	
									for 25mm					
									N=150*					
	35.00				12,13	150	50	75	12,13/50	AR1323	13/04/2016	72	240	
									for 75mm					
									N=200*					
	36.50				10,11	150	50+	60	10,11/50	AR1323	13/04/2016	72	300	
									for 60mm					
									N=250*					
	38.00				15,10	100	50	75	15,10/50	AR1323	13/04/2016	72	240	
									for 75mm					
Notes: 1. Tests carried 2. Reported blow 3. Where full tes 4. Tests carried 5. Entries in the	out in gene vs are for 7 t drive was out using a water dept	eral acco 5mm pe not ach split sp h colum	rdance with netration u ieved, actu oon sample n reflects th	h BS EN I nless indi al penetra er unless he measu	SO 22476 cated "+" ation (R) a noted as red water	-3:2005, in Ind extrap SPT(c) (d depth at	ncluding amend polated N value (enotes use of so time of test.	ment A1 (2 (N*) report blid cone r	2011). ed. nethod) in the co	omments column		N ₆₀ = (Meas	sured hamm	er energy ratio / 60) x N value
RSK Environment I td				, L	Compiled By								Date	Contract Ref:
	RSK Environment Ltd		• [6	Allan			CBAK	ED			28549	

18 Frogmore Road	(antrates	CBAKER	19.01.17		28549	
Hemel Hempstead	Contract:	•		Page:		
Hertfordshire	Mount	Pleasant Sorting Office		27	of	28
HP3 9RT		····· 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5				AG

Exploratory	Depth	Hole	Casing	Water	Seatin	g Drive	Те	st Drive		Hammer	Calibration	Energy		
Position ID	(m)	Dia (mm)	Depth (m)	Depth (m)	Blows	Pen (mm)	Blows	R (mm)	Result	ID	Date	Ratio (%)	N ₆₀	Comments
									N=200*					
	39.50				15,10	100	50+	50	15,10/50	AR1323	13/04/2016	72	360	
									for 50mm					
									N=300*					
Notes: 1. Tests carried of 2. Reported blow	out in gene s are for 75	ral acco 5mm pei	rdance with	h BS EN I	SO 22476	-3:2005, ii	ncluding amendn	nent A1 (2	011).			N ₆₀ = (Mea	sured hamme	er energy ratio / 60) x N value
4. Tests carried of 5. Entries in the	out using a vater depth	split sp 1 colum	oon sample n reflects th	er unless ne measu	noted as red water	SPT(c) (d depth at	enotes use of sol time of test.	lid cone n	nethod) in the c	omments column.			Date	Contract Ref:
R	SK Env 18 From	/ironn amore	nent Lto Road	1		(an	Pater			CBAK	ER		19 01 17	28549
KSK	Hemel Hert HF	Hemp fords P3 9R	ostead hire		Contract:	25416-03		Moi	unt Pleasar	nt Sorting Off	fice		10.01.17	Page: 28 of 28 AG

Project No:	28549				Variable He	ad Test I	In Mon	itorin	g Well:	BF	19		
Date:	14-Dec-16				Type of test:			Fall	ing Head				
Site:	Mount Pleasant				Test number	:		1	8				
Time Elapsed (mins)	Depth at time t	Ht	Ht/Ho	Log Ht/Ho									
0	0	-5.20	1	0			Hea	ad rati	o again	st elapsed	time		
1	0.16	-5.04	0.969	-0.014			1100	a rut	o ugum	oreitapoeta			
2	0.2	-5.00	0.962	-0.017	1 1								
3	0.27	-4.93	0.948	-0.023			+-+						
4	0.3	-4.90	0.942	-0.026									
5	0.4	-4.80	0.923	-0.035	Ht/Ho=0.37								
10	0.67	-4.55	0.871	-0.06									
20	1.3	-4.21	0.81	-0.092									
30	1.85	-3.35	0.644	-0.191	<u> </u>								
60	22	-3.00	0 577	-0.239	5 0.1 -								
		-5.20	1	0									
		-5.20	1	0									
		-5.20	1	0									
		-5.20	1	0									
		-5.20	1	0									
		-5.20	1	0	0.01 -		1			1			
		-5.20	1	0) 1	10	20	30	40	50	60	70
		-5.20	1	0					Flansed	time (mins)			
		-5.20	1	0					Liupseu				
		5.20	1	0									
TEST PARAMETEI	RS			1	Parameters		Calculate	ed value	;	(Comment o	n Result	
Timelag calculated us	ing slope of plot where	e:			Rest Water Leve	el	5.	.20 m					
T1 =	0.5	mins			Ho=		-5.	.20 m					
T2 =	1.25	mins			Borehole Diame	ter (D)	0.	.25 m					
					Shape Factor (F)	1.	.57					
Timelag (T), where Ht	t/Ho=0.37:	91.77	mins		Cross-sectional	Area (A)	4.91E-	-02 m2					
				_	Hydraulic Cond	uctivity	K=A/FT						
TEST CONDITION	<u>S (at time of test)</u>		1			=	5.7E-	-06 m/se	ec				
Depth of borehole	7.50	m											
INTAKE FACTOR	7.50 F	111	1	CROSS SE	CTIONAL ARE	A A							
D (Diameter)	0.25	m	1	A assumed t	o use D for calcul	ation in this	s test						
L*	0.01	m		A assumed t	o use well diamet	er for calcu	ilation in	this test					
L/D ratio=	4.0E-02		1	Diameter of	stand pipe (m)								
Notes:			1										
I * is assumed to be th	a length of the filter i	esponse zon	e Where th	a response zor	e is not fully satu	rated prior	to head to	oct thor	L is consid	lered to represe	nt the dista	nce hetween	the Rest
Water Level and the h	ase of the response zo	ne Where s	trata likely t	o exhibit marl	ked differences in	K exist the	en L may	be furth	er reduced	to represent pre	eferential fl	ow via the m	ore
permeable stratum.	use of the response 20	ne. where a	diata intery t	o exilibit mari	keu unterenees m	it exist the	in E may	oe iuiu	er reduced	to represent pre	lerentiar fi	ow via the m	ore
1													
Where standpipes have	e a fully slotted sectio	n installed th	nrough the fu	ll extent of th	e filter, and/or wh	ere the cha	inge in wa	ater leve	l in the pip	e occurs fully v	vithin a slot	tted section, t	hen the
cross sectional area (A	() is assumed to be the	diameter of	the borehole	and the prese	ence of the slotted	standpipe i	is ignored	d. This	is analogou	s to a test perfo	rmed in a b	orehole.	
Wall on DIL management			D 05020		1.57								
Values of intake fact	one extended in unit	denendant i	BS3930	case d : F=	1.3/	aasa dasari	intion to	he nast	d in row a	hove overwriti	na dofault		
BS5030 Figure 7 used	to determine E	uepenuum i	ipon iesi co	uuuons corre	Insert value dire	ctly next to	<i>рион ю</i> х Е –	ve pusi	a m row u	bove overwruu	ng uejuuu		
Soil flush with bottom	at impervious bounda	rv	BS5930	case a · F=) I' =						
Soil flush with bottom	in uniform soil	,	BS5930	case b : F=	0.69								
Well or BH response z	one extended at impe	rvious											
boundary	1		BS5930	case c : F=	0.81								
Well or BH response	e zone extended in un	iform soil	BS5930	case d : F=	1.57								
Soil in casing with bas	e at impervious bound	lary	BS5930	case e : F=	0.60								
Soil in casing with bas	se in uniform soil		BS5930	case f : F=	0.83								
Cross-sectional Area	(A)			4.045.02									
Calculation of cross se	ectional area A when I	J = diameter		4.91E-02									
Calculation of cross se	cuonai area A using p	npe diamete	1	0.00E+00	<u> </u>								



APPENDIX C CROSS SECTIONS



		HOLE TYPE MARKER LEGENDS:
		€ = CP Boreholes
14	40 30	GEOLOGY COLUMN COLOUR CODES:
	25	 Alluvium Hackney Gravel London Clay Formation Lambeth Group - Upper Mottled Beds Lambeth Group - Laminated Beds
	20	 Lambeth Group - Lower Mottled Beds Lambeth Group - Upnor Formation Thanet Sand Formation White Chalk Subgroup
	15	
	10	
	5	
	0	
	-5	
	-10	
	-15	
		Dimensions Scale
	-20	m Scale X = 1:241 Scale Y = 1:324
		RSK Environment Ltd
		18 Frogmore Road
-	-25	Hemel Hempstead
14	+0	
		Royal Mail Group Limited
		PROJECT:
		Mount Pleasant Sorting Office
		TITLE:
		Calthorpe Site - Section 1
		CONTRACT REF: DRAWING REF:
		28549 of
		DRAWING STATUS: FIGURE
		DRAWING TRACK CODE: GINT_LIBRARY_V8_06.GLB : STANDARD : A3 : LANDSCAPE : ELEV : 28549_MOUNT PLEASANT.GPJ : 11/01/17 14:14 : CP1 :

SUBSURFACE SECTION DIAGRAM



		HOLE TYPE MAP	RKER LEGEND	<u>S:</u>
		 ● = CP Borehole ● = Rotary Boreh 	s oles	
28	80 25	GEOLOGY COLL	JMN COLOUR (CODES:
	20	 Lambeth Group Sand Channel Hackney Grave London Clay Form 	o - Lower Mottle	d Beds -
	15	 Lambeth Group Lambeth Group Lambeth Group Lambeth Group Thanet Sand F White Chalk Space 	- Laminated Bo - Lower Mottle - Upnor Forma ormation	d Beds d Beds tion
	10			
	5			
	0			
	-5			
	-10			
	-15			
	-20	REV. DATE D	ESCRIPTION	BY CHD. APR.
		Dimensions m s	Scale	V = 1.324
	-25		DQK Enviro	
			18 Froamo	re Road
	-30		Hemel Her	npstead
28	80	NSA	Hertford	Ishire
			HP3 9	RT
		CLIENT: Royal Me	ail Groun Limit	hed
				.54
		Mount Plea	asant Sorting O	ffice
		TITLE:		
		Calthorp	e Site - Sectio	on 2
		CONTRACT REF:	DRAWING REF	
		<u>28</u> 549		of
		DRAWING STATUS:	•	FIGURE
		DRAWING TRACK CODE: GIN LANDSCAPE : ELEV : 28549_N CB1 :	IT_LIBRARY_V8_06.GLB : IOUNT PLEASANT.GPJ :	STANDARD : A3 : 11/01/17 14:37 :
	l			

SUBSURFACE SECTION DIAGRAM



		HOLE TYPE MARKER LEGENDS:
		€ = CP Boreholes
		• = Rotary Boreholes
20	00 25	
	23	GEOLOGY COLUMN COLOUR CODES:
		Lambeth Group - Lower Mottled Beds -
	20	Sand Channel
		 Lambeth Group - Upper Mottled Beds
		Lambeth Group - Laminated Beds
	15	Lambeth Group - Upnor Formation
		 Thanet Sand Formation White Chalk Subgroup
	10	
	10	
	5	
	0	
	-5	
	-10	
	15	
	-15	
	-20	
		REV. DATE DESCRIPTION BY CHD. APR.
		Dimensions Scale
	-25	m Scale X = 1:552 Scale Y = 1:324
		RSK Environment Ltd
	20	18 Frogmore Road
20	-30 00	Hertfordshire
		HP3 9RT
		CLIENT:
		Royal Mail Group Limited
		PROJECT:
		Calthorpe Site - Section 3
		CON FRACT REF: DRAWING REF:
		28549 of
		DRAWING STATUS: FIGURE
		DRAWING TRACK CODE: GINT LIBRARY V8 06.GLB : STANDARD : A3 :
		CB1:



		HOLE TYPE MARKER LEGENDS:
		Θ = CP Boreholes Φ = Potary Boreholes
24	40	
-	25	
		GEOLOGY COLUMN COLOUR CODES:
		Alluvium
	20	Hackney Gravel
		 Lambeth Group - Upper Mottled Beds
		Lambeth Group - Laminated Beds
	15	Lambeth Group - Lower Mottled Beds
		 Thanet Sand Formation
		White Chalk Subgroup
	10	
	5	
	0	
	-5	
	-5	
	10	
	-10	
	15	
	-13	
	_20	
	-20	
		KEV. DATE DESCRIPTION BY CHD. APR. Dimensions Scale
	25	m Scale X = 1:828 Scale Y = 1:324
	-23	DQK Environment Ltd
		18 Frogmore Road
	-30	Hemel Hempstead
24	40	Hertfordshire
		HP3 9RT
		CLIENT:
		Royal Mail Group Limited
		PROJECT: Mount Placeant Sorting Office
		Calthorpe Site - Section 4
		CONTRACT REF: DRAWING REF:
		28549 of
		DRAWING STATUS: FIGURE
		DRAWING TRACK CODE: GINT_LIBRARY_V8_06.GLB : STANDARD : A3 : LANDSCAPE : ELEV : 28549_MOUNT PLEASANT.GPJ : 11/01/17 14:59 : CPI :



APPENDIX D CHARACTERISTIC VALUES




Sheet 1 of 1













Sheet 1 of 1























