Ground Investigation Report

HCA Compton
Former Pirbright Facility

Homes England

Project number: 60544578

October 2019

Quality information

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The site reconnaissance consisted of a general external inspection of the site aimed at identifying any obvious signs of geotechnical hazards and potential sources of ground contamination affecting the site. An environmental compliance audit and/or detailed structural inspection of existing buildings were outside the project brief.

The investigation itself was designed generally to meet the objectives of an exploratory investigation, as defined by BS10175:2011 Investigation of Potentially Contaminated Sites: Code of Practice (BSI). As an exploratory/, the results may not provide sufficient data to make detailed estimates of the quantities involved in any remediation work, if required.

The opinions expressed in this Report concerning any contamination found and the risks arising there from are based on current good practice simple statistical assessment and comparison with available soil guideline values, AECOM generic assessment criteria and other guidance values.[It should be noted that the effects of ground and water borne contamination on the environment are constantly under review, and authoritative guidance values are potentially subject to change. The conclusions presented herein are based on the guidance values available at the time this Report was prepared, however, no liability by AECOM can be accepted for the retrospective effects of any changes or amendments to these values.

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1. Introduction

1.1 Background

Homes England commissioned AECOM to undertake a geo-environmental and geotechnical assessment of the HCA Compton site (hereafter referred to as the site).

The site, which was closed in 2010, is a former animal research facility where biological and radiological testing was undertaken. Homes England are currently preparing an outline planning application for site to allow for redevelopment as residential housing with some employment (commercial) use.

To support masterplanning and the outline planning application AECOM previously undertook a Desk Based Assessment (Phase 1 Geotechnical and Geo-environmental Desk Study Report, HCA Report, Project No. 60544578, September 2019 Rev01) of the site. The main findings of the desk study report are summarised in Section 2 of this report, and the main recommendation was that an intrusive ground investigation was undertaken to determine the actual nature of the potential risks identified.

1.2 Scope of Work

AECOM were commissioned to design and supervise a ground investigation undertaken by Homes England's ground investigation contractor White Young Green (WYG), and subsequently produce a Ground Investigation Report. The purpose of this investigation was to characterise the potential geo-environmental risks and geotechnical hazards for the proposed residential housing with some employment (commercial) development.

This report presents:

- Interpretation of geotechnical aspects of the ground investigation works;
  - Soil design parameters;
  - Preliminary advice on the re-use of site won materials;
  - Assessment of options and recommendations for foundation design;
  - Advice on excavation and earthworks;
  - Advice on infiltration and groundwater issues;
  - Assessment of the geotechnical risks associated with the development;
- Interpretation of the geo-environmental aspects of the ground investigation works:
  - A quantitative human health risk assessment based on published Soil Guideline Values and, where appropriate, General Assessment Criteria (GAC) values prepared by AECOM;
  - A consideration of biological risk;
  - A quantitative risk assessment to controlled waters in accordance with current guidance;
  - A ground gas risk assessment in accordance with BS8485:2015;
  - Findings of Arouras interpretation of the radiological testing;
  - Preliminary advice on the disposal classification for arisings from the proposed construction works; and,
- Comment as to the requirement for additional work, including further investigation and/or remediation.

2. Initial Conceptual Site Model (iCSM)

Based on the conclusions of the AECOM Geotechnical and Geo-environmental desk study referenced above a preliminary risk assessment was developed. The findings of which are presented in the following sections.

2.1 Geo-environmental Risk Assessment Review

The preliminary assessment identified the following potential sources and associated contaminants at the site:

Table 2.1 Potential Contaminants of Concern

Sources	Activity/Location	Potential Contaminants of Concerns
S1- Buried Radioactive material	On Site: Bull Pens (Area 1) Results from Aurora radiological investigation positively identified radioactive contamination in this area	Radioactive Contamination
	On Site: Dung Yard/Sheep Pens (Area 2) Results from Aurora radiological investigation positively identified radioactive contamination in this area	
	On Site: South of Dung Yard Barn (Area 3) Results from Aurora radiological investigation indicated that this area was not investigated due to access restrictions	
	On Site: East of Dung Yard Barn (Area 4) Results from Aurora radiological investigation did not identify radioactive contamination in this area	
	On Site: North-east of Plowright Building Sludge Beds (Area 5) Results from Aurora radiological investigation did not identify radioactive contamination in this area	
S2- Potentially contaminated Made Ground	On-Site: Built up areas including roads, accommodation buildings, laboratories, barns and former footprints. The site is terraced and made ground may have also been used for engineering this including retaining walls.	Unknown constituents of Made Ground (metal, phenols, sulphates, poly-aromatic hydrocarbons) Asbestos (identified in SKM Enviros 2011 ground investigation)
S3- Laboratories, barns and Buildings	On Site: There are a significant number of laboratories, barns and buildings scattered across the site	Asbestos, radioactive contamination, biological contamination
S4- Drains	On-Site: Aurora and Zetica 2017 survey information identified fractures, displaced joints and root growth into drains.	Asbestos, radioactive contamination, biological contamination
S5- Institute Tip	On-Site: Previously used to tip incinerated ash.	Radioactive contamination Land gas generation (carbon dioxide, methane)
S6- Storage and use of fuel	On-Site: Fuel storage for the boiler house, incinerators, effluent treatment plant, Sludge drying beds	Fuels (ie. Kerosene, gas oil/diesel). PAHs
S7- Electricity Substations	On-Site: There are 5 know substations located on the site	Polychlorinated biphenyls (PCBs) and hydrocarbons
S8- Churn Road Landfill	Off-Site: Former Chalk Pit also used historically as a refuse tip.	Land gas generation (carbon dioxide, methane)
S9 Natural Strata	Onsite: Area located in lies within an intermediate probability radon area	Radon
S10- Effluent treatment system	On-site: Associated with treatment of discharges from laboratories	Chemical, radioactive and biological contamination
S11 – Sludge Drying Beds (Historic and recent)	Onsite: Historic: Along the northern boundary of Zone 2 Recent: To the north of HSU (CO44) and the skip yard	Chemical, radioactive and biological contamination

S12 – Buildings / Buried ducting	Onsite: Former Structures	Asbestos Containing materials

The findings of the preliminary risk assessment suggest a variable risk from all of the above sources with the risks being classified as low to high risk dependent on the individual source-pathway-receptor linkages. The risks are described below for the identified receptors.

- Human Health:
  - For final end users, the risk from contaminated soils is considered to be low to moderate depending on the migration pathway;
  - A low to moderate risk to adjacent site users depending on the source and migration pathway. The highest risk to adjacent site users was identified as being associated with ingress and/or accumulation of ground gas/vapour with potential sources including made ground (S3), the on-site Institute tip (S5) and the off-site land fill located on Churn Road (S8); and
  - The risk to site/maintenance workers from contaminated soils was considered to be moderate. It is noted however that this should be controlled through use of appropriate risk assessed method statements.by the Principal Contractor and is therefore outside the scope of this works
- Controlled Waters:
  - A high risk to controlled waters was assessed for both controlled waters receptors identified (groundwater and surface waters). The site is underlain by a Principal Chalk Aquifer and the south of the site lies within a Source Protection Zone (SPZ) 1. A groundwater abstraction borehole associated with SPZ1 lies to the south of the site, the abstraction being for a single point abstraction for public water supply. The site is also bordered by the River Pang to the south.
- Property:
  - Substances that can be involved in the chemical attack on building materials and structures may be present beneath the site, these substances may include sulphates. Whilst the risk was considered to be low, a targeted site investigation was recommended; and
  - A moderate risk to buildings was assessed with respect to landfill gas generation and migration of contaminants via preferential flow pathways e.g. services.
- Ecology:
  - A moderate risk to flaura and fauna was identified via a number of potential pathways from the identified sources.

2.2 Geotechnical Review and Potential Constraints

The site is situated on sloping grounds from the north towards Compton Village. The construction of the site has led to a terraced structure with a number of retaining walls to accommodate for the buildings, laboratories and barns.

Based on the desk study the following potential geotechnical hazards were identified:

Table 2.2 Potential Geotechnical Hazards

Hazard category (excluding contamination issues)	Hazard status based on investigation findings and proposed development		Engineering considerations if hazard affects site
	Likely/could be present and/or affect site	Unlikely to be present and/or affect site	
Sudden lateral changes in ground conditions	✓		Intrinsic variability of the River Terrace Deposits within the southern extent of the site. This variability could lead to differential settlements

			which would need to be considered for foundation and earthwork design.
Shrinkable / sensitive clay soils and chalk	✓		Potential ground-related hazards may relate if any sensitive silty clays are encountered beneath the site with risk of swelling / shrinkage, potential rapid loss of strength in wet conditions and frost-susceptible, if present. Chalk can become frost –susceptible in wet conditions. This will need to be considered for foundation design.
Highly compressible and low bearing resistance soils	✓		Potential for soft chalk across the site and loose River Terrace Deposits in the southern part of the site; which would provide an unsuitable founding stratum.
Karstic dissolution features (including 'swallow holes' in Chalk terrain)	✓		The site is underlain by Chalk Bedrock. The Envirocheck indicates that there is a low hazard potential for dissolution features on the site. May affect ground engineering and foundation design.
Evaporite dissolution features and/or subsidence		✓	May affect ground engineering and foundation design.
Ground subject to or at risk from coastal or river erosion		✓	No Hazard
High groundwater table (including waterlogged ground)	✓		Groundwater is likely to be variable within the chalk aquifer and may change depending seasonal fluctuations. The southern part of the site is in a flood zone 2. May affect temporary and permanent works.
Quarrying/mining		✓	Historical chalk pits are noted in the area. If present on site the infilled pits are unlikely to provide suitable strata for foundations.
Existing sub-structures (e.g. tunnels, foundations, basements, and adjacent sub-structures)	✓		The history of the site involved the construction of buildings; there may be substructures and foundations, including basements, which will require removal prior to future construction projections.
Filled and made ground (including embankments, infilled ponds and quarries)	✓		Potential of disturbed ground / infilled burial pits/bunds across the site. These artificial deposits are unlikely to provide a suitable founding stratum due to the variability of the material
Adverse ground chemistry (including expansive slags and weathering of sulphides to sulphates)	✓		Concrete foundations and service structures may need to be designed against natural chemical attack from sulphates within the superficial strata. A chemical assessment would need to be undertaken to confirm the possible impact of this on any proposed concrete structures.

2.3 Desk Top Study Recommendations

To further investigate and/ or mitigate the potential risks identified above the AECOM desk study recommended that:

- A ground investigation should be undertaken to substantiate the preliminary findings of the report and to provide suitable information for geotechnical outline design and planning;
- The geo-environmental investigation should be designed with due consideration of the requirements of BS10175 (2001+A1) Investigation of potentially contaminated sites- Code of Practice;
- Radiological aspects of the investigation should be designed in consideration of the Environment Agency (2002) Guidance on the Characterisation and Remediation of Radioactively Contaminated Land;
- Within the areas of radiological potential concern ground investigation works should be carried out with a radiological expert watching brief;
- The geotechnical elements of the investigation should be designed with consideration of BS EN 1997-1:2004, BS1997-2:2007 (Eurocode 7:Geotechnical Design- Parts 1 and 2) and BS 5930 (2015) Code of Practice for Ground Investigation;
- The investigation will allow a quantitative assessment as to whether any of the potential risks identified in this study are present and are of material concern to the development;
- Further investigation and verification works will be required following the removal of potentially contaminative sources (i.e. tanks etc) and within the demolition footprints of buildings;
- Public Health England (PHE) concluded that high biological risk areas may be narrowed down to the immediate vicinity of the high security drain connecting the effluent sterilisation plant and laboratory building C044. The risks are associated with numerous leak points and biofilm within the pipe itself and that outside these areas only anthrax has the longevity in the soil environment to still be present;
- Details should be obtained by a radiological specialist on the current status of existing Environmental Permits relating to the usage of radioactive materials at the site with evidence of supporting evidence for surrender; and
- Identified buried sources of radiological materials will require specialist disposal under an Environmental Permit.

On this basis, AECOM proposed a site investigation comprising trial pits and windowless sample boreholes to provide general coverage and allow the installation of shallow ground gas and groundwater monitoring boreholes, with deeper rotary boreholes to monitor deeper groundwater.

3. Ground Investigation

3.1 Overview

Based on the desk study findings, a ground investigation was designed to understand ground conditions, provide geotechnical and geo-environmental information for future residential and commercial redevelopment of the site.

The geo-environmental exploratory ground investigation was designed to the general requirements of BS10175 (2001+A1) Investigation of potentially contaminated sites- Code of Practice. Radiological aspects of the investigation were designed in consideration of the Environment Agency (2002) Guidance on the Characterisation and Remediation of Radioactively Contaminated Land. The geotechnical elements of the investigation were designed with consideration of BS EN 1997-1:2004, BS1997-2:2007 (Eurocode 7:Geotechnical Design- Parts 1 and 2) and BS 5930 (2015) Code of Practice for Ground Investigation.

In addition to the standard laboratory geotechnical and environmental of soil samples, the investigation was required to include radiological and microbiological screening to assess risks which are associated with the site history.

The works were completed by WYG who were appointed by Homes England and supervised by AECOM. WYG acted as Principal Contractor for the works, which were required to be performed as per AECOM's specification "Contract Documents and Specification for Ground investigation – HCA Compton 60544578 October 2017 Rev 5 Dated December 2018".

The ground investigation was programmed as four phases of intrusive investigations. These were:

- Phase A – Preliminary Assessment of Biological Risk
  - Machine excavated trial pits to investigate the potential presence of Anthrax.
- Phase B – Main Intrusive Works
  - Machine and hand excavated trial pits, Window sample boreholes with Standard Penetration Test (SPTs), California Bearing Ratio tests (CBRs), In situ testing permeability testing, Photoionisation detector screening (PIDs), installation of gas and groundwater monitoring standpipes and sampling of existing abstraction wells.
- Phase C – Deep Groundwater Investigation
  - Rotary Boreholes to obtain core samples of the bedrock and install gas and groundwater monitoring standpipes. Undertake groundwater samples from deep boreholes and onsite abstraction well
- Phase D – Radiological Trial and Hand Pitting
  - Machine excavated, and hand dug trial pits in areas of known radiological contamination areas.

3.2 Summary of Works

Works were undertaken between 26/11/2018 and 26/02/2019. A summary of the completed intrusive investigation works is presented in **Error! Reference source not found.** below, and the locations shown Appendix A.

Table 3.1 Summary of Works

Phase	Date	Completed Exploratory Locations
A	26/11/2018-30/11/2019	TP01 - TP14 inclusive (14No. Machine excavated trial pits between 1.10m and 3.00 metres below ground level (mbgl))
B	07/01/2019 – 08/02/2019	HP01, HP03 – HP11 inclusive, HP13 and HP14 (12No. Foundation inspection pits to depths between 0.40m and 1.20mbgl) WS01 – WS61 inclusive, WS25a, WS56a and WS58a (63no. Window sample boreholes to depths between 0.20m and 5.00mbgl. Standard penetration tests (SPTs) were undertaken at 1m intervals). 27 of the window sample holes were installed with Gas/groundwater monitoring wells. RC01 – RC03 inclusive (3No. Road cores to depths between 0.10m and 0.26mbg; 6No. California Bearing Ratio tests (CBRs))
C	13/02/2019 – 26/02/2019	BH01 to BH04 inclusive (4No. Windowless sample boreholes with rotary core follow on to depths between 17.40m and 37.00mblg) all boreholes were installed with gas/groundwater monitoring wells
D	04/02/2019 – 08/02/2019	TP15, TP16 and TP17 (3No. 'Phase D' Trial Pits in the northern bund for radiological purposes.) 4 radiological samples taken from Bull pen pots numbers 3, 13, 16 and 19.

3.3 Phase A Investigation

3.3.1 Rationale and Scope

The PHE risk assessment identified Anthrax as the only biological contaminant which has a sufficient lifespan within soils to still be present following closure of the site. In order to establish the risk to workers during later investigation phases, 50 soil samples were taken and submitted to PHE and tested for Anthrax. The analysis undertaken on the samples is presented in The WYG Factual Report in Appendix A.

3.3.2 Findings

Anthrax was not reported to have been found in any of the samples that were sent to PHE for analysis. It was therefore considered that risk of Anthrax contamination across the site is low. This enabled the samples from the subsequent phases of works to be sent off site for laboratory analysis, and PPE in areas not identified as potentially posing a biological risk downgraded.

3.4 Phase B-C Investigation

3.4.1 Rationale and Scope

The following table details the planned scope of works.

Table 3.2 Phase B-C Scope of Works

Sources	Potential Contaminants of Concerns	Investigation Locations	Data Gaps
S1- Buried Radioactive material	Radioactive Contamination	See Phase D Investigation Reporting	N/A
S2- Potentially contaminated Made Ground	Unknown constituents of Made Ground (metal, phenols, sulphates, poly-aromatic hydrocarbons) Asbestos (identified in SKM Enviros 2011 ground investigation)	WS01-WS59, WS61 BH1-BH4	N/A
S3- Laboratories, barns and Buildings	Asbestos, radioactive contamination, biological contamination	WS01-WS59, WS61 BH1-BH4	N/A
S4- Drains	Asbestos, radioactive contamination, biological contamination	WS01-WS59, WS61 BH1-BH4	N/A
S5- Institute Tip	Radioactive contamination Land gas generation (carbon dioxide, methane)	WS55	Off site N/A
S6- Storage and use of fuel	Fuels (ie. Kerosene, gas oil/diesel). PAHs	WS13, WS19, WS20, WS22, WS25, WS25A, WS27, WS35, WS39, WS52	N/A
S7- Electricity Substations	Polychlorinated biphenyls (PCBs) and hydrocarbons	WS19, WS30, WS31, WS35,WS54	N/A
S8- Churn Road Landfill	Land gas generation (carbon dioxide, methane)	WS55	N/A
S9 Natural Strata	Radon	Not included in this investigation.	Outside the scope of this investigation, as the outcome of investigation would not affect the required actions. The Envirocheck report indicates the site lies within an intermediate probability radon area, as between 1% and 3% of homes are above the action level. Radon protective measures are necessary in the construction of new dwellings or extensions.
S10- Effluent treatment system	Chemical, radioactive and biological contamination	Not included in this investigation.	PHE have recommended that materials form the sludge bed will be disposed of to a deep landfill therefore no GI was undertaken in these areas as it would not affect the delineation and removal in this area prior to development.
S11 – Sludge Drying Beds (Historic and recent)	Chemical, radioactive and biological contamination	WS32,WS35, WS61, WS51	PHE have recommended that materials form the sludge bed will be disposed of to a deep landfill. GI to target presence of Historical Sludge beds only.
S12 – Buildings / Buried ducting	Asbestos Containing materials	Not included in this investigation.	Sampling of buildings and buried structures is outside the scope of this ground investigation.

A number of exploratory locations detailed within the specification were altered or abandoned by WYG on the instruction of AECOM, as shown in **Error! Reference source not found.** below.

Table 3.3 Altered Exploratory Hole Locations

Exploratory Location	Variation	Notes
HP02	Terminated	Refusal on hard concrete
HP15 - HP17	Cancelled	No longer required replaced by trial pits
WS60	Cancelled	Cancelled to avoid disruption to commercial laboratory operations.
WS11	Moved	Moved from the top of the embankment to allow access
WS25	Terminated	Unidentified cable encountered
WS25A	Added	Added to replace WS25
WS27	Terminated	Terminated at 0.2mbgl due to potential Asbestos Containing Material (ACM) (sample taken)
WS56	Terminated	Terminated at 0.55m bgl due to refusal on hard chalk
WS56A	Added	Added to replace WS56
WS58	Terminated	Unable to safely set up the rig on uneven ground
WS58A	Added, Terminated	Added to replace WS58, terminated due to being unable to set up rig on uneven ground

3.4.2 In-Situ Testing/ Screening

A number of in-situ tests/ screens were undertaken during site works as listed below.

- Radiological Screening
  - Screening of samples was undertaken as part of the permit by Aurora's Radiation Protection Supervisor at WS01, WS08-WS10, WS12-WS15, WS17, WS19- WS21, WS23,-WS26, WS28- WS30, WS34,-WS43, WS044, WS46, WS048, WS52, WS58, HP05, HP06, HP07, HP08, HP09, HP10,HP11, HP13, and HP14. The location where screening was required was determined by Aurora
- Geotechnical testing
  - Standard Penetration Tests (SPTs) were undertaken at regular intervals in the window samples within the superficial Deposits and Chalk. One hundred and eighteen (118) SPTs were undertaken at depths ranging from 1 to 5m;
  - Hand shear vane tests were undertaken in six (6) trial pits within the cohesive Superficial Deposits and Chalk; and
  - California Bearing Ratio (CBR) tests were undertaken at six (6) locations (CBR1-5 inclusive.
- Environmental testing
  - A total of thirty-eight (38) soil samples from the trial pits and window sample locations were screened using a Photoionisation Detector (PID) to measure the total volatile content within soil headspace bags; and
  - Permeability Testing was undertaken at three (3) locations (WS36, WS53 and WSS25A).

3.4.3 Laboratory Testing

3.4.3.1 Environmental Testing

Based on the potential contaminants identified in the desk study (AECOM, 2019), selected soil and groundwater samples were analysed by UKAS accredited laboratory ALS for the determinants listed in **Error! Reference source not found.**. The analysis undertaken on the samples is presented in the WYG Factual Report in Appendix A.

Table 3.4 Chemical Testing Suites

Determinand	Total Soils Analytical Testing*	Total Leachate Analytical Testing**	Total Waters Analytical Testing
Metal suite (arsenic, barium, beryllium, boron, cadmium, chromium (hexavalent and total), copper, lead, mercury, magnesium, nickel, selenium, vanadium, zinc)	✓	✓	✓
pH	✓		✓
Electrical Conductivity			✓
PCBs	✓	✓	✓
PAH USEPA-16	✓	✓	✓
Phenols	✓	✓	✓
Total organic carbon (TOC)	✓		✓
Dissolved organic carbon		✓	
TPH (CWG) speciated	✓	✓	✓
VOCs	✓	✓	✓
SVOCs & BTEX	✓	✓	✓
MTBE	✓	✓	✓
Cyanide (total)	✓	✓	✓
Sulphur	✓		
Sulphate	✓		
Sulphate (soluble)		✓	✓
Chloride	✓	✓	✓
Fluoride		✓	✓
Nitrate as (NO3-)		✓	✓
Sulphide		✓	✓
Phosphate			✓
Phosphate total (P)		✓	✓
Ammoniacal nitrogen as N		✓	✓
Asbestos	✓		
No. Samples	107	30	5

* Samples selected on site from Made and Natural Ground using visual and PID samples to select soils representative of strata but also any soils with visually/olfactory evidence of contamination.

** Samples were selected on site from Made Ground and Natural Ground to provide a vertical and lateral spread across the site, and based on descriptions in engineers logs.

3.4.3.2 Radiological

Where radiological screening identified elevated levels of radiation above background concentrations samples were obtained. 4No soil samples were taken from the bull pen pots (concrete pots known to contain radioactive soils used to test effects on plant life), and following confirmation from the testing laboratory that they could receive animal remains, 1No from a Sheep pen trenches Figure 1. This was considered to be acceptable on the basis of the Phase A results where no anthrax was reported to have been detected.

The samples were tested for a series of radiological determinants including high-resolution gamma spectrometry (HRGS), C-14/H3 Combustion, Sr-90 analysis, alpha spectrometry. The analysis undertaken on the samples is presented in The WYG Factual Report in Appendix A.

3.4.3.3 Geotechnical Testing

Representative disturbed samples were obtained for soil types encountered. Selected samples were scheduled for testing at Professional Soils Laboratory, with testing reported to be in accordance with BS1377:1990+A1. The following tests were scheduled:

Table 3.5 Summary of Geotechnical Testing

BS Test Number	Test	Quantity
BS1377: Part 2:1990, Clause 3.2	Natural Moisture Content	77
BS1377: Part 2: Clauses 4.4, 5.3 & 5.4 1990	Atterberg Limits	67
BS1377: Part 2:1990, Clause 9.2	Particle Size Distribution (PSD) – Wet Sieving	52
BS1377: Part2:1990, Clause 9.4	Sedimentation by pipette (completed on above samples with >20% clay silt fraction)	50
BS1377: Part 4:1990, Clause 3.3	Dry Density / Moisture Content Relationship 2.5kg rammer 1litre mould	18
BS1377: Part 2: 1990, Clause 3.3	Saturated Moisture Content	34
BS1377: Part 7: 1990, Clause 6.3	Unconfined Compressive Strength Tests	3
BS1377: Part 7: 1990, Clause 5.6	Set of 3 axial and diametric Pont Load Tests	37
BS1377: Part 3:1990	pH	12
BS1377: Part 3:1990	2:1 Water Soluble Sulfate (with determination of water soluble Mg if SO4>3000mg/l, and determination of water soluble nitrate and chloride ff pH <5.5)	12

The analysis undertaken on the samples is presented in the WYG Factual Report in **Error! Reference source not found.**.

3.4.4 Gas and Groundwater Monitoring

Ground gas monitoring rounds were undertaken by WYG using an infrared gas meter with integral electronic flow analyser, with testing reported to be in accordance with BS8576:2013. Measurements of the percentage volume in air (%v/v) of oxygen (O2), carbon dioxide (CO2) and methane (CH4), atmospheric pressure were recorded in addition to ppm readings of hydrogen sulphide (H2S) and carbon monoxide (CO). Flow measurements on each standpipe (L/h) were also taken.

Six gas monitoring visits were undertaken at weekly intervals between the 15th March and the 17th April 2019.

Following groundwater level monitoring, 5No. groundwater samples were taken from the five locations: BH01-04 and GW01 on 4th April 2019 taken from on site abstraction well. The results are presented in The WYG Factual Report in Appendix A.

4. Ground Conditions and Material Properties

4.1 Introduction

The following chapter provides a review of the current ground investigation information. Appendix B contains geological cross sections across the site. This chapter also summarises the results of field and laboratory tests undertaken in the soils and rock. Field tests include standard penetration tests and hand vane tests. Laboratory tests comprise of index and classification tests (Moisture content, Atterberg limits, Particle size analysis and density), and compaction tests using 2.5 kg rammer. Chemical tests were undertaken to assess the aggressive ground conditions to concrete.

Geotechnical properties are derived from the field or laboratory test data presented in Appendix A.

4.2 Stratigraphy

Error! Reference source not found. presents a summary of the strata encountered across the exploratory holes in their sequential order as reported by WYG.

Table 4.1 Ground Conditions

Geological Unit	Typical Description	Range of depth extent (m bgl)
Hard standings	Concrete/TARMAC/Gravel in bitumen mix belonging to wearing and bearing coarse of pavement Occasional Asphalt MACADAM	0.04-0.80
Topsoil	Grass over brown sandy gravelly clay or silty clay with rootlets	0.04-0.70
Made Ground (Sheep pen Trenches)	Occasional plastic fragments were observed, and animal bones and laboratory waste including syringes, plastic pots and electrical components were encountered at approximately 3m depth within the bund north of the Sheep Pen Area.	0-3.0m
Made Ground (Bull Pen pots)	Concrete Pots full of radiological topsoil not logged (formerly used to test the effect radiation has on plant life)	
Made Ground	Both cohesive and granular Made Ground was reported as below: Cohesive Made Ground : Soft/soft to firm, occasionally stiff to very stiff brown sandy gravelly clay with presence of brick fragments Granular Made Ground: Brown clayey sandy gravel or gravelly sand with brick fragments and occasional limestone cobbles.	0.10-1.90
Reworked Chalk*	Natural soils of cohesive and granular nature recorded across the site, appeared to be reworked chalk.	0.30 -4.00

Geological Unit	Typical Description	Range of depth extent (m bgl)
	Cohesive: Soft/firm/soft to firm, locally stiff brown sandy gravelly clay Granular: Light brown clayey sandy gravel or silty sandy gravel	
Structure less Chalk	Grade Dm - White with orange staining sandy gravelly silt. Gravel is of low and medium density. Grade Dc – White with orange staining silty sandy gravel; Gravel is low and medium density	0.4 -14
Weathered Chalk	White/Creamish/Orangish brown sandy gravelly silt and sandy silty gravel. Chalk grade unclassified.	0.9-4.05
Structured Chalk	White mottled orange very weak medium density Chalk (Grade C3) and weak, medium to high density Chalk (Grade B3)	7.90-36.5

* This has sometimes been logged as reworked chalk and sometimes as chalk head.

4.2.1 Topsoil

Topsoil was encountered in the majority of exploratory holes from the ground level to 0.3 m bgl, extending up to 0.70 m bgl in a few locations (WS19, WS35, WS39 and WS56A). Topsoil generally comprises clay and silt with minor sand and gravel constituents. Topsoil was recorded in WS35, WS39, WS56, WS56A and WS59 described as firm and firm to stiff silty clay or clayey silt, with the presence of quartzite, flint, chalk and occasional brick, concrete and plastic elements. No in situ or laboratory geotechnical tests were undertaken in the topsoil.

4.2.2 Artificial ground

For reporting purposes, the artificial ground is subdivided into hard standings, cohesive made ground and granular made ground. Their presence, extents and descriptions are summarised in **Error! Reference source not found.**.

Table 4.2 Summary of Artificial Ground

Strata	Typical Description	Exploratory holes recorded	Range of thickness (m)
Hard standings	Concrete, TARMAC, Gravel in Bitumen mix (wearing and bearing course), MACADAM, Asphalt,	BH01, BH02, ,BH03, HP03, HP07, HP10, TP01, TP02, TP03, TP04, TP05 TP06, TP07, TP11, WS01, WS04, WS05, WS06, WS07, WS08, WS09, WS10 WS11, WS12, WS13, WS14, WS15, WS16, WS17, WS18, WS23, WS24, WS38, WS43, WS46, WS55	0.01-0.61
Made Ground-granular	Clayey sandy gravel or gravelly sand with brick fragments and occasional limestone cobbles	BH02, BH03, HP03, HP05, HP06, HP08, HP10, HP11, HP13 TP01, TP02, TP03, TP05, TP06, TP07, TP10, TP11, TP12 WS04, WS05, WS09, WS10, WS14, WS15, WS16, WS17, WS19, WS20,	0.01-0.80

Strata	Typical Description	Exploratory holes recorded	Range of thickness (m)
		WS23, WS24, WS25, WS29, WS32, WS38, WS43	
Made Ground- cohesive	Soft/soft to firm, occasionally stiff to very stiff sandy gravelly clay or silt with presence of brick fragments, rarely plastic, fabric, concrete and bitumen	BH03, BH04, HP08, HP09, TP03, TP08, TP09, TP10, TP11, TP12, TP13, TP14, WS03, WS06, WS07, WS13, WS15, WS16, WS17, WS20, WS21, WS22 WS25A, WS26, WS27, WS28, WS31, WS32, WS38, WS40, WS45, WS46, WS49, WS53, WS56, WS56A, WS58A, WS59, WS61	0.05-1.55
Made Ground (Sheep pen Trenches)	Occasional plastic fragments were observed, and animal bones and laboratory waste including syringes, plastic pots and electrical components were encountered at approximately 3m depth within the bund north of the Sheep Pen Area.	TP15-TP17	0-3.00
Made Ground (Bull Pen)	Pots full of radiological topsoils (not logged)	Samples from Pots 3,13,16,19	

In situ and laboratory tests conducted in the Made ground are detailed below. The tests were undertaken mostly in cohesive made ground. Only a limited number of tests were carried out on samples from the granular made ground.

Results of Moisture content, Atterberg limits and Particle size distribution tests are plotted in **Error! Reference source not found.** to **Error! Reference source not found.** respectively. The moisture content of the cohesive made ground varies significantly from 9-25 %. The Atterberg limits show that it is low to medium plasticity clay.

Four particle size distribution tests were done on samples of cohesive made ground and are reported in **Error! Reference source not found.**. The fine contents (particles < 0.063 mm size) varies between 22% – 55%.

Two SPT tests were undertaken within the Made Ground. An SPT 'N' count of 53 was returned within cohesive made ground described as stiff slightly gravelly clay. Another test resulted in an SPT 'N' of 60 in Granular Made Ground containing clayey gravel and a high cobble content.

A set of three in situ hand vane tests in WS17 at 0.60 m depth returned a peak undrained shear strength of 42 to 58 kPa.

One compaction tests in Cohesive made ground produced maximum dry density of 1.64 Mg/m3 and optimum moisture content of 20%.

Two sets of chemical tests were undertaken, one in each of the Cohesive and Granular made ground. The outcome is summarised in **Error! Reference source not found.**.

Figure 4.1 Moisture content variation with depth in Made Ground

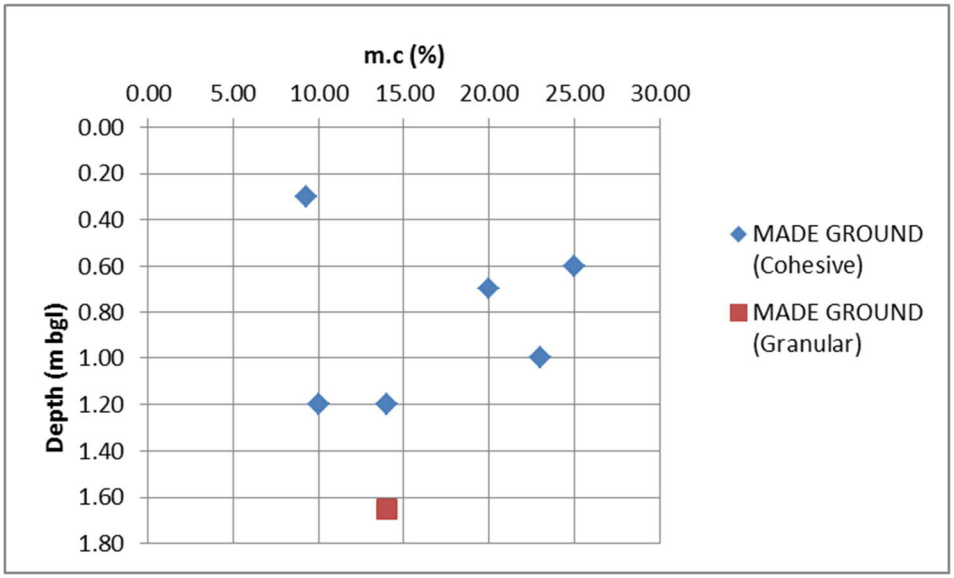


Figure 4.2 Atterberg limits in Made Ground

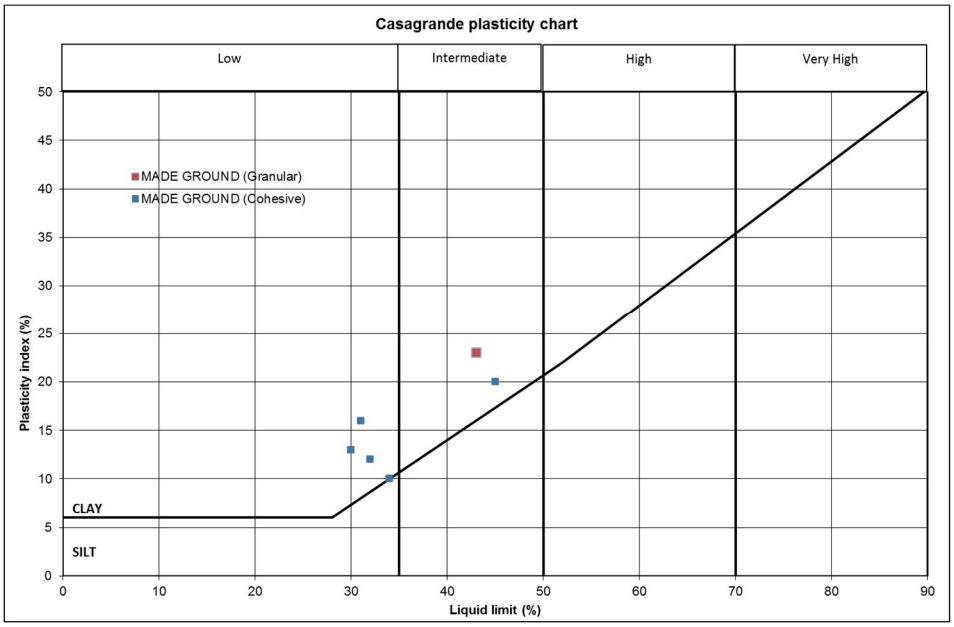
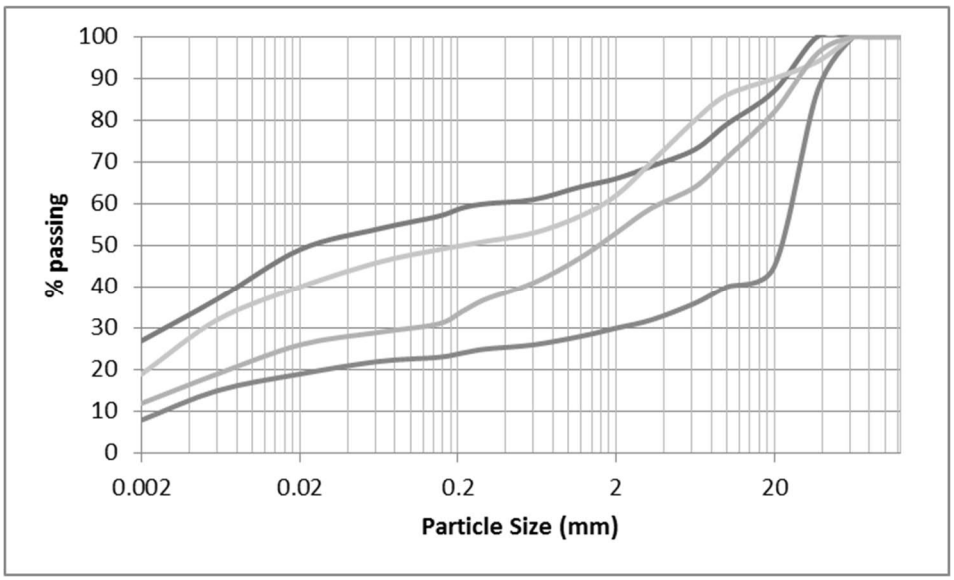


Figure 4.3 Particle size distribution of Cohesive Made Ground



4.2.2.1 Chemical tests Results in Made Ground

Appropriate concrete ACEC classes have been derived within this chapter for non-pyrite brownfield locations and taking into account mobile ground water conditions.

Table 4.3 Chemical Results in Made Ground

	pH	Water soluble sulphate (2:1 soil water extract) (mg/l)	Design Sulphate class	Concrete (ACEC) classification
Cohesive Made Ground	8.56	18.9	DS-1	AC-1
Granular Made Ground	8.34	11.5	DS-1	AC-1

4.2.3 Reworked Chalk

Natural soils, cohesive and granular in nature, were found widely across the site overlying Chalk and beneath topsoil and made ground. **Error! Reference source not found.** summarises the presence and extent of these soils.

The soils are generally described as soft/firm/soft to firm, locally stiff brown sandy gravelly clay or clayey sandy gravel/silty sandy gravel. The gravel is low density chalk.

According to the published geology maps, superficial soils are expected to be absent across the site. On the logs these materials are logged as chalk head or have no geological description. Considering the historical use of the site, it is expected that these natural soils have been disturbed by either natural or artificial processes but they have been grouped together as a single engineering unit due to the similarities in description.

Table 4.4 Summary of Reworked Chalk

Strata	Typical Description	Exploratory holes recorded	Range of thickness (m)
Reworked Chalk (Cohesive)	Sandy gravelly clay	BH03, BH04, HP07, HP09, HP11, TP12, WS13, WS17, WS19, WS21 WS22, WS24, WS25A, WS26, WS28, WS29, WS31, WS32, WS33, WS34 WS35, WS36, WS37, WS39, WS41, WS42, WS44, WS45, WS47, WS48, WS52 WS54, WS57, WS58	0.05-1.7
Reworked Chalk (Granular)	Clayey sandy gravel or silty sandy gravel	WS35, WS39, WS46, WS49, WS50 and WS51	0.2-2.04

Index test results are plotted in **Error! Reference source not found.** and **Error! Reference source not found.**. The moisture content of Cohesive reworked chalk lies over a wide range of 13 -23 %. Atterberg limits show low to high plasticity clay. The Particle size distribution of the cohesive and granular reworked chalk is plotted in **Error! Reference source not found.** and **Error! Reference source not found.** respectively. Two tests in the cohesive reworked chalk reveal a substantial proportion of coarse particles (> 80%).

SPT test results in **Error! Reference source not found.** show the variable consistency of the reworked chalk, as evidenced by the strata descriptions. These observations demonstrate the variable nature of the material across the site.

Two in situ vane tests undertaken in the re worked Chalk (Cohesive) returned a peak undrained shear strength (c_u) of 48 kPa and a residual shear strength of 24 kPa.

Results of compaction tests are summarised in **Error! Reference source not found.**.

A series of chemical tests for soil aggressivity in concrete were undertaken in Cohesive and Granular reworked chalk. The outcome is summarised in **Error! Reference source not found.**.

Figure 4.4 Moisture content variation with depth in Reworked Chalk

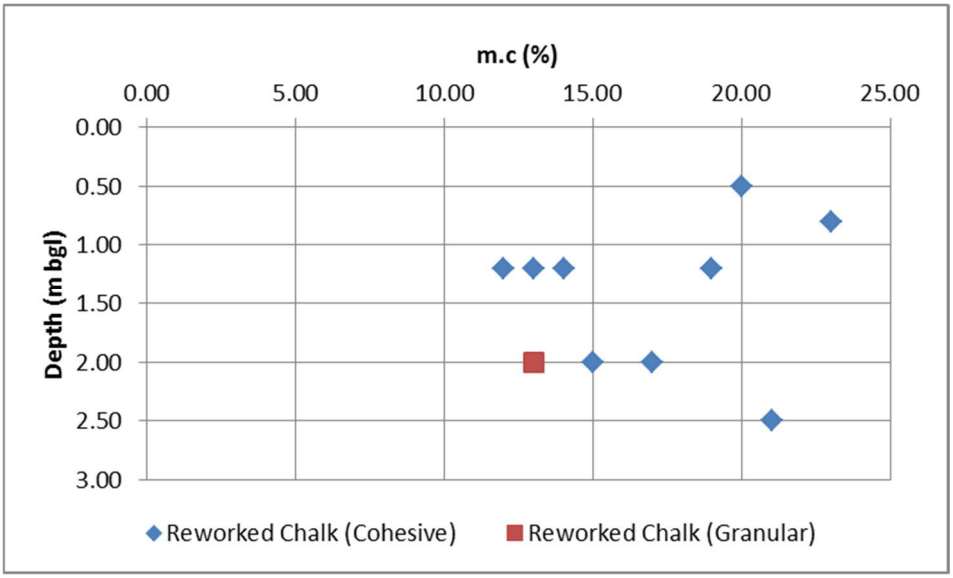


Figure 4.5 Atterberg limits in Reworked Chalk

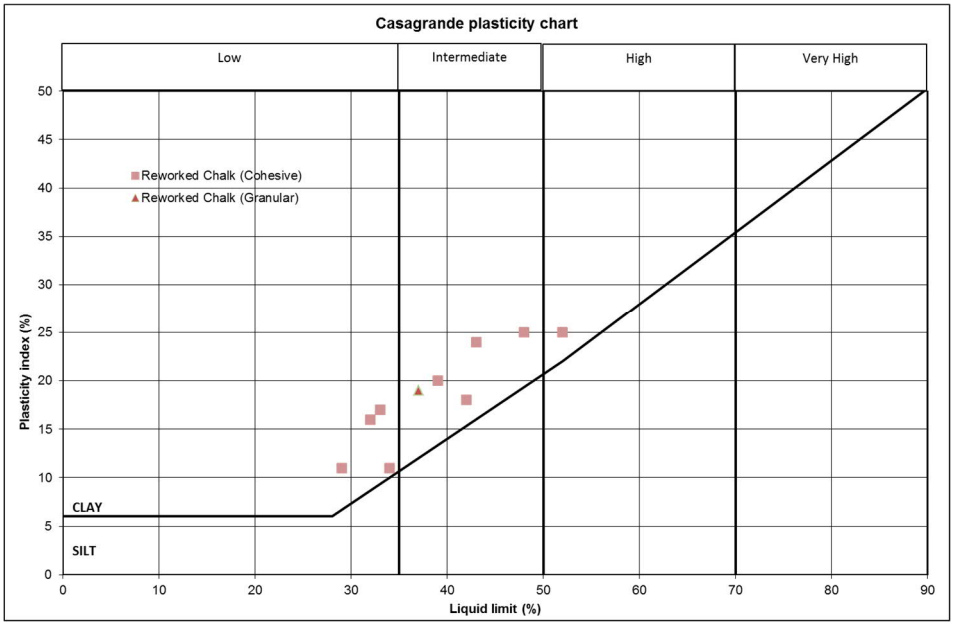


Figure 4.6 Particle size distribution of cohesive reworked chalk

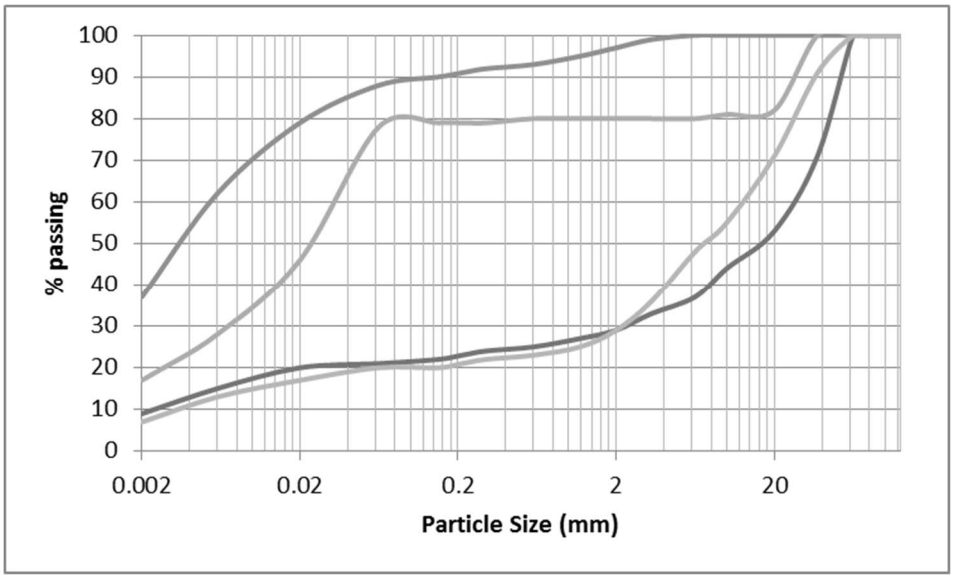


Figure 4.7 Particle size distribution of granular reworked chalk

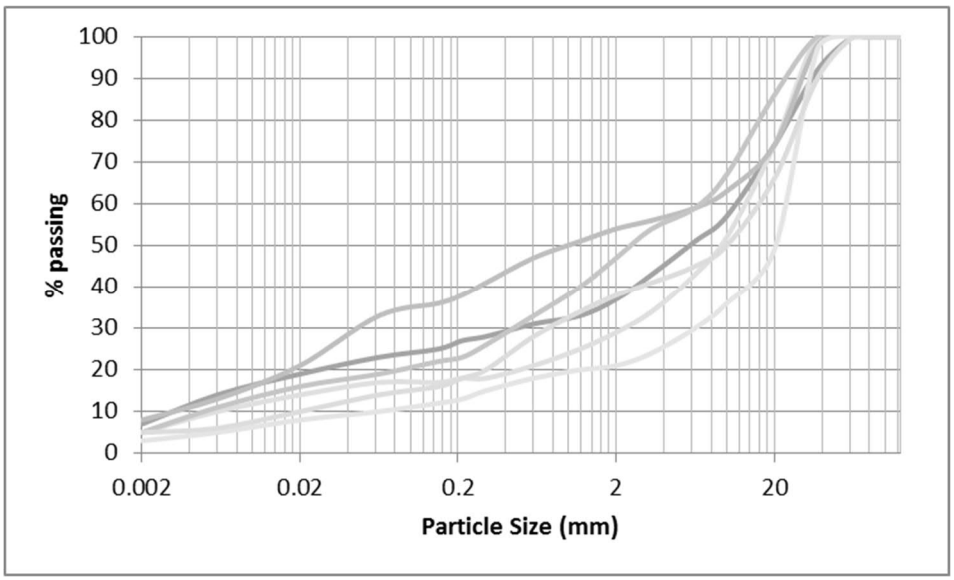


Figure 4.8 SPT 'N' Vs depth in Reworked Chalk

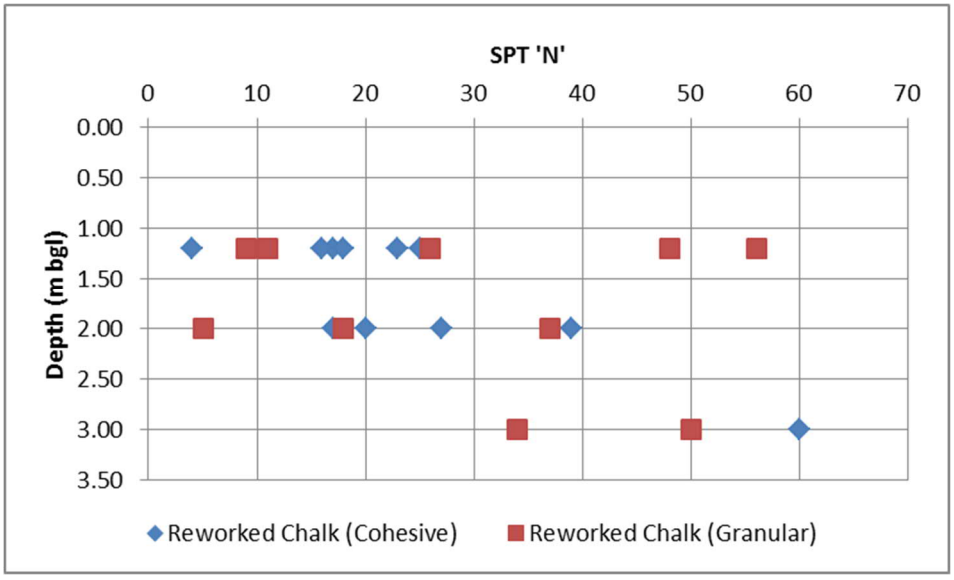


Table 4.5 Compaction Results in Reworked Chalk

	No of tests	Maximum dry density (Mg/m^3)	Optimum moisture content (%)
Reworked Chalk (Cohesive)	5	1.63-1.83, Average 1.72	14-22, Average 17.6
Reworked Chalk (Granular)	2	1.88 & 1.99	13 & 10

Table 4.6 Chemical Test Results in Reworked Chalk

	No of tests	pH	Water soluble sulphate (2:1 soil water extract) (mg/l)	Design Sulphate Class	Concrete (ACEC) Class
Reworked Chalk (Cohesive)	3	8.3-8.77, Average 8.6	7.5-63, Average 28	DS-1	AC-1
Reworked Chalk (Granular)	2	8.62 & 8.54	8.1-11.1	DS-1	AC-1

4.2.4 Structureless Chalk

Structureless chalk refers to in situ chalk weathered completely to form soils. Grade Dm is generally described as 'white orange mottled, sandy gravelly silt with occasional cobbles'. Grade Dc is described as 'White orange mottled silty sandy gravel with frequent of occasional cobbles'. The gravel is low, medium or low to medium density chalk. When the Grade Dm chalk contains bands of Grade Dc or has significant gravel content, it is classified as 'Grade Dm/Dc'.

Many window samples logs recorded structureless chalk, which are not assigned with a grading, and are simply referred as 'Weathered Chalk'. The presence and extent of the Structureless Chalk is summarised in the Table below.

Table 4.7 Summary of Structureless Chalk

Strata	Typical Description	Exploratory holes recorded	Range of thickness (m)
Grade Dm	Sandy gravelly silt, occasional cobbles	BH01, BH02, BH03, BH04 HP01, HP04, HP06, HP07, HP08, HP13, HP14 TP01, TP05, TP06, TP07, TP09, TP12, TP13, TP14 WS02, WS03, WS04, WS06, WS08, WS09, WS10, WS11, WS12, WS13 WS14, WS18, WS19, WS20, WS21, WS22, WS24, WS25A, WS26, WS28 WS29, WS30, WS33, WS34, WS41, WS42, WS43, WS48, WS54, WS55, WS56A, WS57	0.1-4.75 (a maximum of 12.5 m in BH02)
Grade Dc	Silty sandy gravel, occasional to frequent cobbles	BH01, BH02, BH03 TP01, TP05, TP06, TP07, TP13, TP14 WS01, WS08, WS09, WS11, WS12,WS13, WS17, WS18, WS23, WS31 WS33, WS35, WS37, WS38, WS41, WS51	0.3-3.8
Grade Dm/Dc	Sandy very gravelly silt	TP02, TP04, TP08, TP10, WS09 and WS33	1-2.6
Weathered Chalk (not graded)	Sandy gravelly SILT/ CLAY or Silty sandy GRAVEL	TP04, WS05, WS26, WS28, WS32, WS36, WS40, WS44, WS47, WS48 WS50, WS51, WS53, WS55, WS58, WS59	0.1-1.85

The moisture content of the structureless chalk is shown in **Error! Reference source not found.** and lies within the range of 9 to 28 %, with the majority of values lying between 16.5 – 26 %. Atterberg test results shown in **Error! Reference source not found.** show that the structureless chalk can be generally classified as low plasticity clay with some extending to intermediate plasticity.

The Particle size distribution of the structureless chalk are reported in **Error! Reference source not found.** to **Error! Reference source not found.**.

Standard Penetration test (SPT) results in **Error! Reference source not found.** indicate high variability. No specific trend is observed for SPT 'N' variation with depth.

Two hand vane tests done at depths 0.55 m and 0.6 m returned peak c_u of 26 -31 kPa and 22-31 kPa for Grade Dc and Grade Dm.

Results of compaction tests are summarised in **Error! Reference source not found.**.

Particle size distribution test results are plotted in **Error! Reference source not found.** to **Error! Reference source not found.** for Grade Dm, Grade Dc, Grade Dm/Dc and weathered chalk which is not graded.

Error! Reference source not found. provides a summary of density test results. Table 2 of CIRIA Report[10] recommends methods of identifying density scale based on intact dry density and saturated moisture content. As the test results suggest, structureless chalk of Grade Dm and Dc can be classified as medium density and low density respectively.

Chemical test findings for soil aggressively in concrete are listed **Error! Reference source not found.** along with required concrete classification.

Figure 4.9 Moisture content variation with depth of structureless Chalk

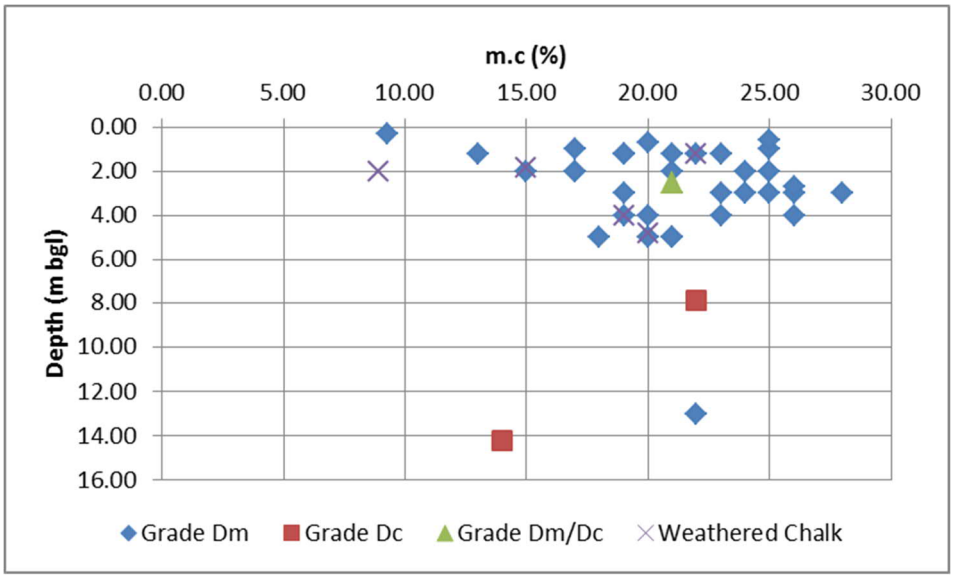


Figure 4.10 Atterberg limits of structureless Chalk

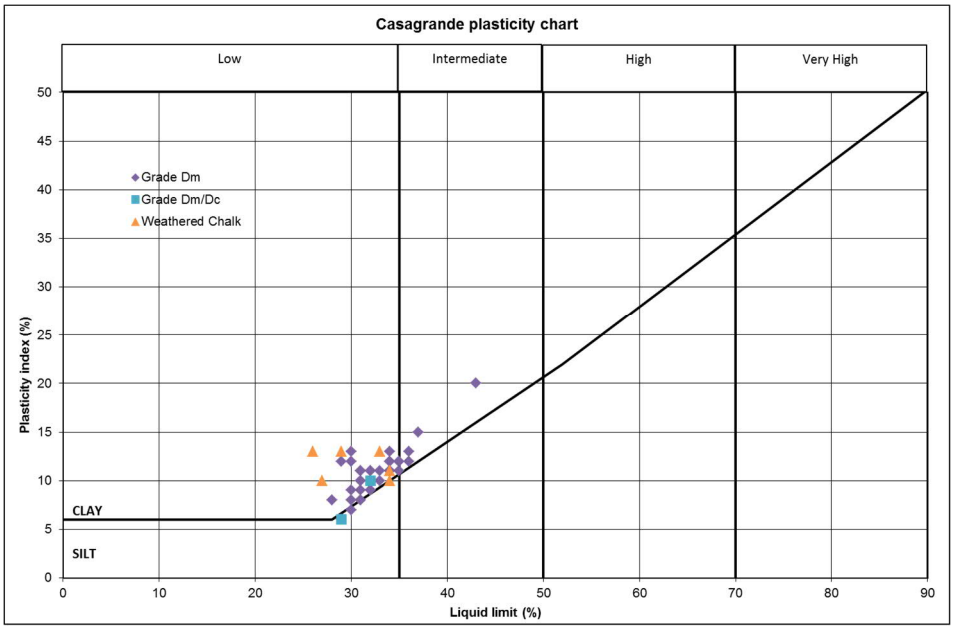


Figure 4.11 Particle size distribution of Grade Dm Chalk

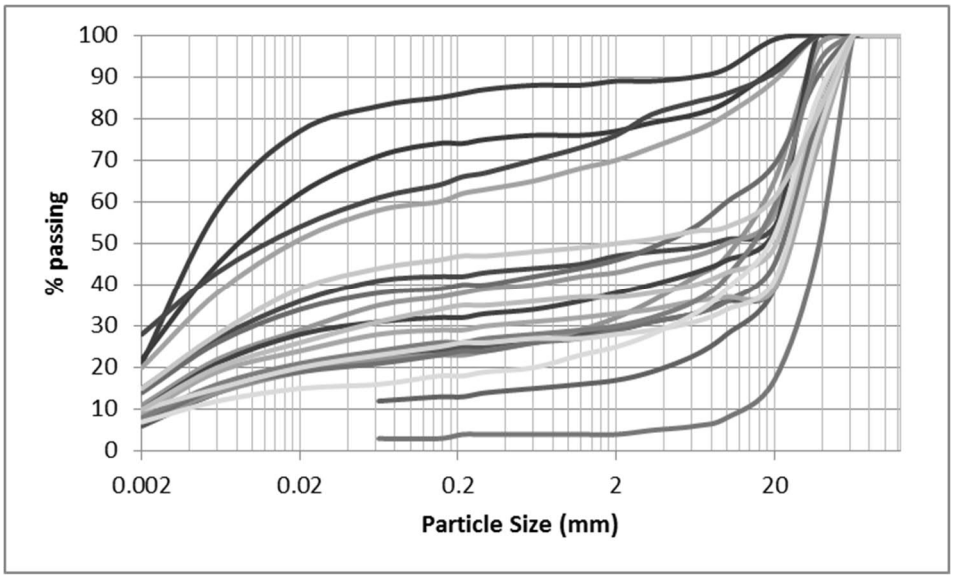


Figure 4.12 Particle size distribution of Grade Dc Chalk

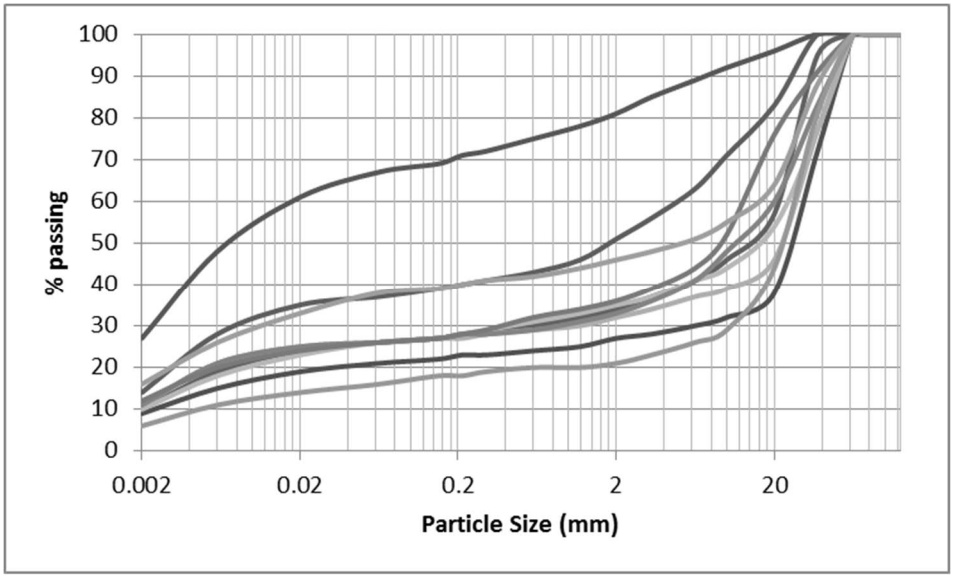


Figure 4.13 Particle size distribution of Grade Dm/Dc Chalk

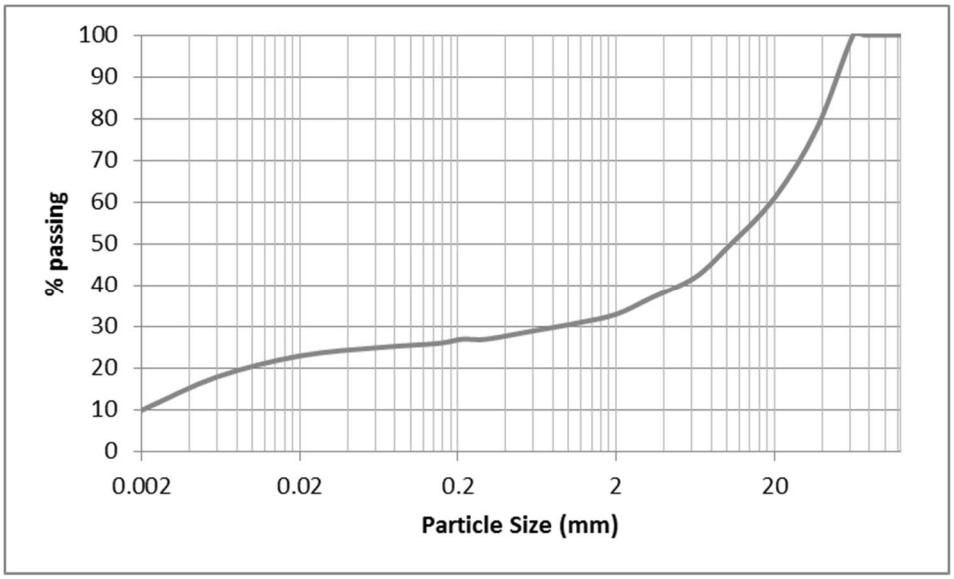


Figure 4.14 Particle size distribution of Grade weathered (not graded) Chalk

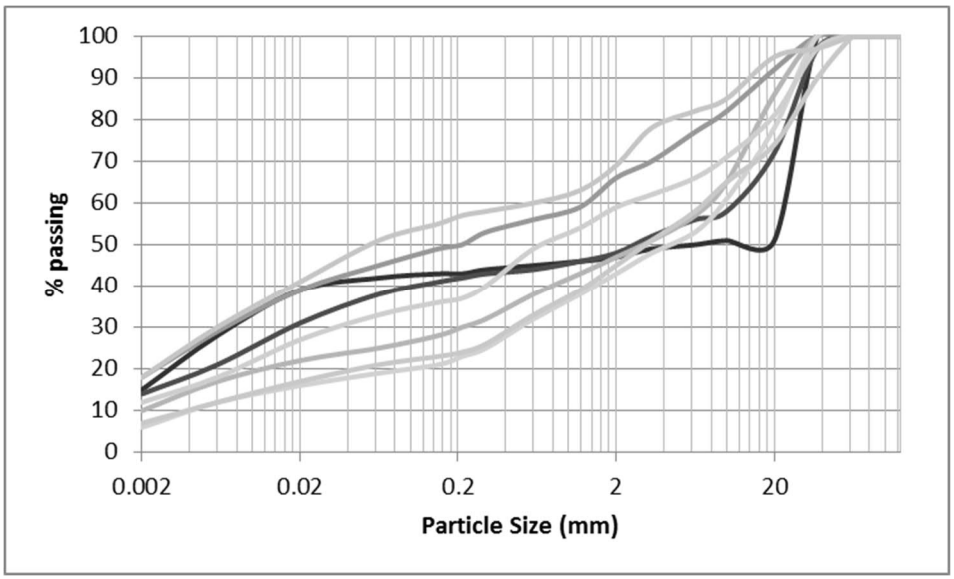


Figure 4.15 SPT 'N' with depth in structureless Chalk

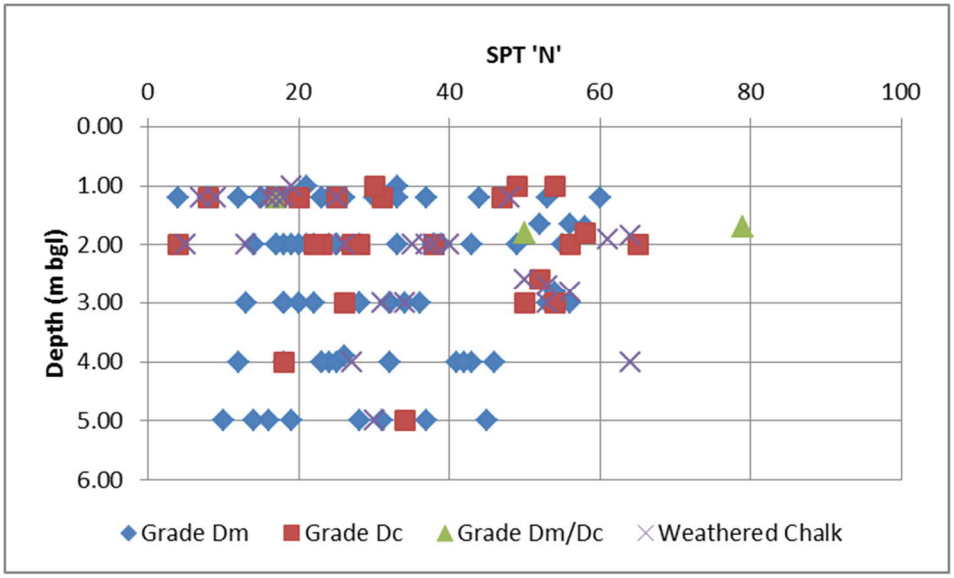


Table 4.8 Compaction Results on Structureless Chalk

	No of tests	Maximum dry density (Mg/m^3)	Optimum moisture content (%)
Grade Dm	6	1.55-1.74 Average 1.63	19-25 Average 22.2
Grade Dc	1	1.57	24
Grade Dm/Dc	1	1.57	24
Weathered Chalk	2	1.61 & 1.77	23 &16

Table 4.9 Density of structureless chalk

	No of tests	Bulk Density (kg/m^3)	Dry Density (kg/m^3)	Saturated m.c. (%)
Grade Dm	3	2037-2075 Average 2055	1660-1710, Average 1680	21-23 Average 22.3
Grade Dc	8	1613-2087 Average 1958	1290-1898 Average 1591	16-41 Average 26.5
Grade Dm/Dc	1	2091	1700	22

Table 4.10 Chemical tests (soil aggressivity in concrete) on structureless chalk

	No of tests	pH	Water soluble sulphate (2:1 soil water extract) (mg/l)	Design sulphate class	Concrete (ACEC) classification
Grade Dm	8	8.76-9.13 Average 8.92	9.6-139.9 Average 29.6	DS-1	AC-1
Grade Dc	6	8.71 – 9.16 Average 8.93	7.2-61 Average 20.4	DS-1	AC-1
Weathered Chalk	2	8.19 & 8.36	10.9 & 11.8	DS-1	AC-1

4.2.5 Structured Chalk

Structured Chalk refers to intact chalk and was proved in window sample WS12 and boreholes BH01, BH02, BH03 and BH04 with the surface at depths between 2.0 – 14 m bgl and extending to the base of the boreholes (maximum depth of 36.50 m bgl). The structured Chalk has been classified as Grade C3, Grade B3 and occasionally Grade C3/4. Chalk grouped under 'Grade C3' is described as 'very weak medium density', and Grade B3 defined as 'weak medium to high density'. The chalk is generally observed to be white mottled orange with rare black specs.

The presence and depth extent of Structured Chalk as recorded in the boreholes is summarised in **Error! Reference source not found.** . Core recovery was poor in BH01 between 7.90 m -9.0 m bgl and 9.75 m – 13.31 m bgl and therefore the chalk was not assigned any grading.

Table 4.11 Summary of structured chalk

Structured Chalk grade	Exploratory holes recorded	Depth range (m bgl)
Grade C3/4	BH03	9.70 - 20.0
Grade C3	BH01	5.80-7.90; 15.75 -17.25 and 18.05 – 36.50
	BH02	16.50 - 20.0
Grade B3	BH01	13.31 – 15.75
	BH02	14 – 16.50
	BH04	6.70 – 17.40

Six moisture content tests were conducted on structured chalk samples and the results are plotted in **Error! Reference source not found.**. Due to the limited number of tests a trend of moisture content variation within different gradings and depth is not evident.

Several tests results are available for bulk and dry density of chalk samples as listed in **Error! Reference source not found.**. Using Table 2 of the CIRIA[10] Report , the Grade B3 chalk can be classified as High density chalk and all other lower grades as medium density chalk.

Figure 4.16 Moisture content variation with depth for structured chalk

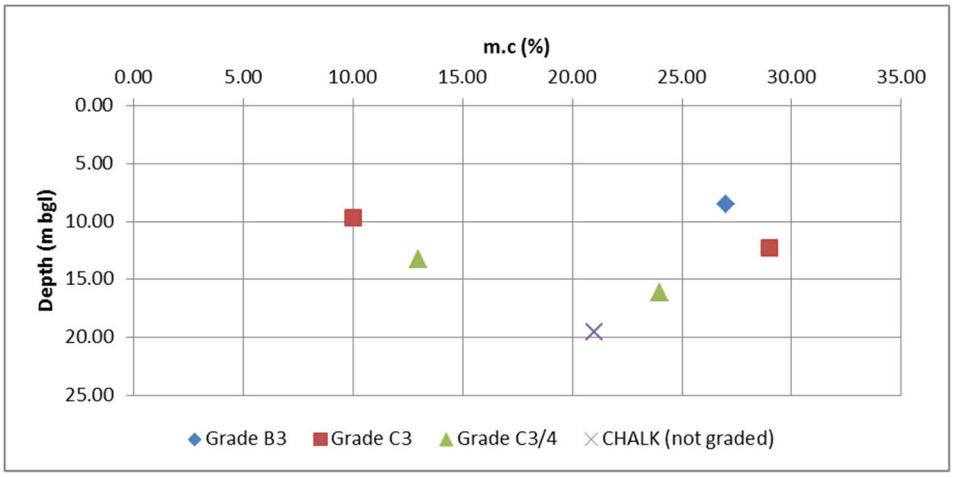
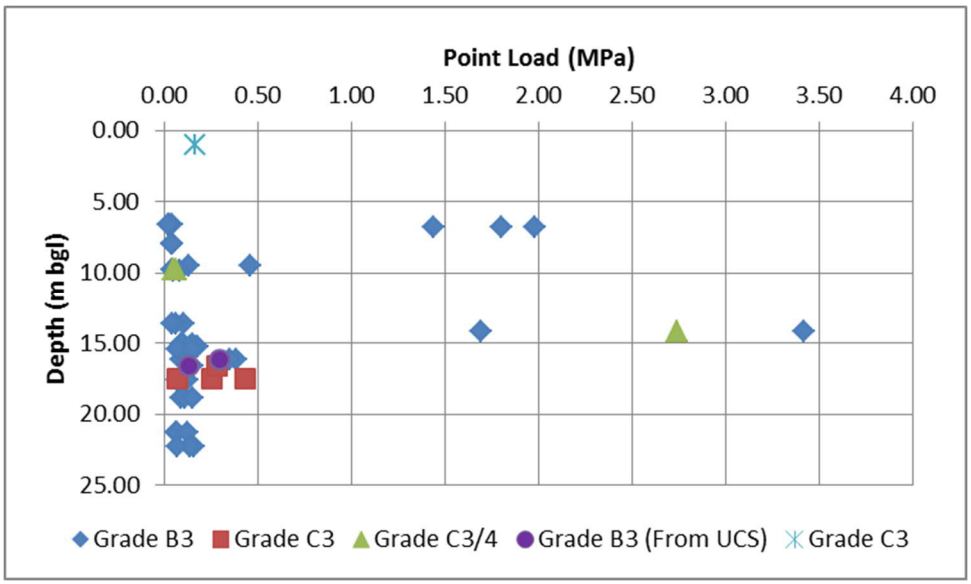


Table 4.12 Density of structured chalk

	No of tests	Bulk Density (kg/m^3)	Dry Density (kg/m^3)	Saturated m.c. (%)
Grade B3	8	1956-2277	1591-2187	8.7-26
		Average 2110	Average 1809	Average 18.6
Grade C3	7	1890 - 2067	1588 - 1809	18 - 26
		Average 2004	Average 1661	Average 23.3
Grade C3/4	5	1864-2369	1486 – 2274	6.9 - 30
		Average 2039	Average 1711	Average 23
Chalk (not graded)	4	1989 – 2352	1644 – 1889	16 - 24
		Average 2141	Average 1764	Average 20

A large number of point load tests were undertaken on chalk cores both in the axial and diametrical direction and also on irregular specimens. The point load strength $I_{s(50)}$ are plotted in **Error! Reference source not found.**. Three UCS tests results are available, one in Grade C3 chalk with a uniaxial compressive strength (q_c) of 2.91 MPa and two in Grade B3 Chalk with q_c of 2.36 MPa and 5.25 MPa, implying very weak Chalk. Three SPT 'N' results are available; 50 and 37 respectively for Grade B3 and Grade C3/4 and 59 within the ungraded Chalk. MJ Tomlinson (2001)[30] quotes a ratio of 18 for q_c/ $I_{s(50)}$ based on tests on Upper Chalk in Humberside. Applying this relationship on to q_c, the $I_{s(50)}$ would vary between 0.13 -0.29 MPa. This is consistent with the majority of the test results shown in **Error! Reference source not found.**.

Figure 4.17 Point load Vs Depth in Structured Chalk



4.3 Groundwater

No ground water strikes were observed in the exploratory holes during field work except in WS19, where ground water was struck at 3.10 m bgl but was not found to be rising during the observation period. Water was encountered with BH1-BH4 following drilling however no strike was encountered.

Ground water monitoring standpipes were installed in all the four boreholes and nearly half of the total number of window sample holes sunk.. The ground water monitoring data are presented within the factual report in Appendix A from the six weekly rounds of monitoring. Many installations in window samples were found to be dry and for those where water was encountered, it was deemed to be insufficient to sample. Ground water depth was noted to vary from 4.87 m bgl to 23.90 m bgl. Shallow ground water was noted at 1 m bgl within the WS16 installation.

4.4 Visual and Olfactory Evidence of Contamination

During the Ground investigation although thin layers of Made Ground was generally encountered across the site no evidence of hydrocarbon impacted material was encountered. All 38 PID sample registered concentrations below <0.01ppm. Potentially asbestos containing material was visually identified in one exploratory hole (WS27).

During the radiological investigation animal remains were found to be present in the vicinity of the area known as the sheep pen one of the locations namely TP15 was identified to have elevated concentration of radioactivity above background levels.

Several pots were detected in the bull pen area of the site the four pots that were sampled exhibited levels of radiation above background namely 3, 13, 16 & 19.

5. Radiological Assessment

Aurora were commissioned by Homes England to undertake radiological supervision for each phase of the ground investigation and produce a radiological remediation strategy for the work. Their report can be found in Appendix C, however is summarised below.

The radiological ground investigation was undertaken in order to target potential areas of known and potential sources of radiation including the following:

- Bull pen pots (TP15- TP17);
- Sheep pen burial; and
- Historic sludge/ waste pits/Glass pits (WS32, WS35).

The ground investigation was unable to investigate potential radiological source which were located beneath existing buildings, and adjacent to active underground service/electricity substations.

5.1 Radiological Conclusions

The full recommendations can be found in Aurora's Remediation Strategy, however they are summarised below.

The four samples taken from the Bull Pen pots and sent for laboratory analysis were classified as low level radioactive waste. Therefore, as part of redevelopment of the site soils contained within the pots, the soils should be sorted into material that is out of scope[1] and permitted waste on site under the supervision of a Radiological Protection supervisor. Following segregation and sorting, all soils and the pots used to contain the soil should be disposed of off site to an appropriate disposal facility.

The one sample taken of the animal remains from the sheep pen, which in situ testing identified containing above background levels of radiation, was sent for laboratory testing which determined the material is above the out of scope waste limits. It is recommended that this material sorted on site with the presence of a Radiological Protection Supervisor and is disposed of off-site to a suitable disposal facility and is buried at depth as recommended by Public Health England.

[1] In scope material is that covered by the Radioactive Substances Act 1993 (RSA93) (Scotland and Northern Ireland) and the sections of the Environmental Permitting Regulations 2010 (EPR10) (England and Wales) relevant to radioactive materials. Out of scope material may still be radioactive but at a level which meets the definitions of out of scope as provided in the Guidance on the scope of and exemptions from the radioactive substances legislation in the UK, Guidance Document. September 2011. Version 1.0, Defra.

6. Human Health Risk Assessment

6.1 Introduction to Generic Risk Assessment Methodology

AECOM has adopted a prescribed methodology for assessing risks to human health at a generic level (termed 'generic quantitative risk assessment' (GQRA) or 'Stage 2' in accordance with CLR11 guidance.

For sites where the initial conceptual site model (iCSM) has identified one or more complete contaminant linkage to human health, it is often necessary to clarify the risks posed by that contaminant linkage by comparison of reported soil and groundwater contaminant concentrations with guideline values that represent acceptable concentrations.

The procedures outlined in EA Science Reports SC050021/SR2 , SR3 , SR4 and SR7 have been adopted in conjunction with the amendments to generic land-use exposure models published in DEFRA research report SP1010 detailing the derivation of Category 4 Screening Levels (C4SL) to select and develop generic assessment criteria (GAC) for soil. This approach has also been adapted to develop assessment criteria for groundwater and soil vapour.

6.2 Selection and Derivation of Stage 2 GAC

6.2.1 Hierarchy of Published Sources

AECOM utilises a hierarchy of published sources for Stage 2 generic assessment criteria for soil.

The hierarchy of published sources are:

- Land Quality Management (LQM) / Chartered Institute of Environmental Health (CIEH) Suitable for Use Levels (S4UL);
- Defra Category 4 Screening Levels (C4SL);
- Environmental Industries Commission (EIC) GAC;
- AECOM GAC;
- Dutch Intervention Values (IV) and Serious Risk Concentrations (SRC); and
- United States Environmental Protection Agency (USEPA) Regional Screening Levels (RSL).

No LQM or EIC values are available for lead, and therefore the published C4SLs for lead are the default soil GAC. Further consideration of Defra SP1010 C4SLs for other substances is made where appropriate, subject to the current limited availability to six substances.

There are no published sources of relevant GAC for non-potable groundwater and soil vapour.

6.2.2 Application of GAC to Site Data

A typical first step is to compare individual soil concentrations to the GAC in order to establish whether further more detailed assessment and/or potentially remediation is required. This comparison can be expressed numerically as a Hazard Quotient (HQ):

$$HQ = \frac{Sample\ Concentration}{GAC}$$

Dependent on the assessment assumptions and uncertainties, a HQ< 1 indicates an acceptable level of risk from the substance being evaluated. The assessment of cumulative risk from multiple substances is not required at a GQRA level with the exception of TPH. In accordance with EA science report P5-080/TR3, a hazard index (HI) is calculated for each individual sample based on the summation of the HQ for each TPH fraction.

Statistical analysis may be warranted, if justified by the available data, to support initial GAC comparisons to individual reported concentrations. For ground investigations of contaminated land sites where judgemental sampling is often employed and representative datasets are small statistical analysis is not viable.

In accordance with EA guidance co-authored by AECOM, GAC can be used as a starting point for evaluating long-term risks to human health from substances in soil. They address one specific consideration – long-term adverse effects on human health – and are designed to indicate where long-term (chronic) human health soil exposure risks are considered to be tolerable or minimal. They do not represent the "trigger" for an unacceptable risk under Part 2A of EPA 1990, and they do not address risk related to construction workers, acute exposure, ecology, controlled waters or building materials, they do not inform on the geotechnical suitability of the soil, and they do not inform on the aesthetic quality of the soil – both visual and olfactory. Therefore the GAC have not been explicitly derived to define remediation standards and are just one component in the assessment of whether soil is suitable for use.

It is good practice to use multiple lines of evidence to support GQRA conclusions.

As there is no known historic use age of hexavalent chromium on the site total chromium has been screened against trivalent chromium GACs

6.3 Proposed Land Use Scenario

The proposed redevelopment scenario selected for the site is "residential with home grown produce." This human health exposure scenario is considered to be conservatively protective of all future end-uses (based on default modelling scenarios).

6.4 Exposure Scenario Modelling Parameters

The exposure pathways modelled in CLEA for derivation of the assessment criteria are listed in Table 6.1. These are the default exposure pathways for the scenario "Residential with home grown produce" modelled to derive GAC against which to screen site data for this land use.

Table 6.1 Exposure Pathways

Exposure Pathway	Residential with home grown produce
Soil and indoor dust ingestion	✓
Ingestion of soil attached to fruit/vegetables	✓
Ingestion of fruit/vegetables	✓
Dermal contact with dust (indoors)	✓
Dermal contact with soil (outdoors)	✓
Inhalation of dust (indoors)	✓
Inhalation of soil (outdoors)	✓
Inhalation of soil vapour (indoor and outdoor)	✓
Groundwater vapour inhalation (indoor and outdoor)	✓

In order to provide the most conservative assessment the lowest TOC >=0.58 to <1.45% was used. With a soil type 'Sand' to calculate the GACs.

It should be noted that Stage 2 assessments tend to be relatively conservative and therefore suitable for screening the potential chronic long term risks to human health at a site. Full details of the physical and chemical parameters used in the derivation of these numbers can be made available upon request.

6.5 Soils Analytical Data

Soil results and environmental laboratory certificates are provided in the Factual report in Appendix A. The data has been compared to the appropriate GAC and these are presented in Appendix E.

The majority of determinants were detected in levels below the GAC in the majority of samples however, two samples from locations WS43 (depth 0.2m) and BH01 (depth 0.2m) contained arsenic concentrations above the GAC screening criteria. Four samples from locations (BH03, WS28, WS38 and WS43) contained PAH congeners with concentrations above the GAC screening criteria for individual PAHs, and eight samples (the four above plus a further four samples (WS25, WS25A, WS39 and WS56) additionally exceeded the screening criteria for benzo(a)pyrene when considering the additive risk from the sum of genotoxic PAHs. Two samples (WS28 and

WS38) also contained TPH with a summed concentration that resulted in a hazard index greater than the threshold of 1.0. The TPH is likely to be associated with the PAHs detected in the same samples.

The maximum concentrations and strata descriptions of the samples with GAC exceedances is presented in Table 6.2 below.

Table 6.2 Summary of Contaminant Exceedances

Determinand	All Data Summary (mg/kg)			GAC mg/kg	n > GAC
	n	Min	Max		
HEAVY METALS					
Arsenic	107	<0.6	85.6	37	2
PAHS					
Dibenz(a,h)anthracene	107	<0.023	4.37	0.24	3
Benzo(b)fluoranthene	107	<0.015	18.8	2.6	3
Chrysene	107	<0.01	27.4	15	2
Benzo(a)pyrene	107	<0.015	22	0.79*	8
Benz(a)anthracene:	107	<0.014	24.7	7.2	2
TPH					
TPH Hazard Index	107	<0.004	1.77	1.0 (unitless)	2

* Benzo(a)pyrene as a surrogate marker for the sum of genotoxic PAHs

6.6 Asbestos in Soils

One hundred soil samples were screened for asbestos. Two samples at locations BH03 (depth 0.5m) and WS28 (depth 0.3m) were found to contain asbestos fibres. The sample taken from BH03 contained chrysotile fibres at a mass of 1% and sample taken from WS28 contained amosite fibres typical of asbestos insulation board (0.0043%). Both these samples were collected from the made ground strata.

A fragment of cement roofing (suspected Asbestos Containing Material) was observed within WS27 at 0.2m bgl.

The soil results for asbestos are shown in the environmental laboratory certificates provided in the Factual Report, contained within Appendix A.

6.7 Discussion of Results

Eight soil samples (BH03, WS25, WS25A, WS28, WS38, WS39, WS43 and WS56) contained PAHs, two contained TPH (WS28 and WS38) and two samples contained arsenic (BH01 and WS43) above the human health, residential with plant uptake screening criteria. All exceedances were confined to made ground and located from depths between 0.2 and 0.5m bgl. All of the samples with PAH exceedances were either within strata described as containing bituminous material or below asphalt hardstanding. These samples are likely to be representative of tarmacadam/asphalt material present at the near surface hardstanding. The two arsenic exceedances are isolated and therefore not considered to be representative of the concentrations across the site.

Asbestos was detected in 2 out of 100 samples in concentration no greater than 1%. Therefore, it is considered unlikely that asbestos is widespread across the site however isolated and random pockets may exist.

6.8 Identification and Management of Acute Risks

The chronic Human Health Risk Assessment presented within this report does not provide a risk assessment with regards to acute risks to construction and maintenance workers.

It is recommended that prior to any earthworks commencing, an appropriate health and safety risk assessment, in accordance with Construction Design Management 2015, should be carried out with regards to acute risk, by the Principal Contractor, in accordance with current health and safety regulations. This assessment should cover potential risks to both construction staff and the local population. Based on the findings of this risk assessment, appropriate mitigation measures should be implemented during the construction period (e.g. in general accordance with CIRIA C552).

7. Controlled Waters Risk Assessment

7.1 Groundwater and Surface Water Generic risk assessment methodology

AECOM has a prescribed methodology for assessing risks to controlled waters at a generic level, termed 'generic quantitative risk assessment' (GQRA) or 'Stage 2' in CLR11 .

For sites in England and Wales where the conceptual site model has identified a potentially complete contaminant linkage to controlled waters, the first step is to define a suitable water target value (WTV) for the identified point of compliance upon which the risk assessment can be based. For groundwater compliance points the Drinking Water Standard (DWS) is used in England and Wales while for surface water compliance points an Environmental Quality Standard (EQS) is adopted.

The Stage 2 assessment involves the comparison of measured soil leachate and groundwater concentrations against the WTV. If the concentrations are below the water target concentrations, then the risks are considered not to be of concern based on the results available. If the concentrations in the source are above the WTV, there is a potentially unacceptable risk to groundwater or surface water which requires further qualitative or quantitative assessment.

Whilst the hierarchies detailed above are appropriate for most sites there may be site specific conditions which require review of alternative criteria to be adopted, i.e. where an aquifer is located in an area of low environmental sensitivity and/or is considered unlikely to be utilised for potable supply or to provide base-flow to surface water. Where alternative criteria have been considered this will be highlighted.

For England and Wales, Stage 2 WTV have been selected following the Level 1 assessment methodology detailed in the EA's Remedial Target Methodology (RTM). The results are interpreted to assess potential risks to controlled waters. It should be noted that for a risk to be present then a relevant contaminant linkage must be present.

7.1.1 Stage 2 Assessment for Groundwater Data

7.1.2 Selection of Stage 2 WTV

7.1.2.1 Protection of Groundwater

The underlying bedrock chalk geology (Seaford Chalk, Lewes Nodular Chalk and Chalk Rock Formations) are classified by the Environment Agency as Principal Aquifers and are therefore a potential resource, thus the data has been screened against Drinking Water Standard (DWS) Values. The selection process used to determine the DWS is presented below in order of preference:

- Drinking Water Standards from the Water Supply (Water Quality) Regulations 2016;
- World Health Organisation (WHO) drinking water standards;
- WHO (2008) proposals for drinking water guidelines which are based on the TPHCWG approach for TPH fractions.
- Drinking Water Guidelines calculated using the WHO methodology;
- US Environmental Protection Agency, Regional Screening Levels, May 2019, Tapwater.
- Draft health protective concentration from California Environmental Protection Agency (1999) Ethanol in Gasoline; and,
- Minimum from Taste/odour Guidelines for Drinking Water Quality (4th Edition inc. the First Addendum). WHO 2017.

7.1.2.2 Protection of Surface Waters

The nearest surface water course is the River Pang which runs along the southern boundary of the site to the south of High Street flowing in south east direction. A drainage ditch also runs to the east of the site flowing south towards the River Pang therefore the data has been screened against Environmental Quality Standards.

The selection process used to determine the freshwater is presented below in order of preference:

- United Kingdom environmental quality standards for Annual Average and Maximum Allowable Concentration including SEPA WAT-SG-53;
- European Union Environmental Objectives (Surface Waters) (Amendment) Regulation 2015; and
- PNEC derived for EU REACH registration dossiers/chemical safety reports (via the Fuel Ether REACH Consortium FERC).

When an EQS or PNEC is not available, a GAC will not be set. However, it is noted that the data has been screened against DWS also as above.

7.2 Soil Leachate Analytical Results

Thirty soil samples were selected on site were submitted for leachate analysis and compared to appropriate DWS and EQS screening criteria. The assessment tables are presented in Appendix E and environmental laboratory certificates are provided in the WYG factual report presented in Appendix A.

The majority of compounds analysed for were not identified at concentrations above the laboratory method limit of detection and no compounds were identified above the relevant DWS WTV.

PAHs exceeded EQS screening levels at all locations. Elevated concentrations of heavy metals (particularly copper) were also present within the majority of the leachate samples. Two samples had EQS screening exceedances of cyanide. A summary of the EQS GAC exceedances is shown in Table 7.1.

Table 7.1 Summary of CoPC Exceedances of EQS in Leachates

Determinand	All Data Summary			GAC EQS (fresh)	n > GAC
	n	Min	Max		
PAH (µg/L)					
Anthracene	30	<0.01	0.421	0.1	3
Fluoranthene	30	0.0152	6.17	0.0063	30
Benzo(a)pyrene	30	<0.002	0.184	0.00017	11
Benzo(g,h,i)perylene	30	<0.005	0.194	0.0082	5
Benzo(b)fluoranthene	30	<0.005	0.23	0.017	4
Benzo(k)fluoranthene	30	<0.005	0.0936	0.017	3
HEAVY METALS (µg/L)					
Cadmium	30	<0.08	0.0926	0.08	1
Chromium	30	<1	18.8	4.7	1
Copper	30	<0.3	9.47	1	23
Lead	30	<0.2	7	1.2	2
Nickel	30	<0.4	10.4	4	1
Zinc	30	<1	231	10.9	4
INORGANICS (mg/L)					
Cyanide	30	<0.05	0.083	0.001	2

7.3 Groundwater Analytical Results

Five water samples were submitted for groundwater analysis and compared to appropriate DWS and EQS screening criteria. The results provided in the WYG factual report presented in Appendix A and in the Tables in Appendix E. Although the majority of determinands were detected in concentrations below the EQS and DWS WTV several determinands were identified to have concentrations above the WTV. A summary is presented in Table 7.2 and Table 7.3 for EQS and DWS, respectively.

Table 7.2 Summary of CoPC Exceedances of EQS in Groundwater

Determinand	All Data Summary			GAC EQS (fresh)	n > GAC
	n	Min	Max		
PAH (µg/L)					
Fluoranthene	5	<0.005	0.0336	0.0063	4
Benzo(a)pyrene	5	<0.002	0.0197	0.00017	4
Benzo(b)fluoranthene	5	<0.005	0.0274	0.017	1
HEAVY METALS (µg/L)					
Copper	5	0.777	10.8	1	4
Chromium	5	1.31	11.6	4.7*	3
Zinc	5	1.72	19.8	10.9	1
PHTHALATES (µg/L)					
Bis(2-ethylhexyl) phthalate	5	<2	3.21	1.3	2

*WFD England/Wales. 2015 - Freshwater Standards

Table 7.3 Summary of CoPC Exceedances of DWS in Groundwater

Determinand	All Data Summary			GAC DWS	n > GAC
	n	Min	Max		
PAH (µg/L)					
Benzo(a)pyrene	5	<0.002	0.0197	0.01	1
INORGANICS (mg/L)					
Nitrate (as NO3-)	5	42.5	53.7	50	2

7.4 Discussion of Results

Soil leachate analysis was undertaken on thirty soil samples. The majority of compounds analysed for were not identified at concentrations above the laboratory method limit of detection and no samples were detected above the UK DWS in the leachate results. Only Nitrate and Benzo(a)pyrene were detected above the DWS. Nitrate was present in all samples and therefore considered to be background concentrations relating to the primarily agricultural nature of the surrounding area. It is also noted that the exceedances were marginal (<10% above the WTV). Benzo(a)pyene was detected above the DWS in 1 out of 5 samples with a concentration of 0.0197 ug/l in BH03. However the concentration within the on site ground water abstraction well is less the 0.002ug/l and therefore it may be localised and not to be a risk to impacting the on-site groundwater abstraction.

A limited number of PAHs, heavy metals and cyanide were recorded above EQS in the leachate results. The EQS are extremely conservative (illustrated by the fact that the laboratory method detection limits for fluoranthene and benzo(a)pyrene are greater than the EQS-Fresh GAC). Furthermore, the exceedances have been observed from the leachate analysis which owing to the 10:1 ratio method of their preparation are extremely conservative.

Copper was present above EQS in the majority of leachate samples, including within natural strata down to 1.0m. with a maximum concentration of 9.47 ug/l which is similar to the concentration within groundwater on the site. Background concentrations within nearby chalk aquifers in Hampshire and the Colne and Lee Valley catchment has been measure by the British Geological Society and Environment Agency to be between <10- 31.8 ug/l and 0.4-37.1 ug/l respectively. It is therefore considered that the copper concentrations on within groundwater represent background concentrations and therefore copper concentrations within the leachate will not increase background concentrations.

The depth of groundwater on site has been identified as between 94.18m AOD and 95.68m AOD which is below the level of the River Pang which Ordnance survey mapping indicates to be 101m AOD. Therefore it is unlikely that groundwater will reach surface water receptors.

In addition to leachate analysis, groundwater analysis was carried out at five locations. The majority of results were below the WTV, however on occasions a limited number of some PAHs, metals, phthalates and nitrates were present above the relevant EQS screening criteria.

Only Nitrate and Benzo(a)pyrene were detected above the DWS. Nitrate was present in all samples and therefore considered to be background concentrations relating to the primarily agricultural nature of the surrounding area. Benzo(a)pyene was detected slightly above the DWS in 1 out of 5 samples with a concentration of 0.0197 ug/l in BH03. However the concentration within the ground water abstraction well is less the 0.002ug/l and therefore it may be localised and not to be a risk to impacting the on-site groundwater abstraction.

Metals, PAHS and Bis(2-ethylhexyl) phthalate were detected in concentration above the conservative EQS values. However, the depth of groundwater on site has been identified as between 94.18m AOD and 95.68m AOD which is below the level of the River Pang which Ordnance survey mapping indicates to be 101mAOD therefore it is unlikely groundwater will reach surface water receptors.

8. Ground Gas Risk Assessment

8.1 Approach to Assessment

The generation or migration of ground gases from man-made or natural sources can pose a major hazard to buildings or other structures if the gases are able to accumulate within confined spaces. In terms of the proposed development, the main risks are that ground gases may accumulate in confined spaces in future site infrastructure.

It is understood that the proposed residential development will comprise of residential units, with private gardens, soft landscaped areas, and associated access roads. There may be potential for the build-up of ground gas in enclosed spaces. In order to determine whether gas generation is occurring at a significant rate within the site, a ground gas monitoring programme was implemented based upon the British Standard code of practice BS8485:2015+A1:2019 including assessment based upon the CIRIA Report C665, 2007.

In accordance with BS8485:2007 the timing of these visits was designed to provide gas monitoring results across a range of atmospheric pressures and conditions including low and falling pressures. Borehole gas screening values (calculated from the borehole flow rate multiplied by the concentration of the particular gas being considered, as defined by Wilson and Card, 1999) were then compared to the CIRIA Report C665, 2007 outlined in the BS8485:2015+A1:2019.

8.2 Data Collection

Ground gas monitoring was been undertaken on all monitoring wells on six occasions between the 15th of March and 17th April 2019.

8.3 Ground Gas Monitoring Results

The gas monitoring results are presented in Appendix A and a summary of the monitoring round is presented below in Table 8.1.

Table 8.1 Ground Gas Monitoring Data

Round No.	Date	Atmospheric Pressure Status*	Steady State (Maximum) Methane %v/v	Steady State (Maximum) Carbon Dioxide %v/v	Steady State (Minimum) Oxygen %v/v	Maximum Flow Rate (L/h)
Round 1	15/03/19	Rising*	0.1	2.6	18.2	0
Round 2	22/03/19	Falling	0.1	4.3	15.6	0.6
Round 3	28/03/19	Falling	0.1	2.5	17.4	0.6
Round 4	04/04/19	Falling	0.1	2.0	17.5	0.6
Round 5	11/04/19	Rising	0.1	5.8	12.3	0.6
Round 6	17/04/19	Rising	0.1	1.7	17.8	0.6

*taken from Benson weather station
https://www.weatheronline.co.uk/weather/maps/city?LANG=en&CEL=C&SI=mph&MAPS=over&CONT=ukuk&LAND=UK&REGION=0003&WMO=03658&UP=0&R=0&LEVEL=150&NOREGION=1

8.4 Discussion of Results

The majority of locations recorded low or negligible flow rates. The maximum flow rate detected at all locations over the six monitoring rounds was 0.6L/h.

Slightly elevated concentrations (1.0-5.0 ppm) of carbon monoxide were encountered at all locations during the six monitoring rounds. Occasional spikes (5.0-20.0 ppm) were also observed in WS08, WS16, WS20, WS40 and WS55, most of which occurred within the first two monitoring rounds. Observed levels declined to between 0 and 4.0 ppm across all locations for the final two rounds.

Concentrations of hydrogen sulphide remained between 0.0 and 2.0 ppm across all monitoring rounds.

Carbon dioxide and methane was recorded at all locations during monitoring, these are summarised below:

- Concentrations of carbon dioxide were encountered at all locations, the highest of which was at BH03 (5.8%v/v) (monitoring round 5).
- Concentrations of CH4 remained between 0 and 0.1% v/v were encountered at all locations, across all rounds.

8.5 Classification of Gas Regime & Characteristic Situation

The following classification of the site gas regime is based on the findings of the six gas monitoring visits undertaken by WYG following the intrusive investigation. The classification is based upon a location specific GSV. The GSV for each location is calculated as the gas flow rate in L/h multiplied by the gas readings as a fraction of the volume. The GSVs for carbon dioxide and methane for each round of monitoring at the site are calculated below in Table 8.5-1.

The results arepresented in in Table 8.2.

Table 8.2 Gas Screening Values and Characteristic Situation

Phase No.	Max Flow	Max Methane (%)	Max Carbon Dioxide (%)	Methane GSV	Carbon Dioxide GSV	Characteristic situation
Max of Rounds 1-6	0.6	0.1	5.8	0.0006	0.0348	1

Although gas screening values classifies the site as CS1 carbon dioxide was in identified BH03 above 5% in a single monitoring round. As such in accordance with CIRIA C665 consideration may have to be given to increasing the CS1 to CS2 in this location.

8.6 Gas Risk Mitigation Measures

Based upon the GSVs calculated for the site from the gas monitoring program the vast majority of the site has been classified as a CIRIA C665 CS1 site (very low hazard potential). Although concentrations of Carbon Dioxide of greater than 5% were encountered in BH03 on one occasion potentially is increasing the characteristic situation to CS2. However due to the response zone of BH3 being is 7.90-20.00m bgl it is unlikely the concentration is representative of gas concentrations at foundation level on the site therefore it is considered that the entire site should be classified as CS1.

Due to the likely residential nature of the potential future site development the designated building type is Type A (see Table 3 of BS8485-2015). This is classed as private ownership with no building management controls on alterations to the internal structure, the use of rooms, the ventilation of rooms or the structural fabric of the building. Some small rooms present. Examples include private housing and some retail premises.

With a Type A building, under CS1, no special gas protection measures would be necessary as part of the proposed future development. If the final design for the development includes changes to current site levels, creation of deeper foundations, such as stone columns etc, there may be changes to the ground gas regime at the site and a re-assessment of the ground gas risk would need to be undertaken.

9. HazWasteOnline Assessment

Laboratory results from 107 soil samples were assessed by the HazWasteOnline assessment tool to establish hazardous waste properties. The results can be found in **Error! Reference source not found.**.

The results show out of the 107 samples 3 were classified to poses hazardous waste (HP8 Corrosive) properties due to elevated pH namely BH1 0.2 BH2 0.3 and BH3 0.5 m, each of which constituted Made Ground deposits.

Furthermore 78 samples we classified as potentially hazardous until shown otherwise dues to HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C". However as no free phase product/flammable liquid waste was detected in any of the soil sample it is considered these samples do not poses flammable properties and therefore non hazardous.

10. Revised Conceptual Site Model and Risk Assessment

10.1 Introduction

This revised CSM has been updated based on the findings of the intrusive investigation and is summarised below. The revised CSM is based on the proposed development to allow for redevelopment as residential housing with some employment (commercial) use, and includes for the expected the standard demolition and construction works that would be required to allow the proposed development e.g. demolition and removal of existing buildings, removal of former drainage system including sludge beds etc. The revised CSM also does not include the risk to construction workers and off-site human health receptors during the demolition and construction works as discussed in section 10.6 below.

10.2 Sources: Chemicals of Potential Concern (CoPC)

Potential Sources	Activity/Location	Contaminants of Concerns	Considered in CSM following Ground Investigation
S1- Buried Radioactive material	On Site: Bull Pens (Area 1) Results from Aurora radiological investigation positively identified radioactive contamination in this area	Radioactive Contamination	Yes – radioactive materials were encountered on site during the ground investigation.
	On Site: Dung Yard/Sheep Pens (Area 2) Results from Aurora radiological investigation positively identified radioactive contamination in this area		
	On Site: South of Dung Yard Barn (Area 3) Results from Aurora radiological investigation indicated that this area was not investigated due to access restrictions		
	On Site: East of Dung Yard Barn (Area 4) Results from Aurora radiological investigation did not identify radioactive contamination in this area		
	On Site: North-east of Plowright Building Sludge Beds (Area 5) Results from Aurora radiological investigation did not identify radioactive contamination in this area		
S2- Potentially contaminated Made Ground	On-Site: Built up areas including roads, accommodation buildings, laboratories, barns and former footprints. The site is terraced and made ground may have also been used for engineering this including retaining walls.	Human health: Soil: Arsenic, polycyclic aromatic hydrocarbons (benz(a)anthracene, chrysene, benzo(a)pyrene, dibenz(a,h)anthracene, benzo(b)fluoranthene), biological hazards and asbestos. Controlled Waters – Groundwater: Groundwater: Copper, zinc, polycyclic aromatic hydrocarbons (fluoranthene, benzo(a)pyrene, benzo(b)fluoranthene), bis(2-ethylhexyl) phthalate, nitrate. Controlled Waters – Surface Water: Soil leachate: Cadmium, copper, lead, nickel, zinc,	Yes

		polycyclic aromatic hydrocarbons(anthracene, fluoranthene, benzo(a)pyrene, benzo(g,h,i)perylene, benzo(b)fluoranthene, benzo(k)fluoranthene) and cyanide. Groundwater: Copper, zinc, polycyclic aromatic hydrocarbons (fluoranthene, benzo(a)pyrene, benzo(b)fluoranthene), bis(2-ethylhexyl) phthalate, nitrate.	
S3- Laboratories, barns and Buildings	On Site: There are a significant number of laboratories, barns and buildings scattered across the site	Asbestos, radioactive contamination, biological contamination	No – it is assumed that former laboratories, barns and buildings will be removed during demolition works and disposed of off-site at a suitable licensed facility.
S4- Drains	On-Site: Aurora and Zetica 2017 survey information identified fractures, displaced joints and root growth into drains.	Asbestos, radioactive contamination, biological contamination	Yes, whilst PHE recommended removal of the drains, there remains a risk from contaminants that have previously leaked from the drains.
S5- Institute Tip	Off-Site: Previously used to tip incinerated ash.	Radioactive contamination Land gas generation (carbon dioxide, methane)	No – ground gas was not encountered in locations close to this off-site source.
S6- Storage and use of fuel	On-Site: Fuel storage for the boiler house, incinerators, effluent treatment plant, Sludge drying beds	Fuels (ie. Kerosene, gas oil/diesel). PAHs	Yes
S7- Electricity Substations	On-Site: There are 5 known substations located on the site	Polychlorinated biphenyls (PCBs) and hydrocarbons	No- no evidence of contamination was encountered
S8- Churn Road Landfill	Off-Site: Former Chalk Pit also used historically as a refuse tip.	Land gas generation (carbon dioxide, methane)	No – ground investigation did not record elevated landfill gases on site.
S9 Natural Strata	Onsite: Area located in lies within an intermediate probability radon area	Radon/ Carbon Dioxide	Yes
S10- Effluent treatment system	On-site: Associated with treatment of discharges from laboratories	Chemical, radioactive and biological contamination	Yes
S11 – Sludge Drying Beds (Historic and recent)	Onsite: Historic: Along the northern boundary of Zone 2 Recent: To the north of HSU (CO44) and the skip yard	Chemical, radioactive and biological contamination	Yes
S12 – Buildings / Buried ducting	Onsite: Former Structures	Asbestos Containing materials	No – it is assumed that building and buried ducting will be removed as part of demolition works.

10.3 Pathways for Migration

The principal contamination pathways for migration may include the following:

P1 – Direct contact with soil/groundwater (ingestion and dermal);

P2 – Inhalation of dust and/or vapours;

P3 – Ingress and /or accumulation of ground gas/vapours;

P4 - Inhalation of ground gas;

P5 – Leaching of contaminants and vertical migration into groundwater;

P6 – Lateral migration of contaminants within groundwater; and

P7 – Direct contact of contaminated ground/groundwater with in-ground structures and ecological receptors.

10.4 Potential Receptors

Human Health Receptors

R1- Final end users (residential and commercial);

R2- Construction/Maintenance workers; and

R3- Adjacent site users.

Controlled Waters Receptors

R4- Groundwater (Principal Aquifer. SPZ and onsite borehole); and

R5- Surface Water (River Pang).

Property Receptors

R6- Future proposed building structures; and

R7 – Services (potable water).

Ecology

R8 -Flora and Fauna.

10.5 Contaminant Linkages and Risk Evaluation

Current best practice recommends that the determination of hazards due to contaminated land is based on the principle of risk assessment, as outlined in the Environment Agency guidance on Model Procedures for the Management of Land Contamination (CLR11).

For a risk to be present, there must be a viable contaminant linkage; i.e. a mechanism whereby a source impacts on a sensitive receptor via a pathway.

Assessments of risks associated with each of these contaminant linkages are discussed in the following sections.

Using criteria broadly based on those presented in the Construction Industry Research and Information Association publication C552 (CIRIA 2001) and R&D 66 (NHBC/EA/CIEH, 2008), the magnitude of the risk associated with potential contamination at the site has been assessed. To do this an estimate is made of:

- The magnitude of the potential consequence (i.e. severity);
- The magnitude of probability (i.e. likelihood).

The severity of the risk is classified according to the criteria in Table 10.1 below;

Table 10.1 Risk Severity

Severe	Acute risks to human health likely to result in "significant harm" (e.g. very high concentrations of contaminants/ground gases) Catastrophic damage to buildings/property (e.g. by explosion, sites with high gassing potential, extensive VOC contamination) Major pollution of controlled waters (e.g. surface watercourses or major aquifers/source protection zones) Short term risk to a particular ecosystem
Medium	Chronic (long-term) risk to human health likely to result in "significant harm" (e.g. elevated concentration of contaminants/ground gases) Pollution of sensitive controlled waters (e.g. surface watercourses or major/minor aquifers) Significant effects on sensitive ecosystems or species
Mild	Pollution of non-sensitive waters (e.g. smaller surface watercourses or non-aquifers) Significant damage to crops, buildings, structures or services (e.g. by explosion, sites with medium gassing potential, elevated concentrations of contaminants)
Minor	Non-permanent human health effects (requirement for protective equipment during site works to mitigate health effects) Damage to non-sensitive ecosystems or species Minor (easily repairable) damage to buildings, structures or services (e.g. by explosion, sites with low gassing potential)

The probability of the risk occurring is classified according to the criteria shown in Table 10.2.

Table 10.2 Risk Probability

High Likelihood	Contaminant linkage may be present that appears very likely in the short-term and risk is almost certain to occur in the long term, or there is evidence of harm to the receptor
Likely	Contaminant linkage may be present, and it is probable that the risk will occur over the long term
Low Likelihood	Contaminant linkage may be present and there is a possibility of the risk occurring, although there is no certainty that it will do so.
Unlikely	Contaminant linkage may be present but the circumstances under which harm would occur even in the long-term are improbable.

An overall evaluation of the level of risk is gained from a comparison of the severity and probability, as shown in Table 10.3.

Table 10.3 Risk Evaluation

		Severity			
		HIGH	MEDIUM	MILD	MINOR
Likelihood	HIGH	Very High	High	Moderate	Moderate/Low
	LIKELY	High	Moderate	Moderate/Low	Low
	LOW	Moderate	Moderate/Low	Low	Very Low
	UNLIKELY	Moderate/Low	Low	Very Low	Very Low

The contaminant linkages which have been identified on the site are presented in Table 10.4 along with an evaluation of the potentially associated risks. The level of risk is determined based on the current condition of the site not including the effects of any mitigation measures.

Table 10.4 Contaminant Linkages

Source	Transport Pathway	Receptor	Consequence of risk being realised	Probability of risk being realised	Risk Classification	Justification	Contaminant Linkage ID
S1- Buried Radioactive material	P1 – Direct contact with soil/groundwater (ingestion and dermal)	R1- Final end users (residential and commercial)	Medium	Likely	Moderate	The four samples taken from the Bull Pen pots and sent for laboratory analysis were classified as low level radioactive waste. The one sample taken of the animal remains from the sheep pen, which in situ testing identified containing above background levels of radiation, was sent for laboratory testing which determined the material is above the out of scope waste limits.	1
	P2 – Inhalation of dust and/or vapours	R1- Final end users (residential and commercial)	Medium	Likely	Moderate		2
S2- Potentially contaminated Made Ground	P1 – Direct contact with soil/groundwater (ingestion and dermal)	R1- Final end users (residential and commercial)	Medium	Likely	Moderate	Eight soil samples (BH03, WS25, WS25A, WS28, WS38, WS43 and WS56) contained PAHs and two samples contained arsenic (BH01 and WS43) above the human health, residential with plant uptake screening criteria. All exceedances were confined to made ground and located from depths between 0.2 and 0.5m bgl. All of the samples with PAH exceedances were either within strata described as containing bituminous material or below asphalt hardstanding. These samples are likely to be representative of tarmacadam/asphalt material present at the near surface hardstanding. The two arsenic exceedances are isolated and therefore not considered to be representative of the concentrations across the site. 2 out of 100 soil samples across the whole site were identified as containing asbestos both of	3
	P2 – Inhalation of dust and/or vapours	R1- Final end users (residential and commercial)	Medium	Likely	Moderate		4

						which from Made Ground. Therefore, it poses a potential risk to end users.	
	P4 - Inhalation of ground gas	R1- Final end users (residential and commercial)	Medium	Unlikely	Low	Based upon the GSVs calculated for the site from the gas monitoring program the site has been classified the site as a CIRIA C665 as CS1 very low hazard potential. Although concentrations of Carbon Dioxide of greater than 5% we encountered in BH03 potentially is increasing the characteristic situation to CS2. However due to the response zone of BH3 being is 7.90-20.00m bgl it is unlikely the concentration are representative of that at the levels of proposed foundations it is therefore considered that the entire site should be classified as CS1 where no protection measures are required.	5
	P5 – Leaching of contaminants and vertical migration into groundwater	R4- Groundwater (Principal Aquifer. SPZ and onsite borehole);	Medium	Unlikely	Low	The majority of compounds analysed for were not identified at concentrations above the laboratory method limit of detection and no samples were detected above the UK DWS during leachate analysis.	6
	P6 – Lateral migration of contaminants within groundwater	R4- Groundwater (Principal Aquifer. SPZ and onsite borehole);	Medium	Unlikely	Low	In addition to leachate analysis, groundwater analysis was carried out at five locations. Only Nitrate and Benzo(a)pyrene were detected above the DWS. Nitrate was present in all samples and therefore considered to be background concentrations relating to the primarily agricultural nature of the surrounding area. Benzo(a)pyene was detected slightly above the DWS in 1 out of 5 samples with a concentration of 0.0197 ug/l in BH03. However the concentration within the ground water abstraction well is less the 0.002ug/l and therefore it is considered very localised and not	7

					to be a risk to impacting the groundwater abstraction or the SPZ.	
	P6 – Lateral migration of contaminants within groundwater	R5- Surface Water (River Pang).	Medium	Unlikely	Low	A limited number of PAHs, heavy metals and cyanide were recorded above EQS in leachate samples but are not considered to pose a significant risk as the recorded concentrations are isolated and not significantly elevated about the EQS. Metals, PAHs and Bis(2-ethylhexyl) phthalate were detected in concentration above the conservative EQS values in groundwater samples. However, the depth of groundwater on site has been identified as between 94.18m AOD and 95.68m AOD which is below the level of the River Pang which Ordnance survey mapping indicates to be 101mAOD therefore it is unlikely any soil leachate will reach surface water receptors.	8
	P7 – Direct contact of contaminated ground/groundwater with in-ground structures	R6- Future proposed building structures	Mild	Unlikely	Very Low	Only low levels of contaminants that can affect building structures have been recorded and A Design Sulphate Class of DS-1 and ACEC Classification of AC-1 are recommended for concrete structural elements.	9
	P3 – Ingress and /or accumulation of ground gas/vapours	R6- Future proposed building structures	Severe	Unlikely	Moderate/ Low	Based upon the GSVs calculated for the site from the gas monitoring program the site has been classified the site as a CIRIA C665 as CS1 very low hazard potential. Although concentrations of Carbon Dioxide of greater than 5% we encountered in BH03 potentially is increasing the characteristic situation to CS2. However due to the response zone of BH3 being is 7.90-20.00m bgl it is unlikely the concentration are representative of that at the levels of proposed foundations it is therefore considered that the entire site should be	10

						classified as CS1 where no protection measures are required.	
	P7 – Direct contact of contaminated ground/groundwater with in-ground structures	R7 – Services (potable water).	Medium	Likely	Moderate	Contaminants that pose a risk to drinking water pipes have been identified in the Made Ground.	11
	P7 – Direct contact of contaminated ground/groundwater with in-ground structures and ecological receptors.	R8 – Flora and Fauna	Mild	Low	Low	Potential risk to gardens and landscaped areas from contaminants within the made ground.	12
S4- Drains	P1 – Direct contact with soil/groundwater (ingestion and dermal)	R1- Final end users (residential and commercial)	Medium	Likely	Moderate	Potential for biological and radiological contamination within drains – not investigated as part of the ground investigation as PHE recommended their removal off site, however the potential remains for contaminants to have impacted soils in the immediate vicinity of the drains and therefore this should be considered during removal.	13
	P2 – Inhalation of dust and/or vapours	R1- Final end users (residential and commercial)	Medium	Likely	Moderate		14
	P5 – Leaching of contaminants and vertical migration into groundwater	R4- Groundwater (Principal Aquifer. SPZ and onsite borehole)	Severe	Likely	High		15

	P6 – Lateral migration of contaminants within groundwater	R5- Surface Water (River Pang)	Severe	Likely	High		16
S6- Storage and use of fuel	P1 – Direct contact with soil/groundwater (ingestion and dermal)	R1- Final end users (residential and commercial)	Medium	Unlikely	Low	Hydrocarbons were detected in soils, ground water and leachate below the GACs	17
	P2 – Inhalation of dust and/or vapours	R1- Final end users (residential and commercial)	Medium	Unlikely	Low		18
	P4 - Inhalation of ground gas	R1- Final end users (residential and commercial)	Medium	Unlikely	Low		19
	P5 – Leaching of contaminants and vertical migration into groundwater	R4- Groundwater (Principal Aquifer. SPZ and onsite borehole);	Medium	Unlikely	Low		20
	P6 – Lateral migration of contaminants within groundwater	R4- Groundwater (Principal Aquifer. SPZ and onsite borehole);	Medium	Unlikely	Low		21

	P6 – Lateral migration of contaminants within groundwater	R5- Surface Water (River Pang).	Medium	Unlikely	Low		22
	P7 – Direct contact of contaminated ground/groundwater with in-ground structures	R6- Future proposed building structures	Medium	Unlikely	Low		23
	P3 – Ingress and /or accumulation of ground gas/vapours	R6- Future proposed building structures	Medium	Unlikely	Low		24
	P7 – Direct contact of contaminated ground/groundwater with in-ground structures	R7 – Services (potable water).	Medium	Unlikely	Low		25
	P7 – Direct contact of contaminated ground/groundwater with in-ground structures and ecological receptors.	R8 – Flora and Fauna	Medium	Unlikely	Low		26
	P2 – Inhalation of dust and/or vapours	R1- Final end users (residential and commercial)	Medium	Likely	Moderate	The Envirocheck report indicates the site lies within an intermediate probability radon area, as between 1% and 3% of homes are above the action level. Radon protective measures are necessary in the construction of new dwellings or extensions.	27

S9 Natural Strata	P4 - Inhalation of ground gas	R1- Final end users (residential and commercial)	Medium	Unlikely	Low	Based upon the GSVs calculated for the site from the gas monitoring program the site has been classified the site as a CIRIA C665 as CS1 very low hazard potential. Although concentrations of Carbon Dioxide of greater than 5% we encountered in BH03 potentially is increasing the characteristic situation to CS2. However due to the response zone of BH3 being is 7.90-20.00m bgl it is unlikely the concentration are representative of that at the levels of proposed foundations it is therefore considered that the entire site should be classified as CS1 where no protection measures are required.	28
	P3 – Ingress and /or accumulation of ground gas/vapours	R6- Future proposed building structures	Severe	Unlikely	Moderate/ Low	Based upon the GSVs calculated for the site from the gas monitoring program the site has been classified the site as a CIRIA C665 as CS1 very low hazard potential. Although concentrations of Carbon Dioxide of greater than 5% we encountered in BH03 potentially is increasing the characteristic situation to CS2. However due to the response zone of BH3 being is 7.90-20.00m bgl it is unlikely the concentration are representative of that at the levels of proposed foundations it is therefore considered that the entire site should be classified as CS1 where no protection measures are required.	29
	P1 – Direct contact with soil/groundwater (ingestion and dermal)	R1- Final end users (residential and commercial)	Medium	Likely	Moderate	Potential for biological and radiological contamination within drains – not investigated as part of the ground investigation as PHE recommended the removal of the infrastructure off site , however the potential remains for contaminants to have impacted soils in the	30

						immediate vicinity of the drains and therefore this should be considered during removal..	
S10- Effluent treatment system	P2 – Inhalation of dust and/or vapours	R1- Final end users (residential and commercial)	Medium	Likely	Moderate	Potential for biological and radiological contamination within drains – not investigated as part of the ground investigation as PHE recommended the removal of the infrastructure off site , however the potential remains for contaminants to have impacted soils in the immediate vicinity of the drains and therefore this should be considered during removal. Potential for biological and radiological contamination within sludge beds – not investigated as part of the ground investigation due to health and safety concerns during the investigation and as PHE recommended their removal.	31
	P5 – Leaching of contaminants and vertical migration into groundwater	R4- Groundwater (Principal Aquifer. SPZ and onsite borehole)	Severe	Likely	High		32
	P6 – Lateral migration of contaminants within groundwater	R5- Surface Water (River Pang)	Severe	Likely	High		33
	P1 – Direct contact with soil/groundwater (ingestion and dermal)	R1- Final end users (residential and commercial)	Medium	Likely	Moderate		34
S11 – Sludge Drying Beds (Historic and recent)	P2 – Inhalation of dust and/or vapours	R1- Final end users (residential and commercial)	Medium	Likely	Moderate	Potential for biological and radiological contamination within sludge beds – not investigated as part of the ground investigation due to health and safety concerns during the investigation and as PHE recommended their removal.	35
	P5 – Leaching of contaminants and vertical migration into groundwater	R4- Groundwater (Principal Aquifer. SPZ and onsite borehole)	Severe	Likely	High		36

	P6 – Lateral migration of contaminants within groundwater	R5- Surface Water (River Pang)	Severe	Likely	High		37

10.6 Discussion of Risks to Construction Workers & Off-site Receptors during construction works.

AECOM understands that the proposed development works will be undertaken in compliance with Construction Design and Management (CDM) 2015 regulations.

Prior to work commencing, a health and safety risk assessment should be carried out by the appointed Principal Contractor / developed in accordance with current health and safety regulations. This assessment should cover potential risks to construction staff, permanent site staff and the local population. Based on the findings of this risk assessment, appropriate mitigation measures should be implemented during the construction period. It should be noted that due to radiological contamination on the site an appropriate radiological specialist should be consulted at all stages in order to ensure works are undertaken safely and in accordance with relevant legislation and the sites radiological permit.

Asbestos containing material was identified within two samples (BH03 and WS28) and suspected asbestos containing material was sighted near WS27. During the construction phase it is likely that the anthropogenic ground across the site will be exposed. Excavation procedures should be reviewed during the construction phase and suitable mitigation measures may be required to be put in place e.g. PPE, Damping Down and air monitoring.

11. Engineering Assessment of Ground Conditions

11.1 Proposed Development

At this stage it is understood the proposed development will consist of two storey housing and commercial units and potentially retaining walls. The layout of these structures and any access roads has not yet been decided.

11.2 Geotechnical Constraints

Ground conditions comprise topsoil and hard standing over varying thickness of made ground, below which lies disturbed/reworked chalk. The history of development and terracing of the site along with natural reworking processes has led to significant variability in the thickness, composition and strength of the superficial soils, as suggested by the ground investigation findings. Both the made ground and reworked chalk are expected to be highly variable and to contain zones of soft compressible material making them unsuitable founding strata but also unlikely to be suitable for reuse as an engineered fill.

11.3 Derived parameters

Moderately conservative parameters have been derived in Table 11.1 for each of the main strata based on the data set available from this preliminary investigation. These do not constitute design parameters (in accordance with EC7) which need to be selected by the designer to ensure that they are appropriate to the particular design analysis being undertaken. They are intended to provide an indication of anticipated engineering behaviour suitable for feasibility. Parameters for the made ground and reworked chalk are conservative due to the high variability in these strata.

Table 11.1 Characteristic Parameter Summary

Stratum	γ^{a} (kN/m^3)	Φ'^{b} (°)	$c_u{}^{c}$ (kPa)	c' (kPa)	c' (kPa)	E' (MPa)	$m_v{}^{c}$ (m^2/MN)
Made Ground							
Granular[f]	17	27	-		-	4-6	-
Cohesive	17	25	25-50		-	2.5-5[(c)]	0.2-0.4
Reworked Chalk							
Granular	18	28	-		-	5-10	-
Cohesive	18	25	20-100		-	2.5-12.5[(c)]	0.08-0.4
Structureless Chalk							
Grade Dc	19	30	-		-	20-30[e]	-
Grade Dm	20	28	70-350		-	7-35[(c)]	0.03-0.143
Structured Chalk	20	15-25[d]		100-200[d]	-	35-80[e]	-

Notes:

1) *Based on strata descriptions and comparison to published values for similar soils or tests results if available*
2) *In the absence of testing, using Peck's correlation with SPT or 'Soil properties and their correlations', by M.Carter and S.P.Bentley*
3) *Derived from correlation with Plasticity Index and SPT (M.J.Tomlinson[Error! Bookmark not defined.]) unless otherwise stated*
4) *Rock Mass Rating of Bieniawski (1989)*
5) *Table 2.14 of M.J.Tomlinson[10]*
6) *No SPT or strength data were available. Parameters were derived assuming loose deposits of SPT'N' typically <5, E' was taken as E'= SPT 'N'*

11.4 Groundwater

No ground water strikes were observed in the exploratory holes during field work except in WS19, where ground water was struck at 3.10 m bgl but was not found to be rising during the observation period. Water was encountered with BH1-BH4 following drilling however no strike was encountered.

Ground water monitoring standpipes were installed in all the four boreholes and nearly half ground water monitoring results show ground water at depths below 5 m bgl, except in one exploratory hole where the ground water level was at 1 m bgl. Ground water is not expected to present challenge for excavations at this stage. However the seasonal variations to ground water levels will have to be taken in to account once the complete set of monitoring data become available. Encountering local perched water is also a possibility.

11.5 Foundations Assessment

Two storey residential buildings typically require shallow footing foundation. The made ground and reworked chalk are both highly variable in nature and contact soft compressible zones. As such they are unsuitable for founding in. Across large areas of the site these strata are less than 2m thick, therefore shallow strip foundations shall be founded below the made ground and reworked chalk in the in-situ chalk, following assessment during the detailed design stage.

Made ground and reworked chalked are underlain by structureless chalk (chalk weathered in to soils) of Grade Dm and Dc. CIRIA Report [1]on Chalk suggest a bearing capacity of 225 kN/m^2 for low density Grade Dc Chalk, providing the settlement can be up to 0.2 % of foundation width. The document further states that in situ testing should be done to select allowable bearing pressure of Grade Dm chalk. Underneath the weathered chalk lies structured Chalk, generally graded B3, C3 and C3/C4 and considered to be much competent founding stratum.

Previous experience with housing developers would indicate that a typical applied factored load on a 600mm wide strip foundation for a 2-storey house would be about 50kN per linear metre, i.e. approximately 83 kN/m^2.

Table 2 of NHBC standards chapter 4.3 “strip and trench fill foundations” indicates the minimum acceptable widths of strip footings for a range of different soil types. It states an acceptable foundation width of 600 mm for ‘firm sandy clay’ and 500 mm for ‘medium dense sand or gravel’.

It is expected the widespread Grade Dm chalk on site can be classed as firm or better (cu> 75 kPa) and therefore would be suitable founding stratum for a shallow strip foundation of 600 mm wide, as would Grade Dc and the less weathered Chalk. Settlement tolerance will need to be considered for any spread foundations. It should be noted that the strength of the founding soils should be proven on site under the supervision of a geotechnical engineer prior to construction. Any unsuitable materials will have to be replaced with suitable class fill.

CIRIA document makes comment on the shrinkage characteristics of clayey chalk. Generally clays of low to intermediate plasticity is classified as shrinkable soil with a low to medium shrinkage potential when exposed. Atterberg limit tests classify the structureless chalk mostly as ‘low plasticity clay’. Reworked Chalk on the other hand is classified as ‘low to intermediate plasticity clay’. CIRIA suggests a minimum foundation depth of 0.75 m to 0.9 m in these cases.

The red spots in **Error! Reference source not found.** highlights boreholes where the made ground and reworked chalk extend to 2m bgl or lower, where construction of shallow foundations may start to become impractical or uneconomic. These are mostly confined to the southern end of the site where founding depths may need to be between 2m and 4m. Some additional strength testing may help to refine this estimate and may show that deep strip footings are still viable, but constructing rafts or piling may be preferable in this area. Additional ground investigation and testing will be required in structured chalk for the design of pile foundations. There are also a few localised holes in the middle of the site and one at the north of the site where foundations are expected to need to extend down to 2m or below. These are possibly associated with local excavations and backfilling during terracing and previous construction on the site. For this reason we would recommend that a geotechnical engineer is present to inspect foundations excavations prior to casting. We do not have details of the terracing and retaining walls which exist on the site but it is also possible that deeper house foundations may be needed above terraces or walls to prevent loading to these structures and due to possible greater fill thicknesses behind these structures.

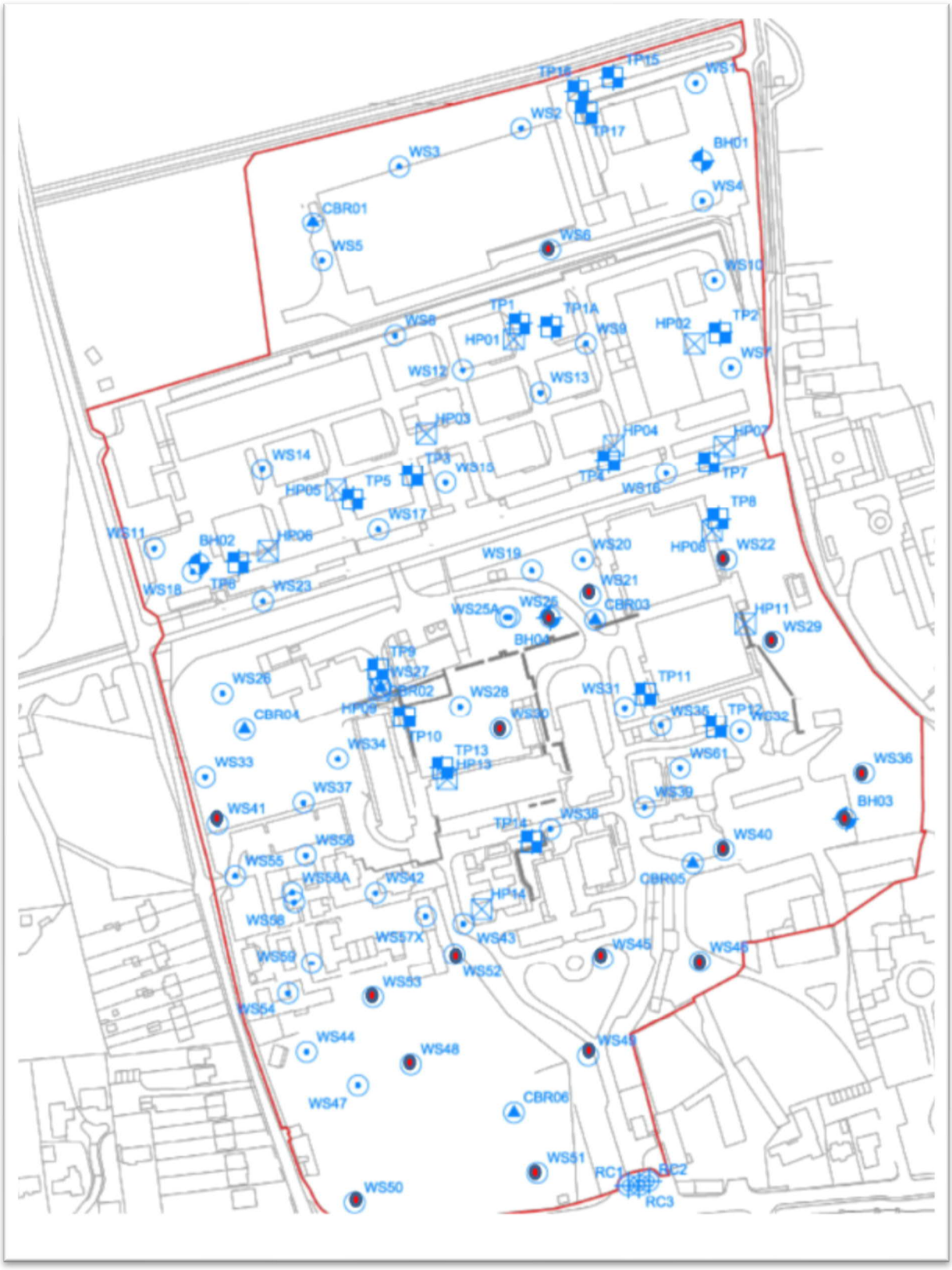


Figure 11.1 Presence of Made Ground/ Rework Chalk >2m thick

11.6 Soil Aggressivity to Concrete

As per the tests results on pH and sulphate (2:1 water: soil extract) summarised in Chapter 4, the Aggressive Chemical Environment Concrete (ACEC) Classification of AC-1, with a Design Sulphate Class of DS-1 can be used as suggested by BRE Special Digest 1 (2005) for brownfield locations.

11.7 Reuse of site won material

Made ground and reworked chalk are considered unsuitable for reusing as engineering fill due to their highly variable nature across the site making it difficult to assess the compaction requirements. These materials were often described 'soft' and their plasticity varies from low to high. Structureless chalk (Grade Dm and Grade Dc) can be re used as engineering fill. Grade Dm is classified as 'low plasticity' with consistency of firm or better. Compaction tests on structureless chalk suggests the natural water content of structureless chalk is at or less than the optimum water content making it suitable for compaction in its current state or after wetting.

11.8 Geotechnical Risk Register

Table 11.2 Geotechnical Risk Register

HAZARD RISK	CAUSE	BEFORE CONTROL			CONSEQUENCE	AFFECTED	MITIGATION MEASURES
		P	C	R			
Made ground and disturbed ground of variable nature	Historical land use	5	3	15	Unexpected ground conditions; difficulty in assessing engineering properties; unstable ground; locally deep excavation required	Proposed foundations	Foundation inspection by geotechnical engineer; in situ testing; pile or raft foundation options to be considered
Unstable ground	Incompetent weathered chalk	4	4	16	Inadequate founding stratum; Bearing failure and excessive foundation settlement	Proposed foundations	Additional ground investigation; Foundation inspection by geotechnical engineer; in situ testing; pile or raft foundation options to be considered extending below the unstable ground
Buried obstructions	Historical land use	4	3	12	Historical structures exposed during foundation construction	Proposed foundations	Confirm clearance of all buried structures as part of site demolition
Buried utilities	Disruption	3	3	9	Unexpected utilities exposed during foundation construction	Proposed foundations	Confirm status of all utilities – undertake utilities search Utility diversions
Damage to existing structures	Historical retaining walls and earthworks being retained	3	3	9	Unknown structural and geotechnical stability of structures; Disturbance, change in loading and ground conditions due to new development	Existing structures	A structural and geotechnical assessment of existing structures to be undertaken as part of the design under the development loads
Concrete attack	High soluble sulphate concentrations in founding soils	2	2	4	Reduction in concrete strength / structural damage.	Proposed foundations	Undertake chemical classification in accordance with BRE SD1 and use appropriate concrete class

P = Probability (1 = Low, 5 = High), C = Consequence (1 = Minor, 5 = Severe), R = Risk Rating (1 = Very Low, 25 = Critical)

12. Conclusions and Recommendations

	Conclusions	Recommendations
Foundations & Floor Slabs	Grade Dm Chalk that is firm or stiffer or Medium dense Grade Dc chalk are considered competent foundation stratum for lightly loaded spread foundations. However, bearing resistance and settlement tolerance will need to be considered for any spread foundations. Deeper foundations in the form of raft or piles may be required in places where buildings and retaining structures exist.	If any soft, loose or deleterious deposits are encountered at the foundation formation level, these should be removed and backfilled with suitable engineered fill or mass concrete. The use of ground bearing floor slabs will require the removal of existing topsoil, Made Ground, soft clay, or deleterious loose deposits and its replacement to proposed formation levels with suitably engineered granular fills placed to an end product specification. Additional ground investigation will be required for the design of deep foundations including piles. The potential for shrinkage and swelling of the potentially 'shrinkable' soils underlying the site will need to be considered based on NHBC Standards Chapter 4 (2019).
Infrastructure	Levels of Sulphate and pH which can aggressively attack concrete have been identified. In addition, low levels of PAHs and metals have been identified. Taking into consideration the chemical testing the appropriate specification of materials should be used for supply pipes, buried services and gas/ damp protective membranes in order to mitigate potential risks.	A Design Sulphate Class of DS-1 and ACEC Classification of AC-1 are recommended for concrete structural elements. Advice should be sought from the utility company, including completing their risk assessment process, to assist in the specification of drinking water supply pipes prior to installation.

	Conclusions	Recommendations
Human Health	Exceedances identified above the GAC for human health are confined to made ground strata. It is anticipated that this made ground will remain in situ during the construction (depended on construction formation levels) and will be capped with either hardstanding or a validated suitable growing medium underlain by a separator membrane therefore limiting contact of these soils with the receptors. PHE England recommends that the sludge beds, and laboratory drainage pipes and soil directly beneath the pipes beneath the laboratory drainage pipes are disposed of site to a suitable deep landfill site. The one sample taken of the animal remains from the Sheep Pen which in situ testing identified containing above background levels of radiation was sent for laboratory testing which determined the material is above the out of scope waste limits. The ground investigation identified that pots in the Bull Pen contained radioactive material some of which would be considered to be low level radioactive waste. Some of the buildings on site have been previously identified to contain potential residual biological risks as noted by PHE and detailed in the AECOM Desk Study report. The Envirocheck report indicates the site lies within an intermediate probability radon area, as between 1% and 3% of homes are above the action level. Radon protective measures are necessary in the construction of new dwellings or extensions.	These results should be taken into account during the design phase. Precautions should be taken to reduce the risk of exposure of construction and maintenance staff to contaminants including asbestos through appropriate health and safety risk assessment processes, which may require the adoption of appropriate health and safety measures such as damping down and adequate personal protective equipment. A Remediation Strategy should be produced for the site to detail the areas that require removal off site to deep landfill. In addition to the biological risk the risk of radioactive contamination should also be assessed as part of the removal works. For the Bull Pen Pots and Sheep Pen burial areas a remediation strategy should be produced outlining the requirements for off site disposal and validation including methodology for dealing with biological and low level radioactive waste soils and animal remains. This Remediation Strategy should be approved by the local planning authority prior to works commencing. In accordance with the recommendations of PHE these buildings should be hand demolished and removed for disposal in in deep landfill. These buildings and the required disposal should be detailed in a Remediation Strategy for the site. Radon protection measures should be designed for new buildings on site.

	Conclusions	Recommendations
Controlled Waters	Soil leachate analysis was undertaken on thirty soil samples. The majority of compounds analysed for were not identified at concentrations above the laboratory method limit of detection and no samples were detected above the UK DWS in the leachate results. Only Nitrate and Benzo(a)pyrene were detected above the DWS. Nitrate was present in all samples and therefore considered to be background concentrations relating to the primarily agricultural nature of the surrounding area. It is also noted that the exceedances were marginal (<10% above the WTV). Benzo(a)pyene was detected above the DWS in 1 out of 5 samples with a concentration of 0.0197 ug/l in BH03. However the concentration within the on site ground water abstraction well is less the 0.002ug/l and therefore it is considered localised and not to be a risk to impacting the on-site groundwater abstraction. A limited number of PAHs, heavy metals and cyanide were recorded above EQS in the leachate results. The EQS are extremely conservative (illustrated by the fact that the laboratory method detection limits for fluoranthene and benzo(a)pyrene are greater than the EQS-Fresh GAC). Furthermore, the exceedances have been observed from the leachate analysis which owing to the 10:1 ratio method of their preparation are extremely conservative. Copper was present above EQS in the majority of leachate samples, including within natural strata down to 1.0m. with a maximum concentration of 9.47 ug/l which is similar to the concentration within groundwater on the site. Background concentrations within nearby chalk aquifers in Hampshire and the Colne and Lee Valley catchment has been measure by the British Geological Society and Environment Agency to be between<10- 31.8 ug/l and 0.4-37.1 ug/l respectively. It is therefore considered that the Copper concentrations on within groundwater represent background concentrations and therefore Copper concentrations within the leachate will no increase background concentrations.	Additional groundwater sampling, laboratory analysis and risk assessment should be undertaken to confirm the existing results and further consider potential risks to controlled waters. Any piles should be designed in accordance with Piling and Penetrative Ground Improvement Methods on Land Affected by Contamination: Guidance on Pollution Prevention (2001).

	Conclusions	Recommendations
	The depth of groundwater on site has been identified as between 94.18m AOD and 95.68m AOD which is below the level of the River Pang which Ordnance survey mapping indicates to be 101m AOD. Therefore it is unlikely that groundwater will reach surface water receptors In addition to leachate analysis, groundwater analysis was carried out at five locations. The majority of results were below the WTV, however on occasions a limited number of some PAHs, metals, phthalates and nitrates were present above the relevant EQS screening criteria. Only Nitrate and Benzo(a)pyrene were detected above the DWS. Nitrate was present in all samples and therefore considered to be background concentrations relating to the primarily agricultural nature of the surrounding area. Benzo(a)pyene was detected slightly above the DWS in 1 out of 5 samples with a concentration of 0.0197 ug/l in BH03. However the concentration within the ground water abstraction well is less the 0.002ug/l and therefore it may be localised and not to be a risk to impacting the on-site groundwater abstraction. Metals, PAHS and Bis(2-ethylhexyl) phthalate were detected in concentration above the conservative EQS values. However, the depth of groundwater on site has been identified as between 94.18m AOD and 95.68m AOD which is below the level of the River Pang which Ordnance survey mapping indicates to be 101mAOD therefore it is unlikely groundwater will reach surface water receptors.	

	Conclusions	Recommendations
Ground Gas	Based upon the GSVs calculated for the site from the gas monitoring program the vast the site has been classified as a CIRIA C665 CS1 Although concentrations of Carbon Dioxide was detected in BH03 above 5% on one occasion the depth of the response zone (7.90-20m bgl) suggests it is unlikely that theses concentrations are representative of that at foundation levels it is not considered necessary to increase the site to a CS2.	No ground gas protection measures are required unless deeper foundation options are required or there are changes to site levels that may affect the ground gas regime. Further assessment would be required if this were the case.
Ecological Receptors	It is assumed that the proposed development will include planting in gardens and landscaped areas.	A landscape architect should be provided with the chemical analysis in order to establish suitable plant species for the site, and a suitable growing medium should be used above a geomembrane separator layer.
Suitability for Reuse	Exceedances identified above the GAC for human health are confined to the shallow made ground on site. It is anticipated that this made ground will remain in situ during the construction (depended on construction formation levels) and not reused on the site unless in a suitable location to not form a contaminant linkage. Made ground and reworked chalk are considered unsuitable for reusing as engineering fill due to their highly variable nature across the site making it difficult to assess the compaction requirements. These materials were often described 'soft' and their plasticity varies from low to high. Structureless chalk (Grade Dm and Grade Dc) can be re used as engineering fill. Grade Dm is classified as 'low plasticity' with consistency of firm or better. Compaction tests on structureless chalk suggests the natural water content of structureless chalk is at or less than the optimum water content making it suitable for compaction in its current state or after wetting.	Material encountered during construction works that is considered to be potentially contaminated through visual or olfactory evidence, or different to that assessed in the ground investigation will require chemical testing and subsequent risk assessment to confirm suitability for reuse. A Discovery and Inspection Strategy should be produced as part of a Remediation Strategy for the site. In addition, suitable geotechnical assessment for the assessment and reuse of site won material should be detailed in an Earthworks Specification for construction works.

	Conclusions	Recommendations
Imported Materials	Soils and aggregates will be required to be imported to site to help provide a suitable growing medium, and development platform.	Imported material (e.g. topsoil, fill, etc.) will require chemical and geotechnical testing before being brought onto site to demonstrate that it is suitable for use. The testing suite and frequency, along with validation requirements, should be agreed with the Contaminated Land Officer at the Local Authority prior to importation of material.
Waste Issues, Disposal of Material (Duty of Care, sustainability, WAC)	The Made Ground has been identified to be present at most locations on the site. Any Made Ground encountered and excavated during the construction works may be considered to be a Controlled Waste by the Environment Agency. A Hazwatse online assessment highlighted 3 of 107 samples we classified as hazardous waste due to high pH.	Any cut and fill works required at the site are likely to be considered to fall under the Environmental Permitting Regulations 2016 by the Environment Agency and may require an Environmental Permit. However, it may be possible to apply for a waste exemption under the Environmental Permitting Regulations. Alternatively, it may be possible to re-use material on site under the CL:AIRE Code of Practice 'The Definition of Waste: Development Industry Code of Practice (CL:AIRE 2011)', if agreed with the Environment Agency. Material encountered during construction works that is considered to be potentially contaminated through visual or olfactory evidence will require chemical testing to confirm the waste classification. If excavated, hazardous material should either be treated on site for re-use or should be removed from site and taken to a suitable licensed receiving facility. All waste classifications should be confirmed by the receiving facility. A waste disposal strategy for materials which have been identified to pose a biological and/or radiological risk should be detailed a Remediation Strategy for the site.

	Conclusions	Recommendations
Further Ground Investigation	A number of areas across the site have not been investigated due to the presence of buildings on site that were no accessible to allow investigation beneath them. Areas of chemical, biological and radiological contamination may be encountered along with areas that pose geotechnical hazards. The conclusions of this report are subject to review and change following this further investigation.	Further ground investigation and risk assessment is required following the removal of buildings on site to confirm the potential ground and contamination risks at the site, and the requirement for any further remediation.

13. References

1. Phase 1 Geotechnical and Geo-environmental Desk Study Report, HCA Report, Project No. 60544578, September 2019 Rev 01.
2. Ground Investigation Report; Former Pirbright Institute, Compton – WYG (April 2019)
3. BS EN ISO 17892
4. BRE Special Digest 1 (2005) Third Edition, Concrete in aggressive ground;
5. British Standards Institution (2013). BS EN ISO 14688-1:2002+A1:2013 Geotechnical Investigation and testing – Identification and classification of soil Part 1: Identification and description;
6. British Standards Institution (2013). BS EN ISO 14688-2:2002+A1:2013 Geotechnical Investigation and testing – Identification and classification of soil – Part 2: Principles for a classification;
7. British Standards Institution (2014). BS EN 1997-1 2004+A1:2013 Eurocode 7: Geotechnical Design – Part 1: General Rules;
8. British Standards Institution (2015). BS8004:2015. Code of Practice for Foundations;
9. NHBC (2016). Standards Chapter 4. Part 4 Foundations;
10. CIRIA Report 11 (2002) Foundations in Chalk
11. CIRIA Report 143 (1995), The Standard Penetration Test (SPT): Method and Use
12. CIRIA Report C552 - 2001 "Contaminated land Risk Assessment" - A Guide to Good Practice;
13. Environment Agency (2009a) Human health toxicological assessment of contaminants in soil. Science Report SC050021/SR2. January 2009;
14. Environment Agency (2009b) Updated technical background to the CLEA model. Science Report SC050021/SR3. January 2009;
15. Environment Agency (2009c) CLEA Software (Version 1.05) Handbook. Science Report SC050021/SR4. October 2009;
16. Environment Agency (2008) Compilation of Data for Priority Organic Pollutants for Derivation of Soil Guideline Values. Science Report SC050021/SR7;
17. Defra (2014) SP1010 - Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination, Final Project Report (Revision 2), Contaminated Land: Applications in Real Environments (CL:AIRE), 24th September 2014;
18. LQM (2015) The LQM/CIEH S4ULs for Human Health Risk Assessment, Land Quality Press, 2015;
19. CL:AIRE (2009) The Soil Generic Assessment Criteria for Human Health Risk Assessment, CL:AIRE in association with AGS and EIC, December 2009;
20. VROM (2009) Soil Remediation Circular, 2009;
21. US EPA Regional Screening Level (RSL) Table (accessible on-line at http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/index.htm);
22. Science Report P5-080/TR3;
23. Science report: SC050021/SGV introduction, March 2009;
24. Technical advice to third parties on Pollution of Controlled Waters for Part IIA of the Environmental Protection Act 1990, V.2";
25. The River Basin Districts Typology, Standards and Groundwater threshold values (Water framework Directive) (England and Wales) Directions 2010;
26. Water Supply (Water Quality) Regulations 1989 & 2000); and
27. Surface Waters (Dangerous Substances) (Classification) Regulations (1989, 1997, and 1998).
28. CL:AIRE (2012) RB17 A Pragmatic Approach to Ground Gas Risk Assessment

Figures

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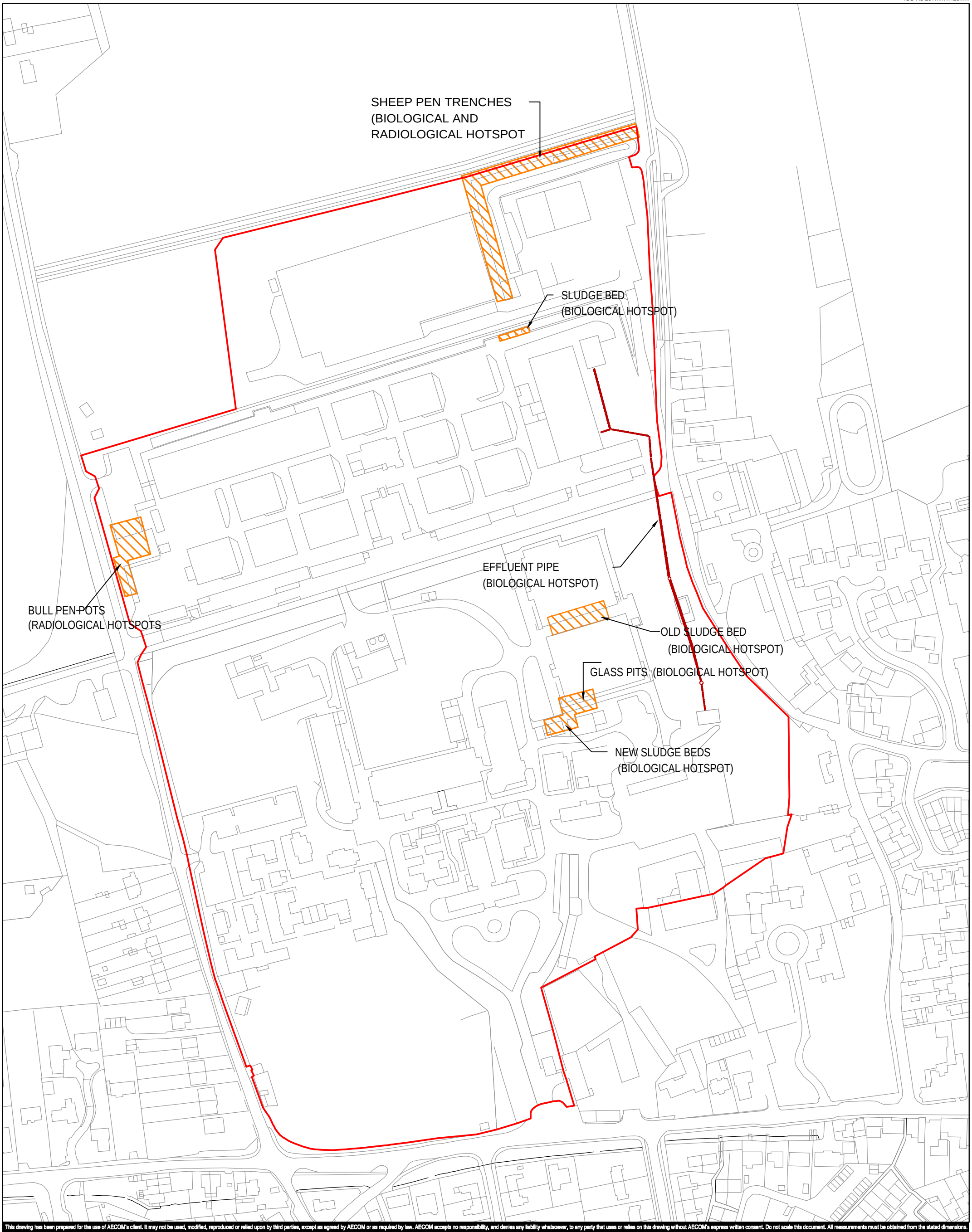

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PROJECT:
COMPTON APPLICATION

CLIENT:
HCA

SHEET TITLE:
Figure 1: Radiological/Biological Hotspots

SHEET NUMBER:
01_005

PROJECT NUMBER:
60544578

SCALE:
1:2000

DATE CREATED:
19/8/19

Biological and or Radiological hotspot

CHECKING/VERIFICATION

DRAWN:	EJ	CHECKED:	BM
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ISSUE/REVISION

I/R	DATE	DESCRIPTION

Appendix A WYG Factual Report

Homes England

Ground Investigation Report

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Contents

Appendices

1.0 Introduction

1.1 Instruction

WYG Environment Planning Transport Limited (WYG) were instructed by Homes England (HE) to carry out ground investigation works of the site located at the former Pirbright Institute, Compton, West Berkshire, RG20 6NL.

The investigation was undertaken under the technical direction from the investigation supervisor, AECOM.

Instructions to proceed were provided in Purchase Order ref DAP8001.

1.2 Objective

The work was undertaken to investigate the ground conditions and provide geotechnical and geoenvironmental information for the residential and commercial redevelopment of the site.

In addition to standard laboratory geoenvironmental and geotechnical assessment of the soil samples, the investigation included radiological and microbiological screening of soils to assess key risks associated with the site history.

1.3 Scope

The finalised ground investigation scope was detailed in the Specification for Ground Investigation – HCA Compton (Document reference: 60544578 SPEC_002), Version 5 issued by AECOM on 17.12.18.

The scope was programmed as four phases of intrusive investigations which are summarised as follows.

- **Phase A – Preliminary Assessment of the Biological risk**

  Machine excavated trial pits.

- **Phase B – Main Site Investigation**

  Machine and hand excavated trial pits, Window sample boreholes with Standard Penetration Test (SPTs), California Bearing Ratio tests (CBRs), In situ testing permeability

testing, Photoionisation detector screening (PIDs), installation of gas and groundwater monitoring standpipes and sampling of existing abstraction wells.

- **Phase C – Supplementary Deep Groundwater Investigation**

  Rotary Boreholes to obtain core samples of the bedrock and install gas and groundwater monitoring standpipes

- **Phase D – Radiological trial pitting**

  Machine excavated trial pits in areas of known radiological contamination.

All four phases included disturbed and undisturbed sampling soil sampling and groundwater sampling for laboratory geotechnical and geoenvironmental assessment.

1.4 Limitations

The information contained in this report is intended for the use of Homes England and is subject to the conditions set out in Appendix A. WYG can take no responsibility for the use of this information by any third party for uses other than that described in this report. The observations summarised in this report are based on the ground investigations carried out by WYG, the third-party information provided, and other sources of readily available information. WYG is not able to provide warranty on the accuracy of any third-party information and this information has been used in good faith.

2.0 Site Details

2.1 Site Location

The site is centred on Ordnance Survey (OS) Grid reference SU 51828 80083 and covers an area of approximately 15.20Ha on the side of the town of Compton, West Berkshire.

The main access gate is located on the north side of Compton High Street and the registered post code is RG20 6NL.

2.2 Site Description

The site is roughly rectangular in plan and measures approximately 560m from north to south, and between 340m to 200m from east to west, narrowing towards the south. The local topography slopes from approximately 120m Above Ordnance Datum (AOD) in the north to around 100m AOD in the south. The level change is accommodated by gentle slopes and some small retaining structures within the site boundary.

At the time of the investigation (during October 2018 to April 2019) approximately 50% of the site footprint was occupied by vacated buildings and hard standing areas, and the remaining 50% comprised soft landscaped areas including a cricket pitch in the southwest of the site.

Hard standing comprised both tarmac access roads and concrete slabs, many of which were in poor condition with cracked uneven surfaces noted.

The main access road approaching from Compton High Street leads into an area of buildings located centrally within the site and continued to the north where it connected with an access road crossing the site from east to west. A mesh fence separated an area to the north which comprised further agricultural buildings and areas of hard standing.

A bunded slope formed the north boundary, and 3 to 5m high mesh fencing secured the perimeter of the site and extended into the site defining separated areas.

It is understood that the site has been used as a research facility since the 1930s, and the buildings remining on site during the investigation varied in age, quality and size. At the time of the investigation the only operational part of the site was a commercial laboratory facility in the northwest of the site.

All other buildings on the site formed part of the Pirbright Institute, which was operated by the Institute of Biotechnology and Biological Science Research Council (BBSRC), undertaking microbiological and radiological research on livestock.

The vacated buildings included laboratories, agricultural units, incineration, effluent treatment, engineering, fuel storage/use and office space.

A decommissioned pump house is situated within the cricket ground, which we understand provided the primary water source for the facility.

Based on the potential for biological agents and radioactive contamination at the site, Public Health England (PHE) and Aurora Health Physics Ltd (Aurora) were consulted prior to undertaking the ground investigation works. A summary of the advice and mitigation measures implemented is summarised in Section 2.3 and 2.4.

The site was initially classified as a 'red site'. This was downgraded to 'yellow' (with certain areas remaining 'red') after the Phase A trail pits established that there was no evidence of contamination in the areas investigated.

Further information regarding the site history and a detailed site description can be found in the Phase 1 Geotechnical and Geo-environmental Desk Study Report, October 2017 (AECOM).

2.3 Biological Agent risk

The AECOM Phase 1 Report[1] and PHE Assessment[2] provide details regarding some of the processes potentially impacting the site and this includes information regarding the historic management of waste. Potentially impacted areas of the site are summarised as the area within the immediate vicinity of the high-security drain connecting the effluent sterilisation plant and laboratory building C044 (both identified on Figure 4 in the AECOM Phase 1 report).

PHE also provided advice on the mitigation of risks associated with biological agents which were incorporated into the Construction Phase Health and Safety Plan and mitigation was implemented during the investigation.

[1] Phase 1 Geotechnical and Geo-environmental Desk Study Report, October 2017 (AECOM)

[2] Former Pirbright Institute: Compton, Berkshire, Data Review and Risk Assessment of Biological Agent Persistence, September 2017 (PHE)

2.4 Radiological risk

The Aurora report[3] details areas potentially impacted by hazardous radioactive materials which are indicated on Figure 2 within the Aurora report and summarised as follows.

- Bull Pens – 41No. ceramic pots with soils contaminated with radionuclides are buried in this area.
- Sheep Pens / Dung Yard – Carcasses contaminated with radionuclides were buried in trenches to the north of this area.
- Whole Body Monitor Building – This building was used to monitor radionuclide content of livestock resulting in potentially contaminated slurry entering the drainage system.

Other areas of potential contamination which have been identified as lower risk from previous investigations having not identified any evidence of radiological contamination include;

the Burial Pits East of Plowright, Schering Plough Car Park, North Laboratory, Jennar Building, Stewart Building, Henderson Building, Gordon Building, Secure units, Embryology Building, Incinerators, Plowright Building, Radioactive Store, Sludge Beds, Site Drains and the Site Tip.

To provide risk mitigation in high risk areas and also to undertake further radiological assessment within the Phase D areas, Aurora were commissioned as Radiation Protection Supervisors.

Prior to the commencement of the phased work within the identified risk areas, the investigation was registered with the HSE under Schedule 1 of the Ionising Radiation Regulations 2017 (Certificate number IRR00024793).

2.5 Anticipated Ground Conditions

The British Geological Survey (BGS) online 'Geology of Britain viewer' shows the site to be underlain by Chalk bedrock (the Seaford Chalk Formation over Lewes Nodular Chalk Formation over Chalk Rock Member), with some superficial River Terrace Deposits encroaching in the south of the site. The BGS 1:50,000 series England and Wales sheet 267 map shows some Made Ground present on the northern part of the site. Descriptions of the formations provided in the BGS lexicon of Named Rock Units are provided in Table 2.1.

[3] Desk study on the radiological status of the former institute of animal health at Compton, October 2018 (Aurora Health Physics Ltd)

Table 2.1 – Extracts from the BGS Lexicon Providing Descriptions of the Expected Geological Units

Geological Unit	BGS Lexicon Description
River Terrace Deposits	Sand and gravel, locally with lenses of silt, clay or peat.
Seaford Chalk Formation	Firm white chalk with conspicuous semi-continuous nodular and tabular flint seams. Hardgrounds and thin marls are known from the lowest beds. Some flint nodules are large to very large.
Lewes Nodular Chalk Formation	Composed of hard to very hard nodular chalks and hardgrounds (which resist scratching by finger-nail) with interbedded soft to medium hard chalks (some grainy) and marls; some griotte chalks. The softer chalks become more abundant towards the top. Nodular chalks are typically lumpy and iron-stained (usually marking sponges). Brash is rough and flaggy or rubbly, and tends to be dirty. First regular seams of nodular flint, some large, commence near the base and continue throughout.
Chalk Rock Member	Very hard chalk and chalkstone, some nodular, including mineralized hardground surfaces and marl seams.

2.6 Hydrogeology

The Environment Agency have classified the chalk bedrock underlying the site as a Principal Aquifer. The superficial River Terrace Deposits are designated as a Secondary A Aquifer.

2.7 Hydrology

The nearest surface water course is the River Pang which runs along the southern boundary of the site, to the south of the High Street, and flows towards the southeast.

3.0 Ground Investigation Works

Four phases of ground investigation works were carried out between the 26th November 2018 and 18th April 2019.

Site investigation activities were undertaken in general accordance with BS5930:1999 – "Code of Practice for Site Investigations) incorporating Amendment 2 (2010), and pursuant to the ground investigation specification[4].

Factual information relating to the works is presented within Appendices B to G. Exploratory hole locations are indicated on Figure A090070-474-LDN-N-13 (Appendix B).

3.1 Summary of Site Works

Intrusive investigation work completed within each phase is summarised in Table 3.1.

Table 3.1 – Summary of Phased Investigations

Phase	Date	Completed Exploratory Hole Locations
A	26/11/2019 – 30/11/2019	TP01 to TP14 inclusive (14No. Machine Excavated Trial pits to depths between 1.10m and 3.00m bgl)
B	07/01/2019 – 08/02/2019	HP01, HP03 to HP11 inclusive, HP13 and HP14 (12 no. Foundation Inspection pits to depths between 0.40m and 1.20m bgl) WS01 to WS59 inclusive, WS61, WS25a, WS56A and WS58A (63 no. Window sample boreholes to depths between 0.20m and 5.00m bgl. SPTs were undertaken at 1m intervals) RC01 to RC03 inclusive (3 no. Road cores to depths between 0.10m and 0.26m bgl;6 no. California Bearding Ratio tests (CBRs)
C	13/02/2019 – 26/02/2019	BH01 to BH04 inclusive (4 no. Windowless sample boreholes with rotary core follow on to depths between 17.40m and 37.00m bgl. Where 90% total core recovery was not achieved, a SPT was carried out in the rotary cored hole)

[4] Specification for Ground Investigation – HCA Compton (Document reference: 60544578 SPEC_002), Version 5 issued by AECOM

Phase	Date	Completed Exploratory Hole Locations
D	04/02/2019 – 08/02/2019	TP15, TP16 and TP17 (3 no. 'Phase D' Trial pits in the northern bund for radiological purposes) Hand dug excavations in the Bull Pen area to identify and sample pots 3, 13, 16 & 19

Changes to the scope and technical specification instructed by or agreed with AECOM during the site investigation programme are summarised in Table 3.2.

Table 3.2 – Summary of Agreed Scope Variations

Exploratory Hole	Variation	Notes
HP02	Terminated	Refusal on hard concrete
HP15 - HP17	Cancelled	No longer required
WS60	Cancelled	Cancelled to avoid disruption to commercial laboratory operations.
WS11	Moved	Moved from the top of the embankment to allow access
WS25	Terminated	Unidentified cable encountered
WS25A	Added	Added to replace WS25
WS27	Terminated	Terminated at 0.2mbgl due to potential ACM
WS56	Terminated	Terminated at 0.55m bgl due to refusal on hard chalk
WS56A	Added	Added to replace WS56
WS58	Terminated	Unable to safely set up the rig on uneven ground
WS58A	Added, Terminated	Added to replace WS58, terminated due to unable to set up rig on uneven ground
Variable Head Test in WS16	Cancelled	
Variable Head Test in WS25A	Added	Added to replace the test scheduled for WS16

Exploratory Hole	Variation	Notes
Variable Head Test in WS48	Cancelled	
Variable Head Test in WS53	Added	Added to replace the test scheduled for WS48
BH05 & BH06	Cancelled	No longer required
TP18 – TP25	Cancelled	No longer required

All exploratory holes were surveyed to Ordnance Datum and scanned using Ground Penetrating Radar (GPR) and Electromagnetic (EM) scanning prior to breaking ground.

Where necessary, surface hard standing was broken using a concrete coring rig attachment, hand held hydraulic breaker or machine operated hydraulic breaker.

Prior to commencing drilling, exploratory holes were hand excavated to 1.20 m bgl.

3.2 In Situ testing

In-situ testing undertaken during the investigation is summarised in Table 3.3. Test results are presented on the Engineering Logs (Appendix C and Appendix F).

Table 3.3 – Summary of In-Situ Testing

Test	Standard	Locations	Number of Tests
Standard Penetration Tests (SPT)	BS EN ISO 22476-3	Window Samples and Rotary Boreholes	174
VOC screening of head space using a Photoionisation Detector	BS EN 10175:2011+A2:2017	Window Samples and Trial Pits	38
Hand Shear Vane	BS EN 1377 Part 7, 1990 Clause 2.1	Inspection pits and trial pits	6
California Bearing Ratio (CBR)	BS EN 1377 Part 9, 1990 Clause 4.3	CBR1 to 5 inclusive.	6

Test	Standard	Locations	Number of Tests
Permeability Testing	BS EN 1377 Part 12, 1990 Clause 4.1	WS36, WS53, WS25A	3
Radiological Screening	Refer to Aurora's report (Appendix G)		

3.3 Sampling

Disturbed and bulk disturbed soil samples were obtained from the exploratory holes for laboratory environmental and geotechnical analysis at the depths indicated on the exploratory logs (denoted as 'D' and 'B'). Environmental samples (denoted as 'ES') were collected in MCERT specified containers for the testing suites detailed within the specification.

Rotary core runs were logged, photographed and sub sampled accordance with BS EN ISO 14688-1: 2002 and BS EN ISO 14689-1: 2003 at the depths indicated on the logs.

Radiological soil sampling was undertaken by the Radiological Protection Supervisor (Aurora) from the 'Bull pen area' during Phase D.

All soils samples were scanned by Aurora for evidence of radiological contamination.

Groundwater samples were obtained from monitoring standpipes (detailed in Section 3.4) during return monitoring visits.

A groundwater sample was also collected from an abstraction well located within a pumphouse on the cricket green.

3.4 Installation details

31no. 50mm diameter dual purpose HDPE gas and groundwater monitoring standpipes were installed within the window sample and rotary boreholes. Response zones were constructed from slotted sections with 325µm filter sock and 10mm pea-shingle surround. A 1m thick bentonite seal was introduced above and below the installations. The installations were finished with a gas tap and flush concrete steel covers.

Response zone details are summarised in Table 3.4

Table 3.4 - Summary of Installation Response Zones

Location	Response Zone Depth (m bgl)		Response Zone Strata
	Top	Base	
BH01	9.00	36.50	Structured Chalk
BH02	9.00	37.00	Structureless & Structured Chalk
BH03	8.00	20.00	Structureless & Structured Chalk
BH04	9.00	17.40	Structured Chalk
WS01	1.00	3.00	Structureless Chalk
WS03	1.00	2.70	Structureless Chalk
WS05	0.20	0.50	Made Ground
WS07	0.50	0.67	Made Ground
WS08	1.00	2.50	Structureless Chalk
WS10	1.00	1.80	Structureless Chalk
WS12	1.00	5.00	Structureless Chalk
WS13	1.00	5.00	Structureless Chalk
WS14	1.00	4.90	Structureless Chalk
WS16	1.00	1.20	Made Ground
WS18	1.00	3.90	Structureless Chalk
WS20	0.50	1.90	Structureless Chalk & Made Ground
WS21	1.00	5.00	Structureless Chalk & Clay
WS22	1.00	3.00	Structureless Chalk & Clay
WS24	1.00	5.00	Structureless Chalk
WS26	1.00	5.00	Structureless Chalk
WS28	1.00	3.00	Structureless Chalk
WS30	1.00	4.70	Structureless Chalk

Location	Response Zone Depth (m bgl)		Response Zone Strata
	Top	Base	
WS32	0.20	1.40	Structureless Chalk & Made Ground
WS34	1.00	1.70	Structureless Chalk
WS37	1.00	1.70	Structureless Chalk
WS40	0.50	1.00	Structureless Chalk & Made Ground
WS42	1.00	5.00	Structureless Chalk & Clay
WS44	1.00	2.00	Structureless Chalk & Clay
WS47	1.00	2.50	Clay & Gravel
WS49	0.20	1.20	Made Ground & Gravel
WS55	1.00	5.00	Structureless Chalk

4.0 Encountered Conditions

Encountered ground conditions compared well to those identified in published literature and in summary comprised Made Ground overlying localised River Terrace Deposits (present in the south of the site) overlying the chalk in the south.

A summary of the encountered strata is provided in the following sections and detailed soil descriptions are provided on the appended engineering logs (Appendix C).

4.1 Surfacing

Where present, surface hard standing comprised either asphalt (along access roads and carpark areas) or ground bearing reinforced concrete slabs (predominantly in the north of the site within industrial areas).

The asphalt wearing and binder course was typically 0.04m thick and underlain by a 0.06 to 0.2m thick subbase.

Concrete slabs were typically cast in situ and ranged between 0.1 and 0.3m thick. 10mm diameter rebar was encountered in all locations.

Exploratory holes within soft landscaped areas typically encounter turf over 0.1m thick Topsoil comprising sandy gravelly silt with abundant rootlets.

4.2 Made Ground

A 0.1 to 1.7m thick layer of Made ground was encountered immediately below the surfacing and typically comprised soft brown sandy gravelly clay. The gravel component, which varied in composition, typically consisted of fine to coarse sub angular to sub rounded of flint and chalk, with brick and concrete fragments. Occasional plastic fragments were observed, and animal bones and laboratory waste including syringes, plastic pots and electrical components were encountered at approximately 3m depth within the bund north of the Sheep Pen Area.

4.3 River Terrace deposits

The River Terrace Deposits were encountered below the Made ground in the south of the site and persisted to depths ranging between 0.50 and 3.00m bgl. These soils were relatively uniform in composition and are typically described as sandy clayey flint and chalk gravel.

4.4 Seaford Chalk Formation

The Seaford Chalk Formation was encountered in all exploratory positions penetrating the overlying Made Ground and River Terrace Deposits at depths ranging between 0.10m and 4.05. The deposit persisted to the full depth of the investigation (37.00m bgl in BH01) and the full thickness Seaford Chalk Formation was not established.

Chalk descriptions provided on the engineering logs are based on CIRIA C574[5], and have broadly been determined as structureless chalk (both Grade Dm and Dc) overlying structured chalk to the full depth of the investigation at 37m bgl.

Grade Dm chalk was encountered from 0.1m depth (shallowest observed) to 14m depth (deepest observed base boundary). The Dm chalk was typically described as a layer of white slightly sandy gravelly silt with gravel comprising angular to subangular fine to coarse chalk.

A gradation to Grade Dc chalk, observed at depths ranging between 0.13m bgl (shallowest observed) and 9.75m bgl (deepest observed). This gradation / boundary was not well defined, and horizons of Grade Dm chalk were also noted at deeper levels below horizons of Grade Dc chalk.

Structured chalk was encountered from depths ranging between 5.8m bgl to 18.05m bgl and persisted to the full depth of the investigation to a maximum depth of 37m bgl. The horizon is relatively uniform in composition, and recovered core typically comprised weak medium density fractured white chalk (Grade C3&4 and Grade B3).

4.5 Observable Contamination

Visual and radiological screening of soils identified obvious signs of contamination in the north bund of the Sheep Pen area and in soils recovered from the pots in exposed in the Bull Pen Area as detailed in Table 4.1.

[5] C574 The Engineering Properties of Chalk (2002)

Table 4.1 – Summary of Observed Visual and Radiological Contamination

Location		Depth (m bgl)		Description
		From	To	
Bund north of Sheep Pen	TP15	2.7	>3.0	Laboratory waste including syringes, plastic pots and some electrical components. Animal remains which were confirmed by the RPS to be contaminated with radioactivity.
	TP16	2.8	>2.8	Animal remains
	TP17	2.8	>2.8	Animal remains
Bull Pen Pots		-	-	Radioactivity was identified by the RPS in samples taken from pots 3, 13, 16 & 19.
WS27		0.2	0.2	Fragment of cement roofing (suspected Asbestos Containing Materia)

4.6 Substructures

Substructures encountered in trial pits scoped to investigate the foundations of existing buildings are detailed on the Trial Pit sketches (Appendix B) and summarised in Table 4.2

Table 4.2 – Summary of Substructures

Location	Depth (m bgl)		Horizontal extent (m)	Description
	From	To		
HP01	0.15	0.30	0.20	Concrete foundation surrounded by structureless chalk
HP03	0.50	-	>0.30	Concrete foundation. Surrounding soils comprised made ground and clayey gravelly sand.
HP04	0.70	-	0.15	Concrete foundation dipping away from the building. Surrounding soils are structureless chalk.
HP05	0.25	0.35	0.15	Concrete foundation. Surrounding soils are made ground gravelly clayey sand.
HP06	0.30	0.40	0.20	Concrete foundation. Surrounding soils are structureless chalk.
HP07	GL	0.15	0.33	Concrete foundation, extends laterally at the base of the wall at ground level
HP08	0.50	0.90	0.20	Concrete foundation. Surrounding soils are made ground gravelly clayey sand over structureless chalk.
HP09	0.65	0.80	0.35	Concrete foundation. Surrounding soils are made ground gravelly sandy clay.
HP10	0.40	-	>0.90	Concrete foundation. Unable to identify lateral extent and thickness of concrete. Surrounding soils are made ground clayey gravelly sand.
HP11	0.70	1.20	0.60	Concrete foundation. Unable to identify base depth of concrete. Surrounding soil is sandy gravelly clay.
HP13	0.30	0.80	0.30	Concrete foundation. Surrounding soil is made ground sandy gravel over structureless chalk.
HP14	0.40	0.80	0.20	Concrete foundation. Unable to identify base depth of concrete. Surrounding soil is structureless chalk.

4.7 Groundwater

Groundwater was encountered during the investigation at the depths summarised in Table 4.3.

Table 4.3 – Summary of Groundwater Strikes

Location	Strike Depth (m bgl)	Notes
WS19	2.20 to 4.00	Seepages in chalk
BH02	25.25	Water level measured after open hole drilling.
BH04	~14	The groundwater was initially observed at a depth of approximately 14m bgl and fell to 17.40m bgl during drilling.

6no. return ground water monitoring visits were undertaken between the 14/03/2019 and 17/04/2019. Installations within the rotary boreholes were purged on the 14th March 2019. Groundwater levels recorded during the return visits including purge volumes are provided in Appendix E.

4.8 Ground Gas

Levels of methane, carbon dioxide, oxygen, carbon monoxide and hydrogen sulfide were measured during the 6no. weekly return monitoring visits. A summary of monitored gas levels is presented in Appendix E.

5.0 Laboratory Analysis

5.1 Geotechnical Laboratory Analysis

Laboratory geotechnical testing was scheduled by AECOM on samples obtained from the site investigation works and carried out by Professional Soils Laboratory (PSL) who are UKAS accredited for a wide range of geotechnical tests .

All testing was carried out in accordance with BS1377:1990+A1 Methods of Testing Soils for Civil Engineering Purposes. Table 5.1 details tests and standards undertaken on samples recovered during the site investigation.

Table 5.1 – Summary of Laboratory Geotechnical Testing

Type of Test	Standard	No.
Classification		
Natural Moisture Content	BS1377: Part 2:1990, Clause 3.2	77
Atterberg Limits	BS1377: Part 2: Clauses 4.4, 5.3 & 5.4 1990	67
Particle Size Distribution (PSD) – Wet Sieving	BS1377: Part 2:1990, Clause 9.2	52
Sedimentation by pipette (completed on above samples with >20% clay silt fraction)	BS1377: Part2:1990, Clause 9.4	50
Dry Density / Moisture Content Relationship 2.5kg rammer 1litre mould	BS1377: Part 4:1990, Clause 3.3	18
Dry Density and Saturated Moisture Content of chalk	BS1377: Part 2: 1990, Clause 3.3	37
Strength / Density		
Unconfined Compressive Strength Tests	BS1377: Part 7: 1990, Clause 6.3	3
Set of 3 axial and diametric Pont Load Tests	BS1377: Part 7: 1990, Clause 5.6	52

Type of Test	Standard	No
Chemical Testing		
pH	BS1377: Part 3:1990	23
2:1 Water Soluble Sulfate (with determination of water soluble Mg if SO4>3000mg/l, and determination of water soluble nitrate and chloride ff pH <5.5)	BS1377: Part 3:1990	23

5.2 Chemical Laboratory Testing

Environmental testing of soil samples and groundwater samples recovered during return monitoring visits was scheduled by AECOM and undertaken by ALS Laboratories who are UKAS and MCERTS accredited for a wide range of chemical tests.

Laboratory testing was carried out in accordance with BS10175: 2011+A1: 2013 Investigation of Potentially Contaminated Sites – Code of Practice. Laboratory analytical certificates are presented in Appendix F.

5.3 Radiological Testing

Soil samples obtained by Aurora from the north bund of the Sheep Pen and from the Bull Pen area soil pots where submitted to SOCOTEC laboratories and scheduled by Aurora for Radiological assessment as summarised in Table 5.3. Test result certificates area included in Appendix E.

Table 5.2 – Summary of Laboratory Radiological Testing

Location	Testing Included	No.
Sheep Pen bund	High Resolution Gamma Spectrometry for a broad range of gamma emitting radionuclides	1
	Carbon-14 and Tritium combustion and subsequent liquid scintillation analysis	1
	Radiochemical separation and gas flow proportional counting for Strontium 90	1
Bull Pen Pot 3	Carbon-14 and Tritium combustion and subsequent liquid scintillation analysis	1
	Radiochemical separation and gas flow proportional counting for Strontium 90	1
Bull Pen Pot 13	High Resolution Gamma Spectrometry for a broad range of gamma emitting radionuclides	1
	Radiochemical separation and alpha spectrometry for Uranium-235, Plutonium-239 and Americium-241	1
Bull Pen Pot 19	High Resolution Gamma Spectrometry for a broad range of gamma emitting radionuclides	1
	Carbon-14 and Tritium combustion and subsequent liquid scintillation analysis	1
	Radiochemical separation and gas flow proportional counting for Strontium 90	1
Bull Pen Pot 16	High Resolution Gamma Spectrometry for a broad range of gamma emitting radionuclides	1
	Radiochemical separation and alpha spectrometry for Uranium-235, Plutonium-239 and Americium-241	1
	Radiochemical separation and gas flow proportional counting for Strontium 90	1

5.4 Biological Agent Testing

45no. Soil samples from the Phase A trial pits, and 6no. samples from the northern bund of the Sheep Pen area were sent to the Public Health England Rare and Imported Pathogens Laboratory (RIPL) for biological agent screening. All 51 samples were tested for Bacillus anthracis (Anthrax) and all confirmed bacillus anthracis was not present in the soils.

Laboratory test certificates for biological testing is included in Appendix F.

6.0 References

1. Phase 1 Geotechnical and Geo-environmental Desk Study Report, October 2017 (AECOM)
2. Former Pirbright Institute: Compton, Berkshire, Data Review and Risk Assessment of Biological Agent Persistence, September 2017 (PHE)
3. Desk study on the radiological status of the former institute of animal health at Compton, October 2018 (Aurora Health Physics Ltd)
4. Specification for Ground Investigation – HCA Compton (Document reference: 60544578 SPEC_002), Version 5 issued by AECOM on 17.12.18
5. CIRIA C574 The Engineering Properties of Chalk (2002)

- BS5930:1999+A2:2010 Code of Practice for Site Investigations
- British Geological Society online Geo-index checked 2nd April 2019
- Environment Agency (2004) CLR11 Model Procedures for the Management of Contaminated Land.
- The BGS 1:50,000 series England and Wales sheet 267

Appendices

Appendix A – Report Conditions

Report Conditions

SITE INVESTIGATION

This report is produced solely for the benefit of Homes England and their Consultant partners and no liability is accepted for any reliance placed on it by any other party unless specifically agreed in writing otherwise.

This report refers, within the limitations stated, to the condition of the site at the time of the inspections. No warranty is given as to the possibility of future changes in the condition of the site.

This report is based on a visual site inspection, reference to accessible referenced historical records, information supplied by those parties referenced in the text and preliminary discussions with local and Statutory Authorities. Some of the opinions are based on unconfirmed data and information and are presented as the best that can be obtained without further extensive research.

Where ground contamination is suspected but no physical site test results are available to confirm this, the report must be regarded as initial advice only, and further assessment should be undertaken prior to activities related to the site. Where test results undertaken by others have been made available these can only be regarded as a limited sample. The possibility of the presence of contaminants, perhaps in higher concentrations, elsewhere on the site cannot be discounted.

Whilst confident in the findings detailed within this report because there are no exact UK definitions of these matters, being subject to risk analysis, we are unable to give categorical assurances that they will be accepted by Authorities or Funds etc. without question as such bodies often have unpublished, more stringent objectives. This report is prepared for the proposed uses stated in the report and should not be used in a different context without reference to WYG. In time improved practices or amended legislation may necessitate a re-assessment.

The assessment of ground conditions within this report is based upon the findings of the study undertaken. We have interpreted the ground conditions in between locations on the assumption that conditions do not vary significantly. However, no investigation can inspect each and every part of the site and therefore changes or variances in the physical and chemical site conditions as described in this report cannot be discounted.

The report is limited to those aspects of land contamination specifically reported on and is necessarily restricted and no liability is accepted for any other aspect especially concerning gradual or sudden pollution incidents. The opinions expressed cannot be absolute due to the limitations of time and resources imposed by the agreed brief and the possibility of unrecorded previous use and abuse of the site and adjacent sites. The report concentrates on the site as defined in the report and provides an opinion on surrounding sites. If migrating pollution or contamination (past or present) exists further extensive research will be required before the effects can be better determined.

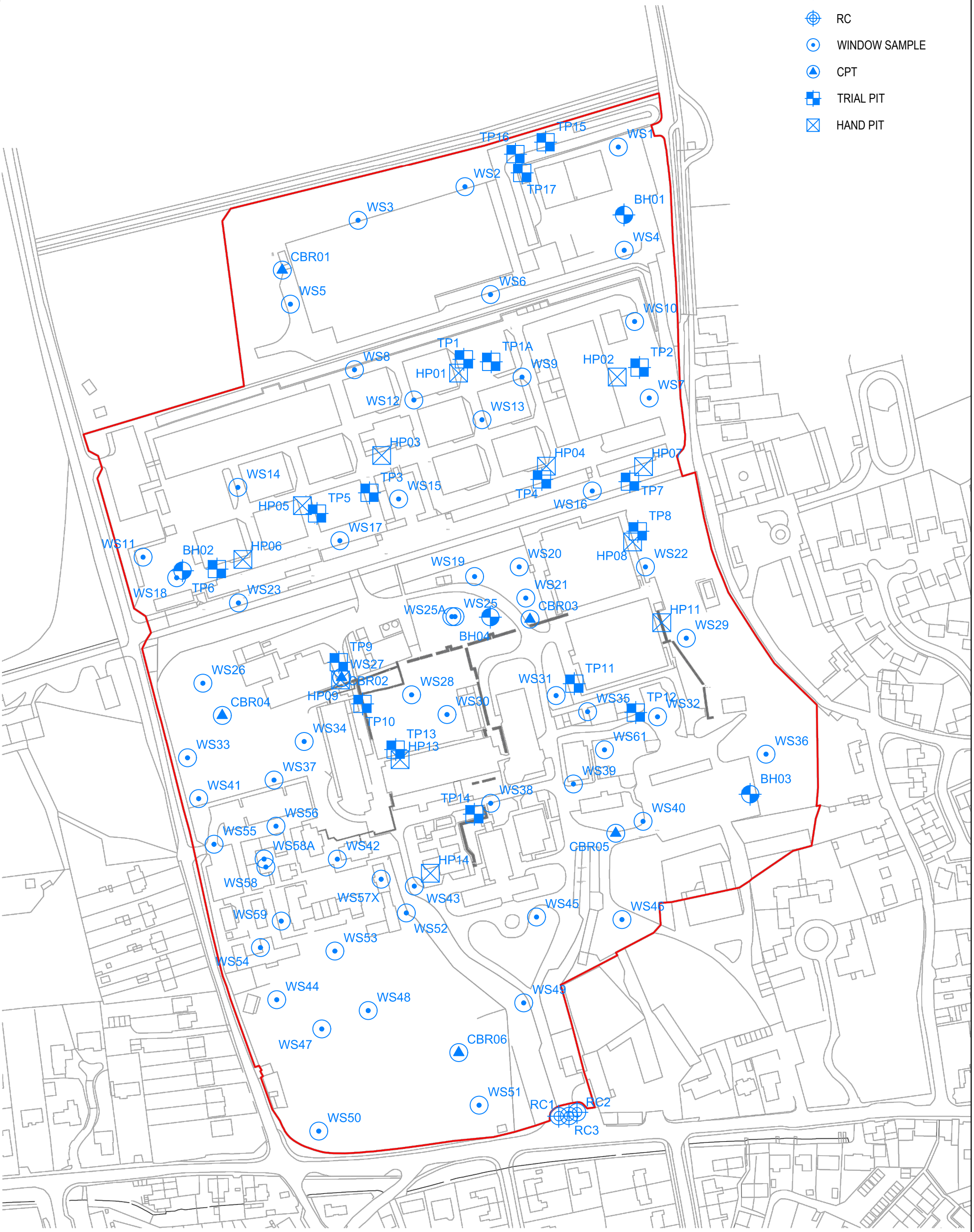
Appendix B – Drawings

DO NOT SCALE: CONTRACTOR TO CHECK ALL DIMENSIONS AND REPORT ANY OMISSIONS OR ERRORS

N

KEY

- BOREHOLE
- RC
- WINDOW SAMPLE
- CPT
- TRIAL PIT
- HAND PIT



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Project: A090070-474
HE COMPTON

Drawing Title:
EXPLORATORY HOLE LOCATION PLAN

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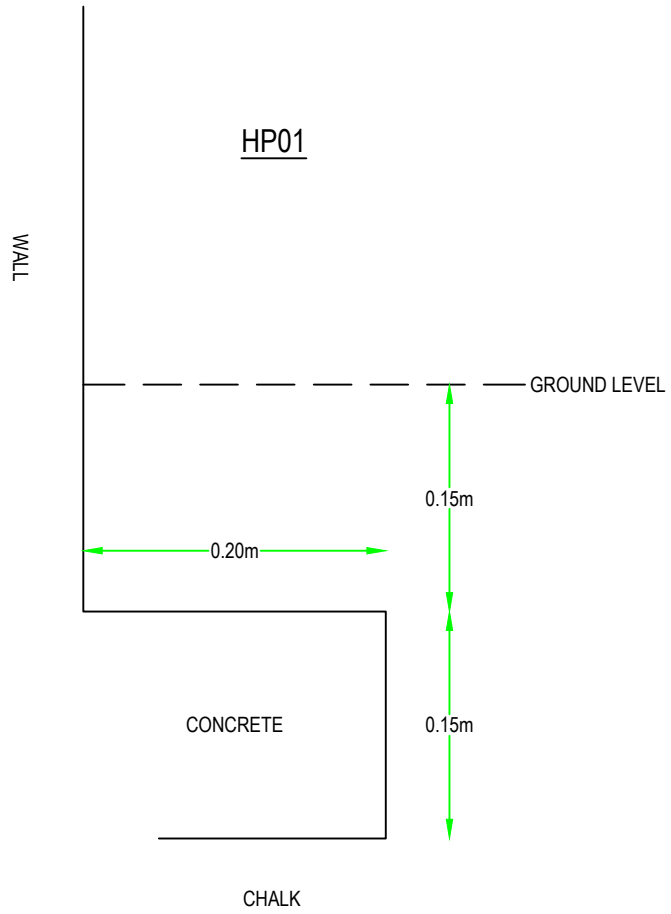

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HAND DUG PIT SKETCH - HP01

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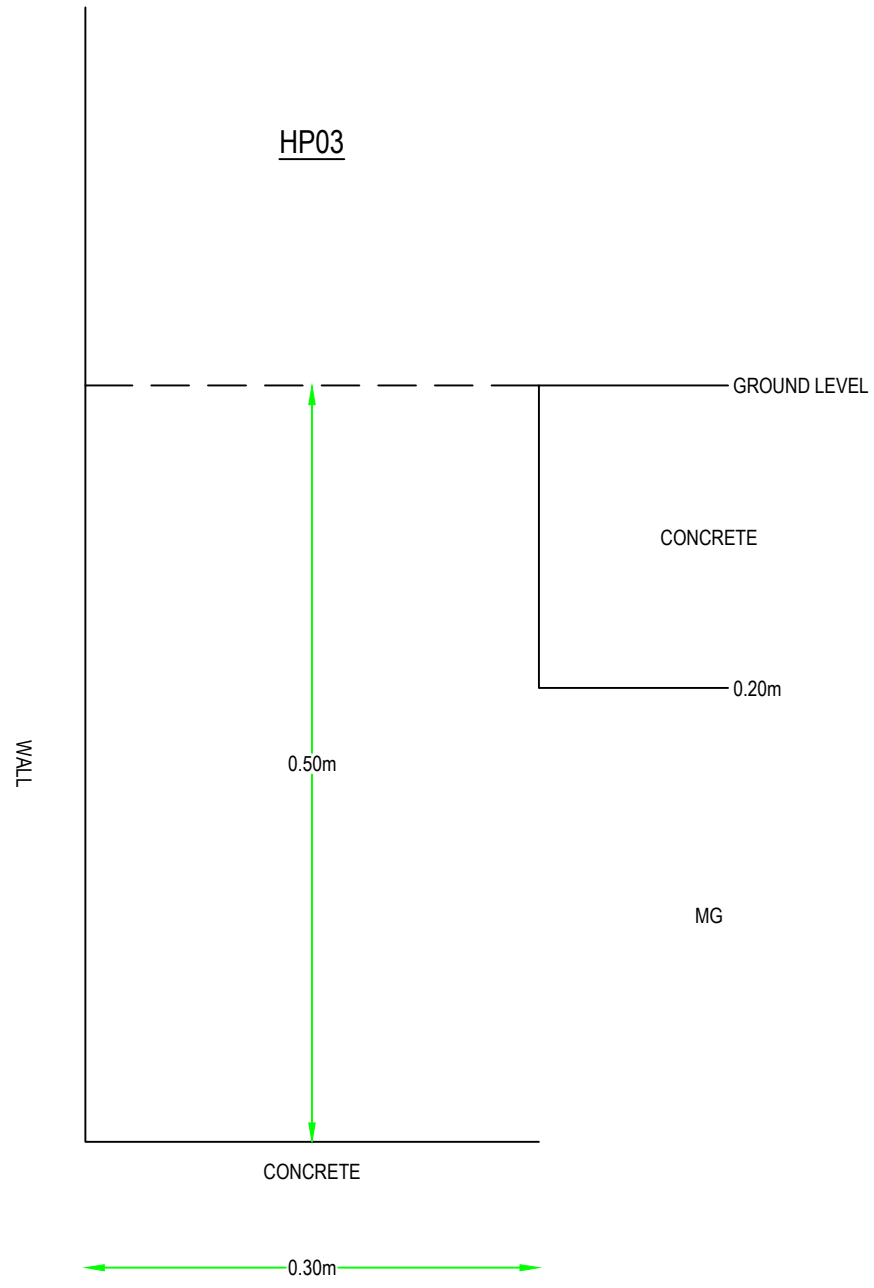

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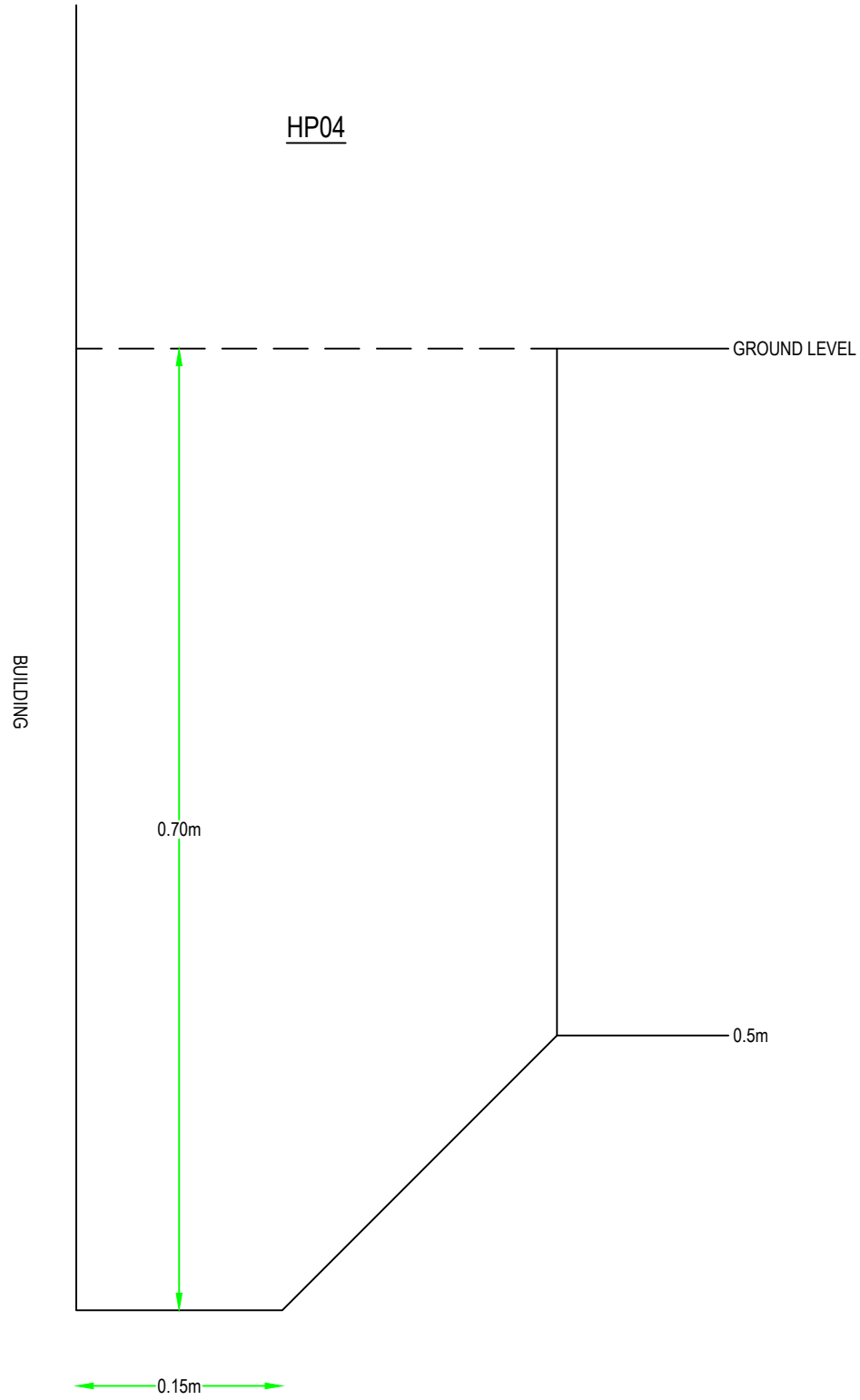

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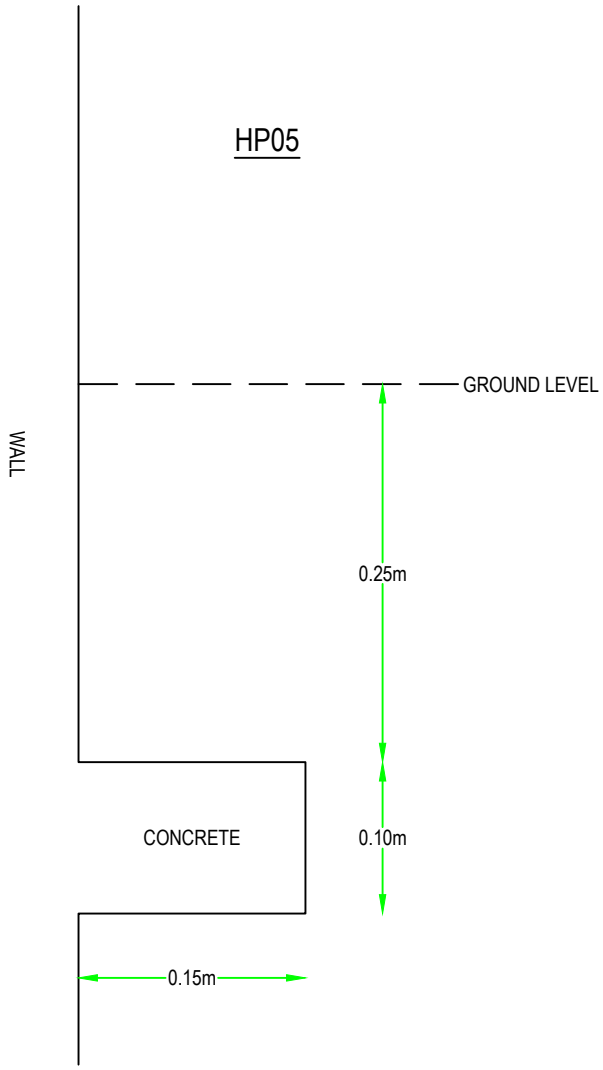

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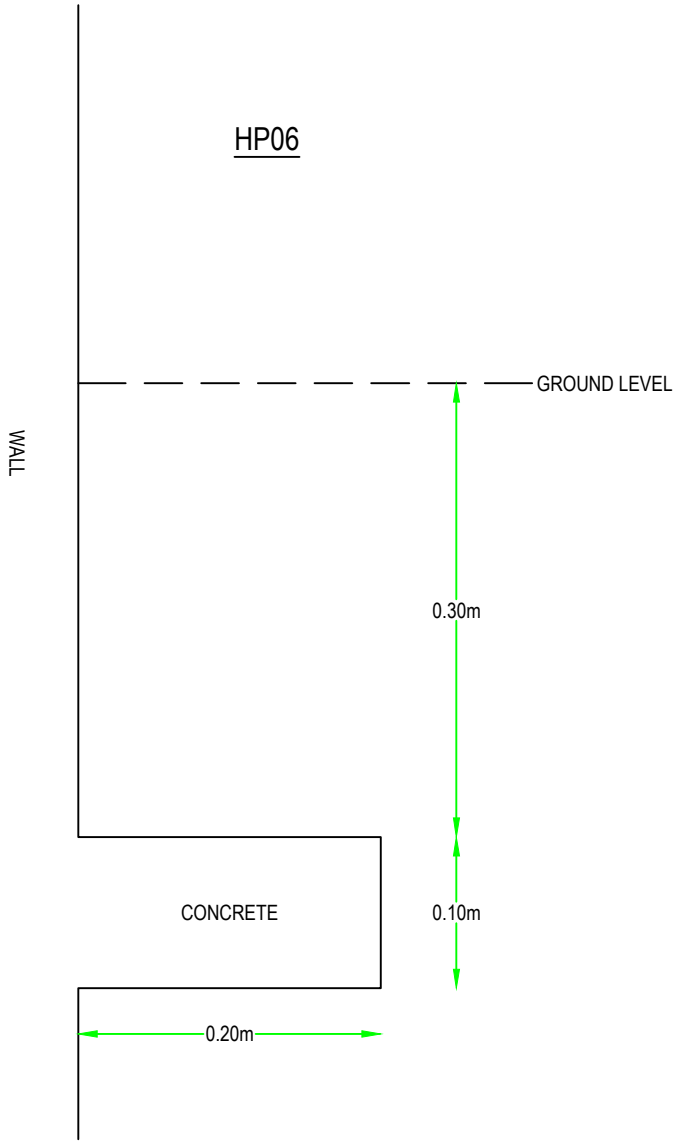

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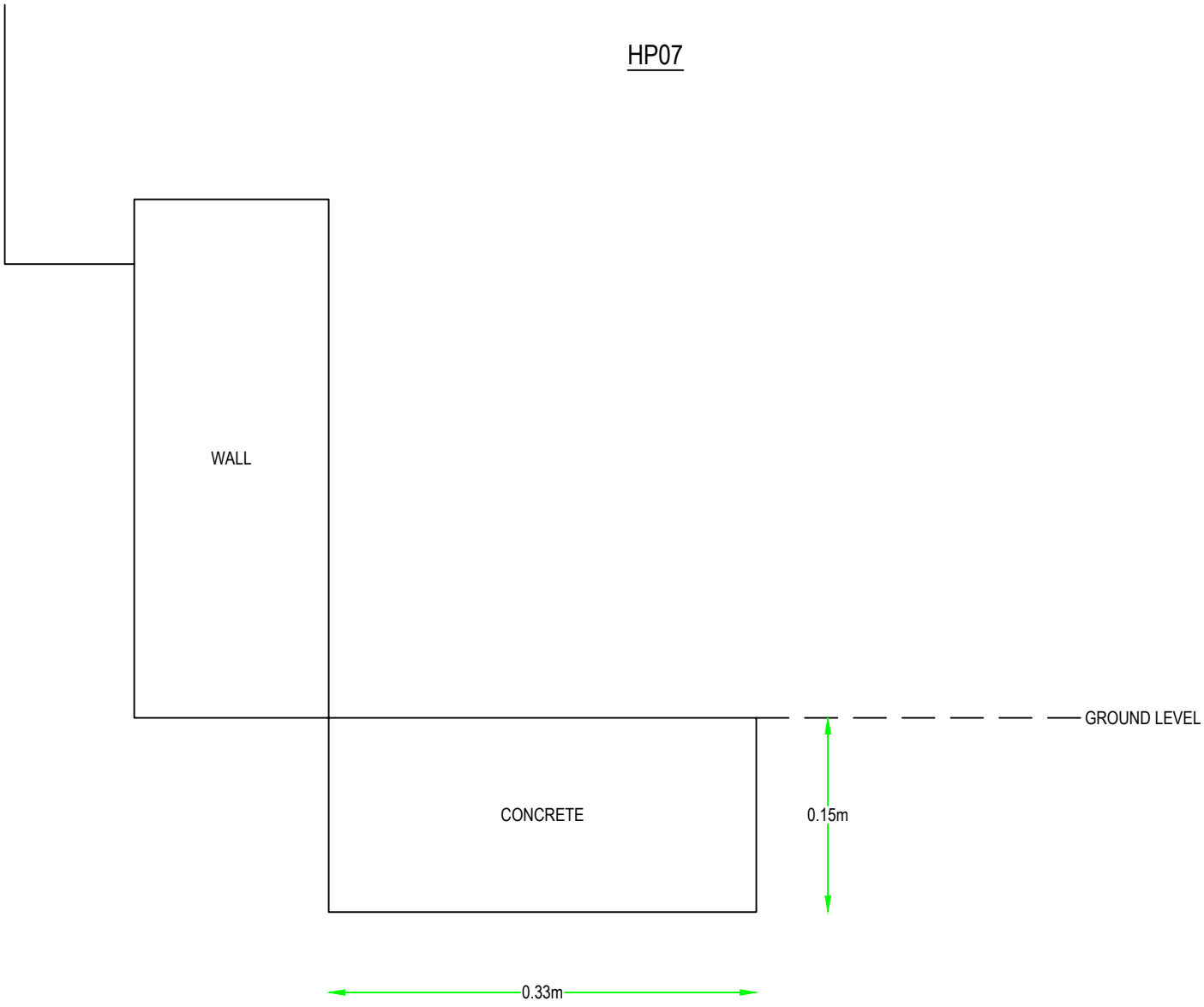

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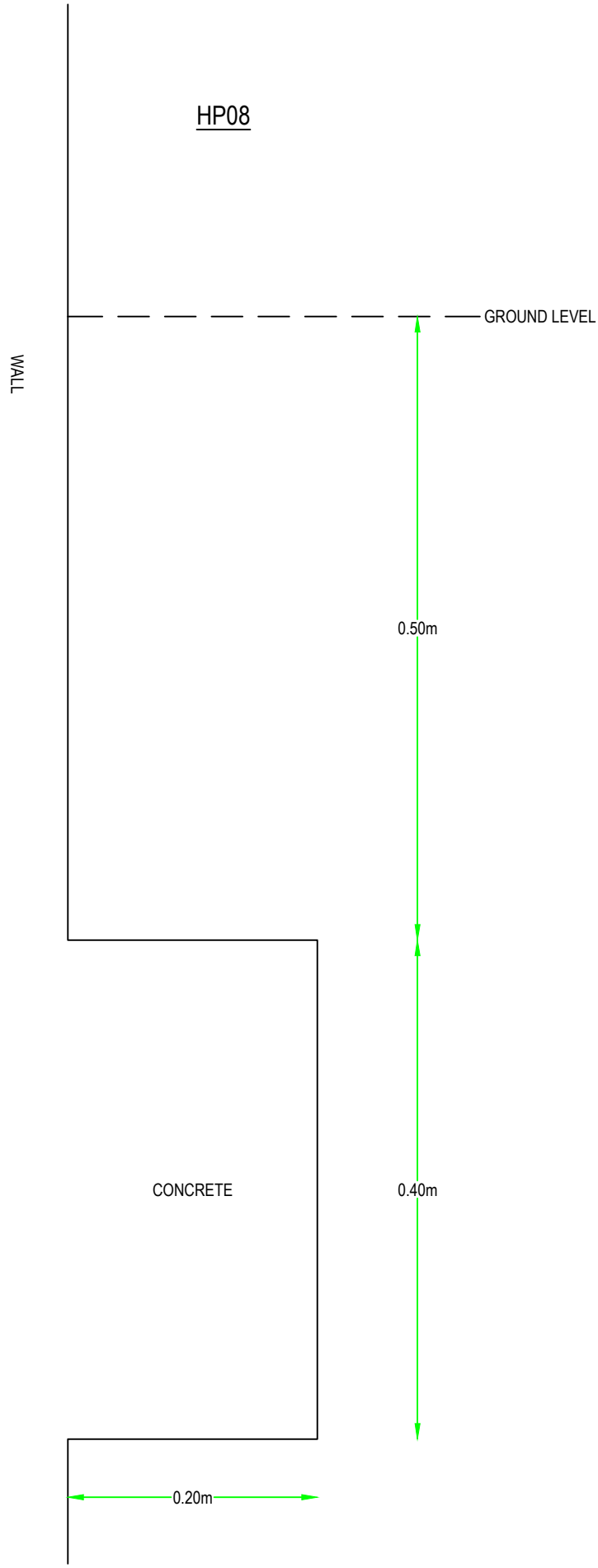

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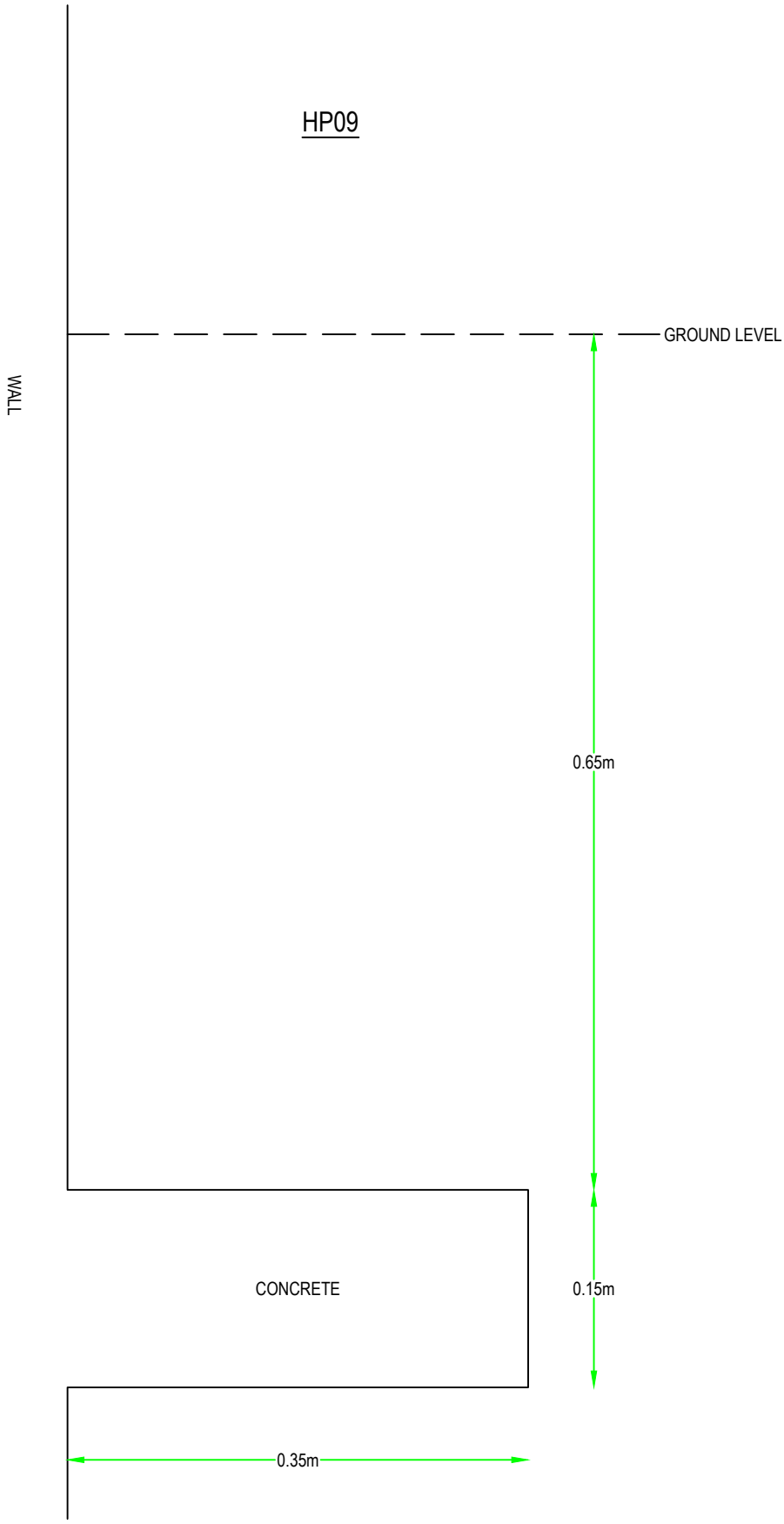

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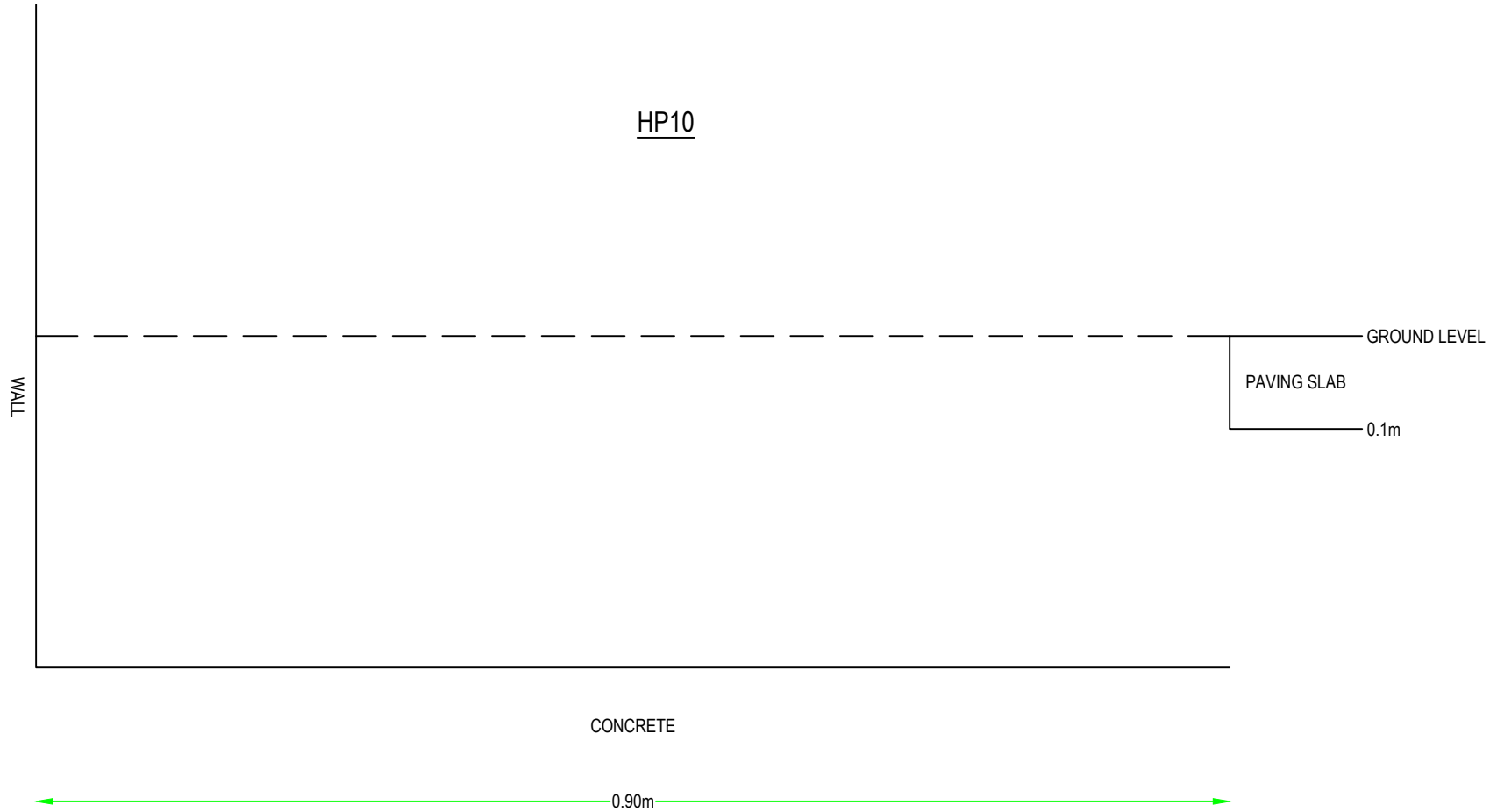

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Drawing Title:
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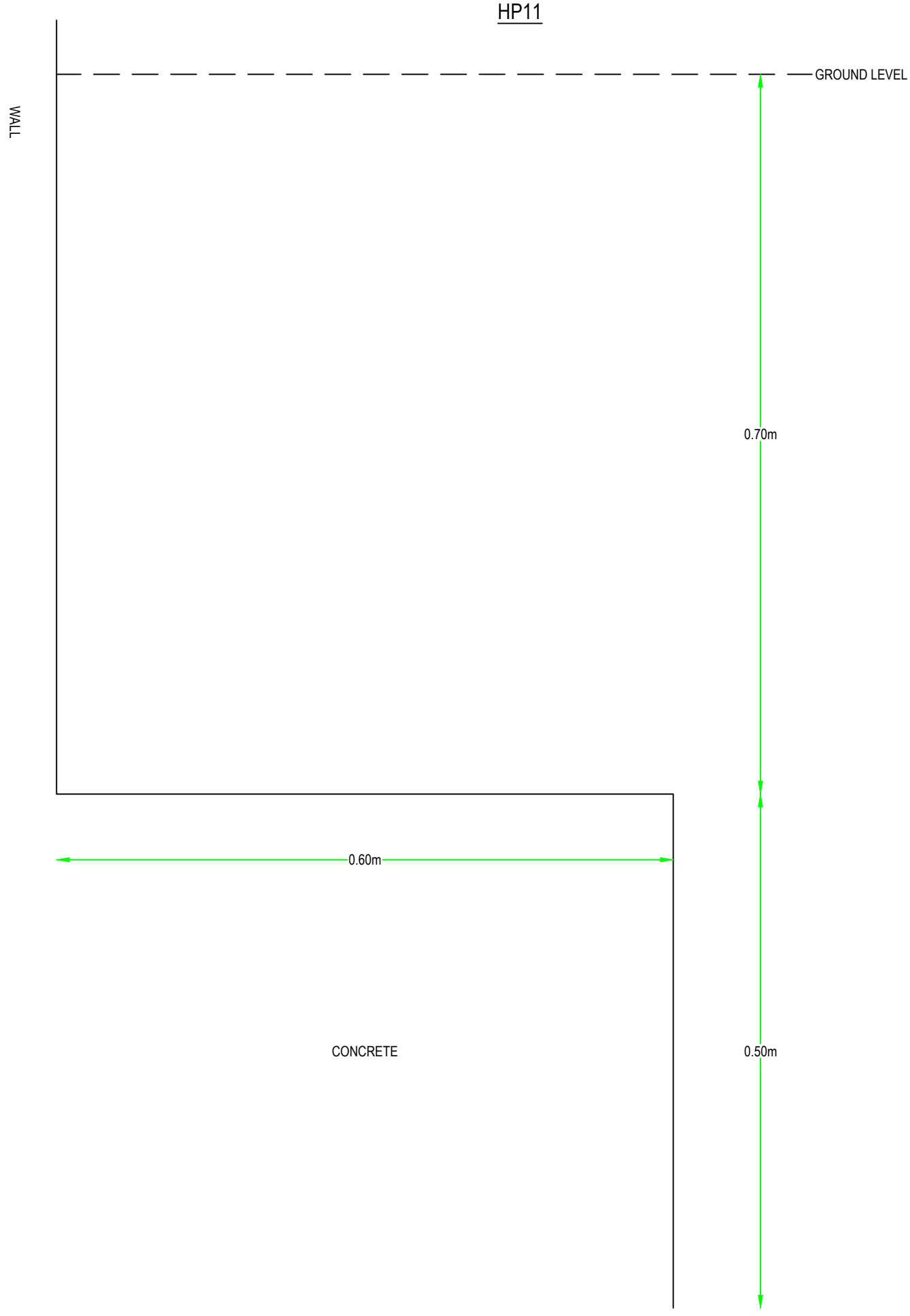

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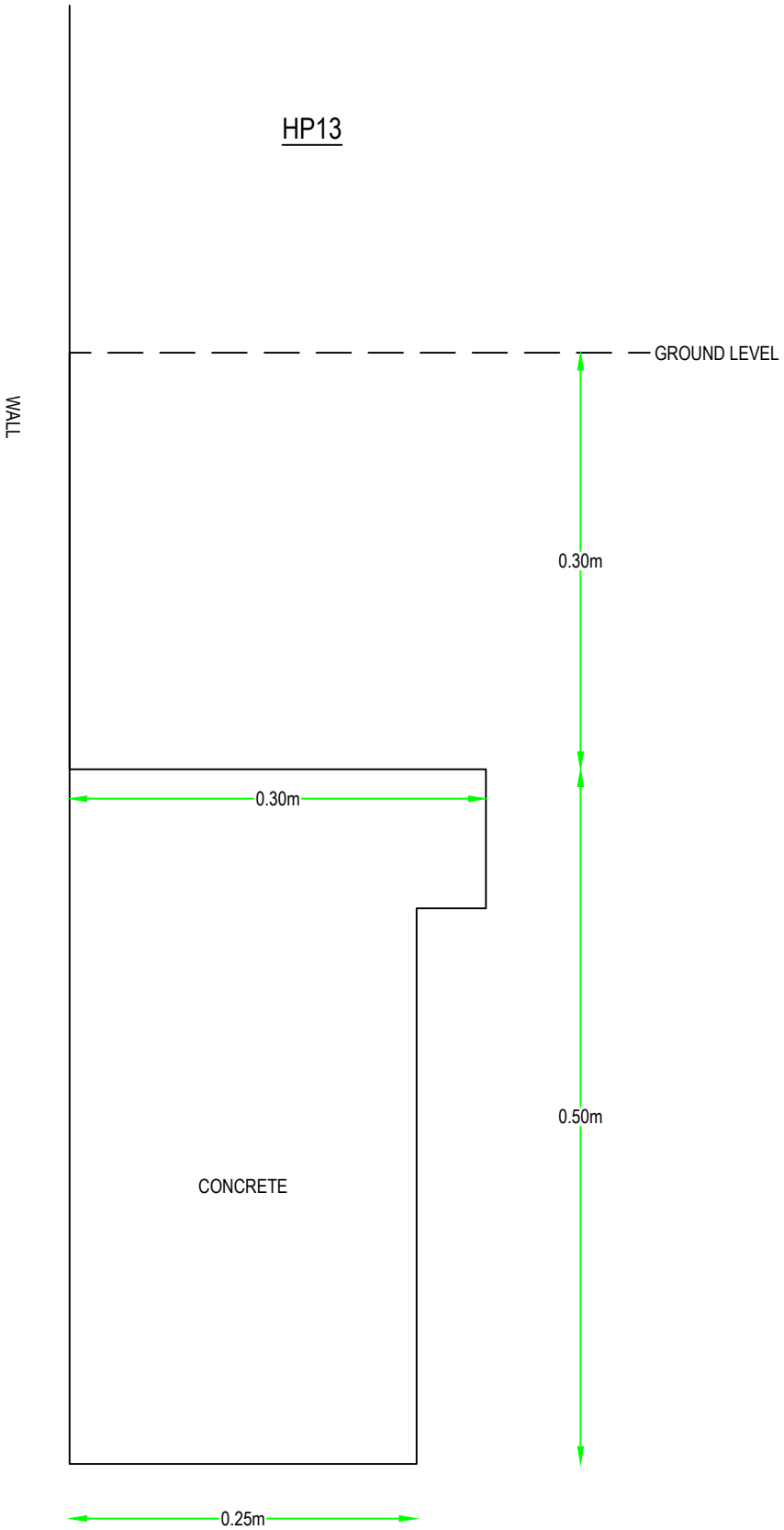

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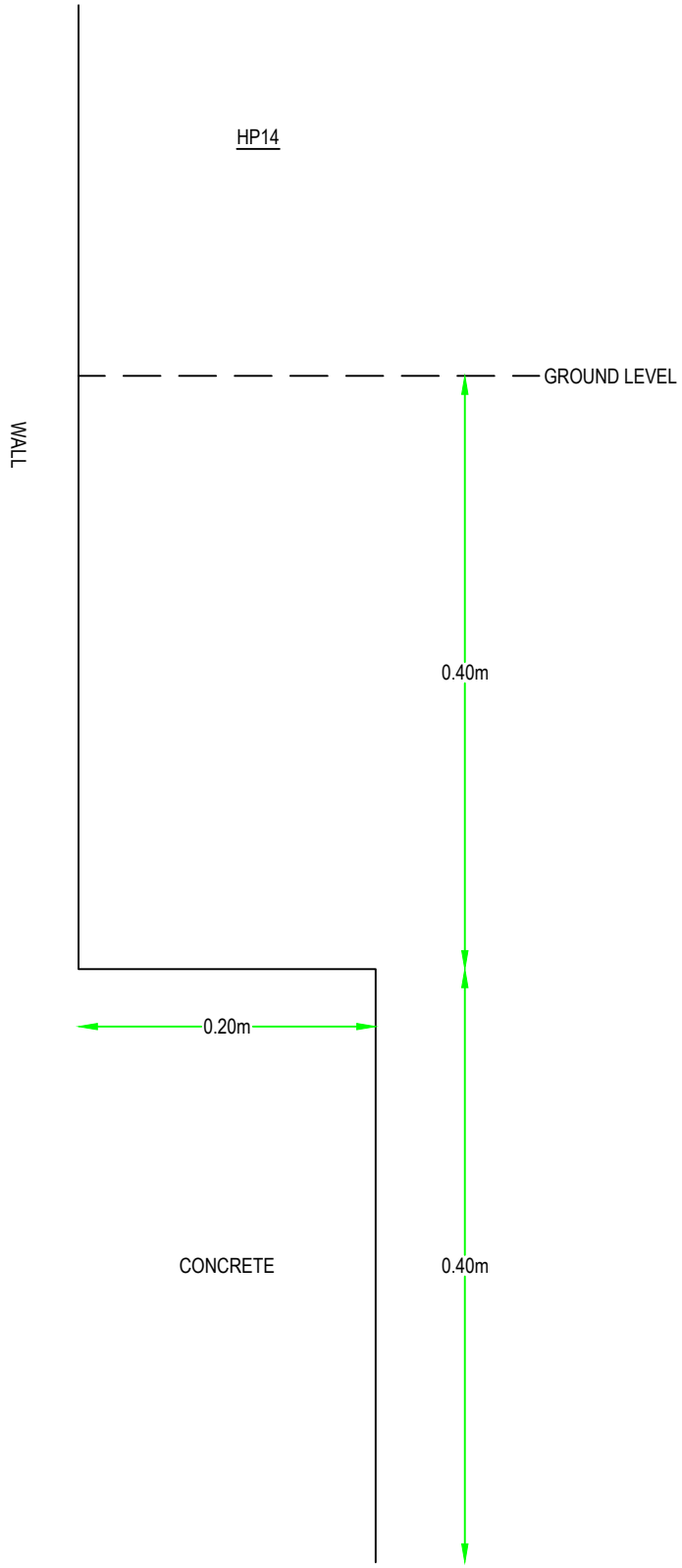

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e-mail: enviro@wyg.com

Client: HOMES ENGLAND

Project: A090070-474
HE COMPTON

Drawing Title:
HAND DUG PIT SKETCH - HP14

Scale @ A4	Drawn	Date	Checked	Date	Approved	Date
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Project No.	Office	Type	Drawing No.	Revision
A090070-474	LDN	N	12	

Appendix C – Borehole Logs

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451891.33	Northing:	180450.63
Level:	117.63mAOD	Depth:	36.50m
Logger:	LM	Type:	WLS+RC
		Inclination:	90°

Status: FINAL

Borehole Number: **BH01**

Sheet 1 of 4

Method, Plant and Crew					Diameter		Casing		Groundwater						
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00	0.80	Inspection Pit	Hand Excavated		0.80	300								
0.80	6.00	Dynamic Windowless Sampling	T44 Rig		6.00	-								
6.00	24.75	Rotary Core	T44 Rig		24.75	92								
24.75	36.50	Rotary Open Hole	T44 Rig		36.50	120								

Scale: 1:50
Checked By: PR
Approved By: RT
Start Date: 21/02/2019
Finish Date: 25/02/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: CONCTETE. (Foreman's description)						0.00	EW040419	
MADE GROUND: (Foreman's description)		0.15	117.48			0.20	ES1	
Structureless CHALK. Comprised of white with occasional orange mottled gravel of subangular fine to coarse low density chalk with occasional cobbles of rinded flint. (Grade Dc) *From 1.70m bgl becomes very silty. (Grade DC/Dm)*		0.80	116.83					
Structureless CHALK. Comprised of white with occasional orange mottled gravelly SILT. Gravel is subangular to subrounded fine to coarse medium density chalk with rare subangular coarse rinded flint. (Grade Dm) *From 4.30m to 5.70m bgl cobble of rinded subangular flint.*		1.90	115.73					
Structured CHALK. White with occasional orange mottled very weak medium density chalk. Fractures are partially open. (Infill likely washed away). (60,100,170) (Grade C3) *From 6.00m to 6.17m bgl recovered as silty gravel.* *From 6.90m to 7.60m bgl recovered as silty gravel.* *From 7.70m to 7.80m bgl recovered as silty gravel.*		5.80	111.83			6.60	C1	
Structured CHALK. Very weak medium density white mottled orange speckled black chalk. (Insufficient rock recovered to grade.) *From 8.30m to 8.50m bgl recovered as silty gravel.* *From 8.50m to 9.00m bgl core loss.*		7.90	109.73			8.50	C2	
Structureless CHALK. Comprising of white mottled orange with black speckling subangular to subrounded fine to coarse medium density chalk. (Grade Dc)		9.00	108.63					SPT(C) 9.00m, N=59 (5,11/14,21,17,7)
Poor recovery. Rock recovered as gravel of subrounded fine to coarse white CHALK with		9.75	107.88			9.65 9.80	C3 C4	

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered.
3. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 36.50m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
0.80	1.50		100	
1.50	3.00		100	
3.00	4.50		100	
4.50	6.00		100	

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451891.33	Northing:	180450.63
Level:	117.63mAOD	Depth:	36.50m
Logger:	LM	Type:	WLS+RC
		Inclination:	90°

Status: FINAL

Borehole Number: **BH01**

Scale: 1:50
Checked By: PR
Approved By: RT
Start Date: 21/02/2019
Finish Date: 25/02/2019

Method, Plant and Crew

From (m)	To (m)	Type	Plant Used	Crew
0.00	0.80	Inspection Pit	Hand Excavated	
0.80	6.00	Dynamic Windowless Sampling	T44 Rig	
6.00	24.75	Rotary Core	T44 Rig	
24.75	36.50	Rotary Open Hole	T44 Rig	

Diameter

Depth (m)	Diam (mm)
0.80	300
6.00	-
24.75	92
36.50	120

Casing

Depth(m)	Diam (mm)

Groundwater

Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Poor recovery. Rock recovered as gravel of subrounded fine to coarse white CHALK with orange mottling and black speckling. *At 9.90m bgl intact rock.* *At 10.35m bgl intact rock.*								
		11.75	105.88					
Poor recovery. Intact rock. Recovered as very weak to weak high density white CHALK with orange mottling and black speckling. *From 12.40m to 12.54m bgl fracture is 90 degrees, occasional pockets of black speckling. (Grade B2)*						12.30	C5	
		12.75	104.88					
Rock recovered as silty gravel of white subangular fine to coarse CHALK with orange mottling and black speckling.								
		13.31	104.32			13.30	C6	
Structured white CHALK with orange mottling and black speckling. Very weak medium to high density chalk. (Grade B3) *At 13.45m bgl fracture is 80mm wide, infill with silty subangular fine gravel, 20 degrees.* *At 13.65m bgl fracture is partial open, no infill, 20 degrees, undulating.* *From 13.75m to 14.45m bgl poor recovery. Rock recovered silty sandy gravel.* *At 14.50m bgl fracture is 90 degrees, stained yellow, 70mm long.* *At 15.27m bgl fracture is 20 degrees, partial open, no infill (washed out)*						15.25	C7	
		15.75	101.88					
Structured CHALK. Very weak medium density white mottled orange speckled black chalk. (Grade C3) *At 16.13m bgl fractures is partially open, infill silt.* *At 16.28m bgl fractures is partially open, infill silt, smooth.* *At 16.55m bgl <3mm space, smooth, no infill.* *From 16.60m to 17.25m bgl 90 degrees, orange staining and black speckling.* *From 16.95m to 17.25m bgl poor recovery (silty gravel).*						16.15	C8	
		17.25	100.38					
Assumed zone of core loss.						17.60	C9	
		18.05	99.58					
Structured white CHALK with orange mottling and black speckling. Very weak medium density. (Grade C3) *At 18.35m bgl fracture is 20 degrees, infill silt, smooth.* *At 18.55m bgl fracture is 10 degrees, undulating, no infill.*								
		18.75	98.88					
Poor recovery. Structured white CHALK with orange mottling and black speckling. Partially intact rock. Very weak medium density. Fracture is 90 degrees, black speckled, adjacent to rock was subangular to subrounded fine to coarse chalk gravel. (Grade C3) *At 19.05m bgl fracture is 80 degrees, smooth.*								
		19.30	98.33					
Structured CHALK. Very weak medium density white mottled orange chalk. Fractures are 10 to 40 degrees, partially open, 2mm to 10mm wide, smooth, infill silt spacing (9mm, 25mm, 45mm), aperture (2mm. 3.1mm, 0mm). (Grade C3)						19.50	C10	

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered.
3. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 36.50m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451891.33	Northing:	180450.63
Level:	117.63mAOD	Depth:	36.50m
Logger:	LM	Type:	WLS+RC
		Inclination:	90°

Status: FINAL

Borehole Number: **BH01**

Scale: 1:50
Checked By: PR
Approved By: RT
Start Date: 21/02/2019
Finish Date: 25/02/2019

Method, Plant and Crew

From (m)	To (m)	Type	Plant Used	Crew
0.00	0.80	Inspection Pit	Hand Excavated	
0.80	6.00	Dynamic Windowless Sampling	T44 Rig	
6.00	24.75	Rotary Core	T44 Rig	
24.75	36.50	Rotary Open Hole	T44 Rig	

Diameter

Depth (m)	Diam (mm)
0.80	300
6.00	-
24.75	92
36.50	120

Casing

Depth(m)	Diam (mm)

Groundwater

Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Structured CHALK. Very weak medium density white mottled orange chalk. Fractures are 10 to 40 degrees, partially open, 2mm to 10mm wide, smooth, infill silt spacing (9mm, 25mm, 45mm), aperture (2mm. 3.1mm, 0mm). (Grade C3)								
						21.30	C11	
At 21.90m bgl fracture is 70 degrees, smooth, frequent black specks.								
At 22.23m bgl fracture is 50mm wide, infill silty gravel. *At 22.35m bgl fracture is 70 degrees, smooth, black speckled.*						22.25	C12	
From 22.75m to 23.15m bgl poor recovery, silty gravel.								
From 23.25m to 24.75m bgl poor recovery, silty sandy gravel.								
At 24.27m bgl fracture is 90 degrees, black speckled.								
Structured white CHALK.		24.75	92.88					

Continued on Next Page

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered.
3. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 36.50m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451891.33	Northing:	180450.63
Level:	117.63mAOD	Depth:	36.50m
Logger:	LM	Type:	WLS+RC
		Inclination:	90°

Status: FINAL

Borehole Number: **BH01**

Sheet 4 of 4

Method, Plant and Crew					Diameter		Casing		Drilling Progress by Time				
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Date	Time	Depth (m)	Casing (m)	Water (m)
0.00	0.80	Inspection Pit	Hand Excavated		0.80	300							
0.80	6.00	Dynamic Windowless Sampling	T44 Rig		6.00	-							
6.00	24.75	Rotary Core	T44 Rig		24.75	92							
24.75	36.50	Rotary Open Hole	T44 Rig		36.50	120							

Scale:	1:50
Checked By:	PR
Approved By:	RT
Start Date:	21/02/2019
Finish Date:	25/02/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples, Tests and Rotary Coring: Depth (m)	Ref	Tests / Results
EOH at 36.50m - Terminated due to refusal		36.50	81.13					

31 32 33 34 35 36 37 38 39 40

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered.
3. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 36.50m bgl.

Flushing

From (m)	To (m)	Return Min %	Colour	Type
6.00	36.50			Air / Mist

Hammer Information

Serial No.	Energy Ratio %

Groundwater

Strike (m)	Casing (m)	Sealed (m)	Time (min)	Rose To (m)	Remarks

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451643.29	Northing:	180250.70
Level:	118.89mAOD	Depth:	37.00m
Logger:	AT	Type:	WLS+RC
		Inclination:	90°

Status: FINAL

Borehole Number: **BH02**

Sheet 1 of 4

Method, Plant and Crew					Diameter		Casing		Groundwater						Scale: 1:50
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks	Checked By: PR
0.00	0.70	Inspection Pit	Hand Excavated		0.70	300									Approved By: RT
0.70	6.00	Dynamic Windowless Sampling	T44 Rig		6.00	-									Start Date: 19/02/2019
6.00	20.00	Rotary Core	T44 Rig		20.00	92									Finish Date: 21/02/2019
20.00	37.00	Rotary Open Hole	T44 Rig		37.00	120									

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: Concrete hardstanding consisting of reinforce concrete. Rebar is 6mm diameter at 0.14m bgl.						0.00	EW040419	
MADE GROUND: Whitish brown sandy GRAVEL with high cobble content. Sand is fine to coarse. Gravel is angular fine to coarse flint and medium strong chalk.		0.26	118.63			0.30	ES1	
Structureless CHALK. Composed of biedge white silty GRAVEL. Gravel is angular fine to coarse flint and medium strong chalk. (Grade Dc)		0.45	118.44			0.75	ES2	
Structureless CHALK. Composed of white slightly sandy gravelly SILT. Sand is fine to coarse. Gravel is angular to subangular fine to coarse weak to medium density chalk with occasional specks. (Grade Dm)		1.50	117.39					
From 4.30m to 4.50m bgl band of flint.								
From 5.70m to 6.00m bgl no recovery, band of flint and rock rolling used.								
From 7.80m to 7.90m bgl band of flint.								
From 9.50m to 9.65m bgl band of flint.								

1 2 3 4 5 6 7 8 9 10

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered.
3. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 37.00m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
0.70	1.50		100	
1.50	3.00		100	
3.00	4.50		100	
4.50	6.00		100	

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**	Location Details	Status	Borehole Number
Location: **Compton, West Berkshire**	Easting: 451643.29 Northing: 180250.70	FINAL	**BH02**
Client: **Homes England**	Level: 118.89mAOD Depth: 37.00m		Sheet 2 of 4
	Logger: AT Type: WLS+RC		
	Inclination: 90°		

Method, Plant and Crew

From (m)	To (m)	Type	Plant Used	Crew
0.00	0.70	Inspection Pit	Hand Excavated	
0.70	6.00	Dynamic Windowless Sampling	T44 Rig	
6.00	20.00	Rotary Core	T44 Rig	
20.00	37.00	Rotary Open Hole	T44 Rig	

Diameter

Depth (m)	Diam (mm)
0.70	300
6.00	-
20.00	92
37.00	120

Casing

Depth(m)	Diam (mm)

Groundwater

Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks

Scale:	1:50
Checked By:	PR
Approved By:	RT
Start Date:	19/02/2019
Finish Date:	21/02/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Structureless CHALK. Composed of white slightly sandy gravelly SILT. Sand is fine to coarse. Gravel is angular to subangular fine to coarse weak to medium density chalk with occasional specks. (Grade Dm)								
Structured white CHALK with occasional orange mottling and black specks medium to strong density fractured chalk. Fractures are partial open, occasional infilled with brownish orange silt. (Grade B3)		14.00	104.89			14.20	C1	SPT(C) 14.00m, N=50 (3,6/7,9,16,18)
						16.10	C2	
Structured white CHALK with orange mottling. Fractures are 2 to 5mm wide, smooth, infill silt. High number of drilling induced fractures. (Grade C3)		16.50	102.39			17.50	C3	
						18.80	C4	
		20.00	98.89					

11 12 13 14 15 16 17 18 19 20

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered.
3. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 37.00m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks

Hammer Information

Serial No.	Energy Ratio %

Project Number

A090070-474

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451643.29	Northing:	180250.70
Level:	118.89mAOD	Depth:	37.00m
Logger:	AT	Type:	WLS+RC
		Inclination:	90°

Status: FINAL

Borehole Number: **BH02**

Method, Plant and Crew					Diameter		Casing		Drilling Progress by Time				
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Date	Time	Depth (m)	Casing (m)	Water (m)
0.00	0.70	Inspection Pit	Hand Excavated		0.70	300							
0.70	6.00	Dynamic Windowless Sampling	T44 Rig		6.00	-							
6.00	20.00	Rotary Core	T44 Rig		20.00	92							
20.00	37.00	Rotary Open Hole	T44 Rig		37.00	120							

Scale:	1:50
Checked By:	PR
Approved By:	RT
Start Date:	19/02/2019
Finish Date:	21/02/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples, Tests and Rotary Coring: Depth (m)	Ref	Tests / Results
Structured white CHALK.								

Continued on Next Page

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered.
3. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 37.00m bgl.

Flushing

From (m)	To (m)	Return Min %	Colour	Type
6.00	37.00			Air / Mist

Hammer Information

Serial No.	Energy Ratio %

Groundwater

Strike (m)	Casing (m)	Sealed (m)	Time (min)	Rose To (m)	Remarks

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451643.29	Northing:	180250.70
Level:	118.89mAOD	Depth:	37.00m
Logger:	AT	Type:	WLS+RC
		Inclination:	90°

Status: FINAL

Borehole Number: **BH02**

Sheet 4 of 4

Method, Plant and Crew					Diameter		Casing		Drilling Progress by Time				
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Date	Time	Depth (m)	Casing (m)	Water (m)
0.00	0.70	Inspection Pit	Hand Excavated		0.70	300							
0.70	6.00	Dynamic Windowless Sampling	T44 Rig		6.00	-							
6.00	20.00	Rotary Core	T44 Rig		20.00	92							
20.00	37.00	Rotary Open Hole	T44 Rig		37.00	120							

Scale:	1:50
Checked By:	PR
Approved By:	RT
Start Date:	19/02/2019
Finish Date:	21/02/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples, Tests and Rotary Coring: Depth (m)	Ref	Tests / Results
EOH at 37.00m - Terminated due to refusal		37.00	81.89					

31 32 33 34 35 36 37 38 39 40

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered.
3. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 37.00m bgl.

Flushing

From (m)	To (m)	Return Min %	Colour	Type
6.00	37.00			Air / Mist

Hammer Information

Serial No.	Energy Ratio %

Groundwater

Strike (m)	Casing (m)	Sealed (m)	Time (min)	Rose To (m)	Remarks

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451962.24	Northing:	180125.01
Level:	103.08mAOD	Depth:	20.00m
Logger:	PR	Type:	WLS+RC
		Inclination:	90°

Status: FINAL

Borehole Number: **BH03**

Sheet 1 of 2

Method, Plant and Crew					Diameter		Casing		Groundwater						
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00	1.20	Inspection Pit	Hand Excavated		1.20	300								
1.20	7.70	Dynamic Windowless Sampling	T44 Rig		7.70	-								
7.70	15.70	Rotary Core	T44 Rig		15.70	92								
15.70	20.00	Rotary Open Hole	T44 Rig		20.00	120								

Scale: 1:50
Checked By: PR
Approved By: RT
Start Date: 14/02/2019
Finish Date: 18/02/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: ASPHALT.		0.10	102.98			0.00	EW040419	
MADE GROUND: SUBBASE.		0.20	102.88					
MADE GROUND: Yellowish brown gravelly SAND. Gravel is fine to coarse brick and flint.						0.40 0.40 - 0.50	D ES1	
MADE GROUND: Brown sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse brick, flint and chalk.		0.70	102.38					
						1.20	ES2	
Firm light brown gravelly CLAY. Gravel is subangular fine to coarse flint. (CHALK HEAD)		1.50	101.58			1.60	ES3	
From 2.10m bgl frequent subrounded fine to medium chalk gravel.								
Structureless CHALK. Comprising white with occasional orange staining slightly sandy gravelly SILT with occasional cobbles >76mm diameter. Gravel is subangular fine to coarse weak to low density chalk and flint. Cobbles are weak to low density chalk. (Grade Dm)		3.10	99.98			4.00	D	
At 6.80m bgl frequent orange staining.								
Structureless CHALK. Comprising white with occasional orange staining slightly sandy silty GRAVEL with occasional cobbles. Gravel is subangular to subrounded fine to coarse weak to medium strength low density chalk. Cobbles are medium strength low to medium density chalk. (Grade Dc)		7.10	95.98			7.90	C1	
Structured CHALK, Weak medium density white with occasional orange staining and rare black specks CHALK. Fractures extremely closely spaced (5/10/30) and are generally infilled		9.70	93.38			9.70	C2	

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered.
3. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 20.00m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.20	2.70		100	
2.70	4.20		100	
4.20	5.70		100	
5.70	7.20		100	
7.20	7.70		100	

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451962.24	Northing:	180125.01
Level:	103.08mAOD	Depth:	20.00m
Logger:	PR	Type:	WLS+RC
		Inclination:	90°

Status: FINAL

Borehole Number: **BH03**

Sheet 2 of 2

Scale: 1:50
Checked By: PR
Approved By: RT
Start Date: 14/02/2019
Finish Date: 18/02/2019

Method, Plant and Crew

From (m)	To (m)	Type	Plant Used	Crew
0.00	1.20	Inspection Pit	Hand Excavated	
1.20	7.70	Dynamic Windowless Sampling	T44 Rig	
7.70	15.70	Rotary Core	T44 Rig	
15.70	20.00	Rotary Open Hole	T44 Rig	

Diameter

Depth (m)	Diam (mm)
1.20	300
7.70	-
15.70	92
20.00	120

Casing

Depth(m)	Diam (mm)

Groundwater

Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Structured CHALK, Weak medium density white with occasional orange staining and rare black specks CHALK. Fractures extremely closely spaced (5/10/30) and are generally infilled white gravelly silt comminuted chalk (15/20/25). (Grade C3/4)						11.30	C3	SPT(C) 11.70m, N=37 (6,6/6,8,11,12)
						13.00	C4	
						14.00	C5	
Between 14.20m to 14.60m bgl recovered as silty gravel.						14.20	C6	
Structured white CHALK.		15.75	87.33					
EOH at 20.00m - Terminated due to refusal		20.00	83.08					

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered.
3. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 20.00m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451816.27	Northing:	180224.59
Level:	110.63mAOD	Depth:	17.40m
Logger:		Type:	WLS+RC
		Inclination:	90°

Status: FINAL

Borehole Number: **BH04**

Sheet 1 of 2

Method, Plant and Crew					Diameter		Casing		Groundwater						
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00 5.50	5.50 17.40	Dynamic Windowless Sampling Rotary Core												

Scale: 1:50
Checked By: PR
Approved By: RT
Start Date: 13/02/2019
Finish Date: 15/02/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over soft brown slightly sandy slightly gravelly silty CLAY Topsoil with frequent rootlets.		0.00	110.48			0.00	EW040419	
MADE GROUND: Soft brown sandy gravelly silty CLAY. Gravel is fine to coarse sub angular to sub rounded of chalk, flint, brick and plastic. *At 0.70m bgl, becoming more chalky.*		0.15				1.00	ES1	
Soft to firm brown slightly gravelly slightly sandy CLAY. Gravel is fine to coarse sub angular to sub rounded of flint and chalk.		1.70	108.93					
Soft to firm light brown slightly sandy slightly gravelly silty CLAY (weathered chalk). Gravel is fine to coarse sub angular to sub rounded of chalk and flint.		2.20	108.43					
Structureless CHALK comprising creamish white sandy gravelly SILT. Gravel is fine to coarse sub angular to sub rounded of chalk and rare flints with rind on 0 - 2mm. (Grade Dm)		2.40	108.23					
Structureless CHALK comprising white slightly sandy gravelly SILT. Gravel is fine to coarse sub angular to sub rounded of weak low density chalk and rare flint. (Grade Dm).		3.20	107.43					
(no recovery) Assumed flint obstruction within chalk		5.50	105.13					
Structureless CHALK comprising white slightly sandy slight gravelly SILT. Gravel if fine to coarse sub angular to sub rounded of weak medium density chalk with black speckling (Grade Dm).		6.00	104.63					
Structured white CHALK. Weak medium to high density with frequent black speckling and orange and green staining. (Grade B3) *Between 6.70 - 6.80m bgl recovered as coarse sub angular to sub rounded gravel of chalk* *Between 7.00 - 7.20m bgl recovered as coarse sub angular to sub rounded gravel of chalk* *Between 7.00 - 7.40m bgl chalk is more heavily stained* *Between 7.30 - 7.40m bgl recovered as coarse sub angular to sub rounded gravel of chalk* *At 7.40m bgl orange and green staining not observed.* *Between 7.50 - 9.90m bgl mostly recovered as coarse sub angular to sub rounded gravel of chalk*		6.70	103.93			6.80 7.90 9.50	C1 C2 C3	
		9.90	100.73					

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered.
3. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 17.40m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.50	3.00		100	
3.00	4.50		100	
4.50	5.50		100	

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451816.27	Northing:	180224.59
Level:	110.63mAOD	Depth:	17.40m
Logger:		Type:	WLS+RC
		Inclination:	90°

Status: FINAL

Borehole Number: **BH04**

Sheet 2 of 2

Method, Plant and Crew					Diameter		Casing		Groundwater						
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00 5.50	5.50 17.40	Dynamic Windowless Sampling Rotary Core												

Scale: 1:50
Checked By: PR
Approved By: RT
Start Date: 13/02/2019
Finish Date: 15/02/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Structured white CHALK with black staining along fractures and rare orange staining. Weak medium to high density. Fractures moderate to widely spaced partly open to open with black speckling (0/100/300) (Grade B3)								
Between 10.90 - 11.20m bgl recovered as coarse sub angular to sub rounded medium density gravel of chalk						11.23	C4	
Between 11.50 - 11.70m bgl recovered as coarse sub angular to sub rounded medium density gravel of chalk with some silt matrix.								
Between 11.90 - 12.20m bgl recovered as coarse sub angular to sub rounded medium density gravel of chalk						12.20	C5	
Between 12.40 - 12.48m bgl layer of soft light grey silt.								
Between 12.90 - 13.05m bgl recovered as coarse sub angular to sub rounded medium density gravel of chalk								
Between 13.53 - 13.65m bgl recovered as coarse sub angular to sub rounded medium density gravel of chalk						13.60	C6	
Between 14.30 - 14.90m bgl recovered as coarse sub angular to sub rounded medium density gravel of chalk								
						15.10	C7	
						15.40	C8	
Structured white CHALK with rare black speckling. Weak medium to high density CHALK. Fractures moderate to widely spaced partly open to open. (0/100/300) (Grade B3)		15.90	94.73					
						16.60	C99	
EOH at 17.40m - Terminated due to perceived groundwater strike		17.40	93.23					

11 12 13 14 15 16 17 18 19 20

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered.
3. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 17.40m bgl.

Sampling Runs				
From (m)	To (m)	Diam (mm)	Recovery %	Remarks

Hammer Information	
Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**	Location Details	Status	Borehole Number
Location: **Compton, West Berkshire**	Easting: 451888.15 Northing: 180488.76	FINAL	**WS01**
Client: **Homes England**	Level: 118.49mAOD Depth: 3.00m		Sheet 1 of 1
	Logger: PR Type: WS		
	Inclination: 90°		

Method, Plant and Crew					Diameter		Casing		Groundwater						Scale: 1:50
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks	Checked By: PR
0.00	1.00	Inspection Pit	Hand Excavated		1.00	300									Approved By: RT
1.00	3.00	Window Sampler	Tracked Window Sampler		3.00	-									Start Date: 31/01/2019
															Finish Date: 31/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: CONCRETE.		0.14	118.35			0.30 - 0.50	B	
Recovered as structureless CHALK, comprising of white slightly silty sandy GRAVEL. Gravel is subangular to subrounded fine to coarse chalk and flint with occasional orange staining. (Grade Dc)						0.50	ES1	
						0.60 - 1.00	B	
						1.00	D	SPT(S) 1.20m, N=25 (3,5/5,7,7,6)
						2.00	D	SPT(S) 2.00m, N=23 (7,6/6,6,5,6)
EOH at 3.00m -		3.00	115.49			3.00	D	SPT(S) 3.00m, 50 (9,11/12,14,24,)

1 2 3 4 5 6 7 8 9 10

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered.
3. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 3.00m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks

Hammer Information

Serial No.	Energy Ratio %

Project Number

A090070-474

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451801.98	Northing:	180466.44
Level:	117.61mAOD	Depth:	2.00m
Logger:	AS	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS02**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						Scale: 1:50
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks	Checked By: PR
0.00	1.20	Inspection Pit	Hand Excavated		1.20	300									Approved By: RT
1.20	2.00	Window Sampler	Tracked Window Sampler		2.00	87									Start Date: 06/02/2019
															Finish Date: 06/02/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Moss over light brown slightly sandy SILT with rootlets. (TOPSOIL)		0.10	117.51					
Recovered as structureless CHALK, comprising of white slightly sandy very gravelly SILT with frequent flint cobbles. Gravel is subangular fine to coarse low density chalk and flint. Cobbles are angular rinded flint. (Grade Dm)						0.30	ES1	PID 0.30m, 0.0ppm
						0.30 - 0.90	B3	
						0.40	D2	
						1.00	D	SPT(S) 1.00m, N=49 (2,4/7,12,15,15)
						1.00	ESD	
						1.50	D4	
						1.50 - 2.00	B5	
EOH at 2.00m - Terminated due to refusal		2.00	115.61			2.00	D	SPT(S) 2.00m, N=56 (5,12/10,13,14,19)

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion exploratory hole backfilled with arisings.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.20	2.00	87	100	

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451741.91	Northing:	180447.56
Level:	117.54mAOD	Depth:	2.70m
Logger:	AS	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS03**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00	1.20	Inspection Pit	Hand Excavated		1.20	300								
1.20	2.70	Window Sampler	Tracked Window Sampler		2.70	87								

Scale: 1:50
Checked By: PR
Approved By: RT
Start Date: 06/02/2019
Finish Date: 06/02/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: Moss over light brown slightly sandy very gravelly SILT with rootlets. Gravel is subangular fine to coarse limestone and mixed aggregates.		0.20	117.34			0.10	ES1	PID 0.10m, 0.0ppm
Recovered as structureless CHALK, comprising of white with occasional orange staining slightly sandy very gravelly SILT with frequent flint cobbles. Sand is fine to coarse. Gravel is subangular fine to coarse very weak low density chalk fragments and rinded flint. Cobbles are angular rinded flint up to 200mm. (Grade Dm)						0.30	ES2	PID 0.30m, 0.0ppm
						0.40	D3	
						0.40 - 1.00	B4	
						1.20	D	SPT(S) 1.20m, N=47 (3,8/9,9,14,15)
						1.40	D5	
At 1.60m bgl band of flint cobbles.						1.40 - 2.00	B6	
						2.00	D	SPT(S) 2.00m, N=27 (4,7/8,7,6,6)
						2.00 - 2.60	B7	
						2.70	D	SPT(S) 2.60m, N=52 (7,9/14,16,12,10)
EOH at 2.70m - Terminated due to refusal		2.70	114.84					

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered.
3. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 2.70m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.20	2.00	87	100	
2.00	2.70	77	100	

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451891.42	Northing:	180430.69
Level:	117.26mAOD	Depth:	5.00m
Logger:	SH	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS04**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00	1.20	Inspection Pit	Hand Excavated		1.20	300								
1.20	5.00	Window Sampler	Tracked Window Sampler		5.00	-								

Scale: 1:50
Checked By: PR
Approved By: RT
Start Date: 31/01/2019
Finish Date: 31/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: CONCRETE								
MADE GROUND: Greyish brown clayey slightly sandy GRAVEL. Sand is fine to coarse. Gravel is angular to subangular fine to medium type 2 aggregate.		0.20	117.06			0.25	ES1	
						0.35	ES2	
Recovered as structureless CHALK, comprising of firm greyish white gravelly silty CLAY. Gravel is fine to coarse low to medium density chalk with cobbles of low to medium density chalk. With rare gravel and cobbles of flint. (Grade Dm)		0.33	116.93			0.50	B1	
						1.00	D1	SPT(S) 1.20m, N=17 (4,6/4,5,4,4)
						1.50	B2	
						2.00	D2	SPT(S) 2.00m, N=22 (3,3/2,7,5,8)
						2.50	B3	
						3.00	D3	SPT(S) 3.00m, N=26 (2,2/2,6,8,10)
						3.50	B4	
						4.00	D4	SPT(S) 4.00m, N=18 (4,3/4,4,3,7)
						4.50	B5	
EOH at 5.00m - Achieved target depth		5.00	112.26			5.00	D5	SPT(S) 5.00m, N=34 (7,6/9,7,7,11)

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion exploratory hole backfilled with arisings.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451703.92	Northing:	180400.45
Level:	117.10mAOD	Depth:	2.00m
Logger:	SH	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS05**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00	1.20	Inspection Pit	Hand Excavated		1.20	300								
1.20	2.00	Window Sampler	Tracked Window Sampler		2.00	-								

Scale: 1:50
Checked By: PR
Approved By: RT
Start Date: 30/01/2019
Finish Date: 30/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: CONCRETE		0.16	116.94			0.20	ES1	
MADE GROUND: Yellowish orange silty sandy GRAVEL. Sand is fine to coarse. Gravel is angular to subangular fine to coarse Type 2 aggregate.		0.50	116.60			0.55 0.60	ES2 B	
Recovered as structureless CHALK, comprising of firm to stiff white chalk putty with frequent gravel and cobble sized fragments of medium density chalk.						1.00	D	SPT(S) 1.20m, N=31 (3,5/10,10,5,6)
At 1.20m bgl band of flint.						1.50	B	
EOH at 2.00m - Terminated due to refusal		2.00	115.10			2.00	D	SPT(S) 2.00m, N=65 (6,6/13,14,16,22)

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 0.50m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451816.34	Northing:	180405.81
Level:	117.37mAOD	Depth:	2.70m
Logger:	SH	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS06**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						Scale: 1:50
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks	Checked By: PR
0.00	1.20	Inspection Pit	Hand Excavated		1.20	300									Approved By: RT
1.20	2.70	Window Sampler	Tracked Window Sampler		2.70	-									Start Date: 31/01/2019
															Finish Date: 31/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: CONCRETE		0.24	117.13			0.25	ES1	
Firm greyish brown slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is subangular to subrounded. fine to coarse chalk and flint.		0.30	117.07			0.35	ES2	
At 0.24m bgl 3cm thick branded nylon rope.						0.50	B1	
Recovered as structureless CHALK, comprising of white firm to stiff chalk putty with frequent gravel to cobble sized fragments of medium dense chalk and flint. (Grade Dm)						1.00	D1	SPT(S) 1.20m, N=8 (1,1/2,2,2,2)
						1.50	B2	
						2.00	D2	SPT(S) 2.00m, N=4 (1,2/1,1,1,1)
EOH at 2.70m - Terminated due to refusal		2.70	114.67					

1 2 3 4 5 6 7 8 9 10

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion exploratory hole backfilled with arisings.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451905.46	Northing:	180347.70
Level:	113.40mAOD	Depth:	0.67m
Logger:	LM	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS07**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks	
0.00	0.67	Inspection Pit	Hand Excavated		0.67	300									

Scale: 1:50
Checked By: PR
Approved By: RT
Start Date: 18/01/2019
Finish Date: 18/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: CONCRETE		0.17	113.24			0.30	ES1	
MADE GROUND: Reddish brown slightly sandy gravelly CLAY. Gravel is angular to subangular fine to coarse flint (no rind), limestone with rare angular gravel of shale.						0.30 - 0.40	B1	
From 0.60m bgl subrounded fine to coarse low density chalk.		0.67	112.74			0.60	B2	
EOH at 0.67m - Terminated due to concrete foundation								

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 0.67m bgl.

Sampling Runs				
From (m)	To (m)	Diam (mm)	Recovery %	Remarks

Hammer Information	
Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**	Location Details	Status	Borehole Number
Location: **Compton, West Berkshire**	Easting: 451739.90 Northing: 180363.57	FINAL	**WS08**
Client: **Homes England**	Level: 116.41mAOD Depth: 2.50m		Sheet 1 of 1
	Logger: PR Type: WS		
	Inclination: 90°		

Method, Plant and Crew					Diameter		Casing		Groundwater						Scale: 1:50
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks	Checked By: PR
0.00	1.00	Inspection Pit	Hand Excavated		1.00	300									Approved By: RT
1.00	2.50	Window Sampler	Tracked Window Sampler		2.50	-									Start Date: 10/01/2019
															Finish Date: 10/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: CONCRETE		0.17	116.24			0.30	ES1	PID 0.30m, 0.0ppm
Recovered as structureless CHALK, comprising of white silty sandy subangular to subrounded fine to coarse chalk GRAVEL. (Grade Dc)						0.30 - 0.60	B2	HV 0.55m, (p)=30, 26, 31 kPa (r)= kPa
Recovered as structureless CHALK, comprising of white gravelly sandy SILT with occasional orange staining. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse chalk and flint. (Grade Dm)		0.60	115.81			0.90	ES3	
						1.00	D4	SPT(S) 1.00m, N=54 (7,12/15,14,11,14)
						1.00 - 2.00	B6	
						1.50	ES5	
						2.00	D7	SPT(S) 2.00m, N=38 (9,15/11,8,8,11)
						2.00 - 2.50	B8	
EOH at 2.50m - Terminated due to refusal		2.50	113.91					

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered.
3. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 2.50m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.20	2.00		100	
2.00	2.50		100	

Hammer Information

Serial No.	Energy Ratio %

Project Number

A090070-474

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451834.04	Northing:	180359.48
Level:	114.00mAOD	Depth:	3.00m
Logger:	LM	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS09**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00	1.20	Inspection Pit	Hand Excavated		1.20	300								
1.20	3.00	Window Sampler	Tracked Window Sampler		3.00	100								

Scale: 1:50
Checked By: PR
Approved By: RT
Start Date: 17/01/2019
Finish Date: 17/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: CONCRETE		0.13	113.87			0.13 - 0.20	ES1	
MADE GROUND: Dark grey clayey slightly sandy GRAVEL with low cobble content. Gravel is angular to subangular medium to coarse limestone. Cobbles are subangular limestone.		0.20	113.80			0.20 - 0.30	ES2	
						0.20 - 0.40	B1	
Recovered as structureless CHALK, comprising of white with occasional orange mottling slightly sandy silty GRAVEL of subangular fine to coarse low density chalk with occasional subangular coarse rinded flint. Low cobble content subangular low density chalk. (Grade Dm/Dc)						1.00 - 1.20	B2	
		1.20	112.80					SPT(S) 1.20m, N=20 (2,3/5,6,5,4)
Recovered as structureless CHALK, comprising of white mottled orange very silty GRAVEL. Gravel is angular to subangular fine to coarse low density chalk. (Grade Dc)						1.50 - 2.00	B3	
At 1.20m bgl flint cobble (10mm).								
						2.00 - 3.00	B4	SPT(S) 2.00m, N=28 (2,6/6,6,8,8)
Recovered as structureless CHALK, comprising of white with occasional orange mottling slightly sandy gravelly SILT. Gravel is subangular fine to coarse low density chalk with occasional angular to rounded rinded flint (Grade Dm)		2.05	111.95					
EOH at 3.00m - Terminated due to refusal		3.00	111.00					SPT(S) 3.00m, N=54 (4,8/12,12,14,16)

1 2 3 4 5 6 7 8 9 10

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion exploratory hole backfilled with arisings.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.20	2.00	100	95	
2.00	3.00	87	100	

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451897.29	Northing:	180390.70
Level:	113.94mAOD	Depth:	1.80m
Logger:	PR	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS10**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00	1.20	Inspection Pit	Hand Excavated		1.20	300								
1.20	1.80	Window Sampler	Tracked Window Sampler		1.80	-								

Scale: 1:50
Checked By: PR
Approved By: RT
Start Date: 24/01/2019
Finish Date: 24/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: CONCRETE		0.18	113.76			0.20	ES1	
Orangish brown sandy clayey GRAVEL. Gravel is subangular to subrounded fine to coarse of flint.		0.35	113.59			0.20 - 0.30	B	
Recovered as structureless CHALK, comprising of white with occasional orange staining sandy gravelly SILT. Gravel is subangular to subrounded fine to coarse flint and chalk. (Grade Dm)						0.50	ES2	
						0.50 - 1.00	B	
								SPT(S) 1.00m, N=30 (5,5/9,12,5,4)
						1.20	D	
EOH at 1.80m - Terminated due to refusal		1.80	112.14			1.80	D	SPT(S) 1.80m, N=58 (9,12/12,12,15,19)
						1.80	ESD	

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Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered.
3. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 1.80m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451621.12	Northing:	180258.32
Level:	119.31mAOD	Depth:	5.00m
Logger:	PR	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS11**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00	1.00	Inspection Pit	Hand Excavated		1.00	300								
1.00	5.00	Window Sampler	Tracked Window Sampler		5.00	-								

Scale: 1:50
Checked By: PR
Approved By: RT
Start Date: 07/02/2019
Finish Date: 07/02/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: CONCRETE.		0.20	119.11			0.30	ES1	
Recovered as structureless CHALK, comprising of white slightly sandy gravelly SILT. Gravel is subangular to subrounded fine to coarse dense chalk and flint. (Grade Dm)						0.50 - 1.00	B	
						1.00	D	
						1.00	ES2	SPT(S) 1.20m, N=44 (3,4/10,12,8,14)
Recovered as structureless CHALK, comprising of white silty sandy GRAVEL. Gravel is subangular to subrounded fine to coarse chalk and flint with occasional staining. (Grade Dc)		1.50	117.81			1.50 - 2.00	B	
						2.00	D	SPT(S) 2.00m, N=49 (8,7/10,11,12,16)
						2.00	ESD	
						2.50 - 3.00	B	
Recovered as structureless CHALK, comprising of white slightly sandy gravelly SILT. Gravel is subangular to subrounded fine to coarse dense chalk and flint with orange staining. (Grade Dm)		2.70	116.61			3.00	D	SPT(S) 3.00m, N=28 (7,5/6,5,8,9)
						3.50 - 4.00	B	
						4.00	D	SPT(S) 4.00m, N=24 (6,10/8,8,3,5)
						4.00 - 5.00	B	
EOH at 5.00m - Achieved target depth		5.00	114.31			5.00	D	SPT(S) 5.00m, N=45 (12,12/11,11,12,11)

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion exploratory hole backfilled with arisings.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451773.30	Northing:	180346.59
Level:	115.51mAOD	Depth:	5.00m
Logger:	LM	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS12**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00	1.20	Inspection Pit	Hand Excavated		1.20	300								
1.20	5.00	Window Sampler	Tracked Window Sampler		5.00	100								

Scale: 1:50
Checked By: PR
Approved By: RT
Start Date: 15/01/2019
Finish Date: 17/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: CONCRETE.		0.13	115.38			0.20 - 0.30	B1	
Recovered as structureless CHALK, comprising of white with occasional orange mottling silty GRAVEL of subrounded to rounded fine to coarse medium density chalk with occasional subrounded medium to coarse flint. (Grade Dc)						0.30	ES1	
Recovered as structureless CHALK, comprising of white mottled orange slightly sandy gravelly SILT. Gravel is angular to rounded fine to coarse medium to high density chalk with subrounded coarse rare rinded flint. (Grade Dm)		0.90	114.61			1.00	ES2	
						1.00 - 1.20	B2	
Recovered as structureless CHALK, comprising of white with rare orange mottling gravelly SILT. Gravel is subangular to rounded medium to coarse medium density chalk. (Grade Dm)		1.20	114.31			1.20 - 2.00	B3	SPT(S) 1.20m, N=19 (2,3/4,5,5,5)
Recovered as structured CHALK, comprising of white mottled orange extremely weak low density chalk. No discernable natural fractures.		2.00	113.51			2.00 - 3.00	B4	SPT(S) 2.00m, N=18 (3,4/4,4,5,5)
Recovered as structureless CHALK, comprising of white with occasional orange mottling gravelly SILT. Gravel is subrounded to rounded medium to coarse medium density chalk with rare angular medium to coarse flint. (Grade Dm)		3.00	112.51			3.00 - 4.00	B5	SPT(S) 3.00m, N=32 (3,4/6,6,9,11)
						4.00 - 5.00	B6	SPT(S) 4.00m, N=25 (4,6/7,7,6,5)
EOH at 5.00m - Achieved target depth		5.00	110.51					SPT(S) 5.00m, N=10 (1,1/2,2,3,3)

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered.
3. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 5.00m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.20	2.00	100	100	
2.00	3.00	87	100	
3.00	4.00	77	100	
4.00	5.00	67	80	

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451811.56	Northing:	180335.46
Level:	114.40mAOD	Depth:	5.00m
Logger:	LM	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS13**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00	1.20	Inspection Pit	Hand Excavated		1.20	300								
1.20	5.00	Window Sampler	Tracked Window Sampler		5.00	100								

Scale: 1:50
Checked By: PR
Approved By: RT
Start Date: 16/01/2019
Finish Date: 16/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: CONCRETE.		0.24	114.16			0.20 - 0.30	B1	
MADE GROUND: Soft light brown slightly sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse flint, chalk and brick with 2No. whole bricks.						0.30	ES1	
At 0.30m bgl whole brick absent.		0.47	113.93			0.50	ES2	HV 0.47m, (p)=72. 74, 90 kPa (r)= kPa
Firm dark brown gravelly CLAY. Gravel is angular to subrounded fine to coarse chalk and flint (rind removed).								
From 0.60m bgl very gravelly.								
From 0.70m bgl flint cobbles present.		0.75	113.65			0.80	ES3	
Recovered as structureless CHALK, comprising of light brown and white very gravelly CLAY. Gravel subrounded fine to coarse low density chalk with occasional angular coarse rinded flint. (Grade Dm)						1.00 - 1.20	B2	SPT(S) 1.20m, N=37 (6,8/8,9,10,10)
At 1.25m bgl 1No. flint cobble (1 to 2mm rind) fragment due to drilling.								
At 1.50m bgl 1No. flint cobble (1 to 3mm rind) fragment due to drilling.		1.65	112.75					
Recovered as structureless CHALK, comprising of white with occasional light orange mottling slightly sandy silty GRAVEL of subrounded fine to coarse low density chalk with occasional coarse rinded flint. (Grade Dc)						2.00 - 3.00	B3	SPT(S) 2.00m, N=21 (4,4/4,9,4,4)
At 2.40m bgl cobble of flint (no rind) fragment due to drilling.								
								SPT(S) 3.00m, N=22 (4,5/7,5,5,5)
Recovered as structureless CHALK, comprising of white with occasional orange mottling gravelly SILT. Gravel is subrounded fine to coarse medium density chalk. (Grade Dm)		3.05	111.35			3.10 - 4.00	B4	
From 3.40m bgl subangular coarse gravel of flint (no rind).								
Between 4.00m to 4.20m bgl case loss (SPT).						4.00 - 5.00	B5	SPT(S) 4.00m, N=41 (3,5/5,6,9,21)
At 4.60m bgl pocket flint fines (fragmented due to drilling).								
EOH at 5.00m - Achieved target depth		5.00	109.40					SPT(S) 5.00m, N=37 (5,10/11,9,7,10)

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered.
3. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 5.00m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.20	2.00	100	100	
2.00	3.00	87	90	
3.00	4.00	77	100	
4.00	5.00	67	80	

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451674.40	Northing:	180297.46
Level:	118.14mAOD	Depth:	4.90m
Logger:	PR	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS14**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00	0.90	Inspection Pit	Hand Excavated		0.90	300								
0.90	4.90	Window Sampler	Tracked Window Sampler		4.90	-								

Scale: 1:50
Checked By: PR
Approved By: RT
Start Date: 10/01/2019
Finish Date: 10/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: CONCRETE with 20mm diameter rebar		0.14	118.00					
MADE GROUND: Black slightly gravelly slightly clayey fine to coarse SAND with organic material. Gravel is subangular medium macadam.		0.15	117.99			0.30	ES1	PID 0.30m, 0.0ppm
Recovered as structureless CHALK, comprising of white sandy gravelly SILT with orange staining. Gravel is subangular to subrounded fine to coarse chalk. Occasional cobbles of chalk. (Grade Dm)						0.60	D2	HV 0.60m, (p)=29, 22, 31 kPa (r)= kPa
From 0.70m bgl subangular fine to coarse flint gravel.						0.60 - 1.20	B3	
								SPT(S) 1.00m, N=33 (8,12/8,6,7,12)
						1.20	D4	
						1.30	ES5	
						1.30 - 2.00	B6	
From 1.70m bgl rare subangular fine to coarse flint gravel.								
						2.00	D7	SPT(S) 2.00m, N=38 (5,6/9,9,10,10)
						2.40 - 3.00	B8	
						3.00	D9	SPT(S) 3.00m, N=36 (6,5/9,8,7,12)
						3.50 - 4.00	B10	
						4.00	D11	SPT(S) 4.00m, N=43 (5,5/8,12,12,11)
						4.00 - 4.90	B12	
EOH at 4.90m - Terminated due to refusal		4.90	113.24					

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered.
3. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 4.90m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451764.74	Northing:	180290.98
Level:	115.18mAOD	Depth:	1.25m
Logger:	LM	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS15**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00	1.20	Inspection Pit	Hand Excavated		1.20	300								
1.20	1.25	Window Sampler	Tracked Window Sampler		1.25	100								

Scale: 1:50
Checked By: PR
Approved By: RT
Start Date: 15/01/2019
Finish Date: 15/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: CONCRETE		0.17	115.01			0.14 - 0.20	ES1	
MADE GROUND: Black sandy angular to subangular fine to medium GRAVEL of cinder with frequent subrounded medium slag. Sand is coarse ash.		0.20	114.98			0.25 - 0.30	B1	
		0.40	114.78			0.26	ES2	
Light brown and white slightly sandy gravelly CLAY. Gravel is subangular to subrounded fine to medium very weak low density chalk with occasional subrounded medium to coarse rinded flint.		0.60	114.58			0.55 - 0.65	B2	HV 0.55m, (p)=40, 40 kPa (r)= kPa
Recovered as structureless CHALK, comprising of white mottled orange silty subangular fine to coarse GRAVEL of low density chalk. (Grade Dc) (Possibly reworked chalk)						0.70	D1	
						0.70 - 0.83	B3	
Firm dark brown to light brown slightly gravelly CLAY. Gravel is subrounded fine to coarse chalk with rare subangular medium to coarse flint.		1.20	113.98			1.20 - 1.25	D2	SPT(S) 1.20m, N=53 (7,10/10,14,14,15)
Very stiff dark brown to light brown slightly gravelly CLAY. Gravel is subrounded fine to coarse chalk with rare subangular medium to coarse flint.		1.25	113.93					
EOH at 1.25m - Terminated due to refusal								

1 2 3 4 5 6 7 8 9 10

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion exploratory hole backfilled with arisings.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.20	1.25	100	100	

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451873.51	Northing:	180295.45
Level:	112.02mAOD	Depth:	1.20m
Logger:	LM	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS16**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00	1.00	Inspection Pit	Hand Excavated		1.00	300								
1.00	1.20	Window Sampler	Tracked Window Sampler		1.20	87								

Scale:	1:50
Checked By:	PR
Approved By:	RT
Start Date:	18/01/2019
Finish Date:	18/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: CONCRETE		0.15	111.88			0.14	ES1	
MADE GROUND: Dark brown to black sandy GRAVEL.		0.15	111.87			0.20 - 0.40	B1	
Recovered as structureless CHALK, comprising of light brown to white with rare orange mottling slightly sandy gravelly SILT. Gravel is subangular to subrounded fine to coarse low density chalk with frequent angular medium to coarse rinded flint. (Grade Dm) (Reworked chalk)		0.50	111.52			0.40	ES2	
Firm light brown gravelly CLAY. Gravel is subangular fine to coarse low density chalk with rare subangular coarse flint.		0.73	111.29			0.60	B2	
Recovered as structureless CHALK, comprising of silty subangular to rounded fine to coarse GRAVEL of low density chalk with occasional subangular medium to coarse flint. (Grade Dc) (Reworked Chalk)		0.95	111.07			0.60	ES3	
MADE GROUND: Dark brown clayey GRAVEL with high cobble content. Gravel is subangular fine to coarse concrete, ceramic with rare clinker.		1.20	110.82			0.80	D1	
EOH at 1.20m - Terminated due to refusal						1.20	ES4	SPT(S) 1.20m, N=60 (4,6/10,14,16,20)

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered.
3. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 1.20m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.00	1.20	87	100	

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451731.68	Northing:	180267.49
Level:	116.30mAOD	Depth:	5.00m
Logger:	PR	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS17**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						Scale: 1:50
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks	Checked By: PR
0.00	1.20	Inspection Pit	Hand Excavated		1.20	300									Approved By: RT
1.20	5.00	Window Sampler	Tracked Window Sampler		5.00	-									Start Date: 11/01/2019
															Finish Date: 11/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: CONCRETE.		0.16	116.14					
Between 0.10m to 0.13m bgl rebar of 5 to 10mm diameter.								
MADE GROUND: Black slightly gravelly SAND. Gravel is subangular to subrounded fine to medium aggregates and brick fragments.		0.20	116.10			0.30	ES1	PID 0.30m, 0.0ppm
						0.50 - 0.70	B3	
						0.60	D2	HV 0.60m, (p)=44, 42, 58 kPa (r)= kPa
Recovered as structureless CHALK, comprising of white sandy gravelly SILT. Gravel is subangular to subrounded fine to coarse chalk and flint. (Grade Dm) (Possibly reworked chalk)		0.70	115.60			0.70 - 1.00	B4	
						0.80	ES5	
Soft brown sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse chalk and flint. (Becoming more chalky with depth)								
		1.20	115.10			1.20	D6	SPT(S) 1.20m, N=15 (2,5/4,4,3,4)
Recovered as structureless CHALK, comprising of white sandy silty GRAVEL. Gravel is subangular to subrounded fine to coarse chalk and flint. (Grade Dc)						1.30	ES7	
						1.50 - 2.00	B8	
At 1.50m bgl cream staining.								
						2.00	D9	SPT(S) 2.00m, N=33 (4,6/8,10,7,8)
						2.50 - 3.00	B10	
						3.00	D11	SPT(S) 3.00m, N=32 (4,5/5,6,10,11)
						3.50 - 4.00	B12	
						4.00	D13	SPT(S) 4.00m, N=46 (14,7/12,15,12,7)
						4.00 - 5.00	B14	
EOH at 5.00m - Achieved target depth		5.00	111.30			5.00	D15	SPT(S) 5.00m, N=28 (2,3/2,6,11,9)

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered.
3. Upon completion exploratory hole backfilled with arisings.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.20	2.00		100	
2.00	3.00		100	
3.00	4.00		100	
4.00	5.00		100	

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451640.03	Northing:	180246.66
Level:	118.99mAOD	Depth:	3.90m
Logger:	PR	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS18**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00	1.00	Inspection Pit	Hand Excavated		1.00	300								
1.00	3.90	Window Sampler	Tracked Window Sampler		3.90	-								

Scale: 1:50
Checked By: PR
Approved By: RT
Start Date: 07/02/2019
Finish Date: 07/02/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: CONCRETE.		0.20	118.79			0.30	ES1	
Recovered as structureless CHALK, comprising of white slightly sandy gravelly SILT. Gravel is subangular to subrounded fine to coarse chalk and flint. (Grade Dm)						0.50	B	
						1.00	B	SPT(S) 1.00m, N=21 (5,9/6,5,5,5)
						1.00	D	
Recovered as structureless CHALK, comprising of white silty sandy GRAVEL. Gravel is subangular to subrounded fine to coarse chalk and flint with occasional staining. (Grade Dc)		1.60	117.39			1.60 - 2.00	B	
At 1.60m bgl flint layer.						2.00	D	SPT(S) 2.00m, N=43 (7,5/11,12,10,10)
						2.00	ESD	
Recovered as structureless CHALK, comprising of white slightly sandy gravelly SILT. Gravel is subangular to subrounded fine to coarse chalk and flint. (Grade Dm)		2.30	116.69			2.50 - 3.00	B	
						3.00	D	SPT(S) 3.00m, N=13 (3,3/2,3,3,5)
						3.50 - 3.90	B	
EOH at 3.90m - Achieved target depth		3.90	115.09			3.90	D	SPT(S) 3.90m, N=26 (5,6/5,6,6,6,9)

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered.
3. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 5.00m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.00	2.00		100	
2.00	3.00		100	
3.00	3.90		100	

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451807.40	Northing:	180247.39
Level:	111.89mAOD	Depth:	4.00m
Logger:	LM	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS19**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00	1.20	Inspection Pit	Hand Excavated		1.20	300			3.10	-	-	3.10	20	
1.20	4.00	Window Sampler	Tracked Window Sampler		4.00	-								

Scale: 1:50
Checked By: PR
Approved By: RT
Start Date: 16/01/2019
Finish Date: 17/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over TOPSOIL: Soft dark brown slightly sandy gravelly CLAY. Gravel is angular to subangular fine to coarse chalk and rounded flint. Frequent rootlets present.						0.10 0.10	D1 ES1	
Recovered as structureless CHALK, comprising of white with occasional orange mottling slightly sandy silty GRAVEL of subangular fine to coarse medium density chalk and occasional angular to subangular medium to coarse flint. (Grade Dc) (Possibly reworked chalk)		0.35	111.54			0.40 - 0.50 0.40 - 0.50	B1 ES2	
Firm dark brown slightly sandy gravelly CLAY. Gravel is subangular to subrounded fine to medium low density chalk and angular fine to coarse rinded flint. Sand is fine.		0.93	110.96			1.00 1.00 - 1.20	ES3 B2	
Stiff orangish brown gravelly sandy CLAY. Gravel is subangular to subrounded fine to coarse flint and chalk.		1.20	110.69			1.20	D2	SPT(S) 1.20m, N=17 (2,3/3,4,4,6)
						1.50 - 2.00	B3	
						2.00	D3	SPT(S) 2.00m, N=24 (3,4/6,7,7,4)
Recovered as structureless CHALK, comprising of white sandy gravelly SILT. Gravel is subrounded fine to coarse chalk. (Grade Dm)		2.20	109.69			2.40 2.50 - 3.00	ES4 B4	
				▼		3.00	D4	SPT(S) 3.00m, N=18 (2,4/3,5,5,5)
						3.30 - 4.00	B5	
EOH at 4.00m - Terminated due to SPT refusal		4.00	107.89			4.00	D5	SPT(S) 4.00m, N=42 (4,7/6,6,12,18)

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Upon completion exploratory hole backfilled with arisings and bentonite.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.20	2.00		100	
2.00	3.00		100	
3.00	4.00		100	

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451832.40	Northing:	180252.81
Level:	111.31mAOD	Depth:	2.40m
Logger:	PR	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS20**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00	1.20	Inspection Pit	Hand Excavated		1.20	300								
1.20	2.40	Window Sampler	Tracked Window Sampler		2.40	-								

Scale: 1:50
Checked By: PR
Approved By: RT
Start Date: 23/01/2019
Finish Date: 23/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over soft brown slightly sandy gravelly CLAY. (TOPSOIL)						0.00 - 0.30 0.10	B ES1	
Recovered as structureless CHALK, comprising of white sandy gravelly SILT. Gravel is subangular to subrounded fine to coarse chalk and flint. (Grade Dm)		0.30	111.01			0.50 0.50 - 1.00	ES2 B	
						1.20 1.20	D ESD	SPT(S) 1.20m, N=15 (2,2/2,3,5,5)
MADE GROUND: Stiff brown slightly sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse flint, chalk and brick.		1.40	109.91			1.50 1.65 1.70	ES3 D D	SPT(S) 1.65m, N=52 (7,9/10,12,15,15)
Recovered as structureless CHALK, comprising of yellowish brown sandy gravelly clayey SILT. Gravel is subangular to subrounded fine to coarse chalk and rinded flint. (Grade Dm)		1.90	109.41			2.00	ES4	
EOH at 2.40m - Terminated due to refusal		2.40	108.91					

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered.
3. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 2.40m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.20	1.65			
1.65	2.40			

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**	Location Details	Status	Borehole Number
Location: **Compton, West Berkshire**	Easting: 451836.12 Northing: 180235.31	FINAL	**WS21**
Client: **Homes England**	Level: 110.13mAOD Depth: 5.00m		Sheet 1 of 1
	Logger: LM+PR Type: WS		
	Inclination: 90°		

Method, Plant and Crew					Diameter		Casing		Groundwater						Scale: 1:50
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks	Checked By: PR
0.00	1.20	Inspection Pit	Hand Excavated		1.20	300									Approved By: RT
1.20	5.00	Window Sampler	Tracked Window Sampler		5.00	-									Start Date: 16/01/2019
															Finish Date: 16/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over TOPSOIL: Dark brown slightly sandy slightly gravelly CLAY. Gravel is angular to subangular fine to medium chalk and flint with occasional rootlets.		0.10	110.03			0.00 - 0.10	D1	
						0.10 - 0.20	D2	
						0.10 - 0.20	ES1	
MADE GROUND: Dark brown slightly sandy gravelly CLAY. Gravel is subangular to subrounded low density chalk with frequent angular to rounded medium to coarse rinded flint.						0.50	B1	
						0.60 - 0.70	ES2	
						0.60 - 0.80	B2	
Recovered as structureless CHALK, comprising of white with occasional orange mottling slightly sandy gravelly SILT with medium cobble content. Gravel is subrounded to rounded medium density chalk with occasional angular fine to coarse rinded flint. Cobbles are subrounded low density chalk and subrounded to rounded flint. (Grade Dm) (Possibly reworked chalk)		0.60	109.53			1.10	D3	
		1.15	108.98			1.20	D	SPT(S) 1.20m, N=4 (1,1/1,1,1,1)
Firm dark brown gravelly CLAY.		1.20	108.93					
Soft to firm brown slightly gravelly CLAY. Gravel is subangular fine to coarse flint.						1.50	ES3	
						1.50 - 2.00	B	
						2.00	D	SPT(S) 2.00m, N=25 (1,2/4,5,8,8)
Stiff brown sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse flint and chalk. (Weathered chalk)		2.20	107.93			2.50	ES4	
						2.50 - 2.90	B	
Recovered as structureless CHALK, comprising of white sandy gravelly SILT. Gravel is subangular to subrounded fine to coarse flint and chalk. (Grade Dm)		2.90	107.23			3.00	D	SPT(S) 3.00m, N=18 (3,3/4,5,4,5)
						3.10	ES5	
						3.50 - 4.00	B	
						4.00	D	SPT(S) 4.00m, N=23 (6,9/4,6,6,7)
						4.00 - 5.00	B	
EOH at 5.00m - Achieved target depth		5.00	105.13			5.00	D	SPT(S) 5.00m, N=19 (7,6/5,4,5,5)

Observations / Remarks	Sampling Runs					Hammer Information	
1. Location GPR / EM scanned prior to breaking ground.	From (m)	To (m)	Diam (mm)	Recovery %	Remarks	Serial No.	Energy Ratio %
2. Groundwater not encountered.							
3. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 5.00m bgl.						Project Number	
						A090070-474	

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451903.39	Northing:	180252.81
Level:	108.98mAOD	Depth:	3.00m
Logger:	LM	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS22**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00	1.20	Inspection Pit	Hand Excavated		1.20	300								
1.20	3.00	Window Sampler	Tracked Window Sampler		3.00	102								

Scale: 1:50
Checked By: PR
Approved By: RT
Start Date: 21/01/2019
Finish Date: 21/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over TOPSOIL. Dark brown slightly sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse chalk and flint with abundant rootlets.		0.08	108.90			0.00 - 0.05	D1	
						0.00 - 0.05	ES1	
MADE GROUND: Soft dark brown and white slightly sandy gravelly CLAY. Gravel is subangular to rounded fine to coarse chalk, flint with rare subrounded fine to medium brick.		0.20	108.78			0.10 - 0.20	B1	
						0.10 - 0.20	ES2	
						0.30	ES3	
						0.30 - 0.50	B2	
Recovered as structureless CHALK, comprising of cream with rare orange mottling slightly sandy gravelly SILT. Gravel is subrounded fine to coarse low density chalk with occasional subangular medium to coarse flint (rinded) with rare subangular flint cobbles. (Grade Dm) (Possibly reworked chalk)						1.00 - 1.20	B3	
								SPT(S) 1.20m, N=16 (2,3/4,4,4,4)
Firm light orangish brown slightly sandy gravelly CLAY. Gravel is subrounded fine to medium low density chalk with rare subangular medium to coarse flint (rinded).		1.20	107.78			1.50 - 2.00	B4	
								SPT(S) 2.00m, N=20 (2,4/5,5,6,4)
Light grey slightly sandy slightly gravelly SILT. Gravel is subrounded fine low density chalk and subrounded coarse flint (rinded).		2.65	106.33			2.65 - 3.00	B5	
EOH at 3.00m - Terminated due to refusal		3.00	105.98					SPT(S) 3.00m, N=55 (15,15/14,15,25,1)

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered.
3. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 1.20m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.20	2.00	102	100	
2.00	3.00	87	100	

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451674.71	Northing:	180232.54
Level:	116.18mAOD	Depth:	1.65m
Logger:	LM	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS23**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						Scale: 1:50
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks	Checked By: PR
0.00	1.20	Inspection Pit	Hand Excavated		1.20	300									Approved By: RT
1.20	1.65	Window Sampler	Tracked Window Sampler		1.65	87									Start Date: 18/01/2019
															Finish Date: 18/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: CONCRETE		0.17	116.00			0.20	ES1	
MADE GROUND: Dark brown to black slightly sandy angular to subangular fine to coarse GRAVEL of clinker, flint with rare slag. Sand is coarse ash.		0.21	115.96			0.30 - 0.50	B1	
Recovered as structureless CHALK, comprising of white mottling orange slightly sandy silty subangular fine to coarse GRAVEL of low density chalk with rare subrounded coarse flint (rinded). (Grade Dc)						0.30 - 0.50	ES2	
From rare 0.70m bgl flint cobbles present.								
From 1.20m bgl occasional subangular fine to coarse flint gravel.						1.20 - 1.65	B2	SPT(S) 1.20m, N=24 (5,7/7,6,6,5)
At 1.44m bgl flint cobble present (fragmented).								
EOH at 1.65m - Terminated due to refusal		1.65	114.52					SPT(S) 1.65m, N=56 (7,8/14,13,14,15)

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion exploratory hole backfilled with arisings.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.20	1.65	87	100	

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**	Location Details		Status	Borehole Number
Location: **Compton, West Berkshire**	Easting:	Northing:	FINAL	**WS24**
Client: **Homes England**	Level:	Depth: 5.00m		Sheet 1 of 1
	Logger: PR	Type: WS		
		Inclination: 90°		

Method, Plant and Crew					Diameter		Casing		Groundwater						Scale: 1:50
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks	Checked By: PR
0.00	1.20	Inspection Pit	Hand Excavated		1.20	300									Approved By: RT
1.20	5.00	Window Sampler	Tracked Window Sampler		5.00	-									Start Date: 17/01/2019
															Finish Date: 17/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: CONCRETE		0.17						
Black sandy subangular fine to coarse GRAVEL.		0.20				0.30	D2	
White/grey sandy gravelly SILT. Gravel is subangular to subrounded fine to coarse chalk and flint.						0.30	ES1	
Brown sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse chalk and flint.		0.60				0.70	D4	
Recovered as structureless CHALK, comprising of white sandy gravelly SILT. Gravel is subangular to subrounded fine to coarse chalk and flint. (Grade Dm)		0.80				0.70	ES3	
						1.20	D5	SPT(S) 1.20m, N=8 (3,2/3,1,2,2)
						1.20	ES6	
						1.50 - 2.00	B7	
						2.00	D8	SPT(S) 2.00m, N=14 (3,3/3,4,3,4)
						2.50 - 3.00	B9	
From 3.00m bgl occasional orange staining and occasional bands of grade Dc.						3.00	D10	SPT(S) 3.00m, N=20 (2,2/3,4,5,8)
						3.50 - 4.00	B11	
						4.00 - 4.50	B12	SPT(S) 4.00m, N=12 (4,4/3,3,3,3)
EOH at 5.00m - Achieved target depth		5.00				5.00	D13	SPT(S) 5.00m, N=16 (3,3/3,4,4,5)

Observations / Remarks	Sampling Runs					Hammer Information	
1. Location GPR / EM scanned prior to breaking ground.	From (m)	To (m)	Diam (mm)	Recovery %	Remarks	Serial No.	Energy Ratio %
2. Groundwater not encountered.							
3. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 5.00m bgl.						Project Number	
						A090070-474	

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451796.38	Northing:	180224.85
Level:	111.02mAOD	Depth:	0.90m
Logger:	LM	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS25**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						Scale:	1:50
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks	Checked By:	PR
0.00	0.90	Inspection Pit	Hand Excavated		0.90	300									Approved By:	RT
															Start Date:	16/01/2019
															Finish Date:	16/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over TOPSOIL: Dark brown slightly sandy CLAY with abundant rootlets.		0.10	110.92			0.00 - 0.10	D1	
MADE GROUND: Dark brown clayey sandy GRAVEL of angular to subangular fine to coarse concrete, brick, chalk and flint.						0.00 - 0.10	ES1	
At 0.2m bgl 1No. fragment of slag.						0.10 - 0.30	ES2	
From 0.40m bgl very clayey.						0.10 - 0.40	B1	
EOH at 0.90m - Terminated due to services		0.90	110.12					

1 2 3 4 5 6 7 8 9 10

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion exploratory hole backfilled with arisings.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451794.59	Northing:	180224.85
Level:	111.02mAOD	Depth:	2.80m
Logger:	PR	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS25A**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						Scale: 1:50
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks	Checked By: PR
0.00	1.20	Inspection Pit	Hand Excavated		1.20	300									Approved By: RT
1.20	2.80	Window Sampler	Tracked Window Sampler		2.80	101									Start Date: 23/01/2019
															Finish Date: 23/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over soft brown slightly sandy slightly gravelly CLAY. Gravel is chalk and flint.						0.00 - 0.20	B	
						0.10	ES1	
MADE GROUND: Soft to firm brown sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse chalk, flint and brick fragments.		0.20	110.82			0.20 - 0.60	B	
						0.30	ES2	
Light brown sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse chalk and rounded flint. (Weathered chalk)		0.60	110.42			0.60 - 1.20	B	
						1.00	ES3	
Recovered as structureless CHALK, comprising of white with orange staining sandy gravelly SILT. Gravel is subangular to subrounded fine to coarse chalk and flint. (Grade Dm)		1.20	109.82			1.20	D	SPT(S) 1.20m, N=15 (5,5/5,4,3,3)
						1.50 - 2.00	B	
						2.00	D	SPT(S) 2.00m, N=28 (5,7/7,7,7,7)
EOH at 2.80m - Terminated due to refusal		2.80	108.22			2.80	D	SPT(S) 2.80m, N=54 (9,11/12,12,13,17)

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered.
3. Upon completion exploratory hole backfilled with arisings.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.20	2.00	101		
2.00	2.80	87		

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451654.74	Northing:	180187.40
Level:	115.95mAOD	Depth:	5.00m
Logger:	PR	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS26**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00	1.20	Inspection Pit	Hand Excavated		1.20	300								
1.20	5.00	Window Sampler	Tracked Window Sampler		5.00	-								

Scale: 1:50
Checked By: PR
Approved By: RT
Start Date: 18/01/2019
Finish Date: 18/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over soft friable brown sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse chalk, flint, concrete fragments and brick fragments. (TOPSOIL)						0.10 - 0.30	B2	
Brown/white very sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse chalk and flint. (Weathered chalk)		0.30	115.65			0.30	ES1	
Recovered as structureless CHALK, comprising of dull white sandy gravelly SILT. Gravel is subangular to subrounded chalk and rare flint. (Grade Dm)		0.50	115.45			0.30 - 0.50	B3	
						0.70	ES2	
						0.70 - 1.00	B5	
						1.20	D6	SPT(S) 1.20m, N=16 (1,2/3,3,4,6)
White silty sandy GRAVEL.		1.30	114.65			1.60	D7	
						2.00	D8	SPT(S) 2.00m, N=25 (7,8/7,7,4,7)
Recovered as structureless CHALK, comprising of white sandy gravelly SILT. Gravel is subrounded fine to coarse chalk with rare subangular fine to coarse flint with occasional orange staining. (Grade Dm)		2.20	113.75			2.70	D9	
						3.00	D10	SPT(S) 3.00m, N=28 (4,5/6,4,7,11)
						4.00	D11	SPT(S) 4.00m, N=32 (5,6/5,7,9,11)
EOH at 5.00m - Achieved target depth		5.00	110.95			5.00	D12	SPT(S) 5.00m, N=31 (10,6/8,5,7,11)

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered.
3. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 5.00m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451732.69	Northing:	180190.64
Level:	112.60mAOD	Depth:	0.20m
Logger:	LM	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS27**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater					
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00	0.20	Inspection Pit	Hand Excavated		0.20	300								

Scale: 1:50
Checked By: PR
Approved By: RT
Start Date: 16/01/2019
Finish Date: 16/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over TOPSOIL: Soft dark brown slightly sandy CLAY with abundant rootlets.		0.08	112.52			0.05	ES1	
MADE GROUND: Dark grey gravelly CLAY with low cobble content. Gravel is subangular to subrounded fine to coarse chalk, flint, concrete and suspected ACM fragment. Cobbles are subangular concrete.		0.20	112.40			0.20	ES2	
EOH at 0.20m -								

1 2 3 4 5 6 7 8 9 10

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion exploratory hole backfilled with arisings.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451771.97	Northing:	180180.90
Level:	110.54mAOD	Depth:	3.00m
Logger:	PR	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS28**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00	1.20	Inspection Pit	Hand Excavated		1.20	300								
1.20	3.00	Window Sampler	Tracked Window Sampler		3.00	-								

Scale: 1:50
Checked By: PR
Approved By: RT
Start Date: 24/01/2019
Finish Date: 24/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over soft brown slightly sandy slightly gravelly CLAY. (TOPSOIL)						0.10	ES1	
		0.20	110.34			0.10 - 0.20	B	
MADE GROUND: Brown sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse chalk, flint, brick and bituminous material.						0.20 - 0.50	B	
		0.50	110.04			0.30	D	
Soft brown sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse chalk and flint.						0.30	ES2	
		0.80	109.74			0.80 - 1.30	B	
White/orangish brown sandy gravelly SILT. Gravel is subangular to subrounded fine chalk and flint. (Weathered chalk)						1.00	ES3	
		1.30	109.24					SPT(S) 1.20m, N=32 (3,6/10,12,6,4)
Recovered as structureless CHALK, comprising of white with occasional orange staining sandy gravelly SILT. Gravel is subangular to subrounded fine to coarse chalk and flint. (Grade Dm)						1.50	ES4	
						1.50 - 2.00	B	
						2.00	D	SPT(S) 2.00m, N=22 (7,7/7,5,5,5)
						2.50 - 3.00	B	
EOH at 3.00m - Terminated due to refusal		3.00	107.54					SPT(S) 3.00m, N=54 (6,10/12,13,14,15)

1 2 3 4 5 6 7 8 9 10

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered.
3. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 3.00m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.20	2.00		100	
2.00	3.00		100	

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451926.31	Northing:	180212.71
Level:	107.83mAOD	Depth:	2.50m
Logger:	LM	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS29**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						Scale: 1:50
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks	Checked By: PR
0.00	1.20	Inspection Pit	Hand Excavated		1.20	300									Approved By: RT
1.20	2.50	Window Sampler	Tracked Window Sampler		2.50	102									Start Date: 21/01/2019
															Finish Date: 21/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over TOSPOIL. Dark brown slightly gravelly CLAY. Gravel is subangular to rounded chalk and flint.		0.17	107.66			0.10 0.10	D1 ES1	
MADE GROUND: Dark brown clayey GRAVEL with high cobble content. Gravel is subangular coarse limestone with rare rounded fine to coarse chalk and flint. Cobbles are subangular limestone.		0.60	107.23			0.40 0.40	B1 ES2	
Soft dark brown gravelly CLAY. Gravel is subrounded fine chalk and subangular fine to coarse flint with rare subangular coarse limestone gravel. (Potential for material above to have fallen in hole)						0.70	ES3	
						1.00 - 1.20	B2	SPT(S) 1.20m, N=15 (2,5/6,4,3,2)
Recovered as structureless CHALK, comprising of white gravelly SILT. Gravel is subrounded fine to medium low density chalk. (Grade Dm)		1.40	106.43					
Light brown slightly gravelly CLAY. Gravel is rounded fine chalk.		1.50	106.33			1.50 - 1.60 1.50 - 2.00	ES4 B3	
								SPT(S) 2.00m, N=17 (5,8/4,4,4,5)
From 2.40m bgl becomes gravelly.		2.50	105.33			2.50	D2	SPT(S) 2.50m, 0 (50 for 20mm/0 for 0mm)
EOH at 2.50m - Terminated due to refusal								

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion exploratory hole backfilled with arisings.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.20	2.00	102	100	
2.00	2.50	87	100	

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451791.89	Northing:	180169.84
Level:	108.67mAOD	Depth:	4.70m
Logger:	PR	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS30**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						Scale: 1:50
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks	Checked By: PR
0.00	1.20	Inspection Pit	Hand Excavated		1.20	300									Approved By: RT
1.20	4.70	Window Sampler	Tracked Window Sampler		4.70	-									Start Date: 23/01/2019
															Finish Date: 23/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over soft brown slightly sandy slightly gravelly CLAY. (TOPSOIL)						0.00 - 0.20	B	
						0.10	ES1	
Recovered as structureless CHALK, comprising of white sandy gravelly SILT. Gravel is subangular to subrounded fine to coarse flint and chalk with occasional staining. (Grade Dm)		0.20	108.47			0.50	ES2	
						0.50 - 1.00	B	
						1.20	D	SPT(S) 1.20m, N=23 (4,4/8,5,6,4)
						1.50 - 2.00	B	
						2.00	D	SPT(S) 2.00m, N=17 (3,4/4,4,5,4)
						2.00	ESD	
						2.50 - 3.00	B	
						3.00	D	SPT(S) 3.00m, N=18 (4,2/4,6,4,4)
						3.00 - 4.00	B	
						4.00	D	SPT(S) 4.00m, N=23 (3,3/2,5,7,9)
EOH at 4.70m - Terminated due to refusal		4.70	103.97			4.70	D	SPT(S) 4.70m, 0 (25 for 0mm/0 for 0mm)

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered.
3. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 4.70m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.20	2.00			
2.00	3.00			
3.00	4.00			
4.00	4.70			

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451853.16	Northing:	180180.46
Level:	106.64mAOD	Depth:	3.00m
Logger:	PR	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS31**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00	1.20	Inspection Pit	Hand Excavated		1.20	300								
1.20	3.00	Window Sampler	Tracked Window Sampler		3.00	-								

Scale: 1:50
Checked By: PR
Approved By: RT
Start Date: 07/02/2019
Finish Date: 07/02/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over soft brown slightly sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse chalk, flint and brick fragments.						0.10 0.10 - 0.50 0.30	ES1 B ES2	
From 0.80m bgl becomes dark brown and slightly gravelly.						0.60 - 1.00	B	
						1.00	ES3	
Dull yellowish brown very sandy very gravelly silty CLAY. Gravel is subangular to subrounded fine to coarse flint and chalk. 1no cobble sized rinded flint.		1.10	105.54			1.20	D	SPT(S) 1.20m, N=23 (3,3/6,6,5,6)
						1.50 1.50 - 2.00	ES4 B	
						2.00 2.00	D ESD	SPT(S) 2.00m, N=39 (7,4/7,7,9,16)
Recovered as structureless CHALK, comprising of dull greyish white very dense chalk GRAVEL in silty sandy matrix. (Grade Dc)		2.50	104.14			2.50 - 3.00	B	
EOH at 3.00m -		3.00	103.64			3.00	D	SPT(S) 3.00m, N=53 (9,9/13,13,13,14)

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion exploratory hole backfilled with arisings.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451910.17	Northing:	180168.56
Level:	105.49mAOD	Depth:	3.00m
Logger:	PR	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS32**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						Scale: 1:50
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks	Checked By: PR
0.00	1.20	Inspection Pit	Hand Excavated		1.20	300									Approved By: RT
1.20	3.00	Window Sampler	Tracked Window Sampler		3.00	-									Start Date: 08/02/2019
															Finish Date: 08/02/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: Yellowish brown slightly clayey sandy GRAVEL is subangular to subrounded fine to coarse type 1 aggregates.		0.20	105.29			0.30	ES1	
MADE GROUND: Soft to firm brown sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse flint, chalk and brick fragments.						0.50 - 1.00	B	
						1.00	ES2	
						1.20	D	SPT(S) 1.20m, N=30 (2,4/6,9,9,6)
Light yellowish brown sandy gravelly SILT. Gravel is subangular to subrounded fine to coarse chalk and flint.		1.40	104.09					
Dull white with reddish brown mottling also with frequent orange, brown and green staining sandy gravelly SILT. Gravel is subrounded fine to coarse chalk. (Weathered chalk)		1.70	103.79			1.80	ES3	
						2.00	D	SPT(S) 2.00m, N=38 (4,6/9,9,9,11)
						2.00 - 3.00	B	
EOH at 3.00m - Terminated due to refusal		3.00	102.49			3.00	D	SPT(S) 3.00m, N=56 (11,17/13,17,13,13)

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 1.40m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451646.12	Northing:	180145.50
Level:	114.04mAOD	Depth:	5.00m
Logger:	PR	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS33**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						Scale: 1:50
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks	Checked By: PR
0.00	1.20	Inspection Pit	Hand Excavated		1.20	300									Approved By: RT
1.20	5.00	Window Sampler	Tracked Window Sampler		5.00	-									Start Date: 18/01/2019
															Finish Date: 18/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Soft friable brown sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse chalk and flint. (TOPSOIL)						0.10	ES1	
						0.10 - 0.30	B2	
Brown/white very sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse flint and chalk. (Weathered chalk)		0.30	113.74					
Recovered as structureless CHALK, comprising of dull white sandy gravelly SILT. Gravel is subangular to subrounded fine to coarse flint and chalk. (Grade Dm)		0.45	113.59			0.50	ES2	
						0.70 - 1.00	B4	
Recovered as structureless CHALK, comprising of white with orange staining silty sandy GRAVEL. Gravel is subangular to subrounded fine to coarse chalk and flint. (Grade Dc)		1.00	113.04			1.20	D5	SPT(S) 1.20m, N=12 (1,2/2,3,3,4)
						1.50 - 2.00	B6	
						2.00	D7	SPT(S) 2.00m, N=19 (2,4/4,5,5,5)
Recovered as structureless CHALK, comprising of white with orange staining sandy gravelly SILT. Gravel is subrounded fine to coarse chalk with occasional flint. (Grade Dm with occasional bands of Dc)		2.40	111.64					
						3.00	D8	SPT(S) 3.00m, N=34 (5,7/7,9,10,8)
						4.00	D9	SPT(S) 4.00m, N=18 (5,4/3,3,5,7)
EOH at 5.00m - Achieved target depth		5.00	109.04			5.00	D10	SPT(S) 5.00m, N=14 (3,3/3,3,3,5)

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion exploratory hole backfilled with arisings.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.20	2.00		100	
2.00	3.00		90	
3.00	4.00		85	
4.00	5.00		65	

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451711.65	Northing:	180154.65
Level:	111.38mAOD	Depth:	1.70m
Logger:	PR	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS34**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00	1.20	Inspection Pit	Hand Excavated		1.20	300								
1.20	1.70	Window Sampler	Tracked Window Sampler		1.70	-								

Scale: 1:50
Checked By: PR
Approved By: RT
Start Date: 23/01/2019
Finish Date: 23/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over soft brown slightly sandy gravelly CLAY. (TOPSOIL)						0.00 - 0.20	B	
						0.10	ES1	
Light brown sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse chalk and flint. (Weathered chalk)		0.20	111.18					
						0.40 - 0.65	B	
						0.50	D	
Recovered as structureless CHALK, comprising of white sandy gravelly SILT. Gravel is subangular to subrounded fine to coarse chalk and flint with occasional orange staining. (Grade Dm)		0.65	110.73			0.80 - 1.20	B	
						1.00	ES2	
						1.20 - 1.70	B	SPT(S) 1.20m, N=20 (1,2/5,5,5,5)
EOH at 1.70m - Terminated due to refusal		1.70	109.68					SPT(S) 1.70m, N=58 (9,10/12,14,16,16)

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered.
3. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 1.70m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451870.84	Northing:	180171.46
Level:	105.88mAOD	Depth:	2.00m
Logger:	LM	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS35**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00	1.20	Inspection Pit	Hand Excavated		1.20	300								
1.20	2.00	Window Sampler	Tracked Window Sampler		2.00	102								

Scale: 1:50
Checked By: PR
Approved By: RT
Start Date: 21/01/2019
Finish Date: 21/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over TOPSOIL. Soft dark brown CLAY with abundant rootlets.						0.10	ES1	
		0.25	105.63					
Firm dark brown gravelly CLAY. Gravel is subangular to subrounded medium to coarse quartzite, flint and chalk. (Imported Topsoil)						0.40	ES2	
		0.50	105.38			0.40 - 0.50	B1	
Firm light brown to dark brown slightly sandy gravelly CLAY. Gravel is subrounded fine to medium chalk with frequent subangular to subrounded medium to coarse rinded flint.						1.00	ES3	
						1.00 - 1.20	B2	SPT(S) 1.20m, N=26 (3,3/6,7,6,7)
Light brown slightly clayey GRAVEL. Gravel is subangular coarse rinded flint (fragmented).		1.30	104.58			1.30 - 1.60	D1	
Recovered as structureless CHALK, comprising of light grey to light brown clayey GRAVEL of angular fine to coarse medium density chalk. (Grade Dc)		1.60	104.28			1.60 - 1.90	D2	
EOH at 2.00m - Terminated due to refusal		2.00	103.88					SPT(S) 2.00m, N=55 (10,12/10,12,16,17)

1 2 3 4 5 6 7 8 9 10

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion exploratory hole backfilled with arisings.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.20	2.00	102	100	

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451971.15	Northing:	180147.52
Level:	103.90mAOD	Depth:	1.80m
Logger:	PR	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS36**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						Scale: 1:50
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks	Checked By: PR
0.00	1.20	Inspection Pit	Hand Excavated		1.20	300									Approved By: RT
1.20	1.80	Window Sampler	Tracked Window Sampler		1.80	-									Start Date: 24/01/2019
															Finish Date: 24/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Soft brown slightly sandy slightly gravelly CLAY. Gravel is subangular to subrounded fine to coarse chalk and flint. (TOPSOIL)						0.00 - 0.20	B	
		0.20	103.70			0.10	ES1	
Soft light brown very sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse chalk and flint.						0.30	ES2	
		0.40	103.50			0.50	ES3	
Soft to firm brown slightly sandy slightly gravelly CLAY.						0.50 - 0.90	B	
		0.90	103.00			1.00	ES4	
Light orange/white sandy gravelly SILT. Gravel is subangular to subrounded flint and chalk. (Weathered chalk)						1.20	D	SPT(S) 1.20m, N=33 (3,8/10,10,7,6)
						1.20	ESD	
EOH at 1.80m - Terminated due to refusal		1.80	102.10			1.80	D	SPT(S) 1.80m, 50 (15,15/50 for 145mm)

1 2 3 4 5 6 7 8 9 10

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Falling test undertaken.
4. Upon completion exploratory hole backfilled with arisings.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451694.68	Northing:	180132.98
Level:	110.88mAOD	Depth:	1.70m
Logger:	LM	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS37**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00	1.20	Inspection Pit	Hand Excavated		1.20	300								
1.20	1.70	Window Sampler	Tracked Window Sampler		1.70	87								

Scale: 1:50
Checked By: PR
Approved By: RT
Start Date: 22/01/2019
Finish Date: 22/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over TOPSOIL. Dark brown slightly sandy slightly gravelly CLAY with abundant rootlets. Gravel is subangular fine to coarse flint.						0.20	D1	
						0.20	ES1	
Firm light brown slightly sandy gravelly CLAY. Gravel is subangular fine to medium chalk and subangular fine to coarse flint.		0.30	110.58			0.30	ES2	
						0.30 - 0.60	B1	
Recovered as structureless CHALK, comprising of white occasional mottling orange slightly sandy silty GRAVEL of subangular fine to coarse medium density chalk with occasional subangular fine to coarse rinded flint. (Grade Dc)		0.60	110.28			0.60 - 1.00	B2	
						0.70	ES3	
						1.20 - 1.70	B3	SPT(S) 1.20m, N=17 (1,2/3,4,5,5)
EOH at 1.70m - Terminated due to refusal		1.70	109.18					SPT(S) 1.70m, N=79 (9,9/17,17,21,24)

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered.
3. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 1.70m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.20	1.70	87	100	

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451816.41	Northing:	180119.94
Level:	105.35mAOD	Depth:	1.00m
Logger:	LM	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS38**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00	1.00	Inspection Pit	Hand Excavated		1.00	300								

Scale: 1:50
Checked By: PR
Approved By: RT
Start Date: 21/01/2019
Finish Date: 21/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: ASPHALT.		0.12	105.23			0.20	ES1	
MADE GROUND: Dark brown to black slightly sandy slightly clayey GRAVEL of subangular to subrounded fine to coarse concrete, clinker and brick.		0.40	104.95			0.20 - 0.40 0.40 - 0.60	B1 B2	
MADE GROUND: Firm dark brown gravelly CLAY. Gravel is angular to subangular fine to coarse chalk and flint (no rind) with rare brick fragments.		0.60	104.75			0.50	ES2	
Light brown clayey sandy GRAVEL of angular to subrounded fine to coarse flint (no rind) and occasional medium density chalk with occasional subangular flint cobbles.						0.70 0.80 - 1.00	ES3 B3	
EOH at 1.00m - Terminated due to refusal		1.00	104.35					SPT(S) 1.00m, N=67 (10,10/14,16,17,20)

1 2 3 4 5 6 7 8 9 10

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered.
3. Upon completion exploratory hole backfilled with arisings.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451862.93	Northing:	180130.78
Level:	103.87mAOD	Depth:	1.20m
Logger:	LM	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS39**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks	
0.00	1.20	Inspection Pit	Hand Excavated		1.20	300									

Scale: 1:50
Checked By: PR
Approved By: RT
Start Date: 21/01/2019
Finish Date: 21/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over TOPSOIL. Soft dark brown slightly sandy clayey SILT with abundant rootlets.		0.10	103.77			0.05	D1	
						0.05	ES1	
Dark brown slightly sandy slightly gravelly clayey SILT. Gravel is subangular fine to coarse brick, flint and chalk. (Imported Topsoil)						0.20	ES2	
						0.20 - 0.40	B1	
Firm dark brown slightly sandy gravelly CLAY. Gravel is subrounded fine to medium low density chalk and subangular medium to coarse rinded flint.		0.70	103.17			0.70 - 0.90	B2	
						0.70 - 0.90	ES3	
Light brown slightly sandy clayey GRAVEL of subangular fine to coarse high density chalk and occasional subangular medium to coarse flint.		0.90	102.97			0.90 - 1.20	B3	
EOH at 1.20m - Terminated due to refusal		1.20	102.67					SPT(S) 1.20m, N=56 (9,11/10,12,16,18)

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion exploratory hole backfilled with arisings.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451902.00	Northing:	180109.85
Level:	103.00mAOD	Depth:	2.70m
Logger:	PR	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS40**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						Scale: 1:50
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks	Checked By: PR
0.00	1.20	Inspection Pit	Hand Excavated		1.20	300									Approved By: RT
1.20	2.70	Window Sampler	Tracked Window Sampler		2.70	101									Start Date: 24/01/2019
															Finish Date: 24/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over soft brown slightly sandy slightly gravelly CLAY. Gravel is subangular to subrounded fine to coarse flint and chalk. (TOSPOIL)						0.10	ES1	
MADE GROUND: Soft to firm brown sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse flint, chalk, brick and concrete.		0.20	102.80			0.30	ES2	
						0.50 - 1.00	B	
						1.00	ES3	
						1.20	D	SPT(S) 1.20m, N=15 (2,2/3,4,4,4)
Light orange and white sandy gravelly SILT. Gravel is subangular to subrounded fine to coarse chalk and flint. (Weathered chalk)		1.30	101.70			1.50	ES4	
						2.00	D	SPT(S) 2.00m, N=28 (8,8/7,7,7,7)
						2.00	ESD	
EOH at 2.70m - Terminated due to refusal		2.70	100.30			2.70	D	SPT(S) 2.70m, N=61 (12,16/14,14,16,17)

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered.
3. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 1.00m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.20	2.00	101	100	
2.00	2.70		100	

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451652.38	Northing:	180122.56
Level:	112.45mAOD	Depth:	5.00m
Logger:	PR	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS41**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						Scale: 1:50
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks	Checked By: PR
0.00	1.20	Inspection Pit	Hand Excavated		1.20	300									Approved By: RT
1.20	5.00	Window Sampler	Tracked Window Sampler		5.00	-									Start Date: 18/01/2019
															Finish Date: 18/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Soft to firm brown sandy gravelly CLAY. Gravel is fine to coarse flint.						0.10	ES1	
						0.10 - 0.30	B2	
		0.30	112.15			0.30 - 0.60	B4	
Light brown/white sandy gravelly friable CLAY. Gravel is subangular to subrounded fine to coarse chalk and flint.						0.50	ES2	
		0.60	111.85			0.60 - 1.00	B5	
Recovered as structureless CHALK, comprising of dull white sandy gravelly SILT. Gravel is subangular to subrounded fine to coarse flint and chalk. 1No. flint cobble. (Grade Dm)								
		1.00	111.45			1.00	ES3	
Recovered as structureless CHALK, comprising of white with orange staining sandy silty GRAVEL. Gravel is subangular to subrounded fine to coarse chalk and flint. (Grade Dc)						1.20	D7	SPT(S) 1.20m, N=6 (1,1/1,2,1,2)
						1.50 - 2.00	B8	
						2.00	D9	SPT(S) 2.00m, N=22 (5,6/5,5,6,6)
		2.30	110.15					
Recovered as structureless CHALK, comprising of white with orange staining sandy gravelly SILT. Gravel is subangular to subrounded fine to coarse chalk with occasional flint. (Grade Dm)						2.50 - 3.00	B13	
						3.00	D10	SPT(S) 3.00m, N=20 (4,4/4,5,5,6)
						3.50 - 4.00	B14	
						4.00	D11	SPT(S) 4.00m, N=18 (4,3/4,5,5,4)
						4.00 - 5.00	B15	
		4.60	107.85					
Recovered as structureless CHALK, comprising of white with orange staining silty sandy GRAVEL. Gravel is subangular to subrounded fine to coarse chalk with occasional flints. (Grade Dc)								
		5.00	107.45			5.00	D12	SPT(S) 5.00m, N=33 (7,5/9,8,8,8)
EOH at 5.00m - Achieved target depth								

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion exploratory hole backfilled with arisings.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451730.26	Northing:	180088.57
Level:	106.58mAOD	Depth:	5.00m
Logger:	LM	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS42**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00	1.20	Inspection Pit	Hand Excavated		1.20	300								
1.20	5.00	Window Sampler	Tracked Window Sampler		5.00	87								

Scale: 1:50
Checked By: PR
Approved By: RT
Start Date: 22/01/2019
Finish Date: 22/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over TOPSOIL. Dark brown slightly sandy slightly gravelly CLAY with abundant roots. Gravel is subangular medium to coarse chalk and flint.		0.20	106.38			0.10 0.10 0.20 - 0.40 0.30	D1 ES1 B1 ES2	
Dark brown slightly sandy gravelly CLAY. Gravel is subangular to subrounded medium density chalk and rinded flint. *From 0.50m bgl turns to light brown.*								
Recovered as structureless CHALK, comprising of white occasional mottled orange slightly sandy gravelly CLAY. Gravel is subangular fine to coarse medium density chalk with rare subangular medium to coarse rinded flint. (Grade Dm)		1.25	105.33			1.25 - 2.00	B2	SPT(S) 1.20m, N=16 (6,5/4,4,4,4)
						2.00 - 3.00	B3	SPT(S) 2.00m, N=19 (3,4/5,4,6,4)
						3.00 - 4.00	D2	SPT(S) 3.00m, N=21 (9,4/3,6,9,3)
						4.00 - 5.00	D3	SPT(S) 4.00m, N=9 (2,1/2,1,2,4)
								SPT(S) 4.60m, N=34 (16,11/8,3,3,20)
EOH at 5.00m - Achieved target depth		5.00	101.58					

1 2 3 4 5 6 7 8 9 10

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered.
3. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 5.00m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.20	2.00	87	100	
2.00	3.00	77	90	
3.00	4.00	67	60	
4.00	5.00	57	60	

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**	Location Details	Status	Borehole Number
Location: **Compton, West Berkshire**	Easting: 451773.49 Northing: 180073.40	FINAL	**WS43**
Client: **Homes England**	Level: 104.23mAOD Depth: 1.00m		Sheet 1 of 1
	Logger: LM Type: WS		
	Inclination: 90°		

Method, Plant and Crew					Diameter		Casing		Groundwater						Scale: 1:50
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks	Checked By: PR
0.00	1.00	Inspection Pit	Hand Excavated		1.00	300									Approved By: RT
															Start Date: 22/01/2019
															Finish Date: 22/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: ASPHALT.		0.11	104.12					
MADE GROUND: Dark brown slightly sandy clayey GRAVEL with low cobble content. Gravel is subangular to subrounded fine to coarse flint (no rind) with rare subangular coarse limestone and well rounded fine to medium chalk. Cobbles are subangular limestone.						0.20 0.20 - 0.40	ES1 B1	
Greyish brown slightly silty clayey gravelly fine to coarse SAND. Gravel is subangular to subrounded fine to coarse flint (rinded) and low density chalk.		0.45	103.78			0.50 0.50 - 0.60	ES2 B2	
EOH at 1.00m - Terminated due to refusal		1.00	103.23					SPT(S) 1.00m, N=65 (8,13/16,16,15,18)

1 2 3 4 5 6 7 8 9 10

Observations / Remarks	Sampling Runs					Hammer Information	
1. Location GPR / EM scanned prior to breaking ground. 2. Groundwater not encountered during excavation. 3. Upon completion exploratory hole backfilled with arisings.	From (m)	To (m)	Diam (mm)	Recovery %	Remarks	Serial No.	Energy Ratio %

Project Number

A090070-474

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451696.25	Northing:	180009.56
Level:	103.33mAOD	Depth:	2.00m
Logger:	AS	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS44**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00	1.20	Inspection Pit	Hand Excavated		1.20	300								
1.20	2.00	Window Sampler	Tracked Window Sampler		2.00	87								

Scale: 1:50
Checked By: PR
Approved By: RT
Start Date: 09/01/2019
Finish Date: 09/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over light brown friable SILT with abundant rootlets. (TOPSOIL)		0.15	103.18			0.20 - 0.50	B2	
Soft brown slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is subangular fine to coarse flint.						0.30	ES1	PID 0.30m, 0.0ppm
Soft orangish brown slightly gravelly silty CLAY. Gravel is subangular fine to coarse flint.		0.50	102.83			0.50 - 1.00	B5	
						0.80	D3	HV 0.80m, (p)=48 kPa (r)=24 kPa
						0.90	ES4	PID 0.90m, 0.0ppm
Cream very gravelly SILT with low cobble content. Gravel is subangular fine to coarse chalk and flint. Cobbles are angular to rounded flint and chalk.		1.10	102.23			1.10	ES6	
						1.20	D	SPT(S) 1.20m, N=52 (6,9/11,14,13,14)
						1.20 - 2.00	B7	PID 1.20m, 0.0ppm
EOH at 2.00m - Terminated due to SPT refusal		2.00	101.33					SPT(S) 2.00m, N=43 (6,10/13,11,10,9) PID 2.00m, 0.0ppm

1 2 3 4 5 6 7 8 9 10

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered.
3. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 2.00m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.20	2.00	87	100	

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451842.21	Northing:	180056.06
Level:	101.77mAOD	Depth:	3.00m
Logger:	LM	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS45**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						Scale: 1:50
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks	Checked By: PR
0.00	1.20	Inspection Pit	Hand Excavated		1.20	300									Approved By: RT
1.20	3.00	Window Sampler			3.00	-									Start Date: 22/01/2019
															Finish Date: 22/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over TOPSOIL. Slightly gravelly sandy CLAY with frequent rootlets. Gravel is well rounded fine to medium flint.		0.20	101.57			0.10 0.10 0.30 0.30	D1 ES1 B1 ES2	
MADE GROUND: Dark brown slightly sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse flint, brick and low density chalk. *Between 0.20m to 0.40m bgl cobble of brick.*		0.40	101.37					
Soft dark brown slightly sandy gravelly CLAY. Gravel is subrounded fine to coarse flint with rare rounded medium chalk. *From 1.10m bgl low density rounded fine to coarse chalk present.*						1.00 1.00 - 1.10	ES3 B2	SPT(S) 1.20m, N=18 (2,8/4,4,5,5)
Firm light brown slightly sandy gravelly CLAY. Gravel is angular to subangular fine to coarse rinded flint with occasional chalk and medium density subangular fine to coarse chalk. (Till) *Between 2.00m to 3.00m bgl rare cobbles of brick.*		1.30	100.47			1.30 1.30 - 2.00 2.00 - 3.00	ES4 B3 B4	SPT(S) 2.00m, N=27 (6,4/7,6,7,7)
EOH at 3.00m - Terminated due to refusal		3.00	98.77					SPT(S) 3.00m, N=60 (11,11/13,14,16,17)

1 2 3 4 5 6 7 8 9 10

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion exploratory hole backfilled with arisings.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451890.20	Northing:	180054.64
Level:	100.78mAOD	Depth:	3.00m
Logger:	LM	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS46**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						Scale: 1:50
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks	Checked By: PR
0.00	1.00	Inspection Pit	Hand Excavated		1.00	300									Approved By: RT
1.00	3.00	Window Sampler	Tracked Window Sampler		3.00	102									Start Date: 22/01/2019
															Finish Date: 22/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: ASPHALT.		0.04	100.74					
MADE GROUND: CONCRETE.		0.14	100.64					
MADE GROUND: ASPHALT.		0.26	100.52			0.30 0.30 - 0.40	ES1 B1	
MADE GROUND: Dark brown slightly sandy slightly gravelly CLAY. Gravel is subangular to subrounded fine to coarse brick, flint and chalk.		0.56	100.22			0.70 0.70 - 0.80	ES2 B2	
Light brown to black slightly sandy clayey GRAVEL. Gravel is subangular fine to coarse rinded flint with occasional rounded fine to medium rounded chalk.								SPT(S) 1.20m, N=11 (3,5/3,3,2,3)
						1.50 - 2.00	B3	
								SPT(S) 2.00m, N=18 (5,3/5,5,4,4)
From 2.50m bgl becomes sandy.								
Light greyish brown gravelly fine SAND. Gravel is subangular fine to medium flint.		2.60	98.18			2.60 - 2.80	D1	
Light greyish brown slightly sandy clayey GRAVEL of subangular fine to coarse rinded flint with occasional chalk.		2.80	97.98			2.80 - 3.00	D2	
		3.00	97.78					SPT(S) 3.00m, N=50 (3,6/10,12,14,14)
EOH at 3.00m - Terminated due to refusal								

1 2 3 4 5 6 7 8 9 10

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion exploratory hole backfilled with arisings.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.00	2.00	102	100	
2.00	3.00	87	80	

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451721.52	Northing:	179993.17
Level:	101.68mAOD	Depth:	2.70m
Logger:	AS	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS47**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00	1.20	Inspection Pit	Hand Excavated		1.20	87								
1.20	2.70	Window Sampler	Tracked Window Sampler		2.70	87								

Scale: 1:50
Checked By: PR
Approved By: RT
Start Date: 09/01/2019
Finish Date: 09/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over light brown friable slightly sandy SILT with abundant rootlets. Sand is fine to coarse. (TOPSOIL)		0.20	101.48					
Soft light brown very gravelly CLAY. Gravel is subangular fine to coarse flint.						0.30 - 1.00	B2	
						0.50	ES1	PID 0.50m, 0.0ppm
						1.20	D	SPT(S) 1.20m, N=17 (4,3/1,2,7,7)
Creamish brown slightly sandy silty subangular fine to coarse flint with occasional fine to medium chalk GRAVEL. Sand is fine to coarse.		1.30	100.38			1.40	ES3	PID 1.40m, 0.0ppm
						1.50	D4	
						1.50 - 2.00	B6	
						2.00	D	SPT(S) 2.00m, N=38 (9,9/9,8,9,12)
						2.00 - 2.70	B7	PID 2.00m, 0.0ppm
EOH at 2.70m - Terminated due to refusal		2.70	98.98			2.70	D	SPT(S) 2.70m, 53 (18,18/17,18,18,) PID 2.70m, 0.0ppm

1 2 3 4 5 6 7 8 9 10

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered.
3. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 2.50m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.20	2.00	87	100	
2.00	2.70	77	100	

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451747.60	Northing:	180003.50
Level:	101.51mAOD	Depth:	5.00m
Logger:	AS	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS48**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00	1.20	Inspection Pit	Hand Excavated		1.20	300								
1.20	5.00	Window Sampler	Tracked Window Sampler		5.00	87								

Scale: 1:50
Checked By: PR
Approved By: RT
Start Date: 09/01/2019
Finish Date: 09/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over light brown silty CLAY with abundant rootlets. (TOPSOIL)								
Soft orangish brown sandy gravelly CLAY. Sand is fine to coarse. Gravel is subangular fine to coarse flint.		0.20	101.31			0.30	ES1	PID 0.30m, 0.0ppm
						0.30 - 0.80	B2	
Creamish brown very silty sandy subangular fine to coarse flint with occasional chalk GRAVEL. Sand is fine to coarse.		1.20	100.31					SPT(S) 1.20m, N=18 (2,4/4,5,5,4)
						1.30	D4	PID 1.30m, 0.0ppm
		1.40	100.11			1.30	ES3	
Soft to firm slightly sandy slightly gravelly SILT. Sand is fine to coarse. Gravel is subangular fine to medium flint and chalk.						1.50 - 2.00	B6	
						1.60	ES5	PID 1.60m, 0.0ppm
								SPT(S) 2.00m, N=40 (5,7/9,10,11,10)
Creamish brown silty sandy subangular fine to coarse chalk and flint GRAVEL. Sand is fine to coarse.		2.20	99.31			2.20 - 3.00	B7	
								SPT(S) 3.00m, N=31 (6,8/10,9,6,6)
From 3.40m bgl becoming very silty.						3.50	D9	PID 3.50m, 0.0ppm
						3.50	ES8	
At 3.80m bgl flint cobble.								
								SPT(S) 4.00m, N=27 (5,4/4,7,8,8)
Recovered as structureless CHALK, comprising of creamish white slightly gravelly SILT. Gravel is subrounded low density chalk. (Grade Dm)		4.05	97.46					
						4.40	ES10	
						4.80	D11	
EOH at 5.00m - Achieved target depth		5.00	96.51					SPT(S) 5.00m, N=30 (4,5/7,6,9,8)

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered.
3. Upon completion exploratory hole backfilled with arisings.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.20	2.00	87	100	
2.00	3.00	77	90	
3.00	4.00	67	85	
4.00	5.00	57	100	

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451834.94	Northing:	180007.82
Level:	100.74mAOD	Depth:	4.00m
Logger:	PR	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS49**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						Scale: 1:50
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks	Checked By: PR
0.00	1.20	Inspection Pit	Hand Excavated		1.20	300									Approved By: RT
1.20	4.00	Window Sampler	Tracked Window Sampler		4.00	87									Start Date: 09/01/2019
															Finish Date: 09/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over brown silty CLAY with rootlets. (TOPSOIL)						0.20	ES1	PID 0.20m, 0.0ppm
MADE GROUND: Soft brown sandy gravelly CLAY. Gravel is subangular fine to coarse flint and brick.		0.30	100.44			0.40 - 0.80	B2	
						0.70	ES3	PID 0.70m, 0.0ppm
Creamish brown silty sandy subangular fine to coarse flint GRAVEL. Sand is fine to coarse.		1.00	99.74			1.20	D5	SPT(S) 1.20m, N=48 (9,12/12,11,12,13)
						1.20	ES4	PID 1.20m, 0.0ppm
						1.20 - 1.80	B7	
Soft to firm yellowish brown slightly sandy slightly gravelly SILT. Sand is fine to coarse. Gravel is subangular fine to medium chalk and flint.		1.80	98.94			1.90	ES6	PID 1.90m, 0.0ppm
						2.00	D8	SPT(S) 2.00m, N=37 (2,2/8,10,9,10)
						2.00 - 2.50	B9	
Creamish brown silty sandy subangular fine to coarse flint GRAVEL. Sand is fine to coarse.		2.50	98.24			3.00 - 4.00	B10	SPT(S) 3.00m, N=34 (7,8/9,8,9,8)
EOH at 4.00m - Terminated due to refusal		4.00	96.74			4.00	D11	SPT(S) 4.00m, 64 (13,15/20,22,22,)

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered.
3. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 1.20m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.20	2.00	87	100	
2.00	3.00	77	95	
3.00	4.00	67	100	

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451719.80	Northing:	179935.78
Level:	100.88mAOD	Depth:	3.00m
Logger:	AS	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS50**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00	1.20	Inspection Pit	Hand Excavated		1.20	300								
1.20	3.00	Window Sampler	Tracked Window Sampler		3.00	87								

Scale: 1:50
Checked By: PR
Approved By: RT
Start Date: 08/01/2019
Finish Date: 08/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over light brown slightly sandy SILT with abundant rootlets. (TOPSOIL)		0.10	100.78					
Light brown very clayey slightly sandy subangular fine to coarse flint GRAVEL. Sand is fine to coarse.						0.40 0.50 - 1.00	ES1 B2	PID 0.50m, 0.0ppm
						1.20	D	SPT(S) 1.20m, N=7 (4,3/2,2,2,1) PID 1.20m, 0.0ppm
Light yellow/cream sandy very gravelly SILT. Gravel is subangular fine to coarse flint and chalk.		1.40	99.48			1.40 - 2.00 1.50 1.60	B5 ES3 D4	PID 1.50m, 0.0ppm
						2.00 2.00 - 3.00	D B6	SPT(S) 2.00m, N=26 (5,6/6,5,6,9) PID 2.00m, 0.0ppm
EOH at 3.00m - Terminated due to refusal		3.00	97.88					SPT(S) 3.00m, N=53 (4,5/8,13,17,15) PID 3.00m, 0.0ppm

1 2 3 4 5 6 7 8 9 10

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered.
3. Upon completion exploratory hole backfilled with arisings.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.20	2.00	87	100	
2.00	3.00	77	90	

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451809.90	Northing:	179950.28
Level:	100.12mAOD	Depth:	3.00m
Logger:	AS	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS51**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00	1.20	Inspection Pit	Hand Excavated		1.20	300								
1.20	3.00	Window Sampler	Tracked Window Sampler		3.00	87								

Scale: 1:50
Checked By: PR
Approved By: RT
Start Date: 08/01/2019
Finish Date: 08/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over light brown slightly sandy SILT with abundant rootlets. (TOPSOIL)		0.10	100.02					
Brown slightly sandy very clayey subangular fine to coarse flint and occasional chalk GRAVEL. Sand is fine to coarse.						0.30	ES1	PID 0.30m, 0.0ppm
						0.30 - 0.90	B2	
						0.70	D3	
Light brown very clayey subangular fine to coarse flint GRAVEL with occasional cobbles of low density chalk.		1.00	99.12			1.20	D	SPT(S) 1.20m, N=9 (1,2/2,1,3,3)
						1.20	ES4	PID 1.20m, 0.0ppm
						1.20 - 2.00	B5	
								SPT(S) 2.00m, N=5 (1,0/1,1,2,1)
								PID 2.00m, 0.0ppm
Soft sandy gravelly SILT. Sand is fine to coarse. Gravel is subangular fine to coarse chalk and flint.		2.20	97.92			2.20 - 2.70	B7	
						2.30	ES6	
Recovered as structureless CHALK, comprising of cream very silty subangular fine to coarse chalk and flint GRAVEL. (Grade Dc)		2.70	97.42					SPT(S) 2.80m, N=56 (1,3/5,12,21,18)
						2.90	D8	
EOH at 3.00m - Terminated due to refusal		3.00	97.12			3.00	D	PID 3.00m, 0.0ppm

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered.
3. Upon completion exploratory hole backfilled with arisings.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks
1.20	2.00	87	65	
2.00	3.00	77	85	

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451769.01	Northing:	180058.33
Level:	103.54mAOD	Depth:	1.90m
Logger:	PR	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS52**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						Scale: 1:50
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks	Checked By: PR
0.00	1.20	Inspection Pit	Hand Excavated		1.20	300									Approved By: RT
1.20	1.90	Window Sampler	Tracked Window Sampler		1.90	-									Start Date: 25/01/2019
															Finish Date: 25/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over soft brown slightly sandy gravelly CLAY. (TOPSOIL)		0.25	103.29			0.10	ES1	PID 0.10m, 0.0ppm
						0.30	ES2	PID 0.30m, 0.0ppm
Orangish brown silty sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse chalk and rare flint. (Weathered chalk)						0.50 - 1.00	B	PID 0.50m, 0.0ppm
						1.00	ES3	PID 1.00m, 0.0ppm
						1.20	D	SPT(S) 1.20m, N=25 (4,5/6,6,6,7)
						1.50 - 1.90	B	
EOH at 1.90m - Terminated due to refusal		1.90	101.64			1.90	D	SPT(S) 1.90m, N=61 (9,12/14,15,16,16)
						1.90	ESD	

1 2 3 4 5 6 7 8 9 10

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered.
3. Upon completion exploratory hole backfilled with arisings.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451728.91	Northing:	180036.88
Level:	103.83mAOD	Depth:	1.85m
Logger:	PR	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS53**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						Scale: 1:50
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks	Checked By: PR
0.00	1.20	Inspection Pit	Hand Excavated		1.20	300									Approved By: RT
1.20	1.85	Window Sampler	Tracked Window Sampler		1.85	-									Start Date: 24/01/2019
															Finish Date: 24/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Soft brown slightly gravelly slightly sandy CLAY. Gravel is subangular to subrounded fine to coarse chalk and flint. (TOPSOIL)						0.10	ES1	
		0.20	103.63			0.20 - 0.80	B	
MADE GROUND: Soft to firm light brown slightly gravelly very sandy CLAY. Gravel is subangular to subrounded fine to coarse chalk, flint, brick fragments and concrete.						0.50	ES2	
		0.80	103.03					
Orangish brown and white sandy gravelly SILT. Gravel is subangular to subrounded fine to coarse flint and chalk. (Weathered chalk)						1.00	ES3	
						1.00 - 1.50	B	
						1.20	D	SPT(S) 1.20m, N=17 (4,4/5,3,5,4)
EOH at 1.85m - Terminated due to refusal		1.85	101.98			1.85	D	SPT(S) 1.85m, N=64 (10,12/13,16,18,17)

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Falling test undertaken.
4. Upon completion exploratory hole backfilled with arisings.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451687.04	Northing:	180038.86
Level:	104.82mAOD	Depth:	2.60m
Logger:	PR	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS54**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						Scale: 1:50
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks	Checked By: PR
0.00	1.20	Inspection Pit	Hand Excavated		1.20	300									Approved By: RT
1.20	2.60	Window Sampler	Tracked Window Sampler		2.60	-									Start Date: 25/01/2019
															Finish Date: 25/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over soft brown slightly sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse chalk and flint. (TOPSOIL)		0.15	104.67			0.10	ES1	
						0.20 - 0.50	B	
						0.30	ES2	
Light orangish brown silty sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse chalk and rinded flint. (Weathered chalk)		0.50	104.32			0.50	ES3	
						0.50 - 1.00	B	
Recovered as structureless CHALK, comprising of white with orange staining sandy gravelly SILT. Gravel is subangular to subrounded fine to coarse chalk and flint. (Grade Dm)								SPT(S) 1.00m, N=19 (4,6/5,4,5,5)
						1.20	D	
						1.50 - 2.00	B	
						2.00	D	SPT(S) 2.00m, N=35 (6,7/11,10,8,6)
EOH at 2.60m - Terminated due to refusal		2.60	102.22			2.60	D	SPT(S) 2.60m, 50 (6,6/50 for 210mm)

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion exploratory hole backfilled with arisings.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451660.96	Northing:	180096.90
Level:	109.09mAOD	Depth:	5.00m
Logger:	SH	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS55**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00	1.20	Inspection Pit	Hand Excavated		1.20	300								
1.20	5.00	Window Sampler	Tracked Window Sampler		5.00	-								

Scale: 1:50
Checked By: PR
Approved By: RT
Start Date: 29/01/2019
Finish Date: 29/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: TARMAC.		0.24	108.85			0.30	ES1	
MADE GROUND: Subbase sandy angular medium GRAVEL. Sand is fine to coarse.		0.28	108.81			0.40	B	
Dense light greyish white weathered CHALK. *Between 0.28m to 0.45m bgl moderately fractured.* *Between 0.80m to 1.30m bgl becoming slightly flinty. Flints are subrounded medium to coarse sized gravels.*						1.00	D	
Recovered as structureless CHALK, comprising of putty with frequent fine to coarse gravel sized fragments of dense chalk and rare flint. (Grade Dm)		1.20	107.89					SPT(S) 1.20m, N=16 (3,3/4,4,4,4)
						1.50 - 2.00	B	
						2.00	D	SPT(S) 2.00m, N=13 (3,3/4,4,3,2)
						2.00	ESD	
						3.00	D	SPT(S) 3.00m, N=14 (3,5/5,4,2,3)
						4.00	D	SPT(S) 4.00m, N=22 (5,2/3,5,7,7)
						4.00 - 5.00	B	
EOH at 5.00m - Achieved target depth		5.00	104.09					SPT(S) 5.00m, N=38 (8,5/8,12,10,8)

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered.
3. Upon completion 50mm diameter gas/groundwater monitoring standpipe installed to 5.00m bgl.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451695.82	Northing:	180107.09
Level:	109.41mAOD	Depth:	0.55m
Logger:	SH	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS56**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks	
0.00	0.55	Window Sampler	Hand Excavated		0.55	300									

Scale: 1:50
Checked By: PR
Approved By: RT
Start Date: 28/01/2019
Finish Date: 28/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Firm to stiff dark brown slightly sandy slightly gravelly silty CLAY. Sand is fine to coarse. Gravel is angular to subrounded fine to medium flint and chalk with frequent fine to medium rootlets. (TOPSOIL)		0.20	109.21			0.10	B	
MADE GROUND: Stiff brown mottled light grey slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is fine to medium flint and chalk with rare plastic.		0.40	109.01			0.10 0.25	ES1 ES2	
STRUCTURELESS CHALK comprising white very gravelly SILT. Gravel is fine to coarse subrounded of dense chalk. (Grade Dm).		0.55	108.86			0.30	B	
EOH at 0.55m - Terminated due to refusal								

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion exploratory hole backfilled with arisings.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**	Location Details	Status	Borehole Number
Location: **Compton, West Berkshire**	Easting: Northing:	FINAL	**WS56A**
Client: **Homes England**	Level: Depth: 5.00m		Sheet 1 of 1
	Logger: SH Type: WS		
	Inclination: 90°		

Method, Plant and Crew					Diameter		Casing		Groundwater						Scale: 1:50
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks	Checked By: PR
0.00	1.20	Inspection Pit	Hand Excavated		1.20	300									Approved By: RT
1.20	5.00	Window Sampler	Tracked Window Sampler		5.00	-									Start Date: 29/01/2019
															Finish Date: 29/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: Firm to stiff dark brown slightly sandy slightly gravelly silty CLAY. Sand is fine to coarse. Gravel is angular to subrounded fine to medium flint, chalk with rare plastic. Frequent fine rootlets. (TOPSOIL)						0.10	ES1	
						0.40	B	
MADE GROUND: Stiff brown mottled light grey slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse chalk and flint with rare canvass/ fabric and plastic.		0.60				0.65	ES2	
						0.80	B	
Recovered as structureless CHALK, comprising of chalk putty with frequent fine to coarse gravel and cobble fragments of dense CHALK with rare flints. (Grade Dm)		1.10				1.00	D	
						1.15	ES3	
From 2.00m bgl becoming fractured chalk with some chalk putty.						2.00	B	
						2.00	D	
						3.00	D	
						4.00	D	
EOH at 5.00m - Achieved target depth		5.00				5.00	D	

Observations / Remarks	Sampling Runs					Hammer Information	
1. Location GPR / EM scanned prior to breaking ground.	From (m)	To (m)	Diam (mm)	Recovery %	Remarks	Serial No.	Energy Ratio %
2. Groundwater not encountered during excavation.							
3. Upon completion exploratory hole backfilled with arisings.						Project Number	
						A090070-474	

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451754.92	Northing:	180077.27
Level:	104.61mAOD	Depth:	2.50m
Logger:	PR	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS57**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						Scale: 1:50
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks	Checked By: PR
0.00	1.20	Inspection Pit	Hand Excavated		1.20	300									Approved By: RT
1.20	2.50	Window Sampler	Tracked Window Sampler		2.50	-									Start Date: 25/01/2019
															Finish Date: 25/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Brown slightly sandy gravelly CLAY. (TOPSOIL)						0.10	ES1	PID 0.10m, 0.0ppm
		0.20	104.41			0.30	ES2	PID 0.30m, 0.0ppm
Light brown and white silty very sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse chalk and flint. (Weathered chalk)						0.50 - 1.00	B	
		1.00	103.61			1.00	ES3	PID 1.00m, 0.0ppm
Recovered as structureless CHALK, comprising of white with light brown/orange staining sandy gravelly SILT. Gravel is subangular to subrounded fine to coarse chalk and rare flint. (Grade Dm)						1.20	D	SPT(S) 1.20m, N=30 (9,10/10,7,7,6)
						1.50 - 2.00	B	
						2.00	D	SPT(S) 2.00m, N=30 (5,5/10,10,6,4)
		2.50	102.11			2.50	D	SPT(S) 2.50m, 53 (12,12/53 for 225mm)
EOH at 2.50m - Terminated due to refusal								

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion exploratory hole backfilled with arisings.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451690.13	Northing:	180084.17
Level:	108.46mAOD	Depth:	1.00m
Logger:	PR	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS58**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks
0.00	1.00	Inspection Pit	Hand Excavated		1.00	300								

Scale: 1:50
Checked By: PR
Approved By: RT
Start Date: 25/01/2019
Finish Date: 25/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over soft brown slightly sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse chalk and flint. (TOPSOIL)		0.20	108.26			0.30	ES1	
Soft to firm light brown sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse chalk and flint.						0.50 - 1.00	B	
Light orangish brown and white sandy gravelly SILT. Gravel is subangular to subrounded fine to coarse chalk and rare flint. (Weathered chalk)		0.90	107.56			1.00	ES2	
EOH at 1.00m - Terminated due to unable to set up rig due to slope		1.00	107.46					

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered.
3. Upon completion exploratory hole backfilled with arisings.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451689.12	Northing:	180088.66
Level:	109.36mAOD	Depth:	0.90m
Logger:	SH	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS58A**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks	
0.00	0.90	Inspection Pit	Hand Excavated		0.90	300									

Scale: 1:50
Checked By: PR
Approved By: RT
Start Date: 28/01/2019
Finish Date: 28/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing		
						Depth (m)	Ref	Tests / Results
Sift to firm brown slightly sandy slightly gravelly silty CLAY. Sand is fine to coarse. Gravel is subangular to subrounded fine flint and chalk. Occasional fine rootlets. (TOPSOIL)		0.20	109.16			0.10 0.15 0.30	ES1 B ES2	
Stiff to very stiff brown mottled greyish white slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is fine to medium flint and chalk. (Reworked Natural Ground)						0.50	B	
At 0.60m bgl rare plastic lashing.								
At 0.90m bgl concrete slab.		0.90	108.46					
EOH at 0.90m - Terminated due to possible services								

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion trial pit backfilled with arisings.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451698.80	Northing:	180053.74
Level:	105.86mAOD	Depth:	1.65m
Logger:	SH	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS59**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						Scale: 1:50
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks	Checked By: PR
0.00	1.20	Inspection Pit	Hand Excavated		1.65	-									Approved By: RT
1.20	1.65	Window Sampler	Tracked Window Sampler		1.65	300									Start Date: 28/01/2019
															Finish Date: 28/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
TOPSOIL.		0.04	105.82			0.10	ES1	
MADE GROUND: Firm dark brown slightly sandy slightly gravelly silty CLAY. Sand is fine to coarse. Gravel is angular to subangular fine to medium flint, concrete, tile and weathered chalk. Frequent fine rootlets.		0.28	105.58			0.15 0.30 0.40	B ES2 B	
Stiff to very stiff brown mottled greyish white slightly sandy gravelly CLAY. Sand is fine to coarse. Gravel is subangular to subrounded fine to medium flint and chalk.		0.65	105.21			0.70 0.80	ES3 B	
Light greyish brown mottled white weathered CHALK with flints.						1.20 - 1.65	D	SPT(S) 1.20m, N=55 (5,9/11,12,15,17)
EOH at 1.65m - Terminated due to refusal		1.65	104.21					

1 2 3 4 5 6 7 8 9 10

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered.
3. Upon completion exploratory hole backfilled with arisings.

Sampling Runs

From (m)	To (m)	Diam (mm)	Recovery %	Remarks

Hammer Information

Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451880.37	Northing:	180150.04
Level:	104.38mAOD	Depth:	0.60m
Logger:	PR	Type:	WS
		Inclination:	90°

Status: FINAL

Borehole Number: **WS61**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Groundwater						Scale:	1:50
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Strike (m)	Casing (m)	Sealed (m)	Rose To (m)	Time (mins)	Remarks	Checked By:	PR
0.00	0.60	Inspection Pit	Hand Excavated		0.60	300									Approved By:	RT
															Start Date:	08/02/2019
															Finish Date:	08/02/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: Grass over soft brown slightly sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse flint, chalk and brick fragments. Also plastic and barrier tape and bag fragments.								
At 0.60m bgl concrete layer. HDP extended 0.80m bgl literally and concrete layer found to persist.		0.60	103.78					
EOH at 0.60m - Terminated due to refusal								

1 2 3 4 5 6 7 8 9 10

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion exploratory hole backfilled with arisings.

Sampling Runs				
From (m)	To (m)	Diam (mm)	Recovery %	Remarks

Hammer Information	
Serial No.	Energy Ratio %

Project Number: **A090070-474**

Project: **HE Compton**	Location Details	Status	Pit Number
Location: **Compton, West Berkshire**	Easting: 451801.41 Northing: 180369.46	FINAL	**TP01**
Client: **Homes England**	Level: 114.68mAOD Depth: 2.00m		Sheet 1 of 1
	Logger: PR Type: TP		

Hole Information		Groundwater				
Pit Dimensions	Orientation: °	Strike (m)	Rose To (m)	After (mins)	Remarks	Scale: 1:10
0.50m / 2.00m	Shoring:					Checked By: RT
	Stability: Stable					Approved By: RT
	Plant: JCB 3CX					Start Date: 27/11/2018
						Finish Date: 27/11/2018

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: Light grey CONCRETE								
MADE GROUND: Grey gravelly fine to coarse SAND. Gravel is subangular fine to coarse of brick and flint.		0.30	114.38			0.30	ES1	
Structureless CHALK composed of white with occasional orange staining very gravelly SILT. Gravels are low density fine to coarse rounded white. Occasional angular to subangular rinded flint cobbles up to 200mm. Orange staining observed to 0.9m bgl. (Grade Dm)		0.50	114.18			0.50	ES2	
						1.00	ES3	1
Structureless CHALK composed of silty low to medium density white sub angular fine to coarse GRAVEL. Frequent angular rinded flint gravel cobbles and boulders up to 400mm. (Grade Dc)		1.20	113.48					
EOH at 2.00m - Terminated in agreement with AECOM representative.		2.00	112.68					2

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion trial pit backfilled with arisings.

Project Number

A090070-474

Project: **HE Compton**	Location Details	Status	Pit Number
Location: **Compton, West Berkshire**	Easting: 451900.10 Northing: 180364.86	FINAL	**TP02**
Client: **Homes England**	Level: 113.50mAOD Depth: 2.10m		Sheet 1 of 2
	Logger: PR Type: TP		

Hole Information		Groundwater				
Pit Dimensions	Orientation: °	Strike (m)	Rose To (m)	After (mins)	Remarks	Scale: 1:10
0.50m / 2.00m	Shoring:					Checked By: RT
	Stability: Stable					Approved By: RT
	Plant: JCB 3CX					Start Date: 27/11/2018
						Finish Date: 27/11/2018

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: Light grey CONCRETE with 10mm diameter reinforcement bars								
MADE GROUND: Reddish brown slightly clayey sandy subangular fine to coarse GRAVEL of granite (type 1 aggregates).		0.20	113.30			0.30	ES1	
						0.50	ES2	
Structureless CHALK composed of white with occasional orange staining very gravelly SILT. Gravels are low density fine to coarse rounded white. Occasional angular to subangular rinded flint cobbles up to 200mm. (Grade Dm/Dc)		0.65	112.84			1.00	ES3	1
At 1.30 m bgl a layer of flints								2

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion trial pit backfilled with arisings.

Project Number

A090070-474

Project: **HE Compton**	Location Details	Status	Pit Number
Location: **Compton, West Berkshire**	Easting: 451900.10 Northing: 180364.86	FINAL	**TP02**
Client: **Homes England**	Level: 113.50mAOD Depth: 2.10m		Sheet 2 of 2
	Logger: PR Type: TP		

Hole Information		Groundwater				Scale: 1:10
Pit Dimensions	Orientation: °	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: RT
0.50m / 2.00m	Shoring:					Approved By: RT
	Stability: Stable					Start Date: 27/11/2018
	Plant: JCB 3CX					Finish Date: 27/11/2018

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Structureless CHALK composed of white with occasional orange staining very gravelly SILT. Gravels are low density fine to coarse rounded white. Occasional angular to subangular rinded flint cobbles up to 200mm. (Grade Dm/Dc)								
EOH at 2.10m - Terminated in agreement with AECOM representative.		2.10	111.40					

3

4

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion trial pit backfilled with arisings.

Project Number

A090070-474

Project: **HE Compton** Location: **Compton, West Berkshire** Client: **Homes England**	Location Details Easting: 451748.38 Northing: 180294.45 Level: 116.16mAOD Depth: 1.20m Logger: PR Type: TP	Status FINAL	Pit Number **TP03** Sheet 1 of 1	

Hole Information		Groundwater				
Pit Dimensions	Orientation: °	Strike (m)	Rose To (m)	After (mins)	Remarks	Scale: 1:10
0.50m / 2.00m	Shoring:					Checked By: RT
	Stability: Stable					Approved By: RT
	Plant: JCB 3CX					Start Date: 26/11/2018
						Finish Date: 26/11/2018

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: Light grey CONCRETE								
MADE GROUND: Greyish brown gravelly SAND. Gravel of subangular to subrounded fine to coarse of flints, brick and clinker		0.20	115.96			0.25	ES1	
Structureless CHALK composed of white with occasional orange staining very gravelly SILT. Gravels are low density fine to coarse rounded white. Occasional angular to subangular fine to coarse gravels of rinded flint. (REWORKED NATURAL).		0.40	115.76			0.50	ES2	
Orangish brown gravelly CLAY. Gravel subangular fine to medium of flints (REWORKED NATURAL).		0.70	115.46			1.10	ES3	
EOH at 1.20m - Pipe discovered at 1.20m bgl. Pipe photographed, covered with plastic bulk bag and pit backfilled.		1.20	114.96					

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion trial pit backfilled with arisings.

Project Number

A090070-474

Project: **HE Compton**	Location Details	Status	Pit Number
Location: **Compton, West Berkshire**	Easting: 451845.24 Northing: 180301.99	FINAL	**TP04**
Client: **Homes England**	Level: 113.48mAOD Depth: 3.00m		Sheet 1 of 2
	Logger: PR Type: TP		

Hole Information		Groundwater				Scale: 1:10
Pit Dimensions	Orientation: °	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: RT
0.50m / 2.00m	Shoring:					Approved By: RT
	Stability: Stable					Start Date: 27/11/2018
	Plant: JCB 3CX					Finish Date: 27/11/2018

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: Light grey CONCRETE								
Structureless CHALK composed of white with occasional orange staining very gravelly SILT. Gravels are low density fine to coarse rounded white. Occasional angular to subangular rinded flint gravels and cobbles. (Grade Dm/Dc)		0.20	113.28			0.20	ES1	
						1.00	ES2	1
Dark brown / orangish brown sandy gravelly CLAY. Gravel is subangular, fine to coarse of flint and chalk. Chalk becoming more common towards the base		1.90	111.58			1.90	ES3	2

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion trial pit backfilled with arisings.

Project Number

A090070-474

Project: **HE Compton**	Location Details	Status	Pit Number
Location: **Compton, West Berkshire**	Easting: 451845.24 Northing: 180301.99	FINAL	**TP04**
Client: **Homes England**	Level: 113.48mAOD Depth: 3.00m		Sheet 2 of 2
	Logger: PR Type: TP		

Hole Information		Groundwater				Scale: 1:10
Pit Dimensions	Orientation: °	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: RT
0.50m / 2.00m	Shoring:					Approved By: RT
	Stability: Stable					Start Date: 27/11/2018
	Plant: JCB 3CX					Finish Date: 27/11/2018

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Dark brown / orangish brown sandy gravelly CLAY. Gravel is subangular, fine to coarse of flint and chalk. Chalk becoming more common towards the base								
EOH at 3.00m - Design depth reached.		3.00	110.48			3.00	ES4	3
								4

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion trial pit backfilled with arisings.

Project Number

A090070-474

Project: **HE Compton**	Location Details	Status	Pit Number
Location: **Compton, West Berkshire**	Easting: 451718.91 Northing: 180282.84	FINAL	**TP05**
Client: **Homes England**	Level: 116.45mAOD Depth: 2.90m		Sheet 1 of 2
	Logger: PR Type: TP		

Hole Information		Groundwater				Scale: 1:10
Pit Dimensions	Orientation: °	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: RT
0.50m / 2.00m	Shoring:					Approved By: RT
	Stability: Stable					Start Date: 26/11/2018
	Plant: JCB 3CX					Finish Date: 26/11/2018

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: Light grey CONCRETE								
MADE GROUND: Greyish brown gravelly SAND. Gravel is subangular fine to coarse of flint concrete and brick		0.20	116.25			0.25	ES1	
Structureless CHALK composed of white with occasional orange staining very gravelly SILT. Gravels are low density fine to coarse rounded white. Occasional angular to subangular rinded flint gravels and cobbles up to 200mm. (Grade Dm)		0.30	116.15			0.50	ES2	
Structureless CHALK composed of silty low to medium density white with occasional orange staining subangular fine to coarse GRAVEL. Frequent angular rinded flint gravel cobbles and boulders up to 400mm. (Grade Dc)		0.80	115.65			1.00	ES3	1
						2.00	ES4	2

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion trial pit backfilled with arisings.

Project Number

A090070-474

Project: **HE Compton** Location: **Compton, West Berkshire** Client: **Homes England**	Location Details Easting: 451718.91 Northing: 180282.84 Level: 116.45mAOD Depth: 2.90m Logger: PR Type: TP	Status FINAL	Pit Number **TP05** Sheet 2 of 2

Hole Information		Groundwater				
Pit Dimensions	Orientation: °	Strike (m)	Rose To (m)	After (mins)	Remarks	Scale: 1:10
0.50m / 2.00m	Shoring:					Checked By: RT
	Stability: Stable					Approved By: RT
	Plant: JCB 3CX					Start Date: 26/11/2018
						Finish Date: 26/11/2018

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Structureless CHALK composed of silty low to medium density white with occasional orange staining subangular fine to coarse GRAVEL. Frequent angular rinded flint gravel cobbles and boulders up to 400mm. (Grade Dc)								
EOH at 2.90m - Terminated in agreement with AECOM representative.		2.90	113.55					

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion trial pit backfilled with arisings.

Project Number

A090070-474

Project: **HE Compton**	Location Details		Status	Pit Number
Location: **Compton, West Berkshire**	Easting: 451662.69	Northing: 180251.60	FINAL	**TP06**
Client: **Homes England**	Level: 118.35mAOD	Depth: 3.00m		Sheet 1 of 2
	Logger: PR	Type: TP		

Hole Information		Groundwater				Scale: 1:10
Pit Dimensions	Orientation: °	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: RT
0.50m / 2.00m	Shoring:					Approved By: RT
	Stability: Stable					Start Date: 26/11/2018
	Plant: JCB 3CX					Finish Date: 26/11/2018

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: Light grey CONCRETE with 10mm diameter reinforcement bars								
MADE GROUND: Grey gravelly SAND. Gravel is subangular to subrounded fine to coarse of flint concrete and brick		0.20	118.15			0.25	ES1	
Structureless CHALK composed of white with occasional orange staining very gravelly SILT. Gravels are low density fine to coarse rounded white. Occasional angular to subangular flint gravels and cobbles up to 200mm with 1-2mm rind. (Grade Dm)		0.30	118.05			0.50	ES2	
Structureless CHALK composed of silty low to medium density white with occasional orange staining subangular fine to coarse GRAVEL. Frequent angular rinded flint gravel and cobbles. (Grade Dc)		1.00	117.35			1.00	ES3	1
						2.00	ES4	2

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion trial pit backfilled with arisings.

Project Number

A090070-474

Project: **HE Compton**	Location Details	Status	Pit Number
Location: **Compton, West Berkshire**	Easting: 451662.69 Northing: 180251.60	FINAL	**TP06**
Client: **Homes England**	Level: 118.35mAOD Depth: 3.00m		Sheet 2 of 2
	Logger: PR Type: TP		

Hole Information		Groundwater				Scale: 1:10
Pit Dimensions	Orientation: °	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: RT
0.50m / 2.00m	Shoring:					Approved By: RT
	Stability: Stable					Start Date: 26/11/2018
	Plant: JCB 3CX					Finish Date: 26/11/2018

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Structureless CHALK composed of silty low to medium density white with occasional orange staining subangular fine to coarse GRAVEL. Frequent angular rinded flint gravel and cobbles. (Grade Dc)								
EOH at 3.00m - Design depth reached.		3.00	115.35					3
								4

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion trial pit backfilled with arisings.

Project Number

A090070-474

Project: **HE Compton**	Location Details	Status	Pit Number
Location: **Compton, West Berkshire**	Easting: 451894.68 Northing: 180300.70	FINAL	**TP07**
Client: **Homes England**	Level: 112.11mAOD Depth: 2.00m		Sheet 1 of 1
	Logger: PR Type: TP		

Hole Information		Groundwater				Scale: 1:10
Pit Dimensions	Orientation: °	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: RT
0.50m / 2.00m	Shoring:					Approved By: RT
	Stability: Stable					Start Date: 27/11/2018
	Plant: JCB 3CX					Finish Date: 27/11/2018

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: Light grey CONCRETE with 10mm diameter reinforcement bars								
MADE GROUND: Brown clayey sandy subangular to subrounded fine to coarse GRAVEL of brick flints and chalk		0.10	112.01			0.15	ES1	
Between 0.4 - 0.5 m bgl a layer of brick fragments						0.40	ES2	
Structureless CHALK composed of white with occasional orange staining very gravelly SILT. Gravels are low density fine to coarse rounded white. Occasional angular to subangular rinded flint cobbles up to 200mm. (Grade Dm)		0.50	111.61					
Structureless CHALK composed of silty low to medium density white sub angular to rounded fine to coarse GRAVEL. Frequent angular rinded flint fine to coarse gravel and cobbles. (Grade Dc)		0.80	111.31			1.00	ES3	1
EOH at 2.00m - Terminated in agreement with AECOM representative.		2.00	110.11					2

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion trial pit backfilled with arisings.

Project Number

A090070-474

Project: **HE Compton**	Location Details	Status	Pit Number
Location: **Compton, West Berkshire**	Easting: 451899.13 Northing: 180272.82	FINAL	**TP08**
Client: **Homes England**	Level: 117.33mAOD Depth: 2.00m		Sheet 1 of 1
	Logger: PR Type: TP		

Hole Information		Groundwater				Scale: 1:10
Pit Dimensions	Orientation: °	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: RT
0.50m / 2.00m	Shoring:					Approved By: RT
	Stability: Stable					Start Date: 28/11/2018
	Plant: JCB 3CX					Finish Date: 28/11/2018

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: Grass over brown gravelly sandy SILT topsoil. Gravel is subangular fine to coarse of flint and brick with common plastic fragments						0.10	ES1	
Structureless CHALK composed of white with occasional orange staining very gravelly SILT. Gravels are low density fine to coarse rounded white. Rare angular to subangular rinded flint gravels and cobbles. (Grade Dm/Dc)		0.15	117.18			1.00	ES2	1
EOH at 2.00m - Terminated in agreement with AECOM representative.		2.00	115.33					2

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion trial pit backfilled with arisings.

Project Number

A090070-474

Project: **HE Compton**	Location Details	Status	Pit Number
Location: **Compton, West Berkshire**	Easting: 451731.15 Northing: 180199.24	FINAL	**TP09**
Client: **Homes England**	Level: 112.97mAOD Depth: 2.30m		Sheet 1 of 2
	Logger: PR Type: TP		

Hole Information		Groundwater				Scale: 1:10
Pit Dimensions	Orientation: °	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: RT
0.50m / 2.00m	Shoring:					Approved By: RT
	Stability: Stable					Start Date: 29/11/2018
	Plant: JCB 3CX					Finish Date: 29/11/2018

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: Grass over brown slightly gravelly sandy SILT topsoil. Gravel is subangular to subrounded of flint brick and chalk						0.10	ES1	
MADE GROUND: Brown and orangish brown gravelly sandy silty CLAY. Gravel is subangular to subrounded fine to coarse of flint brick and chalk. Common cobble and boulder sized whole bricks		0.20	112.77			0.30	ES2	
Structureless CHALK composed of white with occasional orange staining very gravelly SILT. Gravels are low density fine to coarse rounded white. Common angular to subangular rinded flint gravels and cobbles. Orange staining observed to 1.9m bgl. (Grade Dm)		0.70	112.27			1.00	ES3	1 2

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion trial pit backfilled with arisings.

Project Number

A090070-474

Project: **HE Compton** Location: **Compton, West Berkshire** Client: **Homes England**	Location Details Easting: 451731.15 Northing: 180199.24 Level: 112.97mAOD Depth: 2.30m Logger: PR Type: TP	Status FINAL	Pit Number **TP09** Sheet 2 of 2

Hole Information		Groundwater				
Pit Dimensions	Orientation: °	Strike (m)	Rose To (m)	After (mins)	Remarks	Scale: 1:10
0.50m / 2.00m	Shoring:					Checked By: RT
	Stability: Stable					Approved By: RT
	Plant: JCB 3CX					Start Date: 29/11/2018
						Finish Date: 29/11/2018

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Structureless CHALK composed of white with occasional orange staining very gravelly SILT. Gravels are low density fine to coarse rounded white. Common angular to subangular rinded flint gravels and cobbles. Orange staining observed to 1.9m bgl. (Grade Dm)								
EOH at 2.30m - Terminated in agreement with AECOM representative.		2.30	110.67					

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion trial pit backfilled with arisings.

Project Number

A090070-474

Project: **HE Compton**	Location Details	Status	Pit Number
Location: **Compton, West Berkshire**	Easting: 451744.46 Northing: 180175.84	FINAL	**TP10**
Client: **Homes England**	Level: 111.13mAOD Depth: 2.30m		Sheet 1 of 2
	Logger: PR Type: TP		

Hole Information		Groundwater				Scale: 1:10
Pit Dimensions	Orientation: °	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: RT
0.50m / 2.00m	Shoring:					Approved By: RT
	Stability: Stable					Start Date: 28/11/2018
	Plant: JCB 3CX					Finish Date: 28/11/2018

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: Grass over brown sandy gravelly SILT topsoil. Gravel is subangular to subrounded fine to coarse of brick and flint						0.10	ES1	
MADE GROUND: Clayey sandy subangular to subrounded fine to coarse GRAVEL of flint brick and chalk. Common cobble and boulder sized whole bricks and metal bar fragments		0.20	110.93			0.30	ES2	
Structureless CHALK composed of white with occasional orange staining very gravelly SILT. Gravels are low to medium density fine to coarse rounded white. Frequent angular to subangular fine to coarse rinded flint gravels and cobbles. (Grade Dm/Dc)		0.50	110.63			1.50	ES3	1 2

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion trial pit backfilled with arisings.

Project Number

A090070-474

Project: **HE Compton**	Location Details	Status	Pit Number
Location: **Compton, West Berkshire**	Easting: 451744.46 Northing: 180175.84	FINAL	**TP10**
Client: **Homes England**	Level: 111.13mAOD Depth: 2.30m		Sheet 2 of 2
	Logger: PR Type: TP		

Hole Information		Groundwater				Scale: 1:10
Pit Dimensions	Orientation: °	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: RT
0.50m / 2.00m	Shoring:					Approved By: RT
	Stability: Stable					Start Date: 28/11/2018
	Plant: JCB 3CX					Finish Date: 28/11/2018

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Structureless CHALK composed of white with occasional orange staining very gravelly SILT. Gravels are low to medium density fine to coarse rounded white. Frequent angular to subangular fine to coarse rinded flint gravels and cobbles. (Grade Dm/Dc)								
EOH at 2.30m - Terminated in agreement with AECOM representative.		2.30	108.83					

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion trial pit backfilled with arisings.

Project Number

A090070-474

Project: **HE Compton** Location: **Compton, West Berkshire** Client: **Homes England**	Location Details Easting: 451863.43 Northing: 180187.21 Level: 106.66mAOD Depth: 1.10m Logger: PR Type: TP	Status FINAL	Pit Number **TP11** Sheet 1 of 1

Hole Information		Groundwater				
Pit Dimensions	Orientation: °	Strike (m)	Rose To (m)	After (mins)	Remarks	Scale: 1:10
0.50m / 2.00m	Shoring:					Checked By: RT
	Stability: Stable					Approved By: RT
	Plant: JCB 3CX					Start Date: 29/11/2018
						Finish Date: 29/11/2018

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: Light grey CONCRETE								
MADE GROUND: Grey SAND AND GRAVEL. Gravel is subangular fine to coarse of granite brick and flint *At 0.25 m bgl a layer of blue plastic underlying the concrete hardstanding*		0.25	106.42			0.30	ES1	
MADE GROUND: Dull orangish brown sandy gravelly CLAY. Gravel is subrounded to subangular fine to coarse of flint and brick *At 1.00 m bgl concrete protecting a clay pipe approximately 200mm diameter*		0.35	106.32			0.90	ES2	
EOH at 1.10m - Pipe discovered at 1.10m bgl. Pipe photographed and pit backfilled.		1.10	105.56					

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion trial pit backfilled with arisings.

Project Number
A090070-474

Project: **HE Compton**	Location Details	Status	Pit Number
Location: **Compton, West Berkshire**	Easting: 451898.00 Northing: 180170.99	FINAL	**TP12**
Client: **Homes England**	Level: 105.52mAOD Depth: 2.50m		Sheet 1 of 2
	Logger: PR Type: TP		

Hole Information		Groundwater				Scale: 1:10
Pit Dimensions	Orientation: °	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: RT
0.50m / 2.00m	Shoring:					Approved By: RT
	Stability: Stable					Start Date: 28/11/2018
	Plant: JCB 3CX					Finish Date: 28/11/2018

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: Grass over sandy silty fine to coarse subangular to subrounded GRAVEL of granite (type 1 aggregates) flint and brick						0.10	ES1	
MADE GROUND: Brown sandy gravelly SILT. Gravel is sub angular fine to coarse of flint chalk and brick		0.20	105.32			0.30	ES2	
Soft light brown / whiteish brown sandy gravelly CLAY. Gravel is sub angular to rounded fine to coarse of flint and chalk.		0.60	104.92			1.00	ES3	1
Structureless CHALK composed of white/brownish white with occasional orange staining very gravelly SILT. Gravels are low density fine to coarse rounded white. Occasional angular to subangular fine to coarse gravel of rinded flint. (Grade Dm)		1.50	104.02			2.00	ES4	2

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion trial pit backfilled with arisings.

Project Number

A090070-474

Project: **HE Compton** Location: **Compton, West Berkshire** Client: **Homes England**	Location Details Easting: 451898.00 Northing: 180170.99 Level: 105.52mAOD Depth: 2.50m Logger: PR Type: TP	Status FINAL	Pit Number **TP12** Sheet 2 of 2

Hole Information		Groundwater				Scale: 1:10
Pit Dimensions	Orientation: °	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: RT
0.50m / 2.00m	Shoring:					Approved By: RT
	Stability: Stable					Start Date: 28/11/2018
	Plant: JCB 3CX					Finish Date: 28/11/2018

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Structureless CHALK composed of white/brownish white with occasional orange staining very gravelly SILT. Gravels are low density fine to coarse rounded white. Occasional angular to subangular fine to coarse gravel of rinded flint. (Grade Dm)								
EOH at 2.50m - Terminated in agreement with AECOM representative.		2.50	103.02					

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion trial pit backfilled with arisings.

Project Number

A090070-474

Project: **HE Compton** Location: **Compton, West Berkshire** Client: **Homes England**	Location Details Easting: 451763.07 Northing: 180150.18 Level: 107.69mAOD Depth: 2.80m Logger: PR Type: TP	Status FINAL	Pit Number **TP13** Sheet 1 of 2

Hole Information		Groundwater				Scale: 1:10
Pit Dimensions	Orientation: °	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: RT
0.50m / 2.00m	Shoring:					Approved By: RT
	Stability: Stable					Start Date: 28/11/2018
	Plant: JCB 3CX					Finish Date: 28/11/2018

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: Grass over brown sandy gravelly SILT topsoil. Gravel is subangular to subrounded fine to coarse of flint brick and chalk						0.15	ES1	
Structureless CHALK composed of white with occasional orange staining very gravelly SILT. Gravels are low to medium density fine to coarse rounded white. Occasional angular to subangular rinded flint gravels. (Grade Dm)		0.40	107.29			1.00	ES2	1 2

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion trial pit backfilled with arisings.

Project Number
A090070-474

Project: **HE Compton**	Location Details	Status	Pit Number
Location: **Compton, West Berkshire**	Easting: 451763.07 Northing: 180150.18	FINAL	**TP13**
Client: **Homes England**	Level: 107.69mAOD Depth: 2.80m		Sheet 2 of 2
	Logger: PR Type: TP		

Hole Information		Groundwater				Scale: 1:10
Pit Dimensions	Orientation: °	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: RT
0.50m / 2.00m	Shoring:					Approved By: RT
	Stability: Stable					Start Date: 28/11/2018
	Plant: JCB 3CX					Finish Date: 28/11/2018

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Structureless CHALK composed of white with occasional orange staining very gravelly SILT. Gravels are low to medium density fine to coarse rounded white. Occasional angular to subangular rinded flint gravels. (Grade Dm)								
Structureless CHALK composed of silty low to medium density white sub angular fine to coarse GRAVEL. Occassional angular flint gravel and cobbles with up to 2mm rind. (Grade Dc)		2.30	105.39					
EOH at 2.80m - Terminated in agreement with AECOM representative.		2.80	104.89					

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion trial pit backfilled with arisings.

Project Number

A090070-474

Project: **HE Compton**	Location Details	Status	Pit Number
Location: **Compton, West Berkshire**	Easting: 451807.30 Northing: 180113.84	FINAL	**TP14**
Client: **Homes England**	Level: 105.26mAOD Depth: 2.30m		Sheet 1 of 2
	Logger: PR Type: TP		

Hole Information		Groundwater				Scale: 1:10
Pit Dimensions	Orientation: °	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: RT
0.50m / 2.00m	Shoring:					Approved By: RT
	Stability: Stable					Start Date: 28/11/2018
	Plant: JCB 3CX					Finish Date: 28/11/2018

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: Grass over brown (becoming lighter brown with depth) sandy gravelly SILT topsoil.						0.10	ES1	
						0.30	ES2	
Structureless CHALK composed of white/brownish white very gravelly SILT. Gravels are low density fine to coarse rounded white. Occasional angular to subangular flint fine to coarse gravels. (Grade Dm)		0.40	104.86					
Structureless CHALK composed of silty low to medium density white/brownish white sub angular fine to coarse GRAVEL. Very frequent angular rinded flint fine to coarse gravel, cobbles and boulders. (Grade Dc)		0.90	104.36			1.00	ES3	1 2

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion trial pit backfilled with arisings.

Project Number

A090070-474

Project: **HE Compton** Location: **Compton, West Berkshire** Client: **Homes England**	Location Details Easting: 451807.30 Northing: 180113.84 Level: 105.26mAOD Depth: 2.30m Logger: PR Type: TP	Status FINAL	Pit Number **TP14** Sheet 2 of 2

Hole Information		Groundwater				Scale: 1:10
Pit Dimensions	Orientation: °	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: RT
0.50m / 2.00m	Shoring:					Approved By: RT
	Stability: Stable					Start Date: 28/11/2018
	Plant: JCB 3CX					Finish Date: 28/11/2018

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Structureless CHALK composed of silty low to medium density white/brownish white sub angular fine to coarse GRAVEL. Very frequent angular rinded flint fine to coarse gravel, cobbles and boulders. (Grade Dc)								
EOH at 2.30m - Terminated in agreement with AECOM representative.		2.30	102.96					

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion trial pit backfilled with arisings.

Project Number

A090070-474

Project: **HE Compton** Location: **Compton, West Berkshire** Client: **Homes England**	Location Details Easting: 451798.40 Northing: 180361.76 Level: 115.00mAOD Depth: 0.40m Logger: PR Type: IP	Status FINAL	Pit Number **HP01** Sheet 1 of 1

Hole Information		Groundwater				Scale: 1:10
Pit Dimensions	Orientation: °	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: PR
0.30m × 0.30m	Shoring: None					Approved By: RT
	Stability: Stable					Start Date: 14/01/2019
	Plant: Hand Excavated					Finish Date: 14/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over brown very gravelly SILT Topsoil. Gravel is subrounded to rounded medium flint.								
Structureless CHALK, comprising of white sandy gravelly SILT with flint gravel. (Grade Dm)		0.10	114.90					
EOH at 0.40m -		0.40	114.60					

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion exploratory hole backfilled with arisings.

Project Number
A090070-474

Project: **HE Compton** Location: **Compton, West Berkshire** Client: **Homes England**	Location Details Easting: 451755.25 Northing: 180315.45 Level: 115.88mAOD Depth: 0.50m Logger: PR Type: IP	Status FINAL	Pit Number **HP03** Sheet 1 of 1

Hole Information		Groundwater				Scale: 1:10
Pit Dimensions	Orientation: °	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: PR
0.30m x 0.30m	Shoring: None					Approved By: RT
	Stability: Stable					Start Date: 14/01/2019
	Plant: Hand Excavated					Finish Date: 14/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: CONCRETE								
MADE GROUND: Beige clayey gravelly SAND. Gravel is subangular to subrounded flint, chalk and brick fragments.		0.20	115.68					
EOH at 0.50m -		0.50	115.38					

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion exploratory hole backfilled with arisings.

Project Number
A090070-474

Project: **HE Compton** Location: **Compton, West Berkshire** Client: **Homes England**	Location Details Easting: 451847.80 Northing: 180309.44 Level: 113.66mAOD Depth: 0.70m Logger: PR Type: IP	Status FINAL	Pit Number **HP04** Sheet 1 of 1

Hole Information		Groundwater				Scale: 1:10
Pit Dimensions	Orientation: °	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: PR
0.30m x 0.30m	Shoring: None					Approved By: RT
	Stability: Stable					Start Date: 14/01/2019
	Plant: Hand Excavated					Finish Date: 14/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over brown very gravelly SILT Topsoil. Gravel is subrounded to rounded medium flint.								
Structureless CHALK, comprising of gravelly sandy SILT. Gravel is subangular fine to coarse chalk and flint. (Grade Dm)		0.10	113.56					
EOH at 0.70m -		0.70	112.96					

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion exploratory hole backfilled with arisings.

Project Number
A090070-474

Project: **HE Compton** Location: **Compton, West Berkshire** Client: **Homes England**	Location Details Easting: 451710.69 Northing: 180287.27 Level: 117.28mAOD Depth: 0.55m Logger: PR Type: IP	Status FINAL	Pit Number **HP05** Sheet 1 of 1

Hole Information		Groundwater				Scale: 1:10
Pit Dimensions	Orientation: °	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: PR
0.30m x 0.30m	Shoring: None					Approved By: RT
	Stability: Stable					Start Date: 15/01/2019
	Plant: Hand Excavated					Finish Date: 15/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over brown very gravelly SILT Topsoil. Gravel is subrounded to rounded medium flint.								
MADE GROUND: Dull white/grey gravelly very clayey SAND. Gravel is subangular to subrounded fine to coarse flint and chalk.		0.10	117.18			0.30 0.30	D2 ES1	
						0.50 0.50 0.50	B5 D4 ES3	
EOH at 0.55m -		0.55	116.73					

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion exploratory hole backfilled with arisings.

Project Number
A090070-474

Project: **HE Compton**	Location Details		Status	Pit Number
Location: **Compton, West Berkshire**	Easting: 451677.28	Northing: 180257.05	FINAL	**HP06**
Client: **Homes England**	Level: 118.05mAOD	Depth: 0.50m		Sheet 1 of 1
	Logger: PR	Type: IP		

Hole Information		Groundwater				
Pit Dimensions	Orientation: °	Strike (m)	Rose To (m)	After (mins)	Remarks	Scale: 1:10
0.30m / 0.30m	Shoring: None					Checked By: PR
	Stability: Stable					Approved By: RT
	Plant: Hand Excavated					Start Date: 15/01/2019
						Finish Date: 15/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: Brown sandy GRAVEL.						0.30 0.30 0.30 - 0.50	D2 ES1 B3	
Structureless CHALK, comprising of light grey/white sandy gravelly SILT. (Grade Dm)		0.10	117.95					
EOH at 0.50m -		0.50	117.55					

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion exploratory hole backfilled with arisings.

Project Number

A090070-474

Project: **HE Compton**	Location Details	Status	Pit Number
Location: **Compton, West Berkshire**	Easting: 451902.34 Northing: 180309.19	FINAL	**HP07**
Client: **Homes England**	Level: 112.20mAOD Depth: 0.40m		Sheet 1 of 1
	Logger: PR Type: IP		

Hole Information		Groundwater				Scale: 1:10
Pit Dimensions	Orientation: °	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: PR
0.30m / 0.30m	Shoring: None					Approved By: RT
	Stability: Stable					Start Date: 16/01/2019
	Plant: Hand Excavated					Finish Date: 16/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: CONCRETE with steel rebar 5mm in diameter.								
Soft to firm orangish brown slightly sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse flint and chalk.		0.20	112.00					
Structureless CHALK, comprising of white sandy gravelly SILT. Gravel is subangular to subrounded fine to coarse flint and chalk. (Grade Dm)		0.30	111.90			0.30 0.30	D2 ES1	
EOH at 0.40m - Terminated due to refusal on concrete		0.40	111.80			0.40 0.40	D4 ES3	

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion exploratory hole backfilled with arisings.

Project Number

A090070-474

Project: **HE Compton** Location: **Compton, West Berkshire** Client: **Homes England**	Location Details Easting: 451896.17 Northing: 180266.84 Level: 109.08mAOD Depth: 0.90m Logger: PR Type: IP	Status FINAL	Pit Number **HP08** Sheet 1 of 1

Hole Information		Groundwater				Scale: 1:10
Pit Dimensions	Orientation: °	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: PR
0.30m x 0.30m	Shoring: None					Approved By: RT
	Stability: Stable					Start Date: 15/01/2019
	Plant: Hand Excavated					Finish Date: 15/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: Subangular to subrounded medium to coarse flint GRAVEL.								
MADE GROUND: Light brown/white very gravelly slightly sandy clayey SILT. Gravel is subangular to subrounded fine to coarse flint, chalk and brick.		0.25	108.84			0.30	ES1	
Structureless CHALK, comprising of white sandy gravelly SILT. Gravel is subangular is subrounded fine to coarse chalk and flint. (Grade Dm)		0.50	108.58			0.50 0.60 - 0.80	ES2 B3	
EOH at 0.90m -		0.90	108.18					

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion exploratory hole backfilled with arisings.

Project Number
A090070-474

Project: **HE Compton**	Location Details		Status	Pit Number
Location: **Compton, West Berkshire**	Easting: 451732.13	Northing: 180189.30	FINAL	**HP09**
Client: **Homes England**	Level: 112.59mAOD	Depth: 0.90m		Sheet 1 of 1
	Logger: PR	Type: IP		

Hole Information		Groundwater				
Pit Dimensions	Orientation: °	Strike (m)	Rose To (m)	After (mins)	Remarks	Scale: 1:10
0.30m / 0.30m	Shoring: None					Checked By: PR
	Stability: Stable					Approved By: RT
	Plant: Hand Excavated					Start Date: 15/01/2019
						Finish Date: 15/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Brown slightly gravelly sandy SILT Topsoil. Gravel is medium subrounded of flint.								
MADE GROUND: Greyish brown gravelly sandy CLAY. Gravel is subangular to subrounded fine to coarse flint, chalk, red brick with cobble sized flint and whole bricks.		0.10	112.49			0.10	ES1	
						0.30	D3	
						0.30	ES2	
						0.30 - 0.50	B4	
Yellowish brown sandy slightly gravelly CLAY. Gravel is subangular to subrounded fine to coarse flint.		0.80	111.79			0.80	ES5	
EOH at 0.90m -		0.90	111.69					

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion exploratory hole backfilled with arisings.

Project Number

A090070-474

Project: **HE Compton** Location: **Compton, West Berkshire** Client: **Homes England**	Location Details Easting: Northing: Level: Depth: 0.40m Logger: PR Type: IP	Status FINAL	Pit Number **HP10** Sheet 1 of 1

Hole Information		Groundwater				Scale: 1:10
Pit Dimensions	Orientation: °	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: PR
0.30m × 0.30m	Shoring: None					Approved By: RT
	Stability: Stable					Start Date: 16/01/2019
	Plant: Hand Excavated					Finish Date: 16/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: Paving slabs.		0.07						
MADE GROUND: Medium to coarse SAND.		0.12						
MADE GROUND: MACADAM.		0.27				0.35 0.35	ES1 ES2	
MADE GROUND: Beige slightly clayey gravelly medium to coarse SAND.		0.40						
EOH at 0.40m - Terminated due to refusal on concrete								

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion exploratory hole backfilled with arisings.

Project Number

A090070-474

Project: **HE Compton** Location: **Compton, West Berkshire** Client: **Homes England**	Location Details Easting: 451912.56 Northing: 180221.48 Level: 107.32mAOD Depth: 1.20m Logger: PR Type: IP	Status FINAL	Pit Number **HP11** Sheet 1 of 1	

Hole Information		Groundwater				
Pit Dimensions	Orientation: °	Strike (m)	Rose To (m)	After (mins)	Remarks	Scale: 1:10
0.30m × 0.30m	Shoring: None					Checked By: PR
	Stability: Stable					Approved By: RT
	Plant: Hand Excavated					Start Date: 16/01/2019
						Finish Date: 16/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: Subangular to subrounded medium to coarse flint GRAVEL.								
Soft to firm orangish brown sandy gravelly CLAY. Gravel is subangular to subrounded fine to coarse flint and chalk.		0.25	107.07			0.30 0.30	D2 ES1	
Soft pale grey slightly sandy CLAY.		0.80	106.52			0.90 0.90	D4 ES3	
EOH at 1.20m - Terminated due to refusal on concrete		1.20	106.12					

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion exploratory hole backfilled with arisings.

Project Number
A090070-474

Project: **HE Compton** Location: **Compton, West Berkshire** Client: **Homes England**	Location Details Easting: 451765.57 Northing: 180144.48 Level: 106.52mAOD Depth: 0.80m Logger: PR Type: IP	Status FINAL	Pit Number **HP13** Sheet 1 of 1

Hole Information		Groundwater				Scale: 1:10
Pit Dimensions	Orientation: °	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: PR
0.30m x 0.30m	Shoring: None					Approved By: RT
	Stability: Stable					Start Date: 15/01/2019
	Plant: Hand Excavated					Finish Date: 15/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
MADE GROUND: Subangular to subrounded fine to coarse flint GRAVEL.								
MADE GROUND: Brown sandy subangular coarse GRAVEL.		0.10	106.42					
STRUCTURELESS CHALK comprised of very gravelly sandy SILT. Gravel is fine to coarse subrounded of chalk.		0.30	106.22			0.50 0.50	D ES1	
EOH at 0.80m -		0.80	105.72					

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion exploratory hole backfilled with arisings.

Project Number
A090070-474

Project: **HE Compton** Location: **Compton, West Berkshire** Client: **Homes England**	Location Details Easting: 451782.60 Northing: 180080.72 Level: 104.10mAOD Depth: 0.80m Logger: PR Type: IP	Status FINAL	Pit Number **HP14** Sheet 1 of 1

Hole Information		Groundwater				Scale: 1:10
Pit Dimensions	Orientation: °	Strike (m)	Rose To (m)	After (mins)	Remarks	Checked By: PR
0.30m × 0.30m	Shoring: None					Approved By: RT
	Stability: Stable					Start Date: 16/01/2019
	Plant: Hand Excavated					Finish Date: 16/01/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Backfill	Samples and Testing: Depth (m)	Ref	Tests / Results
Grass over brown sandy gravelly CLAY. (TOPSOIL)						0.10	ES1	
		0.15	103.95					
Structureless CHALK, comprising of dull orangish white silty sandy GRAVEL. (Grade Dm)						0.30	ES2	
						0.50	ES3	
		0.80	103.30					
EOH at 0.80m - Terminated due to refusal								

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Groundwater not encountered during excavation.
3. Upon completion exploratory hole backfilled with arisings.

Project Number
A090070-474

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451854.66	Northing:	179944.14
Level:	100.14mAOD	Depth:	0.12m
Logger:	AS	Type:	RC
		Inclination:	90°

Status: FINAL

Borehole Number: **CORE 1**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Drilling Progress by Time				
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Date	Time	Depth (m)	Casing (m)	Water (m)
0.00	0.12	Concrete Core	Road Cored		0.12	125							

Scale: 1:50
Checked By: PR
Approved By: RT
Start Date: 22/02/2019
Finish Date: 22/02/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples, Tests and Rotary Coring							
						Depth (m)	Ref	Core Run	FI	TCR	SCR	RQD	Tests / Results
MADE GROUND: Black GRAVEL in a bitumen matrix. Gravel is subangular fine to medium mixed aggregate matrix 45%. (Wearing coarse)		0.05	100.09			0.05 - 0.11	D1						
MADE GROUND: Recovered as GRAVEL. Gravel is subangular fine to coarse mixed aggregate. (Bearing coarse)		0.11	100.03										
MADE GROUND: Brown/black slightly sandy slightly silty GRAVEL. Sand is fine to coarse. Gravel is subangular fine to coarse limestone aggregate. (Subbase)		0.12	100.02										
EOH at 0.12m -													

1 2 3 4 5 6 7 8 9 10

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Location reinstated using cold lay Macadam.

Drilling Fluid

From (m)	To (m)	Return Min %	Colour	Type

Hammer Information

Serial No.	Energy Ratio %

Groundwater

Strike (m)	Casing (m)	Sealed (m)	Time (min)	Rose To (m)	Remarks

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451864.92	Northing:	179946.30
Level:	100.10mAOD	Depth:	0.26m
Logger:		Type:	RC
		Inclination:	90°

Status: FINAL

Borehole Number: **CORE 2**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Drilling Progress by Time				
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Date	Time	Depth (m)	Casing (m)	Water (m)
0.00	0.26	Concrete Core	Road Core		0.07 0.18 0.26	150 125 100							

Scale:	1:50
Checked By:	PR
Approved By:	RT
Start Date:	22/02/2019
Finish Date:	22/02/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples, Tests and Rotary Coring: Depth (m)	Ref	Core Run	FI	TCR	SCR	RQD	Tests / Results
MADE GROUND: Black GRAVEL in a bitumen matrix. Gravel is subangular fine to medium mixed aggregate matrix 45%. (Wearing coarse)		0.04	100.07			0.01 - 0.07	D1						
MADE GROUND: Recovered as GRAVEL. Gravel is subangular fine to coarse mixed aggregate. (Bearing coarse)		0.07	100.03										
MADE GROUND: Brown/black slightly sandy slightly silty GRAVEL. Sand is fine to coarse. Gravel is subangular fine to coarse limestone aggregate. (Subbase)		0.26	99.84										
EOH at 0.26m -													

1 2 3 4 5 6 7 8 9 10

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Location reinstated using cold lay Macadam.

Drilling Fluid

From (m)	To (m)	Return Min %	Colour	Type

Hammer Information

Serial No.	Energy Ratio %

Groundwater

Strike (m)	Casing (m)	Sealed (m)	Time (min)	Rose To (m)	Remarks

Project Number: **A090070-474**

Project: **HE Compton**

Location: **Compton, West Berkshire**

Client: **Homes England**

Location Details			
Easting:	451860.48	Northing:	179944.20
Level:	100.06mAOD	Depth:	0.10m
Logger:	Road Core	Type:	RC
		Inclination:	90°

Status: FINAL

Borehole Number: **CORE 3**

Sheet 1 of 1

Method, Plant and Crew					Diameter		Casing		Drilling Progress by Time					Scale:	1:50
From (m)	To (m)	Type	Plant Used	Crew	Depth (m)	Diam (mm)	Depth(m)	Diam (mm)	Date	Time	Depth (m)	Casing (m)	Water (m)	Checked By:	PR
0.00	0.10	Concrete Core			0.04 0.10	100 100								Approved By:	RT
														Start Date:	22/02/2019
														Finish Date:	02/02/2019

Strata Description	Legend	Depth (m)	Reduced Level (mAOD)	Water Level (m)	Inst / Backfill	Samples, Tests and Rotary Coring							
						Depth (m)	Ref	Core Run	FI	TCR	SCR	RQD	Tests / Results
MADE GROUND: Black GRAVEL in a bitumen matrix. Gravel is subangular fine to medium mixed aggregate matrix 45%. (Wearing coarse)		0.04	100.02			0.04 - 0.10	D1						
MADE GROUND: Recovered as GRAVEL. Gravel is subangular fine to coarse mixed aggregate. (Bearing coarse)		0.10	99.96										
EOH at 0.10m -													

1 2 3 4 5 6 7 8 9 10

Observations / Remarks

1. Location GPR / EM scanned prior to breaking ground.
2. Location reinstated using cold lay Macadam.

Drilling Fluid

From (m)	To (m)	Return Min %	Colour	Type

Hammer Information

Serial No.	Energy Ratio %

Groundwater

Strike (m)	Casing (m)	Sealed (m)	Time (min)	Rose To (m)	Remarks

Project Number: **A090070-474**

Appendix D – Core Photographs

Plate 1 Rotary BH01 from 0.8 - 3.0m

Plate 2 Rotary BH01 from 3.0 - 6.0m

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Environmental Consultancy
Ground Technologies & Investigation

Project :
HE Compton

Client: Homes England

Project No.: A090070-474

Date : April 2019

Plate 3 Rotary BH01 from 6.0 - 9.0m

Plate 4 Rotary BH01 from 9.0 - 12.75m

WYG Environment
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Environmental Consultancy
Ground Technologies & Investigation

Project :
HE Compton

Client: Homes England

Project No.: A090070-474

Date : April 2019

Plate 5 Rotary BH01 from 12.75 - 15.75m

Plate 6 Rotary BH01 from 15.75 - 18.75m

WYG Environment
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Plate 7 Rotary BH01 from 18.75 - 21.75m

Plate 8 Rotary BH01 from 21.75 - 24.75m

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Plate 9 Rotary BH02 from 0.7 - 3.0m

Plate 10 Rotary BH02 from 3.0 - 5.7m

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Plate 11 Rotary BH02 from 6.0 - 10.25m

Plate 12 Rotary BH02 from 10.25 - 12.5m

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Plate 13 Rotary BH02 from 12.5 - 16.5m

Plate 14 Rotary BH02 from 16.5 - 18.5m

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Plate 15 Rotary BH02 from 18.5 - 20.0m

Plate 16 Rotary BH03 from 1.2 - 4.2m

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Plate 17 Rotary BH03 from 4.2 - 7.2m

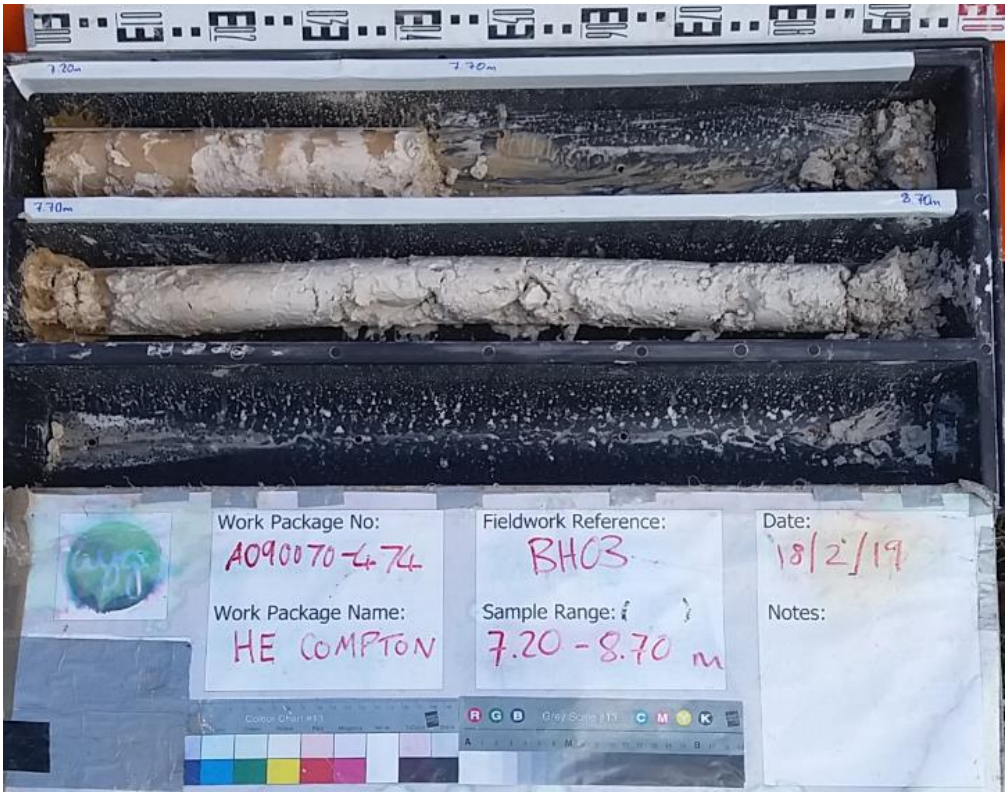

Plate 18 Rotary BH03 from 7.2 - 8.7m

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Plate 19 Rotary BH03 from 8.7 - 11.7m

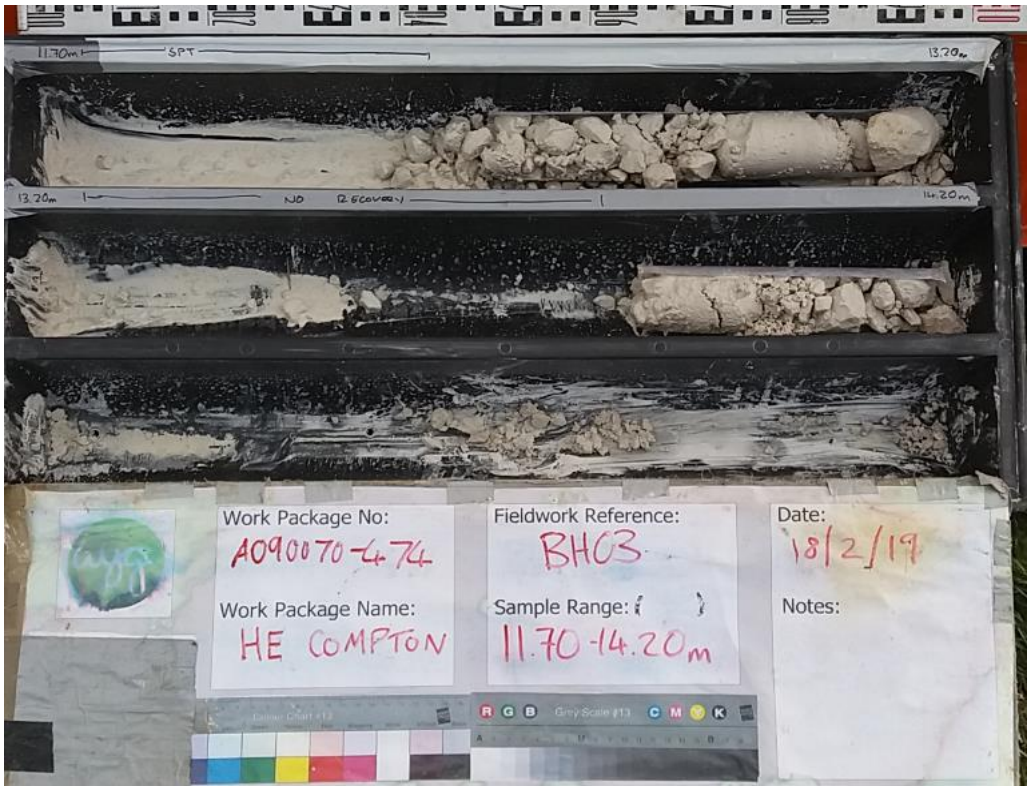

Plate 20 Rotary BH03 from 11.7 - 14.2m

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Plate 21 Rotary BH03 from 14.2 - 15.7m

Plate 22 Rotary BH04 from 1.5 - 4.5m

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Plate 23 Rotary BH04 from 4.5 - 7.5m

Plate 24 Rotary BH04 from 7.5 - 9.9m

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Plate 25 Rotary BH04 from 9.9 - 12.9m

Plate 26 Rotary BH04 from 12.9 - 15.9m

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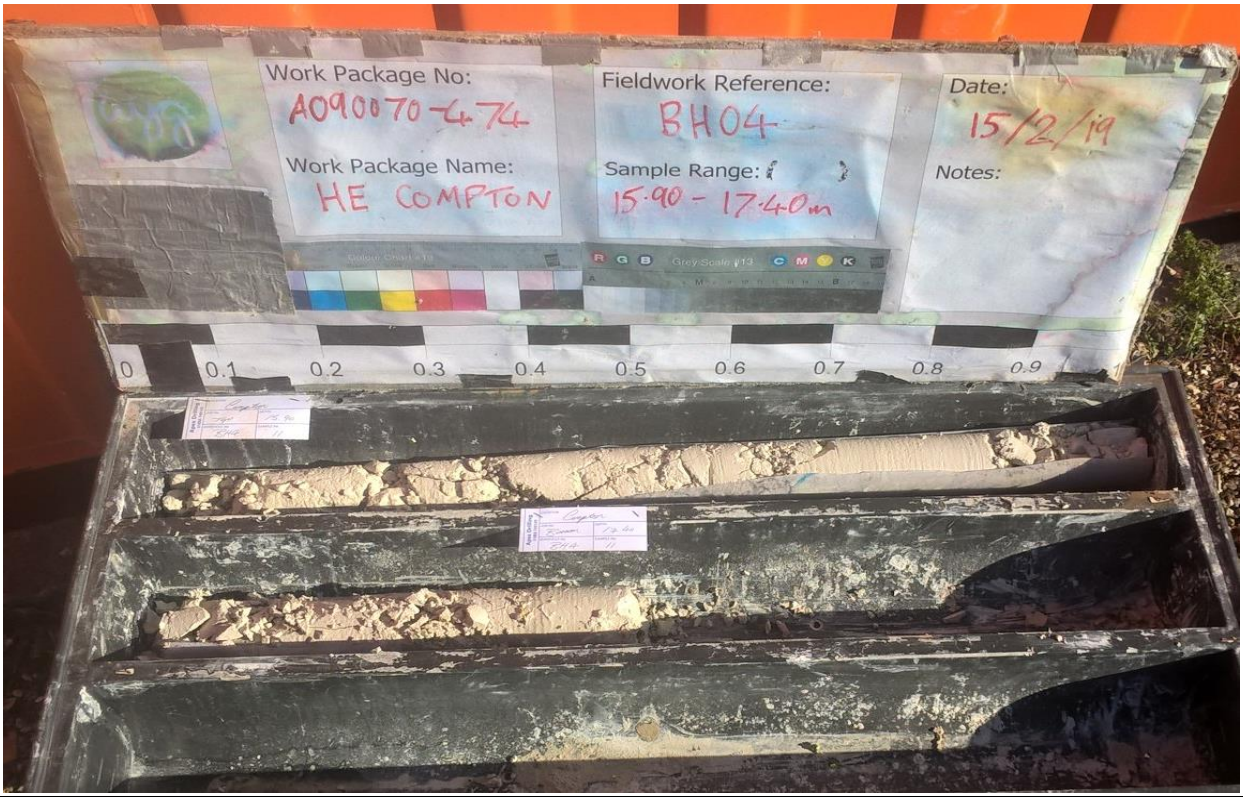

Plate 27 Rotary BH04 from 15.9 - 17.4m

Plate 28 Window Sample WS04 from 1.0 - 5.0m

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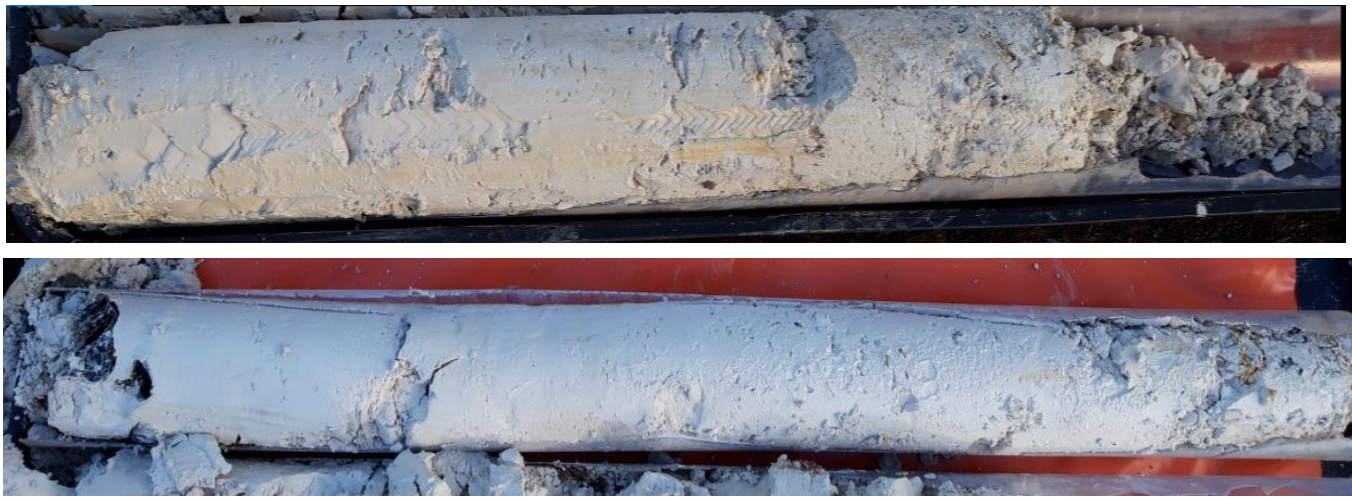

Plate 29 Window Sample WS05 from 0.6 - 2.0m

Plate 30 Window Sample WS06 from 1.0 - 2.7m

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Plate 31 Window Sample WS07

Plate 32 Window Sample WS09 from 1.2 - 3.0m

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Plate 33 Window Sample WS12 from 1.2 - 4.0m

Plate 34 Window Sample WS13 from 1.2 - 5.0m

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Plate 35 Window Sample WS16 from 0.0 - 1.0m

Plate 36 Window Sample WS22 from 0.0 - 3.0m

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Plate 37 Window Sample WS23 from 0.0 - 1.65m

Plate 38 Window Sample WS25 from 0.0 - 0.8m

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Plate 39 Window Sample WS27 from 0.0 - 0.2m

Plate 40 Window Sample WS29 from 1.2 - 2.5m

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Plate 41 Window Sample WS35 from 0.0 - 2.0m

Plate 42 Window Sample WS37 from 0.0 - 1.0m

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Plate 43 Window Sample WS42 from 1.2 - 4.0m

Plate 44 Window Sample WS45 from 0.0 - 3.0m

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Plate 45 Window Sample WS46 from 0.0 - 2.0m

Plate 46 Window Sample WS55 from 1.2 - 5.0m

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Plate 47 Window Sample WS55A from 1.0 - 5.0m

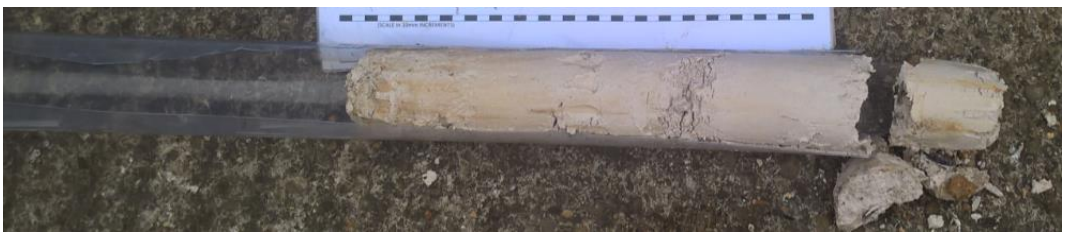

Plate 48 Window Sample WS08 from 1.2 - 2.5m

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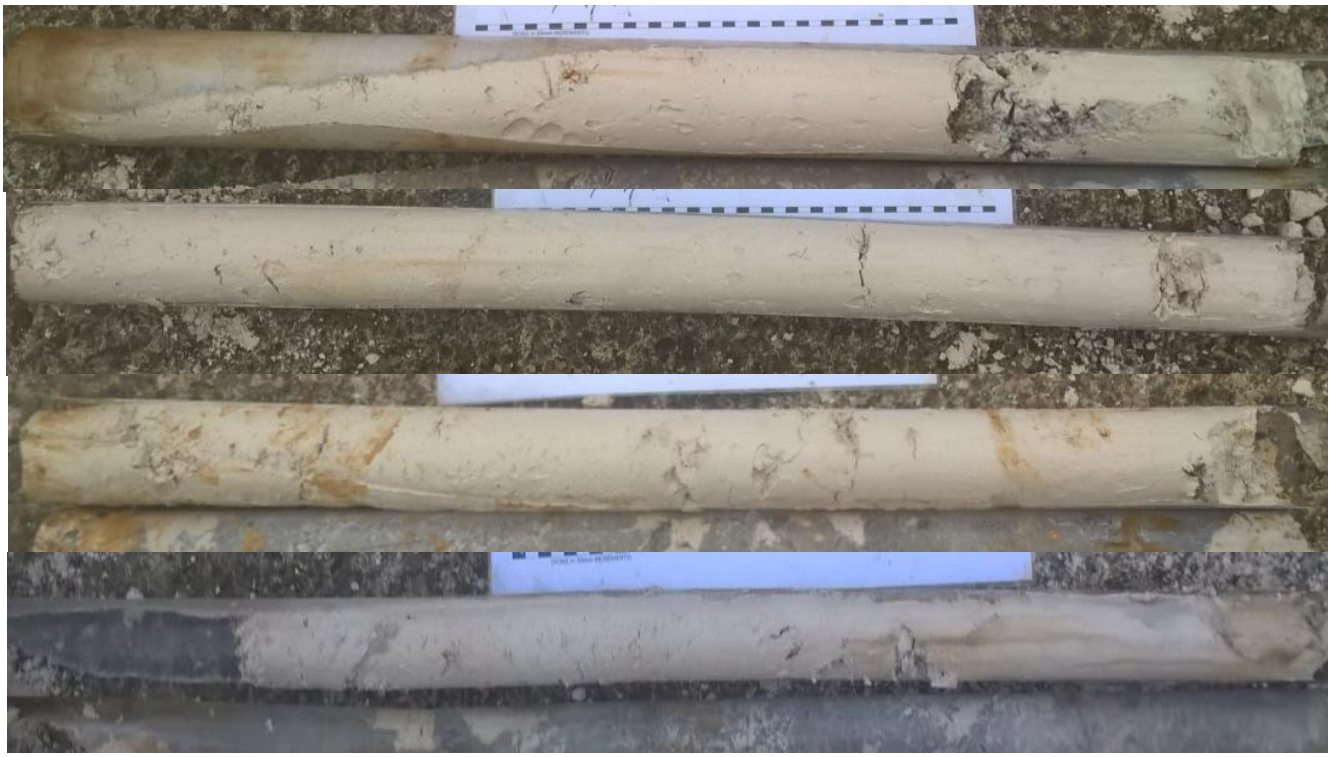

Plate 49 Window Sample WS14 from 1.2 - 4.9m

Plate 50 Window Sample WS17 from 1.2 - 5.0m

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Plate 51 Window Sample WS19 from 1.2 - 4.0m

Plate 52 Window Sample WS21 from 1.2 - 5.0m

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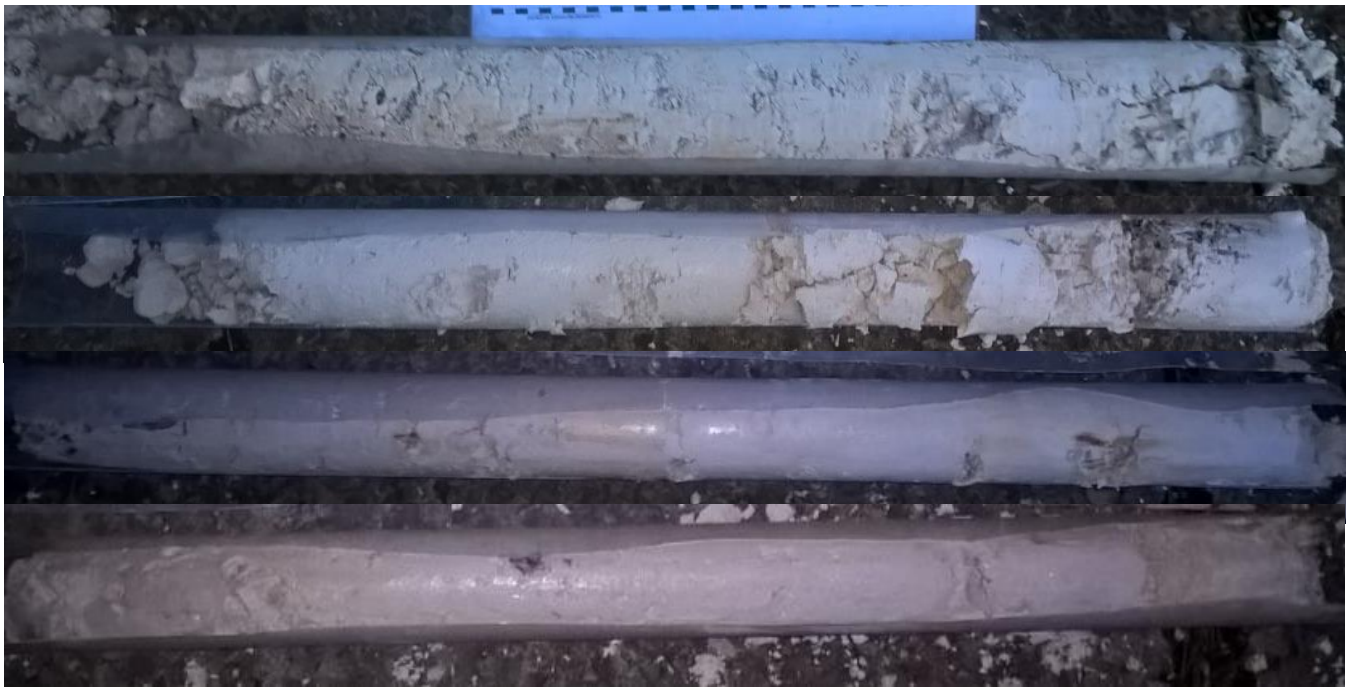

Plate 53 Window Sample WS24 from 1.2 - 5.0m

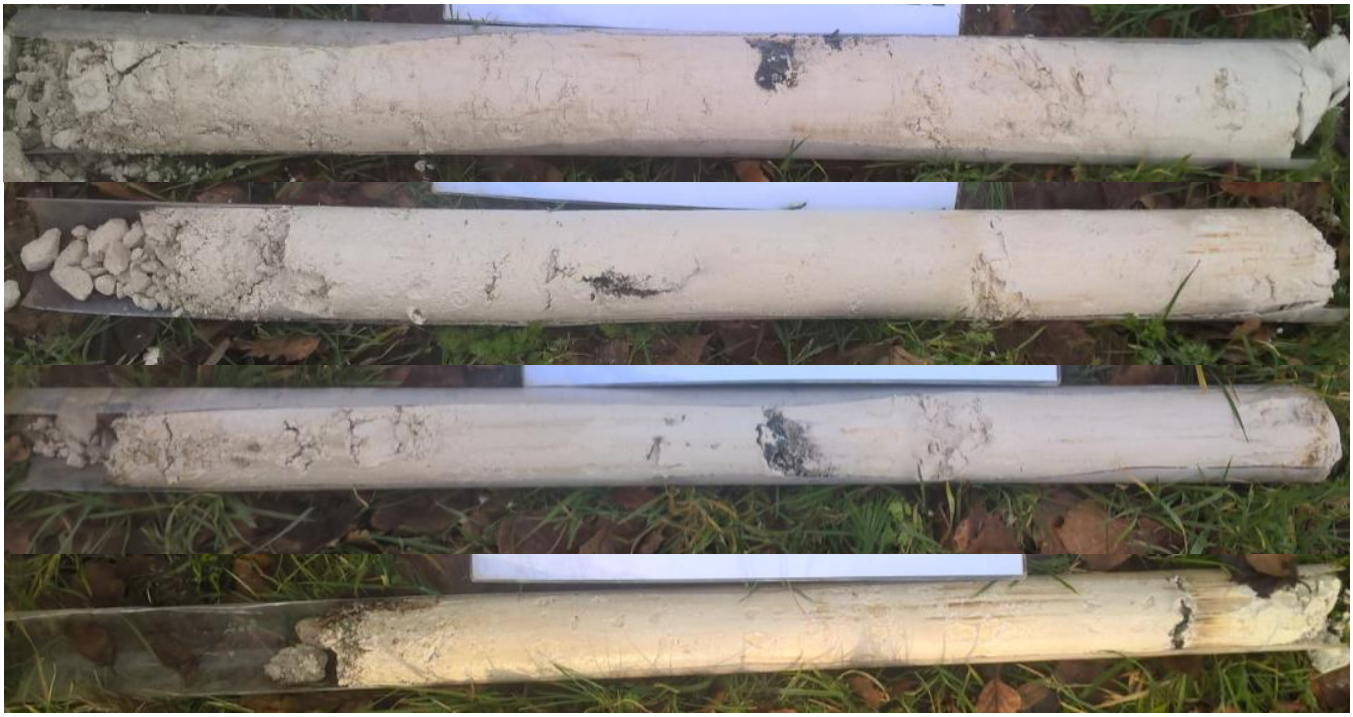

Plate 54 Window Sample WS26 from 1.2 - 5.0m

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Plate 55 Window Sample WS31 from 1.2 - 3.0m

Plate 56 Window Sample WS32 from 1.2 - 3.0m

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Plate 57 Window Sample WS01 from 1.0 - 3.0m

Plate 58 Window Sample WS10 from 1.2 - 1.8m

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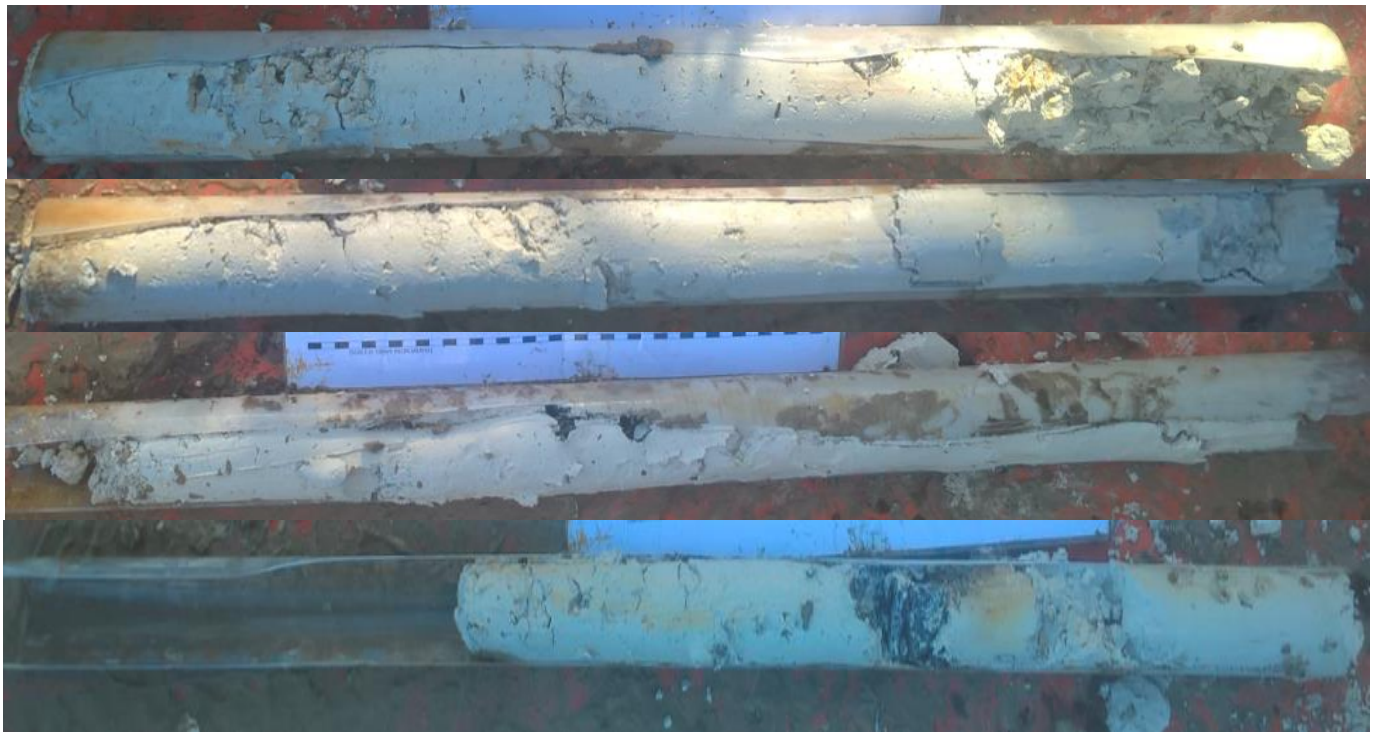

Plate 59 Window Sample WS11 from 1.0 - 5.0m

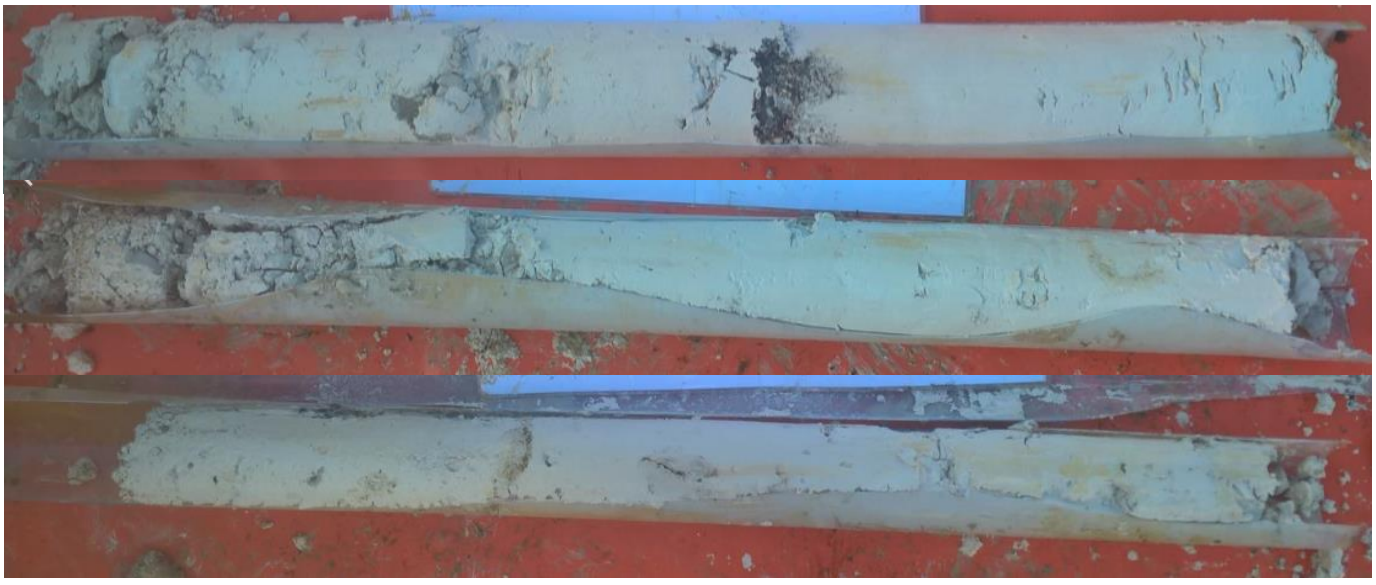

Plate 60 Window Sample WS18 from 1.0 - 3.9m

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Plate 61 Window Sample WS20 from 1.2 - 2.4m

Plate 62 Window Sample WS28 from 1.2 - 3.0m

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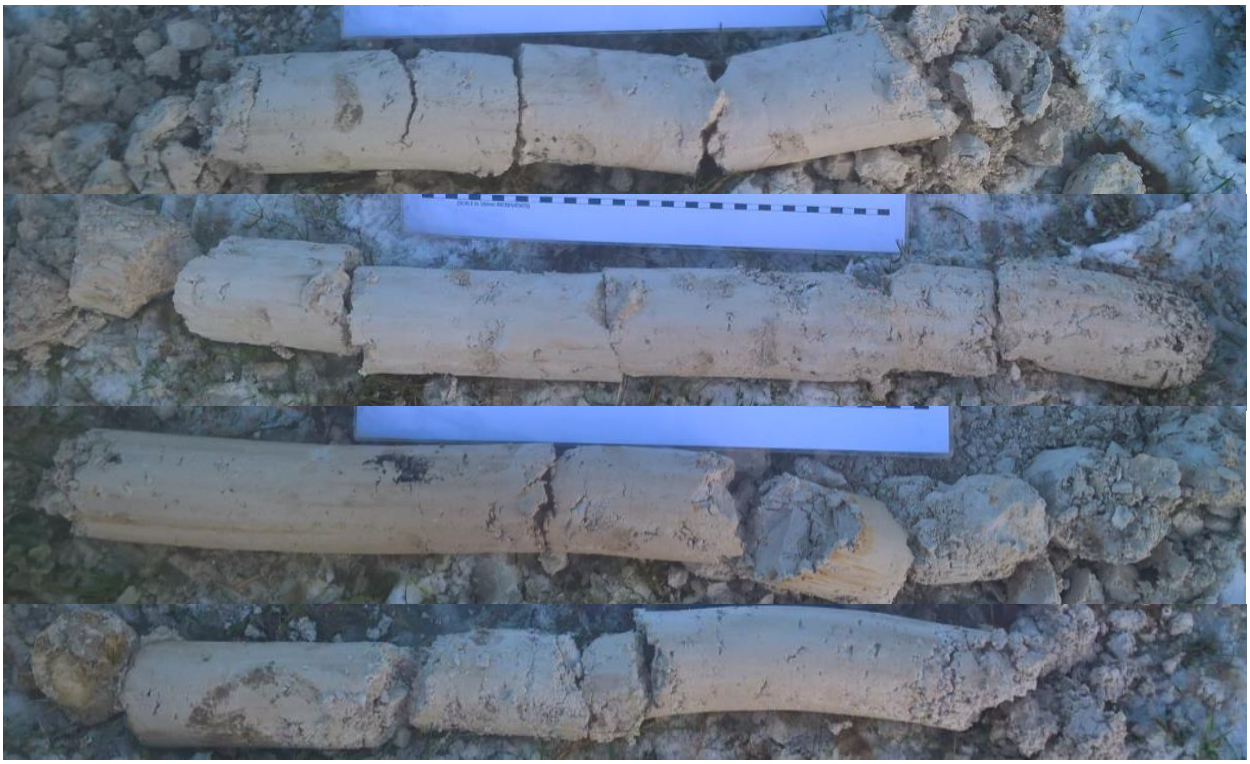

Plate 63 Window Sample WS30 from 1.2 - 4.7m

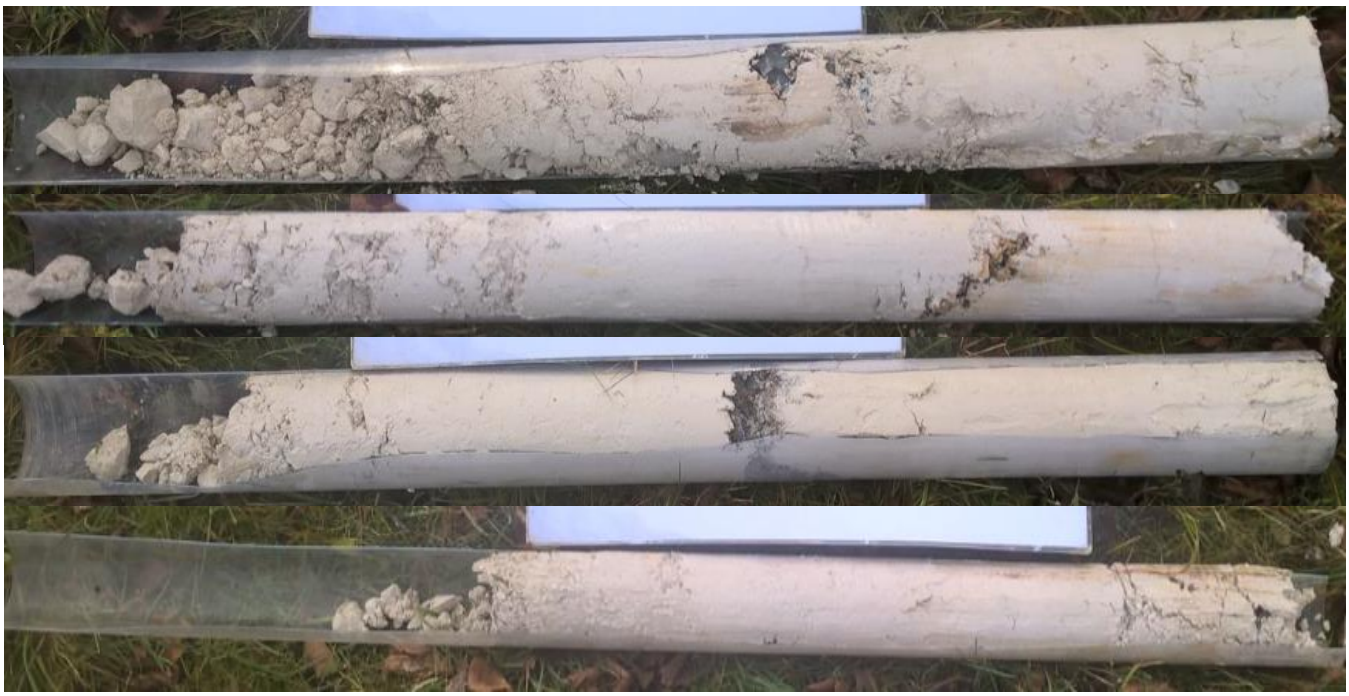

Plate 64 Window Sample WS33 from 1.2 - 5.0m

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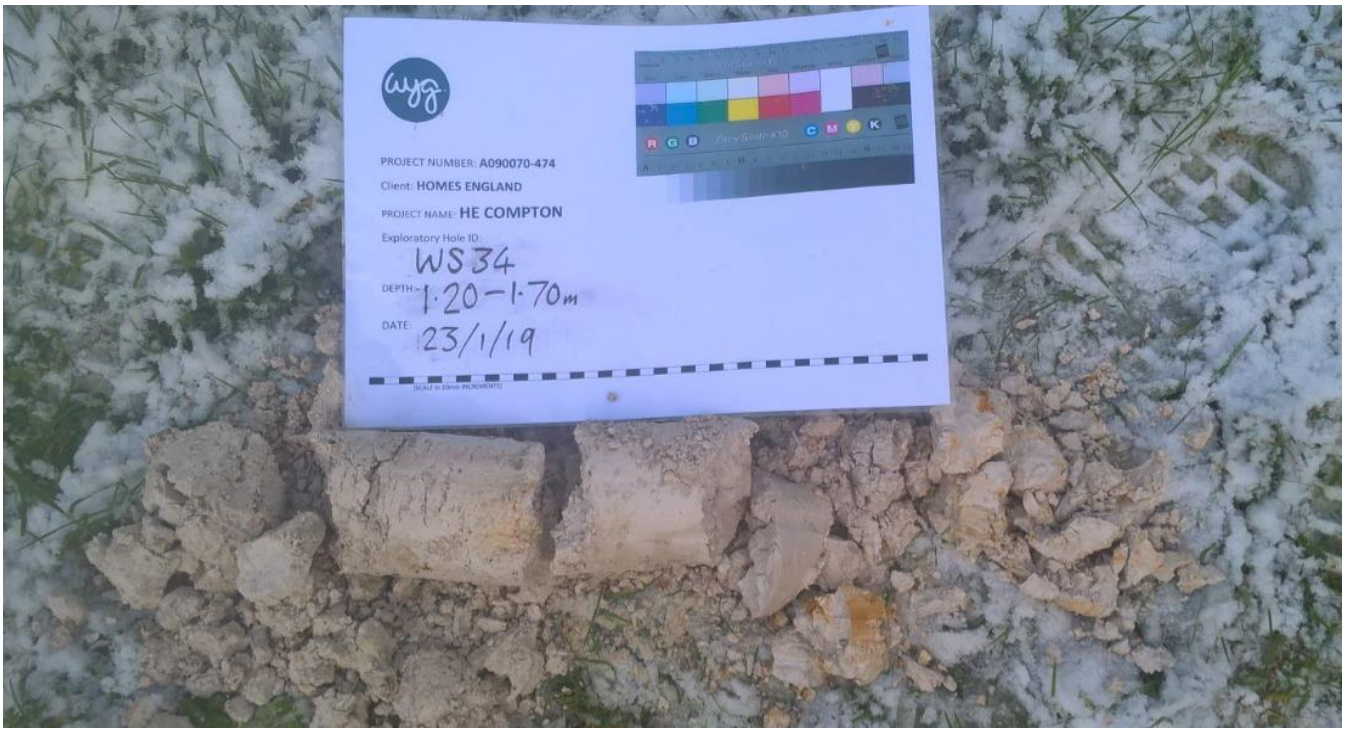

Plate 65 Window Sample WS34 from 1.2 - 1.7m

Plate 66 Window Sample WS36 from 1.2 - 1.8m

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Plate 67 Window Sample WS40 from 1.2 - 2.7m

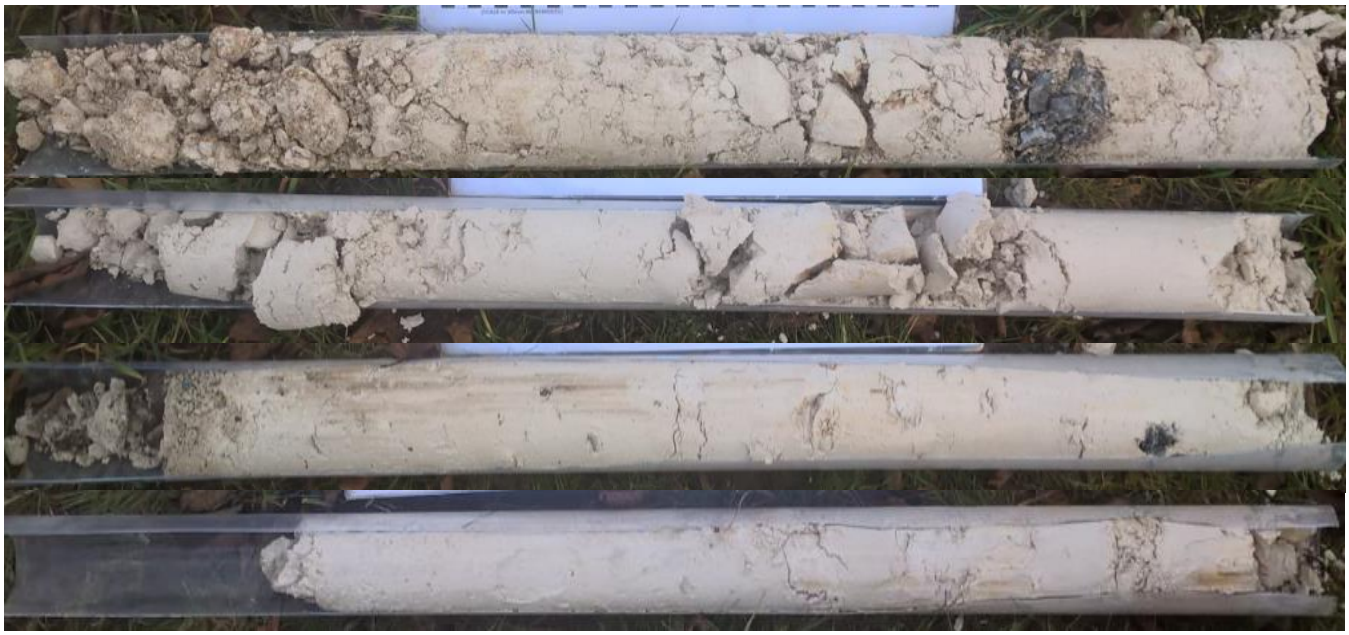

Plate 68 Window Sample WS41 from 1.2 - 5.0m

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Plate 69 Window Sample WS52 from 1.2 - 1.9m

Plate 70 Window Sample WS53 from 1.2 - 1.85m

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Plate 71 Window Sample WS54 from 1.2 - 2.6m

Plate 72 Window Sample WS57 from 1.2 - 2.5m

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Plate 73 Hand Pit HP01

Plate 74 Hand Pit HP02

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Plate 75 Hand Pit HP03

Plate 76 Hand Pit HP05

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Plate 77 Hand Pit HP06

Plate 78 Hand Pit HP07

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Plate 79 Hand Pit HP08

Plate 80 Hand Pit HP09

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Plate 81 Hand Pit HP10

Plate 82 Hand Pit HP11

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Plate 83 Hand Pit HP13

Plate 84 Hand Pit HP14

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