



CORE GEOTECHNICS LIMITED

Geotechnical and Geoenvironmental Engineers

REPORT

SUBJECT	PHASE 2 GROUND INVESTIGATION
SITE	LAND OFF BIDDESTONE LANE, YATTON KEYNELL
PROJECT	PROPOSED DEVELOPMENT
CLIENT	COTSWOLD HOMES LIMITED
INSTRUCTION	via Email
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1. INTRODUCTION

Core Geotechnics Limited (CGL) was instructed by Cotswold Homes Limited (client) to carry out a Phase 2 Ground Investigation relating to proposed new residential development on land located adjacent to Biddestone Lane, Yatton Keynell.

The Phase 2 ground investigation was carried out following completion of a Phase 1 geo-environmental desk study, prepared by Core Geotechnics Limited (CGL) report referenced 24031 dated 30th May 2024.

The scope of this Phase 2 investigation was to establish ground conditions, the presence and nature of any contamination and to provide general recommendations for site development. The investigation was carried out in general accordance with the recommendations of the Phase 1 report, and it follows that both reports should be viewed in conjunction with each other.

The scope of this Phase 2 investigation comprised:-

- Nine machine excavated trial pits
- Five full scale soakaway tests
- Geotechnical and contamination laboratory testing

This report summarises the findings and comments accordingly.

2. SITE LOCATION AND DESCRIPTION

The site is located on land adjacent to and to the east of Biddestone Lane, Yatton Keynell, Chippenham, SN14 7FG.

The site is centred on National Grid coordinates 386600, 175890.

A walkover survey of the site was carried out on 29th April 2024. Photographs of the site taken during the walkover are included in the Phase 1 report.

A Google Earth image of the site dating to April 2020 (site outlined in red) is presented below:-
The site of the proposed development is broadly rectangular in plan shape with approximate maximum dimensions of 230m north-west to south-east and 170m south-west to north-east and

comprises a single large field covering an overall site area of approximately 4.1Ha. The site is bounded to the north-west by Biddestone Lane. The site is bounded to the north-east by a hedge/tree lined field boundary beyond which are playing fields. The site is further bounded to the south-east and south-west by field boundaries beyond which are agricultural fields.

A Google Earth image of the site dating to June 2023 (site outlined in red) is presented as Plate 1 below:-



Plate 1 Google Earth aerial image of site dating to June 2023 (site outlined in red)

At the time of original site inspection, the site was under crop, thought to be winter wheat. Access into the site was via an open section located approximately mid-way along the field boundary with Biddestone Lane. Pedestrian access could also be gained via a stile and public footpath which runs along the north-eastern field boundary. At the time of the Phase 2 ground investigation, the site was laid fallow.

At the time of original site walkover and during the Phase 2 works, the ground surface was soft and boggy with localised ponding in the north-west, north-east and south-eastern corners of the site.

The north-eastern field boundary largely comprised hawthorn of around 5m height interspersed with occasional deciduous trees. The south-eastern field boundary comprised mixed deciduous hedgerow (including hawthorn) and several trees including oak of around 12-15m in height. Several trees along this boundary appeared to be dead. A ditch approximately 0.75-1.0m deep was located along this boundary.

A small pond lies just outside the site boundary in the south-eastern corner of the site and a small pond lies within a wooded copse located centrally within the site toward the southern boundary.

The north-western field boundary with Biddestone Lane comprised mixed deciduous hedgerow with a horse chestnut located part way along its length

There was no observed presence of tanks on the site. There were no areas of obvious surface staining or distressed vegetation in the vicinity of the site which could be attributed to former contaminative activity.

There was no observed presence of Japanese Knotweed on the site.

3. GEOLOGY

3.1 Geology

Geological Survey data shows the site to be directly underlain by the Forest Marble Formation (FMF) of Jurassic age. Limestones of the FMF are shown to outcrop close to the western boundary and may underlie the site beneath a shallow clay covering. The FMF is typically described as greenish grey weathering brown and orange-brown, variably calcareous mudstones/clay.

Geological map extracts as provided in an Envirocheck report procured for the site are included in the Phase 1 report.

There are no areas of potentially infilled or made ground identified on the map extracts within likely influence zone of the site.

3.2 Historical Ground Investigation Records

A search of British Geological Survey Records and our own database revealed no useful data in the vicinity of the site

4. PROPOSED DEVELOPMENT

Current proposals are to develop the site for residential housing. A preliminary proposed site layout plan is presented in the Figures section of this report. Details of proposed structural loadings were not known at the time of writing.

Details of proposed design loadings were not known at the time of investigation although it is considered unlikely that line loads would significantly exceed 50-70kN/m run of load bearing wall.

5. SITE SETTING, POTENTIAL FOR CONTAMINATION & CONCEPTUAL MODEL

The desk study has highlighted that the site has remained undeveloped and has changed very little since at least the 1880's and the field appears to principally be used for agriculture. It is therefore considered that the site has a negligible to low risk of potential contaminants from the past and current land use. The principal risks will relate to possible current or former use of pesticides/herbicides, together with unidentified activities.

There are no landfill sites within likely influence zone of the site therefore the risk of ground gas migration from such a source is considered to be negligible.

The site is in the main bounded by agricultural land with playing fields and the village of Yatton Keynell to the north-east. These features indicate a negligible risk for off-site migration of contaminants on to the site.

The preliminary contamination conceptual model given in the Phase 1 report is reproduced below: -

ENVIRONMENTAL HAZARDS		
Potential Environmental Hazards identified at the site from this desk study:		
- Site essentially comprising farmland - Unknown nature of any made ground present from unidentified activities		
ENVIRONMENTAL RISKS		
POTENTIAL PATHWAYS	RISK CATEGORY	COMMENTS
Contamination from on site sources	NEGLECTIBLE TO LOW	Unknown constituents of any potential made ground
Contaminant migration off-site	NEGLECTIBLE TO LOW	Infiltration and groundwater flow. Site underlain by Secondary Aquifer. No likely sources of significant contamination on site
Contamination from off-site sources	NEGLECTIBLE TO LOW	No significant risk identified
Ground gas	NEGLECTIBLE	No significant risk identified. No radon protection necessary
POTENTIAL RECEPTORS	RISK CATEGORY	COMMENTS
Human Health	MEDIUM	Potential inhalation, ingestion & dermal contact to ground workers and future occupiers.
Soils	NEGLECTIBLE TO LOW	Very low permeability clays likely to underlie the site

POTENTIAL RECEPTORS	RISK CATEGORY	COMMENTS
Groundwater	LOW	Secondary Aquifer underlying the site
Surface Water	LOW TO MEDIUM	Ditches bordering site
Buildings & Foundations	MEDIUM	Likely presence of clay soils which could require deepening of foundations in proximity of existing trees/hedgerow. Presence of pyrite/sulphates in soil
Fauna and Flora	NEGLIGIBLE	Majority of vegetation appears healthy.
CURRENT OVERALL RISK		NEGLIGIBLE- LOW

In summary the potential for contamination on site from historic activities is considered to represent a negligible to low risk. In general, the potential for off-site contamination to migrate onto the subject site is considered negligible to low. The risk associated with ground gas migration is considered negligible.

Contamination testing of soils was carried out to confirm the assumptions made.

6. GROUND INVESTIGATION

6.1 Fieldwork

The fieldwork was carried out in general accordance with BS5930:2015¹ on 27th November 2024 and comprised nine trial pits and five soakaway tests.

The exploratory hole locations were selected and set out by CGL taking into account local constraints and are shown on Figure 1. Principal constraints related to avoidance of surface waterlogging.

Nine trial pits referenced TP01-09 (Appendix A) were formed by a tracked 7 tonne excavator equipped with a 0.60m wide toothless bucket.

Representative samples of the arisings were taken in suitable airtight containers. Hand shear vane tests were carried where possible on suitable intact lumps of excavated cohesive arisings. The resulting undrained cohesion (c_u) is presented on the logs in units of kPa.

Full scale soakaway tests were carried out in TP01-04 and TP08. The soakaway tests were carried out in general accordance with BRE SD365 (2016)². The excavation sides were squared using the excavator bucket and the pits filled with clean water. TP02 however recorded significant groundwater ingress and a rising head test was effectively carried out at this locality.

On completion, or on completion of soakaway testing, the trial pits were backfilled with arisings.

6.2 Logging

A Chartered Geologist carried out the logging of soils and rocks in general accordance with BS5930: 2015. A key to the exploratory hole logs is presented in Appendix A.

Detailed descriptions of the samples are given in the exploratory records, Appendix A, along with details of sampling, in situ testing, groundwater ingress.

¹ British Standards Institution (2015): Code of practice for site investigations. BS 5930

² BRE Digest SD365 (2016) Soakaway Design

6.3 Laboratory Testing

A schedule of laboratory tests was prepared by this Company; the following tests being carried out in accordance with BS EN ISO 17892-1-12, unless stated otherwise. The results are presented in Appendix B.

The natural moisture content was determined on six selected samples. The liquid limit, plastic limit and plasticity index tests were carried out on the same six samples. An Atterberg line plot has also been presented.

The acid soluble, water-soluble sulphate, total sulphur content and pH of four samples were determined.

Selected soil and water samples were despatched to Derwentside Environmental Testing Services Limited (DETS) and subjected to in-house chemical analyses for a suite of determinants as tabulated below.

Nr of samples	Type	Determinants
6	soil	As, Cd, Cu, Pb, Hg, Ni, Se, Zn, Cr, Cr (VI), V, total cyanide, speciated (16) PAH, phenol, pH.
6	soil	Asbestos screen
2	soil	Pesticide and herbicide suites
1	soil	Water soluble sulphate & pH

The results are presented in Appendix C.

7. GROUND CONDITIONS & GEOTECHNICAL PROPERTIES

7.1 General

The following sections summarise ground conditions recorded during the investigations carried out at the site and comprised clays and limestone of the Forest Marble Formation as summarised below: -.

Location	Topsoil*/Made ground to depth (m bgl)	Cohesive FMF Depth range (m bgl)	Limestone FMF Depth Range (m bgl)	Undrained cohesion (kPa)	Inferred Limestone rockhead (m bgl)
TP01	0.25*	0.25-2.00	>2.00m	88->140	2.00
TP02	0.25*	0.25-0.85	0.85-1.10	85	1.10
TP03	0.25*	0.25-1.70	>1.70	96-110	1.70
TP04	1.10	1.10-1.90	>1.90		1.90
TP05	0.25*	0.25-2.10	>2.10	100-115	2.10
TP06	0.25*	0.25-1.70	>1.70	90	1.70
TP07	0.25*	1.00-1.20	0.25-1.00		1.20
TP08	0.25*	0.65->1.70		>140	n/a
TP09	0.25*	0.25-1.30	>1.30	90->140	1.30

7.2 Made Ground/Topsoil

Made ground was only observed in TP04 to a depth of 1.10m. the made ground initially comprised a firm light grey occasionally mottled brown very closely fissured clay to a depth of 0.75m. from 0.75m to 1.10m bgl the made ground comprised a dark brown very silty clay which is thought to represent a relict topsoil horizon. It is thought that the made ground represents where a depression has historically been infilled with locally derived clay

Other than TP04, topsoil was typically observed on the site to a uniform depth of 0.25m below ground level (bgl).

7.3 Forest Marble Formation (FMF)

Deposits thought to represent the FMF were observed directly below topsoil/made ground at all the exploratory hole locations.

Cohesive soils of the FMF were observed directly below topsoil/made ground at shallow depth at the majority of trial pit locations sunk during the course of investigation. The cohesive FMF

was typically described as a firm or stiff brown or brown variably mottled grey and orange-brown slightly sandy silty clay which locally contained limestone laminae and fossil shell fragments

Hand shear vane tests carried out where possible in these cohesive soils recorded undrained cohesion (c_u) ranging from 85 to >140kPa, confirming stiff through very stiff consistency and high strength. The soils were however noted to be firm below the made ground observed in TP04 and locally in the upper 0.50m of the soil profile (eg TP05 & TP09).

Index tests performed within the cohesive FMF gave results falling within Groups CI through CH as defined in BS5930, indicating clays of intermediate through high plasticity. Based upon the modified plasticity index, NHBC Standards³ indicate that this soil will have a worst-case medium volume change potential with variation in moisture content based upon the modified plasticity index.

In TP07 and TP08, a weak through medium strong orange-brown or grey discoloured orange brown, very thinly sub horizontally bedded limestone, with very close to closely spaced discontinuities was observed to 0.65-1.00m bgl before passing into cohesive soils of the FMF (as previously described).

TP08 was completed in clays of the FMF at a depth of 1.70m. All of the other trial pits were completed at effective refusal to excavation in further limestone at variable depths ranging from 1.10-2.10m bgl.

A plan showing depth to refusal to excavation on inferred intact limestone is presented as Figure 2.

7.4 Groundwater & Face Instability

The depth at which groundwater ingress was recorded in trial pits together with details of any trial pit instability are recorded in the table below: -

³ NHBC Standards (2025) Chapter 4.2 Building near trees

Location	Seepage depth range (m bgl)	Ingress	Rate of ingress	Comments/Instability
TP01	n/a			No significant pit face instability recorded
TP02	0.50		Steady, slight ingress	
TP03	1.00			
TP04	1.05		Steady, slight ingress	
	1.50		Rapid inflow	
TP05	0.50		Steady, slight ingress	
TP06	n/a			
TP07	1.10		Steady, slight ingress	
TP08	0.65			
TP09	n/a			

Of note is that it was intended to carry out soakaway testing in TP02 at a depth of 1.10m with a steady slight groundwater ingress recorded below 0.50m. The trial pit was left open for 2.5hours and recorded a standing water level of 0.58m after this time. It should be noted that the Phase 2 investigation was carried out after a period of prolonged heavy rainfall.

A plan showing depth to water ingress is presented as Figure 2.

8. DISCUSSION AND CONCLUSIONS

8.1 General

As indicated in Section 4, current proposals are to develop the site for residential housing. A preliminary proposed site layout plan is presented in the Figures section of this report. Details of structural loadings were not known at the time of writing although it is considered unlikely that line loads would significantly exceed 50-70kN/m run of load bearing wall.

Given that design loads were not known, the following comments should be subject to review once details are known.

8.2 Foundation Considerations

The proposed layout plan suggests that all housing units are located a minimum of 15m lateral distance from boundary hedgerows and trees. It is therefore considered that in the main, foundations could be taken down to a minimum proposed founding depth of 0.90m or 1.25m (allowing for restricted new planting) where foundations are located outside the influence zone of existing or recently removed trees/hedgerows. Within influence zone of trees/hedgerows, foundations should be deepened in accordance with NHBC Standards (Chapter 4.2) and void formers should be utilised to the internal face of external foundations where the NHBC safe founding depth is >1.50m.

At proposed minimum founding depths of 0.90/1.25m, ground conditions should comprise typically stiff and locally very stiff light brown mottled grey and locally orange-brown slightly sandy silty clays which should offer an allowable bearing capacity in the order of 150kPa for strip or trench fill foundations up to 1.2m wide to give settlements not exceeding 25mm. Under anticipated foundation loads, total settlements of around 15mm are to be expected. Locally (ie TP02, 07, 09), limestone beds may be observed at proposed formation levels which may lead to slight differential settlement where foundations span both clays and limestone. It is therefore recommended that foundation bases be lightly reinforced where it is found that clays and limestone are both encountered at formation level. In these areas foundations could be locally deepened to the underlying limestone (observed at 1.10-1.30m depth in TP02, 07 and 09) to eliminate potential differential settlement in such areas.

It is possible that limestone beds may be encountered above formation level where deepening due to the proximity of trees/hedgerows is required. In such cases, foundations could be shallowed within the limestone (minimum 0.60m to afford frost protection) provided further clay beds do not underlie the limestone within the safe founding depth as determined by Chapter 4.2. Further plot specific investigation may be required in such cases when the layout is finalised.

Subject to removal of topsoil and subject to the soils at shallow depth not being desiccated at the time of construction, it is considered that lightly loaded floor slabs could be ground bearing provided that the total thickness of any placed suitable engineered granular fill or made ground does not exceed 0.60m.

Clay soils within the upper 1.0m of the soil profile, could, however be affected by seasonal shrinkage and swelling (particularly where under crop) and it may therefore be considered safer to assume suspended beam and block floor slabs over a clear air void of 250mm based upon a worst-case medium volume change potential.

8.3 Excavations & Drainage

All topsoil should be stripped and stockpiled for later possible re-use or be removed from site.

Excavation to anticipated foundation formation levels should generally be within the scope of conventional plant. It should be noted that effective refusal to excavation within inferred limestone bedrock was observed at the base of the majority of trial pits. Deeper excavation (eg for drainage works) within bedrock may require excavation with more powerful machinery using ripping techniques or the use of breakers to minimise overbreak and to obtain a clean excavation.

Any tree root balls resulting from the removal of trees should be grubbed out and replaced with a suitable, compacted granular fill.

Groundwater was observed in the majority of trial pits at less than 1.0m depth and typically observed as seepage which can in the main be controlled by sump pumping from the base of excavations. More rapid ingress may be encountered particularly within limestone beds and may require a more rigorous method to dewater. It should however be noted that the trial pitting was undertaken following a particularly wet spell of weather and groundwater conditions are likely to improve during drier months.

It should be noted that water levels may rise in winter or at other times following periods of prolonged inclement weather and consideration should be given to carrying out trial excavations shortly prior to commencement of earthworks to assess any implications.

If any potentially unstable excavations are to be entered, then the sides should be battered back and/or shoring methods and equipment should be utilised in accordance with the relevant Health and Safety Acts.

Full scale soakaway tests were carried out in TP01, 03-04 and TP08. In all cases there was insufficient fall to determine an infiltration rate and it is therefore considered that recourse to a positive drainage system, possibly accompanied by attenuation storage and/or rainwater harvesting may be required.

8.4 Buried Concrete

BRE Special Digest 1⁴ (2005) is used to assess the soil and ground water in respect of buried concrete. A slightly alkaline pH of 7.7-8.4 was recorded. The results of acid, water-soluble sulphate total sulphur indicate that significant pyrite is not present and hence total potential sulphate (TPS) concentrations on soil samples all indicate that the site falls within Class DS-1 to give a corresponding ACEC Class AC-1 recommended for design.

8.5 Road Pavement

Highways Agency IAN 73/06 (2009)⁵ indicates that the near surface cohesive soils of the FMF based on an average plasticity index of 25-30% are likely to have minimum long term equilibrium CBR values in the order of 3-4%. A CBR value of 3% is therefore considered appropriate for design. As CBR value depends on the moisture content at time of construction, it is recommended that in-situ testing be carried out at the time of construction. Any soft spots observed at formation should be removed and be replaced by a suitable compacted fill

The soils likely to be encountered at formation level are unlikely to be frost susceptible

⁴ Building Research Establishment (2005): Concrete in aggressive ground. BRE Special Digest 1, Part C. Third Edition.

⁵ Highways Agency Interim Advice Note 73/06 Rev 1 (2009) Design guidance for road pavement foundations (draft HD25)

Care should be taken to minimise degradation due to trafficking etc and a geotextile separator layer may be required at formation level prior to installation of capping/granular sub-base.

8.6 Ground Gas

Radon

The Phase 1 report indicates that the site falls within a one kilometre grid square where <1% of homes are estimated to be above the radon action level and indicates that no radon gas protection measures are necessary in the construction of new dwellings or extensions.

Carbon Dioxide & Methane

In the absence of any known sources , protection measures for methane or carbon dioxide are not considered necessary.

8.7 Contamination Considerations

Basis of Assessment – Soils

The results of ground investigation works have been assessed utilising a Tier 1 quantitative risk assessment. The risk assessment methodology used is taken from the Environment Agency (EA) R&D Publication 20 'Methodology for the Derivation of Remedial Targets for Soil and Groundwater to Protect Water Resources'. The tiered approach acts as a screening process whereby low risk sites are eliminated in order to identify sites that present the greatest environmental risks. The information obtained from the site investigation is used to characterise any contaminant source and subsequently to identify any sensitive environmental receptors and appropriate target concentration at the receptor.

In December 2013 the output of a DEFRA funded research project (SP1010)⁶ was published and included a draft methodology for determining Human Health Category 4 Screening Levels (C4SLs). In March 2014, DEFRA published a Policy Companion Document to accompany the research which endorsed the draft methodology. The C4SLs represent

⁶ CL:AIRE (2013) Development of category 4 screening Levels for the assessment of land affected by contamination

estimates of contaminant concentrations in soils that can, when used in accordance with defined risk assessment methodology be used to determine whether land is clearly not contaminated for human health receptors for specified land uses within the context of Part 2A. The methodology developed for determining C4SLs is described as being strongly precautionary but has been based upon a pragmatic approach to contaminated land risk assessment adopting an acceptably low, rather than minimal level of risk as defined by EA (CLEA) Soil Guideline Values (SGV's).

In October 2014, NHBC⁷ ratified use of C4SLs which may be used for schemes in England and Wales as generic screening values for contaminants in soils, as long as they are justifiable and defensible in the conceptual site model for the site. Where representative contaminant concentrations exceed C4SLs, remediation or further detailed assessment will normally be required.

Contamination test from the investigation are represented in Appendix C.

Comparison of Results - Soil

The derived values of contaminants obtained from analysis were compared with the C4SLs for residential end use with plant uptake. Where no C4SL's were available, the analysis results were compared with the generic guidelines published by LQM/CIEH ('The LQM/CIEH S4ULs for Human Health Risk Assessment' - CIEH 2015). A Soil Organic Matter of 1.0% SOM was assumed.

General Contaminants

Contaminant	Concentration ranges (number of samples = 6)	GACs (mg/kg)	Exceedance Location
Arsenic	≤17mg/kg	37 [640]	
Cadmium	≤0.4mg/kg	26 [420]	
Chromium (III)	≤32mg/kg	910 [8600]	
Chromium (VI)	≤1.0mg/kg	21 [49]	
Copper	≤32mg/kg	2,400 [68,000]	
Lead	<62mg/kg	200 [2,200]	
Mercury	≤0.28mg/kg	40 [1,100]	

⁷ NHBC (October 2014) Technical extra, Issue 15

Contaminant	Concentration ranges (number of samples = 6)	GACs (mg/kg)	Exceedance Location
Nickel	≤26mg/kg	130 [980]	
Phenol	≤0.9mg/kg	120 [440]	
Selenium	≤0.5mg/kg	250 [12,000]	
Vanadium	≤57mg/kg	410 [9,000]	
Zinc	≤85mg/kg	3,700 [730,000]	

GACs derived from Land Quality Management (LQM)/CIEH Values (2015) for residential end use with home grown produce. [CS4SL \(residential with home grown produce\)](#). [LQM/CIEH (2015) value for commercial use]

When compared with the GAC screening values for published C4SLs or LQM/CIEH values, there were no exceedences which could be considered to present an unacceptable risk to human health.

Polyaromatic Hydrocarbons

Contaminant	Concentration ranges number of samples = 6	GACs (mg/kg)	Exceedance Location
Naphthalene	≤0.2mg/kg	2.3 [190]	
Acenaphthylene	≤0.3mg/kg	170 [83,000]	
Acenaphthene	≤0.1mg/kg	210 [84,000]	
Fluorene	≤0.2mg/kg	170 [63,000]	
Phenanthrene	≤4.7mg/kg	95 [22,000]	
Anthracene	≤1.3mg/kg	2,400 [520,000]	
Fluoranthene	≤12mg/kg	280 [23,000]	
Pyrene	≤11mg/kg	620 [54,000]	
Benzo(a)anthracene	≤6.5mg/kg	7.2 [170]	
Chrysene	≤7.7mg/kg	15 [350]	
Benzo(b)fluoranthene	≤0.1-5.6mg/kg	2.6 [44]	TP04 0.80-1.00m (5.6mg/kg)
Benzo(k)fluoranthene	≤3.3mg/kg	77 [1200]	
Benzo(a)pyrene	<0.1-6.9mg/kg	5 [35]	TP04 0.80-1.00m (6.9mg/kg)
Benzo(ghi)perylene	≤4.6mg/kg	320 [3900]	
Dibenzo(ah)anthracene	<0.1-0.9mg/kg	0.24 [3.5]	TP04 0.80-1.00m (0.9mg/kg)

Contaminant	Concentration ranges number of samples = 6	GACs (mg/kg)	Exceedance Location
Indeno(123-cd)pyrene	≤5.8mg/kg	27 [500]	

GACs derived from Land Quality Management (LQM)/CIEH Values (2015) for residential end use with home grown produce. [CS4SL \(residential with home grown produce\)](#). [\[LQM/CIEH \(2015\) value for commercial use\]](#)

When compared with the GAC screening values for published C4SLs or LQM/CIEH values, there were no exceedances which could be considered to present an unacceptable risk to human health with the exception of several PAH compounds observed within a relict topsoil horizon observed between depths of 0.75-1.10m bgl in TP04. The overlying made ground was not found to be impacted with PAH.

Asbestos Screen

Selected samples were tested for the presence of asbestos fibres and recorded a negative presence.

Organo-chlorine and Organo-phosphorus Pesticides (OCP & OPP)

Tests carried out on selected soil samples for 39 routinely determined OCP and OPP gave results all falling below the routine detection limit of 0.1mg/kg and are not considered significant.

Triazine Herbicides

Tests carried out on selected soil samples for 11 routinely determined triazine herbicides gave results all falling below the routine detection limit of 0.1mg/kg and are not considered significant.

Olfactory/Visual Contamination Observations

There was no visual or olfactory evidence for contamination observed at any of the investigation locations sunk during the course of the investigation.

8.8 Risk Assessment & Recommendations

8.8.1 Qualitative Risk Assessment

To determine the potential for contamination from the site, it is necessary to establish whether an environmental risk is present. For a potential risk to occur it is necessary to understand whether contaminants are present; what (if any) are the target receptors within and surrounding the site, and whether pathways exist, or could exist, between the contaminant and the receptor;

Source (e.g. primary sources – leaking above ground storage tanks; secondary sources – free phase product within the ground or soil/groundwater migration).

Receptor (e.g. on-site contractor, off-site residential property, groundwater, surface water and fauna and flora).

Target mechanism between the source and receptor (e.g. groundwater migration), i.e. *Pathway*.

Following the findings of the ground investigation and chemical testing a further conceptual model/qualitative risk assessment has been carried out to identify whether any significant pollutant linkages are present at the site.

Source	Pathway	Receptor	Potential Significant Pollutant Linkage	Control Measures to be implemented
Relict topsoil horizon in TP04 with several elevated PAH compounds	Dermal contact with soils	Construction staff	No – elevations below the relevant guidelines values considered to be appropriate to construction staff.	Appropriate and suitable PPE, welfare facilities, good hygiene practice. A careful watch for unidentified contamination hotspots should be maintained
		Future site occupants	YES – elevations above relevant guidelines values considered to be appropriate to end users.	Further evaluation required
	Ingestion of contaminated soil	Construction staff.	No – elevations below the relevant guidelines values considered to be appropriate to construction staff.	Appropriate and suitable PPE, welfare facilities and good hygiene practice. A careful watch for unidentified contamination hotspots should be maintained
		Future site occupants	YES – elevations above relevant guidelines values considered to be appropriate to end users.	Further evaluation required
	Inhalation of indoor and outdoor dust	Construction staff	No – elevations below the relevant guidelines values considered to be appropriate to construction staff.	Appropriate and suitable PPE, welfare facilities and good hygiene practice. A careful watch for unidentified contamination hotspots should be maintained

Source	Pathway	Receptor	Potential Significant Pollutant Linkage	Control Measures to be implemented
		Future site occupants	YES – elevations above relevant guidelines values considered to be appropriate to end users.	Further evaluation required
	Migration into underlying groundwater	Groundwater and possible onward migration to surface water bodies	YES – elevations above relevant guidelines values considered to be appropriate to end users.	Further evaluation required
Radon gas	Soil/bedrock	Future site occupants	No	None required

8.8.2 Remedial Measures

No exceedances of contaminants were recorded in the soils encountered during the investigation in areas of proposed housing units. No remedial works are therefore considered necessary in areas of soft landscaping directly associated with the housing units (eg gardens, soft verges, planting bays etc).

There was an elevation of several PAH compounds within an area of made ground observed in TP04. The elevations related to a layer of readily identifiable, dark brown, sandy, very silty clay between 0.75-1.10m depth and thought to represent relict topsoil. The overlying cohesive made ground was not impacted with PAH.

TP04 is located in an area of proposed balancing pond so may be removed during excavations to form the pond in this area. The simplest option may be to chase out this readily identifiable layer during excavations for the pond. If this course of action is undertaken then the impacted material should be separately stockpiled from other soils for subsequent evaluation and removal from site. Check testing (ie validation) of soils following removal would be required.

It may be possible to retain the material on site depending on several factors including (a) whether the material is exposed at or close to formation during construction of the pond (b) whether the pond will be lined - leachability of PAH could be an issue if pond not lined (c) whether pond area is accessible to general public or fenced off – different assessment criteria may apply.

A careful watch for any other potential hotspots not identified during the investigation must be made. If obvious contamination is encountered further advice should be sought.

The recommendations given are subject to agreement with Local Authority and it is advised that liaison with this body is undertaken prior to any development commencing at the site.

8.8.3 Waste Disposal

It is recommended that results from the chemical analysis are forwarded to the preferred landfill operator to undertake their own waste assessment. If assessment, based on these results suggests that the material may be hazardous, then WAC analyses should be carried out for appraisal. Should assessment place materials into different waste streams, the materials should be separately stockpiled for subsequent disposal.

Registration of the site with the Environment Agency may also be required before materials are despatched. We recommend that sufficient consultation is carried out with the waste disposal facility prior to despatching any materials from site.

9. GENERAL REMARKS

The comments given in this report and the opinions expressed assume that ground conditions do not vary beyond the range revealed by this investigation. There may however, be conditions at or adjacent to the site, which have not been disclosed by the investigation and which, therefore, have not been considered in this report. Accordingly, a careful watch should be maintained during any future groundworks and the recommendations of this report reviewed as necessary.

This report has been prepared for The Client and their agents in accordance with the terms and conditions of the appointment of CGL. This report shall not be relied upon or transferred to other parties without the express written consent of CGL. Should any information contained within this report be used by any unauthorised third party it is done so at their own risk and shall not be the responsibility of CGL.

CORE GEOTECHNICS LIMITED

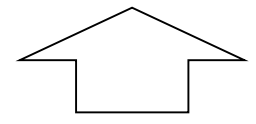
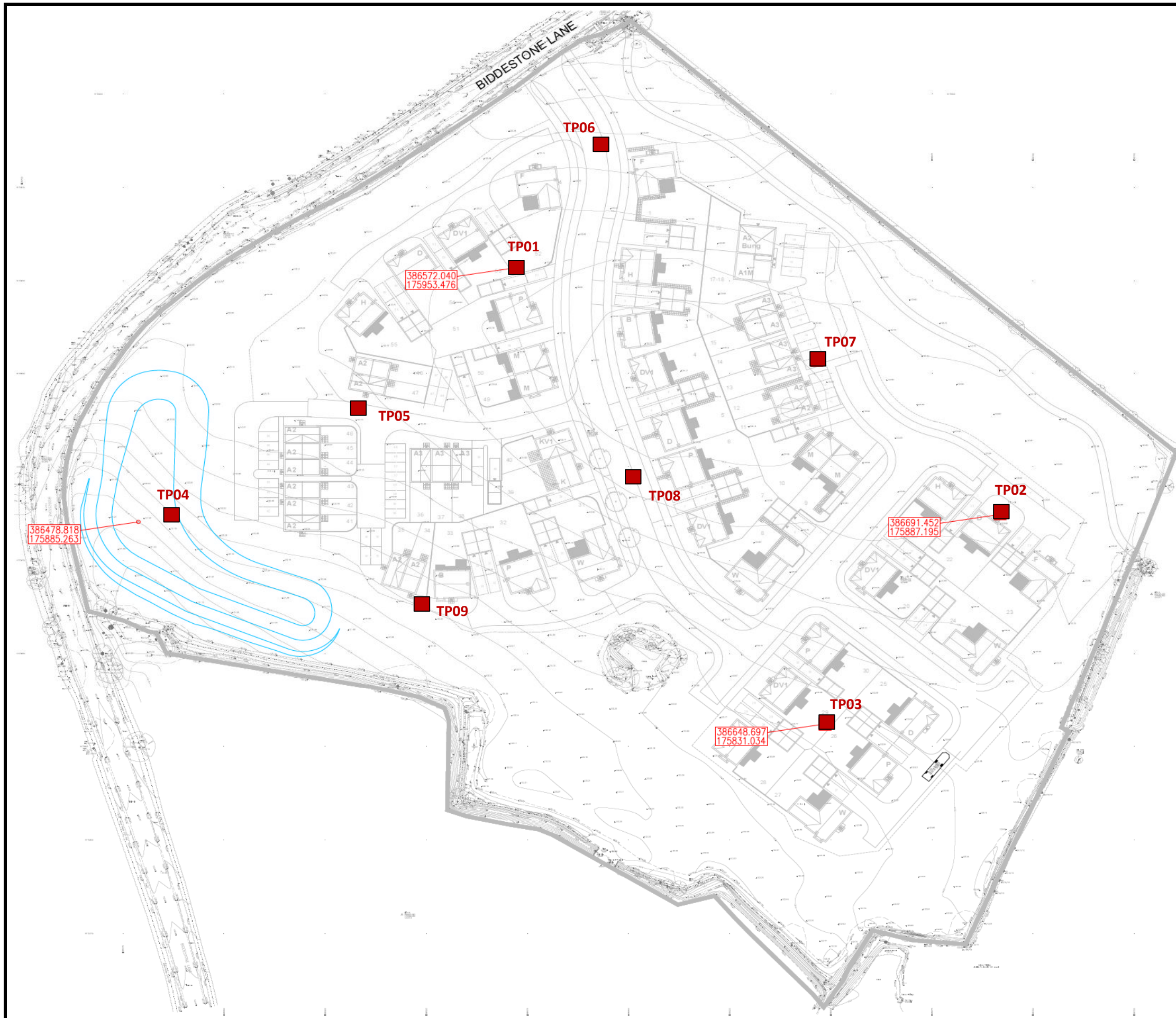


R H Smy BSc CGeol FGS
Director



P Smith BSc MSc CGeol FGS
Director

FIGURES



CORE GEOTECHNICS LIMITED

SITE PLAN



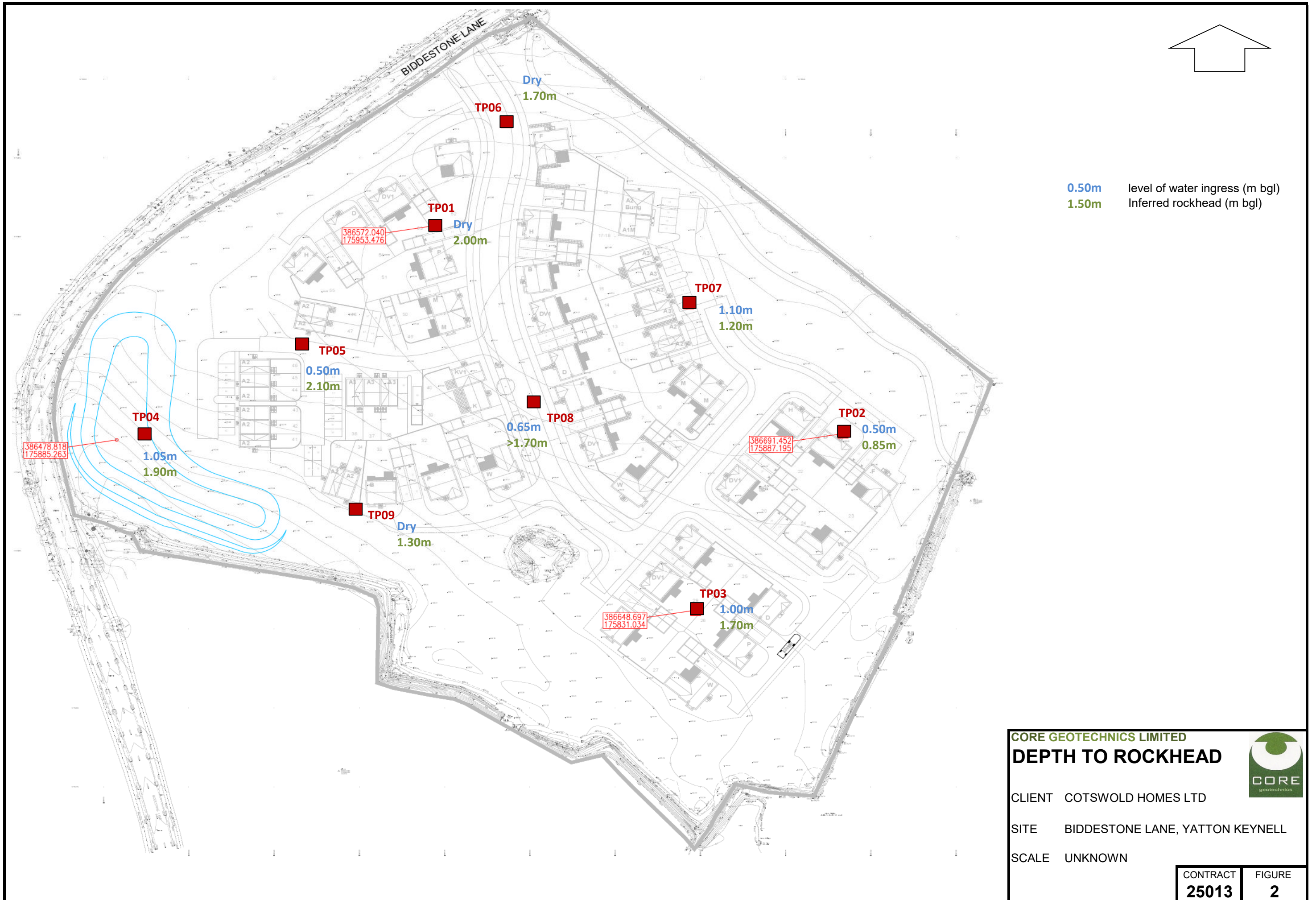
CLIENT COTSWOLD HOMES LTD

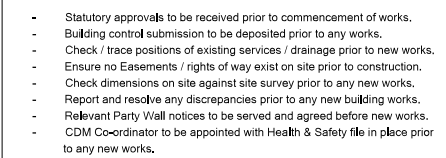
SITE BIDDESTONE LANE, YATTON KEYNELL

SCALE UNKNOWN

CONTRACT
25013

FIGURE
1





Revision:	Date:	Description:
-----------	-------	--------------

Accommodation Schedule:					
1	4b8p F Type	161m ²	30	4b8p P Type	147m ²
2	4b8p H Type	127m ²	31	4b8p W Type	179m ²
3	4b7p B Type	117m ²	32	4b8p P Type	147m ²
4	4b7p Dv1 Type	133m ²	33	4b7p B Type	117m ²
5	4b7p D Type	130m ²	34	2B4P House	67.2m ²
6	4b8p P Type	147m ²	35	2B4P House	67.2m ²
7	4b7p Dv1 Type	133m ²	36	3B5P House	79.8m ²
8	4b8p W Type	179m ²	37	3B5P House	79.8m ²
9	3b6p KV1 Type	95.8m ²	38	3B5P House	79.8m ²
10	3b6p K Type	95.8m ²	39	3b6p K Type	95.8m ²
11	2B4P House	67.2m ²	40	3b6p KV1 Type	95.8m ²
12	2B4P House	67.2m ²	41	2B4P House	67.2m ²
13	3B5P House	79.8m ²	42	2B4P House	67.2m ²
14	3B5P House	79.8m ²	43	2B4P House	67.2m ²
15	3B5P House	79.8m ²	44	2B4P House	67.2m ²
16	3B5P House	79.8m ²	45	2B4P House	67.2m ²
17	1b2p GF Maisonette	51m ²	46	2B4P House	67.2m ²
18	1b2p FF Maisonette	60m ²	47	2B4P House	67.2m ²
19	2b4p Bungalow	61m ²	48	2B4P House	67.2m ²
20	4b7p Dv1 Type	133m ²	49	3B5P M Type	97.6m ²
21	4b8p H Type	127m ²	50	3B5P M Type	97.6m ²
22	4b7p D Type	130m ²	51	4b8p P Type	147m ²
23	4b8p F Type	161m ²	52	4b8p F Type	161m ²
24	4b8p W Type	179m ²	53	4b7p Dv1 Type	133m ²
25	4b7p D Type	130m ²	54	4b7p D Type	130m ²
26	4b8p P Type	147m ²	55	4b8p H Type	127m ²
27	4b8p W Type	179m ²			
28	4b7p Dv1 Type	133m ²			
29	4b7p Dv1 Type	133m ²			

Grand total - 5982.4m² - 64,394sqft

Client:

Cotswold Homes

Drawn By:



Trower Davies
Architectural Consultants

Site Address:

Site Address:
LAND OFF BIDDESTONE LANE
YATTON KEYNELL

Drawing Title:

SITE LAYOUT

Scale:
1:500

Date drawn:

Drawn by:
BT

Project Number:
948

Drawing Number:
100

Revision:

Status:

PLANNING

APPENDIX A

EXPLORATORY HOLE DATA AND IN SITU TESTING



KEY TO EXPLORATORY HOLE LOGS

Sample Type & Symbols

D	Small disturbed sample	B	Bulk sample
G	Gas sample	W	Ground water sample
U	Undisturbed (open drive) sample	DS	Dynamic sample
C	Core run	P	Piston sample
ES	Contamination sample (soil)	EW	Contamination sample (water)
		CS	Core sub sample
	Undisturbed sample		
	Core sample		
*%	Total core recovery expressed as percentage of total core run		
*%	Solid core recovery expressed as percentage of total core run		
*%	Rock quality designation expressed as a percentage of total core run		

Test Type

SPT ↓	Standard Penetration Test
S	Standard Penetration Test – split spoon
C	Standard Penetration Test – solid cone
H	Hand Vane (kPa)
tv	Torvane (kPa)
PP	Pocket Penetrometer (unconfined compressive strength (kg/cm ²))
G	Headspace vapour readings, uncorrected peak values in ppm, using a PID.

Installation



Concrete



Bentonite seal



Granular response zone

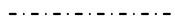


Slotted standpipe/
piezometer

Strata boundaries



Estimated boundary



Gradational boundary



Core Geotechnics Ltd
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Trial Pit No
TP01
Sheet 1 of 1

Project Name:	Proposed Development	Project No.	25013	Co-ords:	Level: mAD	Date	27/11/2024
Location:	Biddestone Lane, Yatton Keynell			Dimensions:	2.50m	Scale	1 : 25
Client:	Cotswold Homes Limited			Depth	2.00m	0.70m	Logged By RS

Water Levels	Samples & In Situ Testing			Depth (m)	Level (mAD)	Legend	Stratum Description	
	Depth (m)	No/Type	Results					
	0.10 - 0.20	ES		0.25			Brown slightly gravelly sandy silty very clayey TOPSOIL. Gravel is fine to coarse angular to sub angular limestone	0
	0.50	D	H 88				Stiff light brown mottled light grey slightly sandy slightly gravelly silty CLAY with occasional very thin limestone laminae and fossil shell fragments. Gravel is fine to coarse angular to sub angular limestone	
	0.90	D	H >140	0.95			Stiff light grey mottled light brown very closely fissured slightly sandy CLAY with occasional very thin limestone laminae and fossil shell fragments.	1
	1.60	D		2.00			1.80 becomes shaly with many very thin limestone laminae	2
							Trial Pit completed at 2.00m.	
				{4.00}				3
								4

Remarks:

EQUIPMENT: 7 tonne excavator equipped with 0.60m wide toothless bucket
METHOD: machine dug. Effective refusal to excavation at 2.00m on intact limestone
GROUNDWATER: None encountered.
Trial pit terminated at 2.00m for full scale soakaway test
BACKFILL: On completion trial pit backfilled with arisings.

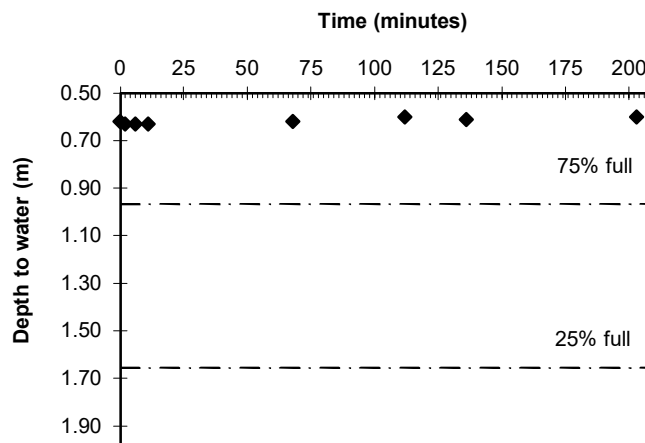
CORE GEOTECHNICS LIMITED
SOAKAWAY TEST



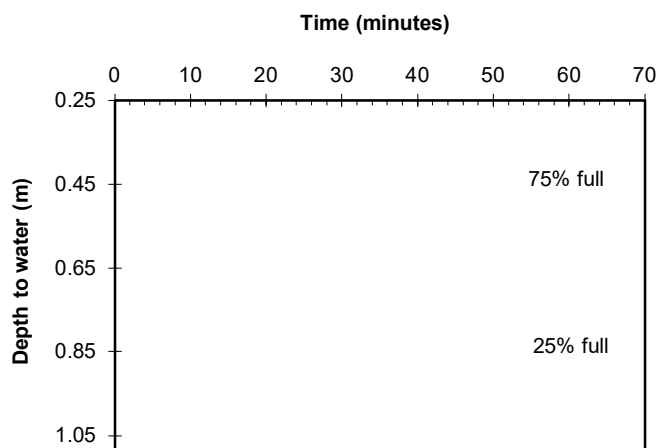
CLIENT COTSWOLD HOMES LIMITED
SITE BIDDESTONE LANE, YATTON KEYNELL
DATE 27/11/2024

TRIAL PIT **TP01**

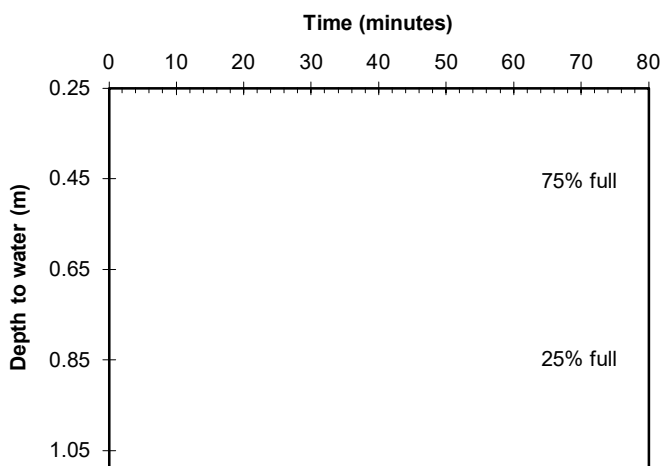
TEST 1
LENGTH 2.50 m
BREADTH 0.70 m
DEPTH 2.00 m
WATER LEVEL dry m
FILL LEVEL 0.62 m
75% Eff Depth 0.97 m
25% Eff Depth 1.66 m
 V_{p75-25} 1.2075 m³
 a_{p50} 6.1660 m²
 t_{p75-25} ** secs
soil infiltration rate, f ** ms⁻¹
**INSUFFICIENT FALL TO DETERMINE RATE



TEST 2
LENGTH m
BREADTH m
DEPTH m
WATER LEVEL m
FILL LEVEL m
75% Eff Depth m
25% Eff Depth m
 V_{p75-25} m³
 a_{p50} m²
 t_{p75-25} secs
soil infiltration rate, f ms⁻¹



TEST 3
LENGTH m
BREADTH m
DEPTH m
WATER LEVEL m
FILL LEVEL m
75% Eff Depth m
25% Eff Depth m
 V_{p75-25} m³
 a_{p50} m²
 t_{p75-25} secs
soil infiltration rate, f ms⁻¹



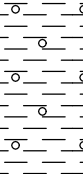
Remarks Test carried out in accordance with BRE DG 365 (2016).

CONTRACT
25013

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RS



Project Name:	Proposed Development	Project No.	25013	Co-ords:	Level: mAD	Date	27/11/2024
Location:	Biddestone Lane, Yatton Keynell	Dimensions:	2.40m	Depth	1.10m	Scale	1 : 25
Client:	Cotswold Homes Limited					Logged By	RS

Water Levels	Samples & In Situ Testing			Depth (m)	Level (mAD)	Legend	Stratum Description	
	Depth (m)	No/Type	Results					
	0.10 - 0.20	ES		0.25			Brown slightly gravelly sandy silty very clayey TOPSOIL. Gravel is fine to coarse angular to sub angular limestone	0
	0.50	D	H 85	0.85			Stiff light brown and orange brown silty sandy slightly gravelly CLAY. Gravel is fine to coarse angular to sub angular limestone	
				1.10			Weak to medium strong thinly sub horizontally laminated becoming thinly bedded shelly crystalline LIMESTONE with very close to closely spaced discontinuities	1
							Trial Pit completed at 1.10m.	
								2
								3
								4

Remarks:

EQUIPMENT: 7 tonne excavator equipped with 0.60m wide toothless bucket
METHOD: machine dug. Effective refusal to excavation at 1.10m on intact limestone
GROUNDWATER: Continuous slight seepages below 0.50m. Water standing at 1.00m on completion
Trial pit terminated at 1.10m for full scale soakaway test
BACKFILL: On completion trial pit backfilled with arisings.

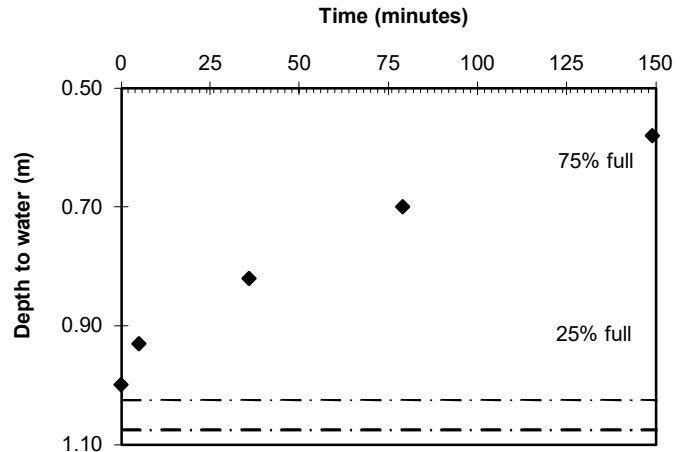
CORE GEOTECHNICS LIMITED
SOAKAWAY TEST



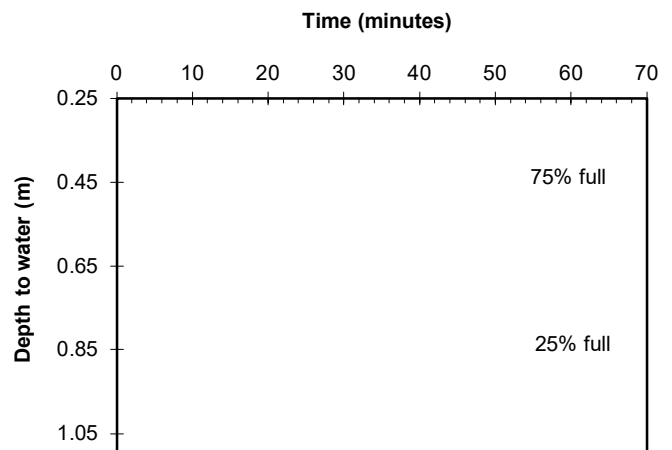
CLIENT COTSWOLD HOMES LIMITED
SITE BIDDESTONE LANE, YATTON KEYNELL
DATE 27/11/2024

TRIAL PIT **TP02**

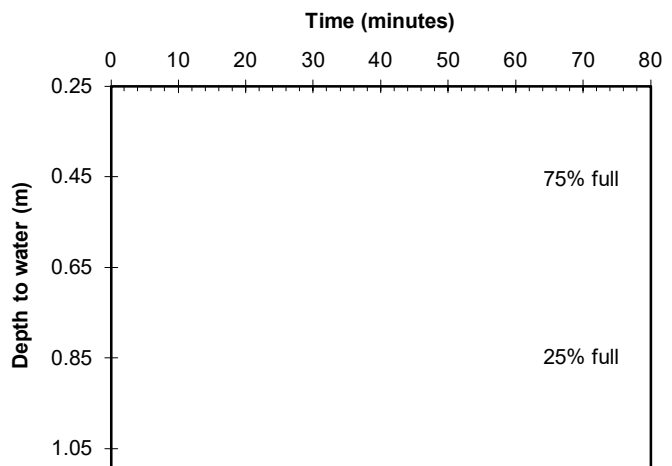
TEST 1
LENGTH 2.40 m
BREADTH 0.70 m
DEPTH 1.10 m
WATER LEVEL 0.50 m
FILL LEVEL 1.00 m
75% Eff Depth 1.03 m
25% Eff Depth 1.08 m
 V_{p75-25} 0.0840 m³
 a_{p50} 1.9900 m²
 t_{p75-25} ** secs
soil infiltration rate, f ** ms⁻¹
**INSUFFICIENT FALL TO DETERMINE RATE



TEST 2
LENGTH m
BREADTH m
DEPTH m
WATER LEVEL m
FILL LEVEL m
75% Eff Depth m
25% Eff Depth m
 V_{p75-25} m³
 a_{p50} m²
 t_{p75-25} secs
soil infiltration rate, f ms⁻¹



TEST 3
LENGTH m
BREADTH m
DEPTH m
WATER LEVEL m
FILL LEVEL m
75% Eff Depth m
25% Eff Depth m
 V_{p75-25} m³
 a_{p50} m²
 t_{p75-25} secs
soil infiltration rate, f ms⁻¹



Remarks Test carried out in accordance with BRE DG 365 (2016).

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25013

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RS



Project Name:	Proposed Development	Project No.	25013	Co-ords:	Level: mAD	Date	27/11/2024
Location:	Biddestone Lane, Yatton Keynell	Dimensions:	2.40m	Depth	1.70m	Scale	1 : 25
Client:	Cotswold Homes Limited					Logged By	RS

Water Levels	Samples & In Situ Testing			Depth (m)	Level (mAD)	Legend	Stratum Description	
	Depth (m)	No/Type	Results					
	0.10 - 0.20	ES		0.25			Brown slightly gravelly sandy silty very clayey TOPSOIL. Gravel is fine to coarse angular to sub angular limestone	0
	0.50	D	H 96				Stiff light brown mottled light grey and orange brown slightly sandy slightly gravelly silty CLAY with occasional very thin limestone laminae and fossil shell fragments. Gravel is fine to coarse angular to sub angular limestone	
	1.00	D	H 110	0.95			Stiff light grey mottled light brown very closely fissured slightly sandy CLAY with occasional very thin limestone laminae and fossil shell fragments.	1
	1.50	D		1.70			1.50 with some increasing to many limestone laminae	
							Trial Pit completed at 1.70m.	2
								3
								4
				{4.00}				

Remarks:
EQUIPMENT: 7 tonne excavator equipped with 0.60m wide toothless bucket
METHOD: machine dug. Effective refusal to excavation at 1.70m on intact limestone
GROUNDWATER: Slight continuous seepage below 1.00m
Trial pit terminated at 1.70m for full scale soakaway test
BACKFILL: On completion trial pit backfilled with arisings.

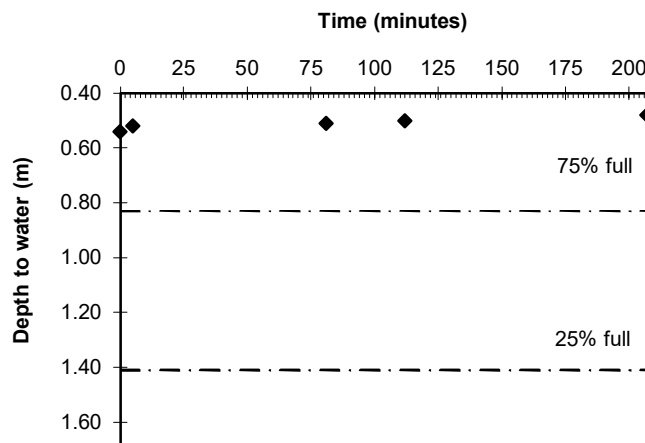
CORE GEOTECHNICS LIMITED
SOAKAWAY TEST



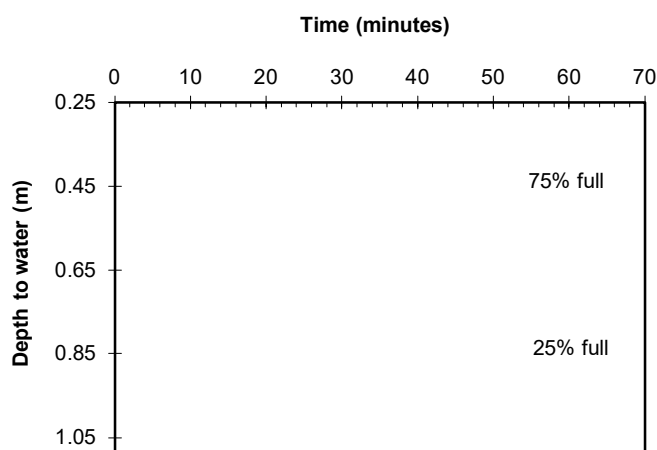
CLIENT COTSWOLD HOMES LIMITED
SITE BIDDESTONE LANE, YATTON KEYNELL
DATE 27/11/2024

TRIAL PIT **TP03**

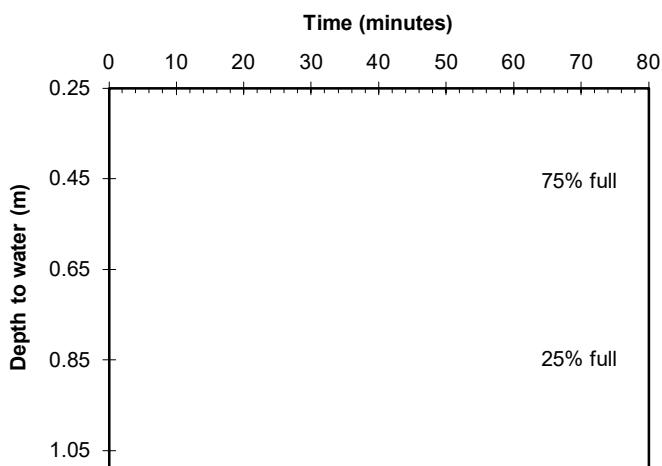
TEST 1
LENGTH 2.40 m
BREADTH 0.65 m
DEPTH 1.70 m
WATER LEVEL dry m
FILL LEVEL 0.54 m
75% Eff Depth 0.83 m
25% Eff Depth 1.41 m
 V_{p75-25} 0.9048 m³
 a_{p50} 5.0980 m²
 t_{p75-25} ** secs
soil infiltration rate, f ** ms⁻¹
**INSUFFICIENT FALL TO DETERMINE RATE



TEST 2
LENGTH m
BREADTH m
DEPTH m
WATER LEVEL m
FILL LEVEL m
75% Eff Depth m
25% Eff Depth m
 V_{p75-25} m³
 a_{p50} m²
 t_{p75-25} secs
soil infiltration rate, f ms⁻¹



TEST 3
LENGTH m
BREADTH m
DEPTH m
WATER LEVEL m
FILL LEVEL m
75% Eff Depth m
25% Eff Depth m
 V_{p75-25} m³
 a_{p50} m²
 t_{p75-25} secs
soil infiltration rate, f ms⁻¹



Remarks Test carried out in accordance with BRE DG 365 (2016).

CONTRACT
25013

CHECKED
RS



Project Name:	Proposed Development	Project No.	25013	Co-ords:	Level: mAD	Date	27/11/2024
Location:	Biddestone Lane, Yatton Keynell			Dimensions:	2.00m	Scale	1 : 25
Client:	Cotswold Homes Limited			Depth	1.90m	0.60m	Logged By RS

Water Levels	Samples & In Situ Testing			Depth (m)	Level (mAD)	Legend	Stratum Description	
	Depth (m)	No/Type	Results					
	0.50	D ES					MADE GROUND: Firm light grey occasionally mottled brown and orange brown very closely fissured CLAY	0
	0.80 - 1.00	ES		0.75			MADE GROUND: Dark brown sandy very silty CLAY (Relict Topsoil)	1
	1.50	D		1.10			Firm brown slightly sandy silty gravelly CLAY. Gravel is fine to coarse angular to sub angular limestone with some tabular cobbles	
				1.90			Trial Pit completed at 1.90m.	2
								3
								4
				{4.00}				

Remarks:
EQUIPMENT: 7 tonne excavator equipped with 0.60m wide toothless bucket
METHOD: machine dug. Effective refusal to excavation at 1.90m on intact limestone
GROUNDWATER: Slight continuous seepage below 1.05m, strong ingress below 1.50m
Trial pit terminated at 1.90m for full scale soakaway test
BACKFILL: On completion trial pit backfilled with arisings.

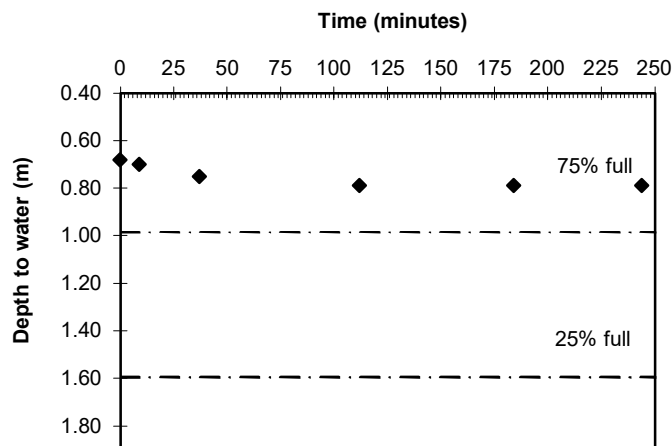
CORE GEOTECHNICS LIMITED
SOAKAWAY TEST



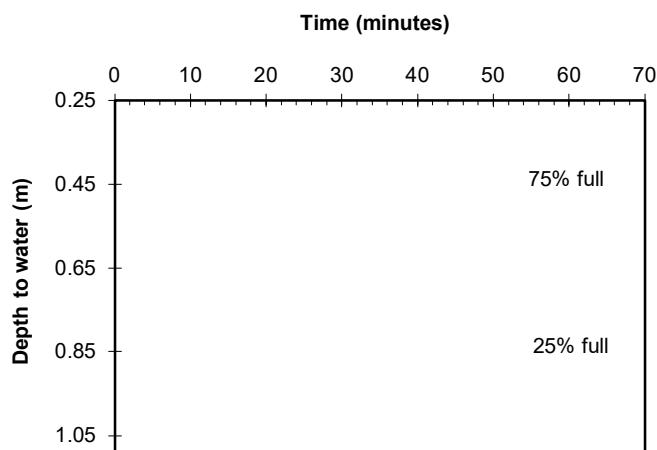
CLIENT COTSWOLD HOMES LIMITED
SITE BIDDESTONE LANE, YATTON KEYNELL
DATE 27/11/2024

TRIAL PIT **TP04**

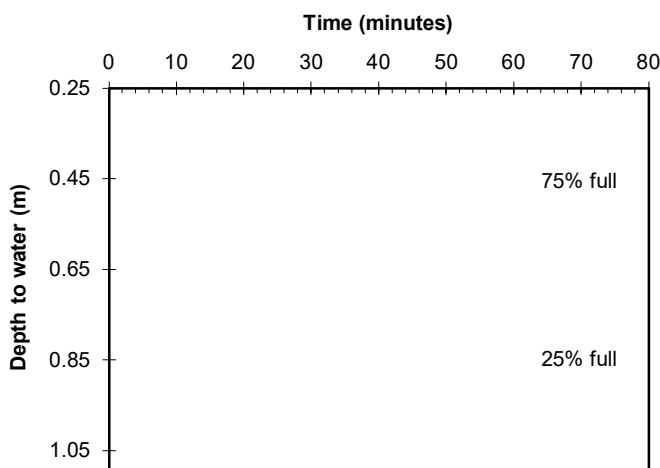
TEST 1	
LENGTH	2.00 m
BREADTH	0.60 m
DEPTH	1.90 m
WATER LEVEL	dry m
FILL LEVEL	0.68 m
75% Eff Depth	0.99 m
25% Eff Depth	1.60 m
V_{p75-25}	0.7320 m ³
a_{p50}	4.3720 m ²
t_{p75-25}	** secs
soil infiltration rate, f ** ms ⁻¹	
**INSUFFICIENT FALL TO DETERMINE RATE	



TEST 2	
LENGTH	m
BREADTH	m
DEPTH	m
WATER LEVEL	m
FILL LEVEL	m
75% Eff Depth	m
25% Eff Depth	m
V_{p75-25}	m ³
a_{p50}	m ²
t_{p75-25}	secs
soil infiltration rate, f ms ⁻¹	



TEST 3	
LENGTH	m
BREADTH	m
DEPTH	m
WATER LEVEL	m
FILL LEVEL	m
75% Eff Depth	m
25% Eff Depth	m
V_{p75-25}	m ³
a_{p50}	m ²
t_{p75-25}	secs
soil infiltration rate, f ms ⁻¹	



Remarks Test carried out in accordance with BRE DG 365 (2016).

CONTRACT
25013

CHECKED
RS



Core Geotechnics Ltd
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Offices in Ledbury & Cheltenham
email: mail@coregeotechnics.co.uk

Trial Pit No
TP05
Sheet 1 of 1

Project Name:	Proposed Development	Project No.	25013	Co-ords:	Level: mAD	Date	27/11/2024
Location:	Biddestone Lane, Yatton Keynell			Dimensions:	2.40m	Scale	1 : 25
Client:	Cotswold Homes Limited			Depth	2.10m	0.70m	Logged By RS

Water Levels	Samples & In Situ Testing			Depth (m)	Level (mAD)	Legend	Stratum Description	
	Depth (m)	No/Type	Results					
				0.25			Brown slightly gravelly sandy silty very clayey TOPSOIL. Gravel is fine to coarse angular to sub angular limestone	0
	0.60		H 115	0.55			Firm orange brown slightly gravelly silty sandy CLAY. Gravel is fine to coarse angular to sub angular limestone	
	1.00		H 100				Stiff light grey occasionally mottled brown and orange brown slightly sandy silty CLAY with some very thin limestone laminae and fossil shell fragments.	1
				2.10			1.70 with some to many limestone laminae	2
							Trial Pit completed at 2.10m.	
				{4.00}				3
								4

Remarks:

EQUIPMENT: 7 tonne excavator equipped with 0.60m wide toothless bucket
METHOD: machine dug. Effective refusal to excavation at 2.10m on intact limestone
GROUNDWATER: Slight continuous seepage below 0.50m
BACKFILL: On completion trial pit backfilled with arisings.



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Trial Pit No
TP06
Sheet 1 of 1

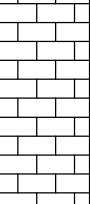
Project Name:	Proposed Development	Project No.	25013	Co-ords:	Level: mAD	Date	27/11/2024
Location:	Biddestone Lane, Yatton Keynell			Dimensions:	2.40m	Scale	1 : 25
Client:	Cotswold Homes Limited			Depth	1.70m	0.70m	Logged By RS

Water Levels	Samples & In Situ Testing			Depth (m)	Level (mAD)	Legend	Stratum Description	
	Depth (m)	No/Type	Results					
	0.50		H 90	0.25			Brown slightly gravelly sandy silty very clayey TOPSOIL. Gravel is fine to coarse angular to sub angular limestone	0
							Stiff light brown slightly sandy silty CLAY with occasional very thin limestone laminae and fossil shell fragments.	
				1.70			1.40 with some to many very thin limestone laminae	1
				{4.00}			Trial Pit completed at 1.70m.	2
								3
								4

Remarks:
EQUIPMENT: 7 tonne excavator equipped with 0.60m wide toothless bucket
METHOD: machine dug. Effective refusal to excavation at 1.70m on intact limestone
GROUNDWATER: None encountered
BACKFILL: On completion trial pit backfilled with arisings.



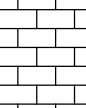
Project Name:	Proposed Development	Project No.	25013	Co-ords:	Level: mAD	Date	27/11/2024
Location:	Biddestone Lane, Yatton Keynell	Dimensions:	2.40m	Depth	1.20m	Scale	1 : 25
Client:	Cotswold Homes Limited					Logged By	RS

Water Levels	Samples & In Situ Testing			Depth (m)	Level (mAD)	Legend	Stratum Description	
	Depth (m)	No/Type	Results					
				0.25			Brown slightly gravelly sandy silty very clayey TOPSOIL. Gravel is fine to coarse angular to sub angular limestone	0
				1.00			Weak to medium strong grey discoloured yellow brown very thinly sub horizontally bedded shelly crystalline LIMESTONE with very close to closely spaced random discontinuities open 10-30mm infilled with clay	
				1.20			Stiff light grey mottled occasionally mottled light brown and orange brown very closely fissured slightly sandy silty CLAY	1
				{4.00}			Trial Pit completed at 1.20m.	2 3 4

Remarks:
EQUIPMENT: 7 tonne excavator equipped with 0.60m wide toothless bucket
METHOD: machine dug. Effective refusal to excavation at 1.20m on intact limestone
GROUNDWATER: Continuous slight seepages below 1.10m.
BACKFILL: On completion trial pit backfilled with arisings.



Project Name:	Proposed Development	Project No.	25013	Co-ords:	Level: mAD	Date	27/11/2024
Location:	Biddestone Lane, Yatton Keynell	Dimensions:	2.00m	Depth	1.70m	Scale	1 : 25
Client:	Cotswold Homes Limited					Logged By	RS

Water Levels	Samples & In Situ Testing			Depth (m)	Level (mAD)	Legend	Stratum Description	
	Depth (m)	No/Type	Results					
	0.10 - 0.20	ES		0.25			Brown slightly gravelly sandy silty very clayey TOPSOIL. Gravel is fine to coarse angular to sub angular limestone	0
				0.65			Medium strong orange brown very thinly sub horizontally bedded LIMESTONE with very close to closely spaced random discontinuities	
	0.80	D	H >140				Very stiff light grey mottled occasionally mottled light brown and orange brown very closely fissured slightly sandy silty CLAY	1
	1.50	D		1.70				
							Trial Pit completed at 1.70m.	2
								3
								4

Remarks:

EQUIPMENT: 7 tonne excavator equipped with 0.60m wide toothless bucket
METHOD: machine dug.
GROUNDWATER: Slight continuous seepage below 0.65m
Trial pit terminated at 1.70m for full scale soakaway test
BACKFILL: On completion trial pit backfilled with arisings.

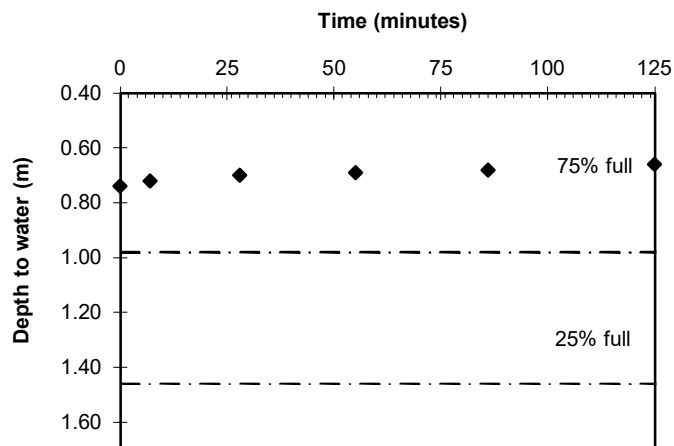
CORE GEOTECHNICS LIMITED
SOAKAWAY TEST



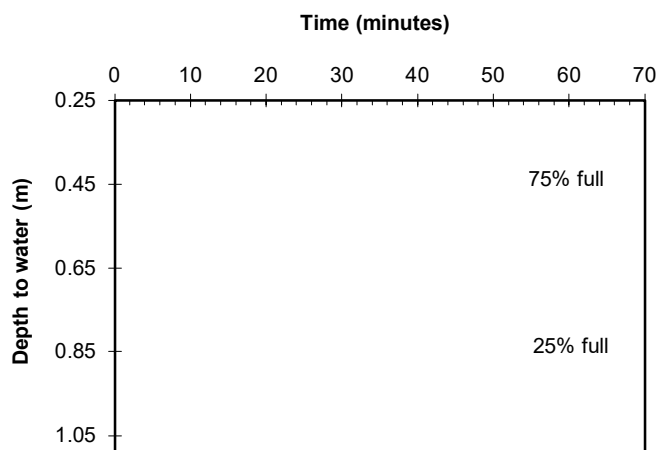
CLIENT COTSWOLD HOMES LIMITED
SITE BIDDESTONE LANE, YATTON KEYNELL
DATE 27/11/2024

TRIAL PIT TP08

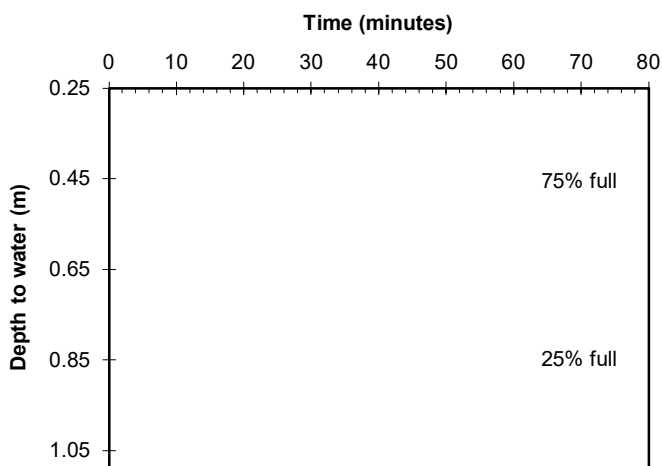
TEST 1
LENGTH 2.60 m
BREADTH 0.65 m
DEPTH 1.70 m
WATER LEVEL dry m
FILL LEVEL 0.74 m
75% Eff Depth 0.98 m
25% Eff Depth 1.46 m
 V_{p75-25} 0.8112 m³
 a_{p50} 4.8100 m²
 t_{p75-25} ** secs
soil infiltration rate, f ** ms⁻¹
**INSUFFICIENT FALL TO DETERMINE RATE



TEST 2
LENGTH m
BREADTH m
DEPTH m
WATER LEVEL m
FILL LEVEL m
75% Eff Depth m
25% Eff Depth m
 V_{p75-25} m³
 a_{p50} m²
 t_{p75-25} secs
soil infiltration rate, f ms⁻¹



TEST 3
LENGTH m
BREADTH m
DEPTH m
WATER LEVEL m
FILL LEVEL m
75% Eff Depth m
25% Eff Depth m
 V_{p75-25} m³
 a_{p50} m²
 t_{p75-25} secs
soil infiltration rate, f ms⁻¹



Remarks Test carried out in accordance with BRE DG 365 (2016).

CONTRACT
25013

CHECKED
RS



Project Name:	Proposed Development	Project No.	25013	Co-ords:	Level: mAD	Date	27/11/2024
Location:	Biddestone Lane, Yatton Keynell			Dimensions:	2.40m	Scale	1 : 25
Client:	Cotswold Homes Limited			Depth	1.30m	0.70m	Logged By RS

Water Levels	Samples & In Situ Testing			Depth (m)	Level (mAD)	Legend	Stratum Description	
	Depth (m)	No/Type	Results					
				0.25			Brown slightly gravelly sandy silty very clayey TOPSOIL. Gravel is fine to coarse angular to sub angular limestone	0
	0.50		H 90	0.45			Firm light brown slightly gravelly slightly sandy silty CLAY. Gravel is fine to coarse angular to sub angular limestone	
	1.00		H >140	1.30			Stiff light grey occasionally mottled brown and orange brown very closely fissured slightly sandy silty CLAY with occasional very thin limestone laminae and fossil shell fragments.	1
							Trial Pit completed at 1.30m.	
								2
								3
								4

Remarks:
EQUIPMENT: 7 tonne excavator equipped with 0.60m wide toothless bucket
METHOD: machine dug. Effective refusal to excavation at 1.30m on intact limestone
GROUNDWATER: None encountered
BACKFILL: On completion trial pit backfilled with arisings.

APPENDIX B

GEOTECHNICAL LABORATORY TESTING RESULTS



CORE GEOTECHNICS LIMITED
PO Box 1392
Cheltenham
Gloucestershire
GL50 9LX

For the attention of Richard Smy

Version No. 1
Reason for update N/A
Page No. 1 of 8
Date of Issue 09/01/2025

TEST REPORT

PROJECT/SITE	YATTON KEYNELL	Samples received	27/11/2024
GEL REPORT NUMBER	38447	Schedule received	28/11/2024
Your ref/PO:	25013	Testing commenced	11/12/2024
Test report refers to	Schedule 001	Status	Final

SUMMARY OF RESULTS ATTACHED

TEST METHOD & DESCRIPTION (S) denotes testing was subcontracted	QUANTITY	ACCREDITED TEST
BS EN ISO 17892-1: 2014:5, Water Content	6	YES
BS EN ISO 17892-12:2018, Liquid & Plastic Limits	6	YES
BRE SD1 Reduced Suite: pH, Sulphate - water and acid soluble, sulphur	4	YES/NO

General Remarks

This report may not be partially reproduced without written permission from this laboratory.
The results reported relate to samples received in the laboratory and the items tested.

Geotechnical Engineering Ltd

Centurion House
Olympus Park, Quedgeley
Gloucester GL2 4NF

www.geoeng.co.uk
geotech@geoeng.co.uk
TEL: 01452 527743

Approved Signatories:

W Jones (Laboratory Manager) J Hanson (Director)
T Best (Deputy Laboratory Manager) N Parry (Director)

LIQUID AND PLASTIC LIMITS

BS EN ISO 17892-12:2018



CLIENT CORE GEOTECHNICS

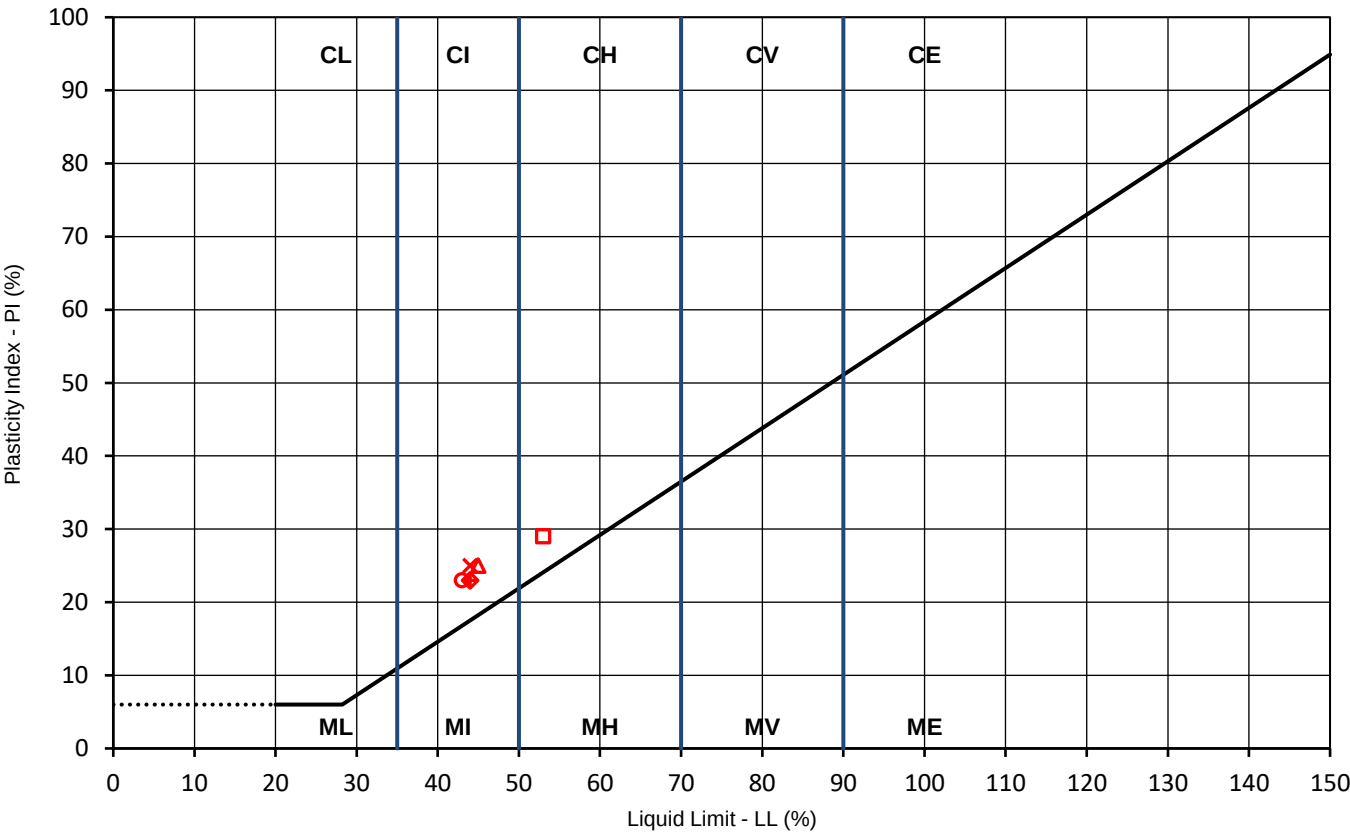
SITE YATTON KEYNELL

borehole /trial pit no.	sample		specimen depth (m)	natural water content (%)	specimen preparation and test method	fraction >0.425 mm (%)	liquid limit (%)	plastic limit (%)	plasticity index (%)	description and remarks	
	no./type	depth (m)									
TP01	D	0.50	0.50	24.2	BXE	22	53	24	29	Brown mottled orange slightly sandy slightly gravelly CLAY with rare shell fragments	
TP01	D	1.60	1.60	20.4	BXE	18	44	21	23	Orangish brown and grey slightly sandy slightly gravelly CLAY	
TP03	D	1.00	1.00	23.3	BXE	22	45	20	25	Brown mottled grey slightly sandy slightly gravelly CLAY	
TP04	D	0.50	0.50	22.4	BXE	6	44	19	25	Brown mottled grey and orange slightly gravelly slightly sandy CLAY	
TP08	D	0.80	0.80	21.5	BXE	19	44	21	23	Brown mottled orange and grey slightly sandy slightly gravelly CLAY	
TP08	D	1.50	1.50	19.7	BXE	8	43	20	23	Brown and grey slightly sandy slightly gravelly CLAY	
general remarks natural water content determined in accordance with BS EN ISO 17892 - 1 : 2014 (unless specified) NP denotes non plastic # denotes sample tested is smaller than that which is recommended in accordance with BS EN ISO 17892 or BS1377											
specimen preparation A - as received B - washed on 0.425mm sieve C - air dried							test method X - cone penetrometer (4 point) Y - cone penetrometer (1 point) Z - casagrande apparatus			CONTRACT 38447	CHECKED TB



CLIENT CORE GEOTECHNICS

SITE YATTON KEYNELL



BH/TP No.		depth (m)	LL	PL	PI	remarks
□	TP01	0.50	53	24	29	
◇	TP01	1.60	44	21	23	
△	TP03	1.00	45	20	25	
✕	TP04	0.50	44	19	25	
✚	TP08	0.80	44	21	23	
○	TP08	1.50	43	20	23	

CONTRACT	CHECKED
38447	TB



Final Report

Report No.: 24-41058-1

Initial Date of Issue: 19-Dec-2024

Re-Issue Details:

Client Geotechnical Engineering Ltd

Client Address: Centurion House, Olympus Park
Quedgeley
Gloucester
Gloucestershire
GL2 4NF

Contact(s): GEL
Tom Best

Project 38447 Yatton Keynell

Quotation No.: **Date Received:** 13-Dec-2024

Order No.: 10206 **Date Instructed:** 13-Dec-2024

No. of Samples: 4

Turnaround (Wkdays): 5 **Results Due:** 19-Dec-2024

Date Approved: 19-Dec-2024

Approved By:

Details: David Smith, Technical Director

For details about application of accreditation to specific matrix types, please refer to the Table at the back of this report

Results - Soil

Project: 38447 Yatton Keynell

Client: Geotechnical Engineering Ltd		Chemtest Job No.:				24-41058	24-41058	24-41058	24-41058
Quotation No.:		Chemtest Sample ID.:				1909568	1909569	1909570	1909571
		Sample Location:				TP01	TP03	TP03	TP08
		Sample Type:				SOIL	SOIL	SOIL	SOIL
		Top Depth (m):				0.90	0.50	1.50	0.80
		Date Sampled:				11-Dec-2024	11-Dec-2024	11-Dec-2024	11-Dec-2024
		Time Sampled:				10:00	10:00	10:00	10:00
Determinand	HWOL Code	Accred.	SOP	Units	LOD				
Moisture		N	2030	%	0.020	17	16	18	16
Soil Colour		N	2040		N/A	Brown	Brown	Brown	Brown
Other Material		N	2040		N/A	Stones	Stones	Stones	Stones
Soil Texture		N	2040		N/A	Clay	Clay	Clay	Clay
pH (2.5:1) at 20C		N	2010		4.0	8.1	8.1	8.0	8.0
Sulphate (2:1 Water Soluble) as SO4		M	2120	g/l	0.010	< 0.010	< 0.010	< 0.010	< 0.010
Total Sulphur		U	2175	%	0.010	0.050	0.040	0.070	0.040
Sulphate (Acid Soluble)		U	2430	%	0.010	0.19	0.12	0.22	0.15

Test Methods

SOP	Title	Parameters included	Method summary	Water Accred.
2010	pH Value of Soils	pH at 20°C	pH Meter	
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <30°C.	
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930	
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES	
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.	
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.	

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

This report shall not be reproduced except in full, and only with the prior approval of the laboratory.

Any comments or interpretations are outside the scope of UKAS accreditation.

The Laboratory is not accredited for any sampling activities and reported results relate to the samples 'as received' at the laboratory.

Uncertainty of measurement for the determinands tested are available upon request .

None of the results in this report have been recovery corrected.

All results are expressed on a dry weight basis.

The following tests were analysed on samples 'as received' and the results subsequently corrected to a dry weight basis EPH, VPH, TPH, BTEX, VOCs, SVOCs, PCBs, Phenols.

For all other tests the samples were dried at $\leq 30^{\circ}\text{C}$ prior to analysis.

All Asbestos testing is performed at the indicated laboratory .

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1.

Sample Deviation Codes

- A - Date of sampling not supplied
- B - Sample age exceeds stability time (sampling to extraction)
- C - Sample not received in appropriate containers
- D - Broken Container
- E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt.

All water samples will be retained for 14 days from the date of receipt.

Charges may apply to extended sample storage.

Water Sample Category Key for Accreditation

- DW - Drinking Water
- GW - Ground Water
- LE - Land Leachate
- NA - Not Applicable

Report Information

PL - Prepared Leachate
PW - Processed Water
RE - Recreational Water
SA - Saline Water
SW - Surface Water
TE - Treated Effluent
TS - Treated Sewage
UL - Unspecified Liquid

Clean Up Codes

NC - No Clean Up
MC - Mathematical Clean Up
FC - Florisil Clean Up

HWOL Acronym System

HS - Headspace analysis
EH - Extractable hydrocarbons – i.e. everything extracted by the solvent
CU - Clean-up – e.g. by Florisil, silica gel
1D - GC – Single coil gas chromatography
Total - Aliphatics & Aromatics
AL - Aliphatics only
AR - Aromatic only
2D - GC-GC – Double coil gas chromatography
#1 - EH_2D_Total but with humics mathematically subtracted
#2 - EH_2D_Total but with fatty acids mathematically subtracted
+ - Operator to indicate cumulative e.g. EH+EH_Total or EH_CU+HS_Total

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

APPENDIX C

CONTAMINATION TESTING RESULTS



Certificate of Analysis

Certificate Number 24-26109

Issued: 09-Dec-24

Client Core Geotechnics Ltd
PO Box 1392
Cheltenham
Oakfield Close
Gloucestershire
GL50 9LX

Our Reference 24-26109

Client Reference ~ 25013

Order No ~ (not supplied)

Contract Title ~ Yatton Keynell

Description 6 Soil samples.

Date Received 02-Dec-24

Date Started 02-Dec-24

Date Completed 09-Dec-24

Test Procedures Identified by prefix DETSn (details on request).

Notes Opinions and interpretations are outside the laboratory's scope of ISO 17025 accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

Kirk Bridgewood
General Manager



Normec DETS Limited

Unit 2, Park Road Industrial Estate South, Consett, Co Durham, DH8 5PY

Symbol key at end of report Tel: 01207 582333 • email: info@dets.co.uk • www.dets.co.uk

Page 1 of 6

Summary of Chemical Analysis

Soil Samples

Our Ref 24-26109

Client Ref ~ 25013

Contract Title ~ Yatton Keynell

Lab No	2433204	2433205	2433206	2433207	2433208	2433209
Sample ID ~	TP01	TP02	TP03	TP04	TP04	TP08
Depth ~	0.10-0.20	0.10-0.20	0.10-0.20	0.50	0.80-1.00	0.10-0.20
Other ID ~						
Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date ~	28/11/2024	28/11/2024	28/11/2024	28/11/2024	28/11/2024	28/11/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg	16	6.0	17	5.3	7.8	6.1
Cadmium	DETSC 2301#	0.1	mg/kg	0.3	0.1	0.4	< 0.1	0.3	0.3
Chromium	DETSC 2301#	0.15	mg/kg	27	10	32	17	21	22
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	20	12	21	15	32	24
Lead	DETSC 2301#	0.3	mg/kg	32	13	36	12	62	27
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05	0.28	0.15	< 0.05
Nickel	DETSC 2301#	1	mg/kg	26	9.0	25	19	18	20
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Vanadium	DETSC 2301#	0.8	mg/kg	45	18	57	21	41	46
Zinc	DETSC 2301#	1	mg/kg	73	34	78	37	85	66
Inorganics									
pH	DETSC 2008#		pH	7.9	7.7	8.1	7.9	8.3	8.4
Cyanide, Total	DETSC 2130#	0.1	mg/kg	0.2	0.2	0.2	< 0.1	0.3	0.2
Sulphate Aqueous Extract as SO4 (2:1)	DETSC 2076#	10	mg/l					17	
PAHs									
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	0.2	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	0.3	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	0.2	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	4.7	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	1.3	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	12	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	11	< 0.1
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	6.5	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	7.7	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	5.6	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	3.3	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	6.9	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	5.8	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	0.9	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	4.6	< 0.1
PAH 16 Total	DETSC 3301	1.6	mg/kg	< 1.6	< 1.6	< 1.6	< 1.6	71	< 1.6
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	0.8	0.9	0.8	< 0.3	0.5	0.7
OCPs									
alpha-BHC	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1			
gamma-BHC (Lindane)	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1			
beta-BHC	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1			
delta-BHC	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1			
Heptachlor	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1			

Summary of Chemical Analysis

Soil Samples

Our Ref 24-26109

Client Ref ~ 25013

Contract Title ~ Yatton Keynell

Lab No	2433204	2433205	2433206	2433207	2433208	2433209
Sample ID ~	TP01	TP02	TP03	TP04	TP04	TP08
Depth ~	0.10-0.20	0.10-0.20	0.10-0.20	0.50	0.80-1.00	0.10-0.20
Other ID ~						
Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date ~	28/11/2024	28/11/2024	28/11/2024	28/11/2024	28/11/2024	28/11/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units					
Aldrin	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1		
Heptachlor epoxide	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1		
gamma-Chlordane	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1		
Endosulphan I & Alpha-chlorodane	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1		
4,4-DDE	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1		
Dieldrin	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1		
Endrin	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1		
Endosulphan II & 4,4-DDD	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1		
Endrin aldehyde	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1		
4,4-DDT	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1		
Endosulphan sulphate	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1		
Methoxychlor	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1		
Endrin ketone	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1		
OPPs								
Dichlorvos	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1		
Mevinphos	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1		
Demeton-O	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1		
Ethoprop	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1		
Naled	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1		
Phorate	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1		
Demeton-S	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1		
Diazinon	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1		
Disulfoton	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1		
Methylparathion	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1		
Ronnel	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1		
Fenthion	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1		
Chlopyrifos	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1		
Trichlorinate	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1		
Merphos	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1		
Stirofos	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1		
Tokuthion	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1		
Fensulfothion	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1		
Bolstar	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1		
Azinphos methyl	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1		
Coumaphos	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1		
Triazines								
Atraton	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1		
Prometon	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1		
Simazine	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1		
Atrazine	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1		
Propazine	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1		
Terbutylazine	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1		



Summary of Chemical Analysis Soil Samples

Our Ref 24-26109

Client Ref ~ 25013

Contract Title ~ Yatton Keynell

Lab No	2433204	2433205	2433206	2433207	2433208	2433209
Sample ID ~	TP01	TP02	TP03	TP04	TP04	TP08
Depth ~	0.10-0.20	0.10-0.20	0.10-0.20	0.50	0.80-1.00	0.10-0.20
Other ID ~						
Sample Type ~	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date ~	28/11/2024	28/11/2024	28/11/2024	28/11/2024	28/11/2024	28/11/2024
Sampling Time ~	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Sebumeton	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1			
Symetryn	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1			
Ametryn	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1			
Prometryne	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1			
Terbutryn	DETSC 3433*	0.1	mg/kg	< 0.1		< 0.1			

Summary of Asbestos Analysis

Soil Samples

Our Ref 24-26109

Client Ref ~ 25013

Contract Title ~ Yatton Keynell

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2433204	TP01 0.10-0.20	SOIL	NAD	none	Josh Best
2433205	TP02 0.10-0.20	SOIL	NAD	none	Josh Best
2433206	TP03 0.10-0.20	SOIL	NAD	none	Josh Best
2433207	TP04 0.50	SOIL	NAD	none	Josh Best
2433208	TP04 0.80-1.00	SOIL	NAD	none	Josh Best
2433209	TP08 0.10-0.20	SOIL	NAD	none	Josh Best

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * -not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 24-26109
Client Ref ~ 25013
Contract ~ Yatton Keynell

Containers Received & Deviating Samples

Lab No	Sample ID ~	Date Sampled ~	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2433204	TP01 0.10-0.20 SOIL	28/11/24	GJ 250ml, PT 1L		
2433205	TP02 0.10-0.20 SOIL	28/11/24	GJ 250ml, PT 1L		
2433206	TP03 0.10-0.20 SOIL	28/11/24	GJ 250ml, PT 1L		
2433207	TP04 0.50 SOIL	28/11/24	GJ 250ml, PT 1L		
2433208	TP04 0.80-1.00 SOIL	28/11/24	GJ 250ml, PT 1L		
2433209	TP08 0.10-0.20 SOIL	28/11/24	GJ 250ml, PT 1L		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time, inappropriate containers etc are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

Key:

~ Sample details are provided by the client and can affect the validity of the results

* -not accredited.

-MCERTS (accreditation only applies if report carries the MCERTS logo).

\$ -subcontracted.

n/s -not supplied.

I/S -insufficient sample.

U/S -unsuitable sample.

t/f -to follow.

nd -not detected.

End of Report