Technical note

Project name	Ashton Keynes		
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1. Introduction

In August 2023, Hydrock Consultants Limited (Hydrock) was commissioned by Bewley Homes. (the Client) to undertake site investigation, comprising a Phase 2 supplementary ground investigation at the site of Cotswold Community School, Ashton Keynes (herein referred to as the wider site). The wider site is located off the north side of Spine Road Ashton Keynes, Swindon, Wiltshire, SN6 6QU.

In September 2023, the Client further instructed this technical note which pertains to obtaining partial discharge of planning condition 32 step (i) of planning application (ref: 16/02609/OUT) for Plots 1 through 12 only (hereafter referred to as the 'site'). The subsequent wider site ground investigation is then due for submission under a separate cover to discharge the development as a whole (hereafter referred to as the 'wider site').

Hydrock understands that the proposed development for the wider site is to comprise 75 new dwellings, including the replacement of 27 existing dwellings and conversion of a listed building and associated infrastructure. A proposed engineering layout, Clarkebond Drawing (ref: D0226-CLK-XX-XX-DR-C-200-S2-T02, dated August 2023), is presented in Appendix A.

There are earthworks proposed for the wider site and these are shown in the cut/fill model Clarkebond drawing (ref: D0226-CLK-XX-XX-DR-C-001-T01, dated 2023), which is presented in Appendix A.

The ground investigation works for the site and the wider site have been undertaken in accordance with Hydrock's proposal referenced (28470-HYD-XX-XX-FP-GE-0001, dated 11 July 2023) and the Client's instructions to proceed dated 03 August 2023 and Purchase Order Number M-D0226.

1.1 Site description

The Site

The site forms Plots 1 through 12 and can be split into north and south segments, as shown on the Site Location Plan (ref: 28470-HYD-XX-XX-DR-GE-1000-S2-P1, dated 03 September 2023), presented in Appendix A.

The northern segment comprises a terrace of derelict houses and gardens that are boarded up to prevent entry. The southern segment comprises a house and garden that has been boarded up to prevent access. There are areas of soft landscaping and hard standing.

A dry water course bound the plots to the west, the spine road bounding the southern plots to the south and agricultural fields bounding the remaining directions of both segments in all other directions.

1.2 Pertinent Site Information

The following is a summary of the pertinent information from the 2018 Desk Study.

Site History

Historically the wider site has been occupied by agricultural farm buildings and agricultural fields. Further development took place between the 1940s and 1960s when the site was converted to a school, becoming known as 'Cotswold Approved School for Intermediate Boys'. The school closed in 2011. A historical gravel pit was present on the wider site, but has been backfilled.

Plots 1 - 12 are shown to be open fields on the earliest OS mapping in 1885. In the 1900s a house was built on the southern segment, and housing noted in the northern segment in 1975. Little change is then noted until the present day.

Geology

Geological sources indicate the site to be underlain by the Northmoor Sand and Gravel Member and, at depth, the Kellaways Clay Member. Made Ground is anticipated locally due to the current/former development of the site.

No Superficial Deposits are noted to be present on mapping. However localised cohesive clays were noted during the Hydrock 2018 (ref: Ref: CCS-HYD-XX-GI-RP-G-1001.P1) investigation and have been interpreted as Superficial Deposits.

Hydrology and Hydrogeology

The Northmoor Sand and Gravel Member is classified by the Environment Agency as a Secondary A aquifer. The underlying Kellaways Clay Member is an unproductive stratum. The site is within a Groundwater Source Protection Zone 2. (SPZ2).

There is a dry ditch (designated a watercourse by the Environment Agency) that bisects the wider site and adjacent the Plots 1 - 12 (western boundary) running north to south.

The nearest surface water feature is a pond on site. There are a number of lakes relating to former gravel pits to the north, west and south of the site.

Ground Stability

No ground stability hazards other than shrinkable clays. However, it should be noted that shallow groundwater in open excavations within granular materials could result in a risk of running sands and trench collapse.

Quarrying/Mining

Since the 2018 investigation, significant quarrying has been and is currently being undertaken to the north-west, north and north-east around the wider site boundaries. This has resulted in significant open cast quarrying. Quarrying activity in to the south-west of the site has now ceased and the area has been restored to form a lake feature.

At the time of writing, the quarrying activities to the north are understood to be at or nearing completion, and upon completion the quarry will be restored to a lake.

UXO

A non-specialist UXO assessment indicates low bomb risk. No further consideration of UXO is required.

Regulatory Correspondence

Hydrock contacted the Environment Agency to confirm the details of the landfills reported to be 200m to the east of site. The waste licenses for Lake 26 86174 and Lake 62 86175 detail that inert waste and clean soils are allowed to be used for filling, and that no putrescible materials are allowed to be used. Therefore, these are not considered to pose a risk of ground gas generation potential. Ground gas and water monitoring is taking place and as such the results will be considered.

1.3 Sources of information

The following documents, reports etc have been provided to Hydrock by Bewley Homes for use in the preparation of this report:

» Hydrock Consultants Ltd (Hydrock) July 2018. 'Cotswolds Community School, Ashton Keynes - Desk Study and Preliminary Ground Investigation', Ref: CCS-HYD-XX-GI-RP-G-1001.P1. For Acorn Property Group.

» Hydrock March 2023. 'Site conditions Report' Ref: 09616-HYD-XX-XX-GE-TN-001. For Bewley Homes.

2. Conceptual Site Model

The preliminary ground model presented in the Site Conditions Report (Ref: 09616-HYD-XX-XX-GE-TN-001) forms the basis on the conceptual site model. This report considers the wider site and as such the pertinent sources highlighted, in Section 1.1 that relate to plots 1 to 12 have been carried forward for this assessment.

2.1 Geotechnical hazard identification

2.1.1 Context

The preliminary geotechnical hazard identification has been undertaken in accordance with the general requirements of ICE/DETR Document 'Managing Geotechnical Risk' and the HE documents HD 41/15 and CD 622.

The following section sets out the identified geotechnical hazards and the development elements potentially affected (see Table G.1 in Appendix G for further information).

2.1.2 Plausible geotechnical hazards

Plausible geotechnical hazards identified at the site are:

- Uncontrolled Made Ground (variable strength and compressibility).
- Soft / loose compressible ground (low strength and high settlement potential).
- Shrinkage / swelling of the clay fraction of soils under the influence of vegetation.
- Variable lateral and vertical changes in ground conditions.
- Attack of buried concrete by aggressive ground conditions.
- Obstructions.
- Shallow groundwater.
- Changing groundwater conditions.
- Made Ground, leading to difficulty with excavation and collapse of side walls.

2.1.3 Potential development elements affected

Development elements potentially affected by geotechnical hazards are:

- Buildings – foundations.
- Buildings – floor slabs
- Roads and pavements.
- Gardens.
- Construction staff, vehicles and plant operators.
- Concrete below ground.

Health and safety risks to site Contractors and maintenance workers have not been assessed during these works and will need to be considered separately during design.

2.2 Geo-environmental exposure model

2.2.1 Context

The preliminary exposure model is used to identify geo-environmental hazards and to establish potential contaminant linkages, based on the source-pathway-receptor (SPR) approach.

A viable contaminant linkage requires all the components of an SPR to be present. If only one or two are present, there is no linkage and no further assessment is required.

2.2.2 Potential contaminants

For the purpose of this assessment the potential contaminants have been separated according to whether they are likely to have originated from an on-site or off-site source.

2.2.2.1 *Potential sources of contamination on the site have been identified below:*

- Made Ground, associated with historical construction activities and imported fill, possibly including elevated concentrations of metals, metalloids, asbestos fibres, Asbestos Containing Materials, PAH and petroleum hydrocarbons (S01).
- Ground gasses (carbon dioxide and methane) from organic material within any Made Ground across the site (S02).
- Ground gases (carbon dioxide and methane) from organic materials within cohesive superficial deposits on site (S03).
- Asbestos within existing and former buildings on site (S04).

2.2.2.2 *Potential off-site sources of contamination*

- Ground gases (carbon dioxide and methane) generated from organic materials within the landfill to the east 210m from (S05).

Sources on the wider site are not considered to pose a risk to the site (Plots 1 - 12) as no visual or olfactory evidence of contamination was noted during the investigation works.

2.2.3 Potential receptors

The following potential receptors in relation to the proposed land use have been identified.

- People (site end users, neighbours) (R01).
- Development end use (buildings, utilities and landscaping) (R02).
- Groundwater: Secondary A aquifer status of the Northmoor Sand and Gravel Member (R03).
- Surface water: on-site watercourse and off-site lakes (restored quarries) to the south-west, west and (R04).
- Ecology flora and fauna (R05).

Due to the Kellaways Clay Member being designated an unproductive stratum, it is not considered to be a receptor and therefore not considered in the CSM.

2.2.4 Potential pathways

The following potential pathways have been identified.

- Direct contact: Ingestion, skin contact, inhalation of dust and outdoor air by people and ecological recipients (P01).
- Migration, build-up and explosion of ground gas and vapours via permeable soils and/or construction gaps. (P02).
- Petroleum hydrocarbon vapour migration, ingress, build-up and explosion via permeable soils and/or construction gaps. (P03).
- Migration and leaching of mobile contaminant through the unsaturated and saturated zones. (P04).
- Surface water via base flow from groundwater (P05).
- Uptake by flora and fauna. (P06).

Health and safety risks to site development contractors and maintenance workers have not been assessed as part of this study and will need to be considered separately.

The above sources, pathways and receptors have been considered as part of the Preliminary Risk Assessment in accordance with LCRM (2023), are considered to be plausible in the context of this site and have been carried forward for investigation and assessment.

3. Ground Investigation

The fieldwork took place between 3 August and 11 August 2023 for the wider site which includes Plots 1 - 12. The ground investigation locations were surveyed in using a topographical survey quality GPS and are shown on the Exploratory Hole Location Plan (ref: 28470-HYD-XX-XX-DR-GE-1001, dated August 2023) in Appendix A.

Table 3.1: Summary of site works

Activity	Method	No	Name	Depth Maximum / Range (m bgl)	In situ tests	Rationale
Drilling, Pitting and Probing						
Boreholes	Cable percussive	2	BH101 - BH102	9.95 - 10.0	SPT	To assess the deeper ground conditions, recover disturbed and undisturbed samples for geotechnical characterisation and chemical analysis; and to allow the installation of gas and groundwater monitoring and sampling wells.
Trial pits	Machine (8 Ton tracked).	3	TP101 - TP103	2.60 - 3.0	-	To assess shallow ground conditions and to recover samples for geotechnical characterisation and chemical analysis.

Wells for monitoring groundwater levels and ground gas concentrations, and to facilitate the sampling of groundwater, were installed in all of the cable percussion boreholes. A summary of the monitoring well installations is presented in Table 3.2.

Table 3.2: Summary of monitoring installations

Location	Ground level (m OD)	Standpipe / piezometer diameter (mm)	Screen top and base depth (m bgl)	Screen top and base elevation (m OD)	Strata targeted
BH101	88.55	50	1.00 to 6.00	87.55 to 80.05	Northmoor Sand and Gravel
BH102	88.85	50	1.00 to 7.80	87.85 to 81.05	Northmoor Sand and Gravel

3.1.1 *Geo-environmental monitoring*

Gas monitoring boreholes have been monitored on one occasion. Monitoring is ongoing and thus the ground investigation report for the wider site will include the full records.

Preliminary gas monitoring results (1 visit) shows that a maximum steady value of 0.0 (%v/v) for methane, 1.50 (%v/v) for carbon dioxide, 17.0 (%v/v) for oxygen has been recorded with a flow rate of 0.30 (l/hr).

3.2 Geo-environmental testing

3.2.1 *Sampling strategy and protocols*

Exploratory hole positions were determined by reference to the site conditions and uncertainties identified in the Initial Conceptual Model.

No features within Plots 1 – 12 were targeted for specific investigation.

Samples were taken, stored and transported in general accordance with BS 10175:2011+A2:2017.

3.2.2 *Geo-environmental laboratory analyses*

The chemical test certificates for testing undertaken as part of Hydrock's investigation are provided in Appendix D and summarised in the table below. Wherever possible, UKAS and MCERTS accredited procedures have been used.

The geo-environmental analyses undertaken on soils are summarised in Table 3.3.

Table 3.3: Geo-environmental analyses of soils

Determinand Suite	MG	TS	SD	NMS	KC
Hydrock minimum suite of determinands for solids*	1	1	2	6	1

MG = Made Ground

TS = Topsoil

NMS = Northmoor Sand and Gravel Member

KC = Kellaways Clay

SD = Superficial Deposits

3.3 Geotechnical testing

3.3.1 Geotechnical laboratory testing

The geotechnical tests undertaken are summarised in Table 3.4 and the test certificates are provided. Wherever possible, UKAS accredited procedures have been used.

Table 3.4: Summary of sample numbers for geotechnical tests

Test	Superficial Deposits	Northmoor Sand and Gravel	Kellaways Clay Member
Particle Size Distribution (PSD)	-	4	-
Undrained Triaxial	-	-	1
BRE SD-1	1	5	2

3.4 Constraints

Due to the necessity for archaeological investigations, a substantial portion of the rear gardens situated behind the northern section of terraced houses (Plots 2 – 12) could not undergo examination. The archaeological activities involved soil excavation down to the underlying Northmoor Sand and Gravel Member, and their findings provide adequate confirmation of ground conditions in these specific areas.

In anticipation of the impending demolition of structures, the placement of boreholes was carefully chosen to be positioned as far from the structures as reasonably achievable. This strategic placement was implemented to minimise any constraints on the demolition operations and safeguard existing installations.

4. Ground Conditions

4.1 Physical ground conditions

4.1.1 Summary of strata encountered

The following presents a summary of the properties of the ground and groundwater conditions encountered, based on field observations, interpretation of the field data and laboratory test results, taking into account drilling, excavation and sampling methods, transport, handling and specimen preparation.

All relevant data from the Hydrock investigation are provided in the logs which are presented in Appendix B, previous data are provided in Appendix C a summary of the ground model is presented in Table 4.1 and the individual strata are described in the sections below.

Table 4.1: Strata encountered

Stratum	Depth to top (m bgl)	Depth to base (m bgl)	Thickness (m) (range)	Thickness (m) (average)
Topsoil	GL	0.10 - 0.35	0.10 - 0.35	0.27
Made Ground (TP102 only)	0.30	0.70	0.40	0.40
Superficial Deposits	0.10 - 0.30	0.50 - 0.60	0.20 - 0.50	0.33
Northmoor Sand and Gravel Member	0.35 - 0.70	7.60 - 8.60	7.00 - 8.00	7.50
Kellaways Clay Member	7.60 - 8.60	>9.95 - >10.0	>1.40 - >2.35	Not proven

Topsoil

Topsoil was encountered between GL to 0.35m bgl, with an average thickness of 0.27m. The topsoil comprised brown sandy silt or sandy clay locally with gravel content.

For the purposes of this report, topsoil is defined as the upper layer of an in-situ soil profile, usually darker in colour and more fertile than the layer below (subsoil), which is a product of natural chemical, physical, biological and environmental processes, but does not imply compliance with BS 3882:2015. Reuse of topsoil as a growing medium at the site should be determined by the landscape architect or the landscape Contractors.

Made Ground

Made Ground was encountered between 0.30m to 0.70m bgl, with an average thickness of 0.40m. The Made Ground comprised sandy silty gravel with anthropogenic content including wood, coal and glass.

Made Ground was only noted within TP102 which is located between the terraced houses and is likely a result of historical construction activities.

Superficial Deposits

Superficial Deposits was encountered between 0.10m to 0.60m bgl, with an average thickness of 0.33m. The Superficial Deposits comprised orangish brown sandy silt or slightly sandy clay locally gravelly.

This was encountered inconsistently across the site and is considered to be local pockets of cohesive material deposited on top of the Northmoor Sand and Gravel Member.

Northmoor Sand and Gravel Member

Northmoor Sand and Gravel Member was encountered between 0.35m to 8.60m bgl, with an average thickness of 7.50m. The Northmoor Sand and Gravel Member comprised brown sandy silty gravel.

This was encountered beneath the topsoil, Made Ground or Superficial Deposits in all locations and forms the first strata associated with the bedrock geology.

Kellaways Clay Member

Kellaways Clay Member was encountered between 7.60m to 10.00m bgl and the extent was not proven. The Kellaways Clay Member comprised very stiff dark grey sandy clay.

The was encountered beneath the Northmoor Sand and Gravel Member in the two deep boreholes BH101 and BH102.

Visual and olfactory evidence of contamination (soil)

No visual or olfactory evidence of contamination other than inert anthropogenic material recorded in TP102 during the site works.

Groundwater

Groundwater levels were monitored post site works and were noted to be between 2.37m - 2.62m bgl in Plots 1 - 12.

Ground Gas Monitoring

One round of monitoring for the wider site has been undertaken to date. Two more rounds are planned as part of the wider site commission and will be reported under a separate cover.

Ground Gases

Preliminary gas monitoring results (1 visit) shows that a maximum steady value of 0.0 (%v/v) for methane, 1.50 (%v/v) for carbon dioxide, 17.0 (%v/v) for oxygen has been recorded with a flow rate of 0.30 (l/hr).

4.2 Geotechnical data

Laboratory test results are contained in Appendix C with in situ test results shown on the relevant exploratory hole log or datasheet Appendix C. The following sections summarise the main findings and provide interpretation where appropriate.

Plasticity

The Hydrock 2018 report (Ref: CCS-HYD-XX-GI-RP-G-1001.P1) the Superficial Deposits (encountered to a maximum depth of 0.60m bgl) tested as part of the historical investigation for the wider site are noted to be low to medium volume change potential and it is considered that this reflects the conditions on the site (Plots 1-12).

The PSD testing for the Northmoor Sand and Gravel Member shows fine content is less that 9% in Plots 1 – 12. This indicates the strata as being non plastic.

The Kellaway's Clay Formation (only present at depth) tested a part of the wider site investigation site are noted to be low to medium volume change potential and it is considered that this reflects the conditions on the site (Plots 1-12).

Particle size distribution

Particle Size Distribution test (PSDs) results are summarised in Table 4.2 and summary descriptions and PSD plots of the material analysed are presented in Appendix C,

Table 4.2: PSD results summary

Stratum	No. of tests	Silt/Clay %	Sand %	Gravel %	General description
Northmoor Sand and Gravel Member	4	2 - 9	24 - 35	57 - 75	Slightly clayey/silty, sandy GRAVEL

Soil strength

Table 4.3 summarises information pertaining to the shear strength of the soils according to geological stratum. Factual results are summarised for laboratory tests, field tests (e.g. hand shear vane) and uncorrected Standard Penetration Tests (SPT). Where the SPT is used to infer shear strength by published correlation, this is also tabulated.

Table 4.3: Soil strength results and derived values

Stratum	No. of tests	SPT (N-value) (range)	cu (kPa)	Method
Kellaways Clay Member	2	50	>210*	SPT – cable percussion.
	1	-	235	Laboratory triaxial test

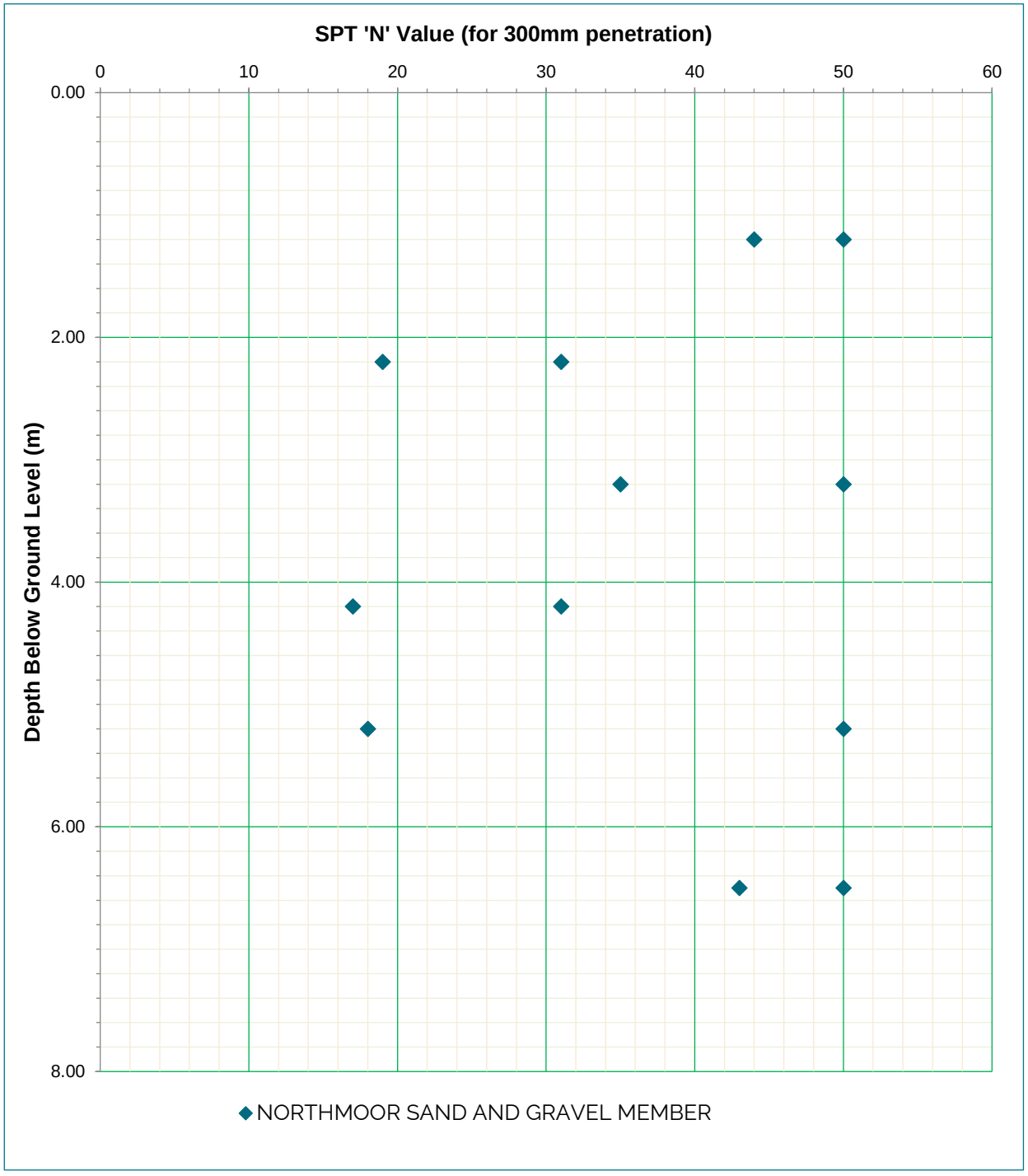
**Correlation with Stroud (1975) based on 'average' plasticity*

Relative density

Table 4.4 summarises information pertaining to the relative density of the granular soils according to geological stratum. Factual results are summarised for laboratory tests, field tests (e.g. SPT, CPT, dynamic probe correlation).

Table 4.4: Relative density results and derived values

Stratum	No. of tests	Method	SPT (N-value) (Range)	phi' (°)
Northmoor Sand and Gravel Member	12	SPT – cable percussion (Peck et. al. (1967).	17 -50	33 - 41



California Bearing Ratio (CBR)

Based on the Hydrock 2018 report (Ref: CCS-HYD-XX-GI-RP-G-1001.P1) CBR values are considered to be >2% for Made Ground and Superficial Deposits soils, and 5% for the Northmoor Sand and Gravel Member.

Sulfate content

In accordance with BRE (Special Digest 1), the Design Sulfate (DS) classification and the Aggressive Chemical Environment for Concrete (ACEC) classification are presented in Table 4.5. The assessment summary sheets are presented in Appendix C.

Table 4.5: Aggressive chemical environment concrete classification

Stratum	No. tests	DS	ACEC
Superficial Deposits	1	DS-1	AC-1*
Northmoor Sand and Gravel Member	5	DS-1	AC-1
Kellaways Clay Member	2	DS-4	AC-4

5. Geotechnical Assessment

5.1 Geotechnical categorization of the proposed development

Eurocode 7, Section 2 advocates the use of geotechnical categorization of the proposed structures to establish the design requirements.

The proposed development is to comprise low rise (2 to 3 storey) residential dwellings, with associated gardens, Public Open Space and infrastructure.

Hydrock understands up to 1.50m of cut to fill is required across the wider site with 0.50m of cut required in Plots 1 – 12, locally deeper for foundations and floor slabs as part of the enabling works. 1.0 – 1.50m of fill is required across all of plots 1 – 12.

The cut/fill and finished floor levels should be taken into account when designing the foundation depths.

Based on the above, for the purposes of this investigation, the proposed structures have been classed as Geotechnical Category 1.

5.2 Site preparation

The redevelopment will involve demolition of the existing buildings. This should be undertaken to an appropriate Specification to ensure any asset materials generated are geotechnically suitable for use.

Whilst no buried obstructions were encountered by this investigation, the possibility of buried obstructions, e.g. foundations, ground bearing floor slabs, being encountered remains. Therefore, it is recommended that an allowance be made for breaking out obstructions, for example provision of pneumatic breakers for site plant. If underground structures cannot be removed, they will need to be surveyed in three dimensions and the new structures will need to be designed to accommodate them.

5.3 Groundworks

Following breaking out of hardstanding, excavation of shallow soils should be readily undertaken by conventional plant and equipment.

Trial pit faces were noted to remain generally vertical without collapse. The faces of shallow, near vertically sided excavations put down at the site are likely to remain stable for short periods of time.

It is considered that potential for collapse is present in the natural coarse soils where groundwater ingress may occur.

Random and sudden falls should be expected from the faces of near vertically sided excavations put down at the site.

A risk assessment of the stability of any open excavation should be undertaken by a competent person and appropriate measures adopted to ensure safe working practise in and around open excavations. Further guidance on responsibilities and requirements for working near, and in, excavations can be obtained from the Construction Design and Management Regulations (2015); Construction Information Sheet 47: Inspections and Reports (2005) and HSG47: Avoiding Danger from Underground Services.

To ensure no loads are imposed on the sides of the excavation, spoil should not be placed immediately adjacent to the excavation. Spoil should be placed a suitable distance from the side of the excavation (as assessed by a competent person).

Based on site observations, the rate of water ingress to the proposed excavations is likely to be slow if groundwater levels remain at the levels reported. In these circumstances, groundwater control by sump pumping is likely to be sufficient.

However, it should be recognised that groundwater levels may vary from those at the time of the investigation, for example in response to seasonal fluctuations and the timing of construction may dictate the extent of groundwater control required.

Any water pumped from excavations may need to be passed via settlement tanks (to reduce suspended solids) before being discharged to the sewer. Discharge consents may also be required.

5.4 Earthworks/reuse of site-won materials

The proposed cut/fill model Clarkebond drawing (ref: D0226-CLK-XX-XX-DR-C-001-T01, dated 2023), is presented in Appendix A.

The drawing indicates that up to 2.50m of cut and then 1.50m of fill is required across the wider site. In relation to the site (Plots 1 – 12) that up to 0.50m of cut and 1.50m of fill is required. See below exert the green to dark green indicating up to 1.0-1.50m of fill required.



Figure 5.1 Exert of cut/fill model for plots 1 (right) 2 – 12 (left).

The Northmoor Sand and Gravel Member and Superficial Deposits 'won' from the site would both be suitable for raising site levels.

The Northmoor Sand and Gravel may also be suitable for use as (Class 6) structural fill, and it's re-use for capping should be considered in lieu of importing aggregate. At the time of writing the ground investigation report for the wider site has not been finalised and as such Hydrock cannot comment of the chemical suitability of re-using materials from the wider site.

Therefore, at this time it would not be recommended to re-use any materials from the wider site until such times as the wider ground investigation report is issued.

5.5 Foundation Recommendations

This section provides recommendations for the foundations for houses within the site (Plots 1-12) as shown on the proposed engineering layout, Clarkebond Drawing (ref: D0226-CLK-XX-XX-DR-C-200-S2-T02, dated August 2023), is presented in Appendix A.

Strip or trench fill foundations are considered suitable across the site and should be below any Made Ground and at least 300mm into the undisturbed natural strata, which comprise medium dense (or better) granular Northmoor Sand and Gravel Member. It is anticipated that founding depths would be between 0.65m - 1.00m bgl based on the investigation records. Localised deepening may need to be undertaken. Foundations should also extend below the proposed fill.

A safe net bearing pressure of 200kN/m^2 is considered appropriate for foundations bearing on the Northmoor Sand and Gravel.

Considering that the Made Ground and Superficial Deposits are discrete and localised it is anticipated the founding depths will be beyond these materials. If encountered at founding depths then foundations should extend beyond these or a minimum of 0.90m below where they are encountered.

Foundation formations should be inspected by a geotechnical engineer or other suitably competent person to ensure the founding conditions are suitable and as indicated in this report. Any formation materials deemed as unsuitable should be excavated and replaced with lean mix concrete or deepened to suitable strata. If this is not possible, alternative solutions (such as piling) should be undertaken.

Foundation excavations should be protected from rainfall, inflow of surface water, frost and freezing conditions. They should also be protected from drying out in hot dry weather.

Groundwater monitoring indicates a shallow groundwater table and excavations may be difficult to undertake. However, is considered to be below the recommended founding depths.

5.6 Ground Floor Slabs

In accordance with the NHBC standards, as Superficial Deposits of medium volume change potential and localised Made Ground (400mm) are present at the site in discrete pockets, it is recommended that these are excavated and replaced with granular arising from trench excavations.

It is considered that the proposed cut will likely expose the Northmoor Sand and Gravel Member across the majority of the plots.

This would allow for slabs without a void (ground bearing or suspended cast in situ onto the ground).

The following criteria are satisfied:

- the foundation depth (such as due to the influence of trees) is less than 1.5m;
- any fill is suitable, well-compacted granular material and less than 600mm thick;
- it is demonstrated that the soils are not desiccated and are at their equilibrium moisture content; and
- ground floor construction is not undertaken when the surface soils are seasonally desiccated (i.e. during summer and autumn), unless NHBC is satisfied the soil is not desiccated.

Ground floor slabs should be designed to incorporate any gas mitigation measures that may be required, as discussed later within this report.

5.7 Roads and pavements

Based on the test results from the wider site and subject to in situ testing during construction, it is considered likely an equilibrium CBR of 5% will be achievable for the Northmoor Sand and Gravel Member. It is recommended that the Superficial Deposits and Made Ground soils are removed beneath roads and pavements.

Proof rolling of the formation level will be required and any loose or soft spots should be removed and replaced with an engineered fill, in accordance with a suitable Specification. The formation level will also need to be protected during inclement weather from deterioration; all slopes should be trimmed to falls to shed rain water and the surface sealed to limit infiltration.

Prior to the placement of the founding materials and the construction of the road pavement, the sub-formation and formation will need to be inspected and checked in accordance with a suitable specification to ensure the ground conditions are as expected. All testing should be carried out in accordance with DMRB IAN 73/06 to confirm that the ground conditions at time of construction are consistent with the previous design parameters.

Where the CBR is found to be less than 2.5%, the sub-grade may be unsuitable for both the trafficking of site plant and as support for a permanent foundation, without improvement works being undertaken. Improvement works should be carried out in accordance with DMRB IAN 73/06 Rev 1 Chapter 5. In summary, consideration may be given to the following potential remedial techniques:

- excavation and re-engineering or replacement of weaker soils;
- the inclusion of geosynthetic reinforcement within the unbound layers of the capping and sub-grade;
- where cohesive soils are present and they are deemed suitable for treatment with hydraulic binders, to employ modification and/or stabilisation techniques on the formation; and
- where granular soils are present, de-watering and re-engineering the formation.

5.8 Drainage

Hydrock understand that the development is to tie into the public surface water discharge via the completion of a new route down the spine road.

Therefore, no further consideration is given to drainage.

5.9 Buried Concrete

Based on guidelines provided in BRE Special Digest 1 (BRE 2005) and the information presented in Section 4.2.

- The shallow soils (Superficial Deposits and Northmoor Sand and Gravel Member) can be classified as Design Sulfate Class DS-1 and ACEC Class AC-1*.
- The deeper soils (clays of the Kellaways Clay Member) can be classified as Design Sulfate Class DS-4 and ACEC Class AC-4.

This equates to a Design Chemical Class[1] of:

- DC-1* for the shallow soils (Superficial Deposits and Northmoor Sand and Gravel Member); and
- DC-4 for the deeper soils (clays of the Kellaways Clay Member).

The designer should check and confirm the classification of concrete using the information presented in Appendix C.

[1] The calculated ACEC class can be used in accordance with BS 8500-1+A2 (2019), Table A.9 to select the Designated Concrete (DC) class for an intended working life of 50 years. However, the designer is referred to BS 8500-1+A2 (2019), for full details and notes to Table A.9, including any Additional Protective Measures (APMs).

6. Geo-environmental Assessment

Updated conceptual model

Following the ground investigation, the plausible contaminant sources, receptors and pathways identified in the preliminary geo-environmental exposure model have been confirmed and no updates are required.

Risk assessment approach

Using the updated CSM, a Tier 2 generic quantitative risk assessment (GQRA) for identified receptors based on all media sampled has been undertaken in accordance with the principles of LCRM.

Firstly, the risks associated with the identified potential contaminant linkages have been estimated using standardised methods (typically involving comparison of site data with published 'screening values'). Secondly, where screening values are exceeded, the result has been evaluated in an authoritative review of the findings with other pertinent information to determine whether or not the exceedance is or is not acceptable in the site-specific circumstances.

The data sets used in the assessment comprise the analytical results obtained by Hydrock as listed in Section 3.2.

In cases where potentially unacceptable risks are indicated and/or the land is potentially unsuitable for its intended use, actions such as more advanced stages of risk assessment (Tier 3, detailed quantitative risk assessment (DQRA)) or remediation will be discussed as required.

6.1 Human health risk assessment

Soils Assessment

Generic Assessment Criteria

The soil screening values used are generic assessment criteria (GAC) (i.e. derived in accordance with EA CLEA guidance (2009) using the updated exposure model detailed in Defra SP1010 (2014), with the exception of published C4SLs. The term 'GAC' used in this report is inclusive of all generic soil screening values.

Based on the proposed development, generic assessment criteria (GAC) based on a default residential with homegrown produce CLEA land use scenario has been adopted.

GAC are selected based on the following hierarchy:

- Category 4 Screening Levels (C4SL), where available.
- SoBRA Acute GAC for free cyanide, as acute dose toxicity is the primary risk driver.
- Hydrock GAC, derived by Hydrock as detailed in in Appendix D.

The results of the assessment are presented in Appendix D.

Data sets

The data set(s) used in this report is based on the conceptual site model and the proposed development, and is taken to be the entire area of the site (Plots 1-12) with the data separated into Made Ground, Topsoil and natural soils.

GAC based on a soil organic matter (SOM) of 6% for Made Ground, Topsoil and Northmoor Sand and Gravel and 2.5% for Superficial Deposits and Kellaways Clay Member based on laboratory results. Assessment sheets are presented in Appendix E,

Assessment Results

Results indicate that all chemicals of potential concern (CoPC) are below the relevant GAC, therefore the contaminant linkage is incomplete and there is no recorded risk to human health.

6.2 Phytotoxicity risk assessment

Priority phytotoxic chemical concentrations have been screened against published values to determine the likely risk to plant growth (phytotoxic GAC). Phytotoxic GAC based on a pH of 7% have been adopted for all soils based on laboratory results.

As with human health, individual sample test results are compared directly with the phytotoxic GAC.

Results indicate that all CoPC are below the relevant phytotoxic GAC, therefore the contaminant linkage is incomplete and there is no recorded risk to plant life.

6.3 Pollution of controlled waters risk assessment

The Northmoor Sand and Gravel Member is classified by the Environment Agency as a Secondary A aquifer. The underlying Kellaways Clay Member is an unproductive stratum. The site is within a Groundwater Source Protection Zone 2. (SPZ2).

The nearest surface water feature is a pond on site. There are a number of lakes relating to former gravel pits to the north, west and south of the site.

The laboratory test certificates presented in Appendix D include testing from the wider site and the petroleum hydrocarbon concentrations are low indicating residual contamination, not considered to pose a risk to human health. The concentration recorded are not considered to pose a risk to controlled waters as they are relatively low and of heavy end low mobility factions.

Though there are controlled water receptors on site, Hydrock consider that in the absence of any significant thickness of Made Ground or elevated concentrations of compounds of concern, there is not a risk to controlled waters from the ground conditions reported at the site (Plots 1 to 12).

6.4 Ground Gas Risk Assessment

The site is not in a Radon Affected Area. Hydrock note that the Radon risk maps have been updated in December 2022 and have confirmed based on up-to-date information that less than 1% of homes at or above the Action Level. Therefore, no protection measures are required.

Hydrock contacted the Environment Agency to confirm the details of the landfills reported to be 210m to the east of site. The waste licenses for Lake 26 86174 and Lake 62 86175 detail that inert waste and clean soils are allowed to be used for filling, and that no putrescible materials are allowed to be used. Therefore, these are not considered to pose a risk of ground gas generation potential.

Additionally, the initial ground gas monitoring programme shows that the Gas Screening Values for methane and carbon dioxide are 0.0003 and 0.0114 (l/hr) respectively which further support a CS1 scenario.

CL:AIRE RB17 (Card et al 2012) states that where there are natural soils with no credible methane source, with Made Ground less than 1 m thick, composed of inert material such as sub-base of mineral soils, and no radon barrier is required, no gas protection is required as this represents CS1. As such, no ground gas protection is required.

It is considered then by the weight of available evidence that CS1 conditions apply. i.e., no protection measures required.

6.5 Construction materials risk assessment

Water pipelines

A formal water pipe investigation and risk assessment is beyond the scope of this report. However, the findings of this investigation have been compared to the threshold values in Water UK HBF (2014), Table 1 as far as is practicable.

The site is brownfield. However, the investigation has not detected organic contamination in exceedance of the threshold values and Hydrock believes standard pipework may be suitable for the site. However, confirmation should be sought from the water supply company at the earliest opportunity.

6.5.1 Other construction materials

Plastic pipes for drains and sewers are manufactured from unplasticized poly(vinyl chloride) (PVC-U), polypropylene (PP) or polyethylene (PE). These materials may be affected by the presence of organic compounds in the soil.

In accordance with the British Plastics Federation Guidance (August, 2018), as the concentrations of PAH, and BTEX are below 100mg/kg and the concentrations of petroleum hydrocarbons (TPH) are below 200 mg/kg, PVC-U, PP or PE pipework is considered suitable.

The implications for buried concrete are discussed in Section 5.9.

6.6 Findings of the generic contamination risk assessments

The potential sources, pathways and receptors identified in the Site Conditions Report (pertinent to Plots 1 - 12) have been investigated (Sections 3) and assessed (Section 6). A Source-Pathway-Receptor linkage assessment has been undertaken and is presented in Appendix G.

There are no Source-Pathway-Receptor contaminant linkages which require mitigation.

7. Waste

7.1 Introduction

The Waste Framework Directive (WFD) (2009/98/EC) defines waste as 'any substance which the holder discards or intends to discard.' In a geo-environmental context, the waste is most often 'soil' and the two main scenarios are offsite disposal of the material as a waste and/or reuse of the material on site. For cost and sustainability reasons, reuse is preferred to off-site disposal.

Section 7.2 below describes the key issues relating to off-site disposal to landfill.

7.2 Waste disposal

7.2.1 Principles

Based on the WFD, any material excavated on site may be classified as waste and it is the responsibility of the producer of a material to determine whether or not it is waste. Where off-site disposal is undertaken, the following guidance applies.

Classification is a staged process:

- A hazardous waste is defined under the WFD as one which possesses one or more of fifteen defined hazardous properties. If a waste is not defined as hazardous, then it is non-hazardous.
- Where the materials are soil, it is then be assigned using the 'List of Waste Codes', which classifies the material as either:
  - hazardous (17-05-03), which is defined as "soil and stones containing hazardous substances"; or
  - non-hazardous (17-05-04), which is defined as "soil and stones other than those mentioned in 17-05-03".
  - Hydrock utilise the proprietary assessment tool, HazWasteOnline™ to undertake this assessment.
- Waste Acceptance Criteria (WAC) testing is then undertaken if required, and are only applicable following classification of the waste, and only where the waste is destined for disposal to landfill. The WAC are both qualitative and quantitative. The WAC and the associated laboratory analyses (leaching tests) are not suitable for use in the determination of whether a waste is hazardous or non-hazardous.

It should be noted that some non-hazardous wastes may be suitable for disposal at an inert landfill as non-hazardous waste, subject to meeting the appropriate waste acceptance criteria.

It should be noted that classification must be undertaken on the waste produced, by the waste producer. Necessary sampling frequency to adequately characterise a soil population is defined within WM3.

Further discussion with regards to the characterisation process for different scenarios and waste types is provided below.

Topsoil and Peat

Topsoil and peat are biodegradable, therefore if they are surplus to requirements and cannot be re-used in accordance with a Materials Management Plan, they cannot be classified as inert. As such, topsoil and peat need to be classified by a staged assessment and sampling process and would either be classified as hazardous or non-hazardous, depending upon the results of the assessment.

Greenfield sites

Waste from completely greenfield sites may be accepted at a landfill as inert waste if it meets the requirements of paragraph 10 (wastes acceptable without testing at landfills for inert waste) of the Landfill (England and Wales) (Amendment) Regulations (2005) ('the Regulations') can be met. Paragraph 10 of the Regulations states, "soils may be able to be classified as inert waste without testing, if:

- they are single stream waste of a single waste type;
- there is no suspicion of contamination and they do not contain other material or substances such as metals, asbestos, plastics, chemicals, etc….."

As such, where the site is greenfield and the waste producer is confident about the quality of a soil (i.e. naturally occurring and uncontaminated), further sampling and laboratory testing is not necessary for the Basic Characterisation and this can be undertaken on qualitative Waste Acceptance Criteria testing.

In this instance the waste producer can characterise the waste based on visual assessment and written description of the waste in addition to supporting evidence such as a desk study assessment of the greenfield status. However, it should be noted this characterisation is subject to agreement by the landfill operator who may require testing to be undertaken to confirm classification.

Contaminated or potentially contaminated sites

If the site is brownfield, contaminated or potentially contaminated, the waste must undergo an initial waste classification exercise using background information on the source and origin of the waste and assessment of chemical test data in accordance with Environment Agency Technical Guidance WM3.

If following the initial waste classification exercise, the soils are acceptable for disposal to a non-hazardous landfill, further qualitative Waste Acceptance Criteria (WAC) testing is not required.

However, if soils are potentially able to be disposed to an inert landfill as non-hazardous waste, or require testing to determine if they can be disposed of to a stable non-reactive hazardous or hazardous class of landfill, the next stage of assessment is to undertake qualitative WAC testing. This will determine the Basic Characterisation and the landfill category at which the soils can be accepted.

Hazardous material must be subjected to WAC testing to determine whether it requires treatment before it can be accepted at the hazardous landfill, while non-hazardous material can be tested to determine whether it may be suitable for placement in an inert landfill.

7.2.2 HazWasteOnline™ assessment

As the site is brownfield, in order to inform the preliminary waste characterisation process, Hydrock has undertaken an exercise using the proprietary web-based tool HazWasteOnline™. The output of the HazWasteOnline™ assessment is provided in Appendix E and a summary of the preliminary waste classification is provided below in Section 7.2.4.

7.2.3 WAC testing

The site is brownfield. However, WAC testing has not been undertaken to date but will be required on the excavated soils that are to be disposed of, to assist with waste disposal options prior to disposal. A summary of the preliminary waste disposal options is provided below in Section 7.2.4.

7.2.4 Preliminary waste disposal options

The site is brownfield and based on the site history, and the HazWasteOnline™ assessment, if suitable segregation of different types of waste is put in place, for soils to be disposed of, it is considered that:

- The natural uncontaminated subsoils are likely to be classified as 'non-hazardous' waste and subject to WAC testing should be able to be disposed of at an inert landfill.
- The 'General' Made Ground is likely to be classified as non-hazardous waste.
- Any soils containing > 0.1% asbestos or visible asbestos containing materials would be considered as hazardous.

7.2.5 General waste comments

It should be noted that:

- It is the waste producer's responsibility to segregate the waste at source and waste producers must not mix waste materials/streams or dilute hazardous components, for example by mixing with less or non-hazardous waste on site to meet WAC limit values.
- The above preliminary assessment has been made on the basis of the soils tested as part of the ground investigation, using the HazWasteOnline™ assessment. However, the formal classification of waste can only be undertaken on the material to be disposed of, and by the waste producer and the receiving landfill as license conditions vary from landfill to landfill.
- Basic Characterisation should be undertaken in accordance with Environment Agency guidance by the waste producer. Hydrock can assist if required and this report will assist the characterisation. However, Basic Characterisation does not form part of the current commission and would require further assessment and testing on the wastes actually to be disposed.
- Once the waste producer has undertaken an initial Basic Characterisation on each waste stream, they can manage the soils as part of the on-site processing programme (for example, stockpiling, treatment, screening and separation). The waste producer and landfill operator will then need to agree the suite of compliance testing for regularly generated waste to demonstrate compliance with the initial Basic Characterisation prior to disposal.
- At the time of disposal, additional testing on the excavated soils to be disposed of, will likely be necessary.
- Non-hazardous and hazardous soils require pre-treatment (separation, sorting and screening) prior to disposal.
- The costs for disposal of non-hazardous and hazardous soils are significant compared to disposal of inert material.
- In addition to disposal costs, landfill tax will be applicable. Non-hazardous and hazardous waste will generally be subject to the Standard Rate Landfill Tax. Inert or inactive waste will generally be subject to the Lower Rate Landfill Tax. The landfill tax value changes each April and can be found at https://www.gov.uk/government/publications/rates-and-allowances-landfill-tax/landfill-tax-rates-from-1-april-2013.
- Before a waste producer can move waste to a landfill site for disposal, they need to check the landfill site has the appropriate permit and must have completed the following[2]:
  - Duty of care transfer note / Hazardous Waste consignment note, including comment as to if pre-treatment has been undertaken; and

[2] ENVIRONMENT AGENCY. November 2010. Guidance on waste acceptance procedures and criteria. Waste acceptance at landfills. The Environment Agency.

- Basic Characterisation of the waste, to include: description of the waste; waste code (using list of wastes); composition of the waste (by testing, if necessary) and; WAC testing (if required).

8. Uncertainties and Limitations

8.1 Site-specific comments

This report only pertains to the partial discharge of planning conditions in relation to Plots 1 -12, no other part of the development is considered in this report and as such it cannot be used to discharge the site as a whole.

Due to the necessity for archaeological investigations, a substantial portion of the rear gardens situated behind the northern section of terraced houses (Plots 2 – 12) could not undergo examination.

Whilst the ground model is reasonably well understood it is plausible that local variations in ground conditions could be encountered, e.g., deeper Made Ground, obstructions (foundations, floor slabs etc.) beneath structures.

In anticipation of the impending demolition of structures, the placement of boreholes was carefully chosen to be positioned as far from the structures as reasonably achievable. This strategic placement was implemented to minimise any constraints on the demolition operations and safeguard existing installations.

The bulk cut/fill proposed on Plots 1 - 12 are not considered as part of this note and should be further assessed as part of an earthworks specification.

Hydrock have prepared this report in advance of the main investigation report to allow for partial planning discharge of Plots 1 - 12.

8.2 General comments

Hydrock Consultants Limited (Hydrock) has prepared this report in accordance with the instructions of Bewley Homes (the Client), by e-mail dated September 2023 under the terms of appointment for Hydrock, for the sole and specific use of the Client and parties commissioned by them to undertake work where reliance is placed on this report. Any third parties who use the information contained herein do so at their own risk. Hydrock shall not be responsible for any use of the report or its contents for any purpose other than that for which it was prepared or for use of the report by any parties not defined in Hydrock's appointment.

This report details the findings of work carried out in August 2023. The report has been prepared by Hydrock on the basis of available information obtained during the study period. Although every reasonable effort has been made to gather all relevant information, not all potential environmental constraints or liabilities associated with the site may have been revealed.

Hydrock has used reasonable skill, care and diligence in the design of the investigation of the site and in its interpretation of the information obtained. The inherent variation of ground conditions allows only definition of the actual conditions at the locations and depths of trial pits and boreholes at the time of the investigation. At intermediate locations, conditions can only be inferred.

Groundwater data are only representative of the dates on which they were obtained and both levels and quality may vary.

Plans that provide assessment of foundation types and depths are indicative and subject to further design. This design should incorporate a detailed assessment of the influence of trees, influence of cut to fill proposals and geological conditions.

Unless otherwise stated, the recommendations in this report assume that ground levels will remain as existing. If there is to be any re-profiling (e.g. to create development platforms or for flood alleviation) then the recommendations may not apply.

Information provided by third parties has been used in good faith and is taken at face value; however, Hydrock cannot guarantee its accuracy or completeness.

Where the existing report(s) prepared by others have been provided by the Client, it is assumed that these have been either commissioned by the Client, or can be assigned to the Client, and can be relied upon by Hydrock. Should this not be the case Hydrock should be informed immediately as additional work may be required. Hydrock is not responsible for any factual errors or omissions in the supplied data, or for the opinions and recommendations of others. It is possible that the conditions described may have since changed through natural processes or later activities.

The work has been carried out in general accordance with recognised best practice. Unless otherwise stated, no assessment has been made for the presence of radioactive substances or unexploded ordnance. Where the phrase 'suitable for use' is used in this report, it is in keeping with the terminology used in planning control and does not imply any specific warranty or guarantee offered by Hydrock.

The chemical analyses reported were scheduled for the purposes of risk assessment with respect to human health, plant life and controlled waters as discussed in the report. Whilst the results may be useful in applying the Hazardous Waste Assessment Methodology given in Environment Agency Technical Guidance WM3, they are not primarily intended for that purpose and additional analysis will be required at the time of disposal to fully classify waste. Discussion and comment with regards to waste classification are preliminary and do not form the requirements of 'Basic Characterisation' as required.

Assessment and testing for the presence of coal tar has only been completed at the locations of exploratory holes undertaken for risk assessment purposes. This investigation is not designed to provide a definitive assessment of the risk from coal tar, nor the waste classification for bituminous bound pavement arisings at the site.

Unless otherwise stated, at the time of this investigation the future routes of water supply pipes had not been established. This investigation and sampling strategy may not be fully compliant with UKWIR recommendations. Consequently, a targeted investigation and specific sampling and chemical testing may be required at a later date once the routes of the supply pipes are known. In addition, it is recommended that the relevant water supply company be contacted at an early stage to confirm its requirements for assessment, which may not necessarily be the same as those recommended by UKWIR.

Whilst the preliminary risk assessment process has identified potential risks to construction workers, consideration of occupational health and safety issues is beyond the scope of this report.

The non-specialist UXO screening has been undertaken for the purposes of ground investigation only (i.e. low risk activity in accordance with CIRIA Report C681). Further assessment should be undertaken with regards to other higher risk activities e.g. construction.

Please note that notwithstanding any site observations concerning the presence or otherwise of archaeological sites, asbestos-containing materials or invasive weeds, this report does not constitute a formal survey of these potential constraints and specialist advice should be sought.

Any site boundary line depicted on plans does not imply legal ownership of land.

9. Conclusions

9.1 Geotechnical

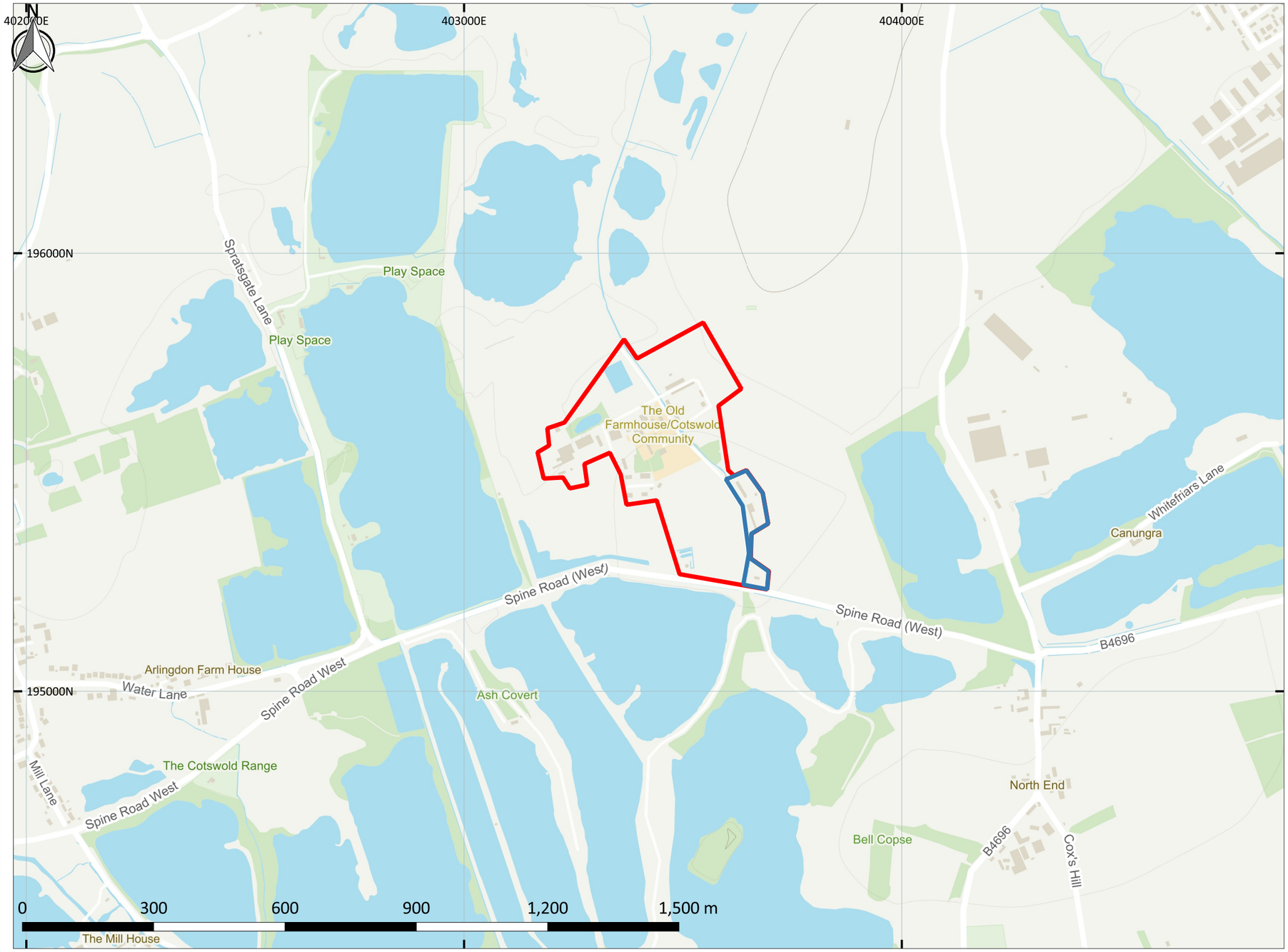
- A safe net bearing pressure of 200kN/m^2 is considered appropriate for foundations bearing on the Northmoor Sand and Gravel beneath the topsoil, superficial deposits and any proposed earthworks.
- If Made Ground and Cohesive materials are replaced with granular fill, or the formation comprises Northmoor Sand and Gravel, ground bearing floor slabs are permissible.
- An equilibrium CBR of 5% will be achievable where the formation comprises the Northmoor Sand and Gravel. Where areas of Made Ground and/or clay are present, these should be removed prior to road pavement construction.
- Buried concrete class requirements comprise:
  - DC-1* for the shallow soils (Superficial Deposits and Northmoor Sand and Gravel Member); and
  - DC-4 for the deeper soils (clays of the Kellaways Clay Member).

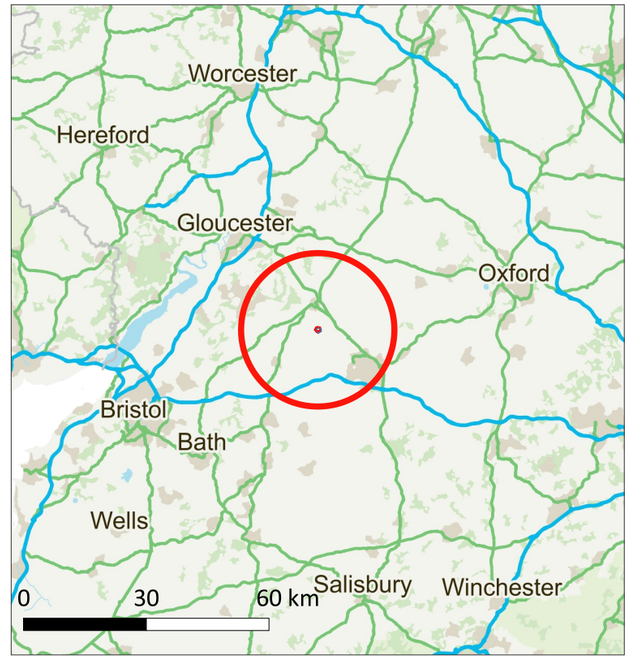
9.2 Geo-environmental

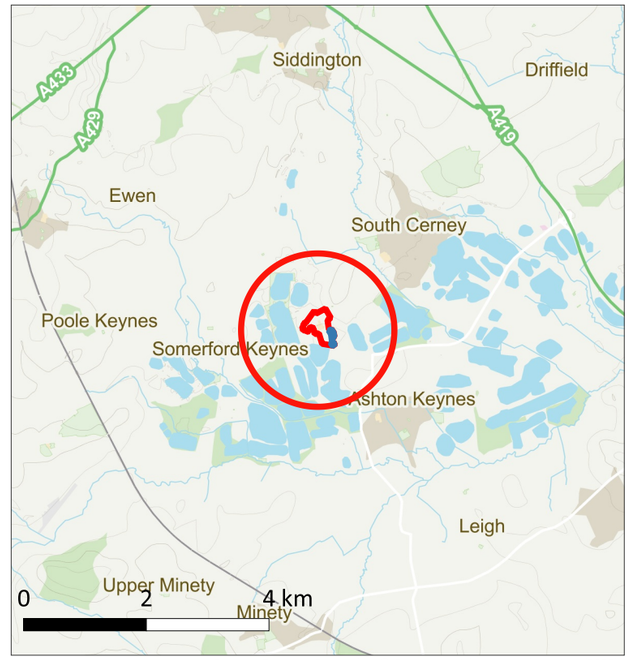
Asbestos is present in existing buildings and requires carful remove by a specialist contractor prior to demolition.

The findings of the data related to Plots 1 - 12 show that there is no risk to human health, controlled waters or plant life. It is therefore considered that the planning conditions pertaining to ground conditions can be discharged.

Appendix A Drawings







Contains Ordnance Survey data © Crown copyright and database right (2020)

KEY PLAN

Wider Site Boundary

Site Boundary (plots 1 to 12)

NOTES

1. Contains OS data © Crown copyright and database right (2023)

REVISIONS

REV.	DRAWN BY INITIALS	CHECKED BY INITIALS	DATE	REVISION NOTES/COMMENTS
P01	KB	SW	03/09/23	First issue

Hydrock

TITLE
SITE LOCATION PLAN

HYDROCK PROJECT NO.
28470

SCALE @ A3
1:10,000

CLIENT
BEWLEY HOMES

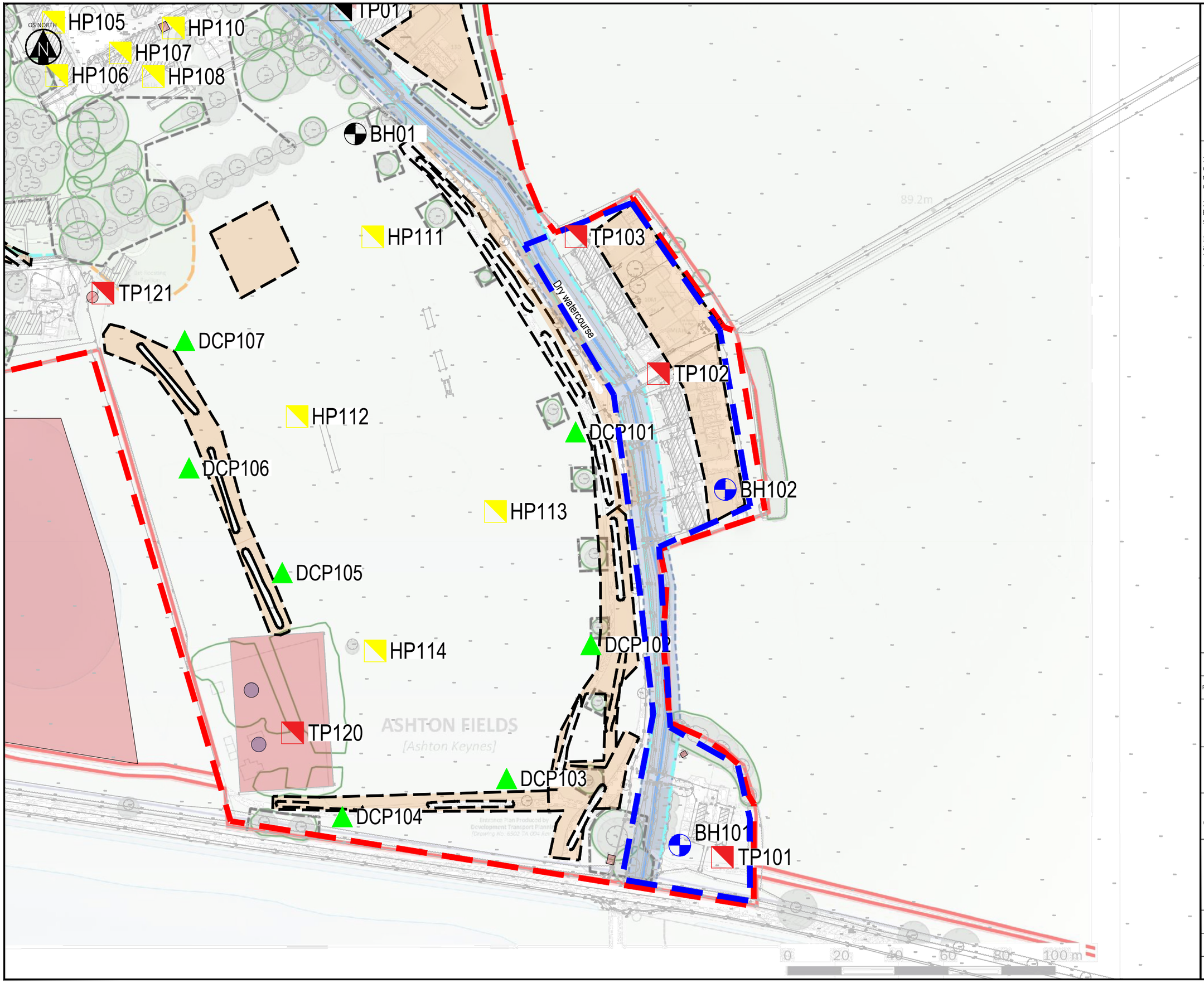
PURPOSE OF ISSUE
SUITABLE FOR INFORMATION

STATUS
S2

PROJECT
COTSWOLD COMMUNITY SCHOOL, ASHTON KEYNES

DRAWING NO.
28470-HYD-XX-XX-DR-GE-1000

REVISION
P01



KEY

- BoreHole
- Hand Pit/StockPile
- Trial Pit
- TRL DCP
- Concrete Core
- Notable site feature
- Asbetos Containing Materials Present
- Wider Site Boundary
- Plots 1 - 12 Boundary
- Archaeological Restriction
- Ecological Restriction
- BoreHole 2018
- Trial Pit 2018

NOTES

1. All dimensions are to be checked on site before the commencement of works. Any discrepancies are to be reported to the Architect & Engineer for verification. Figured dimensions only are to be taken from this drawing.

2. This drawing is to be read in conjunction with all relevant Engineers' and Service Engineers' drawings and specifications.

3. This drawing has been based on the following drawings and information:
Topographic Survey
- Site Survey T_MG0377

REV.						
P1	FIRST ISSUE					
	EP	18/07/23	SW	19/07/23	SW	19/07/23
	REVISION NOTES/COMMENTS					
	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE

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CLIENT
BEWLEY HOMES

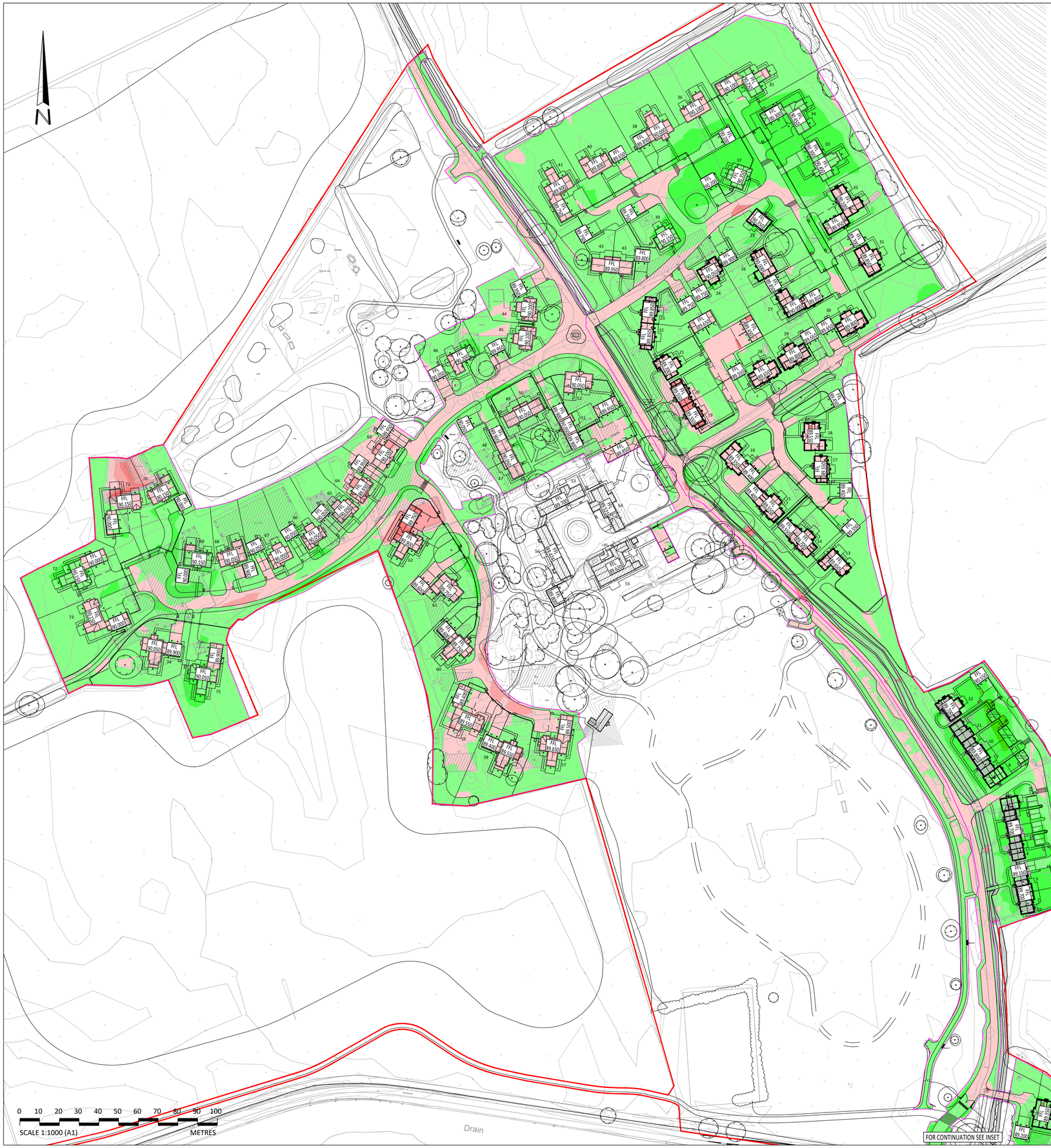
PROJECT
COTSWOLD COMMUNITY SCHOOL, ASHTON KEYNES

TITLE
EXPLORATORY HOLE LOCATION PLAN

HYDROCK PROJECT NO.	SCALE @ A3
C-09612-C	1:1750

PURPOSE OF ISSUE	STATUS
SUITABLE FOR INFORMATION	S2

DRAWING NO. (PROJECT CODE-ORGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER)	REVISION
09612- HYD-XX-GI-DR-G-1001	P2





WEST

Height Bands	Cut Volume	Fill Volume
Fill 1m - 1.5m	--	0.41m³
Fill 0.5m - 1m	--	98.37m³
Fill 0m - 0.5m	--	5794.32m³
Cut 0m - 0.5m	2917.40m³	--
Cut 0.5m - 1m	215.14m³	--
Cut 1m - 1.5m	38.19m³	--
Cut 1.5m - 2m	2.47m³	--
Cut 2m - 2.5m	0.01m³	--

Total Cut: 3173.20m³
Total Fill: 5893.10m³

MODEL 1: TOPSOIL STRIP (EXISTING GROUND - 300mm)
MODEL 2: FORMATION SURFACE

EAST

Height Bands	Cut Volume	Fill Volume
Fill 1m - 1.5m	--	9.93m³
Fill 0.5m - 1m	--	866.47m³
Fill 0m - 0.5m	--	10321.07m³
Cut 0m - 0.5m	2149.78m³	--
Cut 0.5m - 1m	24.87m³	--
Cut 1m - 1.5m	0.54m³	--

Total Cut: 2175.18m³
Total Fill: 11197.47m³

MODEL 1: TOPSOIL STRIP (EXISTING GROUND - 300mm)
MODEL 2: FORMATION SURFACE

CDM RESIDUAL RISKS

The work shown on this drawing is both familiar to the designers and routinely safely built in similar circumstances by competent contractors.

Risks are not considered significant.

~~**Relevant data is included in the Pre-Construction Information Pack.**~~

Signed: D.Henson **Date: 16.08.2023**

DO NOT SCALE THIS DRAWING FOR CONSTRUCTION PURPOSES.

CONTRACTOR TO CHECK ALL DIMENSIONS AND REPORT ALL ERRORS AND OMISSIONS TO THE ENGINEER.

KEY:

SITE BOUNDARY

FFL XX.XXX PROPOSED FINISHED FLOOR LEVEL

B06163 - Ashton Keynes

Construction Depths

Landscape Depth	300 mm	
Carriageway Depth	670 mm	
Footpath Depth	230 mm	
Driveway Depth	480 mm	
Building Pad Depth	900 mm	min*

Parameters

Assumed Existing Topsoil Depth	300 mm	
Site Area	82,116 sqm	
Garden/Landscaped Areas	43,480 sqm	
Number of Plots	71 plots	#
Additional Plot Arisings Per Plot	45 cu m	

Topsoil Analysis

1st Surface	2nd Surface	Cut (cu m)	Fill (cu m)	Nett (cu m) Cut = +ve / Fill = -ve
Existing Ground	Topsoil Strip (Existing Ground - 300mm)	24,635	0	24,635
Formation Surface	Finished Surface	0	13,044	-13,044
TOTAL TOPSOIL BALANCE		**24,635**	**13,044**	**11,591**

Bulk Earthworks

1st Surface	2nd Surface	Cut (cu m)	Fill (cu m)	Nett (cu m) Cut = +ve / Fill = -ve
Topsoil Strip (Existing Ground - 300mm)	Formation Surface	5,348	17,091	-11,742
Additional Arisings				
Permeable fill required for infiltration features, Driveways = 6151 cu m (shown as cut to indicate a reduction in bulk fill requirement)				
Permeable paving in driveways		6,151	0	6,151
TOTAL BULK EARTHWORKS		**11,499**	**17,091**	**-5,591**

* 900mm minimum depth
# Existing Plots 53 to 56 omitted from volumes

Note:
1. Excavations for drainage / services / retaining walls have not been accounted for at this stage.

Rev	Detail	By	Chk	Date
T01	DRAWING REFERENCE UPDATED.	FD	DH	16.08.23
P03	FINISHED FLOOR LEVELS AND KEY ADDED.	AH	DH	02.08.23
P02	CUT AND FILL VOLUMES REVISED TO SUIT LATEST LEVELS. EARTHWORKS TABLE ADDED. HEIGHT BAND COLOURS AMENDED.	AH	DH	05.07.23
P01	PRELIMINARY FIRST ISSUE.	JB	DH	27.02.23

Revisions

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Client: BEWLEY HOMES

Project: ASHTON KEYNES

Drawing Title: PRELIMINARY CUT FILL ANALYSIS OVERVIEW

Purpose of Issue: TENDER

ClarkeBond Project No.	Status
B06163	S2

Project	Originator	Volume	Level	Type	Role	Drg No.
D0226	CLK	XX	XX	DR	C	001

Scale	Date	Revision
1:1000	Feb' 2023	T01

Drawn	Checked	Sheet Size
AH	DH	A1

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CDM RESIDUAL RISKS

The work shown on this drawing is both familiar to the designers and routinely safely built in similar circumstances by competent contractors.

Risks are not considered significant.

~~**Relevant data is included in the Pre-Construction Information Pack.**~~

Signed: D.HENSON **Date: 25.08.2023**

DO NOT SCALE THIS DRAWING FOR CONSTRUCTION PURPOSES.

CONTRACTOR TO CHECK ALL DIMENSIONS AND REPORT ALL ERRORS AND OMISSIONS TO THE ENGINEER.

Rev	Detail	By	Chk	Date
T02	UPDATED MASTERPLAN; ENGINEERING UPDATED TO SUIT	SF	DH	25.08.23
T01	DRAWING REFERENCE UPDATED	MY	DH	16.08.23
P01	TENDER ISSUE.	AH	DH	31.07.23

Revisions

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web www.clarkebond.com
Bristol Exeter London Darlington

Client: BEWLEY HOMES

Project: ASHTON KEYNES

Drawing Title: ENGINEERING LAYOUT

OVERVIEW

Purpose of Issue: TENDER

ClarkeBond Project No.	Status
B06163	S2

Project	Originator	Volume	Level	Type	Role	Drg No.
D0226	CLK	XX	XX	DR	C	200

Scale	Date	Revision
1:1250	JULY 2023	T02

Drawn	Checked	Sheet Size
AH	DH	A1

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Appendix B Exploratory Hole Logs

Hydrock	Project: Cotswold Community School, Ashton Keynes	Borehole No BH101 Page No. 1 of 2

Method: Cable Percussion	Date(s): 04/08/2023 - 07/08/2023	Logged By: AT	Drilled By: CCGI
Client: Bewley Homes	Co-ords: 403656.80, 195248.01	Checked By: SW	Flush:
Hydrock Project No: 28470	Ground Level: 88.55m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
0.00 - 0.40	B			Firm brown slightly sandy SILT with frequent rootlets. Sand is fine to coarse. (TOPSOIL)	0.30	(0.30)	88.25		
0.20	ES								
0.40 - 0.80	B			Firm yellowish brown slightly sandy CLAY. Sand is fine to coarse. (SUPERFICIAL DEPOSITS)	0.60	(0.30)	87.95		
0.60	D								
0.60	ES			Yellowish brown gravelly slightly silty fine to coarse SAND. Gravel is subrounded to rounded rarely tabular fine to coarse of limestone. (NORTHMOOR SAND AND GRAVEL MEMBER)	0.80	(0.20)	87.75		
0.80 - 1.20	B								
1.00	ES								
1.20	SPT	N=44 (4,3,10,10,11,13)		Dense yellowish grey very sandy subrounded to rounded fine to medium GRAVEL of limestone. Sand is fine to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)					
1.20	D								
1.20 - 1.65	B								
1.70 - 2.20	B								
1.80	D								
2.20	SPT	N=31 (6,5,6,7,8,10)				(3.40)			
2.20 - 2.65	B								
2.70	D								
2.70 - 3.20	B								
3.20	SPT	N=35 (6,7,10,8,8,9)							
3.20 - 3.65	B								
3.70	D								
3.70 - 4.20	B								
4.20	SPT	N=17 (2,3,3,5,5,4)		Medium dense yellowish grey very sandy subrounded to rounded fine to medium GRAVEL of limestone. Sand is fine to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER) *... below 4.20m bgl: becoming medium dense.*	4.20		84.35		
4.20 - 4.65	B								
4.70	D								
4.70 - 5.20	B								
5.20	SPT	N=18 (1,3,5,2,4,7)				(2.30)			
5.20 - 5.65	B								
5.70	D								
5.70 - 6.20	B								
6.50	SPT	50/170mm (7,12,17,23,10)		Dense yellowish grey very sandy subrounded to rounded fine to medium GRAVEL of limestone. Sand is fine to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)	6.50		82.05		
6.50 - 6.95	B								
7.00 - 7.60	B								
7.70 - 8.00	B					(2.10)			
8.00 - 8.45	B								
8.00 - 8.45	UT								
8.50 - 9.50	B				8.60		79.95		
9.50	SPT	N=54 (5,6,9,11,15,19)		Very stiff thinly laminated dark grey sandy CLAY. Sand is fine to medium. (KELLAWAYS CLAY MEMBER)		(1.40)			
9.50 - 9.95	D				10.00		78.55		

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
Dando 3000	03/08	0800	0.00					
Dando 3000	03/08	1645	0.00					
Dando 3000	04/08	0800	0.00					
Dando 3000	04/08	1700	10.00	9.00	150			
Dando 3000	07/08	0800	10.00	9.00	150			
Dando	07/08	1015	10.00					

Chiselling

From (m)	To (m)	Duration (HH:MM)

General Remarks:
1. Location GPR cleared by Clifton Surveys Ltd and CAT & Genny. 2. Inspection pit hand dug to 0.80m bgl unable to progress further with hand tools. 3. Groundwater strike at 3.10m bgl. 4. 50mm monitoring well installed, response zone between 1.00m - 8.50m bgl.

Logged in general accordance with BS5930:2015

Hydrock	Project: Cotswold Community School, Ashton Keynes	Borehole No BH101 Page No. 2 of 2

Method: Cable Percussion	Date(s): 04/08/2023 - 07/08/2023	Logged By: AT	Drilled By: CCGI
Client: Bewley Homes	Co-ords: 403656.80, 195248.01	Checked By: SW	Flush:
Hydrock Project No: 28470	Ground Level: 88.55m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrum-entation / Backfill
Depth (m)	Type	Results							
				End of Borehole at 10.00m					
					11				
					12				
					13				
					14				
					15				
					16				
					17				
					18				
					19				
					20				

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
3000								

Chiselling

From (m)	To (m)	Duration (HH:MM)

General Remarks:
1. Location GPR cleared by Clifton Surveys Ltd and CAT & Genny. 2. Inspection pit hand dug to 0.80m bgl unable to progress further with hand tools. 3. Groundwater strike at 3.10m bgl. 4. 50mm monitoring well installed, response zone between 1.00m - 8.50m bgl.

Logged in general accordance with BS5930:2015

Hydrock	Project: Cotswold Community School, Ashton Keynes	Borehole No BH102 Page No. 1 of 1

Method: Cable Percussion	Date(s): 07/08/2023 - 08/08/2023	Logged By: AT	Drilled By: CCGI
Client: Bewley Homes	Co-ords: 403675.51, 195381.49	Checked By: SW	Flush:
Hydrock Project No: 28470	Ground Level: 88.85m OD		Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
0.00 - 0.40	B			Grass over firm brown sandy CLAY with frequent rootlets. Sand is fine to coarse . (TOPSOIL)	0.10	(0.10)	88.75		
0.20	ES			Stiff brown slightly sandy slightly gravelly CLAY with occasional rootlets. Sand is fine to coarse. Gravel is subrounded fine to medium of limestone. (SUPERFICIAL DEPOSITS)	0.60	(0.50)	88.25		
0.40 - 0.60	B			Yellowish brown very sandy slightly silty subrounded to rounded fine to medium GRAVEL of limestone. Sand is fine to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)					
0.60	ES								
0.60 - 1.20	B								
1.00	ES								
1.20	SPT	50/230mm (4,4,8,16,20,6)		*... from 1.20m bgl: becoming dense.*		(1.60)			
1.20 - 1.65	B								
1.70	D								
1.70 - 2.20	B				2.20		86.65		
2.20	SPT	N=19 (3,3,4,4,5,6)		Medium dense yellowish brown very sandy slightly silty subrounded to rounded fine to medium GRAVEL of limestone. Sand is fine to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)					
2.20 - 2.65	B								
2.70	D					(1.00)			
2.70 - 3.20	B				3.20		85.65		
3.20	SPT	50/210mm (6,12,17,17,16)		Dense yellowish brown very sandy slightly silty subrounded to rounded fine to medium GRAVEL of limestone. Sand is fine to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)					
3.20 - 3.65	B								
3.70	D					(1.00)			
3.70 - 4.20	B				4.20		84.65		
4.20	SPT	N=31 (3,4,5,10,9,7)		Medium dense yellowish brown very sandy slightly silty subrounded to rounded fine to medium GRAVEL of limestone. Sand is fine to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)					
4.20 - 4.65	B								
4.70	D					(1.00)			
4.70 - 5.20	B				5.20		83.65		
5.20	SPT	50/105mm (19,6,37,13)		Very Dense yellowish brown very sandy slightly silty subrounded to rounded fine to medium GRAVEL of limestone. Sand is fine to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)					
5.20 - 5.65	B								
5.70	D								
5.70 - 6.50	B								
6.50	SPT	N=43 (2,3,4,4,11,24)		*... below 6.50m bgl: becoming dense.*		(2.40)			
6.50 - 6.95	B								
7.00	D								
7.00 - 7.60	B				7.60		81.25		
7.60	D			Brown to yellowish brown slightly sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is subrounded fine of limestone. (KELLAWAYS CLAY MEMBER)	7.80	(0.20)	81.05		
7.60 - 8.00	B			Very stiff dark grey sandy CLAY. Sand is fine to medium. (KELLAWAYS CLAY MEMBER)					
8.00 - 8.24	UT								
8.45 - 8.50	D								
8.50 - 9.50	B					(2.15)			
9.00	ES								
9.50	SPT	50/165mm (9,12,14,16,20)			9.95		78.90		
				End of Borehole at 9.95m					

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
Dando 3000	07/08	1100	0.00					
Dando 3000	07/08	1700	6.50	5.20	150			
Dando 3000	08/08	0800	6.50	5.20	150			
Dando 3000	08/08	1430	9.95					

Chiselling

From (m)	To (m)	Duration (HH:MM)

General Remarks:
1. Location GPR cleared by Clifton Surveys Ltd and CAT & Genny. 2. Inspection pit hand dug to 0.90m bgl unable to progress further with hand tools. 3. No groundwater encountered. 4. 50mm monitoring well installed, response zone between 1.00m - 7.80m bgl.

Logged in general accordance with BS5930:2015

Hydrock	Project: Cotswold Community School, Ashton Keynes	Trialpit No TP101 Page No. 1 of 1

Method: Trial Pit	Date(s): 04/08/2023	Logged By: AT	Checked By: SW
Client: Bewley Homes	Co-ords: 403678.85, 195245.06	Stability: Stable.	Dimensions: 3.30m / 0.60m
Hydrock Project No: 28470	Ground Level: 88.58m OD	Plant: 8 Ton.	Scale: 1:25

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
0.20	ES			Grass over brown slightly sandy slightly gravelly SILT with frequent roots and rootlets. Sand is fine to coarse. Gravel is subangular to rounded fine to medium of limestone. (TOPSOIL)	0.35	(0.35)	88.23	
0.50	ES			Yellowish brown sandy subrounded to rounded fine to coarse GRAVEL of limestone. Sand is fine to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)				
1.00 1.00 1.00 - 1.20	D ES B					(2.25)		
2.00	ES							
					2.60		85.98	
				Base of Excavation at 2.60m				

General Remarks:
1. Position cleared by GPR by Clifton Surveys Ltd and by CAT and Genny prior to excavation. 2. Machine excavated to 2.60m bgl. 3. No visual or olfactory evidence of contamination encountered. 4. Groundwater encountered at 2.50m bgl. 5. Pit remained stable. 6. Trial pit backfilled with arisings.

Logged in general accordance with BS5930:2015

Hydrock	Project: Cotswold Community School, Ashton Keynes	Trialpit No TP102 Page No. 1 of 1

Method: Trial Pit	Date(s): 04/08/2023	Logged By: KB	Checked By: SW
Client: Bewley Homes		Stability: Stable.	Dimensions: 3.00m x 0.60m / Scale: 1:25
Hydrock Project No: 28470		Plant: 8 Ton.	

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
0.20	ES			Soft dark brown gravelly sandy SILT with rootlets. Gravel is subangular to rounded fine to coarse of limestone and quartzite. Sand is fine to coarse. (TOPSOIL)	0.30	(0.30)		
0.50	ES			Brown sandy silty subangular to rounded fine to coarse GRAVEL of limestone and quartzite with anthropogenic material comprising wood logs coal and glass. (MADE GROUND)	0.70	(0.40)		
1.00 1.00 1.00 - 1.40	D ES B			Yellowish brown sandy slightly silty subangular to rounded fine to coarse GRAVEL of limestone and quartzite with occasional silt pockets. (NORTHMOOR SAND AND GRAVEL MEMBER) *... below 1.40m bgl: becoming yellow and very sandy.*	3.00	(2.30)		
2.50 2.50 - 2.90	D B			Base of Excavation at 3.00m				

General Remarks:
1. Position cleared by GPR by Clifton Surveys Ltd and by CAT and Genny prior to excavation. 2. Machine excavated to 3.0m bgl. 3. No visual or olfactory evidence of contamination encountered. 4. No groundwater encountered. 5. Pit remained stable. 6. Trial pit backfilled with arisings.

Logged in general accordance with BS5930:2015

Hydrock

Project: Cotswold Community School, Ashton Keynes	Trialpit No TP103 Page No. 1 of 1

Method: Trial Pit	Date(s): 04/08/2023	Logged By: KB	Checked By: SW
Client: Bewley Homes	Co-ords: 403619.19, 195481.94	Stability: Stable.	Dimensions: 3.30m x 0.60m
Hydrock Project No: 28470	Ground Level: 89.04m OD	Plant: 8 Ton.	Scale: 1:25

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
0.20	ES			Soft dark brown gravelly sandy SILT with rootlets. Gravel is subangular to rounded fine to coarse of limestone and quartzite. Sand is fine to coarse. (TOPSOIL)	0.30	(0.30)	88.74	
				Firm orangish brown sandy SILT. Sand is fine to coarse. (SUPERFICIAL DEPOSITS)	0.50	(0.20)	88.54	
0.60 0.60	D ES			Yellowish brown sandy slightly silty subangular to rounded fine to coarse GRAVEL of limestone and quartzite with rare silt pockets. (NORTHMOOR SAND AND GRAVEL MEMBER)				
1.00 1.00	D ES					(2.30)		
2.10	D			*... below 2.0m bgl: becoming silty.*	2.80		86.24	
				Base of Excavation at 2.80m				

General Remarks:
1. Position cleared by GPR by Clifton Surveys Ltd and by CAT and Genny prior to excavation. 2. Machine excavated to 2.80m bgl. 3. No visual or olfactory evidence of contamination encountered. 4. No groundwater encountered. 5. Pit remained stable. 6. Trial pit backfilled with arisings.

Logged in general accordance with BS5930:2015

Appendix C Geotechnical Testing

4041

TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS

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

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

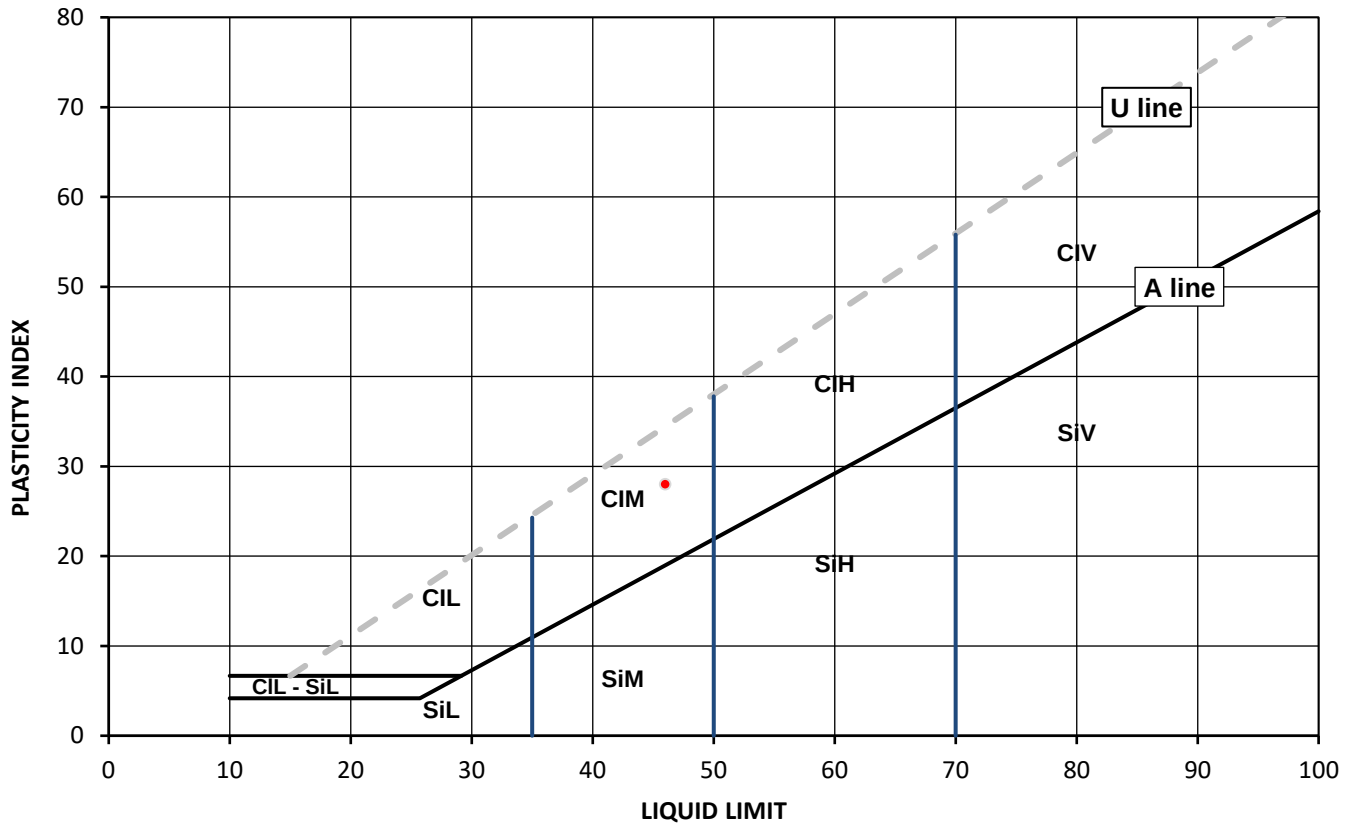
Client:	Hydrock Consultants Ltd	Client Reference:	C 28470 C
Client Address:	Over Court Barns, Over Lane, Bristol, BS32 4DF	Job Number:	23-51825-1
		Date Sampled:	08/08/2023
		Date Received:	17/08/2023
Contact:	Scott Williams	Date Tested:	28/08/2023
Site Address:	Ashton Keynes	Sampled By:	Client - A. Tidswell

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	2785569	Depth Top [m]:	2.70
Hole No.:	BH103	Depth Base [m]:	3.20
Sample Reference:	Not Given	Sample Type:	B
Sample Description:	Grey slightly gravelly slightly sandy CLAY		
Sample Preparation:	Tested after washing to remove >425um		

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
23	46	18	28	94



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Water Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report relate only to the sample(s) submitted for testing.

Signed: Katarzyna Koziel

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Date Reported: 04/09/2023

GF 236.13

TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS

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

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

4041

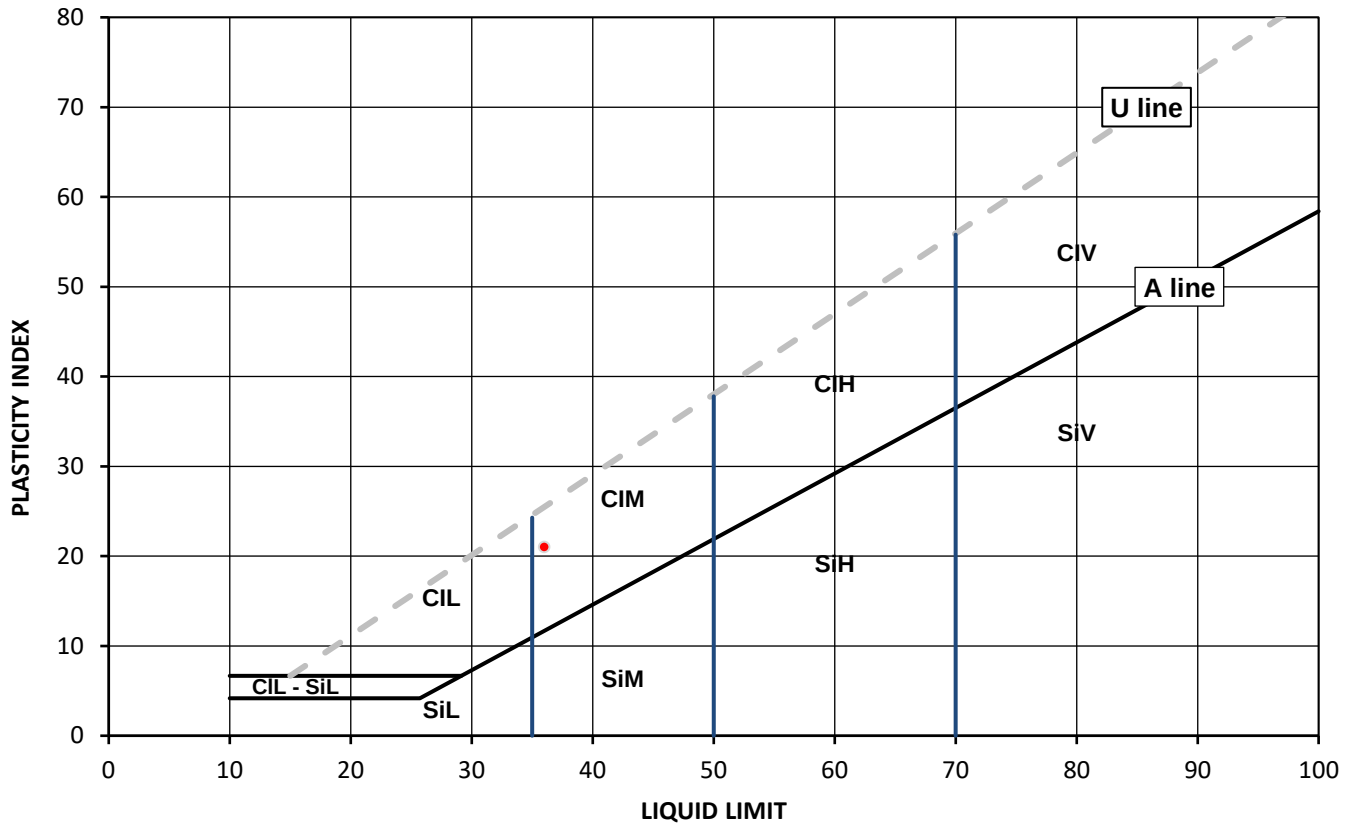
Client:	Hydrock Consultants Ltd	Client Reference:	C 28470 C
Client Address:	Over Court Barns, Over Lane, Bristol, BS32 4DF	Job Number:	23-51825-1
		Date Sampled:	09/08/2023
		Date Received:	17/08/2023
Contact:	Scott Williams	Date Tested:	28/08/2023
Site Address:	Ashton Keynes	Sampled By:	Client - A. Tidswell

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	2785571	Depth Top [m]:	4.70
Hole No.:	BH103	Depth Base [m]:	5.20
Sample Reference:	Not Given	Sample Type:	B
Sample Description:	Grey slightly gravelly sandy CLAY		
Sample Preparation:	Tested after >425um removed by hand		

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
15	36	15	21	99



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Water Content by BS 1377-2: 1990: Clause 3.2

Remarks:

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Signed: Katarzyna Koziel

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Date Reported: 04/09/2023

GF 236.13

TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS

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

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

4041

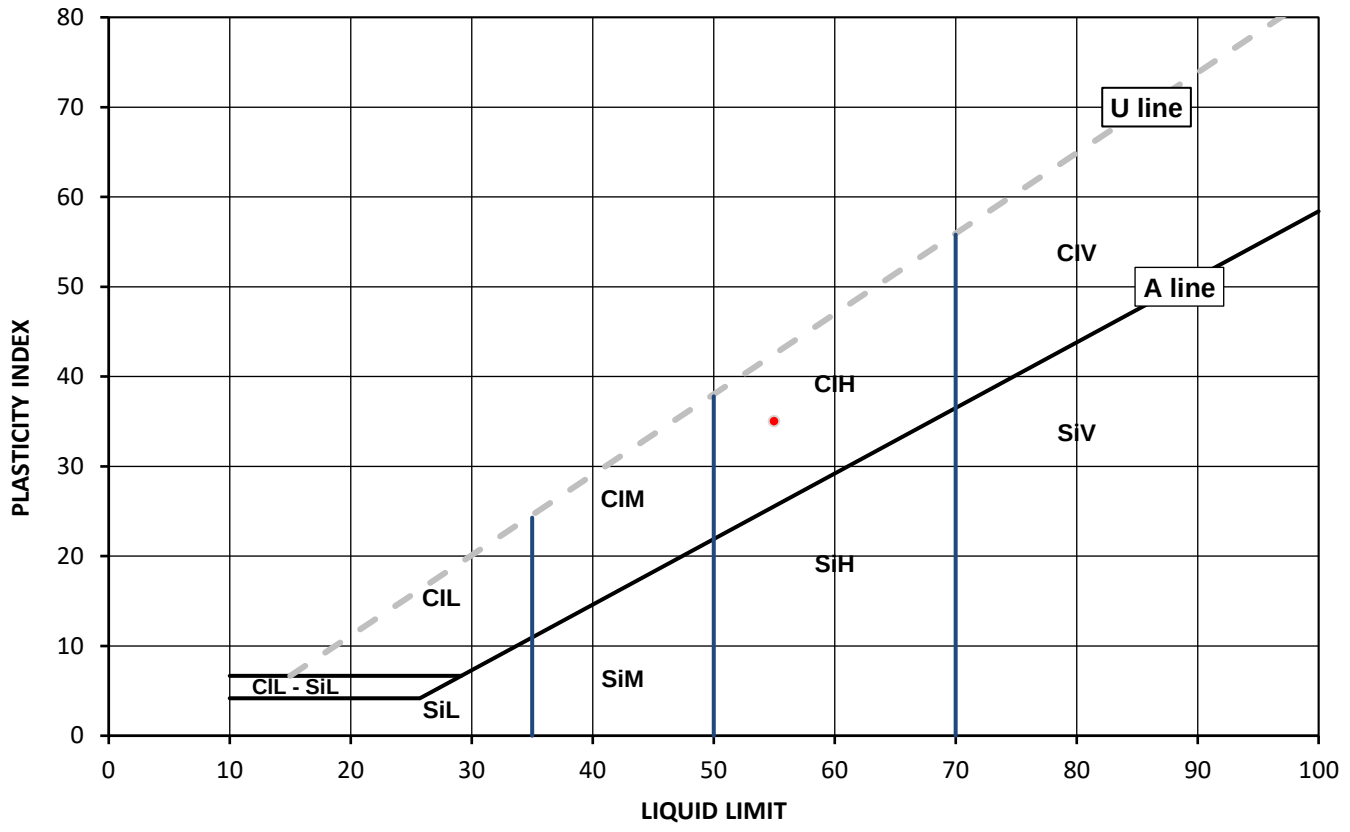
Client:	Hydrock Consultants Ltd	Client Reference:	C 28470 C
Client Address:	Over Court Barns, Over Lane, Bristol, BS32 4DF	Job Number:	23-51825-1
		Date Sampled:	07/08/2023
		Date Received:	17/08/2023
Contact:	Scott Williams	Date Tested:	25/08/2023
Site Address:	Ashton Keynes	Sampled By:	Client - A. Tidswell

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	2785578	Depth Top [m]:	2.00
Hole No.:	TP107	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	D
Sample Description:	Grey slightly sandy CLAY		
Sample Preparation:	Tested in natural condition		

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
21	55	20	35	100



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Water Content by BS 1377-2: 1990: Clause 3.2

Remarks:

Opinions and interpretations expressed herein are outside of the scope of the UKAS Accreditation. This report may not be reproduced other than in full without the prior written approval of the issuing laboratory. The results included within the report relate only to the sample(s) submitted for testing.

Signed: Katarzyna Koziel

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Date Reported: 04/09/2023

GF 236.13

TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS

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

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

4041

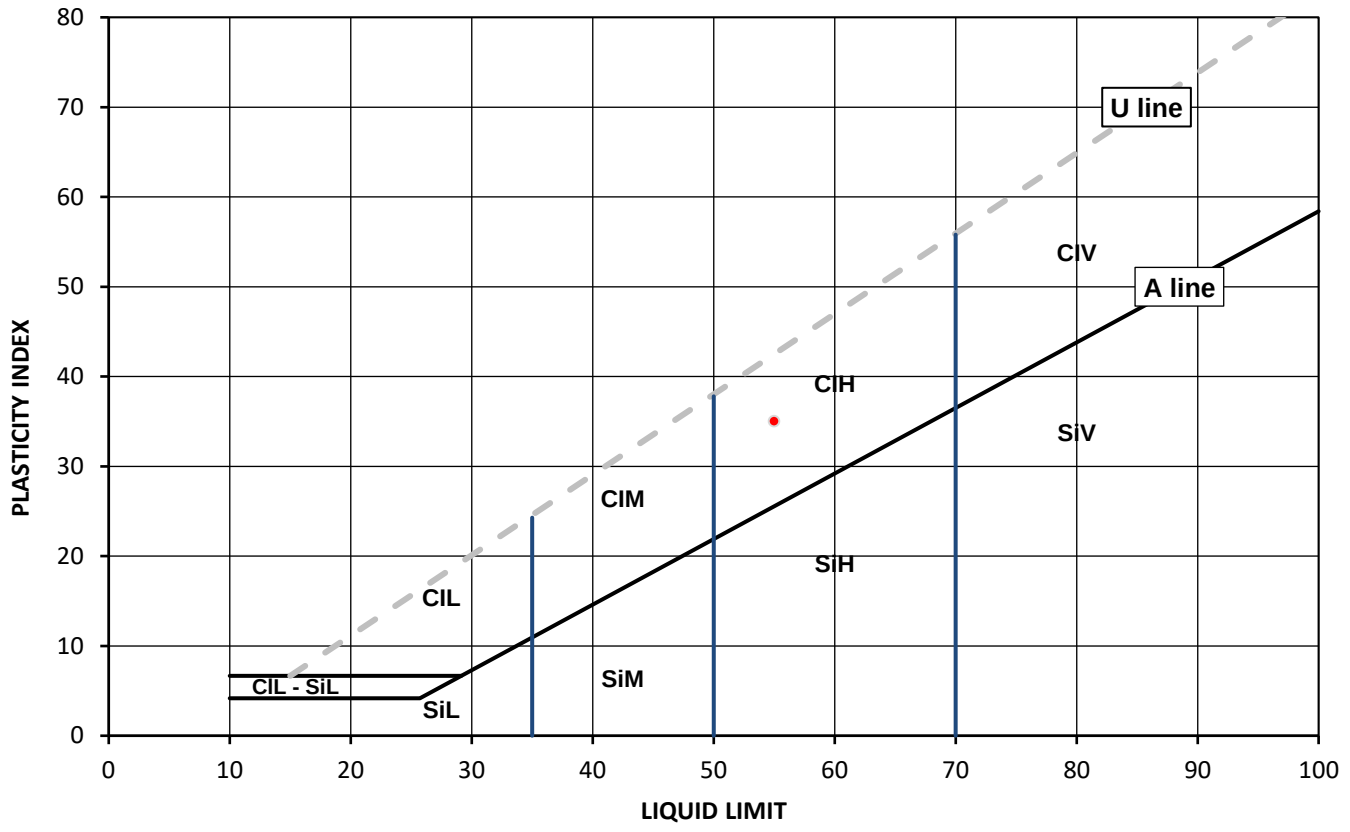
Client:	Hydrock Consultants Ltd	Client Reference:	C 28470 C
Client Address:	Over Court Barns, Over Lane, Bristol, BS32 4DF	Job Number:	23-51825-1
		Date Sampled:	07/08/2023
		Date Received:	17/08/2023
Contact:	Scott Williams	Date Tested:	25/08/2023
Site Address:	Ashton Keynes	Sampled By:	Client - A. Tidswell

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	2785579	Depth Top [m]:	2.00
Hole No.:	TP108	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	D
Sample Description:	Grey slightly sandy CLAY		
Sample Preparation:	Tested in natural condition		

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
20	55	20	35	100



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Water Content by BS 1377-2: 1990: Clause 3.2

Remarks:

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Signed: Katarzyna Koziel

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Date Reported: 04/09/2023

GF 236.13

SUMMARY REPORT

SUMMARY OF CLASSIFICATION TEST RESULTS

Tested in Accordance with:

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

4041

Client: Hydrock Consultants Ltd

Client Address: Over Court Barns, Over Lane, Bristol, BS32 4DF

Contact: Scott Williams

Site Address: Ashton Keynes

Water Content by BS 1377-2:1990: Clause 3.2Atterberg by BS 1377-2: 1990: Clause 4.3 (4 Point Test), Clause 4.4 (1 Point Test) and 5

Client Reference: C 28470 C
Job Number: 23-51825-1
Date Sampled: 07/08 - 09/08/2023
Date Received: 17/08/2023
Date Tested: 25/08 - 28/08/2023
Sampled By: Client - A. Tidswell

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	Water Content BS 1377-2 [W]	Water Content BS EN ISO 17892-2 [W]	Atterberg				Density			Total Porosity#		
		Reference	Depth Top	Depth Base	Type					% Passing 425um	WL	Wp	Ip	bulk	dry	PD			
			m	m				%	%	%	%	%	%	Mg/m3	Mg/m3	Mg/m3	%		
2785569	BH103	Not Given	2.70	3.20	B	Grey slightly gravelly slightly sandy CLAY	Atterberg 4 Point	23		94	46	18	28						
2785571	BH103	Not Given	4.70	5.20	B	Grey slightly gravelly sandy CLAY	Atterberg 4 Point	15		99	36	15	21						
2785578	TP107	Not Given	2.00	Not Given	D	Grey slightly sandy CLAY	Atterberg 4 Point	21		100	55	20	35						
2785579	TP108	Not Given	2.00	Not Given	D	Grey slightly sandy CLAY	Atterberg 4 Point	20		100	55	20	35						

Note: # Non accredited; NP - Non plastic

Comments:

Signed:

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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Date Reported: 04/09/2023

GF 238.16

SUMMARY REPORT

DETERMINATION OF WATER CONTENT

Tested in Accordance with: BS 1377-2: 1990: Clause 3.2

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

4041

Client: Hydrock Consultants Ltd

Client Address: Over Court Barns, Over Lane,
Bristol, BS32 4DF

Contact: Scott Williams

Site Address: Ashton Keynes

Client Reference: C 28470 C
Job Number: 23-51825-1
Date Sampled: 07/08 - 09/08/2023
Date Received: 17/08/2023
Date Tested: 25/08 - 28/08/2023
Sampled By: Client - A. Tidswell

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	WC	Sample preparation / Oven temperature at the time of testing			
		Reference	Depth Top m	Depth Base m	Type			%				
2785569	BH103	Not Given	2.70	3.20	B	Grey slightly gravelly slightly sandy CLAY		23	Sample was quartered, oven dried at 106.1 °C			
2785571	BH103	Not Given	4.70	5.20	B	Grey slightly gravelly sandy CLAY		15	Sample was quartered, oven dried at 106.1 °C			
2785578	TP107	Not Given	2.00	Not Given	D	Grey slightly sandy CLAY		21	Sample was quartered, oven dried at 107.8 °C			
2785579	TP108	Not Given	2.00	Not Given	D	Grey slightly sandy CLAY		20	Sample was quartered, oven dried at 107.8 °C			

Comments:

Signed:

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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Date Reported: 04/09/2023

GF 099.17

4041

TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

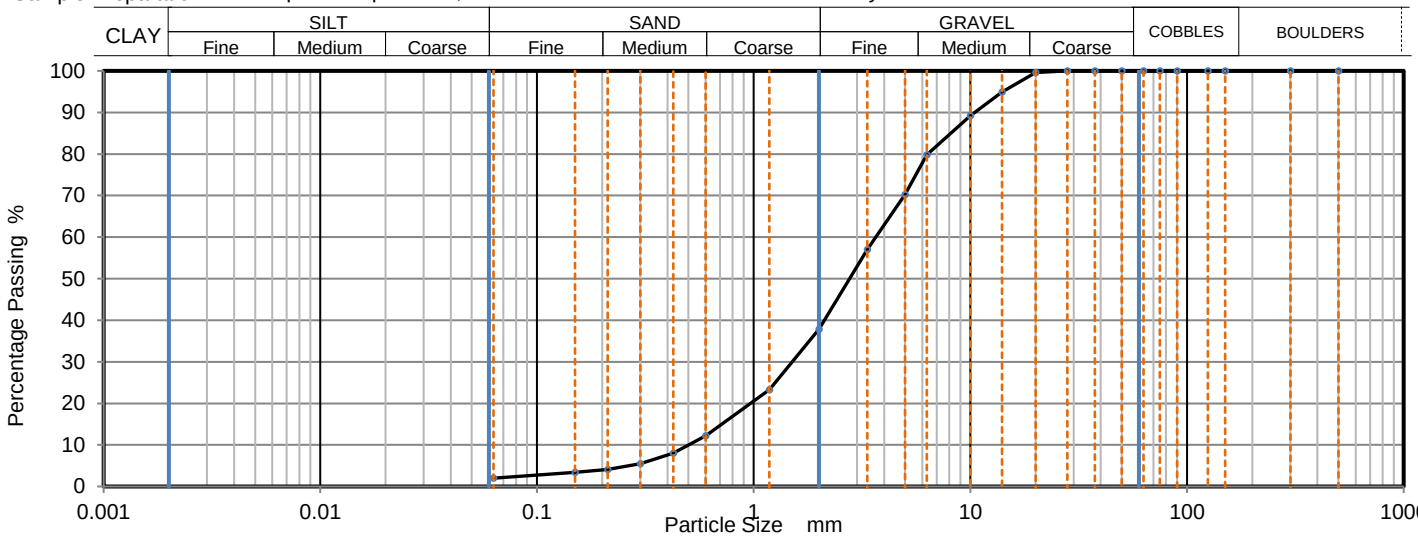
Environmental Science

Client:	Hydrock Consultants Ltd	Client Reference:	C 28470 C
Client Address:	Over Court Barns, Over Lane, Bristol, BS32 4DF	Job Number:	23-51825-1
		Date Sampled:	04/08/2023
		Date Received:	17/08/2023
Contact:	Scott Williams	Date Tested:	26/08/2023
Site Address:	Ashton Keynes	Sampled By:	Client - A. Tidswell

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	2785566	Depth Top [m]:	1.70
Hole No.:	BH101	Depth Base [m]:	2.20
Sample Reference:	Not Given	Sample Type:	B
Sample Description:	Light brown sandy GRAVEL		
Sample Preparation:	Sample was quartered, oven dried at 109.0 °C and broken down by hand.		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	95		
10	89		
6.3	80		
5	70		
3.35	57		
2	38		
1.18	23		
0.6	12		
0.425	8		
0.3	6		
0.212	4		
0.15	3		
0.063	3		

Sample Proportions	% dry mass
Very coarse	0
Gravel	62
Sand	35
Fines <0.063mm	3

Grading Analysis		
D100	mm	28
D60	mm	3.67
D30	mm	1.51
D10	mm	0.5
Uniformity Coefficient		7.3
Curvature Coefficient		1.2

Uniformity and Curvature Coefficient calculated in accordance with BS EN ISO 14688-2:2018

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

Remarks:

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Signed: Katarzyna Koziel

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Date Reported: 04/09/2023

GF 100.23

TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

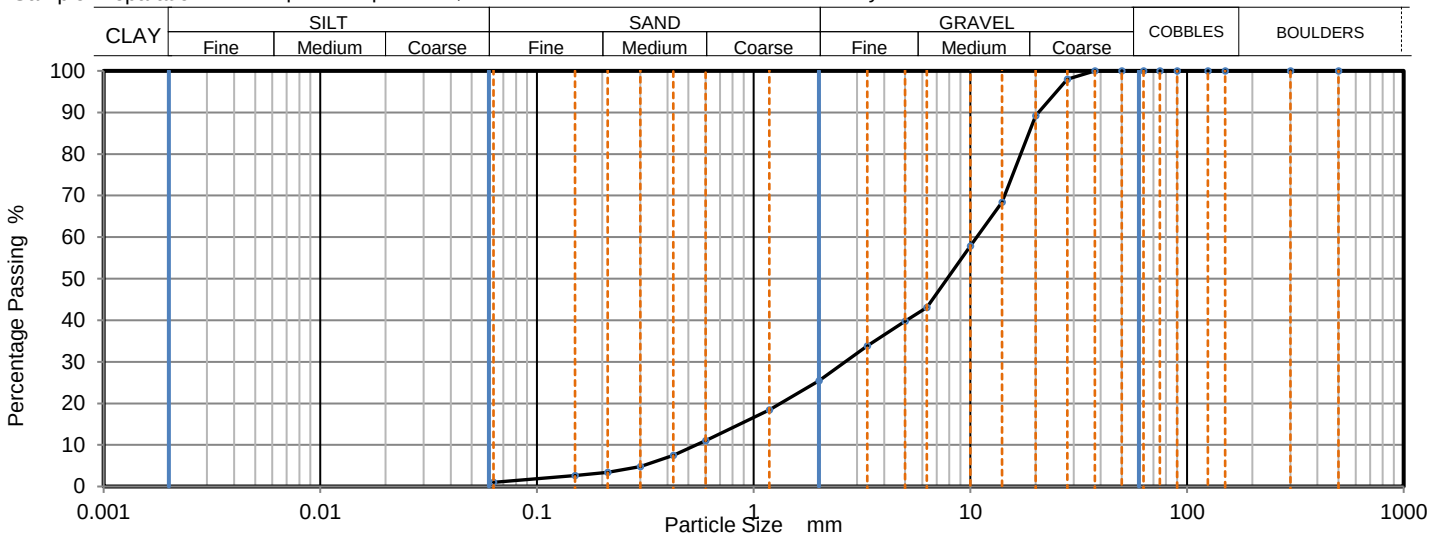
4041

Client:	Hydrock Consultants Ltd	Client Reference:	C 28470 C
Client Address:	Over Court Barns, Over Lane, Bristol, BS32 4DF	Job Number:	23-51825-1
		Date Sampled:	07/08/2023
		Date Received:	17/08/2023
Contact:	Scott Williams	Date Tested:	26/08/2023
Site Address:	Ashton Keynes	Sampled By:	Client - A. Tidswell

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	2785567	Depth Top [m]:	1.20
Hole No.:	BH102	Depth Base [m]:	1.65
Sample Reference:	Not Given	Sample Type:	B
Sample Description:	Light brown sandy GRAVEL		
Sample Preparation:	Sample was quartered, oven dried at 106.1 °C and broken down by hand.		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	98		
20	89		
14	68		
10	58		
6.3	43		
5	40		
3.35	34		
2	25		
1.18	18		
0.6	11		
0.425	8		
0.3	5		
0.212	3		
0.15	3		
0.063	2		

Sample Proportions	% dry mass
Very coarse	0
Gravel	75
Sand	24
Fines <0.063mm	2

Grading Analysis		
D100	mm	37.5
D60	mm	10.7
D30	mm	2.66
D10	mm	0.544
Uniformity Coefficient		20
Curvature Coefficient		1.2

Uniformity and Curvature Coefficient calculated in accordance with BS EN ISO 14688-2:2018

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

Remarks:

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Signed: Katarzyna Koziel

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Date Reported: 04/09/2023

GF 100.23

TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

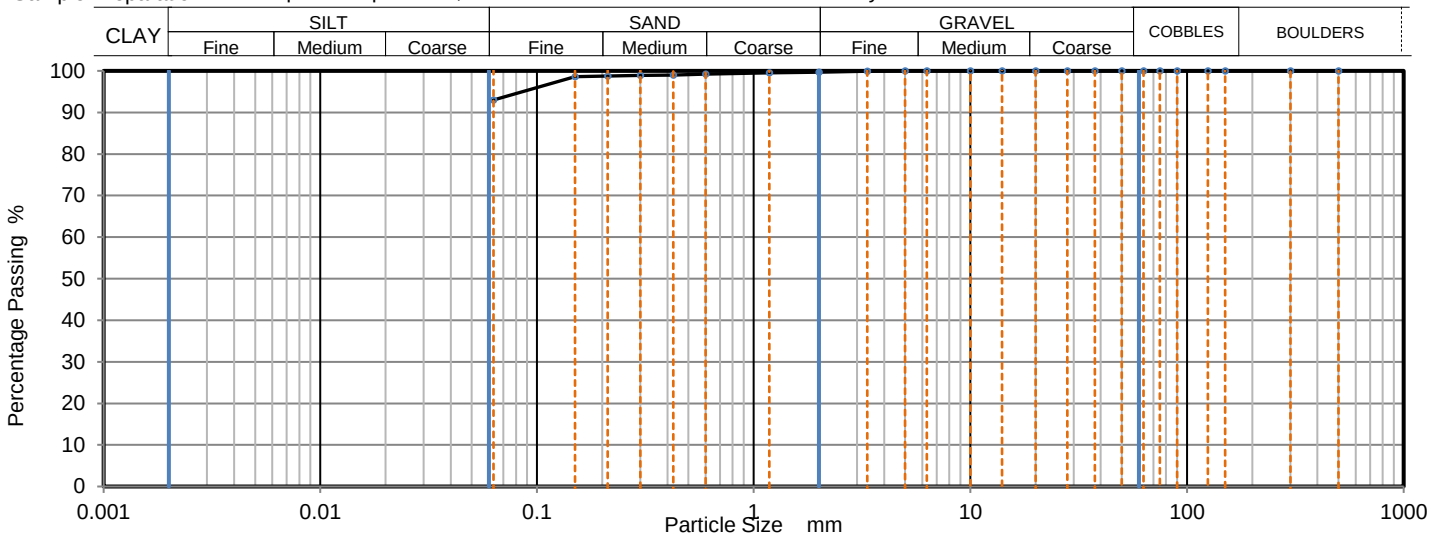
4041

Client:	Hydrock Consultants Ltd	Client Reference:	C 28470 C
Client Address:	Over Court Barns, Over Lane, Bristol, BS32 4DF	Job Number:	23-51825-1
		Date Sampled:	11/08/2023
		Date Received:	17/08/2023
Contact:	Scott Williams	Date Tested:	26/08/2023
Site Address:	Ashton Keynes	Sampled By:	Client - A. Tidswell

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	2785574	Depth Top [m]:	9.50
Hole No.:	BH105	Depth Base [m]:	10.00
Sample Reference:	Not Given	Sample Type:	B
Sample Description:	Grey CLAY		
Sample Preparation:	Sample was quartered, oven dried at 109.0 °C and broken down by hand.		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	100		
14	100		
10	100		
6.3	100		
5	100		
3.35	100		
2	100		
1.18	100		
0.6	99		
0.425	99		
0.3	99		
0.212	99		
0.15	99		
0.063	93		

Sample Proportions	% dry mass
Very coarse	0
Gravel	0
Sand	7
Fines <0.063mm	93

Grading Analysis		
D100	mm	5
D60	mm	
D30	mm	
D10	mm	
Uniformity Coefficient		N/A
Curvature Coefficient		

Uniformity and Curvature Coefficient calculated in accordance with BS EN ISO 14688-2:2018

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

Remarks:

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Signed: Katarzyna Koziel

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Date Reported: 04/09/2023

GF 100.23

TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

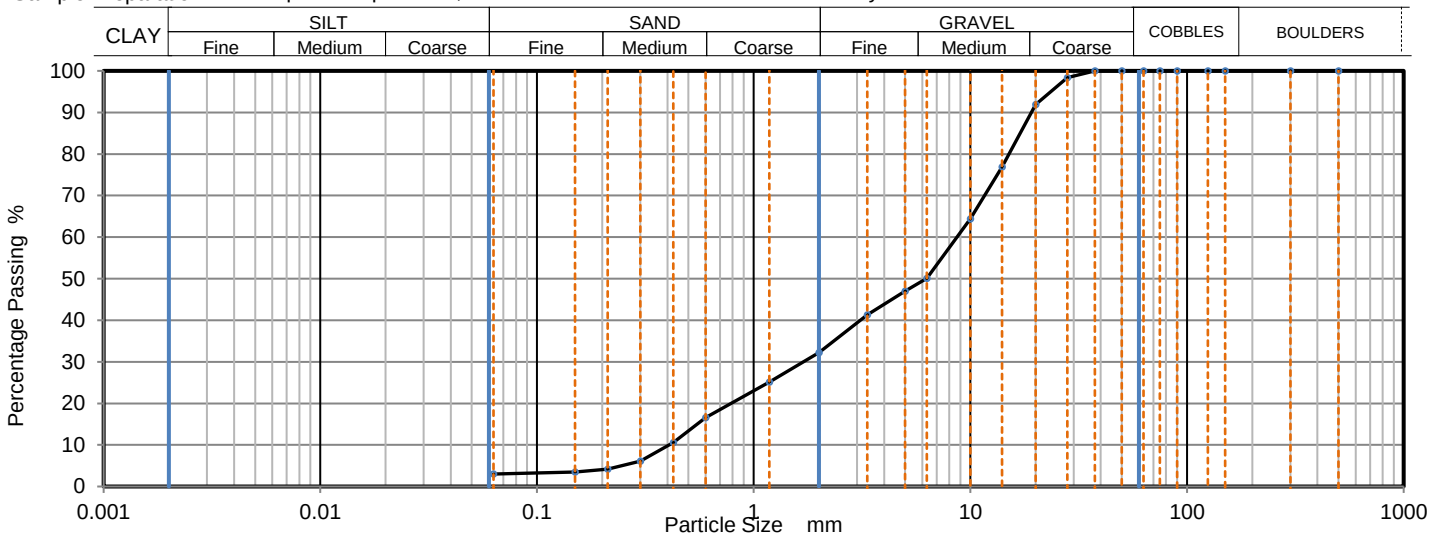
4041

Client:	Hydrock Consultants Ltd	Client Reference:	C 28470 C
Client Address:	Over Court Barns, Over Lane, Bristol, BS32 4DF	Job Number:	23-51825-1
		Date Sampled:	04/08/2023
		Date Received:	17/08/2023
Contact:	Scott Williams	Date Tested:	26/08/2023
Site Address:	Ashton Keynes	Sampled By:	Client - A. Tidswell

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	2785575	Depth Top [m]:	1.00
Hole No.:	TP101	Depth Base [m]:	1.20
Sample Reference:	Not Given	Sample Type:	B
Sample Description:	Light brown sandy GRAVEL		
Sample Preparation:	Sample was quartered, oven dried at 106.1 °C and broken down by hand.		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	98		
20	92		
14	77		
10	64		
6.3	50		
5	47		
3.35	41		
2	32		
1.18	25		
0.6	17		
0.425	11		
0.3	6		
0.212	4		
0.15	4		
0.063	3		

Sample Proportions	% dry mass
Very coarse	0
Gravel	68
Sand	29
Fines <0.063mm	3

Grading Analysis		
D100	mm	37.5
D60	mm	8.68
D30	mm	1.7
D10	mm	0.407
Uniformity Coefficient		21
Curvature Coefficient		0.82

Uniformity and Curvature Coefficient calculated in accordance with BS EN ISO 14688-2:2018

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

Remarks:

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Signed: Katarzyna Koziel

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Date Reported: 04/09/2023

GF 100.23

TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

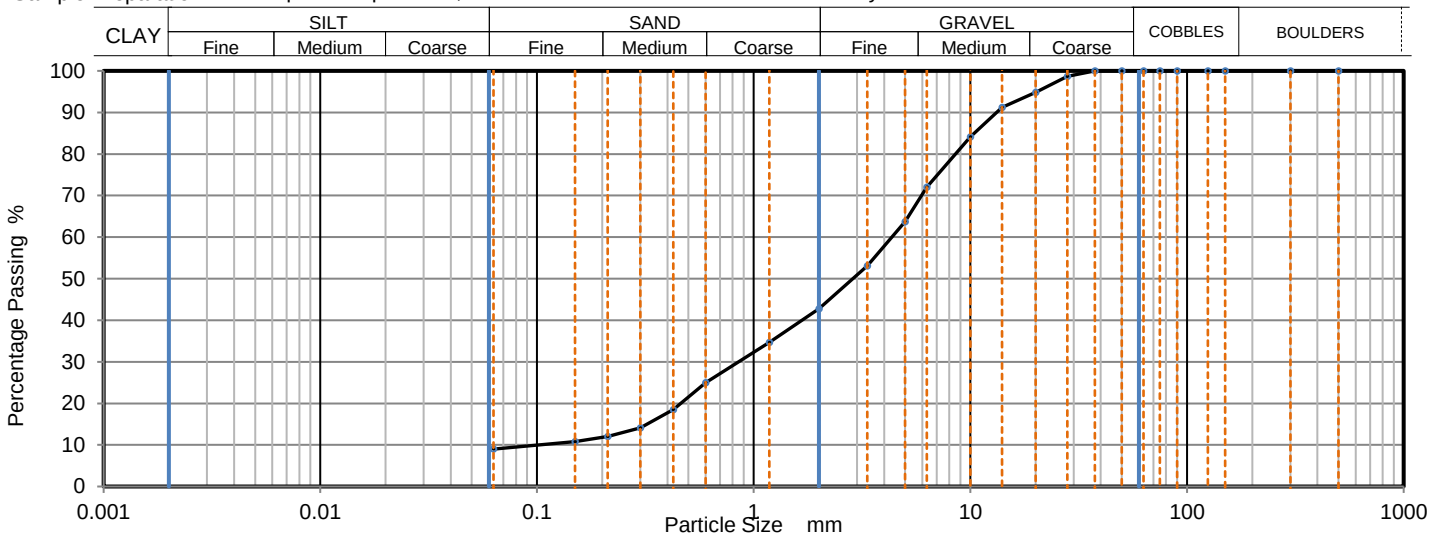
4041

Client:	Hydrock Consultants Ltd	Client Reference:	C 28470 C
Client Address:	Over Court Barns, Over Lane, Bristol, BS32 4DF	Job Number:	23-51825-1
		Date Sampled:	04/08/2023
		Date Received:	17/08/2023
Contact:	Scott Williams	Date Tested:	28/08/2023
Site Address:	Ashton Keynes	Sampled By:	Client - A. Tidswell

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	2785576	Depth Top [m]:	1.00
Hole No.:	TP102	Depth Base [m]:	1.40
Sample Reference:	Not Given	Sample Type:	B
Sample Description:	Light brown sandy GRAVEL		
Sample Preparation:	Sample was quartered, oven dried at 106.1 °C and broken down by hand.		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	99		
20	95		
14	91		
10	84		
6.3	72		
5	64		
3.35	53		
2	43		
1.18	35		
0.6	25		
0.425	19		
0.3	14		
0.212	12		
0.15	11		
0.063	9		

Sample Proportions	% dry mass
Very coarse	0
Gravel	57
Sand	33
Fines <0.063mm	9

Grading Analysis		
D100	mm	37.5
D60	mm	4.34
D30	mm	0.851
D10	mm	0.0917
Uniformity Coefficient		47
Curvature Coefficient		1.8

Uniformity and Curvature Coefficient calculated in accordance with BS EN ISO 14688-2:2018

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

Remarks:

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Signed: Katarzyna Koziel

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Date Reported: 04/09/2023

GF 100.23

TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

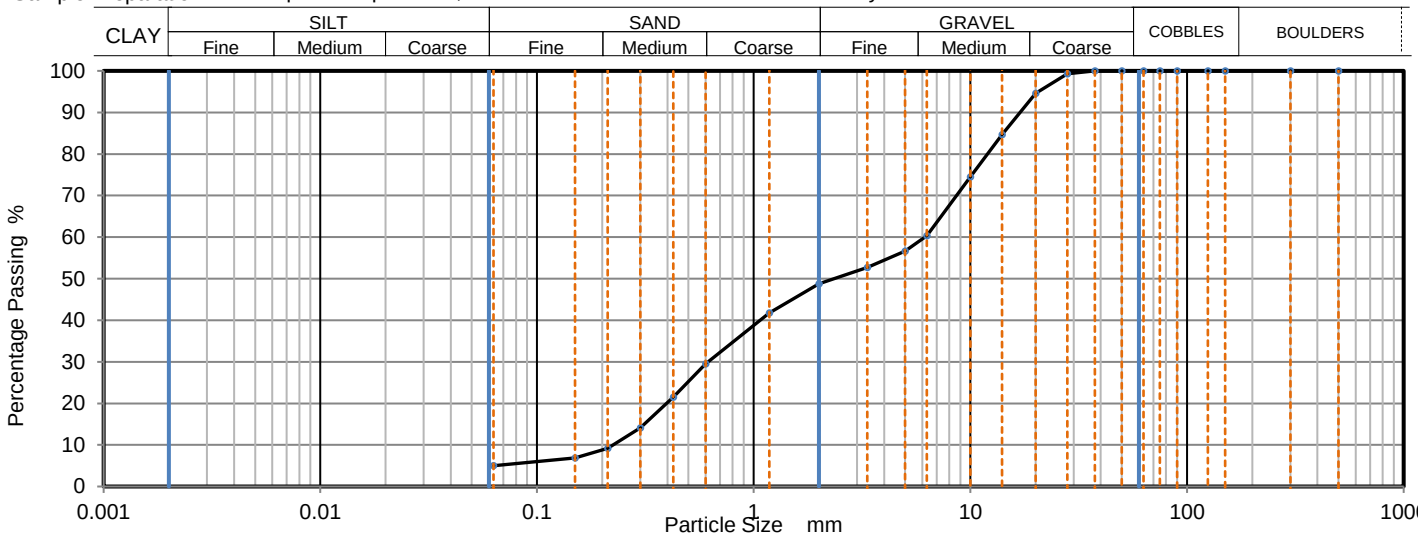
4041

Client:	Hydrock Consultants Ltd	Client Reference:	C 28470 C
Client Address:	Over Court Barns, Over Lane, Bristol, BS32 4DF	Job Number:	23-51825-1
		Date Sampled:	07/08/2023
		Date Received:	17/08/2023
Contact:	Scott Williams	Date Tested:	26/08/2023
Site Address:	Ashton Keynes	Sampled By:	Client - A. Tidswell

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	2785577	Depth Top [m]:	0.80
Hole No.:	TP107	Depth Base [m]:	1.00
Sample Reference:	Not Given	Sample Type:	B
Sample Description:	Light brown sandy GRAVEL		
Sample Preparation:	Sample was quartered, oven dried at 106.1 °C and broken down by hand.		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	99		
20	95		
14	85		
10	75		
6.3	60		
5	57		
3.35	53		
2	49		
1.18	42		
0.6	30		
0.425	22		
0.3	14		
0.212	9		
0.15	7		
0.063	5		

Sample Proportions	% dry mass
Very coarse	0
Gravel	51
Sand	44
Fines <0.063mm	5

Grading Analysis		
D100	mm	37.5
D60	mm	6.2
D30	mm	0.615
D10	mm	0.224
Uniformity Coefficient		28
Curvature Coefficient		0.27

Uniformity and Curvature Coefficient calculated in accordance with BS EN ISO 14688-2:2018

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

Remarks:

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Signed: Katarzyna Koziel

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Date Reported: 04/09/2023

GF 100.23

TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

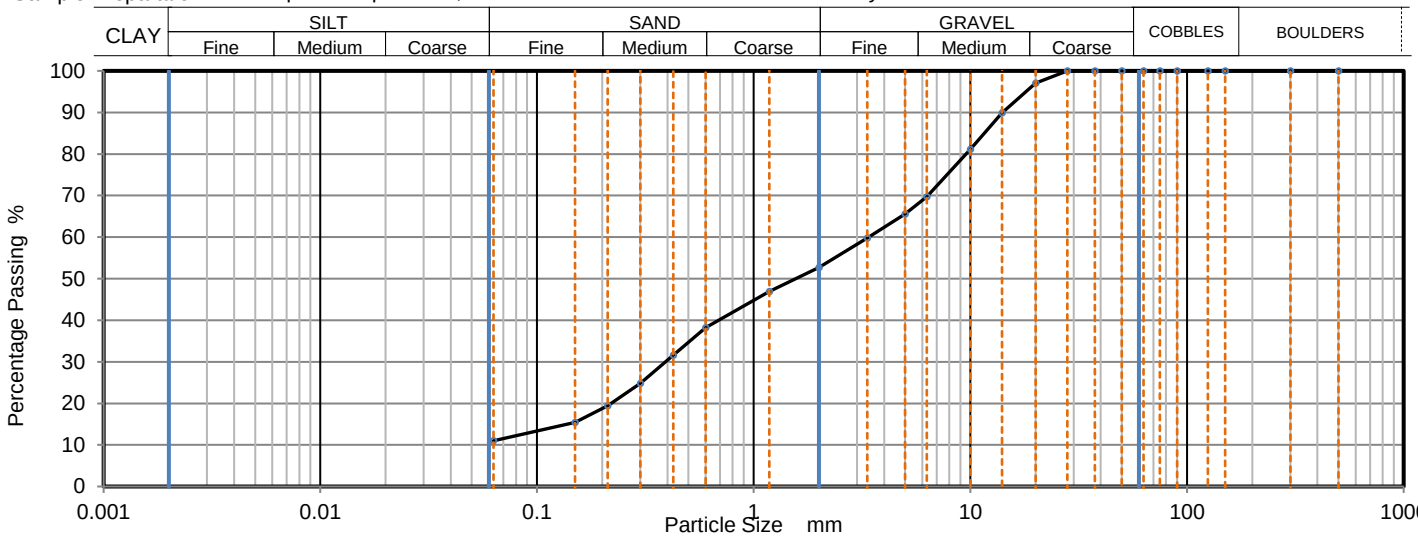
4041

Client:	Hydrock Consultants Ltd	Client Reference:	C 28470 C
Client Address:	Over Court Barns, Over Lane, Bristol, BS32 4DF	Job Number:	23-51825-1
		Date Sampled:	07/08/2023
		Date Received:	17/08/2023
Contact:	Scott Williams	Date Tested:	26/08/2023
Site Address:	Ashton Keynes	Sampled By:	Client - A. Tidswell

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	2785580	Depth Top [m]:	1.80
Hole No.:	TP110	Depth Base [m]:	2.00
Sample Reference:	Not Given	Sample Type:	B
Sample Description:	Light brown sandy GRAVEL		
Sample Preparation:	Sample was quartered, oven dried at 109.0 °C and broken down by hand.		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	97		
14	90		
10	81		
6.3	70		
5	66		
3.35	60		
2	53		
1.18	47		
0.6	38		
0.425	32		
0.3	25		
0.212	19		
0.15	15		
0.063	12		

Sample Proportions	% dry mass
Very coarse	0
Gravel	47
Sand	41
Fines <0.063mm	12

Grading Analysis		
D100	mm	28
D60	mm	3.39
D30	mm	0.391
D10	mm	
Uniformity Coefficient		> 54
Curvature Coefficient		

Uniformity and Curvature Coefficient calculated in accordance with BS EN ISO 14688-2:2018

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

Remarks:

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Signed: Katarzyna Koziel

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Date Reported: 04/09/2023

GF 100.23

TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

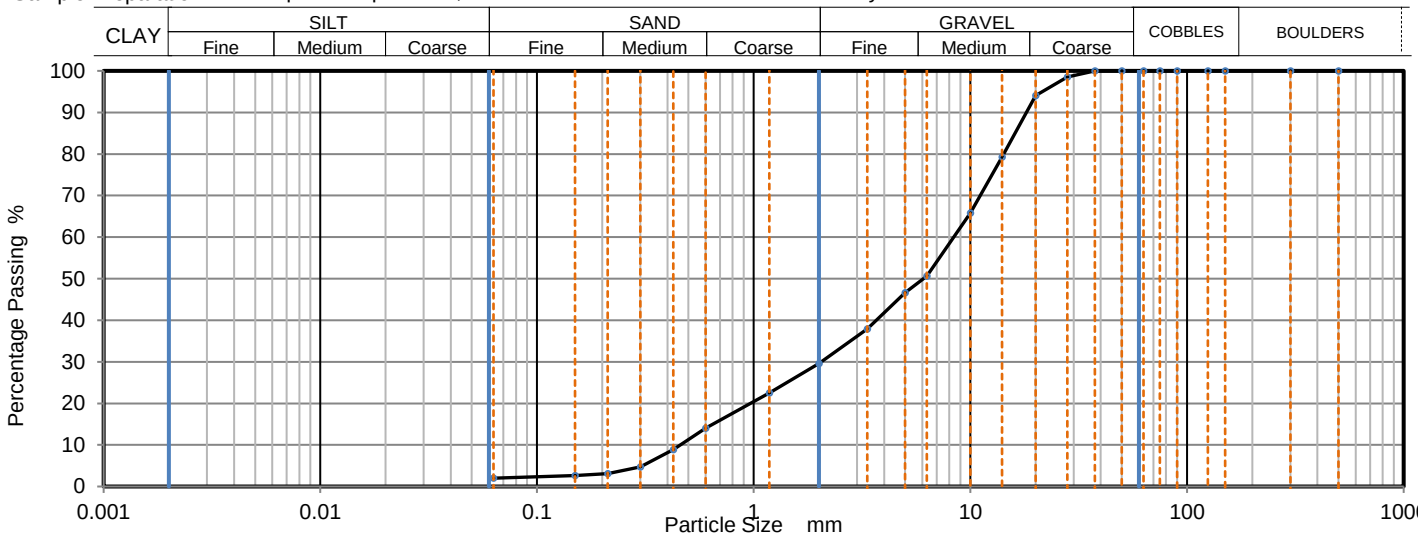
4041

Client:	Hydrock Consultants Ltd	Client Reference:	C 28470 C
Client Address:	Over Court Barns, Over Lane, Bristol, BS32 4DF	Job Number:	23-51825-1
		Date Sampled:	07/08/2023
		Date Received:	17/08/2023
Contact:	Scott Williams	Date Tested:	26/08/2023
Site Address:	Ashton Keynes	Sampled By:	Client - A. Tidswell

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	2785581	Depth Top [m]:	0.50
Hole No.:	TP111	Depth Base [m]:	0.70
Sample Reference:	Not Given	Sample Type:	B
Sample Description:	Light brown sandy GRAVEL		
Sample Preparation:	Sample was quartered, oven dried at 106.1 °C and broken down by hand.		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	99		
20	94		
14	79		
10	66		
6.3	51		
5	47		
3.35	38		
2	30		
1.18	23		
0.6	14		
0.425	9		
0.3	5		
0.212	3		
0.15	3		
0.063	2		

Sample Proportions	% dry mass
Very coarse	0
Gravel	70
Sand	27
Fines <0.063mm	2

Grading Analysis		
D100	mm	37.5
D60	mm	8.38
D30	mm	2.05
D10	mm	0.457
Uniformity Coefficient		18
Curvature Coefficient		1.1

Uniformity and Curvature Coefficient calculated in accordance with BS EN ISO 14688-2:2018

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

Remarks:

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Signed: Katarzyna Koziel

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Date Reported: 04/09/2023

GF 100.23

TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

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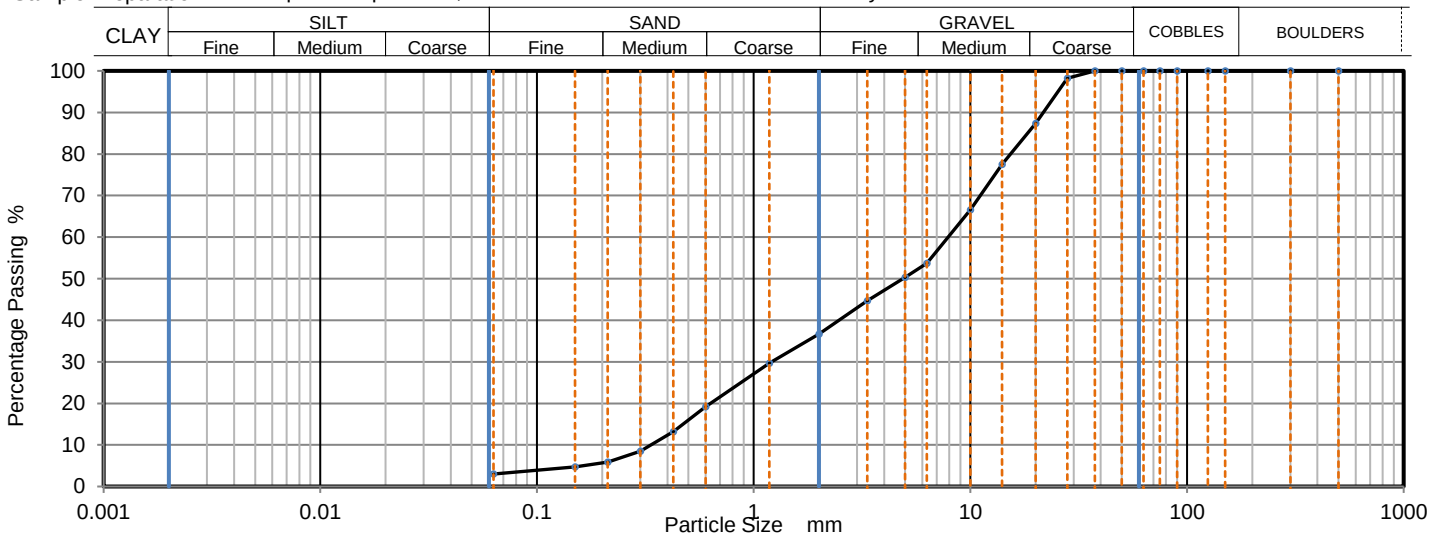
Client:	Hydrock Consultants Ltd	Client Reference:	C 28470 C
Client Address:	Over Court Barns, Over Lane, Bristol, BS32 4DF	Job Number:	23-51825-1
		Date Sampled:	07/08/2023
		Date Received:	17/08/2023
Contact:	Scott Williams	Date Tested:	26/08/2023
Site Address:	Ashton Keynes	Sampled By:	Client - A. Tidswell

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	2785582	Depth Top [m]:	1.80
Hole No.:	TP112	Depth Base [m]:	2.00
Sample Reference:	Not Given	Sample Type:	B
Sample Description:	Orangish brown sandy GRAVEL		
Sample Preparation:	Sample was quartered, oven dried at 106.1 °C and broken down by hand.		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	98		
20	87		
14	78		
10	67		
6.3	54		
5	50		
3.35	45		
2	37		
1.18	30		
0.6	19		
0.425	13		
0.3	9		
0.212	6		
0.15	5		
0.063	3		

Sample Proportions	% dry mass
Very coarse	0
Gravel	63
Sand	33
Fines <0.063mm	3

Grading Analysis		
D100	mm	37.5
D60	mm	7.89
D30	mm	1.21
D10	mm	0.336
Uniformity Coefficient		24
Curvature Coefficient		0.55

Uniformity and Curvature Coefficient calculated in accordance with BS EN ISO 14688-2:2018

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

Remarks:

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Katarzyna Koziel
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for and on behalf of i2 Analytical Ltd

Date Reported: 04/09/2023

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TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

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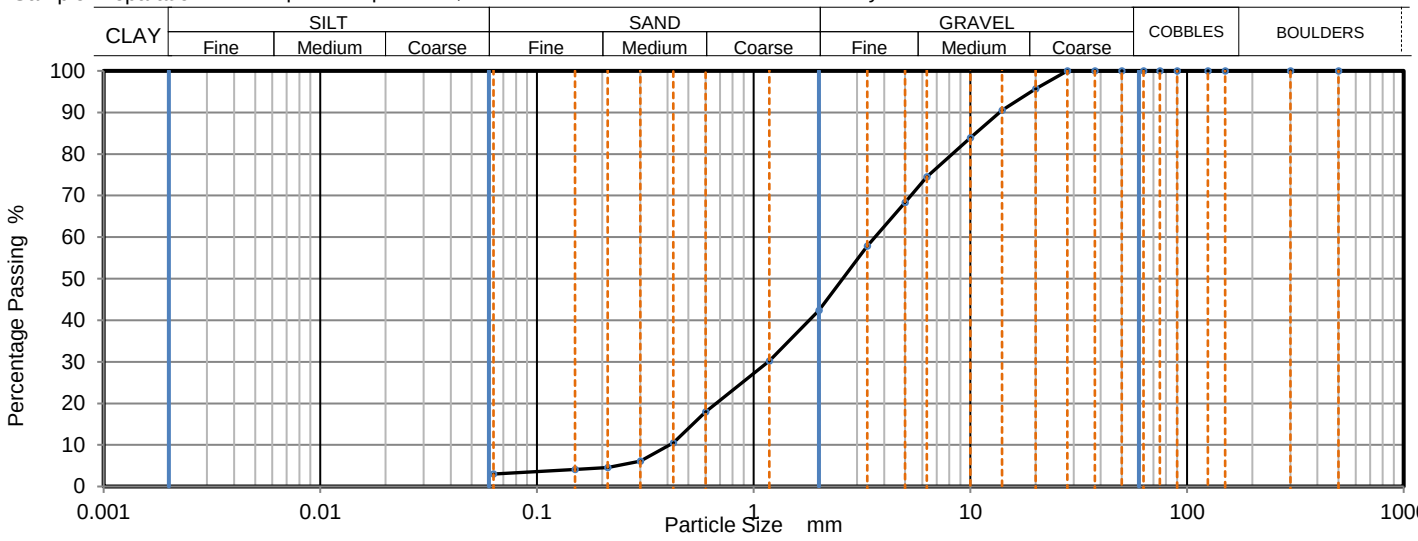
Client:	Hydrock Consultants Ltd	Client Reference:	C 28470 C
Client Address:	Over Court Barns, Over Lane, Bristol, BS32 4DF	Job Number:	23-51825-1
		Date Sampled:	08/08/2023
		Date Received:	17/08/2023
Contact:	Scott Williams	Date Tested:	26/08/2023
Site Address:	Ashton Keynes	Sampled By:	Client - A. Tidswell

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	2785583	Depth Top [m]:	1.80
Hole No.:	TP115	Depth Base [m]:	2.00
Sample Reference:	Not Given	Sample Type:	B
Sample Description:	Light brown sandy GRAVEL		
Sample Preparation:	Sample was quartered, oven dried at 106.1 °C and broken down by hand.		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	96		
14	91		
10	84		
6.3	75		
5	68		
3.35	58		
2	42		
1.18	30		
0.6	18		
0.425	11		
0.3	6		
0.212	5		
0.15	4		
0.063	4		

Sample Proportions	% dry mass
Very coarse	0
Gravel	58
Sand	38
Fines <0.063mm	4

Grading Analysis		
D100	mm	28
D60	mm	3.63
D30	mm	1.16
D10	mm	0.408
Uniformity Coefficient		8.9
Curvature Coefficient		0.92

Uniformity and Curvature Coefficient calculated in accordance with BS EN ISO 14688-2:2018

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

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Date Reported: 04/09/2023

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TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

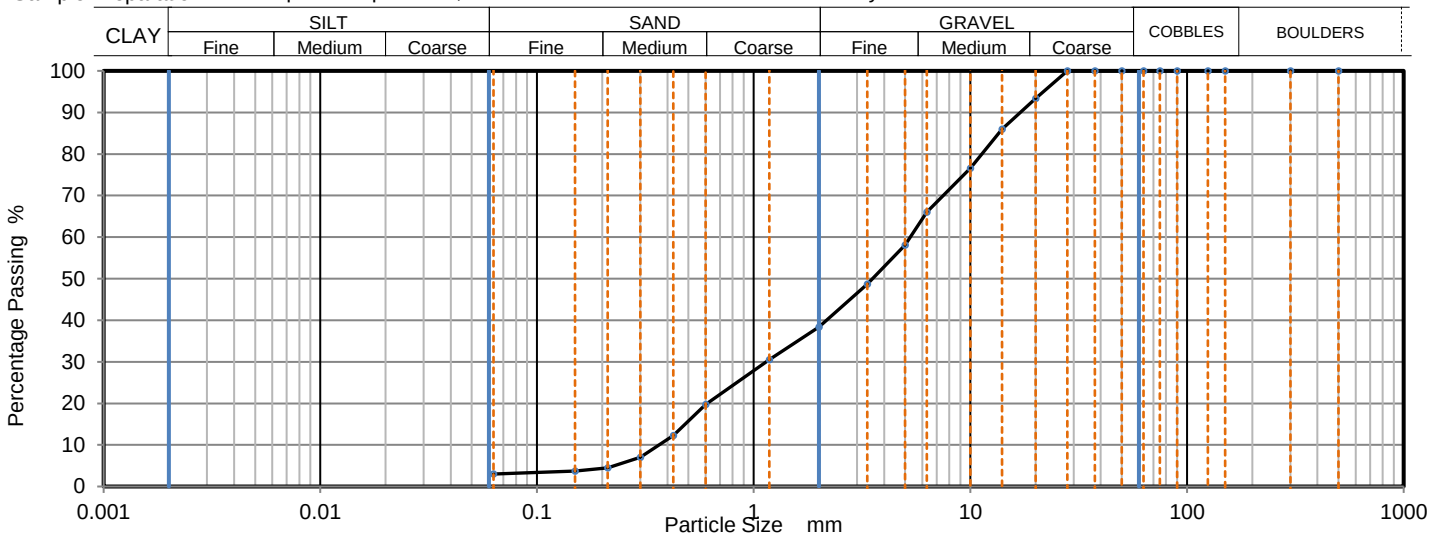
4041

Client:	Hydrock Consultants Ltd	Client Reference:	C 28470 C
Client Address:	Over Court Barns, Over Lane, Bristol, BS32 4DF	Job Number:	23-51825-1
		Date Sampled:	08/08/2023
		Date Received:	17/08/2023
Contact:	Scott Williams	Date Tested:	28/08/2023
Site Address:	Ashton Keynes	Sampled By:	Client - A. Tidswell

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	2785584	Depth Top [m]:	1.00
Hole No.:	TP119	Depth Base [m]:	1.20
Sample Reference:	Not Given	Sample Type:	B
Sample Description:	Light brown sandy GRAVEL		
Sample Preparation:	Sample was quartered, oven dried at 106.1 °C and broken down by hand.		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	93		
14	86		
10	77		
6.3	66		
5	58		
3.35	49		
2	38		
1.18	31		
0.6	20		
0.425	12		
0.3	7		
0.212	5		
0.15	4		
0.063	3		

Sample Proportions	% dry mass
Very coarse	0
Gravel	62
Sand	35
Fines <0.063mm	3

Grading Analysis		
D100	mm	28
D60	mm	5.29
D30	mm	1.15
D10	mm	0.366
Uniformity Coefficient		14
Curvature Coefficient		0.68

Uniformity and Curvature Coefficient calculated in accordance with BS EN ISO 14688-2:2018

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

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Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Date Reported: 04/09/2023

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TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

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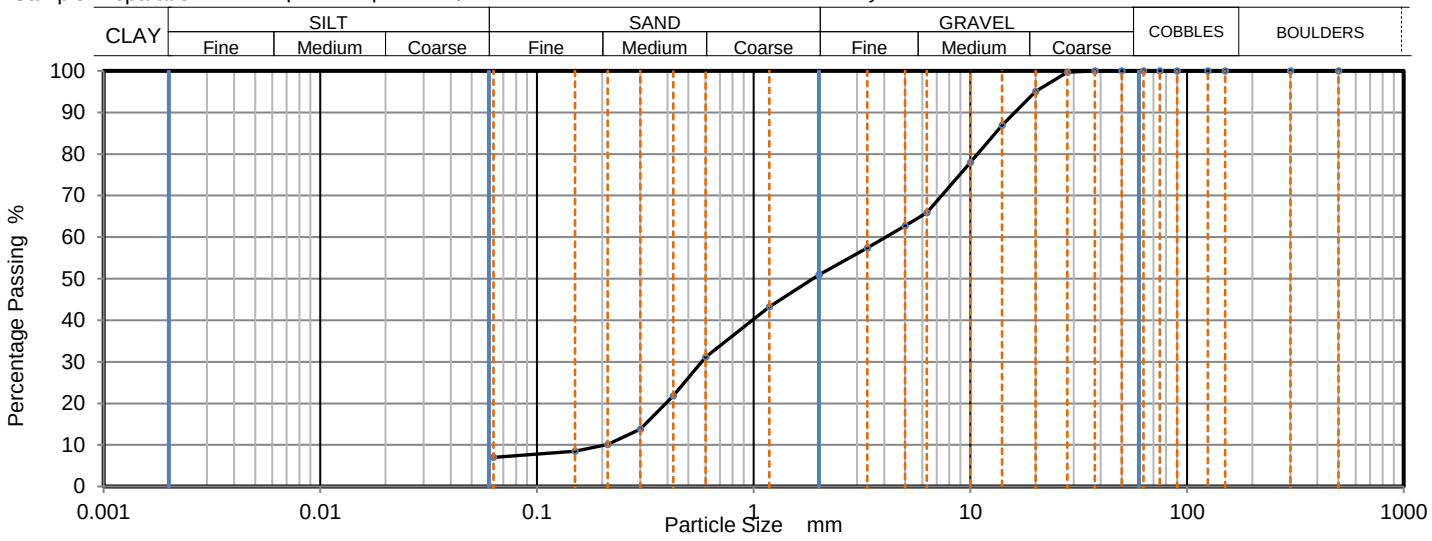
Client:	Hydrock Consultants Ltd	Client Reference:	C 28470 C
Client Address:	Over Court Barns, Over Lane, Bristol, BS32 4DF	Job Number:	23-51825-1
		Date Sampled:	09/08/2023
		Date Received:	17/08/2023
Contact:	Scott Williams	Date Tested:	26/08/2023
Site Address:	Ashton Keynes	Sampled By:	Client - A. Tidswell

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	2785585	Depth Top [m]:	1.00
Hole No.:	TP122	Depth Base [m]:	1.20
Sample Reference:	Not Given	Sample Type:	B
Sample Description:	Light brown sandy GRAVEL		
Sample Preparation:	Sample was quartered, oven dried at 106.1 °C and broken down by hand.		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	95		
14	87		
10	78		
6.3	66		
5	63		
3.35	57		
2	51		
1.18	43		
0.6	31		
0.425	22		
0.3	14		
0.212	10		
0.15	9		
0.063	7		

Sample Proportions	% dry mass
Very coarse	0
Gravel	49
Sand	44
Fines <0.063mm	7

Grading Analysis		
D100	mm	37.5
D60	mm	4.08
D30	mm	0.575
D10	mm	0.206
Uniformity Coefficient		20
Curvature Coefficient		0.39

Uniformity and Curvature Coefficient calculated in accordance with BS EN ISO 14688-2:2018

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

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Katarzyna Koziel
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for and on behalf of i2 Analytical Ltd

Date Reported: 04/09/2023

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TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

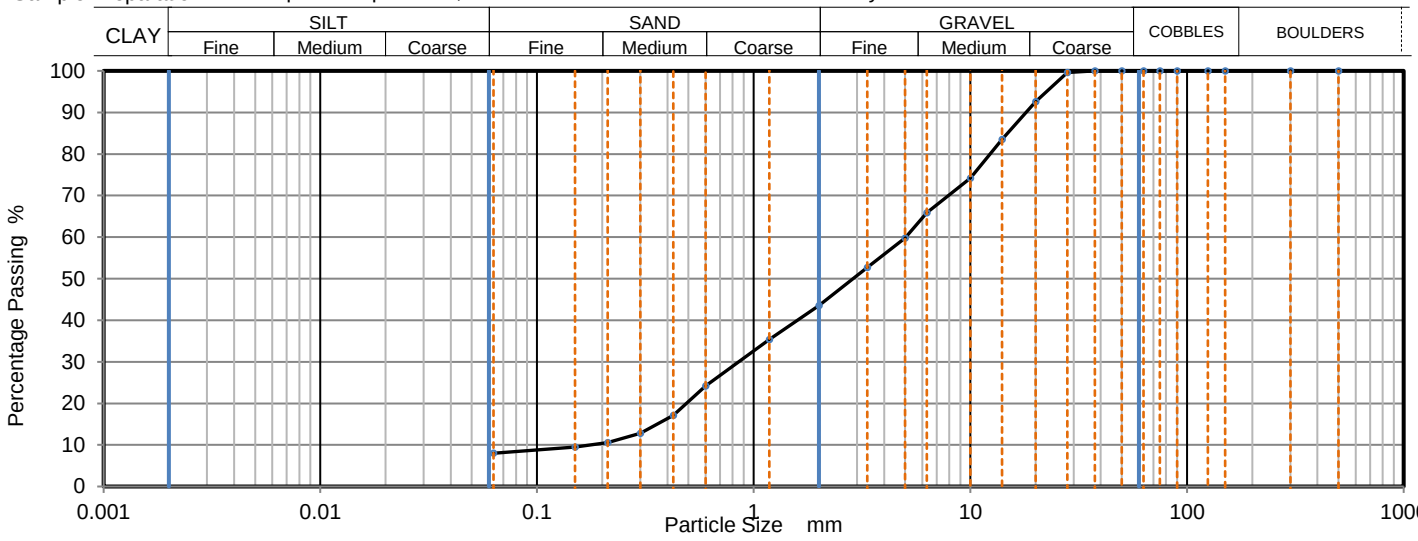
4041

Client:	Hydrock Consultants Ltd	Client Reference:	C 28470 C
Client Address:	Over Court Barns, Over Lane, Bristol, BS32 4DF	Job Number:	23-51825-1
		Date Sampled:	09/08/2023
		Date Received:	17/08/2023
Contact:	Scott Williams	Date Tested:	28/08/2023
Site Address:	Ashton Keynes	Sampled By:	Client - A. Tidswell

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	2785586	Depth Top [m]:	0.80
Hole No.:	TP124	Depth Base [m]:	1.00
Sample Reference:	Not Given	Sample Type:	B
Sample Description:	Light brown sandy GRAVEL		
Sample Preparation:	Sample was quartered, oven dried at 106.1 °C and broken down by hand.		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	93		
14	84		
10	74		
6.3	66		
5	60		
3.35	53		
2	44		
1.18	35		
0.6	24		
0.425	17		
0.3	13		
0.212	11		
0.15	10		
0.063	9		

Sample Proportions	% dry mass
Very coarse	0
Gravel	56
Sand	35
Fines <0.063mm	9

Grading Analysis		
D100	mm	37.5
D60	mm	5.03
D30	mm	0.853
D10	mm	0.174
Uniformity Coefficient		29
Curvature Coefficient		0.83

Uniformity and Curvature Coefficient calculated in accordance with BS EN ISO 14688-2:2018

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

Remarks:

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Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Date Reported: 04/09/2023

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TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

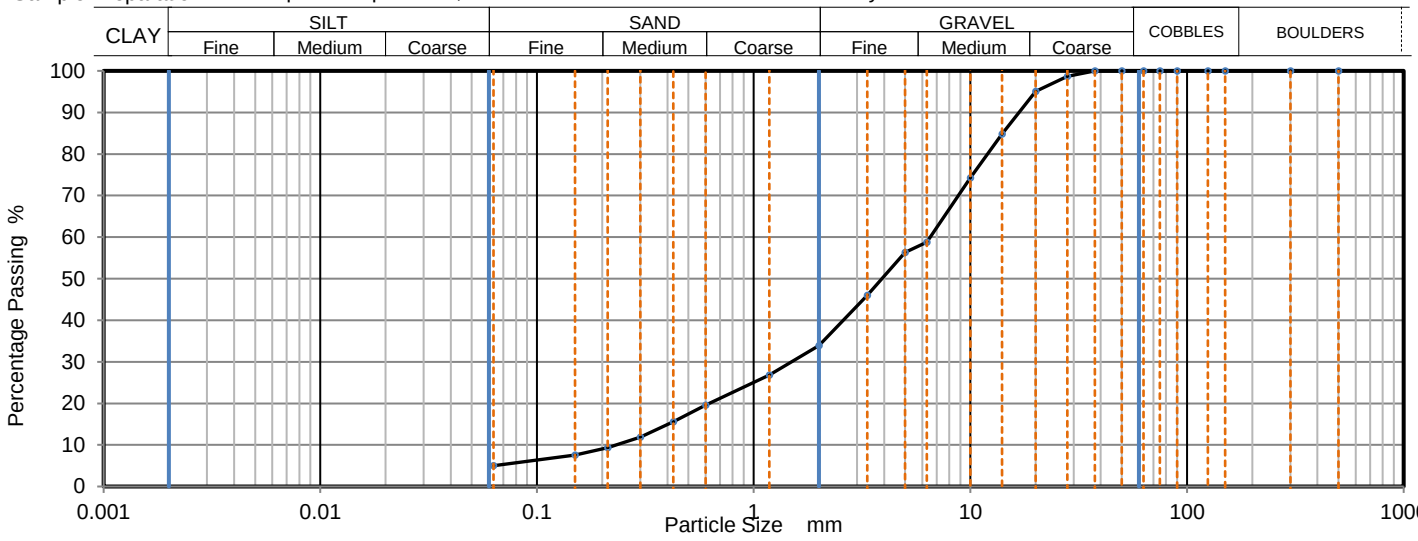
4041

Client:	Hydrock Consultants Ltd	Client Reference:	C 28470 C
Client Address:	Over Court Barns, Over Lane, Bristol, BS32 4DF	Job Number:	23-51825-1
		Date Sampled:	09/08/2023
		Date Received:	17/08/2023
Contact:	Scott Williams	Date Tested:	26/08/2023
Site Address:	Ashton Keynes	Sampled By:	Client - A. Tidswell

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	2785587	Depth Top [m]:	0.80
Hole No.:	TP125	Depth Base [m]:	1.00
Sample Reference:	Not Given	Sample Type:	B
Sample Description:	Yellowish brown sandy GRAVEL		
Sample Preparation:	Sample was quartered, oven dried at 106.1 °C and broken down by hand.		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	99		
20	95		
14	85		
10	74		
6.3	59		
5	56		
3.35	46		
2	34		
1.18	27		
0.6	20		
0.425	16		
0.3	12		
0.212	9		
0.15	8		
0.063	5		

Sample Proportions	% dry mass
Very coarse	0
Gravel	66
Sand	28
Fines <0.063mm	5

Grading Analysis		
D100	mm	37.5
D60	mm	6.53
D30	mm	1.49
D10	mm	0.232
Uniformity Coefficient		28
Curvature Coefficient		1.5

Uniformity and Curvature Coefficient calculated in accordance with BS EN ISO 14688-2:2018

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

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Katarzyna Koziel
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for and on behalf of i2 Analytical Ltd

Date Reported: 04/09/2023

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TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

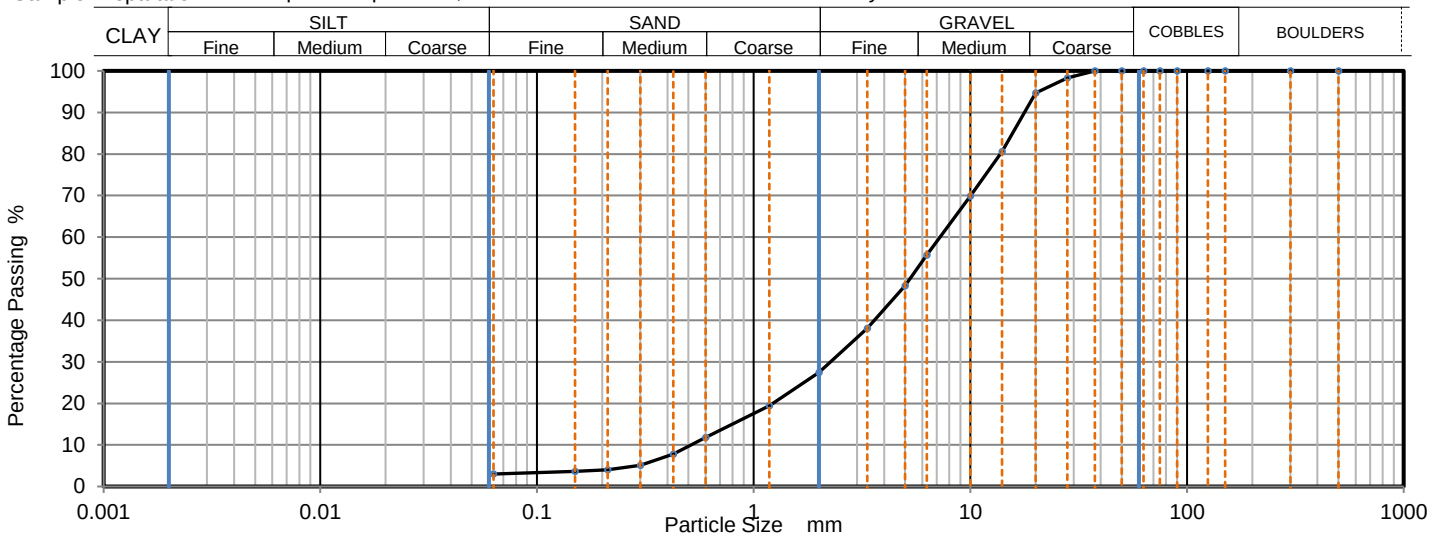
4041

Client:	Hydrock Consultants Ltd	Client Reference:	C 28470 C
Client Address:	Over Court Barns, Over Lane, Bristol, BS32 4DF	Job Number:	23-51825-1
		Date Sampled:	09/08/2023
		Date Received:	17/08/2023
Contact:	Scott Williams	Date Tested:	26/08/2023
Site Address:	Ashton Keynes	Sampled By:	Client - A. Tidswell

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	2785588	Depth Top [m]:	1.50
Hole No.:	TP126	Depth Base [m]:	1.70
Sample Reference:	Not Given	Sample Type:	B
Sample Description:	Yellowish brown sandy GRAVEL		
Sample Preparation:	Sample was quartered, oven dried at 106.1 °C and broken down by hand.		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	98		
20	95		
14	81		
10	70		
6.3	56		
5	48		
3.35	38		
2	27		
1.18	19		
0.6	12		
0.425	8		
0.3	5		
0.212	4		
0.15	4		
0.063	3		

Sample Proportions	% dry mass
Very coarse	0
Gravel	73
Sand	24
Fines <0.063mm	3

Grading Analysis		
D100	mm	37.5
D60	mm	7.24
D30	mm	2.26
D10	mm	0.515
Uniformity Coefficient		14
Curvature Coefficient		1.4

Uniformity and Curvature Coefficient calculated in accordance with BS EN ISO 14688-2:2018

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

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Katarzyna Koziel
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for and on behalf of i2 Analytical Ltd

Date Reported: 04/09/2023

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TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

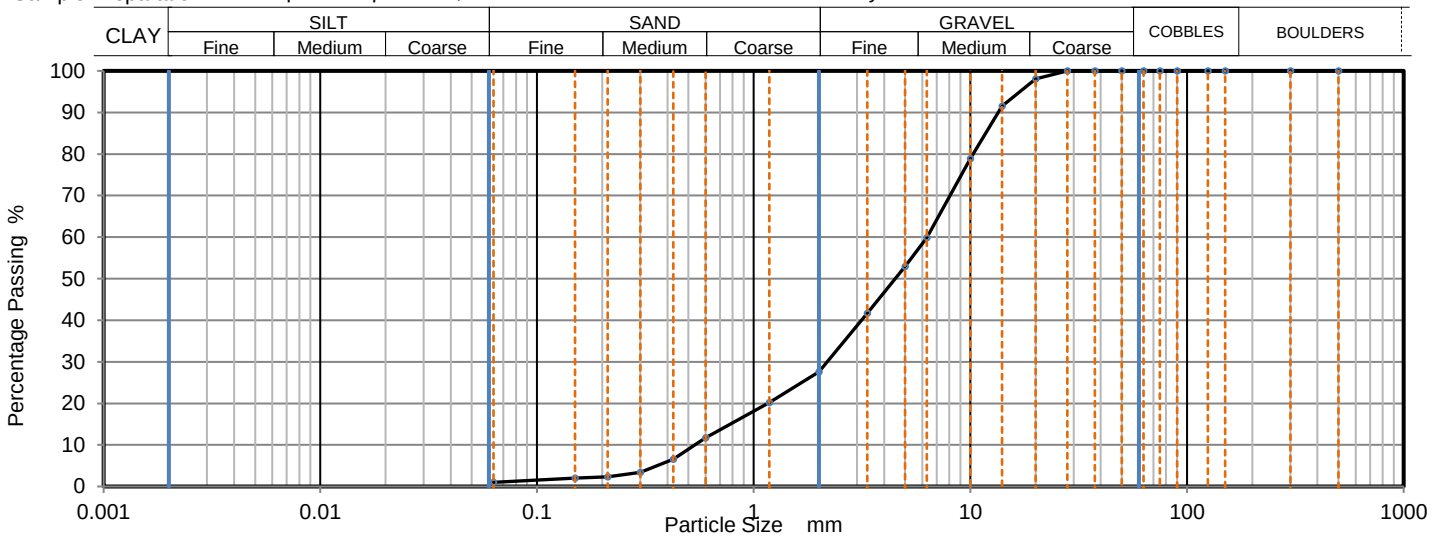
4041

Client:	Hydrock Consultants Ltd	Client Reference:	C 28470 C
Client Address:	Over Court Barns, Over Lane, Bristol, BS32 4DF	Job Number:	23-51825-1
		Date Sampled:	10/08/2023
		Date Received:	17/08/2023
Contact:	Scott Williams	Date Tested:	28/08/2023
Site Address:	Ashton Keynes	Sampled By:	Client - A. Tidswell

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	2786855	Depth Top [m]:	3.20
Hole No.:	BH105	Depth Base [m]:	3.65
Sample Reference:	10	Sample Type:	B
Sample Description:	Light brown sandy GRAVEL		
Sample Preparation:	Sample was quartered, oven dried at 106.1 °C and broken down by hand.		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	98		
14	92		
10	79		
6.3	60		
5	53		
3.35	42		
2	28		
1.18	20		
0.6	12		
0.425	7		
0.3	3		
0.212	2		
0.15	2		
0.063	2		

Sample Proportions	% dry mass
Very coarse	0
Gravel	72
Sand	26
Fines <0.063mm	2

Grading Analysis		
D100	mm	28
D60	mm	6.32
D30	mm	2.19
D10	mm	0.535
Uniformity Coefficient		12
Curvature Coefficient		1.4

Uniformity and Curvature Coefficient calculated in accordance with BS EN ISO 14688-2:2018

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

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Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Date Reported: 04/09/2023

GF 100.23

TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

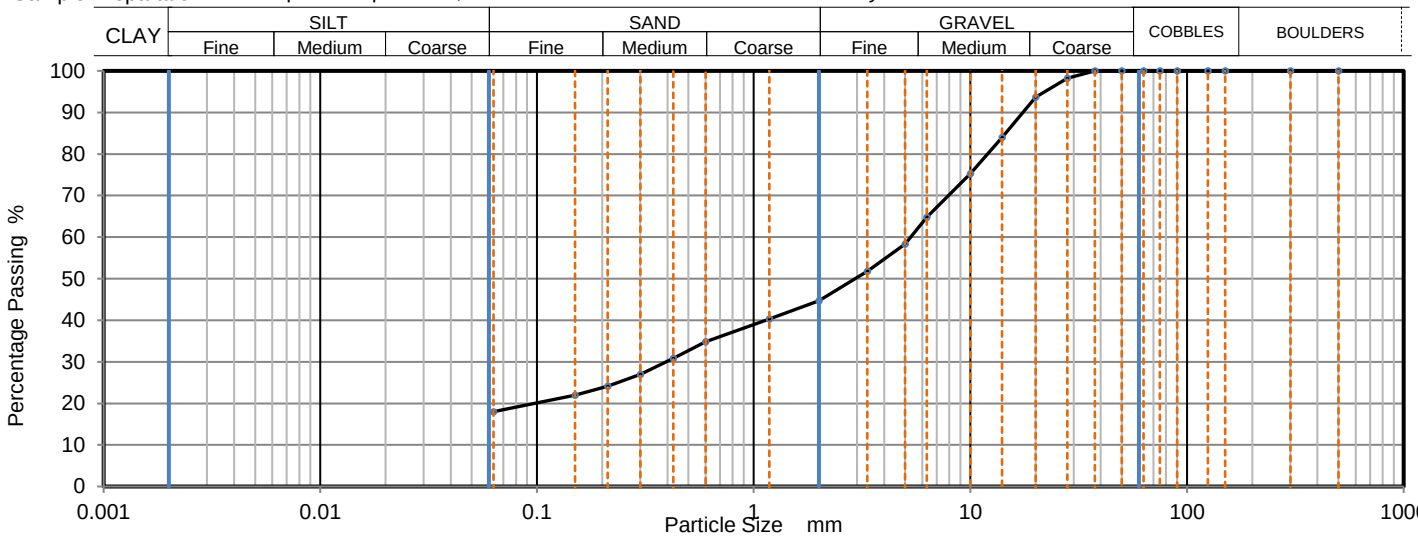
4041

Client:	Hydrock Consultants Ltd	Client Reference:	C 28470 C
Client Address:	Over Court Barns, Over Lane, Bristol, BS32 4DF	Job Number:	23-51825-1
		Date Sampled:	04/08/2023
		Date Received:	17/08/2023
Contact:	Scott Williams	Date Tested:	26/08/2023
Site Address:	Ashton Keynes	Sampled By:	Client - A. Tidswell

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	2786856	Depth Top [m]:	1.20
Hole No.:	TP104	Depth Base [m]:	1.40
Sample Reference:	Not Given	Sample Type:	B
Sample Description:	Yellowish brown sandy clayey GRAVEL		
Sample Preparation:	Sample was quartered, oven dried at 106.1 °C and broken down by hand.		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	98		
20	94		
14	84		
10	75		
6.3	65		
5	58		
3.35	52		
2	45		
1.18	40		
0.6	35		
0.425	31		
0.3	27		
0.212	24		
0.15	22		
0.063	19		

Sample Proportions	% dry mass
Very coarse	0
Gravel	55
Sand	26
Fines <0.063mm	19

Grading Analysis		
D100	mm	37.5
D60	mm	5.31
D30	mm	0.396
D10	mm	
Uniformity Coefficient		> 84
Curvature Coefficient		

Uniformity and Curvature Coefficient calculated in accordance with BS EN ISO 14688-2:2018

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

Remarks:

Signed: Katarzyna Koziel

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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Date Reported: 04/09/2023

GF 100.23

TEST CERTIFICATE

DETERMINATION OF PARTICLE SIZE DISTRIBUTION

Tested in Accordance with: BS 1377-2: 1990

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

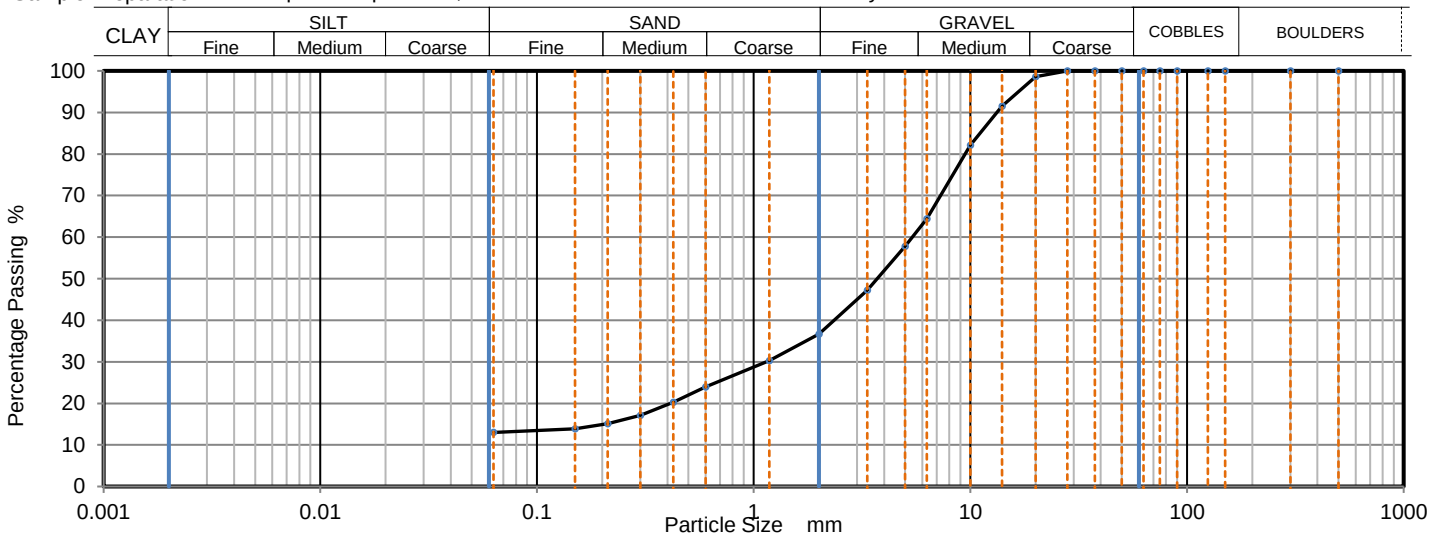
4041

Client:	Hydrock Consultants Ltd	Client Reference:	C 28470 C
Client Address:	Over Court Barns, Over Lane, Bristol, BS32 4DF	Job Number:	23-51825-1
		Date Sampled:	04/08/2023
		Date Received:	17/08/2023
Contact:	Scott Williams	Date Tested:	26/08/2023
Site Address:	Ashton Keynes	Sampled By:	Client - A. Tidswell

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	2786857	Depth Top [m]:	0.70
Hole No.:	TP105	Depth Base [m]:	1.00
Sample Reference:	Not Given	Sample Type:	B
Sample Description:	Yellowish brown sandy GRAVEL		
Sample Preparation:	Sample was quartered, oven dried at 109.0 °C and broken down by hand.		



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
500	100		
300	100		
150	100		
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	99		
14	92		
10	82		
6.3	64		
5	58		
3.35	47		
2	37		
1.18	30		
0.6	24		
0.425	20		
0.3	17		
0.212	15		
0.15	14		
0.063	13		

Sample Proportions	% dry mass
Very coarse	0
Gravel	63
Sand	24
Fines <0.063mm	13

Grading Analysis		
D100	mm	28
D60	mm	5.4
D30	mm	1.15
D10	mm	
Uniformity Coefficient		> 86
Curvature Coefficient		

Uniformity and Curvature Coefficient calculated in accordance with BS EN ISO 14688-2:2018

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

Remarks:

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Signed: Katarzyna Koziel

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Date Reported: 04/09/2023

GF 100.23

TEST CERTIFICATE

DETERMINATION OF THE UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION WITHOUT MEASUREMENT OF PORE PRESSURE

Tested in Accordance with: BS 1377-7: 1990: Clause 8

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

4041

Client:	Hydrock Consultants Ltd	Client Reference:	C 28470 C
Client Address:	Over Court Barns, Over Lane, Bristol, BS32 4DF	Job Number:	23-51825-1
		Date Sampled:	08/08/2023
		Date Received:	17/08/2023
Contact:	Scott Williams	Date Tested:	28/08/2023
Site Address:	Ashton Keynes	Sampled By:	Client - A. Tidswell

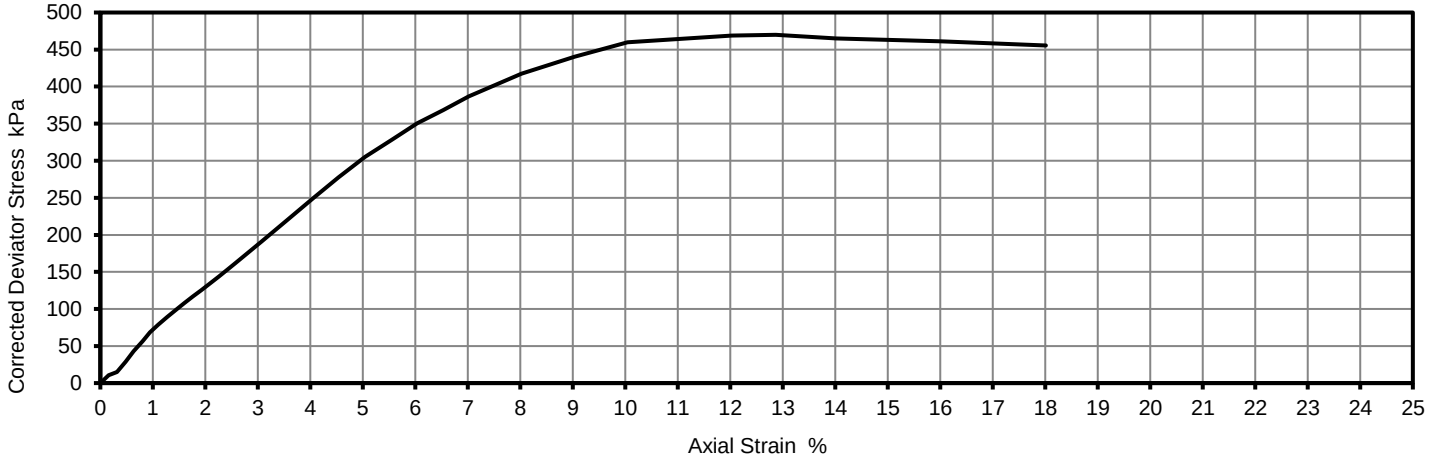
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

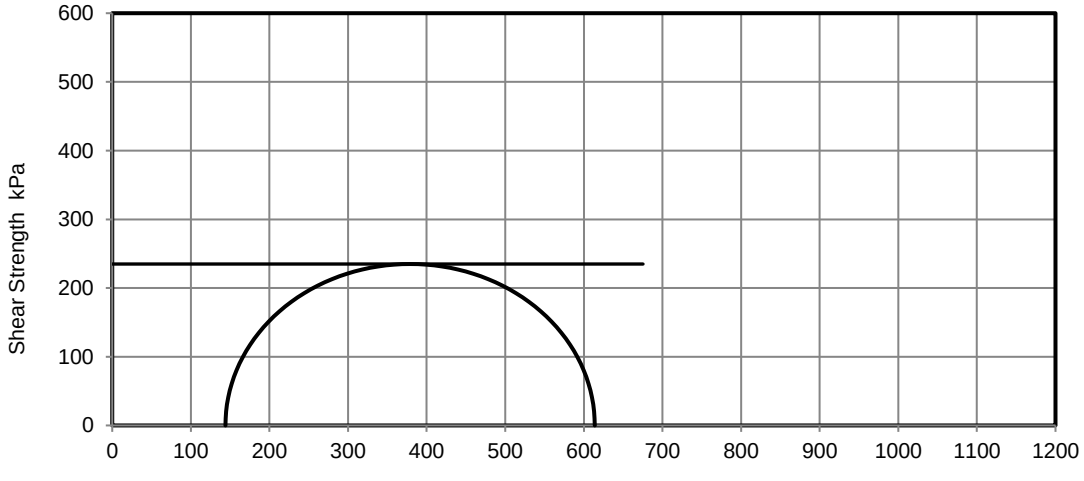
Laboratory Reference:	2785568	Depth Top [m]:	8.00
Hole No.:	BH102	Depth Base [m]:	8.24
Sample Reference:	Not Given	Sample Type:	U
Sample Description:	Grey slightly silty CLAY		
Sample Preparation:	Sample prepared in accordance with BS 1377-1:2016 Clause 9.1.1.		

Test Number	1		Rate of Strain	1.99	%/min
Length	200.72	mm	Cell Pressure	144	kPa
Diameter	104.83	mm	Axial Strain at failure	12.9	%
Bulk Density	2.21	Mg/m3	Deviator Stress, (σ1 - σ3)f	470	kPa
Moisture Content	15	%	Undrained Shear Strength, cu	235	kPa ½(σ1 - σ3)f
Dry Density	1.92	Mg/m3	Mode of Failure	Compound	
Membrane Correction	0.69	kPa	Latex membrane thickness	0.27	mm

Deviator Stress v Axial Strain

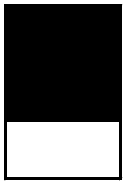


Mohr Circles





Position within sample



Note: Deviator stress corrected for area change and membrane effects. Mohr circles and their interpretation is not covered by BS1377. This is provided for information only.

Remarks:

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Signed: Katarzyna Koziel

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Date Reported: 04/09/2023

GF 184.14

4041

TEST CERTIFICATE

DETERMINATION OF THE UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION WITHOUT MEASUREMENT OF PORE PRESSURE

Tested in Accordance with: BS 1377-7: 1990: Clause 8

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

Environmental Science

Client:	Hydrock Consultants Ltd	Client Reference:	C 28470 C
Client Address:	Over Court Barns, Over Lane, Bristol, BS32 4DF	Job Number:	23-51825-1
		Date Sampled:	09/08/2023
		Date Received:	17/08/2023
Contact:	Scott Williams	Date Tested:	28/08/2023
Site Address:	Ashton Keynes	Sampled By:	Client - A. Tidswell

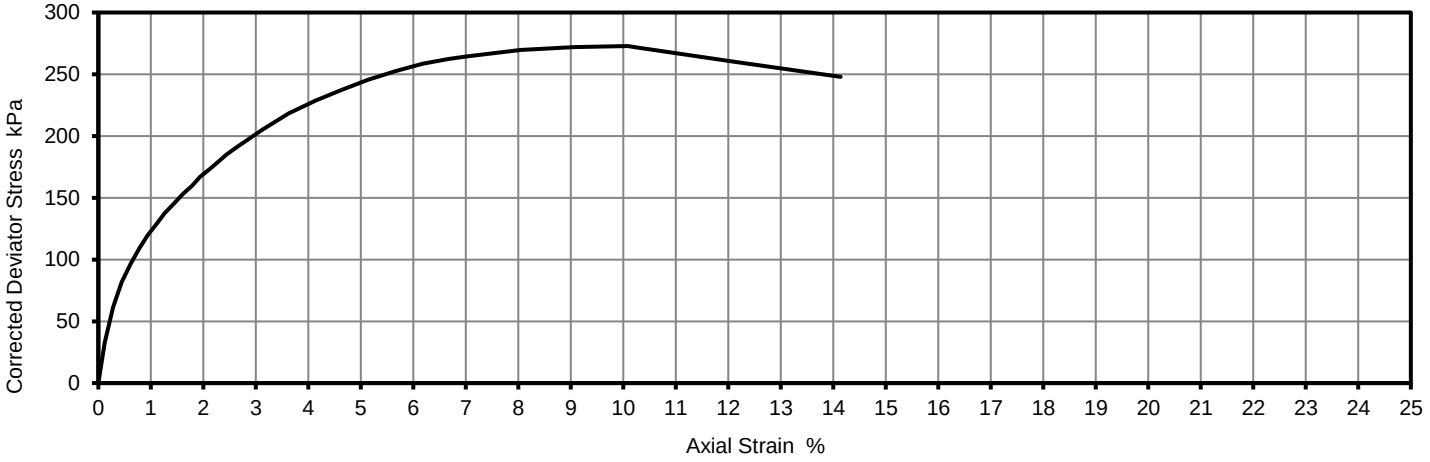
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

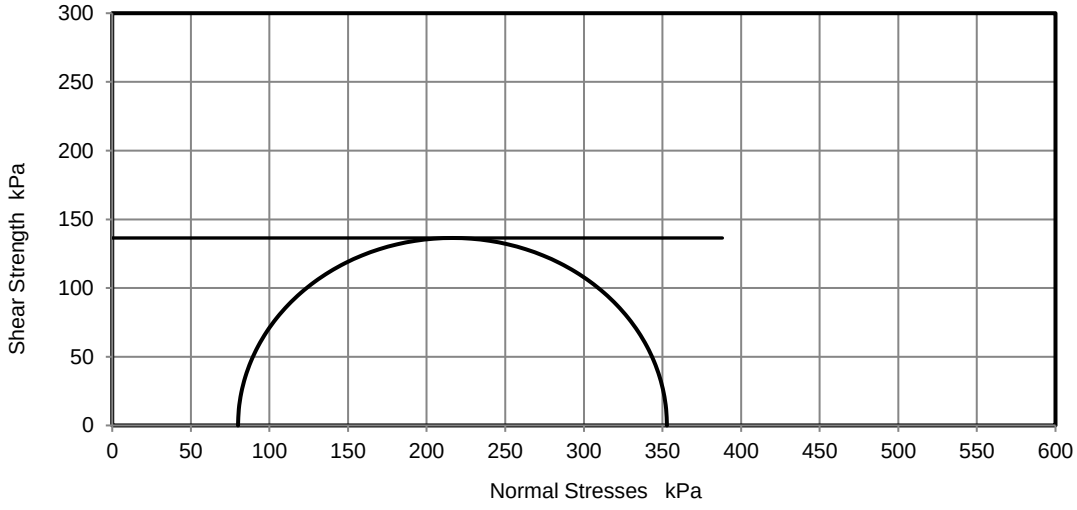
Laboratory Reference:	2785570	Depth Top [m]:	4.20
Hole No.:	BH103	Depth Base [m]:	4.65
Sample Reference:	Not Given	Sample Type:	U
Sample Description:	Grey slightly silty CLAY		
Sample Preparation:	Sample prepared in accordance with BS 1377-1:2016 Clause 9.1.1.		

Test Number	1		Rate of Strain	2.00	%/min
Length	200.37	mm	Cell Pressure	80	kPa
Diameter	102.71	mm	Axial Strain at failure	10.1	%
Bulk Density	2.12	Mg/m3	Deviator Stress, (σ1 - σ3)f	273	kPa
Moisture Content	19	%	Undrained Shear Strength, cu	136	kPa ½(σ1 - σ3)f
Dry Density	1.78	Mg/m3	Mode of Failure	Brittle	
Membrane Correction	0.63	kPa	Latex membrane thickness	0.29	mm

Deviator Stress v Axial Strain

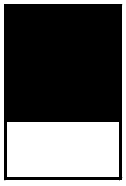


Mohr Circles





Position within sample



Note: Deviator stress corrected for area change and membrane effects. Mohr circles and their interpretation is not covered by BS1377. This is provided for information only.

Remarks:

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Signed: Katarzyna Koziel

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Date Reported: 04/09/2023

GF 184.14

TEST CERTIFICATE

DETERMINATION OF THE UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION WITHOUT MEASUREMENT OF PORE PRESSURE

Tested in Accordance with: BS 1377-7: 1990: Clause 8

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

4041

Client:	Hydrock Consultants Ltd	Client Reference:	C 28470 C
Client Address:	Over Court Barns, Over Lane, Bristol, BS32 4DF	Job Number:	23-51825-1
		Date Sampled:	10/08/2023
		Date Received:	17/08/2023
Contact:	Scott Williams	Date Tested:	28/08/2023
Site Address:	Ashton Keynes	Sampled By:	Client - A. Tidswell

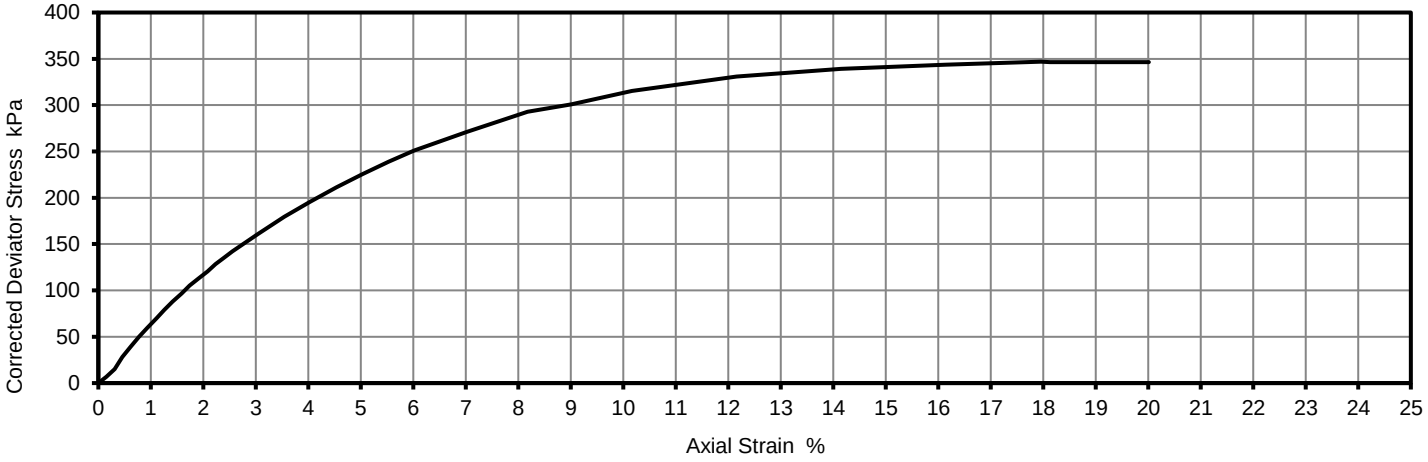
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

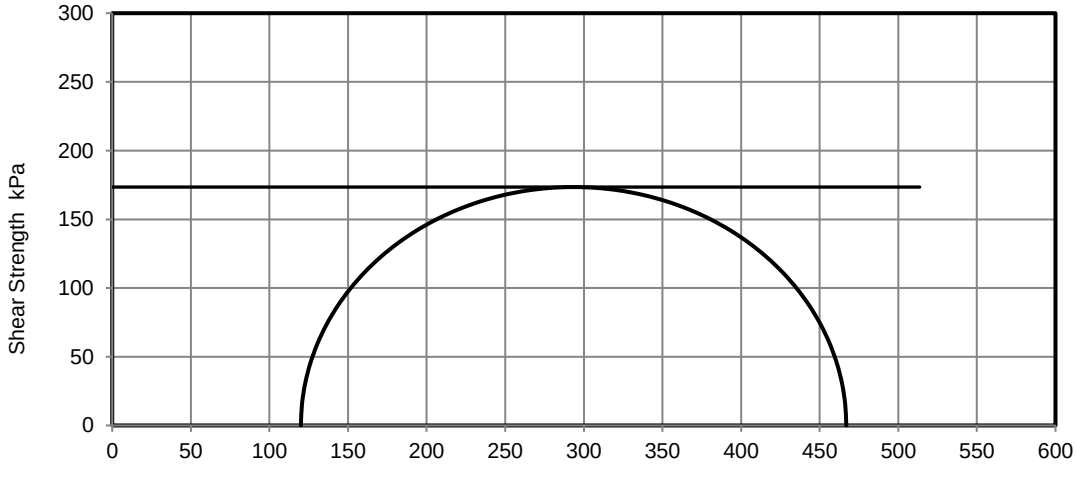
Laboratory Reference:	2785572	Depth Top [m]:	6.50
Hole No.:	BH104	Depth Base [m]:	6.95
Sample Reference:	Not Given	Sample Type:	U
Sample Description:	Grey silty CLAY		
Sample Preparation:	Sample prepared in accordance with BS 1377-1:2016 Clause 9.1.1.		

Test Number	1		Rate of Strain	1.99	%/min
Length	201.15	mm	Cell Pressure	120	kPa
Diameter	105.30	mm	Axial Strain at failure	18.0	%
Bulk Density	2.19	Mg/m3	Deviator Stress, (σ1 - σ3)f	347	kPa
Moisture Content	16	%	Undrained Shear Strength, cu	173	kPa ½(σ1 - σ3)f
Dry Density	1.89	Mg/m3	Mode of Failure	Compound	
Membrane Correction	1.00	kPa	Latex membrane thickness	0.30	mm

Deviator Stress v Axial Strain

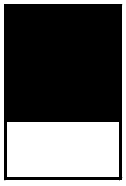


Mohr Circles





Position within sample



Note: Deviator stress corrected for area change and membrane effects. Mohr circles and their interpretation is not covered by BS1377. This is provided for information only.

Remarks:

Signed: Katarzyna Koziel

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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Date Reported: 04/09/2023

GF 184.14

TEST CERTIFICATE

DETERMINATION OF THE UNDRAINED SHEAR STRENGTH IN TRIAXIAL COMPRESSION WITHOUT MEASUREMENT OF PORE PRESSURE

Tested in Accordance with: BS 1377-7: 1990: Clause 8

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

4041

Client:	Hydrock Consultants Ltd	Client Reference:	C 28470 C
Client Address:	Over Court Barns, Over Lane, Bristol, BS32 4DF	Job Number:	23-51825-1
		Date Sampled:	11/08/2023
		Date Received:	17/08/2023
Contact:	Scott Williams	Date Tested:	28/08/2023
Site Address:	Ashton Keynes	Sampled By:	Client - A. Tidswell

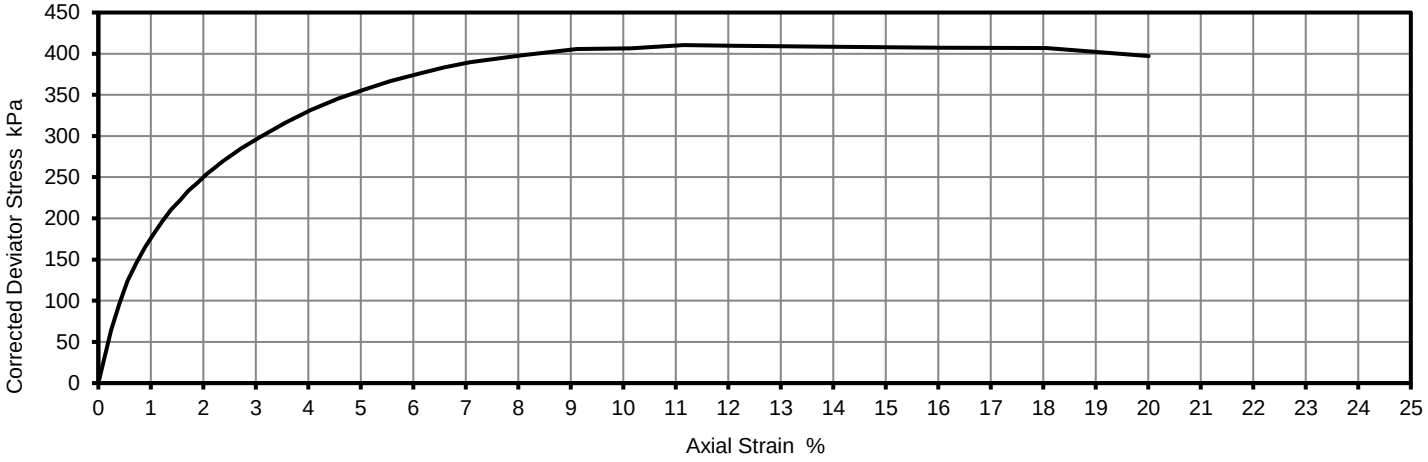
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

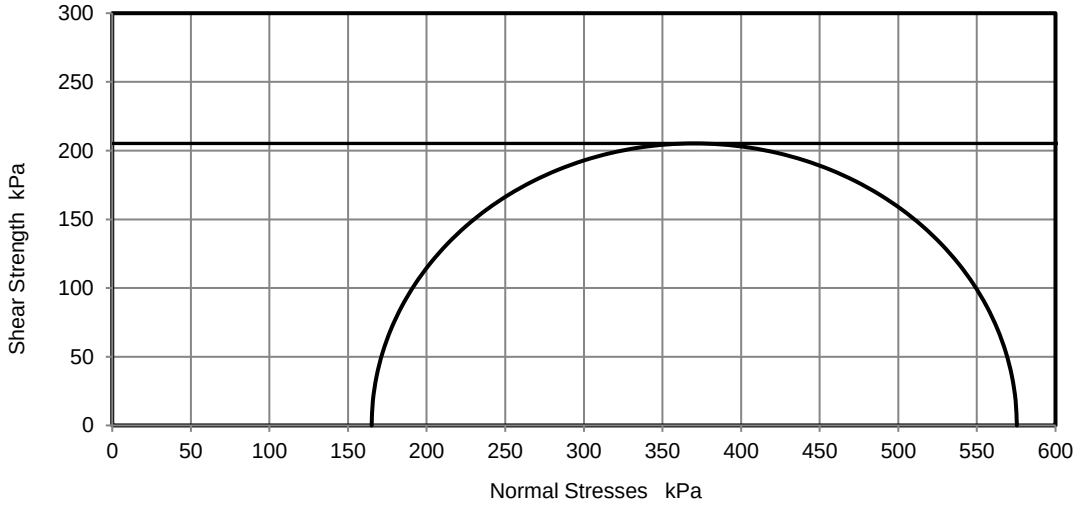
Laboratory Reference:	2785573	Depth Top [m]:	9.00
Hole No.:	BH105	Depth Base [m]:	9.45
Sample Reference:	Not Given	Sample Type:	U
Sample Description:	Grey CLAY		
Sample Preparation:	Sample prepared in accordance with BS 1377-1:2016 Clause 9.1.1.		

Test Number	1		Rate of Strain	2.00	%/min
Length	200.49	mm	Cell Pressure	165	kPa
Diameter	104.72	mm	Axial Strain at failure	11.1	%
Bulk Density	2.11	Mg/m3	Deviator Stress, (σ1 - σ3)f	410	kPa
Moisture Content	23	%	Undrained Shear Strength, cu	205	kPa ½(σ1 - σ3)f
Dry Density	1.72	Mg/m3	Mode of Failure	Compound	
Membrane Correction	0.67	kPa	Latex membrane thickness	0.29	mm

Deviator Stress v Axial Strain

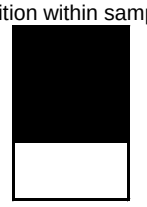


Mohr Circles





Position within sample



Note: Deviator stress corrected for area change and membrane effects. Mohr circles and their interpretation is not covered by BS1377. This is provided for information only.

Remarks:

Signed: Katarzyna Koziel

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

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Date Reported: 04/09/2023

GF 184.14

Scott Williams
Hydrock Consultants Ltd
Over Court Barns
Over Lane
Bristol
BS32 4DF

t: 01454 619533
f: 01454 614125
e: Group Bristol cc engineer

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

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

Analytical Report Number : 23-51840

Project / Site name:	Ashton Keynes	**Samples received on:**	17/08/2023
Your job number:	C 28470 C	**Samples instructed on/ Analysis started on:**	21/08/2023
Your order number:	PO28043	**Analysis completed by:**	06/09/2023
Report Issue Number:	1	**Report issued on:**	06/09/2023
Samples Analysed:	28 soil samples		

Signed:

Anna Goc
PL Head of Reporting Team
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

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The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number: 23-51840
Project / Site name: Ashton Keynes
Your Order No: PO28043

Lab Sample Number				2785655	2785656	2785657	2785658	2785659
Sample Reference				BH101	BH101	BH102	BH103	BH103
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				4.70-5.20	9.50-9.95	8.45-8.50	1.70	2.70-3.20
Date Sampled				04/08/2023	04/08/2023	08/08/2023	08/08/2023	08/08/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	26	< 0.1	< 0.1	35	< 0.1
Moisture Content	%	0.01	NONE	4.7	9.3	6.8	6.4	13
Total mass of sample received	kg	0.001	NONE	0.4	0.5	0.6	0.4	0.3
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	8.8	7.8	7.9	8.8	7.7
Total Sulphate as SO4	%	0.005	MCERTS	0.089	0.134	0.109	0.071	0.153
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.0216	0.716	0.667	0.0155	0.748
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	2.9	29	16	1.9	19
Total Sulphur	%	0.005	MCERTS	0.039	1.11	1.11	0.036	1.46
Water Soluble Nitrate (2:1) as N (leachate equivalent)	mg/l	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Heavy Metals / Metalloids								
Magnesium (water soluble)	mg/kg	5	NONE	7.4	45	38	< 5.0	30
Magnesium (leachate equivalent)	mg/l	2.5	NONE	3.7	23	19	< 2.5	15

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

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The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number: 23-51840
Project / Site name: Ashton Keynes
Your Order No: PO28043

Lab Sample Number				2785660	2785661	2785662	2785663	2785664
Sample Reference				BH104	BH104	BH104	BH104	BH104
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.60-1.20	1.70	4.20-4.65	7.00-8.00	8.00-8.45
Date Sampled				09/08/2023	09/08/2023	09/08/2023	10/08/2023	10/08/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	28	73	59	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	4.5	9.9	2.8	9.9	11
Total mass of sample received	kg	0.001	NONE	0.4	0.5	0.4	0.6	0.6
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	8.7	8.8	8.8	7.7	8
Total Sulphate as SO4	%	0.005	MCERTS	0.081	0.067	0.066	0.204	0.104
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.0056	0.0096	0.0162	1.06	0.565
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	1.1	2.3	2.4	27	8.9
Total Sulphur	%	0.005	MCERTS	0.033	0.03	0.034	1.11	0.886
Water Soluble Nitrate (2:1) as N (leachate equivalent)	mg/l	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Heavy Metals / Metalloids								
Magnesium (water soluble)	mg/kg	5	NONE	< 5.0	< 5.0	< 5.0	73	51
Magnesium (leachate equivalent)	mg/l	2.5	NONE	< 2.5	< 2.5	< 2.5	36	26

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

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The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number: 23-51840
Project / Site name: Ashton Keynes
Your Order No: PO28043

Lab Sample Number				2785665	2785666	2785667	2785668	2785669
Sample Reference				BH105	BH105	BH105	TP102	TP103
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.70	7.00	9.45-9.50	1.00	1.00
Date Sampled				10/08/2023	11/08/2023	11/08/2023	04/08/2023	04/08/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	34	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	3.8	5.1	12	3.9	4
Total mass of sample received	kg	0.001	NONE	0.7	0.7	0.8	0.7	0.7

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.9	8.8	8.3	8.7	8.8
Total Sulphate as SO4	%	0.005	MCERTS	0.072	0.076	0.077	0.088	0.075
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.0062	0.0164	0.476	0.0084	0.0061
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	1.8	2.1	7.5	1.3	1.4
Total Sulphur	%	0.005	MCERTS	0.03	0.042	1.58	0.041	0.034
Water Soluble Nitrate (2:1) as N (leachate equivalent)	mg/l	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0

Heavy Metals / Metalloids

Magnesium (water soluble)	mg/kg	5	NONE	< 5.0	< 5.0	28	< 5.0	< 5.0
Magnesium (leachate equivalent)	mg/l	2.5	NONE	< 2.5	< 2.5	14	< 2.5	< 2.5

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

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Analytical Report Number: 23-51840
Project / Site name: Ashton Keynes
Your Order No: PO28043

Lab Sample Number				2785670	2785671	2785672	2785673	2785674
Sample Reference				TP107	TP107	TP108	TP112	TP114
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.80-1.00	2.00	0.80-1.00	1.00	1.20
Date Sampled				07/08/2023	07/08/2023	07/08/2023	07/08/2023	08/08/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	40	< 0.1	33	< 0.1	38
Moisture Content	%	0.01	NONE	4.3	14	3.3	2.8	3.5
Total mass of sample received	kg	0.001	NONE	0.3	0.3	0.3	0.4	0.4
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	8.8	8.1	8.9	8.9	8.7
Total Sulphate as SO4	%	0.005	MCERTS	0.076	0.094	0.071	0.071	0.072
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.011	0.584	0.0042	0.005	0.0078
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	1.3	18	1.2	1.4	3.6
Total Sulphur	%	0.005	MCERTS	0.044	1.35	0.03	0.031	0.029
Water Soluble Nitrate (2:1) as N (leachate equivalent)	mg/l	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Heavy Metals / Metalloids								
Magnesium (water soluble)	mg/kg	5	NONE	< 5.0	24	< 5.0	< 5.0	< 5.0
Magnesium (leachate equivalent)	mg/l	2.5	NONE	< 2.5	12	< 2.5	< 2.5	< 2.5

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

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The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number: 23-51840
Project / Site name: Ashton Keynes
Your Order No: PO28043

Lab Sample Number				2785675	2785676	2786858	2786859	2786860
Sample Reference				TP119	TP124	BH101	BH102	TP101
Sample Number				None Supplied	None Supplied	2	18	2
Depth (m)				1.00	1.00	0.40-0.80	5.70-6.50	1.00
Date Sampled				08/08/2023	09/08/2023	04/08/2023	07/08/2023	04/08/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	30	36	49
Moisture Content	%	0.01	NONE	1.5	2.7	4.5	4.1	2.7
Total mass of sample received	kg	0.001	NONE	0.4	0.3	0.4	0.3	0.3
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	9	8.8	8.7	8.9	9.5
Total Sulphate as SO4	%	0.005	MCERTS	0.072	0.069	0.076	0.07	0.072
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.0053	0.0055	0.005	0.0149	0.0271
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	1.7	1.3	1.6	1.8	3.6
Total Sulphur	%	0.005	MCERTS	0.03	0.031	0.035	0.028	0.029
Water Soluble Nitrate (2:1) as N (leachate equivalent)	mg/l	2	NONE	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Heavy Metals / Metalloids								
Magnesium (water soluble)	mg/kg	5	NONE	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Magnesium (leachate equivalent)	mg/l	2.5	NONE	< 2.5	< 2.5	< 2.5	< 2.5	< 2.5

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

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Analytical Report Number: 23-51840
Project / Site name: Ashton Keynes
Your Order No: PO28043

Lab Sample Number				2787126	2787127	2787128
Sample Reference				TP101	TP104	TP105
Sample Number				D2	None Supplied	None Supplied
Depth (m)				1.00	1.20-1.40	0.70-1.00
Date Sampled				04/08/2023	04/08/2023	04/08/2023
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**			
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	4.1	7	5
Total mass of sample received	kg	0.001	NONE	0.3	0.3	0.3
General Inorganics						
pH - Automated	pH Units	N/A	MCERTS	8.7	8.5	8.6
Total Sulphate as SO4	%	0.005	MCERTS	0.091	0.083	0.091
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.0072	0.0087	0.0102
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	1.6	1.1	1.7
Total Sulphur	%	0.005	MCERTS	0.034	0.03	0.031
Water Soluble Nitrate (2:1) as N (leachate equivalent)	mg/l	2	NONE	< 2.0	< 2.0	< 2.0
Heavy Metals / Metalloids						
Magnesium (water soluble)	mg/kg	5	NONE	< 5.0	< 5.0	< 5.0
Magnesium (leachate equivalent)	mg/l	2.5	NONE	< 2.5	< 2.5	< 2.5

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

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The results included within the report relate only to the sample(s) submitted for testing.

Analytical Report Number : 23-51840
Project / Site name: Ashton Keynes

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

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

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2785655	BH101	None Supplied	4.70-5.20	Brown sand with gravel and stones.
2785656	BH101	None Supplied	9.50-9.95	Brown clay and sand with gravel.
2785657	BH102	None Supplied	8.45-8.50	Brown clay and sand with gravel.
2785658	BH103	None Supplied	1.7	Brown sand with gravel and stones.
2785659	BH103	None Supplied	2.70-3.20	Brown clay with vegetation.
2785660	BH104	None Supplied	0.60-1.20	Brown sand with gravel and stones.
2785661	BH104	None Supplied	1.7	Non Soil **
2785662	BH104	None Supplied	4.20-4.65	Brown sand with gravel and stones.
2785663	BH104	None Supplied	7.00-8.00	Brown clay and sand with gravel.
2785664	BH104	None Supplied	8.00-8.45	Brown clay and sand with gravel.
2785665	BH105	None Supplied	1.7	Brown sand with gravel and stones.
2785666	BH105	None Supplied	7	Brown sand with gravel.
2785667	BH105	None Supplied	9.45-9.50	Brown clay.
2785668	TP102	None Supplied	1	Brown sand with gravel.
2785669	TP103	None Supplied	1	Brown sand with gravel.
2785670	TP107	None Supplied	0.80-1.00	Brown sand with gravel and stones.
2785671	TP107	None Supplied	2	Brown clay.
2785672	TP108	None Supplied	0.80-1.00	Brown sand with gravel and stones.
2785673	TP112	None Supplied	1	Brown sand with gravel.
2785674	TP114	None Supplied	1.2	Brown sand with gravel and stones.
2785675	TP119	None Supplied	1	Brown sand with gravel.
2785676	TP124	None Supplied	1	Brown sand with gravel.
2786858	BH101	2	0.40-0.80	Brown sand with gravel and stones.
2786859	BH102	18	5.70-6.50	Brown sand with gravel and stones.
2786860	TP101	2	1	Brown sand with gravel and stones.
2787126	TP101	D2	1	Brown sand with gravel.
2787127	TP104	None Supplied	1.20-1.40	Brown sand with gravel.
2787128	TP105	None Supplied	0.70-1.00	Brown sand with gravel.

Analytical Report Number : 23-51840
Project / Site name: Ashton Keynes

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Magnesium, water soluble, in soil	Determination of water soluble magnesium by extraction with water followed by ICP-OES.	In-house method based on TRL 447	L038-PL	D	NONE
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total Sulphate in soil as %	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Total Sulphur in soil as %	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
Water Soluble Nitrate (2:1) as N in soil	Determination of nitrate by reaction with sodium salicylate and colorimetry.	In-house method based on Examination of Water and Wastewatern & Polish Standard Method PN-82/C-04579.08, 2:1 extraction.	L078-PL	W	NONE
Chloride, water soluble, in soil	Determination of Chloride colorimetrically by discrete analyser.	In house method.	L082-PL	D	MCERTS

For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

**Unaccredited sample matrix.

Hydrock

Client	Location or material to which this assessment applies
Bewley Homes	Kellaways Clay Member
Project	
Cotswold Community School, Ashton Keynes	
Job number	
28470	

Concrete in aggressive ground

After BRE Special Digest 1, 2005

Soil data

	(Adjusted) water soluble sulfate (mg/l)	Total potential sulfate (%)	Water soluble magnesium (mg/l)
Number of tests	2	2	0
No. tests in 20% data set	0	0	
No. tests with suspected pyrite		2	
Maximum value	29	3.3	
Mean of highest two values	23	3	
Mean of highest 20%			
Characteristic Value	**29**	**3.3**	

	[no pyrite]	[pyrite suspected]
DS Class	**DS-1**	**DS-5**

If pyrite suspected, DS Class limited to **DS-4**

Is pyrite assumed to be present? Yes **Adopted DS Class =** **DS-4**

Water data

	(Adjusted) soluble sulfate (mg/l)	Soluble magnesium (mg/l)
Characteristic Value (Maximum Level)	0	0

DS Class

pH data

	Soil	Water
Number of tests	2	0
No. tests in 20% data set	0	
Lowest pH	7.8	
Mean of lowest 20%		
Characteristic value	**7.8**	
Design value	**7.8**	

Number of soil pH results less than 5.5: 0

DS Class design value

Based on higher of soil and water data **DS-4**

ACEC Class design value

Natural ground

Mobile groundwater **AC-4**

Hydrock

Client	Location or material to which this assessment applies
Bewley Homes	Northmoor Sand and Gravel Member
Project	
Cotswold Community School, Ashton Keynes	
Job number	
28470	

Concrete in aggressive ground

After BRE Special Digest 1, 2005

Soil data

	(Adjusted) water soluble sulfate (mg/l)	Total potential sulfate (%)	Water soluble magnesium (mg/l)
Number of tests	5	5	0
No. tests in 20% data set	1	1	
No. tests with suspected pyrite		0	
Maximum value	10	0.1	
Mean of highest two values	10	0	
Mean of highest 20%			
Characteristic Value	**10**	**0**	
			Mg not required

	[no pyrite]	**[pyrite suspected]**
DS Class	**DS-1**	**DS-1**

If pyrite suspected, DS Class limited to **DS-1**

Is pyrite assumed to be present? **No** **Adopted DS Class =** **DS-1**

Water data

	(Adjusted) soluble sulfate (mg/l)	Soluble magnesium (mg/l)
Characteristic Value (Maximum Level)	0	0 **Mg not required**
DS Class		

pH data

	Soil	Water
Number of tests	5	0
No. tests in 20% data set	1	
Lowest pH	8.1	
Mean of lowest 20%	8.1	
Characteristic value	**8.1**	
Design value	**8.1**	
Number of soil pH results less than 5.5	0	

DS Class design value

Based on higher of soil and water data **DS-1**

ACEC Class design value

Brownfield

Mobile groundwater **AC-1**

Hydrock

Client	Location or material to which this assessment applies
Bewley Homes	Superficial Deposits
Project	
Cotswold Community School, Ashton Keynes	
Job number	
C28470	

Concrete in aggressive ground

After BRE Special Digest 1, 2005

Soil data

	(Adjusted) water soluble sulfate (mg/l)	Total potential sulfate (%)	Water soluble magnesium (mg/l)
Number of tests	1	1	0
No. tests in 20% data set	0	0	
No. tests with suspected pyrite		0	
Maximum value	0.005	0.1	
Mean of highest two values	0	0	
Mean of highest 20%			
Characteristic Value	**0.005**	**0.1**	

	[no pyrite]	[pyrite suspected]
DS Class	**DS-1**	**DS-1**

If pyrite suspected, DS Class limited to **DS-1**

Is pyrite assumed to be present? No **Adopted DS Class =** **DS-1**

Water data

	(Adjusted) soluble sulfate (mg/l)	Soluble magnesium (mg/l)
Characteristic Value (Maximum Level)	0	0
DS Class		

pH data

	Soil	Water
Number of tests	1	0
No. tests in 20% data set	0	
Lowest pH	8.7	
Mean of lowest 20%		
Characteristic value	**8.7**	
Design value	**8.7**	

Number of soil pH results less than 5.5: 0

DS Class design value

Based on higher of soil and water data **DS-1**

ACEC Class design value

Natural ground

Mobile groundwater **AC-1 ***

* increase to AC-2z in flowing water (pure or with >15mg/l carbon dioxide)

Appendix D Geo-environmental Testing and Assessment

Andrew Tidswell
Hydrock Consultants ltd
Over Court Barns
Over lane
Almondsbury
Bristol
BS32 4DF

Derwentside Environmental Testing Services Ltd
Unit 1
Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Kent
ME17 2JN
t: 01622 850410

DETS Report No: 23-10664

Site Reference:	Ashton Keynes
Project / Job Ref:	28470
Order No:	PO28046
Sample Receipt Date:	18/08/2023
Sample Scheduled Date:	18/08/2023
Report Issue Number:	1
Reporting Date:	04/09/2023

Authorised by:

Ela Mysiara
Quality Manager

Dates of laboratory activities for each tested analyte are available upon request.

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.

DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

Soil Analysis Certificate						
DETS Report No: 23-10664	**Date Sampled**	17/08/23	17/08/23	17/08/23	17/08/23	17/08/23
Hydrock Consultants ltd	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Ashton Keynes	**TP / BH No**	BH101	BH101	BH101	BH102	BH102
Project / Job Ref: 28470	**Additional Refs**	ES101	ES102	ES103	ES101	ES103
Order No: PO28046	**Depth (m)**	0.20	0.60	1.00	0.20	1.00
Reporting Date: 04/09/2023	**DETS Sample No**	670681	670682	670683	670684	670685

Determinand	**Unit**	**RL**	**Accreditation**		(n)	(n)		(n)
Asbestos Screen (S)	N/a	N/a	**ISO17025**	Not Detected	Not Detected	Not Detected	Not Detected	
Sample Matrix (S)	Material Type	N/a	NONE					
Asbestos Type (S)	PLM Result	N/a	**ISO17025**					
pH	pH Units	N/a	**MCERTS**	7.9	8.1	8.1	7.8	8.1
Free Cyanide	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	
Total Sulphate as SO_4	mg/kg	< 200	**MCERTS**					777
Total Sulphate as SO_4	%	< 0.02	**MCERTS**					0.08
W/S Sulphate as SO_4 (2:1)	mg/l	< 10	**MCERTS**					< 10
W/S Sulphate as SO_4 (2:1)	g/l	< 0.01	**MCERTS**					< 0.01
Total Sulphur	%	< 0.02	NONE					0.03
Fraction Organic Carbon (FOC)	Units	< 0.001	**MCERTS**	0.035	0.055	0.067	0.027	
Ammonium as NH_4	mg/kg	< 0.5	**MCERTS**					9.3
Ammonium as NH_4	mg/l	< 0.05	**MCERTS**					0.93
W/S Chloride (2:1)	mg/kg	< 1	**MCERTS**					7
W/S Chloride (2:1)	mg/l	< 0.5	**MCERTS**					3.5
Water Soluble Nitrate (2:1) as NO_3	mg/kg	< 3	**MCERTS**					4
Water Soluble Nitrate (2:1) as NO_3	mg/l	< 1.5	**MCERTS**					1.8
Arsenic (As)	mg/kg	< 2	**MCERTS**	16	6	5	16	
Beryllium (Be)	mg/kg	< 0.5	**MCERTS**	1	< 0.5	< 0.5	1	
W/S Boron	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	
Cadmium (Cd)	mg/kg	< 0.2	**MCERTS**	0.2	< 0.2	< 0.2	0.4	
Chromium (III)	mg/kg	< 2	NONE	23	8	5	25	
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	
Copper (Cu)	mg/kg	< 4	**MCERTS**	15	9	8	16	
Lead (Pb)	mg/kg	< 3	**MCERTS**	34	5	< 3	36	
W/S Magnesium	mg/l	< 0.1	NONE					0.7
Mercury (Hg)	mg/kg	< 1	**MCERTS**	< 1	< 1	< 1	< 1	
Nickel (Ni)	mg/kg	< 3	**MCERTS**	13	4	< 3	11	
Selenium (Se)	mg/kg	< 2	**MCERTS**	< 2	< 2	< 2	< 2	
Vanadium (V)	mg/kg	< 1	**MCERTS**	39	15	11	41	
Zinc (Zn)	mg/kg	< 3	**MCERTS**	66	18	9	65	
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	
Total Coliforms (S)	MPN/g	N/a	NONE					
Faecal Coliforms (S)	MPN/g	< 10	NONE					
Faecal Streptococci (S)	CFU/g	< 10	NONE					
Clostridium Perfringens (S)	CFU/g	N/a	NONE					

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion

Subcontracted analysis (S)

(n) Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation

DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

Soil Analysis Certificate

DETS Report No: 23-10664	**Date Sampled**	17/08/23	17/08/23	17/08/23	17/08/23	17/08/23
Hydrock Consultants ltd	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Ashton Keynes	**TP / BH No**	BH102	BH103	BH103	BH104	BH104
Project / Job Ref: 28470	**Additional Refs**	ES104	ES101	ES103	ES101	ES102
Order No: PO28046	**Depth (m)**	9.00	0.20	1.00	0.20	0.60
Reporting Date: 04/09/2023	**DETS Sample No**	670686	670687	670688	670689	670690

Determinand	Unit	RL	Accreditation	(n)				
Asbestos Screen (S)	N/a	N/a	ISO17025	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
Sample Matrix (S)	Material Type	N/a	NONE					
Asbestos Type (S)	PLM Result	N/a	ISO17025					
pH	pH Units	N/a	MCERTS	8.0	7.6	8.1	8.0	8.1
Free Cyanide	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	< 1
Total Sulphate as SO_4	mg/kg	< 200	MCERTS					
Total Sulphate as SO_4	%	< 0.02	MCERTS					
W/S Sulphate as SO_4 (2:1)	mg/l	< 10	MCERTS					
W/S Sulphate as SO_4 (2:1)	g/l	< 0.01	MCERTS					
Total Sulphur	%	< 0.02	NONE					
Fraction Organic Carbon (FOC)	Units	< 0.001	MCERTS	0.006	0.046	0.040	0.011	0.061
Ammonium as NH_4	mg/kg	< 0.5	MCERTS					
Ammonium as NH_4	mg/l	< 0.05	MCERTS					
W/S Chloride (2:1)	mg/kg	< 1	MCERTS					
W/S Chloride (2:1)	mg/l	< 0.5	MCERTS					
Water Soluble Nitrate (2:1) as NO_3	mg/kg	< 3	MCERTS					
Water Soluble Nitrate (2:1) as NO_3	mg/l	< 1.5	MCERTS					
Arsenic (As)	mg/kg	< 2	MCERTS	6	20	6	8	7
Beryllium (Be)	mg/kg	< 0.5	MCERTS	< 0.5	1.4	< 0.5	< 0.5	< 0.5
W/S Boron	mg/kg	< 1	NONE	1.6	1.2	< 1	< 1	< 1
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	1.4	0.4	< 0.2	< 0.2	< 0.2
Chromium (III)	mg/kg	< 2	NONE	8	43	6	10	5
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Copper (Cu)	mg/kg	< 4	MCERTS	9	17	8	7	8
Lead (Pb)	mg/kg	< 3	MCERTS	7	41	< 3	8	3
W/S Magnesium	mg/l	< 0.1	NONE					
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1	< 1	< 1	< 1	< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	14	18	< 3	5	< 3
Selenium (Se)	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Vanadium (V)	mg/kg	< 1	MCERTS	11	58	12	19	12
Zinc (Zn)	mg/kg	< 3	MCERTS	190	107	8	25	9
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Total Coliforms (S)	MPN/g	N/a	NONE					
Faecal Coliforms (S)	MPN/g	< 10	NONE					
Faecal Streptococci (S)	CFU/g	< 10	NONE					
Clostridium Perfringens (S)	CFU/g	N/a	NONE					

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion
Subcontracted analysis (S)

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Soil Analysis Certificate

DETS Report No: 23-10664	**Date Sampled**	17/08/23	17/08/23	17/08/23	17/08/23	17/08/23
Hydrock Consultants ltd	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Ashton Keynes	**TP / BH No**	BH105	BH105	BH105	BH105	TP101
Project / Job Ref: 28470	**Additional Refs**	ES101	ES102	ES103	ES104	ES101
Order No: PO28046	**Depth (m)**	0.20	0.60	1.00	8.50	0.50
Reporting Date: 04/09/2023	**DETS Sample No**	670691	670692	670693	670694	670695

Determinand	Unit	RL	Accreditation		(n)	(n)		(n)
Asbestos Screen (S)	N/a	N/a	ISO17025	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
Sample Matrix (S)	Material Type	N/a	NONE					
Asbestos Type (S)	PLM Result	N/a	ISO17025					
pH	pH Units	N/a	MCERTS	7.6	8.1	8.0	7.9	7.9
Free Cyanide	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	< 1
Total Sulphate as SO_4	mg/kg	< 200	MCERTS					
Total Sulphate as SO_4	%	< 0.02	MCERTS					
W/S Sulphate as SO_4 (2:1)	mg/l	< 10	MCERTS					
W/S Sulphate as SO_4 (2:1)	g/l	< 0.01	MCERTS					
Total Sulphur	%	< 0.02	NONE					
Fraction Organic Carbon (FOC)	Units	< 0.001	MCERTS	0.068	0.037	0.066	0.010	0.013
Ammonium as NH_4	mg/kg	< 0.5	MCERTS					
Ammonium as NH_4	mg/l	< 0.05	MCERTS					
W/S Chloride (2:1)	mg/kg	< 1	MCERTS					
W/S Chloride (2:1)	mg/l	< 0.5	MCERTS					
Water Soluble Nitrate (2:1) as NO_3	mg/kg	< 3	MCERTS					
Water Soluble Nitrate (2:1) as NO_3	mg/l	< 1.5	MCERTS					
Arsenic (As)	mg/kg	< 2	MCERTS	9	16	8	5	8
Beryllium (Be)	mg/kg	< 0.5	MCERTS	< 0.5	0.7	< 0.5	0.5	< 0.5
W/S Boron	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	< 1
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	0.5	0.3	< 0.2	< 0.2	< 0.2
Chromium (III)	mg/kg	< 2	NONE	13	19	5	7	11
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Copper (Cu)	mg/kg	< 4	MCERTS	17	15	9	16	9
Lead (Pb)	mg/kg	< 3	MCERTS	105	35	7	7	15
W/S Magnesium	mg/l	< 0.1	NONE					
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1	< 1	< 1	< 1	< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	7	11	3	12	6
Selenium (Se)	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Vanadium (V)	mg/kg	< 1	MCERTS	20	35	12	11	19
Zinc (Zn)	mg/kg	< 3	MCERTS	157	81	14	36	35
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Total Coliforms (S)	MPN/g	N/a	NONE					
Faecal Coliforms (S)	MPN/g	< 10	NONE					
Faecal Streptococci (S)	CFU/g	< 10	NONE					
Clostridium Perfringens (S)	CFU/g	N/a	NONE					

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion
Subcontracted analysis (S)

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Soil Analysis Certificate						
DETS Report No: 23-10664	**Date Sampled**	17/08/23	17/08/23	17/08/23	17/08/23	17/08/23
Hydrock Consultants ltd	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Ashton Keynes	**TP / BH No**	TP101	TP102	TP102	TP102	TP103
Project / Job Ref: 28470	**Additional Refs**	ES103	ES101	ES102	ES103	ES101
Order No: PO28046	**Depth (m)**	1.00	0.20	0.50	1.00	0.20
Reporting Date: 04/09/2023	**DETS Sample No**	670696	670697	670698	670699	670700

Determinand	Unit	RL	Accreditation		(n)	(n)	(n)	
Asbestos Screen (S)	N/a	N/a	ISO17025		Not Detected	Not Detected	Not Detected	Not Detected
Sample Matrix (S)	Material Type	N/a	NONE					
Asbestos Type (S)	PLM Result	N/a	ISO17025					
pH	pH Units	N/a	MCERTS	8.1	7.8	7.7	7.9	7.9
Free Cyanide	mg/kg	< 1	NONE		< 1	< 1	< 1	< 1
Total Sulphate as SO_4	mg/kg	< 200	MCERTS	783				
Total Sulphate as SO_4	%	< 0.02	MCERTS	0.08				
W/S Sulphate as SO_4 (2:1)	mg/l	< 10	MCERTS	< 10				
W/S Sulphate as SO_4 (2:1)	g/l	< 0.01	MCERTS	< 0.01				
Total Sulphur	%	< 0.02	NONE	0.04				
Fraction Organic Carbon (FOC)	Units	< 0.001	MCERTS		0.057	0.053	0.044	0.020
Ammonium as NH_4	mg/kg	< 0.5	MCERTS	3.4				
Ammonium as NH_4	mg/l	< 0.05	MCERTS	0.34				
W/S Chloride (2:1)	mg/kg	< 1	MCERTS	6				
W/S Chloride (2:1)	mg/l	< 0.5	MCERTS	3				
Water Soluble Nitrate (2:1) as NO_3	mg/kg	< 3	MCERTS	< 3				
Water Soluble Nitrate (2:1) as NO_3	mg/l	< 1.5	MCERTS	< 1.5				
Arsenic (As)	mg/kg	< 2	MCERTS		12	13	8	15
Beryllium (Be)	mg/kg	< 0.5	MCERTS		0.6	0.7	< 0.5	0.7
W/S Boron	mg/kg	< 1	NONE		1.3	1.3	< 1	< 1
Cadmium (Cd)	mg/kg	< 0.2	MCERTS		0.4	0.4	< 0.2	0.3
Chromium (III)	mg/kg	< 2	NONE		16	17	8	21
Chromium (hexavalent)	mg/kg	< 2	NONE		< 2	< 2	< 2	< 2
Copper (Cu)	mg/kg	< 4	MCERTS		17	16	9	17
Lead (Pb)	mg/kg	< 3	MCERTS		31	36	8	34
W/S Magnesium	mg/l	< 0.1	NONE	1				
Mercury (Hg)	mg/kg	< 1	MCERTS		< 1	< 1	< 1	< 1
Nickel (Ni)	mg/kg	< 3	MCERTS		7	8	< 3	10
Selenium (Se)	mg/kg	< 2	MCERTS		< 2	< 2	< 2	< 2
Vanadium (V)	mg/kg	< 1	MCERTS		28	30	17	40
Zinc (Zn)	mg/kg	< 3	MCERTS		62	69	15	68
Total Phenols (monohydric)	mg/kg	< 2	NONE		< 2	< 2	< 2	< 2
Total Coliforms (S)	MPN/g	N/a	NONE					
Faecal Coliforms (S)	MPN/g	< 10	NONE					
Faecal Streptococci (S)	CFU/g	< 10	NONE					
Clostridium Perfringens (S)	CFU/g	N/a	NONE					

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Subcontracted analysis (S)

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Soil Analysis Certificate						
DETS Report No: 23-10664	**Date Sampled**	17/08/23	17/08/23	17/08/23	17/08/23	17/08/23
Hydrock Consultants ltd	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Ashton Keynes	**TP / BH No**	TP103	TP104	TP104	TP104	TP105
Project / Job Ref: 28470	**Additional Refs**	ES103	ES1	ES2	ES3	ES101
Order No: PO28046	**Depth (m)**	1.00	0.20	0.60	1.20	0.20
Reporting Date: 04/09/2023	**DETS Sample No**	670701	670702	670703	670704	670705

Determinand	**Unit**	**RL**	**Accreditation**	(n)	(n)	(n)	(n)	
Asbestos Screen (S)	N/a	N/a	**ISO17025**	Not Detected	Not Detected	Not Detected		Not Detected
Sample Matrix (S)	Material Type	N/a	NONE					
Asbestos Type (S)	PLM Result	N/a	**ISO17025**					
pH	pH Units	N/a	**MCERTS**	8.1	8.1	8.1		7.7
Free Cyanide	mg/kg	< 1	NONE	< 1	< 1	< 1		< 1
Total Sulphate as SO_4	mg/kg	< 200	**MCERTS**					
Total Sulphate as SO_4	%	< 0.02	**MCERTS**					
W/S Sulphate as SO_4 (2:1)	mg/l	< 10	**MCERTS**					
W/S Sulphate as SO_4 (2:1)	g/l	< 0.01	**MCERTS**					
Total Sulphur	%	< 0.02	NONE					
Fraction Organic Carbon (FOC)	Units	< 0.001	**MCERTS**	0.050	0.043	0.050		0.048
Ammonium as NH_4	mg/kg	< 0.5	**MCERTS**					
Ammonium as NH_4	mg/l	< 0.05	**MCERTS**					
W/S Chloride (2:1)	mg/kg	< 1	**MCERTS**					
W/S Chloride (2:1)	mg/l	< 0.5	**MCERTS**					
Water Soluble Nitrate (2:1) as NO_3	mg/kg	< 3	**MCERTS**					
Water Soluble Nitrate (2:1) as NO_3	mg/l	< 1.5	**MCERTS**					
Arsenic (As)	mg/kg	< 2	**MCERTS**	5	8	8		20
Beryllium (Be)	mg/kg	< 0.5	**MCERTS**	< 0.5	< 0.5	< 0.5		1.1
W/S Boron	mg/kg	< 1	NONE	< 1	< 1	< 1		1.2
Cadmium (Cd)	mg/kg	< 0.2	**MCERTS**	< 0.2	0.3	< 0.2		0.4
Chromium (III)	mg/kg	< 2	NONE	6	7	8		28
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2	< 2		< 2
Copper (Cu)	mg/kg	< 4	**MCERTS**	8	9	9		38
Lead (Pb)	mg/kg	< 3	**MCERTS**	< 3	8	7		55
W/S Magnesium	mg/l	< 0.1	NONE					
Mercury (Hg)	mg/kg	< 1	**MCERTS**	< 1	< 1	< 1		< 1
Nickel (Ni)	mg/kg	< 3	**MCERTS**	< 3	4	4		13
Selenium (Se)	mg/kg	< 2	**MCERTS**	< 2	< 2	< 2		< 2
Vanadium (V)	mg/kg	< 1	**MCERTS**	11	14	15		50
Zinc (Zn)	mg/kg	< 3	**MCERTS**	7	36	17		269
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2	< 2		< 2
Total Coliforms (S)	MPN/g	N/a	NONE					
Faecal Coliforms (S)	MPN/g	< 10	NONE					
Faecal Streptococci (S)	CFU/g	< 10	NONE					
Clostridium Perfringens (S)	CFU/g	N/a	NONE					

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Subcontracted analysis (S)

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Soil Analysis Certificate

DETS Report No: 23-10664	**Date Sampled**	17/08/23	17/08/23	17/08/23	17/08/23	17/08/23
Hydrock Consultants ltd	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Ashton Keynes	**TP / BH No**	TP105	TP106	TP106	TP107	TP107
Project / Job Ref: 28470	**Additional Refs**	ES102	ES101	ES102	ES101	ES102
Order No: PO28046	**Depth (m)**	0.50	0.20	0.40	0.30	0.80
Reporting Date: 04/09/2023	**DETS Sample No**	670706	670707	670708	670709	670710

Determinand	Unit	RL	Accreditation	(n)		(n)		
Asbestos Screen (S)	N/a	N/a	ISO17025	Not Detected	Not Detected		Not Detected	Not Detected
Sample Matrix (S)	Material Type	N/a	NONE					
Asbestos Type (S)	PLM Result	N/a	ISO17025					
pH	pH Units	N/a	MCERTS	8.0	7.9		7.7	8.2
Free Cyanide	mg/kg	< 1	NONE	< 1	< 1		< 1	< 1
Total Sulphate as SO_4	mg/kg	< 200	MCERTS					
Total Sulphate as SO_4	%	< 0.02	MCERTS					
W/S Sulphate as SO_4 (2:1)	mg/l	< 10	MCERTS					
W/S Sulphate as SO_4 (2:1)	g/l	< 0.01	MCERTS					
Total Sulphur	%	< 0.02	NONE					
Fraction Organic Carbon (FOC)	Units	< 0.001	MCERTS	0.037	0.050		0.037	0.033
Ammonium as NH_4	mg/kg	< 0.5	MCERTS					
Ammonium as NH_4	mg/l	< 0.05	MCERTS					
W/S Chloride (2:1)	mg/kg	< 1	MCERTS					
W/S Chloride (2:1)	mg/l	< 0.5	MCERTS					
Water Soluble Nitrate (2:1) as NO_3	mg/kg	< 3	MCERTS					
Water Soluble Nitrate (2:1) as NO_3	mg/l	< 1.5	MCERTS					
Arsenic (As)	mg/kg	< 2	MCERTS	4	15		20	4
Beryllium (Be)	mg/kg	< 0.5	MCERTS	< 0.5	0.8		1.4	< 0.5
W/S Boron	mg/kg	< 1	NONE	< 1	< 1		< 1	< 1
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	< 0.2	< 0.2		0.3	< 0.2
Chromium (III)	mg/kg	< 2	NONE	5	17		35	4
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2		< 2	< 2
Copper (Cu)	mg/kg	< 4	MCERTS	6	15		14	5
Lead (Pb)	mg/kg	< 3	MCERTS	4	25		28	< 3
W/S Magnesium	mg/l	< 0.1	NONE					
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1	< 1		< 1	< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	< 3	10		18	< 3
Selenium (Se)	mg/kg	< 2	MCERTS	< 2	< 2		< 2	< 2
Vanadium (V)	mg/kg	< 1	MCERTS	9	32		63	7
Zinc (Zn)	mg/kg	< 3	MCERTS	11	41		77	4
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2		< 2	< 2
Total Coliforms (S)	MPN/g	N/a	NONE					
Faecal Coliforms (S)	MPN/g	< 10	NONE					
Faecal Streptococci (S)	CFU/g	< 10	NONE					
Clostridium Perfringens (S)	CFU/g	N/a	NONE					

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Subcontracted analysis (S)

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Soil Analysis Certificate

DETS Report No: 23-10664	**Date Sampled**	17/08/23	17/08/23	17/08/23	17/08/23	17/08/23
Hydrock Consultants ltd	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Ashton Keynes	**TP / BH No**	TP109	TP109	TP110	TP112	TP112
Project / Job Ref: 28470	**Additional Refs**	ES101	ES102	ES101	ES102	ES103
Order No: PO28046	**Depth (m)**	0.20	0.70	0.20	0.40	0.70
Reporting Date: 04/09/2023	**DETS Sample No**	670711	670712	670713	670714	670715

Determinand	Unit	RL	Accreditation					
						(n)		(n)
Asbestos Screen (S)	N/a	N/a	ISO17025	Detected		Not Detected	Not Detected	Not Detected
Sample Matrix (S)	Material Type	N/a	NONE	Chrysotile present in microscopic insulation				
Asbestos Type (S)	PLM Result	N/a	ISO17025	Chrysotile				
pH	pH Units	N/a	MCERTS	7.8		7.5	7.9	7.8
Free Cyanide	mg/kg	< 1	NONE	< 1		< 1	< 1	< 1
Total Sulphate as SO_4	mg/kg	< 200	MCERTS					
Total Sulphate as SO_4	%	< 0.02	MCERTS					
W/S Sulphate as SO_4 (2:1)	mg/l	< 10	MCERTS					
W/S Sulphate as SO_4 (2:1)	g/l	< 0.01	MCERTS					
Total Sulphur	%	< 0.02	NONE					
Fraction Organic Carbon (FOC)	Units	< 0.001	MCERTS	0.055		0.057	0.050	0.029
Ammonium as NH_4	mg/kg	< 0.5	MCERTS					
Ammonium as NH_4	mg/l	< 0.05	MCERTS					
W/S Chloride (2:1)	mg/kg	< 1	MCERTS					
W/S Chloride (2:1)	mg/l	< 0.5	MCERTS					
Water Soluble Nitrate (2:1) as NO_3	mg/kg	< 3	MCERTS					
Water Soluble Nitrate (2:1) as NO_3	mg/l	< 1.5	MCERTS					
Arsenic (As)	mg/kg	< 2	MCERTS	21		18	9	20
Beryllium (Be)	mg/kg	< 0.5	MCERTS	1.1		1.3	< 0.5	0.7
W/S Boron	mg/kg	< 1	NONE	1.2		1.6	< 1	< 1
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	0.5		0.4	< 0.2	< 0.2
Chromium (III)	mg/kg	< 2	NONE	29		32	6	18
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2		< 2	< 2	< 2
Copper (Cu)	mg/kg	< 4	MCERTS	36		15	8	17
Lead (Pb)	mg/kg	< 3	MCERTS	781		72	8	135
W/S Magnesium	mg/l	< 0.1	NONE					
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1		< 1	< 1	< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	14		16	3	13
Selenium (Se)	mg/kg	< 2	MCERTS	< 2		< 2	< 2	< 2
Vanadium (V)	mg/kg	< 1	MCERTS	47		54	14	36
Zinc (Zn)	mg/kg	< 3	MCERTS	318		91	15	45
Total Phenols (monohydric)	mg/kg	< 2	NONE	4.8		7.2	< 2	< 2
Total Coliforms (S)	MPN/g	N/a	NONE					
Faecal Coliforms (S)	MPN/g	< 10	NONE					
Faecal Streptococci (S)	CFU/g	< 10	NONE					
Clostridium Perfringens (S)	CFU/g	N/a	NONE					

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Subcontracted analysis (S)

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Soil Analysis Certificate

DETS Report No: 23-10664	**Date Sampled**	17/08/23	17/08/23	17/08/23	17/08/23	17/08/23
Hydrock Consultants ltd	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Ashton Keynes	**TP / BH No**	TP113	TP113	TP113	TP114	TP114
Project / Job Ref: 28470	**Additional Refs**	ES101	ES102	ES103	ES102	ES103
Order No: PO28046	**Depth (m)**	0.30	0.50	0.80	0.30	1.20
Reporting Date: 04/09/2023	**DETS Sample No**	670716	670717	670718	670719	670720

Determinand	Unit	RL	Accreditation					
						(n)	(n)	(n)
Asbestos Screen (S)	N/a	N/a	ISO17025	Not Detected			Detected	Not Detected
Sample Matrix (S)	Material Type	N/a	NONE				Chrysotile present in bundles	
Asbestos Type (S)	PLM Result	N/a	ISO17025				Chrysotile	
pH	pH Units	N/a	MCERTS	7.7			9.7	8.3
Free Cyanide	mg/kg	< 1	NONE	< 1			< 1	< 1
Total Sulphate as SO_4	mg/kg	< 200	MCERTS					
Total Sulphate as SO_4	%	< 0.02	MCERTS					
W/S Sulphate as SO_4 (2:1)	mg/l	< 10	MCERTS					
W/S Sulphate as SO_4 (2:1)	g/l	< 0.01	MCERTS					
Total Sulphur	%	< 0.02	NONE					
Fraction Organic Carbon (FOC)	Units	< 0.001	MCERTS	0.052			0.072	0.071
Ammonium as NH_4	mg/kg	< 0.5	MCERTS					
Ammonium as NH_4	mg/l	< 0.05	MCERTS					
W/S Chloride (2:1)	mg/kg	< 1	MCERTS					
W/S Chloride (2:1)	mg/l	< 0.5	MCERTS					
Water Soluble Nitrate (2:1) as NO_3	mg/kg	< 3	MCERTS					
Water Soluble Nitrate (2:1) as NO_3	mg/l	< 1.5	MCERTS					
Arsenic (As)	mg/kg	< 2	MCERTS	20			13	5
Beryllium (Be)	mg/kg	< 0.5	MCERTS	0.9			0.5	< 0.5
W/S Boron	mg/kg	< 1	NONE	< 1			< 1	< 1
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	0.7			0.2	< 0.2
Chromium (III)	mg/kg	< 2	NONE	22			10	5
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2			< 2	< 2
Copper (Cu)	mg/kg	< 4	MCERTS	22			25	8
Lead (Pb)	mg/kg	< 3	MCERTS	69			34	4
W/S Magnesium	mg/l	< 0.1	NONE					
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1			< 1	< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	12			8	< 3
Selenium (Se)	mg/kg	< 2	MCERTS	< 2			< 2	< 2
Vanadium (V)	mg/kg	< 1	MCERTS	39			26	10
Zinc (Zn)	mg/kg	< 3	MCERTS	118			47	7
Total Phenols (monohydric)	mg/kg	< 2	NONE	2.2			< 2	< 2
Total Coliforms (S)	MPN/g	N/a	NONE					
Faecal Coliforms (S)	MPN/g	< 10	NONE					
Faecal Streptococci (S)	CFU/g	< 10	NONE					
Clostridium Perfringens (S)	CFU/g	N/a	NONE					

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion
Subcontracted analysis (S)

DETS Ltd
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Soil Analysis Certificate

DETS Report No: 23-10664	**Date Sampled**	17/08/23	17/08/23	17/08/23	17/08/23	17/08/23
Hydrock Consultants ltd	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Ashton Keynes	**TP / BH No**	TP116	TP117	TP117	TP118	TP119
Project / Job Ref: 28470	**Additional Refs**	ES101	ES101	ES102	ES102	ES102
Order No: PO28046	**Depth (m)**	0.40	0.20	0.40	0.70	0.40
Reporting Date: 04/09/2023	**DETS Sample No**	670721	670722	670723	670724	670725

Determinand	Unit	RL	Accreditation	(n)				
Asbestos Screen (S)	N/a	N/a	ISO17025	Not Detected	Not Detected		Not Detected	Not Detected
Sample Matrix (S)	Material Type	N/a	NONE					
Asbestos Type (S)	PLM Result	N/a	ISO17025					
pH	pH Units	N/a	MCERTS	8.0	8.0		7.9	7.9
Free Cyanide	mg/kg	< 1	NONE	< 1	< 1		< 1	< 1
Total Sulphate as SO_4	mg/kg	< 200	MCERTS					
Total Sulphate as SO_4	%	< 0.02	MCERTS					
W/S Sulphate as SO_4 (2:1)	mg/l	< 10	MCERTS					
W/S Sulphate as SO_4 (2:1)	g/l	< 0.01	MCERTS					
Total Sulphur	%	< 0.02	NONE					
Fraction Organic Carbon (FOC)	Units	< 0.001	MCERTS	0.031	0.025		0.024	0.018
Ammonium as NH_4	mg/kg	< 0.5	MCERTS					
Ammonium as NH_4	mg/l	< 0.05	MCERTS					
W/S Chloride (2:1)	mg/kg	< 1	MCERTS					
W/S Chloride (2:1)	mg/l	< 0.5	MCERTS					
Water Soluble Nitrate (2:1) as NO_3	mg/kg	< 3	MCERTS					
Water Soluble Nitrate (2:1) as NO_3	mg/l	< 1.5	MCERTS					
Arsenic (As)	mg/kg	< 2	MCERTS	18	12		15	25
Beryllium (Be)	mg/kg	< 0.5	MCERTS	0.8	< 0.5		0.6	1.1
W/S Boron	mg/kg	< 1	NONE	< 1	< 1		< 1	< 1
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	0.3	0.2		< 0.2	0.4
Chromium (III)	mg/kg	< 2	NONE	20	13		16	30
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2		< 2	< 2
Copper (Cu)	mg/kg	< 4	MCERTS	15	13		12	14
Lead (Pb)	mg/kg	< 3	MCERTS	27	21		14	29
W/S Magnesium	mg/l	< 0.1	NONE					
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1	< 1		< 1	< 1
Nickel (Ni)	mg/kg	< 3	MCERTS	11	8		9	17
Selenium (Se)	mg/kg	< 2	MCERTS	< 2	< 2		< 2	< 2
Vanadium (V)	mg/kg	< 1	MCERTS	38	25		31	56
Zinc (Zn)	mg/kg	< 3	MCERTS	47	56		35	58
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2		< 2	< 2
Total Coliforms (S)	MPN/g	N/a	NONE					
Faecal Coliforms (S)	MPN/g	< 10	NONE					
Faecal Streptococci (S)	CFU/g	< 10	NONE					
Clostridium Perfringens (S)	CFU/g	N/a	NONE					

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Subcontracted analysis (S)

DETS Ltd
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Soil Analysis Certificate

DETS Report No: 23-10664	**Date Sampled**	17/08/23	17/08/23	17/08/23	17/08/23	17/08/23
Hydrock Consultants ltd	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Ashton Keynes	**TP / BH No**	TP120	TP124	TP125	TP126	HP101
Project / Job Ref: 28470	**Additional Refs**	ES103	ES101	ES102	ES101	ES101
Order No: PO28046	**Depth (m)**	1.00	0.20	0.50	0.20	0.30
Reporting Date: 04/09/2023	**DETS Sample No**	670726	670727	670728	670729	670730

Determinand	Unit	RL	Accreditation					
					(n)			(n)
Asbestos Screen (S)	N/a	N/a	ISO17025		Detected	Not Detected	Not Detected	Not Detected
Sample Matrix (S)	Material Type	N/a	NONE		Chrysotile present in microscopic insulation debris			
Asbestos Type (S)	PLM Result	N/a	ISO17025		Chrysotile			
pH	pH Units	N/a	MCERTS		7.7	7.8	7.7	8.1
Free Cyanide	mg/kg	< 1	NONE		< 1	< 1	< 1	< 1
Total Sulphate as SO_4	mg/kg	< 200	MCERTS					
Total Sulphate as SO_4	%	< 0.02	MCERTS					
W/S Sulphate as SO_4 (2:1)	mg/l	< 10	MCERTS					
W/S Sulphate as SO_4 (2:1)	g/l	< 0.01	MCERTS					
Total Sulphur	%	< 0.02	NONE					
Fraction Organic Carbon (FOC)	Units	< 0.001	MCERTS		0.053	0.048	0.011	0.027
Ammonium as NH_4	mg/kg	< 0.5	MCERTS					
Ammonium as NH_4	mg/l	< 0.05	MCERTS					
W/S Chloride (2:1)	mg/kg	< 1	MCERTS					
W/S Chloride (2:1)	mg/l	< 0.5	MCERTS					
Water Soluble Nitrate (2:1) as NO_3	mg/kg	< 3	MCERTS					
Water Soluble Nitrate (2:1) as NO_3	mg/l	< 1.5	MCERTS					
Arsenic (As)	mg/kg	< 2	MCERTS		15	8	11	15
Beryllium (Be)	mg/kg	< 0.5	MCERTS		0.8	< 0.5	< 0.5	0.6
W/S Boron	mg/kg	< 1	NONE		< 1	< 1	< 1	< 1
Cadmium (Cd)	mg/kg	< 0.2	MCERTS		35.1	0.6	0.2	0.3
Chromium (III)	mg/kg	< 2	NONE		67	7	13	17
Chromium (hexavalent)	mg/kg	< 2	NONE		< 2	< 2	< 2	< 2
Copper (Cu)	mg/kg	< 4	MCERTS		1880	27	10	15
Lead (Pb)	mg/kg	< 3	MCERTS		1840	18	11	25
W/S Magnesium	mg/l	< 0.1	NONE					
Mercury (Hg)	mg/kg	< 1	MCERTS		< 1	< 1	< 1	< 1
Nickel (Ni)	mg/kg	< 3	MCERTS		145	4	7	9
Selenium (Se)	mg/kg	< 2	MCERTS		< 2	< 2	< 2	< 2
Vanadium (V)	mg/kg	< 1	MCERTS		32	12	24	33
Zinc (Zn)	mg/kg	< 3	MCERTS		5510	69	39	42
Total Phenols (monohydric)	mg/kg	< 2	NONE		< 2	< 2	< 2	< 2
Total Coliforms (S)	MPN/g	N/a	NONE	0				
Faecal Coliforms (S)	MPN/g	< 10	NONE	> 2010				
Faecal Streptococci (S)	CFU/g	< 10	NONE	< 10				
Clostridium Perfringens (S)	CFU/g	N/a	NONE	0				

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Subcontracted analysis (S)

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Soil Analysis Certificate						
DETS Report No: 23-10664	**Date Sampled**	17/08/23	17/08/23	17/08/23	17/08/23	17/08/23
Hydrock Consultants ltd	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Ashton Keynes	**TP / BH No**	HP101	HP110	HP110	HP111	HP112
Project / Job Ref: 28470	**Additional Refs**	ES102	ES101	ES102	ES101	ES102
Order No: PO28046	**Depth (m)**	0.75	0.30	0.50	0.10	0.40
Reporting Date: 04/09/2023	**DETS Sample No**	670731	670732	670733	670734	670735

Determinand	**Unit**	**RL**	**Accreditation**	(n)	(n)			(n)
Asbestos Screen (S)	N/a	N/a	**ISO17025**	Not Detected	Not Detected	Not Detected	Not Detected	Not Detected
Sample Matrix (S)	Material Type	N/a	NONE					
Asbestos Type (S)	PLM Result	N/a	**ISO17025**					
pH	pH Units	N/a	**MCERTS**	8.8	8.2	8.1	7.8	7.8
Free Cyanide	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	< 1
Total Sulphate as SO_4	mg/kg	< 200	**MCERTS**					
Total Sulphate as SO_4	%	< 0.02	**MCERTS**					
W/S Sulphate as SO_4 (2:1)	mg/l	< 10	**MCERTS**					
W/S Sulphate as SO_4 (2:1)	g/l	< 0.01	**MCERTS**					
Total Sulphur	%	< 0.02	NONE					
Fraction Organic Carbon (FOC)	Units	< 0.001	**MCERTS**	0.049	0.025	0.037	0.030	0.033
Ammonium as NH_4	mg/kg	< 0.5	**MCERTS**					
Ammonium as NH_4	mg/l	< 0.05	**MCERTS**					
W/S Chloride (2:1)	mg/kg	< 1	**MCERTS**					
W/S Chloride (2:1)	mg/l	< 0.5	**MCERTS**					
Water Soluble Nitrate (2:1) as NO_3	mg/kg	< 3	**MCERTS**					
Water Soluble Nitrate (2:1) as NO_3	mg/l	< 1.5	**MCERTS**					
Arsenic (As)	mg/kg	< 2	**MCERTS**	8	17	12	19	13
Beryllium (Be)	mg/kg	< 0.5	**MCERTS**	< 0.5	0.6	< 0.5	0.8	0.5
W/S Boron	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	< 1
Cadmium (Cd)	mg/kg	< 0.2	**MCERTS**	< 0.2	0.3	< 0.2	0.4	0.2
Chromium (III)	mg/kg	< 2	NONE	10	11	10	21	15
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Copper (Cu)	mg/kg	< 4	**MCERTS**	11	14	12	14	11
Lead (Pb)	mg/kg	< 3	**MCERTS**	10	24	12	32	11
W/S Magnesium	mg/l	< 0.1	NONE					
Mercury (Hg)	mg/kg	< 1	**MCERTS**	< 1	< 1	< 1	< 1	< 1
Nickel (Ni)	mg/kg	< 3	**MCERTS**	5	35	9	11	8
Selenium (Se)	mg/kg	< 2	**MCERTS**	< 2	< 2	< 2	< 2	< 2
Vanadium (V)	mg/kg	< 1	**MCERTS**	17	20	20	41	28
Zinc (Zn)	mg/kg	< 3	**MCERTS**	21	48	24	52	27
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	< 2
Total Coliforms (S)	MPN/g	N/a	NONE					
Faecal Coliforms (S)	MPN/g	< 10	NONE					
Faecal Streptococci (S)	CFU/g	< 10	NONE					
Clostridium Perfringens (S)	CFU/g	N/a	NONE					

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion
Subcontracted analysis (S)

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Soil Analysis Certificate						
DETS Report No: 23-10664	**Date Sampled**	17/08/23	17/08/23	17/08/23	17/08/23	
Hydrock Consultants ltd	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	
Site Reference: Ashton Keynes	**TP / BH No**	HP114	HP115	SP1	SP2	
Project / Job Ref: 28470	**Additional Refs**	ES101	ES101	None Supplied	None Supplied	
Order No: PO28046	**Depth (m)**	0.14	0.20	None Supplied	None Supplied	
Reporting Date: 04/09/2023	**DETS Sample No**	670736	670737	670738	670739	

Determinand	Unit	RL	Accreditation	(n)				
Asbestos Screen (S)	N/a	N/a	ISO17025	Not Detected	Not Detected	Not Detected	Not Detected	
Sample Matrix (S)	Material Type	N/a	NONE					
Asbestos Type (S)	PLM Result	N/a	ISO17025					
pH	pH Units	N/a	MCERTS	7.6	7.4	7.2	7.7	
Free Cyanide	mg/kg	< 1	NONE	< 1	< 1	< 1	< 1	
Total Sulphate as SO_4	mg/kg	< 200	MCERTS					
Total Sulphate as SO_4	%	< 0.02	MCERTS					
W/S Sulphate as SO_4 (2:1)	mg/l	< 10	MCERTS					
W/S Sulphate as SO_4 (2:1)	g/l	< 0.01	MCERTS					
Total Sulphur	%	< 0.02	NONE					
Fraction Organic Carbon (FOC)	Units	< 0.001	MCERTS	0.033	0.049	0.024	0.046	
Ammonium as NH_4	mg/kg	< 0.5	MCERTS					
Ammonium as NH_4	mg/l	< 0.05	MCERTS					
W/S Chloride (2:1)	mg/kg	< 1	MCERTS					
W/S Chloride (2:1)	mg/l	< 0.5	MCERTS					
Water Soluble Nitrate (2:1) as NO_3	mg/kg	< 3	MCERTS					
Water Soluble Nitrate (2:1) as NO_3	mg/l	< 1.5	MCERTS					
Arsenic (As)	mg/kg	< 2	MCERTS	16	18	9	29	
Beryllium (Be)	mg/kg	< 0.5	MCERTS	0.8	0.8	0.7	< 0.5	
W/S Boron	mg/kg	< 1	NONE	< 1	< 1	3.7	1.1	
Cadmium (Cd)	mg/kg	< 0.2	MCERTS	0.3	0.4	< 0.2	0.4	
Chromium (III)	mg/kg	< 2	NONE	20	21	19	19	
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2	< 2	< 2	< 2	
Copper (Cu)	mg/kg	< 4	MCERTS	12	17	22	109	
Lead (Pb)	mg/kg	< 3	MCERTS	22	42	13	50	
W/S Magnesium	mg/l	< 0.1	NONE					
Mercury (Hg)	mg/kg	< 1	MCERTS	< 1	< 1	< 1	< 1	
Nickel (Ni)	mg/kg	< 3	MCERTS	10	12	26	5	
Selenium (Se)	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	
Vanadium (V)	mg/kg	< 1	MCERTS	37	39	18	16	
Zinc (Zn)	mg/kg	< 3	MCERTS	44	89	111	459	
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2	6.4	3.4	< 2	
Total Coliforms (S)	MPN/g	N/a	NONE					
Faecal Coliforms (S)	MPN/g	< 10	NONE					
Faecal Streptococci (S)	CFU/g	< 10	NONE					
Clostridium Perfringens (S)	CFU/g	N/a	NONE					

Analytical results are expressed on a dry weight basis where samples are assisted-dried at less than 30°C. The Method Description page describes if the test is performed on the dried or as-received portion
Subcontracted analysis (S)

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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 23-10664	**Date Sampled**	17/08/23	17/08/23	17/08/23	17/08/23	17/08/23
Hydrock Consultants ltd	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Ashton Keynes	**TP / BH No**	BH101	BH101	BH101	BH102	BH102
Project / Job Ref: 28470	**Additional Refs**	ES101	ES102	ES103	ES101	ES104
Order No: PO28046	**Depth (m)**	0.20	0.60	1.00	0.20	9.00
Reporting Date: 04/09/2023	**DETS Sample No**	670681	670682	670683	670684	670686

Determinand	Unit	RL	Accreditation		(n)	(n)		
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6

(n) Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation

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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 23-10664	**Date Sampled**	17/08/23	17/08/23	17/08/23	17/08/23	17/08/23
Hydrock Consultants ltd	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Ashton Keynes	**TP / BH No**	BH103	BH103	BH104	BH104	BH105
Project / Job Ref: 28470	**Additional Refs**	ES101	ES103	ES101	ES102	ES101
Order No: PO28046	**Depth (m)**	0.20	1.00	0.20	0.60	0.20
Reporting Date: 04/09/2023	**DETS Sample No**	670687	670688	670689	670690	670691

Determinand	Unit	RL	Accreditation	(n)				
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	3.06
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	2.42
Phenanthrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	27.30
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	7.36
Fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	42.10
Pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	30.80
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	21.70
Chrysene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	20.80
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	20.80
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	5.35
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	13.80
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	7.35
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	2.13
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	5.97
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6	< 1.6	< 1.6	< 1.6	211

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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 23-10664	**Date Sampled**	17/08/23	17/08/23	17/08/23	17/08/23	17/08/23
Hydrock Consultants ltd	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Ashton Keynes	**TP / BH No**	BH105	BH105	BH105	TP101	TP102
Project / Job Ref: 28470	**Additional Refs**	ES102	ES103	ES104	ES101	ES101
Order No: PO28046	**Depth (m)**	0.60	1.00	8.50	0.50	0.20
Reporting Date: 04/09/2023	**DETS Sample No**	670692	670693	670694	670695	670697

Determinand	Unit	RL	Accreditation	(n)	(n)		(n)	(n)
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	0.95	0.16	< 0.1	< 0.1	< 0.1
Anthracene	mg/kg	< 0.1	MCERTS	0.28	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	mg/kg	< 0.1	MCERTS	2.33	0.46	< 0.1	< 0.1	< 0.1
Pyrene	mg/kg	< 0.1	MCERTS	1.83	0.38	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	1.49	0.32	< 0.1	< 0.1	< 0.1
Chrysene	mg/kg	< 0.1	MCERTS	1.52	0.33	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	1.87	0.43	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	0.48	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	1.27	0.30	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	0.80	0.20	< 0.1	< 0.1	< 0.1
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	0.21	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	0.67	0.17	< 0.1	< 0.1	< 0.1
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	13.7	2.7	< 1.6	< 1.6	< 1.6

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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 23-10664	**Date Sampled**	17/08/23	17/08/23	17/08/23	17/08/23	17/08/23
Hydrock Consultants ltd	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Ashton Keynes	**TP / BH No**	TP102	TP102	TP103	TP103	TP104
Project / Job Ref: 28470	**Additional Refs**	ES102	ES103	ES101	ES103	ES1
Order No: PO28046	**Depth (m)**	0.50	1.00	0.20	1.00	0.20
Reporting Date: 04/09/2023	**DETS Sample No**	670698	670699	670700	670701	670702

Determinand	Unit	RL	Accreditation	(n)	(n)		(n)	(n)
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	mg/kg	< 0.1	MCERTS	0.11	< 0.1	< 0.1	< 0.1	< 0.1
Pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6

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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 23-10664	**Date Sampled**	17/08/23	17/08/23	17/08/23	17/08/23	17/08/23
Hydrock Consultants ltd	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Ashton Keynes	**TP / BH No**	TP104	TP105	TP105	TP106	TP107
Project / Job Ref: 28470	**Additional Refs**	ES2	ES101	ES102	ES101	ES101
Order No: PO28046	**Depth (m)**	0.60	0.20	0.50	0.20	0.30
Reporting Date: 04/09/2023	**DETS Sample No**	670703	670705	670706	670707	670709

Determinand	Unit	RL	Accreditation	(n)		(n)		
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	< 0.1	0.30	< 0.1	< 0.1	< 0.1
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	0.43	< 0.1	< 0.1	< 0.1
Pyrene	mg/kg	< 0.1	MCERTS	< 0.1	0.35	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	0.14	< 0.1	< 0.1	< 0.1
Chrysene	mg/kg	< 0.1	MCERTS	< 0.1	0.16	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	0.16	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6

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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 23-10664	**Date Sampled**	17/08/23	17/08/23	17/08/23	17/08/23	17/08/23
Hydrock Consultants ltd	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Ashton Keynes	**TP / BH No**	TP107	TP109	TP110	TP112	TP112
Project / Job Ref: 28470	**Additional Refs**	ES102	ES101	ES101	ES102	ES103
Order No: PO28046	**Depth (m)**	0.80	0.20	0.20	0.40	0.70
Reporting Date: 04/09/2023	**DETS Sample No**	670710	670711	670713	670714	670715

Determinand	Unit	RL	Accreditation			(n)		(n)
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	< 0.1	0.14	< 0.1	< 0.1	< 0.1
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	0.31	< 0.1	< 0.1	< 0.1
Pyrene	mg/kg	< 0.1	MCERTS	< 0.1	0.30	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	0.18	< 0.1	< 0.1	< 0.1
Chrysene	mg/kg	< 0.1	MCERTS	< 0.1	0.18	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	0.21	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	0.17	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6

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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 23-10664	**Date Sampled**	17/08/23	17/08/23	17/08/23	17/08/23	17/08/23
Hydrock Consultants ltd	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Ashton Keynes	**TP / BH No**	TP113	TP114	TP114	TP116	TP117
Project / Job Ref: 28470	**Additional Refs**	ES101	ES102	ES103	ES101	ES101
Order No: PO28046	**Depth (m)**	0.30	0.30	1.20	0.40	0.20
Reporting Date: 04/09/2023	**DETS Sample No**	670716	670719	670720	670721	670722

Determinand	Unit	RL	Accreditation		(n)	(n)		(n)
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	0.13	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	0.22	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	0.14	3.04	< 0.1	< 0.1	< 0.1
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	2.62	< 0.1	< 0.1	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	2.69	31.20	< 0.1	< 0.1	< 0.1
Anthracene	mg/kg	< 0.1	MCERTS	0.60	8.95	< 0.1	< 0.1	< 0.1
Fluoranthene	mg/kg	< 0.1	MCERTS	10	43.70	< 0.1	< 0.1	< 0.1
Pyrene	mg/kg	< 0.1	MCERTS	9.72	36	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	5.04	16.70	< 0.1	< 0.1	< 0.1
Chrysene	mg/kg	< 0.1	MCERTS	5.10	15.80	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	6.06	17.10	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	1.65	4.90	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	4.79	14.60	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	3.22	8.14	< 0.1	< 0.1	< 0.1
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	0.56	1.65	< 0.1	< 0.1	< 0.1
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	2.80	7.08	< 0.1	< 0.1	< 0.1
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	52.4	212	< 1.6	< 1.6	< 1.6

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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 23-10664	**Date Sampled**	17/08/23	17/08/23	17/08/23	17/08/23	17/08/23
Hydrock Consultants ltd	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Ashton Keynes	**TP / BH No**	TP118	TP119	TP124	TP125	TP126
Project / Job Ref: 28470	**Additional Refs**	ES102	ES102	ES101	ES102	ES101
Order No: PO28046	**Depth (m)**	0.70	0.40	0.20	0.50	0.20
Reporting Date: 04/09/2023	**DETS Sample No**	670724	670725	670727	670728	670729

Determinand	Unit	RL	Accreditation				(n)	
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	1.30	< 0.1	< 0.1
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	0.35	< 0.1	< 0.1
Fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	2.72	< 0.1	< 0.1
Pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	2.27	< 0.1	< 0.1
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	1.18	< 0.1	< 0.1
Chrysene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	1.23	< 0.1	< 0.1
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	1.21	< 0.1	< 0.1
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	0.44	< 0.1	< 0.1
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	0.96	< 0.1	< 0.1
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	0.59	< 0.1	< 0.1
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	0.13	< 0.1	< 0.1
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	0.49	< 0.1	< 0.1
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6	< 1.6	12.9	< 1.6	< 1.6

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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 23-10664	**Date Sampled**	17/08/23	17/08/23	17/08/23	17/08/23	17/08/23
Hydrock Consultants ltd	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Ashton Keynes	**TP / BH No**	HP101	HP101	HP110	HP110	HP111
Project / Job Ref: 28470	**Additional Refs**	ES101	ES102	ES101	ES102	ES101
Order No: PO28046	**Depth (m)**	0.30	0.75	0.30	0.50	0.10
Reporting Date: 04/09/2023	**DETS Sample No**	670730	670731	670732	670733	670734

Determinand	Unit	RL	Accreditation	(n)	(n)	(n)		
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6

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Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 23-10664	**Date Sampled**	17/08/23	17/08/23	17/08/23	17/08/23	17/08/23
Hydrock Consultants ltd	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Ashton Keynes	**TP / BH No**	HP112	HP114	HP115	SP1	SP2
Project / Job Ref: 28470	**Additional Refs**	ES102	ES101	ES101	None Supplied	None Supplied
Order No: PO28046	**Depth (m)**	0.40	0.14	0.20	None Supplied	None Supplied
Reporting Date: 04/09/2023	**DETS Sample No**	670735	670736	670737	670738	670739

Determinand	Unit	RL	Accreditation	(n)	(n)			
Naphthalene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Acenaphthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluorene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	0.14	< 0.1	< 0.1
Pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	0.12
Benzo(a)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Chrysene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenz(a,h)anthracene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(ghi)perylene	mg/kg	< 0.1	MCERTS	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Total EPA-16 PAHs	mg/kg	< 1.6	MCERTS	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6

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Soil Analysis Certificate - TPH LQM Banded						
DETS Report No: 23-10664	**Date Sampled**	17/08/23	17/08/23	17/08/23	17/08/23	17/08/23
Hydrock Consultants ltd	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Ashton Keynes	**TP / BH No**	TP104	TP104	TP104	TP106	TP106
Project / Job Ref: 28470	**Additional Refs**	ES1	ES2	ES3	ES101	ES102
Order No: PO28046	**Depth (m)**	0.20	0.60	1.20	0.20	0.40
Reporting Date: 04/09/2023	**DETS Sample No**	670702	670703	670704	670707	670708

Determinand	Unit	RL	Accreditation	(n)	(n)	(n)		(n)
Aliphatic >C5 - C6 : HS_1D_MS_AL	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >C6 - C8 : HS_1D_MS_AL	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic >C8 - C10 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C10 - C12 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C12 - C16 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aliphatic >C16 - C35 : EH_CU_1D_AL	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Aliphatic >C35 - C44 : EH_CU_1D_AL	mg/kg	< 10	NONE	< 10	< 10	< 10	< 10	< 10
Aliphatic (C5 - C44) : HS_1D_MS+EH_CU_1D_AL	mg/kg	< 30	NONE	< 30	< 30	< 30	< 30	< 30
Aromatic >C5 - C7 : HS_1D_MS_AR	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >C7 - C8 : HS_1D_MS_AR	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic >C8 - C10 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C10 - C12 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C12 - C16 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C16 - C21 : EH_CU_1D_AR	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aromatic >C21 - C35 : EH_CU_1D_AR	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Aromatic >C35 - C44 : EH_CU_1D_AR	mg/kg	< 10	NONE	< 10	< 10	< 10	< 10	< 10
Aromatic (>C5 - C44) : HS_1D_MS+EH_CU_1D_AR	mg/kg	< 30	NONE	< 30	< 30	< 30	< 30	< 30
Total >C5 - C44 : HS_1D_MS+EH_CU_1D_Total	mg/kg	< 60	NONE	< 60	< 60	< 60	< 60	< 60

(n) Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation

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Soil Analysis Certificate - TPH LQM Banded						
DETS Report No: 23-10664	**Date Sampled**	17/08/23	17/08/23	17/08/23	17/08/23	17/08/23
Hydrock Consultants ltd	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Ashton Keynes	**TP / BH No**	TP109	TP109	TP112	TP113	TP113
Project / Job Ref: 28470	**Additional Refs**	ES101	ES102	ES103	ES101	ES102
Order No: PO28046	**Depth (m)**	0.20	0.70	0.70	0.30	0.50
Reporting Date: 04/09/2023	**DETS Sample No**	670711	670712	670715	670716	670717

Determinand	Unit	RL	Accreditation	(n)				
Aliphatic >C5 - C6 : HS_1D_MS_AL	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >C6 - C8 : HS_1D_MS_AL	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic >C8 - C10 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C10 - C12 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C12 - C16 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aliphatic >C16 - C35 : EH_CU_1D_AL	mg/kg	< 10	MCERTS	< 10	< 10	< 10	< 10	< 10
Aliphatic >C35 - C44 : EH_CU_1D_AL	mg/kg	< 10	NONE	< 10	< 10	< 10	< 10	< 10
Aliphatic (C5 - C44) : HS_1D_MS+EH_CU_1D_AL	mg/kg	< 30	NONE	< 30	< 30	< 30	< 30	< 30
Aromatic >C5 - C7 : HS_1D_MS_AR	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >C7 - C8 : HS_1D_MS_AR	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic >C8 - C10 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C10 - C12 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C12 - C16 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2	< 2	4	7
Aromatic >C16 - C21 : EH_CU_1D_AR	mg/kg	< 3	MCERTS	< 3	< 3	< 3	43	123
Aromatic >C21 - C35 : EH_CU_1D_AR	mg/kg	< 10	MCERTS	< 10	< 10	< 10	179	292
Aromatic >C35 - C44 : EH_CU_1D_AR	mg/kg	< 10	NONE	< 10	< 10	< 10	< 10	< 10
Aromatic (>C5 - C44) : HS_1D_MS+EH_CU_1D_AR	mg/kg	< 30	NONE	< 30	< 30	< 30	225	421
Total >C5 - C44 : HS_1D_MS+EH_CU_1D_Total	mg/kg	< 60	NONE	< 60	< 60	< 60	225	421

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Soil Analysis Certificate - TPH LQM Banded						
DETS Report No: 23-10664	**Date Sampled**	17/08/23	17/08/23	17/08/23	17/08/23	17/08/23
Hydrock Consultants ltd	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Ashton Keynes	**TP / BH No**	TP113	TP117	TP117	TP124	HP101
Project / Job Ref: 28470	**Additional Refs**	ES103	ES101	ES102	ES101	ES101
Order No: PO28046	**Depth (m)**	0.80	0.20	0.40	0.20	0.30
Reporting Date: 04/09/2023	**DETS Sample No**	670718	670722	670723	670727	670730

Determinand	Unit	RL	Accreditation	(n)	(n)			(n)
Aliphatic >C5 - C6 : HS_1D_MS_AL	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic >C6 - C8 : HS_1D_MS_AL	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aliphatic >C8 - C10 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C10 - C12 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aliphatic >C12 - C16 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	< 3	< 3	< 3	< 3	< 3
Aliphatic >C16 - C35 : EH_CU_1D_AL	mg/kg	< 10	MCERTS	< 10	< 10	< 10	16	< 10
Aliphatic >C35 - C44 : EH_CU_1D_AL	mg/kg	< 10	NONE	< 10	< 10	< 10	< 10	< 10
Aliphatic (C5 - C44) : HS_1D_MS+EH_CU_1D_AL	mg/kg	< 30	NONE	< 30	< 30	< 30	< 30	< 30
Aromatic >C5 - C7 : HS_1D_MS_AR	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic >C7 - C8 : HS_1D_MS_AR	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Aromatic >C8 - C10 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C10 - C12 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Aromatic >C12 - C16 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2	< 2	2	< 2
Aromatic >C16 - C21 : EH_CU_1D_AR	mg/kg	< 3	MCERTS	< 3	< 3	< 3	17	< 3
Aromatic >C21 - C35 : EH_CU_1D_AR	mg/kg	< 10	MCERTS	< 10	< 10	< 10	67	< 10
Aromatic >C35 - C44 : EH_CU_1D_AR	mg/kg	< 10	NONE	< 10	< 10	< 10	< 10	< 10
Aromatic (>C5 - C44) : HS_1D_MS+EH_CU_1D_AR	mg/kg	< 30	NONE	< 30	< 30	< 30	86	< 30
Total >C5 - C44 : HS_1D_MS+EH_CU_1D_Total	mg/kg	< 60	NONE	< 60	< 60	< 60	102	< 60

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Soil Analysis Certificate - TPH LQM Banded						
DETS Report No: 23-10664	**Date Sampled**	17/08/23	17/08/23	17/08/23		
Hydrock Consultants ltd	**Time Sampled**	None Supplied	None Supplied	None Supplied		
Site Reference: Ashton Keynes	**TP / BH No**	HP101	HP110	HP110		
Project / Job Ref: 28470	**Additional Refs**	ES102	ES101	ES102		
Order No: PO28046	**Depth (m)**	0.75	0.30	0.50		
Reporting Date: 04/09/2023	**DETS Sample No**	670731	670732	670733		

Determinand	Unit	RL	Accreditation	(n)	(n)			
Aliphatic >C5 - C6 : HS_1D_MS_AL	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01		
Aliphatic >C6 - C8 : HS_1D_MS_AL	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05		
Aliphatic >C8 - C10 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2	< 2	< 2		
Aliphatic >C10 - C12 : EH_CU_1D_AL	mg/kg	< 2	MCERTS	< 2	< 2	< 2		
Aliphatic >C12 - C16 : EH_CU_1D_AL	mg/kg	< 3	MCERTS	< 3	< 3	< 3		
Aliphatic >C16 - C35 : EH_CU_1D_AL	mg/kg	< 10	MCERTS	< 10	< 10	< 10		
Aliphatic >C35 - C44 : EH_CU_1D_AL	mg/kg	< 10	NONE	< 10	< 10	< 10		
Aliphatic (C5 - C44) : HS_1D_MS+EH_CU_1D_AL	mg/kg	< 30	NONE	< 30	< 30	< 30		
Aromatic >C5 - C7 : HS_1D_MS_AR	mg/kg	< 0.01	NONE	< 0.01	< 0.01	< 0.01		
Aromatic >C7 - C8 : HS_1D_MS_AR	mg/kg	< 0.05	NONE	< 0.05	< 0.05	< 0.05		
Aromatic >C8 - C10 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2	< 2		
Aromatic >C10 - C12 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2	< 2		
Aromatic >C12 - C16 : EH_CU_1D_AR	mg/kg	< 2	MCERTS	< 2	< 2	< 2		
Aromatic >C16 - C21 : EH_CU_1D_AR	mg/kg	< 3	MCERTS	< 3	< 3	< 3		
Aromatic >C21 - C35 : EH_CU_1D_AR	mg/kg	< 10	MCERTS	< 10	< 10	< 10		
Aromatic >C35 - C44 : EH_CU_1D_AR	mg/kg	< 10	NONE	< 10	< 10	< 10		
Aromatic (>C5 - C44) : HS_1D_MS+EH_CU_1D_AR	mg/kg	< 30	NONE	< 30	< 30	< 30		
Total >C5 - C44 : HS_1D_MS+EH_CU_1D_Total	mg/kg	< 60	NONE	< 60	< 60	< 60		

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Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 23-10664	**Date Sampled**	17/08/23	17/08/23	17/08/23	17/08/23	17/08/23
Hydrock Consultants ltd	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Ashton Keynes	**TP / BH No**	TP104	TP104	TP104	TP106	TP106
Project / Job Ref: 28470	**Additional Refs**	ES1	ES2	ES3	ES101	ES102
Order No: PO28046	**Depth (m)**	0.20	0.60	1.20	0.20	0.40
Reporting Date: 04/09/2023	**DETS Sample No**	670702	670703	670704	670707	670708

Determinand	Unit	RL	Accreditation	(n)	(n)	(n)		(n)
Benzene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Toluene : HS_1D_MS	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Ethylbenzene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
p & m-xylene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
o-xylene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
MTBE : HS_1D_MS	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5

(n) Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation

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Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 23-10664	**Date Sampled**	17/08/23	17/08/23	17/08/23	17/08/23	17/08/23
Hydrock Consultants ltd	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Ashton Keynes	**TP / BH No**	TP109	TP109	TP112	TP113	TP113
Project / Job Ref: 28470	**Additional Refs**	ES101	ES102	ES103	ES101	ES102
Order No: PO28046	**Depth (m)**	0.20	0.70	0.70	0.30	0.50
Reporting Date: 04/09/2023	**DETS Sample No**	670711	670712	670715	670716	670717

Determinand	Unit	RL	Accreditation	(n)				
Benzene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Toluene : HS_1D_MS	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Ethylbenzene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
p & m-xylene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
o-xylene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
MTBE : HS_1D_MS	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5

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Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 23-10664	**Date Sampled**	17/08/23	17/08/23	17/08/23	17/08/23	17/08/23
Hydrock Consultants ltd	**Time Sampled**	None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Site Reference: Ashton Keynes	**TP / BH No**	TP113	TP117	TP117	TP124	HP101
Project / Job Ref: 28470	**Additional Refs**	ES103	ES101	ES102	ES101	ES101
Order No: PO28046	**Depth (m)**	0.80	0.20	0.40	0.20	0.30
Reporting Date: 04/09/2023	**DETS Sample No**	670718	670722	670723	670727	670730

Determinand	Unit	RL	Accreditation	(n)	(n)			(n)
Benzene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
Toluene : HS_1D_MS	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5
Ethylbenzene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
p & m-xylene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
o-xylene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2	< 2	< 2
MTBE : HS_1D_MS	ug/kg	< 5	MCERTS	< 5	< 5	< 5	< 5	< 5

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Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 23-10664	**Date Sampled**	17/08/23	17/08/23	17/08/23		
Hydrock Consultants ltd	**Time Sampled**	None Supplied	None Supplied	None Supplied		
Site Reference: Ashton Keynes	**TP / BH No**	HP101	HP110	HP110		
Project / Job Ref: 28470	**Additional Refs**	ES102	ES101	ES102		
Order No: PO28046	**Depth (m)**	0.75	0.30	0.50		
Reporting Date: 04/09/2023	**DETS Sample No**	670731	670732	670733		

Determinand	Unit	RL	Accreditation	(n)	(n)			
Benzene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2		
Toluene : HS_1D_MS	ug/kg	< 5	MCERTS	< 5	< 5	< 5		
Ethylbenzene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2		
p & m-xylene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2		
o-xylene : HS_1D_MS	ug/kg	< 2	MCERTS	< 2	< 2	< 2		
MTBE : HS_1D_MS	ug/kg	< 5	MCERTS	< 5	< 5	< 5		

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MCERTS THE ENVIRONMENT AGENCY'S MONITORING CERTIFICATION SCHEME
UKAS TESTING 4480

Soil Analysis Certificate - Sample Descriptions	
DETS Report No: 23-10664	
Hydrock Consultants ltd	
Site Reference: Ashton Keynes	
Project / Job Ref: 28470	
Order No: PO28046	
Reporting Date: 04/09/2023	

DETS Sample No	TP / BH No	Additional Refs	Depth (m)	Moisture Content (%)	Sample Matrix Description
670681	BH101	ES101	0.20	15.1	Brown sandy clay with stones and vegetation
670682	BH101	ES102	0.60	5.9	Brown sandy gravel with stones
670683	BH101	ES103	1.00	5.6	Light brown sandy gravel with stones
670684	BH102	ES101	0.20	14.9	Brown sandy clay with stones
670685	BH102	ES103	1.00	3.9	Light brown sandy gravel with stones
670686	BH102	ES104	9.00	15	Grey clay
670687	BH103	ES101	0.20	27.5	Brown sandy clay with vegetation
670688	BH103	ES103	1.00	7.2	Light brown sandy gravel with stones
670689	BH104	ES101	0.20	8.9	Light brown sandy clay with stones
670690	BH104	ES102	0.60	4.3	Light brown gravelly sand with stones
670691	BH105	ES101	0.20	10.7	Black loamy sand with stones and brick
670692	BH105	ES102	0.60	8.7	Brown sandy gravel with stones and concrete
670693	BH105	ES103	1.00	4.2	Light brown sandy gravel with stones
670694	BH105	ES104	8.50	13.7	Grey clay
670695	TP101	ES101	0.50	8.6	Brown sandy gravel with stones
670696	TP101	ES103	1.00	4.2	Light brown gravelly sand with stones
670697	TP102	ES101	0.20	9.6	Brown sandy gravel with stones
670698	TP102	ES102	0.50	10.5	Brown sandy gravel with stones
670699	TP102	ES103	1.00	5.5	Brown sandy gravel with stones
670700	TP103	ES101	0.20	13.2	Brown sandy clay with stones and vegetation
670701	TP103	ES103	1.00	5.4	Light brown sandy gravel with stones
670702	TP104	ES1	0.20	5.9	Brown sandy gravel with stones
670703	TP104	ES2	0.60	6.7	Brown sandy gravel with stones
670704	TP104	ES3	1.20	7.7	Brown sandy gravel with stones
670705	TP105	ES101	0.20	20.4	Brown loamy sand with stones and vegetation
670706	TP105	ES102	0.50	4.4	Light brown sandy gravel with stones and concrete
670707	TP106	ES101	0.20	16.5	Brown sandy clay with stones and vegetation
670708	TP106	ES102	0.40	16.4	Brown sandy gravel with stones
670709	TP107	ES101	0.30	24.7	Brown sandy clay with stones
670710	TP107	ES102	0.80	4	Brown sandy clay with stones and vegetation
670711	TP109	ES101	0.20	23.1	Light brown gravelly sand with stones
670712	TP109	ES102	0.70	4.8	Brown sandy clay with stones and vegetation
670713	TP110	ES101	0.20	27.4	Light brown sandy gravel with stones
& 670714	TP112	ES102	0.40	6.5	Brown clayey sand with stones
670715	TP112	ES103	0.70	6.5	Light brown sandy gravel with stones
670716	TP113	ES101	0.30	15.3	Brown sandy clay with stones and vegetation
670717	TP113	ES102	0.50	17.5	Brown loamy sand with stones and vegetation
670718	TP113	ES103	0.80	8	Light brown sandy gravel with stones
670719	TP114	ES102	0.30	6.5	Brown sandy gravel with stones and concrete
670720	TP114	ES103	1.20	4.9	Light brown sandy gravel with stones and concrete
670721	TP116	ES101	0.40	9.6	Brown sandy clay with stones
670722	TP117	ES101	0.20	9.5	Brown sandy gravel with stones and concrete
670723	TP117	ES102	0.40	4.9	Light brown gravelly sand with stones
670724	TP118	ES102	0.70	5.1	Light brown gravelly sand with stones and vegetation
670725	TP119	ES102	0.40	8.1	Brown sandy clay with stones and vegetation
670726	TP120	ES103	1.00	3.3	Light brown gravelly sand with stones
670727	TP124	ES101	0.20	17.6	Black loamy sand with stones and vegetation
670728	TP125	ES102	0.50	3.6	Light brown sandy gravel with stones
670729	TP126	ES101	0.20	6.5	Light brown sandy clay with stones and vegetation
670730	HP101	ES101	0.30	9.9	Brown sandy gravel with stones
670731	HP101	ES102	0.75	7.9	Brown sandy gravel with stones
670732	HP110	ES101	0.30	10	Brown sandy gravel with stones
670733	HP110	ES102	0.50	7.9	Brown gravelly sand with stones
670734	HP111	ES101	0.10	12.3	Brown sandy clay with stones
670735	HP112	ES102	0.40	7.7	Brown sandy gravel with stones
670736	HP114	ES101	0.14	11	Brown sandy gravel with stones and vegetation
670737	HP115	ES101	0.20	21.9	Brown loamy sand with stones and vegetation
670738	SP1	None Supplied	None Supplied	23.2	Grey clay
670739	SP2	None Supplied	None Supplied	15.5	Black loamy sand with stones and vegetation

Moisture content is part of procedure E003 & is not an accredited test
Insufficient Sample I/S
& samples received in inappropriate containers for hydrocarbon analysis

DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

4480

Soil Analysis Certificate - Methodology & Miscellaneous Information
DETS Report No: 23-10664
Hydrock Consultants ltd
Site Reference: Ashton Keynes
Project / Job Ref: 28470
Order No: PO28046
Reporting Date: 04/09/2023

Matrix	Analysed On	Determinand	Brief Method Description	Method No
Soil	D	Boron - Water Soluble	Determination of water soluble boron in soil by 2:1 hot water extract followed by ICP-OES	E012
Soil	AR	BTEX	Determination of BTEX by headspace GC-MS	E001
Soil	D	Cations	Determination of cations in soil by aqua-regia digestion followed by ICP-OES	E002
Soil	D	Chloride - Water Soluble (2:1)	Determination of chloride by extraction with water & analysed by ion chromatography	E009
Soil	AR	Chromium - Hexavalent	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry	E016
Soil	AR	Cyanide - Complex	Determination of complex cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Free	Determination of free cyanide by distillation followed by colorimetry	E015
Soil	AR	Cyanide - Total	Determination of total cyanide by distillation followed by colorimetry	E015
Soil	D	Cyclohexane Extractable Matter (CEM)	Gravimetrically determined through extraction with cyclohexane	E011
Soil	AR	Diesel Range Organics (C10 - C24)	Determination of hexane/acetone extractable hydrocarbons by GC-FID	E004
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of saturated calcium sulphate followed by electrometric measurement	E022
Soil	AR	Electrical Conductivity	Determination of electrical conductivity by addition of water followed by electrometric measurement	E023
Soil	D	Elemental Sulphur	Determination of elemental sulphur by solvent extraction followed by GC-MS	E020
Soil	AR	EPH (C10 – C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH Product ID	Determination of acetone/hexane extractable hydrocarbons by GC-FID	E004
Soil	AR	EPH TEXAS (C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C40)	Determination of acetone/hexane extractable hydrocarbons by GC-FID for C8 to C40. C6 to C8 by headspace GC-MS	E004
Soil	D	Fluoride - Water Soluble	Determination of Fluoride by extraction with water & analysed by ion chromatography	E009
Soil	D	Fraction Organic Carbon (FOC)	Determination of TOC by combustion analyser.	E027
Soil	D	Organic Matter (SOM)	Determination of TOC by combustion analyser.	E027
Soil	D	TOC (Total Organic Carbon)	Determination of TOC by combustion analyser.	E027
Soil	AR	Exchangeable Ammonium	Determination of ammonium by discrete analyser.	E029
Soil	D	FOC (Fraction Organic Carbon)	Determination of fraction of organic carbon by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	D	Loss on Ignition @ 450oC	Determination of loss on ignition in soil by gravimetrically with the sample being ignited in a muffle furnace	E019
Soil	D	Magnesium - Water Soluble	Determination of water soluble magnesium by extraction with water followed by ICP-OES	E025
Soil	D	Metals	Determination of metals by aqua-regia digestion followed by ICP-OES	E002
Soil	AR	Mineral Oil (C10 - C40)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge	E004
Soil	AR	Moisture Content	Moisture content; determined gravimetrically	E003
Soil	D	Nitrate - Water Soluble (2:1)	Determination of nitrate by extraction with water & analysed by ion chromatography	E009
Soil	D	Organic Matter	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	PAH - Speciated (EPA 16)	Determination of PAH compounds by extraction in acetone and hexane followed by GC-MS with the use of surrogate and internal standards	E005
Soil	AR	PCB - 7 Congeners	Determination of PCB by extraction with acetone and hexane followed by GC-MS	E008
Soil	D	Petroleum Ether Extract (PEE)	Gravimetrically determined through extraction with petroleum ether	E011
Soil	AR	pH	Determination of pH by addition of water followed by electrometric measurement	E007
Soil	AR	Phenols - Total (monohydric)	Determination of phenols by distillation followed by colorimetry	E021
Soil	D	Phosphate - Water Soluble (2:1)	Determination of phosphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Total	Determination of total sulphate by extraction with 10% HCl followed by ICP-OES	E013
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of sulphate by extraction with water & analysed by ion chromatography	E009
Soil	D	Sulphate (as SO4) - Water Soluble (2:1)	Determination of water soluble sulphate by extraction with water followed by ICP-OES	E014
Soil	AR	Sulphide	Determination of sulphide by distillation followed by colorimetry	E018
Soil	D	Sulphur - Total	Determination of total sulphur by extraction with aqua-regia followed by ICP-OES	E024
Soil	AR	SVOC	Determination of semi-volatile organic compounds by extraction in acetone and hexane followed by GC-MS	E006
Soil	AR	Thiocyanate (as SCN)	Determination of thiocyanate by extraction in caustic soda followed by acidification followed by addition of ferric nitrate followed by colorimetry	E017
Soil	D	Toluene Extractable Matter (TEM)	Gravimetrically determined through extraction with toluene	E011
Soil	D	Total Organic Carbon (TOC)	Determination of organic matter by oxidising with potassium dichromate followed by titration with iron (II) sulphate	E010
Soil	AR	TPH CWG (ali: C5- C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C34, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C35. C5 to C8 by headspace GC-MS	E004
Soil	AR	TPH LQM (ali: C5-C6, C6-C8, C8-C10, C10-C12, C12-C16, C16-C35, C35-C44, aro: C5-C7, C7-C8, C8-C10, C10-C12, C12-C16, C16-C21, C21-C35, C35-C44)	Determination of hexane/acetone extractable hydrocarbons by GC-FID fractionating with SPE cartridge for C8 to C44. C5 to C8 by headspace GC-MS	E004
Soil	AR	VOCs	Determination of volatile organic compounds by headspace GC-MS	E001
Soil	AR	VPH (C6-C8 & C8-C10)	Determination of hydrocarbons C6-C8 by headspace GC-MS & C8-C10 by GC-FID	E001

D Dried
AR As Received

DETS Ltd
Unit 1, Rose Lane Industrial Estate
Rose Lane
Lenham Heath
Maidstone
Kent ME17 2JN
Tel : 01622 850410

List of HWOL Acronyms and Operators
DETS Report No: 23-10664
Hydrock Consultants ltd
Site Reference: Ashton Keynes
Project / Job Ref: 28470
Order No: PO28046
Reporting Date: 04/09/2023

Acronym	Description
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
2D	GC-GC - Double coil gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics only
AR	Aromatics only
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - underscore to separate acronyms (exception for +)
+	Operator to indicate cumulative eg. EH+HS_Total or EH_CU+HS_Total

Det - Acronym
Benzene - HS_1D_MS
Ethylbenzene - HS_1D_MS
MTBE - HS_1D_MS
TPH CWG - Aromatic >C16 - C21 - EH_CU_1D_AR
TPH LQM - Aliphatic >C10 - C12 - EH_CU_1D_AL
TPH LQM - Aliphatic >C12 - C16 - EH_CU_1D_AL
TPH LQM - Aliphatic >C16 - C35 - EH_CU_1D_AL
TPH LQM - Aliphatic >C35 - C44 - EH_CU_1D_AL
TPH LQM - Aliphatic >C5 - C44 - HS_1D_MS+EH_CU_1D_AL
TPH LQM - Aliphatic >C5 - C6 - HS_1D_MS_AL
TPH LQM - Aliphatic >C6 - C8 - HS_1D_MS_AL
TPH LQM - Aliphatic >C8 - C10 - EH_CU_1D_AL
TPH LQM - Aromatic >C10 - C12 - EH_CU_1D_AR
TPH LQM - Aromatic >C12 - C16 - EH_CU_1D_AR
TPH LQM - Aromatic >C21 - C35 - EH_CU_1D_AR
TPH LQM - Aromatic >C35 - C44 - EH_CU_1D_AR
TPH LQM - Aromatic >C5 - C44 - HS_1D_MS+EH_CU_1D_AR
TPH LQM - Aromatic >C5 - C7 - HS_1D_MS_AR
TPH LQM - Aromatic >C7 - C8 - HS_1D_MS_AR
TPH LQM - Aromatic >C8 - C10 - EH_CU_1D_AR
TPH LQM - Total >C5 - C44 - HS_1D_MS+EH_CU_1D_Total
Toluene - HS_1D_MS
m & p-xylene - HS_1D_MS
o-Xylene - HS_1D_MS

Assessment of Chemicals of Potential Concern to Plant Life

Risk parameter:	Phytotoxic pH 7
Client:	Bewley Homes
Site:	Ashton Keynes
Job no.:	28470
Lab. report no(s).:	23-10755.1 and 23-10664.0

Data Filters

Zone	Plots 1 - 12
Strata	KC
Depth Min (m bgl)	0.2
Depth Max (m bgl)	9
Dataset mean pH	8.00
Scenario pH	7

Hydrock

Date	17/08/2023
Zone	Plots 1 - 12
Location	BH102
Depth (m bgl)	9
Strata	KC

All values in mg/kg unless otherwise stated

CAS No / P Code	Chemical of Potential Concern	Units	LoD	No. Samples	Min. Value	Max. Value	Mean	Median	Standard Deviation	No. Samples >= GAC & > LoD	GAC	GAC Source		
0	**Hydrock Default Suite - FOC / SOM / pH**													
P1334	pH (su)	pH Units	0.1	1	8.00	8.00	8.00	8.00	-		-	-		8
-	**Hydrock Default Suite - Metals & PAH**													
7440-38-2	Arsenic	mg/kg	2	1	6.00	6.00	6.00	6.00	-	0	250	MAFF 1998		6
7440-42-8	Boron	mg/kg	1	1	1.60	1.60	1.60	1.60	-	0	5	Nable, et al. 1997		1.6
16065-83-1	Chromium (III)	mg/kg	2	1	8.00	8.00	8.00	8.00	-	0	400	MAFF 1998 (Cr(T))		8
18540-29-9	Chromium (VI)	mg/kg	2	1	2.00	2.00	2.00	2.00	-	0	25	ICRCL 70/90 1990		<2
7440-50-8	Copper	mg/kg	4	1	9.00	9.00	9.00	9.00	-	0	135	BS3882 2015		9
7440-02-0	Nickel	mg/kg	3	1	14.00	14.00	14.00	14.00	-	0	75	BS3882 2015		14
7440-66-6	Zinc	mg/kg	3	1	190.00	190.00	190.00	190.00	-	0	300	BS3882 2015		190

Legend:

TS	Topsoil
MG	Made Ground
SD	Superficial Deposits
NMS	Northmorr Sand and Gravel
KC	Kellaways Clay Member

<0.02	Value below the laboratory reporting limit and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate.
0.02	Value greater than, or equal to, the generic assessment criterion (GAC).
***<10**	Value excluded from statistical analysis
Y	Text result
-	Represents a determinand that was not tested.
•	represents a data point that is not included in the current filter settings

Template Version:
1.06: 20/07/23

Assessment of Chemicals of Potential Concern to Human Health

Risk parameter:	Default - Human Health - residential with home-grown produce (2.5%SOM)
Client:	Bewley Homes
Site:	Ashton Keynes
Job no.:	28470
Lab. report no(s).:	23-10755.1 and 23-10664.0

Data Filters

Zone	All
Strata	KC
Depth Min (m bgl)	0.2
Depth Max (m bgl)	9
Dataset mean SOM%	1.03
Scenario SOM%	2.5

Hydrock

Date	17/08/2023
Zone	Plots 1 - 12
Location	BH102
Depth (m bgl)	9
Strata	KC

All values in mg/kg unless otherwise stated

CAS No / P Code	Chemical of Potential Concern	Units	LoD	No. Samples	Min. Value	Max. Value	Mean	Median	Standard Deviation	No. Samples >= GAC & > LoD	Soil Saturation Limit @2.5% SOM	GAC	GAC Source	Strata	KC
-	**Asbestos**														
P1020	Asbestos Identified	text	Y/N	12	-	-	-	-	No. of detects:	0	-	-	-		N
P1889	Asbestos Screen Name	text		2	-	-	-	-	-		-	-	-		
P1880	Asbestos Containing Material Types Detected (ACM)	text		5	-	-	-	-	-		-	-	-		
0	**Hydrock Default Suite - FOC / SOM / pH**										-				
P1085	FOC (dimensionless)	||	0.001	1	0.006	0.006	0.006	0.006	-		-	-	-		0.006
-	SOM (calculated)	%	0.1724	1	1.03	1.03	1.03	1.03	-		-	-	-		1.0344
P1334	pH (su)	pH Units	0.1	1	8.00	8.00	8.00	8.00	-		-	-	-		8
-	**Hydrock Default Suite - Metals & PAH**														
7440-38-2	Arsenic	mg/kg	2	1	6.00	6.00	6.00	6.00	-	0	NR	37	C4SL - CL:AIRE 2014		6
7440-41-7	Beryllium	mg/kg	0.5	1	0.50	0.50	0.50	0.50	-	0	NR	1.7	Hydrock Derived		<0.5
7440-42-8	Boron	mg/kg	1	1	1.60	1.60	1.60	1.60	-	0	NR	300	Hydrock Derived		1.6
7440-43-9	Cadmium	mg/kg	0.2	1	1.40	1.40	1.40	1.40	-	0	NR	22	C4SL - CL:AIRE 2014		1.4
16065-83-1	Chromium (III)	mg/kg	2	1	8.00	8.00	8.00	8.00	-	0	NR	890	Hydrock Derived		8
18540-29-9	Chromium (VI)	mg/kg	2	1	2.00	2.00	2.00	2.00	-	0	NR	21	C4SL - CL:AIRE 2014		<2
7440-50-8	Copper	mg/kg	4	1	9.00	9.00	9.00	9.00	-	0	NR	2500	Hydrock Derived		9
7439-92-1	Lead	mg/kg	3	1	7.00	7.00	7.00	7.00	-	0	NR	200	C4SL - CL:AIRE 2014		7
7439-97-6	Mercury, inorganic	mg/kg	1	1	1.00	1.00	1.00	1.00	-	0	NR	40	Hydrock Derived		<1
7440-02-0	Nickel	mg/kg	3	1	14.00	14.00	14.00	14.00	-	0	NR	130	Hydrock Derived		14
7782-49-2	Selenium	mg/kg	2	1	2.00	2.00	2.00	2.00	-	0	NR	260	Hydrock Derived		<2
7440-62-2	Vanadium	mg/kg	1	1	11.00	11.00	11.00	11.00	-	0	NR	410	Hydrock Derived		11
7440-66-6	Zinc	mg/kg	3	1	190.00	190.00	190.00	190.00	-	0	NR	3900	Hydrock Derived		190
P1095	Cyanide (free)	mg/kg	1	1	1.00	1.00	1.00	1.00	-	0	NR	24	Acute Risk - SoBRA 2020		<1
P1186	Total Phenols (Monohydric)	mg/kg	2	1	2.00	2.00	2.00	2.00	-	0	38058	210	Hydrock Derived		<2
83-32-9	Acenaphthene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	141	540	Hydrock Derived		<0.1
208-96-8	Acenaphthylene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	212	440	Hydrock Derived		<0.1
120-12-7	Anthracene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	2.91	5500	Hydrock Derived		<0.1
56-55-3	Benz(a)anthracene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	4.28	12	Hydrock Derived		<0.1
50-32-8	Benzo(a)pyrene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	2.28	5	C4SL - CL:AIRE 2014		<0.1
205-99-2	Benzo(b)fluoranthene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	3.04	3.3	Hydrock Derived		<0.1
191-24-2	Benzo(ghi)perylene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	0.04	340	Hydrock Derived		<0.1
207-08-9	Benzo(k)fluoranthene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	1.72	93	Hydrock Derived		<0.1
218-01-9	Chrysene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	1.10	22	Hydrock Derived		<0.1
53-70-3	Dibenz(ah)anthracene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	0.010	0.29	Hydrock Derived		<0.1
206-44-0	Fluoranthene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	47	560	Hydrock Derived		<0.1
86-73-7	Fluorene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	77	420	Hydrock Derived		<0.1
193-39-5	Indeno(123cd)pyrene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	0.15	36	Hydrock Derived		<0.1
91-20-3	Naphthalene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	183	30	Hydrock Derived		<0.1
85-01-8	Phenanthrene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	90	220	Hydrock Derived		<0.1
129-00-0	Pyrene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	5.5	1200	Hydrock Derived		<0.1
P1310	PAH 16 Total	mg/kg	1.6	1	1.60	1.60	1.60	1.60	-			-			<1.6

Legend:

TS	Topsoil
MG	Made Ground
SD	Superficial Deposits
NMS	Northmorr Sand and Gravel
KC	Kellaways Clay Member

<0.02	Value below the laboratory reporting limit and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate.
0.02	Value greater than, or equal to, the generic assessment criterion (GAC).
<10	Value excluded from statistical analysis
Y	Text result
-	Represents a determinand that was not tested.
+	represents a data point that is not included in the current filter settings

Template Version:
1.06: 20/07/23

Assessment of Chemicals of Potential Concern to Plant Life

Risk parameter:	Phytotoxic pH 7
Client:	Bewley Homes
Site:	Ashton Keynes
Job no.:	28470
Lab. report no(s).:	23-10755.1 and 23-10664.0

Data Filters

Zone	Plots 1 - 12
Strata	MG
Depth Min (m bgl)	0.2
Depth Max (m bgl)	9
Dataset mean pH	7.70
Scenario pH	7

Hydrock

Date	17/08/2023
Zone	Plots 1 - 12
Location	TP102
Depth (m bgl)	0.5
Strata	MG

All values in mg/kg unless otherwise stated

CAS No / P Code	Chemical of Potential Concern	Units	LoD	No. Samples	Min. Value	Max. Value	Mean	Median	Standard Deviation	No. Samples >= GAC & > LoD	GAC	GAC Source		
0	**Hydrock Default Suite - FOC / SOM / pH**													
P1334	pH (su)	pH Units	0.1	1	7.70	7.70	7.70	7.70	-		-	-		7.7
-	**Hydrock Default Suite - Metals & PAH**													
7440-38-2	Arsenic	mg/kg	2	1	13.00	13.00	13.00	13.00	-	0	250	MAFF 1998		13
7440-42-8	Boron	mg/kg	1	1	1.30	1.30	1.30	1.30	-	0	5	Nable, et al. 1997		1.3
16065-83-1	Chromium (III)	mg/kg	2	1	17.00	17.00	17.00	17.00	-	0	400	MAFF 1998 (Cr(T))		17
18540-29-9	Chromium (VI)	mg/kg	2	1	2.00	2.00	2.00	2.00	-	0	25	ICRCL 70/90 1990		<2
7440-50-8	Copper	mg/kg	4	1	16.00	16.00	16.00	16.00	-	0	135	BS3882 2015		16
7440-02-0	Nickel	mg/kg	3	1	8.00	8.00	8.00	8.00	-	0	75	BS3882 2015		8
7440-66-6	Zinc	mg/kg	3	1	69.00	69.00	69.00	69.00	-	0	300	BS3882 2015		69

Legend:

TS	Topsoil
MG	Made Ground
SD	Superficial Deposits
NMS	Northmorr Sand and Gravel
KC	Kellaways Clay Member

<0.02	Value below the laboratory reporting limit and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate.
0.02	Value greater than, or equal to, the generic assessment criterion (GAC).
*<10	Value excluded from statistical analysis
Y	Text result
-	Represents a determinand that was not tested.
•	represents a data point that is not included in the current filter settings

Template Version:
1.06: 20/07/23

Assessment of Chemicals of Potential Concern to Human Health

Risk parameter:	Default - Human Health - residential with home-grown produce (6%SOM)
Client:	Bewley Homes
Site:	Ashton Keynes
Job no.:	28470
Lab. report no(s).:	23-10755.1 and 23-10664.0

Data Filters

Zone	All
Strata	MG
Depth Min (m bgl)	0.2
Depth Max (m bgl)	9
Dataset mean SOM%	9.14
Scenario SOM%	6

Hydrock

Date	17/08/2023
Zone	Plots 1 - 12
Location	TP102
Depth (m bgl)	0.5
Strata	MG

All values in mg/kg unless otherwise stated

CAS No / P Code	Chemical of Potential Concern	Units	LoD	No. Samples	Min. Value	Max. Value	Mean	Median	Standard Deviation	No. Samples >= GAC & > LoD	Soil Saturation Limit @6% SOM	GAC	GAC Source		
-	**Asbestos**														
P1020	Asbestos Identified	text	Y/N	12	-	-	-	-	No. of detects:	0	-	-	-		N
P1889	Asbestos Screen Name	text		3	-	-	-	-	-		-	-	-		
P1880	Asbestos Containing Material Types Detected (ACM)	text		6	-	-	-	-	-		-	-	-		
o	**Hydrock Default Suite - FOC / SOM / pH**										-				
P1085	FOC (dimensionless)	||	0.001	1	0.053	0.053	0.053	0.053	-		-	-	-		0.053
-	SOM (calculated)	%	0.1724	1	9.14	9.14	9.14	9.14	-		-	-	-		9.1372
P1334	pH (su)	pH Units	0.1	1	7.70	7.70	7.70	7.70	-		-	-	-		7.7
-	**Hydrock Default Suite - Metals & PAH**														
7440-38-2	Arsenic	mg/kg	2	1	13.00	13.00	13.00	13.00	-	0	NR	37	C4SL - CL:AIRE 2014		13
7440-41-7	Beryllium	mg/kg	0.5	1	0.70	0.70	0.70	0.70	-	0	NR	1.7	Hydrock Derived		0.7
7440-42-8	Boron	mg/kg	1	1	1.30	1.30	1.30	1.30	-	0	NR	300	Hydrock Derived		1.3
7440-43-9	Cadmium	mg/kg	0.2	1	0.40	0.40	0.40	0.40	-	0	NR	22	C4SL - CL:AIRE 2014		0.4
16065-83-1	Chromium (III)	mg/kg	2	1	17.00	17.00	17.00	17.00	-	0	NR	890	Hydrock Derived		17
18540-29-9	Chromium (VI)	mg/kg	2	1	2.00	2.00	2.00	2.00	-	0	NR	21	C4SL - CL:AIRE 2014		<2
7440-50-8	Copper	mg/kg	4	1	16.00	16.00	16.00	16.00	-	0	NR	2500	Hydrock Derived		16
7439-92-1	Lead	mg/kg	3	1	36.00	36.00	36.00	36.00	-	0	NR	200	C4SL - CL:AIRE 2014		36
7439-97-6	Mercury, inorganic	mg/kg	1	1	1.00	1.00	1.00	1.00	-	0	NR	40	Hydrock Derived		<1
7440-02-0	Nickel	mg/kg	3	1	8.00	8.00	8.00	8.00	-	0	NR	130	Hydrock Derived		8
7782-49-2	Selenium	mg/kg	2	1	2.00	2.00	2.00	2.00	-	0	NR	260	Hydrock Derived		<2
7440-62-2	Vanadium	mg/kg	1	1	30.00	30.00	30.00	30.00	-	0	NR	410	Hydrock Derived		30
7440-66-6	Zinc	mg/kg	3	1	69.00	69.00	69.00	69.00	-	0	NR	3900	Hydrock Derived		69
P1095	Cyanide (free)	mg/kg	1	1	1.00	1.00	1.00	1.00	-	0	NR	24	Acute Risk - SoBRA 2020		<1
P1186	Total Phenols (Monohydric)	mg/kg	2	1	2.00	2.00	2.00	2.00	-	0	70308	390	Hydrock Derived		<2
83-32-9	Acenaphthene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	336	1200	Hydrock Derived		<0.1
208-96-8	Acenaphthylene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	506	970	Hydrock Derived		<0.1
120-12-7	Anthracene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	6.96	11000	Hydrock Derived		<0.1
56-55-3	Benz(a)anthracene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	10.27	14	Hydrock Derived		<0.1
50-32-8	Benzo(a)pyrene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	5.46	5	C4SL - CL:AIRE 2014		<0.1
205-99-2	Benzo(b)fluoranthene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	7.29	3.7	Hydrock Derived		<0.1
191-24-2	Benzo(ghi)perylene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	0.09	350	Hydrock Derived		<0.1
207-08-9	Benzo(k)fluoranthene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	4.12	100	Hydrock Derived		<0.1
218-01-9	Chrysene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	2.64	27	Hydrock Derived		<0.1
53-70-3	Dibenz(ah)anthracene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	0.024	0.31	Hydrock Derived		<0.1
206-44-0	Fluoranthene	mg/kg	0.1	1	0.11	0.11	0.11	0.11	-	0	113	900	Hydrock Derived		0.11
86-73-7	Fluorene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	183	900	Hydrock Derived		<0.1
193-39-5	Indeno(123cd)pyrene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	0.37	41	Hydrock Derived		<0.1
91-20-3	Naphthalene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	432	71	Hydrock Derived		<0.1
85-01-8	Phenanthrene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	214	450	Hydrock Derived		<0.1
129-00-0	Pyrene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	13.2	2000	Hydrock Derived		<0.1
P1310	PAH 16 Total	mg/kg	1.6	1	1.60	1.60	1.60	1.60	-			-			<1.6

Legend:

TS	Topsoil
MG	Made Ground
SD	Superficial Deposits
NMS	Northmorr Sand and Gravel
KC	Kellaways Clay Member

<0.02	Value below the laboratory reporting limit and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate.
0.02	Value greater than, or equal to, the generic assessment criterion (GAC).
<10	Value excluded from statistical analysis
Y	Text result
-	Represents a determinand that was not tested.
+	represents a data point that is not included in the current filter settings

Template Version:
1.06: 20/07/23

Assessment of Chemicals of Potential Concern to Plant Life

Risk parameter: Phytotoxic pH 7
Client: Bewley Homes
Site: Ashton Keynes
Job no.: 28470
Lab. report no(s).: 23-10755.1 and 23-10664.0

Data Filters
Zone: Plots 1 - 12
Strata: NMS
Depth Min (m bgl): 0.2
Depth Max (m bgl): 9

Dataset mean pH: 8.04
Scenario pH: 7

All values in mg/kg unless otherwise stated

CAS No / P Code	Chemical of Potential Concern	Units	LoD	No. Samples	Min. Value	Max. Value	Mean	Median	Standard Deviation	No. Samples >= GAC & > LoD	GAC	GAC Source	Strata						
Date														17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023
Zone														Plots 1 - 12	Plots 1 - 12	Plots 1 - 12	Plots 1 - 12	Plots 1 - 12	Plots 1 - 12	Plots 1 - 12
Location														BH101	BH101	BH102	TP101	TP101	TP102	TP103
Depth (m bgl)														0.6	1	1	0.5	1	1	1
0	**Hydrock Default Suite - FOC / SOM / pH**																			
P1334	pH (su)	pH Units	0.1	7	7.90	8.10	8.04	8.10	0.10		-	-		8.1	8.1	8.1	7.9	8.1	7.9	8.1
-	**Hydrock Default Suite - Metals & PAH**																			
7440-38-2	Arsenic	mg/kg	2	5	5.00	8.00	6.40	6.00	1.52	0	250	MAFF 1998		6	5		8		8	5
7440-42-8	Boron	mg/kg	1	5	1.00	1.00	1.00	1.00	0.00	0	5	Nable, et al. 1997		<1	<1		<1		<1	<1
16065-83-1	Chromium (III)	mg/kg	2	5	5.00	11.00	7.60	8.00	2.30	0	400	MAFF 1998 (Cr(T))		8	5		11		8	6
18540-29-9	Chromium (VI)	mg/kg	2	5	2.00	2.00	2.00	2.00	0.00	0	25	ICRCL 70/90 1990		<2	<2		<2		<2	<2
7440-50-8	Copper	mg/kg	4	5	8.00	9.00	8.60	9.00	0.55	0	135	BS3882 2015		9	8		9		9	8
7440-02-0	Nickel	mg/kg	3	5	3.00	6.00	3.80	3.00	1.30	0	75	BS3882 2015		4	<3		6		<3	<3
7440-66-6	Zinc	mg/kg	3	5	7.00	35.00	16.80	15.00	11.10	0	300	BS3882 2015		18	9		35		15	7

Legend:

TS	Topsoil
MG	Made Ground
SD	Superficial Deposits
NMS	Northmorr Sand and Gravel
KC	Kellaways Clay Member

<0.02	Value below the laboratory reporting limit and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate.
0.02	Value greater than, or equal to, the generic assessment criterion (GAC).
*<10	Value excluded from statistical analysis
Y	Text result
-	Represents a determinand that was not tested.
•	represents a data point that is not included in the current filter settings

Template Version:
1.06: 20/07/23

Assessment of Chemicals of Potential Concern to Human Health

Risk parameter:	Default - Human Health - residential with home-grown produce (6%SOM)
Client:	Bewley Homes
Site:	Ashton Keynes
Job no.:	28470
Lab. report no(s).:	23-10755.1 and 23-10664.0

Data Filters

Zone	All
Strata	NMS
Depth Min (m bgl)	0.2
Depth Max (m bgl)	9
Dataset mean SOM%	7.90
Scenario SOM%	6

All values in mg/kg unless otherwise stated

CAS No / P Code	Chemical of Potential Concern	Units	LoD	No. Samples	Min. Value	Max. Value	Mean	Median	Standard Deviation	No. Samples >= GAC & > LoD	Soil Saturation Limit @6% SOM	GAC	GAC Source	Strata	Date	Zone	Location	Depth (m bgl)	Strata
															17/08/2023	Plots 1 - 12	BH101	0.6	NMS
															17/08/2023	Plots 1 - 12	BH101	1	NMS
															17/08/2023	Plots 1 - 12	BH102	1	NMS
															17/08/2023	Plots 1 - 12	TP101	0.5	NMS
															17/08/2023	Plots 1 - 12	TP101	1	NMS
															17/08/2023	Plots 1 - 12	TP102	1	NMS
															17/08/2023	Plots 1 - 12	TP103	1	NMS
-	**Asbestos**																		
P1020	Asbestos Identified	text	Y/N	11	-	-	-	-	No. of detects:	0	-	-	-		N	N		N		N	N
P1889	Asbestos Screen Name	text		2	-	-	-	-	-		-	-	-								
P1880	Asbestos Containing Material Types Detected (ACM)	text		3	-	-	-	-	-		-	-	-								
0	**Hydrock Default Suite - FOC / SOM / pH**										-								
P1085	FOC (dimensionless)	||	0.001	5	0.013	0.067	0.046	0.050	0.02		-	-	-		0.055	0.067		0.013		0.044	0.05
-	SOM (calculated)	%	0.1724	5	2.24	11.55	7.90	8.62	3.48		-	-	-		9.482	11.5508		2.2412		7.5856	8.62
P1334	pH (su)	pH Units	0.1	7	7.90	8.10	8.04	8.10	0.10		-	-	-		8.1	8.1	8.1	7.9	8.1	7.9	8.1
-	**Hydrock Default Suite - Metals & PAH**																		
7440-38-2	Arsenic	mg/kg	2	5	5.00	8.00	6.40	6.00	1.52	0	NR	37	C4SL - CL:AIRE 2014		6	5		8		8	5
7440-41-7	Beryllium	mg/kg	0.5	5	0.50	0.50	0.50	0.50	0.00	0	NR	1.7	Hydrock Derived		<0.5	<0.5		<0.5		<0.5	<0.5
7440-42-8	Boron	mg/kg	1	5	1.00	1.00	1.00	1.00	0.00	0	NR	300	Hydrock Derived		<1	<1		<1		<1	<1
7440-43-9	Cadmium	mg/kg	0.2	5	0.20	0.20	0.20	0.20	0.00	0	NR	22	C4SL - CL:AIRE 2014		<0.2	<0.2		<0.2		<0.2	<0.2
16065-83-1	Chromium (III)	mg/kg	2	5	5.00	11.00	7.60	8.00	2.30	0	NR	890	Hydrock Derived		8	5		11		8	6
18540-29-9	Chromium (VI)	mg/kg	2	5	2.00	2.00	2.00	2.00	0.00	0	NR	21	C4SL - CL:AIRE 2014		<2	<2		<2		<2	<2
7440-50-8	Copper	mg/kg	4	5	8.00	9.00	8.60	9.00	0.55	0	NR	2500	Hydrock Derived		9	8		9		9	8
7439-92-1	Lead	mg/kg	3	5	3.00	15.00	6.80	5.00	5.02	0	NR	200	C4SL - CL:AIRE 2014		5	<3		15		8	<3
7439-97-6	Mercury, inorganic	mg/kg	1	5	1.00	1.00	1.00	1.00	0.00	0	NR	40	Hydrock Derived		<1	<1		<1		<1	<1
7440-02-0	Nickel	mg/kg	3	5	3.00	6.00	3.80	3.00	1.30	0	NR	130	Hydrock Derived		4	<3		6		<3	<3
7782-49-2	Selenium	mg/kg	2	5	2.00	2.00	2.00	2.00	0.00	0	NR	260	Hydrock Derived		<2	<2		<2		<2	<2
7440-62-2	Vanadium	mg/kg	1	5	11.00	19.00	14.60	15.00	3.58	0	NR	410	Hydrock Derived		15	11		19		17	11
7440-66-6	Zinc	mg/kg	3	5	7.00	35.00	16.80	15.00	11.10	0	NR	3900	Hydrock Derived		18	9		35		15	7
P1095	Cyanide (free)	mg/kg	1	5	1.00	1.00	1.00	1.00	0.00	0	NR	24	Acute Risk - SoBRA 2020		<1	<1		<1		<1	<1
P1186	Total Phenols (Monohydric)	mg/kg	2	5	2.00	2.00	2.00	2.00	0.00	0	70308	390	Hydrock Derived		<2	<2		<2		<2	<2
83-32-9	Acenaphthene	mg/kg	0.1	5	0.10	0.10	0.10	0.10	0.00	0	336	1200	Hydrock Derived		<0.1	<0.1		<0.1		<0.1	<0.1
208-96-8	Acenaphthylene	mg/kg	0.1	5	0.10	0.10	0.10	0.10	0.00	0	506	970	Hydrock Derived		<0.1	<0.1		<0.1		<0.1	<0.1
120-12-7	Anthracene	mg/kg	0.1	5	0.10	0.10	0.10	0.10	0.00	0	6.96	11000	Hydrock Derived		<0.1	<0.1		<0.1		<0.1	<0.1
56-55-3	Benz(a)anthracene	mg/kg	0.1	5	0.10	0.10	0.10	0.10	0.00	0	10.27	14	Hydrock Derived		<0.1	<0.1		<0.1		<0.1	<0.1
50-32-8	Benzo(a)pyrene	mg/kg	0.1	5	0.10	0.10	0.10	0.10	0.00	0	5.46	5	C4SL - CL:AIRE 2014		<0.1	<0.1		<0.1		<0.1	<0.1
205-99-2	Benzo(b)fluoranthene	mg/kg	0.1	5	0.10	0.10	0.10	0.10	0.00	0	7.29	3.7	Hydrock Derived		<0.1	<0.1		<0.1		<0.1	<0.1
191-24-2	Benzo(ghi)perylene	mg/kg	0.1	5	0.10	0.10	0.10	0.10	0.00	0	0.09	350	Hydrock Derived		<0.1	<0.1		<0.1		<0.1	<0.1
207-08-9	Benzo(k)fluoranthene	mg/kg	0.1	5	0.10	0.10	0.10	0.10	0.00	0	4.12	100	Hydrock Derived		<0.1	<0.1		<0.1		<0.1	<0.1
218-01-9	Chrysene	mg/kg	0.1	5	0.10	0.10	0.10	0.10	0.00	0	2.64	27	Hydrock Derived		<0.1	<0.1		<0.1		<0.1	<0.1
53-70-3	Dibenz(ah)anthracene	mg/kg	0.1	5	0.10	0.10	0.10	0.10	0.00	0	0.024	0.31	Hydrock Derived		<0.1	<0.1		<0.1		<0.1	<0.1
206-44-0	Fluoranthene	mg/kg	0.1	5	0.10	0.10	0.10	0.10	0.00	0	113	900	Hydrock Derived		<0.1	<0.1		<0.1		<0.1	<0.1
86-73-7	Fluorene	mg/kg	0.1	5	0.10	0.10	0.10	0.10	0.00	0	183	900	Hydrock Derived		<0.1	<0.1		<0.1		<0.1	<0.1
193-39-5	Indeno(123cd)pyrene	mg/kg	0.1	5	0.10	0.10	0.10	0.10	0.00	0	0.37	41	Hydrock Derived		<0.1	<0.1		<0.1		<0.1	<0.1
91-20-3	Naphthalene	mg/kg	0.1	5	0.10	0.10	0.10	0.10	0.00	0	432	71	Hydrock Derived		<0.1	<0.1		<0.1		<0.1	<0.1
85-01-8	Phenanthrene	mg/kg	0.1	5	0.10	0.10	0.10	0.10	0.00	0	214	450	Hydrock Derived		<0.1	<0.1		<0.1		<0.1	<0.1
129-00-0	Pyrene	mg/kg	0.1	5	0.10	0.10	0.10	0.10	0.00	0	13.2	2000	Hydrock Derived		<0.1	<0.1		<0.1		<0.1	<0.1
P1310	PAH 16 Total	mg/kg	1.6	5	1.60	1.60	1.60	1.60	0.00			-			<1.6	<1.6		<1.6		<1.6	<1.6

Legend:

TS	Topsoil
MG	Made Ground
SD	Superficial Deposits
NMS	Northmorr Sand and Gravel
KC	Kellaways Clay Member

<0.02	Value below the laboratory reporting limit and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate.
0.02	Value greater than, or equal to, the generic assessment criterion (GAC).
<10	Value excluded from statistical analysis
Y	Text result
-	Represents a determinand that was not tested.
+	represents a data point that is not included in the current filter settings

Template Version:
1.06: 20/07/23

Assessment of Chemicals of Potential Concern to Plant Life

Risk parameter:	Phytotoxic pH 7
Client:	Bewley Homes
Site:	Ashton Keynes
Job no.:	28470
Lab. report no(s).:	23-10755.1 and 23-10664.0

Data Filters

Zone	Plots 1 - 12
Strata	SD
Depth Min (m bgl)	0.2
Depth Max (m bgl)	9
Dataset mean pH	7.80
Scenario pH	7

Hydrock

Date	17/08/2023
Zone	Plots 1 - 12
Location	BH102
Depth (m bgl)	0.2
Strata	SD

All values in mg/kg unless otherwise stated

CAS No / P Code	Chemical of Potential Concern	Units	LoD	No. Samples	Min. Value	Max. Value	Mean	Median	Standard Deviation	No. Samples >= GAC & > LoD	GAC	GAC Source		
0	**Hydrock Default Suite - FOC / SOM / pH**													
P1334	pH (su)	pH Units	0.1	1	7.80	7.80	7.80	7.80	-		-	-		7.8
-	**Hydrock Default Suite - Metals & PAH**													
7440-38-2	Arsenic	mg/kg	2	1	16.00	16.00	16.00	16.00	-	0	250	MAFF 1998		16
7440-42-8	Boron	mg/kg	1	1	1.00	1.00	1.00	1.00	-	0	5	Nable, et al. 1997		<1
16065-83-1	Chromium (III)	mg/kg	2	1	25.00	25.00	25.00	25.00	-	0	400	MAFF 1998 (Cr(T))		25
18540-29-9	Chromium (VI)	mg/kg	2	1	2.00	2.00	2.00	2.00	-	0	25	ICRCL 70/90 1990		<2
7440-50-8	Copper	mg/kg	4	1	16.00	16.00	16.00	16.00	-	0	135	BS3882 2015		16
7440-02-0	Nickel	mg/kg	3	1	11.00	11.00	11.00	11.00	-	0	75	BS3882 2015		11
7440-66-6	Zinc	mg/kg	3	1	65.00	65.00	65.00	65.00	-	0	300	BS3882 2015		65

Legend:

TS	Topsoil
MG	Made Ground
SD	Superficial Deposits
NMS	Northmorr Sand and Gravel
KC	Kellaways Clay Member

<0.02	Value below the laboratory reporting limit and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate.
0.02	Value greater than, or equal to, the generic assessment criterion (GAC).
*<10	Value excluded from statistical analysis
Y	Text result
-	Represents a determinand that was not tested.
•	represents a data point that is not included in the current filter settings

Template Version:
1.06: 20/07/23

Assessment of Chemicals of Potential Concern to Human Health

Risk parameter:	Default - Human Health - residential with home-grown produce (2.5%SOM)
Client:	Bewley Homes
Site:	Ashton Keynes
Job no.:	28470
Lab. report no(s).:	23-10755.1 and 23-10664.0

Data Filters

Zone	All
Strata	SD
Depth Min (m bgl)	0.2
Depth Max (m bgl)	9
Dataset mean SOM%	4.65
Scenario SOM%	2.5

Hydrock

Date	17/08/2023
Zone	Plots 1 - 12
Location	BH102
Depth (m bgl)	0.2
Strata	SD

All values in mg/kg unless otherwise stated

CAS No / P Code	Chemical of Potential Concern	Units	LoD	No. Samples	Min. Value	Max. Value	Mean	Median	Standard Deviation	No. Samples >= GAC & > LoD	Soil Saturation Limit @2.5% SOM	GAC	GAC Source		
-	**Asbestos**														
P1020	Asbestos Identified	text	Y/N	12	-	-	-	-	No. of detects:	0	-	-	-		N
P1889	Asbestos Screen Name	text		2	-	-	-	-	-		-	-	-		
P1880	Asbestos Containing Material Types Detected (ACM)	text		5	-	-	-	-	-		-	-	-		
0	**Hydrock Default Suite - FOC / SOM / pH**										-				
P1085	FOC (dimensionless)	||	0.001	1	0.027	0.027	0.027	0.027	-		-	-	-		0.027
-	SOM (calculated)	%	0.1724	1	4.65	4.65	4.65	4.65	-		-	-	-		4.6548
P1334	pH (su)	pH Units	0.1	1	7.80	7.80	7.80	7.80	-		-	-	-		7.8
-	**Hydrock Default Suite - Metals & PAH**														
7440-38-2	Arsenic	mg/kg	2	1	16.00	16.00	16.00	16.00	-	0	NR	37	C4SL - CL:AIRE 2014		16
7440-41-7	Beryllium	mg/kg	0.5	1	1.00	1.00	1.00	1.00	-	0	NR	1.7	Hydrock Derived		1
7440-42-8	Boron	mg/kg	1	1	1.00	1.00	1.00	1.00	-	0	NR	300	Hydrock Derived		<1
7440-43-9	Cadmium	mg/kg	0.2	1	0.40	0.40	0.40	0.40	-	0	NR	22	C4SL - CL:AIRE 2014		0.4
16065-83-1	Chromium (III)	mg/kg	2	1	25.00	25.00	25.00	25.00	-	0	NR	890	Hydrock Derived		25
18540-29-9	Chromium (VI)	mg/kg	2	1	2.00	2.00	2.00	2.00	-	0	NR	21	C4SL - CL:AIRE 2014		<2
7440-50-8	Copper	mg/kg	4	1	16.00	16.00	16.00	16.00	-	0	NR	2500	Hydrock Derived		16
7439-92-1	Lead	mg/kg	3	1	36.00	36.00	36.00	36.00	-	0	NR	200	C4SL - CL:AIRE 2014		36
7439-97-6	Mercury, inorganic	mg/kg	1	1	1.00	1.00	1.00	1.00	-	0	NR	40	Hydrock Derived		<1
7440-02-0	Nickel	mg/kg	3	1	11.00	11.00	11.00	11.00	-	0	NR	130	Hydrock Derived		11
7782-49-2	Selenium	mg/kg	2	1	2.00	2.00	2.00	2.00	-	0	NR	260	Hydrock Derived		<2
7440-62-2	Vanadium	mg/kg	1	1	41.00	41.00	41.00	41.00	-	0	NR	410	Hydrock Derived		41
7440-66-6	Zinc	mg/kg	3	1	65.00	65.00	65.00	65.00	-	0	NR	3900	Hydrock Derived		65
P1095	Cyanide (free)	mg/kg	1	1	1.00	1.00	1.00	1.00	-	0	NR	24	Acute Risk - SoBRA 2020		<1
P1186	Total Phenols (Monohydric)	mg/kg	2	1	2.00	2.00	2.00	2.00	-	0	38058	210	Hydrock Derived		<2
83-32-9	Acenaphthene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	141	540	Hydrock Derived		<0.1
208-96-8	Acenaphthylene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	212	440	Hydrock Derived		<0.1
120-12-7	Anthracene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	2.91	5500	Hydrock Derived		<0.1
56-55-3	Benz(a)anthracene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	4.28	12	Hydrock Derived		<0.1
50-32-8	Benzo(a)pyrene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	2.28	5	C4SL - CL:AIRE 2014		<0.1
205-99-2	Benzo(b)fluoranthene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	3.04	3.3	Hydrock Derived		<0.1
191-24-2	Benzo(ghi)perylene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	0.04	340	Hydrock Derived		<0.1
207-08-9	Benzo(k)fluoranthene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	1.72	93	Hydrock Derived		<0.1
218-01-9	Chrysene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	1.10	22	Hydrock Derived		<0.1
53-70-3	Dibenz(ah)anthracene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	0.010	0.29	Hydrock Derived		<0.1
206-44-0	Fluoranthene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	47	560	Hydrock Derived		<0.1
86-73-7	Fluorene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	77	420	Hydrock Derived		<0.1
193-39-5	Indeno(123cd)pyrene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	0.15	36	Hydrock Derived		<0.1
91-20-3	Naphthalene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	183	30	Hydrock Derived		<0.1
85-01-8	Phenanthrene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	90	220	Hydrock Derived		<0.1
129-00-0	Pyrene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	5.5	1200	Hydrock Derived		<0.1
P1310	PAH 16 Total	mg/kg	1.6	1	1.60	1.60	1.60	1.60	-			-			<1.6

Legend:

TS	Topsoil
MG	Made Ground
SD	Superficial Deposits
NMS	Northmorr Sand and Gravel
KC	Kellaways Clay Member

<0.02	Value below the laboratory reporting limit and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate.
0.02	Value greater than, or equal to, the generic assessment criterion (GAC).
<10	Value excluded from statistical analysis
Y	Text result
-	Represents a determinand that was not tested.
+	represents a data point that is not included in the current filter settings

Template Version:
1.06: 20/07/23

Assessment of Chemicals of Potential Concern to Plant Life

Risk parameter:	Phytotoxic pH 7
Client:	Bewley Homes
Site:	Ashton Keynes
Job no.:	28470
Lab. report no(s).:	23-10755.1 and 23-10664.0

Data Filters

Zone	Plots 1 - 12
Strata	TS
Depth Min (m bgl)	0.2
Depth Max (m bgl)	9
Dataset mean pH	7.87
Scenario pH	7

All values in mg/kg unless otherwise stated

CAS No / P Code	Chemical of Potential Concern	Units	LoD	No. Samples	Min. Value	Max. Value	Mean	Median	Standard Deviation	No. Samples >= GAC & > LoD	GAC	GAC Source	Date	17/08/2023	17/08/2023	17/08/2023
													Zone	Plots 1 - 12	Plots 1 - 12	Plots 1 - 12
													Location	BH101	TP102	TP103
													Depth (m bgl)	0.2	0.2	0.2
0	**Hydrock Default Suite - FOC / SOM / pH**												Strata	TS	TS	TS
P1334	pH (su)	pH Units	0.1	3	7.80	7.90	7.87	7.90	0.06		-	-		7.9	7.8	7.9
-	**Hydrock Default Suite - Metals & PAH**															
7440-38-2	Arsenic	mg/kg	2	3	12.00	16.00	14.33	15.00	2.08	0	250	MAFF 1998		16	12	15
7440-42-8	Boron	mg/kg	1	3	1.00	1.30	1.10	1.00	0.17	0	5	Nable, et al. 1997		<1	1.3	<1
16065-83-1	Chromium (III)	mg/kg	2	3	16.00	23.00	20.00	21.00	3.61	0	400	MAFF 1998 (Cr(T))		23	16	21
18540-29-9	Chromium (VI)	mg/kg	2	3	2.00	2.00	2.00	2.00	0.00	0	25	ICRCL 70/90 1990		<2	<2	<2
7440-50-8	Copper	mg/kg	4	3	15.00	17.00	16.33	17.00	1.15	0	135	BS3882 2015		15	17	17
7440-02-0	Nickel	mg/kg	3	3	7.00	13.00	10.00	10.00	3.00	0	75	BS3882 2015		13	7	10
7440-66-6	Zinc	mg/kg	3	3	62.00	68.00	65.33	66.00	3.06	0	300	BS3882 2015		66	62	68

Legend:

TS	Topsoil
MG	Made Ground
SD	Superficial Deposits
NMS	Northmorr Sand and Gravel
KC	Kellaways Clay Member

<0.02	Value below the laboratory reporting limit and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate.
0.02	Value greater than, or equal to, the generic assessment criterion (GAC).
*<10	Value excluded from statistical analysis
Y	Text result
-	Represents a determinand that was not tested.
•	represents a data point that is not included in the current filter settings

Template Version:
1.06: 20/07/23

Assessment of Chemicals of Potential Concern to Human Health

Risk parameter:	Default - Human Health - residential with home-grown produce (6%SOM)
Client:	Bewley Homes
Site:	Ashton Keynes
Job no.:	28470
Lab. report no(s).:	23-10755.1 and 23-10664.0

Data Filters

Zone	All
Strata	TS
Depth Min (m bgl)	0.2
Depth Max (m bgl)	9
Dataset mean SOM%	6.44
Scenario SOM%	6

All values in mg/kg unless otherwise stated

CAS No / P Code	Chemical of Potential Concern	Units	LoD	No. Samples	Min. Value	Max. Value	Mean	Median	Standard Deviation	No. Samples >= GAC & > LoD	Soil Saturation Limit @6% SOM	GAC	GAC Source	Strata	Date	Zone	Location	Depth (m bgl)
															17/08/2023	Plots 1 - 12	BH101	0.2
															17/08/2023	Plots 1 - 12	TP102	0.2
															17/08/2023	Plots 1 - 12	TP103	0.2
-	**Asbestos**																	
P1020	Asbestos Identified	text	Y/N	12	-	-	-	-	No. of detects:	0	-	-	-		N	N	N	
P1889	Asbestos Screen Name	text		3	-	-	-	-	-		-	-	-					
P1880	Asbestos Containing Material Types Detected (ACM)	text		5	-	-	-	-	-		-	-	-					
0	**Hydrock Default Suite - FOC / SOM / pH**										-							
P1085	FOC (dimensionless)	||	0.001	3	0.020	0.057	0.037	0.035	0.02		-	-	-		0.035	0.057	0.02	
-	SOM (calculated)	%	0.1724	3	3.45	9.83	6.44	6.03	3.21		-	-	-		6.034	9.8268	3.448	
P1334	pH (su)	pH Units	0.1	3	7.80	7.90	7.87	7.90	0.06		-	-	-		7.9	7.8	7.9	
-	**Hydrock Default Suite - Metals & PAH**																	
7440-38-2	Arsenic	mg/kg	2	3	12.00	16.00	14.33	15.00	2.08	0	NR	37	C4SL - CL:AIRE 2014		16	12	15	
7440-41-7	Beryllium	mg/kg	0.5	3	0.60	1.00	0.77	0.70	0.21	0	NR	1.7	Hydrock Derived		1	0.6	0.7	
7440-42-8	Boron	mg/kg	1	3	1.00	1.30	1.10	1.00	0.17	0	NR	300	Hydrock Derived		<1	1.3	<1	
7440-43-9	Cadmium	mg/kg	0.2	3	0.20	0.40	0.30	0.30	0.10	0	NR	22	C4SL - CL:AIRE 2014		0.2	0.4	0.3	
16065-83-1	Chromium (III)	mg/kg	2	3	16.00	23.00	20.00	21.00	3.61	0	NR	890	Hydrock Derived		23	16	21	
18540-29-9	Chromium (VI)	mg/kg	2	3	2.00	2.00	2.00	2.00	0.00	0	NR	21	C4SL - CL:AIRE 2014		<2	<2	<2	
7440-50-8	Copper	mg/kg	4	3	15.00	17.00	16.33	17.00	1.15	0	NR	2500	Hydrock Derived		15	17	17	
7439-92-1	Lead	mg/kg	3	3	31.00	34.00	33.00	34.00	1.73	0	NR	200	C4SL - CL:AIRE 2014		34	31	34	
7439-97-6	Mercury, inorganic	mg/kg	1	3	1.00	1.00	1.00	1.00	0.00	0	NR	40	Hydrock Derived		<1	<1	<1	
7440-02-0	Nickel	mg/kg	3	3	7.00	13.00	10.00	10.00	3.00	0	NR	130	Hydrock Derived		13	7	10	
7782-49-2	Selenium	mg/kg	2	3	2.00	2.00	2.00	2.00	0.00	0	NR	260	Hydrock Derived		<2	<2	<2	
7440-62-2	Vanadium	mg/kg	1	3	28.00	40.00	35.67	39.00	6.66	0	NR	410	Hydrock Derived		39	28	40	
7440-66-6	Zinc	mg/kg	3	3	62.00	68.00	65.33	66.00	3.06	0	NR	3900	Hydrock Derived		66	62	68	
P1095	Cyanide (free)	mg/kg	1	3	1.00	1.00	1.00	1.00	0.00	0	NR	24	Acute Risk - SoBRA 2020		<1	<1	<1	
P1186	Total Phenols (Monohydric)	mg/kg	2	3	2.00	2.00	2.00	2.00	0.00	0	70308	390	Hydrock Derived		<2	<2	<2	
83-32-9	Acenaphthene	mg/kg	0.1	3	0.10	0.10	0.10	0.10	0.00	0	336	1200	Hydrock Derived		<0.1	<0.1	<0.1	
208-96-8	Acenaphthylene	mg/kg	0.1	3	0.10	0.10	0.10	0.10	0.00	0	506	970	Hydrock Derived		<0.1	<0.1	<0.1	
120-12-7	Anthracene	mg/kg	0.1	3	0.10	0.10	0.10	0.10	0.00	0	6.96	11000	Hydrock Derived		<0.1	<0.1	<0.1	
56-55-3	Benz(a)anthracene	mg/kg	0.1	3	0.10	0.10	0.10	0.10	0.00	0	10.27	14	Hydrock Derived		<0.1	<0.1	<0.1	
50-32-8	Benzo(a)pyrene	mg/kg	0.1	3	0.10	0.10	0.10	0.10	0.00	0	5.46	5	C4SL - CL:AIRE 2014		<0.1	<0.1	<0.1	
205-99-2	Benzo(b)fluoranthene	mg/kg	0.1	3	0.10	0.10	0.10	0.10	0.00	0	7.29	3.7	Hydrock Derived		<0.1	<0.1	<0.1	
191-24-2	Benzo(ghi)perylene	mg/kg	0.1	3	0.10	0.10	0.10	0.10	0.00	0	0.09	350	Hydrock Derived		<0.1	<0.1	<0.1	
207-08-9	Benzo(k)fluoranthene	mg/kg	0.1	3	0.10	0.10	0.10	0.10	0.00	0	4.12	100	Hydrock Derived		<0.1	<0.1	<0.1	
218-01-9	Chrysene	mg/kg	0.1	3	0.10	0.10	0.10	0.10	0.00	0	2.64	27	Hydrock Derived		<0.1	<0.1	<0.1	
53-70-3	Dibenz(ah)anthracene	mg/kg	0.1	3	0.10	0.10	0.10	0.10	0.00	0	0.024	0.31	Hydrock Derived		<0.1	<0.1	<0.1	
206-44-0	Fluoranthene	mg/kg	0.1	3	0.10	0.10	0.10	0.10	0.00	0	113	900	Hydrock Derived		<0.1	<0.1	<0.1	
86-73-7	Fluorene	mg/kg	0.1	3	0.10	0.10	0.10	0.10	0.00	0	183	900	Hydrock Derived		<0.1	<0.1	<0.1	
193-39-5	Indeno(123cd)pyrene	mg/kg	0.1	3	0.10	0.10	0.10	0.10	0.00	0	0.37	41	Hydrock Derived		<0.1	<0.1	<0.1	
91-20-3	Naphthalene	mg/kg	0.1	3	0.10	0.10	0.10	0.10	0.00	0	432	71	Hydrock Derived		<0.1	<0.1	<0.1	
85-01-8	Phenanthrene	mg/kg	0.1	3	0.10	0.10	0.10	0.10	0.00	0	214	450	Hydrock Derived		<0.1	<0.1	<0.1	
129-00-0	Pyrene	mg/kg	0.1	3	0.10	0.10	0.10	0.10	0.00	0	13.2	2000	Hydrock Derived		<0.1	<0.1	<0.1	
P1310	PAH 16 Total	mg/kg	1.6	3	1.60	1.60	1.60	1.60	0.00			-			<1.6	<1.6	<1.6	

Legend:

TS	Topsoil
MG	Made Ground
SD	Superficial Deposits
NMS	Northmorr Sand and Gravel
KC	Kellaways Clay Member

<0.02	Value below the laboratory reporting limit and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate.
0.02	Value greater than, or equal to, the generic assessment criterion (GAC).
<10	Value excluded from statistical analysis
Y	Text result
-	Represents a determinand that was not tested.
+	represents a data point that is not included in the current filter settings

Template Version:
1.06: 20/07/23

Hydrock

Site: Cotswold Community School, Ashton Keynes
Job number: 28470
Client: Bewley Homes

Gas analyser: GA5000
Equipment check OK: Y
Service in date: Y
Calibration check OK: Y
Name of person monitoring: AT (1)

Notes on site conditions:

Notes: LEL = lower explosive limit = 5%v/v. * where the flow is less than the limit of detection of the instrument, the detection limit is reported. GSVs are rounded to 3 places.

Monitoring round		Borehole details						Pressure and flow					Gas concentrations									GSV		Local conditions
Date	Time	Borehole	Single or dual gas tap	Response zone depth (m)	Depth to water or depth of hole if dry (m)	D denotes dry hole	Volume of headspace in BH (well pipe & filter pack) (m^3)	Atmospheric pressure (hPa)	Atm pressure falling / rising / steady	Relative BH pressure (hPa)	Gas flow* (l/hr)	Gas flow* (absolute value) (l/hr)	VOC (as ppm using PID)	CH_4 (%v/v) Initial	CH_4 (%v/v) Steady	CH_4 (%LEL) Initial	CH_4 (%LEL) Steady	CO_2 (%v/v) Initial	CO_2 (%v/v) Steady	O_2 (%v/v) Initial	O_2 (%v/v) Steady	Other Gases PID	Gas Screening Value (CH_4) (l/hr)	Gas Screening Value (CO_2) (l/hr)	Notes on condition of borehole and surrounding ground
								Max. individual values:				**0.3**		**0.1**			**3.8**		**18.8**			**0.0003**	**0.0114**	
								Min. individual values:				0.0		0.0			1.5		17.0			0	0.0016	**Summary statistics for this monitoring period.**
								Worst-case GSVs based on max. individual flow and max. individual conc. over the duration of this table:														**0.0003**	**0.0114**	
05/09/23		BH101	S	1.00 - 8.50	2.4		0.00895	1007	S	0.00	0.3	0.3	0	0.1	0.1			3.8	3.8	17	17		0.0003	0.0114	
05/09/23		BH102	S	1.00 - 7.8	2.62		0.00977	1008	S	-0.04	0.3	0.3	0	0.1	0			2.9	2.9	17.8	17.8		0	0.0087	
05/09/23		BH103	S	1.00 - 2.6	2.8	D	0.00550	1007	S	0.14	0.3	0.3	0.2	0	0			2.5	2.5	17.4	17.4		0	0.0075	
05/09/23		BH104	S	1.00 - 5.5	3.45		0.00677	1007	S	0.05	0.3	0.3	0	0	0			1.7	1.6	18.2	18.2		0	0.0048	
05/09/23		BH105	S	1.00 - 8.1	3.44		0.00675	1007	S	0.02	0.3	0.0	0	0.1	0			1.7	1.5	18.1	18.5		0	0.0045	
05/09/23		BH01	S	1.00 - 10.00	2.77		0.00544	1007	S	-0.05	0.1	0.1	0	0	0			1.6	1.6	18.8	18.8		0	0.0016	

WILTSHIRE COUNTY COUNCIL

R.V. Brown
Chief Public Health Inspector
and Chief Inspector for
Animal Health

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Your ref. | Our ref. | Please ask for.

ASET/NW/91/0085/WD/MP | Mr. Tovey

5th June 1991

Dear Sir,

Control of Pollution Act 1974
North End Farm, Ashton Keynes
(Licence No. NW/91/0085/WD)

I refer to the recent telephone conversation between your Mr. Yelland and the writer with regard to the types of waste to be permitted for disposal at the above site.

Within the term "concrete waste" in Condition 1(ii) it was intended that this would include for the disposal of items worn out in the manufacture of concrete products, such as the latex moulds as described in the statement accompanying the original application.

Since there appears to be a need to clarify the situation please amend the licence as follows:-

DELETE

Condition 1(ii)and 1(iii).

ADD

Condition 1(ii). Uncontaminated soil, sub soil, naturally excavated materials, brick, stone, concrete and other inert wastes arising from the manufacture of concrete products.

Condition 1(iii). The types of waste which cannot be deposited are waste consisting of timber, glass, packaging and paper, asbestos, plaster, metal and empty containers, fabrics and any other putrescible or contaminated materials.

Yours faithfully,

Senior Technical Officer

OUTGOING-1

LETTER-2

OUTGOING-1

N W | 9 1 0 0 8 5 WD

85

THE SCHEDULE TO THE LICENCE

Name of Licensing Authority: Wiltshire County Council

Name and address of applicant:

~~ECC Construction Materials Ltd.,~~
~~John Keay House,~~
~~ST. AUSTELL,~~ CAMAS UK LTD
~~Cornwall,~~ Regent House
~~PL25 4DJ~~ Rodney Road
CHELTENHAM
Glos. GL50 1HX

Agent:

ECC Group PLC,
Group Estates Department,
Highlands Farm,
HENLEY ON THAMES,
Oxon. RG9 4PS

Brief Details of the Application: Application Date: 4th October 1990

Location: North End ~~Farm~~ Works, Ashton Keynes

Proposed Development: Infilling of lake

Conditions:

Types of Waste

1. (i) The types and quantities of wastes deposited daily at the site shall not exceed the operator's ability to deal with them.

   (ii) The types and quantities of waste which can be deposited are:-

   Uncontaminated soil and sub-soil and other naturally excavated materials, brick, stone and concrete waste.

   (iii) The types of waste which cannot be deposited are:-

   Waste consisting of timber, glass, plastic, rubber, packaging and paper, asbestos, plaster, metal and empty containers, fabrics and any other putrescible or contaminated materials.

2. Waste subject to the Control of Pollution (Special Waste) Regulations 1980 under Section 17 of the Control of Pollution Act shall not be deposited.

Reasons:

Dated this 22nd day of May 1991

Signed KV Strickland
Authorised Officer

PERMIT

Site Work Conditions

3. The Chief Public Health Inspector shall be notified in writing when all the site works required by the operational plan and conditions 4 to 7 inclusive have been completed and a site inspection shall be carried out before any waste material is deposited.

4. The licence holder must ensure that any services, springs, watercourses or land drainage affecting the site are properly investigated, protected or diverted outside the site or culverted or cut off as necessary. The Chief Public Health Inspector shall be informed of any action as a result of this condition and any Dewatering or Discharge of Land Drainage Consents required by the National Rivers Authority shall be obtained beforehand. All works undertaken to comply with this condition shall be completed to the satisfaction of the Chief Public Health Inspector and National Rivers Authority.

5. To prevent unauthorised access the fencing provided which clearly delineate the site boundary shall be maintained and provided with the gates not less than 1.2m high and these shall be kept locked at all times when a responsible employee is not present on site. Any additional fencing shall be not less than 1.2m high and consist of 4 strands of wire 300mm apart strained between posts where hedgerows do not provide an effective barrier.

6. The licence holder shall provide adequate wheel cleaning equipment capable of removing extraneous material from all wheels of vehicles leaving the site.

   The equipment shall consist of either high pressure water jet gun and hose, or wheel washing trough and wheel spinner, or a combination of all three, and be sited at the position indicated on the attached plan (or as agreed by the Chief Public Health Inspector).

   Drainage from this equipment shall be designed to contain the water within the site and not discharge on to the public highway.

   If necessary additional brushing equipment shall be provided if conditions warrant it.

   Clear instructions shall be displayed at all times requiring all vehicles leaving the site to use the facilities. The equipment shall be maintained in good working order throughout the life of the site and any breakdown of the equipment must be repaired as soon as possible and the matter notified to the Chief Public Health Inspector.

Operational Conditions

7. The site shall only be open during the following hours:-

Weekdays	7.00 a.m. to 6.00 p.m.
Saturdays	7.00 a.m. to 1.00 p.m.

The site shall NOT be open to receive waste on Sundays and Bank Holidays.

8. The site shall be operated and completed in accordance with the statement and plans submitted as part of the application unless operational reasons require an alteration. Such alterations shall only be implemented after the approval of the Chief Public Health Inspector.

9. The site roads shall be constructed from good clean hardcore or stone well consolidated and of a depth capable of sustaining frequent use by heavy vehicles. The surface from points A to B on the attached plan shall be of bitumen macadam or concrete and shall be kept free of mud at all times by regular brushing in order to prevent the deposit of mud on the public highway. All site roads shall be maintained throughout the life of the site to the reasonable satisfaction of the Chief Public Health Inspector.

10. The site shall be adequately manned and supervised during working hours.

11. Waste shall be compacted and formed into a layer as soon as possible after deposit and not later than at the end of the working day on which the waste is received to keep the site tidy and avoid nuisance.

12. Not less frequently than once a week any loose waste which may be lying on the site shall be gathered and disposed of in such a way as to keep the site tidy.

13. No waste material shall be burnt within the boundaries of the site, and a fire at the site shall be regarded as an emergency and immediate action shall be taken to extinguish it. All outbreaks of fire shall be notified to the Chief Public Health Inspector.

14. Precautions shall be taken to deal effectively with any vermin and insects on the site.

15. A record shall be kept of the types and quantities of waste deposited. Such records shall be forwarded to the Chief Public Health Inspector requests.

16. The terms of the site licence shall be made known to any person who is given responsibility for the management or control of the site and a copy of this shall be available at the site.

17. Such action as may be necessary shall be taken to deal with any dust nuisance, including, if necessary, the use of water sprays.

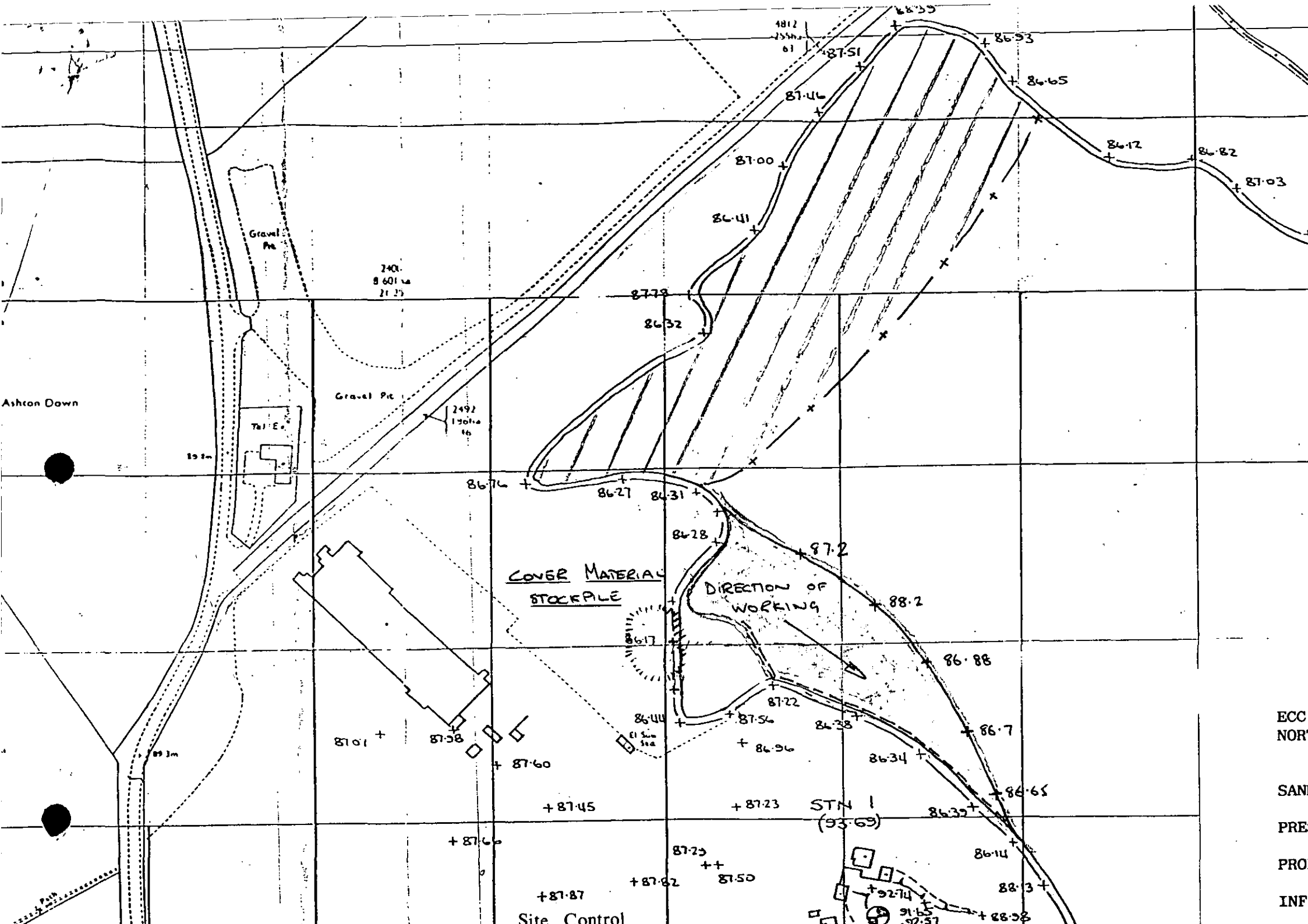
18. Each layer of waste and covering material shall be laid to a fall to encourage surface water run-off.

19. Until final restoration, completed areas of landfilling shall be graded and maintained in a tidy condition.

20. The final layer deposited shall be subject to the minimum compaction and shall, to a depth of not less than one metre, be kept free of materials likely to interfere with final restoration or subsequent cultivation.

21. In the event of the amount, quality or properties of any leachate or drainage on or from the site proving unsatisfactory at any time, provision shall be made for the collection and removal or treatment of the offending liquid. All works undertaken to comply with this condition shall be completed to the satisfaction of the Chief Public Health Inspector and National Rivers Authority.

22. The licence holder is responsible for ensuring that any necessary arrangements are made for compliance with all the conditions hereto, particularly in so far as compliance with any of the conditions will or may affect the rights or interest of any other person or other property.


Ashton Down
Gravel Pit
Gravel Pit
COVER MATERIAL STOCKPILE
DIRECTION OF WORKING
STN 1 (93.69)
Site Control
87.51
86.93
86.65
87.46
87.00
86.12
86.82
87.03
86.41
87.78
86.32
86.76
86.27
86.31
86.28
87.2
88.2
86.88
87.22
86.44
87.56
86.38
86.7
86.96
86.34
87.01
87.38
87.60
87.45
87.23
86.65
86.32
87.66
87.25
87.50
86.14
87.82
88.3
87.87
92.74
88.38

		N	W	9	0	0	0	8	0	W D

THE SCHEDULE TO THE LICENCE

Name of Licensing Authority:

Wiltshire County Council

Name and address of applicant:

ECC Construction Materials Ltd.,
John Keay House,
ST. AUSTELL, CAMAS UK LTD
Cornwall Regent House
PL25 4DJ Rodney Road
CHELTENHAM
GL50 1HX

Agent:

D. J. Sandbrook,
ECC Group PLC.,
Group Estates Department,
Highlands Farm,
HENLEY ON THAMES,
Oxon. RG9 4PS

OUTGOING-1

Brief Details of the Application:

Application Date: 22nd May 1990

Location: ~~ECC Quarries Ltd.~~, North End Lake, Ashton Keynes (Lake 62)

Proposed Development: Partial infilling of an area of former sand and gravel workings with approximately 400,000 cubic metres of inert fill in order to create a landscaped lake suitable for a range of amenity afteruses.

Conditions:

Types of Waste

1. (i) The types and quantities of wastes deposited daily at the site shall not exceed the operator's ability to deal with them.

(ii) The types of waste which can be deposited are:-

Uncontaminated soil and sub-soil and other naturally excavated materials, brick, stone and concrete waste for road making.

(iii) The types of waste which cannot be deposited are:-

Waste consisting of timber, glass, plastic, rubber, packaging and paper, asbestos, plaster, metal and empty containers, fabrics and any other putrescible or contaminated material.

Reasons:

2. Waste subject to the Control of Pollution (Special Waste) Regulations 1980 made under Section 17 of the Control of Pollution Act shall not be deposited.

PERMIT

Dated this 29th day of January 19 91

Signed .....

Authorised Officer

Site Work Conditions

3. The Chief Public Health Inspector shall be notified in writing when all the site works required by conditions 4 to 6 inclusive have been completed and a site inspection shall be carried out before any waste material is deposited.

4. The licence holder must ensure that any services, springs, watercourses or land drainage affecting the site are properly investigated, protected or diverted outside the site or culverted or cut off as necessary. The Chief Public Health Inspector shall be informed of any action as a result of this condition and any dewatering or Discharge of Land Drainage Consents required by the National Rivers Authority shall be obtained beforehand. All works undertaken to comply with this condition shall be completed to the satisfaction of the Chief Public Health Inspector and National Rivers Authority.

5. To prevent unauthorised access the fencing provided which clearly delineate the site boundary shall be maintained and provided with gates not less than 1.2m high and these shall be kept locked at all times when a responsible employee is not present on site. Any additional fencing shall be not less than 1.2m high and consist of 4 strands of wire 300mm apart strained between posts where hedgerows do not provide an effective barrier.

6. The licence holder shall provide adequate wheel cleaning equipment capable of removing extraneous material from all wheels of vehicles leaving the site.

   The equipment shall consist of either high pressure water jet gun and hose, or wheel washing trough and wheel spinner, or a combination of all three, and be sited at the position indicated on the attached plan (or as agreed by the Chief Public Health Inspector).

   Drainage from this equipment shall be designed to contain the water within the site and not discharge on to the public highway.

   If necessary additional brushing equipment shall be provided if conditions warrant it.

   Clear instructions shall be displayed at all times requiring all vehicles leaving the site to use the facilities. The equipment shall be maintained in good working order throughout the life of the site and any breakdown of the equipment must be repaired as soon as possible and the matter notified to the Chief Public Health Inspector.

Operational Conditions

7. The site shall only be open during the following hours:-

Weekdays	7.00 a.m. to 6.00 p.m.
Saturdays	7.00 a.m. to 1.00 p.m.

   The site shall NOT be open to receive waste on Sundays and Bank Holidays.

8. The site shall be operated and completed in accordance with the statement and plans submitted as part of the application unless operational reasons require an alteration. Such alterations shall only be implemented after the approval of the Chief Public Health Inspector.

9. The site roads shall be constructed from good clean hardcore or stone, well consolidated and of a depth capable of sustaining frequent use by heavy vehicles. The surface from points A to B on the attached plan shall be of bitumen macadam or concrete and shall be kept free of mud at all times by regular brushing in order to prevent the deposit of mud on the public highway. All site roads shall be maintained throughout the life of the site to the reasonable satisfaction of the Chief Public Health Inspector.

10. The site shall be adequately manned and supervised during working hours.

11. Waste shall be compacted and formed into a layer as soon as possible after deposit and not later than at the end of the working day on which the waste is received to keep the site tidy and avoid nuisance.

12. Waste other than soil, sub-soil and excavated material in its natural state shall not be deposited in water.

13. Not less frequently than once a week any loose waste which may be lying on the site shall be gathered and disposed of in such a way as to keep the site tidy.

14. No waste material shall be burnt within the boundaries of the site, and a fire at the site shall be regarded as an emergency and immediate action shall be taken to extinguish it. All outbreaks of fire shall be notified to the Chief Public Health Inspector.

15. Precautions shall be taken to deal effectively with any vermin and insects on the site.

16. A record shall be kept of the types and quantities of waste deposited. Such records shall be forwarded to the Chief Public Health Inspector at such intervals and in such a manner as the Chief Public Health Inspector requests.

17. The terms of the site licence shall be made known to any person who is given responsibility for the management or control of the site and a copy of this shall be available at the site.

18. Such action as may be necessary shall be taken to deal with any dust nuisance, including, if necessary, the use of water sprays.

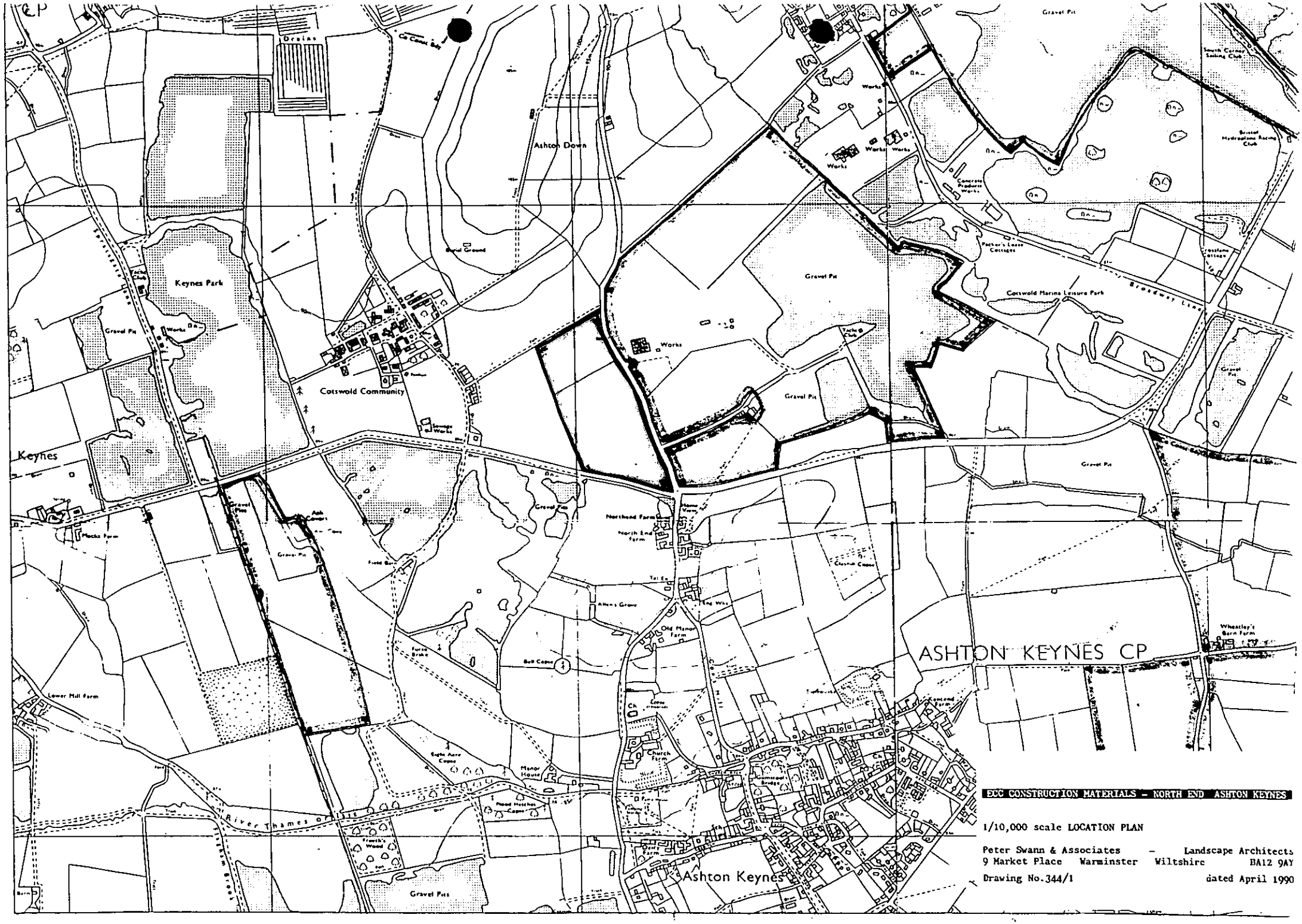
19. Each layer of waste and covering material shall be laid to a fall to encourage surface water run-off.

20. Until final restoration, completed areas of landfilling shall be graded and maintained in a tidy condition.

21. The final layer deposited shall be subject to the minimum compaction and shall, to a depth of not less than one metre, be kept free of materials likely to interfere with final restoration or subsequent cultivation.

22. In the event of the amount, quality or properties of any leachate or drainage on or from the site proving unsatisfactory at any time, provision shall be made for the collection and removal or treatment of the offending liquid. All works undertaken to comply with this condition shall be completed to the satisfaction of the Chief Public Health Inspector and National Rivers Authority.

23. The licence holder is responsible for ensuring that any necessary arrangements are made for compliance with all the conditions hereto, particularly in so far as compliance with any of the conditions will or may affect the rights or interest of any other person or other property.



ECC CONSTRUCTION MATERIALS - NORTH END ASHTON KEYNES

1/10,000 scale LOCATION PLAN

Peter Swann & Associates - Landscape Architects
9 Market Place Warminster Wiltshire BA12 9AY

Drawing No.344/1 dated April 1990

Appendix D Waste Assessment

Waste Classification Report

HazWasteOnline™ classifies waste as either **hazardous** or **non-hazardous** based on its chemical composition, related legislation and the rules and data defined in the current UK or EU technical guidance (Appendix C) (note that HP 9 Infectious is not assessed). It is the responsibility of the classifier named below to:

a) understand the origin of the waste
b) select the correct List of Waste code(s)
c) confirm that the list of determinands, results and sampling plan are fit for purpose
d) select and justify the chosen metal species (Appendix B)
e) correctly apply moisture correction and other available corrections
f) add the meta data for their user-defined substances (Appendix A)
g) check that the classification engine is suitable with respect to the national destination of the waste (Appendix C)

To aid the reviewer, the laboratory results, assumptions and justifications managed by the classifier are highlighted in pale yellow.

FLHPQ-34PYS-FCVNB

Job name

28470 Ashton Keynes

Description/Comments

DETS lab cert: 23-10664

Project

28470

Site

Ashton Keynes

Classified by

Name:
Matthew Keehn
Date:
06 Sep 2023 10:23 GMT
Telephone:

Company:
Hydrock Consultants Ltd

HazWasteOnline™ provides a two day, hazardous waste classification course that covers the use of the software and both basic and advanced waste classification techniques. Certification has to be renewed every 3 years.

HazWasteOnline™ Certification: **CERTIFIED**

Course	Date
Hazardous Waste Classification	08 Sep 2020

Next 3 year Refresher due by Sep 2023

Purpose of classification

2 - Material Characterisation

Address of the waste

Site is located off the north side of Spine Road Ashton Keynes, Swindon, Wiltshire **Post Code** SN6 6QU

SIC for the process giving rise to the waste

Description of industry/producer giving rise to the waste

Redevelopment of site for residential dwellings.

Description of the specific process, sub-process and/or activity that created the waste

Redevelopment of site for residential dwellings.

Description of the waste

Topsoil, Natural Sands/Gravels, Natural Clays and discrete Made Ground comprising sandy silty gravel with anthropogenic content including wood, coal and glass.

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	BH101	0.20	Non Hazardous		3
2	BH101[2]	0.60	Non Hazardous		5
3	BH101[3]	1.00	Non Hazardous		7
4	BH102	0.20	Non Hazardous		9
5	TP101	0.50	Non Hazardous		11
6	TP102	0.20	Non Hazardous		13
7	TP102[2]	0.50	Non Hazardous		15
8	TP102[3]	1.00	Non Hazardous		17
9	TP103	0.20	Non Hazardous		19
10	TP103[2]	1.00	Non Hazardous		21

Related documents

#	Name	Description
1	Hydrock Standard plus Cresol (ammended Lead)	waste stream template used to create this Job

Report

Created by: Matthew Keehn

Created date: 06 Sep 2023 10:23 GMT

Appendices	Page
Appendix A: Classifier defined and non GB MCL determinands	23
Appendix B: Rationale for selection of metal species	24
Appendix C: Version	25

Classification of sample: BH101

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:	
BH101	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:		
0.20 m	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	acenaphthene		201-469-6	83-32-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
3	anthracene		204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		16 mg/kg	1.32	21.125 mg/kg	0.00211 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		1 mg/kg	2.775	2.775 mg/kg	0.000278 %		
11	boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		<1 mg/kg	13.43	<13.43 mg/kg	<0.00134 %		<LOD
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	0.2 mg/kg	1.285	0.257 mg/kg	0.00002 %		
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		23 mg/kg	1.462	33.616 mg/kg	0.00336 %		
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<2 mg/kg	1.923	<3.846 mg/kg	<0.000385 %		<LOD
15	chrysene	601-048-00-0	205-923-4	218-01-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		copper { dicopper oxide; copper (I) oxide }				15	mg/kg	1.126	16.888	mg/kg	0.00169 %		
		029-002-00-X	215-270-7	1317-39-1									
17		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<**LOD**
		006-007-00-5											
18		dibenz[a,h]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
19		fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			205-912-4	206-44-0									
20		fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			201-695-5	86-73-7									
21		indeno[123-cd]pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			205-893-2	193-39-5									
22		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	34	mg/kg		34	mg/kg	0.0034 %		
		082-001-00-6											
23		mercury { mercury dichloride }				<1	mg/kg	1.353	<1.353	mg/kg	<0.000135 %		<**LOD**
		080-010-00-X	231-299-8	7487-94-7									
24		naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
25		nickel { nickel dihydroxide }				13	mg/kg	1.579	20.533	mg/kg	0.00205 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
26		pH				7.9	pH		7.9	pH	7.9 pH		
				PH									
27		phenanthrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			201-581-5	85-01-8									
28		phenol				<2	mg/kg		<2	mg/kg	<0.0002 %		<**LOD**
		604-001-00-2	203-632-7	108-95-2									
29		pyrene				<2	mg/kg		<2	mg/kg	<0.0002 %		<**LOD**
			204-927-3	129-00-0									
30		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1.6	mg/kg	1.405	<2.248	mg/kg	<0.000225 %		<**LOD**
		034-002-00-8											
31		zinc { zinc oxide }				66	mg/kg	1.245	82.151	mg/kg	0.00822 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.024 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: BH101[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:	
BH101[2]	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:		
0.60 m	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	acenaphthene		201-469-6	83-32-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
3	anthracene		204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		6 mg/kg	1.32	7.922 mg/kg	0.000792 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		<0.5 mg/kg	2.775	<1.388 mg/kg	<0.000139 %		<LOD
11	boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		<1 mg/kg	13.43	<13.43 mg/kg	<0.00134 %		<LOD
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2 mg/kg	1.285	<0.257 mg/kg	<0.00002 %		<LOD
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		8 mg/kg	1.462	11.692 mg/kg	0.00117 %		
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<2 mg/kg	1.923	<3.846 mg/kg	<0.000385 %		<LOD
15	chrysene	601-048-00-0	205-923-4	218-01-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		copper { dicopper oxide; copper (I) oxide }				9	mg/kg	1.126	10.133	mg/kg	0.00101 %		
		029-002-00-X	215-270-7	1317-39-1									
17		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<**LOD**
		006-007-00-5											
18		dibenz[a,h]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
19		fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			205-912-4	206-44-0									
20		fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			201-695-5	86-73-7									
21		indeno[123-cd]pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			205-893-2	193-39-5									
22		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	5	mg/kg		5	mg/kg	0.0005 %		
		082-001-00-6											
23		mercury { mercury dichloride }				<1	mg/kg	1.353	<1.353	mg/kg	<0.000135 %		<**LOD**
		080-010-00-X	231-299-8	7487-94-7									
24		naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
25		nickel { nickel dihydroxide }				4	mg/kg	1.579	6.318	mg/kg	0.000632 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
26		pH				8.1	pH		8.1	pH	8.1 pH		
				PH									
27		phenanthrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			201-581-5	85-01-8									
28		phenol				<2	mg/kg		<2	mg/kg	<0.0002 %		<**LOD**
		604-001-00-2	203-632-7	108-95-2									
29		pyrene				<2	mg/kg		<2	mg/kg	<0.0002 %		<**LOD**
			204-927-3	129-00-0									
30		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1.6	mg/kg	1.405	<2.248	mg/kg	<0.000225 %		<**LOD**
		034-002-00-8											
31		zinc { zinc oxide }				18	mg/kg	1.245	22.405	mg/kg	0.00224 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.00933 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: BH101[3]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:		LoW Code:	
BH101[3]		Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:			
1.00 m		Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	acenaphthene		201-469-6	83-32-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
3	anthracene		204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		5 mg/kg	1.32	6.602 mg/kg	0.00066 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		<0.5 mg/kg	2.775	<1.388 mg/kg	<0.000139 %		<LOD
11	boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		<1 mg/kg	13.43	<13.43 mg/kg	<0.00134 %		<LOD
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2 mg/kg	1.285	<0.257 mg/kg	<0.00002 %		<LOD
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		5 mg/kg	1.462	7.308 mg/kg	0.000731 %		
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<2 mg/kg	1.923	<3.846 mg/kg	<0.000385 %		<LOD
15	chrysene	601-048-00-0	205-923-4	218-01-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		copper { dicopper oxide; copper (I) oxide }				8	mg/kg	1.126	9.007	mg/kg	0.000901 %		
		029-002-00-X	215-270-7	1317-39-1									
17		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<**LOD**
		006-007-00-5											
18		dibenz[a,h]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
19		fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			205-912-4	206-44-0									
20		fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			201-695-5	86-73-7									
21		indeno[123-cd]pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			205-893-2	193-39-5									
22		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	<3	mg/kg		<3	mg/kg	<0.0003 %		<**LOD**
		082-001-00-6											
23		mercury { mercury dichloride }				<1	mg/kg	1.353	<1.353	mg/kg	<0.000135 %		<**LOD**
		080-010-00-X	231-299-8	7487-94-7									
24		naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
25		nickel { nickel dihydroxide }				<3	mg/kg	1.579	<4.738	mg/kg	<0.000474 %		<**LOD**
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
26		pH				8.1	pH		8.1	pH	8.1 pH		
				PH									
27		phenanthrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			201-581-5	85-01-8									
28		phenol				<2	mg/kg		<2	mg/kg	<0.0002 %		<**LOD**
		604-001-00-2	203-632-7	108-95-2									
29		pyrene				<2	mg/kg		<2	mg/kg	<0.0002 %		<**LOD**
			204-927-3	129-00-0									
30		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1.6	mg/kg	1.405	<2.248	mg/kg	<0.000225 %		<**LOD**
		034-002-00-8											
31		zinc { zinc oxide }				9	mg/kg	1.245	11.202	mg/kg	0.00112 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.00717 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: BH102

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BH102
Sample Depth:
0.20 m

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	acenaphthene		201-469-6	83-32-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
3	anthracene		204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		16 mg/kg	1.32	21.125 mg/kg	0.00211 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		1 mg/kg	2.775	2.775 mg/kg	0.000278 %		
11	boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		<1 mg/kg	13.43	<13.43 mg/kg	<0.00134 %		<LOD
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	0.4 mg/kg	1.285	0.514 mg/kg	0.00004 %		
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		25 mg/kg	1.462	36.539 mg/kg	0.00365 %		
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<2 mg/kg	1.923	<3.846 mg/kg	<0.000385 %		<LOD
15	chrysene	601-048-00-0	205-923-4	218-01-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
16		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		16	mg/kg	1.126	18.014	mg/kg	0.0018 %		
17		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<**LOD**
18		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
19		fluoranthene		205-912-4	206-44-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
20		fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
21		indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
22		lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	36	mg/kg		36	mg/kg	0.0036 %		
23		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<1	mg/kg	1.353	<1.353	mg/kg	<0.000135 %		<**LOD**
24		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
25		nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		11	mg/kg	1.579	17.374	mg/kg	0.00174 %		
26		pH			PH		7.8	pH		7.8	pH	7.8 pH		
27		phenanthrene		201-581-5	85-01-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
28		phenol	604-001-00-2	203-632-7	108-95-2		<2	mg/kg		<2	mg/kg	<0.0002 %		<**LOD**
29		pyrene		204-927-3	129-00-0		<2	mg/kg		<2	mg/kg	<0.0002 %		<**LOD**
30		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1.6	mg/kg	1.405	<2.248	mg/kg	<0.000225 %		<**LOD**
31		zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		65	mg/kg	1.245	80.906	mg/kg	0.00809 %		
											Total:	0.0241 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP101

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:	
TP101	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:		
0.50 m	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	acenaphthene		201-469-6	83-32-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
3	anthracene		204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		8 mg/kg	1.32	10.563 mg/kg	0.00106 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		<0.5 mg/kg	2.775	<1.388 mg/kg	<0.000139 %		<LOD
11	boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		<1 mg/kg	13.43	<13.43 mg/kg	<0.00134 %		<LOD
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2 mg/kg	1.285	<0.257 mg/kg	<0.00002 %		<LOD
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		11 mg/kg	1.462	16.077 mg/kg	0.00161 %		
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<2 mg/kg	1.923	<3.846 mg/kg	<0.000385 %		<LOD
15	chrysene	601-048-00-0	205-923-4	218-01-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		copper { dicopper oxide; copper (I) oxide }				9	mg/kg	1.126	10.133	mg/kg	0.00101 %		
		029-002-00-X	215-270-7	1317-39-1									
17		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<**LOD**
		006-007-00-5											
18		dibenz[a,h]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
19		fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			205-912-4	206-44-0									
20		fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			201-695-5	86-73-7									
21		indeno[123-cd]pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			205-893-2	193-39-5									
22		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	15	mg/kg		15	mg/kg	0.0015 %		
		082-001-00-6											
23		mercury { mercury dichloride }				<1	mg/kg	1.353	<1.353	mg/kg	<0.000135 %		<**LOD**
		080-010-00-X	231-299-8	7487-94-7									
24		naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
25		nickel { nickel dihydroxide }				6	mg/kg	1.579	9.477	mg/kg	0.000948 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
26		pH				7.9	pH		7.9	pH	7.9 pH		
				PH									
27		phenanthrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			201-581-5	85-01-8									
28		phenol				<2	mg/kg		<2	mg/kg	<0.0002 %		<**LOD**
		604-001-00-2	203-632-7	108-95-2									
29		pyrene				<2	mg/kg		<2	mg/kg	<0.0002 %		<**LOD**
			204-927-3	129-00-0									
30		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1.6	mg/kg	1.405	<2.248	mg/kg	<0.000225 %		<**LOD**
		034-002-00-8											
31		zinc { zinc oxide }				35	mg/kg	1.245	43.565	mg/kg	0.00436 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.0135 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP102

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:	
TP102	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:		
0.20 m	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	acenaphthene		201-469-6	83-32-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
3	anthracene		204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		12 mg/kg	1.32	15.844 mg/kg	0.00158 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.6 mg/kg	2.775	1.665 mg/kg	0.000167 %		
11	boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		1.3 mg/kg	13.43	17.459 mg/kg	0.00175 %		
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	0.4 mg/kg	1.285	0.514 mg/kg	0.00004 %		
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		16 mg/kg	1.462	23.385 mg/kg	0.00234 %		
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<2 mg/kg	1.923	<3.846 mg/kg	<0.000385 %		<LOD
15	chrysene	601-048-00-0	205-923-4	218-01-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
16		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		17	mg/kg	1.126	19.14	mg/kg	0.00191 %		
17		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<**LOD**
18		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
19		fluoranthene		205-912-4	206-44-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
20		fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
21		indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
22		lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	31	mg/kg		31	mg/kg	0.0031 %		
23		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<1	mg/kg	1.353	<1.353	mg/kg	<0.000135 %		<**LOD**
24		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
25		nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		7	mg/kg	1.579	11.056	mg/kg	0.00111 %		
26		pH			PH		7.8	pH		7.8	pH	7.8 pH		
27		phenanthrene		201-581-5	85-01-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
28		phenol	604-001-00-2	203-632-7	108-95-2		<2	mg/kg		<2	mg/kg	<0.0002 %		<**LOD**
29		pyrene		204-927-3	129-00-0		<2	mg/kg		<2	mg/kg	<0.0002 %		<**LOD**
30		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1.6	mg/kg	1.405	<2.248	mg/kg	<0.000225 %		<**LOD**
31		zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		62	mg/kg	1.245	77.172	mg/kg	0.00772 %		
											Total:	0.0212 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP102[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP102[2]
Sample Depth:
0.50 m

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	acenaphthene		201-469-6	83-32-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
3	anthracene		204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		13 mg/kg	1.32	17.164 mg/kg	0.00172 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.7 mg/kg	2.775	1.943 mg/kg	0.000194 %		
11	boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		1.3 mg/kg	13.43	17.459 mg/kg	0.00175 %		
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	0.4 mg/kg	1.285	0.514 mg/kg	0.00004 %		
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		17 mg/kg	1.462	24.846 mg/kg	0.00248 %		
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<2 mg/kg	1.923	<3.846 mg/kg	<0.000385 %		<LOD
15	chrysene	601-048-00-0	205-923-4	218-01-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		copper { dicopper oxide; copper (I) oxide }				16	mg/kg	1.126	18.014	mg/kg	0.0018 %		
		029-002-00-X	215-270-7	1317-39-1									
17		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
		006-007-00-5											
18		dibenz[a,h]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
19		fluoranthene				0.11	mg/kg		0.11	mg/kg	0.000011 %		
			205-912-4	206-44-0									
20		fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-695-5	86-73-7									
21		indeno[123-cd]pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-893-2	193-39-5									
22		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	36	mg/kg		36	mg/kg	0.0036 %		
		082-001-00-6											
23		mercury { mercury dichloride }				<1	mg/kg	1.353	<1.353	mg/kg	<0.000135 %		<LOD
		080-010-00-X	231-299-8	7487-94-7									
24		naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
25		nickel { nickel dihydroxide }				8	mg/kg	1.579	12.636	mg/kg	0.00126 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
26		pH				7.7	pH		7.7	pH	7.7 pH		
				PH									
27		phenanthrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-581-5	85-01-8									
28		phenol				<2	mg/kg		<2	mg/kg	<0.0002 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
29		pyrene				<2	mg/kg		<2	mg/kg	<0.0002 %		<LOD
			204-927-3	129-00-0									
30		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1.6	mg/kg	1.405	<2.248	mg/kg	<0.000225 %		<LOD
		034-002-00-8											
31		zinc { zinc oxide }				69	mg/kg	1.245	85.885	mg/kg	0.00859 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.0229 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP102[3]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP102[3]
Sample Depth:
1.00 m

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	acenaphthene		201-469-6	83-32-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
3	anthracene		204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		8 mg/kg	1.32	10.563 mg/kg	0.00106 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		<0.5 mg/kg	2.775	<1.388 mg/kg	<0.000139 %		<LOD
11	boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		<1 mg/kg	13.43	<13.43 mg/kg	<0.00134 %		<LOD
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2 mg/kg	1.285	<0.257 mg/kg	<0.00002 %		<LOD
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		8 mg/kg	1.462	11.692 mg/kg	0.00117 %		
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<2 mg/kg	1.923	<3.846 mg/kg	<0.000385 %		<LOD
15	chrysene	601-048-00-0	205-923-4	218-01-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		copper { dicopper oxide; copper (I) oxide }				9	mg/kg	1.126	10.133	mg/kg	0.00101 %		
		029-002-00-X	215-270-7	1317-39-1									
17		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<**LOD**
		006-007-00-5											
18		dibenz[a,h]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
19		fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			205-912-4	206-44-0									
20		fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			201-695-5	86-73-7									
21		indeno[123-cd]pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			205-893-2	193-39-5									
22		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	8	mg/kg		8	mg/kg	0.0008 %		
		082-001-00-6											
23		mercury { mercury dichloride }				<1	mg/kg	1.353	<1.353	mg/kg	<0.000135 %		<**LOD**
		080-010-00-X	231-299-8	7487-94-7									
24		naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
25		nickel { nickel dihydroxide }				<3	mg/kg	1.579	<4.738	mg/kg	<0.000474 %		<**LOD**
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
26		pH				7.9	pH		7.9	pH	7.9 pH		
				PH									
27		phenanthrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			201-581-5	85-01-8									
28		phenol				<2	mg/kg		<2	mg/kg	<0.0002 %		<**LOD**
		604-001-00-2	203-632-7	108-95-2									
29		pyrene				<2	mg/kg		<2	mg/kg	<0.0002 %		<**LOD**
			204-927-3	129-00-0									
30		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1.6	mg/kg	1.405	<2.248	mg/kg	<0.000225 %		<**LOD**
		034-002-00-8											
31		zinc { zinc oxide }				15	mg/kg	1.245	18.671	mg/kg	0.00187 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.00936 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP103

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:	
TP103	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:		
0.20 m	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	acenaphthene		201-469-6	83-32-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
3	anthracene		204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		15 mg/kg	1.32	19.805 mg/kg	0.00198 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.7 mg/kg	2.775	1.943 mg/kg	0.000194 %		
11	boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		<1 mg/kg	13.43	<13.43 mg/kg	<0.00134 %		<LOD
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	0.3 mg/kg	1.285	0.386 mg/kg	0.00003 %		
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		21 mg/kg	1.462	30.693 mg/kg	0.00307 %		
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<2 mg/kg	1.923	<3.846 mg/kg	<0.000385 %		<LOD
15	chrysene	601-048-00-0	205-923-4	218-01-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD

#		Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
16		copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		17	mg/kg	1.126	19.14	mg/kg	0.00191 %		
17		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<**LOD**
18		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
19		fluoranthene		205-912-4	206-44-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
20		fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
21		indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
22		lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	34	mg/kg		34	mg/kg	0.0034 %		
23		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<1	mg/kg	1.353	<1.353	mg/kg	<0.000135 %		<**LOD**
24		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
25		nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		10	mg/kg	1.579	15.795	mg/kg	0.00158 %		
26		pH			PH		7.9	pH		7.9	pH	7.9 pH		
27		phenanthrene		201-581-5	85-01-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
28		phenol	604-001-00-2	203-632-7	108-95-2		<2	mg/kg		<2	mg/kg	<0.0002 %		<**LOD**
29		pyrene		204-927-3	129-00-0		<2	mg/kg		<2	mg/kg	<0.0002 %		<**LOD**
30		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1.6	mg/kg	1.405	<2.248	mg/kg	<0.000225 %		<**LOD**
31		zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		68	mg/kg	1.245	84.641	mg/kg	0.00846 %		
											Total:	0.0235 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: TP103[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:	
TP103[2]	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:		
1.00 m	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 0% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	acenaphthene		201-469-6	83-32-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
3	anthracene		204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		5 mg/kg	1.32	6.602 mg/kg	0.00066 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		<0.5 mg/kg	2.775	<1.388 mg/kg	<0.000139 %		<LOD
11	boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		<1 mg/kg	13.43	<13.43 mg/kg	<0.00134 %		<LOD
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2 mg/kg	1.285	<0.257 mg/kg	<0.00002 %		<LOD
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		6 mg/kg	1.462	8.769 mg/kg	0.000877 %		
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<2 mg/kg	1.923	<3.846 mg/kg	<0.000385 %		<LOD
15	chrysene	601-048-00-0	205-923-4	218-01-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		copper { dicopper oxide; copper (I) oxide }				8	mg/kg	1.126	9.007	mg/kg	0.000901 %		
		029-002-00-X	215-270-7	1317-39-1									
17		cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
		006-007-00-5											
18		dibenz[a,h]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
19		fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-912-4	206-44-0									
20		fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-695-5	86-73-7									
21		indeno[123-cd]pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-893-2	193-39-5									
22		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	<3	mg/kg		<3	mg/kg	<0.0003 %		<LOD
		082-001-00-6											
23		mercury { mercury dichloride }				<1	mg/kg	1.353	<1.353	mg/kg	<0.000135 %		<LOD
		080-010-00-X	231-299-8	7487-94-7									
24		naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
25		nickel { nickel dihydroxide }				<3	mg/kg	1.579	<4.738	mg/kg	<0.000474 %		<LOD
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
26		pH				8.1	pH		8.1	pH	8.1 pH		
				PH									
27		phenanthrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-581-5	85-01-8									
28		phenol				<2	mg/kg		<2	mg/kg	<0.0002 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
29		pyrene				<2	mg/kg		<2	mg/kg	<0.0002 %		<LOD
			204-927-3	129-00-0									
30		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<1.6	mg/kg	1.405	<2.248	mg/kg	<0.000225 %		<LOD
		034-002-00-8											
31		zinc { zinc oxide }				7	mg/kg	1.245	8.713	mg/kg	0.000871 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.00707 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Appendix A: Classifier defined and non GB MCL determinands

- **acenaphthene** (EC Number: 201-469-6, CAS Number: 83-32-9)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Aquatic Chronic 2; H411

- **acenaphthylene** (EC Number: 205-917-1, CAS Number: 208-96-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4; H302 , Acute Tox. 1; H330 , Acute Tox. 1; H310 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315

- **anthracene** (EC Number: 204-371-1, CAS Number: 120-12-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **benzo[ghi]perylene** (EC Number: 205-883-8, CAS Number: 191-24-2)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 23 Jul 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **boron tribromide/trichloride/trifluoride (combined)** (CAS Number: 10294-33-4, 10294-34-5, 7637-07-2)

Description/Comments: Combines the hazard statements and the average of the conversion factors for boron tribromide, boron trichloride and boron trifluoride
Data source: N/A
Data source date: 06 Aug 2015
Hazard Statements: EUH014 , Acute Tox. 2; H330 , Acute Tox. 2; H300 , Skin Corr. 1A; H314 , Skin Corr. 1B; H314

- **chromium(III) oxide (worst case)** (EC Number: 215-160-9, CAS Number: 1308-38-9)

Description/Comments: Data from C&L Inventory Database
Data source: https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/33806
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4; H332 , Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Resp. Sens. 1; H334 , Skin Sens. 1; H317 , Repr. 1B; H360FD , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex**

GB MCL index number: 006-007-00-5
Description/Comments: Conversion factor based on a worst case compound: sodium cyanide
Additional Hazard Statement(s): EUH032 >= 0.2 %
Reason for additional Hazards Statement(s):
20 Nov 2021 - EUH032 >= 0.2 % hazard statement sourced from: WM3, Table C12.2

- **fluoranthene** (EC Number: 205-912-4, CAS Number: 206-44-0)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **fluorene** (EC Number: 201-695-5, CAS Number: 86-73-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

- **indeno[123-cd]pyrene** (EC Number: 205-893-2, CAS Number: 193-39-5)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Carc. 2; H351

lead compounds with the exception of those specified elsewhere in this Annex

GB MCL index number: 082-001-00-6
Description/Comments: Least-worst case: IARC considers lead compounds Group 2A; Probably carcinogenic to humans; Lead REACH Consortium, following MCL protocols, considers many simple lead compounds to be Carcinogenic category 2
Additional Hazard Statement(s): Carc. 2; H351
Reason for additional Hazards Statement(s):
20 Nov 2021 - Carc. 2; H351 hazard statement sourced from: IARC Group 2A (Sup 7, 87) 2006; Lead REACH Consortium www.reach-lead.eu/substanceinformation.html. Review date 29/09/2015

pH (CAS Number: PH)

Description/Comments: Appendix C4
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: None.

phenanthrene (EC Number: 201-581-5, CAS Number: 85-01-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Carc. 2; H351 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Skin Irrit. 2; H315

pyrene (EC Number: 204-927-3, CAS Number: 129-00-0)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 2014
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

Appendix B: Rationale for selection of metal species

arsenic {arsenic trioxide}

Worst case species based on hazard statements

beryllium {beryllium oxide}

Worst case species based on hazard statements

boron {boron tribromide/trichloride/trifluoride (combined)}

Worst case species based on hazard statements

cadmium {cadmium sulfide}

Worst case species based on hazard statements

chromium in chromium(III) compounds {chromium(III) oxide (worst case)}

Worst case species based on hazard statements

chromium in chromium(VI) compounds {chromium(VI) oxide}

Worst case species based on hazard statements

copper {dicopper oxide; copper (I) oxide}

Most likely common species

cyanides {salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex}

Worst case species

lead {lead compounds with the exception of those specified elsewhere in this Annex}

Worst case species based on hazard statements

mercury {mercury dichloride}

Worst case species based on hazard statements

nickel {nickel dihydroxide}

Worst case species based on hazard statements

selenium {selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex}

Worst case species based on hazard statements

zinc {zinc oxide}

Worst case species based on hazard statements

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.2.GB - Oct 2021
HazWasteOnline Classification Engine Version: 2023.237.5731.10565 (25 Aug 2023)
HazWasteOnline Database: 2023.237.5731.10565 (25 Aug 2023)

This classification utilises the following guidance and legislation:
WM3 v1.2.GB - Waste Classification - 1st Edition v1.2.GB - Oct 2021
CLP Regulation - Regulation 1272/2008/EC of 16 December 2008
1st ATP - Regulation 790/2009/EC of 10 August 2009
2nd ATP - Regulation 286/2011/EC of 10 March 2011
3rd ATP - Regulation 618/2012/EU of 10 July 2012
4th ATP - Regulation 487/2013/EU of 8 May 2013
Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013
5th ATP - Regulation 944/2013/EU of 2 October 2013
6th ATP - Regulation 605/2014/EU of 5 June 2014
WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014
Revised List of Waste 2014 - Decision 2014/955/EU of 18 December 2014
7th ATP - Regulation 2015/1221/EU of 24 July 2015
8th ATP - Regulation (EU) 2016/918 of 19 May 2016
9th ATP - Regulation (EU) 2016/1179 of 19 July 2016
10th ATP - Regulation (EU) 2017/776 of 4 May 2017
HP14 amendment - Regulation (EU) 2017/997 of 8 June 2017
13th ATP - Regulation (EU) 2018/1480 of 4 October 2018
14th ATP - Regulation (EU) 2020/217 of 4 October 2019
15th ATP - Regulation (EU) 2020/1182 of 19 May 2020
The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1567 of 16th December 2020
The Waste and Environmental Permitting etc. (Legislative Functions and Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1540 of 16th December 2020
GB MCL List - version 1.1 of 09 June 2021

Appendix F Geotechnical Risk Register

Geotechnical hazard identification – desk study stage

Potential geotechnical hazards have been assessed in accordance with the general requirements of ICE/DETR Document 'Managing Geotechnical Risk' and the HE documents HD 41/15 and CD 622. The following pages set out the identified geotechnical risks and hazards which are associated with the proposed development and establish the approach which is to be taken to manage the risks including the geotechnical input and analysis.

Table F.1 is a preliminary assessment of possible geotechnical hazards at the site at Desk Study stage. This information is used to assist with ground investigation design.

Table F.1: Possible geotechnical hazards

Hazard	Comment	Hazard status based on desk study	
		Could be present and / or affect site (i.e. Plausible)	**Unlikely to be present and/or affect site**
Uncontrolled Made Ground (variable strength and compressibility).	Made Ground was previously encountered on site.	✓	-
Soft / loose compressible ground (low strength and high settlement potential).	Cohesive clays previously encountered on site.	✓	-
Shrink swell of the clay fraction of soils under the influence of vegetation.	Desk Study reports a Moderate risk for shrinking/swelling of clays on-site.	✓	-
Variable lateral and vertical changes in ground conditions.	Variable ground conditions encountered in the Hydrock 2018 ground investigation.	✓	-
High sulfates present in the soils.	Whilst the Hydrock 2018 report states a DS-1 classification for the Northmoor Sand and Gravel Member, no testing was undertaken in the Kellaways Clay Member. The Kellaways Clay is historically known to be high in sulfates and	✓	-

	the depositional environment lends itself to the formation of pyrite.		
Adverse chemical ground conditions, (e.g. expansive slag).	Historic land use does not suggest this to be present.	-	✓
Obstructions.	Possibility for buried obstructions present on site.	✓	-
Existing below ground structures to remain (foundations).	Grade listed buildings are to remain on-site and form part of the proposed development.	✓	-
Shallow groundwater.	Groundwater levels may fluctuate seasonally.	✓	-
Changing groundwater conditions.		✓	-
Risk from erosion.	The site is not considered to be at risk from erosion.	-	✓
Risk from flooding.	The wider site is partially in Flood Zone 3.	✓	-
Running sands and / or loose Made Ground, leading to difficulty with excavation and collapse of side walls.	There is potential for high groundwater levels to destabilise sands and loose Made Ground may be present on site.	✓	-
Slope stability issues – general slopes.	Plots 1 - 12 are not at risk as no slopes are present with the exception of the water course.	-	✓
Slope stability issues – retaining walls.	No retaining walls present on-site.	✓	-
Earthworks – settlement (due to placement of fill on soft / loose ground).	Earthworks are required on site 0.50m of cut and 1.50m of fill required.	✓	-
Earthworks – poor bearing capacity of new fill.		✓	-
Earthworks – unsuitability of site won material to be reused as fill.		✓	-

Solution features in Chalk.	Geology on site is not susceptible to this risk.	-	✓
Cavities in the Superficial Deposits due to solution features.	Geology on site is not susceptible to this risk.	-	✓
Dissolution (associated with "wet rock head").	Geology on site is not susceptible to this risk.	-	✓
Brine extraction.	Geology on site is not susceptible to this risk.	-	✓
Quarrying.	Backfilled gravel pit recorded on-site	✓	-
Cambered ground with gulls possibly present.	Geology on site is not susceptible to this risk.	-	✓
Relict Slip Surfaces.	Geology on site is not susceptible to this risk.	-	✓
Solifluction.	Geology on site is not susceptible to this risk.	-	✓
Problematic soils (silts and rewetting etc.).	Geology on site is not susceptible to this risk.	-	✓

Geotechnical Hazard Identification – Following Ground Investigation

The preliminary Geotechnical Risk Register following Ground Investigation is set out in Table F.3.

The probability and impact of a hazard have been judged on a qualitative scale as set out in Table F.2. The degree of risk (R) is determined by combining tan assessment of the probability (P) of the hazard occurring with an assessment of the impact (I) of the hazard and associated mitigation it will require if it occurs (R = P x I).

Table F.2: Qualitative assessment of hazards and risks

P = Probability		I = Impact		R = Risk Rating (P x I)	
1	Very unlikely (VU)	1	Very Low	1 – 4	None / negligible
2	Unlikely (U)	2	Low	5 – 9	Minor
3	Plausible (P)	3	Medium	10 – 14	Moderate
4	Likely (Lk)	4	High	15 – 19	Substantial
5	Very Likely (VLk)	5	Very High	20 - 25	Severe

Hazard	Comments	Who is at Risk	Consequence	Risk Before Mitigation			Actions Required
				P	I	R	
Uncontrolled Made Ground (variable strength and compressibility).	There is Made Ground due to historical construction activity at the site. The Made Ground is localised to one location as is 0,40m thick.	Residential Dwellings.	Bearing capacity failure, settlement (total and differential).	2	4	8	Design foundations to found below Made Ground.
			Floor slab failure.	2	4	8	Remove Made Ground down to natural Northmoor Sand and Gravel subgrade and/or replace with structural fill. Alternatively, suspended ground floor slabs could be adopted.
		Roads and Pavements.	Settlement (total and differential) of roads and pavements.	2	2	4	Design roads and pavements using suitable geotechnical parameters and increase the sub-base and use geo-grids as appropriate.
		Services.	Settlement (differential), causing damage to services.	2	2	4	Where services are laid in Made Ground, anticipated settlements could be significant. Consideration should be given to removing and local Made Ground and replacing with suitable granular fill. It is also advisable to steepen falls in drainage to prevent back fall and use rocker boxes and flexible couplings.
		Gardens.	Settlement (differential), in gardens.	2	2	4	It is unlikely that settlements will be significant with regard to gardens.
		Construction staff, vehicles and plant operators.	Trafficking of the site in temporary conditions. Overturning of plant during construction.	2	3	6	Where soft spots encountered, over-excavation and replacement with suitable fill. Outline design of working platform to include geo-grid. Site inspection and watching brief by Contractor to review working platform frequently and regularly.

Soft / loose ground (low strength and high settlement potential).	The shallow natural soils comprise Superficial Deposits, which consist of soft clays.	Residential Dwellings.	Foundation bearing capacity failure, settlement (total and differential).	3	4	12	Design foundations to found below any soft clay.
			Floor slab failure.	3	4	12	Design floor slab as suspended unless materials are removed.
		Roads and Pavements.	Settlement (total and differential), of roads and pavements.	3	3	9	Design roads and pavements using suitable geotechnical parameters and increase the sub-base and use geo-grids as appropriate. If anticipated settlements are significant, and cannot be mitigated by design, over-excavate and replace soft soils.
		Services.	Settlement (differential), causing damage to services.	3	3	9	Ground levels are being raised and settlements may be significant, it is recommended these localised pockets of superficial deposits are removed from area of structural fill.
		Gardens.	Settlement (differential), in gardens.	3	3	9	
		Construction staff, vehicles and plant operators.	Trafficking of the site in temporary conditions. Overturning of plant during construction.	3	3	9	Where soft spots encountered, over-excavate and replace with suitable fill. Design working platform to suit the ground conditions. Site inspection and watching brief by Contractor to review working platform frequently and regularly.
Shrinkage / swelling of the clay fraction of soils under the influence of vegetation.	The clays of the Superficial Deposits are medium heave potential.	Foundations.	Shrinkage or heave of soils and associated damage to foundations.	4	3	12	Design foundations in accordance with NHBC standards. Deepen foundations due to trees as appropriate. Alternatively remove Superficial Deposits from building footprints.
		Floor slabs.	Floor slab failure.	4	4	16	Design floor slabs in accordance with NHBC standards. Design floor slab as suspended with a void, unless the warranty provider is satisfied the soil is not desiccated, or

							slabs are constructed when soils are not seasonally desiccated (i.e. during winter and spring). Alternatively remove Superficial Deposits from building footprints.
Variable lateral and vertical changes in ground conditions.	The Made Ground soils vary laterally and vertically, both in composition and strength.	Residential Dwellings.	Foundation bearing capacity failure, settlement (total and differential).	3	4	12	Design foundations to found below Made Ground or ensure Made Ground is removed.
			Floor slab failure.	3	4	12	Design floor slab as suspended or remove Made Ground from building footprints.
		Roads and Pavements.	Settlement (total and differential), of roads and pavements.	3	3	9	Design roads and pavements using suitable geotechnical parameters and increase the sub-base and use geo-grids as appropriate. If anticipated settlements are significant, and cannot be mitigated by design, over-excavate and replace unsuitable soils.
		Services.	Settlement (differential), causing damage to services.	3	3	9	Settlements are not anticipated to be significant with regard to services. No additional design requirements envisaged.
		Gardens.	Settlement (differential), in gardens.	3	3	9	It is unlikely that settlements will be significant with respect to gardens.
		Construction staff, vehicles and plant operators.	Trafficking of the site in temporary conditions. Overturning of plant during construction.	3	3	9	Where soft spots encountered, over-excavate and replace with suitable fill. Design working platform to suit the ground conditions. Outline design of working platform to include geo-grid if necessary. Site inspection and watching brief by Contractor to review working platform frequently and regularly.

Sulfates present in the soils.	The ground investigation has proven that the Shallow soils are classified as DS-1 with the deeper Kellaways Clay Member classified as DS-4.	Attack of buried concrete.	Damage to concrete and reduction in strength.	2	4	8	Classify concrete in accordance with BRE SD1 and design concrete accordingly.
		Earthworks.	Sulfate heave following the use of hydraulic binders.	2	4	8	Supplementary sulfate testing in accordance with BRE guidelines to be undertaken during earthworks. Before the use of hydraulic binders is approved, comprehensive testing and design will need to be completed by a Specialist Contractor to satisfy both themselves and the Engineer of the suitability of the soils for treatment, and confirm that the requisite end-performance of the material is achievable. The use of modification / stabilisation to be restricted to suitable materials following laboratory trials. In all instances where improvement by the inclusion of binders is considered, a mix design is required and as part of this design, samples should be checked for swelling, even where very low sulfate values are recorded.
Obstructions.	There is a potential for obstructions to be present due to historical construction activity, or unknown fill in Made Ground.	Construction staff, vehicles and plant operators.	Risk of collapse of excavation as obstructions are pulled out.	3	3	6	Allow for a breaker to be present during construction and remove obstructions where encountered during construction.
		Roads and Pavements.	Hard spots in externals and roads / pavements.	3	2	6	
		Residential Dwellings.	Impact on piling / VSC, resulting in additional piles / columns and re-design of foundations.	3	3	9	

Existing below ground structures to remain (foundations).	Grade Listed buildings in the middle of site are to be retained and re developed.	Adjacent Building.	Foundation bearing capacity failure, settlement (differential).	4	4	16	Undertake geotechnical design to ensure the proposed structures do not result in settlement of the existing foundations. Design to be undertaken in accordance with EC7. Contractor to appoint competent Temporary Works Designer to design temporary works, in accordance with BS 5975:2008+A1:2011. Temporary Works Design to include recommendations for inspection of excavations. No person entry to unsupported excavations.
Shallow groundwater.	Monitoring during the ground investigations has proven a shallow groundwater table between 2.37m and 2.62m bgl. Groundwork contractor to maintain water monitoring to ensure levels do not rise to founding depths and cause issues with the concrete pour and collapse.	Construction staff, vehicles and plant operators.	Difficulty with excavation. Limit state failure, excessive deformation, trafficking of site plant, inability to place and compact fill.	4	2	8	Contractor to appoint competent Temporary Works Designer to design temporary works, in accordance with BS 5975:2008+A1:2011. Temporary Works Designer to consider in their analysis the impact of, and requirements for, de-watering of excavations. Any water that collects at the base of excavations to be removed as soon as practicable.
		Slopes and Retaining.	Serviceability issues.	4	2	8	Contractor to appoint competent Temporary Works Designer to design temporary works, as required in accordance with BS 5975:2008+A1:2011. The shallow groundwater is to be taken into account during geotechnical design of the permanent works.
Changing groundwater conditions.	Site visits note that the water level in the lakes has changed significantly	Construction staff, vehicles and plant operators.	Difficulty with excavation. Limit state failure, excessive deformation, trafficking of site	4	2	8	Contractor to appoint competent Temporary Works Designer to design temporary works as required, in accordance with BS 5975:2008+A1:2011. Temporary Works Designer to consider in their analysis the impact of a variable water table.

	between March - August 2023.		plant, inability to place and compact fill.				
		Slopes and Retaining.	Serviceability issues.	4	2	8	Contractor to appoint competent Temporary Works Designer to design temporary works, as required in accordance with BS 5975:2008+A1:2011. Design drainage for retaining walls to account for fluctuating groundwater levels. The shallow groundwater is to be taken into account during geotechnical design of the permanent works.
Subject to risk from flooding.	The wider site is partially in Flood Zone 3	The entire development.	Damage to houses, gardens roads and services.	3	4	12	The site is partially located within a Flood Zone 3, and as such is at risk of flooding. The planning of the site needs to take into account the risk of flooding. Existing flood defences should be inspected and if necessary updated or replaced.
Running sands and / or loose Made Ground, leading to difficulty with excavation and collapse of side walls.	The ground investigation has indicated that there is a potential for loose soils and Made Ground to be present at the site.	Construction staff, vehicles and plant operators.	Ground failure, instability of plant and machinery.	3	4	12	As instability has been noted in all pits from surface, foundation options should be reviewed to ensure minimal excavation (e.g. piles).
			Risk of collapse of excavation.	3	3	9	Contractor to appoint competent Temporary Works Designer to design temporary works, in accordance with BS 5975:2008+A1:2011. Temporary Works Design to include recommendations for inspection of excavations. No person entry to unsupported excavations.
Slope stability issues – retaining walls.	Plots 1 - 12 note the requirement for localise retaining walls <1.50m in height.	Residential Dwellings.	Serviceability issues.	4	4	12	Design of the retaining to be undertaken in accordance with EC7.
		Pavement construction and long-term	Serviceability issues.	4	3	9	Adequate drainage to be designed behind the structure, or for water seepage through the face of the wall. Lateral earth pressure parameters to be characterised during investigation and design.

		durability highways and external areas.					Engineered fill requirements to be defined at outline design stage.
Earthworks – Settlement (due to placement of fill on soft / loose ground / Deep Made Ground).	The ground conditions at the cut level consists of dense sands/gravels.	Residential Dwellings.	Foundation bearing capacity failure, settlement (total and differential).	2	4	8	Design foundations to found below any soft spots/made ground.
			Floor slab failure.	2	4	8	Design floor slab as suspended or ensure soft spots/made ground is removed.
		Roads and Pavements .	Settlement (total and differential), of roads and pavements.	2	3	6	Settlements are not anticipated to be significant with regard to services. Design roads and pavements using suitable geotechnical parameters and increase the sub-base and use geo-grids as appropriate.
		Services.	Settlement (differential), causing damage to services.	2	3	6	Settlements are not anticipated to be significant with regard to services.
		Gardens.	Settlement (differential), in gardens.	2	3	6	Assess the use of geogrids as part of the design process.
		Construction staff, vehicles and plant operators.	Trafficking of the site in temporary conditions. Overturning of plant during construction.	2	3	6	Where soft spots encountered, over-excavate and replace with suitable fill. Design working platform to suit the ground conditions. Site inspection and watching brief by Contractor to review working platform frequently and regularly.
Earthworks – poor bearing capacity and /	There is a requirement for cut to fill to create	Residential Dwellings.	Foundation bearing capacity failure,	3	4	12	Minimum engineering performance to be defined in an Earthworks Specification.

or settlement of new fill.	the development platform. This will require reuse of soils excavated from the site.		settlement (total and differential).				Earthworks to be designed in accordance with 1) Manual of Contract Documents for Highway Works (MCHW), Volume 1; 2) Specification for Highway Works (SHW) Series 600; 3) 6031:2009, Code of practice for earthworks; and 4) BS 8000-1, workmanship on building sites. Site testing to be undertaken to confirm the works are in accordance with the design. A suitable watching brief and independent verification.
			Floor slab failure.	3	4	12	
		Roads and Pavements.	Settlement (total and differential).	3	3	9	
		Services.	Settlement (differential), causing damage to services.	3	3	9	
		Gardens.	Settlement (differential), in gardens.	3	3	9	
		Construction staff, vehicles and plant operators.	Trafficking of the site in temporary conditions. Overturning of plant during construction.	3	3	9	
Earthworks – Unsuitability of site won material to be reused as fill.	There is a requirement for cut to fill to create the development platform and filling of remediation excavations. This will require reuse of soils excavated from the site.	Earthworks control, inability to place and compact fill.	Service limit state failure, excessive and intolerable total and differential settlement.	2	3	4	The design is to describe the processes required to produce suitable fill for reuse. Contractor to design site control measures, plant, equipment and arrangement to comply with processing requirements. Site testing to be undertaken to confirm the works are in accordance with the design. A suitable watching brief and independent verification. Adequate investigation required of soil types and characterisation of the soils to be undertaken during investigation.
		Project Budgets - Insufficient fill to complete	Additional Costs, due to importation of fill or having to modify designs.	2	2	4	

		earthworks.					Some fill may be unsuitable for use.
Quarrying.	Historical gravel pits are noted to be on site however investigation did not note this to be present on the wider site and no indications of quarrying in Plots 1 - 12.	Residential Dwellings.	Reduction of lateral support potentially affecting stability of the structure.	2	5	10	Where soft spots encountered, over-excavation and replacement with suitable fill.
			Floor slab failure.	2	5	10	
		Roads and Pavements.	Serviceability affected.	2	3	6	
		Services.	Damage to services. Leaking drainage causing inundation and further collapse.	2	3	6	
		Gardens.	Depression or void forming at the surface.	2	3	6	
		Construction staff, vehicles and plant operators.	Trafficking of the site in temporary conditions. Overturning of plant during construction.	2	3	6	
Unforeseen ground conditions - risk associated with limited data.	Ground investigation has been undertaken. However, additional information will be obtained during construction.	All aspects of the development		3	4	12	Designers to be contacted if conditions encountered are different to those identified during investigation. Regular inspections of excavations and earthworks for evidence of stability. Adequate investigation required to characterise the site and understand the potential risks.

	Ground conditions are only defined at exploratory hole locations.				

Whilst the probability and impact of the hazard occurring can be reduced to a minimum by geotechnical design, the impact cannot be reduced below very low. The risk register will need to be up-dated, as necessary, to reflect design, additional information, data and experience as it is gained through the construction process.

Impacts of the design with regard to health and Safety considerations will need to be included by the designer at design stage.

Appendix G Plausible source-pathway-receptor contaminant linkages

Summary of potential contaminant linkages

Table G.2 lists the plausible contaminant linkages which have been identified. These are considered as potentially unacceptable risks in line with guidelines published in LCRM (2023) and additional risk assessment is required.

Source – Pathway – Receptor Linkages have been assessed in general accordance with guidance in CIRIA Report C552 (Rudland et al 2001) but modified to add a 'no linkage' category and to remove low/moderate risk (See Table G.1).

It should be noted that whilst the risk assessment process undertaken in this report may identify potential risks to site demolition and redevelopment workers, consideration of occupational health and safety issues is beyond the scope of this report and need to be considered separately in the Construction Phase Health and Safety Plan.

Table G.1: Consequence versus probability assessment.

		Consequence			
Probability		Severe	Medium	Mild	Minor
	High Likelihood	Very high risk	High risk	Moderate risk	Low risk
	Likely	High risk	Moderate risk	Low risk	Very low risk
	Low Likelihood	Moderate risk	Low risk	Low risk	Very low risk
	Unlikely	Low risk	Very low risk	Very low risk	Very low risk
	No Linkage	No risk			

Table G.2: Exposure model – final source-pathway-receptor contaminant linkages

Sources	Possible Pathways	Receptors	Probability	Consequence	Risk Level	Comments	
Made Ground, associated with historical construction activities and imported fill, possibly including elevated concentrations of metals, metalloids, asbestos fibres, Asbestos Containing Materials, PAH and petroleum hydrocarbons (S01).	Ingestion, inhalation or direct contact.	Site users. Neighbours.	Low likelihood	Medium	Low	Testing throughout plots 1 - 12 including the Made Ground soils did not record compounds in excess of the GAC. No visual or olfactory evidence of Petroleum Hydrocarbons were noted.	No exceedances of the GAC and therefore it is considered a low risk. The risk of significant generation of dust is likely only during site development process and can therefore be controlled.
	Root uptake.	Site users.	Low likelihood	Medium	Low		
	Leaching through unsaturated zone.	Groundwater and possible abstractors.	Low likelihood	Medium	Low	The Made Ground recorded on site is of limited extent and thickness. The laboratory testing has note recorded significant levels of compounds of concern. Therefore, there is limited compounds to be leached and migrate into groundwater and the risk is considered to be low.	
	Base flow from contaminated groundwater.	Aquatic ecosystems. Surface water and possible abstractors.	Low likelihood	Medium	Low		
Ground gasses (carbon dioxide and methane)	Migration, build up, asphyxiatio	Site users.	Unlikely	Medium to Severe	Very low to Low	CL:AIRE RB17 (Card et al 2012) states that where there are natural soils with no credible methane source, with Made Ground less than 1 m thick, composed of inert material such	

from organic material within any Made Ground across the site (S02).	n and explosion.	Neighbours. Buildings on site.				as sub-base of mineral soils, and no radon barrier is required, no gas protection is required as this represents CS1. As such, no ground gas protection is required.
Ground gases (carbon dioxide and methane) from organic materials within cohesive superficial deposits on site (S03).	Migration, build up, asphyxiation and explosion.	Site users. Neighbours. Buildings on site.	Unlikely	Medium to Severe	Very low to Low	
Asbestos within existing and former buildings on site (S04).	Fugitive dust.	On Site	Likely	Severe	High	Asbestos is present in existing buildings. Careful removal will be required from buildings during demolition. However, removal under controlled conditions should limit release of fibres to the air and the ground.
		Neighbours.	Unlikely	Severe	Low	
Ground gases (carbon dioxide and methane) generated from organic materials within the landfill to the east 210m from (S05).	Migration, build up, asphyxiation and explosion.	Site users. Neighbours. Buildings on site.	Unlikely	Medium to Severe	Very low to Low	Hydrock contact the Environment Agency to confirm the details of the landfills reported to be 20m to the east of site. The waste licenses for Lake 26 86174 and Lake 62 86175 detail that inert waste and clean soils are allowed to be used for filling, and that no putrescible materials are allowed to be used. Therefore, these are not considered to pose a risk of ground gas generation potential.