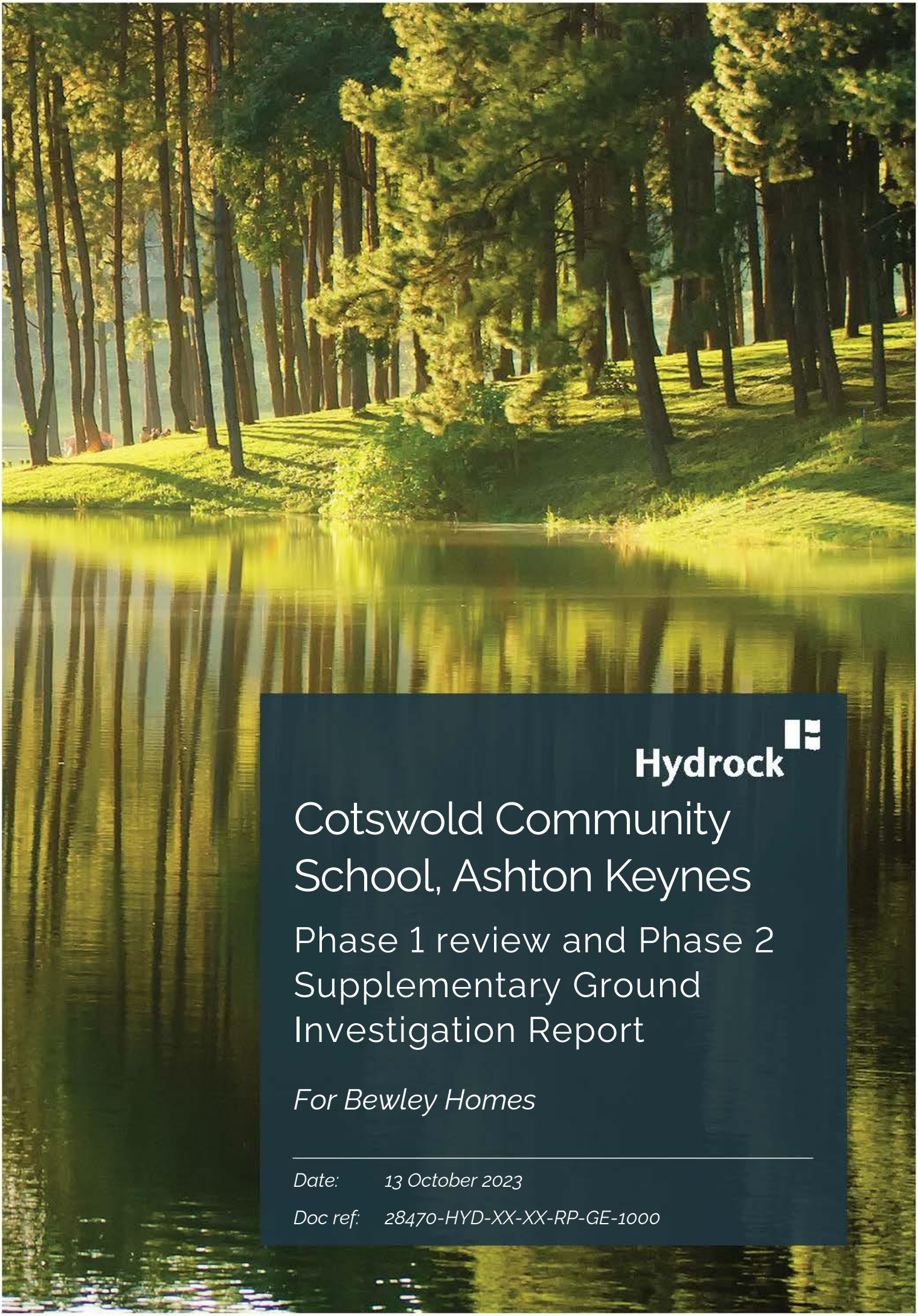


Hydrock

Cotswold Community School, Ashton Keynes

Phase 1 review and Phase 2 Supplementary Ground Investigation Report

For Bewley Homes

Date: *13 October 2023*

Doc ref: *28470-HYD-XX-XX-RP-GE-1000*

Document control sheet

Issued by	Hydrock Consultants Limited Over Court Barns Over Lane Almondsbury Bristol BS32 4DF United Kingdom	T +44 (0)1454 619533 F +44 (0)1454 614125 E bristol@hydrock.com hydrock.com
Client	Bewley Homes	
Project name	Cotswold Community School, Ashton Keynes	
Project title	Phase 1 review and Phase 2 Supplementary Ground Investigation Report	
BIM reference	28470-HYD-XX-XX-RP-GE-1000	
Project reference	28470	
Date	13/10/2023	

Document production record

Issue Number	P01	*Name*
Prepared by		Andrew Tidswell BSc (Hons) FGS
Checked by		Richard Swayne BSc (Hons) MSc FGS CGeol RoGEP
Approved by		James Walker BSc (Hons) MSc CGeol FGS

Document revision record

Issue Number	*Status*	*Date*	*Revision Details*
P01	S2	13/10/2023	First issue

Hydrock Consultants Limited (Hydrock) has prepared this report in accordance with the instructions of the above-named Client, 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.

Contents

Executive summary **4**
1. Introduction **10**
2. Phase 1 Desk Study Information Review **13**
3. Initial Conceptual Site Model **21**
4. Ground investigations **25**
5. Ground investigation records and data **30**
6. Geotechnical assessment **39**
7. Geo-environmental assessment **47**
8. Waste and materials management **62**
9. Uncertainties and limitations **68**
10. References **71**

Tables

Table 4.1: Summary of site works 25
Table 4.2: Summary of monitoring installations 26
Table 4.3: Geo-environmental analyses of soils 27
Table 4.4: Geo-environmental analyses of waters 28
Table 4.5: Summary of sample numbers for geotechnical tests 28
Table 5.1: Strata encountered 30
Table 5.2: Groundwater occurrence 34
Table 5.3: Groundwater level data summary 34
Table 5.4: Range of ground gas data 35
Table 5.5: Volume change potential 35
Table 5.6: PSD results summary 36
Table 5.7: Soil strength results and derived values 36
Table 5.8: Relative density results and derived values 37
Table 5.9: Aggressive chemical environment concrete classification 38
Table 6.1: Geotechnical parameters recommended for design of Geotechnical Category 1 Structures (EC7) 39
Table 6.2: Preliminary earthworks assessment 41
Table 7.1: CoPC in soils which require further assessment (human health) 48
Table 7.2: Asbestos in soil samples (laboratory testing) 50
Table 3: Summary of coliform testing 53
Table 7.4: CoPC which require further assessment (phytotoxic) 54
Table 7.5: Summary of water quality risk assessment protocol 56
Table 7.6: CoPC which require further assessment (controlled waters) 57
Table 7.7: Ground gas risk assessment 59
Table 7.8: Residual risks following risk evaluation 60

Figures

Figure 2.1: Historical gravel pit 14
Figure 5.1: Undrained shear strength versus depth summary 37
Figure 5.2: SPT 'N' Value versus depth summary 38

Appendices

Appendix A Drawings
Appendix B Historical Reports
Appendix C Exploratory hole location plan, exploratory hole logs and photographs
Appendix D Geotechnical test results and geotechnical plots
Appendix E Site monitoring data
Appendix F Contamination test results and GQRA
Appendix G Waste assessment
Appendix H Preliminary geotechnical risk register
Appendix I Plausible source-pathway-receptor contaminant linkages

Executive summary

Site information and setting	
Objectives	The works have been commissioned to support and to assist in discharging planning condition 32(i) of planning application (ref: 16/02609/OUT) and will form the basis of clearing 32(ii) through 32(v) if deemed required.
Client	Bewley Homes.
Site name and location	Cotswold Community School, Ashton Keynes.
Proposed development	The proposals are understood to comprise 75 new dwellings, including the replacement of 27 existing dwellings and conversion of a listed buildings as well as associated infrastructure, parking and soft landscaping. Hydrock understands the area of open space in the south of site is to be retained as an open space feature and will be the focal point of the initial development. The area of tennis courts is to be redeveloped into an orchard for the future residents.
Site description	The site covers approximately 16 ha and currently comprises a number of unoccupied former school buildings, four of which are grade listed. The site setting is typically rural, with vegetation present on and around the site and the surrounding land predominantly comprising agricultural/pastoral fields and sand extraction quarries. The site is bound to the north and north-west by active sand and gravel quarries. It is bound to the east by an area of scheduled monument which comprises agricultural fields. To the south, the site is bound by Spine Road and a restored flooded quarry. To the south-west, the site is bound by a restored quarry forming a lake.
Desk study summary	
Topography	The site is generally flat with topographic levels gently dipping towards the south. Ground levels in the north-east are approximately 93m Above Ordnance Datum (AOD) falling to approximately 89m AOD in the south.
Hydrology & 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 site, 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.
Site History	Historically, the 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 site, but has been backfilled. A decommissioned historical sewage treatment works is also present on site

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.
Natural geological hazards	No ground stability hazards other than shrinkable clays are reported. However, it should be noted that anticipated shallow groundwater in open excavations in granular materials could result in a risk of running sands and trench collapse.
Anthropomorphic geotechnical hazards	Since the 2018 ground investigation undertaken by Hydrock, significant quarrying has been and is currently being undertaken to the north-west, north and north-east around the site boundaries. Quarrying activity in to the south-west of the site has now ceased and the area has been remediated to form a lake. 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 another lake. There is a risk of instability at site boundaries shared with the historical and active sand and gravel pits.
UXO risk	A non-specialist UXO assessment indicates low bomb risk. No further consideration of UXO is required.
Initial Conceptual Site Model based on desk study review	
Potential contaminant sources	» Made Ground is to be expected from the historical construction activities, the historical sewage treatment works and backfilling of former gravel pits on site. » Hydrocarbon fuels and vapours from the multiple above ground storage tanks across the site. » Ground gases from any potential organic materials within the Made Ground, nearby landfills and backfilled gravel pits. » Residual contamination from the operation of the sewage treatment works. » Asbestos within former/current buildings. » Stockpiled soils.
Potential contaminant linkages (for receptors for which there is or will be a pathway)	» Humans (residential with plant uptake, POS) » Controlled waters – surface water / groundwater » Plants » Ecology » Buildings / property
Ground model proven by investigation	
Ground and groundwater conditions encountered by investigation	The ground conditions as proven by the investigation (s) undertaken at the site comprise: » Topsoil – between GL and 0.45m bgl, comprising dark brown to brown slightly gravelly sandy silt and slightly sandy gravelly clay with varying fractions of sand and gravel; over » Relict Topsoil – between 0.30 and 0.60m bgl, comprising firm to stiff dark brown slightly sandy to sandy slightly gravelly to gravelly silt; over » Made Ground – between GL and 0.80m below ground level (bgl), comprising:

	» Very sandy to slightly sandy subangular fine to coarse gravel of limestone with rare subrounded cobbles of limestone. The sand fraction comprised fine to coarse sand. » Sandy slightly gravelly silt. The coarse fraction comprised fine to coarse sand and subangular fine to coarse gravel of limestone. » Gravelly silty and very gravelly fine to coarse sand. The gravel fraction comprising subangular to subrounded fine to coarse gravels of limestone, brick fragments and concrete; over » Superficial Deposits – between 0.10m and 0.80m bgl, comprising soft to firm yellowish brown to brown sandy silt and slightly sandy clay with varying fractions of sand and gravel; over » Northmoor Sand and Gravel Member – between 0.05m and 8.00m bgl, comprising soft to firm yellowish brown to brown sandy silt and slightly sandy clay with varying fractions of sand and gravel; over » Kellaways Clay Member – between 1.50m and >10.00m bgl, comprising stiff to very stiff thinly laminated dark grey to grey slightly sandy clay with a varying silt content and occasional shell fragments. » Stockpiles – potential site-won topsoil comprising dark brown to brown slightly gravelly sandy silt and clay. Groundwater levels during monitoring were between 2.37m and 3.45m bgl.
Summary of geotechnical conclusions	
Groundwork	Obstructions associated with current development, including foundations, floor slabs and services, should be anticipated. Excavations readily achievable with standard excavation plant. Heavy duty plant may be required to remove existing structures. Excavations during investigation were generally stable, although slight spalling should be expected from the Northmoor Sand and Gravel Member below the water table. Water seepages into excavations are unlikely to be adequately controlled by sump pumping and alternative methods of dewatering are likely to be required.
Foundations	Foundations are recommended to comprise: » Strip/trench-fill foundations that should be below any Made Ground and Superficial Deposits, and at least 300mm into the Northmoor Sand and Gravel Member or Kellaways Clay Formation. » Piled foundations may be considered if groundwater levels rise to a level where stability of trenches and pouring of concrete is no longer viable. Allowable net bearing pressure of 150kN/m^2 should be available for strip/trench fill foundations. Suspended ground floor slab to be adopted due to the presence of medium volume change potential soils. Ground bearing slabs may be used if: » 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
Roads and pavements	For road and pavement design, a design CBR of 5 % is recommended for the Northmoor Sand and Gravel Member. A CBR of <2% should be used for design in the areas of any Made Ground, Superficial Deposits and Kellaways Clay Member soils on account of their high plasticity and variable nature. Due to the localised nature and limited thickness of the Made Ground and Superficial Deposits, Hydrock recommend removal of these (Made Ground and Superficial Deposits) soils from beneath road and pavement construction.
Sustainable drainage	The development drainage is to tie into the public surface water discharge via the completion of a new route down Spine Road.
Buried concrete	» Superficial Deposits - DS-1- AC-1. » Northmoor Sand & Gravel Member - DS-1 - AC-1.. » Kellaways Clay Member - DS-4 - AC-1.
Summary of geo-environmental assessment	
Human Health	» The screening exercise has identified metals and PAHs in the Made Ground that exceed the GAC for Residential with home grown produce and Public Open Space land use scenarios. » No exceedances of contaminants of potential concern were encountered in the topsoil, Northmoor Sand and Gravel Member, Kellaways Clay Member or stockpiles. » Elevated counts of faecal coliforms (E. coli) compared to the natural background levels were encountered adjacent to the disused sewage treatment plant.
Phytotoxicity	» Pervasive nickel; copper and zinc are present in the Made Ground (Buried Construction Waste) and exceed the phytotoxicity GACs. » Exceedances of the phytotoxicity GACs for Zinc are also present in Stockpile 2 and Made Ground. » The requirement for mitigation of risk to human health will also serve to mitigate risks to plant life, However; Stockpile 2 should not be used as a growing medium.
Controlled waters	» Heavy metals were detected above the DWS and EQS targets. However, the wider waterbody is recorded as containing high metals and so Hydrock does not believe the site poses a significant risk to controlled waters.
Natural contamination	» No naturally occurring elevated concentrations of metals were identified.
Radon:	» The site is not in a Radon Affected Area.
Construction materials:	» Plastic or bitumastic products are not considered to be at risk due to no VOCs being present.
Potable water supply pipes	» Partial brownfield site and the presumption in the guidance is that barrier pipe will be used. However, the investigation and assessment has indicated no significant Contaminants of Concern and as such standard pipework may be suitable for the site following negotiations with the supply company.
Ground gases or vapours:	» Low risk from ground gases and CS1 conditions apply.

Enabling works	
Proposed mitigation measures	The mitigation measures proposed to remove unacceptable risks include: » The installation of a 600mm cover system in gardens and 450mm in public open space, comprising a crushed stone break layer, a bonded geogrid break layer (e.g. TX160G), subsoil and a minimum of 150mm of topsoil. » The excavation and disposal of the Made Ground soils. » Demolition and removal of the disused sewage treatment plant (STW), with any visually/olfactorily impacted soils, and a clean cover system installed over its location. The methodology for the remediation should be presented in a Remediation Strategy, which will need to be submitted to the warranty provider and the regulatory authorities for approval. Verification reports by a competent independent geo-environmental specialist will be required following completion of any remedial works.
Earthworks	In order to undertake the proposed cut to fill earthworks and use of excavated materials in earthworks, a site-specific Earthwork Specification will be required to allow reuse of suitable materials along with the production of a Materials Management Plan and its approval by a Qualified Person. Verification reports by competent independent geotechnical specialists will be required following completion of any earthworks.
Waste management	Excavated soils to be disposed of as waste, are likely to be classed as follows: » The Superficial Deposits, NMS and Kellaways Clay Member are likely to be classified as 'Non-Hazardous' waste and subject to the receiving tip and 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. should be able to be disposed of at an inert landfill. » The stockpiles are likely to be classified as Non-Hazardous' waste. should be able to be disposed of at an inert landfill. » The Made Ground Buried Construction Waste is likely to be classified as 'Hazardous' waste, to be disposed of at a hazardous landfill.
Future considerations	
Further work	Following the ground investigation works undertaken to date, the following further works will be required: » Completion of the ongoing groundwater monitoring programme (3 months post site works). » Further investigation works post-demolition of the backfilled gravel pit in the west of the site. » It may be prudent for further investigation works post demolition to further refine the ground model. However, this is viewed as a refinement to the geotechnical considerations on the site. » Decommissioning, demolition and removal of the disused sewage treatment plant (STP) including filter material by a suitably qualified and experienced Contractor. » Further delineation of the extent of the Made Ground (Buried Construction Waste) encountered in the north-east of the site.

- An addendum report to address the risk of ground instability due to the sand and gravel quarrying to the south-west.
- Discussion and agreement with utility providers regarding the materials suitable for pipework.
- Discussions with regulatory bodies and the warranty provider regarding the conclusions of this report.
- Production of a Remediation Strategy and Verification Plan (and agreement with the regulatory bodies and the warranty provider).
- Production of a Materials Management Plan relating to reuse of soils at the site and import of soils to the site.
- Writing of a Materials Management Strategy relating to reuse of soils at the site.
- Remediation and mitigation works.
- Verification of the earthworks, remediation and mitigation works.

This Executive Summary forms part of Hydrock Consultants Limited report number 28470-HYD-XX-XX-RP-GE-1000 and should not be used as a separate document.

1. Introduction

1.1 Terms of reference

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. The site is located off the north side of Spine Road, Ashton Keynes, Swindon, Wiltshire, SN6 6QU.

Hydrock understands that the proposed development encompasses the construction of 75 new dwellings. This development includes the replacement of 27 existing dwellings, the conversion of four listed buildings, and the establishment of associated infrastructure, parking facilities, soft landscaping, and an adoptable pumping station. It is noted that the southern area of the site will be preserved as public open space. Additionally, the existing tennis courts will be repurposed into an orchard for the benefit of future residents.

Hydrock understand that a temporary haulage road is proposed to be constructed within the area of retained open space in the south and west of the site for use by construction traffic, and that a temporary compound will be erected in the vicinity of the disused sewage treatment plant during the construction phase of the proposed development.

A proposed engineering layout, Clarkebond Drawing (ref: D0226-CLK-XX-XX-DR-C-200-S2-T02, dated August 2023), is presented in Appendix A.

The investigation works 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 3 August 2023 and Purchase Order Number M-D0226.

1.2 Objectives

The works have been commissioned to support and to assist in discharging planning condition 32(i) of planning application (ref: 16/02609/OUT) and will form the basis of clearing steps 32(ii) through 32(v) if deemed required.

The objective of the Phase 1 information review is to formulate a new preliminary Ground Model and an initial Conceptual Site Model (CSM) of the site to identify and make a preliminary assessment of any potential geo-environmental and geotechnical risks to the proposed development.

The objectives of the Phase 2 Ground Investigation are:

- to resolve any geotechnical and geo-environmental uncertainties identified in the Phase 1 Desk Study and Site Conditions Report by refining and updating the preliminary Ground Model, based on the conditions met in accordance with the principles of Environment Agency (EA) 'Land Contamination: Risk Management' (LCRM) (2023);
- to identify any geo-environmental mitigation requirements to enable development to progress; and
- to provide preliminary geotechnical recommendations for foundations, road pavement, earthworks and surface water drainage design.

1.3 Scope

The scope of the Supplementary Phase 2 Ground Investigation comprises:

- Cable Percussion drilling, trial pitting, and Transport Research Laboratory Dynamic Cone Penetrometer (TRL-DCP) testing to:
  - obtain data on the ground and groundwater conditions of the site;

  - » allow collection of samples for geotechnical and chemical laboratory analysis;
  - » allow geotechnical field tests to be undertaken;
  - » install gas and groundwater wells;
- » gas concentration and groundwater level monitoring;
- » gas and groundwater sampling;
- » geotechnical and chemical laboratory analysis;
- » updating of the preliminary Ground Model;
- » preparation of a geotechnical risk register;
- » presentation of an initial geotechnical design recommendations;
- » formulation of an updated CSM, including identification of any plausible contaminant linkages;
- » completion of a generic quantitative risk assessment of any identified chemical contaminants to establish 'suitability for use' under the current planning regime;
- » discussion of any potential environmental liabilities associated with land contamination (soil, water and gas); and
- » identification of outline mitigation requirements to ensure the site is 'suitable for use'.

1.4 Available information

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

- » Clarkebond Consultants. February 2023. 'Preliminary Cut Fill Analysis Overview'. Ref D0226-CLK-XX-XX-DR-C-001-T01. For Bewley Homes.
- » Clarkebond Consultants. February 2023. 'Engineering layout'. Ref D0226-CLK-XX-XX-DR-C-200-T02. For Bewley Homes.
- » Hydrock March 2023. 'Cotswolds Community School, Ashton Keynes - Site conditions Report' Ref 9616-HYD-XX-XX-GE-TN-001. For Bewley Homes.
- » 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.

It is understood that the Client defined in Section 1.1 commissioned the Hydrock March 2023 report and has obtained assignment of the Hydrock July 2018 Report, and Hydrock has assumed full reliance can be placed upon their contents. Should this not be the case, Hydrock should be informed at the earliest opportunity.

1.5 Regulatory context and guidance

The investigation work has been carried out in general compliance with recognised best practice, including (but not limited to) BS 5930:2015, BS 10175:2011+A2:2017 and the AGS (2006) 'Good Practice Guidelines for Site Investigations'.

The geo-environmental section of this report is written in broad accordance with BS 10175:2011+A2:2017, EA LCRM (2023) and the AGS (2006) 'Good Practice Guidelines for Site Investigations'.

The methods used follow a risk-based approach, the first stage of which is a review for the Phase 1 desk study (ref: CCS-HYD-XX-GI-RP-G-1001.P1, July 2018)) and field reconnaissance, with any potential geo-environmental risks assessed qualitatively. This is done using the 'source-pathway-receptor contaminant linkage' concept to assess risk as introduced in the Environmental Protection Act 1990 (EPA, 1990). Any potential geotechnical risks are also assessed from the Phase 1 desk study and site reconnaissance stage.

Phase 2 comprises intrusive ground investigation work and testing. The factual information from the desk study review and the ground investigation are used to develop the CSM. This CSM is based on a ground model of the site physical conditions and an exposure model of the possible contaminant linkages. The CSM forms the basis for Generic Quantitative Risk Assessment (GQRA) in accordance with current guidelines. This GQRA might lead to more Detailed Quantitative Risk Assessment (DQRA).

Professional judgement is then used to evaluate the findings of the risk assessments and to provide recommendations for the development.

The geotechnical section of this report is prepared in general accordance with BS EN 1997-1+A1: 2013, BS EN 1997-2:2007 and BS 8004:2015. This report constitutes a Ground Investigation Report (GIR) as described in Part 2 of Eurocode 7 (BS EN 1997-2) (EC7). However, it is not intended to fulfil the requirements of a Geotechnical Design Report (GDR) as specified in EC7.

Where relevant the relevant requirements of the current edition of NHBC Standards have also been applied.

The geo-environmental and geotechnical aspects are discussed in separate sections. Throughout the report the term 'geotechnical' is used to describe aspects relating to the physical nature of the site (such as foundation requirements). The term 'geo-environmental' is used to describe aspects relating to ground-related environmental issues (such as potential contamination). However, it should be appreciated that this is an integrated investigation and these two main aspects are inter-related. Designers should take all aspects of the investigation into account.

Remaining uncertainties and recommendations for further work are listed in Section 9 and Section 10.

2. Phase 1 Desk Study Information Review

A Desk Study and Preliminary Ground Investigation (ref: CCS-HYD-XX-GI-RP-G-1001.P1, July 2018) was undertaken by Hydrock for the proposed development on behalf of the former developer.

In March 2023, Hydrock was commissioned by Bewley to undertake a site conditions report including a site walkover (Ref: 9616-HYD-XX-XX-GE-TN-001) in order to facilitate the purchase of the site and carry out due diligence.

The above-mentioned reports should be read in conjuncture with this investigation, the following is a summary of the pertinent information.

2.1 Site location

The site is located off of the north side of Spine Road, approximately 2km from the centre of Ashton Keynes and 7km east of Cotswold Airport. The National Grid Reference for the centre of the site is SU 03444 95568.

The site is shown on the Site Location Plan (28470-HYD-XX-XX-DR-GE-1000, dated September 2023) in Appendix A.

2.2 Site description

The site covers approximately 16ha and currently comprises a number of unoccupied former school buildings, four of which are grade listed. Other structures include a gymnasium, plant rooms, fuel tanks, swimming pool facility, derelict residential housing and agricultural barns and units. The south of the site is predominantly a grassed field, which is proposed to remain as an area of public open space (POS).

The site setting is typically rural, with vegetation present on and around the site and the surrounding land predominantly comprising agricultural fields and sand extraction quarries. Access to the site is from Spine Road. There is a private road network around the site. A drainage ditch and public footpath run along the main access road in an approximate north to south orientation and a second footpath truncates from the centre of the site and runs off-site to the north-east.

The site is bound to the north and north-west by active sand and gravel quarries. It is bound to the east by an area of scheduled monument which comprises agricultural fields. To the south, the site is bound by Spine Road and a restored flooded quarry. To the south-west, the site is bound by a restored quarry forming a lake.

Since the 2018 investigation, significant quarrying has been and is currently being undertaken to the north-west, north and north-east around the 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 remediated to form a lake.

During the Hydrock March 2023 site walkover, two stockpiles were noted to be present on site: one located in the east and one in the north of the site (see Hydrock drawing Ref: 09612-HYD-XX-GI-DR-G-1002). It is understood that these stockpiles comprise site-won topsoil.

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 also be restored to a lake.

The site is generally flat with topographic levels gently dipping towards the south. Ground levels in the north-east are approximately 93m Above Ordnance Datum (AOD) falling to approximately 89m AOD in the south.

2.3 Site history

Historically, the 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 site as shown in Figure 2.1, but has since been backfilled.

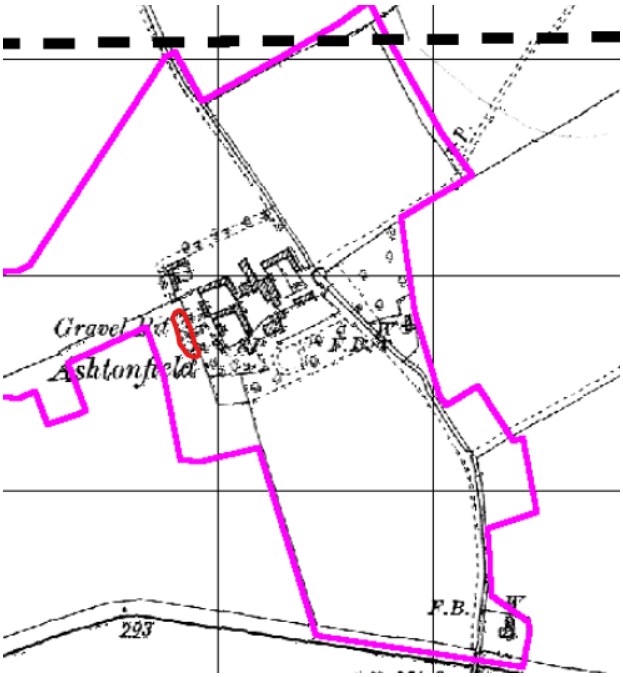


Figure 2.1: Historical gravel pit

(Reproduced with permission from Groundsure)

There is anecdotal evidence that a hydrocarbon leak occurred to the east of the access lane.

There is anecdotal evidence that at an unknown date, a fire occurred in a barn with a suspected asbestos clad roof, in the west of the site.

2.4 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, including the backfilled gravel pit shown in Figure 2.1.

No Superficial Deposits are noted to be present on mapping.

2.5 Natural Ground Stability

The Hydrock 2018 report (ref: CCS-HYD-XX-GI-RP-G-1001.P1, July 2018) indicates no ground stability hazards other than shrinkable clays. However, it should be noted that anticipated shallow groundwater in open excavations in granular materials could result in a risk of running sands and trench collapse.

The active sand and gravel quarries on the northern site boundary pose a risk of ground instability. Hydrock are preparing to address this which shall be issued as a separate addendum report.

2.6 Hydrogeology and Hydrology

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 site, 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.

2.7 Flood risk

The site is partially in Flood Zone 2 and Zone 3. The location of the Flood Zone 3 region within the site is related to the presence of the watercourse that runs in an approximate north to south orientation through the site. The regions of Flood Zone 2 are in the south-west corner of the site and towards the north of the site along the path of the watercourse.

The Hydrock 2018 Report states that the environmental data indicates a risk of groundwater flooding of property below ground level in the central and north-eastern parts of the site. The remainder of the site is indicated to be at risk of groundwater flooding at the surface.

No further consideration has been given to the risk of flooding.

2.8 Mining or mineral extraction

The surrounding area is known to have been used for sand and gravel extraction. Many of these sand and gravel pits are now filled with water and are used as recreational lakes and ponds. It should be noted that the majority of the local gravel extraction pits surrounding the site are not believed to have been backfilled with solid waste but have flooded to form lakes.

2.9 Waste management

There are two records of potentially infilled ground on the site, one is the infilled gravel pit (Figure 2.1) and the other is the pond in the north western part of the site.

It should be noted that although there are landfill licenses for the North End West/Lake 62 sites, it does not seem to have been completely landfilled because this area appears to be a lake used for triathlon training according to google earth satellite imagery and internet searches.

2.10 Natural soil chemistry

The previous desk study did not identify any significantly elevated naturally occurring elements that may present a risk to future site users.

2.11 Radon

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.

2.12 Unexploded ordnance (UXO)

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

2.13 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 carried out a desk study and preliminary ground investigation in 2018; the reader is referred to this report for further information, though the salient points are detailed below.

The preliminary ground investigation comprised:

- 1 cable percussive borehole to 10.45m bgl;
- 6 trial pits to a maximum depth of 2.0m bgl;
- Chemical testing of soils and water and geotechnical testing of soils;
- Two months of continuous groundwater monitoring; and
- One exploratory hole was located to target an historical hydrocarbon spill, oil tanks within the built-up area of the site and the boiler house associated with the leisure centre and swimming pool.

2.13.1 Ground Conditions

- Topsoil – to between 0.2m and 0.5m below ground level (bgl), comprising dark brown gravelly clay. Gravel sub-angular to sub-rounded fine to medium of limestone.
- Made Ground – to between 0.35 and 0.7m bgl (maximum proven), comprising soft brown and grey clay with frequent medium to coarse gravel and fragments of brick and concrete fragments and occasional brick and concrete cobbles.; over
- Shallow Cohesive Materials – to between 0.6m and 0.8m bgl, comprising soft brown sandy gravelly clay. Gravel sub-angular to sub-rounded fine to medium of limestone.
- Northmoor Sand and Gravel Member – to a maximum proven depth of 5.5mbgl, comprising medium dense [inferred] creamy brown sandy sub-angular to sub-rounded fine to coarse gravel of limestone. Sand is medium to coarse; over
- Kellaways Clay Member – to a maximum proven depth of 10.45mbgl, stiff blue grey slightly sandy clay with occasional fossil shell fragments.

2.13.2 Groundwater

Groundwater was encountered at between 1.7mbgl and 2.0mbgl within the Northmoor Sands and Gravels during the preliminary investigation. Water levels recorded post-fieldwork ranged from 1.8mbgl to 2.2mbgl.

2.13.3 Geotechnical Recommendations

The preliminary ground investigation provided the following geotechnical recommendations:

Obstructions

There are existing structures on the site comprising a number of buildings historically relating to the site's former farm and school usage. Obstructions associated with this development, including foundations, floor slabs and services, should be anticipated.

Groundworks and Earthworks

Excavation of shallow soils should be readily achievable with standard excavation plant. Excavations above the groundwater levels are likely to be stable.

Water seepages into excavations are unlikely to be adequately controlled by sump pumping and alternative methods of dewatering are likely to be required.

Excavated soils should be reuseable as follows:

- Made Ground – reuseable as landscaping material only;
- Northmoor Sand and Gravel Member – reuseable as General Fill; and
- Kellaways Clay Member – reuseable as General Fill.

Foundations

Strip/trench fill foundations in the Northmoor Sand and Gravel Member at a minimum depth of 0.75mbgl and extending at least 300mm into the granular material dependent upon foundation depths being above seasonal groundwater levels.

Allowable net bearing pressure of 150kN/m^2 should be viable, keeping total and differential settlement within acceptable limits. Alternatively, a piled foundation solution may be required is significant thickness of Made Ground or poor ground conditions are encountered.

Floor Slabs

Suspended floor slabs were recommended because of depth of Made Ground encountered.

Roads and Pavements

CBR Values: <2% on natural cohesive soils, 5% on natural granular soils.

Concrete Classification

Design Sulfate Class - DS-1 and ACEC Class AC-1 for the Made Ground, shallow cohesive soils and Northmoor Sands and Gravels.

Additional testing on the Kellaways Clay will be required if a piled foundation solution is necessary.

Waste Classification

HazWaste Online assessment categorises the Made Ground, Topsoil, Superficial Deposits and Northmoor Sand and Gravel Member all as 'Non-Hazardous'.

2.13.4 Geo-Environmental Recommendations

Human Health

A slightly elevated concentration of benzo(a)pyrene was recorded within Made Ground in centre of the site, north of the listed buildings. However, not considered an unacceptable risk (subject to regulatory approval).

Plant Growth

A Minor boron exceedance was encountered within the Topsoil in area of the historical fuel spill (See Hydrock Site Walkover Plan Ref 09612-HYD-XX-GI-DR-G-1002). It was not considered an unacceptable risk to plant life.

Radon

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.

Water Supply Pipes

The site is brownfield and the presumption in the guidance is that barrier pipe will be used.

However, the investigation and assessment has indicated no significant Contaminants of Concern and as such standard pipework may be suitable for the site following negotiations with the supply company.

However, for site planning purposes and budgeting it is recommended that barrier pipe provision is assumed pending liaison with the supply company.

Gas Protection

CS1 assumed at the time of writing. May need to be revised subject to confirmation of existence of landfill within 250m to east of the site and subsequent gas monitoring indicates the presence of gas.

Remediations

The preliminary desk study and ground investigation concluded that no remedial measures were considered necessary at the site based on the current works that were undertaken. However further ground investigation and assessment was recommended to fully assess the site.

Uncertainties and Limitations

Acorn Property Group stipulated that the preliminary ground investigation carried out was to target potential sources of contamination and indication of groundwater level.

It should be noted that although there are landfill licenses for the North End West/Lake 62 sites it does not appear to have been completely landfilled because this area appears to be a lake. It is feasible that landfill licenses were obtained and never used or the area was partially landfilled and then flooded to form the lake. This discrepancy in the data requires clarification and further enquiries to try to find out the extent of any landfill. If this cannot be clarified it is advised that gas monitoring is undertaken within the existing borehole on site to get an initial indication as to whether there is any ground gas present.

The report stated that groundwater level logger monitoring was incomplete, however, this was subsequently completed with a groundwater level of 1.8 to 2.2m bgl. It is important to note that the groundwater monitoring took place during the summer and there had been a low level of rainfall. Groundwater levels fluctuate and therefore it should be noted that monitoring may not have recorded worst-case groundwater data.

The footprints of the existing buildings have not been investigated.

The suspected asbestos roofed burnt barn has not been investigated.

Overgrown areas of the site were not able to be accessed due to ecological constraints (bird nesting season).

2.13.5 *Recommendations for further work*

The Hydrock Desk Study and Preliminary Ground Investigation report makes the following recommendations for further work at the site:

- Further investigation into the suspected burnt asbestos roofed barn in the west of the site in conjunction with a pre-demolition asbestos survey;
- Investigation of infilled gravel pit onsite;
- Discussions with service providers regarding the materials suitable for pipework;
- Post demolition ground investigation to fully characterise the site;
- Detailed design of foundations;
- Gas monitoring if the extent of landfilling cannot be established;
- Ground conditions across large areas of the site will require investigation due to the potential for variable ground and conditions and further potential sources of contamination.

2.14 Hydrock. March 2023. 'Cotswolds Community School, Ashton Keynes - Site conditions Report' Ref 9616-HYD-XX-XX-GE-TN-001. For Bewley Homes.

On the 23 March 2023 Hydrock undertook a walkover of the site in order to observe any changes to site conditions and inform the client of any new potential risks to the proposed development.

During the walkover, all of the existing points of interest were checked and several new points were noted. This is summarised on the Site Walkover Plan (Ref: 09612-HYD-XX-GI-DR-G-1002, dated 27 March 2023, Located in Appendix A). A summary of pertinent photographs are included in this report.

The landfills recorded 210m to the east of site are at present still a lake; historical landfilling records detail that there was waste deposited into the landfill in 1992.

Geo-Environmental considerations

- Three previously unknown fuel tanks.
- Previously unknown boiler house.
- Extensive use of asbestos containing materials (ACM) in the agricultural buildings and sewage works.

Geotechnical considerations

- Tension cracks along the site boundary shared with the remediated quarry (lake) to the south-east of the site. There is a need for an assessment of slope stability, which is being carried out by Hydrock separately, as part of a dedicated Slope Stability Assessment. The findings of this assessment shall be issued as a separate addendum report.

2.14.1 *Recommendations for Further Works*

The Hydrock 2023 site walkover lists the following recommendations for further works:

- Pre-demolition asbestos survey for all structures noted to contain asbestos containing materials;
- Cataloguing and removal of asbestos debris/lagging/cement from site;
- Removal and verification of the numerous fuel tanks present on site;

- Further ground investigation including (but not limited to);
  - Investigate the suspected burnt asbestos roofed barn in the west of the site (whilst this no longer seems to be present the area it should still be considered for investigation);
  - Investigate areas that are currently inaccessible, post demolition;
  - Investigate the potential for variable ground and conditions;
  - Install ground gas monitoring wells;
  - Potential, and not currently investigated, sources of contamination; and
  - Investigation of infilled gravel pit onsite.
- Detailed design of foundations;
- Consideration of tension cracks and ground instability from the remediated quarry to the south west and any potential future instability from the quarries to the north west/north;
- Extensive gas monitoring if extent of landfilling to the east cannot be established; and
- Discussions with service providers regarding the materials suitable for pipework.

3. Initial Conceptual Site Model

3.1 Introduction

The initial CSM incorporates evidence from the site walkover, the Desk Study and previous investigations carried out at the site. The formulation of an initial CSM is a key component of the LCRM methodology, and incorporates: a ground model of the site physical conditions; and an exposure model of the possible contaminant linkages. It forms the basis for Generic Quantitative Risk Assessment (GQRA) in accordance with current guidelines.

3.2 Ground model

The preliminary ground model presented in Section 3.2 provides an understanding of the ground conditions and is the basis for preparing the preliminary geotechnical hazard assessment (Section 3.3) and the preliminary geo-environmental exposure model (Section3.4).

3.3 Geotechnical hazard identification

3.3.1 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 H.1 in Appendix H for further information).

3.3.2 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.
- Existing below ground structures to remain (foundations of existing buildings on site).
- Shallow groundwater.
- Changing groundwater conditions.
- Risk from flooding.
- Made Ground, leading to difficulty with excavation and collapse of side walls.
- Slope stability issues – general slopes.
- Slope stability issues – retaining walls.
- Earthworks – settlement (due to placement of fill on soft / loose ground).
- Earthworks – poor bearing capacity of new fill.
- Earthworks – unsuitability of site won material to be reused as fill.
- Quarrying / mining.

3.3.3 Potential development elements affected

Development elements potentially affected by geotechnical hazards are:

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

The above plausible geotechnical hazards and development elements affected have been carried forward for investigation and assessment. The investigation is presented in Section 5 and the assessment is presented in Section 6.

3.4 Geo-environmental exposure model

3.4.1 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.

3.4.2 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.

3.4.2.1 Potential on-site sources of contamination

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).
- Made Ground associated with the backfilling of the gravel pit in the west of the site possibly including elevated concentrations of metals, metalloids, asbestos fibres, Asbestos Containing Materials, PAH and petroleum hydrocarbons (S02).
- Hydrocarbon fuels and vapours, associated with the multiple Above Ground Storage Tanks (ASTs) and operation of plant rooms including possible leakage from filling. (S03).
- Hydrocarbon fuels and vapours from the historical fuel spillage in the east of the site (S04).
- Ground gasses (carbon dioxide and methane) from organic material within any Made Ground across the site (S05).
- Ground Gases (carbon dioxide and methane) from organic materials within the Made Ground of the back-filled gravel pit in the west of the site (S06).
- Ground gases (carbon dioxide and methane) from organic materials within cohesive superficial deposits on site (S07).
- Residual contamination from sewage in the settlement beds that are present in the south-west corner of the site, potentially containing elevated metals, detergents, inorganic and organic contaminants and possibly pathogenic contaminants such as faecal coliforms (S08).

- Asbestos within existing and former buildings on site (i.e. plant rooms and sewage treatment works) (S09).
- Existing stockpiles potentially including elevated concentrations of metals, metalloids, asbestos fibres, Asbestos Containing Materials, PAH and petroleum hydrocarbons (S10).

3.4.2.2 *Potential off-site sources of contamination*

- Ground gases (carbon dioxide and methane) generated from organic materials within the landfill to the east 210m from. (S11).

3.4.3 *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 (remediated 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.

3.4.4 *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, asphyxiation 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).

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. The investigation is presented in Section 5 and the assessment is presented in Section 0 An assessment of the Source – Pathway – Receptor linkages is undertaken following the assessment (Section 0) and is presented in 1).

A summary of the plausible linkages is presented on the Initial CSM provided in Appendix A. (ref: 28470-HYD-XX-XX-DR-GE-1004).

3.4.5 *Potential implications of climate change*

Climate change has the potential to change the risk profile for conceptual site models and associated contaminant linkages. The impact of climate change on the CSM is site-specific, and a qualitative assessment of the potential impact of climate change on the CSM for this site is summarised below. The assessment has primarily utilised the guidance in Environment Agency

(2010)[1] and SoBRA (2022)[2] which set out the UK context to climate change and land contamination. Both guidance documents advocate a "what if" scenario approach in the context of changes in ambient temperatures, an increase in the frequency of extreme rainfall/storm events and heatwaves/droughts, and long-term changes in groundwater and sea levels.

Those "what if" scenarios that are relevant to this CSM are:

- Increased long-term rainfall leading to increased infiltration and seasonally higher groundwater and water levels in surface waters.
- Increased frequency and/or magnitude of extreme rainfall events leading to short-term surface flooding, surface water run-off, groundwater flooding, and/or land-based erosion.
- Increased frequency and/or magnitude of storm events leading to short-term drops in barometric pressure and/or high winds.
- Occurrence of extreme cold and hot weather events leading to changes in ground conditions such as soil temperature, evapo(trans)piration, and soil moisture (for example freeze-thaw effects and desiccation), decreased infiltration and fall in groundwater and surface water levels.
- Long-term decrease in rainfall leading to lower infiltration and fall in groundwater and surface water levels.

[1] *Environment Agency, 2010. Guiding Principles for Land Contamination. Part 2. FAQs, technical information, detailed advice and references, March 2010.*

[2] *SoBRA, 2022. Guidance on Assessing Risk to Controlled Waters from UK Land Contamination Under Conditions of Future Climate Change, Society of Brownfield Risk Assessment, August 2022.*

4. Ground investigations

4.1 Site works

The ground investigation works, including the rationale which was based on the findings of the preliminary risk assessment is summarised in Section 3. For the investigation rationale of the historical investigations, please refer to the historical reports in Section 2.

The fieldwork took place between 3 August and 11 August 2023. 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-1002-S2-P01) in Appendix A.

The logs, including details of ground conditions, soil sampling, in situ testing and any installations, are also presented in Appendix C.

The weather conditions during the Hydrock fieldwork and for the previous week were mixed conditions.

Table 4.1: Summary of site works

Activity	Method	No.	Name	Depth Maximum / Range (m bgl)	In situ tests	Rationale
Drilling, Pitting and Probing						
Boreholes	Cable percussive	5	BH101 - BH105	5.20 - 10.0	SPT Groundwater level loggers for long-term groundwater monitoring.	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 Tonne tracked).	26	TP101 - TP126	0.90 - 3.5	Hand shear vane (HSV)	To assess shallow ground conditions and to recover samples for geotechnical characterisation and chemical analysis.
Hand pits	Hand excavated	16	HP101 - HP115 and SS1	0.45 – 1.00	-	To determine foundation construction of existing buildings and to investigate stockpiles and tank locations with recovery of disturbed samples for chemical analysis.

Probes	TRL dynamic cone penetrometer	7	DCP101 - DCP107		California Bearing Ratio (CBR	To aid pavement design.
Concrete cores	Electric bolt down.	12	CC101 - CC112	0.11 - 0.34	N/A	To investigate beneath floor slabs of structures that are known to contain ACM and prove if asbestos is present beneath the slabs.
Stockpile samples	Hand excavated	2	SP1 - SP2	-	N/A	To recover samples for 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 4.2.

Table 4.2: 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 Sands and Gravel
BH102	88.85	50	1.00 to 7.80	87.85 to 81.05	Northmoor Sands and Gravel
BH103	89.59	50	1.00 to 2.60	88.56 to 77.45	Northmoor Sands and Gravel
BH104	89.78	50	1.00 to 5.50	88.78 to 84.28	Northmoor Sands and Gravel
BH105	89.59	50	1.00 to 8.10	88.59 - 81.49	Northmoor Sands and Gravel

4.2 Geo-environmental testing

4.2.1 Sampling strategy and protocols

Exploratory hole positions were determined by reference to the site conditions and uncertainties identified in the initial CSM.

Certain specific features such as the boiler houses in the centre west and centre east of the site, the historical fuel spill in the east, various ASTs and the sewage treatment plant in the south were targeted for specific investigation, but a reasonably even spacing was used for the remainder of the site.

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

4.2.2 Geo-environmental monitoring

Gas monitoring boreholes have been monitored on 3 occasions and the monitoring program is complete. The results are presented in Appendix E.

4.2.3 Geo-environmental laboratory analyses

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

The chemical test certificates for testing undertaken as part of historical investigations are provided in the relevant reports in Appendix F.

The geo-environmental analyses undertaken on soils are summarised in Table 4.3.

Table 4.3: Geo-environmental analyses of soils

Determinand Suite	MG	MGBCW	Topsoil	Relict Topsoil	SD	NMS	KC	SP
Hydrock minimum suite of determinands for solids*	13	1	12	1	4	19	2	2
Speciated aliphatic and aromatic banding Total petroleum hydrocarbons by HS-GC/MS and GC/FID (Hydrock Tier 2 TPH Suite)	10	1	-	1	1	7	-	2
Asbestos quantification	2	1	-	-	-	-	-	-
Sewage Screening suite	-	-	1	-	-	2	-	-

Note:

MG- Made Ground

MGBCW- Made Ground Buried Construction Waste

SD- Superficial Deposits

NMS – Northmoor Sands and Gravel

KC - Kellaways Clay Member

SP - Stockpiles

The soils chemical test data (including both Hydrock and historical data) are interpreted and assessed in Sections 7.3 and 7.4.

The geo-environmental analyses undertaken as part of Hydrock's investigation on waters, are summarised in Table 4.4.

Table 4.4: Geo-environmental analyses of waters

Determinand Suite	Groundwater
Hydrock minimum suite of determinands for waters	5
Speciated aliphatic and aromatic banding Total petroleum hydrocarbons by HS-GC/MS and GC/FID (Hydrock Tier 2 TPH Suite)	5

The groundwater chemical test data (including both Hydrock and historical data) are interpreted and assessed in Section 7.

4.3 Geotechnical testing

4.3.1 Geotechnical laboratory testing

The geotechnical tests undertaken by Hydrock are summarised in Table 4.5 and the test certificates are provided in Appendix D. Wherever possible, UKAS accredited procedures have been used.

The geotechnical tests undertaken as part of historical investigations are provided in the relevant reports in Appendix D.

Table 4.5: Summary of sample numbers for geotechnical tests

Test	Superficial Deposits	Northmoor Sand and Gravel	Kellaways Clay Member
Moisture Content	-	-	4
Particle Size Distribution (PSD)	-	16	1
Atterberg	-	-	4
Quick Undrained Triaxial	-	-	4
BRE SD-1	1	19	7

The geotechnical test data (including both Hydrock and historical data) are summarised in Section 5.7 and interpreted in Section 6.

4.4 Constraints

The thickness of the Northmoor Sands and Gravel Member was greater than anticipated in a number of exploratory locations, which, along with no groundwater being encountered in the majority of boreholes, extended the drilling time of each position.

The positions of exploratory locations were restricted in some areas due to the presence of tree protection fencing erected around trees that are to be retained by the proposed development.

Dense vegetation limited the positioning of some exploratory hole positions. During the site investigation, the Principal Contractor had a sub-contractor on site conducting vegetation clearance, often under the supervision of an ecologist which restricted the readily accessible areas of investigation in some instances.

The north and north-western areas of the site adjacent to, and including, the tennis courts were under ecological restrictions due to the presence of badgers and as such works were unable to be conducted in these areas.

Further ecological restrictions were present due to Great Crested Newts and bats. Newt fences were erected throughout the site which were time consuming to deconstruct and re-erect when needing to access exploratory locations. For ecologically restricted areas see the Exploratory Hole Location Plan in Appendix A.

A building in the west of the site could not be accessed due to the potential for further collapse, therefore this structure was not investigated.

Due to the bats and the security hoarding placed on buildings, the majority of site buildings could not be accessed at the time of the investigation.

It was understood that the scheduled monument area stopped at a set of newly erected fencing on the eastern site boundary. However, during site works (including confirmation with plans) it became apparent that the boundary extended to the gardens at the rear of the eastern properties. In order to avoid works within the scheduled monument, exploratory locations were repositioned to be outside the scheduled area. See Hydrock drawing ref 28470-HYD-XX-XX-DR-G-1002 for areas of archaeological and ecological restrictions).

Large portions of the site were subject to archaeological investigations and therefore could not be accessed, or minimal works allowed only during the investigation. This restricted investigation within certain areas of the site.

Due to the impending demolition of the structures on site, monitoring wells could not be installed within proximity of these structures to ensure they would still be accessible and not damaged by the demolition works. Therefore, all boreholes were located in positions where risk of damage during demolition works would be low.

5. Ground investigation records and data

5.1 Physical ground conditions

5.1.1 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 discussed in Section 4 as well as any reliable data from previous investigations noted in Section 1.4 and discussed in the sections below are used from this point forward.

Details of the Hydrock ground investigation works are provided in the logs in Appendix C, previous data are provided in Appendix B. A summary of the ground model is presented in Table 5.1 and the individual strata are described in the sections below. The cross-sections (HYD-XX-XX-DR-GE-1005) are presented in Appendix A.

Table 5.1: Strata encountered

Stratum	Depth to top (m bgl)	Depth to top (m AOD)	Depth to base (m bgl)	Depth to base (m AOD)	Thickness (m) (range)	Thickness (m) (average)
Made Ground	GL - 0.30	89.46 - 91.06	0.20 - 0.80	90.36 - 89.10	0.20 - 0.70	0.36
Made Ground Buried Construction Waste	GL - 0.30	89.52 - 89.22	0.30	89.22	0.30	0.30
Topsoil	GL - 0.35	88.55 - 91.00	0.05 - 0.5	88.23 - 90.95	0.05 - 0.45	0.30
Relict Topsoil	0.30 - 0.60	89.10 - 89.22	0.50 - 1.10	88.61 - 89.02	0.10 - 0.50	0.27
Superficial Deposits	0.10 - 0.40	88.25 - 89.47	0.40 - 0.80	87.95 - 89.17	0.20 - 0.50	0.31
Northmoor Sands and Gravel Member	0.05 - 1.10	87.95 - 90.95	1.50 - 8.60	79.95 - 88.05	1.10 - 8.00	4.14
Kellaways Clay Member	1.50 - 8.60	79.95 - 88.05	>10.00	-	>4.95	Not Proven
Stockpiles	-	-	-	-	-	-

5.1.2 Surface Covering

During the field reconnaissance and fieldwork, a variety of surface coverings were observed, including concrete and asphalt surrounding the farm buildings to the north-west, existing structures in the central and eastern parts of the site, as well as along the access road from Spine Road and the existing road network within the site.

Vegetation was widespread across the site, consisting of grass, shrubs, and trees. The vegetation was noted to be dense.

5.1.3 Made Ground

Made Ground was encountered across much of the site; however, it was not encountered in the proposed area of retained open space in the south and north west of the site, respectively. Additional Made Ground may be present in the backfilled gravel pit in the west of the site; however, the area was inaccessible due to vegetation and buildings.

The Made Ground was encountered from between ground level and 0.30m bgl. and to depths of between 0.20m and 0.80m bgl. An average thickness of 0.36m was proven.

The Made Ground conditions generally varied across the site, comprising:

- Very sandy to slightly sandy subangular fine to coarse gravel of limestone with rare subrounded cobbles of limestone. The sand fraction comprised fine to coarse sand.
- Sandy slightly gravelly silt. The coarse fraction comprised fine to coarse sand and subangular fine to coarse gravel of limestone.
- Gravelly silty and very gravelly fine to coarse sand. The gravel fraction comprising subangular to subrounded fine to coarse gravels of limestone, brick fragments and concrete.

Cohesive Made Ground was encountered in the west of the site at BH105 comprising sandy slightly gravelly silt. Sand was fine to coarse. The gravel fraction comprised subangular to subrounded clasts of brick fragments, limestone, with rare glass.

At TP04 and TP05 near the centre of the site, cohesive Made Ground was encountered comprising soft sandy gravelly clay and clay with frequent medium to coarse gravel of brick and concrete fragments.

The full thickness of Made Ground was not proven at TP04 due to encountering an unidentified service resulting in the termination of the position.

Made Ground Buried Construction Waste

Anecdotal evidence provided during the site investigation indicated an area of buried construction waste in the paddocks in the north-east of the site behind the existing buildings. Upon investigation (Exploratory Location TP124), a dark brown silty gravelly fine to coarse sand was encountered from the surface to a depth of 0.30m bgl. the gravel fraction comprised subangular to subrounded clasts of concrete, brick, slate, tile fragments, ceramic fragments and glass.

Made Ground Surfacing

Surfacing Made Ground comprising light yellowish grey concrete and dark blackish grey asphalt was encountered in six exploratory positions around the centre and adjacent to the disused gym and swimming pool areas.

Where present, the Made Ground Surfacing materials were encountered from ground level to a depth of between 0.12m and 0.18m bgl. an average thickness of 0.16m was proven.

Made Ground Subbase

Subbase type material was encountered in HP101 and TP114. At HP101 it comprised slightly sandy subangular fine to coarse gravel of limestone and subrounded cobbles of concrete. AT TP114 it comprised black angular fine to medium gravel of limestone within a bitumen matrix.

The subbase materials were encountered from between 0.15m and 0.18m bgl and to a depth of between 0.20m and 0.23m bgl. an average thickness of 0.05m was proven.

5.1.4 Concrete cores

Concrete coring was undertaken within the floor slabs of four buildings located in the north-west of the site. The floor slabs ranged in thickness between 0.11m and 0.50m and comprised concrete.

An asbestos consultant was present on site to clarify whether any ACM was present underneath the floor slabs of the buildings; no ACM was identified.

5.1.5 Topsoil

Where Made Ground was not encountered, the exploratory locations encountered topsoil.

Topsoil was between 0.05m and 0.45m thick, with an average thickness of 0.30m. The topsoil comprised dark brown to brown slightly gravelly sandy silt and slightly sandy gravelly clay with varying fractions of sand and gravel. The coarse fractions were generally fine to coarse sand and subangular to subrounded fine to medium gravel of limestone.

In the area of retained open space at the south of the site the topsoil comprised silty slightly gravelly fine to coarse sand. The gravel constituent comprised subrounded fine to coarse clasts of limestone.

5.1.6 Relict Topsoil

At TP104 and TP114, Relict Topsoil was encountered below Made Ground between depths of 0.30m and 0.60m bgl. it ranged in thickness of between 0.10m and 0.50m and had a proven average thickness of 0.27m.

The Relict Topsoil comprised firm to stiff dark brown slightly sandy to sandy slightly gravelly to gravelly silt with roots and rootlets. Sand is fine to coarse. Gravel is subangular to subrounded fine to medium of limestone.

5.1.7 Superficial Deposits

Superficial Deposits (where present) were encountered underlying the Made Ground and/or topsoil from depths of 0.10m and 0.40m bgl, to depths of between 0.40m and 0.80m bgl and were proven to be between 0.20m and 0.50m thick, with an average thickness of 0.31m.

The strata generally comprised soft to firm yellowish brown to brown sandy silt and slightly sandy clay with varying factions of sand and gravel. The coarse fractions were generally fine to coarse sand and subangular to subrounded fine to coarse gravel of limestone.

Superficial Deposits were generally absent in the centre and south of the site but were present in the south-east, north, east and west.

5.1.8 Northmoor Sand and Gravel Member

The Northmoor Sand and Gravel Member (NSM) was encountered underlying the topsoil, superficial deposits and Made Ground where present. The NMS was encountered from between 0.05m and 1.10m bgl and where full thickness was proven it was found to be between 1.10m and 8.00m thick, with an average thickness of 4.14m.

The NMS generally comprised medium dense to very dense yellowish brown sandy to very sandy subangular to rounded fine to coarse gravel of limestone. The sand and silt proportions generally varied across the site.

5.1.9 *Kellaways Clay Member*

The Kellaways Clay Member was encountered at all the boreholes locations and within TP105, TP107, TP108 and TP122. It was encountered between depths of 1.50m and 8.60m bgl and its base was not proven.

The Kellaways Clay was encountered at shallower depths in the east and north of the site and deepened towards the south and west. See cross-section drawing (28470-HYD-XX-XX-DR-GE-1005) in Appendix A.

The Kellaways Clay Member generally comprised stiff to very stiff thinly laminated dark grey to grey slightly sandy clay with a varying silt content and occasional shell fragments. The clay was noted to be slightly gravelly in BH102 between 7.60 and 7.80m bgl. The gravel comprised subrounded fine clasts of limestone.

At TP105 the stratum was noted to be firm.

Rare pockets of fine sand-sized pockets of pyrite was noted in BH104, and BH105 below 7.00m and 8.10m respectively.

5.1.10 *Stockpiles*

The stockpiles comprised dark brown to brown slightly gravelly sandy silt and clay. The soils are likely site-won topsoil.

5.2 Foundation Inspections

Eight foundation pits were undertaken locations are shown in the EHLP and sketches are shown in drawing 1006.

5.3 Obstructions

Obstructions were encountered in a TP113 during the investigation. This comprised an unmarked cable that was encountered and demonstrated to not be live after further CAT & Genny scans.

5.4 Visual and olfactory evidence of contamination (soil)

With the exception of the more common man-made constituents (glass, concrete, brick, ceramic fragments, etc), described above in Section 5.1.3, no visual and olfactory evidence of contamination was noted.

5.5 Groundwater

5.5.1 Groundwater observations and levels

Groundwater encountered during the investigation is listed in Table 5.2. A groundwater observation represents the depth at which groundwater was first observed and is likely to be deeper than the actual water table level at that location.

Table 5.2: Groundwater occurrence

Stratum	Date	Location	Fieldwork		Comment
			Groundwater observation (m bgl)	Rose to after 20 mins (m bgl)	
Northmoor Sand and Gravel Member	04/08/2023	BH101	3.10	1.80	Water strike noted by drillers.
		TP101	2.50	2.50	Fast inflow, trial pit remained stable.
		TP105	3.20		
	07/08/2023	TP110	3.10	-	Fast inflow, trial pit remained stable.
	09/08/2023	TP120	2.70	-	Fast inflow, trial pit remained stable.
		TP121	3.10	-	
	10/05/2018	TP01	2.0		Moderate inflow, trial pit remained stable.
		TP02	1.70	-	
		TP03	1.80	-	
		TP05	1.60	-	
		TP06	1.90	-	

Groundwater levels recorded during post-fieldwork monitoring are summarised in Table 5.3.

Table 5.3: Groundwater level data summary

Stratum	Date range	Location	Post-fieldwork monitoring	
			Depth to groundwater (range) (m bgl)	Groundwater elevation (range) (m OD)
Northmoor Sand and Gravel Member	22/08/23 - 21/09/23	BH101	2.37 - 2.42	86.18 - 86.13
		BH102	2.61 - 2.64	86.21 - 86.24
		BH103	DRY	-
		BH104	3.42 - 3.45	86.37 - 86.34
		BH105	3.32 - 3.45	86.35 - 86.22
		BH01	2.77 - 2.78	

Post-fieldwork groundwater monitoring also includes long-term groundwater monitoring using downhole groundwater level loggers. The results of the long-term monitoring will be reported under a separate cover.

5.5.2 *Groundwater summary*

In general, shallow groundwater was encountered within the Northmoor Sand and Gravel Member between 1.60m and 3.10m bgl. Groundwater flow appears to be topographically controlled and flow from the north-east at BH103 in a westerly and southerly flow towards the west and southern site boundaries.

5.6 Ground gases (carbon dioxide and methane)

Records from the gas monitoring boreholes are presented in Appendix E and summarised in Table 5.4.

To date all (3) gas monitoring rounds have been completed and the gas monitoring is complete. The data are assessed in Section 7.7.

Table 5.4: Range of ground gas data

Stratum	Methane (%)	Carbon dioxide (%)	Oxygen (%)	Steady flow rate (l/hr)	Comment
Northmoor Sand and Gravel Member	0.0 - 0.1	0.9 - 3.8	17 - 20.4	0.0 - 0.1	Three out of the three carbon dioxide readings are below 5%.

5.7 Geotechnical data

5.7.1 *Introduction*

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

5.7.2 *Plasticity*

The volume change potentials in terms of NHBC Standard (Chapter 4.2) with respect to building near trees have been determined from the results of plasticity index tests on samples of soil. These are summarised in Table 5.5.

Table 5.5: Volume change potential

Stratum	No. of tests	Plasticity Index			Modified Plasticity Index			Plasticity designation	Volume Change Potential
		Min.	Max.	Av.	Min.	Max.	Av.		
Superficial Deposits	2	23	44	23	16	30	23	Intermediate	Medium
Kellaways Clay Member	4	21	35	30	21	35	30	Intermediate	Medium

5.7.3 Particle size distribution

Particle Size Distribution test (PSDs) results are summarised in Table 5.6 and summary indicative descriptions and PSD plots of the material analysed are presented in Appendix D.

Table 5.6: PSD results summary

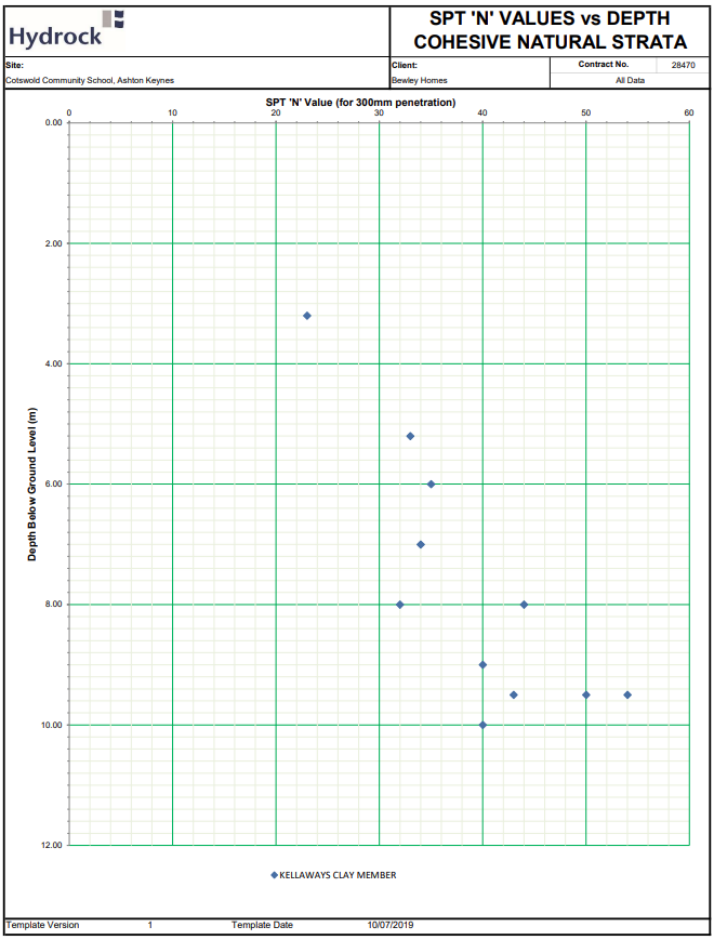
Stratum	No. of tests	Silt/Clay %	Sand %	Gravel %	Material Grading	General description
Northmoor Sand & Gravel Member	21	2 - 19	46 - 22	47 - 75	Class 6	Sandy gravel.
Kellaways Clay	1	93	7	-	Class 2	Slightly sandy clay.

5.7.4 Soil strength

Table 5.7 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. A shear strength versus depth profile is summarised in Figure 5.1, and plots are presented in Appendix D.

Table 5.7: Soil strength results and derived values

Stratum	No. of tests	SPT (N-value) (range)	c_u (kPa)	Method
Kellaways Clay Member	11	23 - 54	92 - 216	SPT – cable percussion.
	2		144 - 180	Hand shear vane
	4	-	136 - 235	Laboratory triaxial test



As shown by Figure 5.1, the strength profile of the Kellaways Clay Member indicates an overall increase in strength with depth reflective of the stiff clays recorded with the borehole logs.

Figure 5.1: Undrained shear strength versus depth summary

5.7.5 *Relative density*

Table 5.8 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,). A SPT 'N' value versus depth profile is summarised in Figure 5.2. Plots are presented in Appendix D.

Table 5.8: Relative density results and derived values

Stratum	No. of tests	Method	SPT (N-value) (Range)	phi' (°)
Northmoor Sand and Gravel Member	27	SPT – cable percussion (Peck et. al. (1967).	9 - 54	29 - 41

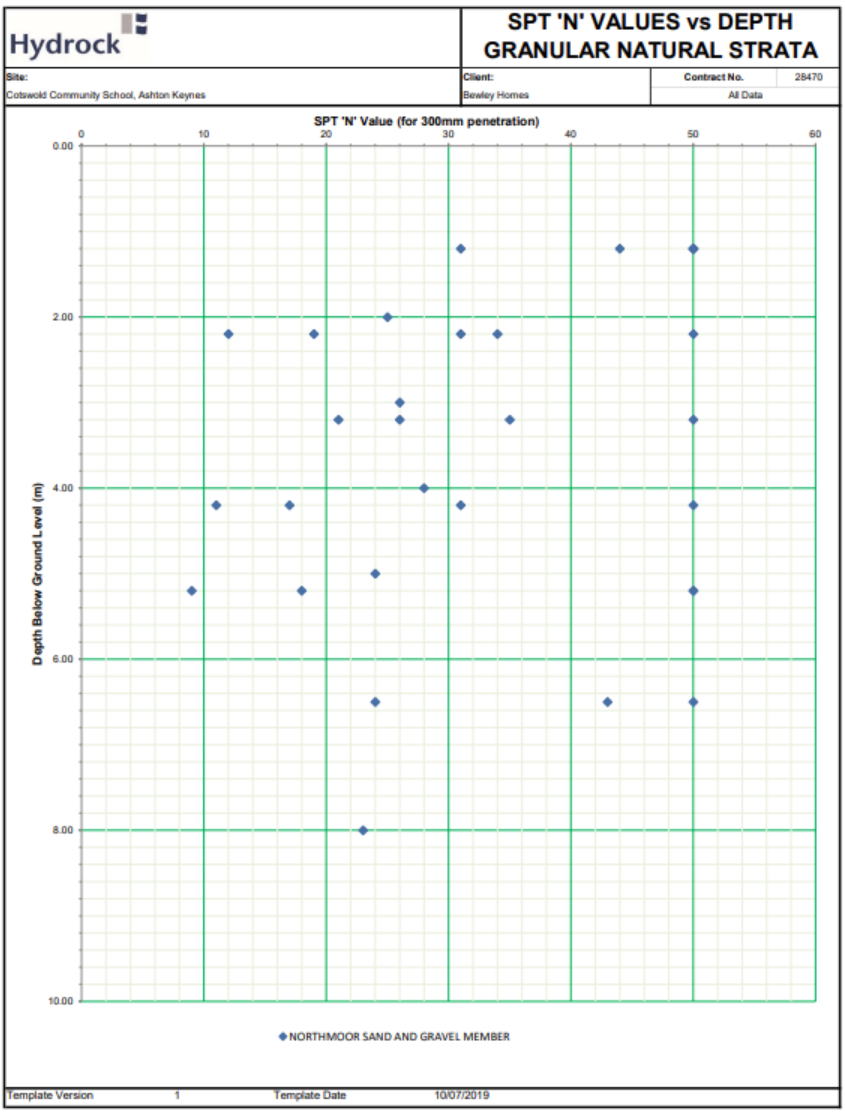


Figure 5.2: SPT 'N' Value versus depth summary

The SPT 'N' values show a poor correlation between density vs depth.

The data indicates that the Northmoor Sand and Gravel Member generally varies between medium dense and very dense and that there is not a strong correlation showing increasing density with depth.

The N-values obtained in the Northmoor Sand and Gravel Member in BH104 at 5.20m bgl were recorded as 9, indicating loose condition. However, these are likely to have been influenced by unbalanced water pressures in the borehole, hence it is likely that the *in situ* density is in reality higher than indicated from the SPTs.

5.7.6 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 5.9. The assessment summary sheets are presented in Appendix D.

Table 5.9: Aggressive chemical environment concrete classification

Stratum	No. tests	DS	ACEC
Superficial Deposits	1	DS-1	AC-1*
Northmoor Sand and Gravel Member	21	DS-1	AC-1*
Kellaways Clay Member	7	DS-4m	AC-4m

6. Geotechnical assessment

6.1 Geotechnical categorization of the proposed development

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

The proposed development is to comprise low rise residential dwellings, with associated gardens, public open space and infrastructure. An initial review of the Clarkebond Preliminary Cut Fill Analysis drawing located in Appendix A shows minimal cut to fill (up to 1.5m cut and fill) or retaining is required.

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.

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

Following ground investigation and as part of the assessment provided in the following section, the preliminary geotechnical hazard identification undertaken in Section 3.3 has been updated.

Assessment 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 preliminary Geotechnical Risk Register following investigation is provided in Appendix H (Table H.3) and will need to be updated during future design works.

6.2 Characteristic design values

For design of Category 1 structures in accordance with BS EN ISO 1997-1 (EC 7), the geotechnical parameters given in Table 6.1 can be used for design. These values have been determined from laboratory testing, *in situ* testing and by professional judgement using published data together with knowledge and experience of the ground conditions. Care should be exercised in using these assumed soil strength parameters for any purpose beyond the scope of this report because it may be that additional sampling and testing is required for certain purposes. The reader should refer to the original test results summarised in Section 5 and provided in Appendix C and Appendix D.

Table 6.1: Geotechnical parameters recommended for design of Geotechnical Category 1 Structures (EC7)

Stratum	Bulk unit weight kN/m^3	Effective angle of internal friction	Effective cohesion kN/m^2	Undrained shear strength kN/m^2
	γ [a]	ϕ' [b c]	c' [d]	c_u [e]
Superficial Deposits	18	22	0	25-75
Northmoor Sand and Gravel Member	18	30	0	-
Kellaways Clay Member	20	22	0	90 – 235 (increasing with depth)

[a] Measured as part of the triaxial strength test and estimated based on the recommendations of BS 8004-2015.

[b] Internal friction (φ') values for the granular in situ material derived from SPT data following the recommendations of Peck et al., (1967).

Stratum	Bulk unit weight kN/m^3	Effective angle of internal friction	Effective cohesion kN/m^2	Undrained shear strength kN/m^2
	γ [a]	ϕ' [b c]	c' [d]	c_u [e]

[c] Internal friction (φ') values for the cohesive in-situ material derived from BS 8004-2015, where φcv' is derived from plasticity index. The use of φcv' in the analysis is considered to provide a conservative estimate of φ'.

[d] BS 8002:1994 Code of practice for Earth retaining structures, British Standards institution.

[e] Site measurements and laboratory data.

[f] Laboratory data.

6.3 Groundwork

6.3.1 Site preparation

The redevelopment will involve demolition of the existing buildings and structures, with the exception of the grade listed buildings in the centre of the site which are to be retained. This should be undertaken to an appropriate specification to ensure any asset materials generated are geotechnically suitable for use.

Buried obstructions were encountered during this investigation associated with services for the previous use of the site, and there is a possibility of further such obstructions being encountered, including foundations associated with the existing structures on site.

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.

Topsoil should be removed from beneath all building and hardstanding areas.

6.3.2 Groundworks

Following breaking-out of hardstanding and obstructions, excavation of shallow soils should be readily undertaken by conventional plant and equipment. However, excavation through any buried construction may require heavy-duty excavation plant.

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.

However, coarse soils were encountered across the site in the form of gravel and sand, and whilst no spalling was noted in the trial pit excavations, faces may become unstable during longer periods of excavation.

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

Temporary trench support, or battering of excavation sides, is recommended for all excavations that are to be left open for any length of time and will definitely be required where man entry is required. Particular attention should be paid to excavation at, or close to, site boundaries and structures/buildings, where collapse of excavation faces could have a disproportionate effect.

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 significant through the Northmoor Sand and Gravel Member at depths below 2.60m. In these circumstances, groundwater control by sump pumping is unlikely to be sufficient to deal with anticipated flows and alternative methods of dewatering, such as well points, or use of impermeable cut-offs should be allowed for.

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.

6.3.3 *Earthworks/reuse of site-won materials*

It is understood that up to 2.5m of cut and 1.5m of fill is required to bring the site to final finished levels as indicated on Clarkebond Consultants February 2023. 'Preliminary Cut Fill Analysis Overview'. Ref D0226-CLK-XX-XX-DR-C-001-T01. Hydrock understand the bulk earthworks post topsoil strip is to comprise a total of 11,499 m^3 of cut, and 17,091 m^3 of fill to form the development platform. This leads to an approximate deficit of 5,591 m^3.

The classification of materials depends on both the proposed end use and whether the material will meet the performance requirements of that end use. Based on Hydrock's understanding, the following assessment is based on General Fill and Landscape Fill for external areas and Structural Fill for the building footprint.

An initial assessment of classification data (see Section 5.7 and Appendix D) has been completed based on Hydrock's understanding of the development and the potential to reuse site-won materials as an engineered fill material. This is summarised in Table 6.2.

Table 6.2: Preliminary earthworks assessment

Stratum	Proposed end use	Preliminary classification (SHW Series 600)	Comment	Suitability for improvement by the inclusion of binders
Topsoil	Open Space	Class 4 (Landscape Fill)	Unsuitable for General Fill due to high organic content. Can only be used in areas which are not sensitive to settlement.	Unlikely to be suitable
Made Ground	External Areas	Unable to classify due to variable nature.	It is considered that removal of Made Ground is likely required to facilitate remedial options, as discussed in Section 7.9	n/a
Northmoor Sand and	Below structures	Class 6 (Structural	1 out of 21 tests did not conform to 6F1 grading,	n/a

Stratum	Proposed end use	Preliminary classification (SHW Series 600)	Comment	Suitability for improvement by the inclusion of binders
Gravel Member	and general fill	and General Fill)	however the bulk of the site-won Northmoor Sand and Gravel Member is considered to be class 6.	

The earthworks may need to be undertaken under a Materials Management Plan (see Section 8.3).

Where it is proposed to reuse site-won materials as an engineered fill it will be necessary to develop an appropriate Site Specific Earthworks Specification. The basis for the Specification should be BS 6031:2009 and the latest version of the SHW, Series 600 Earthworks

Hydrock understand that all earthworks and material management activities are to be managed by the groundworks contractor.

6.4 Retaining walls

With regard to the proposed retaining walls, Hydrock understand there will be 2 no. retaining walls in the south-east (Plot 2) and eastern parts of the site (Plot 17), which will retain placed soils and protect against tree roots (see D0226-CLK-XX-XX-DR-C-001-T01 in Appendix A).

Design of the retaining walls has not been finalised, however, from analysis of the proposed cut and fill drawings, the retaining walls are not anticipated to be greater than 2.0m-height. A safe bearing pressure of 150 kN/m^2 is recommended, if the retaining wall is founded in medium dense and dense gravels of the Northmoor Sand and Gravel Member. The retaining walls will need to be designed by the structural engineer.

Allowance should be made in the design of the retaining walls for adequate drainage behind the structure, or for water seepage through the face of the wall. The stability of the retaining wall is not considered in this report and should be considered by the designer.

Care will need to be taken to ensure that any works close to the site boundaries will not destabilise or cause damage to neighbouring properties including the existing boundary fences and adjacent scheduled monument beyond.

6.5 Quarrying / Slope Stability

The desk study data indicates the presence of a gravel pit in the western part of the site, dating back to the period between 1924 and 1960. Subsequently, it was backfilled after 1960.

During the 2023 Hydrock ground investigation, the area of the backfilled gravel pit targeted by TP118 found no evidence of Made Ground. However, it may be present in the areas east of TP118 which was not accessible during the investigation due to vegetation and buildings. Further investigation is recommended post demolition.

Notably, adjacent quarrying activities to the southwest of the site have resulted in tension cracks developing on the crests of the restored sand quarry banks. Consequently, there is a need for an assessment of slope stability, which is being carried out by Hydrock separately, as part of a dedicated Slope Stability Assessment. The findings of this assessment shall be issued as a separate addendum report.

6.6 Foundation recommendations

This section provides recommendations for the foundations for houses, as indicated on Clarkebond Consultants February 2023. 'Engineering layout', Ref D0226-CLK-XX-XX-DR-C-200-T02.

The depth below ground level and recommendations for foundations are based upon current ground levels and they should be revised and updated upon final issue of the cut and fill model with the finalised finished floor levels taken into consideration.

The recommendations in this report are based on the current NHBC Standards (2023).

The residential dwellings and associated structures proposed for the site are considered to be Geotechnical Category 1. Preliminary foundation recommendations for the foundations for houses and related buildings in this section are based on the geotechnical parameters provided in Section 6.2.

The safe bearing pressures for foundations quoted for Category 1 structures in this report take into consideration traditional factors of safety against the risk of shear failure of the ground and should prevent undue or excessive total and differential settlement from the anticipated structural loadings.

6.6.1 Trench-fill/strip foundations

Strip or trench-fill foundations are deemed appropriate for the site and should be situated beneath any Made Ground and Superficial Deposits. They should penetrate at least 300mm into the undisturbed **Northmoor Sand and Gravel Member**, which consists of medium dense (or better) granular soils. A foundation depth zoning plan, Drawing Ref: 28470-HYD-XX-XX-DR-GE-1007, has been provided in Appendix A to indicate the required founding depths across the site.

Based on the encountered ground conditions, it is concluded that strip foundations are suitable. Currently, groundwater levels are below the proposed founding depths. However, in the event of fluctuations, an alternative foundation solution should be considered, or significant dewatering may be necessary to ensure the stability of foundation trenches and the suitability of concrete pouring. Hydrock recommends groundwater monitoring prior to construction.

A safe net bearing pressure of 150kN/m^2 is considered appropriate. If there is a need to enlarge the foundations, for example, due to excessive loads that render the quoted safe net bearing pressure inadequate, this may result in increased settlements, necessitating a review of the above recommendations.

Considering the NHBC volume change potential (medium), the minimum founding depth for strip or trench fill foundations should be 0.90m below the current ground level or below the base of the Made Ground, whichever is deeper. Nevertheless, due to the localised nature of the encountered Made Ground and Superficial deposits on-site, it is likely that founding depths will be below the base of these soils.

In cases where foundation depths need to be stepped to accommodate changes in depths due to trees or variations in ground conditions, these steps should be designed in accordance with the requirements outlined in the NHBC Standards.

Additionally, foundations may need to be deepened to minimise stresses on the ground beneath existing adjacent foundations, particularly for the retained grade-listed buildings at the centre of the site, to depths below the influence of tree desiccation effects and roots. If tree removal is planned, the roots should be removed, and foundations extended below the zone of disturbance created by this activity and any remaining root hairs. Furthermore, deepening foundations in accordance with NHBC Standards will be required when strip or trench fill foundations are within the zone of influence of existing, removed, or proposed trees and proposed shrub planting. A tree

survey conducted by an arboriculturist following BS 5837:2012 should identify the type and height of existing trees on the site, including any off-site trees that could affect foundation design.

For foundations within the zone of potential desiccation from trees and depths exceeding 1.5m below ground level, a suitable compressible material or void former should be placed on the inner faces of foundations to external walls and beneath ground-bearing floor slabs.

Excavation of trench fill foundations exceeding 2.5m below ground level may not be economically feasible and may be impractical due to water-bearing gravels, which could lead to trench collapse.

In such cases, foundations exceeding 2.5m in depth should be designed by a Structural Engineer following the requirements of NHBC Standards (Chapter 4.2.8) and NHBC Technical Requirement R5. Furthermore, when trench fill foundations exceed 2.5m due to trees, the design should account for soil desiccation risk based on plot-specific testing within the influence distance of trees.

Foundation formations should undergo inspection by a geotechnical engineer or another suitably competent person to verify that the founding conditions align with the specifications in this report. Any formation materials deemed unsuitable should be excavated and replaced with lean mix concrete or deepened to suitable strata. If these options are not feasible, alternative solutions, such as piling, should be considered.

Foundation excavations must be protected from rainfall, surface water inflow, frost, freezing conditions, and drying out during hot, dry weather. Any collected water at the base of foundation excavations should be removed by pumping from a sump located at the base.

6.6.2 Piled foundations

While strip and trench foundations are initially deemed suitable, in the event that proposed site levels paired with groundwater levels rise to a point where the stability of trenches and the feasibility of pouring concrete become compromised, the adoption of piled foundations may be necessary.

- Obstructions in the ground are anticipated due to the presence of previous structures, etc. These obstructions could potentially cause piles to terminate at shallower depths than designed or deviate from the vertical, thus reducing their load-carrying capacity. In certain cases, obstructions may even lead to pile breakage.
- Pile installation has the potential to create preferential pathways for the migration of contaminants to groundwater.
- Boring piles through coarse soils may result in material loosening, increasing the risk of shaft collapse before concreting and diminishing shaft friction.
- Groundwater levels are situated between 1.8m 2.37m and 3.10m below ground level (bgl), and temporary casing is likely to be necessary. In the case of Continuous Flight Auger (CFA) piles, concrete is placed as the auger is withdrawn, which can help balance water pressure if executed with care.
- Piles should extend a minimum of five pile diameters into the Kellaways Clay Member to mobilize sufficient shaft friction and end-bearing resistance to support the required loads without experiencing unacceptable settlement.
- Where site level raises are proposed, given that fill will be placed over the piles, they must also be designed to accommodate potential down-drag effects caused by negative skin friction from the secondary consolidation of recently placed fill.
- The risk of pile shaft collapse, particularly in running sand type conditions, may arise from 'necking' of the pile, potentially leading to pile failure.
- When foundations are constructed on clay soils within the influence zone of trees, the design should account for the upper section of the pile being sleeved or allowing for additional length

to resist stresses associated with clay swelling or shrinkage. Additionally, heave protection may be required on the inner faces and beneath the ground beams.

6.6.3 *Foundation works risk assessment*

If piles are adopted, a foundation works risk assessment should be undertaken.

6.6.4 *Working platform*

If piles are adopted, a working platform will be required for tracked plant. This should be designed in accordance with BR 470 Working platforms for tracked plant.

6.7 Ground floor slabs

In accordance with the NHBC standards, as localised Made Ground (up to 800mm thick) and clay soils of medium volume change potential are present at the site, it is recommended that a suspended ground floor slab is adopted, unless these soils are excavated and replaced with granular engineered fill obtained from imported or site-won or material.

Slabs without a void (ground bearing or suspended cast *in situ* onto the ground) may be used if all of 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; **or**
- proposed site levels mean that non-shrinkable Northmoor Sand and Gravel is at Formation Level.

6.8 Roads and pavements

Based on the test results and subject to *in situ* testing during construction, it is considered likely an equilibrium CBR of 5% will be achievable over the majority of the site within the Northmoor Sand and Gravel Member.

A CBR of <2% should be used for design in the areas of any Made Ground, Superficial Deposits and Kellaways Clay Member soils on account of their high plasticity and variable nature. Due to the localised nature and limited thickness of the Made Ground and Superficial Deposits, Hydrock recommend removal of these (Made Ground and Superficial Deposits) soils from beneath road and pavement construction.

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.

6.9 Drainage

No infiltration testing was carried out as part of this investigation.

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 in this report.

6.10 Buried concrete

Based on guidelines provided in BRE Special Digest 1 (BRE 2005) and the information presented in Section 5.7.6 (Table 5.9):

- 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 (Kellaways Clay Member) can be classified as Design Sulfate Class DS-4 and ACEC Class AC-4.

This equates to a Design Chemical Class[3] of:

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

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

[3] 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).

7. Geo-environmental assessment

7.1 Updated Conceptual Site Model

7.1.1 Updated ground model

The initial CSM developed from the desk study review and field reconnaissance survey in Section 3 has been updated using the findings of the ground investigation and is presented in Section 5. The updated CSM is the basis for the geo-environmental assessment presented in this section.

7.1.2 Updated exposure model

Following the ground investigation, the plausible contaminant sources, receptors and pathways identified in the preliminary geo-environmental exposure model Section 3 have been updated or confirmed as follows.

7.1.2.1 Sources

Anecdotal evidence during the Hydrock August 2023 ground investigation revealed that localised burial of construction waste occurred in paddocks located to the north of the disused buildings in the north-east of the site. As a result, the following source has been added to the exposure model.

» Made Ground, associated with historical buried construction waste possibly including elevated concentrations of metals, metalloids, asbestos fibres, Asbestos Containing Materials, PAH and petroleum hydrocarbons. (S12).

7.1.2.2 Receptors

No potential receptors have been removed from, or added to, the exposure model.

7.1.2.3 Pathways

No pathways have been removed from, or added to, the exposure model.

Using the updated ground model and updated exposure model, generic risk assessment is undertaken as presented below.

7.2 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 4 together with any reliable data from previous investigations as listed in Section 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 are proposed in Section 7.9.

7.3 Human health risk assessment

7.3.1 Soils Assessment

7.3.1.1 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 ands public open space (park) CLEA land use scenarios have 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 Appendix F.

The results of the assessment are presented in Appendix F.

7.3.1.2 Data sets

The data sets used in this report is based on the CSM and the proposed development, and is taken to be the entire area of the site / based on the following site zones, with the data separated into Made Ground, Topsoil and the different natural strata encountered.

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

7.3.1.3 Assessment Results

Based on individual test results that exceed the GAC, the chemicals of potential concern (CoPC) which require further assessment are summarised in Table 7.1.

Table 7.1: CoPC in soils which require further assessment (human health)

CoPC	GAC (mg/kg)	GAC Source	No. samples	Min. (mg/kg)	Max. (mg/kg)	No. samples >GAC
Residential With Home Grown Produce- Site						
Topsoil						
No Exceedances						
Relict Topsoil						
No Exceedances						
Made Ground Buried Construction Waste						
Cadmium	22	C4SL - CL:AIRE 2014	16	0.20	35.10	1

Lead	200	C4SL - CL:AIRE 2014	16	8.00	1840.00	1
Nickel	130	Hydrock Derived	16	3.00	145.00	1
Zinc	3900	Hydrock Derived	16	15.00	5510.00	1
Made Ground						
Lead	200	C4SL - CL:AIRE 2014	16	8.00	1840.00	1
Benz(a)anthracene	14	Hydrock Derived	16	0.05	21.70	2
Benzo(a)pyrene	5	C4SL - CL:AIRE 2014	16	0.05	14.60	2
Benzo(b)fluoranthene	3.7	Hydrock Derived	16	0.05	20.80	4
Dibenz(ah)anthracene	0.31	Hydrock Derived	16	0.05	2.13	4
Stockpiles						
No Exceedances						
Superficial Deposits						
No Exceedances						
Northmoor Sands and Gravels						
No Exceedances						
Kellaways Clay Member						
No Exceedances						
POS - Site						
Topsoil						
No Exceedances						
Relict Topsoil						
No Exceedances						
Made Ground Buried Construction Waste						
Lead	1300	C4SL - CL:AIRE 2014	17	8.00	1840.00	1
Made Ground						
Benzo(b)fluoranthene	16	Hydrock Derived	17	0.05	20.80	2

Dibenz(ah)anthracene	1.4	Hydrock Derived	17	0.05	2.13	2
Stockpiles						
No Exceedances						
Superficial Deposits						
No Exceedances						
Northmoor Sands and Gravels						
No Exceedances						
Kellaways Clay Member						
No Exceedances						
POS - Retained area						
Topsoil						
No Exceedances						
Northmoor Sands and Gravels						
No Exceedances						

The exceedances noted in the Made Ground and Made Ground Buried Construction Waste require further consideration.

All sources of potential Petroleum Hydrocarbons were investigated and the reported values for Petroleum Hydrocarbons are below the GACs and therefore not considered a risk to Human Health.

The phrase 'further assessment required' is used to denote soil concentrations that exceed a GAC. This does not necessarily mean that the soil is 'contaminated' or not otherwise suitable for use. The assessment and any mitigation required are to ensure the site does not pose an 'unacceptable risk' as defined under Planning and Part 2A of EPA 1990.

7.3.2 Asbestos

Asbestos has been identified by laboratory testing of soil samples as provided in Table 7.2.

Table 7.2: Asbestos in soil samples (laboratory testing)

Location	Stratum	Depth (m bgl)	% Asbestos (w/w)	Comment
TP109	Made Ground	0.20	<0.001	Fibres (chrysotile).
TP114	Made Ground	0.30	<0.001	Fibres (chrysotile).
TP124	Made Ground Buried Construction Waste	0.20	<0.001	Fibres (chrysotile).

The presence of asbestos fibres in soil requires further consideration.

7.3.3 Risk evaluation

The screening exercise has identified metals (cadmium, lead, nickel and zinc) in Made Ground Buried Construction Waste and lead and PAHs in the Made Ground at concentrations above the GAC. These are considered further here to assess if the exceedance may be acceptable with respect to the proposed development. The phrase 'further assessment' does not necessarily mean that the soil is 'contaminated' or not fit for use.

7.3.3.1 Topsoil

No exceedances were encountered within the Topsoil and therefore it is considered suitable for re-use on site.

7.3.3.2 Relict Topsoil

No exceedances were encountered within the Relict Topsoil and therefore it is considered suitable for re-use on site.

7.3.3.3 Stockpiles

No exceedances were encountered within the stockpiles and therefore it is considered suitable for re-use on site.

7.3.3.4 Superficial Deposits

No exceedances were encountered within the Superficial Deposits and therefore they are considered suitable for re-use on site.

7.3.3.5 Northmoor Sand and Gravel Member

No exceedances were encountered within the Northmoor Sand and Gravel Member and therefore it is considered suitable for re-use on site.

7.3.3.6 Kellaways Clay Member

No exceedances were encountered within the Kellaways Clay Member and therefore it is considered suitable for re-use on site.

7.3.3.7 Metals in Made Ground Buried Construction Waste

It is acknowledged only 1 no. sample was undertaken in the Made Ground Buried Construction Waste, however the ground conditions encountered suggest that this is representative of the area and further testing is unlikely to conclude differently.

Cadmium is present in the Made Ground. 1 no. sample exceeded the residential with home grown produce scenario with a maximum detection of 35.10 mg/kg. this is an exceedance of the GAC (22 mg/kg) and as such is considered to be an unacceptable risk, which requires mitigation.

Lead is present in the Made Ground. 1 sample exceeded the residential with home grown produce scenario and 1 sample exceeded the public open space park scenario with a maximum detection of 1840 mg/kg, which is a significant exceedance of both GAC (200 mg/kg and 1300 mg/kg respectively) these significant exceedances are considered to be an unacceptable risk, which requires mitigation for the proposed end use.

Nickel is present in the Made Ground. 1 sample exceeded the residential with home grown produce with a maximum detection of 145 mg/kg, which is an exceedance of the GAC (130 mg/kg). This exceedance is considered a be an unacceptable risk, which requires mitigation for the proposed end use.

Zinc is present in the Made Ground. 1 sample exceeded the residential with homegrown produce scenario with a detection of 5510 mg/kg. this is a significant exceedance of the GAC (3900 mg/kg) and as such is considered an unacceptable risk and requires mitigation for the proposed end use.

7.3.3.8 Metals in Made Ground

Lead is present in the Made Ground. 1 sample exceeded the residential with home grown produce scenario with a maximum detection of 781 mg/kg, which is a significant exceedance of the GAC (200 mg/kg). This significant exceedance is considered to be an unacceptable risk, which requires mitigation for the proposed end use.

7.3.3.9 PAH in Made Ground

The double ratio plots located in Appendix F demonstrate that all of the PAH exceedances are likely derived from coal-based products. The historical barn fire may be the source of these PAH detections, or other historical coal-fired plant such as boilers or heating systems associated with the former school buildings.

Benz(a)anthracene is present in the Made Ground. 2 samples exceed the residential with home grown produce scenario with a maximum detection of 21.70 mg/kg, which are in exceedance of the GAC (14 mg/kg). This exceedance is considered an unacceptable risk, which requires mitigation for the proposed site end use.

Benzo(a)pyrene is present in the Made Ground. 2 samples exceed the residential with home grown produce scenario, with a maximum detection of 14.60 mg/kg. this is a significant exceedance of the GAC (5 mg/kg) and as such is considered an unacceptable risk, which requires mitigation for the proposed end use.

Benzo(b)fluoranthene is present in the Made Ground. 4 samples exceed the residential with home grown produce scenario and 2 samples exceed the Public Open Space scenario, with a maximum detection of 20.80 mg/kg. this is a significant exceedance of the residential with home grown produce GAC (3.7 mg/kg) and an exceedance of the POS GAC (16 mg/kg) and as such is considered an unacceptable risk, which requires mitigation for the proposed end use.

Dibenz(ah)anthracene los present in the Made Ground. 4 samples exceed the residential with home grown produce scenario and 2 samples exceed the POS scenario, with a maximum detection of 2.13 mg/kg. This is an exceedance of the residential with home grown produce GAC (0.31 mg/kg) and is considered an unacceptable risk, which requires mitigation for the proposed site end use.

7.3.3.10 Asbestos

Laboratory testing detected chrysotile asbestos fibres (<0.001%v/v) in three locations across the site. All samples were quantified and the results were below the laboratory limit of detection. The chrysotile was detected locally in Made Ground at TP109 and TP114 and within the Made Ground Buried Construction Waste at TP124 (see Drawing Ref: 28470-XX-G-DR-G-1002 for locations).

Further ACM was encountered by the archaeological contractors during the reduced level dig as part of the archaeological investigation and visually confirmed by a Hydrock engineer during a site gas monitoring round.

Hydrock consider it plausible for asbestos to be present in any of the Made Ground soils and asbestos, (even at low concentrations), represents an unacceptable risk and mitigation measures will be required in this area of the site.

7.3.4 Disused sewage treatment plant screening

As part of the proposed development, which includes the demolition and removal of the disused sewage treatment plant (STP) located in the southwest of the site, total and faecal coliform testing was conducted on three samples.

Control samples were collected from the topsoil and the underlying Northmoor Sand and Gravel Member within the area designated for retained open space, situated approximately 200m from the STP. Additionally, one sample from the Northmoor Sand and Gravel Member adjacent to the STP was subjected to testing.

It's worth noting that MPN/G (Most Probable Number) is equivalent to Colony Forming Units per gram (CFU/g).

Table 3: Summary of coliform testing

Sample Ref.	Total Coliforms (MPN/g)	Faecal Coliforms (MPN/g)
TP120	0	>2010
SS1 - Topsoil	220	<10
SS1 - NMS	0	<10

7.3.4.1 Total Coliforms

There are currently no human health assessment criteria for coliforms/bacteria in soil. Total coliforms testing is only considered to be an initial indicator since numbers greater than 1,000 CFU/g are not considered unusual in an aerobic topsoil.

Laboratory testing of topsoil on the site recorded a total coliform count of 220 MPN/g within the control sample of topsoil, and reported a count of below the laboratory limit of detection within the underlying Northmoor Sand and Gravel Member.

7.3.4.2 Faecal Coliforms

The control samples tested indicated that faecal coliform concentrations were below the laboratory limit of detection.

Laboratory testing recorded elevated levels of faecal coliforms (>2010 MPN/g of E. coli) present in the soils adjacent to the disused sewage treatment plant when compared to the normal background levels demonstrated by the control samples.

Faecal coliforms can be an indicator of recent faecal contamination, potentially suggesting a leak from the disused STP. It is important to note that all warm-blooded animals excrete these organisms, and concentrations below 100 CFU/g could originate from sources like dog, bird, or vermin faeces, while concentrations exceeding 1,000 CFU/g / MPN/g may be indicative of recent sewage contamination.

Based on anecdotal discussions with the Client, it is believed that the STP has been disused since the closure of the school in 2011. As of the time of writing, the STP has not been emptied, and on-site observations have noted the presence of gravel granular filter material still within the tank, potentially containing sewage sludge and other materials.

Hydrock concludes that the elevated count of faecal coliforms suggests that the STP represents a localised source of potential contamination and recommends implementing mitigation measures.

It is understood that the historical sewage treatment works will be removed as part of the proposed development, effectively eliminating the localised source of potential contamination. Further details regarding the mitigation measures are discussed in greater depth in section 7.9.

7.4 Phytotoxicity risk assessment

7.4.1 Risk estimation

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.

Based on individual test results that exceed the phytotoxic GAC, CoPC which require further assessment are summarised in Table 7.4.

Table 7.4: CoPC which require further assessment (phytotoxic)

CoPC	GAC (mg/kg)	Basis for GAC	No. samples	Min. (mg/kg)	Max. (mg/kg)	No. samples >GAC
Topsoil						
No Exceedances						
Made Ground						
Zinc	300	BS3882 2015	16	15	318	1
Made Ground Buried Construction Waste						
Copper	135	BS3882 2015	1	1880	1,880	1
Nickel	75	BS3882 2015	1	145	145	1
Zinc	300	BS3882 2015	1	4.00	5510	1
Stockpiles						
Zinc	300	BS3882 2015	2	111.00	459	1
Superficial Deposits						
No Exceedances						
Northmoor Sands and Gravels						
No Exceedances						
Kimmeridge Clay Formation						
No Exceedances						

7.4.2 Risk evaluation

Detriment to plant life is difficult to quantify and many of the GAC are based on agricultural crop yields rather than harm to particular plant species.

7.4.2.1 Made Ground, Made Ground Buried Construction Waste

Within the Made Ground and Made Ground Buried Construction Waste, concentrations of copper, nickel and zinc are significantly elevated when compared to the GAC. Whilst detriment to plant life is difficult to quantify as many of the GAC are based on agricultural crop yields rather than harm to particular plant species, the significant exceedance of the GAC indicates the probability of an unacceptable risk to plant life and mitigation may be required.

The requirement for mitigation of risk to human health (as discussed in Section 7.3.3) will also serve to mitigate risks to plant life.

7.4.2.2 Stockpiles

Within the Stockpiled soils, concentrations of copper, nickel and zinc significantly elevated when compared to the GAC. Whilst detriment to plant life is difficult to quantify as many of the GAC are based on agricultural crop yields rather than harm to particular plant species, the significant exceedance of the GAC indicates the probability of an unacceptable risk to plant life and mitigation may be required.

The requirement for mitigation of risk to human health (as discussed in Section 7.3.3) will also serve to mitigate risks to plant life. A minor exceedance of zinc (459 mg/kg) was encountered in stockpile 2, However, it is not considered to pose a significant risk to plant life.

7.4.2.3 Topsoil

As there are no exceedances within the topsoil for the Human Health and Phytotoxicity GACs, it is considered suitable for reuse.

7.4.2.4 Relict Topsoil

As there are no exceedances within the Relict Topsoil for the Human Health and Phytotoxicity GACs, it is considered suitable for reuse.

7.4.2.5 Superficial Deposits

As there are no exceedances within the Superficial Deposits for the Human Health and Phytotoxicity GACs, it is considered suitable for reuse.

7.4.2.6 Northmoor Sand and Gravel Member

As there are no exceedances within the NMS for the Human Health and Phytotoxicity GACs, it is considered suitable for reuse.

7.4.2.7 Kellaways Clay Member

As there are no exceedances within the Kellaways Clay Member for the Human Health and Phytotoxicity GACs, it is considered suitable for reuse.

7.5 Pollution of controlled waters risk assessment

7.5.1 Risk estimation

The risks to groundwater and surface water from contaminants on site have been assessed in accordance with the Environment Agency (2006) Remedial Targets Methodology (RTM).

Site contaminant loadings are compared with relevant screening values (Water Quality Targets (WQTs), which are linked to the CSM.

Acceptable WQT are defined for protection of human health (based on Drinking Water Standards (DWS)) and for protection of aquatic ecosystems (Environmental Quality Standards (EQS)).

As related specifically to this site, the data are compared with criteria selected in accordance with the methodology presented in Appendix F. This methodology involves selecting which of several alternative risk scenarios apply in this case. The assessment is presented in Table 7.5, below with the justification for the scenarios selected explained in the following text:

- 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 site 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.
- Pervasive levels of metals and PAHs present in Made Ground soils.
- Detections of Petroleum Hydrocarbons are below the GACs for human health, however, should be considered in the context of the risk to controlled waters.
- Whilst concentrations are detected these are relatively low concentrations and not indicative of significant source remaining, it is considered to be residual levels from historical spills/leaks.
- The levels of residual hydrocarbon fractions are within the C12 – C35 aromatic range and are heavy end. The reported solubility limit for C12 - C35 TPH fractions is 5.8 to $6.6x10^{-3}$ mg/l[4], and the same guidance advises that these fractions have a moderate to very low mobility in soil and groundwater.

Table 7.5: Summary of water quality risk assessment protocol

Hydrock scenario	Water body receptors	Secondary receptors	Example contaminant linkages	RTM level and data used	Water quality targets
D	Groundwater Surface water.	Human health (abstraction). Aquatic ecosystem.	Contaminants from site leach or seep into a groundwater body that feeds inland surface water by base flow. The surface water may be used for human	RTM Level 2 - Groundwater.	DWS EQS (inland)

[4] CL:AIRE, 2017. Petroleum Hydrocarbons in Groundwater: Guidance on assessing petroleum hydrocarbons using existing hydrogeological risk assessment methodologies. CL:AIRE, London.

Hydrock scenario	Water body receptors	Secondary receptors	Example contaminant linkages	RTM level and data used	Water quality targets
			consumption and is an aquatic ecosystem.		

Notes:

Some EQS are water hardness dependent. This is measured either in the receiving surface water or in groundwater (if it is part of the pathway), or is estimated from national maps.

Inland waters EQS applicable to freshwater, 'other' waters EQS applicable to coastal or transitional waters.

This table and the results of the assessment are considered as a first screening for potential risks of pollution of Controlled Waters. More specific requirements may be stipulated by the relevant Agency.

The results of the screening assessment are presented in Appendix F and are summarised in Table 7.6.

There are no WQT for petroleum hydrocarbons in water. Consequently, Hydrock has calculated risk-based guidelines for drinking water based on a methodology proposed by the WHO and using the tolerable daily intakes for the various TPH fractions as used in the derivation of the soil GAC. The results are included in Table 7.6.

In some instances, the reporting limit (or detection limit) quoted by the laboratory may be greater than the WQT that it is being assessed against. As the current exercise is an initial screening assessment, further assessment of these elements has not been undertaken.

Table 7.6: CoPC which require further assessment (controlled waters)

CoPC	WQT (µg/l)	Basis for WQT	No. samples	No. samples above LoD	Min. (µg/l)	Max. (µg/l)	No. samples exceeding WQT and above LoD
Groundwater in the Northmoor Sands and Gravels							
Aluminium	200	DWS	5	5	1.3	430	1
Copper	1	EQS	5	5	0.6	3.5	4

Note: the maximum recorded value is compared with the water quality target.

7.5.2 Risk evaluation

The Drinking Water Standard (DWS) for aluminium and the Environmental Quality Standard (EQS) for copper have been exceeded. Aluminium has been detected in the groundwater, with a maximum concentration of 430 µg/l, surpassing the DWS target of 200 µg/l. Additionally, copper has been found in the groundwater, with a maximum concentration of 3.5 µg/l, exceeding the EQS target of 1 µg/l.

Heavy metals in the Made Ground and Made Ground Buried Waste also exceed the Generic Assessment Criteria (GACs) for Human Health. However, due to the localised and shallow nature of

the Made Ground, it is likely to be removed during the enabling works. Consequently, if heavy metals are leaching from the Made Ground and Made Ground Buried Construction Waste, the sources will have been removed, potentially breaking the source-pathway-receptor linkage.

The Cerney Wick Brook (source to Thames) Water Body, encompassing the site, is currently classified as 'poor' under the Water Framework Directive, with high recorded concentrations of heavy metals, including copper. Given the presence of heavy metals in the wider water body, the origin may either be from natural geology or inflow from an off-site source. Therefore, these exceedances are not deemed to pose a significant risk of pollution to Controlled Waters.

Furthermore, the inland waters EQSs for copper are based on the bioavailable fraction. Since bioavailability calculations have not been performed for these metals, the assessment is conservative, assuming 100% bioavailability.

Removing these natural contaminants from the water or preventing further infiltration would be technically challenging and likely disproportionately costly.

Hydrock believes that the risks to Controlled Waters from the site are low and do not require further consideration.

7.6 Ground gases risk assessment

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 significant risk of ground gas generation potential.

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.

7.6.1 Data

It is judged from the available evidence that the gas generation potential at the site is negligible and as such the monitoring regime suggested by CIRIA C665 is not proportionate to the risk and the guidance in BS8576:2013 that gas monitoring might not be necessary at sites where the gas generation potential is 'very low' should prevail. Notwithstanding this, three monitoring rounds will have been undertaken to confirm the insignificant nature of the risk.

Hydrock has undertaken the 3 of 3 readings as required, including during periods of falling and low atmospheric pressure. The conclusions presented below are considered to approximate to worst-case conditions.

7.6.2 Assessment

The risks associated with the ground gases methane (CH_4) and carbon dioxide (CO_2) have been assessed using BS 8485:2015 +A1:2019,

The assessment guidelines set out in Table 2 of BS 8485 are based on interpretation of the gas concentrations and the gas flow rates. The quantitative assessment has been carried out by comparing the individual gas concentrations and gas screening values (GSV[5]) in Appendix D with the published CS thresholds (BS 8485 Table 2), in addition to a worst-case GSV assessment in

[5] Note: GSV is synonymous with 'site characteristic hazardous gas flow rate' (Q_{hgs}) of BS 8485:2015 +A1:2019 Table.

accordance with section 6.3.7 of BS 8485. The assessment is summarised in Table 7.7 and the full assessment is presented in **Appendix E**.

Table 7.7: Ground gas risk assessment

	Min	Max	Typical [i]	Comment
Steady Flow Rate (l/hr)	0.1	0.3	<1 *	-
Methane (%)	0.0	0.1	<1	The typical methane concentration is less than 1% and the typical carbon dioxide concentration is less than 5%.
Carbon Dioxide (%)	1.5	3.8	<5	
Oxygen (%)	17.0	20.4		-
Carbon Dioxide GSV (l/hr)	0.0027	0.0114	<0.07	CS1
Methane GSV (l/hr)	0.0	0.0003	<0.07	CS1

[i] Hydrock assumes that values are considered to be atypical if 95% or more of the remaining data are less than the value under consideration

For the purposes of the calculation, where the recorded gas flow rate is below the manufacturer's limit of detection for the instrument used, the detection limit has been adopted for the gas flow rate.

As indicated in Table 7.7, the computed GSV for carbon dioxide and methane indicates CS1 conditions, and whilst methane and carbon dioxide concentrations have been measured at concentrations 'typically' above 1% and 5% respectively. As such, the site is provisionally classified as Characteristic Situation 1.

7.7 Construction materials risk assessment

7.7.1 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 partially brownfield and 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.

7.7.2 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 6.10.

7.8 Findings of the generic contamination risk assessments

The potential sources, pathways and receptors identified in the Information Review (Section 2) have been investigated (Sections 5 and 6) and assessed (Sections 7.2 to 7.7). A Source-Pathway-Receptor linkage assessment has been undertaken and is presented in Appendix I (Table I.2).

The main features of the site are summarised on the Site Conditions Plan presented in Appendix A (Hydrock Drawing 28470-HYD-XX-XX-DR-GE-1003).

A summary of the Source-Pathway-Receptor (SPR) contaminant linkages for which the risks may be unacceptable and require mitigation (those that are moderate or higher) are discussed in Table 7.8.

Table 7.8: Residual risks following risk evaluation

Contaminant Linkage				Comments	
Pollutant Linkage	Sources	Pathways	Receptors	General	Mitigation
PL 1.	Pervasive levels of metals in Made Ground Buried Construction Waste and metals and PAHs in Made Ground	Ingestion, inhalation or direct contact.	Human health.	Significant exceedance of the GAC.	Mitigation required in the form of an engineered cover system or disposal of impacted soils.
PL 2.	Possible ACM (visibly identified) and asbestos fibres in Made Ground and Made Ground Buried Construction Waste Soils.	Inhalation of fugitive dust	Human health.	Possible ACM (visibly identified) and asbestos fibres.	Mitigation required in the form of an engineered cover system or disposal of impacted soils.
PL 3.	Asbestos fibres from insulation or asbestos-containing materials in the buildings.	Inhalation of fugitive dust.	Human health (site neighbours).	Asbestos noted in old buildings.	Removal will be required. However, removal under controlled conditions should limit off-site emissions

7.9 Mitigation measures

The outline remediation strategy presented below is provided for guidance only, and does not represent a 'Remediation Options Appraisal', or a 'Remediation Strategy', prepared in accordance with LCRM (2023).

As shown in Table 7.8 Hydrock consider the following mitigation is required to ensure the site is suitable for use for the proposed end use. The mitigation measures include:

- The installation of a 600mm engineered cover system in gardens, comprising a bonded geogrid break layer (e.g. TX160G), subsoil beneath a topsoil thickness of between 150mm and 450mm (PL1 and PL2).
- Excavation and disposal of the discrete pockets of Made Ground and Made Ground Buried Construction Waste soils present at the near surface, some of which will be removed as part of the enabling works reduced level dig. (PL1 and PL2).
- Demolition and removal of the disused STP, followed by the installation of a 600mm clean cover system comprising 150mm topsoil and 450mm clean subsoil. Re-use of the excavated natural sub-soils is acceptable only within the footprint of the STP.

The methodology for the remediation should be set out in a Remediation Strategy (which will include the 'Implementation Plan', the 'Verification Plan' and the 'Long Term Monitoring and Maintenance Plan'), which will need to be submitted to the warranty provider and the regulatory authorities for approval.

In addition, the production of a Materials Management Plan and its approval by a Qualified Person will be required to allow reuse of suitable material at the site in accordance with waste regulations.

Verification reports by a competent independent geo-environmental specialist will be required following completion of any remedial works.

8. Waste and materials management

8.1 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 8.2 below describes the key issues relating to off-site disposal to landfill and Section 8.3 considers requirements relating to reuse of soils and materials management.

8.2 Waste disposal

8.2.1 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.

8.2.2 HazWasteOnline™ assessment

As the site is partially 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 G and a summary of the preliminary waste classification is provided below in Section 8.2.3.

8.2.3 Preliminary waste disposal options

The site is partially brownfield and based on the site history and 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 and rock materials (Superficial Deposits, Kellaways Clay Member and Northmoor Sand and Gravel Member) are likely to be classified as 'Non-Hazardous' waste and subject to the receiving tip and 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 and should be able to be disposed of at an inert landfill.
- The stockpiles are likely to be classified as 'Non-Hazardous' waste and should be able to be disposed of at an inert landfill.
- The Made Ground Buried Construction Waste is likely to be classified as 'Hazardous' waste, to be disposed of at a hazardous landfill.
- Any soils containing > 0.1% asbestos or visible asbestos containing materials would be considered as hazardous.

8.2.4 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[6]:
  - Duty of care transfer note / Hazardous Waste consignment note, including comment as to if pre-treatment has been undertaken; and
  - 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).

8.3 Materials management

8.3.1 Introduction

Soils that are to remain on site, should be managed and reused in accordance with a Materials Management Plan (MMP), prepared in accordance with 'The Definition of Waste: Development Industry Code of Practice', Version 2 (CL:AIRE), known as the DoWCoP. Where all aspects of the DoWCoP are followed the soils are considered not to be waste, because they were never discarded in the first place.

Version 2 of the DoWCoP clearly sets out the principles and an outline of the requirements of a MMP. The following compliance criteria must be seen to apply to the MMP for the site:

- Factor 1: Protection of human health and protection of the environment.
- Factor 2: Suitability for use, without further treatment.
- Factor 3: Certainty of Use.
- Factor 4: Fixed Quantity of Material.

The reuse of soils at sites should be considered during the planning and development design process so that compliance with issues such as fixed quantity and certainty of use clearly relate to agreed site levels. Suitability of Use is normally evident from the remediation strategy or the design statement, which form an integral part of a MMP. However, some soils may need to be tested post-excavation to prove they are suitable for use.

Once the MMP is finalised, it must be declared by a Qualified Person (QP). The Declaration is an on-line submission as part of which the QP is required to confirm that the declaration is being made before the relevant works have commenced (i.e. it is not a retrospective application).

Once all material movements have been completed in accordance with the MMP a verification report must be produced, kept for 2 years and provided to the EA on request.

It should be noted that failure to comply with the requirements of the DoWCoP when re-using materials has potentially significant consequences for the waste holder. The risk is that the reused materials are still regarded as a waste that has been illegally deposited. From 1 April 2018, the scope of Landfill Tax has been extended to sites operating without the appropriate environmental disposal permit, and operators of illegal waste sites will now be liable for Landfill Tax. Further

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

information is available at: https://www.gov.uk/government/publications/landfill-tax-disposals-not-made-at-landfill-sites/landfill-tax-disposals-not-made-at-landfill-sites.

If soils are excavated and reused on sites (or moved to another site) without a MMP, exemption, or appropriate Permit in place, anyone who knowingly facilitates the disposal may be *'jointly and severally liable'* to any assessment of tax, fines or prosecution.

8.3.2 Materials management scenarios

The materials management scenarios present on site are discussed below.

It should be noted that more than one scenario may apply, dependent upon where the soils are proposed for reuse.

8.3.2.1 Clean, naturally occurring materials – reused on the site of origin

Where soils are naturally occurring, uncontaminated and are reused on the site they are excavated (i.e. greenfield site with documented site history, with no Made Ground), they will fall outside the Waste Framework Directive (WFD) (i.e. they will not be a waste when reused on the site of origin).

However, there needs to be certainty of that reuse, and evidence is necessary to support this strategy, for example through information provided during the planning process. The onus is on the developer to demonstrate that the materials are not a waste and will never become a waste. As such, a Materials Re-use Strategy is recommended to show certainty. Alternatively, if the volume of material is under 1,000 tonnes, then a U1 waste exemption may be applied for from the Environment Agency.

It may be noted that some 'clean naturally occurring materials' may still fail the 'suitable for use' test, for example, soils with a naturally high organic content may not be suitable for use because of their propensity to produce ground gases such as methane. Rules regarding other more unusual circumstances such as where natural soils contain an unacceptably high mineral content are described in the DoWCoP.

8.3.2.2 Clean, naturally occurring materials – transferred to other sites

Where soils are naturally occurring, uncontaminated and are transferred to other sites (i.e. direct transfer), they will not become waste as long as the transfer is undertaken in accordance with the DoWCoP. A MMP must be prepared for the receiving site and the materials movement must be noted in the MMP of the Donor site. This movement must have been declared to CL:AIRE prior to the works commencing.

8.3.2.3 Made Ground and other contaminated soils

On sites where Made Ground or contaminated soils are present, any soils excavated will be a waste as soon as they are excavated (even if they are clean, naturally occurring materials), unless they are subject to reuse in accordance with the DoWCoP. As such, for any brownfield site or a site where Made Ground is present and soils are being moved and reused, the materials could be deemed a waste, subject to either:

- a Materials Management Plan (MMP), to prevent the material being classified as a waste following reuse; or
- an exemption (for limited volumes); or
- an environmental permit, dependant on its status.

Other commonly occurring circumstances are:

If Made Ground is being moved between sites, it must be ensured that appropriate permits are in place to ensure the soils are not classified as a waste. Made Ground cannot be moved between sites under DoWCoP alone and would require relevant permits as part of the MMP documentation for the Hub site the material is being treated at.

8.3.2.4 Made Ground and other contaminated soils

All recycled materials (6F2 etc.) must be produced under the 2013 WRAP 'Quality Protocol: Aggregates from inert waste', whether on site or off-site. If they are not, they will be deemed a waste and can only be used on site under a permit. More information can be found at https://www.gov.uk/government/publications/quality-protocol-production-of-aggregates-frm-inert-waste.

8.3.2.5 Geotechnical improvement requirements

Construction activities carried out on uncontaminated soils solely for the purpose of improving geotechnical properties e.g. lime / cement modification, are not generally regarded as waste treatment operations and do not require a permit.

However, should processing be needed (such as screening, treatment or improvement), that would constitute a waste activity and require a mobile treatment permit. This may be as simple as removing oversize material with an excavator bucket, to using a riddle bucket to remove hardcore to full mechanical screening.

9. Uncertainties and limitations

9.1 Site-specific comments

Faecal Coliform testing indicated that the area of the disused sewage treatment plant to contain elevated levels of faecal coliform bacteria. The depth and spread of the contamination was not determined during this investigation; however, it is considered to be localised.

The positions of exploratory hole locations were restricted in some areas due to the presence of tree protection fencing erected around trees that are to be retained by the proposed development.

During the investigation dense vegetation limited the positioning of exploratory positions on the site and as such some areas were unable to be accessed.

The north and north-western areas of the site adjacent to and including the tennis courts are under ecological restrictions due to the presence of badgers were not accessed. Further ecological restrictions were present due to great crested newts and bats.

Some of the buildings in the west of the site could not be accessed due to the potential for further collapse on site whilst moving heavy equipment beneath. Therefore, these structures were unable to be investigated. Due to the bats and the security hoarding placed on buildings, the majority of site buildings could not be accessed at the time of the investigation.

The scheduled monument extended to the gardens at the rear of the eastern site properties (inside the red line boundary). In order to avoid works within the scheduled monument, exploratory locations were repositioned to be within the gardens.

Large portions of the site were subject to archaeological investigations and therefore could not be accessed, or minimal works allowed only during the investigation. This restricted investigation within certain areas of the site.

9.2 General comments

Hydrock Consultants Limited (Hydrock) has prepared this report in accordance with the instructions of Bewley Homes (the Client), by e-mail dated August 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.

10. References

ASSOCIATION OF GROUND INVESTIGATION SPECIALISTS. 2006. Guidelines for Good Practice in Site Investigation. Issue 2. AGS, Beckenham.

ASSOCIATION OF GROUND INVESTIGATION SPECIALISTS. 2019. Waste Classification for Soils – A Practitioners' Guide. AGS, Beckenham.

BRE. 1980. Low-rise buildings on shrinkable clay soils: Part 1. BRE Digest 240. Building Research Establishment, Garston.

BRE. 1999. The influence of trees on house foundations in clay soils. BRE Digest 298. Building Research Establishment, Garston.

BRE. 2016. Soakaway design. BRE DG 365. BRE, Garston.

BRE. 2005. Concrete in aggressive ground. BRE Special Digest 1, 3rd Edition. BRE, Garston.

BRITISH PLASTIC FEDERATION. August 2018. 'Designing Drains and Sewers for Brownfield Sites. Guidance Notes'. BPF Pipes Group (https://www.bpfpipesgroup.com/media/29155/Designing-drains-and-sewers-for-brownfield-sites.pdf)

BRITISH STANDARDS INSTITUTION. 2003. Geotechnical investigation and testing - Identification and classification of rock - Part 1: Identification and description. BS EN ISO 14689-1 Incorporating Corrigendum No.1. BSI, London

BRITISH STANDARDS INSTITUTION. 2004+A1 2013. Eurocode 7 – Geotechnical design - Part 1: General rules. BS EN 1997-1+A1. Incorporating Corrigendum February 2009. BSI, London.

BRITISH STANDARDS INSTITUTION. 2007. Eurocode 7 – Geotechnical design - Part 2: Geotechnical investigation and testing. BS EN 1997-2. BSI, London.

BRITISH STANDARDS INSTITUTION. 2009. Code of practice for earthworks. BS 6031 Incorporating Corrigendum No.1:2010. BSI, London.

BRITISH STANDARDS INSTITUTION. 2011. Code of Practice for Investigation of Potentially Contaminated sites. BS 10175 Incorporating Amendment No. 2:2017. BSI, London.

BRITISH STANDARDS INSTITUTION. 2012. Trees in relation to design, demolition and construction – Recommendations. BS 5837. BSI, London.

BRITISH STANDARDS INSTITUTION. 2013. Guidance on investigations for ground gas. Permanent gases and Volatile Organic Compounds (VOCs) BS 8576. BSI, London.

BRITISH STANDARDS INSTITUTION. 2015. Code of Practice for Foundations. BS 8004. BSI, London.

BRITISH STANDARDS INSTITUTION. 2015. Specification for topsoil. BS 3882. BSI, London.

BRITISH STANDARDS INSTITUTION. 2015. Code of practice for ground investigations. BS 5930. BSI, London.

BRITISH STANDARDS INSTITUTION. 2015+A2 2019. Concrete – complementary British Standard to BS EN 206-1 – Part 1: Method of specifying and guidance to the specifier. BS 8500-1+A2 2019. BSI, London.

BRITISH STANDARDS INSTITUTION. 2015+A1 2019. Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings. BS 8485:2015 +A1:2019. BSI, London.

CARD, G., WILSON, S. and MORTIMER, S. 2012. A pragmatic approach to ground gas risk assessment. CL:AIRE Research Bulletin RB17. CL:AIRE, London.

CARD, G., LUCAS, J., WILSON, S., 2019. Risk and reliability in gas protection design - 20 years on. Ground Engineering, August/September 2019.

CL:AIRE. 2011. The Definition of Waste: Development Industry Code of Practice, Version 2. Contaminated Land: Applications in the Real Environment (CL:AIRE), London.

CL:AIRE, 2017. A Pragmatic Approach to Ground Gas Risk Assessment. Research Bulletin 17, CL:AIRE, Buckinghamshire. ISSN 2047-6450.

CL:AIRE, 2018. Ground gas monitoring and 'worst-case' conditions. Technical Bulletin 17, CL:AIRE, Buckinghamshire, August 2018.

CL:AIRE, 2020. Professional Guidance: Comparing Soil Contamination Data with a Critical Concentration. CL:AIRE, Buckinghamshire. ISBN 978-1-905046-35-5.

CL:AIRE, 2021. Good practice for risk assessment for coal mine gas emissions. CL:AIRE, Buckinghamshire. ISBN 978-1-905046-39-3

CL:AIRE, 2022. Resilience and Adaptation for Sustainable Remediation, SuRF-UK bulletin SuRF 5, August 2022.

CLAYTON, C. R. I. 2001. Managing Geotechnical Risk. Improving productivity in UK building and construction. Thomas Telford, London.

CONCRETE SOCIETY, THE. 2013. Concrete industrial ground floors. A guide to design and construction. Technical Report 34 (4th Ed.). The Concrete Society, Camberley.

DEPARTMENT FOR ENVIRONMENT FOOD AND RURAL AFFAIRS (DEFRA). 2005. 'Landfill (England and Wales) (Amendment) Regulations', (with reference to previous iterations of the regulations).

DEFRA. 2014. SP1010: Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination – Policy Companion Document. Defra, London.

ENVIRONMENT AGENCY. 2006. Remedial Targets Methodology. Hydrogeological Risk Assessment for Land Contamination. The Environment Agency, Bristol.

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

Environment Agency, 2010. Guiding Principles for Land Contamination. Part 2. FAQs, technical information, detailed advice and references, March 2010.

ENVIRONMENT AGENCY. November 2011. Treatment of waste for landfill. Report – GEHO1111BVDF-E-E 913_11, Version 2 The Environment Agency. http://publications.environment-agency.gov.uk/pdf/GEHO1111BVDF-E-E.pdf

ENVIRONMENT AGENCY. 2021. Waste classification. Guidance on the classification and assessment of waste (1st Edition v1.2.GB) Technical Guidance WM3. The Environment Agency.

ENVIRONMENT AGENCY. 2023. Land Contamination: Risk Management (LCRM). The Environment Agency.

HATANAKA, M, UCHIDA, A, KAKURAI, M, and AOKI, M. 1980. A consideration on the relationship between SPT N-value and internal friction angle of sandy soils. Journal of Structural and Construction Engineering (Transactions of AIJ). 63. 125-129. 10.3130/aijs.63.125_2.

HEALTH and SAFETY EXECUTIVE. December 2005. Construction Information Sheet 47: Inspections and Reports (CIS 47 (Rev 1)). HSE.

HEALTH and SAFETY EXECUTIVE. 2014. HSG47 - Avoiding danger from underground services (Third edition). HSE.

HEALTH and SAFETY EXECUTIVE. January 2020. EH40/2005 Workplace Exposure Limits (4th edition 2020,). HSE.

HIGHWAYS AGENCY. 2009. Design Guidance for Road Pavement Foundations (Draft HD25). Interim Advice Note 73/06. Rev 1. Highway Agency, London.

HIGHWAYS AGENCY. 2014. Manual of Contract Documents for Highway Works, Specification for Highway Works: Volume 1, Amendment August 2014. Highway Agency, London.

THE HIGHWAYS AGENCY. 2015. Design Manual, Road and Bridges: Volume 4, Geotechnics and Drainage; Section 1, Earthworks; Part 3, HD 41/15, Maintenance of highway geotechnical assets. HD 41/15.

THE HIGHWAYS AGENCY. 2019. Design Manual for Roads and Bridges. Managing Geotechnical Risk. CD 622 Rev 0. Highway Agency, London.

UK HEALTH SECURITY AGENCY (UKHSA) and BRITISH GEOLOGICAL SURVEY. December 2022. Indicative Atlas of Radon Potential for Great Britain (Version 3) (https://www.ukradon.org/information/ukmaps)

MINISTRY OF HOUSING, COMMUNITIES and LOCAL GOVERNMENT (MHCLG). Internet published Planning practice guidance https://www.gov.uk/government/collections/planning-practice-guidance. MHCLG. London

NATHANAIL P., JONES A., OGDEN, R., AND ROBERTSON A. 2014. Asbestos in soil and made ground: a guide to understanding and managing risks. CIRIA Report C733 Contaminated Land: Applications in Real Environments, London.

NHBC and ENVIRONMENT AGENCY. 2008. Guidance for the safe development of housing on land affected by contamination. R&D Publication 66, 2 Volumes.

NHBC. 2023. NHBC Standards. NHBC, Milton Keynes. https://nhbc-standards.co.uk/

NHBC FOUNDATION. 2023. Hazardous ground gas - an essential guide for housebuilders. NF94. NHBC, Milton Keynes

PECK, R.B., HANSON, W.E., AND THORNBURN, T.H., Foundation Engineering, 2nd Edn, John Wiley, New York, 1967, p.310.

RAWLINS, B. G., McGRATH, S. P., SCHEIB, A. J., CAVE, N., LISTER, T. R., INGHAM, M., GOWING, C. and CARTER, S. 2012. The advanced geochemical atlas of England and Wales. British Geological Survey, Keyworth.

SHAND, P., EDMUNDS, W.M., LAWRENCE, A.R., SMEDLEY, PAULINE, BURKE, S. 2007. The natural (baseline) quality of groundwater in England and Wales. Environment Agency, 72pp. (RR/07/006)

SCIVYER, C. and JAGGS M. 2023. Radon: Guidance on protective measures for new buildings. Building Research Establishment Report BR 211 6th Edition. BRE, Garston.

SoBRA, 2022. Guidance on Assessing Risk to Controlled Waters from UK Land Contamination Under Conditions of Future Climate Change, Society of Brownfield Risk Assessment, August 2022.

STONE, K., MURRAY, A., COOKE, S., FORAN, J. and GOODERHAM, L. 2009. Unexploded ordnance (UXO), a guide to the construction industry. CIRIA Report C681. Contaminated Land: Applications in Real Environments, London.

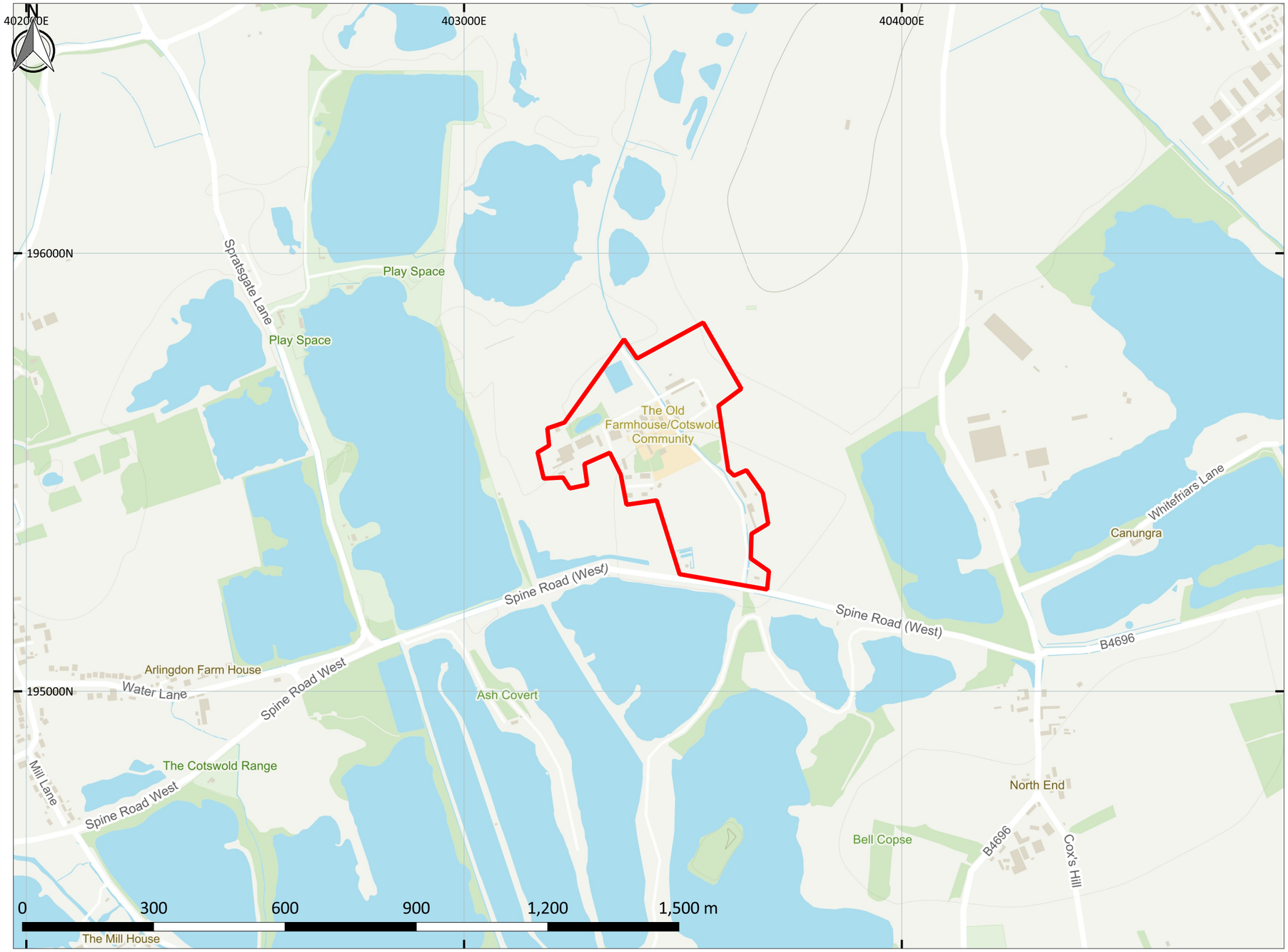
STROUD, M. A. 1975. The standard penetration test in insensitive clays and soft rocks. Proceedings of the European Symposium on penetration testing, 2, 367-375.

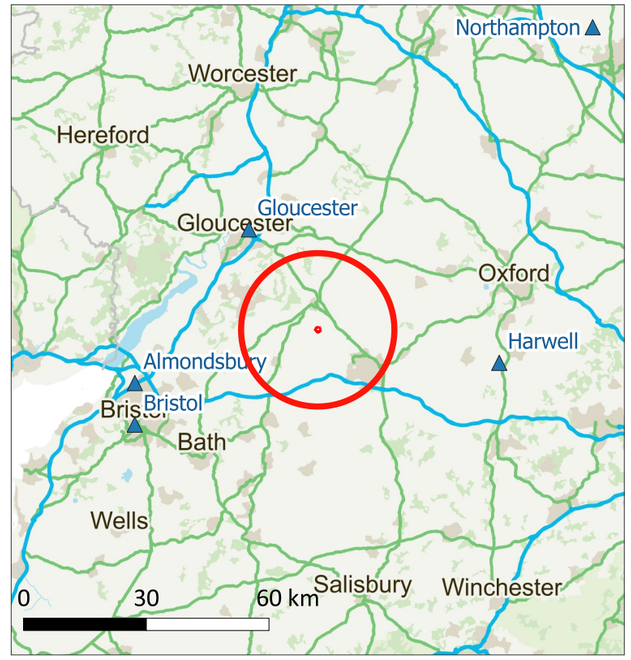
TOMLINSON. M.J. 2001. Foundation Design and Construction (6th Edition and 7th Edition). Prentice Hall Press

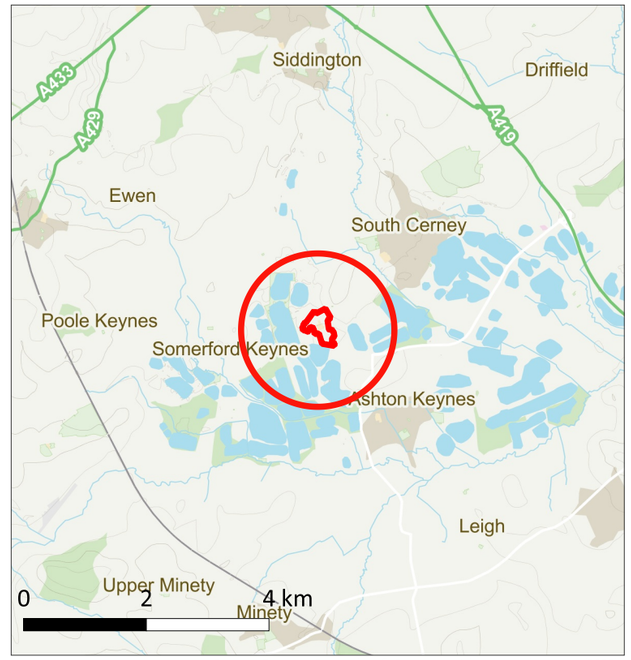
WASTE AND RESOURCES ACTION PROGRAMME (WRAP). October 2013. Quality Protocol. Aggregates from inert waste. End of waste criteria for the production of aggregates from inert waste.

WATER UK HBF. January 2014. Contaminated Land Assessment Guidance. Water UK and the Home Builders Federation.

Appendix A Drawings







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

KEY PLAN

Site Boundary

NOTES

1. Contains OS data © Crown copyright and database right (2022)

REVISIONS

REV.	DRAWN BY INITIALS	CHECKED BY INITIALS	DATE	REVISION NOTES/COMMENTS
P01	KB	SW	01/09/23	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

OS NORTH

Sands quarry

Restored sands quarry (Lake) - multiple tension cracks present along the crest of banks.

Stockpile

Tennis courts

Drained Ponds

Dry watercourse

ASHTON FIELDS
[Ashton Keynes]

Drain

SP1 SP2

TP101 TP102 TP103 TP104 TP105 TP106 TP107 TP108 TP109 TP110 TP111 TP112 TP114 TP115 TP116 TP117 TP118 TP119 TP120 TP121 TP122 TP123 TP124 TP125 TP126

BH101 BH102 BH103 BH104 BH105 BH01

HP101 HP102 HP103 HP104 HP105 HP106 HP107 HP108 HP109 HP110 HP111 HP112 HP113 HP114 HP115

CC101 CC102 CC103 CC104 CC105 CC106 CC107 CC108 CC109 CC110 CC111 CC112

DCP101 DCP102 DCP103 DCP104 DCP105 DCP106 DCP107

TP01 TP02 TP03 TP04 TP05 TP06

89.2m

KEY

- BH
- HP
- TP
- Notable site feature
- Asbetos Containing Materials Present

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
REV.	REVISION NOTES/COMMENTS					
	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE

Hydrock
Over Court Barns
Over Lane
Almondsbury, Bristol BS32 4DF
TEL: 01454 619 533
FAX: 01454 614 125
E-Mail: bristol@hydrock.com
or visit www.hydrock.com

CLIENT

BEWLEY HOMES

PROJECT

COTSWOLD COMMUNITY SCHOOL, ASHTON KEYNES

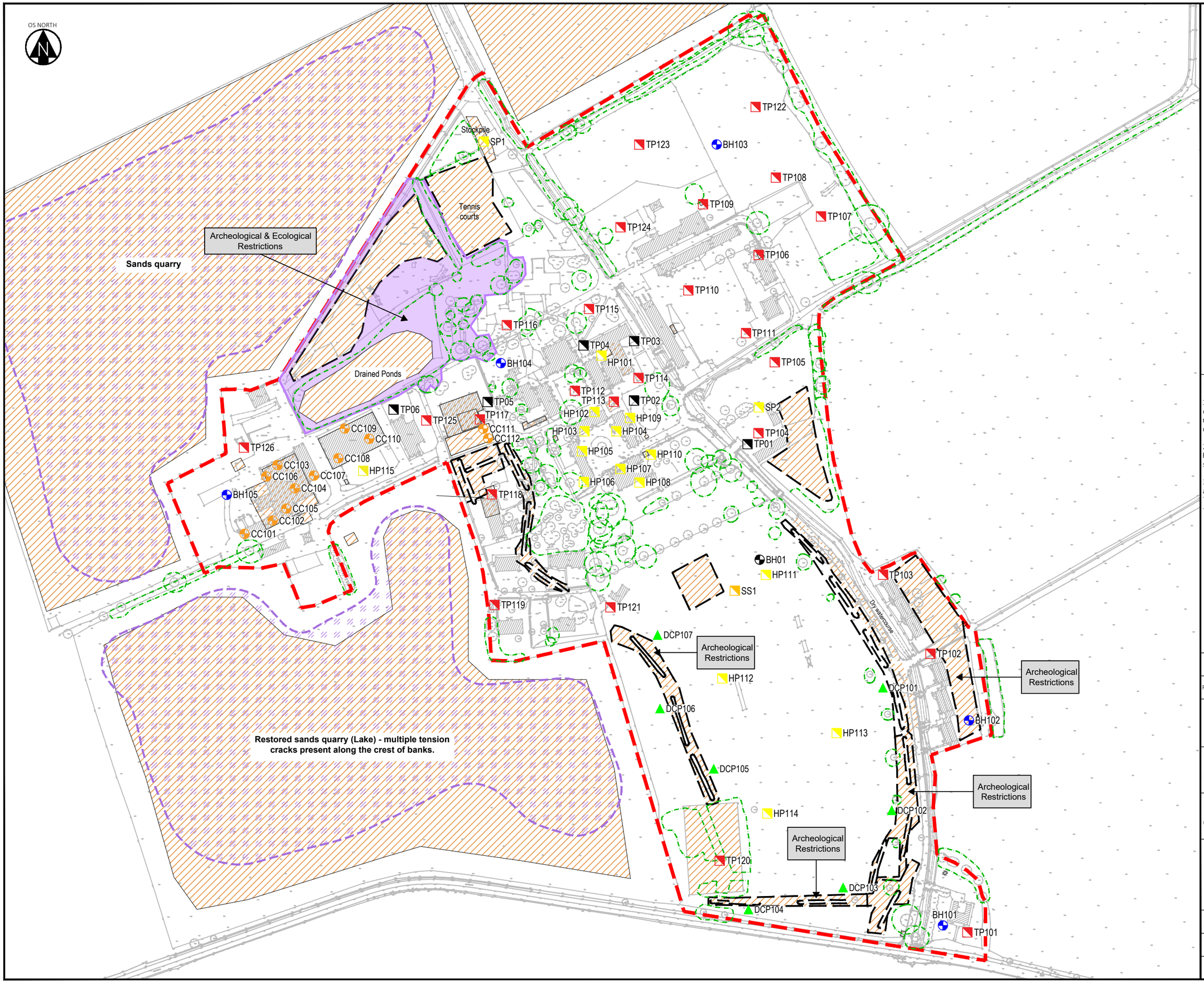
TITLE

PROPOSED 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-ORIGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER)	REVISION
09612- HYD-XX-GI-DR-G-1001	P2



KEY

- Wider Site Boundary
- BHi Borehole
- HPi Hand Pit / Stockpile
- TPi Trial Pit
- DCP TRL DCP
- CCii Concrete Core
- BHi Borehole 2018
- TPi Trial Pit 2018
- Restricted Zones
- Tree to be Retained

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	07/09/23	SW	07/09/23	SW	07/09/23
	REVISION NOTES/COMMENTS					
	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE

Hydrock
Over Court Barns
Over Lane
Almondsbury, Bristol BS32 4DF
TEL: 01454 619 533
FAX: 01454 614 125
E-Mail: bristol@hydrock.com
or visit www.hydrock.com

CLIENT
BEWLEY HOMES

PROJECT
COTSWOLD COMMUNITY SCHOOL, ASHTON KEYNES

TITLE
EXPLORATORY HOLE LOCATION PLAN

HYDROCK PROJECT NO.	SCALE @ A3
C-28470-C	1:2000

PURPOSE OF ISSUE	STATUS
SUITABLE FOR INFORMATION	S2

DRAWING NO. (PROJECT CODE-ORGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER) 28470- HYD-XX-GI-DR-G-1002

REVISION P2

OS NORTH

Extent implied from annecdotal evidence

Archeological & Ecological Restrictions

Sands quarry

Stockpile

Tennis courts

Drained Ponds

Restored sands quarry (Lake) - multiple tension cracks present along the crest of banks.

Made Ground and suspected ACM encountered in Archeological Restrictions

Archeological Restrictions

Archeological Restrictions

Archeological Restrictions

Archeological Restrictions

Dry watercourse

TP122 TP123 BH103 TP108 TP109 TP124 TP107 TP106 TP110 TP115 TP116 TP111 TP04 TP03 HP101 BH104 TP105 TP114 TP112 TP113 TP02 TP05 TP06 TP125 TP117 HP102 HP109 SP2 CC109 CC110 CC111 CC112 HP103 HP104 TP104 TP01 TP126 CC108 HP105 HP110 CC103 CC106 CC107 HP115 HP107 CC104 HP106 HP108 CC105 BH105 CC102 TP118 CC101 BH01 HP111 TP103 SS1 TP119 TP121 DCP107 TP102 HP112 DCP101 DCP106 BH102 HP113 DCP105 HP114 DCP102 TP120 DCP103 DCP104 BH101 TP101

KEY

- Wider Site Boundary
- BHi Borehole
- HPi Hand Pit / Stockpile
- TPi Trial Pit
- DCP TRL DCP
- CCiii Concrete Core
- BHi Borehole 2018
- TPi Trial Pit 2018
- Restricted Zones
- Tree to be Retained
- Asbestos Fibres Detected in Made Ground
- Elevated PAH Concentration in Made Ground
- Elevated Metal in Made Ground
- Elevated Faecal Coliforms

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	07/09/23	SW	07/09/23	SW	07/09/23
	REVISION NOTES/COMMENTS					
	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE

Hydrock
Over Court Barns
Over Lane
Almondsbury, Bristol BS32 4DF
TEL: 01454 619 533
FAX: 01454 614 125
E-Mail: bristol@hydrock.com
or visit www.hydrock.com

CLIENT
BEWLEY HOMES

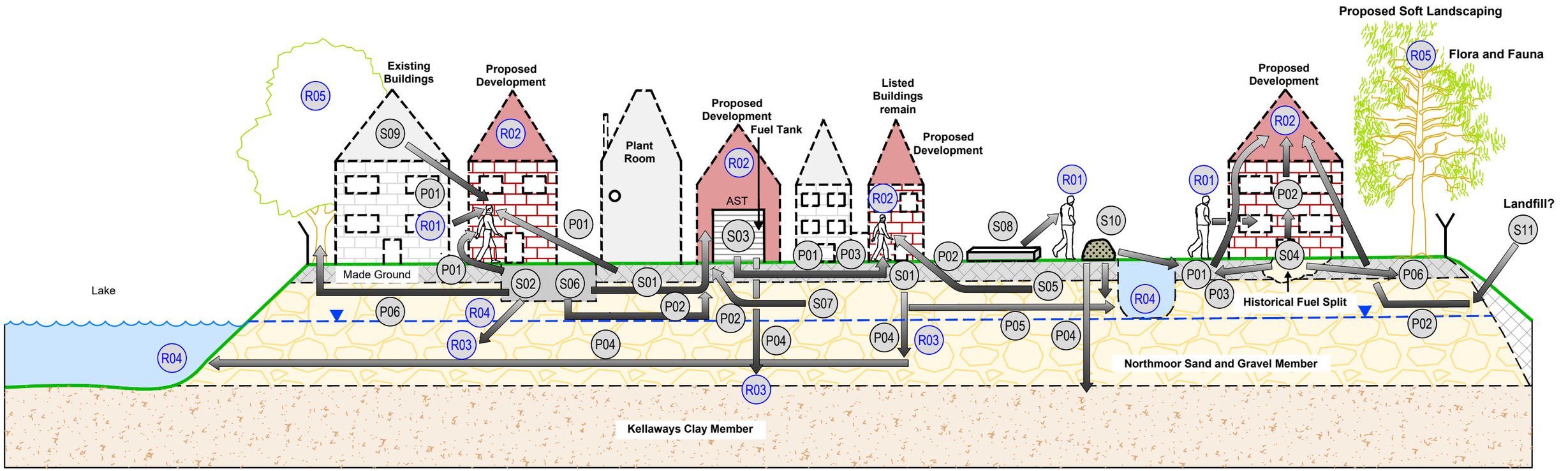
PROJECT
COTSWOLD COMMUNITY SCHOOL, ASHTON KEYNES

TITLE
SITE CONDITION PLAN

HYDROCK PROJECT NO.	SCALE @ A3
C-28470-C	1:2000

PURPOSE OF ISSUE	STATUS
SUITABLE FOR INFORMATION	S2

DRAWING NO. (PROJECT CODE-ORGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER)	REVISION
28470-HYD-XX-XX-DR-GE-1003	P2



Potential on-site sources of contamination

S01. 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.

S02. Made ground associated with the backfilling of the gravel pit in the west of the site possibly including elevated concentrations of metals, metalloids, asbestos fibres, Asbestos Containing Materials, PAH and petroleum hydrocarbons.

S03. Hydrocarbon fuels and vapours, associated with the multiple Above Ground Storage Tanks (ASTS) and operation of plant rooms including possible leakage from filling.

S04. Hydrocarbon fuels and vapours from the historical fuel spillage in the east of the site.

S05. Ground gasses (carbon dioxide and methane) from organic material within any Made Ground across the site.

S06. Ground Gases (carbon dioxide and methane) from organic materials within the Made Ground of the back-filled gravel pit in the west of the site.

S07. Ground gases (carbon dioxide and methane) from organic materials within cohesive superficial deposits on site.

S08. Residual contamination from sewage in the settlement beds that are present in the south-west corner of the site, potentially containing levated metals, detergents, inorganic and organic contaminants and possibly (although unlikely) pathogenic contaminants such as faecal coliforms.

S09. Asbestos within existing and former buildings on site (i.e. plant rooms and sewage treatment works).

S10. Existing stockpiles potentially including elevated concentrations of metals, metalloids, asbestos fibres, Asbestos Containing Materials, PAH and petroleum hydrocarbons.

Potential off-site sources of contamination

S11. Ground gases (carbon dioxide and methane) generated from organic materials within the landfill to the east 210m from the site.

Potential receptors

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

R01. People (site end users, neighbours).

R02. Development end use (buildings, utilities and landscaping).

R03. Groundwater: secondary A aquifer status of the Northmoor Sand and Gravel Member.

R04. Surface water: on-site watercourse and off-site lakes (remediated quarries) to the south-west, west and.

R05. Ecology flora and fauna.

Potential pathways

The following potential pathways have been identified.

P01. Direct contact: ingestion, skin contact, inhalation of dust and outdoor air by people and ecological recipients.

P02. Migration, build-up and explosion of ground gas and vapours via permeable soils and/or construction gaps.

P03. Petroleum hydrocarbon vapour migration, ingress, build-up and explosion via permeable soils and/or construction gaps.

P04. Migration and leaching of mobile contaminant through the unsaturated and saturated zones.

P05. Surface water via base flow from groundwater. P06. Uptake by flora and fauna.

KEY

- Existing ground profile
- Conjectural geological boundary
- Groundwater elevation
- Made Ground
- Northmoor Sand and Gravel Member
- Kellaways Clay Member

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.

REV.						
P1	FIRST ISSUE					
	EP	13/09/23	AT	13/09/23	RSw	13/09/23
	REVISION NOTES/COMMENTS					
	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE

Hydrock
Over Court Barns
Over Lane
Almondsbury, Bristol BS32 4DF
TEL: 01454 619 533
FAX: 01454 614 125
E-Mail: bristol@hydrock.com
or visit www.hydrock.com

CLIENT: BEWLEY HOMES

PROJECT: COTSWOLD COMMUNITY SCHOOL, ASHTON KEYNES

TITLE: INITIAL CONCEPTUAL SITE MODEL

HYDROCK PROJECT NO.	SCALE @ A3
C-28470-C	NTS

PURPOSE OF ISSUE	STATUS
SUITABLE FOR INFORMATION	S2

DRAWING NO. (PROJECT CODE-ORGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER): 28470-HYD-XX-XX-DR-GE-1004

REVISION: P1

PLAN VIEW
Scale 1:250

KEY:

Wider Site Boundary

Line of Cross Section

BHi Borehole

TPi Trial Pit

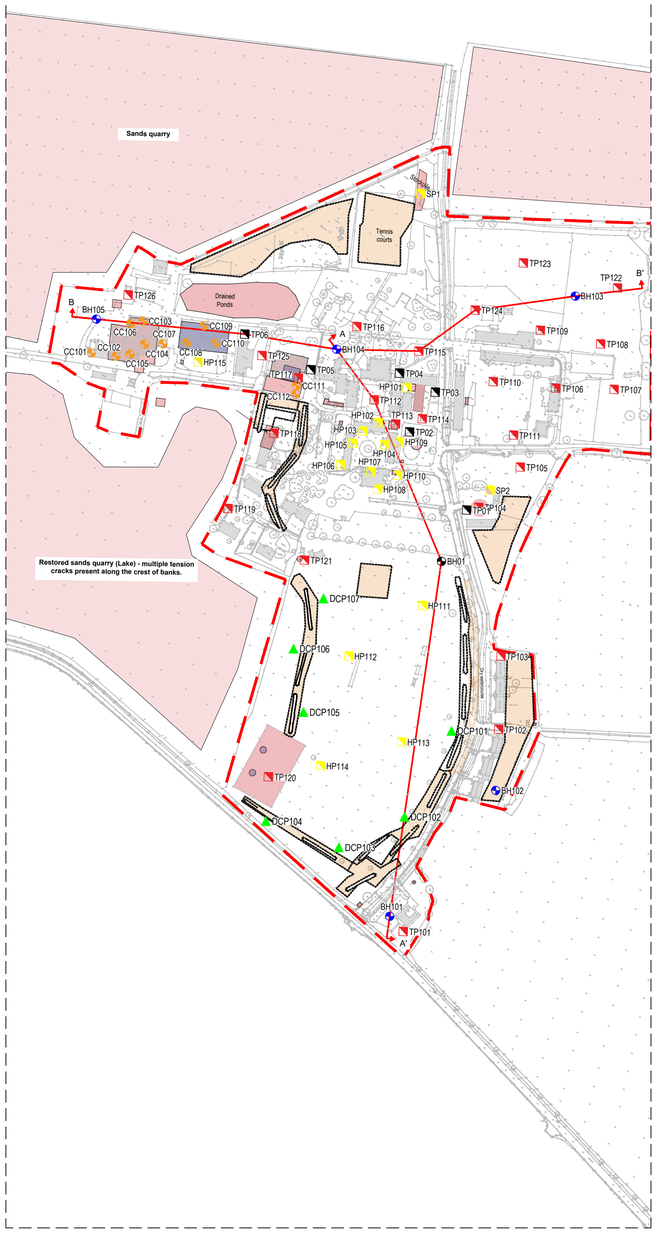
CCiii Concrete Core

TPi Trial Pit 2018

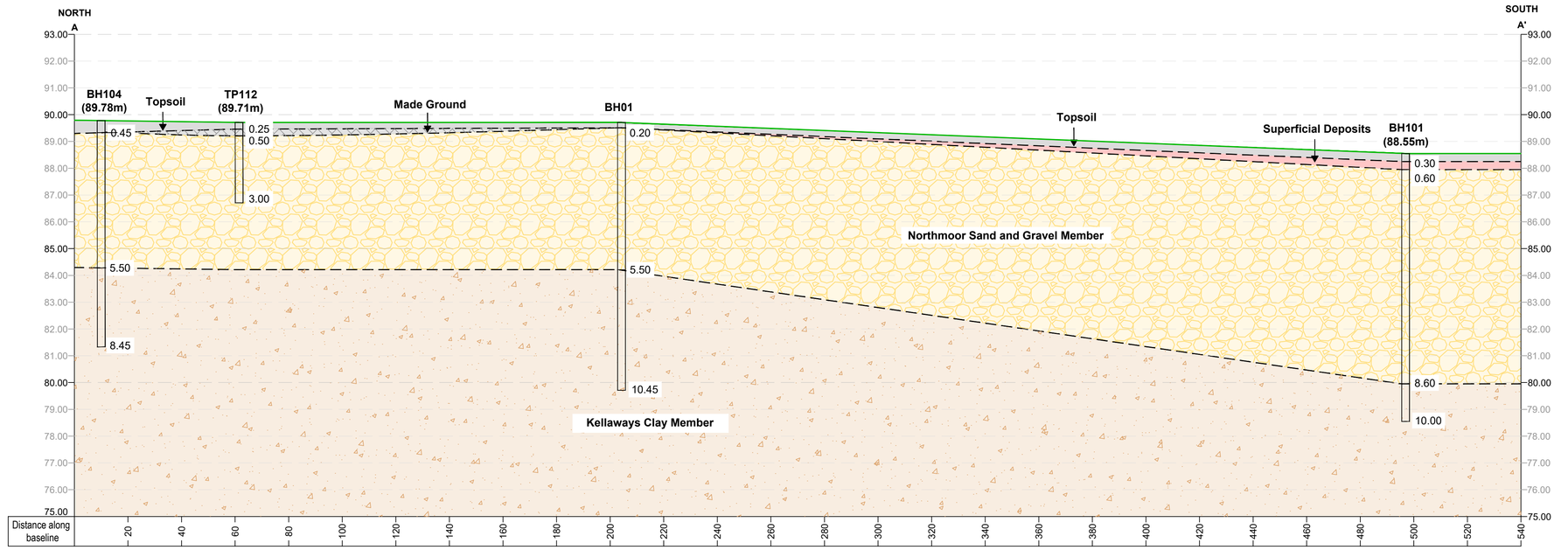
HPi Hand Pit / Stockpile

DCP TRL DCP

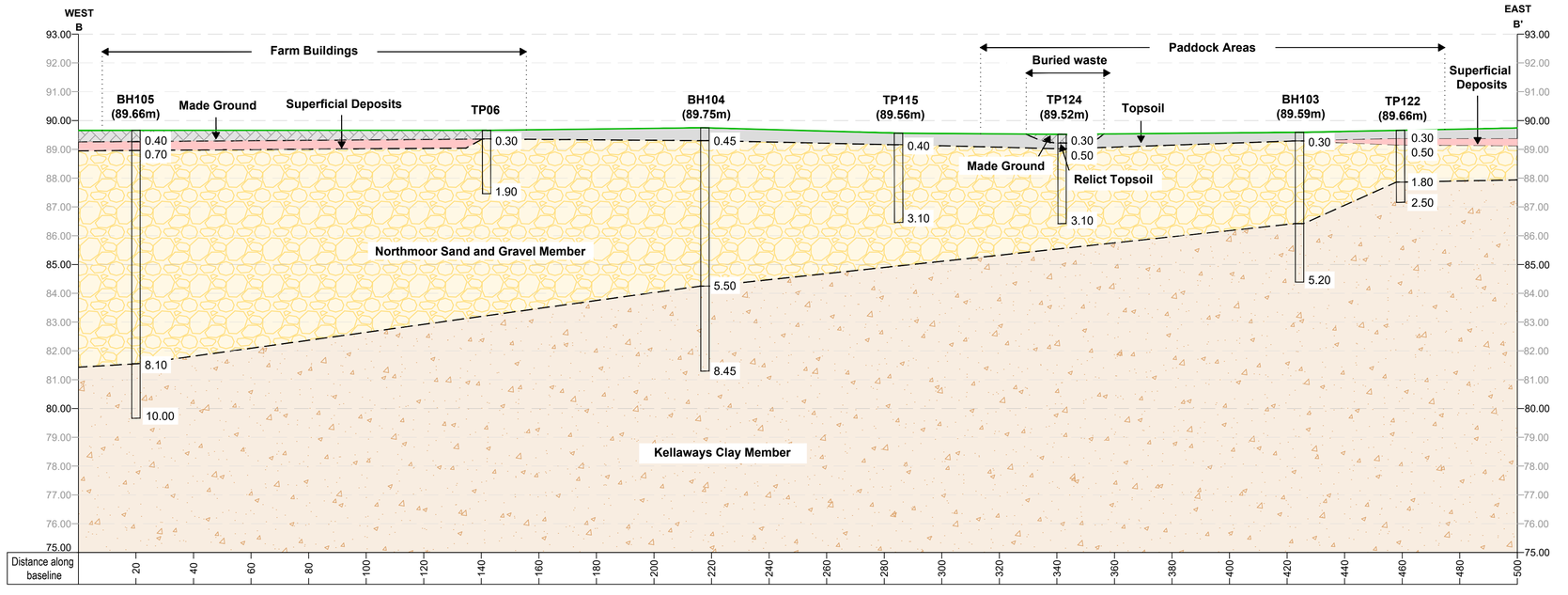
BHi Borehole 2018



SECTION A - A'
HORIZONTAL SCALE 1:1000
VERTICAL SCALE 1:100



SECTION B - B'
HORIZONTAL SCALE 1:1000
VERTICAL SCALE 1:100



KEY

- Existing ground profile
- Conjectural geological boundary
- Topsoil
- Made Ground
- Superficial Deposits
- Northmoor Sand and Gravel Member
- Kellaways Clay Member

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.

REV.	REVISION NOTES/COMMENTS					
	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE
P1	FIRST ISSUE					
	EP	14/09/23	AT	14/09/23	RSw	14/09/23

Hydrock
Over Court Barns
Over Lane
Almondsbury, Bristol BS32 4DF
TEL: 01454 619 533
FAX: 01454 614 125
E-Mail: bristol@hydrock.com
or visit www.hydrock.com

CLIENT: BEWLEY HOMES

PROJECT: COTSWOLD COMMUNITY SCHOOL, ASHTON KEYNES

TITLE: CROSS SECTION A-A' & B-B'

HYDROCK PROJECT NO.: C-28470-C

SCALE @ A1: AS SHOWN

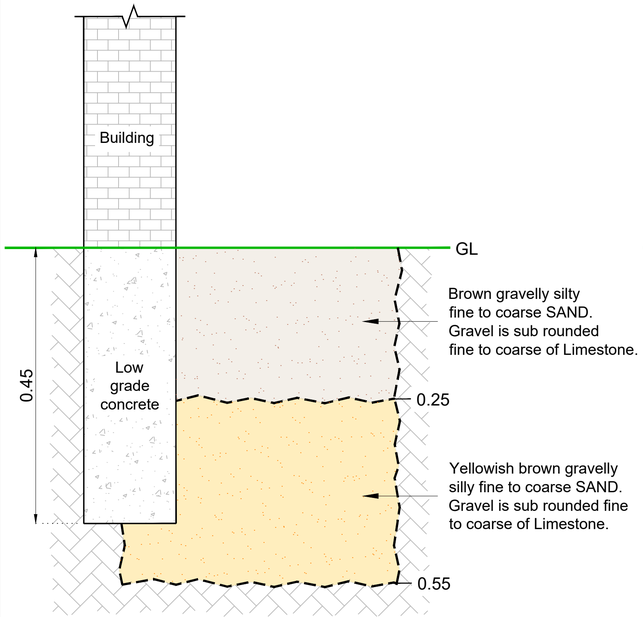
PURPOSE OF ISSUE: SUITABLE FOR INFORMATION

STATUS: S2

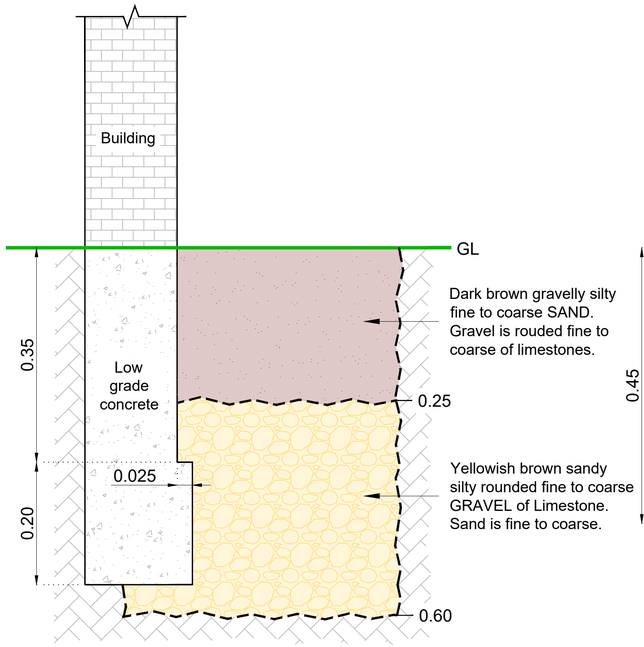
DRAWING NO. (PROJECT CODE-ORIGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER): 28470-HYD-XX-XX-DR-GE-1005

REVISION: P1

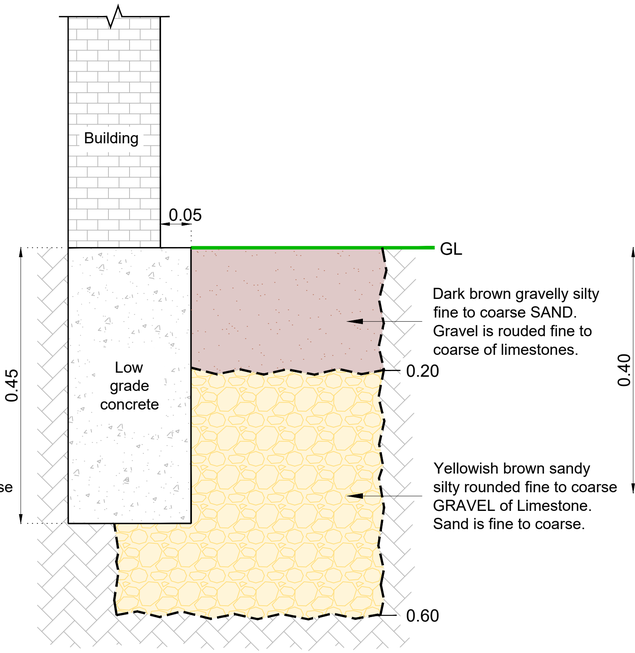
FOUNDATION SKETCH HP109



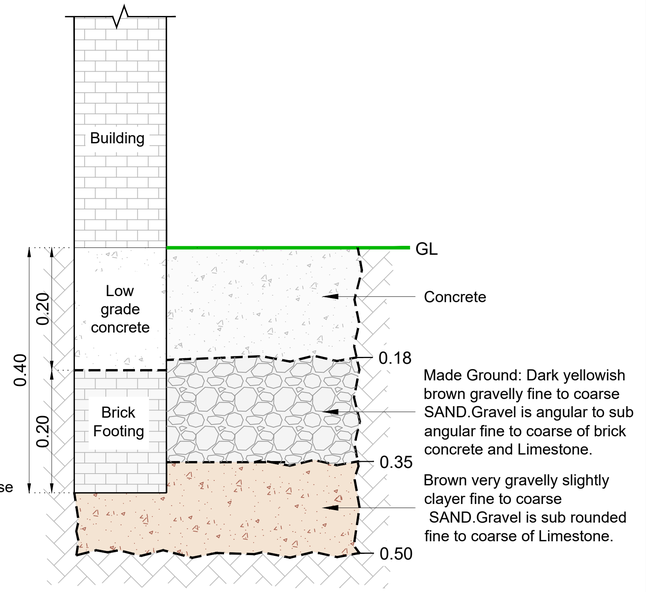
FOUNDATION SKETCH HP108



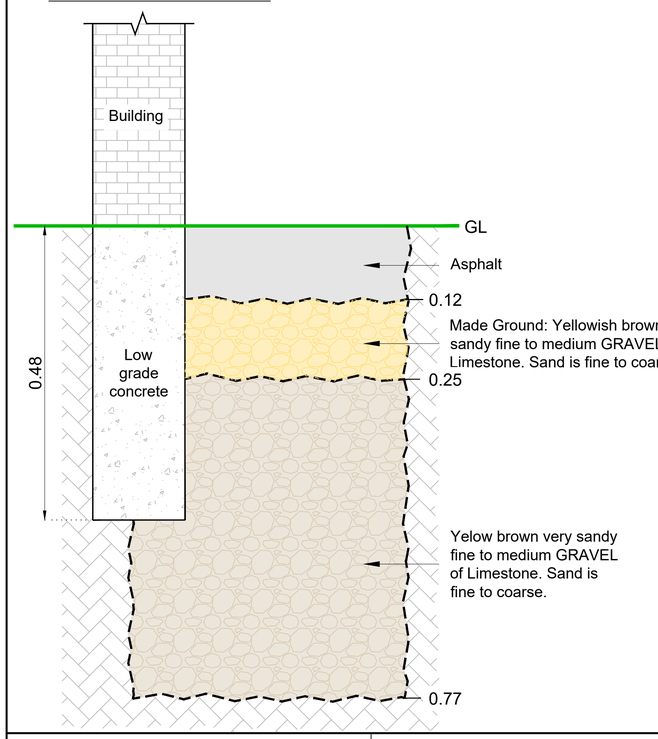
FOUNDATION SKETCH HP107



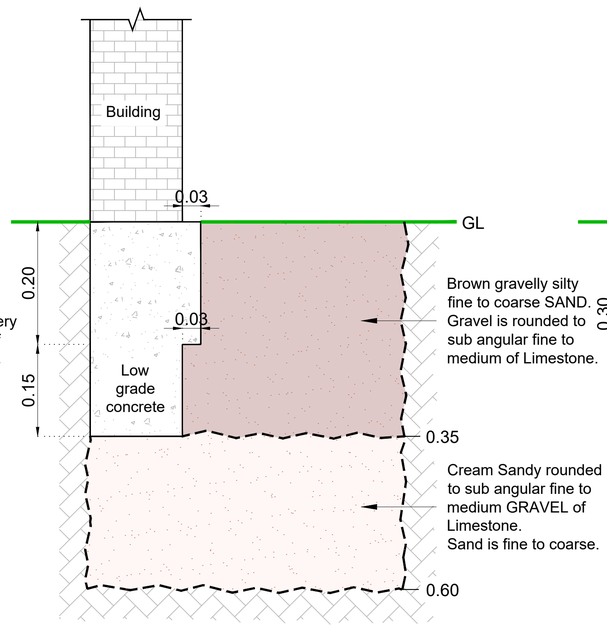
FOUNDATION SKETCH HP106



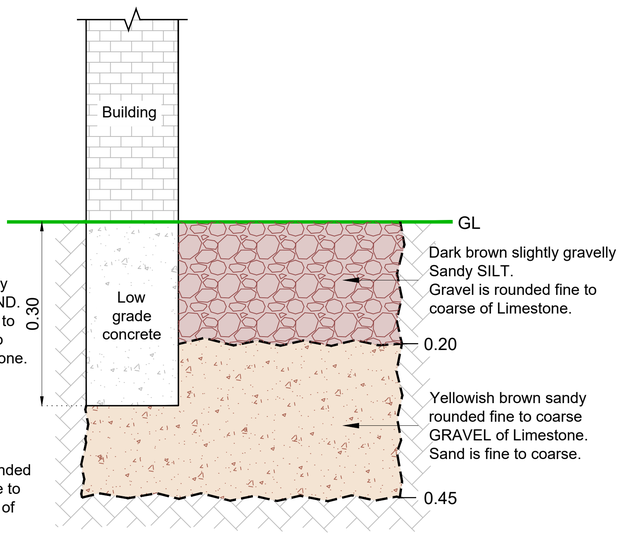
FOUNDATION SKETCH HP105



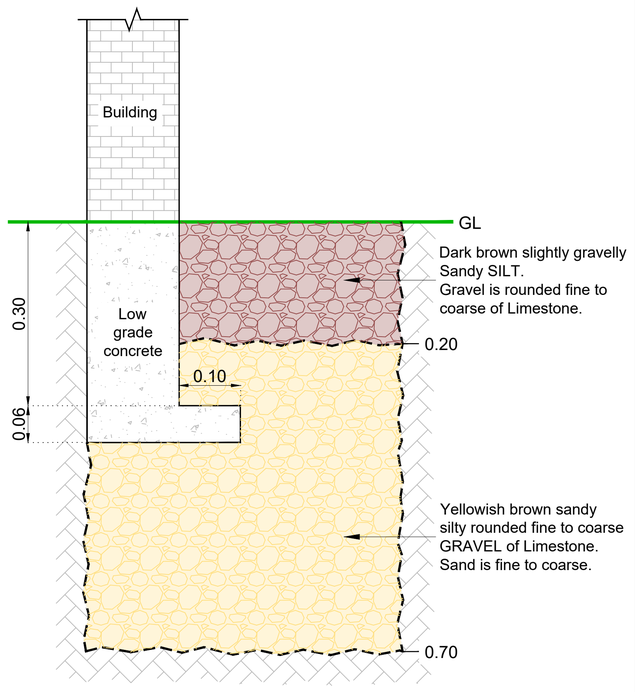
FOUNDATION SKETCH HP104



FOUNDATION SKETCH HP103



FOUNDATION SKETCH HP102



KEY

- Existing ground profile
- Conjectural geological boundary
- Building
- Low grade concrete

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: xxxxxxx

REV.	REVISION NOTES/COMMENTS	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE
P1	FIRST ISSUE	EP	19/09/23	RSw	19/09/23	RSw	19/09/23

Hydrock
Over Court Barns
Over Lane
Almondsbury, Bristol BS32 4DF
TEL: 01454 619 533
FAX: 01454 614 125
E-Mail: bristol@hydrock.com
or visit www.hydrock.com

CLIENT: BEWLEY HOMES

PROJECT: COTSWOLD COMMUNITY SCHOOL, ASHTON KEYNES

TITLE: FOUNDATION SKETCHES HP102, HP103, HP104, HP105, HP106 HP107,HP108 & HP109

HYDROCK PROJECT NO.	SCALE @ A1
C-28470-C	1:5

PURPOSE OF ISSUE	STATUS
SUITABLE FOR INFORMATION	S2

DRAWING NO. (PROJECT CODE-ORGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER)	REVISION
28470-HYD-XX-XX-DR-GE-1006	P1

OS NORTH

Track

Drain

Burial Ground

PLOTS 19-43
0.60m - 0.80m

PLOTS 44 - 52
0.70m - 1.10m

PLOTS 61- 75
0.50m - 1.00m

PLOTS 13-18
0.60m - 0.80m

PROPOSED RETAINING WALL TO PROTECT AGAINST ROOT PROTECTION

AREA IN ABEYANCE

PLOTS 1-12
0.65m - 1.00m

PROPOSED RETAINING WALL DUE TO PROXIMITY TO SITE BOUNDARY

EXISTING TREES/HEDGELINE HAS BEEN REMOVED

PLOTS 1-12
0.65m - 1.00m

Drain

KEY

- Wider Site Boundary
- Zone 1
- Zone 2
- Zone 3
- Zone 4

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.

REV.	REVISION NOTES/COMMENTS	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE
P1	FIRST ISSUE	EP	19/09/23	AT	19/09/23	AT	19/09/23

Hydrock
Over Court Barns
Over Lane
Almondsbury, Bristol BS32 4DF
TEL: 01454 619 533
FAX: 01454 614 125
E-Mail: bristol@hydrock.com
or visit www.hydrock.com

CLIENT

BEWLEY HOMES

PROJECT

COTSWOLD COMMUNITY SCHOOL,
ASHTON KEYNES

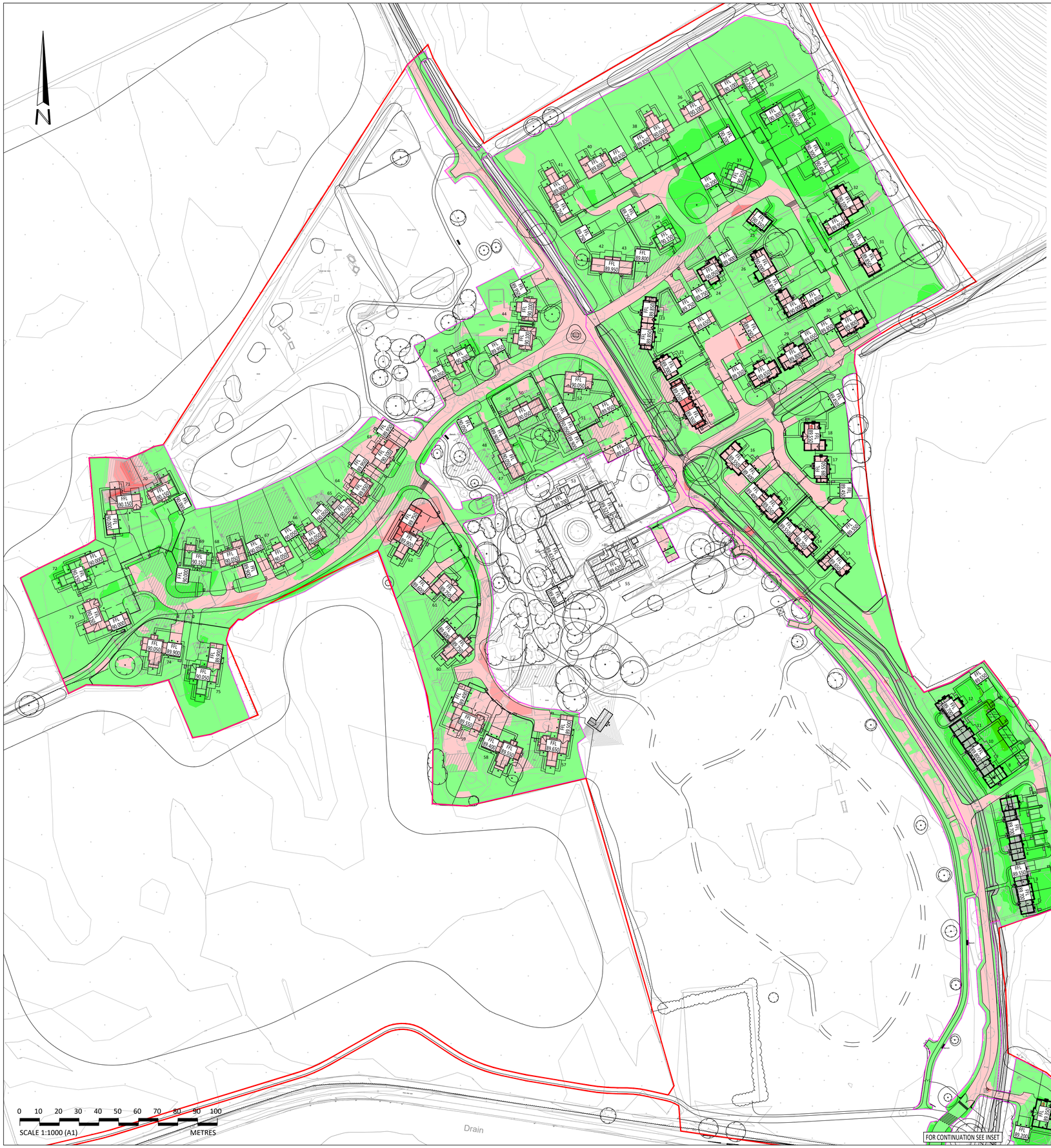
TITLE

FOUNDATION DEPTH ZONATION PLAN

HYDROCK PROJECT NO.	SCALE @ A1
C-28470-C	1:1000

PURPOSE OF ISSUE	STATUS
SUITABLE FOR INFORMATION	S2

DRAWING NO. (PROJECT CODE-ORGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER)	REVISION
28470-HYD-XX-XX-DR-GE-1007	P1



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

clarkebond
MULTIDISCIPLINARY ENGINEERING CONSULTANTS
The Cocoa House
129 Cumberland Road
Bristol BS1 6UY
tel +44 (0) 117 929 2244
e-mail bristol@clarkebond.com
web www.clarkebond.com
Bristol Exeter London Darlington

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

© This drawing may not be copied without prior written permission.



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

clarkebond
MULTIDISCIPLINARY ENGINEERING CONSULTANTS
The Cocoa House
129 Cumberland Road
Bristol BS1 6UY
tel +44 (0) 117 929 2244
e-mail bristol@clarkebond.com
web www.clarkebond.com
Bristol Exeter London Darlington

Client: BEWLEY HOMES

Project: ASHTON KEYNES

Drawing Title: ENGINEERING LAYOUT

OVERVIEW

Purpose of Issue: TENDER

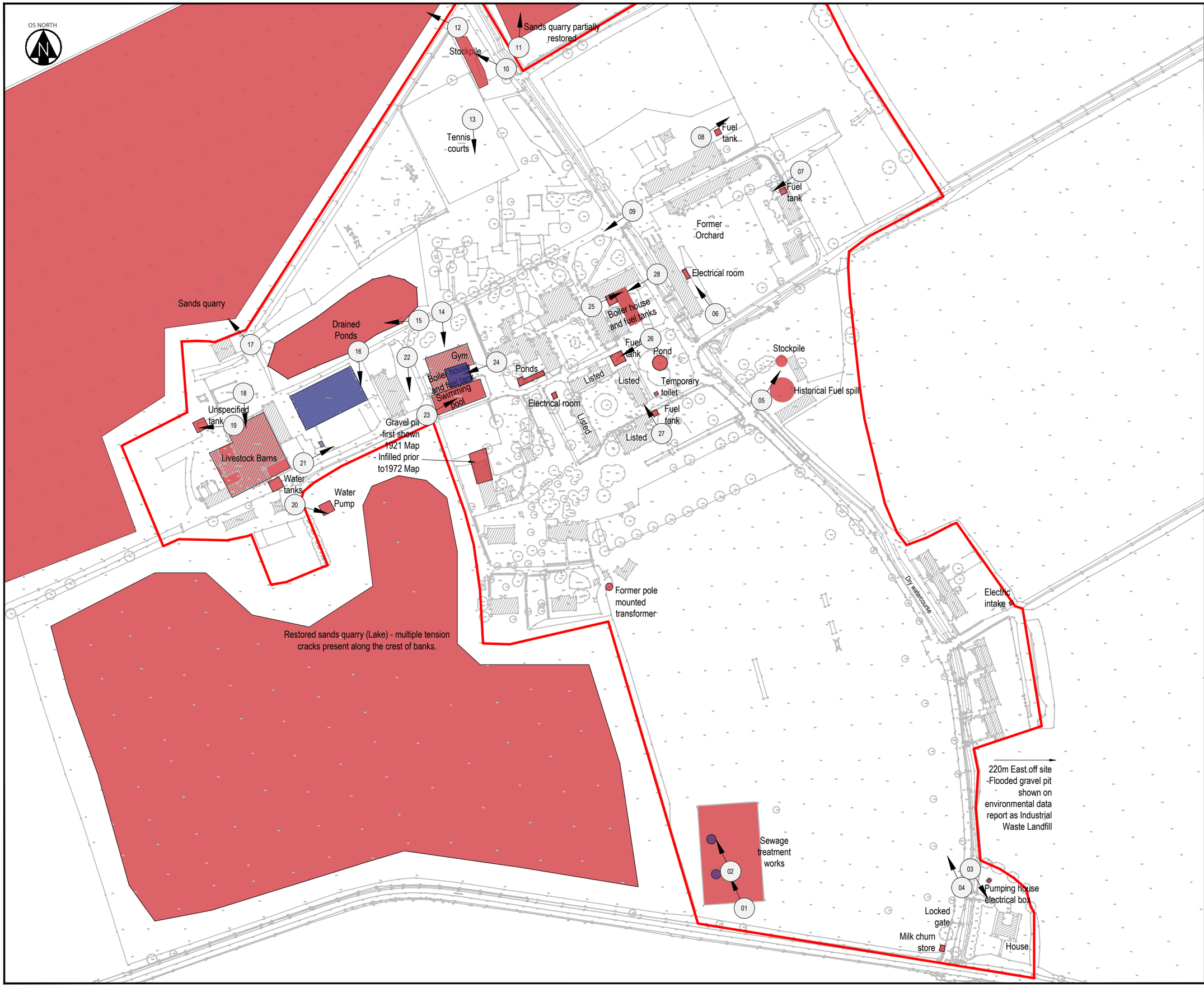
ClarkeBond Project No.	Status
B06163	S2

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

© This drawing may not be copied without prior written permission.



KEY

01 Photo location and reference

Notable site feature

Asbetos Containing Materials Present

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					
	SW	23/03/23	AJ	27/03/23	AJ	27/03/23
REV.	REVISION NOTES/COMMENTS					
	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE

Hydrock
Over Court Barns
Over Lane
Almondsbury, Bristol BS32 4DF
TEL: 01454 619 533
FAX: 01454 614 125
E-Mail: bristol@hydrock.com
or visit www.hydrock.com

CLIENT
BEWLEY HOMES

PROJECT
COTSWOLD COMMUNITY SCHOOL, ASHTON KEYNES

TITLE
SITE WALKOVER 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-1002	P1

Appendix B Historical Reports

Site Conditions Report for Bewley Homes

Project name	Cotswold Community School, Ashton Keynes		
Title	Site Conditions Report		
Document reference	9616-HYD-XX-XX-GE-TN-001		
Author	Scott Williams		
Revision	S2/P01		
Date	27 March 2023	Approved	✓

1. Introduction

In March 2023, Hydrock Consultants Limited (Hydrock) was commissioned by Bewley Homes (the Client) to undertake a site conditions report, comprising a walkover and review of previous data at the former Cotswold Community School, Ashton Keynes. The reasoning for this is to allow for an updated and longer term of warranty (12 years) and an increase in insurance value (£5m Professional Indemnity) for the report Hydrock undertook in 2018, undertaken for Acorn Property Group.

Previously the proposed development was to comprise 75 new dwellings including replacement of 27 existing dwellings and conversion of a listed building as well as associated infrastructure.

The works have been undertaken in accordance with Hydrock's proposal referenced (Email, dated 21 Mach 2023) and the Client's instructions to proceed (by email from Andrew Driscoll, dated 21 Mach 2023).

Site Description

The site covers approximately 16 ha and currently comprises a number of former school buildings, some of which are understood to be listed, including a gymnasium and swimming pool facility. A number of the buildings are currently used for agricultural purposes.

The site setting is typically rural, with vegetation present on and around the site and the surrounding land predominantly comprising agricultural/pastoral fields and sand extraction quarries. There is a private road network around the site. Since the 2018 investigation significant quarrying has been and is currently being undertaken around the site boundaries. This has resulted in significant open cast quarry's and remediated quarry's now forming lakes.

Sources of information

- Hydrock - Desk Study and Preliminary Ground Investigation Report - July 2018. Ref: CCS-HYD-XX-GI-RP-G-1001.P1, dated 26 July 2018.

2. Hydrock 2018 Desk Study and Preliminary Ground Investigation Report

Hydrock undertook a Desk Study and Preliminary Ground Investigation in 2018 for Acorn Property Group. The pertinent findings of which are summarised below, with some commentary added as part of this review, the Hydrock 2018 Report (Ref: CCS-HYD-XX-GI-RP-G-1001.P1, dated 26 July 2018) should be read in conjunction with this site conditions update.

It is important to note the limitations of this investigation - "This was a targeted investigation, predominantly designed to assess contamination risk from currently identified sources of contamination, to assess groundwater levels at the time of the works and to give an understanding of the natural soil conditions." This was undertaken at the request of the client.

It should be anticipated that a level of risk is to be associated with the limited scope of works requested by the client and that there is potential for variations in ground conditions and the potential for further contamination to be present on site.

2.1 Summary of Desk Study

Site History

Historically the site has been home to farm buildings and agricultural fields. Further development took place between the 1940s and 1960s when the site was converted to a school. An historical small gravel pit was present on site, although this has been backfilled.

The change of site usage and name is understood to have taken place in the early 1940s with the opening of the 'Cotswold Approved School for Intermediate Boys', accommodating up to approximately 140 students. The school closed in 2011.

There is anecdotal evidence that there had been a hydrocarbon leak to the east of the access lane.

Anticipated 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.

Hydrogeology and Hydrology

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 site is partially in Flood Zone 3.

Mining and Mineral Extraction

The surrounding area is known to have been used for sand and gravel extraction. Many of these sand and gravel pits are now filled with water and are used as recreational lakes and ponds. It is important to note that the majority of the local gravel extraction pits surrounding the site are not believed to have been backfilled with solid waste but have flooded to form lakes.

Waste Management

There are two records of potentially infilled ground on the site, one is the infilled gravel pit and the other is the pond in the north western part of the site.

It should be noted that although there are landfill licenses for the North End West/Lake 62 sites it does not seem to have been completely landfilled because this area appears to be a lake used for triathlon training according to google earth satellite imagery and internet searches. It is feasible that landfill licenses were obtained and never used or the area was partially landfilled and then flooded to form the lake. This discrepancy in the data requires clarification and further enquiries to try to find out the extent of any landfilling which took place.

Unexploded Ordnance

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

2.2 Summary of The Ground Investigation

The investigation comprised:

- 1 cable percussive borehole to 10.45m bgl;
- 6 trial pits to a maximum depth of 2.0m bgl;
- chemical testing of soils and water and geotechnical testing of soils;
- two months of continuous groundwater monitoring; and
- A number of the exploratory holes were located to target an historical hydrocarbon spill, oil tanks within the built-up area of the site and the boiler house associated with the leisure centre and swimming pool.

Ground Conditions

- Topsoil – to between 0.2m and 0.5m below ground level (bgl), comprising dark brown gravelly clay. Gravel sub-angular to sub-rounded fine to medium of limestone.
- Made Ground – to between 0.35 and 0.7m bgl (maximum proven), comprising soft brown and grey clay with frequent medium to coarse gravel and fragments of brick and concrete fragments and occasional brick and concrete cobbles.; over
- Shallow Cohesive Materials – to between 0.6m and 0.8m bgl, comprising soft brown sandy gravelly clay. Gravel sub-angular to sub-rounded fine to medium of limestone.
- Northmoor Sand and Gravel Member – to a maximum proven depth of 5.5mbgl, comprising medium dense [inferred] creamy brown sandy sub-angular to sub-rounded fine to coarse gravel of limestone. Sand is medium to coarse; over
- Kellaways Clay Member – to a maximum proven depth of 10.45mbgl, stiff blue grey slightly sandy clay with occasional fossil shell fragments.

Groundwater

Groundwater was encountered at between 1.7mbgl and 2.0mbgl within the Northmoor Sands and Gravels during the investigation. Water levels recorded post-fieldwork range from 1.8mbgl to 2.2mbgl.

2.3 Geotechnical Recommendations

Obstructions

There is existing development on the site comprising a number of buildings historically relating to the sites former farm and school usage. Obstructions associated with this development, including foundations, floor slabs and services, should be anticipated.

Groundworks and Earthworks

Excavation of shallow soils should be readily achievable with standard excavation plant. Excavations above the ground water level are likely to be stable.

Water seepages into excavations are unlikely to be adequately controlled by sump pumping and alternative methods of dewatering are likely to be required.

Excavated soils should be re-useable as follows:

- Made Ground – re-useable as landscaping material only;
- Northmoor Sand and Gravel Member – re-useable as General Fill; and
- Kellaways Clay Member – re-useable as General Fill.

Foundations

Strip/trench fill foundations in the Northmoor Sand and Gravel Member at a minimum depth of 0.75mbgl and extending at least 300mm into the granular material dependent upon foundation depths being above seasonal groundwater levels.

Allowable net bearing pressure of 150kN/m^2 should be available, keeping total and differential settlement within acceptable limits. Alternatively, a piled foundation solution will may be required.

Floor Slabs

Suspended because of depth of Made Ground (where present).

Roads and Pavements

CBR values: <2% on natural fine soils, 5% on natural coarse soils.

Concrete Classification

Design Sulfate Class - DS-1 and ACEC Class AC-1 for the Made Ground, shallow cohesive soils and Northmoor Sands and Gravels. Additional testing on the Kellaways Clay will be required if a piled foundation solution is proposed.

Waste Classification

HazWaste Online assessment categorizes materials as 'Non-Hazardous'.

2.4 Geo-Environmental Recommendations

Human health

Slightly elevated concentrations of benzo(a)pyrene. However, not considered an unacceptable risk (subject to regulatory approval).

Plant growth

Minor boron exceedance. Not considered an unacceptable risk.

Radon

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.

Water supply pipes

Brownfield site and the presumption in the guidance is that barrier pipe will be used. However, the investigation and assessment has indicated no significant Contaminants of Concern and as such standard pipework may be suitable for the site following negotiations with the supply company.

However, for site planning purposes and budgeting it is recommended that barrier pipe provision is assumed pending liaison with the supply company.

Gas protection

CS1 assumed at the time of writing. May need to be revised subject to confirmation of existence of landfill within 250m to east of the site and subsequent gas monitoring indicates the presence of gas.

Remediation

No remedial measures are considered necessary at the site based on the current works that have been undertaken. Further assessment will be required to fully assess the site.

2.5 Uncertainties and Limitations

Acorn Property Group stipulated that the preliminary ground investigation carried out was to target potential sources of contamination and indication of groundwater level.

It should be noted that although there are landfill licenses for the North End West/Lake 62 sites it does not appear to have been completely landfilled because this area appears to be a lake. It is feasible that landfill licenses were obtained and never used or the area was partially landfilled and then flooded to form the lake. This discrepancy in the data requires clarification and further enquiries to try to find out the extent of any landfill. If this cannot be clarified it is advised that gas monitoring is undertaken within the existing borehole on site to get an initial indication as to whether there is any ground gas present.

The report states that groundwater level logger monitoring is incomplete, however this was subsequently completed with a groundwater level of 1.8 to 2.2m bgl. It is important to note that the groundwater monitoring is taking place during the summer and there has been a low level of rainfall. Groundwater levels fluctuate and therefore it should be noted that monitoring may not record worst-case groundwater data.

The footprints of the existing buildings have not been investigated.

The suspected asbestos roofed burnt barn has not been investigated.

Overgrown areas of the site were not able to be accessed due to ecological risks (bird nesting season).

2.6 Recommendations for further work

- Further investigation into the suspected burnt asbestos roofed barn in the west of the site in conjunction with a pre-demolition asbestos survey;
- Investigation of infilled gravel pit onsite.
- Discussions with service providers regarding the materials suitable for pipework;
- Post demolition ground investigation to fully characterise the site;
- Detailed design of foundations;
- Gas monitoring if extent of landfilling cannot be established.
- Ground conditions across large areas of the site will require investigation due to the potential for variable ground and conditions and further potential sources of contamination.

3. Hydrock 2023 Walkover

On the 23 March 2023 Hydrock undertook a walkover of the site in order to observe any changes to site conditions and inform the client of any new potential risks to the proposed development.

During the walkover all of the existing points of interest were checked and several new points where noted. This is summarised on the Site Walkover Plan (Ref: 09612-HYD-XX-XX-DR-GE-1000, dated 27 March 2023). A summary of pertinent photographs and included in this report.

The landfills noted 210m to the east of site are at present is still a lake, historical landfilling records detail that there was waste deposited in to the landfill in 1992.

Geo-Environmental Considerations

- Previously unknown fuel tanks (three).
- Previously unknown boiler house.
- Extensive use of asbestos containing materials in the agricultural buildings and sewage works.

Geotechnical Considerations

- Tension cracks along the remediated quarry (lake) to the south east of site.

3.1 Recommendations For Further Works

- Pre-demolition asbestos survey for all structures noted to contain asbestos containing materials;
- Cataloguing and removal of asbestos debris/lagging/cement from site;
- Removal and verification of the numerous fuel tanks present on site;
- Further ground investigation including (but not limited to);
  - Investigate the suspected burnt asbestos roofed barn in the west of the site (whilst this no longer seems to be present the area should still be considered for investigation);
  - Investigate areas that are currently inaccessible, post demolition;
  - Investigate the potential for variable ground and conditions;
  - Install ground gas monitoring wells;
  - Potential, and not currently investigated, sources of contamination; and
  - Investigation of infilled gravel pit onsite.
- Detailed design of foundations;
- Consideration of tension cracks and ground instability from the remediated quarry to the south west and any potential future instability from the quarries to the north west/north;
- Extensive gas monitoring if extent of landfilling to the east cannot be established; and
- Discussions with service providers regarding the materials suitable for pipework.

Enclosed

Desk Study Photograph 1	
Date: 23/03/2023	
Direction Photograph Taken: North west.	
Description: Sewage works.	

Desk Study Photograph 2	
Date: 23/03/2023	
Direction Photograph Taken: North west.	
Description: Sewage works potential asbestos.	

Desk Study Photograph 3	
Date: 23/03/2023	
Direction Photograph Taken: South east.	
Description: Pumping house electrical box.	

Desk Study Photograph 4	
Date: 23/03/2023	
Direction Photograph Taken: North west.	
Description: Southern field area.	

Desk Study Photograph 5	
Date: 23/03/2023	
Direction Photograph Taken: North east.	
Description: Historical fuel spill area and new stockpile.	

Desk Study Photograph 6	
Date: 23/03/2023	
Direction Photograph Taken: North west.	
Description: Electrical room and former orchard.	

Desk Study Photograph 7	
Date: 23/03/2023	
Direction Photograph Taken: South west.	
Description: Fuel tank.	

Desk Study Photograph 8	
Date: 23/03/2023	
Direction Photograph Taken: South west.	
Description: Fuel tank.	

Desk Study Photograph 9	
Date: 23/03/2023	
Direction Photograph Taken: South west.	
Description: General site.	

Desk Study Photograph 10	
Date: 23/03/2023	
Direction Photograph Taken: North.	
Description: Stockpile	

Desk Study Photograph 11	
Date: 23/03/2023	
Direction Photograph Taken: North east.	
Description: Quarrying activities.	

Desk Study Photograph 12	
Date: 23/03/2023	
Direction Photograph Taken: North west.	
Description: Quarrying activities.	

Desk Study Photograph 13	
Date: 23/03/2023	
Direction Photograph Taken: South west.	
Description: Tennis courts.	

Desk Study Photograph 14	
Date: 23/03/2023	
Direction Photograph Taken: South.	
Description: Gym.	

Desk Study Photograph 15	
Date: 23/03/2023	
Direction Photograph Taken: West.	
Description: Empty ponds.	

Desk Study Photograph 16	
Date: 23/03/2023	
Direction Photograph Taken: South west.	
Description: Agricultural buildings.	

Desk Study Photograph 17	
Date: 23/03/2023	
Direction Photograph Taken: North west.	
Description: Quarrying activities.	

Desk Study Photograph 18	
Date: 23/03/2023	
Direction Photograph Taken: South.	
Description: Livestock barns.	

Desk Study Photograph 19	
Date: 23/03/2023	
Direction Photograph Taken: West.	
Description: Unspecified tank on a trailer.	

Desk Study Photograph 20	
Date: 23/03/2023	
Direction Photograph Taken: South east.	
Description: Water pump, tension cracks visible in crest in back ground.	

Desk Study Photograph 21	
Date: 23/03/2023	
Direction Photograph Taken: North east.	
Description: Asbestos warning.	

Desk Study Photograph 22	
Date: 23/03/2023	
Direction Photograph Taken: South west.	
Description: Asbestos warning.	

Desk Study Photograph 23	
Date: 23/03/2023	
Direction Photograph Taken: North east.	
Description: Swimming pool.	

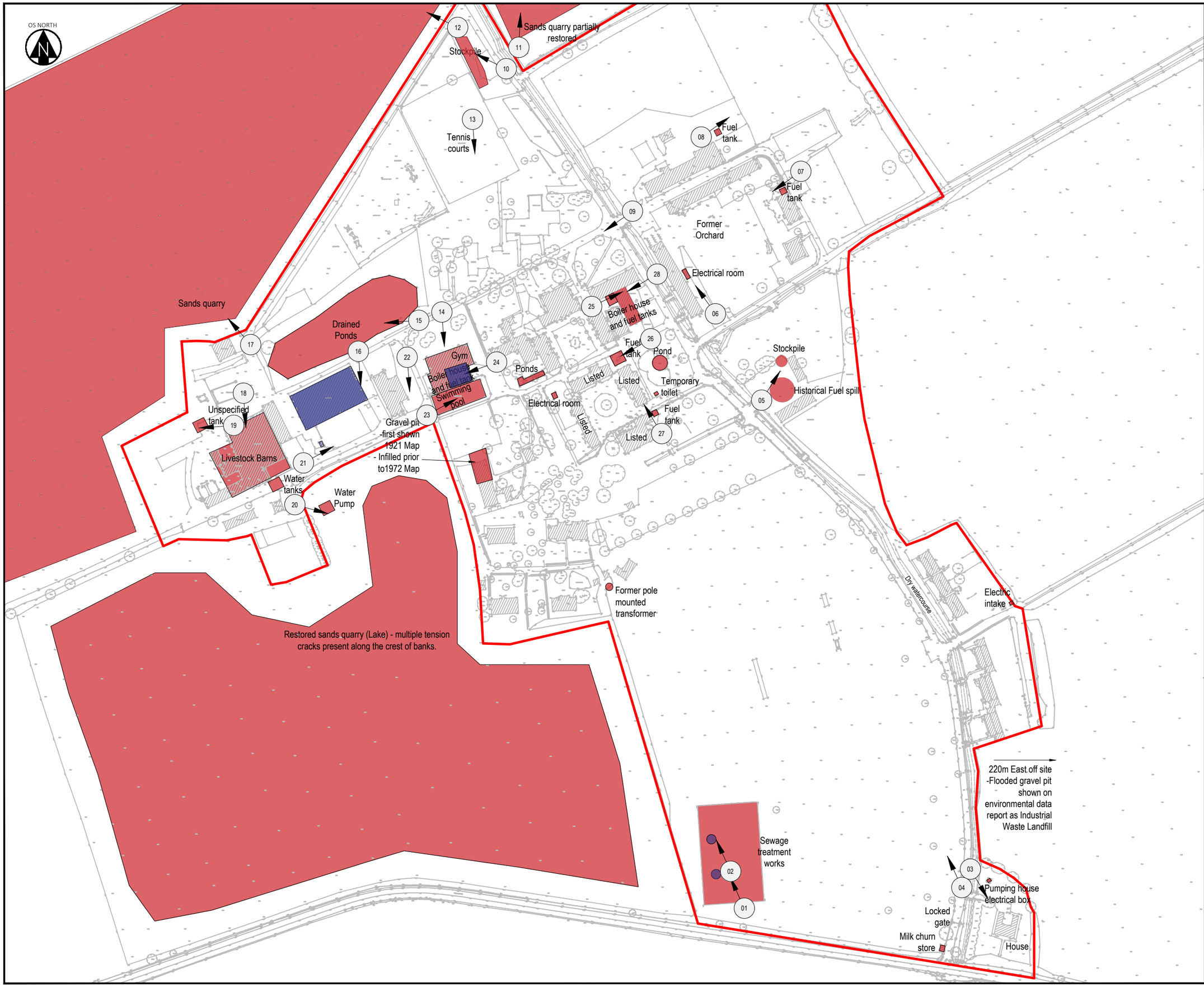
Desk Study Photograph 24	
Date: 23/03/2023	
Direction Photograph Taken: West.	
Description: Fuel tank for boiler house.	

Desk Study Photograph 25	
Date: 23/03/2023	
Direction Photograph Taken: North east.	
Description: Fuel tank for boiler house. (Hydrocarbon odours noted).	

Desk Study Photograph 26	
Date: 23/03/2023	
Direction Photograph Taken: South west.	
Description: Fuel tank.	

Desk Study Photograph 27	
Date: 23/03/2023	
Direction Photograph Taken: South west.	
Description: Fuel tank.	

Desk Study Photograph 28	
Date: 23/03/2023	
Direction Photograph Taken: South west.	
Description: Boiler house.	



KEY

01 Photo location and reference

Notable site feature

Asbetos Containing Materials Present

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					
	SW	23/03/23	AJ	27/03/23	AJ	27/03/23
REV.	REVISION NOTES/COMMENTS					
	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE

Hydrock
Over Court Barns
Over Lane
Almondsbury, Bristol BS32 4DF
TEL: 01454 619 533
FAX: 01454 614 125
E-Mail: bristol@hydrock.com
or visit www.hydrock.com

CLIENT
BEWLEY HOMES

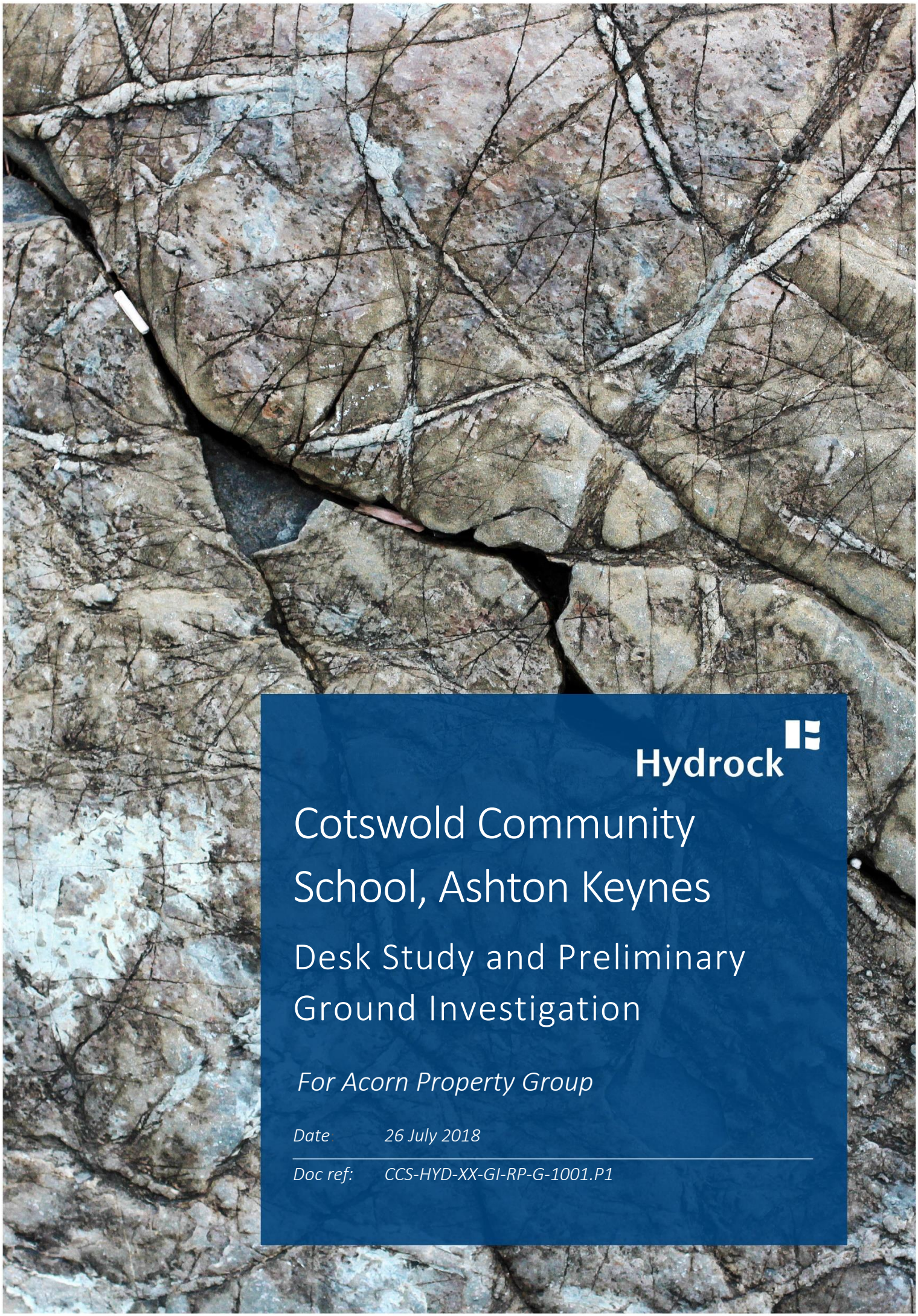
PROJECT
COTSWOLD COMMUNITY SCHOOL, ASHTON KEYNES

TITLE
SITE WALKOVER 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-1002	P1



Hydrock

Cotswold Community School, Ashton Keynes

Desk Study and Preliminary Ground Investigation

For Acorn Property Group

Date *26 July 2018*

Doc ref: *CCS-HYD-XX-GI-RP-G-1001.P1*

DOCUMENT CONTROL SHEET

Issued by	Hydrock Consultants Limited Over Court Barns Over Lane Almondsbury Bristol BS32 4DF	Tel: 01454 619533 Fax: 01454 614125 www.hydrock.com
Client	Acorn Property Group	
Project name	Cotswold Community School, Ashton Keynes	
Title	Desk Study and Preliminary Ground Investigation	
Doc ref	CCS-HYD-XX-GI-RP-G-1001.P1	
Project no.	C-09612-C	
Status	Final	
Date	26/07/2018	

Document Production Record		
Issue Number	P1	Name
Prepared by		Shay Marriott BSc FGS
Checked by		Karen Southern BSc MSc FGS
Approved by		Joanna Fortune BSc PhD FGS

Document Revision Record			
Issue Number	Status	Date	Revision Details
1	Final	26/07/18	First Issue

Hydrock Consultants Limited has prepared this report in accordance with the instructions of the above named client for their sole and specific use. Any third parties who may use the information contained herein do so at their own risk.

CONTENTS

EXECUTIVE SUMMARY AND CONCEPTUAL SITE MODEL 1
1. INTRODUCTIONTERMS OF REFERENCE 4
2. PRELIMINARY INVESTIGATION (PHASE 1 STUDY) 6
3. PRELIMINARY CONCEPTUAL SITE MODEL 13
4. GROUND INVESTIGATION 17
5. GROUND INVESTIGATION RECORDS AND DATA 20
6. GEO-ENVIRONMENTAL ASSESSMENT 25
7. GEO-ENVIRONMENTAL CONCLUSIONS AND RECOMMENDATIONS 30
8. GEOTECHNICAL ASSESSMENT 33
9. UNCERTAINTIES AND LIMITATIONS 37
10. RECOMMENDATIONS FOR FURTHER WORK 39
11. REFERENCES 40

Tables

Table 2.1: Site Referencing Information 6
Table 2.2: Site Description 6
Table 2.3: Key Features from Historical Mapping 7
Table 2.4: Geology 9
Table 2.5: Hydraulic Characteristics of Strata 9
Table 2.6: Groundwater Body 10
Table 2.7: Surface Water Features 10
Table 2.8: Waste Management Sites 11
Table 2.9: Natural Soil Chemistry (mg/kg) 12
Table 4.1: Investigation Rationale 17
Table 4.2: Summary of Site Works 18
Table 4.3: Summary of Sample Numbers for Geo-environmental Analyses of Soils or Other Solids 19
Table 4.4: Summary of Sample Numbers for Geo-environmental Analyses of Waters 19
Table 4.5: Summary of Sample Numbers for Geotechnical Tests 19
Table 5.1: Strata Encountered 20
Table 5.2: Soil Strength Results and Derived Values 22
Table 5.3: Obstructions Encountered During Hydrock Investigations 22
Table 5.4: CBR Results 22
Table 5.5: Aggressive Chemical Environment Concrete Classification 22
Table 5.6: Groundwater Data 23
Table 6.1: Summary of Water Quality Risk Assessment Protocol 28
Table 6.2: Chemicals of Potential Concern for Which Further Assessment is Required (Controlled Waters) 28

Appendices

Appendix A - Drawings

Appendix B - Site Walkover Photographs

Appendix C - Historical Ordinance Survey Maps

Appendix D - Desk Study Research Information

Appendix E - Ground Investigation Plan, Exploratory Hole Logs and Photographs

Appendix F - Geotechnical Test Results and SPT Depth Plots

Appendix G - Site Monitoring Data

Appendix H - Hydrock Methodolody

Appendix I - Contamination Test Results and Statistical Analysis

Appendix J - Waste Classification

EXECUTIVE SUMMARY AND CONCEPTUAL SITE MODEL

SITE INFORMATION AND SETTING	
Report Purpose	Phase 1 and 2 desk study, preliminary ground investigation and risk assessment.
Client	Acorn Property Group.
Site Name and Location	Cotswold Community School, Ashton Keynes.
Proposed Development	The proposed development is to comprise 75 new dwellings including replacement of 27 existing dwellings and conversion of a listed building as well associated infrastructure.
PHASE 1 (DESK STUDY + WALKOVER)	
Current land Use and Description	The 16ha site is currently derelict and overgrown. A number of buildings and former school facilities are present.
Site History	Historically the site has been home to farm buildings and agricultural fields. Further development took place between the 1940s and 1960s when the site was converted to a school.
Unexploded Ordnance	A non-specialist UXO assessment indicates low bomb risk. No further consideration of UXO is required.
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.
Mining and Mineral Extraction	The surrounding area is known to have been used for sand and gravel extraction. Many of these sand and gravel pits are now filled with water and are used as recreational lakes and ponds.
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).
Hydrology	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.
Flood Risk	The site is partially in Flood Zone 3.
PHASE 2 - GROUND INVESTIGATION	
Hydrock Site Works	The Hydrock ground investigation comprised: - 1 cable percussive borehole to 10.45m bgl; - 6 trial pits to a maximum depth of 2.0m bgl; - chemical testing of soils and water and geotechnical testing of soils; - two months of continuous groundwater monitoring. A number of the exploratory holes were located to target an historical hydrocarbon spill, oil tanks within the built-up area of the site and the boiler house associated with the leisure centre and swimming pool.
Ground Conditions Encountered (All Data)	Topsoil – to between 0.2m and 0.5m below ground level (bgl), comprising dark brown gravelly clay. Gravel sub-angular to sub-rounded fine to medium of limestone. Made Ground – to between 0.35 and 0.7m bgl (maximum proven), comprising soft brown and grey clay with frequent medium to coarse gravel and fragments of brick and concrete fragments and occasional brick and concrete cobbles.; over Shallow Cohesive Materials – to between 0.6m and 0.8m bgl, comprising soft brown sandy gravelly clay. Gravel sub-angular to sub-rounded fine to medium of limestone. Northmoor Sand and Gravel Member – to a maximum proven depth of 5.5mbgl, comprising medium dense [inferred] creamy brown sandy sub-angular to sub-rounded fine to coarse gravel of limestone. Sand is medium to coarse; over

	Kellaways Clay Member – to a maximum proven depth of 10.45mbgl, stiff blue grey slightly sandy clay with occasional fossil shell fragments.
Groundwater Encountered (All Data)	Groundwater was encountered at between 1.7mbgl and 2.0mbgl within the Northmoor Sands and Gravels during the investigation. Water levels recorded post-fieldwork range from 1.8mbgl to 2.2mbgl.
GEO-ENVIRONMENTAL ASSESSMENT AND CONCLUSIONS	
Conclusions of Contamination Generic Risk Assessment (All Data)	**Human health**: Slightly elevated concentrations of benzo(a)pyrene. However, not considered an unacceptable risk (subject to regulatory approval). **Plant growth:** Minor boron exceedance. Not considered an unacceptable risk. **Radon:** The site is not in a Radon Affected Area. **Water supply pipes:** Brownfield site and the presumption in the guidance is that barrier pipe will be used. However, the investigation and assessment has indicated no significant Contaminants of Concern and as such standard pipework may be suitable for the site following negotiations with the supply company. However, for site planning purposes and budgeting it is recommended that barrier pipe provision is assumed pending liaison with the supply company. **Gas protection**: CS1 assumed at present. May need to be revised subject to confirmation of existence of landfill within 250m to east of the site and subsequent gas monitoring indicates the presence of gas.
Proposed Mitigation Measures	No remedial measures are considered necessary at the site based on the current scope of works. Further assessment will be required to fully assess the site.
GEOTECHNICAL CONCLUSIONS	
Obstructions	There is existing development on the site comprising a number of buildings historically relating to the sites former farm and school usage. Obstructions associated with this development, including foundations, floor slabs and services, should be anticipated.
Groundworks and Earthworks	Excavation of shallow soils should be readily achievable with standard excavation plant. Excavations above the ground water level are likely to be stable. Water seepages into excavations are unlikely to be adequately controlled by sump pumping and alternative methods of dewatering are likely to be required. Excavated soils should be re-useable as follows: Made Ground – re-useable as landscaping material only; Northmoor Sand and Gravel Member – re-useable as General Fill; and Kellaways Clay Member – re-useable as General Fill.
Foundations	Strip/trench fill foundations in the Northmoor Sand and Gravel Member at a minimum depth of 0.75mbgl and extending at least 300mm into the granular material dependent upon foundation depths being above seasonal groundwater levels. Allowable net bearing pressure of 150kN/m^2 should be available, keeping total and differential settlement within acceptable limits. Alternatively, a piled foundation solution will be required.
Ground Floor Slabs	Suspended because of depth of Made Ground (where present).
Road Pavement Design (CBR)	<2% on natural fine soils. 5% on natural coarse soils.
Buried Concrete	Design Sulfate Class - DS-1 and ACEC Class AC-1 for the Made Ground, shallow cohesive soils and Northmoor Sands and Gravels. Additional testing on the Kellaways Clay will be required if a piled foundation solution is proposed.
Waste Management	HazWaste Online assessment categorizes materials as 'Non-Hazardous'.

FUTURE CONSIDERATIONS	
Uncertainties and Limitations	Acorn Property Group stipulated that the preliminary ground investigation carried out was to target potential sources of contamination and indication of groundwater level. It should be noted that although there are landfill licenses for the North End West/Lake 62 sites it does not appear to have been completely landfilled because this area appears to be a lake. It is feasible that landfill licenses were obtained and never used or the area was partially landfilled and then flooded to form the lake. This discrepancy in the data requires clarification and further enquiries to try to find out the extent of any landfill. If this cannot be clarified it is advised that gas monitoring is undertaken within the existing borehole on site to get an initial indication as to whether there is any gas present. The groundwater level logger monitoring is incomplete as monitoring is ongoing and the conclusions of this report will be updated following completion of the scheduled monitoring. Interim readings have been included to date in this report. It is important to note that the groundwater monitoring is taking place during the summer and there has been a low level of rainfall. Groundwater levels fluctuate and therefore it should be noted that monitoring may not record worst-case groundwater data. The footprints of the buildings have not been investigated as most buildings are still in use, preventing intrusive ground investigation. The suspected asbestos roofed burnt barn has not been investigated. Overgrown areas of the site were not able to be accessed due to ecological risks (bird nesting season).
Further Work	Further investigation into the suspected burnt asbestos roofed barn in the west of the site in conjunction with a pre-demolition asbestos survey; Investigation of infilled gravel pit onsite. Discussions with service providers regarding the materials suitable for pipework; Post demolition ground investigation to fully characterise the site; Detailed design of foundations; Gas monitoring if extent of landfilling cannot be established. Ground conditions across large areas of the site will require investigation due to the potential for variable ground and conditions and further potential sources of contamination.

This Executive Summary forms part of Hydrock Consultants Limited report ref. CCS-HYD-XX-GI-RP-G-1001.P1 and should not be used as a separate document.

1. INTRODUCTION

In June 2018, Hydrock Consultants Limited (Hydrock) was commissioned by Acorn Property Group to undertake a desk study and preliminary targeted ground investigation at the former Cotswold Community School in Ashton Keynes, Swindon.

The site covers approximately 16 ha and currently comprises a number of former school buildings, some of which are understood to be listed, including a gymnasium and swimming pool facility. A number of the buildings are believed to currently be used for agricultural purposes. The site setting is typically rural, with vegetation present on and around the site and the surrounding land predominantly comprising agricultural/pastoral fields. There is a private road network around the site.

The proposed development is to comprise 75 new dwellings including replacement of 27 existing dwellings and conversion of a listed building as well as associated infrastructure.

A site location plan (Drawing CCS-HYD-XX-GI-DR-G-1000-P1), a site survey plan and a proposed development layout (1000_642_153A_Site Plan Stitched Sections) are presented in Appendix A.

1.1 Objectives

The objectives of this preliminary investigation are to assess the ground and groundwater conditions to provide initial geotechnical design recommendations and to carry out a risk assessment of potential chemical contaminants to establish 'suitability for use' under the current planning regime.

This is a targeted investigation to assess risks from identified sources of contamination, investigate groundwater levels and provide initial information on the underlying geology at the site.

1.2 Scope

The scope of work for this commission comprises:

- a desk study and site walk-over reconnaissance to determine the nature of the site and its surroundings including current and former land uses, geology, hydrogeology, hydrology and geo-environmental data.
- a preliminary targeted ground investigation based on a site walkover including trial pitting, cable percussive boring, rotary drilling, groundwater monitoring and laboratory chemical and geotechnical testing; and
- reporting on findings of the desk study, ground investigation, geo-environmental assessment of the site conditions and geotechnical interpretation of the ground and groundwater conditions. The investigation targets identified sources of contamination including historical fuel spills, on-site sources of contamination and areas of potential Made Ground as well as deeper ground conditions and groundwater level in one location. It is important to note that large areas of the site lie outside of the scope of investigation and consequently the conclusions of this report will require confirmation through supplementary ground investigation and assessment prior to development.

See Appendix H for detailed reporting methodology.

1.3 Provided Information

A topographical survey (document reference T_MG0377) has been provided to Hydrock by Acorn Property Group for use in the preparation of this report. The exploratory hole location plan provided in Appendix E is derived from information from the provided topographical survey.

1.4 Approach

The work has been carried out in general accordance with recognised best practice as detailed in guidance documents such as the CLR 11 Model Procedures (Environment Agency 2004), the AGS (2006) Good Practice Guidelines for Site Investigations, BS 5930:2015 and BS 10175:2011+A1:2013. The technical details of the approach and the methodologies adopted are given in Appendix H.

A recognised phased approach has been followed, starting with a desk study and walk-over to produce a preliminary assessment of the site conditions and the important factors that require further investigation to reduce uncertainty.

Phase 2 comprises intrusive investigation work and testing. The factual data from Phases 1 and 2 are used to develop a conceptual site model (CSM). This comprises a ground model (of the physical conditions) and an exposure model (of the possible contaminant linkages). The CSM forms the basis for a number of risk assessments in accordance with current guidelines. Professional judgement is then used to evaluate the findings of the risk assessments and to provide recommendations for the project.

By convention, the geo-environmental and the geotechnical aspects are discussed in separate sections, but in instances where interaction is required to produce a holistic design, this is discussed at the end of the geotechnical recommendations section.

Remaining uncertainties and recommendations for further work are listed at the end of the report.

2. PRELIMINARY INVESTIGATION (PHASE 1 STUDY)

A number of desk study sources have been used to assemble the following information, including a proprietary environmental data report which has been obtained for the site (dated 1st June 2018) and is presented in Appendix D.

2.1 Site Referencing

The site is referenced in Table 2.1.

Table 2.1: Site Referencing Information

Item	Brief Description
Site name	Cotswold Community School.
Site location and grid reference	Off Spine Road West, Ashton Keynes, Swindon [postcode SN6 6QU]. The approximate National Grid Reference is 403470E, 195530N.

A site location plan is provided in Appendix A. (Drawing CCS-HYD-XX-GI-DR-G-1000- -P1).

2.2 Site Description and Walk-Over Survey

A walk-over survey was undertaken on 25th April 2018 to visually assess potential hazards and receptors. A site walkover plan is provided in Appendix A. A basic site description is presented in Table 2.2 and selected walk-over photographs are presented in Appendix B.

Table 2.2: Site Description

Item	Brief Description
Site access	Via Spine Road West.
Site area	Approximately 16 ha.
Elevation, topography and any geomorphic features	The site is generally flat, although there are undulations in the surrounding field areas. There is a (currently dry) watercourse adjacent to the east of the access lane. The elevation of the site is understood to be approximately 95mAOD.
Present land use	The site is currently disused. There are a number of existing structures on site relating to the site's former school use, including a number of listed buildings. A number of garages are present to the east of the access lane. There is a small leisure complex including outdoor swimming pool and associated infrastructure. In the approximate centre of the site there are heating oil storage tanks. It is anticipated that a number of private services will be present within the built-up areas of the site, although these are unlikely to be surveyed or mapped. There are understood to be a small number of external utilities including HV and LV power, water and BT feeding in from off-site grids. There is a disused sewage works in the south of the site adjacent to Spine Road West and the access lane. A burnt barn is present in the west of the site. There also a pond in the northwestern area of the site.
Vegetation	There is significant vegetation across the site. Since the closure of the school buildings the built-up area has become overgrown and additionally there are numerous trees, hedges and shrubs of various species, height and maturity present across the site. There is a field in the southern area of the site containing a number of trees and bordered by hedgerows and trees. An orchard is present in the northeastern site area.

General site sensitivity	The site is in a rural location. It is not considered to be a sensitive area; however, the site surface water is in a Nitrite Vulnerable Zone. There is a Nature Reserve approximately 500m west of the site.
Site boundaries and surrounding land	The site is predominantly bordered by agricultural fields with a number of small farm buildings. The southern site boundary is Spine Road West. There are numerous flooded gravel pits within the surrounding land.

2.3 Site History

A study of historical Ordnance Survey maps (Appendix C) has been undertaken to identify any former land uses at the site and surrounding areas which may have geotechnical or geo-environmental implications for the proposed development and is summarised in Table 2.3.

Table 2.3: Key Features from Historical Mapping

Map Edition and Scale	Key Features on Site	Key Features off Site
1885: 1:10,560	The site originally comprised farm buildings and fields, part of the wider Ashtonfield Farm (also known as Westham Farm). This is understood to comprise residential buildings and outhouses as well as a small orchard. The access lane to the farm is believed to be in the same location as the access lane used presently.	The site lies within wider agricultural land, believed at least partially to be land relating to Ashtonfield Farm. There is an unnamed road (currently Spine Road West) present adjacent to the southern site boundary. There are a number of small lanes or roads adjacent to the site.
1900-1903: 1:10,560 1900 1:2500	A small building is shown to have been constructed in the south eastern corner of the site. Two wells are present, one is located in the south east corner of the site and the other is shown in the north west corner of the farm buildings.	No significant off-site changes.
1924: 1:10,560	The well located in the north west corner of the farm buildings is no longer mapped. A Gravel Pit is shown to be present near the western site boundary.	A field barn is shown to have been constructed approximately 450m south of the site. There is a small copse of trees approximately 100m to the north east of the site boundary.
1960: 1:10,000	The site formerly known as Ashtonfield Farm is shown as Cotswold School. This is anecdotally understood to have been developed in the early 1940s, although no mapping is present for this time period. A significant number of new small and medium structures have been built within the site boundary and the gravel pit is no longer shown as present. A small water feature (pond) is shown to be present to the north west of the location of the former on-site gravel pit and there is a small rectangular feature in the south west of the site.	A number of gravel pits are shown to be present to the immediate south and 300m west of the site.

1975 – 1976: 1:10,000 1971 / 1971-73: 1:2,500	The site appears on mapping renamed as Cotswold Community. A small number of additional structures are shown to be present within the built-up area in the central and northern parts of the site. A sewage works is marked as being present in the south of the site, alongside associated ponds. A number of apparently residential buildings are shown to have been constructed adjacent to the eastern site boundary. These include a swimming pool and a pavilion.	A burial ground is shown to be present in the location of the small copse of trees 100m north east of the site boundary. The copse is no longer mapped. It is indicated that a 'drain' extends to the north of the site although it is unclear whether this extends into the site at this time. Gravel pits to the south and west of the site have expanded considerably to the south, west and north west. They appear to be flooded and are shown as large water features. Pertinently, one of the lakes (unnamed) is shown to extend to the unnamed road immediately south of the site boundary. The lake approximately 400m to the west of the site is labelled Keynes Park and is understood to have an associated Yacht Club. Large areas are shown as multiple drains 500m north and beyond. A non-descript 'works' building is shown on mapping approximately 500m east of the site boundary. There is a small 'works' building approximately 500m west of the site.
2000: 1:10,000	The drain previously marked as off site is shown to extend within the site boundary, running from north to south on the east side of the access road.	The extent of the lakes to the south and east of the site is increased, although they have not encroached any closer to the site. The works to the west are no longer mapped. Conveyors are shown in the vicinity of the works buildings to the east of the site.
2018: 1:10,000	The site is now labelled Cotswold Community (Special Needs School). There are no significant on-site changes.	A small number of further water features are shown as being present between 150m and 500m to the north of the site boundary.

The change of site usage and name is understood to have taken place in the early 1940s with the opening of the 'Cotswold Approved School for Intermediate Boys', accommodating up to approximately 140 students. The school closed in 2011.

There is anecdotal evidence that there had been a hydrocarbon leak to the east of the access lane.

2.4 Unexploded Ordnance/Bombs

In general accordance with CIRIA Report C681 (Stone et al 2009) non-specialist UXO screening exercise has been carried out for the site. There is no indication of former military use from the desk study. Screening against the Zetica regional bomb risk map ((Wiltshire) indicates the site to be in an area where the bomb risk is low. A copy of the site specific and regional (Wiltshire) local bomb risk maps are presented in Appendix D.

2.5 Geology

The general geology of the site area is shown on the 1:50,000 geological map of Swindon (Sheet 252) and is summarised in Table 2.4.

Table 2.4: Geology

Location	Age	Stratigraphic Name	Description
On Site (Superficial)	Pleistocene/early Quaternary	Northmoor Sand and Gravel Member	Dominated by clasts of Middle Jurassic Limestone, however also containing a smaller proportion of flint and quartz.
On Site at depth	Jurassic.	Kellaways Clay Member	Medium grey silicate mudstone locally with thin beds of siltstone and sandstone. Weathers to clay.

Some Made Ground is anticipated across the site area from previous development, particularly around the historical and disused farm/school buildings.

2.6 Mining or Mineral Extraction

The ponds/lakes to the north, south and west are predominantly indicative of surface extraction of gravel deposits. Historical mapping indicates a substantial past record of gravel extraction from the Northmoor Sand and Gravel stratum. An historical small gravel pit was present on site, although this has been backfilled. There is a pond to the north west of the original gravel pit which itself may also have been a gravel pit and later allowed to flood to form the pond. It is important to note that the majority of the local gravel extraction pits surrounding the site are not believed to have been backfilled with solid waste but have flooded to form lakes.

2.7 Ground Stability

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

2.8 Hydrogeology

The aquifer designations given in Table 2.5 are based on the Environment Agency interactive aquifer designation map.

Table 2.5: Hydraulic Characteristics of Strata

Stratum	Aquifer Designation	Hydraulic Characteristics
Made Ground (Imported Fill)	N/A	Moderate to high porosity because of unconsolidated nature, but permeability likely to be constrained to low or low to moderate because of poor sorting and clay content.
Northmoor Sand and Gravel Member	Secondary A aquifer	The sands and gravels are highly permeable and porous; therefore, the transmissivity of the aquifer is likely to be large
Kellaways Clay Member	Unproductive strata	Likely to be characterised by low permeability clays and mudstones. Overall this unit is likely to be unconducive to

		groundwater flow due to low horizontal and vertical permeability.

Reference to the Environment Agency web site shows the following groundwater body beneath the site and the current chemical status (Table 2.6).

Table 2.6: Groundwater Body

Category	Label or Status
Waterbody ID	GB40602G600500
Waterbody name	Kemble Forest Marble
River basin district	Thames
Current quantitative quality	Good
Current chemical quality	Good
Upward chemical trend	Yes
2015 predicted quantitative quality	Good
2015 predicted chemical quality	Good
Overall risk	At risk
Protected area	Yes - Drinking Water

The north eastern edge of the site is within a Zone 2 (Outer) groundwater Source Protection Zone (SPZ2). The remainder of the site is within a Total Catchment Area Zone 3 (subsurface activity only). There are no licensed groundwater abstractions within 500m of the site. There are four groundwater abstractions within 1000m of site, all relating to construction or mineral washing. The majority of the site is covered by soils of high leaching potential. The site is within a Drinking Water Protection Zone.

There is one discharge consent within 500m relating to sewage discharge.

2.9 Hydrology and Flooding

The surface water features in the vicinity of the site are listed in Table 2.7. None of these are assessed for chemical quality.

Table 2.7: Surface Water Features

Feature	Location Relative to Site
Pond	On site
Watercourse	On site
Lakes (numerous)	Within 20m of the southern site boundary. Present predominantly to the north, west and south of the site.

The desk study information indicates the proposed development is partially within a Flood Zone 3 region (with a high/significant probability of flooding so consultation with the Environment Agency is required with a Flood Risk Assessment (FRA) plus Sequential Test Evidence and where required confirmation that the Exception Test has been applied.

It should be noted that the location of the Flood Zone 3 region within the site appears to be related to the presence of the watercourse adjacent to the access lane which runs in a north

south direction through the site. At the north and south ends of the drainage channel these areas are also in Flood Zone 2.

The environmental data report indicates there is a risk of groundwater flooding of property below ground level in the central and north eastern parts of the site. The remainder of the site is at risk of groundwater flooding at the surface.

No further consideration of flood risk is undertaken in this report. Specialist flood risk advice should be sought with regards to drainage and flooding.

2.10 Waste Management and Hazardous Substances

There are three waste management sites recorded within 250m of the site, as listed in Table 2.8.

Table 2.8: Waste Management Sites

Site Name and Location	Details
Cotswold Community, Ashton Keynes 100m north west	Status: Open Operational dates: Unknown Size: Unknown Wastes accepted: Soil, Subsoil. Notes: Likely to be related to local farming/agricultural processes.
North End West, North Wiltshire 210m east	Status: closed/inactive Operational dates: Unknown - 1998. Size: Unknown Wastes accepted: Unknown
Lake 62, Ashton Keynes, Swindon (North End Works and Camas Aggregates) 220-404m east	Status: closed/inactive Operational dates: From 1991 – 2002. Size: large (>75000 tonnes per year) Wastes accepted: inert and industrial wastes, including construction waste, demolition and dredgings,

There is one discharge consent to surface within 500m relating to sewage discharge to the River Thames.

It should be noted that although there are landfill licenses for the North End West/Lake 62 sites it does not seem to have been completely landfilled because this area appears to be a lake used for triathlon training according to google earth satellite imagery and internet searches. It is feasible that landfill licenses were obtained and never used or the area was partially landfilled and then flooded to form the lake. This discrepancy in the data requires clarification and further enquiries to try to find out the extent of any landfilling which took place.

There are also two records of potentially infilled ground on the site, one is the infilled gravel pit and the other is the pond in the north western part of the site.

There are no records of prosecutions relating to authorised processes in the vicinity of the site.

There are no Local Authority Pollution Prevention and Controls, COMAH sites, NIHHS sites, or Planning Hazardous Substance consents or enforcements within 500m of the site. Historically the site was approximately 500m from a Local Authority Pollution Prevention and Control area; however, the authorisation for this has been revoked.

There are a number of industrial processes operating in the surrounding area relating to gravel extraction. However, as long as these have been operated in accordance with any applicable licence, no impact on the site is envisaged.

2.11 Natural Soil Chemistry

Information contained within the environmental data report (Appendix D) gives indicative natural concentration values (estimated) for the natural soils at the site for a selection of Contaminants of Potential Concern (CoPC). These have been reproduced in Table 2.9.

Table 2.9: Natural Soil Chemistry (mg/kg)

Element	Arsenic	Cadmium	Chromium	Lead	Nickel
Concentration (mg/kg)	15-25	<1.8	60 - 90	<100	15 - 30

2.12 Radon

The radon risk has been assessed in the environmental data report. This indicates that the site is not in a Radon Affected Area and no radon protection measures are required.

3. PRELIMINARY CONCEPTUAL SITE MODEL

3.1 Physical Setting

The preliminary ground model of the site is the basis of the understanding of the ground conditions that will inform the geo-environmental exposure model and the geotechnical hazard assessment.

3.1.1 Location and Site History

The 16ha site is located in Ashton Keynes, north of Swindon at postcode SN6 6QU (grid ref. 403470, 195530).

The site has historically comprised farmland centring around buildings relating to Ashtonfield Farm and subsequently Cotswold School.

Currently there are a number of buildings of varying ages on the site, incorporating facilities such as a leisure complex with outdoor swimming pool, classrooms, accommodation, old garages and outhouses, some of which (for example a barn) are currently used for agriculture. There is also a burnt-out barn in the west of the site which is believed to have an asbestos roof. The southern part of the site is an open field which does not appear to have been subject to any historical development.

There is a small house-sized structure in the south east corner of the site and an inactive sewage works in the south west of the site. The surrounding land is understood to be predominantly used for agricultural and pastoral purposes.

Historical and current contaminative land uses are mainly associated with on-site storage of fuel/hydrocarbons for heating the buildings and swimming pool and the potential for asbestos associated with the historical development. There may also be spillages/fuel leaks associated with the old garages and asbestos fibres may have been dispersed across the site as a result of the fire in the barn.

3.1.2 Landscape and Topography

Physically the site is flat, lying at an approximate elevation of 95mAOD (metres above Ordnance Datum). The setting is generally rural, although there are a number of flooded former gravel extraction pits currently in proximity to the site.

3.1.3 Geology

The ground model applying to the site generally is of a thin layer of Made Ground representing the built environment, over another moderate layer of superficial granular natural materials, over a substantial thickness of mudstone at depth.

Made Ground is considered likely to be generally thin (<1m) and mostly comprises concrete foundation materials and sub-base or fill. Made Ground may be locally deeper, for example due to the infilled gravel pit.

The superficial geology comprises the Northmoor Sand and Gravel Member which is typically sand and gravel of limestone.

The solid geology comprises Kellaways Clay Member - Mudstone comprising grey silicate mudstone locally with thin beds of siltstone and sandstone which weathers to a clay.

3.1.4 Hydrology and Drainage

The site has a number of local water features, including a watercourse and small pond within the site boundaries. There is a lake approximately 20m to the south of the site as well as a number of larger water features (understood to be gravel extraction pits) to the north, west and south of the site. Surface runoff from the site is likely to be drained to ground.

3.1.5 Hydrogeology

The Northmoor Sand and Gravel is classed by the Environment Agency as a Secondary A Aquifer. The Kellaways Clay Member is classified as Unproductive Strata. Based on the anticipated underlying superficial geology and the surrounding lakes, groundwater is considered likely to be relatively shallow.

3.2 Geo-environmental Exposure Model

The preliminary exposure model is used for geo-environmental hazard identification and establishing potential contaminant linkages based on the contaminant-pathway-receptor approach. A conceptual site model drawing is provided in Appendix A.

3.2.1 Potential Contaminants

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

Potential On-Site Sources of Contamination

- Made Ground possibly including metals, metalloids, asbestos, PAH and petroleum hydrocarbons, associated with the site's former agricultural and educational usage particularly relating to the further development understood to have taken between the 1940s and 1960s.
- Made Ground associated with the infilling of the gravel pit possibly including metals, metalloids, asbestos, PAH and petroleum hydrocarbons.
- Asbestos fibres which may have dispersed across the site during a fire in a barn in the west of the site which had a suspected asbestos roof.
- Hydrocarbon fuels, lubricant and chlorinated solvents associated with the school buildings, garages and leisure facilities (e.g. oil tanks/boiler house).
- Potential hydrocarbon leakage understood to have taken place to the east of the access lane.
- Elevated metals within natural soils.
- Ground gases (carbon dioxide and methane) from any organic materials present in the infilled gravel pit/Made Ground on the site.

Potential Off-Site Sources of Contamination

- Landfilled waste and ground gases from any landfilling to the east of the site. At present it is not confirmed whether landfilling was undertaken or not as the area shown to be landfilled is

actually a lake so for completeness the risks associated with landfilling have been included in this assessment.

- The potential for gas generation from the landfilling to the north of the site is considered to be low because this operation was to import additional soil for agricultural usage and is not considered further.

Whilst there has been significant gravel extraction in the area, it is understood that with the exception of the landfills mentioned above all other gravel pits have allowed to flood to create lakes and therefore their gas generation potential is considered to be low.

Potential Receptors

The following potential receptors have been identified.

- Humans (neighbours, site end users).
- Development end use (buildings, utilities and landscaping).
- Groundwater: Secondary A aquifer status of the Northmoor Sand and Gravel member.
- Surface water: on-site drainage ditch and pond and offsite lakes.
- Ecology associated with the rural area.

It should be noted that health and safety risks to site contractors and maintenance workers have not been assessed during these works and will need to be considered separately.

3.2.2 Potential Pathways

The following potential pathways have been identified.

- Humans: ingestion, skin contact, inhalation of dust and outdoor air.
- Buildings: gas (carbon dioxide/methane) ingress via permeable soils and/or construction gaps.
- Plant life: root uptake.
- Underlying groundwater: migration of contaminants into the Northmoor Sand and Gravels aquifer.
- Surface water: overland flow and baseflow from groundwater.
- Surface water: drainage discharge.

3.3 Geotechnical Hazard Identification

Potential geotechnical hazards based on the expected ground conditions are listed below.

- Attack of buried concrete by aggressive ground conditions – the development site may contain unknown Made Ground and potentially sulfate bearing soils. The Kellaways Clay member is known to be high in naturally occurring sulfates and be potentially pyritic.
- Potentially loosely packed gravels and potentially shallow groundwater, leading to difficulty with excavation due to trench collapse.
- Shrinkage/swelling of clay – settlement/heave of foundations when located within the influence of trees and vegetation.

- Settlement of foundations due to locally deep Made Ground in areas such as the backfilled gravel pit.

4. GROUND INVESTIGATION

4.1 Investigation Rationale

The ground investigation rationale based on the findings of the preliminary risk assessment is summarised in Table 4.1.

Table 4.1: Investigation Rationale

Exploratory Holes	Purpose
BH01	To assess deeper ground conditions and allow SPTs and samples for geotechnical characterisation. To allow collection of samples for contamination testing. Installation of a groundwater monitoring well.
TP 01-06	To investigate shallow ground conditions and allow samples to be taken for contamination and geotechnical testing. Targeting the following features: • built up area; • historical hydrocarbon spillage east of the access lane; • oil tanks in centre of developed area; and • swimming pool/leisure centre boiler house.
TRL DCP01 - 06	To obtain CBR values. Carried out at TP01-03, 05 and 06 as well as BH01. Not carried out at TP04 due to presence of Made Ground and suspected presence of buried services.

The preliminary ground investigation is a targeted scope of works aiming to investigate identified sources of contamination as well as provide information groundwater levels and the natural geology beneath the site.

4.2 Ground Gas Regime

It is judged from the available evidence that the gas generation potential on site is limited to the infilled gravel pit and any Made Ground present on site which is not anticipated to be present in significant quantities. Generally, the gas generation potential is considered to be low for the site. Offsite it is reported that there is a landfill within 250m to the east of the site which could be a source of gas generation. However, this location currently appears to be a lake so it is possible that, although licenses were obtained, the area was never actually landfilled and was just flooded. If it was just flooded then there is no gas risk but if it was a landfill then gas monitoring is recommended. The landfill to the north of the site accepted soil and subsoil for agricultural uses and is considered to present a low risk in relation to gas generation potential.

4.3 Site Works

The fieldwork took place on 10th and 11th May 2018 and is summarised in It was also not possible to access the area where the historical infilled gravel pit was reported to be due to access restrictions caused by extensive overgrowth and the potential risks to nesting birds.

Table 4.2 and the approximate position of site investigation locations (surveyed in using a tape measure from landmarks) are shown on the Exploratory Hole Location Plan in Appendix E. Due to

site constrains and the limited targeted scope of the ground investigation it was not possible to investigate the full extent of the site.

The logs, including details of ground conditions, soil sampling, in situ testing and any installations, are presented in Appendix E.

The weather conditions during the fieldwork and for the previous week were dry and warm.

It was noted during fieldwork that a burnt farm building with a suspected asbestos roof is present in the west of the site. Investigation of this structure and potential contamination pertaining to it has not been undertaken at this stage due to the risk from asbestos and it is therefore likely to require further work or remediation. It was also not possible to access the area where the historical infilled gravel pit was reported to be due to access restrictions caused by extensive overgrowth and the potential risks to nesting birds.

Table 4.2: Summary of Site Works

Activity	Method	No.	Max. or Range Depth	In Situ Tests	Notes (e.g. Installations)
Drilling, Pitting and Probing					
Boreholes	Cable percussive	1	10.45m	SPT	63mm HDPE wells with gas tap.
Trial pits	Machine (JCB 3CX)	6	0.6 - 2.0		
Probes	TRL dynamic cone penetrometer	6	1.0	CBR	
Hydrogeological	Level Logger in BH01	1	0-8m	Groundwater Monitoring	Level logger and barometer installed for two months with one interim data assessment.

4.4 Geo-Environmental Testing

4.4.1 Sampling Strategy and Protocols

Investigatory hole locations were determined by reference to the conditions identified in the preliminary risk assessment. Certain specific features such as the oil tanks in the built-up area and the historical hydrocarbon leakage to the east of the access lane were targeted for specific investigation, but a reasonably even spacing was used for the remainder of the site. No specific sampling statistics or grid were utilised in this instance.

Samples were taken, stored and transported in general accordance with BS 10175:2011+A1:2013.

4.4.2 Geotechnical Monitoring

A groundwater level logger was placed for a two month groundwater monitoring period in BH01. An interim download of the first month of data was carried out on 12th June 2018 and the final data download was carried out on the 23rd July 2018.

The results are presented in Appendix G.

4.4.3 *Geo-environmental Laboratory Analyses*

Wherever possible, UKAS accredited procedures have been used and the chemical test certificates are provided in Appendix I. The geo-environmental analyses undertaken on soils are summarised in Table 4.3.

Table 4.3: Summary of Sample Numbers for Geo-environmental Analyses of Soils or Other Solids

Determinand Suite	Made Ground	Topsoil	Natural cohesive soils	Natural Granular Soils
Hydrock default suite of determinands for solids	4	1	3	1
Total petroleum hydrocarbons by GC-FID (Hydrock Level 2 suite)	2	0	1	1

The geo-environmental analyses undertaken on waters, leachates (eluates) or other liquids are summarised in Table 4.4.

Table 4.4: Summary of Sample Numbers for Geo-environmental Analyses of Waters

Determinand Suite	Ground-water
Hydrock default suite of determinands for waters	1

4.5 Geotechnical Testing

Geotechnical Laboratory Testing

Wherever possible, UKAS accredited procedures have been used and the geotechnical test certificates are provided in Appendix F. The tests undertaken are summarised in Table 4.3.

Table 4.5: Summary of Sample Numbers for Geotechnical Tests

Test	Made Ground	Natural Cohesive Materials	Natural Granular Materials
Natural moisture content		2	
Atterberg limit determination		2	
Particle size distribution (sieve/sedimentation)			4
Sulfate and aggressive chemical environment classification for buried concrete classification (full BRE SD1 suite)	1	3	1

Please note that further assessment of deeper ground conditions may be required as part of a more comprehensive ground investigation.

5. GROUND INVESTIGATION RECORDS AND DATA

5.1 Physical Ground Conditions

5.1.1 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.

For the purposes of property designation, soils are divided into fine soils (clays and silts) and coarse soils (sands, gravels, cobbles and boulders) in accordance with BS 5930.

Soil plasticity class for fine soils is based on the classification system of BS 5930, adopting modified plasticity index values (based on percentage passing 425µm sieve). Volume change potential of fine soils on change of moisture content has been assessed using guidance provided in NHBC Standards.

The angle of shearing resistance (ϕ') of the coarse soils has been derived from the uncorrected standard penetration resistance N-value using the relationship published by Hatanaka and Uchida (1996).

Details are provided in the logs in Appendix E, a summary is presented in Table 5.1 and the individual strata are described in the sections below.

Table 5.1: Strata Encountered

Stratum	Brief Description	Depth to Top (m bgl)	Depth to Base (m bgl)	Thickness (m)
Topsoil	Dark brown gravelly clay. Gravel sub-angular to sub-rounded fine to medium of limestone.	0.0 (from surface) 0.35 (buried horizon in TP01)	0.2 - 0.3 (from surface) 0.5 (buried horizon in TP01)	0.15 - 0.3
Made Ground	Variously as; soft brown and grey clay with frequent medium to coarse gravel and fragments of brick and concrete up to cobble size; and brown and grey sandy gravel.	0 (from surface)	0.35 - 0.7	0.35 - 0.7
Shallow Cohesive Materials	Soft brown sandy gravelly clay. Gravel sub-angular to sub-rounded fine to medium of limestone.	0.3	0.6 - 0.8	0.3 - 0.5
Northmoor Sand and Gravel Member	Medium dense [inferred in trial pits] creamy brown sandy sub-angular to sub-rounded fine to coarse gravel of limestone. Sand is medium to coarse	0.2 - 0.6	1.8 - 5.5 (proven in BH01)	1.5 - 5.3
Kellaways Clay Member	Stiff blue grey slightly sandy clay with occasional fossil shell fragments.	5.5	>10.45	>4.95

5.1.2 Topsoil

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), and which is a product of natural chemical, physical, biological and environmental processes, but does not imply compliance with BS 3882:2015.

Where the Made Ground was not encountered, the exploratory holes encountered topsoil.

5.1.3 Made Ground

Made Ground was encountered across the built-up area of the site, as well as locally as a buried horizon in the eastern part of the site (directly east of the access lane) and can generally be described variously as brown and grey clay with gravel and cobbles of brick, concrete and other gravel of various lithologies, and grey and brown sandy gravel. Surfacing includes concrete and soft standing.

The Made Ground is inherently variable and as such representative values of geotechnical properties are impracticable to determine. On this basis, no laboratory geotechnical testing has been undertaken on it.

5.1.4 Shallow Cohesive Materials

Shallow cohesive materials were encountered underlying the topsoil and overlying the Northmoor Sand and Gravel Member. This generally consisted of soft brown sandy gravelly clay. Gravel is sub-angular to sub-rounded fine to medium of limestone.

Natural moisture contents in the fine units of these materials range from 14% to 20%, and modified plasticity indices range from 16% to 30%. On this basis these soils are classified as of intermediate to high plasticity (CI/CH soils) and of low to medium volume change potential.

5.1.5 Northmoor Sand and Gravel Member

Northmoor Sand and Gravel Member was encountered underlying the Made Ground, topsoil and natural cohesive materials across the site. This generally consisted of medium dense creamy brown sandy to very sandy sub-angular to sub-rounded fine to coarse gravel of limestone. A clayey gravel band was encountered between 5.0 and 5.5m bgl overlying the Kellaways Clay Member.

SPT N-values within these materials range from 25 - 31, showing them to be of medium relative density. The SPT within the clayey gravel unit was 24. A plot of the SPT v depth is provided in Appendix F. Angles of shearing resistance based on these results range from 34° to 36° based on the correlation of Hatanaka and Uchida (1996).

Particle size distribution testing on this geological stratum shows it to be sandy gravel.

5.2 Kellaways Clay Member

The Kellaways Clay Member was encountered underlying the Northmoor Sand and Gravel Member. This generally consisted of stiff blue grey slightly sandy gravelly CLAY with occasional fossil shell fragments.

Standard Penetration Testing in the Kellaways Clay Member is summarised in Table 5.2.

Table 5.2: Soil Strength Results and Derived Values

SPT (N-Value) (Range)	Shear Strength (Range) cu (kPa)	Method	No. of Results
32-40	140-180	Correlation with Stroud (1975) based on 'average' plasticity	5

5.3 Obstructions

One trial pit encountered obstructions during excavation as summarised in Table 5.3.

Table 5.3: Obstructions Encountered During Hydrock Investigations

Exploratory Hole	Depth (m)	Description	Stratum
TP04	0 - 0.7	A number of unidentified services were encountered whilst hand pitting to locate buried services.	Made Ground

5.3.1 California Bearing Ratio (CBR)

The CBR results are summarised in Table 5.4. These results are discussed in Section 8.6.

Table 5.4: CBR Results

Stratum	Method	No. Tests	CBR (%) (Range)
Made Ground	TRL DCP	6	>7 - 50%
Shallow Cohesive Materials	TRL DCP	3	>17 - 25%
Northmoor Sand and Gravels	TRL DCP	11	>2 - >100%

5.3.2 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 5.5. The assessment summary sheet is presented in Appendix F.

Table 5.5: Aggressive Chemical Environment Concrete Classification

Stratum	No. Tests	DS	ACEC
Made Ground, Shallow Natural Cohesive and Natural Granular	4	DS-1	AC-1

No testing has been undertaken to date on the underlying Kellaways Clay Member.

5.4 Groundwater

5.4.1 Groundwater Levels

Groundwater strikes encountered during the investigation and subsequent monitoring are summarised in

Table 5.6.

Table 5.6: Groundwater Data

Stratum	Date Range	Exploratory Hole	Fieldwork	Post-Fieldwork Monitoring (interim results from data loggers)	
			Depth Groundwater Encountered (Rose to after 20 mins) (m bgl)	Depth to Groundwater (Range) (m bgl)	Depth to Groundwater (Range) (Approximate mAOD)
Northmoor Sand and Gravel Member	10/05/2018 - 10/07/2018	BH01	2.10 (1.90) 5.20 (3.30)	1.79 - 1.17	92 - 93
	10/05/2018	TP01	2.0	N/A	N/A
	10/05/2018	TP02	1.7	N/A	N/A
	10/05/2018	TP03	1.8	N/A	N/A
	10/05/2018	TP05	1.7	N/A	N/A
	10/05/2018	TP06	1.9	N/A	N/A

The post fieldwork groundwater level monitoring has shown groundwater levels ranging between 1.79m bgl and 2.17m bgl. The data along with rainfall data for the monitoring period is provided graphically in Appendix G. The data clearly illustrates a rapid groundwater level response to significant rainfall.

At a recent meeting on 14th June 2018 Acorn provided Hydrock with groundwater level data originating from Hills who have been undertaking gravel extraction the area. Although the exact location of the boreholes monitored is not known it is reported to Hydrock that they are located in the vicinity of the site. The groundwater level data was recorded from July 2017 to April 2018 and indicates water levels ranging between 1.58mbgl and 3.35mbgl with the average being around 2.5mbgl. These appear to indicate groundwater to be slightly lower (approximately 86-88mAOD than the data obtained from Hydrock's monitoring (approximately 92-93mAOD).

5.5 Geo-Environmental Results

The chemical test results for soil and groundwater are given in Appendix I, which also includes summary tables of the data.

Concentrations of the following determinands were not reported above the laboratory limit of detection.

Soils – Asbestos, Cadmium, Chromium (VI), Selenium, Cyanide (free), Total Phenols (monohydric), Acenaphthene, Acenaphthylene, Fluorene, Naphthalene, BTEX, aliphatics EC5-44 and aromatics EC5-16.

Waters – Ag (dissolved), Cd (dissolved), Cr (III) and Cr (VI) (dissolved), Cr (total) (dissolved), Hg (dissolved), Pb (dissolved), Sn (dissolved), Zn (dissolved), Cyanide (free), Cyanide (total), Bromate (BrO_3), PAHs (reduced suite) and Phenols.

5.6 Updated Ground Model

The preliminary conceptual site model initially developed from the desk study and walk-over survey (Section 3) has been confirmed using the findings of the ground investigation. The main features of the site are summarised on the Site Walkover Plan (Appendix A).

Subsequent to the ground model described in Section 3, the ground investigation has confirmed ground conditions below the site to comprise:

Made Ground – to between 0.35 and 0.7m below ground level (bgl), variously comprising clays with gravel and cobbles of brick and concrete as well as brown and grey sandy gravels; over

Northmoor Sand and Gravel Member – to between 1.8 and 5.5m bgl, comprising sandy limestone gravel; over

Kellaways Clay Member – to a maximum proven depth of 10.45m bgl, comprising stiff blue grey slightly sandy clay with occasional fossil shell fragments.

True groundwater level occurs at approximately 1.8-2.2m depth within the Northmoor Sand and Gravel Member.

There was no visual or olfactory evidence of contamination in any exploratory hole location.

6. GEO-ENVIRONMENTAL ASSESSMENT

6.1 Approach

A number of generic risk assessments are undertaken in accordance with the principles of CLR 11 (Environment Agency 2004) using the CSM that has been updated following the ground investigation. Firstly, the risks associated with the identified potential contaminant linkages are estimated using standardised methods (typically involving comparison of site data with published 'screening values'). Secondly, where screening values are exceeded, the risks are evaluated in an authoritative review of the findings with other pertinent information to determine if exceedance may be acceptable in the particular circumstances. For details please refer to Appendix H.

The data sets used comprise the appropriate analytical results obtained by Hydrock and listed in Section 4.4.

In cases where unacceptable risks are indicated, mitigation measures such as more advanced stages of risk assessment or remediation will be proposed in Section 7.

6.2 Updated Exposure Model

Following the site investigation, the plausible contaminant sources, receptors and pathways identified in Section 3 have been updated or confirmed as follows.

6.2.1 Sources

The following potential sources have been removed from the exposure model.

- Petroleum hydrocarbons within the Made Ground near the oil tanks, targeted in TP04.
- Petroleum hydrocarbons in the area of the historical fuel spillage to the east of the access lane.

No odours or visual evidence of contamination were encountered during investigation works and the laboratory test data indicates no petroleum hydrocarbons above the limit of detection.

6.2.2 Receptors

No potential receptors have been removed from, or added to, the exposure model.

6.2.3 Pathways

No pathways have been removed from, or added to, the exposure model.

With reference to the updated ground model and updated exposure model reported above, generic risk assessment is undertaken in Section 7. Geotechnical recommendations made in Section 8.

6.3 Human Health Risk Assessment

This is a Tier 2 assessment using soil screening values for the residential with plant uptake CLEA land use scenario.

The soil screening values used are generic assessment criteria (GAC) and results are given in Appendix I. Note that the Category 4 Screening Levels (C4SL) for lead have been used as there are no recognised GACs and the use of the term 'GAC' in this report includes these.

Statistical testing is used where data sets are suitable. For data sets with low sample numbers and/or a non-random spatial distribution (e.g. where sampling is targeted at specific areas) individual sample test results are compared directly with the screening values.

It should be noted that the phrase 'further assessment required' is used to denote soil concentrations that are equal to, or exceed, a GAC. This does not necessarily mean that the soil is 'contaminated' or not fit for use.

6.3.1 Risk Estimation

Hydrock Default List of Determinands

The individual analytical results have been compared with the relevant GACs in the summary table in Appendix I. From this, the chemical of potential concern is benzo(a)pyrene (TP4 @ 0.5mbgl) (1 out of 8 samples).

Asbestos

No asbestos was recorded in any samples during the ground investigation. However, there remains a risk of asbestos potentially being present due to a past fire in a barn which had a suspected asbestos roof. Asbestos fibres could have been released during the fire and spread across the site by the wind. Due to the age of buildings and historical site usage it is also considered likely that there may be asbestos encountered elsewhere on site.

Petroleum Hydrocarbons (PHC)

Laboratory testing indicated the presence of petroleum hydrocarbons above the laboratory limit of detection (aromatic EC16-44) in Made Ground pertaining to TP04 and TP05. However, neither sample exceeded the GAC.

6.3.2 Risk Evaluation

The screening exercise identified the following substances at concentrations above the GAC. These are considered further here to assess if the exceedance may be acceptable with respect to the proposed development.

Although the GAC for benzo(a)pyrene is exceeded, the laboratory result of 3.6mg/kg is less than the Category 4 Screening Level (C4SL) of 5mg/kg. Whilst the GAC represents minimal risk, the C4SL represents a low level of risk but is still highly protective of human health. The Defra (March 2014) policy document states that the C4SLs were developed so they could be used under the planning regime. "It is anticipated that, where they exist, C4SLs will be used as generic screening criteria that can be used within a GQRA, albeit describing a higher level of risk than the currently or previously available SGVs." The DCLG Planning Policy Guidance (Reference ID: 33-007-20140612 Land affected by contamination, dated 12 June 2014) endorses this by stating that "Defra has published a policy companion document considering the use of 'Category 4 Screening Levels' in providing a simple test for deciding when land is suitable for use and definitely not contaminated land." This was made clear in a letter to all local authorities from Lord de Mauley, Defra Parliamentary Under Secretary on 3 September 2014. It is Hydrock's advice that the C4SL is likely to indicate suitability for use, but this must be confirmed with the Environmental Health Officer.

6.4 Plant Life Risk Assessment

6.4.1 Risk Estimation

Priority phytotoxic chemical concentrations have been screened against published values to determine the likely risk to plant growth and the findings presented in Appendix I. As with human health, statistical testing is used where data sets are suitable, otherwise individual sample test results are compared directly with the screening values.

Based on test results that exceed the GAC, the only chemical of potential concern is boron (TP1 @ 0.4mbgl) encountered in one sample of eight. Laboratory testing showed boron to be at a concentration of 3.4mg/kg compared to a GAC of 3mg/kg.

6.4.2 Risk Evaluation

Within the buried topsoil horizon, boron is slightly elevated when compared to the GAC. Detriment to plant life is hard to quantify and many of the GACs are based on agricultural crop yields rather than serious harm of death of a species. As the exceedance is slight and the vegetation on site did not show any signs of physical distress, Hydrock does not believe any additional consideration is required with regards to risks to plant life.

It is important to note that the sample in which the boron exceedance was encountered was from the buried topsoil horizon in TP01. Given that the material is buried below a shallow Made Ground horizon it is unlikely to be reused on site as a growing medium.

6.5 Pollution of Controlled Waters Risk Assessment

6.5.1 Risk Estimation

The risks to groundwater and surface water from contaminants on site have been assessed according to the Environment Agency (2006) Remedial Targets Methodology (RTM).

Under the European Water Framework Directive (2000/60/EC) pollutants from contaminated land sites are considered as passive inputs. Inputs to surface waters and inputs of non-hazardous pollutants to groundwater and are regulated under the Agency's 'limit' pollution objective. As such, site contaminant loadings are compared with relevant threshold values (Water Quality Targets) which are linked to the conceptual site model. Acceptable WQT are defined for protection of human health (based on Drinking Water Standards (DWS)) and for protection of aquatic ecosystems (Environmental Quality Standards (EQS)).

For the purposes of this report, the site data are compared with the various targets as set out according to the Hydrock scenario in Table 6.1 (see Appendix I for details), on the basis of the following:

- The Northmoor Sand and Gravel Member may provide base flow to the numerous ponds and lakes located to the north, west and south of the site as well as the pond on site;
- The Northmoor Sand and Gravel Member has Secondary A Aquifer status. Although there are not thought to be local groundwater abstractions (private or commercial), the decision to assess groundwater quality against DWS as well as EQS is based on the relatively shallow groundwater onsite and the potential for a local abstraction in the future.

Table 6.1: Summary of Water Quality Risk Assessment Protocol

Hydrock Scenario	Water Body Receptors	Secondary Receptors	Example Contaminant Linkages	RTM Level and Data Used	Water Quality Targets
D	Groundwater. Surface water.	Human health (abstraction). Aquatic ecosystem.	Contaminants from site leach or seep into groundwater body and this feeds surface water by base flow. The surface water may be used for human consumption and is an aquatic ecosystem.	RTM Level 2 - Groundwater.	DWS EQS (inland)
Notes: Some EQS are water hardness dependent. This is measured either in the receiving water or in groundwater (if it is part of the pathway) or is estimated from national maps. Inland waters EQS applicable to freshwater, other waters EQS applicable to marine or transitional waters. Where both DWS and EQS are applicable, it is assumed that the EQS is for inland waters. This table and the results of the assessment are considered as a first screening for potential risks of pollution of Controlled Waters. More specific requirements may be stipulated by the relevant Agency.					

The results of the Remedial Targets Methodology assessment are presented in Appendix I and are summarised in Table 6.2 for the single sample analysed.

It should be noted that in some instances the reporting limit (or detection limit) quoted by the laboratory is greater than the WQT that it is being assessed against. This applies to free cyanide, benzo(a)pyrene, and Fluoranthene [P]. As the current exercise is an initial screening assessment, further assessment of these elements has not been undertaken.

Table 6.2: Chemicals of Potential Concern for Which Further Assessment is Required (Controlled Waters)

Chemical of Potential Concern	Water Quality Target (µg/l)	Basis for Water Quality Target	No. Samples	Concentration (µg/l)
Iron	200	DWS	1	260

6.5.2 Risk Evaluation

Whilst there is a marginal exceedance of the water quality targets, this is not considered to represent a significant risk of pollution of Controlled Waters as there is no evidence of artificial accumulations of this substance on the site and it is considered that the presence originates from the natural geology.

6.6 Ground Gases Risk Assessment

Assessment

The risks associated with the ground gases methane (CH_4) and carbon dioxide (CO_2) are assessed using BS 8485:2015 and guidance from CIRIA Report 665 (Wilson et al 2007) and NHBC (Boyle and Witherington 2007). The development proposals are understood to require consideration of Situation B (low-rise housing with a vented sub-floor void). However, once the development

proposals are more fully developed a revised assessment should be undertaken if this is not the case.

Due to the preliminary nature of the Ground Investigation, at present no gas monitoring has been undertaken at the site.

The methodology of CL:AIRE RB17 (Card et al 2012) states that where natural soils are present with Made Ground less than 1 m thick, composed of inert material such as sub-base of mineral soils as is the case on this site, and no radon barrier is being provided, no gas protection is required as this represents CS1.

While the current works have indicated limited made ground across the investigated area, to ascertain whether this assessment applies to the site, further works will be required to investigate the thickness and composition of any Made Ground, particularly in regard to the backfilled gravel pit.

Offsite it is reported that there is a landfill within 250m to the east of the site which could be a source of gas generation. However, this location currently appears to be a lake so it is possible that although licenses were obtained the area was never actually landfilled and was just flooded. If it was only flooded then no gas risk is anticipated, but if it was used as a landfill then a period of gas monitoring is recommended. Further enquiries are therefore required to ascertain the nature of the lake/landfill.

6.7 Construction Materials Risk Assessment

6.7.1 Water Pipelines

The current guidance on selection of materials for potable water supply pipes to be laid in contaminated land is contained in a document published jointly by Water UK and the Home Builders Federation (Water UK HBF (2014)). The protocols in that document are for guidance and are not subject to enforcement by Water UK or any agency, but have been adopted by Water UK and by HBF as best practice for their members. Accordingly, this guidance is used in the following assessment.

The findings of this investigation have been compared to the threshold values in Water UK Table 1 as far as is practicable to give an indication of the possible restrictions to the use of plastic pipes for water supply to the site.

The site is partially brownfield and there is a presumption in the guidance that barrier pipe will be used. However, the investigation and assessment has indicated no exceedance of the threshold values and as such standard pipework may be suitable for the site; confirmation should be sought from the water supply company at the earliest opportunity. Until proven or agreed otherwise, it is recommended that barrier pipe provision is assumed pending liaison with the supply company.

6.7.2 Other Construction Materials

The implications for buried concrete are discussed in Section 8.5.

7. GEO-ENVIRONMENTAL CONCLUSIONS AND RECOMMENDATIONS

7.1 Key Risk Drivers

7.1.1 Human Health

No chemicals determinands of potential concern have been identified with regard to human health within the limited targeted investigation undertaken to date. Further assessment should be undertaken across the wider site area to confirm the risk posed to the future development.

Furthermore, the potential for release of chemicals potentially harmful to human health remains. Fuel tanks in the centre of the site have the future potential to leak, particularly if damaged during further works on site. Based on the granular nature of the underlying superficial geology it is considered that petroleum hydrocarbon migration in the groundwater could be rapid and extensive so care should be taken. In addition, there is the potential for other currently unidentified sources of contamination to exist.

The presence of the suspected asbestos barn in the west of the site is of potential concern as asbestos fibres originating from it would be considered a direct risk to human health. Windblown fibres could also potentially contaminate soils across the wider site, rendering them unsuitable for use within the proposed development. Asbestos in the fabric of the other buildings on site also requires assessment and appropriate control.

7.1.2 Plant Life

No chemicals of potential concern have been identified with regard to plant life to date. Further testing should be undertaken in a supplementary investigation.

7.1.3 Controlled Waters

No chemicals of potential concern have been identified with regard to EQS or DWS. Further testing should be undertaken in a supplementary investigation if any risk to Controlled Waters is suspected.

7.2 Mitigation Measures

Site preparation works are likely to include removal by specialist contractors of asbestos from the burnt barn building and potentially other buildings in accordance with an asbestos survey and relevant legislation.

The former fuel tanks will have to be removed together with any petroleum hydrocarbon impacted soils around and below the tanks and associated pipework. Although no hydrocarbon impacted soils were encountered during the ground investigation the potential for such soils remains.

No radon protection is required for new buildings at this location.

Monitoring and assessment will be required to determine the level of gas mitigation necessary where a potential risk of gases is identified from either an off-site landfill or potentially gas generating materials within Made Ground on site.

The use of barrier pipe for potable water supplies is currently recommended for preliminary purposes due to the brownfield nature of the site and limited investigation to date pending consultation with the water supply company.

7.3 Waste Management

Any material excavated on site may be classified as waste and it is the responsibility of the holder of a material to form their own view on whether or not it is waste. This includes determining when waste that has been treated in some way can cease to be classed as waste for a particular purpose. Further details are given in Appendix H.

If material is to be removed from the site (e.g. foundation arisings) the laboratory test results in Appendix I should be presented to the proposed receiving landfill site (to aid Waste Characterisation), prior to export, to confirm that it is suitably licensed to accept them. Some additional testing may be necessary at the time of disposal for the receiving landfill to confirm the Waste Acceptance Criteria (WAC) are acceptable for it to receive the waste.

Based on the results of the testing it is anticipated that the natural excavated soils will be classified as inert for off-site disposal purposes. However, this will depend on the results of the WAC testing. If the soils are not proven to be inert, they may be classified as non-hazardous.

Non-hazardous soils require pre-treatment prior to disposal. Effective pre-treatment, involving separation, sorting and screening can offer cost reductions through reducing the hazardous nature and volume of soil waste. Costs for disposal of non-hazardous/hazardous soils are significant compared to disposal of inert material.

7.3.1 HazWasteOnline™ Assessment

In order to inform the waste characterisation process, Hydrock has undertaken a preliminary exercise using the proprietary web-based tool HazWasteOnline™, to characterise the soils encountered in the investigation.

Based on the HazWasteOnline™ output, all soils tested may be classified as non-hazardous. The results of the output are included in Appendix J.

Further testing of the soils (WAC testing) may be required in order to satisfactorily categorise the soil for its suitability for disposal at an inert or a hazardous landfill site.

7.3.2 Waste Recommendations

Prior to disposal, the characteristics of any excavated soils will need classification in consultation with landfill sites and waste disposal contractors. Testing and analysis will be required to be carried out on the actual soil arisings which will constitute the waste.

7.3.3 Materials Management

Any material excavated on site may be classified as waste and it is the responsibility of the holder of a material to form their own view on whether or not it is waste. This includes determining when waste that has been treated in some way can cease to be classed as waste for a particular purpose.

If site-won material is to be re-used on site, a Materials Management Plan will be required, signed off by a Qualified Person as defined in the 'Development Industry Code of Practice' (CL:AIRE, March 2011).

8. GEOTECHNICAL ASSESSMENT

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. For the purposes of this investigation, the proposed structures have been classed as Geotechnical Category 1.

The Geotechnical Category should be re-assessed at the design stage and a specific Geotechnical Design Report is required for Category 2 or 3 structures.

8.1 Groundwork

8.1.1 Site Preparation

A number of buildings with associated infrastructure are present within the site. It is understood that a number of these are listed and are therefore to be retained. However, the majority of buildings are understood to be earmarked for demolition. If buried or overhead services and utilities pertaining to the listed buildings are on site, their presence must be considered when carrying out works relating to the buildings to be demolished.

Whilst no significant buried obstructions were encountered by this investigation, the possibility of buried obstructions 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.

Topsoil and unsuitable Made Ground should be removed from beneath all building and hardstanding areas.

A sewage works is present in the south of the site, however Hydrock's understanding is that this is likely to be refurbished for future usage.

A stream traverses the site from north to south along the eastern side of the access lane. There are a number of bridges crossing the stream and these may be structurally weak.

8.1.2 Groundworks

Following breaking out of hardstanding and/or obstructions, excavation of shallow soils should be readily undertaken by conventional plant and equipment. However, excavation through any buried construction may require heavy-duty excavation plant.

Whilst the trial pits were seen to be stable during the ground investigation, random and sudden falls should be expected from the faces of near vertically sided excavations put down at the site. This situation is likely to be prevalent in the natural coarse soils and is likely to be exacerbated by water inflows.

Temporary trench support, or battering of excavation sides, is likely to be required for all excavations that are to be left open for any length of time and will definitely be required where man entry is required. Particular attention should be paid to excavation at, or close to, site boundaries/adjoining existing roads/structures/buildings, where collapse of excavation faces could have a disproportionate effect.

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).

Groundwater was not encountered within likely founding excavation depths at the time of the investigation. However, based on site observations, it is considered that sump pumping may not be sufficient to deal with anticipated flows and alternative methods of dewatering including cut-offs, or well points, may prove necessary. It should be recognised that groundwater levels will fluctuate seasonally and the timing of construction may dictate the extent of groundwater control required.

Any water pumped from excavations is likely to need to be passed via settlement tanks before being discharged to the sewer; discharge consents will also be required.

8.1.3 Earthworks/Reuse of Site-Won Materials

Spoil resulting from excavations within the Made Ground will not be suitable for re-use as engineered fill but may either be used for landscaping (subject to further testing and the necessary approvals/consents) or should be disposed of off the site.

An initial assessment has been completed on the potential to re-use site-won materials as an engineered fill material, which indicates the soils which are likely to be re-used can be classified as follows:

- Made Ground – Class 1 Granular (less than 15% passing the 63µm sieve) and Class 2 cohesive (more than 15% passing the 63µm sieve) - General Fill.
- Northmoor Sands and Gravels - Class 1 granular (less than 15% passing the 63µm sieve) - General Fill or Structural Fill.

8.2 Foundations

The recommendations in this report follow NHBC Standards Chapter 4.2 (2014).

The Made Ground and low strength natural fine soils (topsoil and shallow cohesive materials) are considered unsuitable in their present condition for use as founding soils on the basis of their relatively low strength and high compressibility and should be fully penetrated by all new foundations. In accordance with NHBC Standards the shallow cohesive soils would be considered to have a low to medium volume change potential.

On the basis of the above, minimum founding depths are likely to between 0.75m and 1.1m bgl and extending at least 0.3m into the granular Northmoor Sand and Gravel Member. In places (e.g. TP02) the foundation depth will need to be greater as the upper cohesive layer extends to 0.8m and could locally be deeper elsewhere on site. Foundations that are carried deep to minimise lateral stresses on existing adjacent foundations may be stepped up, in accordance with the requirements of EC7, BS EN 1997 as long as a suitable founding stratum is present at shallower depth.

If trees are to be removed, the roots should be grubbed out and foundations extended to below the zone of disturbance created by this activity. In addition, foundations will need to extend below the depth of disturbance caused by the grubbing out of foundations and infrastructure associated with the existing development on the site.

The allowable bearing pressure for foundations takes into consideration the risk of shear failure of the ground (ultimate limit state) and acceptable limits of settlement (serviceability limit state).

Foundations which span founding materials of different stiffness should have mesh reinforcement placed at the top and bottom.

The depth of foundations should be designed, and the formations inspected by a Geotechnical Engineer. Any sub-formation materials deemed as unsuitable such as soft or loose zones should be excavated and replaced with well compacted suitable granular fill or lean mix concrete.

Foundation excavations should be protected from water and inclement weather including frost and any water should be removed by pumping from a sump in the base of the excavation.

All existing services and foundations to be removed should be grubbed out in a careful and controlled manner.

8.2.1 Strip or Trench Fill Foundations

Traditional strip or trench fill foundations are considered suitable for the proposed development, provided that construction is undertaken above groundwater. Seasonal variation may therefore influence construction if founding depth is at or below winter groundwater levels.

Based on the design soil parameters provided in earlier sections of this report an allowable net bearing capacity of 150kN/m^2 should be available for a strip or trench fill foundations bearing on the natural granular Northmoor Sand and Gravel member soils. This value includes a factor of safety of 3.0 against general shear failure and should result in total settlements of not more than 20mm for foundations up to 1m wide, keeping differential settlements within acceptable limits.

Foundations in excess of 2.5m depth are not anticipated at the site due to the nature of the soils and the observed groundwater elevations. However, if proposed they should be designed by an Engineer in accordance with the requirements of NHBC Standards.

8.2.2 Piled Foundations

The seasonal variation in the depth to groundwater is currently unknown but it is noted that the site is considered to be at risk from groundwater flooding at surface,

Therefore, should groundwater be encountered at foundation depth, it may be necessary to adopt a piled foundation solution. In addition, should deep Made Ground be encountered, such as in the area of the backfilled gravel pit, or in areas where removal of existing buried structures has significantly disrupted the shallow soils, difficulties due to uncontrolled groundwater may require the use of piled foundations.

Driven piles are likely to be appropriate given the ground conditions encountered, founding through the Made Ground and Northmoor Sands and Gravels and into the Kellaways Clay.

8.3 Ground Floor Slabs

Made Ground greater than 600mm thick was encountered in TP04 and should be anticipated across much of the site once foundations and services have been grubbed out. A thin cohesive layer was also encountered below the Made ground (where present) and above the granular Northmoor Send and Gravel, which may represent an upper weathering of the granular deposits. Therefore, it is recommended that suspended floor slabs should be adopted in areas where Made Ground/cohesive soils are encountered, in accordance with NHBC Standards. This recommendation should be reviewed once demolition and clearance is complete and further investigation has been undertaken.

Ground bearing slabs may be used should the Northmoor Sands and Gravels be exposed and if 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; and
- it is demonstrated that desiccation is not present and cohesive soils are at their equilibrium moisture content.

Prior to the placement of the founding materials and the construction of the ground bearing floor slab, the sub-formation and formation will need to be inspected and checked by a geotechnical engineer to ensure the ground conditions are as expected. This is likely to include sufficient appropriate testing, carried out in accordance with the DMRB IAN 73/06, to confirm the ground conditions at time of construction are consistent with the previous design parameters derived from this ground investigation.

8.4 Roads and Pavements

There is an assumption that levels across the site will remain broadly as they were at the time of the ground investigation.

It is considered likely that the granular content (gravel) within the shallow cohesive materials has artificially increased the indicative CBR (%) obtained through in-situ TRL DCP testing. Therefore, it is considered likely an equilibrium CBR of 2% will be achievable over the majority of the site in the shallow cohesive materials and can be used for preliminary design, subject to in situ testing during construction.

Test results within the Northmoor Sand and Gravel Member typically indicate a high CBR value. Where these granular materials are encountered close to surface, an equilibrium CBR of 5% should be achievable and can be used for preliminary design subject to further testing.

Notwithstanding, the depth to groundwater should be considered within the design as shallow groundwater could have a significant impact on road construction.

8.5 Buried Concrete

Based on guidelines provided in BRE Special Digest 1 (BRE 2005), the soils can be classified as Design Sulfate Class DS-1 and ACEC Class AC-1 (see Section 5.3.2). Further assessment of deeper materials will be required if a deeper foundation solution such as piling should be considered as no testing has currently been undertaken on the underlying Kellaway Clays.

9. UNCERTAINTIES AND LIMITATIONS

9.1 Site-Specific Comments

This was a targeted investigation, predominantly designed to assess contamination risk from currently identified sources of contamination, to assess groundwater levels at the time of the works and to give an understanding of the natural soil conditions at the site as requested by Acorn Property Group.

Overgrown areas of the site were not able to be accessed due to ecological limitations (bird nesting season).

The groundwater level logger monitoring is incomplete. Monitoring is ongoing and the conclusions of this report will be updated following completion of the scheduled monitoring.

It is important to note that the groundwater monitoring is taking place during the summer and there has been a low level of rainfall. Groundwater levels fluctuate and therefore it should be noted that monitoring may not record worst-case groundwater data.

The footprints of the buildings have not been investigated as most buildings are still in use, preventing intrusive ground investigation.

The suspected asbestos roofed burnt barn has not been investigated.

It should be noted that although there are landfill licenses for the North End West/Lake 62 sites it does not appear to have been completely landfilled because this area appears to be a lake. It is feasible that landfill licenses were obtained and never used or the area was partially landfilled and then flooded to form the lake. This discrepancy in the data requires clarification and further enquiries to try to find out the extent of any landfill. If this cannot be clarified it is advised that gas monitoring is undertaken within the existing borehole on site to get an initial indication as to whether there is any gas present.

9.2 General Comments

Hydrock Consultants Limited (Hydrock) has prepared this report in accordance with the instructions of James Groombridge on behalf of Acorn Property Group (the Client), by email dated 1st May 2018 under the terms of appointment for Hydrock. 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 and provided. Should the Client require to pass copies of the report to other parties for information, the whole of the report should be so copied, but no professional liability or warranty shall be extended to other parties by Hydrock in this connection without the explicit written agreement thereto by Hydrock.

This report details the findings of work carried out in May 2018. 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, all potential environmental constraints or liabilities associated with the site may not have been revealed.

Hydrock has used reasonable skill, care and diligence in the design of the investigation of the site. 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 findings described are only representative of the dates on which they were made and levels may vary.

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. It is assumed that previous reports provided have been assigned to the Client and can be relied upon. Should this not be the case Hydrock should be informed immediately as additional work may be required.

The work has been carried out in general accordance with recognised best practice. The various methodologies used are explained in Appendix H. 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 may be required should waste classification be required for consideration of off-site disposal of contaminated soils. Separate analyses will be required to meet the Waste Acceptance Criteria for specific landfill sites.

Unless otherwise stated, the chemical testing carried out for this report was not scoped to comply with the requirements of the water supply company and further work may be required.

The preliminary risk assessment process may identify potential risks to site demolition and redevelopment workers. However, consideration of occupational health and safety issues is beyond the scope of this report.

Please note that notwithstanding any site observations concerning the presence or otherwise of archaeological sites, asbestos-containing materials or invasive weeds such as Japanese knotweed, this report does not constitute a formal survey of these potential hazards.

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

10. RECOMMENDATIONS FOR FURTHER WORK

The following further works will be required:

- further investigation into the suspected burnt asbestos roofed barn in the west of the site in conjunction with a pre-demolition asbestos survey off all buildings on site;
- Liaise with regulator/Hills to confirm if off site gravel pit has been landfilled;
- two additional groundwater monitoring boreholes with groundwater monitoring over the winter.
- investigation of infilled gravel pit onsite.
- discussions with service providers regarding the materials suitable for pipework etc.
- post site clearance ground investigation to provide information to fully characterise the site.
- detailed design of foundations.
- gas monitoring if extent of landfilling cannot be established or if potentially gas generating Made Ground is identified on site.

11. REFERENCES

ALLEN, D. L., BREWERTON, L. J., COLEBY, L. M., GIBBS, B. R., LEWIS, M. A., MACDONALD, A. M., WAGSTAFF, S. J. and WILLIAMS, A.T. 1997. The physical properties of major aquifers in England and Wales. British Geological Survey Technical Report WD/97/34. 312pp. Environment Agency R&D Publication 8.

ASSOCIATION OF GROUND INVESTIGATION SPECIALISTS. 2006. Guidelines for Good Practice in Site Investigation. Issue 2. AGS, Beckenham.

BOYLE, R. and WITHERINGTON, P. JANUARY 2007. Guidance on evaluation of development proposals on sites where methane and carbon dioxide are present. Report No. 10627-R01(04). NHBC, Milton Keynes. 93pp + apps.

BRE. 1980. Low-rise buildings on shrinkable clay soils: Part 1. BRE Digest 240. Building Research Establishment, Garston, 4pp.

BRE. 1999. The influence of trees on house foundations in clay soils. BRE Digest 298. Building Research Establishment, Garston, 8pp.

BRE. 1991. Soakaways. BRE Digest 365. BRE, Garston.

BRE. 2005. Concrete in aggressive ground. BRE Special Digest 1, 3rd Edition. BRE, Garston.

BRITISH STANDARDS INSTITUTION. 1986. British Standard Code of practice for Foundations. BS 8004. BSI, London.

BRITISH STANDARDS INSTITUTION. 2003. Geotechnical investigation and testing - Identification and classification of rock - Part 1: Identification and description. BS EN ISO 14689-1 Incorporating Corrigendum No.1. BSI, London

BRITISH STANDARDS INSTITUTION. 2004. Eurocode 7 – Geotechnical design - Part 1: General rules. BS EN 1997-1. Incorporating Corrigendum No.1. BSI, London.

BRITISH STANDARDS INSTITUTION. 2006. Concrete – complementary British Standard to BS EN 206-1 – Part 1: Method of specifying and guidance to the specifier. BS 8500-1. BSI, London.

BRITISH STANDARDS INSTITUTION. 2007. Eurocode 7 – Geotechnical design - Part 2: Geotechnical investigation and testing. BS EN 1997-2. BSI, London.

BRITISH STANDARDS INSTITUTION. 2009. Code of practice for earthworks. BS 6031 Incorporating Corrigendum No.1:2010. BSI, London.

BRITISH STANDARDS INSTITUTION. 2011. Code of Practice for Investigation of Potentially Contaminated sites. BS 10175 Incorporating Amendment No.1:2013. BSI, London.

BRITISH STANDARDS INSTITUTION. 2012. Trees in relation to design, demolition and construction – Recommendations. BS 5837. BSI, London.

BRITISH STANDARDS INSTITUTION. 2015. Specification for topsoil. BS 3882. BSI, London.

BRITISH STANDARDS INSTITUTION. 2015. Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings. BS 8485. BSI, London.

BRITISH STANDARDS INSTITUTION. 2015. Code of practice for ground investigations. BS 5930. BSI, London.

CARD, G., WILSON, s. and MORTIMER, S. 2012. A pragmatic approach to ground gas risk assessment. CL:AIRE Research Bulletin RB17. CL:AIRE, London.

CIEH and CL:AIRE. May 2008. Guidance on comparing soil contamination data with a critical concentration. Chartered Institute of Environmental Health and Contaminated Land: Applications in Real Environments, London, 66pp.

CL:AIRE. March 2011. The Definition of Waste: Development Industry Code of Practice, Version 2. Contaminated Land: Applications in the Real Environment (CL:AIRE), London.

CLAYTON, C.R.I. 1995. The Standard Penetration Test (SPT): methods and use. CIRIA Report R143, CIRIA, London.

DCLG. March 2012. National Planning Policy Framework. DCLG, London.

DCLG. March 2012. Technical Guidance top the National Planning Policy Framework. DCLG, London.

DEFRA. March 2014. SP1010: Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination – Policy Companion Document. Defra, London.

ENVIRONMENT AGENCY. 2004. Model procedures for the management of land contamination. Contaminated Land Report 11. The Environment Agency.

ENVIRONMENT AGENCY. 2006. Remedial Targets Methodology. Hydrogeological Risk Assessment for Land Contamination. The Environment Agency, Bristol, 123pp.

ENVIRONMENT AGENCY. 2015. Waste classification. Guidance on the classification and assessment of waste (1st Ed.) Technical Guidance WM3. The Environment Agency.

HATANAKA, M. and UCHIDA, A. 1996. Empirical correlation between penetration resistance and effective friction of sandy soil. Soils & Foundations, 36 (4), 1-9. Japanese Geotechnical Society.

HIGHWAYS AGENCY. 2009. Design Guidance for Road Pavement Foundations (Draft HD25). Interim Advice Note 73/06. Rev 1. Highway Agency, London.

HIGHWAYS AGENCY. 2014. Manual of Contract Documents for Highway Works, Specification for Highway Works: Volume 1, Amendment August 2014. Highway Agency, London.

JONES, H. K., MORRIS, B. L., CHENEY, C. S., BREWERTON, L. J., MERRIN, P. D., LEWIS, M. A., MACDONALD, A. M., COLEBY, L. M., TALBOT, J. C., MCKENZIE, A. A., BIRD, M. J., CUNNINGHAM, J. and ROBINSON, V. K. 2000. The physical properties of minor aquifers in England and Wales. British Geological Survey Technical Report WD/00/04. 234pp. Environment Agency R&D Publication 68.

MALLETT, H., COX, L., WILSON, S., and CORBAN, M. 2014. Good practice on the testing and verification of protection systems for buildings against hazardous ground gases. CIRIA Report C735. CIRIA, London.

MILES, J. C. H., APPLETON, J. D., REES, D. M., GREEN, B. M. R., ADLAM. K. A. M. and MYRES. A. H. 2007. Indicative Atlas of Radon in England and Wales. Health Protection Agency and British Geological Survey. Report HPA-RPD-033.

NHBC. 2014. NHBC Standards, Part 1 Introduction and Technical Requirements. NHBC, Milton Keynes.

NHBC. 2014. NHBC Standards, Part 4 Foundations. NHBC, Milton Keynes.

NHBC. 2014. NHBC Standards, Chapter 4.2 Building near trees. NHBC, Milton Keynes.

RAWLINS, B. G., McGRATH, S. P., SCHEIB, A. J., CAVE, N., LISTER, T. R., INGHAM, M., GOWING, C. and CARTER, S. 2012 .The advanced geochemical atlas of England and Wales. British Geological Survey, Keyworth.

SCIVYER, C. 2015. Radon: Guidance on protective measures for new buildings. Building Research Establishment Report BR 211. BRE, Garston.

STONE, K., MURRAY, A., COOKE, S., FORAN, J. and GOODERHAM, L. 2009. Unexploded ordnance (UXO), a guide to the construction industry. CIRIA Report C681. CIRIA, London. 141 pp.

STROUD, M. A. 1975. The standard penetration test in insensitive clays and soft rocks. Proceedings of the European Symposium on penetration testing, 2, 367-375.

UKTAG. November 2013 (updated January 2014). Updated recommendations on environmental standards. River Basin Management (2015-21). UK Technical Advisory Group on the Water Framework Directive.

WATER UK HBF. January 2014. Contaminated Land Assessment Guidance. Water UK and the Home Builders Federation. 12pp.

WFD-UKTAG. July 2014. UKTAG River & Lake Assessment Method, Specific Pollutants (Metals), Metal Bioavailability Assessment Tool (M-BAT). Water Framework Directive – United Kingdom Technical Advisory Group. Stirling.

WILSON, S., OLIVER, S., MALLETT, H., HUTCHINGS, H. and CARD, G. 2007. Assessing risks posed by hazardous ground gases to buildings. CIRIA Report C665. CIRIA, London. 182pp.

Appendix A

Drawings



The Builder is to check and verify all buildings and site dimensions, levels and sewer invert levels prior to commencement of work.

Do not scale off this drawing, work to figured dimensions only.

This drawing must be read and checked with all structural and relevant specialist drawings.

The Builder is to comply in all respects with the current Building Regulations and latest Codes of Practice.

Revisions

No.	Description	Date

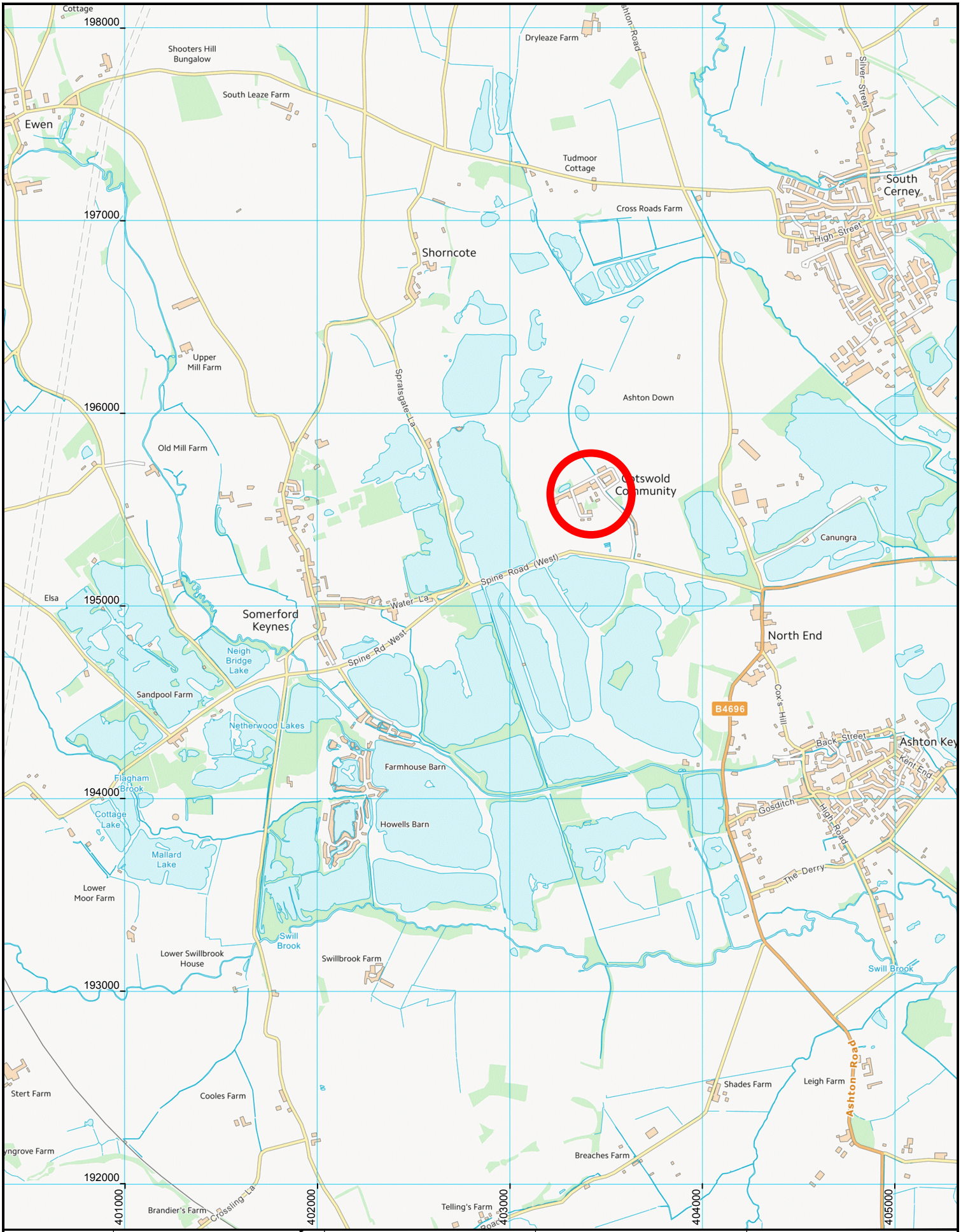
Acorn,
Cotswold Community, Ashton Keynes

New Residential Development

Ritchie & Ritchie Architects LLP
The Manor House, Lichfield Street, Tamworth,
Staffordshire, B79 7QF
+44 (0)1827 62251
www.randrarchitects.co.uk

Proposed Site Plan

Scale	Date	Drawn	Job	Drawing
1:1000 A1	May 2018	IDR/BTE	1000-642	153A



OS NORTH

Site Ref: SU09

0 500 Metres

GLOUCESTERSHIRE

WILTSHIRE SWINDON

REV.						
P1	FIRST ISSUE					
	AT	24/05/18	SM	24/05/18	KS	24/05/18
	REVISION NOTES/COMMENTS					
	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE

Hydrock

Over Court Barns
Over Lane
Almondsbury, Bristol BS32 4DF
TEL: 01454 619 533
FAX: 01454 614 125
E-Mail: bristol@hydrock.com
or visit www.hydrock.com

CLIENT: ACORN PROPERTY GROUP

PROJECT: ASHTON KEYNES

TITLE: SITE LOCATION PLAN

HYDROCK PROJECT NO.	SCALE @ A4
C-09612-C	1:25,000

PURPOSE OF ISSUE	STATUS
SUITABLE FOR INFORMATION	S2

DRAWING NO. (PROJECT CODE-ORGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER)	REVISION
CCS-HYD-XX-GI-DR-G-1000	P1

OS NORTH

Tennis courts

Orchard

Ponds

Bio-hazard

Gym
Boiler house and fuel tank
Swimming pool

Ponds

Fuel tanks

Fuel tanks

Pond

Listed

Listed

Temporary toilet

Fuel spill

Listed

Listed

Burnt asbestos barn

Gravel pit
-first shown 1921 Map
- Infilled prior to1972 Map

Former pole mounted transformer

Dry watercourse

Electric intake

Wooded Area

Sewage treatment works

220m East off site
-Flooded gravel pit shown on environmental data report as Industrial Waste Landfill

Locked gate

Milk churn store

House

1 2 3 4 5 6 7 8 9 10

KEY

01 Photo location and reference

Notable site feature

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					
	AT	26/07/18	SM	26/07/18	KS	26/07/18
REV.	REVISION NOTES/COMMENTS					
	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE

Hydrock
Over Court Barns
Over Lane
Almondsbury, Bristol BS32 4DF
TEL: 01454 619 533
FAX: 01454 614 125
E-Mail: bristol@hydrock.com
or visit www.hydrock.com

CLIENT

ACORN PROPERTY GROUP

PROJECT

COTSWOLD COMMUNITY SCHOOL, ASHTON KEYNES

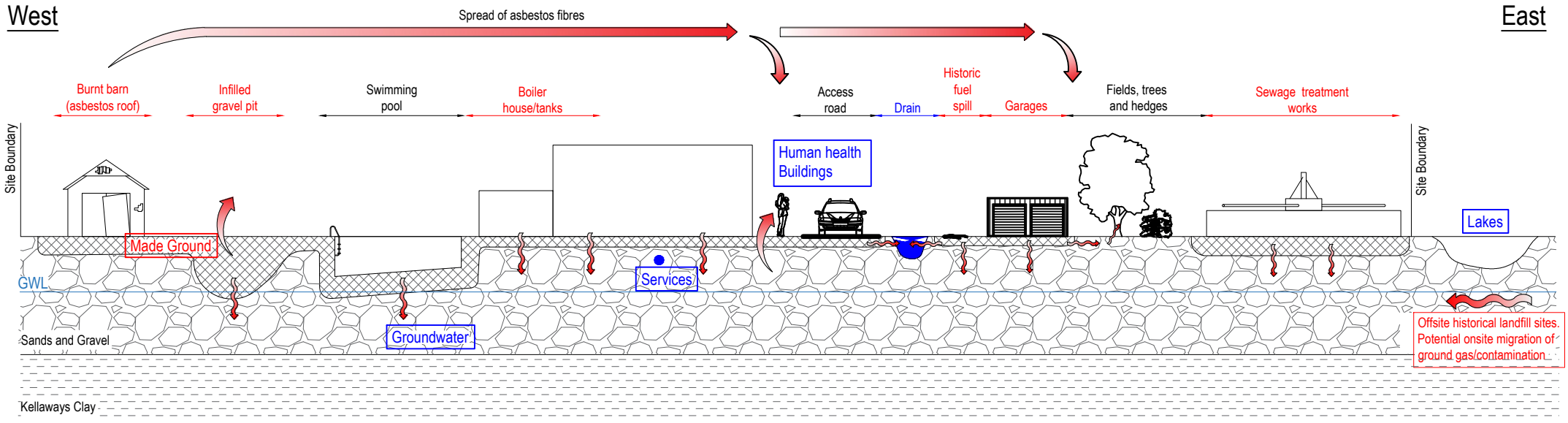
TITLE

SITE WALKOVER PLAN

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

PURPOSE OF ISSUE	STATUS
SUITABLE FOR INFORMATION	S2

DRAWING NO. (PROJECT CODE-ORIGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER)	REVISION
CCS-HYD-XX-GI-DR-G-1002	P1



Sources

- Elevated metals within natural soild
- Infilled pond
- Boiler house
- Fuel tanks

  } Made ground associated
- Sewage treatment works
- Former pole mounted transformer
- Burnt asbestos barn
- Made ground and ground gases associated with infilled gravel pit and offsite landfills

Pathways

- Onsite migration of ground gas
- Ingestion, skin contact, inhalation of dust and outdoor air
- Plant life root uptake
- Migration via ground water
- Surface water
- Gas ingress to buildings

Receptors

- Humans
- Development end use (buildings, utilities and landscaping)
- Groundwater
- Surface water
- Ecology

Legend

- Made Ground
- Northmoor sands and gravel
- Kellaways clays

KEY

NOTES

REV.	REVISION NOTES/COMMENTS	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE
P1	FIRST ISSUE	AT	19/06/18	KS	19/06/18	KS	19/06/18

Hydrock
Over Court Barns
Over Lane
Almondsbury, Bristol BS32 4DF
TEL: 01454 619 533
FAX: 01454 614 125
E-Mail: bristol@hydrock.com
or visit www.hydrock.com

CLIENT: ACORN PROPERTY GROUP

PROJECT: ASHTON KEYNES

TITLE: CONCEPTUAL SITE MODEL

HYDROCK PROJECT NO.: C-09612-C

SCALE @ A4: N/A

PURPOSE OF ISSUE: SUITABLE FOR INFORMATION

STATUS: S2

DRAWING NO. (PROJECT CODE-ORGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER): CCS-HYD-XX-GI-DR-G-1003

REVISION: P1

Appendix B

Site Walkover Photographs



Plate 1: Oil tanks near TP04



Plate 2: Pond near TP02



Plate 3: Swimming pool boiler house



Plate 4: Disused swimming pool



Plate 5: Agricultural buildings near TP06



Plate 6: Burned suspected asbestos roofed barn



Plate 7: Field in south of site



Plate 8: Garages to east of access lane near TP01



Plate 9: Listed buildings in centre of the built-up area



Plate 10: Sewage works in south of the site

Appendix C

Historical Ordinance Survey Maps

Historical Mapping Legends

Ordnance Survey County Series 1:10,560

Gravel Pit
Sand Pit
Other Pits
Quarry
Shingle
Orchard
Osiers
Reeds
Marsh
Mixed Wood
Deciduous
Brushwood
Fir
Furze
Rough Pasture
Arrow denotes flow of water
Trigonometrical Station
Site of Antiquities
Bench Mark
Pump, Guide Post, Signal Post
Well, Spring, Boundary Post
·285 Surface Level
Sketched Contour
Instrumental Contour
Main Roads
Fenced
Un-Fenced
Minor Roads
Fenced
Un-Fenced
Sunken Road
Raised Road
Road over Railway
Railway over River
Railway over Road
Level Crossing
Road over River or Canal
Road over Stream
Road over Stream
County Boundary (Geographical)
County & Civil Parish Boundary
Administrative County & Civil Parish Boundary
Co. Boro. Bdy. County Borough Boundary (England)
Co. Burgh Bdy. County Burgh Boundary (Scotland)
R.D. Bdy. Rural District Boundary
Civil Parish Boundary

Ordnance Survey Plan 1:10,000

Chalk Pit, Clay Pit or Quarry
Gravel Pit
Sand Pit
Disused Pit or Quarry
Refuse or Slag Heap
Lake, Loch or Pond
Dunes
Boulders
Coniferous Trees
Non-Coniferous Trees
Orchard
Scrub
Coppice
Bracken
Heath
Rough Grassland
Marsh
Reeds
Saltings
Building
Direction of Flow of Water
Shingle
Sand
Glasshouse
Pylon
Pylon
Electricity Transmission Line
Sloping Masonry
Cutting
Embankment
Standard Gauge Multiple Track
Road Under
Road Over
Level Crossing
Foot Bridge
Standard Gauge Single Track
Siding, Tramway or Mineral Line
Narrow Gauge
Geographical County
Administrative County, County Borough or County of City
Municipal Borough, Urban or Rural District, Burgh or District Council
Borough, Burgh or County Constituency
Shown only when not coincident with other boundaries
Civil Parish
Shown alternately when coincidence of boundaries occurs

BP, BS	Boundary Post or Stone	Pol Sta	Police Station
Ch	Church	PO	Post Office
CH	Club House	PC	Public Convenience
F E Sta	Fire Engine Station	PH	Public House
FB	Foot Bridge	SB	Signal Box
Fn	Fountain	Spr	Spring
GP	Guide Post	TCB	Telephone Call Box
MP	Mile Post	TCP	Telephone Call Post
MS	Mile Stone	W	Well

1:10,000 Raster Mapping

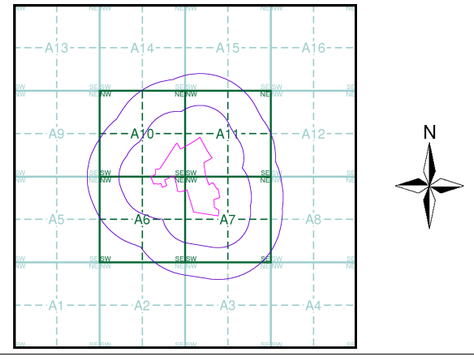
Gravel Pit
Refuse tip or slag heap
Rock
Rock (scattered)
Boulders
Boulders (scattered)
Shingle
Mud
Mud
Sand
Sand
Sand Pit
Slopes
Top of cliff
General detail
Underground detail
Overhead detail
Narrow gauge railway
Multi-track railway
Single track railway
County boundary (England only)
Civil, parish or community boundary
District, Unitary, Metropolitan, London Borough boundary
Constituency boundary
Area of wooded vegetation
Non-coniferous trees
Non-coniferous trees (scattered)
Coniferous trees
Coniferous trees (scattered)
Positioned tree
Orchard
Coppice or Osiers
Rough Grassland
Heath
Scrub
Marsh, Salt Marsh or Reeds
Water feature
Flow arrows
MHW(S) Mean high water (springs)
MLW(S) Mean low water (springs)
Telephone line (where shown)
Electricity transmission line (with poles)
BM 123.45 m Bench mark (where shown)
Triangulation station
Point feature (e.g. Guide Post or Mile Stone)
Pylon, flare stack or lighting tower
Site of (antiquity)
Glasshouse
General Building
Important Building

Hydrock

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Gloucestershire	1:10,560	1885	2
Wiltshire	1:10,560	1900 - 1903	3
Gloucestershire	1:10,560	1903	4
Gloucestershire	1:10,560	1924	5
Ordnance Survey Plan	1:10,000	1960	6
Ordnance Survey Plan	1:10,000	1975 - 1976	7
10K Raster Mapping	1:10,000	2000	8
10K Raster Mapping	1:10,000	2006	9
VectorMap Local	1:10,000	2018	10

Historical Map - Slice A



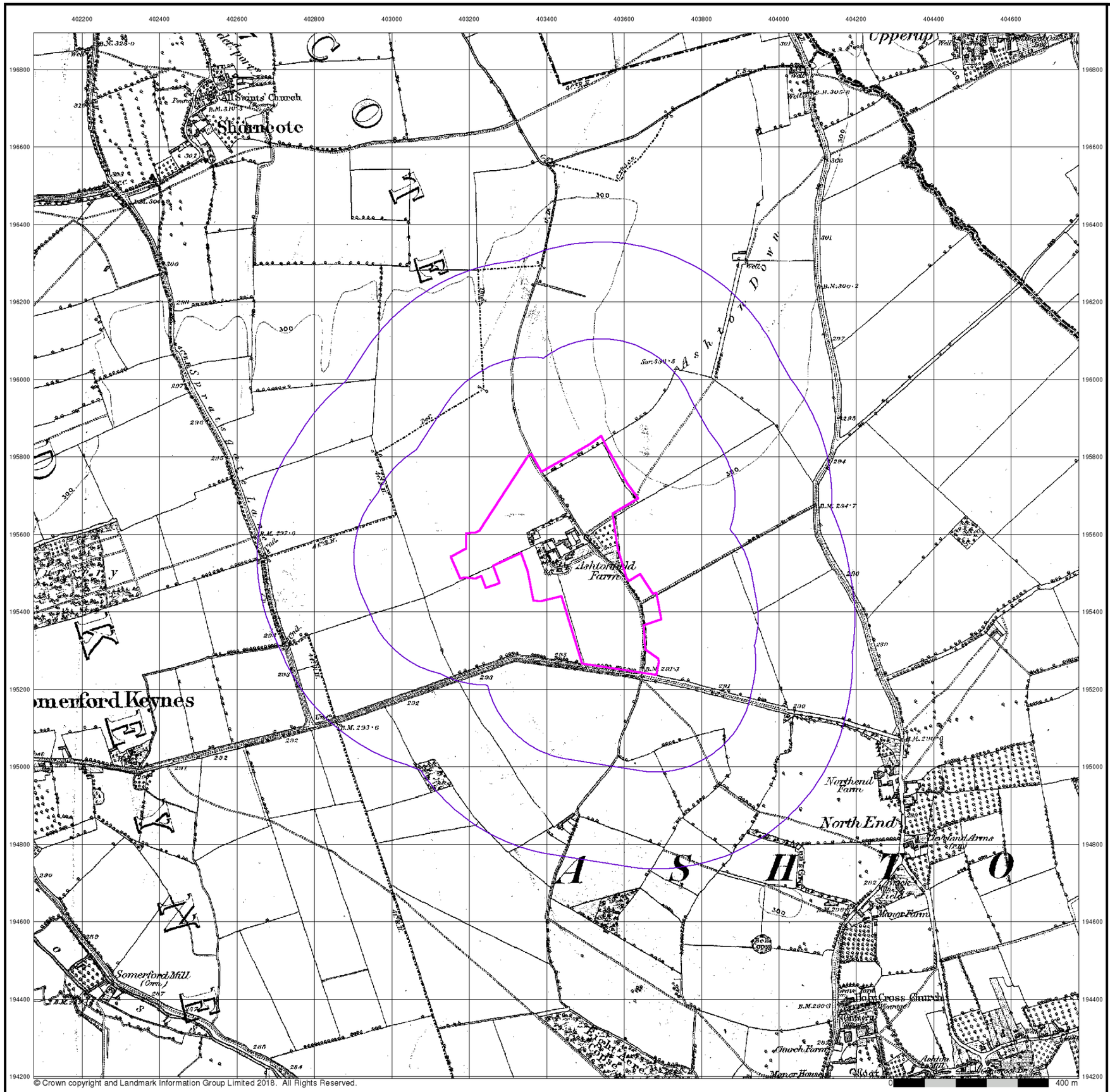
Order Details

Order Number: 168381006_1_1
Customer Ref: C-09612-C
National Grid Reference: 403470, 195530
Slice: A
Site Area (Ha): 16.1
Search Buffer (m): 500

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



© Crown copyright and Landmark Information Group Limited 2018. All Rights Reserved.

Hydrock

Gloucestershire

Published 1885

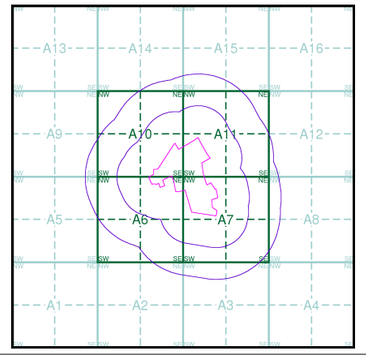
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

05900
1885
1:10,560

Historical Map - Slice A



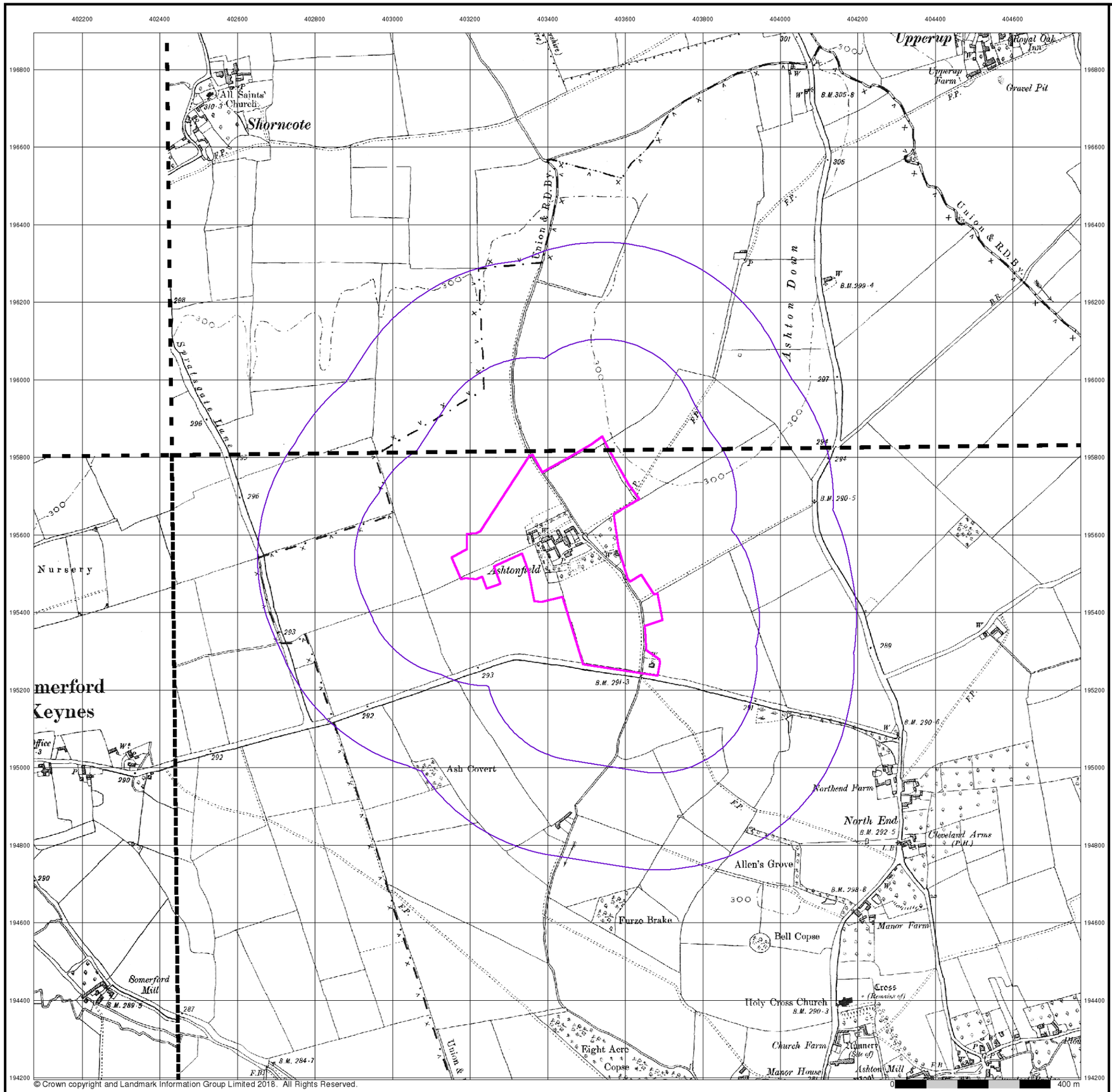
Order Details

Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	500

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



© Crown copyright and Landmark Information Group Limited 2018. All Rights Reserved.

Hydrock

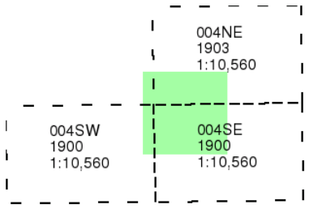
Wiltshire

Published 1900 - 1903

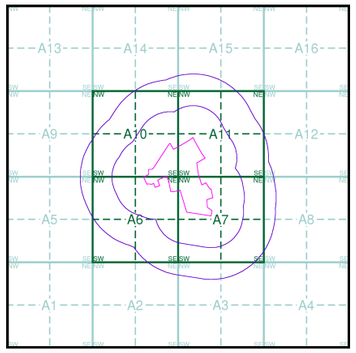
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A



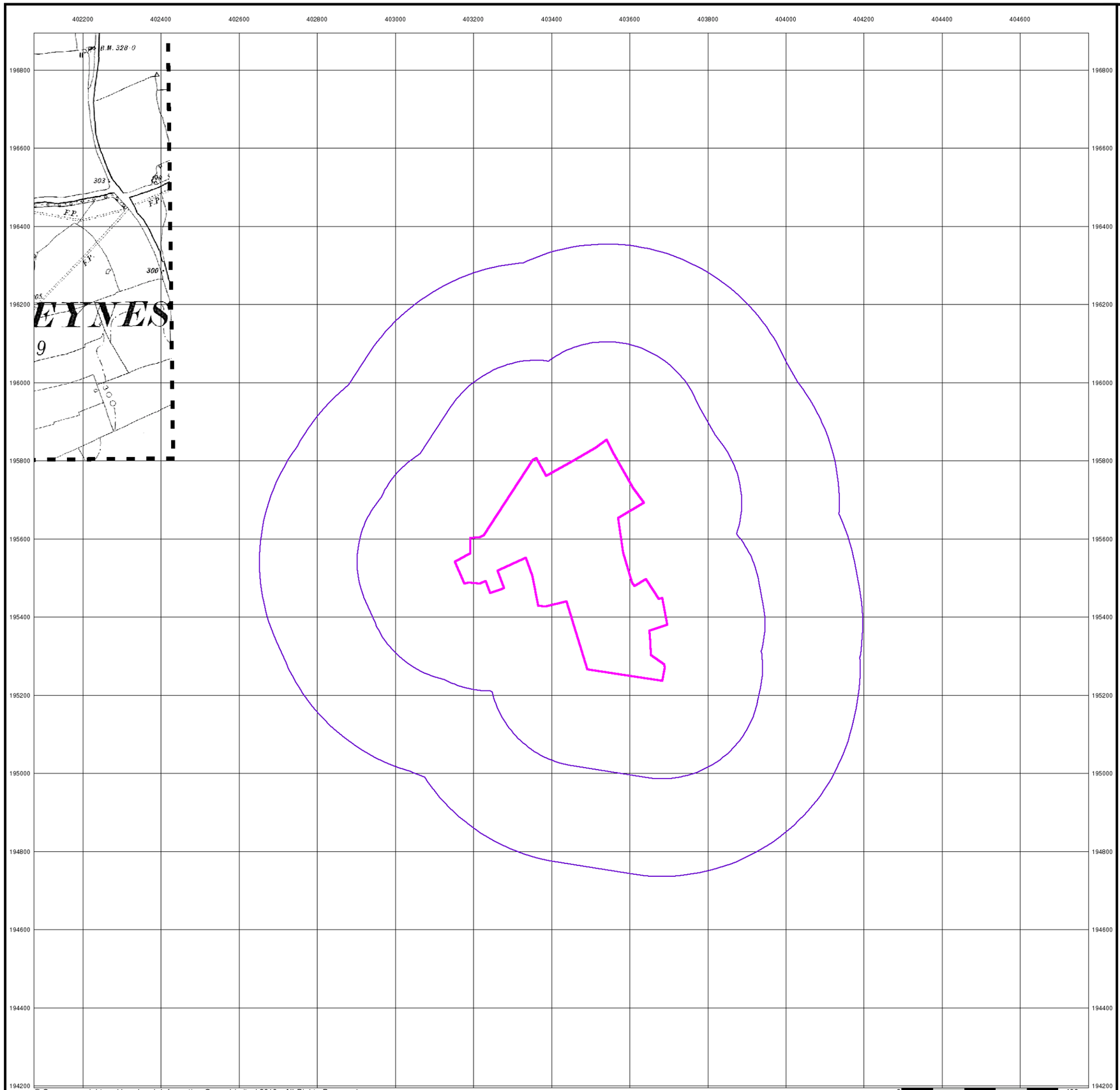
Order Details

Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	500

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



© Crown copyright and Landmark Information Group Limited 2018. All Rights Reserved.

Hydrock

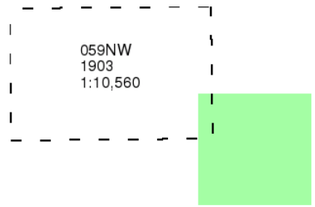
Gloucestershire

Published 1903

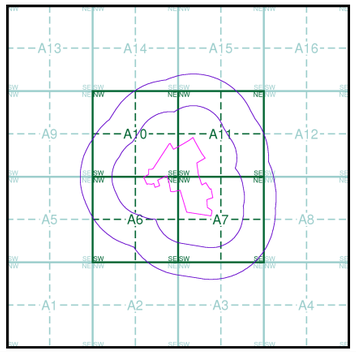
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

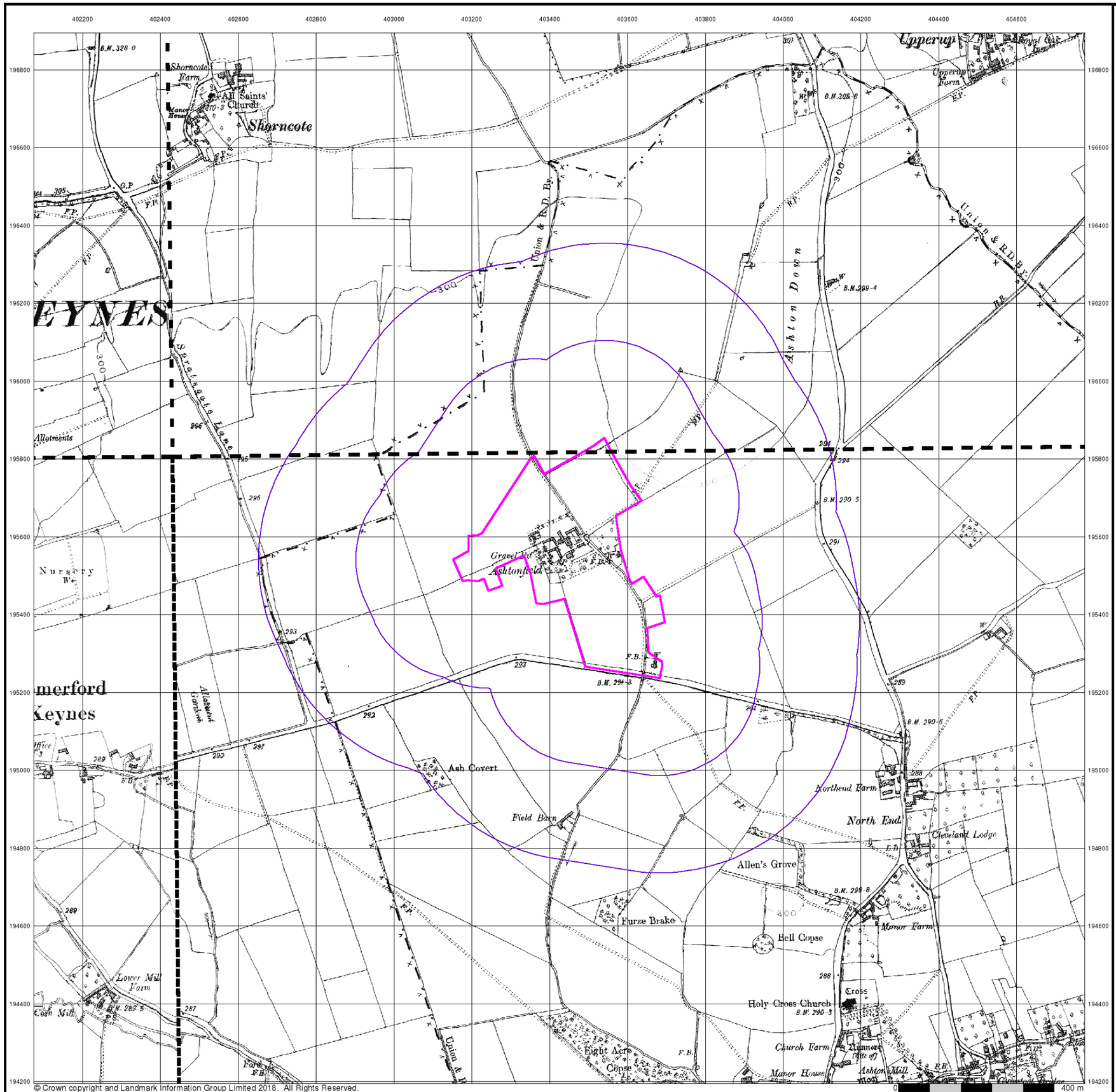
Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	500

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



© Crown copyright and Landmark Information Group Limited 2018. All Rights Reserved.

Hydrock

Gloucestershire

Published 1924

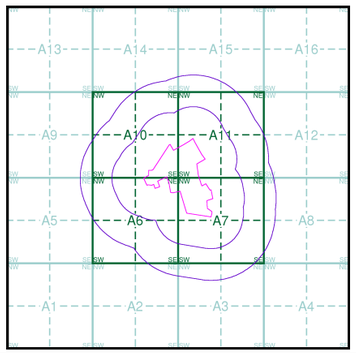
Source map scale - 1:10,560

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

059NW 1924 1:10,560	059NE 1924 1:10,560
059SW 1924 1:10,560	059SE 1924 1:10,560

Historical Map - Slice A



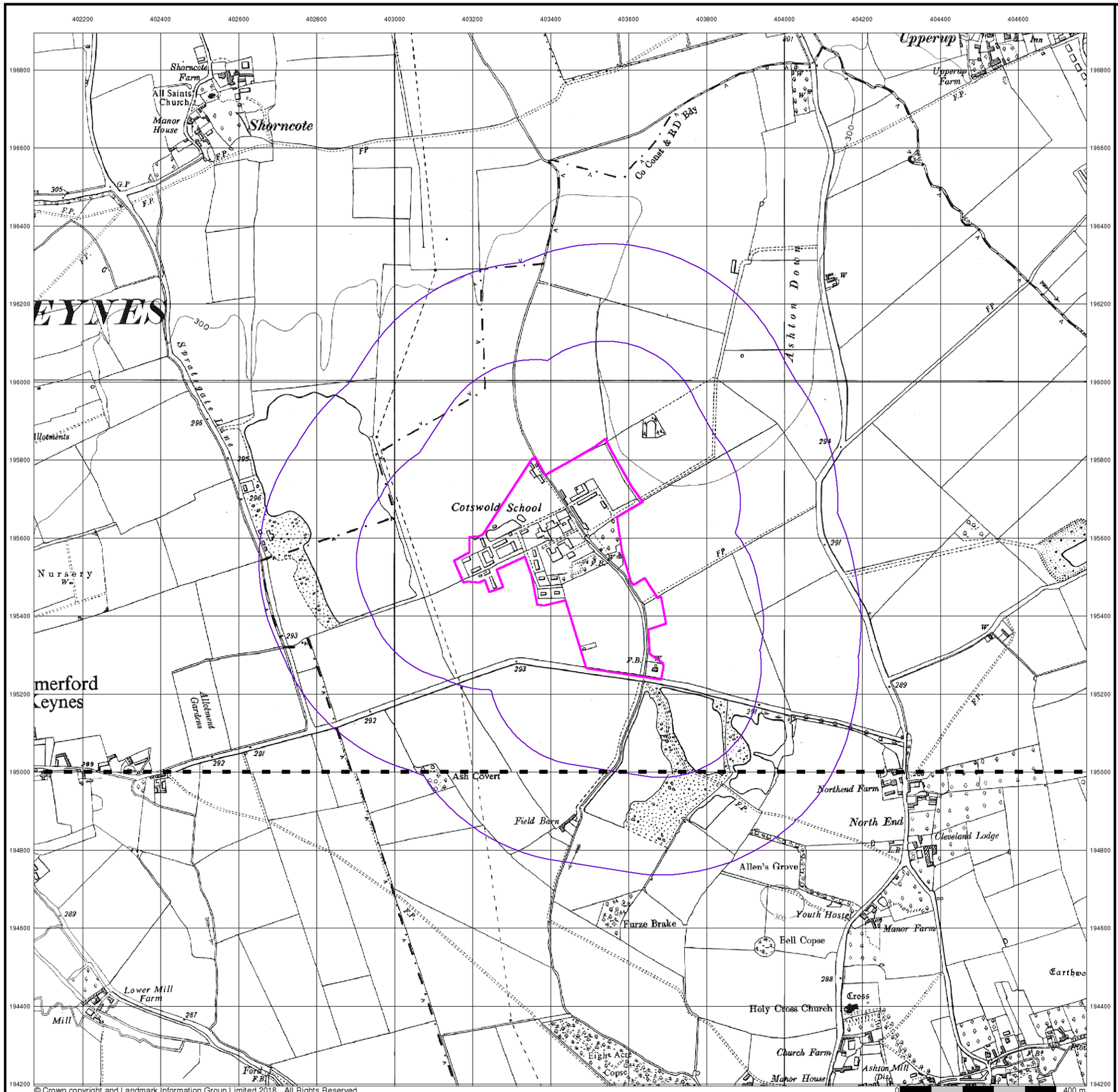
Order Details

Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	500

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



© Crown copyright and Landmark Information Group Limited 2018. All Rights Reserved.

Hydrock

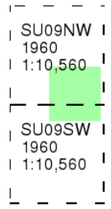
Ordnance Survey Plan

Published 1960

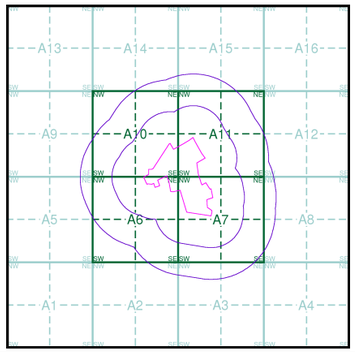
Source map scale - 1:10,000

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)



Historical Map - Slice A



Order Details

Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	500

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



© Crown copyright and Landmark Information Group Limited 2018. All Rights Reserved.

Hydrock

Ordnance Survey Plan

Published 1975 - 1976

Source map scale - 1:10,000

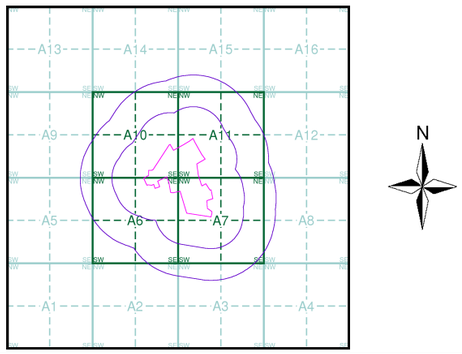
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas; these maps were used to update the 1:10,560 maps. The published date given therefore is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas. In the late 1940`s, a Provisional Edition was produced, which updated the 1:10,560 mapping from a number of sources. The maps appear unfinished - with all military camps and other strategic sites removed. These maps were initially overprinted with the National Grid. In 1970, the first 1:10,000 maps were produced using the Transverse Mercator Projection. The revision process continued until recently, with new editions appearing every 10 years or so for urban areas.

Map Name(s) and Date(s)

SU09NW
1976
1:10,000

SU09SW
1975
1:10,000

Historical Map - Slice A



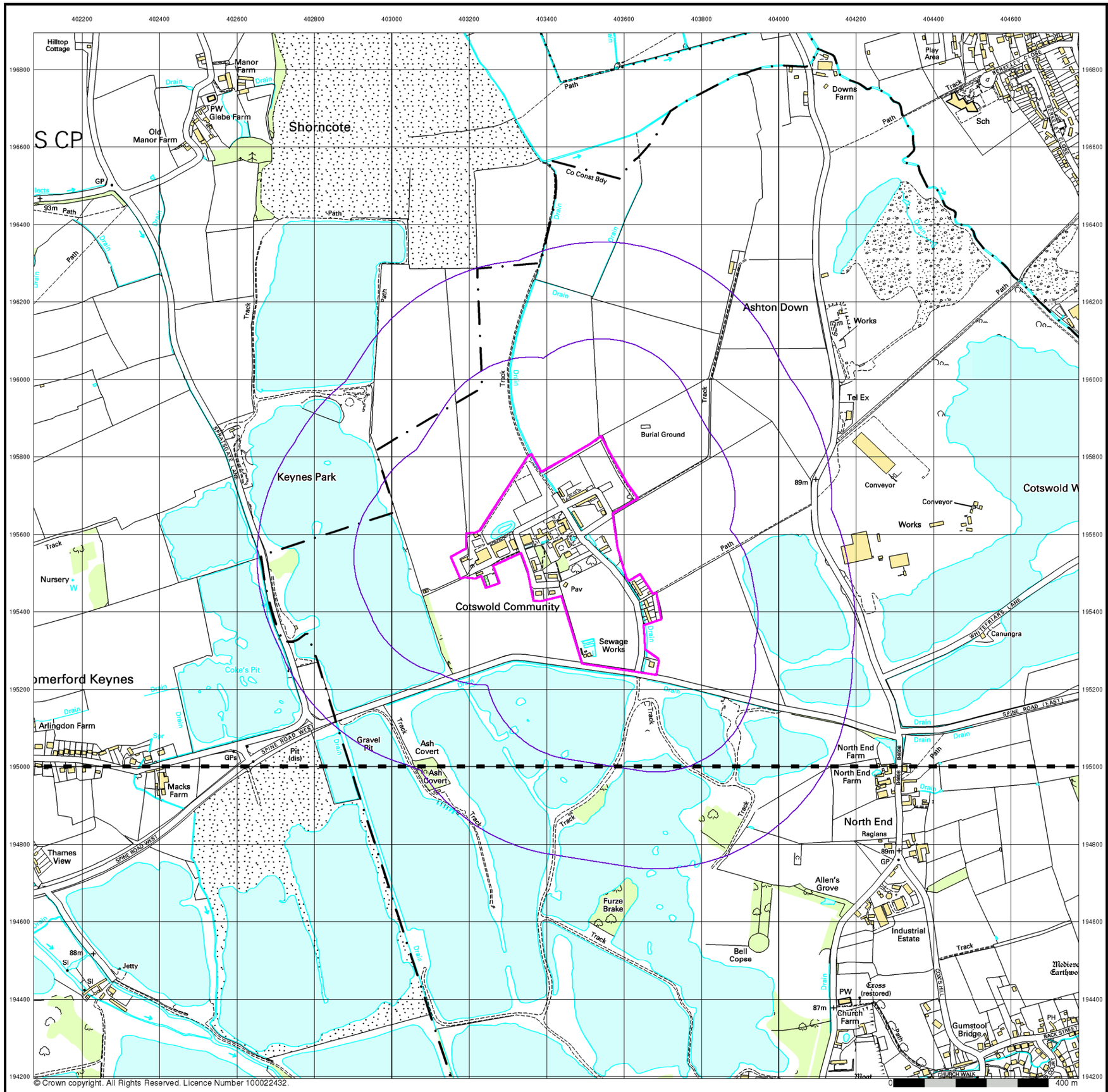
Order Details

Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	500

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



Hydrock

10k Raster Mapping

Published 2000

Source map scale - 1:10,000

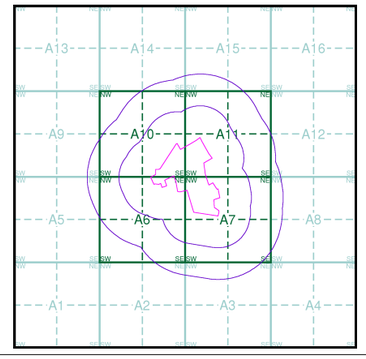
The historical maps shown were produced from the Ordnance Survey`s 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)

SU09NW
2000
1:10,000

SU09SW
2000
1:10,000

Historical Map - Slice A



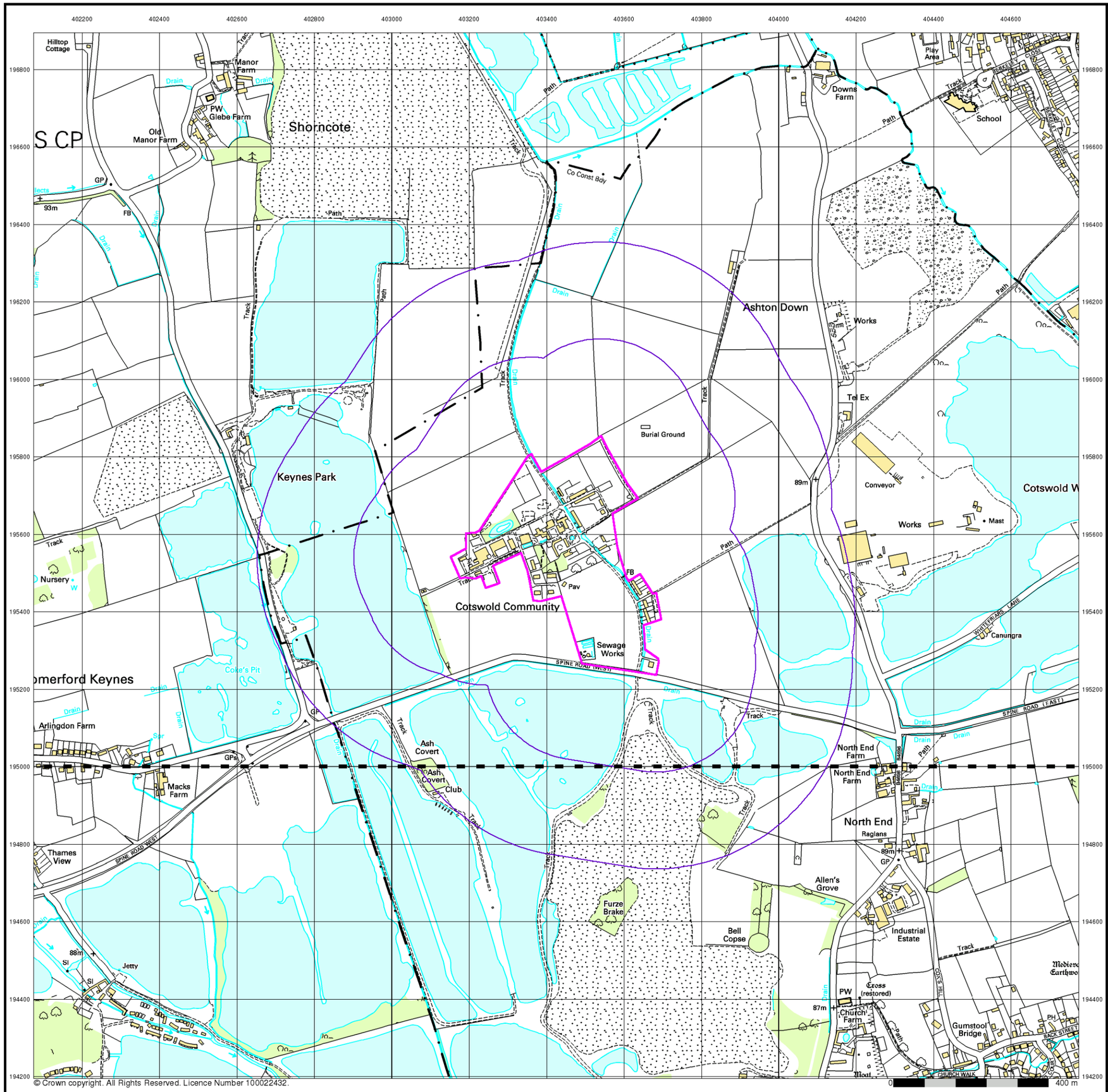
Order Details

Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	500

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



© Crown copyright. All Rights Reserved. Licence Number 100022432.

Hydrock

10k Raster Mapping

Published 2006

Source map scale - 1:10,000

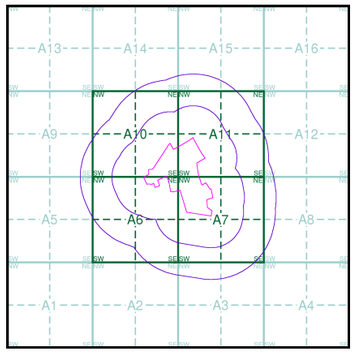
The historical maps shown were produced from the Ordnance Survey`s 1:10,000 colour raster mapping. These maps are derived from Landplan which replaced the old 1:10,000 maps originally published in 1970. The data is highly detailed showing buildings, fences and field boundaries as well as all roads, tracks and paths. Road names are also included together with the relevant road number and classification. Boundary information depiction includes county, unitary authority, district, civil parish and constituency.

Map Name(s) and Date(s)

SU09NW
2006
1:10,000

SU09SW
2006
1:10,000

Historical Map - Slice A



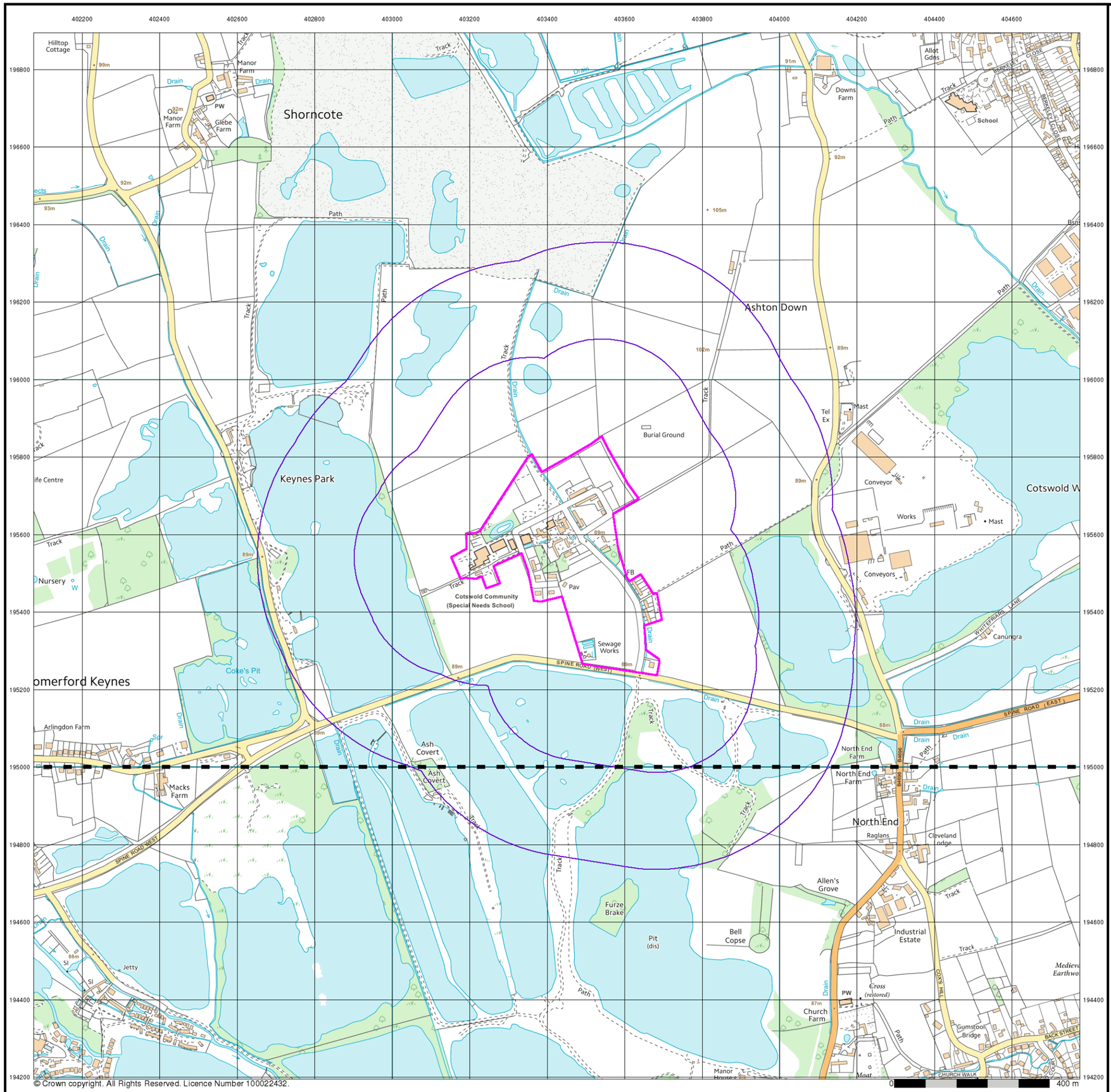
Order Details

Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	500

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



© Crown copyright. All Rights Reserved. Licence Number 100022432.

Hydrock

VectorMap Local

Published 2018

Source map scale - 1:10,000

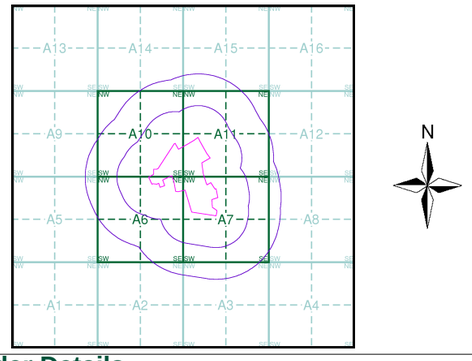
VectorMap Local (Raster) is Ordnance Survey's highest detailed 'backdrop' mapping product. These maps are produced from OS's VectorMap Local, a simple vector dataset at a nominal scale of 1:10,000, covering the whole of Great Britain, that has been designed for creating graphical mapping. OS VectorMap Local is derived from large-scale information surveyed at 1:1250 scale (covering major towns and cities),1:2500 scale (smaller towns, villages and developed rural areas), and 1:10 000 scale (mountain, moorland and river estuary areas).

Map Name(s) and Date(s)

SU09NW
2018
Variable

SU09SW
2018
Variable

Historical Map - Slice A



Order Details

Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	500

Site Details

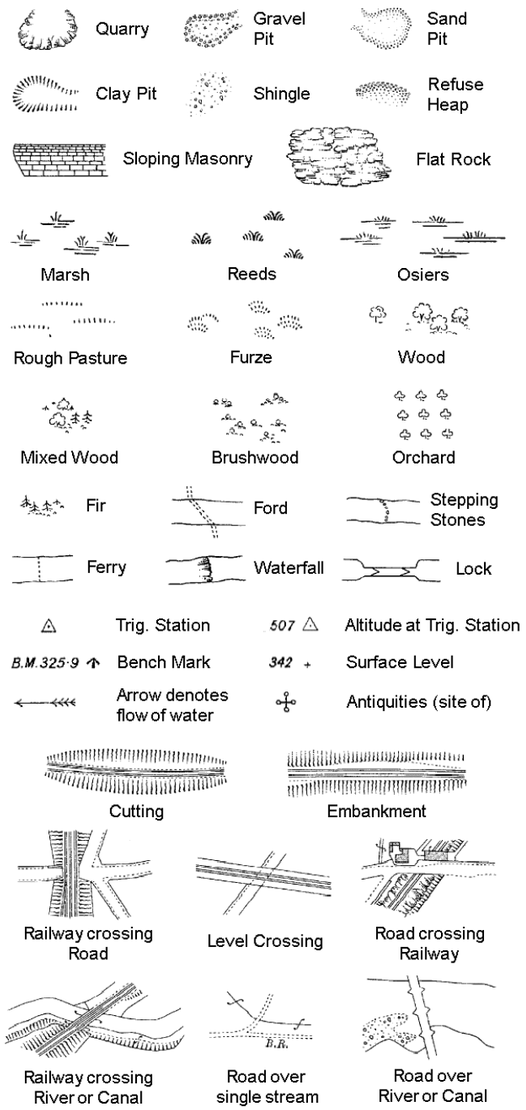
Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk

Historical Mapping Legends

Ordnance Survey County Series and Ordnance Survey Plan 1:2,500



County Boundary (Geographical)

County & Civil Parish Boundary

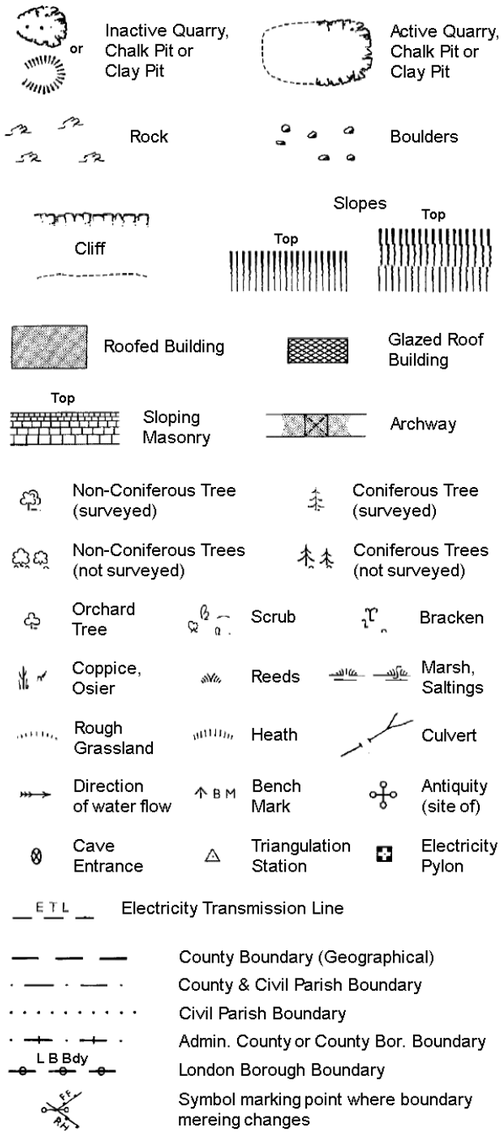
Administrative County & Civil Parish Boundary

Co. Boro. Bdy. County Borough Boundary (England)

Co. Burgh Bdy. County Burgh Boundary (Scotland)

B P B S	Boundary Post or Stone	P.C.B	Police Call Box
B.R.	Bridle Road	P	Pump
E.P	Electricity Pylon	S.P	Signal Post
F.B.	Foot Bridge	St.	Sluice
F.P.	Foot Path	Sp.	Spring
G.P	Guide Post or Board	T.C.B	Telephone Call Box
M.S	Mile Stone	Tr.	Trough
M.P M.R	Mooring Post or Ring	W	Well

Ordnance Survey Plan, Additional SIMs and Supply of Unpublished Survey Information 1:2,500 and 1:1,250



County Boundary (Geographical)

County & Civil Parish Boundary

Civil Parish Boundary

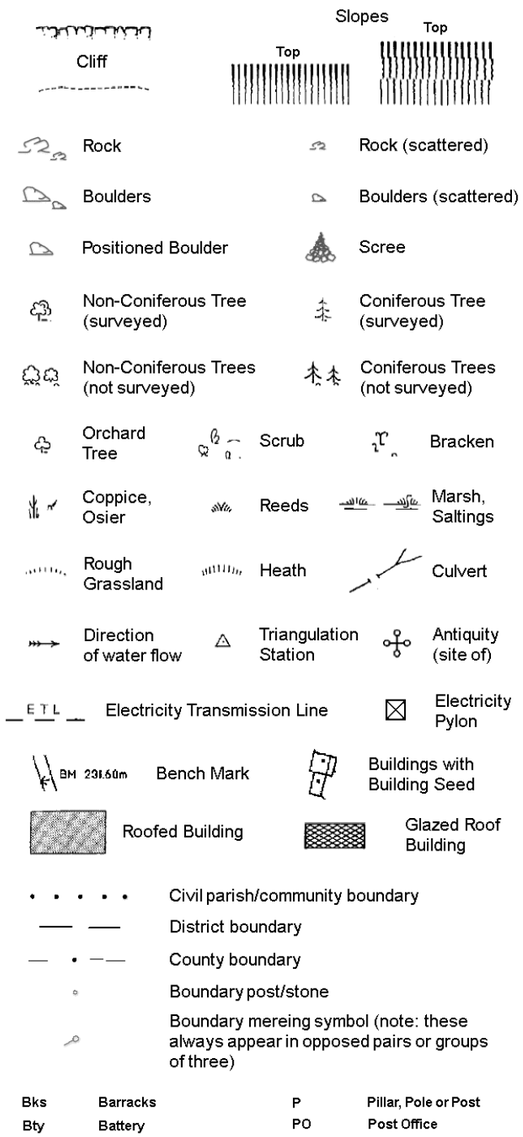
Admin. County or County Bor. Boundary

L B Bdy London Borough Boundary

Symbol marking point where boundary mereing changes

BH	Beer House	P	Pillar, Pole or Post
BP, BS	Boundary Post or Stone	PO	Post Office
Cn, C	Capstan, Crane	PC	Public Convenience
Chy	Chimney	PH	Public House
D Fn	Drinking Fountain	Pp	Pump
El P	Electricity Pillar or Post	SB, S Br	Signal Box or Bridge
FAP	Fire Alarm Pillar	SP, SL	Signal Post or Light
FB	Foot Bridge	Spr	Spring
GP	Guide Post	Tk	Tank or Track
H	Hydrant or Hydraulic	TCB	Telephone Call Box
LC	Level Crossing	TCP	Telephone Call Post
MH	Manhole	Tr	Trough
MP	Mile Post or Mooring Post	Wr Pt, Wr T	Water Point, Water Tap
MS	Mile Stone	W	Well
NTL	Normal Tidal Limit	Wd Pp	Wind Pump

Large-Scale National Grid Data 1:2,500 and 1:1,250



Civil parish/community boundary

District boundary

County boundary

Boundary post/stone

Boundary mereing symbol (note: these always appear in opposed pairs or groups of three)

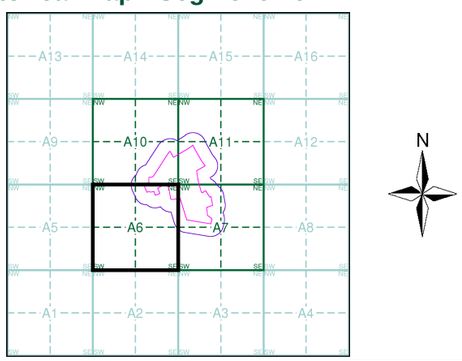
Bks	Barracks	P	Pillar, Pole or Post
Bty	Battery	PO	Post Office
Cemy	Cemetery	PC	Public Convenience
Chy	Chimney	Pp	Pump
Cis	Cistern	Ppg Sta	Pumping Station
Dismtd Rly	Dismantled Railway	PW	Place of Worship
El Gen Sta	Electricity Generating Station	Sewage Ppg Sta	Sewage Pumping Station
El P	Electricity Pole, Pillar	SB, S Br	Signal Box or Bridge
El Sub Sta	Electricity Sub Station	SP, SL	Signal Post or Light
FB	Filter Bed	Spr	Spring
Fn / D Fn	Fountain / Drinking Ftn.	Tk	Tank or Track
Gas Gov	Gas Valve Compound	Tr	Trough
GVC	Gas Governer	Wd Pp	Wind Pump
GP	Guide Post	Wr Pt, Wr T	Water Point, Water Tap
MH	Manhole	Wks	Works (building or area)
MP, MS	Mile Post or Mile Stone	W	Well

Hydrock

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Wiltshire	1:2,500	1875	2
Wiltshire	1:2,500	1900	3
Gloucestershire	1:2,500	1921	4
Wiltshire	1:2,500	1921	5
Ordnance Survey Plan	1:2,500	1972 - 1973	6
Additional SIMs	1:2,500	1978 - 1993	7
Additional SIMs	1:2,500	1990	8
Large-Scale National Grid Data	1:2,500	1994	9
Historical Aerial Photography	1:2,500	1999	10

Historical Map - Segment A6



Order Details

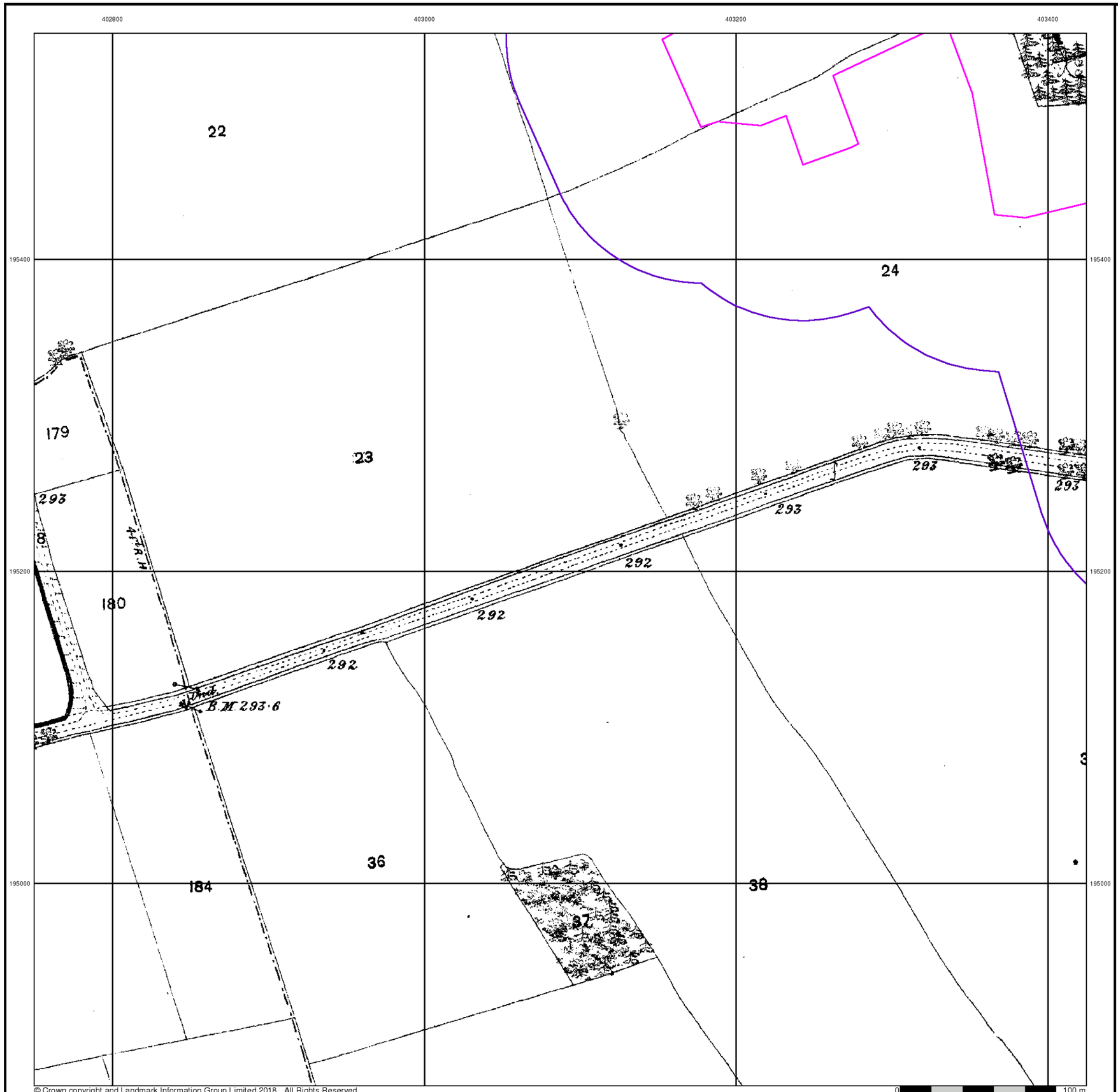
Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	100

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



Hydrock

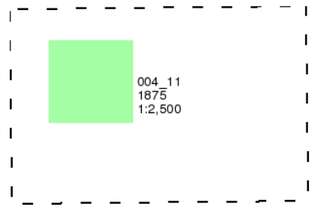
Wiltshire

Published 1875

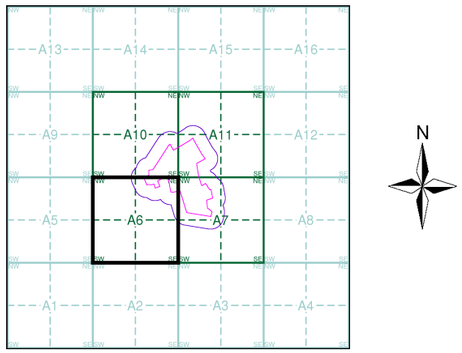
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A6



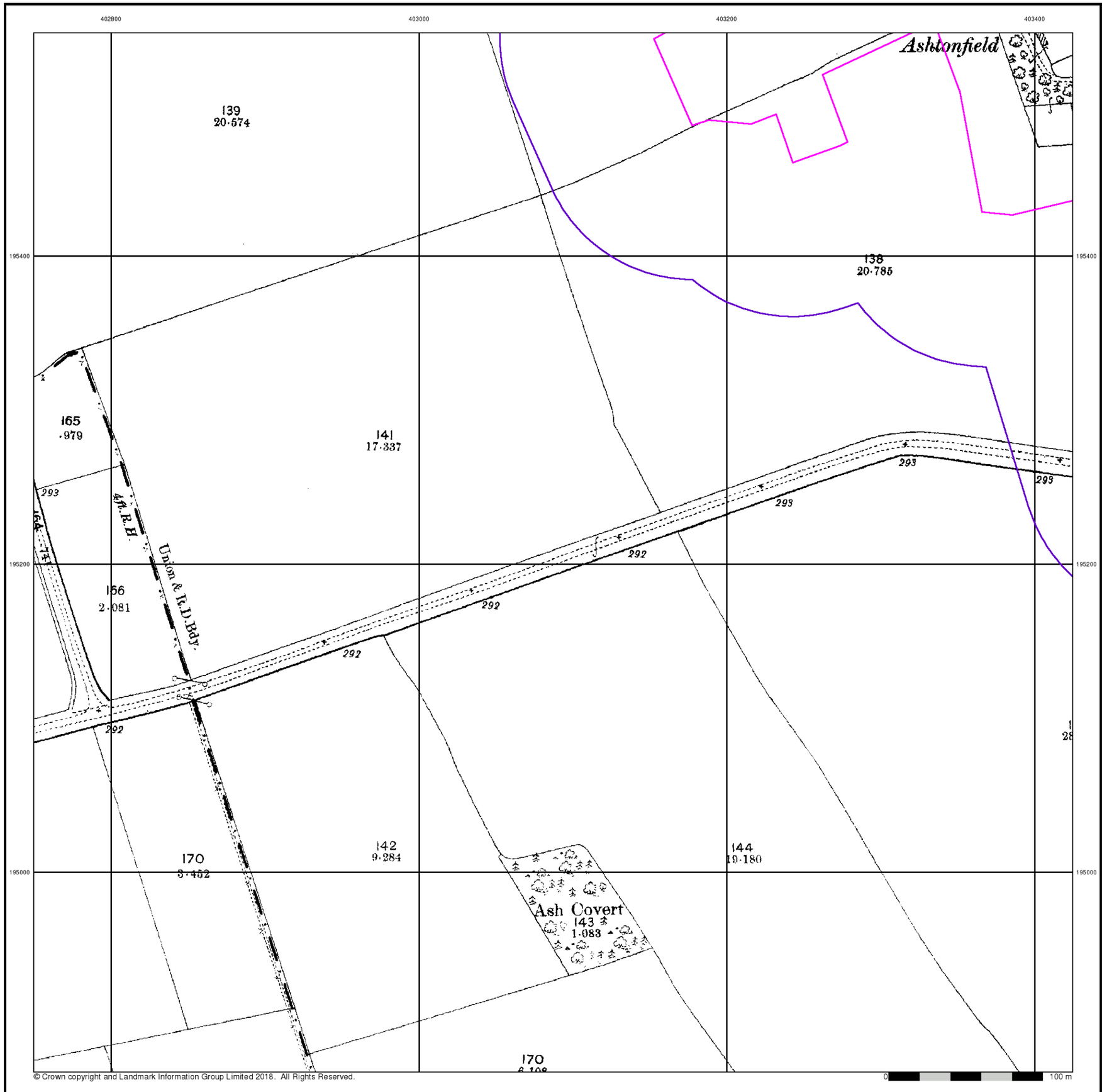
Order Details

Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	100

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



© Crown copyright and Landmark Information Group Limited 2018. All Rights Reserved.

Hydrock

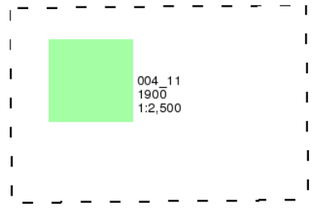
Wiltshire

Published 1900

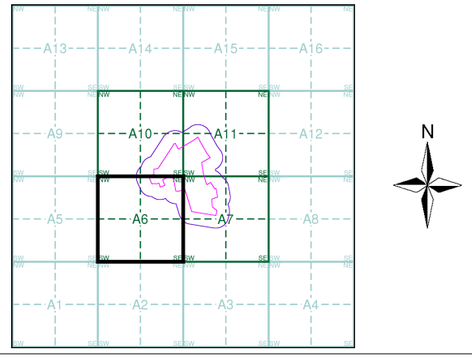
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A6



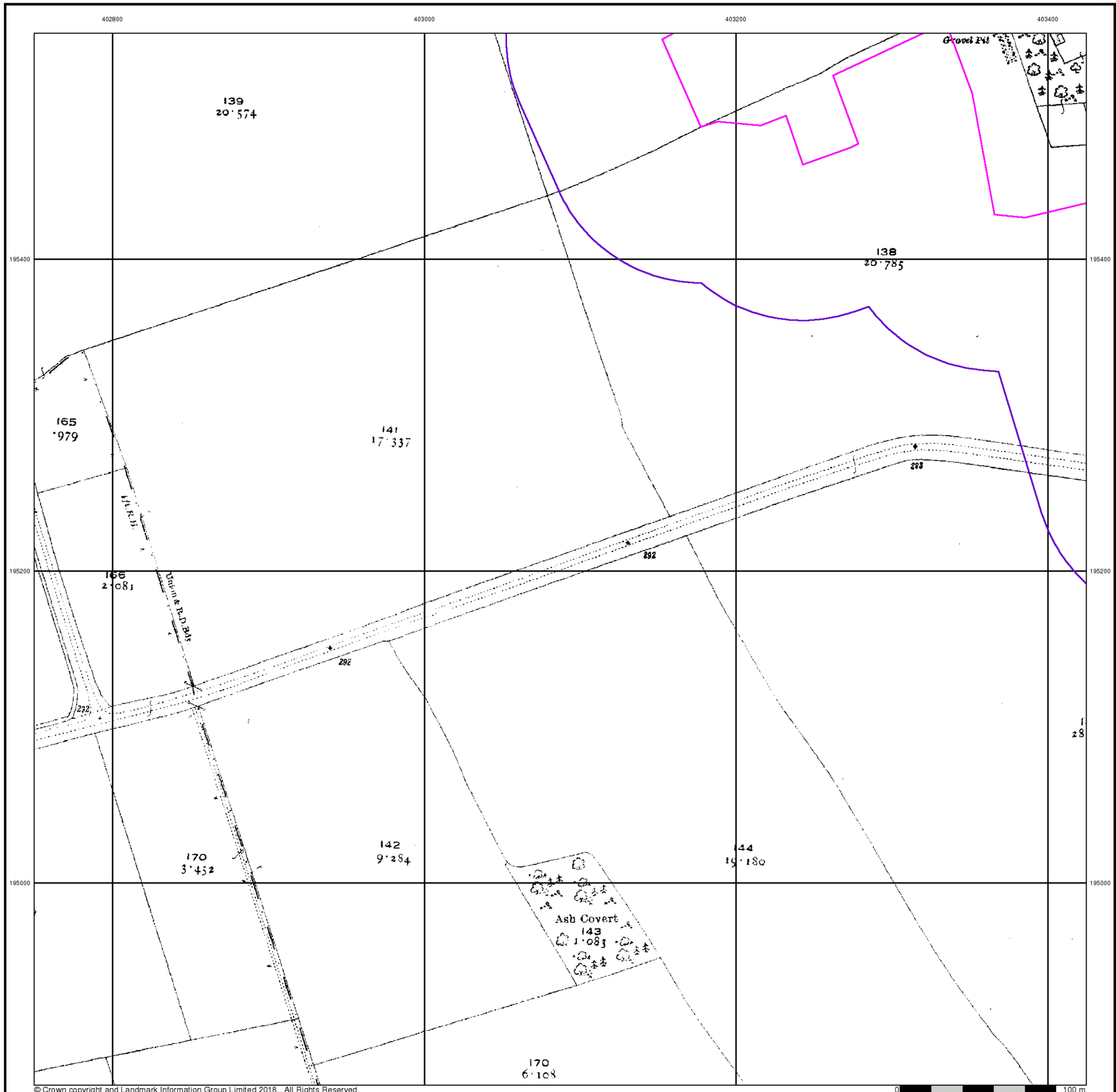
Order Details

Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	100

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



© Crown copyright and Landmark Information Group Limited 2018. All Rights Reserved.

Hydrock

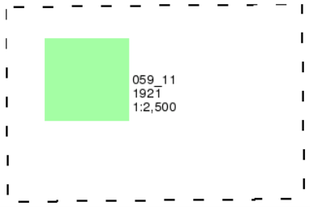
Gloucestershire

Published 1921

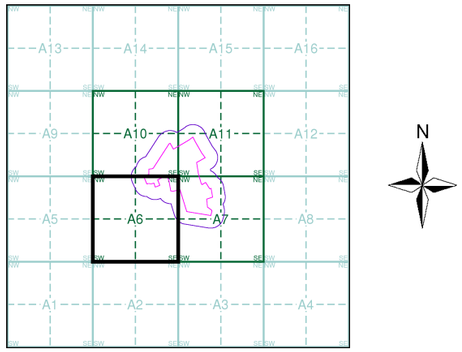
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A6



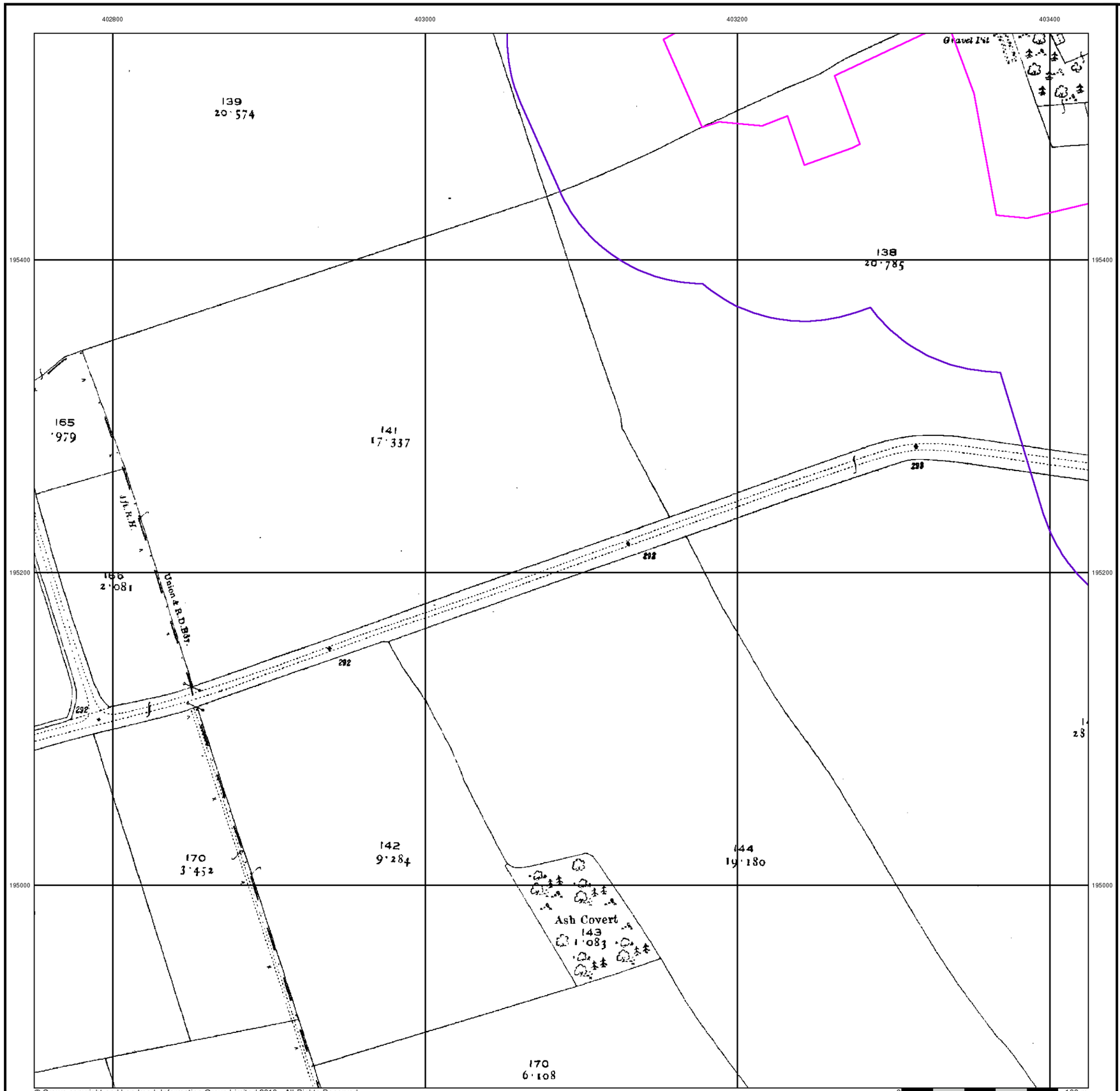
Order Details

Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	100

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



Hydrock

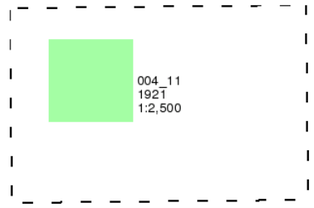
Wiltshire

Published 1921

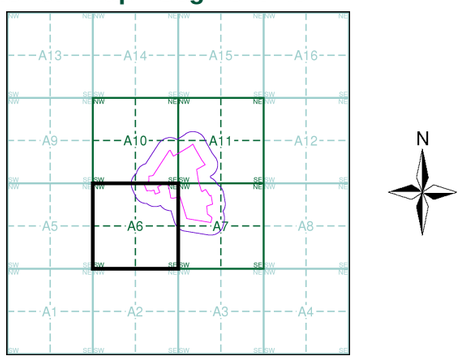
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A6



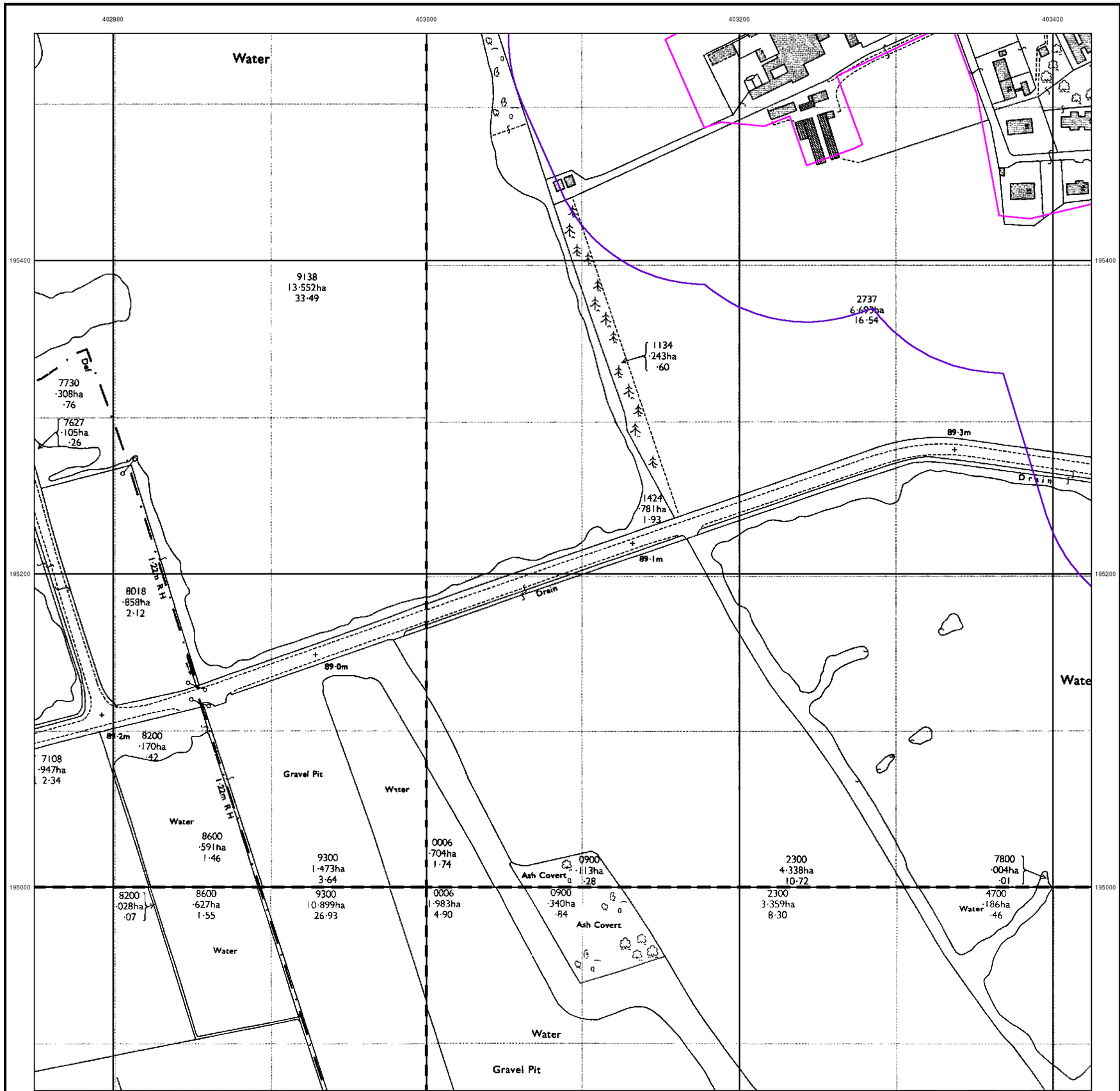
Order Details

Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	100

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



Hydrock

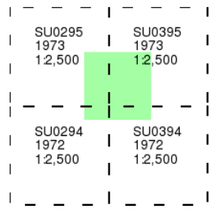
Ordnance Survey Plan

Published 1972 - 1973

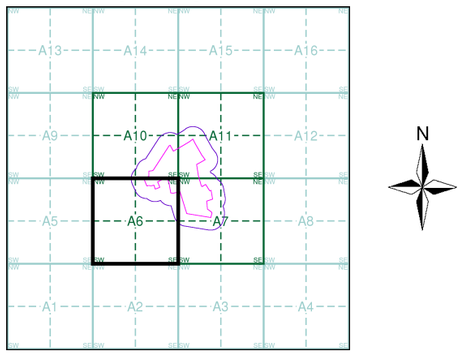
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A6



Order Details

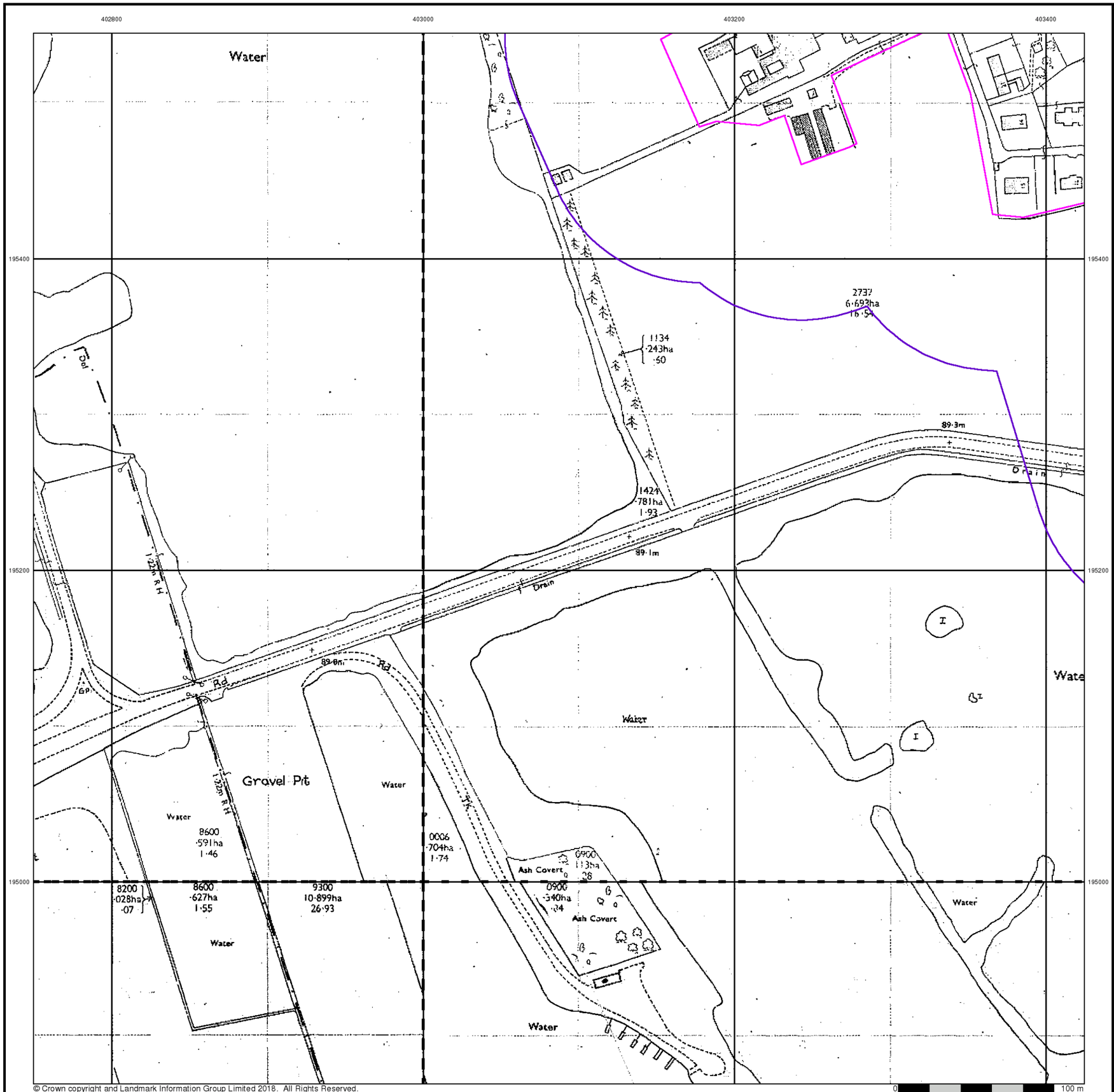
Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	100

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



Hydrock

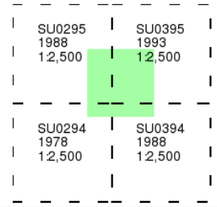
Additional SIMs

Published 1978 - 1993

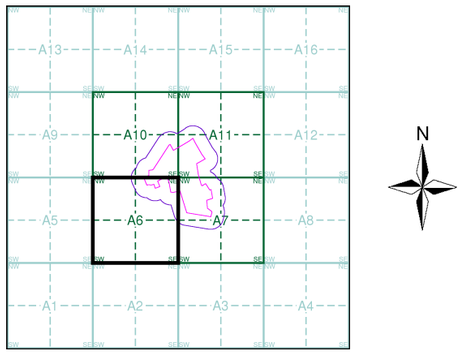
Source map scale - 1:2,500

The SIM cards (Ordnance Survey's `Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A6



Order Details

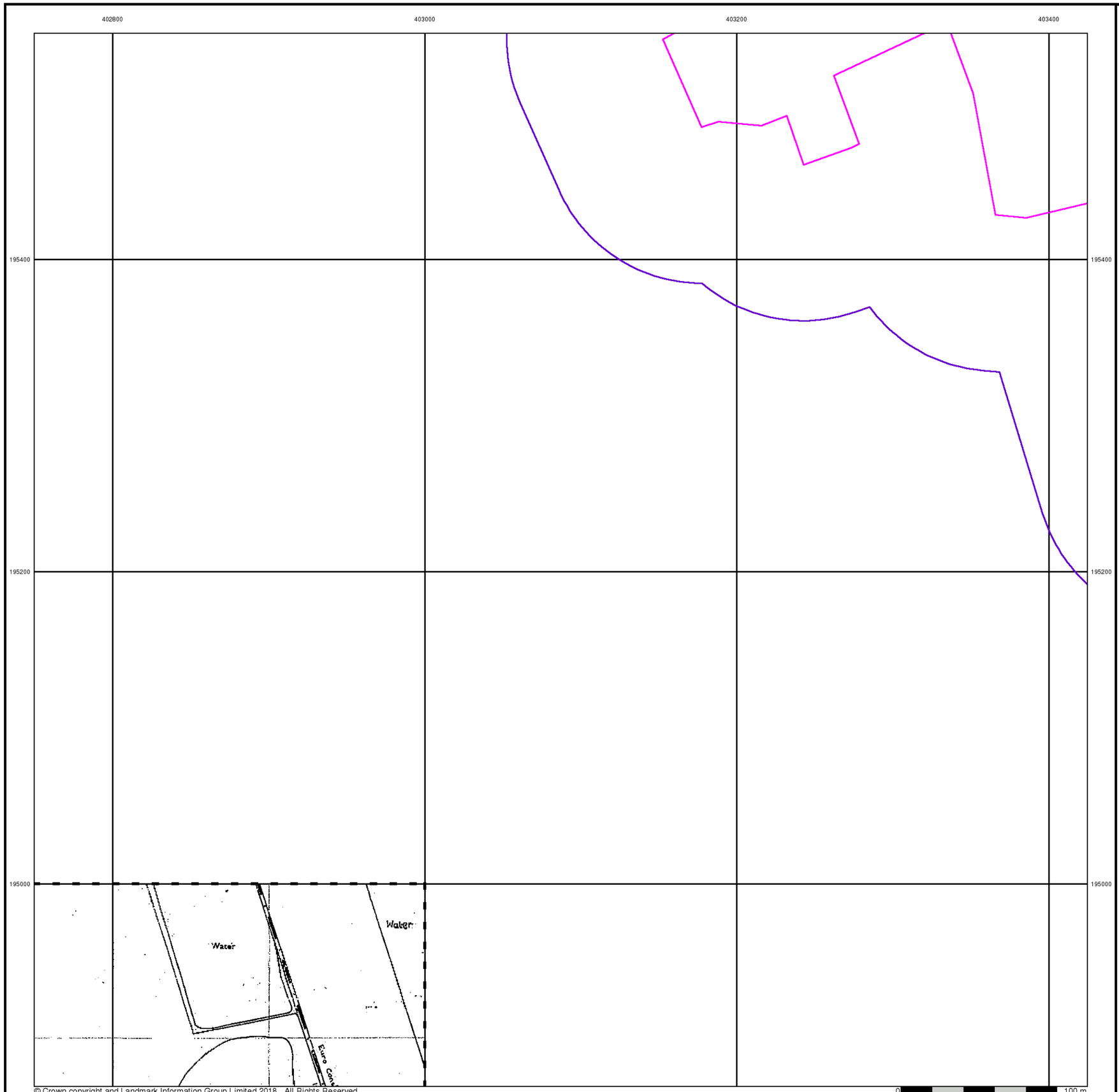
Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	100

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



Hydrock

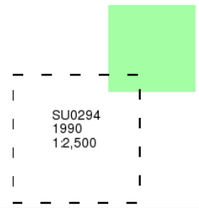
Additional SIMs

Published 1990

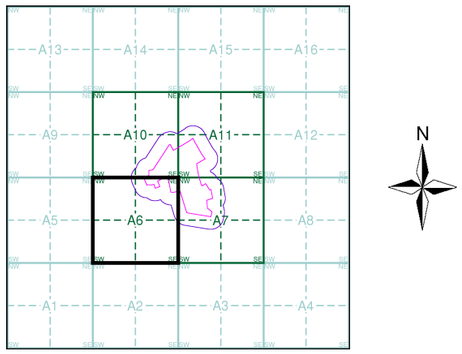
Source map scale - 1:2,500

The SIM cards (Ordnance Survey's `Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A6



Order Details

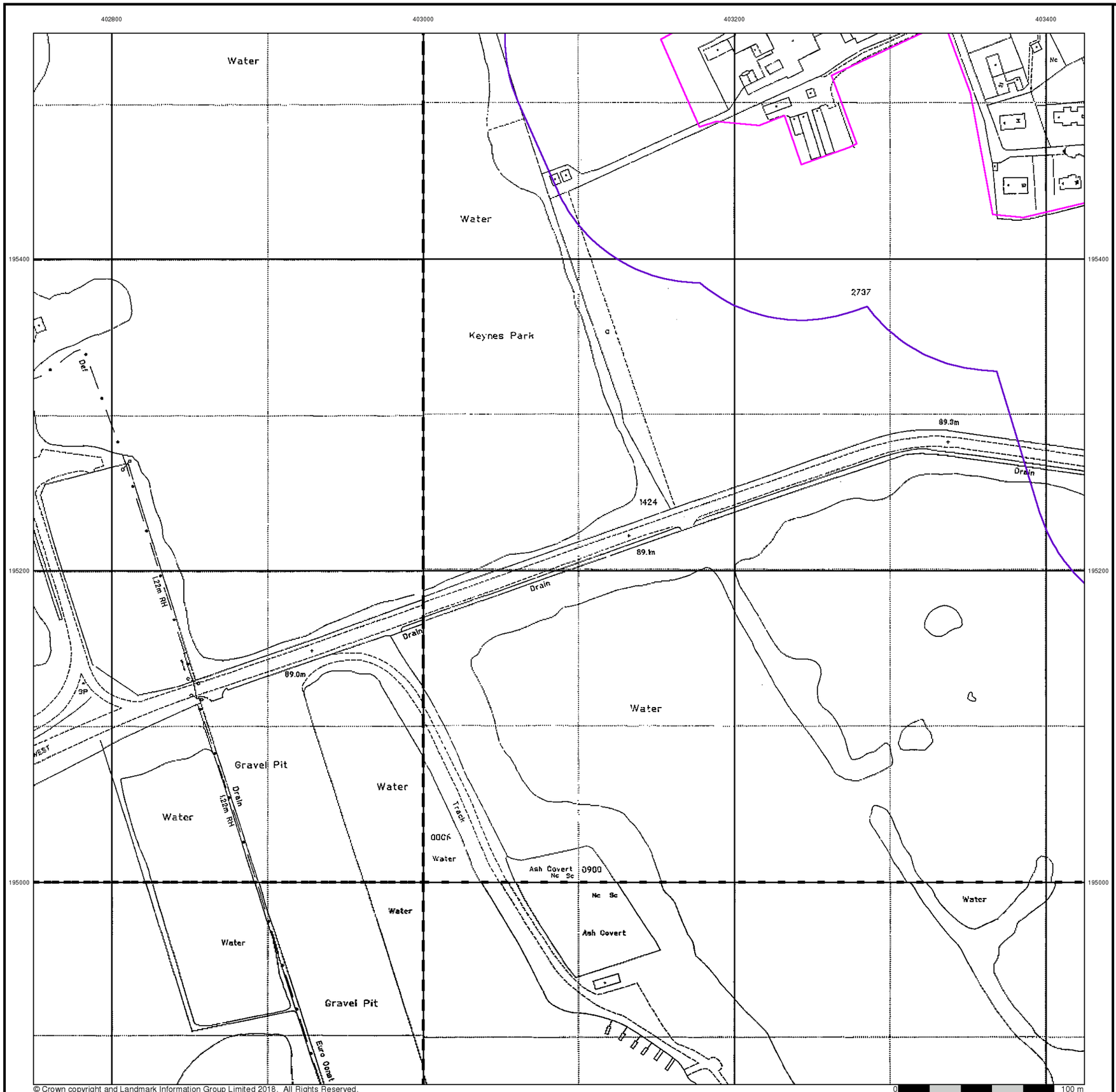
Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	100

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



© Crown copyright and Landmark Information Group Limited 2018. All Rights Reserved.

Hydrock

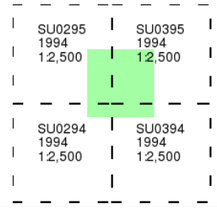
Large-Scale National Grid Data

Published 1994

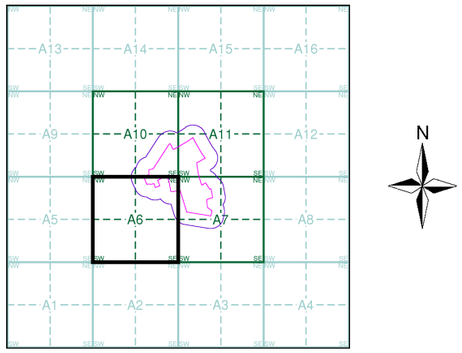
Source map scale - 1:2,500

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A6



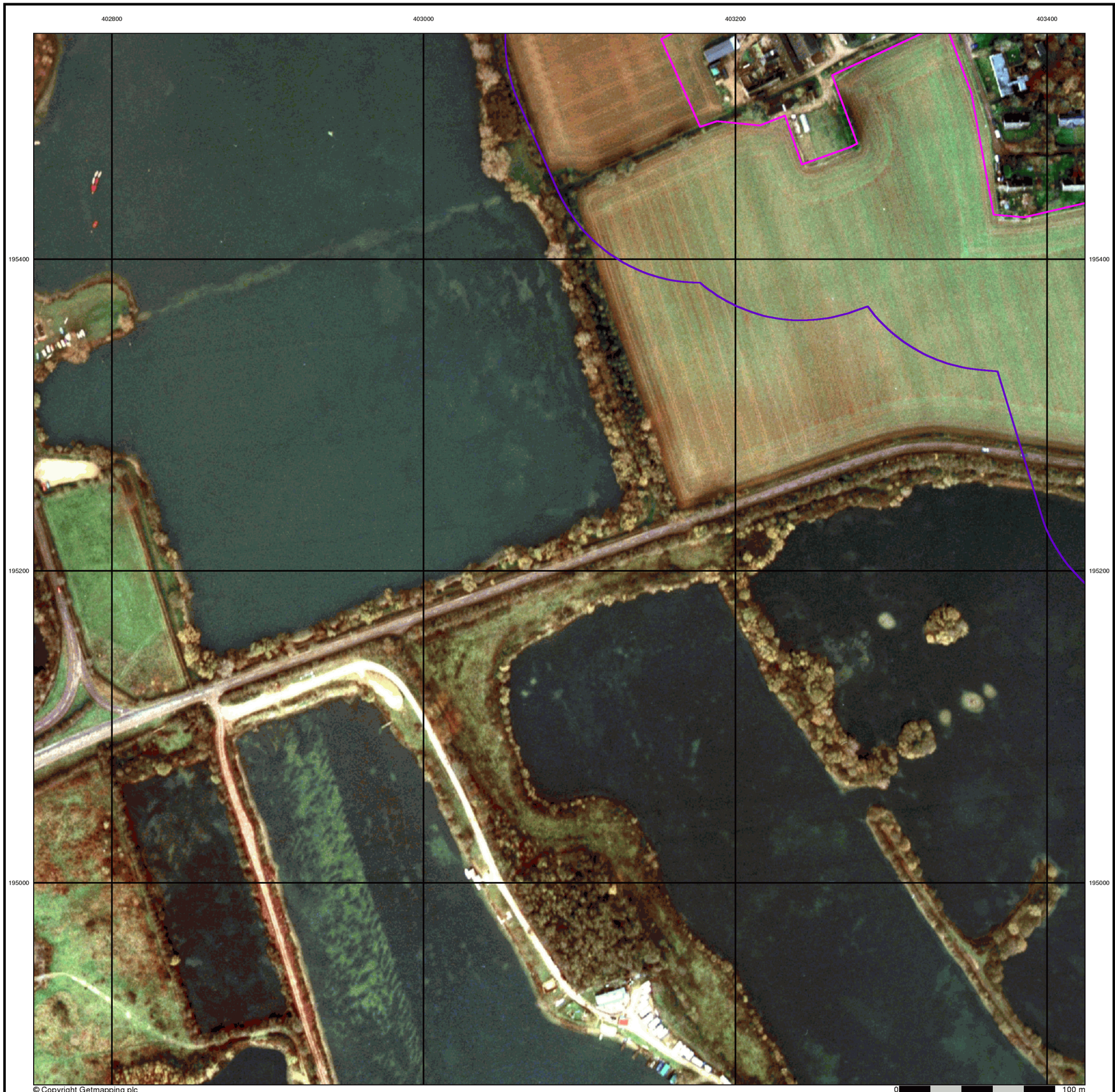
Order Details

Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	100

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



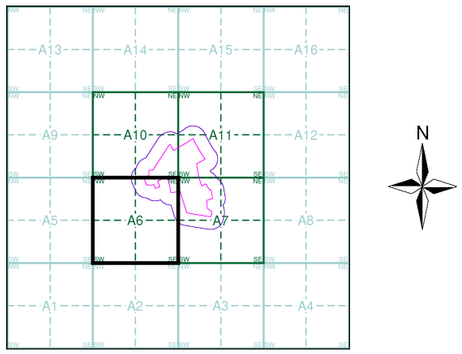
Hydrock

Historical Aerial Photography

Published 1999

This aerial photography was produced by Getmapping, these vertical aerial photographs provide a seamless, full colour survey of the whole of Great Britain

Historical Aerial Photography - Segment A6



Order Details

Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	100

Site Details

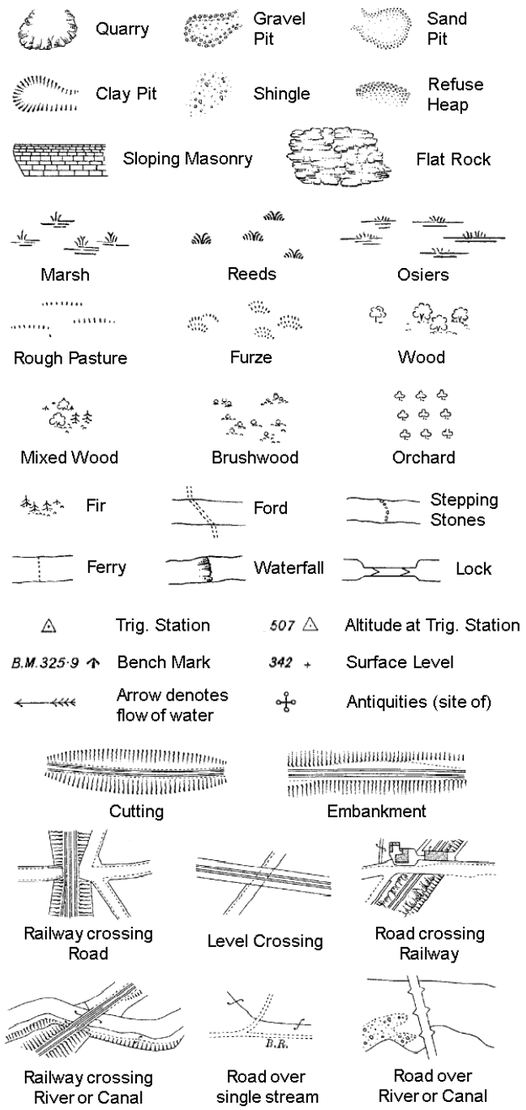
Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk

Historical Mapping Legends

Ordnance Survey County Series and Ordnance Survey Plan 1:2,500



County Boundary (Geographical)

County & Civil Parish Boundary

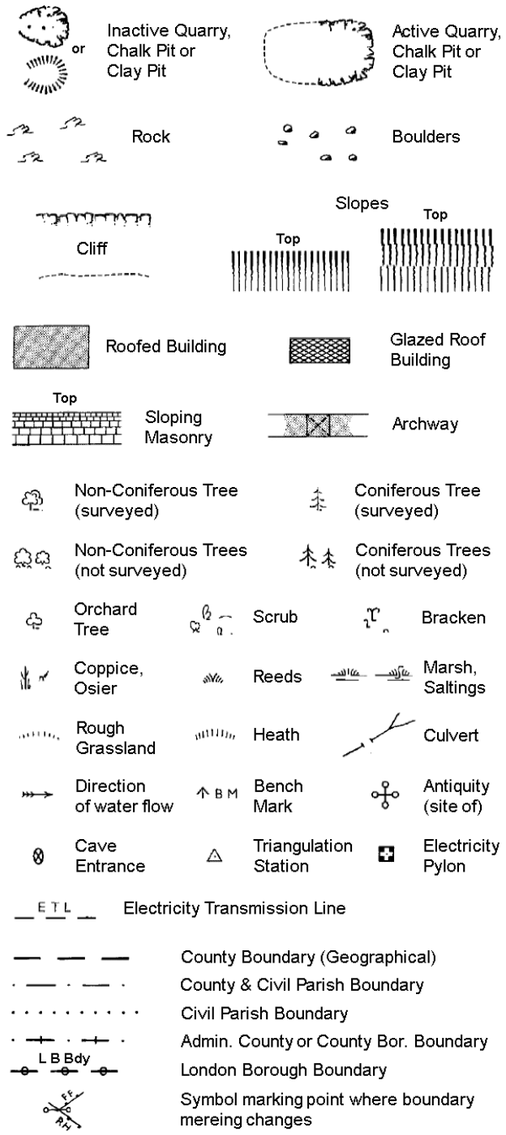
Administrative County & Civil Parish Boundary

Co. Boro. Bdy. County Borough Boundary (England)

Co. Burgh Bdy. County Burgh Boundary (Scotland)

B P B S	Boundary Post or Stone	P.C.B	Police Call Box
B.R.	Bridle Road	P	Pump
E.P	Electricity Pylon	S.P	Signal Post
F.B.	Foot Bridge	St.	Sluice
F.P.	Foot Path	Sp.	Spring
G.P	Guide Post or Board	T.C.B	Telephone Call Box
M.S	Mile Stone	Tr.	Trough
M.P M.R	Mooring Post or Ring	W	Well

Ordnance Survey Plan, Additional SIMs and Supply of Unpublished Survey Information 1:2,500 and 1:1,250



County Boundary (Geographical)

County & Civil Parish Boundary

Civil Parish Boundary

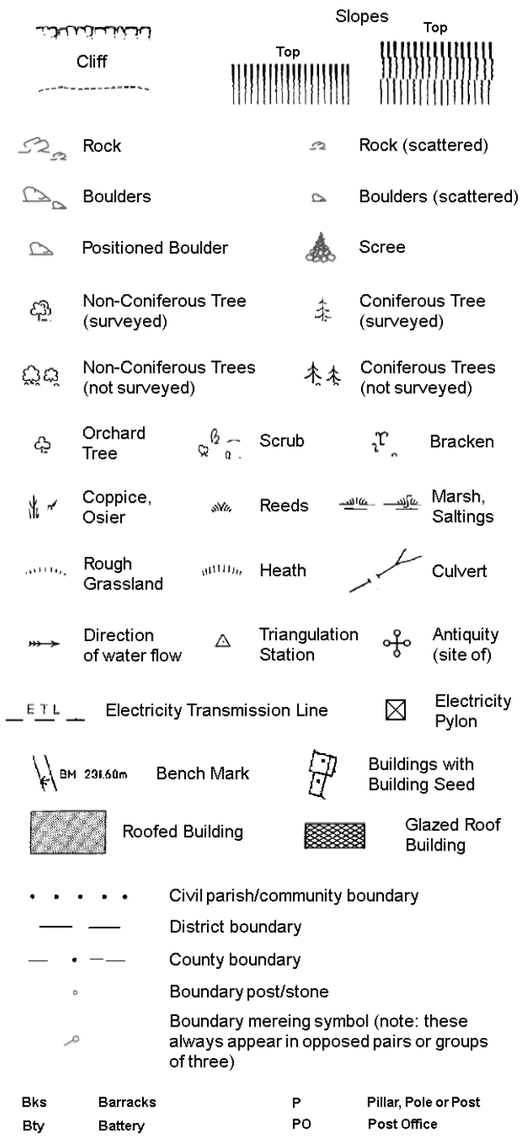
Admin. County or County Bor. Boundary

L B Bdy London Borough Boundary

Symbol marking point where boundary mereing changes

BH	Beer House	P	Pillar, Pole or Post
BP, BS	Boundary Post or Stone	PO	Post Office
Cn, C	Capstan, Crane	PC	Public Convenience
Chy	Chimney	PH	Public House
D Fn	Drinking Fountain	Pp	Pump
El P	Electricity Pillar or Post	SB, S Br	Signal Box or Bridge
FAP	Fire Alarm Pillar	SP, SL	Signal Post or Light
FB	Foot Bridge	Spr	Spring
GP	Guide Post	Tk	Tank or Track
H	Hydrant or Hydraulic	TCB	Telephone Call Box
LC	Level Crossing	TCP	Telephone Call Post
MH	Manhole	Tr	Trough
MP	Mile Post or Mooring Post	Wr Pt, Wr T	Water Point, Water Tap
MS	Mile Stone	W	Well
NTL	Normal Tidal Limit	Wd Pp	Wind Pump

Large-Scale National Grid Data 1:2,500 and 1:1,250



Civil parish/community boundary

District boundary

County boundary

Boundary post/stone

Boundary mereing symbol (note: these always appear in opposed pairs or groups of three)

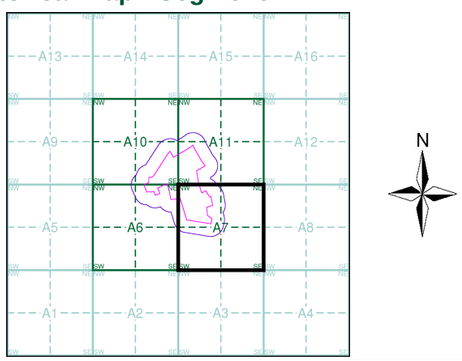
Bks	Barracks	P	Pillar, Pole or Post
Bty	Battery	PO	Post Office
Cemy	Cemetery	PC	Public Convenience
Chy	Chimney	Pp	Pump
Cis	Cistern	Ppg Sta	Pumping Station
Dismtd Rly	Dismantled Railway	PW	Place of Worship
El Gen Sta	Electricity Generating Station	Sewage Ppg Sta	Sewage Pumping Station
El P	Electricity Pole, Pillar	SB, S Br	Signal Box or Bridge
El Sub Sta	Electricity Sub Station	SP, SL	Signal Post or Light
FB	Filter Bed	Spr	Spring
Fn / D Fn	Fountain / Drinking Ftn.	Tk	Tank or Track
Gas Gov	Gas Valve Compound	Tr	Trough
GVC	Gas Governer	Wd Pp	Wind Pump
GP	Guide Post	Wr Pt, Wr T	Water Point, Water Tap
MH	Manhole	Wks	Works (building or area)
MP, MS	Mile Post or Mile Stone	W	Well

Hydrock

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Wiltshire	1:2,500	1875	2
Wiltshire	1:2,500	1900	3
Gloucestershire	1:2,500	1921	4
Wiltshire	1:2,500	1921	5
Ordnance Survey Plan	1:2,500	1971 - 1973	6
Supply of Unpublished Survey Information	1:2,500	1974	7
Additional SIMs	1:2,500	1983 - 1993	8
Additional SIMs	1:2,500	1990	9
Large-Scale National Grid Data	1:2,500	1994	10
Historical Aerial Photography	1:2,500	1999	11

Historical Map - Segment A7



Order Details

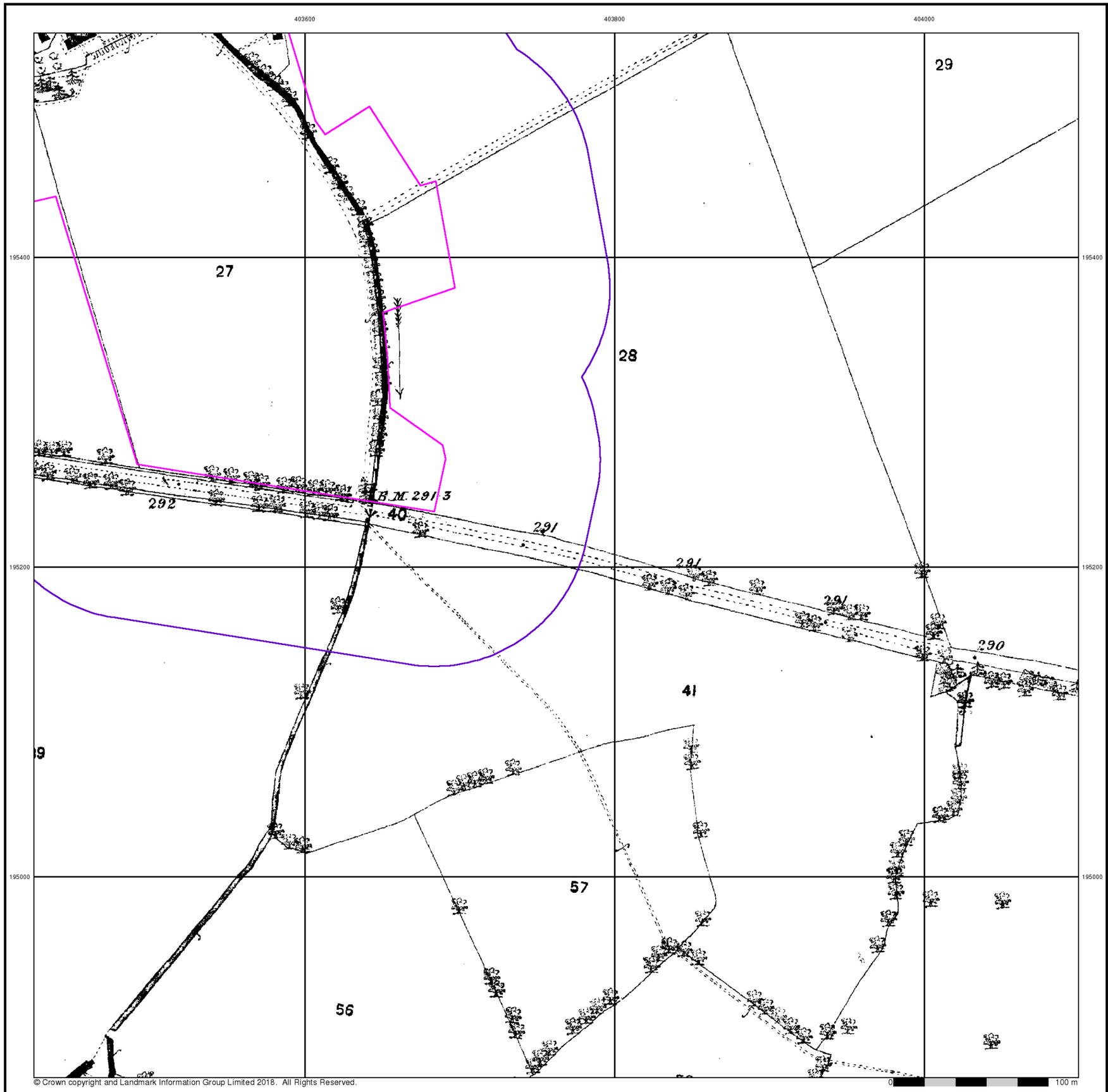
Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	100

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



Hydrock

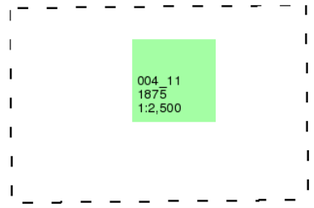
Wiltshire

Published 1875

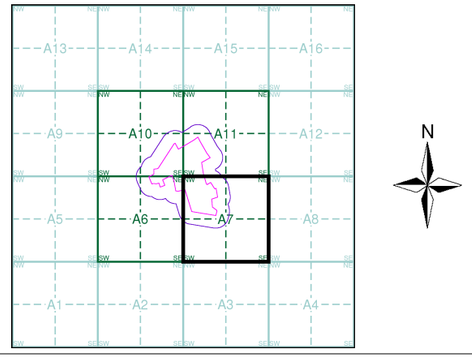
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A7



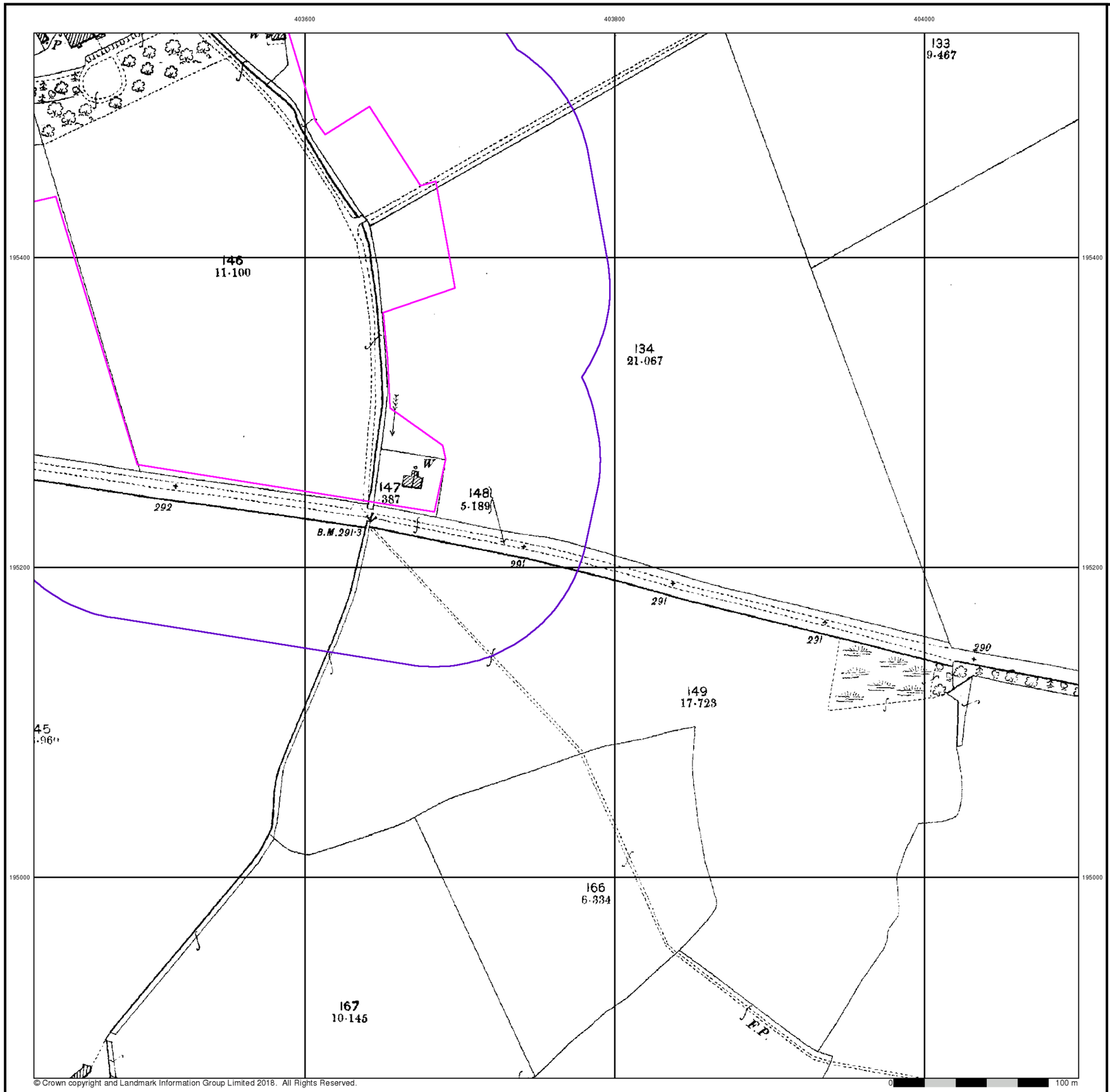
Order Details

Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	100

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



© Crown copyright and Landmark Information Group Limited 2018. All Rights Reserved.

0 100 m

Hydrock

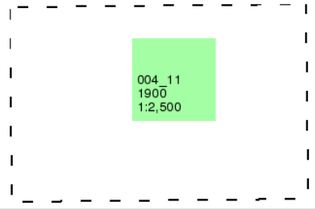
Wiltshire

Published 1900

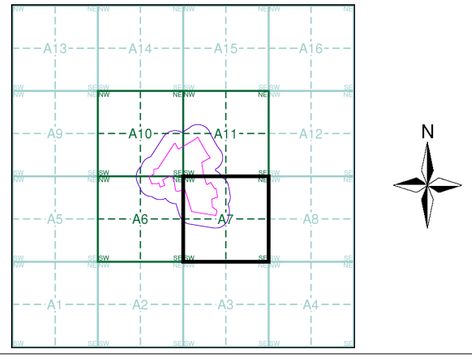
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A7



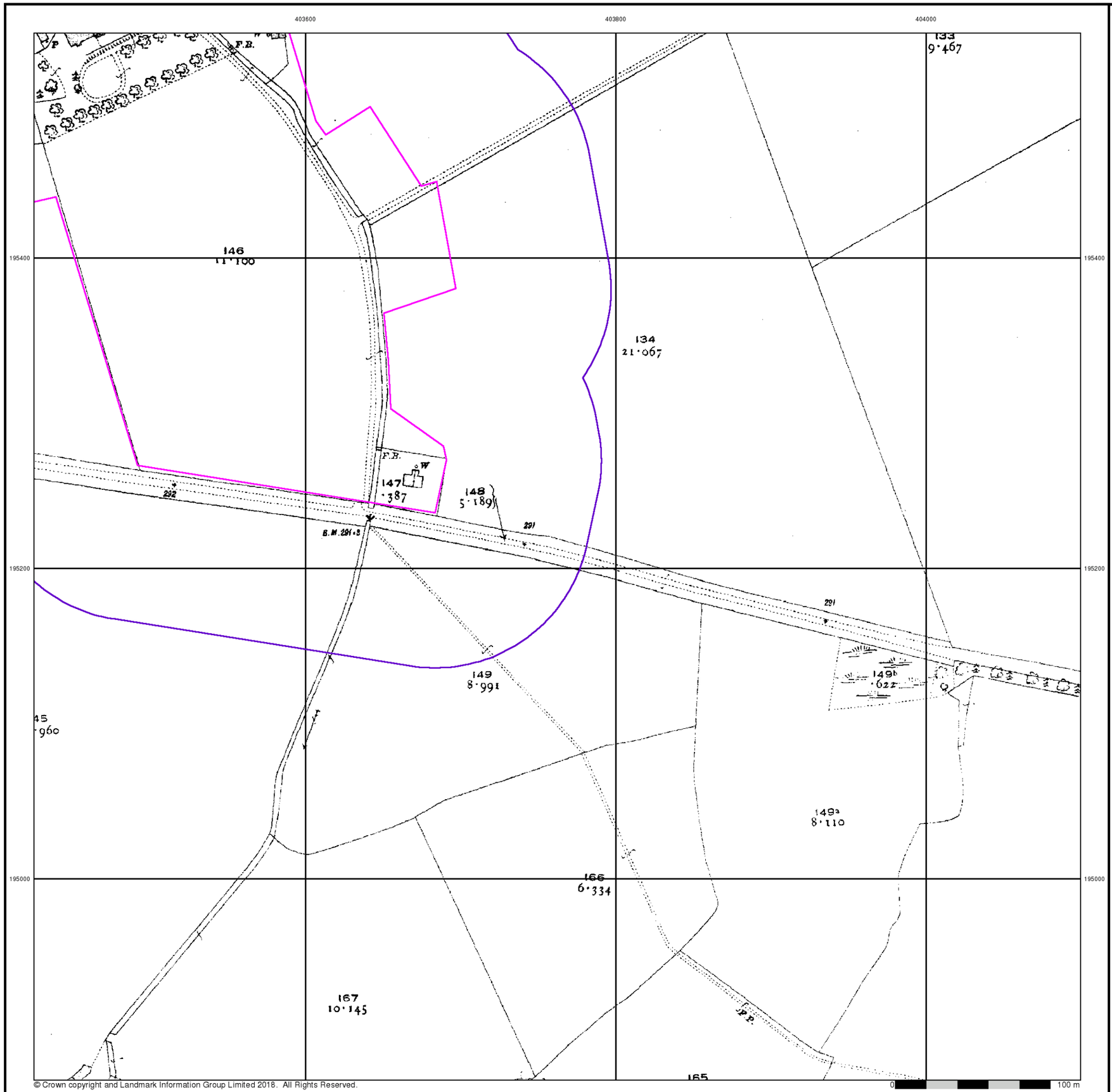
Order Details

Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	100

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



© Crown copyright and Landmark Information Group Limited 2018. All Rights Reserved.

0 100 m

Hydrock

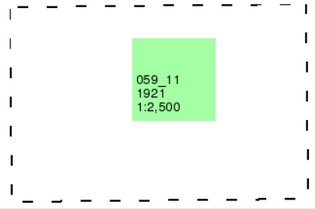
Gloucestershire

Published 1921

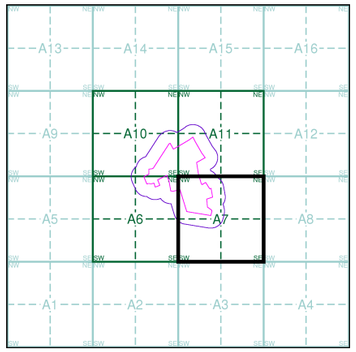
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A7



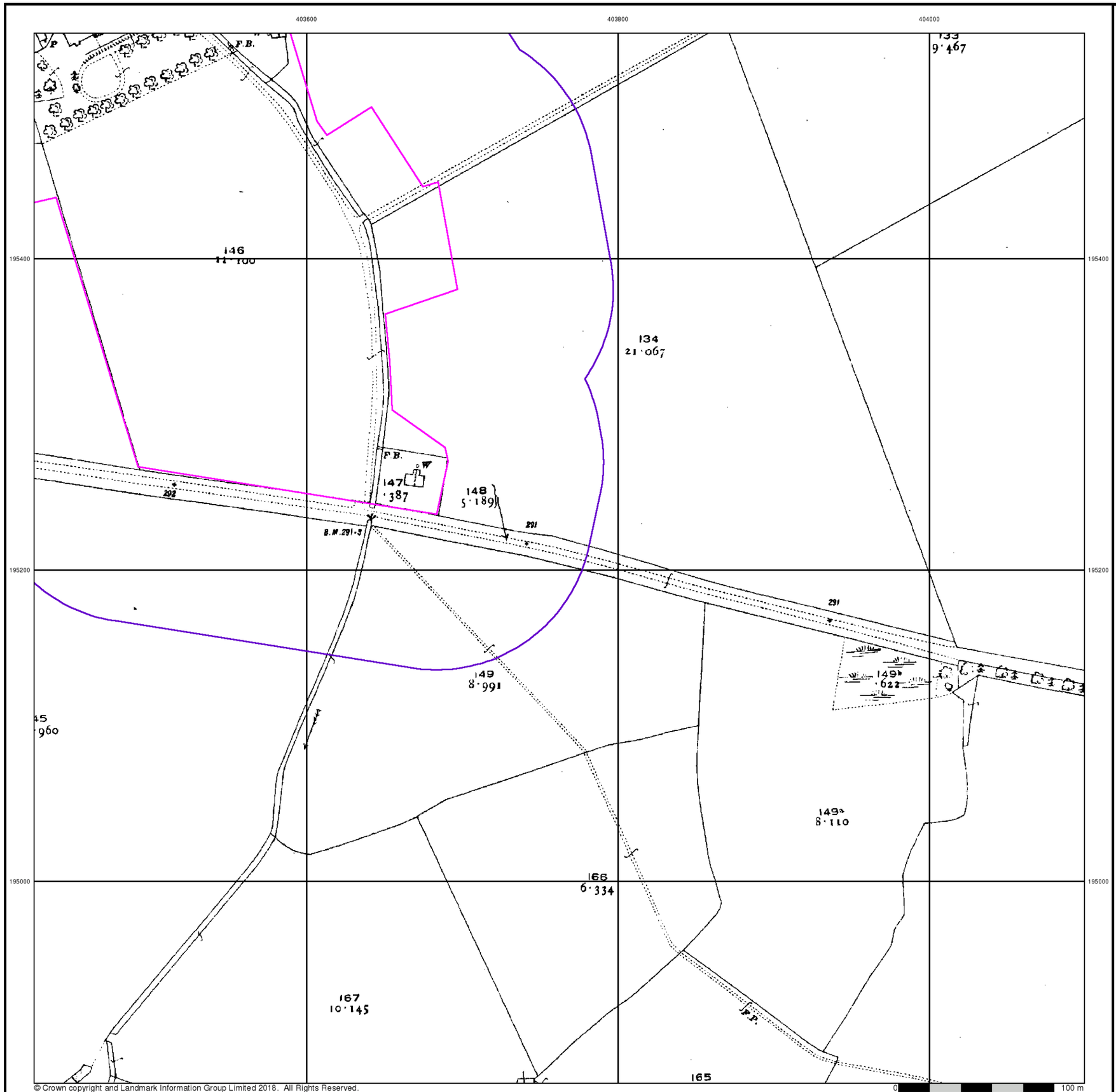
Order Details

Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	100

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



Hydrock

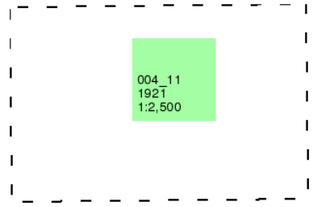
Wiltshire

Published 1921

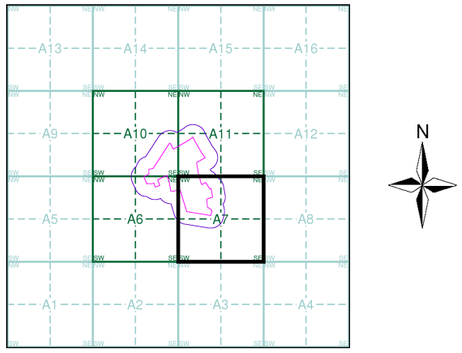
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A7



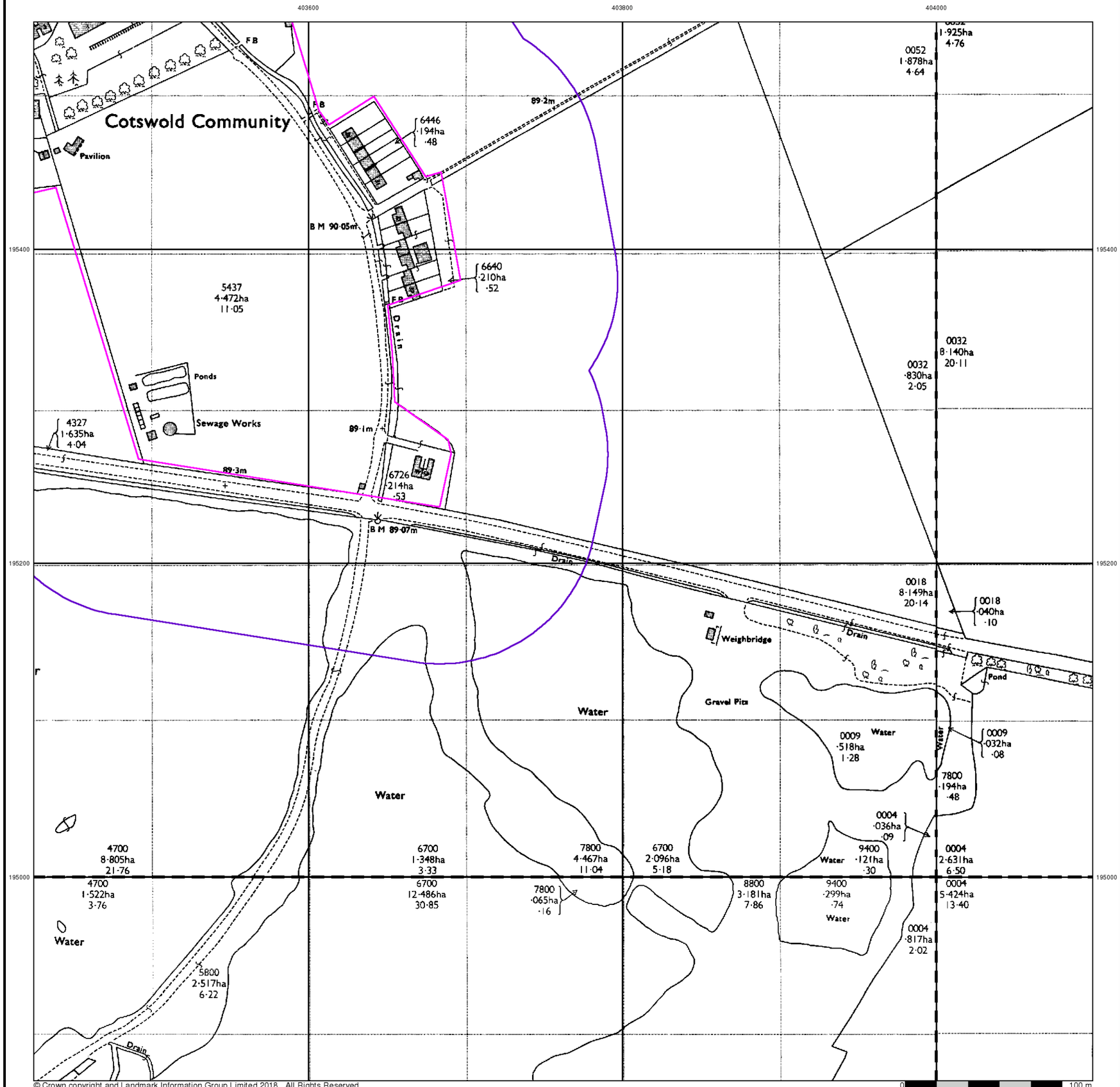
Order Details

Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	100

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



© Crown copyright and Landmark Information Group Limited 2018. All Rights Reserved.

Hydrock

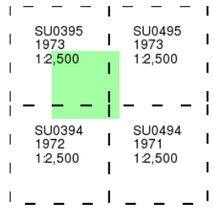
Ordnance Survey Plan

Published 1971 - 1973

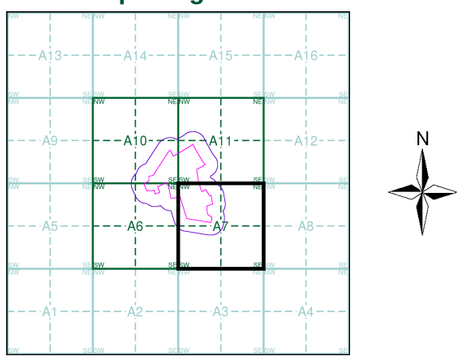
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A7



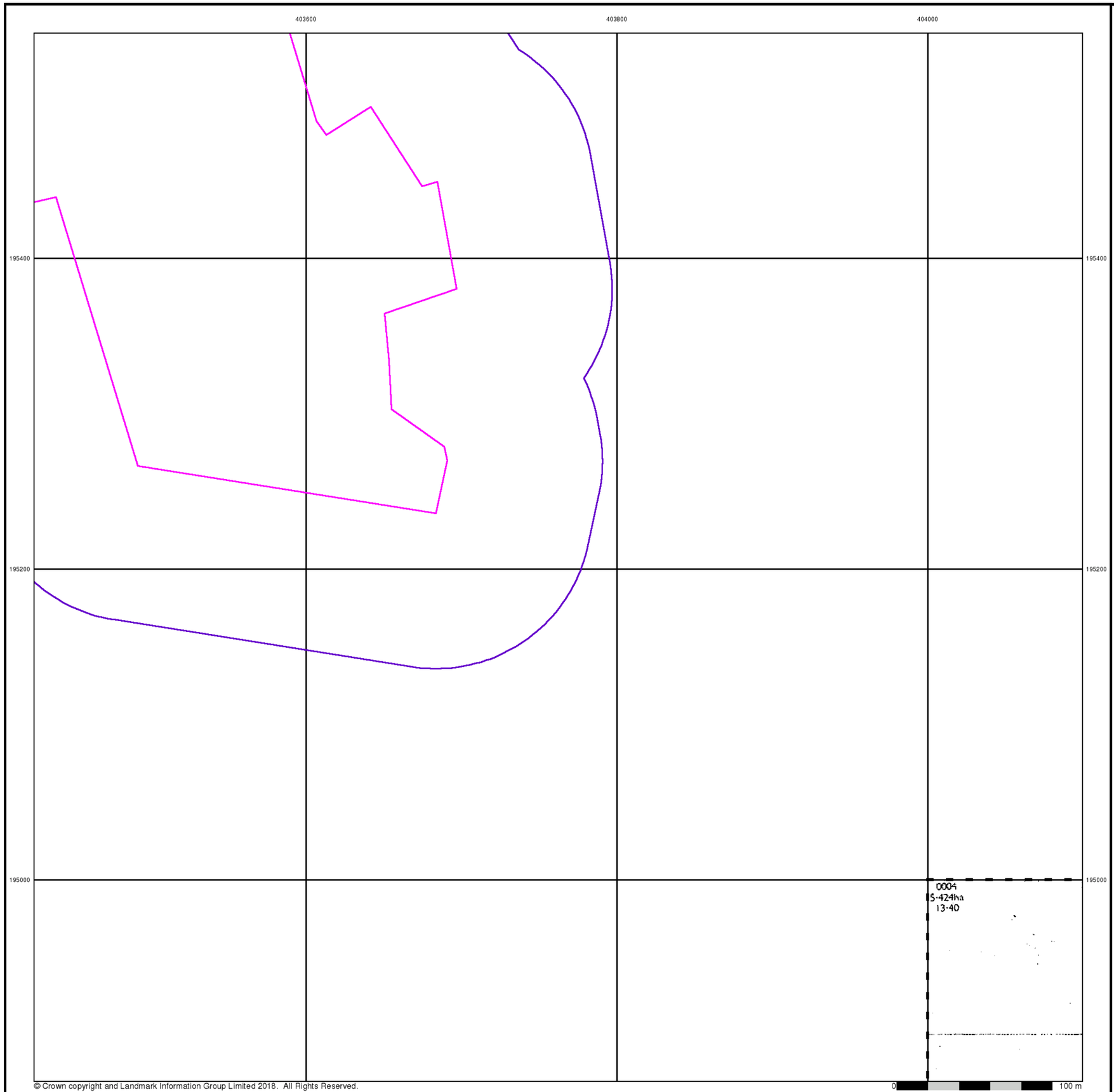
Order Details

Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	100

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



© Crown copyright and Landmark Information Group Limited 2018. All Rights Reserved.

Hydrock

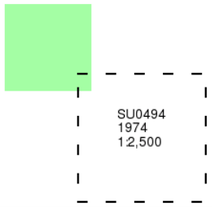
Supply of Unpublished Survey Information

Published 1974

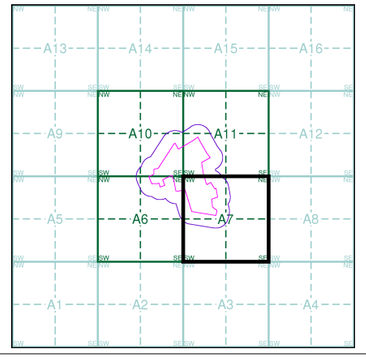
Source map scale - 1:2,500

SUSI maps (Supply of Unpublished Survey Information) were produced between 1972 and 1977, mainly for internal use at Ordnance Survey. These were more of a `work-in-progress' plan as they showed updates of individual areas on a map. These maps were unpublished, and they do not represent a single moment in time. They were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A7



Order Details

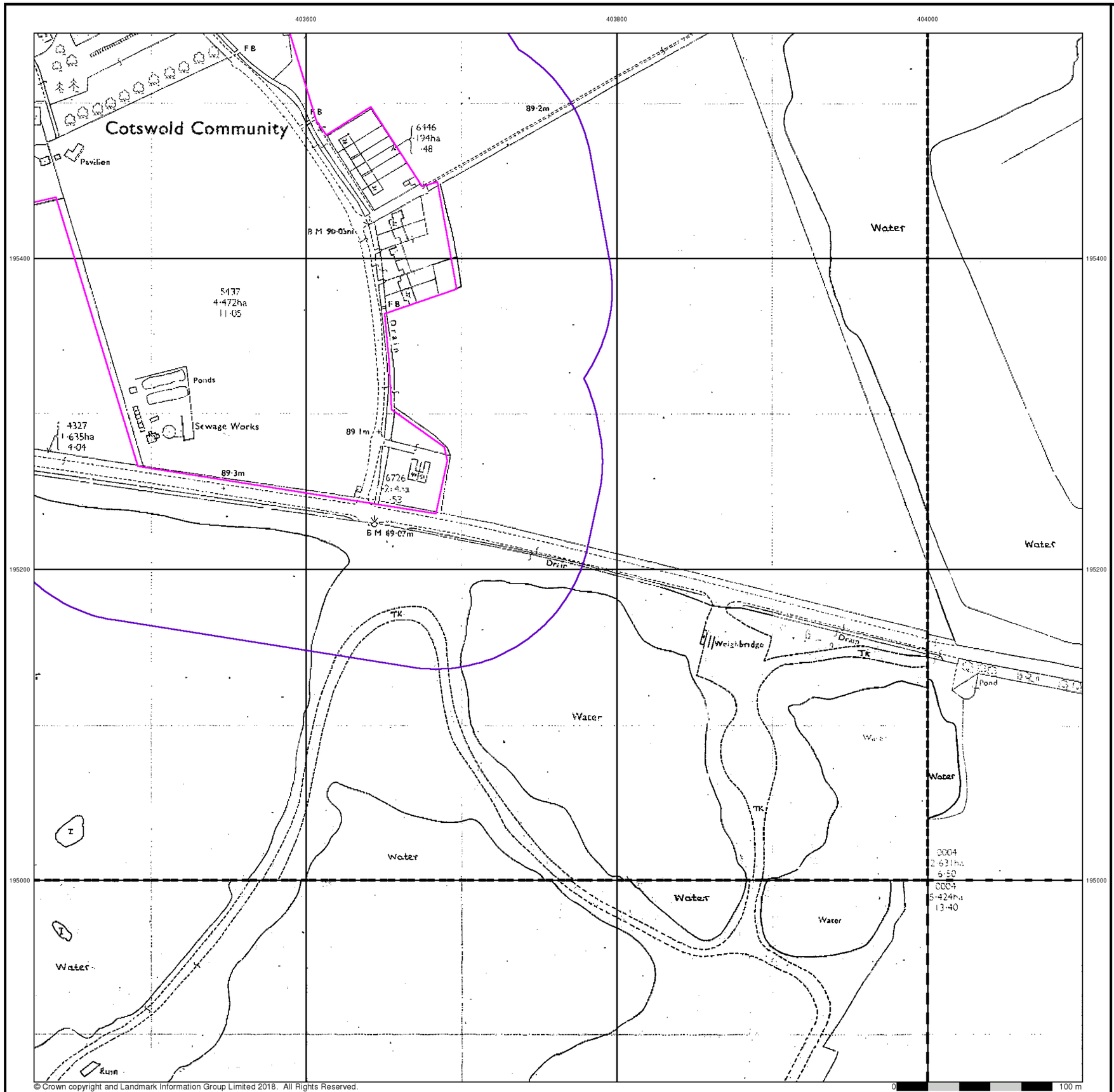
Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	100

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



© Crown copyright and Landmark Information Group Limited 2018. All Rights Reserved.

Hydrock

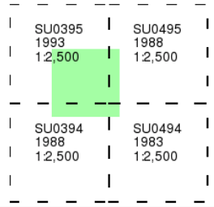
Additional SIMs

Published 1983 - 1993

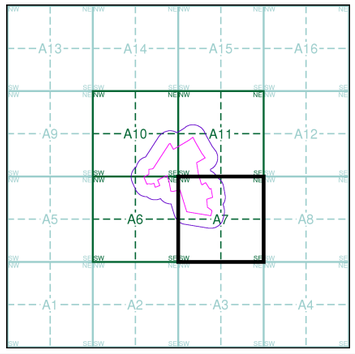
Source map scale - 1:2,500

The SIM cards (Ordnance Survey's `Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A7



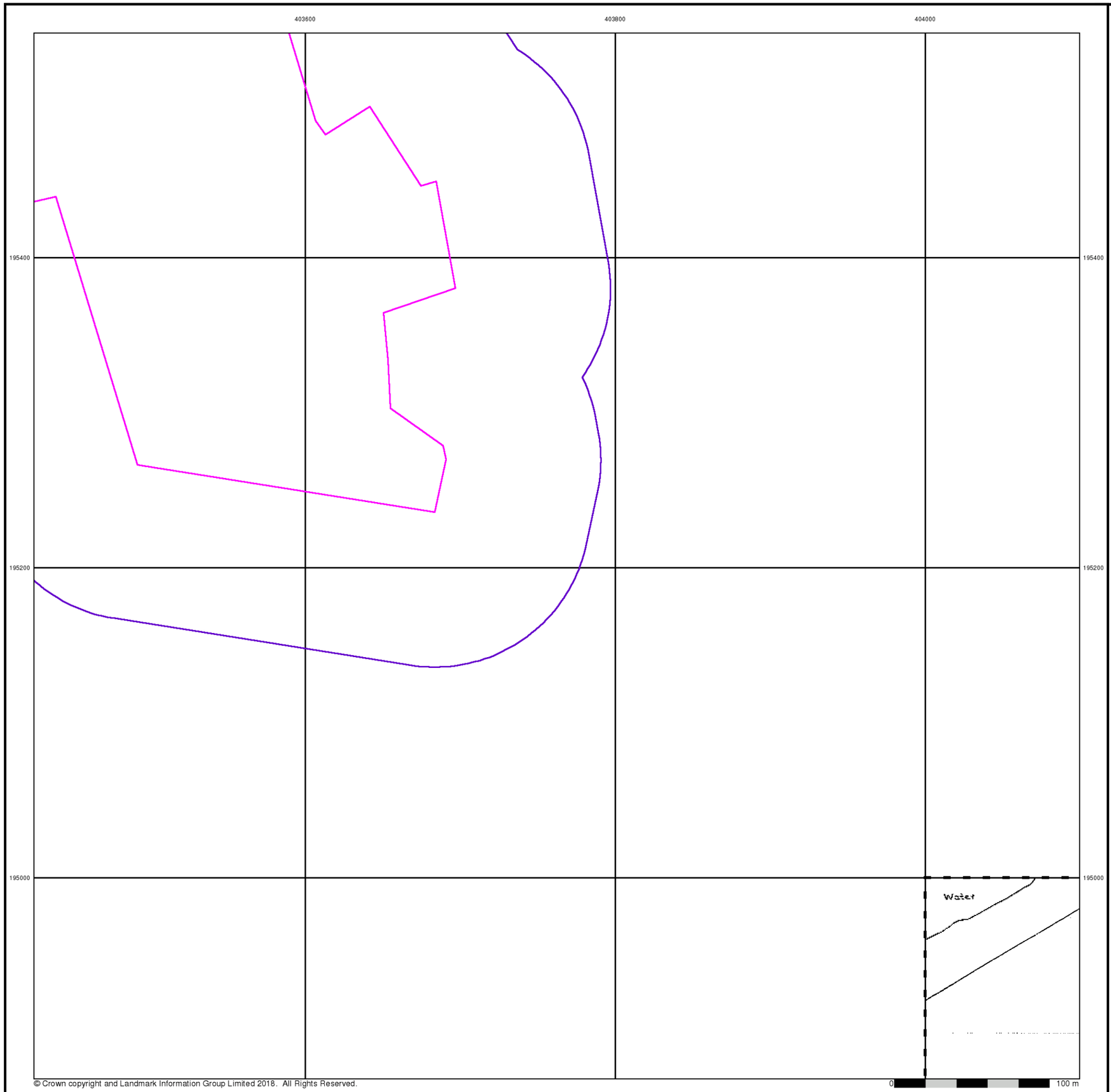
Order Details

Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	100

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



© Crown copyright and Landmark Information Group Limited 2018. All Rights Reserved.

Hydrock

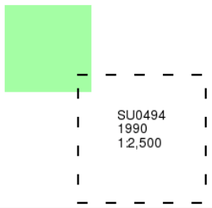
Additional SIMs

Published 1990

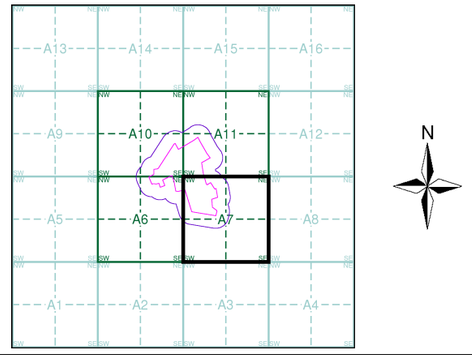
Source map scale - 1:2,500

The SIM cards (Ordnance Survey's `Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A7



Order Details

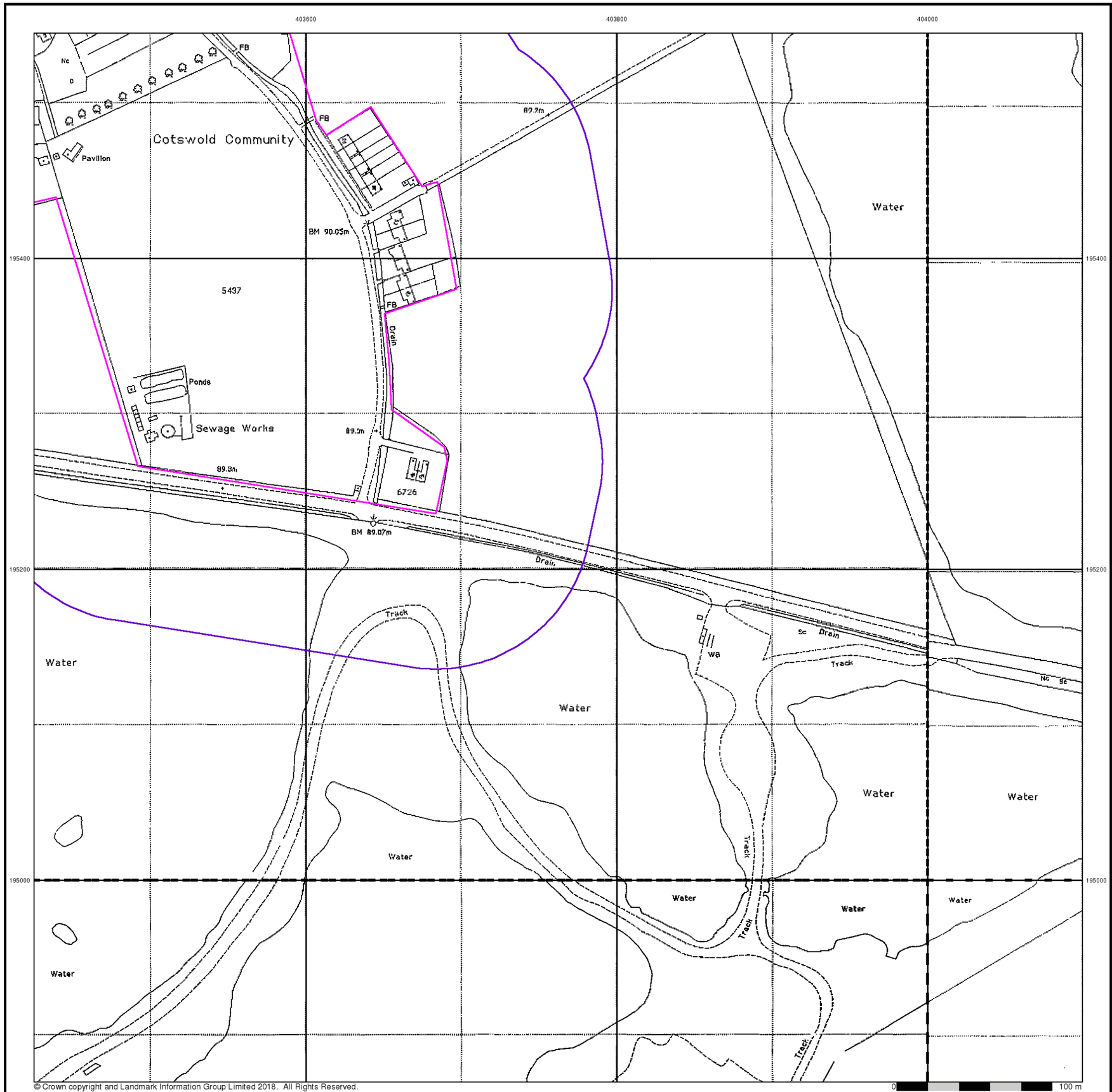
Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	100

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



© Crown copyright and Landmark Information Group Limited 2018. All Rights Reserved.

Hydrock

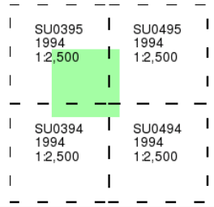
Large-Scale National Grid Data

Published 1994

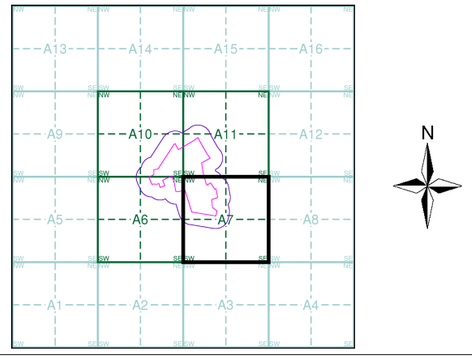
Source map scale - 1:2,500

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A7



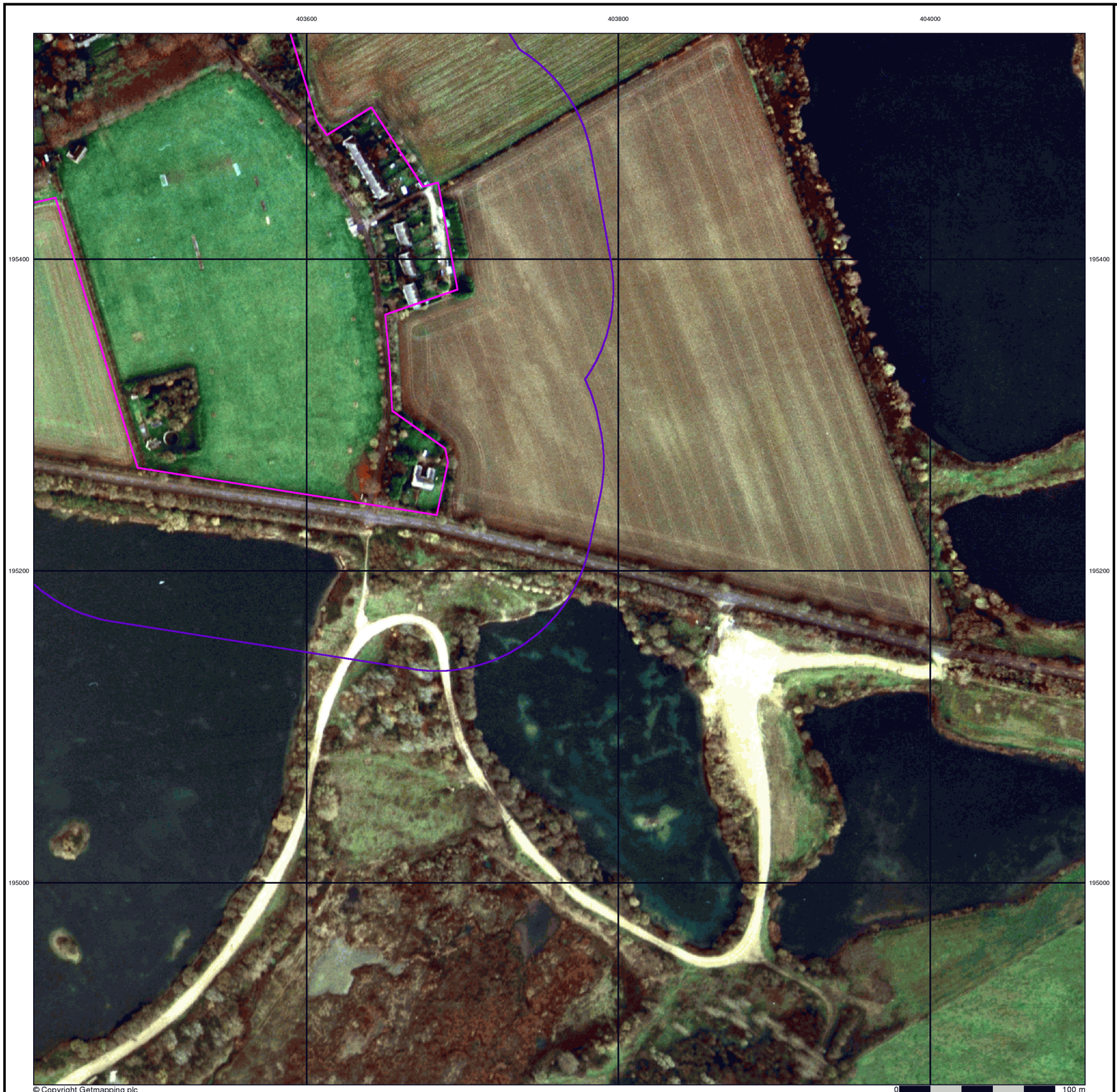
Order Details

Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	100

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



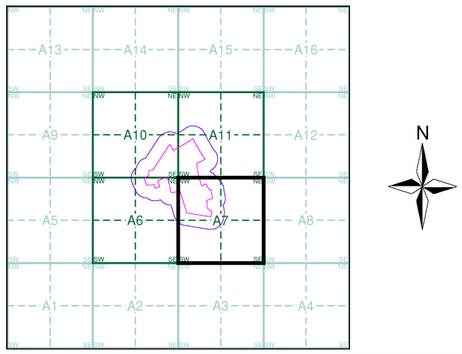
Hydrock

Historical Aerial Photography

Published 1999

This aerial photography was produced by Getmapping, these vertical aerial photographs provide a seamless, full colour survey of the whole of Great Britain

Historical Aerial Photography - Segment A7



Order Details

Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	100

Site Details

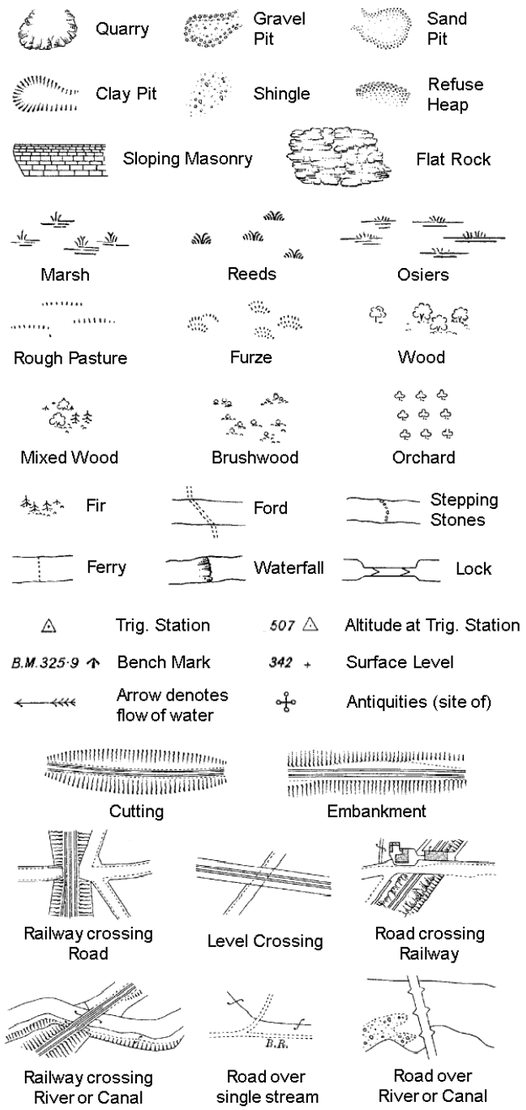
Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk

Historical Mapping Legends

Ordnance Survey County Series and Ordnance Survey Plan 1:2,500



County Boundary (Geographical)

County & Civil Parish Boundary

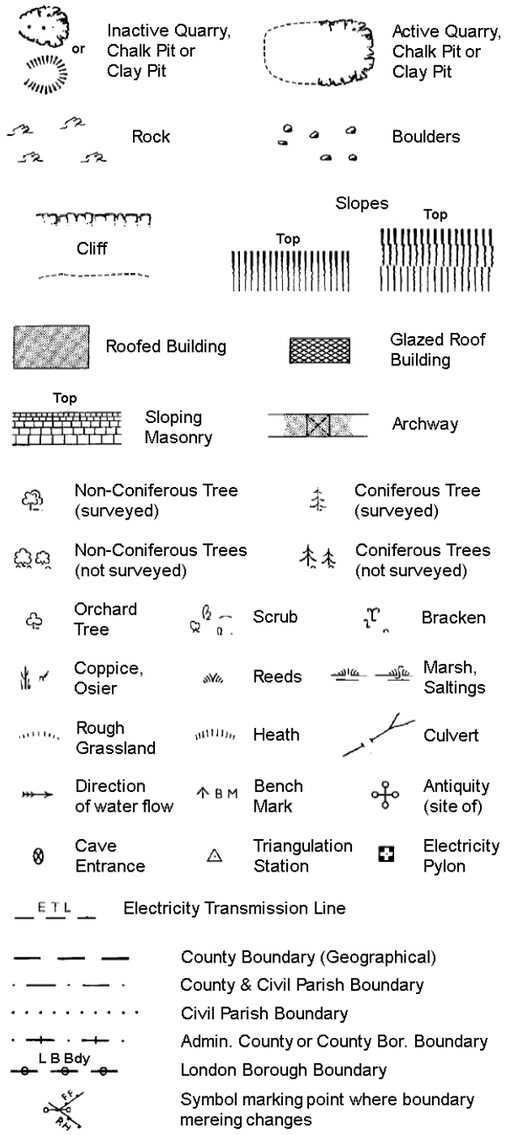
Administrative County & Civil Parish Boundary

Co. Boro. Bdy. County Borough Boundary (England)

Co. Burgh Bdy. County Burgh Boundary (Scotland)

B P B S	Boundary Post or Stone	P.C.B	Police Call Box
B.R.	Bridle Road	P	Pump
E.P	Electricity Pylon	S.P	Signal Post
F.B.	Foot Bridge	St.	Sluice
F.P.	Foot Path	Sp.	Spring
G.P	Guide Post or Board	T.C.B	Telephone Call Box
M.S	Mile Stone	Tr.	Trough
M.P M.R	Mooring Post or Ring	W	Well

Ordnance Survey Plan, Additional SIMs and Supply of Unpublished Survey Information 1:2,500 and 1:1,250



County Boundary (Geographical)

County & Civil Parish Boundary

Civil Parish Boundary

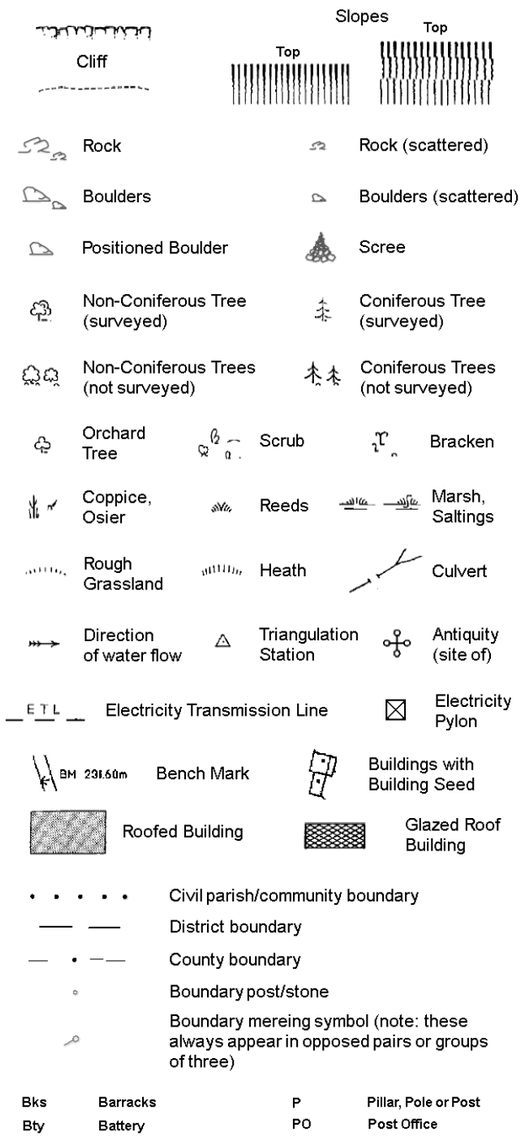
Admin. County or County Bor. Boundary

L B Bdy London Borough Boundary

Symbol marking point where boundary mereing changes

BH	Beer House	P	Pillar, Pole or Post
BP, BS	Boundary Post or Stone	PO	Post Office
Cn, C	Capstan, Crane	PC	Public Convenience
Chy	Chimney	PH	Public House
D Fn	Drinking Fountain	Pp	Pump
El P	Electricity Pillar or Post	SB, S Br	Signal Box or Bridge
FAP	Fire Alarm Pillar	SP, SL	Signal Post or Light
FB	Foot Bridge	Spr	Spring
GP	Guide Post	Tk	Tank or Track
H	Hydrant or Hydraulic	TCB	Telephone Call Box
LC	Level Crossing	TCP	Telephone Call Post
MH	Manhole	Tr	Trough
MP	Mile Post or Mooring Post	Wr Pt, Wr T	Water Point, Water Tap
MS	Mile Stone	W	Well
NTL	Normal Tidal Limit	Wd Pp	Wind Pump

Large-Scale National Grid Data 1:2,500 and 1:1,250



Civil parish/community boundary

District boundary

County boundary

Boundary post/stone

Boundary mereing symbol (note: these always appear in opposed pairs or groups of three)

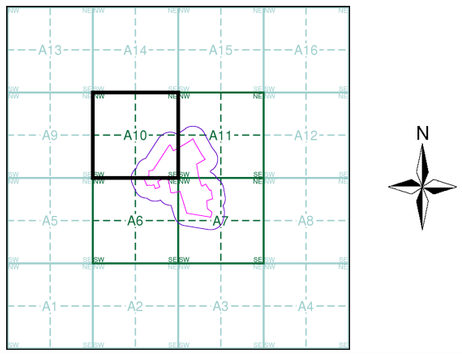
Bks	Barracks	P	Pillar, Pole or Post
Bty	Battery	PO	Post Office
Cemy	Cemetery	PC	Public Convenience
Chy	Chimney	Pp	Pump
Cis	Cistern	Ppg Sta	Pumping Station
Dismtd Rly	Dismantled Railway	PW	Place of Worship
El Gen Sta	Electricity Generating Station	Sewage Ppg Sta	Sewage Pumping Station
El P	Electricity Pole, Pillar	SB, S Br	Signal Box or Bridge
El Sub Sta	Electricity Sub Station	SP, SL	Signal Post or Light
FB	Filter Bed	Spr	Spring
Fn / D Fn	Fountain / Drinking Ftn.	Tk	Tank or Track
Gas Gov	Gas Valve Compound	Tr	Trough
GVC	Gas Governer	Wd Pp	Wind Pump
GP	Guide Post	Wr Pt, Wr T	Water Point, Water Tap
MH	Manhole	Wks	Works (building or area)
MP, MS	Mile Post or Mile Stone	W	Well

Hydrock

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Wiltshire	1:2,500	1875	2
Gloucestershire	1:2,500	1875	3
Wiltshire	1:2,500	1900	4
Wiltshire	1:2,500	1921	5
Gloucestershire	1:2,500	1921	6
Ordnance Survey Plan	1:2,500	1973	7
Additional SIMs	1:2,500	1988 - 1993	8
Large-Scale National Grid Data	1:2,500	1994	9
Historical Aerial Photography	1:2,500	1999	10

Historical Map - Segment A10



Order Details

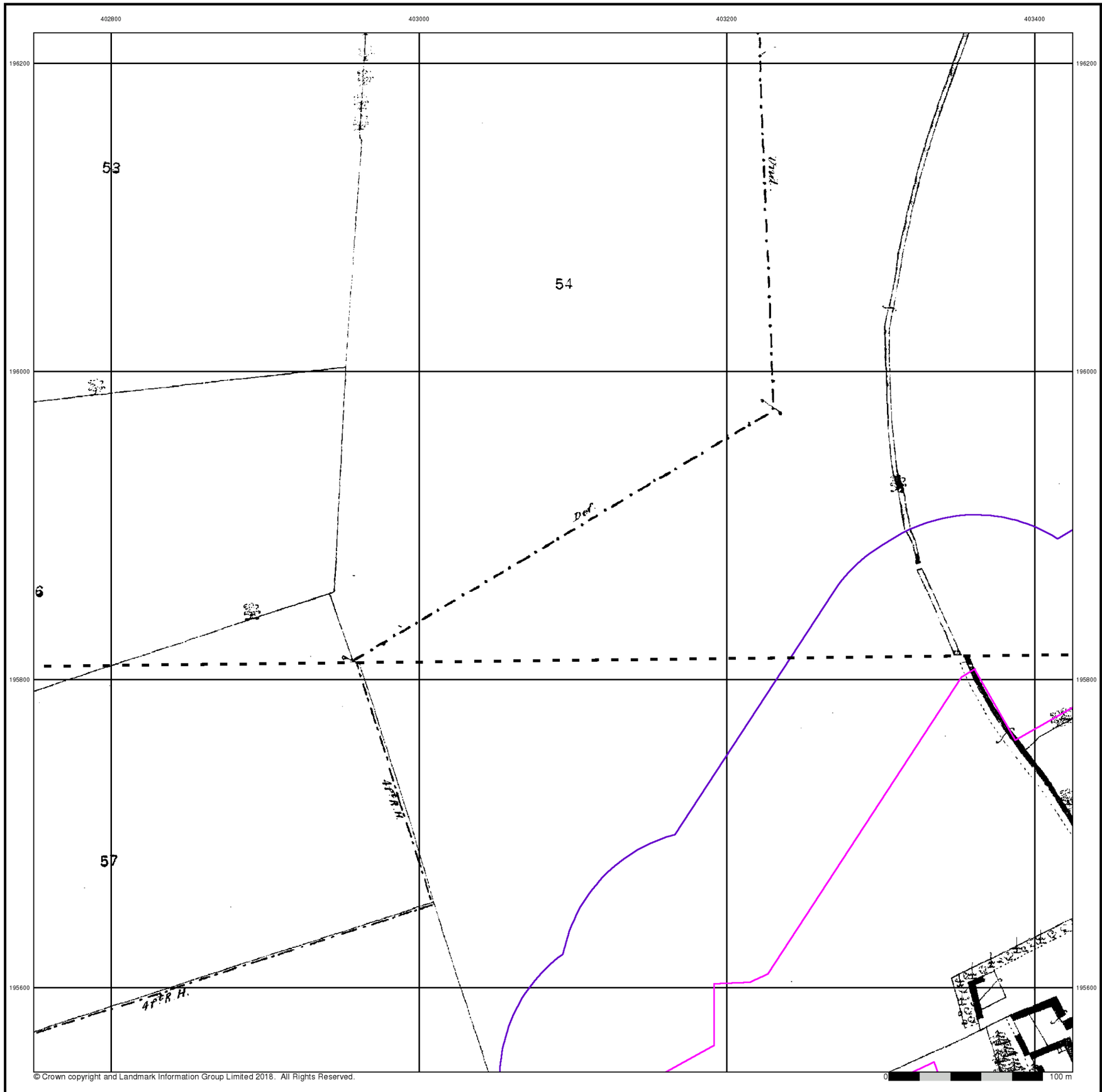
Order Number: 168381006_1_1
Customer Ref: C-09612-C
National Grid Reference: 403470, 195530
Slice: A
Site Area (Ha): 16.1
Search Buffer (m): 100

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



© Crown copyright and Landmark Information Group Limited 2018. All Rights Reserved.

Hydrock

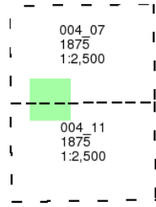
Wiltshire

Published 1875

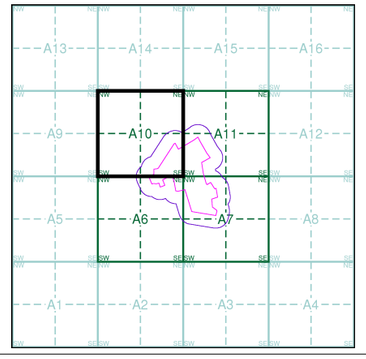
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A10



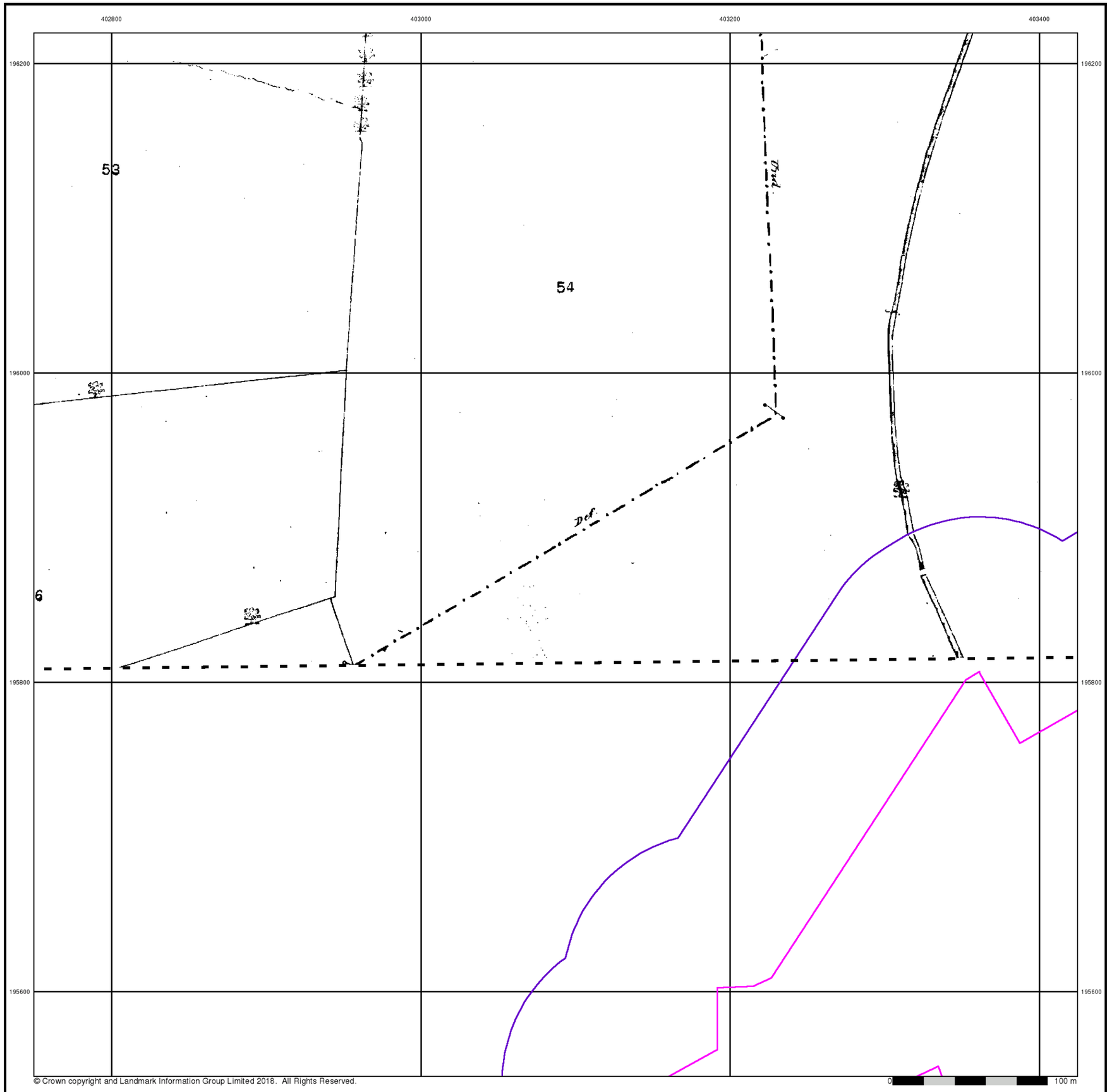
Order Details

Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	100

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



© Crown copyright and Landmark Information Group Limited 2018. All Rights Reserved.

Hydrock

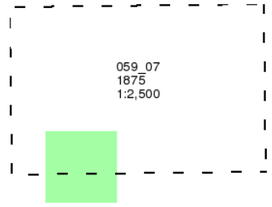
Gloucestershire

Published 1875

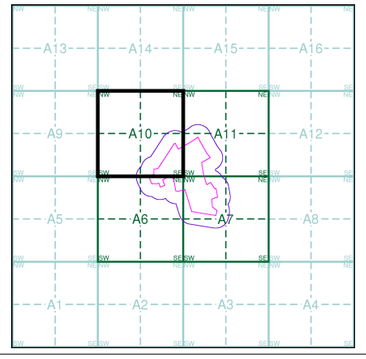
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A10



Order Details

Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	100

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



Hydrock

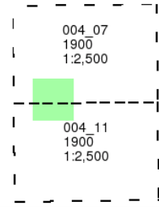
Wiltshire

Published 1900

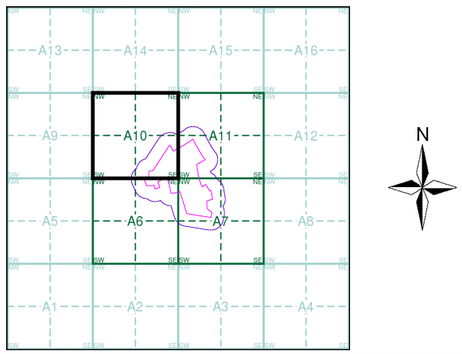
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A10



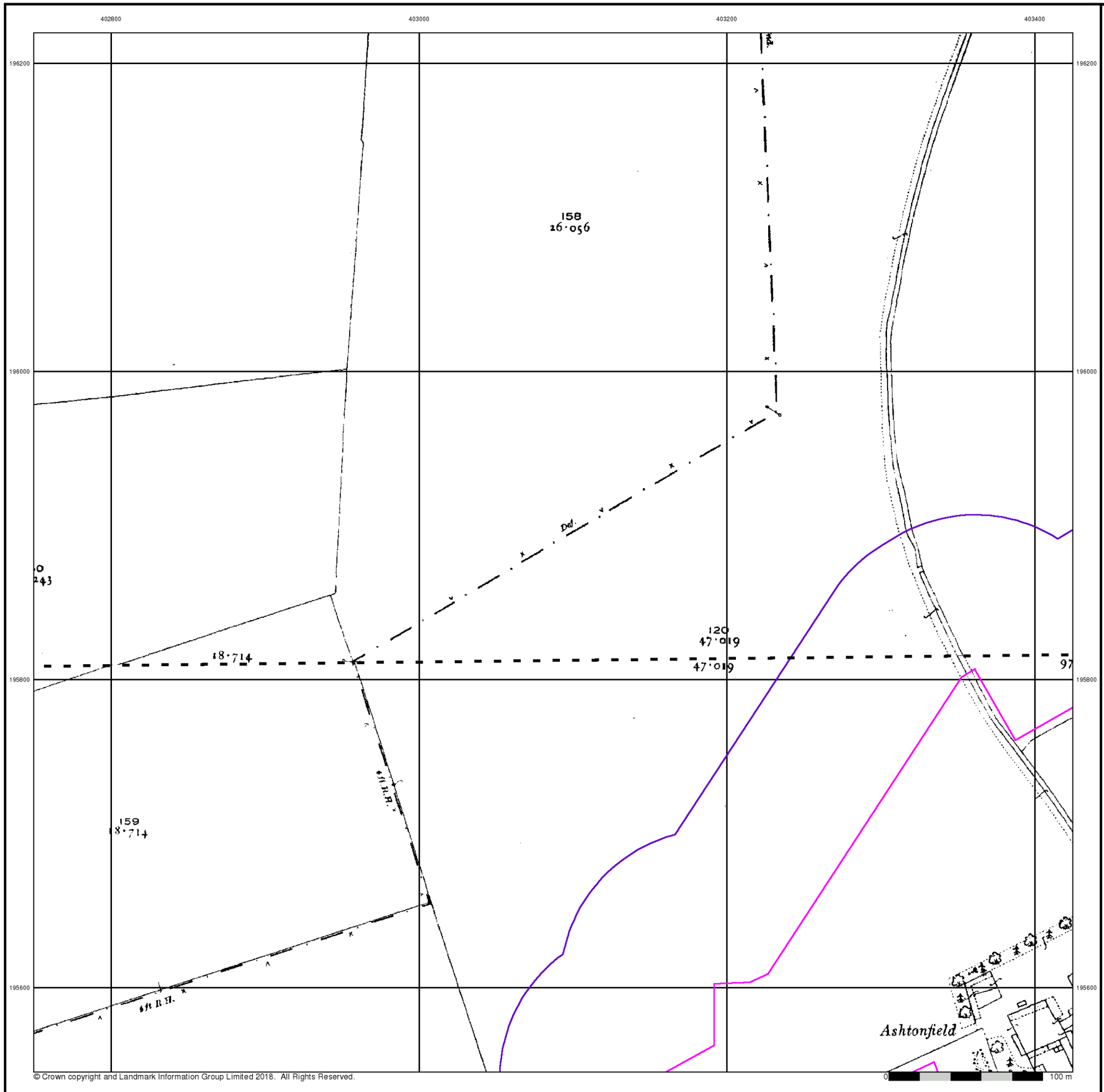
Order Details

Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	100

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



© Crown copyright and Landmark Information Group Limited 2018. All Rights Reserved.

Hydrock

Wiltshire

Published 1921

Source map scale - 1:2,500

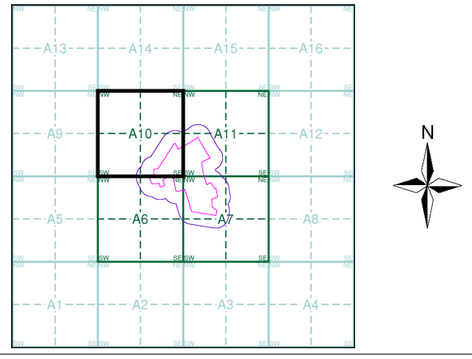
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

004_07
1921
1:2,500

004_11
1921
1:2,500

Historical Map - Segment A10



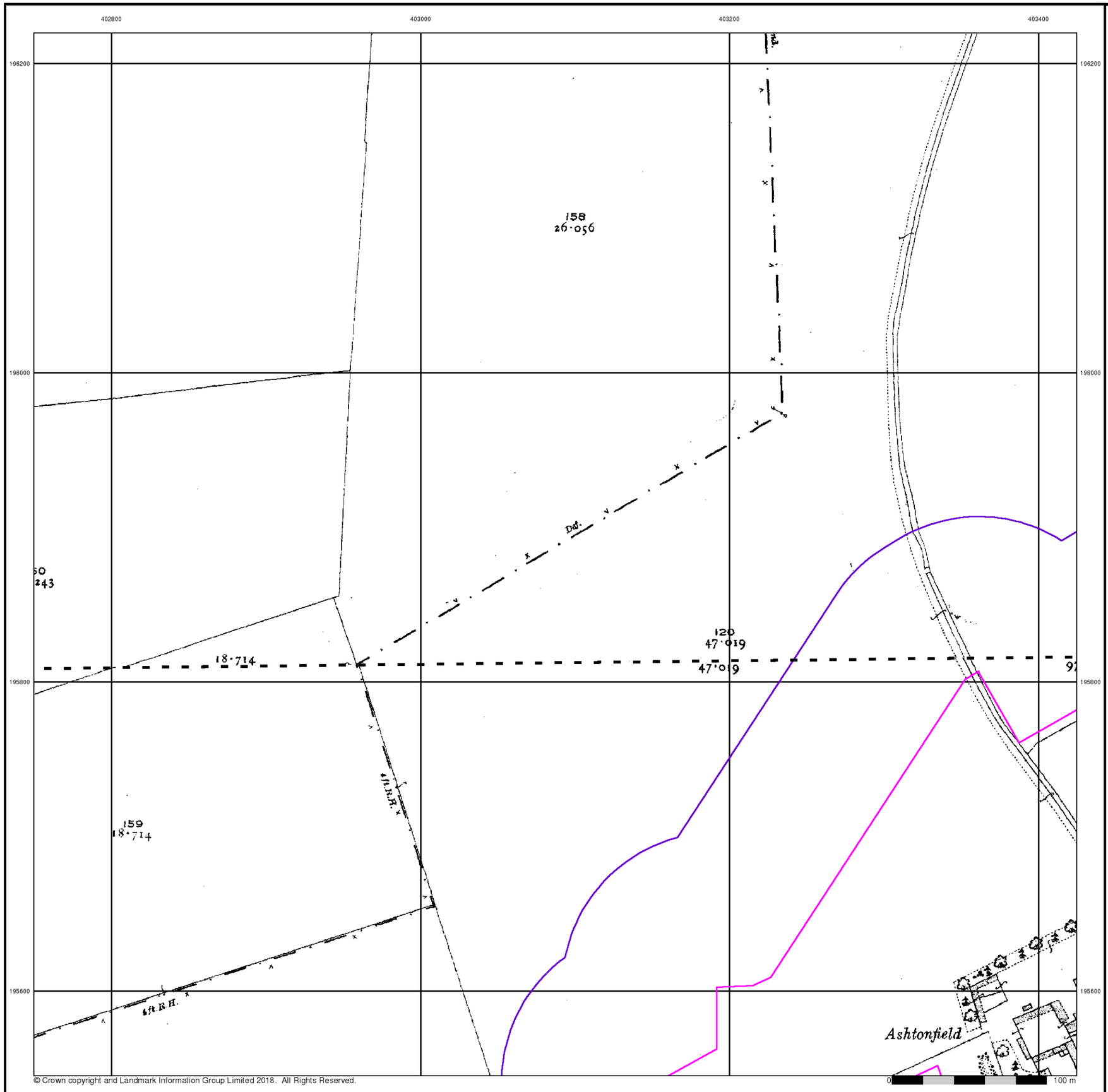
Order Details

Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	100

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



© Crown copyright and Landmark Information Group Limited 2018. All Rights Reserved.

Hydrock

Gloucestershire

Published 1921

Source map scale - 1:2,500

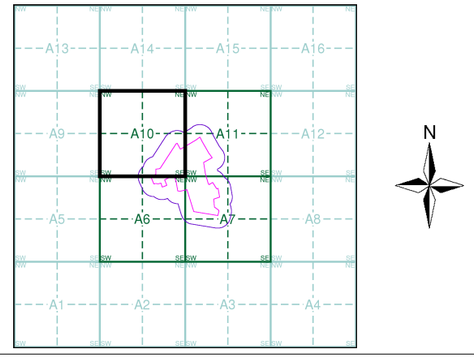
The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)

059_07
1921
1:2,500

059_11
1921
1:2,500

Historical Map - Segment A10



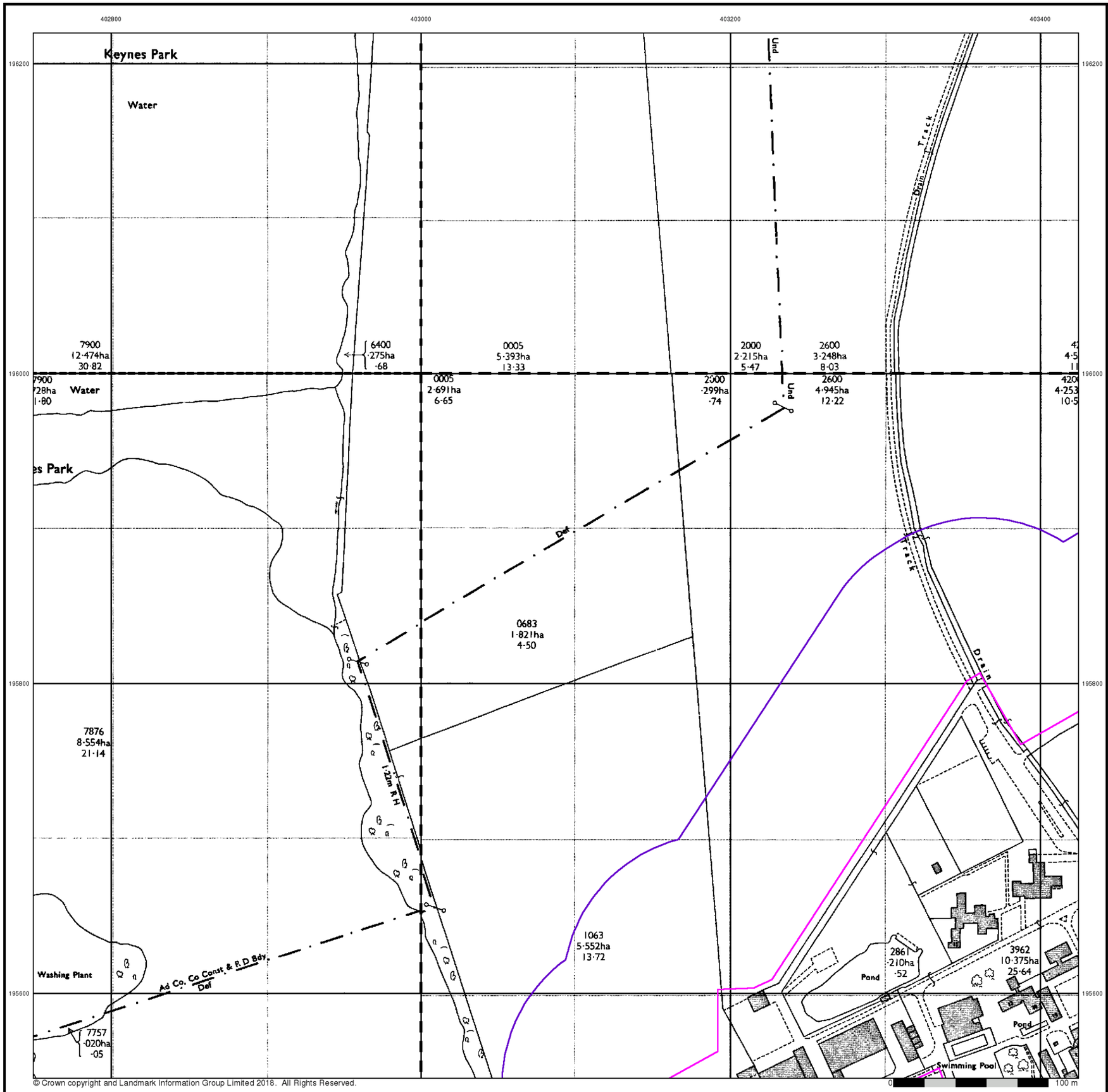
Order Details

Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	100

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



© Crown copyright and Landmark Information Group Limited 2018. All Rights Reserved.

Hydrock

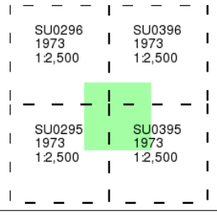
Ordnance Survey Plan

Published 1973

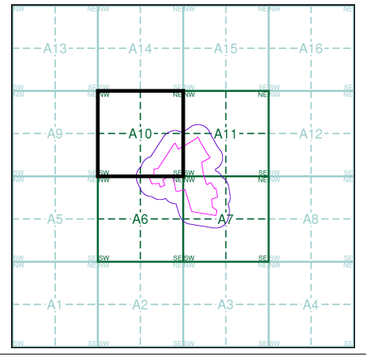
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A10



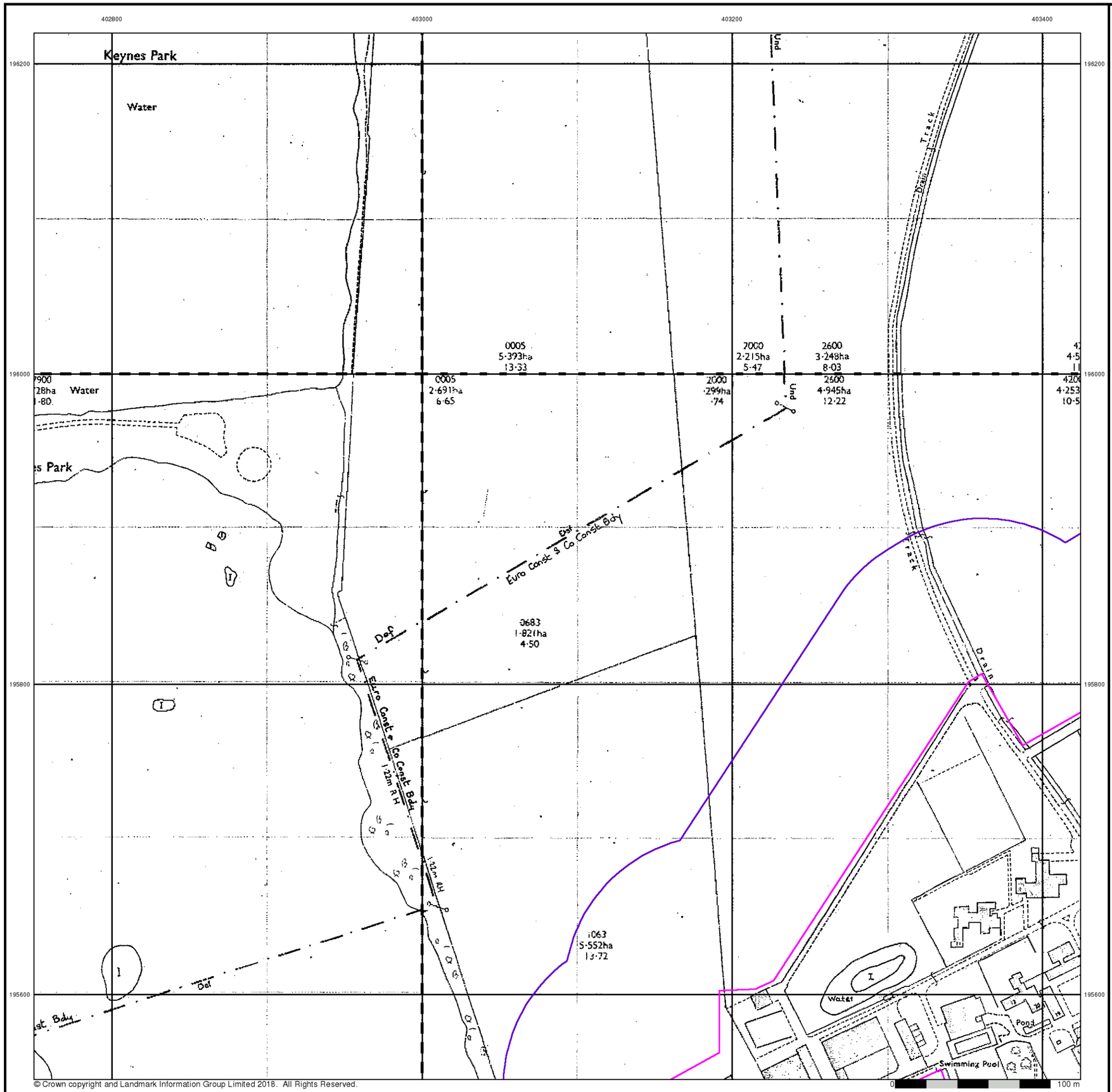
Order Details

Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	100

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



© Crown copyright and Landmark Information Group Limited 2018. All Rights Reserved.

Hydrock

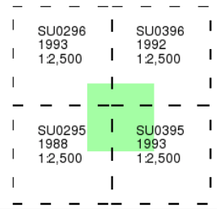
Additional SIMs

Published 1988 - 1993

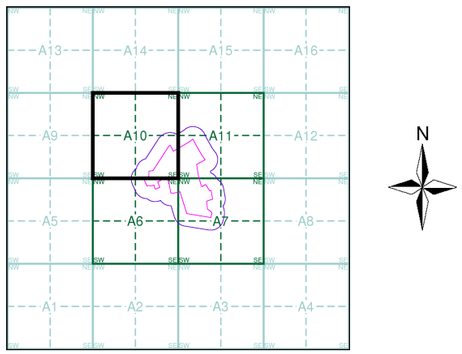
Source map scale - 1:2,500

The SIM cards (Ordnance Survey's `Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A10



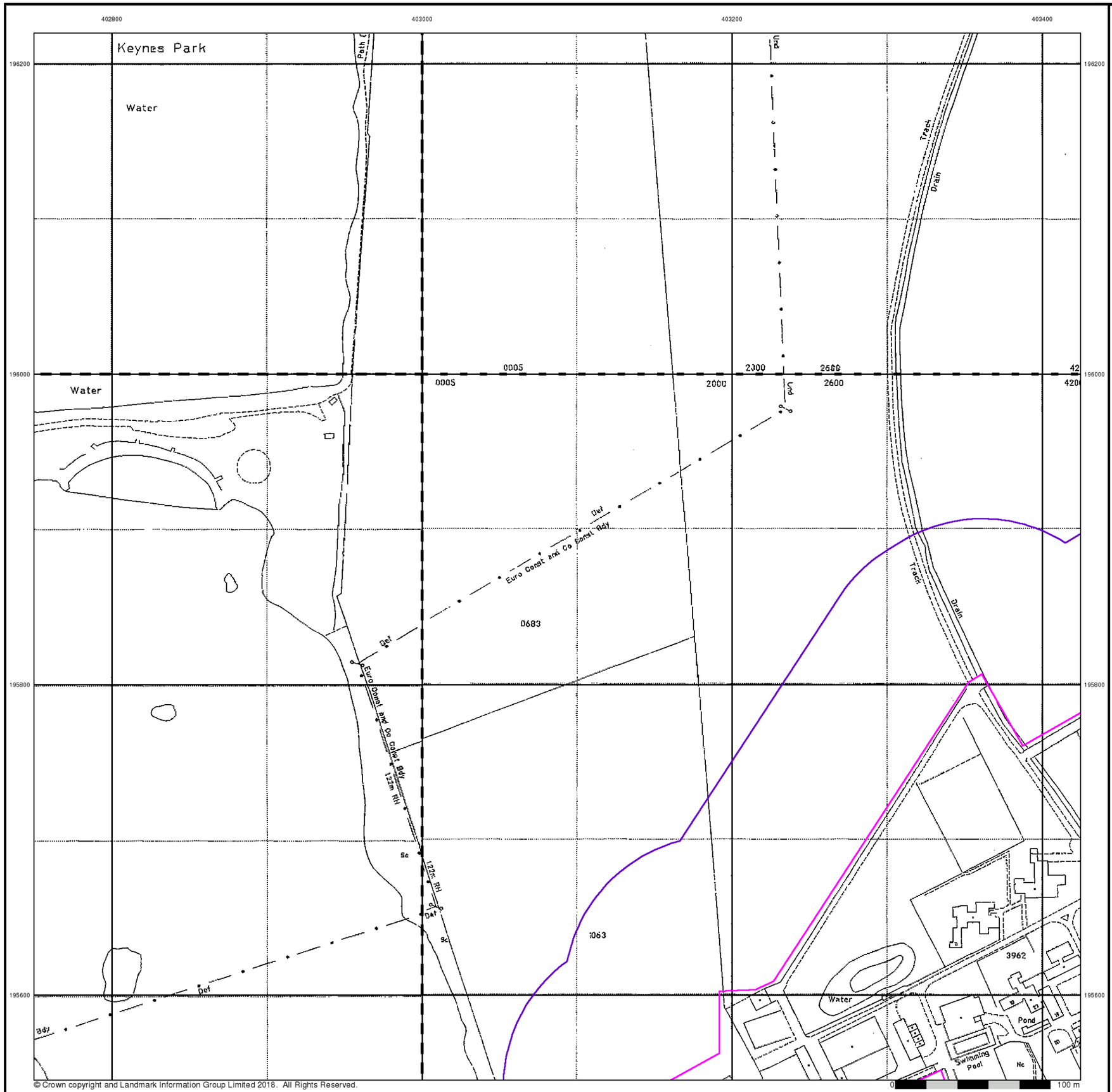
Order Details

Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	100

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



© Crown copyright and Landmark Information Group Limited 2018. All Rights Reserved.

Hydrock

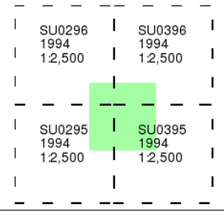
Large-Scale National Grid Data

Published 1994

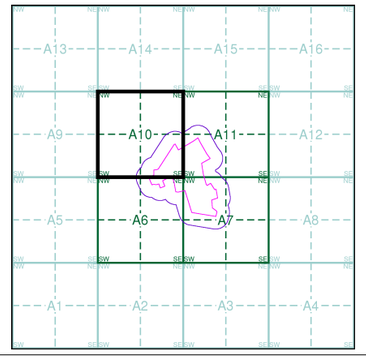
Source map scale - 1:2,500

'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A10



Order Details

Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	100

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



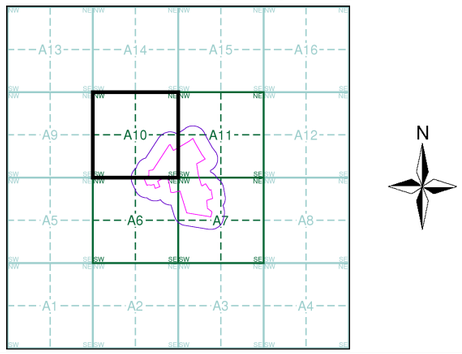
Hydrock

Historical Aerial Photography

Published 1999

This aerial photography was produced by Getmapping, these vertical aerial photographs provide a seamless, full colour survey of the whole of Great Britain

Historical Aerial Photography - Segment A10



Order Details

Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	100

Site Details

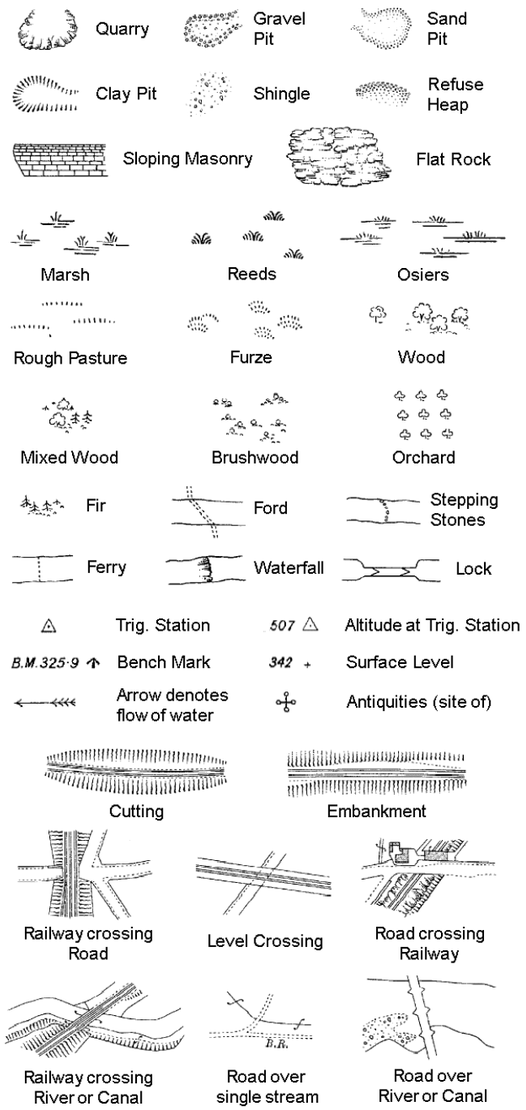
Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk

Historical Mapping Legends

Ordnance Survey County Series and Ordnance Survey Plan 1:2,500



County Boundary (Geographical)

County & Civil Parish Boundary

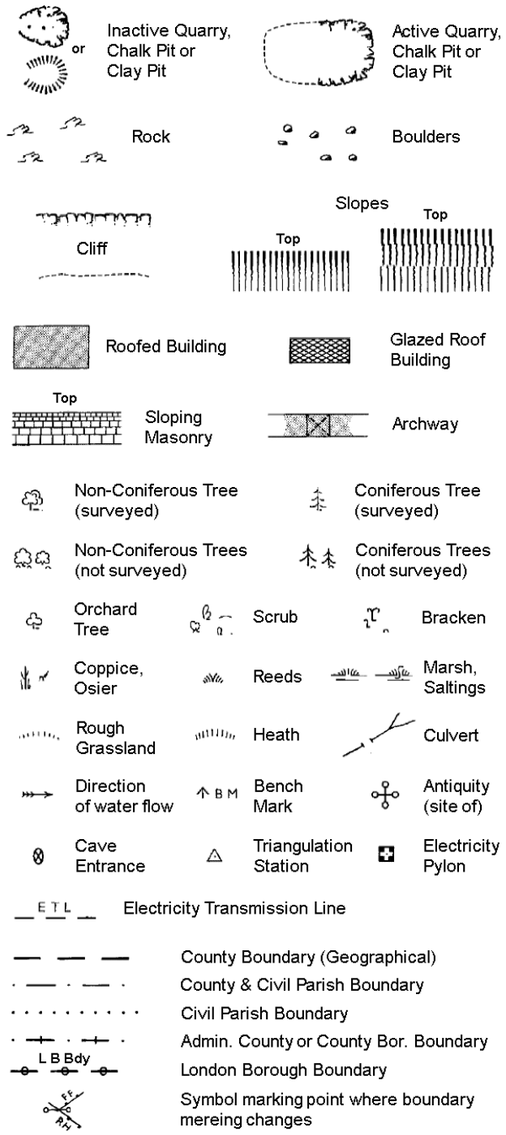
Administrative County & Civil Parish Boundary

Co. Boro. Bdy. County Borough Boundary (England)

Co. Burgh Bdy. County Burgh Boundary (Scotland)

B P B S	Boundary Post or Stone	P.C.B	Police Call Box
B.R.	Bridle Road	P	Pump
E.P	Electricity Pylon	S.P	Signal Post
F.B.	Foot Bridge	St.	Sluice
F.P.	Foot Path	Sp.	Spring
G.P	Guide Post or Board	T.C.B	Telephone Call Box
M.S	Mile Stone	Tr.	Trough
M.P M.R	Mooring Post or Ring	W	Well

Ordnance Survey Plan, Additional SIMs and Supply of Unpublished Survey Information 1:2,500 and 1:1,250



County Boundary (Geographical)

County & Civil Parish Boundary

Civil Parish Boundary

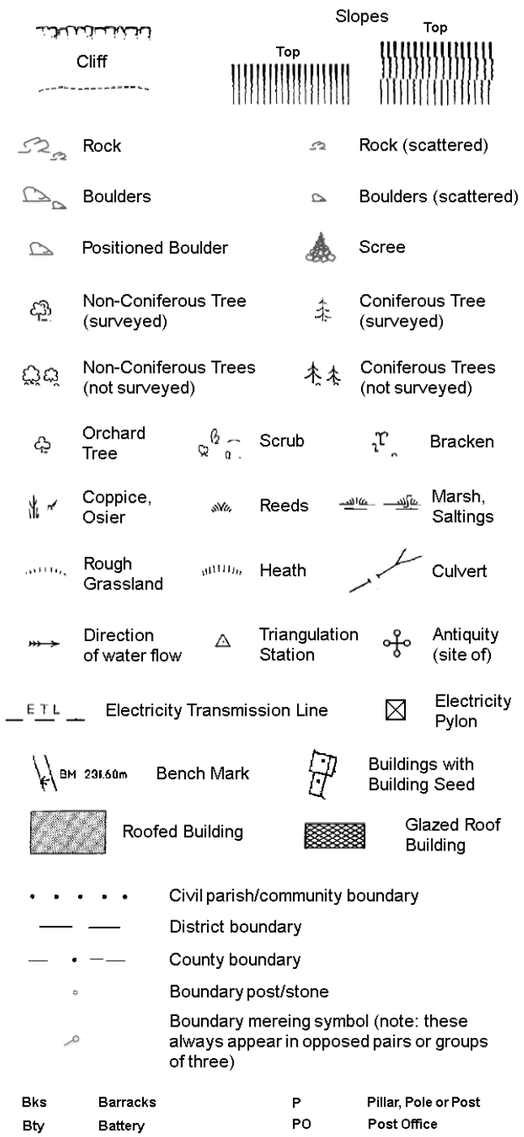
Admin. County or County Bor. Boundary

L B Bdy London Borough Boundary

Symbol marking point where boundary mereing changes

BH	Beer House	P	Pillar, Pole or Post
BP, BS	Boundary Post or Stone	PO	Post Office
Cn, C	Capstan, Crane	PC	Public Convenience
Chy	Chimney	PH	Public House
D Fn	Drinking Fountain	Pp	Pump
El P	Electricity Pillar or Post	SB, S Br	Signal Box or Bridge
FAP	Fire Alarm Pillar	SP, SL	Signal Post or Light
FB	Foot Bridge	Spr	Spring
GP	Guide Post	Tk	Tank or Track
H	Hydrant or Hydraulic	TCB	Telephone Call Box
LC	Level Crossing	TCP	Telephone Call Post
MH	Manhole	Tr	Trough
MP	Mile Post or Mooring Post	Wr Pt, Wr T	Water Point, Water Tap
MS	Mile Stone	W	Well
NTL	Normal Tidal Limit	Wd Pp	Wind Pump

Large-Scale National Grid Data 1:2,500 and 1:1,250



Civil parish/community boundary

District boundary

County boundary

Boundary post/stone

Boundary mereing symbol (note: these always appear in opposed pairs or groups of three)

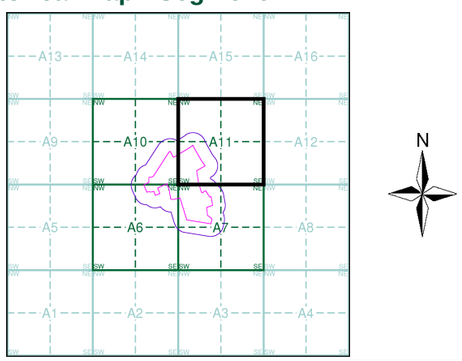
Bks	Barracks	P	Pillar, Pole or Post
Bty	Battery	PO	Post Office
Cemy	Cemetery	PC	Public Convenience
Chy	Chimney	Pp	Pump
Cis	Cistern	Ppg Sta	Pumping Station
Dismtd Rly	Dismantled Railway	PW	Place of Worship
El Gen Sta	Electricity Generating Station	Sewage Ppg Sta	Sewage Pumping Station
El P	Electricity Pole, Pillar	SB, S Br	Signal Box or Bridge
El Sub Sta	Electricity Sub Station	SP, SL	Signal Post or Light
FB	Filter Bed	Spr	Spring
Fn / D Fn	Fountain / Drinking Ftn.	Tk	Tank or Track
Gas Gov	Gas Valve Compound	Tr	Trough
GVC	Gas Governer	Wd Pp	Wind Pump
GP	Guide Post	Wr Pt, Wr T	Water Point, Water Tap
MH	Manhole	Wks	Works (building or area)
MP, MS	Mile Post or Mile Stone	W	Well

Hydrock

Historical Mapping & Photography included:

Mapping Type	Scale	Date	Pg
Wiltshire	1:2,500	1875	2
Gloucestershire	1:2,500	1875	3
Wiltshire	1:2,500	1900	4
Wiltshire	1:2,500	1921	5
Gloucestershire	1:2,500	1921	6
Ordnance Survey Plan	1:2,500	1973	7
Additional SIMs	1:2,500	1988 - 1993	8
Ordnance Survey Plan	1:2,500	1991	9
Large-Scale National Grid Data	1:2,500	1994	10
Historical Aerial Photography	1:2,500	1999	11

Historical Map - Segment A11



Order Details

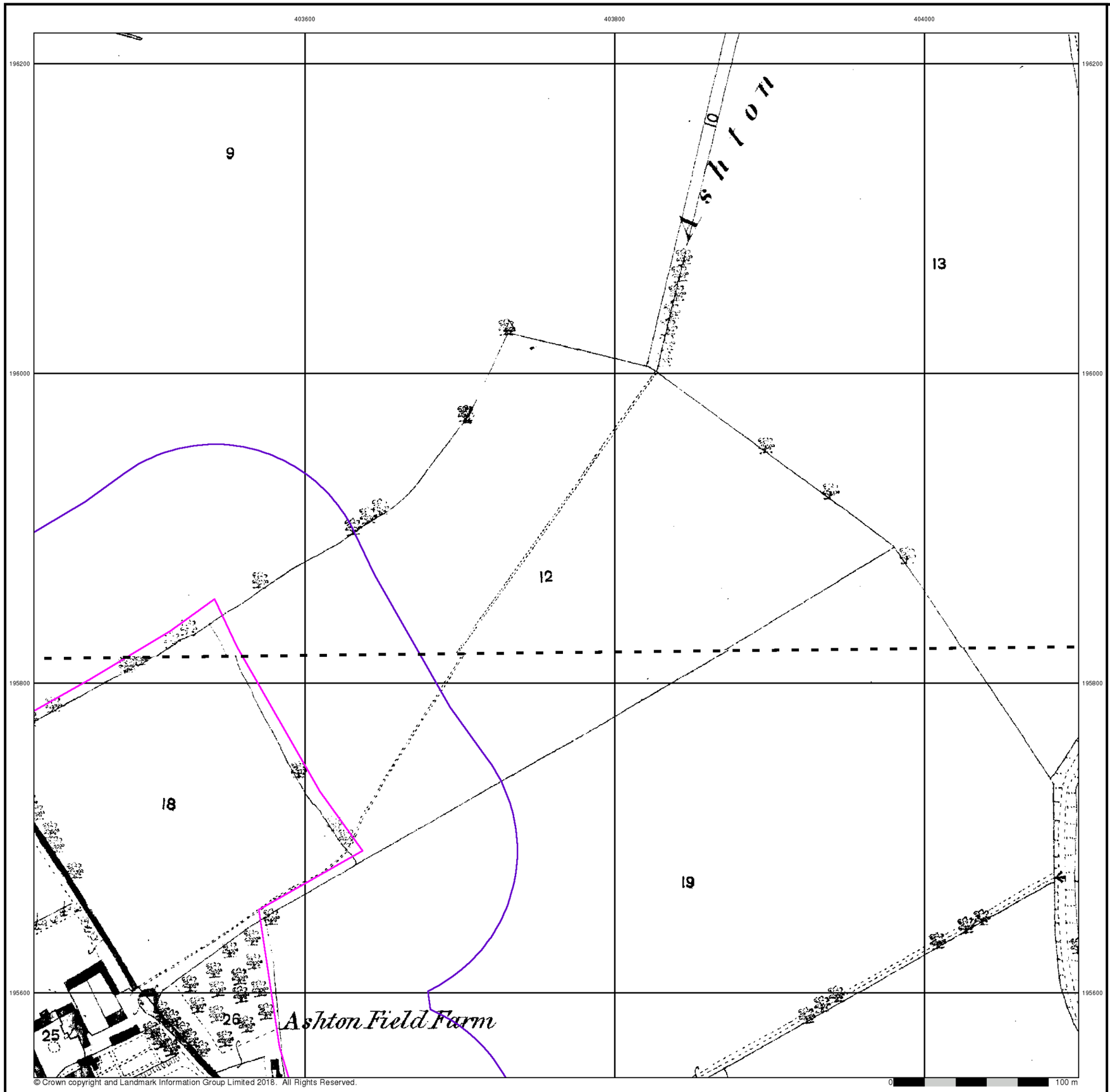
Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	100

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



© Crown copyright and Landmark Information Group Limited 2018. All Rights Reserved.

Hydrock

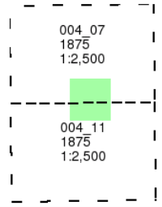
Wiltshire

Published 1875

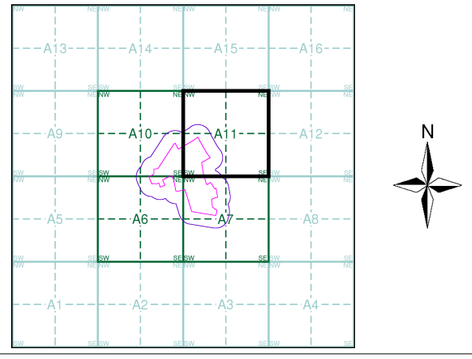
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A11



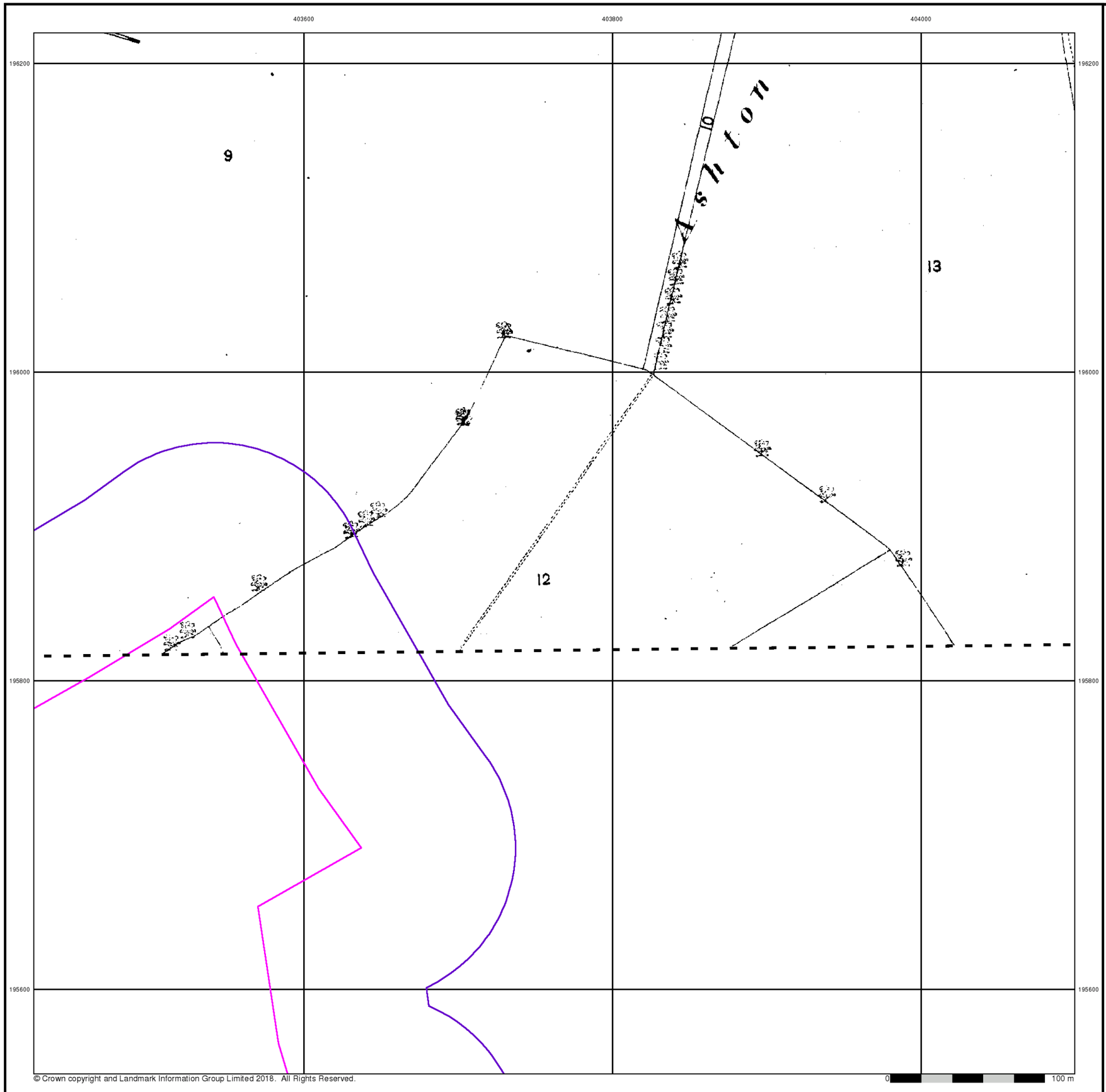
Order Details

Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	100

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



Hydrock

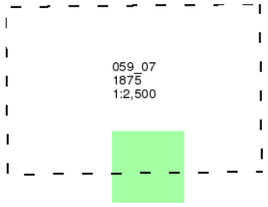
Gloucestershire

Published 1875

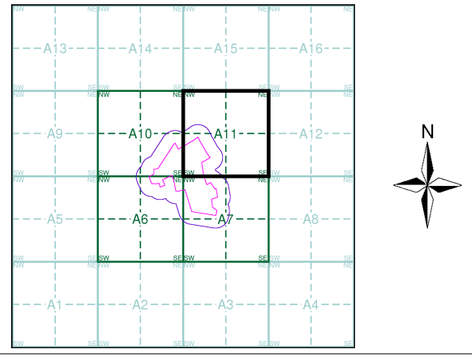
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A11



Order Details

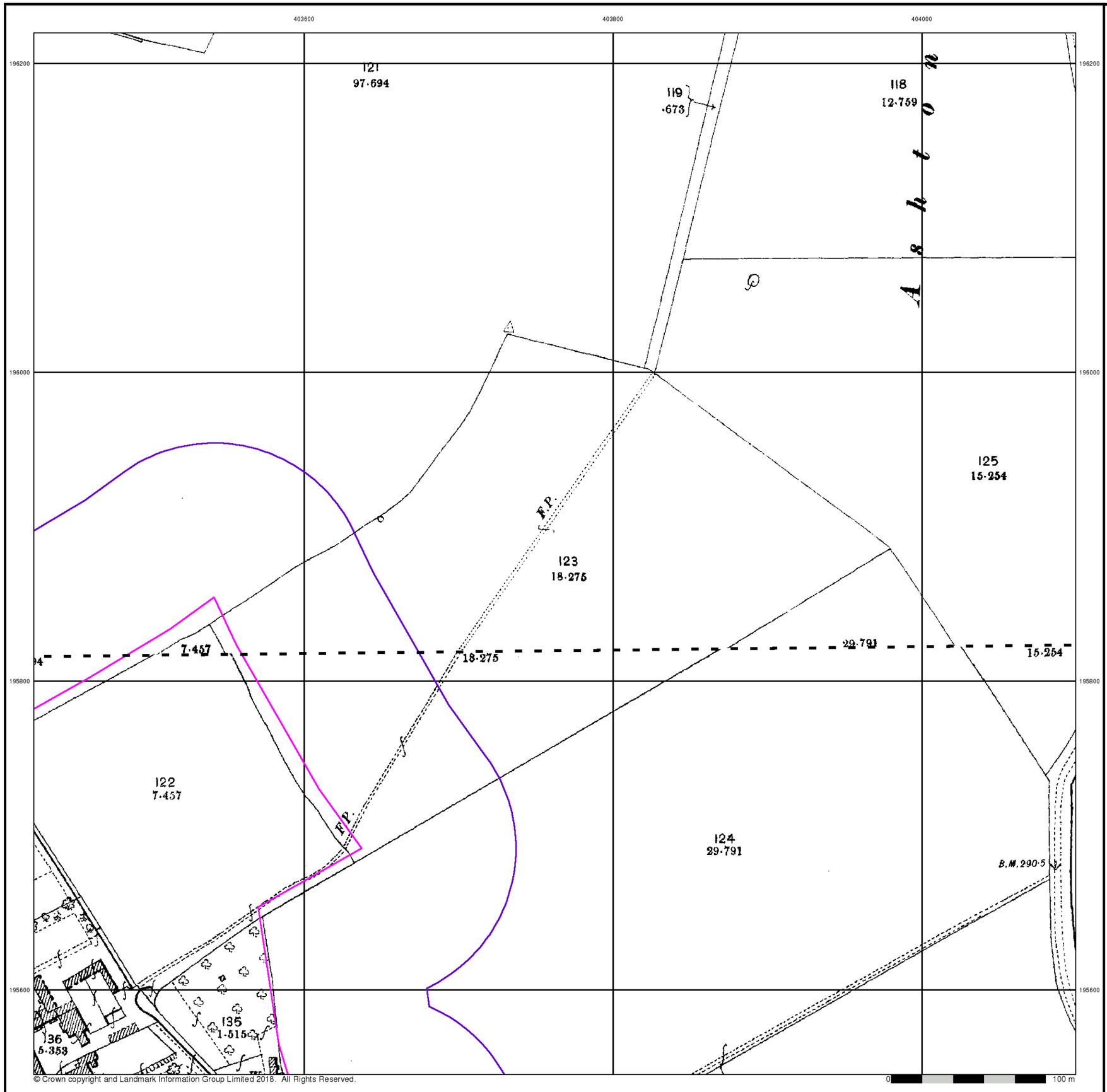
Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	100

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



© Crown copyright and Landmark Information Group Limited 2018. All Rights Reserved.

Hydrock

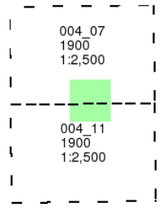
Wiltshire

Published 1900

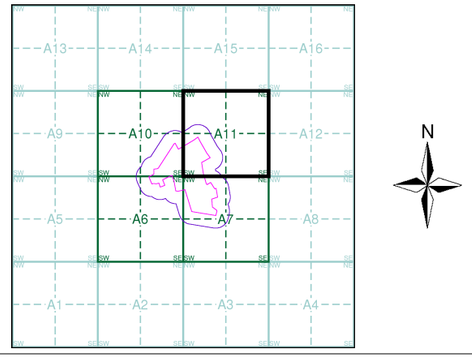
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A11



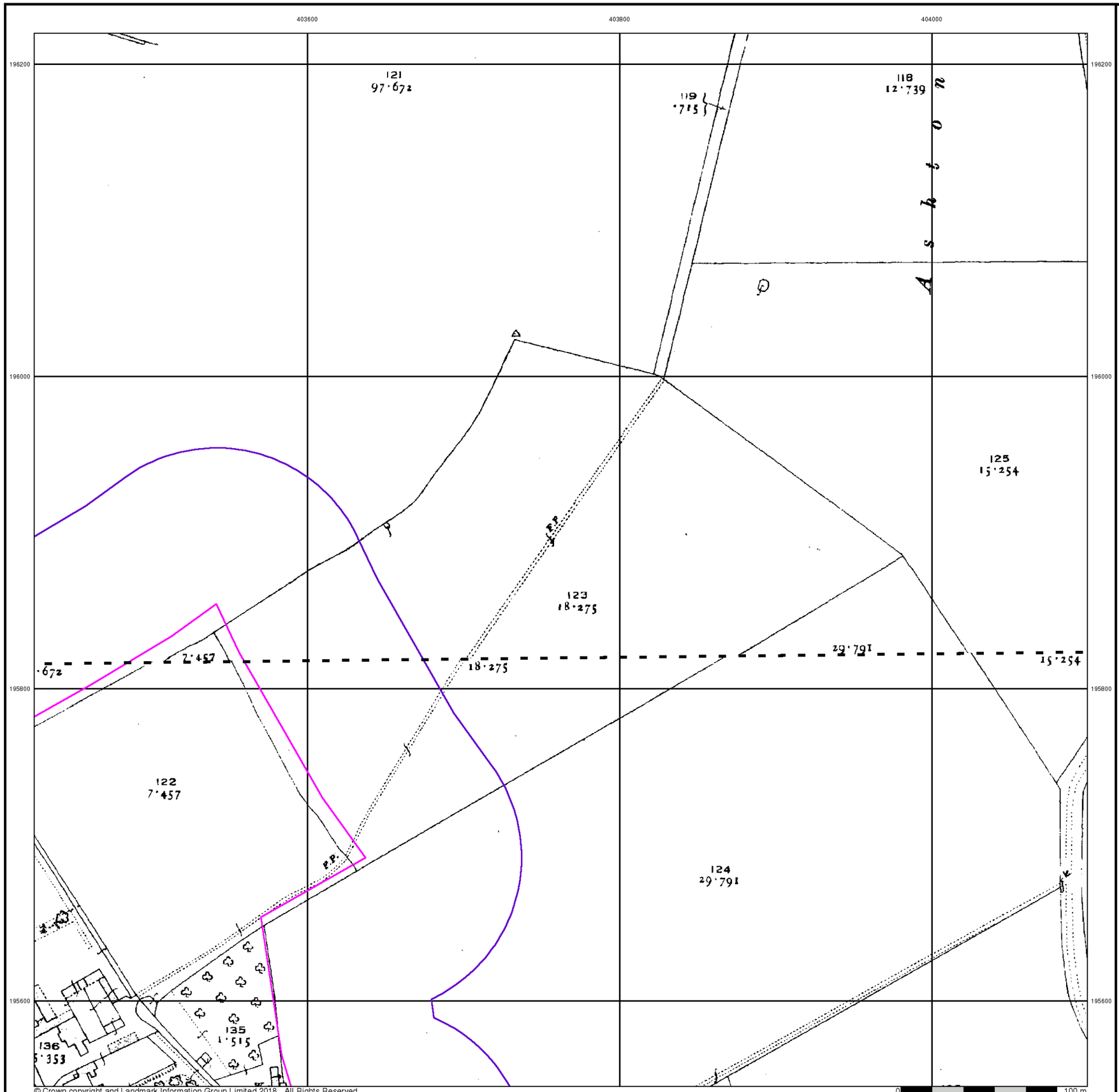
Order Details

Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	100

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



© Crown copyright and Landmark Information Group Limited 2018. All Rights Reserved.

Hydrock

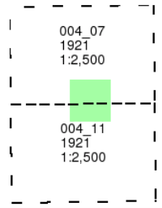
Wiltshire

Published 1921

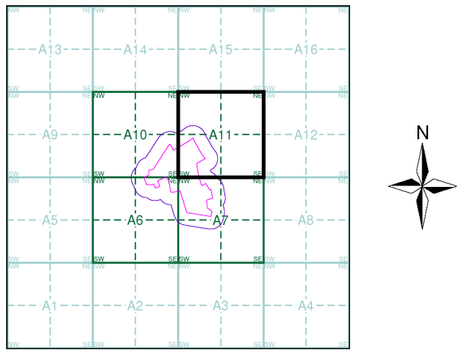
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A11



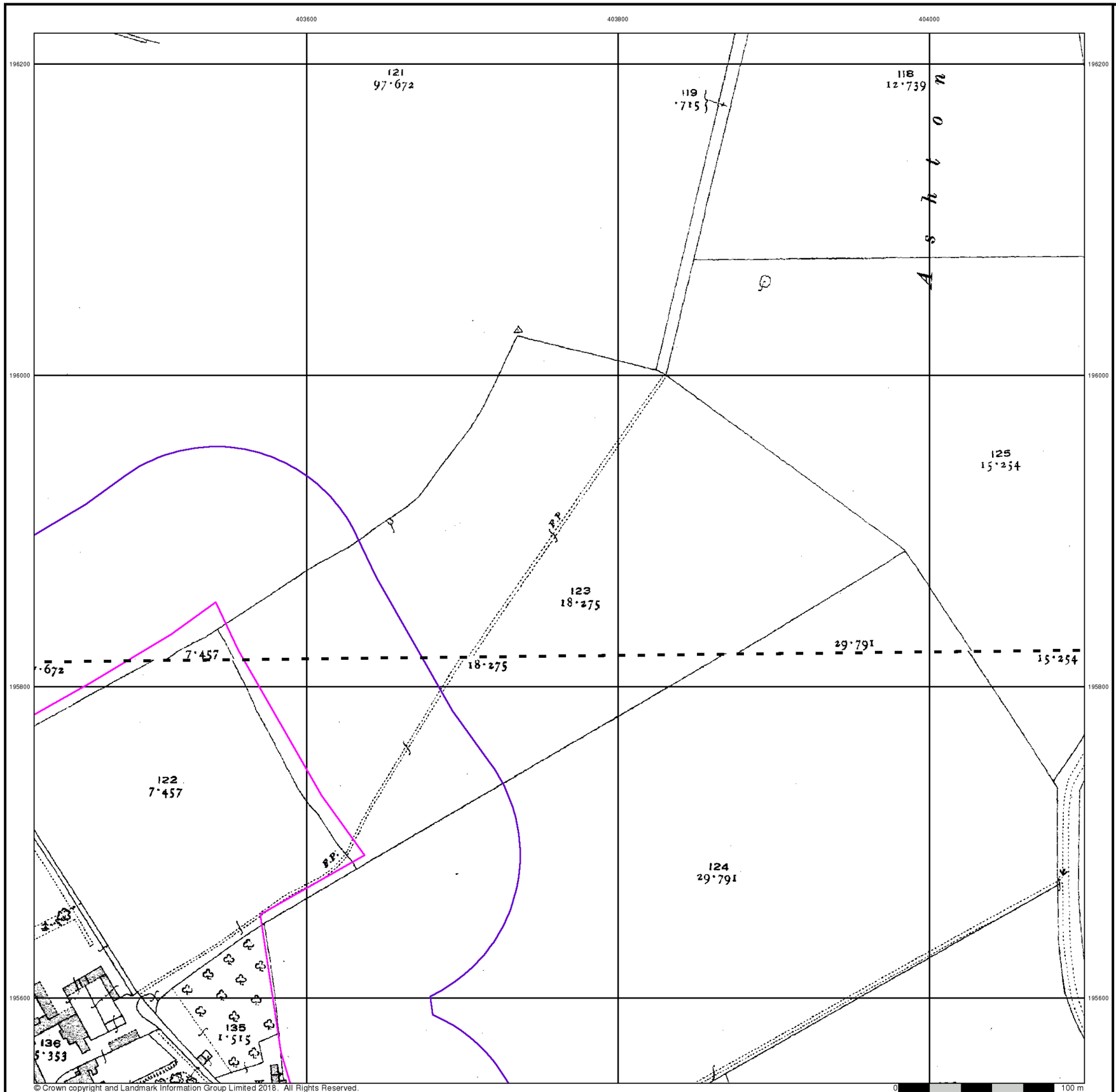
Order Details

Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	100

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



© Crown copyright and Landmark Information Group Limited 2018. All Rights Reserved.

Hydrock

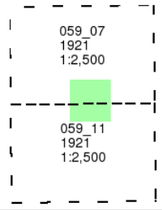
Gloucestershire

Published 1921

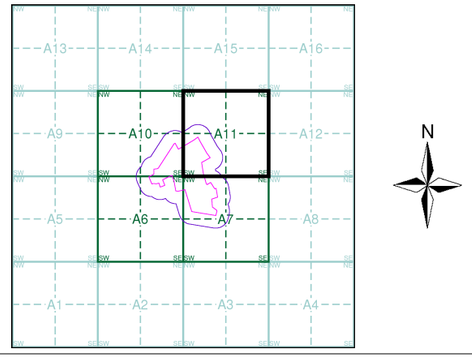
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A11



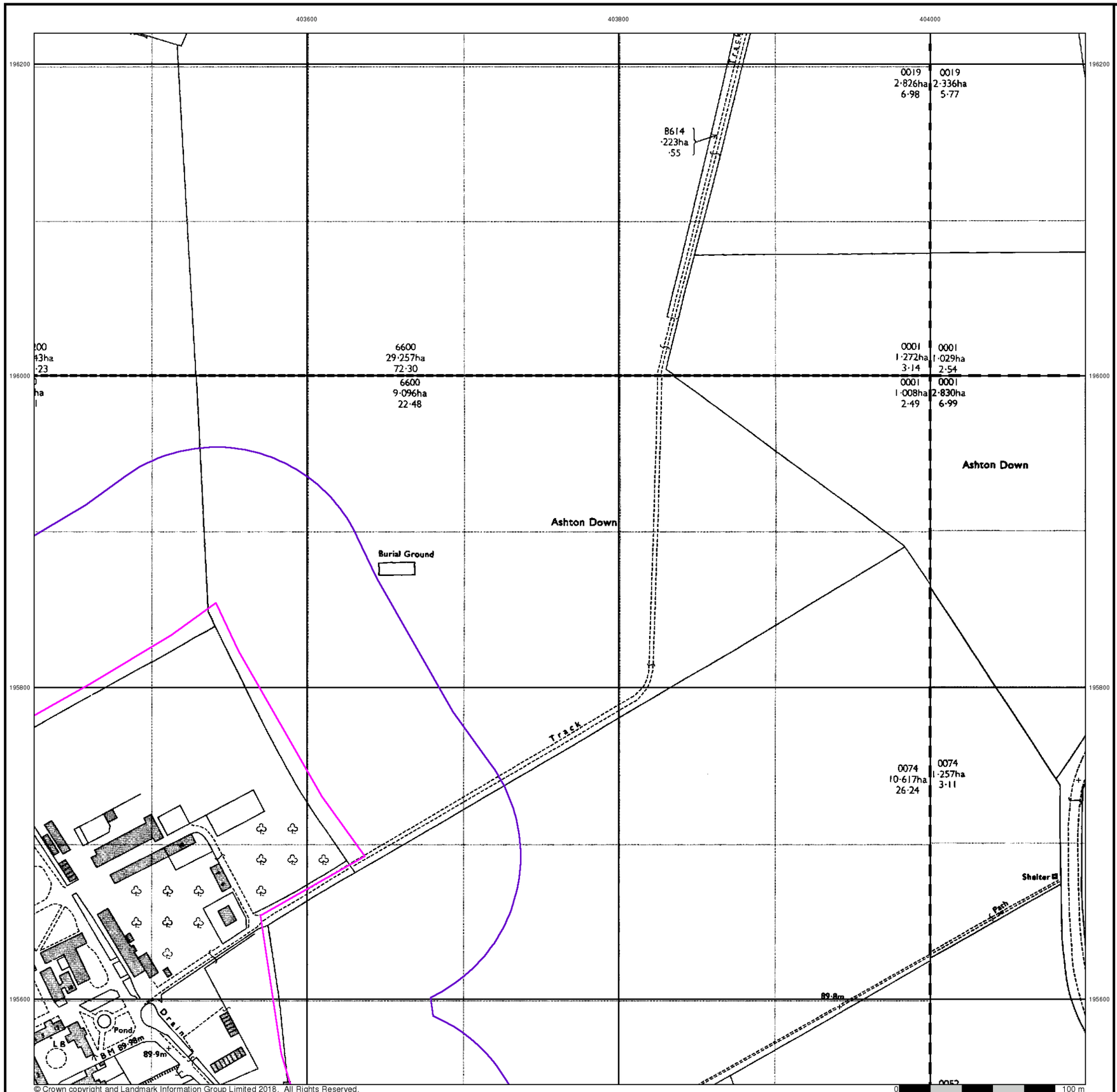
Order Details

Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	100

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



Hydrock

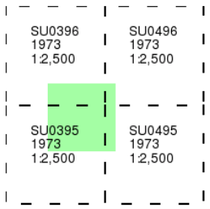
Ordnance Survey Plan

Published 1973

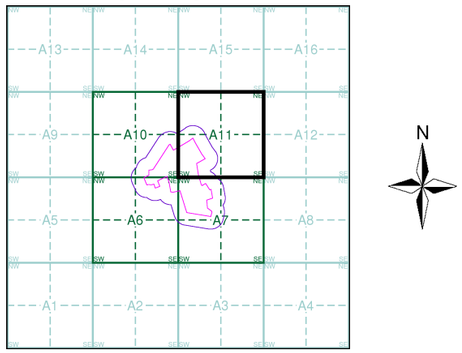
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A11



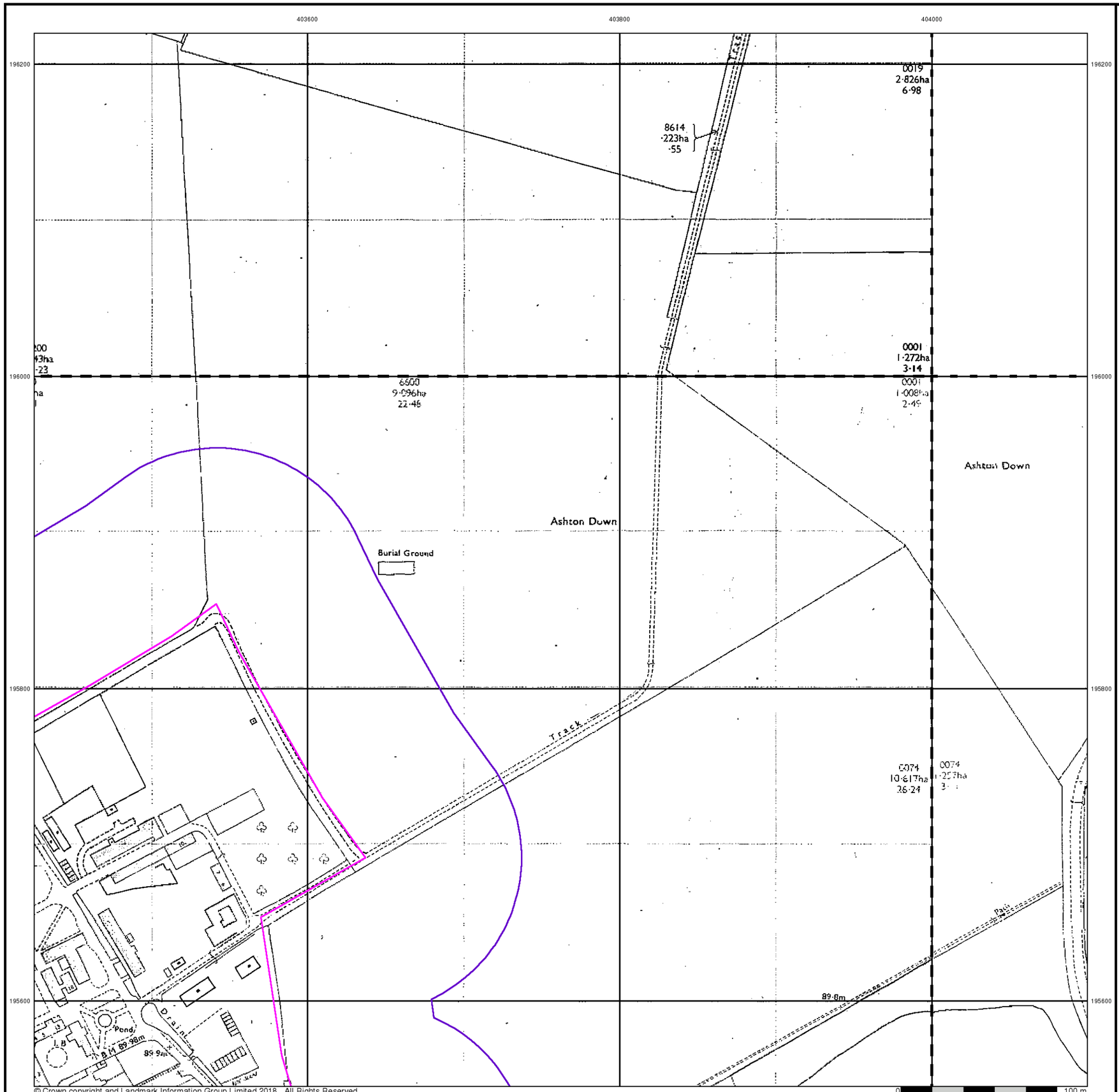
Order Details

Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	100

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



© Crown copyright and Landmark Information Group Limited 2018. All Rights Reserved.

Hydrock

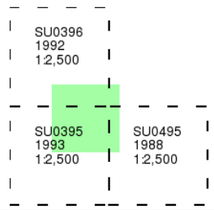
Additional SIMs

Published 1988 - 1993

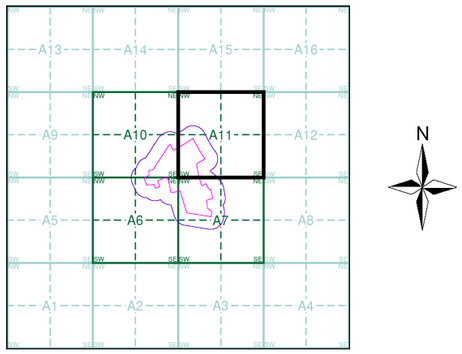
Source map scale - 1:2,500

The SIM cards (Ordnance Survey's `Survey of Information on Microfilm') are further, minor editions of mapping which were produced and published in between the main editions as an area was updated. They date from 1947 to 1994, and contain detailed information on buildings, roads and land-use. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)



Historical Map - Segment A11



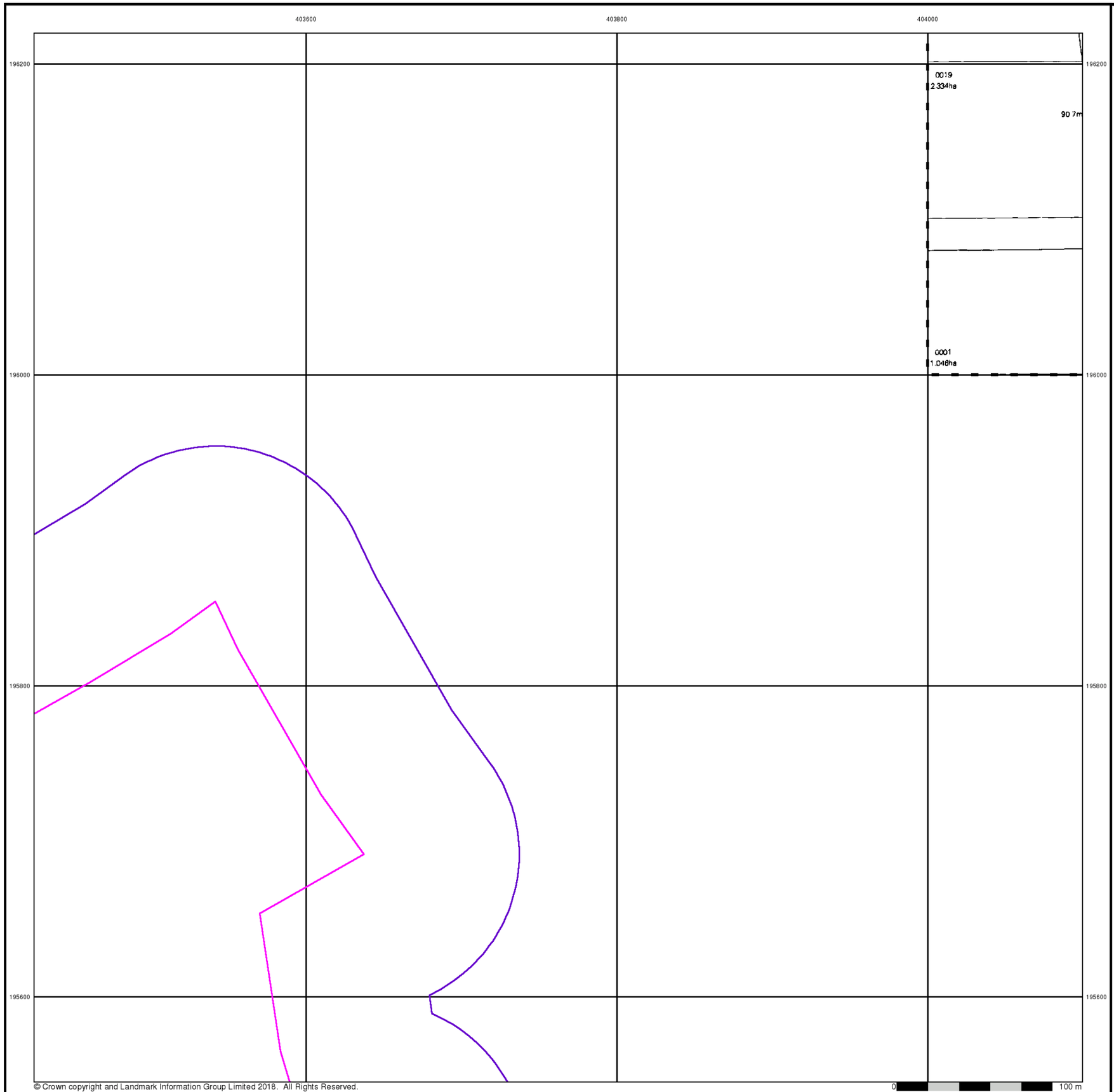
Order Details

Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	100

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



© Crown copyright and Landmark Information Group Limited 2018. All Rights Reserved.

Hydrock

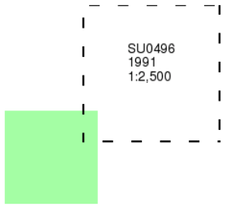
Ordnance Survey Plan

Published 1991

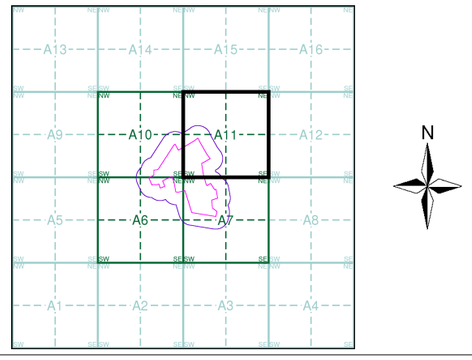
Source map scale - 1:2,500

The historical maps shown were reproduced from maps predominantly held at the scale adopted for England, Wales and Scotland in the 1840`s. In 1854 the 1:2,500 scale was adopted for mapping urban areas and by 1896 it covered the whole of what were considered to be the cultivated parts of Great Britain. The published date given below is often some years later than the surveyed date. Before 1938, all OS maps were based on the Cassini Projection, with independent surveys of a single county or group of counties, giving rise to significant inaccuracies in outlying areas.

Map Name(s) and Date(s)



Historical Map - Segment A11



Order Details

Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	100

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk

403600 403800 404000

196200 196200

196000 196000

195800 195800

195600 195600

6600

0019

0001

0074

90.7m

89.3m

89.8m

89.9m

Ashton Down

Ashton Down

Burial Ground

Track

Path (um)

Drain

Pond

Orch

LS

BM 89.96m

© Crown copyright and Landmark Information Group Limited 2018. All Rights Reserved.

0 100 m

Hydrock

Large-Scale National Grid Data

Published 1994

Source map scale - 1:2,500

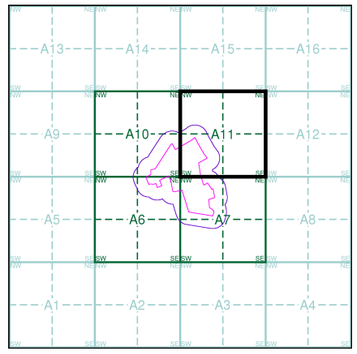
'Large Scale National Grid Data' superseded SIM cards (Ordnance Survey's 'Survey of Information on Microfilm') in 1992, and continued to be produced until 1999. These maps were the fore-runners of digital mapping and so provide detailed information on houses and roads, but tend to show less topographic features such as vegetation. These maps were produced at both 1:2,500 and 1:1,250 scales.

Map Name(s) and Date(s)

SU0396 1994 1:2,500 | SU0496 1994 1:2,500

SU0395 1994 1:2,500 | SU0495 1994 1:2,500

Historical Map - Segment A11



Order Details

Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	100

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



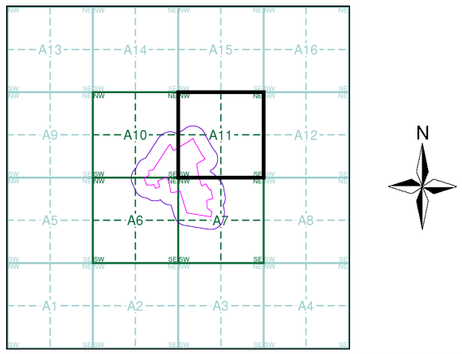
Hydrock

Historical Aerial Photography

Published 1999

This aerial photography was produced by Getmapping, these vertical aerial photographs provide a seamless, full colour survey of the whole of Great Britain

Historical Aerial Photography - Segment A11



Order Details

Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	100

Site Details

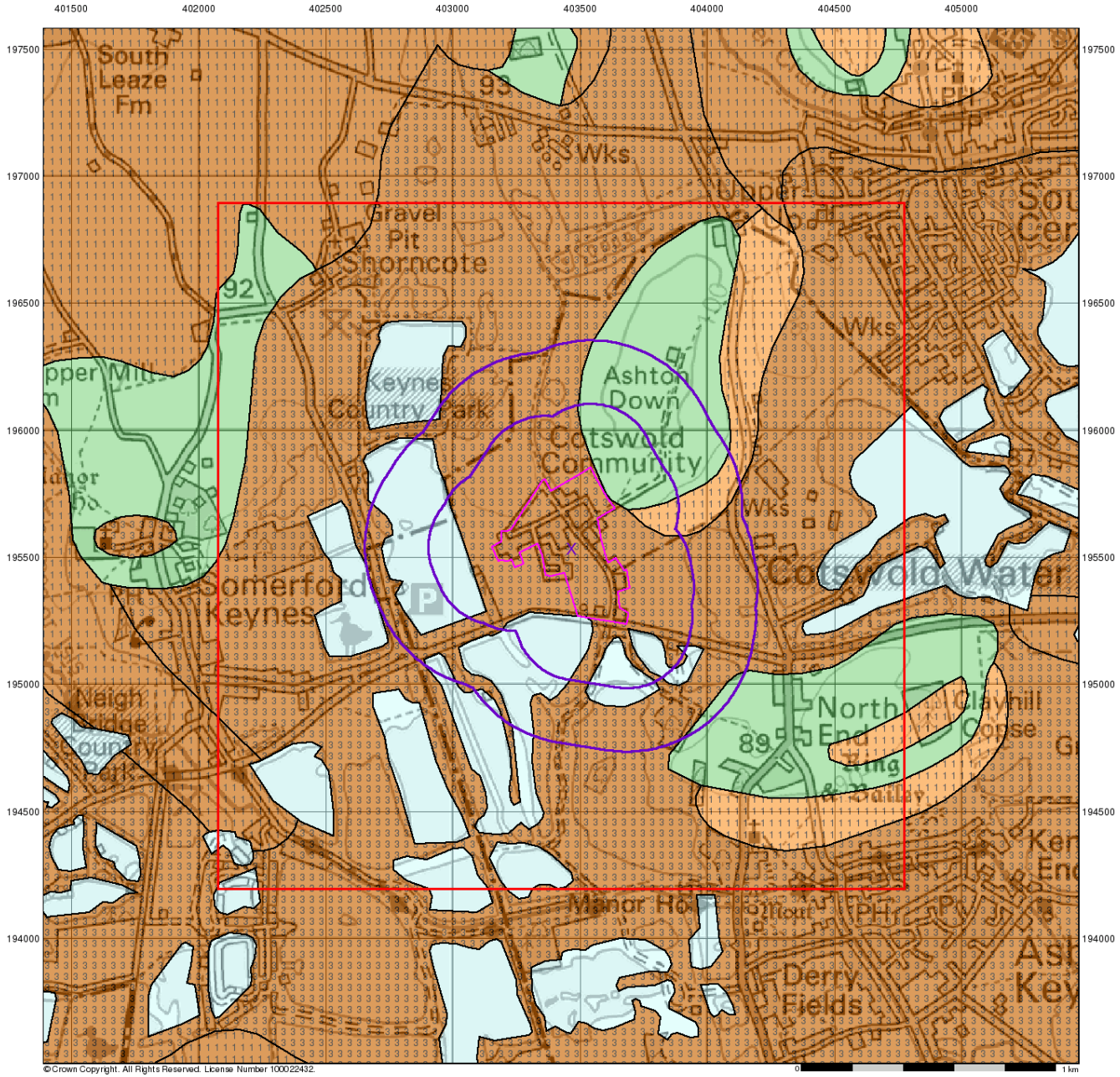
Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk

Appendix D

Desk Study Research Information



Hydrock

Groundwater Vulnerability

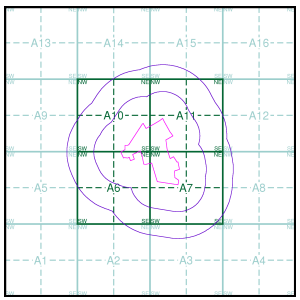
General

Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

Geological Classes	Soil Classes
Major Aquifer (Highly Permeable)	High (H) 1, 2, 3, U
	Intermediate (I) 1, 2
	Low
Minor Aquifer (Variably Permeable)	High (H) 1, 2, 3, U
	Intermediate (I) 1, 2
	Low
Non Aquifer (Negligibly Permeable)	
Water or Sea	
Drift Deposit	

Site Sensitivity Context Map - Slice A



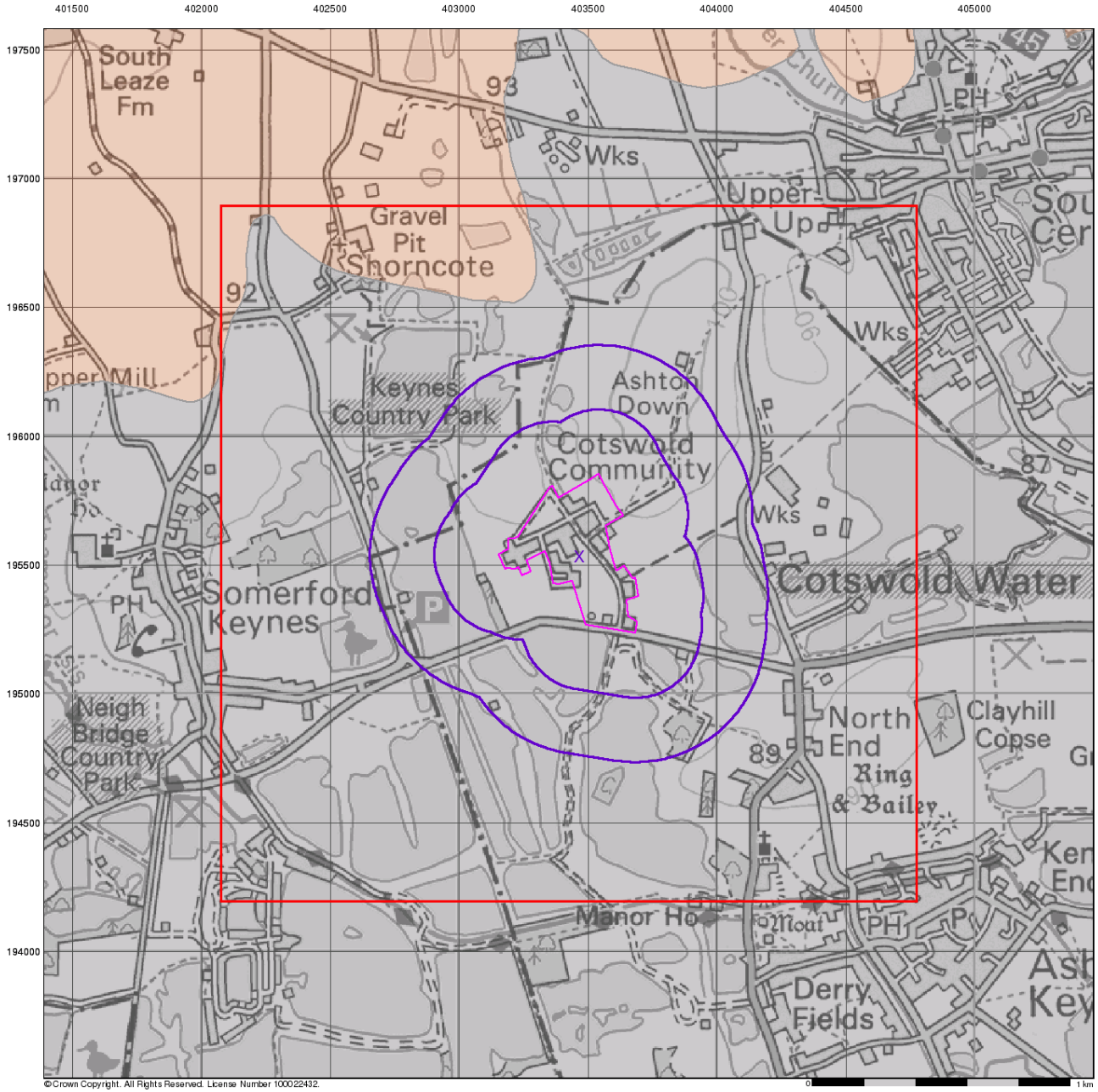
Order Details

Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	500

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



Hydrock

Bedrock Aquifer Designation

General

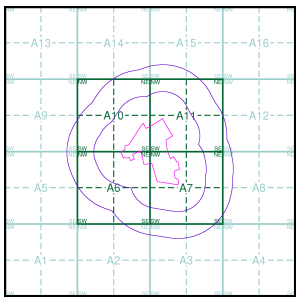
Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

Geological Classes

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown
- Unknown (Lakes and Landslip)

Site Sensitivity Context Map - Slice A



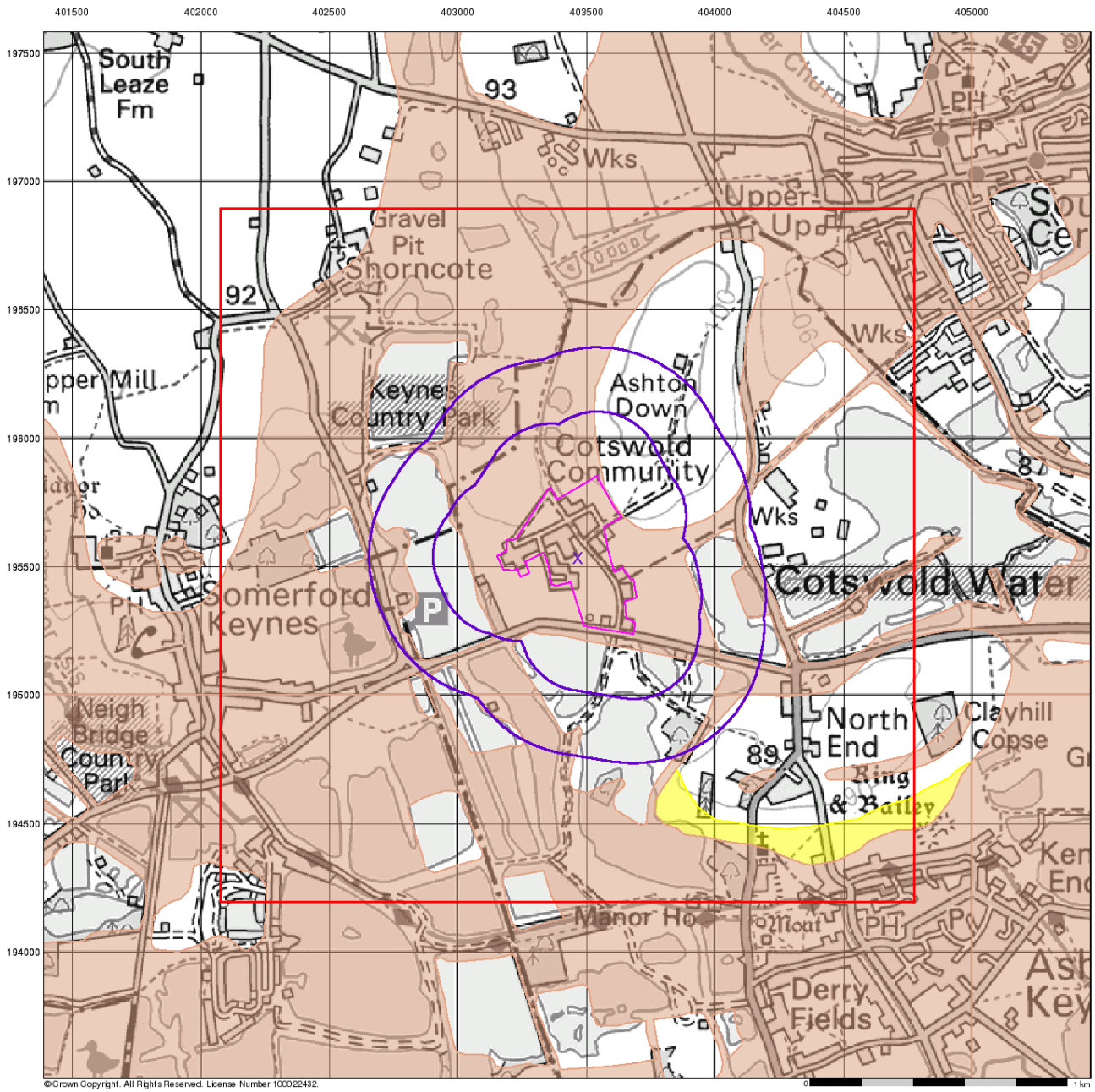
Order Details

Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	500

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



Hydrock

Superficial Aquifer Designation

General

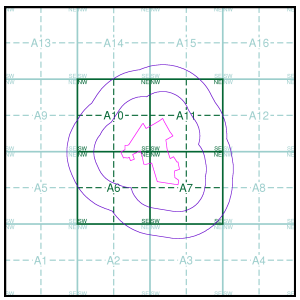
Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Agency and Hydrological

Geological Classes

- Principal Aquifer
- Secondary A Aquifer
- Secondary B Aquifer
- Secondary Undifferentiated
- Unproductive Strata
- Unknown
- Unknown (Lakes and Landslip)

Site Sensitivity Context Map - Slice A



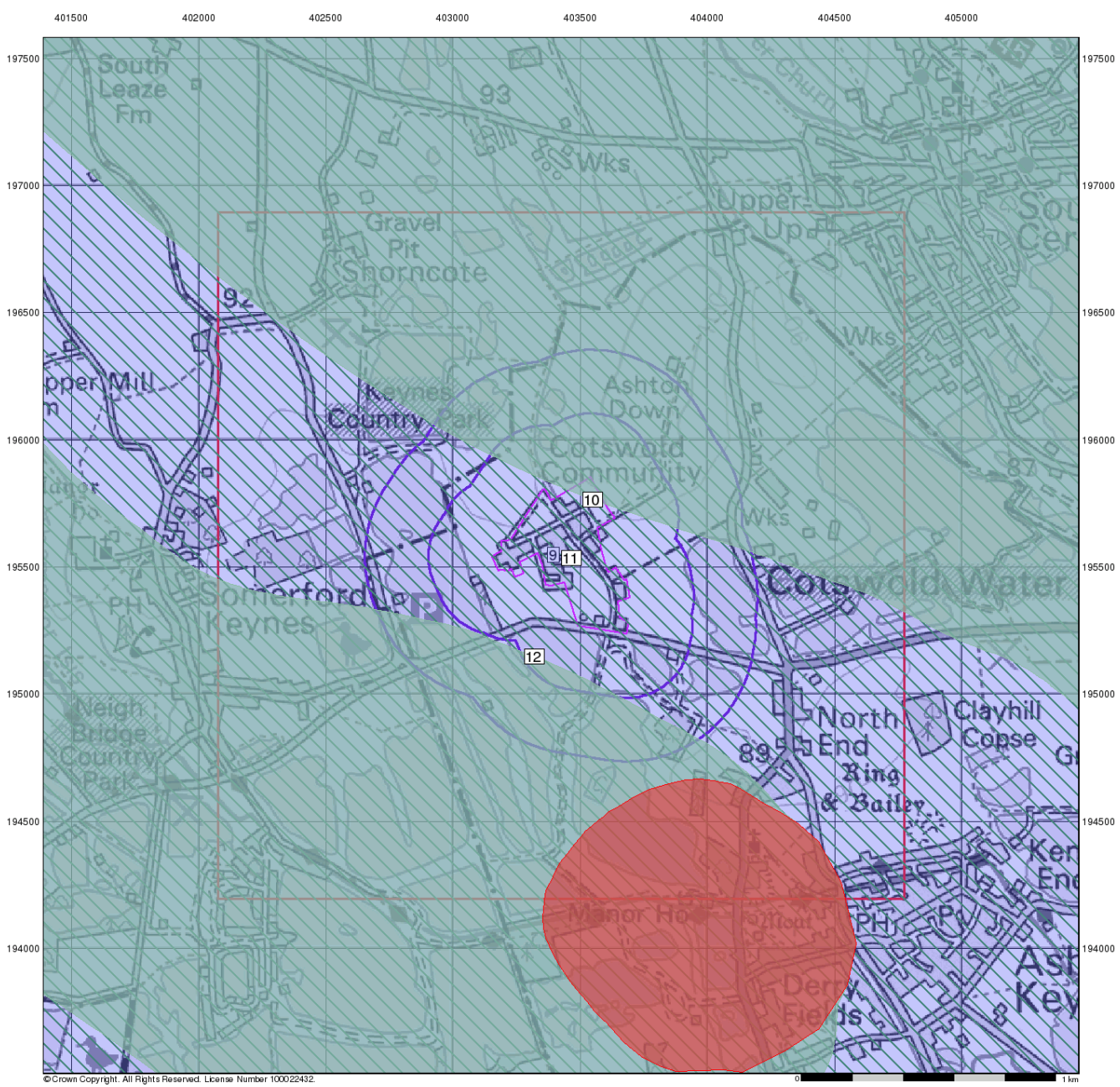
Order Details

Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	500

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



Hydrock

Source Protection Zones

General

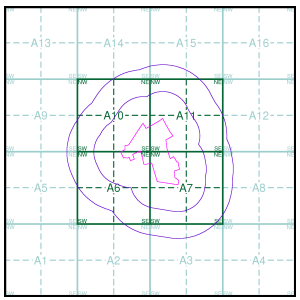
Specified Site | Specified Buffer(s) | Bearing Reference Point

Slice | Map ID

Agency and Hydrological

- Inner zone (Zone 1)
- Inner zone - subsurface activity only (Zone 1c)
- Outer zone (Zone 2)
- Outer zone - subsurface activity only (Zone 2c)
- Total catchment (Zone 3)
- Total catchment - subsurface activity only (Zone 3c)
- Special interest (Zone 4)

Site Sensitivity Context Map - Slice A



Order Details

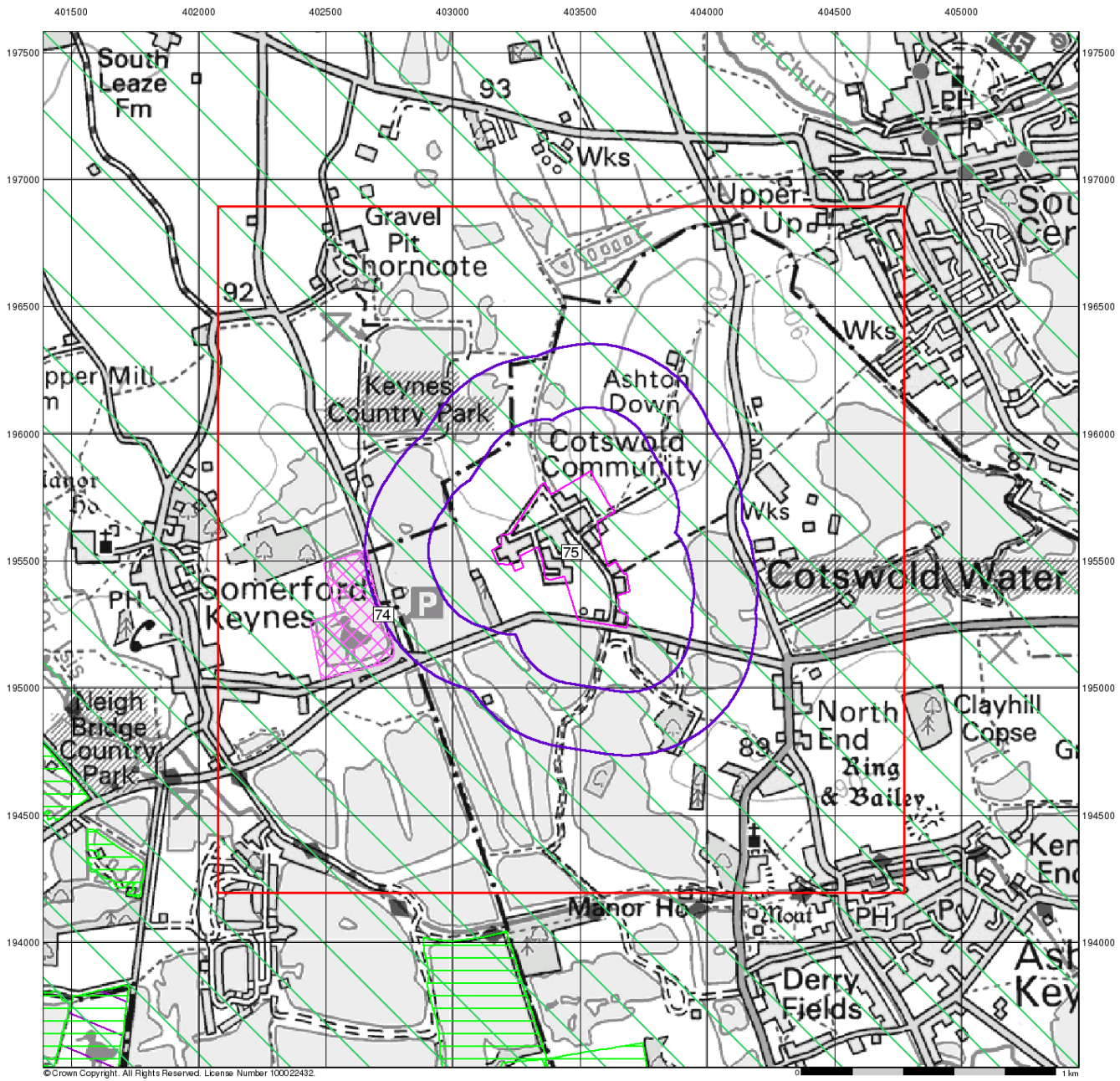
Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	500

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



Hydrock

Sensitive Land Uses

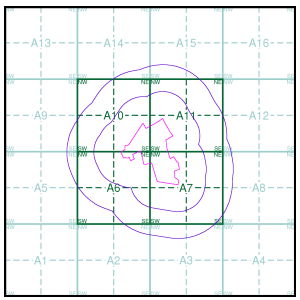
General

Specified Site | Specified Buffer(s) | Bearing Reference Point
Slice | Map ID

Sensitive Land Uses

- Ancient Woodland
- Area of Adopted Green Belt
- Area of Unadopted Green Belt
- Area of Outstanding Natural Beauty
- Environmentally Sensitive Area
- Forest Park
- Local Nature Reserve
- Marine Nature Reserve
- National Nature Reserve
- National Park
- Nitrate Sensitive Area
- Nitrate Vulnerable Zone
- Ramsar Site
- Site of Special Scientific Interest
- Special Area of Conservation
- Special Protection Area
- World Heritage Sites

Site Sensitivity Context Map - Slice A

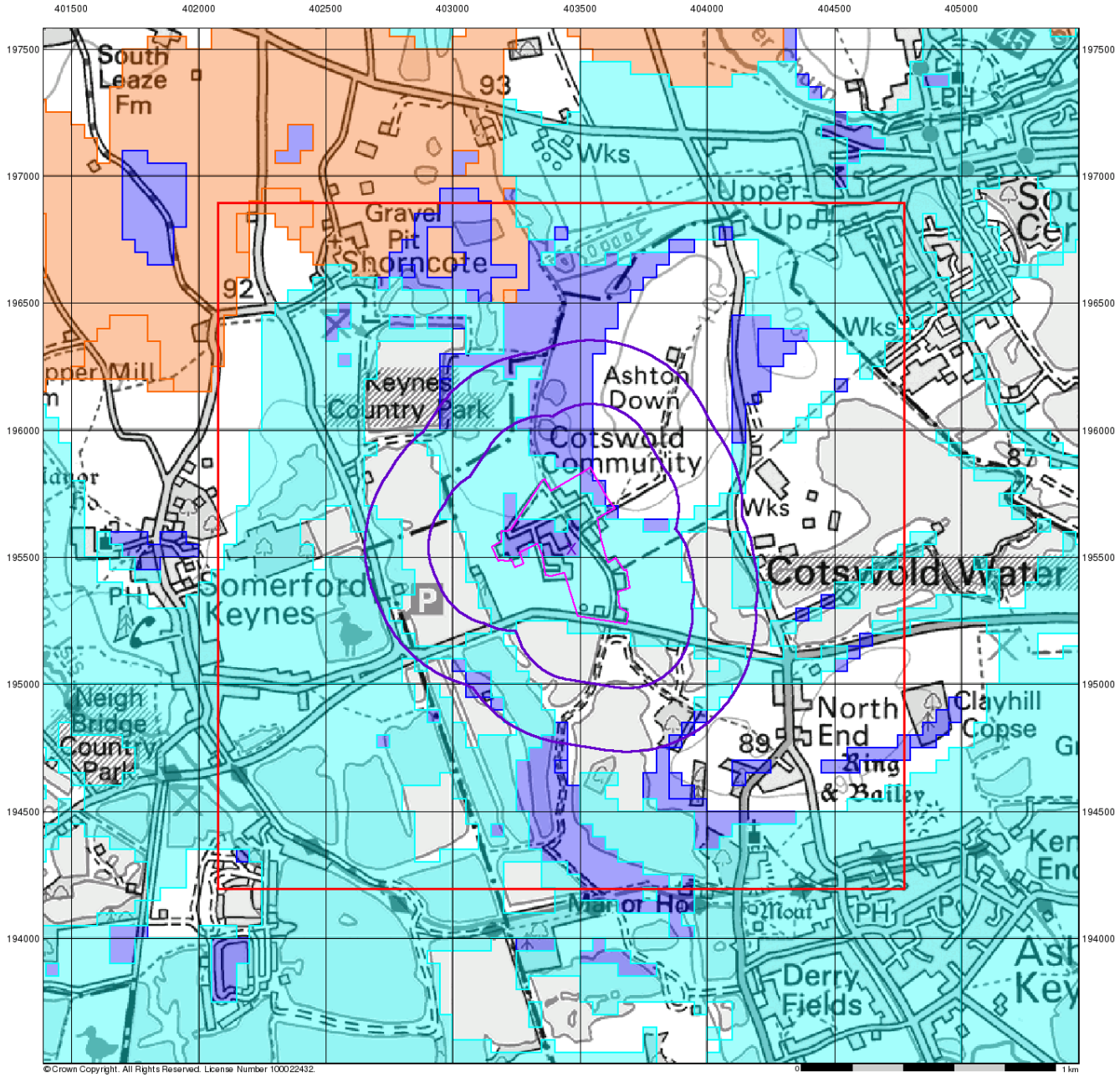


Order Details

Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	500

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU



Hydrock

BGS Flood GFS Data

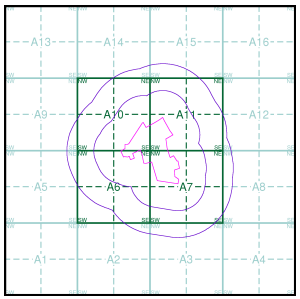
General

Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice

Agency and Hydrological (Flood)

- Limited Potential for Groundwater Flooding to Occur
- Potential for Groundwater Flooding of Property Situated Below Ground Level
- Potential for Groundwater Flooding to Occur at Surface

Site Sensitivity Context Map - Slice A



Order Details

Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	500

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Hydrock

Envirocheck® Report:

Datasheet

Order Details:

Order Number:
168381006_1_1

Customer Reference:
C-09612-C

National Grid Reference:
403470, 195530

Slice:
A

Site Area (Ha):
16.1

Search Buffer (m):
500

Site Details:

Cotswold Community School
Ashton Keynes
Swindon
SN6 6QU

Client Details:

MS R Robertson
Hydrock Consultants
Over Court Barns
Over Lane
Almondsbury
Bristol
BS32 4DF

Hydrock

Contents

Report Section	Page Number
Summary	-
Agency & Hydrological	1
Waste	12
Hazardous Substances	-
Geological	15
Industrial Land Use	21
Sensitive Land Use	22
Data Currency	23
Data Suppliers	29
Useful Contacts	30

Introduction

The Environment Act 1995 has made site sensitivity a key issue, as the legislation pays as much attention to the pathways by which contamination could spread, and to the vulnerable targets of contamination, as it does the potential sources of contamination.
For this reason, Landmark's Site Sensitivity maps and Datasheet(s) place great emphasis on statutory data provided by the Environment Agency/Natural Resources Wales and the Scottish Environment Protection Agency; it also incorporates data from Natural England (and the Scottish and Welsh equivalents) and Local Authorities; and highlights hydrogeological features required by environmental and geotechnical consultants. It does not include any information concerning past uses of land. The datasheet is produced by querying the Landmark database to a distance defined by the client from a site boundary provided by the client.
In the attached datasheet the National Grid References (NGRs) are rounded to the nearest 10m in accordance with Landmark's agreements with a number of Data Suppliers.

Copyright Notice

© Landmark Information Group Limited 2018. The Copyright on the information and data and its format as contained in this Envirocheck® Report ("Report") is the property of Landmark Information Group Limited ("Landmark") and several other Data Providers, including (but not limited to) Ordnance Survey, British Geological Survey, the Environment Agency/Natural Resources Wales and Natural England, and must not be reproduced in whole or in part by photocopying or any other method. The Report is supplied under Landmark's Terms and Conditions accepted by the Customer.
A copy of Landmark's Terms and Conditions can be found with the Index Map for this report. Additional copies of the Report may be obtained from Landmark, subject to Landmark's charges in force from time to time. The Copyright, design rights and any other intellectual rights shall remain the exclusive property of Landmark and /or other Data providers, whose Copyright material has been included in this Report.

Natural England Copyright Notice

Site of Special Scientific Interest, National Nature Reserve, Ramsar, Special Protection Area, Special Conservation Area, Marine Nature Reserve data (derived from Ordnance Survey 1:10000 raster) is provided by, and used with the permission of, Natural England who retain the copyright and Intellectual Property Rights for the data.

Scottish Natural Heritage Copyright

Contains SNH information licensed under the Open Government Licence v3.0.

Ove Arup Copyright Notice

The Mining Instability data was obtained on licence from Ove Arup & Partners Limited (for further information, contact mining.review@arup.com). No reproduction or further use of such Data is to be made without the prior written consent of Ove Arup & Partners Limited. The supplied Mining Instability data is derived from publicly available records and other third party sources and neither Ove Arup & Partners nor Landmark warrant the accuracy or completeness of such information or data.

Peter Brett Associates Copyright Notice

The cavity data presented has been extracted from the PBA enhanced version of the original DEFRA national cavity databases. PBA/DEFRA retain the copyright & intellectual property rights in the data. Whilst all reasonable efforts are made to check that the information contained in the cavity databases is accurate we do not warrant that the data is complete or error free. The information is based upon our own researches and those collated from a number of external sources and is continually being augmented and updated by PBA. In no event shall PBA/DEFRA or Landmark be liable for any loss or damage including, without limitation, indirect or consequential loss or damage arising from the use of this data.

Radon Potential dataset Copyright Notice

Information supplied from a joint dataset compiled by The British Geological Survey and Public Health England.

Natural Resources Wales Copyright Notice

Contains Natural Resources Wales information © Natural Resources Wales and Database Right. All rights Reserved. Contains Ordnance Survey Data. Ordnance Survey Licence number 100019741. Crown Copyright and Database Right.
Contains Natural Resources Wales information © Natural Resources Wales and Database Right. All rights Reserved. Some features of this information are based on digital spatial data licensed from the Centre for Ecology & Hydrology © NERC (CEH). Defra, Met Office and DARD Rivers Agency © Crown copyright. © Cranfield University. © James Hutton Institute. Contains OS data © Crown copyright and database right 2018. Land & Property Services © Crown copyright and database right.

Report Version v53.0

Hydrock

Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m (*up to 1000m)
Agency & Hydrological				
BGS Groundwater Flooding Susceptibility	pg 1	Yes	Yes	Yes
Contaminated Land Register Entries and Notices				
Discharge Consents	pg 2	2	2	4
Prosecutions Relating to Controlled Waters			n/a	n/a
Enforcement and Prohibition Notices				
Integrated Pollution Controls				
Integrated Pollution Prevention And Control				
Local Authority Integrated Pollution Prevention And Control				
Local Authority Pollution Prevention and Controls	pg 4			1
Local Authority Pollution Prevention and Control Enforcements				
Nearest Surface Water Feature	pg 4	Yes		
Pollution Incidents to Controlled Waters	pg 4			1
Prosecutions Relating to Authorised Processes				
Registered Radioactive Substances				
River Quality				
River Quality Biology Sampling Points				
River Quality Chemistry Sampling Points				
Substantiated Pollution Incident Register				
Water Abstractions	pg 4			(*7)
Water Industry Act Referrals				
Groundwater Vulnerability	pg 5	Yes	n/a	n/a
Drift Deposits			n/a	n/a
Bedrock Aquifer Designations	pg 6	Yes	n/a	n/a
Superficial Aquifer Designations	pg 6	Yes	n/a	n/a
Source Protection Zones	pg 6	3	1	
Extreme Flooding from Rivers or Sea without Defences	pg 6	Yes	Yes	n/a
Flooding from Rivers or Sea without Defences	pg 6	Yes	Yes	n/a
Areas Benefiting from Flood Defences				n/a
Flood Water Storage Areas				n/a
Flood Defences				n/a
OS Water Network Lines	pg 7	14	4	15

Data Type	Page Number	On Site	0 to 250m	251 to 500m (*up to 1000m)
Waste				
BGS Recorded Landfill Sites				
Historical Landfill Sites	pg 12		1	
Integrated Pollution Control Registered Waste Sites				
Licensed Waste Management Facilities (Landfill Boundaries)	pg 12		2	
Licensed Waste Management Facilities (Locations)	pg 12			1
Local Authority Landfill Coverage		2	n/a	n/a
Local Authority Recorded Landfill Sites	pg 13		2	
Potentially Infilled Land (Non-Water)	pg 13	1		
Potentially Infilled Land (Water)	pg 13	1		
Registered Landfill Sites	pg 13			2
Registered Waste Transfer Sites				
Registered Waste Treatment or Disposal Sites				
Hazardous Substances				
Control of Major Accident Hazards Sites (COMAH)				
Explosive Sites				
Notification of Installations Handling Hazardous Substances (NIHHS)				
Planning Hazardous Substance Consents				
Planning Hazardous Substance Enforcements				

Hydrock

Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m (*up to 1000m)
Geological				
BGS 1:625,000 Solid Geology	pg 15	Yes	n/a	n/a
BGS Estimated Soil Chemistry	pg 15	Yes	Yes	Yes
BGS Recorded Mineral Sites	pg 17	1	3	11
BGS Urban Soil Chemistry				
BGS Urban Soil Chemistry Averages				
CBSCB Compensation District			n/a	n/a
Coal Mining Affected Areas			n/a	n/a
Mining Instability			n/a	n/a
Man-Made Mining Cavities				
Natural Cavities				
Non Coal Mining Areas of Great Britain				n/a
Potential for Collapsible Ground Stability Hazards	pg 19	Yes	Yes	n/a
Potential for Compressible Ground Stability Hazards				n/a
Potential for Ground Dissolution Stability Hazards				n/a
Potential for Landslide Ground Stability Hazards	pg 20	Yes	Yes	n/a
Potential for Running Sand Ground Stability Hazards	pg 20	Yes		n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 20	Yes	Yes	n/a
Radon Potential - Radon Affected Areas			n/a	n/a
Radon Potential - Radon Protection Measures			n/a	n/a
Industrial Land Use				
Contemporary Trade Directory Entries				
Fuel Station Entries				
Points of Interest - Commercial Services				
Points of Interest - Education and Health				
Points of Interest - Manufacturing and Production	pg 21			1
Points of Interest - Public Infrastructure	pg 21	1	2	
Points of Interest - Recreational and Environmental				
Gas Pipelines				
Underground Electrical Cables				

Data Type	Page Number	On Site	0 to 250m	251 to 500m (*up to 1000m)
Sensitive Land Use				
Ancient Woodland				
Areas of Adopted Green Belt				
Areas of Unadopted Green Belt				
Areas of Outstanding Natural Beauty				
Environmentally Sensitive Areas				
Forest Parks				
Local Nature Reserves	pg 22			1
Marine Nature Reserves				
National Nature Reserves				
National Parks				
Nitrate Sensitive Areas				
Nitrate Vulnerable Zones	pg 22	1		
Ramsar Sites				
Sites of Special Scientific Interest				
Special Areas of Conservation				
Special Protection Areas				
World Heritage Sites				

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A7NW (E)	0	1	403500 195534
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A11SW (NE)	0	1	403600 195650
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A11SW (NE)	0	1	403550 195700
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A7NW (NE)	0	1	403468 195534
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A11SW (E)	121	1	403750 195600
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A6SE (S)	302	1	403350 195000
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A7SE (SE)	391	1	404000 195000
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A10NW (NW)	404	1	403000 196000
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A8NW (E)	404	1	404100 195534
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A6SE (SW)	405	1	403150 195050
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A6SW (SW)	406	1	403050 195100
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A3NW (S)	418	1	403450 194850
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A7SE (SE)	429	1	403950 194900
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A6SE (SW)	431	1	403200 194950
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A6SE (SW)	433	1	403150 195000
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A3NE (SE)	443	1	403900 194850
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A12SW (E)	467	1	404100 195750
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A3NE (SE)	467	1	403850 194800
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A3NE (SE)	500	1	403800 194750

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
1	**Discharge Consents** Operator: The Cotswold Community Property Type: EDUCATION/NURSERY/SCHOOL/COLLEGE/UNI/TRAINING VENUE Location: Cotswold Community School, Ashton Keynes, Wilts Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Ctcu.0992 Permit Version: 2 Effective Date: 21st December 2012 Issued Date: 21st December 2012 Revocation Date: 29th May 2014 Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Into Land Receiving Water: Gravel Strata **Status: Surrendered under EPR 2010** Positional Accuracy: Located by supplier to within 100m	A7NW (S)	0	2	403500 195400
1	**Discharge Consents** Operator: The Cotswold Community Property Type: EDUCATION/NURSERY/SCHOOL/COLLEGE/UNI/TRAINING VENUE Location: Cotswold Community School, Ashton Keynes, Wilts Authority: Environment Agency, Thames Region Catchment Area: Not Given Reference: CTCU.0992 Permit Version: 1 Effective Date: 23rd October 1980 Issued Date: 23rd October 1980 Revocation Date: 20th December 2012 Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Into Land Receiving Water: Gravel Strata **Status: Transferred from Water Resources Act 1963** Positional Accuracy: Located by supplier to within 100m	A7NW (S)	0	2	403500 195400
2	**Discharge Consents** Operator: Wiltshire Cc Property Type: EDUCATION/NURSERY/SCHOOL/COLLEGE/UNI/TRAINING VENUE Location: Cotswold Community School, Ashton Keynes, Wilts Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Ctcu.0993 Permit Version: 1 Effective Date: 23rd October 1980 Issued Date: 23rd October 1980 Revocation Date: 23rd March 1994 Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Into Land Receiving Water: Gravel Strata **Status: Authorisation revokedRevoked** Positional Accuracy: Located by supplier to within 100m	A7NE (E)	106	2	403800 195400
3	**Discharge Consents** Operator: Gloucestershire County Council Property Type: Public Conveniences Location: Public Toilet, Somerford Keynescountry Park, Somerford Keynes,Glos Authority: Environment Agency, Thames Region Catchment Area: Not Given Reference: CTWC.1487 Permit Version: 1 Effective Date: 27th February 1987 Issued Date: 27th February 1987 Revocation Date: 23rd July 2003 Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Irrigation Area Receiving Water: River Terraces **Status: Consent revoked or revised: New Consent issued (Section 37(1))** Positional Accuracy: Located by supplier to within 100m	A10SW (W)	150	2	403050 195650

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
4	**Discharge Consents** Operator: Grasshopper 2000 Limited (Trading As:) Property Type: MINERAL/GRAVEL EXTRACTION/QUARRYING Location: Gloucester Sand & Gravel Co Ltd Spratsgate Lane, Somerford Keynes, Cirencester, Gloucestershire Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Cawm.0051 Permit Version: 1 Effective Date: 2nd November 1999 Issued Date: 21st January 2000 Revocation Date: 3rd May 2006 Discharge Type: Trade Discharge - Mineral Workings Discharge Environment: Freshwater Stream/River Receiving Water: Spratsgate Lane Ditch **Status: Revoked (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A10SW (W)	403	2	402750 195550
5	**Discharge Consents** Operator: Cotswold Water Park Society Property Type: Public Conveniences Location: Keynes Country Park Spratsgate Lane Shorncote Cirencester Glos Gl7 6df Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Cawm.0705 Permit Version: 2 Effective Date: 21st December 2012 Issued Date: 21st December 2012 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Into Land Receiving Water: Into Land **Status: Varied under EPR 2010** Positional Accuracy: Located by supplier to within 10m	A10NW (NW)	438	2	402940 195970
5	**Discharge Consents** Operator: Cotswold Water Park Society Property Type: Public Conveniences Location: Keynes Country Park Spratsgate Lane Shorncote Cirencester Glos Gl7 6df Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Cawm.0705 Permit Version: 1 Effective Date: 23rd July 2003 Issued Date: 29th April 2004 Revocation Date: 20th December 2012 Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Into Land Receiving Water: Into Land **Status: New Consent (Water Resources Act 1991, Section 88 & Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A10NW (NW)	438	2	402940 195970
6	**Discharge Consents** Operator: Waterland Gear Limited Property Type: SPORT, AMUSEMENT+RECREATION/GOLF CLUB/GYM/THEME PK/SPA Location: Waterland Outdoor Pursuits Centre Lake 32 Cotswold Water Park Sprattsgate Lane Cirencester Gloucestershire Gl7 6df Authority: Environment Agency, Thames Region Catchment Area: Not Supplied Reference: Eprab3696wk Permit Version: 1 Effective Date: 23rd May 2014 Issued Date: 23rd May 2014 Revocation Date: Not Supplied Discharge Type: Sewage Discharges - Final/Treated Effluent - Not Water Company Discharge Environment: Freshwater Stream/River Receiving Water: Drain Trib Of River Thames **Status: New issued under EPR 2010** Positional Accuracy: Located by supplier to within 10m	A5NE (W)	475	2	402725 195334

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
7	**Local Authority Pollution Prevention and Controls** Name: Ready Mixed Concrete Location: North End Works, Ashton Keynes, SWINDON, Wiltshire, S Authority: Wiltshire Council, Environmental Health Department Permit Reference: C01/17/16 Dated: 5th April 1993 Process Type: Local Authority Air Pollution Control Description: PG3/8 Quarry processes including roadstone plants and the size reduction of bricks, tiles and concrete **Status: Authorisation revokedRevoked** Positional Accuracy: Manually positioned to the address or location	A12SW (E)	500	3	404170 195567
	Nearest Surface Water Feature	A7NW (S)	0	-	403518 195329
8	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: MINETY Authority: Environment Agency, Thames Region Pollutant: Unknown Sewage Note: Not Supplied Incident Date: Not Supplied Incident Reference: W1960373 Catchment Area: Not Given Receiving Water: Not Given Cause of Incident: Not Given Incident Severity: Category 3 - Minor Incident Positional Accuracy: Unknown	A6SE (S)	327	2	403301 195001
	Water Abstractions Operator: Gloucestershire Sand & Grav Co Licence Number: 28/39/01/0096 Permit Version: 101 Location: Lake 33, Cotswold Water Park, Somerford Keynes Authority: Environment Agency, Thames Region Abstraction: Mineral Products: Mineral Washing Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Land At Lake 33 Cotswold Water Park Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 4th February 2002 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A9SE (W)	619	2	402560 195720
	Water Abstractions Operator: Gloucestershire Sand & Gravel Co Ltd Licence Number: 28/39/01/0096 Permit Version: 100 Location: Lake 33, Cotswold Water Park, Somerford Keynes Authority: Environment Agency, Thames Region Abstraction: Mineral Products: Mineral Washing Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): 2867 Yearly Rate (m3): 720000 Details: Land At Lake 33 Cotswold Water Park Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 5th March 1997 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A9SE (W)	619	2	402560 195720
	Water Abstractions Operator: Tarmac Limited Licence Number: 28/39/01/0102 Permit Version: 1 Location: South Cerney Plant B/H Authority: Environment Agency, Thames Region Abstraction: Construction: General Use (Medium Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Land At The South Cerney Plant Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 25th May 2005 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A12NW (NE)	641	2	404120 196130

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Tarmac Limited Licence Number: 28/39/01/0095 Permit Version: 101 Location: South Cerney Plant B/H Authority: Environment Agency, Thames Region Abstraction: Construction: General Use (Medium Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Land At The South Cerney Plant Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 20th November 2000 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A12NW (NE)	641	2	404120 196130
	Water Abstractions Operator: Tarmac Topmix Ltd Licence Number: 28/39/01/0095 Permit Version: 100 Location: South Cerney Plant B/H Authority: Environment Agency, Thames Region Abstraction: Construction: General Use (Medium Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): 76 Yearly Rate (m3): 27594 Details: Land At The South Cerney Plant Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 7th June 1995 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A12NW (NE)	641	2	404120 196130
	Water Abstractions Operator: Aggregate Industries Uk Ltd Licence Number: 28/39/01/0081 Permit Version: 102 Location: North End Farm, Ashton Keynes B/H Authority: Environment Agency, Thames Region Abstraction: Construction: General Use (Medium Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Land At North End Farm, Ashton Keynes Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 31st July 2013 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A12SE (E)	797	2	404453 195659
	Water Abstractions Operator: Aggregate Industries Uk Ltd Licence Number: 28/39/01/0081 Permit Version: 101 Location: North End Farm, Ashton Keynes B/H Authority: Environment Agency, Thames Region Abstraction: Construction: General Use (Medium Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): 382 Yearly Rate (m3): 114559 Details: Land At North End Farm, Ashton Keynes Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 1st January 1998 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A12SE (E)	830	2	404500 195600
	Groundwater Vulnerability Soil Classification: Not classified Map Sheet: Sheet 37 Southern Cotswolds Scale: 1:100,000	A7NW (S)	0	2	403444 195271
	Groundwater Vulnerability Soil Classification: Soils of High Leaching Potential (H3)- Coarse textured or moderately shallow soils which readily transmit non-absorbed pollutants and liquid discharges but which have some ability to attenuate absorbed pollutants because of their large clay or organic matter contents Map Sheet: Sheet 37 Southern Cotswolds Scale: 1:100,000	A7NW (NE)	0	2	403468 195534

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Drift Deposits None				
	Bedrock Aquifer Designations Aquifer Designation: Unproductive Strata	A7NW (NE)	0	1	403468 195534
	Superficial Aquifer Designations Aquifer Designation: Secondary Aquifer - A	A7NW (NE)	0	1	403468 195534
9	**Source Protection Zones** Name: Not Supplied Source: Environment Agency, Head Office Reference: Not Supplied Type: Zone IIc (Outer Protection Zone): Either 25% of the source area or a 400 day travel time whichever is greater - subsurface activity only.	A7NW (NE)	0	2	403468 195534
10	**Source Protection Zones** Name: Not Supplied Source: Environment Agency, Head Office Reference: Not Supplied Type: Zone II (Outer Protection Zone): Either 25% of the source area or a 400 day travel time whichever is greater.	A11SW (N)	0	2	403551 195765
11	**Source Protection Zones** Name: Not Supplied Source: Environment Agency, Head Office Reference: Not Supplied Type: Zone III (Total Catchment): The total area needed to support the discharge from the protected groundwater source.	A7NW (NE)	0	2	403468 195534
12	**Source Protection Zones** Name: Not Supplied Source: Environment Agency, Head Office Reference: Not Supplied Type: Zone II (Outer Protection Zone): Either 25% of the source area or a 400 day travel time whichever is greater.	A6SE (S)	174	2	403321 195147
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A11SW (NE)	0	2	403504 195570
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A7NW (S)	24	2	403434 195250
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Events Boundary Accuracy: As Supplied	A7NW (SE)	25	2	403640 195212
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A7SW (SE)	70	2	403704 195170
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models and Fluvial Events Boundary Accuracy: As Supplied	A7SW (S)	113	2	403604 195134
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A6NW (W)	114	2	403084 195420
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A7SW (S)	227	2	403654 195010
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models and Fluvial Events Boundary Accuracy: As Supplied	A7SW (S)	241	2	403624 195000
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A11SW (NE)	0	2	403504 195570

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A7NW (S)	24	2	403434 195250
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A7SW (SE)	70	2	403704 195170
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A6NW (W)	114	2	403084 195420
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A10SE (NW)	168	2	403194 195880
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A7SW (S)	227	2	403654 195010
	Areas Benefiting from Flood Defences None				
	Flood Water Storage Areas None				
	Flood Defences None				
13	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 126.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A7NW (SE)	0	4	403648 195368
14	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 103.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A7NW (S)	0	4	403518 195329
15	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 1.4 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A7NW (SE)	0	4	403647 195369
16	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 34.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A7NW (SE)	0	4	403644 195403
17	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 2.5 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A7NW (SE)	0	4	403643 195406

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
18	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 202.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A11SW (NE)	0	4	403525 195565
19	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 3.7 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A11SW (NE)	0	4	403522 195567
20	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 64.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A11SW (NE)	0	4	403519 195570
21	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 2.5 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A11SW (N)	0	4	403481 195615
22	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 61.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A11SW (N)	0	4	403480 195617
23	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 7.8 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A11SW (N)	0	4	403448 195670
24	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 6.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A11SW (N)	0	4	403445 195676
25	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 148.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A11SW (N)	0	4	403445 195676
26	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 476.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A10SE (N)	0	4	403362 195799

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
27	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 371.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A7NW (SE)	1	4	403643 195242
28	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 18.5 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A7NW (SE)	1	4	403643 195242
29	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 668.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A7NW (S)	13	4	403428 195261
30	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 294.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 2	A6NE (SW)	241	4	403155 195237
31	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 491.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A10SW (W)	272	4	402886 195593
32	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 470.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A11NW (N)	361	4	403519 196214
33	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 35.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A14SE (N)	437	4	403370 196256
34	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 1.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A14SE (N)	437	4	403370 196256
35	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 77.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A10NW (NW)	447	4	402954 196008

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
36	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 15.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 2	A6SW (SW)	460	4	402877 195138
37	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 287.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A14SE (N)	463	4	403382 196289
38	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 15.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 2	A6SW (SW)	473	4	402862 195132
39	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 82.7 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A6SW (SW)	478	4	402842 195145
40	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 19.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A6SW (SW)	478	4	402842 195145
41	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 11.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A6SW (SW)	487	4	402848 195127
42	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 14.9 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A6SW (SW)	487	4	402848 195127
43	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 674.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A5NE (W)	488	4	402721 195295
44	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 8.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A6SW (SW)	496	4	402837 195124

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
45	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 35.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Thames Primacy: 1	A6SW (SW)	496	4	402851 195112

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
46	**Historical Landfill Sites** Licence Holder: Camas Aggregates Location: Ashton Keynes, Swindon, Wiltshire Name: North End Works (Lake 62) Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD13677 First Input Date: 1st April 1992 Last Input Date: Not Supplied Specified Waste Type: Deposited Waste included Inert Waste EA Waste Ref: 86175 Regis Ref: TF1/L/CAM003 WRC Ref: 3900/3441 BGS Ref: Not Supplied Other Ref: NW/90/0080/WD, TP0236	A7NE (E)	222	2	403890 195531
47	**Licensed Waste Management Facilities (Landfill Boundaries)** Name: North End Works Licence Number: 86174 Location: CAMAS Building Materials, North End Works, Ashton Keynes, Swindon, Wiltshire, SN6 6QX Licence Holder: Camas U K Ltd Authority: Environment Agency - South East Region, West Thames Area Site Category: Industrial Waste Landfills Max Input Rate: Not Supplied **Licence Status: Closure** Issued: 22nd May 1991 Positional Accuracy: Positioned by the supplier Boundary Accuracy: As Supplied	A7NE (E)	221	2	403888 195533
48	**Licensed Waste Management Facilities (Landfill Boundaries)** Name: North End Works (Lake 62) Licence Number: 86175 Location: North End Works (lake 62), Ashton Keynes, Swindon, Wilts, SN6 Licence Holder: Camas Uk Ltd Authority: Environment Agency - Thames Region, West Area Site Category: Landfills Taking Other Wastes (Construction, Demolition, Dredgings) Max Input Rate: Large (Equal to or greater than 75,000 tonnes per year) **Licence Status: Inactive** Issued: 29th January 1991 Positional Accuracy: Positioned by the supplier Boundary Accuracy: As Supplied	A7NE (E)	221	2	403889 195533
49	**Licensed Waste Management Facilities (Locations)** Licence Number: 86175 Location: North End Works (lake 62), Ashton Keynes, Swindon, Wiltshire, SN6 Operator Name: CAMAS U K Ltd Operator Location: Not Supplied Authority: Environment Agency - South East Region, West Thames Area Site Category: Landfills Taking Other Wastes (Construction, Demolition, Dredgings) **Licence Status: Surrendered** Issued: 29th January 1991 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: 6th February 2002 IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 100m	A8NW (E)	404	2	404100 195400
	Local Authority Landfill Coverage Name: Wiltshire County Council - Has supplied landfill data		0	6	403468 195534
	Local Authority Landfill Coverage Name: North Wiltshire District Council - Has no landfill data to supply		0	5	403468 195534
	Local Authority Landfill Coverage Name: Gloucestershire County Council - Has supplied landfill data		184	8	403010 195656
	Local Authority Landfill Coverage Name: Cotswold District Council - Has no landfill data to supply		184	7	403010 195656

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
50	**Local Authority Recorded Landfill Sites** Location: Cotswold Community, Ashton Keynes, North Wiltshire Reference: Not Supplied Authority: Wiltshire County Council (now part of Wiltshire Council) **Last Reported Status: Open** Types of Waste: Soil, Subsoil Date of Closure: Not Supplied Positional Accuracy: Positioned by the supplier Boundary Quality: Moderate	A10NE (NW)	97	6	403308 195889
51	**Local Authority Recorded Landfill Sites** Location: North End West, North Wiltshire Reference: Not Supplied Authority: Wiltshire County Council (now part of Wiltshire Council) **Last Reported Status: Closed** Types of Waste: Not Supplied Date of Closure: 31/12/1998 Positional Accuracy: Positioned by the supplier Boundary Quality: Good	A11SE (E)	212	6	403871 195553
52	**Potentially Infilled Land (Non-Water)** Bearing Ref: W Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1976	A6NE (W)	0	-	403356 195544
53	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1960	A10SE (NW)	0	-	403329 195648
54	**Registered Landfill Sites** Licence Holder: Camas Uk Plc Licence Reference: NW/90/0080 Site Location: North End Works (Lake 62), Ashton Keynes, Swindon, Wiltshire, Sn6 6qp Licence Easting: 404100 Licence Northing: 195400 Operator Location: John Keay House, ST AUSTELL, Cornwall, PL25 4DJ Authority: Environment Agency - Thames Region, West Area Site Category: Landfill Max Input Rate: Medium (Equal to or greater than 25,000 and less than 75,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Status: May not be workingUnder Review Dated: 29th January 1991 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the address or location Boundary Accuracy: Not Applicable Authorised Waste: Brick,Stone,Concrete For Road Making; Other Excavated Natural Materials; Uncontam.Soil & Subsoil Prohibited Waste: Asbestos; Empty Containers; Fabrics; Glass; Metal; Other Inert Mat'L From Building Works; Packaging & Paper; Plastic; Rubber; Special Wastes; Timber	A8NW (E)	404	2	404100 195400

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
55	**Registered Landfill Sites** Licence Holder: Camas Uk Ltd Licence Reference: NW/91/0085 Site Location: North End Works, Ashton Keynes, Swindon, Wiltshire, Sn6 3qx Licence Easting: 404100 Licence Northing: 195300 Operator Location: Regent House, Rodney Road, CHELTENHAM, Gloucestershire, GL50 1HX Authority: Environment Agency - Thames Region, West Area Site Category: Landfill Max Input Rate: Very Small (Less than 10,000 tonnes per year) Waste Source Restrictions: No known restriction on source of waste Status: Site Closed Dated: 22nd May 1991 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the address or location Boundary Accuracy: Not Applicable Authorised Waste: Brick,Stone,Concrete For Road Making Other Excavated Natural Materials Uncontam.Soil & Subsoil Prohibited Waste: Asbestos Empty Containers Fabrics Glass Metal Other Inert Mat'L From Building Works Packaging & Paper Plastic Rubber Special Wastes Timber	A8NW (E)	411	2	404100 195300

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS 1:625,000 Solid Geology Description: Kellaways Formation And Oxford Clay Formation (Undifferentiated)	A7NW (NE)	0	1	403468 195534
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A7NW (NE)	0	1	403468 195534
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 90 - 120 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 30 - 45 mg/kg	A11SW (NE)	2	1	403644 195694
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 90 - 120 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 30 - 45 mg/kg	A6NE (S)	53	1	403405 195231
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 90 - 120 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 30 - 45 mg/kg	A6NW (W)	113	1	403065 195445
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A11NW (N)	146	1	403468 196000
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 90 - 120 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 30 - 45 mg/kg	A7NE (E)	215	1	403886 195533

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A11SE (E)	315	1	404000 195617
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A7SE (SE)	389	1	404000 195011
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 90 - 120 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 30 - 45 mg/kg	A6SW (SW)	416	1	402993 195104
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 90 - 120 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 30 - 45 mg/kg	A10NW (NW)	444	1	402947 195992
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 90 - 120 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 30 - 45 mg/kg	A12SW (E)	465	1	404119 195614
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 90 - 120 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 30 - 45 mg/kg	A7SE (SE)	472	1	404085 194978

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 25 - 35 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 90 - 120 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 30 - 45 mg/kg	A11NE (NE)	474	1	404000 196000
56	**BGS Recorded Mineral Sites** Site Name: Ashtonfield Gravel Pit Location: Not Supplied Source: British Geological Survey, National Geoscience Information Service Reference: 56658 Type: Opencast **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Quaternary Geology: Northmoor Sand And Gravel Member (River Thames Gravels) Commodity: Sand and Gravel Positional Accuracy: Located by supplier to within 10m	A10SE (W)	0	1	403370 195553
57	**BGS Recorded Mineral Sites** Site Name: Manor Farm North Quarry Location: Not Supplied Source: British Geological Survey, National Geoscience Information Service Reference: 221414 Type: Opencast **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Quaternary Geology: Northmoor Sand And Gravel Member Commodity: Sand and Gravel Positional Accuracy: Located by supplier to within 10m	A7SW (S)	173	1	403656 195065
58	**BGS Recorded Mineral Sites** Site Name: Manor Farm North Quarry Location: Not Supplied Source: British Geological Survey, National Geoscience Information Service Reference: 189970 Type: Opencast **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Quaternary Geology: Northmoor Sand And Gravel Member Commodity: Sand and Gravel Positional Accuracy: Located by supplier to within 10m	A6SE (S)	186	1	403400 195105
59	**BGS Recorded Mineral Sites** Site Name: Manor Farm North Quarry Location: Not Supplied Source: British Geological Survey, National Geoscience Information Service Reference: 221415 Type: Opencast **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Quaternary Geology: Northmoor Sand And Gravel Member Commodity: Sand and Gravel Positional Accuracy: Located by supplier to within 10m	A7SE (SE)	191	1	403782 195073
60	**BGS Recorded Mineral Sites** Site Name: Cotswold Community Location: Not Supplied Source: British Geological Survey, National Geoscience Information Service Reference: 7134 Type: Opencast **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Quaternary Geology: Northmoor Sand And Gravel Member (River Thames Gravels) Commodity: Sand and Gravel Positional Accuracy: Located by supplier to within 10m	A10NE (N)	254	1	403375 196060

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
61	**BGS Recorded Mineral Sites** Site Name: Spratsgate Lane Quarry Location: Not Supplied Source: British Geological Survey, National Geoscience Information Service Reference: 189972 Type: Opencast **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Quaternary Geology: Northmoor Sand And Gravel Member Commodity: Sand and Gravel Positional Accuracy: Located by supplier to within 10m	A6NW (W)	273	1	402915 195405
62	**BGS Recorded Mineral Sites** Site Name: Manor Farm North Quarry Location: Not Supplied Source: British Geological Survey, National Geoscience Information Service Reference: 221416 Type: Opencast **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Quaternary Geology: Northmoor Sand And Gravel Member Commodity: Sand and Gravel Positional Accuracy: Located by supplier to within 10m	A7SE (SE)	289	1	403903 195049
63	**BGS Recorded Mineral Sites** Site Name: Shorncote Quarry Location: Not Supplied Source: British Geological Survey, National Geoscience Information Service Reference: 189980 Type: Opencast **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Quaternary Geology: Northmoor Sand And Gravel Member Commodity: Sand and Gravel Positional Accuracy: Located by supplier to within 10m	A10NE (NW)	348	1	403125 196065
64	**BGS Recorded Mineral Sites** Site Name: Manor Farm North Quarry Location: Not Supplied Source: British Geological Survey, National Geoscience Information Service Reference: 221418 Type: Opencast **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Quaternary Geology: Northmoor Sand And Gravel Member Commodity: Sand and Gravel Positional Accuracy: Located by supplier to within 10m	A7SW (S)	358	1	403595 194888
65	**BGS Recorded Mineral Sites** Site Name: North End West Location: Not Supplied Source: British Geological Survey, National Geoscience Information Service Reference: 10348 Type: Opencast **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Quaternary Geology: Northmoor Sand And Gravel Member (River Thames Gravels) Commodity: Sand and Gravel Positional Accuracy: Located by supplier to within 10m	A7NE (E)	364	1	404060 195400
66	**BGS Recorded Mineral Sites** Site Name: Manor Farm North Quarry Location: Not Supplied Source: British Geological Survey, National Geoscience Information Service Reference: 221422 Type: Opencast **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Quaternary Geology: Northmoor Sand And Gravel Member Commodity: Sand and Gravel Positional Accuracy: Located by supplier to within 10m	A6SE (SW)	368	1	403143 195107

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
67	**BGS Recorded Mineral Sites** Site Name: Manor Farm North Quarry Location: Not Supplied Source: British Geological Survey, National Geoscience Information Service Reference: 221417 Type: Opencast **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Quaternary Geology: Northmoor Sand And Gravel Member Commodity: Sand and Gravel Positional Accuracy: Located by supplier to within 10m	A7SE (SE)	395	1	404027 195041
68	**BGS Recorded Mineral Sites** Site Name: Manor Farm North Quarry Location: Not Supplied Source: British Geological Survey, National Geoscience Information Service Reference: 221420 Type: Opencast **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Quaternary Geology: Northmoor Sand And Gravel Member Commodity: Sand and Gravel Positional Accuracy: Located by supplier to within 10m	A3NE (SE)	410	1	403832 194854
69	**BGS Recorded Mineral Sites** Site Name: Manor Farm North Quarry Location: Not Supplied Source: British Geological Survey, National Geoscience Information Service Reference: 10353 Type: Opencast **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Quaternary Geology: Northmoor Sand And Gravel Member (River Thames Gravels) Commodity: Sand and Gravel Positional Accuracy: Located by supplier to within 10m	A6SE (S)	418	1	403290 194900
70	**BGS Recorded Mineral Sites** Site Name: Spratsgate Lane Quarry Location: Not Supplied Source: British Geological Survey, National Geoscience Information Service Reference: 189973 Type: Opencast **Status: Ceased** Operator: Not Supplied Operator Location: Not Supplied Periodic Type: Quaternary Geology: Northmoor Sand And Gravel Member Commodity: Sand and Gravel Positional Accuracy: Located by supplier to within 10m	A10SW (W)	432	1	402790 195775
	BGS Measured Urban Soil Chemistry No data available				
	BGS Urban Soil Chemistry Averages No data available				
	Coal Mining Affected Areas In an area that might not be affected by coal mining				
	Non Coal Mining Areas of Great Britain No Hazard				
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A7NW (NE)	0	1	403468 195534
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A7SW (S)	236	1	403468 195000
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A7NW (NE)	0	1	403468 195534
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A7SW (S)	236	1	403468 195000

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A7NW (NE)	0	1	403468 195534
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A7SW (S)	236	1	403468 195000
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A7NW (NE)	0	1	403468 195534
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A7SW (S)	222	1	403641 195016
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A7SW (S)	236	1	403607 195000
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A7SW (S)	238	1	403468 195000
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A7NW (NE)	0	1	403468 195534
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A11SW (NE)	2	1	403644 195694
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A6NE (S)	53	1	403405 195231
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A6NW (W)	113	1	403065 195445
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A7NE (E)	215	1	403886 195533
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A7SW (S)	236	1	403468 195000
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A7NW (NE)	0	1	403468 195534
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A7SW (S)	236	1	403468 195000
	Radon Potential - Radon Affected Areas Affected Area: The property is in a Lower probability radon area (less than 1% of homes are estimated to be at or above the Action Level). Source: British Geological Survey, National Geoscience Information Service	A7NW (NE)	0	1	403468 195534
	Radon Potential - Radon Protection Measures Protection Measure: No radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A7NW (NE)	0	1	403468 195534

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
71	**Points of Interest - Manufacturing and Production** Name: Gravel Pit Location: GL7 Category: Extractive Industries Class Code: Sand, Gravel and Clay Extraction and Merchants Positional Accuracy: Positioned to an adjacent address or location	A6SW (SW)	495	9	402906 195072
72	**Points of Interest - Public Infrastructure** Name: Sewage Works Location: SN6 Category: Infrastructure and Facilities Class Code: Waste Storage, Processing and Disposal Positional Accuracy: Positioned to address or location	A7NW (S)	0	9	403504 195303
73	**Points of Interest - Public Infrastructure** Name: Burial Ground Location: SN6 Category: Infrastructure and Facilities Class Code: Cemeteries and Crematoria Positional Accuracy: Positioned to an adjacent address or location	A11NW (NE)	118	9	403657 195884
73	**Points of Interest - Public Infrastructure** Name: Burial Ground Location: Not Supplied Category: Infrastructure and Facilities Class Code: Cemeteries and Crematoria Positional Accuracy: Positioned to an adjacent address or location	A11NW (NE)	119	9	403657 195887

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
74	**Local Nature Reserves** Name: Cokes Pit Lake Multiple Area: N Area (m2): 104530.81 Source: Natural England Designation Date: 13th June 2003	A5NE (W)	484	10	402727 195290
75	**Nitrate Vulnerable Zones** Name: Thames (Churn To Coln) Nvz Description: Surface Water Source: Environment Agency, Head Office	A7NW (NE)	0	11	403468 195534

Agency & Hydrological	Version	Update Cycle
Contaminated Land Register Entries and Notices		
Cotswold District Council - Environmental Health Department	January 2015	Annual Rolling Update
Wiltshire Council - Environmental Health Department	March 2015	Annually
North Wiltshire District Council (now part of Wiltshire Council) - Environmental Services	May 2008	Not Applicable
Discharge Consents		
Environment Agency - South West Region	April 2018	Quarterly
Environment Agency - Thames Region	April 2018	Quarterly
Enforcement and Prohibition Notices		
Environment Agency - South West Region	March 2013	As notified
Environment Agency - Thames Region	March 2013	As notified
Integrated Pollution Controls		
Environment Agency - South West Region	October 2008	Variable
Environment Agency - Thames Region	October 2008	Variable
Integrated Pollution Prevention And Control		
Environment Agency - South East Region - West Thames Area	April 2018	Quarterly
Environment Agency - South West Region	April 2018	Quarterly
Environment Agency - Thames Region	April 2018	Quarterly
Local Authority Integrated Pollution Prevention And Control		
Wiltshire Council - Environmental Health Department	July 2015	Variable
Cotswold District Council - Environmental Health Department	November 2015	Variable
North Wiltshire District Council (now part of Wiltshire Council) - Environmental Services	September 2008	Not Applicable
Local Authority Pollution Prevention and Controls		
Wiltshire Council - Environmental Health Department	July 2015	Annually
Cotswold District Council - Environmental Health Department	November 2015	Annual Rolling Update
North Wiltshire District Council (now part of Wiltshire Council) - Environmental Services	September 2008	Not Applicable
Local Authority Pollution Prevention and Control Enforcements		
Wiltshire Council - Environmental Health Department	July 2015	Variable
Cotswold District Council - Environmental Health Department	November 2015	Variable
North Wiltshire District Council (now part of Wiltshire Council) - Environmental Services	September 2008	Not Applicable
Nearest Surface Water Feature		
Ordnance Survey	September 2017	
Pollution Incidents to Controlled Waters		
Environment Agency - South West Region	September 1999	Not Applicable
Environment Agency - Thames Region	September 1999	Not Applicable
Prosecutions Relating to Authorised Processes		
Environment Agency - South West Region	March 2013	As notified
Environment Agency - Thames Region	March 2013	As notified
Prosecutions Relating to Controlled Waters		
Environment Agency - South West Region	March 2013	As notified
Environment Agency - Thames Region	March 2013	As notified
Registered Radioactive Substances		
Environment Agency - South West Region	January 2015	
Environment Agency - Thames Region	January 2015	
River Quality		
Environment Agency - Head Office	November 2001	Not Applicable
River Quality Biology Sampling Points		
Environment Agency - Head Office	July 2012	Annually
River Quality Chemistry Sampling Points		
Environment Agency - Head Office	July 2012	Annually

Agency & Hydrological	Version	Update Cycle
Substantiated Pollution Incident Register		
Environment Agency - South East Region - West Thames Area	April 2018	Quarterly
Environment Agency - South West Region - North Wessex Area	April 2018	Quarterly
Environment Agency - South West Region - Wessex Area	April 2018	Quarterly
Environment Agency - Thames Region - West Area	April 2018	Quarterly
Water Abstractions		
Environment Agency - South West Region	April 2018	Quarterly
Environment Agency - Thames Region	April 2018	Quarterly
Water Industry Act Referrals		
Environment Agency - South West Region	October 2017	Quarterly
Environment Agency - Thames Region	October 2017	Quarterly
Groundwater Vulnerability		
Environment Agency - Head Office	April 2015	Not Applicable
Drift Deposits		
Environment Agency - Head Office	January 1999	Not Applicable
Bedrock Aquifer Designations		
British Geological Survey - National Geoscience Information Service	August 2015	As notified
Superficial Aquifer Designations		
British Geological Survey - National Geoscience Information Service	August 2015	As notified
Source Protection Zones		
Environment Agency - Head Office	January 2018	Quarterly
Extreme Flooding from Rivers or Sea without Defences		
Environment Agency - Head Office	February 2018	Quarterly
Flooding from Rivers or Sea without Defences		
Environment Agency - Head Office	February 2018	Quarterly
Areas Benefiting from Flood Defences		
Environment Agency - Head Office	February 2018	Quarterly
Flood Water Storage Areas		
Environment Agency - Head Office	February 2018	Quarterly
Flood Defences		
Environment Agency - Head Office	February 2018	Quarterly
OS Water Network Lines		
Ordnance Survey	January 2018	Quarterly
Surface Water 1 in 30 year Flood Extent		
Environment Agency - Head Office	October 2013	As notified
Surface Water 1 in 100 year Flood Extent		
Environment Agency - Head Office	October 2013	As notified
Surface Water 1 in 1000 year Flood Extent		
Environment Agency - Head Office	October 2013	As notified
Surface Water Suitability		
Environment Agency - Head Office	October 2013	As notified
BGS Groundwater Flooding Susceptibility		
British Geological Survey - National Geoscience Information Service	May 2013	As notified

Waste	Version	Update Cycle
BGS Recorded Landfill Sites		
British Geological Survey - National Geoscience Information Service	June 1996	Not Applicable
Historical Landfill Sites		
Environment Agency - Head Office	April 2018	Quarterly
Integrated Pollution Control Registered Waste Sites		
Environment Agency - South West Region	October 2008	Not Applicable
Environment Agency - Thames Region	October 2008	Not Applicable
Licensed Waste Management Facilities (Landfill Boundaries)		
Environment Agency - South East Region - West Thames Area	April 2018	Quarterly
Environment Agency - South West Region - North Wessex Area	April 2018	Quarterly
Environment Agency - South West Region - Wessex Area	April 2018	Quarterly
Environment Agency - Thames Region - West Area	April 2018	Quarterly
Licensed Waste Management Facilities (Locations)		
Environment Agency - South East Region - West Thames Area	April 2018	Quarterly
Environment Agency - South West Region - North Wessex Area	April 2018	Quarterly
Environment Agency - South West Region - Wessex Area	April 2018	Quarterly
Environment Agency - Thames Region - West Area	April 2018	Quarterly
Local Authority Landfill Coverage		
Cotswold District Council - Environmental Health Department	May 2000	Not Applicable
Gloucestershire County Council	May 2000	Not Applicable
North Wiltshire District Council (now part of Wiltshire Council) - Environmental Services	May 2000	Not Applicable
Wiltshire County Council (now part of Wiltshire Council)	May 2000	Not Applicable
Local Authority Recorded Landfill Sites		
Cotswold District Council - Environmental Health Department	May 2000	Not Applicable
Gloucestershire County Council	May 2000	Not Applicable
North Wiltshire District Council (now part of Wiltshire Council) - Environmental Services	May 2000	Not Applicable
Wiltshire County Council (now part of Wiltshire Council)	May 2000	Not Applicable
Potentially Infilled Land (Non-Water)		
Landmark Information Group Limited	December 1999	Not Applicable
Potentially Infilled Land (Water)		
Landmark Information Group Limited	December 1999	Not Applicable
Registered Landfill Sites		
Environment Agency - South West Region - North Wessex Area	March 2003	Not Applicable
Environment Agency - South West Region - Wessex Area	March 2003	Not Applicable
Environment Agency - Thames Region - West Area	March 2003	Not Applicable
Registered Waste Transfer Sites		
Environment Agency - South West Region - North Wessex Area	March 2003	Not Applicable
Environment Agency - South West Region - Wessex Area	March 2003	Not Applicable
Environment Agency - Thames Region - West Area	March 2003	Not Applicable
Registered Waste Treatment or Disposal Sites		
Environment Agency - South West Region - North Wessex Area	March 2003	Not Applicable
Environment Agency - South West Region - Wessex Area	March 2003	Not Applicable
Environment Agency - Thames Region - West Area	March 2003	Not Applicable

Hazardous Substances	Version	Update Cycle
Control of Major Accident Hazards Sites (COMAH)		
Health and Safety Executive	September 2017	Bi-Annually
Explosive Sites		
Health and Safety Executive	March 2017	Variable
Notification of Installations Handling Hazardous Substances (NIHHS)		
Health and Safety Executive	November 2000	Not Applicable
Planning Hazardous Substance Enforcements		
Gloucestershire County Council	April 2008	Annual Rolling Update
Wiltshire County Council (now part of Wiltshire Council)	December 2008	Annual Rolling Update
Cotswold District Council - Development Control Administration	February 2016	Variable
Wiltshire Council - Planning Department	February 2016	Variable
North Wiltshire District Council (now part of Wiltshire Council)	June 2009	Not Applicable
Planning Hazardous Substance Consents		
Gloucestershire County Council	April 2008	Annual Rolling Update
Wiltshire County Council (now part of Wiltshire Council)	December 2008	Annual Rolling Update
Cotswold District Council - Development Control Administration	February 2016	Variable
Wiltshire Council - Planning Department	February 2016	Variable
North Wiltshire District Council (now part of Wiltshire Council)	June 2009	Not Applicable

Geological	Version	Update Cycle
BGS 1:625,000 Solid Geology		
British Geological Survey - National Geoscience Information Service	January 2009	Not Applicable
BGS Estimated Soil Chemistry		
British Geological Survey - National Geoscience Information Service	October 2015	As notified
BGS Recorded Mineral Sites		
British Geological Survey - National Geoscience Information Service	May 2018	Bi-Annually
CBSCB Compensation District		
Cheshire Brine Subsidence Compensation Board (CBSCB)	August 2011	Not Applicable
Coal Mining Affected Areas		
The Coal Authority - Property Searches	March 2014	As notified
Mining Instability		
Ove Arup & Partners	October 2000	Not Applicable
Non Coal Mining Areas of Great Britain		
British Geological Survey - National Geoscience Information Service	May 2015	Not Applicable
Potential for Collapsible Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	June 2015	As notified
Potential for Compressible Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	June 2015	As notified
Potential for Ground Dissolution Stability Hazards		
British Geological Survey - National Geoscience Information Service	June 2015	As notified
Potential for Landslide Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	June 2015	As notified
Potential for Running Sand Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	June 2015	As notified
Potential for Shrinking or Swelling Clay Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	June 2015	As notified
Radon Potential - Radon Affected Areas		
British Geological Survey - National Geoscience Information Service	July 2011	As notified
Radon Potential - Radon Protection Measures		
British Geological Survey - National Geoscience Information Service	July 2011	As notified

Industrial Land Use	Version	Update Cycle
Contemporary Trade Directory Entries Thomson Directories	February 2018	Quarterly
Fuel Station Entries Catalist Ltd - Experian	April 2018	Quarterly
Gas Pipelines National Grid	July 2014	Quarterly
Points of Interest - Commercial Services PointX	March 2018	Quarterly
Points of Interest - Education and Health PointX	March 2018	Quarterly
Points of Interest - Manufacturing and Production PointX	March 2018	Quarterly
Points of Interest - Public Infrastructure PointX	March 2018	Quarterly
Points of Interest - Recreational and Environmental PointX	March 2018	Quarterly
Underground Electrical Cables National Grid	December 2015	Bi-Annually

Sensitive Land Use	Version	Update Cycle
Ancient Woodland		
Natural England	October 2017	Bi-Annually
Areas of Adopted Green Belt		
Cotswold District Council	February 2018	As notified
North Wiltshire District Council (now part of Wiltshire Council)	February 2018	As notified
Wiltshire Council - Planning Department	February 2018	As notified
Areas of Unadopted Green Belt		
Cotswold District Council	February 2018	As notified
North Wiltshire District Council (now part of Wiltshire Council)	February 2018	As notified
Wiltshire Council - Planning Department	February 2018	As notified
Areas of Outstanding Natural Beauty		
Natural England	February 2018	Bi-Annually
Environmentally Sensitive Areas		
Natural England	January 2017	
Forest Parks		
Forestry Commission	April 1997	Not Applicable
Local Nature Reserves		
Natural England	February 2018	Bi-Annually
Marine Nature Reserves		
Natural England	January 2018	Bi-Annually
National Nature Reserves		
Natural England	February 2018	Bi-Annually
National Parks		
Natural England	April 2017	Bi-Annually
Nitrate Vulnerable Zones		
Environment Agency - Head Office	December 2017	Bi-Annually
Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	October 2015	
Ramsar Sites		
Natural England	February 2018	Bi-Annually
Sites of Special Scientific Interest		
Natural England	February 2018	Bi-Annually
Special Areas of Conservation		
Natural England	January 2018	Bi-Annually
Special Protection Areas		
Natural England	February 2018	Bi-Annually

Data Suppliers

A selection of organisations who provide data within this report

Data Supplier	Data Supplier Logo
Ordnance Survey	Map data
Environment Agency	Environment Agency
Scottish Environment Protection Agency	SEPA Scottish Environment Protection Agency
The Coal Authority	The Coal Authority
British Geological Survey	British Geological Survey NATURAL ENVIRONMENT RESEARCH COUNCIL
Centre for Ecology and Hydrology	Centre for Ecology & Hydrology NATURAL ENVIRONMENT RESEARCH COUNCIL
Natural Resources Wales	Cyfoeth Naturiol Cymru Natural Resources Wales
Scottish Natural Heritage	SCOTTISH NATURAL HERITAGE
Natural England	NATURAL ENGLAND
Public Health England	Public Health England
Ove Arup	ARUP
Peter Brett Associates	pba peterbrett

Contact	Name and Address	Contact Details
1	**British Geological Survey - Enquiry Service** British Geological Survey, Environmental Science Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
2	**Environment Agency - National Customer Contact Centre (NCCC)** PO Box 544, Templeborough, Rotherham, S60 1BY	Telephone: 03708 506 506 Email: enquiries@environment-agency.gov.uk
3	**Wiltshire Council - Environmental Health Department** County Hall, Bythesea Road, Trowbridge, Wiltshire, BA14 8JN	Telephone: 01225 713000 Email: customerservices@wiltshire.gov.uk Website: www.wiltshire.gov.uk
4	**Ordnance Survey** Adanac Drive, Southampton, Hampshire, SO16 0AS	Telephone: 03456 05 05 05 Email: customerservices@ordnancesurvey.co.uk Website: www.ordnancesurvey.gov.uk
5	**North Wiltshire District Council (now part of Wiltshire Council) - Environmental Services** County Hall, Bythesea Road, Trowbridge, Wiltshire, BA14 8JN	Telephone: 0300 456 0100 Website: www.wiltshire.gov.uk
6	**Wiltshire County Council (now part of Wiltshire Council)** County Hall, Bythesea Road, Trowbridge, Wiltshire, BA14 8JN	Telephone: 01225 713000 Email: communications@wiltshire.gov.uk Website: www.wiltshire.gov.uk
7	**Cotswold District Council - Environmental Health Department** Council Offices, Trinity Road, Cirencester, Gloucestershire, GL7 1PX	Telephone: 01285 643643 Fax: 01285 640743 Website: www.cotswold.gov.uk
8	**Gloucestershire County Council** Shire Hall, Westgate Street, Gloucester, Gloucestershire, GL1 2TG	Telephone: 01452 425000 Website: www.gloscc.gov.uk
9	**PointX** 7 Abbey Court, Eagle Way, Sowton, Exeter, Devon, EX2 7HY	Website: www.pointx.co.uk
10	**Natural England** County Hall, Spetchley Road, Worcester, WR5 2NP	Telephone: 0300 060 3900 Email: enquiries@naturalengland.org.uk Website: www.naturalengland.org.uk
11	**Environment Agency - Head Office** Rio House, Waterside Drive, Aztec West, Almondsbury, Bristol, Avon, BS32 4UD	Telephone: 01454 624400 Fax: 01454 624409
-	**Public Health England - Radon Survey, Centre for Radiation, Chemical and Environmental Hazards** Chilton, Didcot, Oxfordshire, OX11 0RQ	Telephone: 01235 822622 Fax: 01235 833891 Email: radon@phe.gov.uk Website: www.ukradon.org
-	**Landmark Information Group Limited** Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmarkinfo.co.uk Website: www.landmarkinfo.co.uk

Please note that the Environment Agency / Natural Resources Wales / SEPA have a charging policy in place for enquiries.

Geology 1:50,000 Maps Legends

Artificial Ground and Landslip

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	WGR	Worked Ground (Undivided)	Void	Not Supplied - Holocene

Superficial Geology

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	ALV	Alluvium	Clay, Silt, Sand and Gravel	Not Supplied - Holocene
	NO	Northmoor Sand and Gravel Member	Sand and Gravel	Not Supplied - Pleistocene
	SURA	Summertown-Radley Sand and Gravel Member	Sand and Gravel	Not Supplied - Pleistocene
	HEAD	Head	Clay, Silt, Sand and Gravel	Not Supplied - Quaternary

Bedrock and Faults

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	KLC	Kellaways Clay Member	Mudstone	Not Supplied - Callovian
	OXC	Oxford Clay Formation	Mudstone	Not Supplied - Callovian
	KLS	Kellaways Sand Member	Sandstone and Siltstone, Interbedded	Not Supplied - Callovian
	CB	Cornbrash Formation	Limestone	Not Supplied - Bathonian
	FMB	Forest Marble Formation	Mudstone	Not Supplied - Bathonian
		Faults		

Hydrock

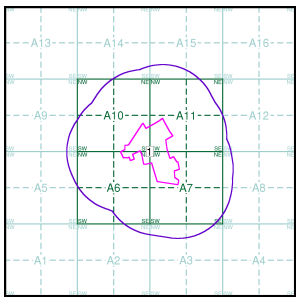
Geology 1:50,000 Maps

This report contains geological map extracts taken from the BGS Digital Geological map of Great Britain at 1:50,000 scale and is designed for users carrying out preliminary site assessments who require geological maps for the area around the site. This mapping may be more up to date than previously published paper maps.
The various geological layers - artificial and landslip deposits, superficial geology and solid (bedrock) geology are displayed in separate maps, but superimposed on the final 'Combined Surface Geology' map. All map legends feature on this page. Not all layers have complete nationwide coverage, so availability of data for relevant map sheets is indicated below.

Geology 1:50,000 Maps Coverage

Map ID:	**1**
Map Sheet No:	**252**
Map Name:	**Swindon**
Map Date:	**1974**
Bedrock Geology:	**Available**
Superficial Geology:	**Available**
Artificial Geology:	**Available**
Faults:	**Not Supplied**
Landslip:	**Available**
Rock Segments:	**Not Supplied**

Geology 1:50,000 Maps - Slice A

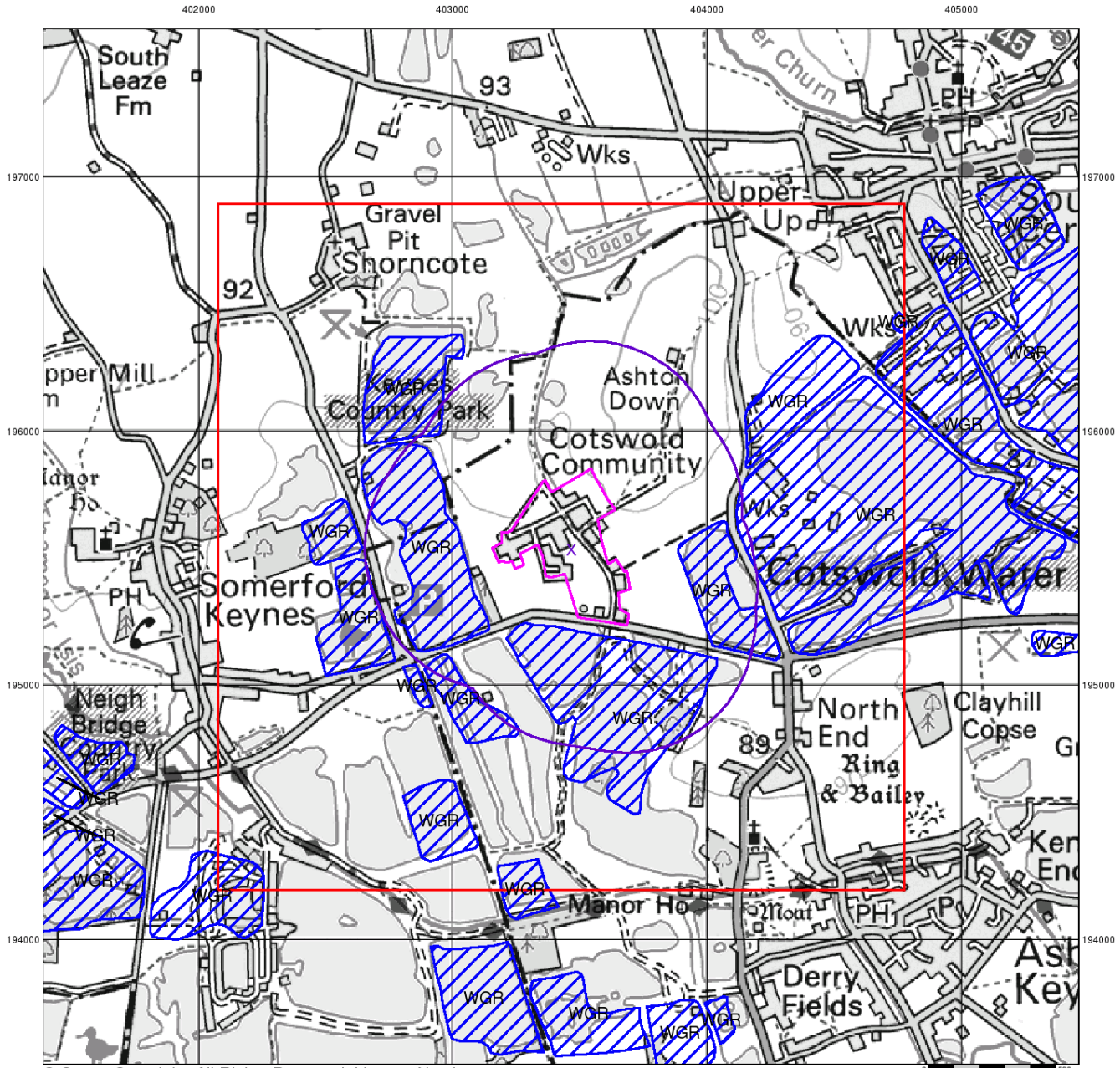


Order Details:

Order Number:	168381006_1_1
Customer Reference:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	500

Site Details:

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU



© Crown Copyright. All Rights Reserved. License Number 100022432.

Hydrock

Artificial Ground and Landslip

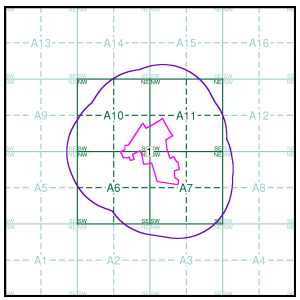
Artificial ground is a term used by BGS for those areas where the ground surface has been significantly modified by human activity. Information about previously developed ground is especially important, as it is often associated with potentially contaminated material, unpredictable engineering conditions and unstable ground.

Artificial ground includes:

- Made ground - man-made deposits such as embankments and spoil heaps on the natural ground surface.
- Worked ground - areas where the ground has been cut away such as quarries and road cuttings.
- Infilled ground - areas where the ground has been cut away then wholly or partially backfilled.
- Landscaped ground - areas where the surface has been reshaped.
- Disturbed ground - areas of ill-defined shallow or near surface mineral workings where it is impracticable to map made and worked ground separately.

Mass movement (landslip) deposits on BGS geological maps are primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground. The dataset also includes foundered strata, where the ground has collapsed due to subsidence.

Artificial Ground and Landslip Map - Slice A



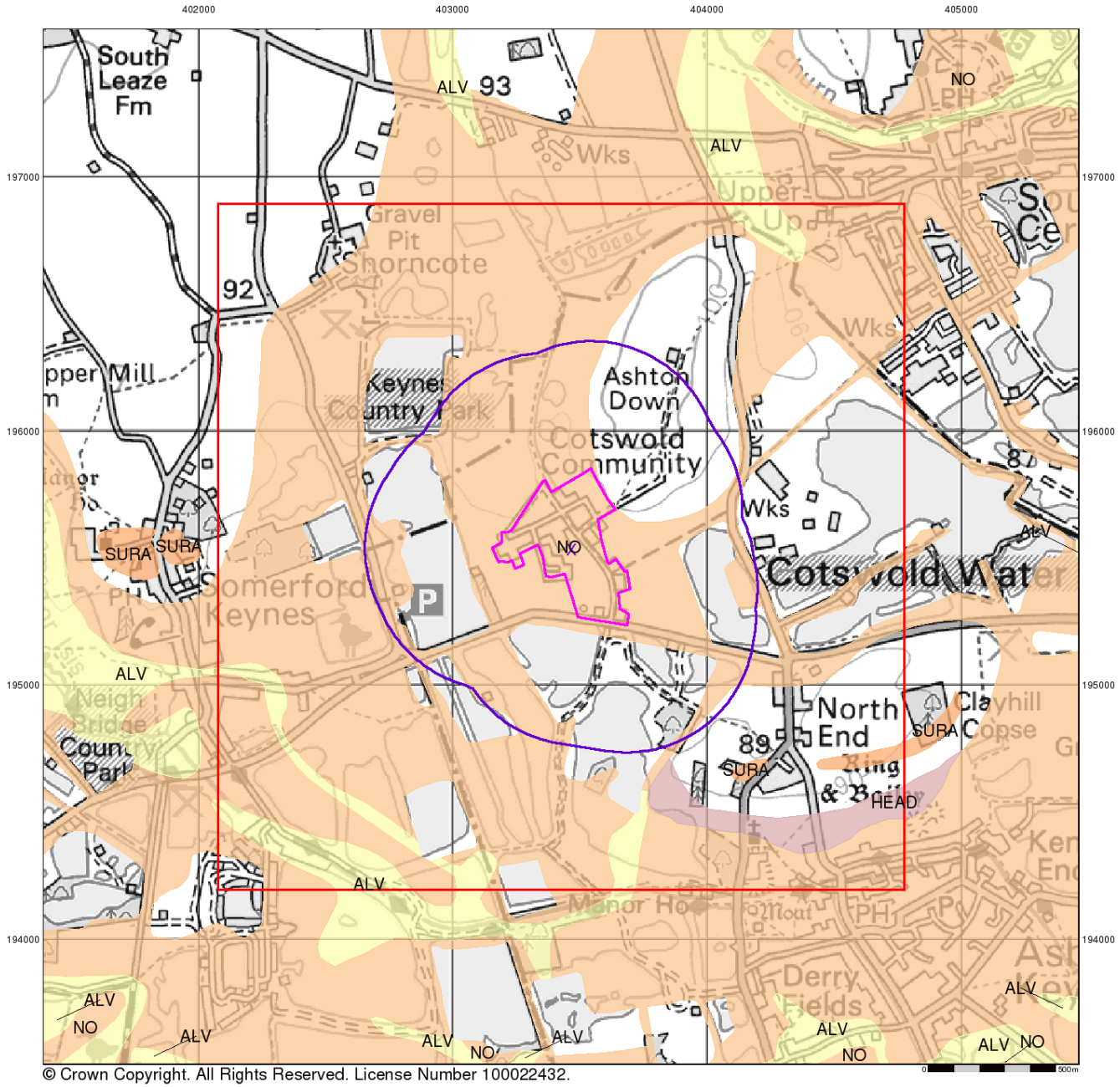
Order Details:

Order Number:	168381006_1_1
Customer Reference:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	500

Site Details:

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



© Crown Copyright. All Rights Reserved. License Number 100022432.

Hydrock

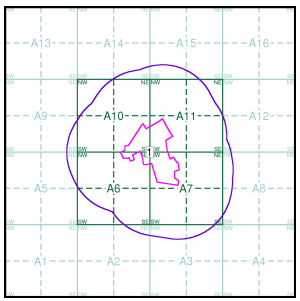
Superficial Geology

Superficial Deposits are the youngest geological deposits formed during the most recent period of geological time, the Quaternary, which extends back about 1.8 million years from the present.

They rest on older deposits or rocks referred to as Bedrock. This dataset contains Superficial deposits that are of natural origin and 'in place'. Other superficial strata may be held in the Mass Movement dataset where they have been moved, or in the Artificial Ground dataset where they are of man-made origin.

Most of these Superficial deposits are unconsolidated sediments such as gravel, sand, silt and clay, and onshore they form relatively thin, often discontinuous patches or larger spreads.

Superficial Geology Map - Slice A



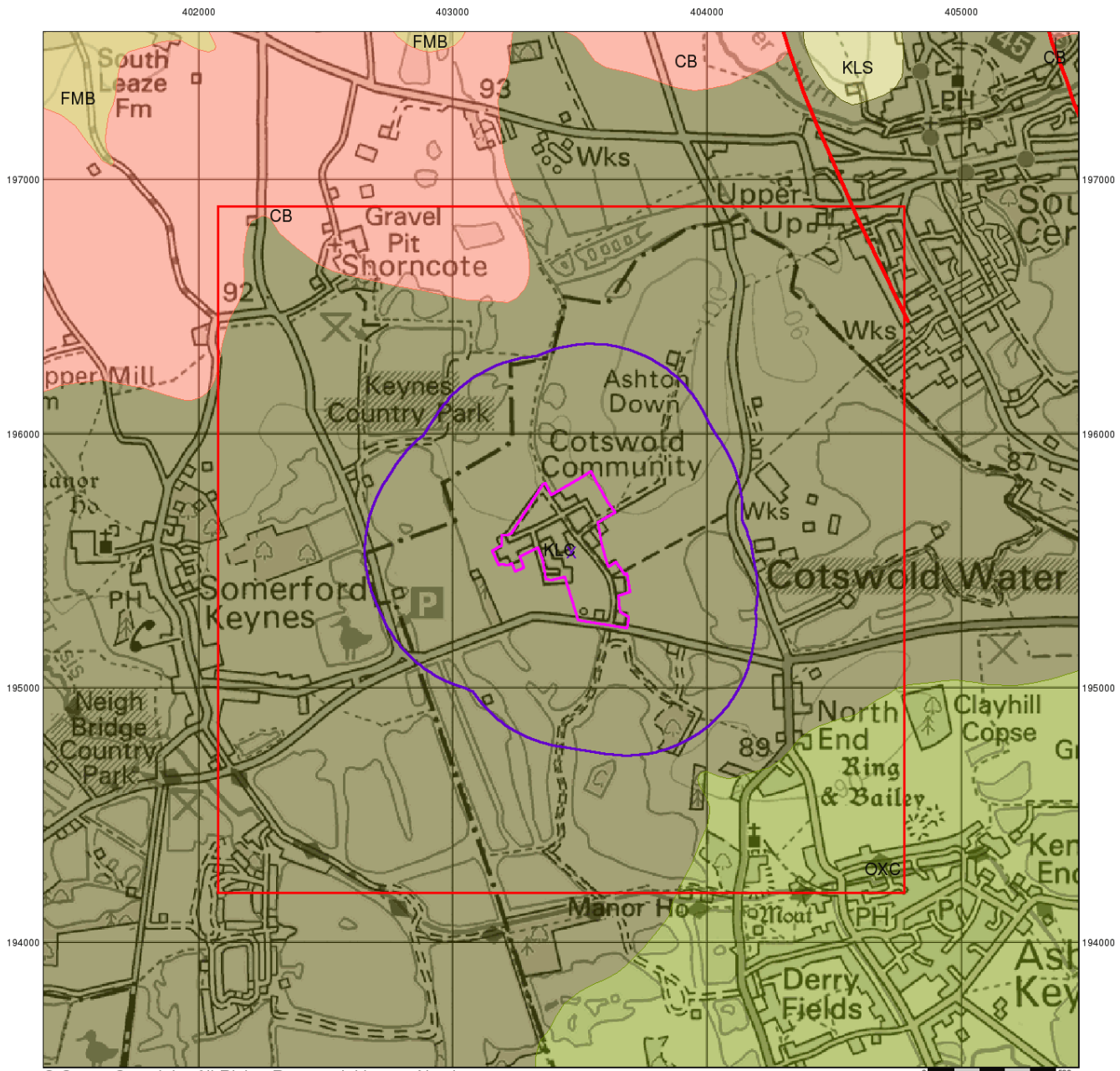
Order Details:

Order Number:	168381006_1_1
Customer Reference:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	500

Site Details:

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



© Crown Copyright. All Rights Reserved. License Number 100022432.

Hydrock

Bedrock and Faults

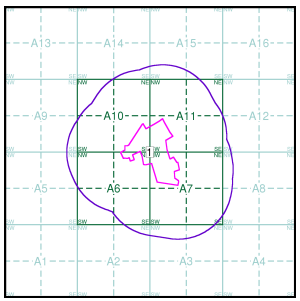
Bedrock geology is a term used for the main mass of rocks forming the Earth and are present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

The bedrock has formed over vast lengths of geological time ranging from ancient and highly altered rocks of the Proterozoic, some 2500 million years ago, or older, up to the relatively young Pliocene, 1.8 million years ago.

The bedrock geology includes many lithologies, often classified into three types based on origin: igneous, metamorphic and sedimentary.

The BGS Faults and Rock Segments dataset includes geological faults (e.g. normal, thrust), and thin beds mapped as lines (e.g. coal seam, gypsum bed). Some of these are linked to other particular 1:50,000 Geology datasets, for example, coal seams are part of the bedrock sequence, most faults and mineral veins primarily affect the bedrock but cut across the strata and post date its deposition.

Bedrock and Faults Map - Slice A



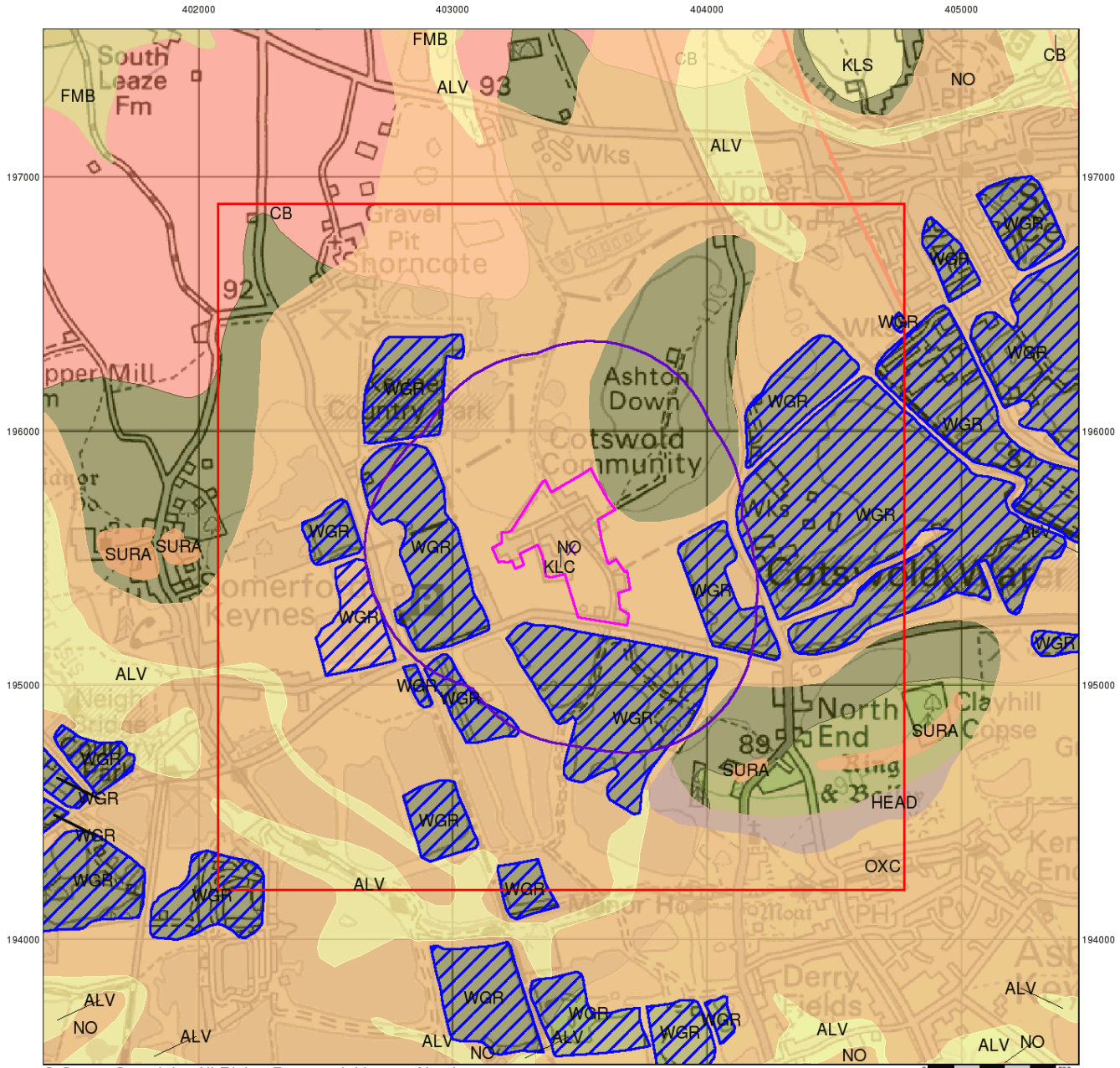
Order Details:

Order Number:	168381006_1_1
Customer Reference:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	500

Site Details:

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



© Crown Copyright. All Rights Reserved. License Number 100022432.

Hydrock

Combined Surface Geology

The Combined Surface Geology map combines all the previous maps into one combined geological overview of your site.

Please consult the legends to the previous maps to interpret the Combined "Surface Geology" map.

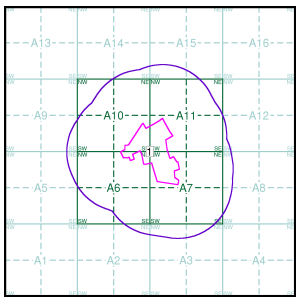
Additional Information

More information on 1:50,000 Geological mapping and explanations of rock classifications can be found on the BGS website. Using the LEX Codes in this report, further descriptions of rock types can be obtained by interrogating the 'BGS Lexicon of Named Rock Units'. This database can be accessed by following the 'Information and Data' link on the BGS website.

Contact

British Geological Survey
Kingsley Dunham Centre
Keyworth
Nottingham
NG12 5GG
Telephone: 0115 936 3143
Fax: 0115 936 3276
email: enquiries@bgs.ac.uk
website: www.bgs.ac.uk

Combined Geology Map - Slice A



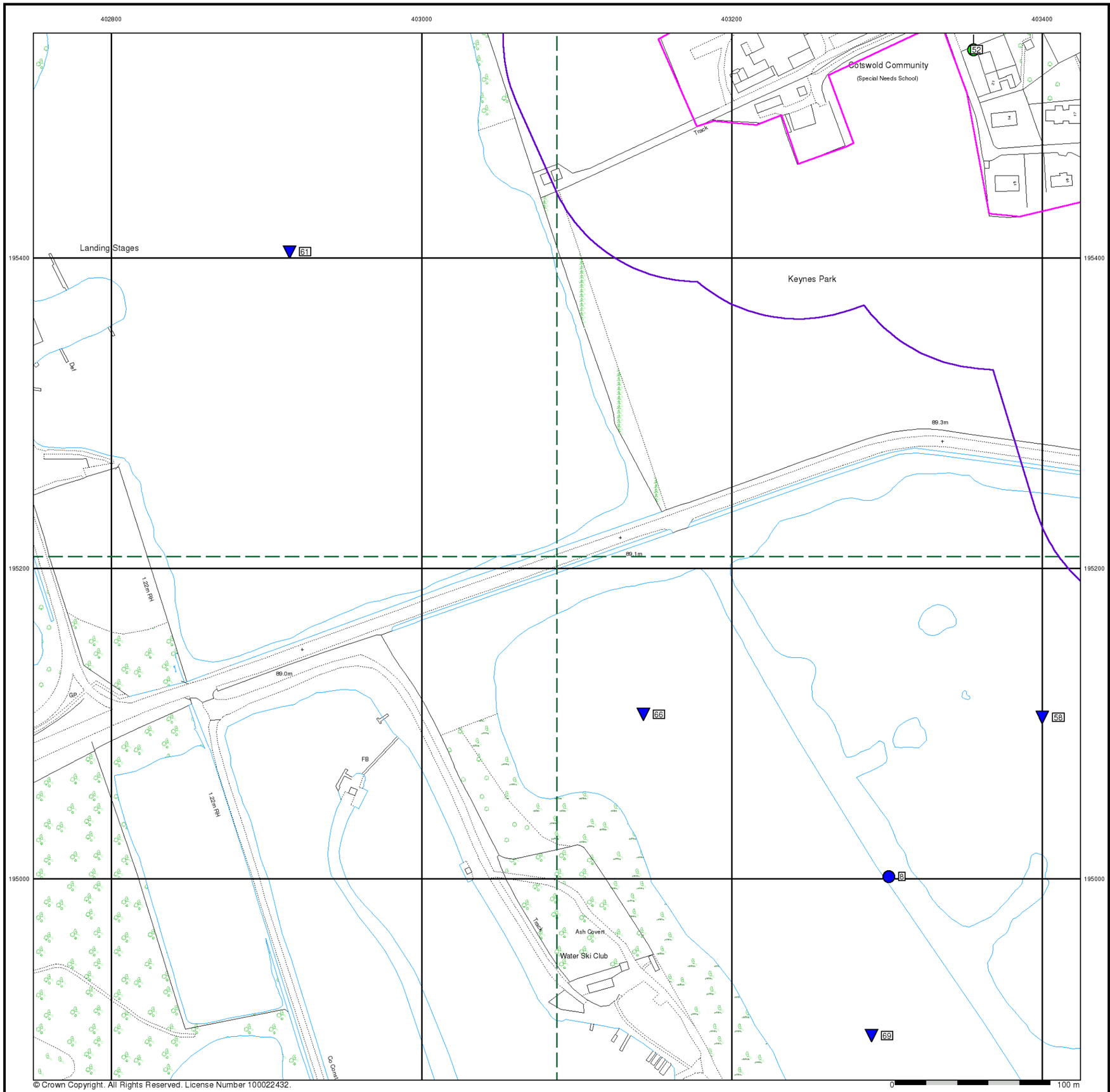


Order Details:

Order Number:	168381006_1_1
Customer Reference:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	500

Site Details:

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU



© Crown Copyright. All Rights Reserved. License Number 100022432.

Hydrock

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location
- Pylon
- Overhead Transmission Line

Agency and Hydrological

- Contaminated Land Register Entry or Notice (Location)
- Contaminated Land Register Entry or Notice
- Discharge Consent
- Enforcement or Prohibition Notice
- Integrated Pollution Control
- Integrated Pollution Prevention Control
- Local Authority Integrated Pollution Prevention and Control
- Local Authority Pollution Prevention and Control
- Local Authority Pollution Prevention and Control Enforcement
- Pollution Incident to Controlled Waters
- Prosecution Relating to Authorised Processes
- Prosecution Relating to Controlled Waters
- Registered Radioactive Substance
- River Network or Water Feature
- River Quality Sampling Point
- Substantiated Pollution Incident Register
- Water Abstraction
- Water Industry Act Referral

Hazardous Substances

- COMAH Site
- Explosive Site
- NIHHS Site
- Planning Hazardous Substance Consent
- Planning Hazardous Substance Enforcement

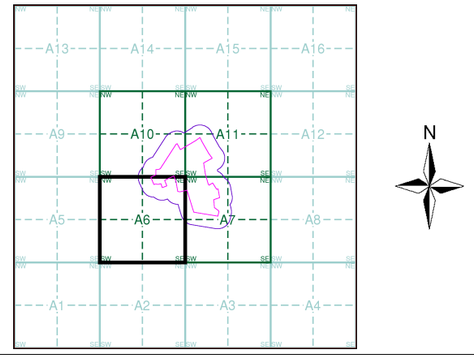
Geological

- BGS Recorded Mineral Site

Waste

- BGS Recorded Landfill Site (Location)
- BGS Recorded Landfill Site
- EA Historic Landfill (Buffered Point)
- EA Historic Landfill (Polygon)
- Integrated Pollution Control Registered Waste Site
- Licensed Waste Management Facility (Landfill Boundary)
- Licensed Waste Management Facility (Location)
- Local Authority Recorded Landfill Site (Location)
- Local Authority Recorded Landfill Site
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
- Registered Landfill Site
- Registered Landfill Site (Location)
- Registered Landfill Site (Point Buffered to 100m)
- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

Site Sensitivity Map - Segment A6



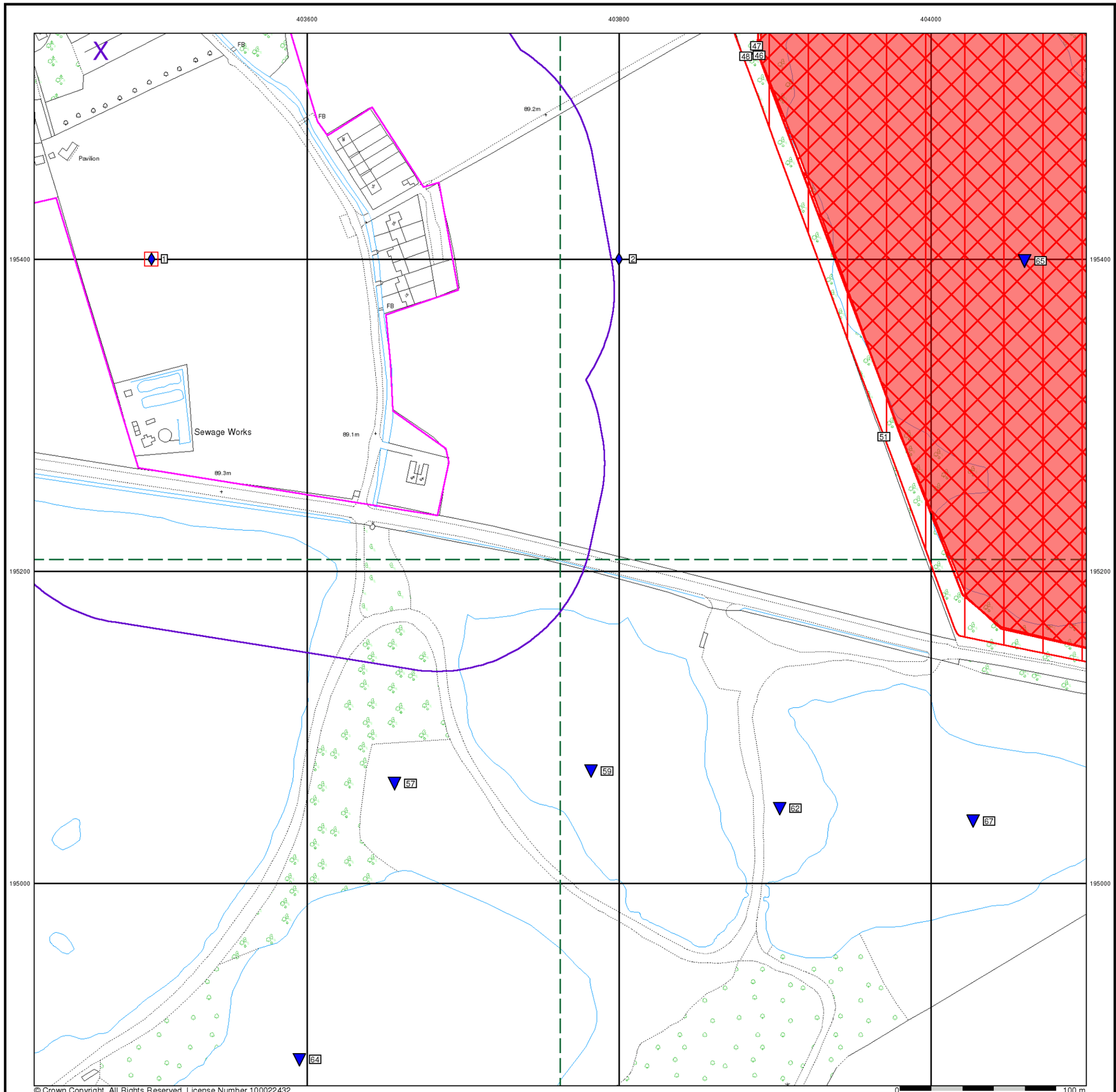
Order Details

Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Plot Buffer (m):	100

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



© Crown Copyright. All Rights Reserved. License Number 100022432.

Hydrock

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location
- Pylon
- Overhead Transmission Line

Agency and Hydrological

- Contaminated Land Register Entry or Notice (Location)
- Contaminated Land Register Entry or Notice
- Discharge Consent
- Enforcement or Prohibition Notice
- Integrated Pollution Control
- Integrated Pollution Prevention Control
- Local Authority Integrated Pollution Prevention and Control
- Local Authority Pollution Prevention and Control
- Local Authority Pollution Prevention and Control Enforcement
- Pollution Incident to Controlled Waters
- Prosecution Relating to Authorised Processes
- Prosecution Relating to Controlled Waters
- Registered Radioactive Substance
- River Network or Water Feature
- River Quality Sampling Point
- Substantiated Pollution Incident Register
- Water Abstraction
- Water Industry Act Referral

Hazardous Substances

- COMAH Site
- Explosive Site
- NIHHS Site
- Planning Hazardous Substance Consent
- Planning Hazardous Substance Enforcement

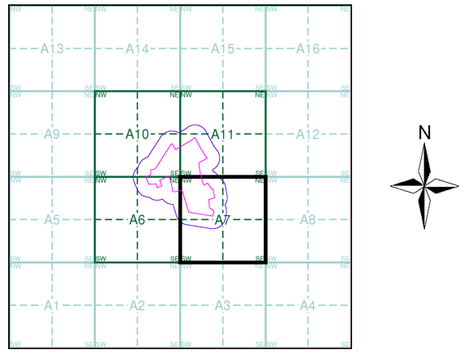
Geological

- BGS Recorded Mineral Site

Waste

- BGS Recorded Landfill Site (Location)
- BGS Recorded Landfill Site
- EA Historic Landfill (Buffered Point)
- EA Historic Landfill (Polygon)
- Integrated Pollution Control Registered Waste Site
- Licensed Waste Management Facility (Landfill Boundary)
- Licensed Waste Management Facility (Location)
- Local Authority Recorded Landfill Site (Location)
- Local Authority Recorded Landfill Site
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
- Registered Landfill Site
- Registered Landfill Site (Location)
- Registered Landfill Site (Point Buffered to 100m)
- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

Site Sensitivity Map - Segment A7



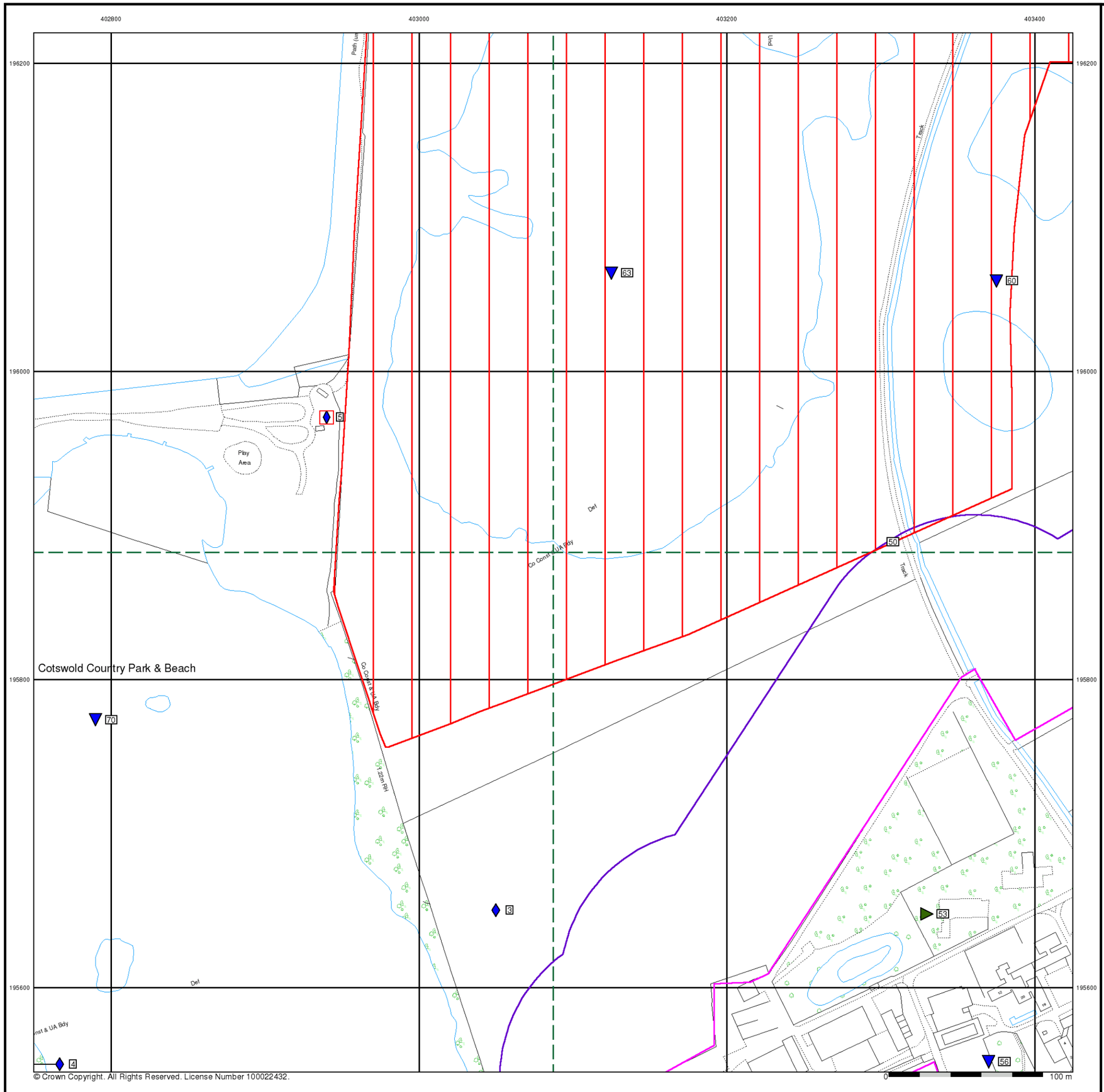
Order Details

Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Plot Buffer (m):	100

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



© Crown Copyright. All Rights Reserved. License Number 100022432.

Hydrock

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location
- Pylon
- Overhead Transmission Line

Agency and Hydrological

- Contaminated Land Register Entry or Notice (Location)
- Contaminated Land Register Entry or Notice
- Discharge Consent
- Enforcement or Prohibition Notice
- Integrated Pollution Control
- Integrated Pollution Prevention Control
- Local Authority Integrated Pollution Prevention and Control
- Local Authority Pollution Prevention and Control
- Local Authority Pollution Prevention and Control Enforcement
- Pollution Incident to Controlled Waters
- Prosecution Relating to Authorised Processes
- Prosecution Relating to Controlled Waters
- Registered Radioactive Substance
- River Network or Water Feature
- River Quality Sampling Point
- Substantiated Pollution Incident Register
- Water Abstraction
- Water Industry Act Referral

Hazardous Substances

- COMAH Site
- Explosive Site
- NIHHS Site
- Planning Hazardous Substance Consent
- Planning Hazardous Substance Enforcement

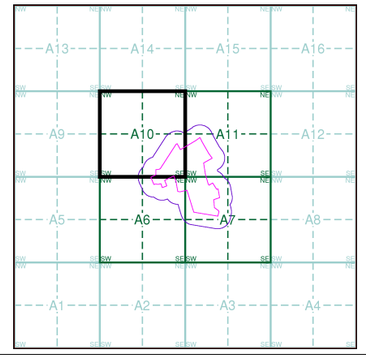
Geological

- BGS Recorded Mineral Site

Waste

- BGS Recorded Landfill Site (Location)
- BGS Recorded Landfill Site
- EA Historic Landfill (Buffered Point)
- EA Historic Landfill (Polygon)
- Integrated Pollution Control Registered Waste Site
- Licensed Waste Management Facility (Landfill Boundary)
- Licensed Waste Management Facility (Location)
- Local Authority Recorded Landfill Site (Location)
- Local Authority Recorded Landfill Site
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
- Registered Landfill Site
- Registered Landfill Site (Location)
- Registered Landfill Site (Point Buffered to 100m)
- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

Site Sensitivity Map - Segment A10



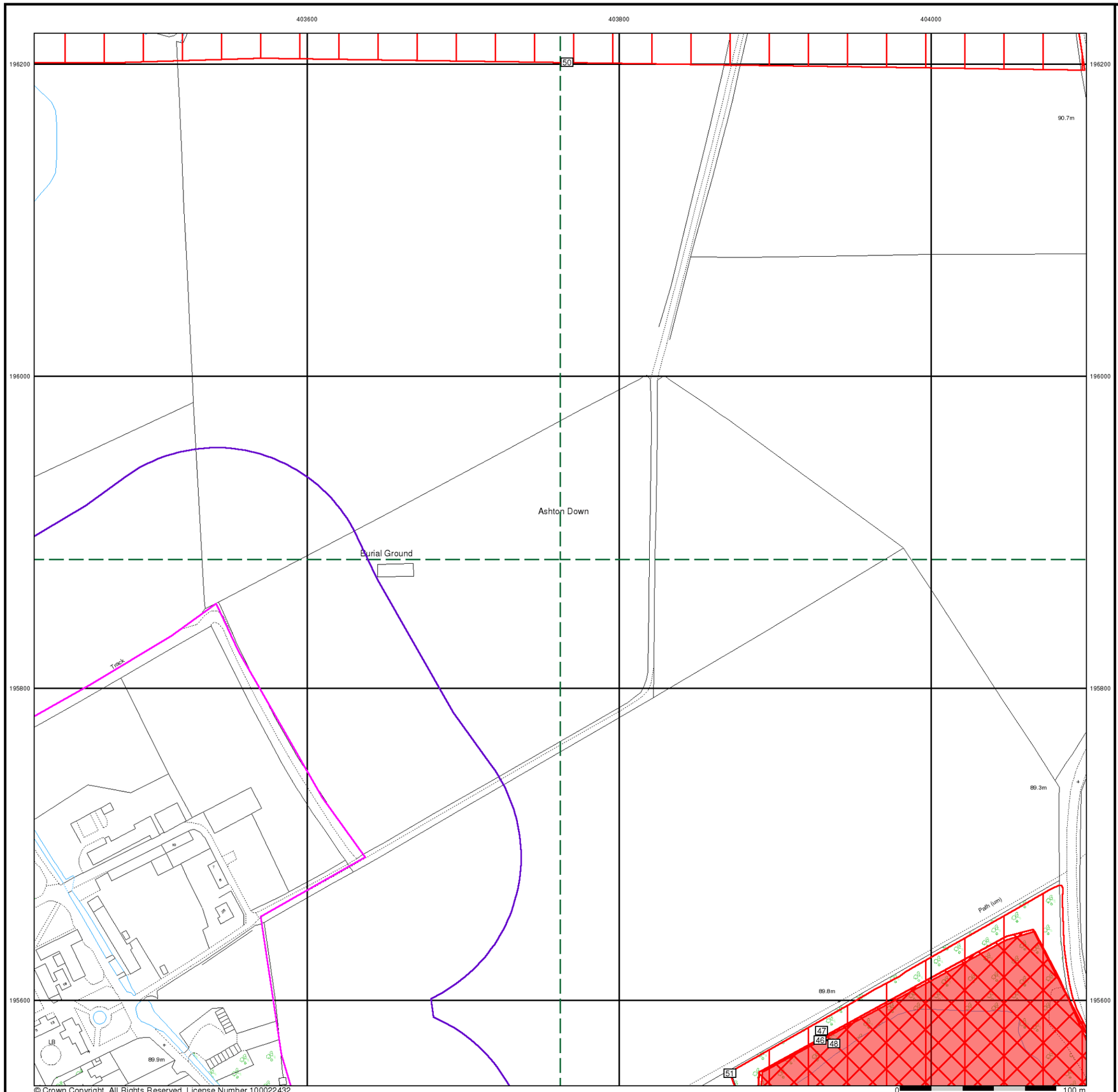
Order Details

Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Plot Buffer (m):	100

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



© Crown Copyright. All Rights Reserved. License Number 100022432.

Hydrock

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location
- Pylon
- Overhead Transmission Line

Agency and Hydrological

- Contaminated Land Register Entry or Notice (Location)
- Contaminated Land Register Entry or Notice
- Discharge Consent
- Enforcement or Prohibition Notice
- Integrated Pollution Control
- Integrated Pollution Prevention Control
- Local Authority Integrated Pollution Prevention and Control
- Local Authority Pollution Prevention and Control
- Local Authority Pollution Prevention and Control Enforcement
- Pollution Incident to Controlled Waters
- Prosecution Relating to Authorised Processes
- Prosecution Relating to Controlled Waters
- Registered Radioactive Substance
- River Network or Water Feature
- River Quality Sampling Point
- Substantiated Pollution Incident Register
- Water Abstraction
- Water Industry Act Referral

Hazardous Substances

- COMAH Site
- Explosive Site
- NIHHS Site
- Planning Hazardous Substance Consent
- Planning Hazardous Substance Enforcement

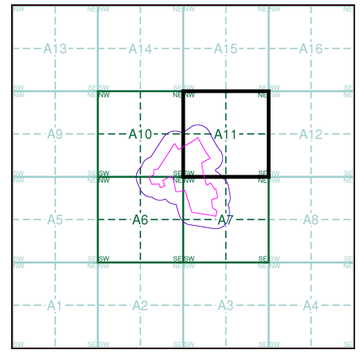
Geological

- BGS Recorded Mineral Site

Waste

- BGS Recorded Landfill Site (Location)
- BGS Recorded Landfill Site
- EA Historic Landfill (Buffered Point)
- EA Historic Landfill (Polygon)
- Integrated Pollution Control Registered Waste Site
- Licensed Waste Management Facility (Landfill Boundary)
- Licensed Waste Management Facility (Location)
- Local Authority Recorded Landfill Site (Location)
- Local Authority Recorded Landfill Site
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
- Registered Landfill Site
- Registered Landfill Site (Location)
- Registered Landfill Site (Point Buffered to 100m)
- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

Site Sensitivity Map - Segment A11



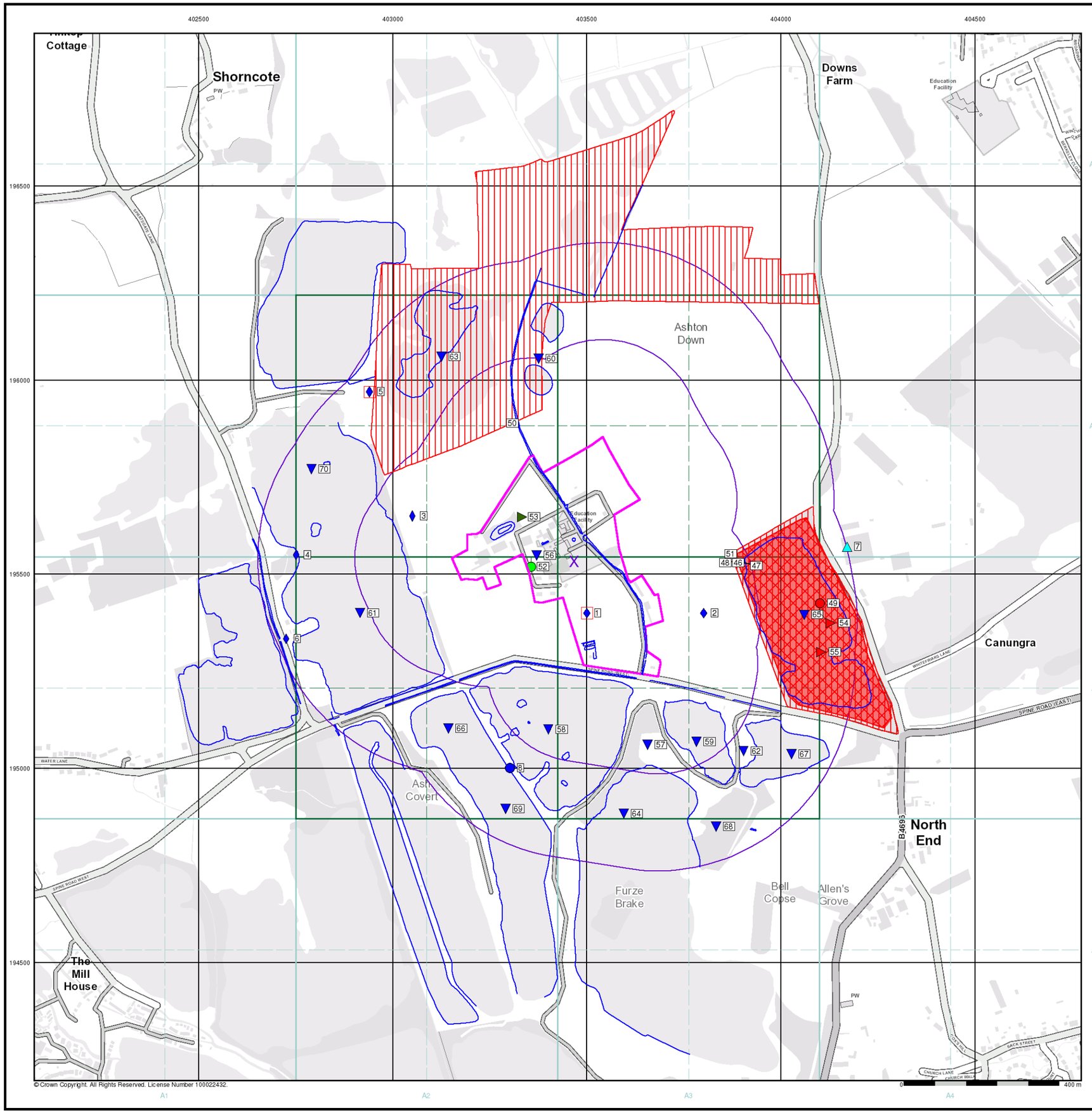
Order Details

Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Plot Buffer (m):	100

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



© Crown Copyright. All Rights Reserved. License Number 100022432.

Hydrock

General

Specified Site
Specified Buffer(s)
Bearing Reference Point
Map ID
Several of Type at Location

Agency and Hydrological

- Contaminated Land Register Entry or Notice (Location)
- Contaminated Land Register Entry or Notice
- Discharge Consent
- Enforcement or Prohibition Notice
- Integrated Pollution Control
- Integrated Pollution Prevention Control
- Local Authority Integrated Pollution Prevention and Control
- Local Authority Pollution Prevention and Control
- Local Authority Pollution Prevention and Control Enforcement
- Pollution Incident to Controlled Waters
- Prosecution Relating to Authorised Processes
- Prosecution Relating to Controlled Waters
- Registered Radioactive Substance
- River Network or Water Feature
- River Quality Sampling Point
- Substantiated Pollution Incident Register
- Water Abstraction
- Water Industry Act Referral

Hazardous Substances

- COMAH Site
- Explosive Site
- NIHHS Site
- Planning Hazardous Substance Consent
- Planning Hazardous Substance Enforcement

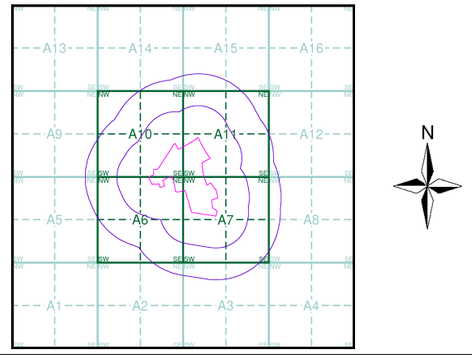
Geological

- BGS Recorded Mineral Site

Waste

- BGS Recorded Landfill Site (Location)
- BGS Recorded Landfill Site
- EA Historic Landfill (Buffered Point)
- EA Historic Landfill (Polygon)
- Integrated Pollution Control Registered Waste Site
- Licensed Waste Management Facility (Landfill Boundary)
- Licensed Waste Management Facility (Location)
- Local Authority Recorded Landfill Site (Location)
- Local Authority Recorded Landfill Site
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
- Registered Landfill Site
- Registered Landfill Site (Location)
- Registered Landfill Site (Point Buffered to 100m)
- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

Site Sensitivity Map - Slice A



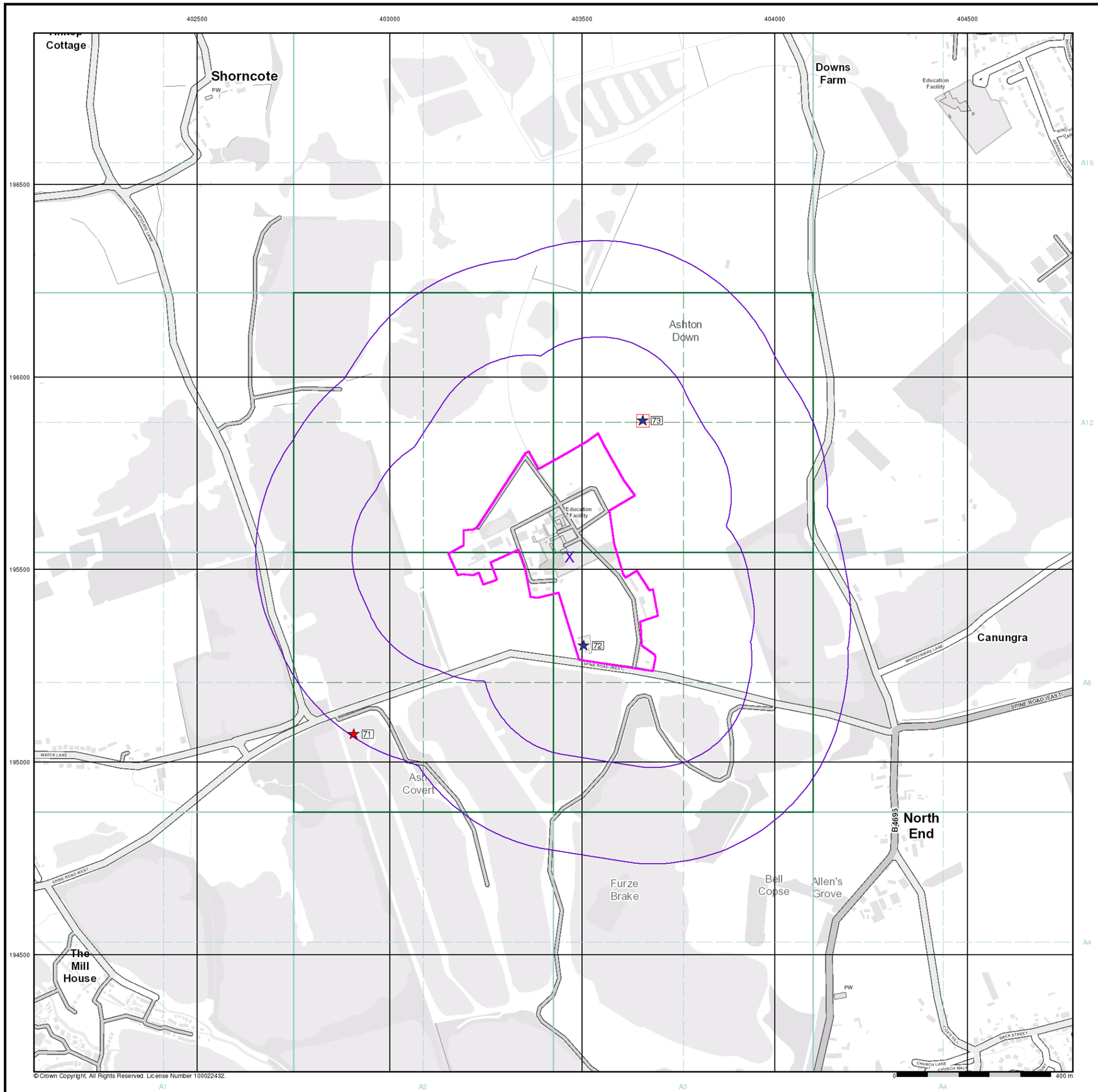
Order Details

Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	500

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



© Crown Copyright. All Rights Reserved. License Number 100022432.

Hydrock

Industrial Land Use Map

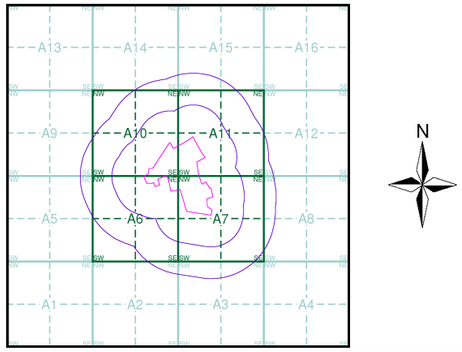
General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

Industrial Land Use

- Contemporary Trade Directory Entry
- Fuel Station Entry
- Gas Pipeline
- Points of Interest - Commercial Services
- Points of Interest - Education and Health
- Points of Interest - Manufacturing and Production
- Points of Interest - Public Infrastructure
- Points of Interest - Recreational and Environmental
- Underground Electrical Cables

Industrial Land Use Map - Slice A



Order Details

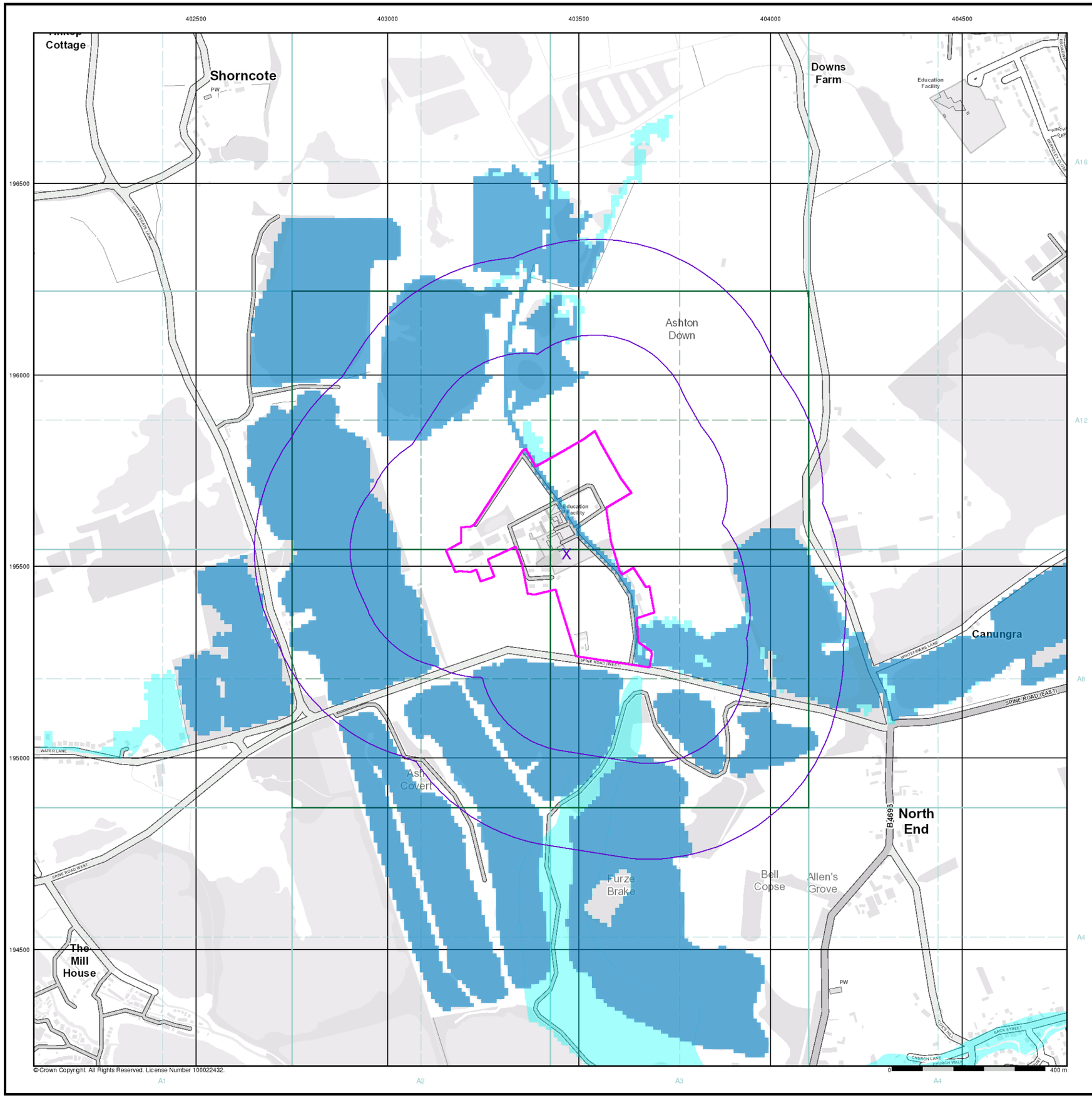
Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	500

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



© Crown Copyright. All Rights Reserved. License Number 100022432.

Hydrock

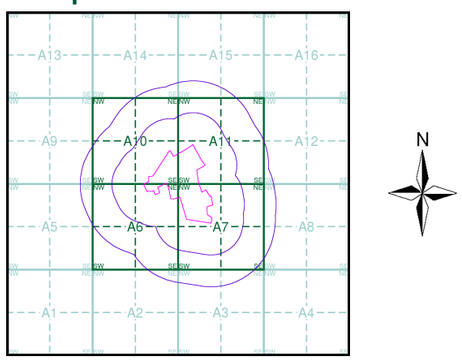
General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

Agency and Hydrological (Flood)

- Extreme Flooding from Rivers or Sea without Defences (Zone 2)
- Flooding from Rivers or Sea without Defences (Zone 3)
- Area Benefiting from Flood Defence
- Flood Water Storage Areas
- Flood Defence

Flood Map - Slice A



Order Details

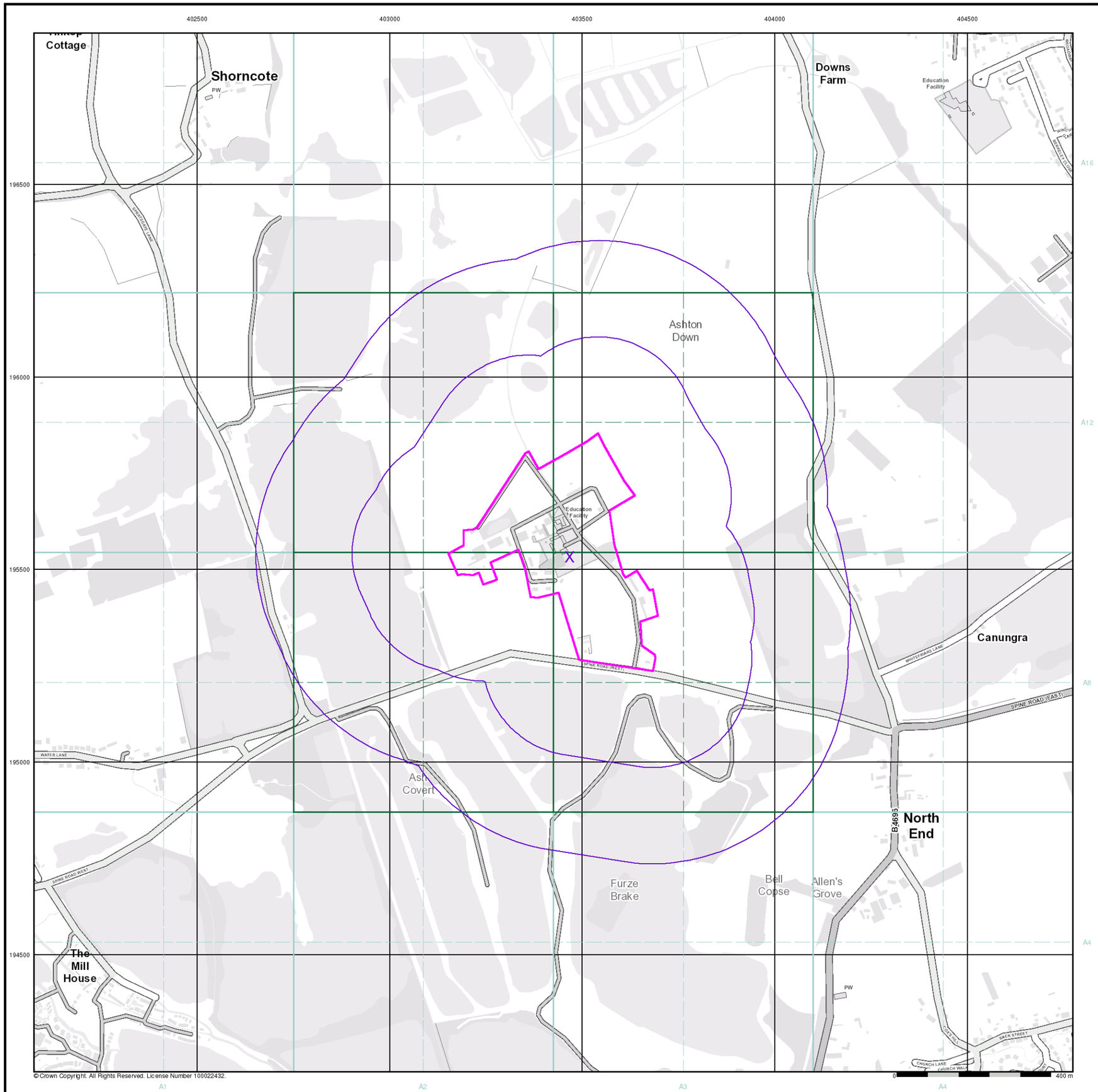
Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	500

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



© Crown Copyright. All Rights Reserved. License Number 100022432.

Hydrock

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location

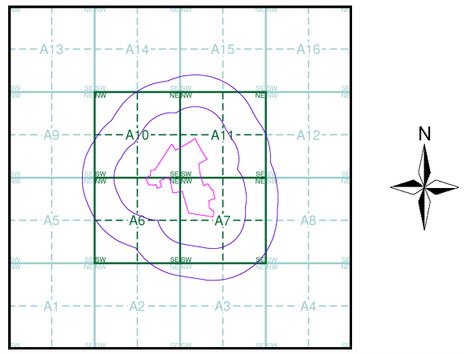
Agency and Hydrological (Boreholes)

- BGS Borehole Depth 0 - 10m
- BGS Borehole Depth 10 - 30m
- BGS Borehole Depth 30m +
- Confidential
- Other

For Borehole information please refer to the Borehole .csv file which accompanied this slice.

A copy of the BGS Borehole Ordering Form is available to download from the Support section of www.envirocheck.co.uk.

Borehole Map - Slice A



Order Details

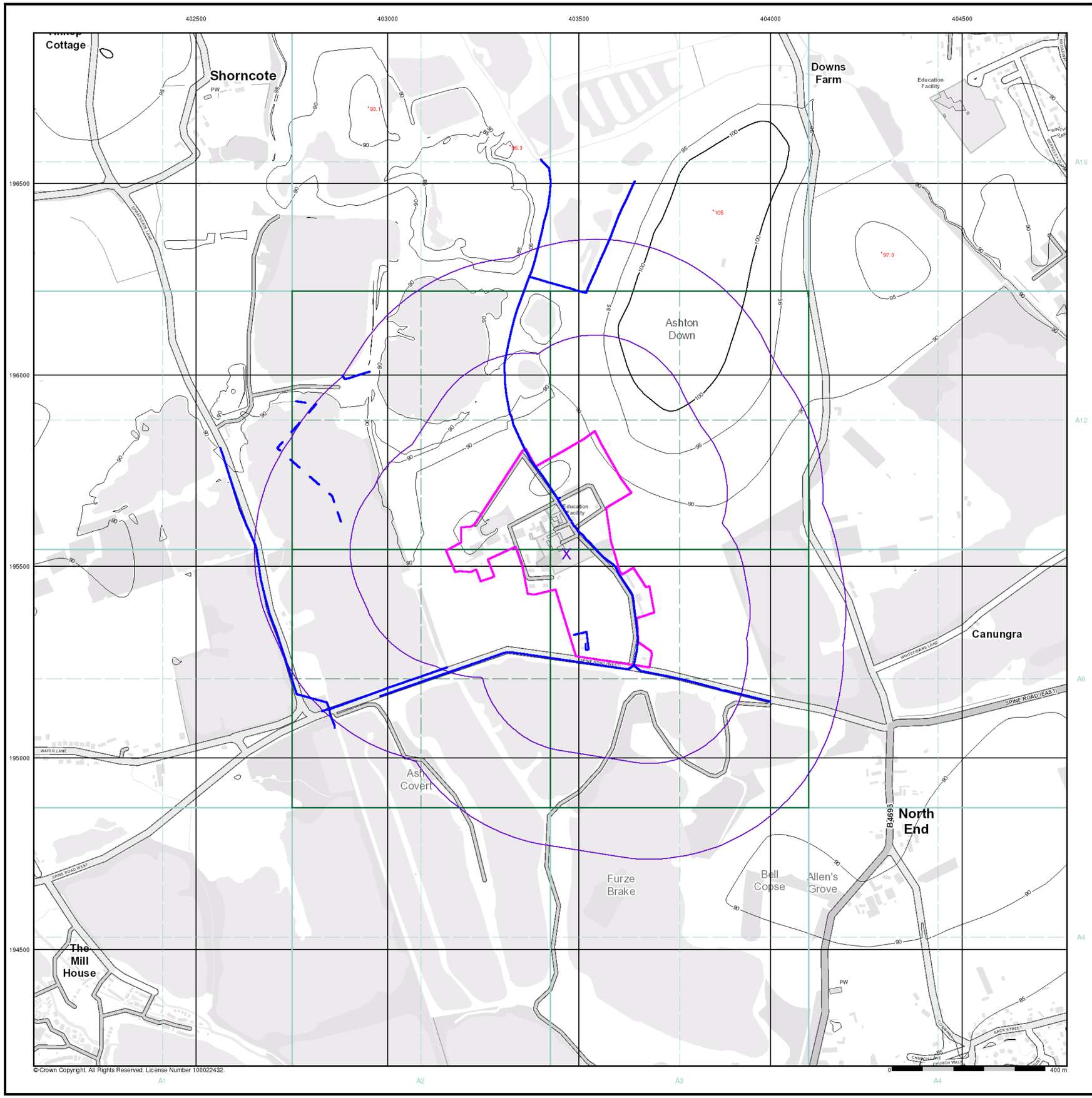
Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	500

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



© Crown Copyright. All Rights Reserved. License Number 100022432.

Hydrock

General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

OS Water Network Data

- Canal
- Reservoir
- Foreshore
- Marsh
- Tidal River
- Inland River
- Drain
- Other
- Lake
- Transfer
- Lock Or Flight Of Locks
- Sea

Contours (height in meters)

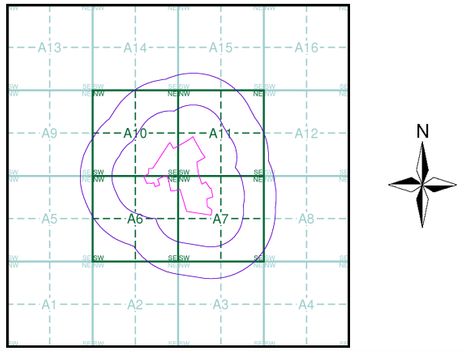
Standard Contour 105 100 95

Master Contour

Spot Height 167.3

- MLW Mean Low Water
- MHW Mean High Water

OS Water Network Map - Slice A



Order Details

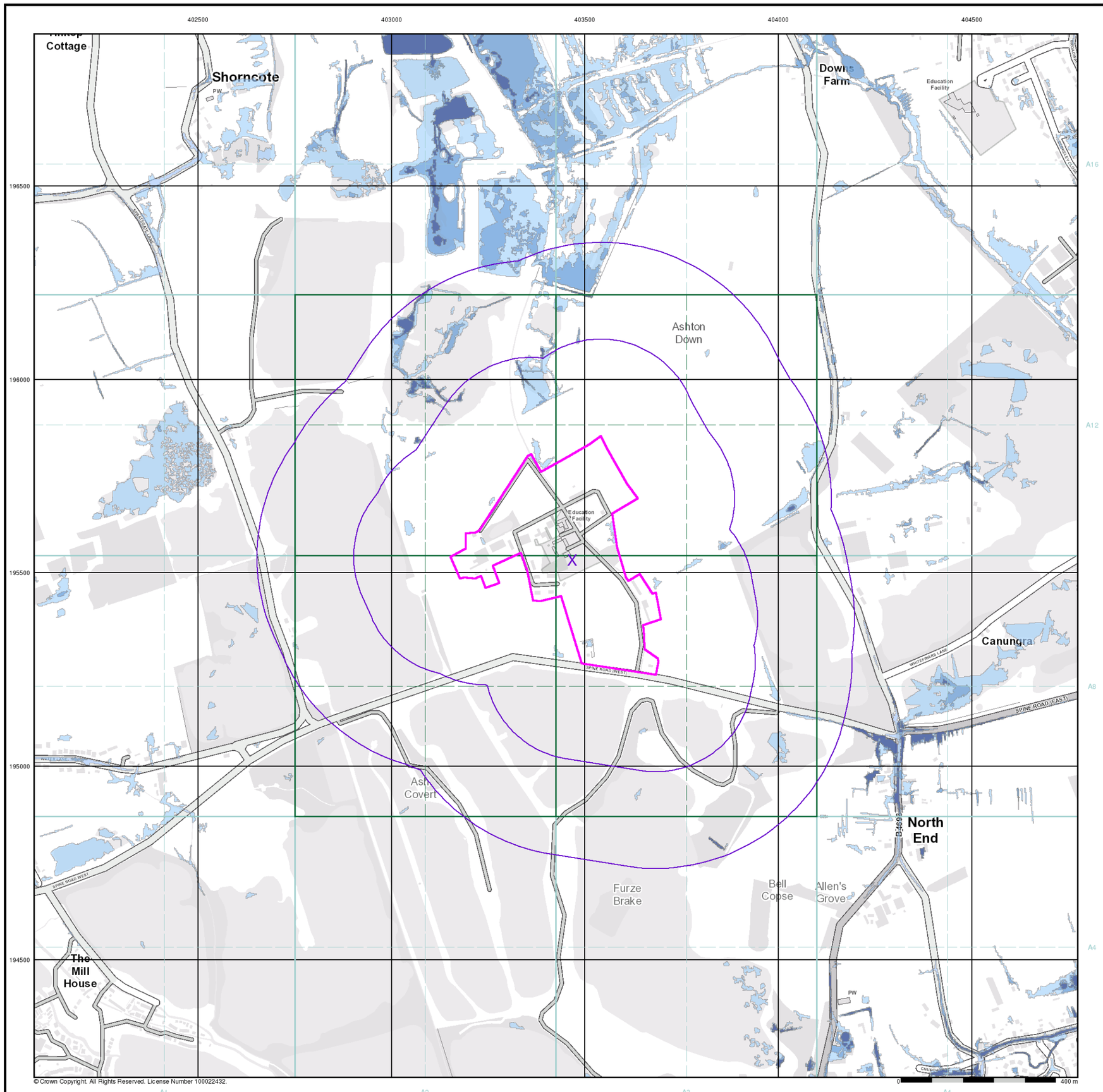
Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	500

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



© Crown Copyright. All Rights Reserved. License Number 100022432.

Hydrock

General

- Specified Site
- Specified Buffer(s)
- X Bearing Reference Point

Risk of Flooding from Surface Water

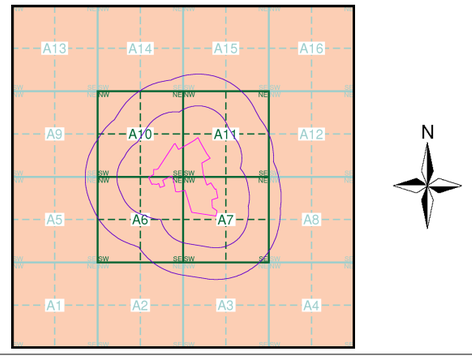
- High - 30 Year Return
- Medium - 100 Year Return
- Low - 1000 Year Return

Suitability

See the suitability map below

- National to county
- County to town
- Town to street
- Street to parcels of land
- Property

EA/NRW Suitability Map - Slice A



Order Details

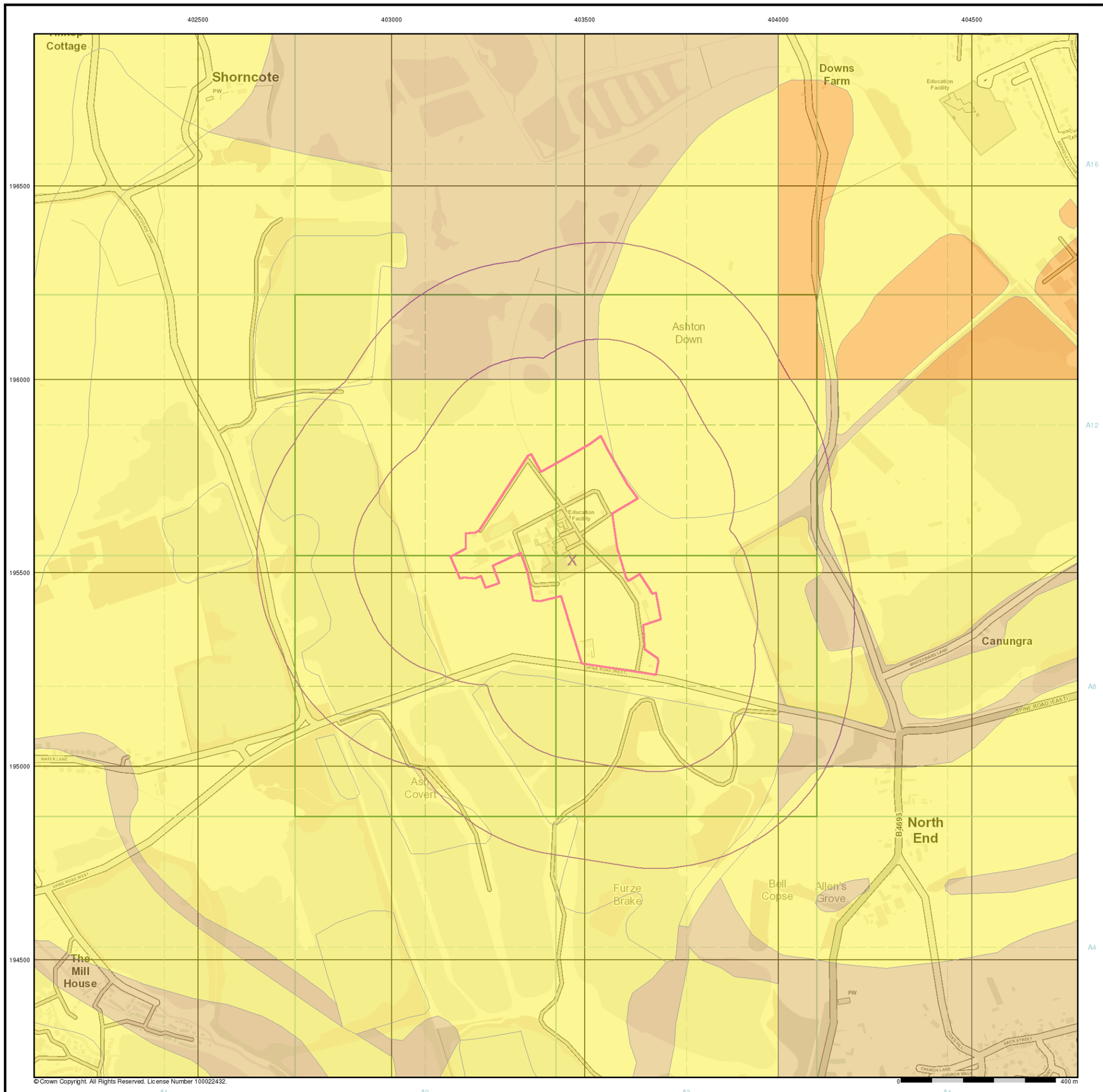
Order Number:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	500

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



Hydrock

General

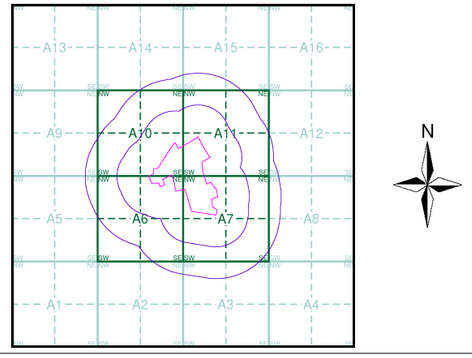
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Arsenic

Arsenic Concentrations mg/kg

- < 15
- 15 - 25
- 25 - 35
- 35 - 45
- 45 - 60
- 60 - 120
- > 120

Estimated Soil Chemistry Arsenic - Slice A

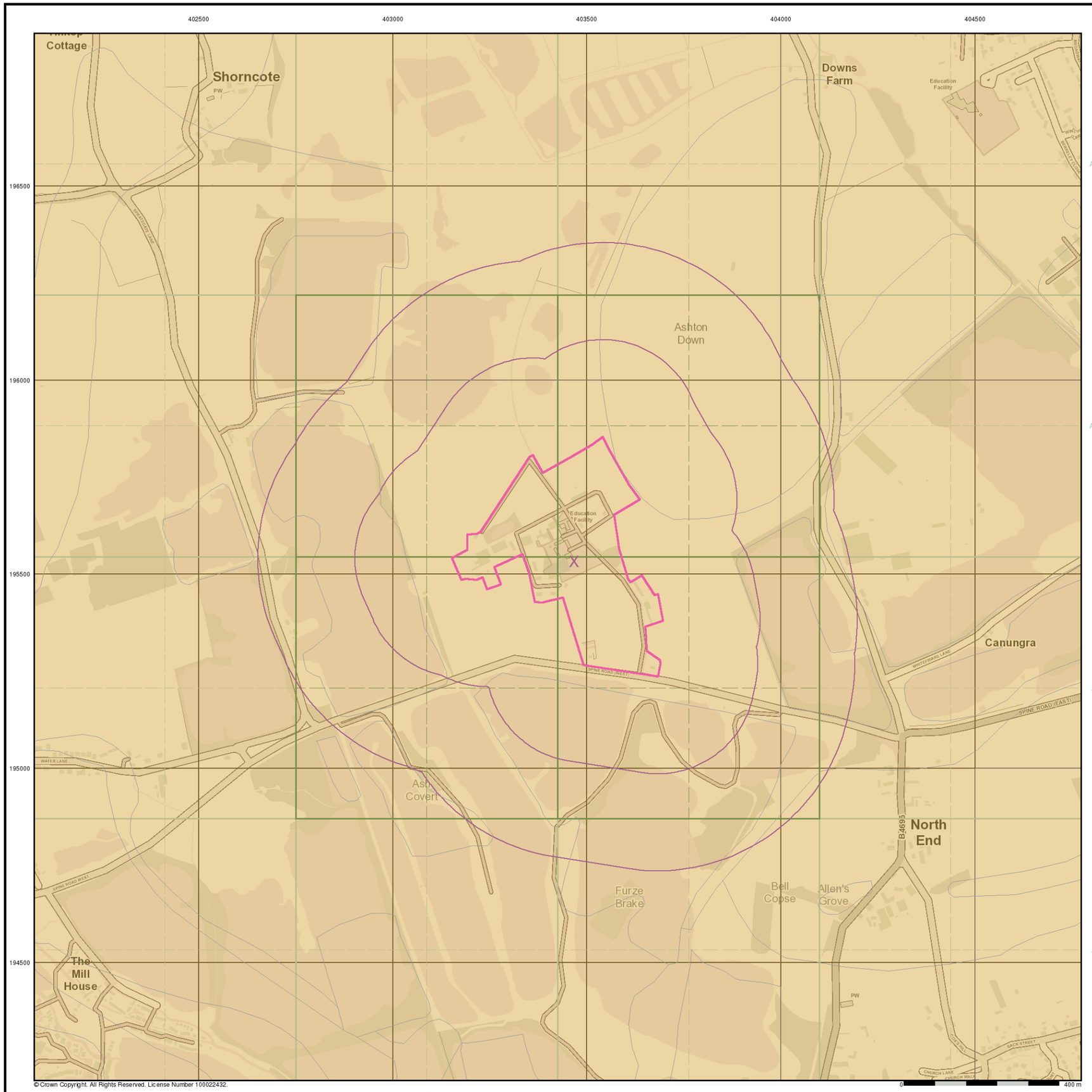


Order Details

Order Details:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	500

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU



© Crown Copyright. All Rights Reserved. License Number 100022432.

Hydrock

General

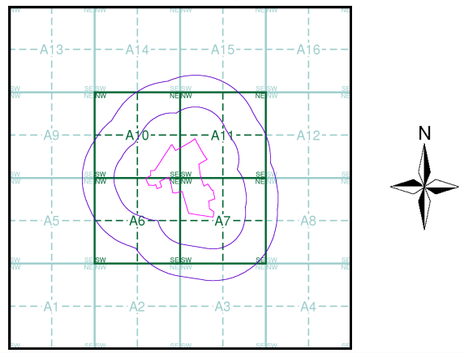
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Cadmium

Cadmium Concentrations mg/kg

- < 1.8
- 1.8 - 2.2
- 2.2 - 3.0
- > 3.0

Estimated Soil Chemistry Cadmium - Slice A



Order Details

Order Details:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	500

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



Hydrock

General

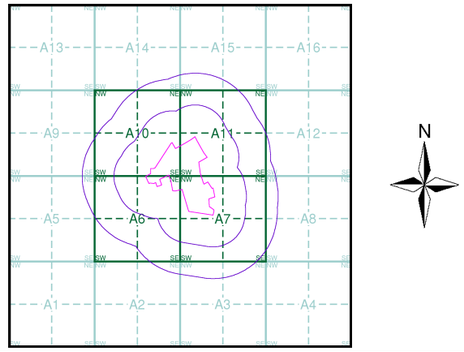
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Chromium

Chromium Concentrations mg/kg

- < 20
- 20 - 40
- 40 - 60
- 60 - 90
- 90 - 120
- 120 - 180
- > 180

Estimated Soil Chemistry Chromium - Slice A



Order Details

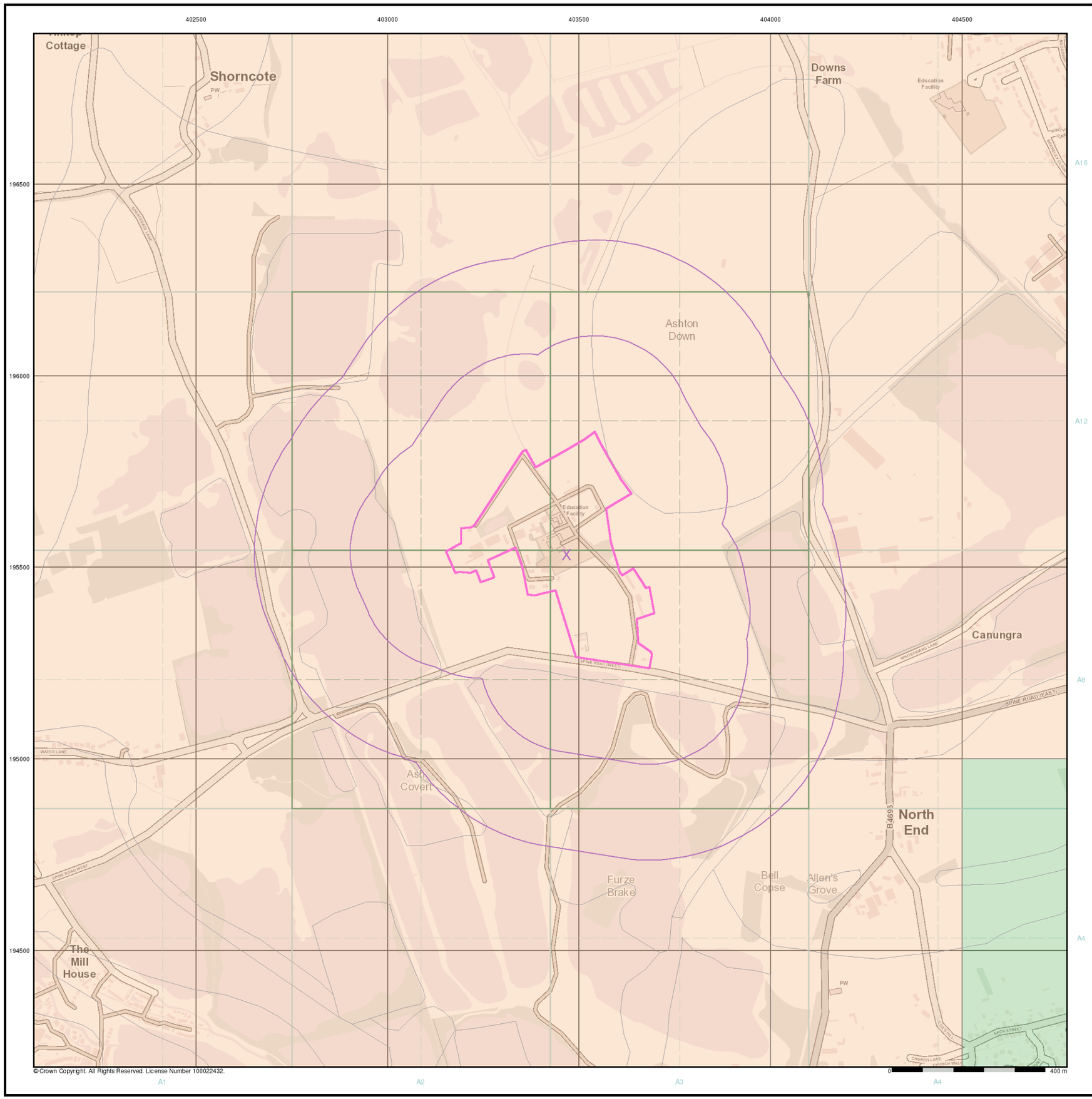
Order Details:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	500

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



© Crown Copyright. All Rights Reserved. License Number 100022432.

Hydrock

General

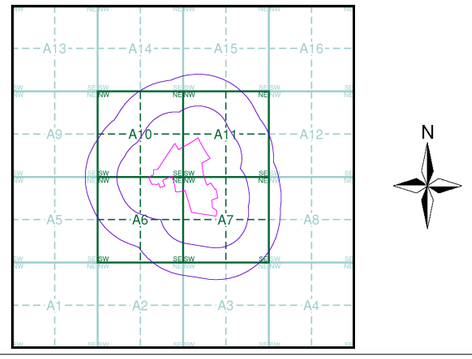
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Lead

Lead Concentrations mg/kg

- <100 mg/kg
- 100 - 200
- 200 - 300
- 300 - 600
- 600 - 1200
- >1200

Estimated Soil Chemistry Lead - Slice A



Order Details

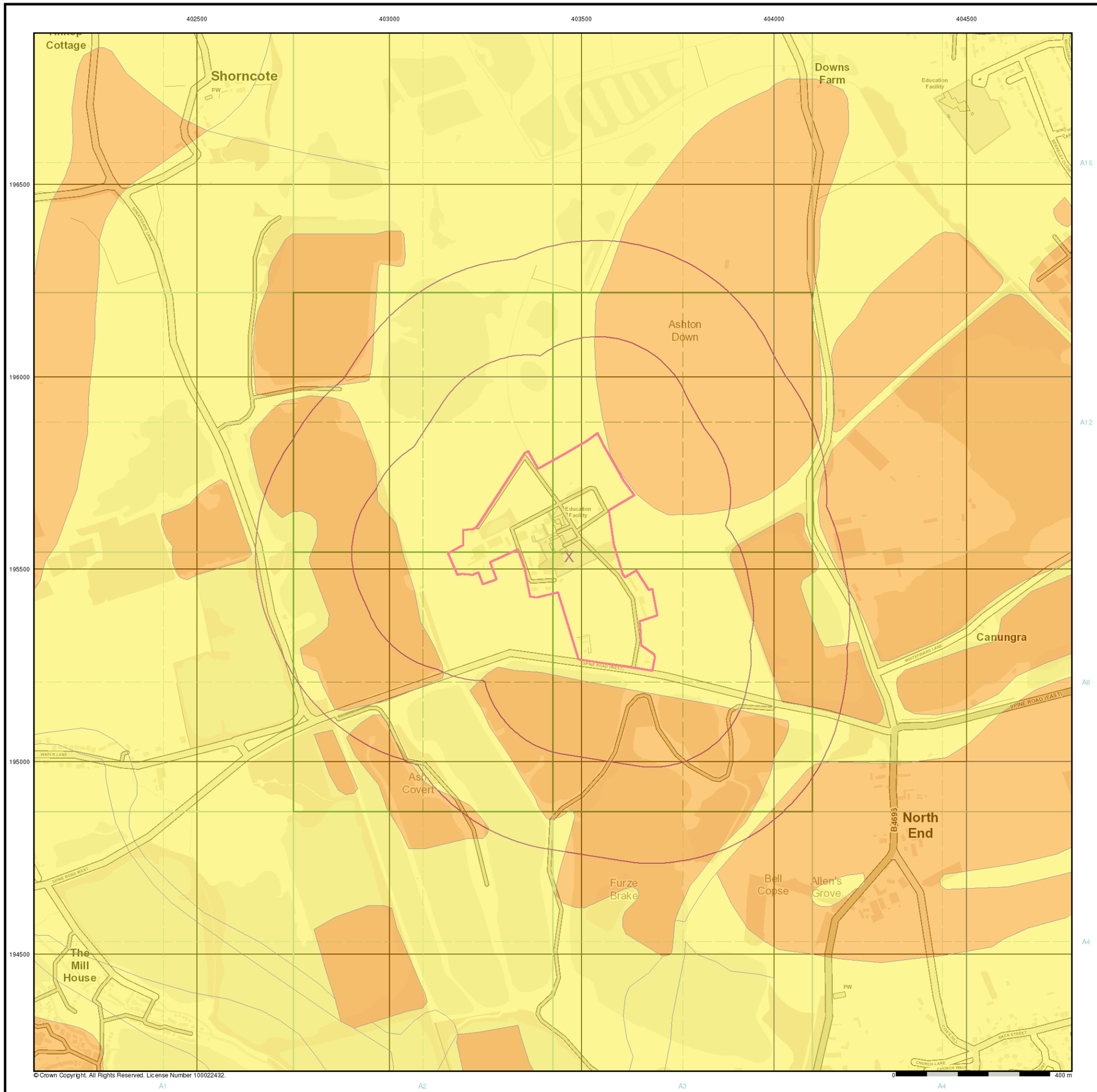
Order Details:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	500

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

Landmark INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



© Crown Copyright. All Rights Reserved. License Number 100022432.

Hydrock

General

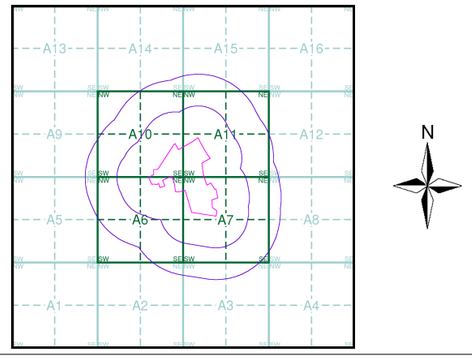
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Nickel

Nickel Concentrations mg/kg

- < 15
- 15 - 30
- 30 - 45
- 45 - 60
- 60 - 80
- 80 - 100
- > 100

Estimated Soil Chemistry Nickel - Slice A



Order Details

Order Details:	168381006_1_1
Customer Ref:	C-09612-C
National Grid Reference:	403470, 195530
Slice:	A
Site Area (Ha):	16.1
Search Buffer (m):	500

Site Details

Cotswold Community School, Ashton Keynes, Swindon, SN6 6QU

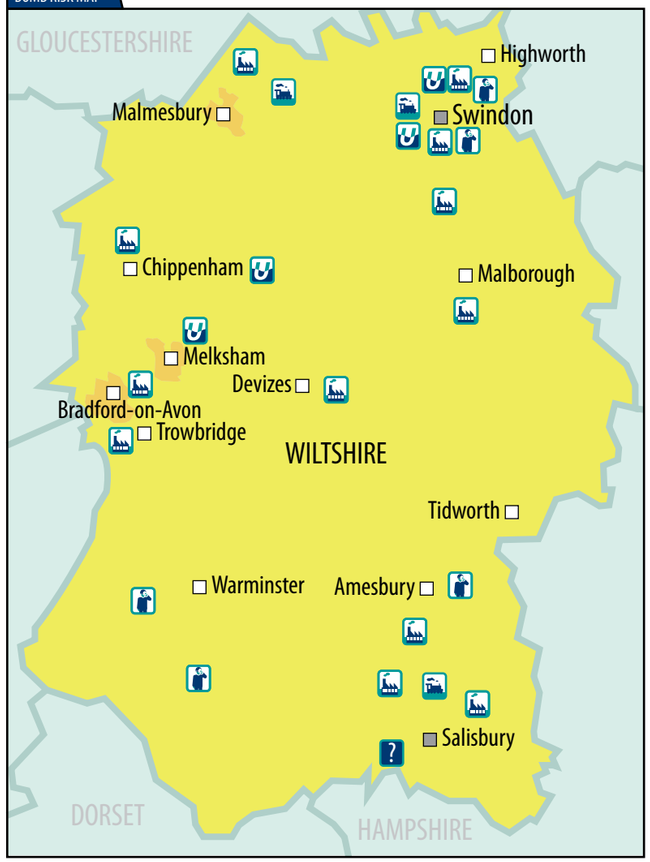
REGIONAL UNEXPLODED BOMB RISK

WILTSHIRE

DENSITY OF BOMBS PER BOROUGH

Borough	High explosive	Anti-personnel	Incendiary
Swindon	45	0	0
Malmesbury	175	0	0
Highworth	114	0	0
Devizes	194	0	0
Chippenham	18	0	0
Salisbury&Wilton	456	0	0
Marlborough&Ramsbury	175	0	0

BOMB RISK MAP



OTHER WWII TARGETS
- military
- transport
- utilities
- industry
- docks
- other

BOMB TONNAGE
- >1000
- >500
- >100
- > 0
- unverified

BOMB RISK
- high
- moderate
- low

The information in this regional UXB risk map is derived from a number of sources and should be read in conjunction with the "Users' Guide" (printed overleaf). Zetica cannot guarantee the accuracy or completeness of the information or data.

This map covers regions of coast with beaches, estuaries and alike. Further consideration of the bomb risk is required in these areas. The often inaccessible nature and changing ground conditions (e.g. movement of silt that may contain ordnance) means that historical bombing records for these areas are often poor or inaccurate and further assessment of the bomb risk may be required as part of a site specific study.

A FOUR-STEP PROCESS

Risk assessment and method statement from a qualified explosive ordnance clearance (EOC) operative.

Surface geophysical survey to allow shallow groundwork.

MAGCONE detects UXBs and obstructions on piling layout to the no-risk depth.

Detected UXBs can be dealt with by our EOC engineers and a Clearance Certificate issued for the site.

For more details on this and related services, telephone: +44 (0) 1993 886682 or visit our website: www.zetica.com

zetica

BOMB MAP USERS' GUIDE

Sources of information and explanation of bomb risk

Why?

Unexploded bombs (UXB) still present a risk to construction projects long after the end of the Second World War (WWII). UXBs often entered the ground unnoticed at high velocity and penetrated to a depth of several metres. Here they remain – vulnerable to disturbances from construction work. Beyond the depth of shallow excavation work, the greatest risk is to piling, drilling and probing crews. A piling rig could repeatedly hit a UXBs with considerable force before the crew realises an obstruction has been impacted. It could then be up to 72 hours before the detonator activates.

Who?

The responsibility for avoiding UXB risk usually lies with construction companies or house builders particularly those who are redeveloping urban sites. In addition, project engineering or environmental consultants are expected to advise their clients of a site's history. Other interested parties include those organisations whose employees are physically at most risk from intrusive works, normally piling companies, drillers or probing operators.

How?

UXB risk should be assessed for every site, but especially those in known heavily bombed areas or those situated near war-time strategic installations that were priority targets for enemy aircraft, for example, airfields. Zetica's regional bomb risk map is therefore a first point of reference from which the relative, potential abundance of UXBs can be judged. Consultants then advise their clients that an ordnance-risk desk study is required, which they may obtain from external sources. Construction companies or house builders who assess their own risk could choose to come direct to Zetica.

When?

Do not wait for the piling or drilling company to be on site before thinking about UXB risk – it will inevitably cause delays and higher costs. Request the regional bomb risk map from Zetica as soon as a site is being considered, and then use it to help you or your clients to decide if an ordnance-risk desk study is required.

Where?

Maps can be obtained for any county in England, Scotland, Wales or Northern Ireland – or for any London borough. They can help determine the areas that were most heavily bombed – but no part of the country should be considered 100% safe from UXB risk. Even remote rural areas can have a high risk if, for example, they were locations for decoy airfields or beacons that were lit to fool enemy pilots into thinking they had located a burning city that had been successfully hit by others in the raid.

How to use this regional map

This map is designed to give you an indication of the potential risk from UXBs in your area. If you are conducting work that involves excavation, piling or other disturbance of the ground, then you should use the map to identify the category of risk for your site.

The risk boundaries are a guide, compiled from data based on the political areas for which records are held; being just outside a high-risk area does not mean there is no UXB risk. You should use the map to assist in your decision of whether to investigate the UXB risk further.

Information on the regional risk remaining from UXBs in the UK

Zetica has built the largest UXB database of its kind in the UK. It includes a unique digital library of bomb census data, and maps showing key strategic points and bombing densities from the First and Second World Wars. The main sources of information include records from central government (Public Records Office), the Ministry of Defence, and the German Luftwaffe.

Using information from this database, Zetica has published maps of UXB risk on a regional, county and borough scale. The maps indicate relative degrees of UXB risk based on available records for bombing densities and known targeted areas for regions within the UK. The risk is broken down into individual boroughs, towns or cities. The data are based on the historical boroughs and are then overlaid onto the modern map. It is important to note that more-detailed research may be required for individual sites, particularly where proximity to a potential WWII target means the local risk may be higher.

High risk

Areas designated as high risk are those that show a high density of bombing hits (50+ bombs per 1000 acres) and abundant potential WWII targets. In high-risk regions, further action to mitigate UXB risk is considered essential.

Moderate risk

Moderate-risk regions are those that show a bomb density of between 11 and 50 bombs per 1000 acres and that may contain potential WWII targets. Action to mitigate the risk is considered essential, albeit more likely that a reduced scope of work is required compared with that needed for high-risk regions.

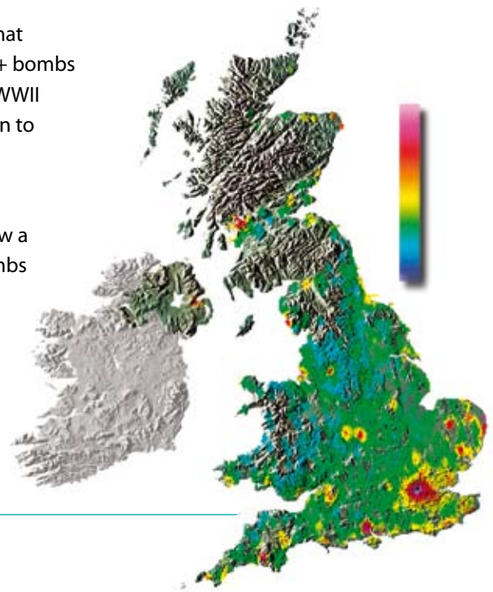
Low risk

Low-risk regions are those with a bombing density of up to 10 bombs per 1000 acres. These areas are considered to have a significant but low UXB risk. In general, further action to mitigate the risk is considered prudent, although not essential. Care is required when assessing the risk for specific sites where the risk may be higher because of local wartime activity.

Other WWII targets

Other regions with the risk of UXBs are key strategic points as defined by the government during WWII as representing potential enemy targets. Where these exist outside areas mapped as high, moderate or low risk, a site-specific assessment of the UXB risk may be required.

Relative UXB risk across UK



What to do if…

…you have a site that has a potential UXB risk

In the absence of current legislation requiring you to address the risk from UXBs, your responsibilities under health and safety legislation and regulations such as construction design and management require that you address all identified risks. The first stage is to request further advice from a professional adviser such as Zetica, or to gain more site-specific information by commissioning an ordnance-risk desk study. Then a strategy to deal with the risk can be established that is tailored to your proposed work.

…you find a suspect item or require advice

If during site works you find a suspect (ordnance-related) item, it is very important that you do not touch or move it (even if it has already been moved by an excavator). If it is clearly ordnance related, then dial 999 and ask for the police. Ensure that the area around the item is kept as clear as possible without placing yourself at risk. If you are unsure and do not wish to cause undue alarm, or you just require some advice, then you can call Zetica. We have experienced qualified UXB specialists on hand who can offer support and advice during any site works.

More-detailed procedures should be established in advance if you are in an area where the risk of finding a UXB is shown to be significant (moderate to high).

Site-specific desktop studies

Zetica is able to provide high-quality, site-specific UXB risk information for any residential, industrial or commercial property in the UK. These desktop studies provide details of the bombing density within an area and for the site itself, in order to indicate the risks of UXBs still being present. A risk assessment is provided to facilitate informed decision making on whether any further risk mitigation measures are required.

UNEXPLODED BOMB RISK MAP

SITE LOCATION

Location: SN6 6QU,
Map Centre: 403231,195541



LEGEND

- **High:** Areas indicated as having a bombing density of 50 bombs per 1000acre or higher.
- **Moderate:** Areas indicated as having a bombing density of 15 to 49 bombs per 1000acre.
- **Low:** Areas indicated as having 15 bombs per 1000acre or less.

miltary | **industry** | **UXO find**
transport | **dock** | **Luftwaffe targets**
utilities | **other**

How to use your Unexploded Bomb (UXB) risk map?

The map indicates the potential for Unexploded Bombs (UXB) to be present as a result of World War Two (WWII) bombing.

You can incorporate the map into your preliminary risk assessment* for potential Unexploded Ordnance (UXO) for a site. Using this map, you can make an informed decision as to whether more in-depth detailed risk assessment* is necessary.

What do I do if my site is in a moderate or high risk area?

Generally, we recommend that a detailed UXO desk study and risk assessment is undertaken for sites in a moderate or high UXB risk area.

More often than not, this further detailed research will conclude that the potential for a significant UXO hazard to be present on your site is actually low.

Never plan site work or undertake a risk assessment using these maps alone. More detail is required, particularly where there may be a source of UXO from other military operations which are not reflected on these maps.

If my site is in a low risk area, do I need to do anything?

If both the map and other research confirms that there is a low potential for UXO to be present on your site then, subject to your own comfort and risk tolerance, works can proceed with no special precautions.

A low risk really means that there is no greater probability of encountering UXO than anywhere else in the UK.

If you are unsure whether other sources of UXO may be present, you can ask for one of our **pre-desk study assessments (PDSA)**

If I have any questions, who do I contact?

tel: **+44 (0) 1993 886682**

email: **uxo@zetica.com**

web: **www.zeticauxo.com**

The information in this UXB risk map is derived from a number of sources and should be used in conjunction with the accompanying notes on our website: **(https://zeticauxo.com/downloads-and-resources/risk-maps/)**

Zetica cannot guarantee the accuracy or completeness of the information or data used and cannot accept any liability for any use of the maps. These maps can be used as part of a technical report or similar publication, subject to acknowledgment. The copyright remains with Zetica Ltd.

It is important to note that this map is not a UXO risk assessment and should not be reported as such when reproduced.

*Preliminary and detailed UXO risk assessments are advocated as good practice by industry guidance such as CIRIA C681 'Unexploded Ordnance (UXO), a guide for the construction industry'.

Appendix E

Ground Investigation Plan, Exploratory Hole Logs and Photographs



Plate 11: TP01



Plate 12: TP01 arisings



Plate 13: TP02



Plate 14: Base of TP02



Plate 15: TP03



Plate 16: Base of TP03



Plate 17: TP04 with concrete removed



Plate 18: Unidentified buried pipe at base of handpit in TP04



Plate 19: TP05



Plate 20: Base of TP05



Plate 21: TP06



Plate 22: Base of TP06

Hydrock

Project: Cotswold Community School, Ashton Keynes

Borehole No
BH01
Page No. 1 of 1

Method: Cable Percussion	Date(s): 10/05/2018 - 11/05/2018	Logged By: SM	Drilled By: CJA
Client: Acorn Property Group		Checked By: KS	Flush: Water
Hydrock Project No: C-09612-C			Scale: 1:55

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
0.20	D			Dark brown slightly sandy gravelly CLAY. Gravel is sub-angular to sub-rounded fine to medium of limestone. Frequent fine rootlets. (TOPSOIL)	0.20	(0.20)			
0.50	D			Medium dense creamy brown sandy sub-angular to sub-rounded fine to coarse GRAVEL of limestone. Sand is medium to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)					
1.00	D								
1.20	SPT	N=31 (4,7,7,7,8,9)							
1.50	D								
2.00	SPT	N=25 (3,5,5,6,7,7)							
2.50	D					(4.80)			
3.00	SPT	N=26 (7,5,6,7,6,7)							
3.50	D								
4.00	SPT	N=28 (3,7,6,7,7,8)							
4.50	D								
5.00	SPT	N=24 (5,4,5,6,6,7)		Medium dense creamy brown clayey sandy to dense sub-angular to sub-rounded fine to coarse GRAVEL of limestone. Sand is medium to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)	5.00	(0.50)			
5.50	D			Stiff blue grey slightly sandy CLAY with occasional fossil shell fragments. (KELLAWAYS CLAY MEMBER)	5.50				
6.00	SPT	N=35 (3,5,8,9,9,9)							
6.50	D								
7.00	SPT	N=34 (4,7,8,8,9,9)							
7.50	D								
8.00	SPT	N=32 (4,6,7,7,9,9)				(4.95)			
8.50	D								
9.00	SPT	N=40 (6,7,8,10,11,11)							
9.50	D								
10.00	SPT	N=40 (5,7,8,8,11,13)							
				End of Borehole at 10.45m	10.45				

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
CP	10/05	0900	0.00	0.00			Water	Grey
CP	10/05	1700	8.00	6.00	103	1.90	Water	Grey
CP	11/05	0009	8.00	6.00	103	1.90	Water	Grey
CP	11/05	0014	10.45	6.00	103	1.90	Water	Grey

Chiselling

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

General Remarks:
Location scanned with CAT and Genny prior to excavation. Handpit excavated to 1.2m prior to drilling. Borehole terminated at proposed base depth with SPT at 10.45m.

Groundwater: Encountered at 2.1m (rising to 1.9m) and 5.2m (rising to 3.3m)

Logged in general accordance with BS5930:2015

OS NORTH

TP04
TP03
TP02
TP06
TP05
TP01
BH01

KEY

Trial pit

Borehole

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.	REVISION NOTES/COMMENTS					
	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE
P1	FIRST ISSUE					
	AT	24/05/18	SM	24/05/18	KS	24/05/18

Hydrock
Over Court Barns
Over Lane
Almondsbury, Bristol BS32 4DF
TEL: 01454 619 533
FAX: 01454 614 125
E-Mail: bristol@hydrock.com
or visit www.hydrock.com

CLIENT

ACORN PROPERTY GROUP

PROJECT

ASHTON KEYNES

TITLE

EXPLORATORY HOLE
LOCATION PLAN

HYDROCK PROJECT NO.	SCALE @ A3
C-09612-C	1:1250

PURPOSE OF ISSUE	STATUS
SUITABLE FOR INFORMATION	S2

DRAWING NO. (PROJECT CODE-ORGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER)	REVISION
CCS-HYD-XX-GI-DR-G-1001	P1

Hydrock	Project: Cotswold Community School, Ashton Keynes	Trialpit No TP01 Page No. 1 of 1

Method: Trial Pit	Date(s): 10/05/2018	Logged By: SM	Checked By:
Client: Acorn Property Group		Stability: Stable	Dimensions: 2.20m x 0.60m
Hydrock Project No: C-09612-C		Plant: JCB 3CX	Scale: 1:13

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
0.20 0.20	D ES			Brown and grey sandy sub-angular to sub-rounded fine to coarse gravel of mixed lithologies. Sand fine to coarse. (MADE GROUND)	0.35	(0.35)		
0.40 0.40	D ES			Dark brown gravelly CLAY. Gravel is sub-angular to sub-rounded fine to medium of limestone. (TOPSOIL)	0.50	(0.15)		
0.80 0.80	D ES			Medium dense [inferred] creamy brown sandy sub-angular to sub-rounded fine to coarse GRAVEL of limestone. Sand is fine to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)	1	(1.50)		
1.30 1.30	D ES							
2.00 2.00 2.00	B D ES		▼	Base of Excavation at 2.00m	2.00			

General Remarks:
Location scanned with CAT & Genny prior to excavation. Groundwater encountered at 2.0m bgl. No visual or olfactory evidence of contamination. Trial pit backfilled with arisings.

Logged in general accordance with BS5930:2015

Hydrock	Project: Cotswold Community School, Ashton Keynes	Trialpit No TP02 Page No. 1 of 1

Method: Trial Pit	Date(s): 10/05/2018	Logged By: SM	Checked By:
Client: Acorn Property Group		Stability: Stable	Dimensions: 2.20m x 0.60m / Scale: 1:13
Hydrock Project No: C-09612-C		Plant: JCB 3CX	

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
0.20 0.20	D ES			Dark brown gravelly CLAY. Gravel is sub-angular to sub-rounded fine to medium of limestone. (TOPSOIL)	0.30	(0.30)		
0.50 0.50	D ES			Soft brown sandy gravelly CLAY. Gravel is sub-angular to sub-rounded fine to medium of limestone.	0.80	(0.50)		
1.00 1.00	D ES			Medium dense [inferred] creamy brown very sandy sub-angular to sub-rounded fine to coarse GRAVEL of limestone. Sand is fine to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)	1.80	(1.00)		
1.70 1.70	B D		▼	Base of Excavation at 1.80m				

General Remarks:
Location scanned with CAT & Genny prior to excavation. Groundwater encountered at 1.7m bgl. No visual or olfactory evidence of contamination. Trial pit backfilled with arisings.

Logged in general accordance with BS5930:2015

Hydrock

Project: Cotswold Community School, Ashton Keynes	Trialpit No TP03 Page No. 1 of 1

Method: Trial Pit	Date(s): 10/05/2018	Logged By: SM	Checked By:
Client: Acorn Property Group		Stability: Stable	Dimensions: 2.20m x 0.60m / Scale: 1:13
Hydrock Project No: C-09612-C		Plant: JCB 3CX	

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
0.20 0.20	D ES			Dark brown gravelly CLAY. Gravel is sub-angular to sub-rounded fine to medium of limestone. (TOPSOIL)	0.30	(0.30)		
0.50 0.50	D ES			Soft brown sandy gravelly CLAY. Gravel is sub-angular to sub-rounded fine to medium of limestone.	0.60	(0.30)		
1.00 1.00	D ES			Medium dense [inferred] creamy brown sandy sub-angular to sub-rounded fine to coarse GRAVEL of limestone. Sand is fine to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)	1.50	(0.90)		
1.60 1.60	B D			Medium dense [inferred] yellow brown very sandy sub-angular to sub-rounded fine to coarse GRAVEL of limestone. Sand is fine to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)	1.80	(0.30)		
				Base of Excavation at 1.80m				

General Remarks:
Location scanned with CAT & Genny prior to excavation. Groundwater encountered at 1.8m bgl. No visual or olfactory evidence of contamination. Trial pit backfilled with arisings.

Logged in general accordance with BS5930:2015

Hydrock

Project: Cotswold Community School, Ashton Keynes	Trialpit No TP04 Page No. 1 of 1

Method: Trial Pit	Date(s): 10/05/2018	Logged By: SM	Checked By:
Client: Acorn Property Group		Stability: Stable	Dimensions: 1.50m / 0.60m — Scale: 1:13
Hydrock Project No: C-09612-C		Plant: JCB 3CX	

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
				CONCRETE (MADE GROUND)	0.15	(0.15)		
0.20 0.20	D ES			Soft brown and grey CLAY with frequent medium to coarse gravel of brick and concrete fragments and occasional brick and concrete cobbles. (MADE GROUND)	0.70	(0.55)		
0.50 0.50	D ES			Base of Excavation at 0.70m				

General Remarks:
Location scanned with CAT & Genny prior to excavation. Water pipe access cover encountered below concrete. Trial pit progressed beyond this point using handpitting methodology. Unidentified service encountered at 0.7m. No groundwater encountered. Trial pit backfilled with arisings.

Logged in general accordance with BS5930:2015

Hydrock

Project: Cotswold Community School, Ashton Keynes

Trialpit No
TP05
Page No. 1 of 1

Method: Trial Pit	Date(s): 10/05/2018	Logged By: SM	Checked By:
Client: Acorn Property Group		Stability: Stable	Dimensions: 2.20m x 0.60m / Scale: 1:13
Hydrock Project No: C-09612-C		Plant: JCB 3CX	

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
0.20 0.20	D ES			Soft brown sandy gravelly CLAY. Gravel is sub-angular to sub-rounded fine to medium of limestone. Occasional brick and concrete fragments. (MADE GROUND) *... Concrete block at 0.4m.*	0.60	(0.60)		
0.50 0.50	D ES			Medium dense [inferred] creamy brown very sandy sub-angular to sub-rounded fine to coarse GRAVEL of limestone. Sand is coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)				
1.00 1.00	D ES				1	(1.20)		
1.60 1.60	B D			Base of Excavation at 1.80m	1.80			
					2			

General Remarks:
Location scanned with CAT & Genny prior to excavation. Groundwater encountered at 1.7m bgl. No visual or olfactory evidence of contamination. Trial pit backfilled with arisings.

Logged in general accordance with BS5930:2015

Hydrock

Project: Cotswold Community School, Ashton Keynes	Trialpit No TP06 Page No. 1 of 1

Method: Trial Pit	Date(s): 10/05/2018	Logged By: SM	Checked By:
Client: Acorn Property Group		Stability: Stable	Dimensions: 2.20m x 0.60m / Scale: 1:13
Hydrock Project No: C-09612-C		Plant: JCB 3CX	

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
0.20 0.20	D ES			Brown and grey sandy sub-angular to sub-rounded fine to coarse gravel of mixed lithologies. Occasional fine to medium gravel of asphalt. Sand is fine to coarse. (MADE GROUND)	0.30	(0.30)		
0.50 0.50	D ES			Medium dense [inferred] creamy brown sandy sub-angular to sub-rounded fine to coarse GRAVEL of limestone. Sand is medium to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)				
1.00 1.00	D ES				1	(1.60)		
1.50	D							
				Base of Excavation at 1.90m	1.90			
					2			

General Remarks:
Location scanned with CAT & Genny prior to excavation. Groundwater encountered at 1.9m bgl. No visual or olfactory evidence of contamination. Trial pit backfilled with arisings.

Logged in general accordance with BS5930:2015

Appendix F

Geotechnical Test Results and SPT Depth Plots

TEST CERTIFICATE

Determination of Liquid and Plastic Limits

Tested in Accordance with BS1377-2: 1990: Clause 4.4 & 5: One Point Method

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

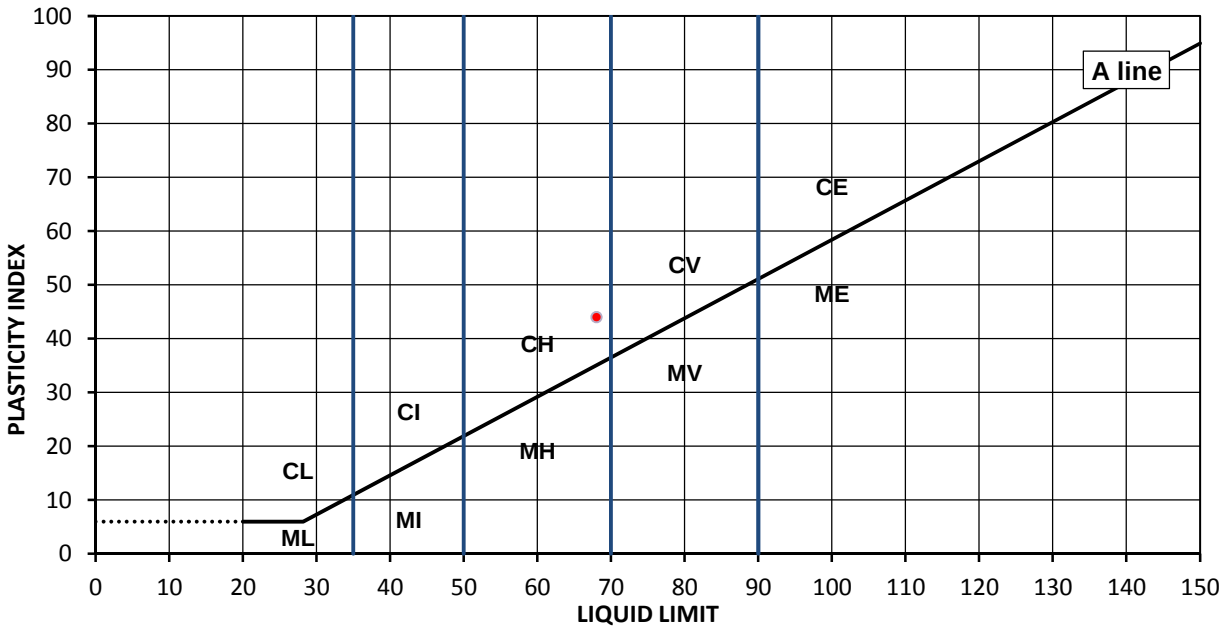
4041

Client:	Hydrock Consultants Ltd	Client Reference:	C-09612-C
Client Address:	Over Court Barns Over Lane Bristol BS32 4DF	Job Number:	18-85802
		Date Sampled:	10/05/2018
		Date Received:	16/05/2018
Contact:	Shay Marriott	Date Tested:	23/05/2018
Site Name:	Cotsworld Community School, Ashton Keynes	Sampled By:	SM
Site Address:	Not Given		

Test Results

Laboratory Reference:	962870	Depth Top [m]:	0.50
Hole No.:	TP02	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Brown slightly gravelly CLAY		
Sample Preparation:	Tested after washing to remove >425um		

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
20	68	24	44	66



Legend, based on BS 5930:2015 Code of practice for site investigations

		Plasticity		Liquid Limit
C	Clay	L	Low	below 35
M	Silt	I	Medium	35 to 50
		H	High	50 to 70
		V	Very high	70 to 90
		E	Extremely high	exceeding 90
	Organic	O	append to classification for organic material (eg CHO)	

Remarks:

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Date Reported: 30/05/2018

Signed:

Darren Berrill
Geotechnical General Manager

for and on behalf of i2 Analytical Ltd

"Opinions and interpretations expressed here in 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 are representative of the samples submitted for analysis.
The analysis was carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland."

TEST CERTIFICATE

Determination of Liquid and Plastic Limits

Tested in Accordance with BS1377-2: 1990: Clause 4.4 & 5: One Point Method

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

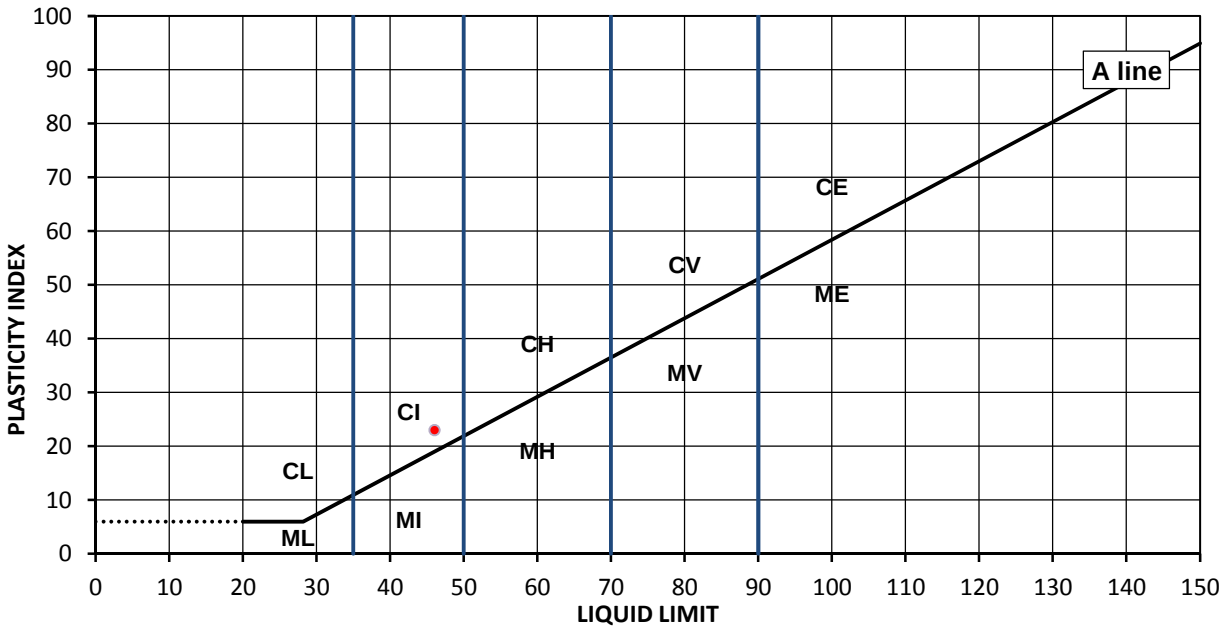
4041

Client:	Hydrock Consultants Ltd	Client Reference:	C-09612-C
Client Address:	Over Court Barns Over Lane Bristol BS32 4DF	Job Number:	18-85802
		Date Sampled:	10/05/2018
		Date Received:	16/05/2018
Contact:	Shay Marriott	Date Tested:	22/05/2018
Site Name:	Cotsworld Community School, Ashton Keynes	Sampled By:	SM
Site Address:	Not Given		

Test Results

Laboratory Reference:	962872	Depth Top [m]:	0.50
Hole No.:	TP03	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Yellowish brown slightly gravelly slightly sandy CLAY		
Sample Preparation:	Tested after washing to remove >425um		

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
14	46	23	23	68



Legend, based on BS 5930:2015 Code of practice for site investigations

		Plasticity		Liquid Limit
C	Clay	L	Low	below 35
M	Silt	I	Medium	35 to 50
		H	High	50 to 70
		V	Very high	70 to 90
		E	Extremely high	exceeding 90
	Organic	O	append to classification for organic material (eg CHO)	

Remarks:

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Date Reported: 30/05/2018

Signed:

Darren Berrill
Geotechnical General Manager

for and on behalf of i2 Analytical Ltd

"Opinions and interpretations expressed here in 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 are representative of the samples submitted for analysis.
The analysis was carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland."

TEST CERTIFICATE

Summary of Classification Test Results

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

Client: Hydrock Consultants Ltd
Client Address: Over Court Barns
Over Lane
Bristol
BS32 4DF
Contact: Shay Marriott
Site Name: Cotsworld Community School, Ashton Keynes
Site Address: Not Given

Client Reference: C-09612-C
Job Number: 18-85802
Date Sampled: 10/05/2018
Date Received: 16/05/2018
Date Tested: 22/05 - 23/05/2018
Sampled By: SM

Test results

Laboratory Reference	Hole No.	Sample				Soil Description	M/C	Atterberg				Density		Total Porosity
		Reference	Top depth [m]	Base depth [m]	Type		%	% Passing 425um %	LL %	PL %	PI %	bulk Mg/m3	PD Mg/m3	Mg/m3
962870	TP02	Not Given	0.50	Not Given	D	Brown slightly gravelly CLAY	20	66	68	24	44			
962872	TP03	Not Given	0.50	Not Given	D	Yellowish brown slightly gravelly slightly sandy CLAY	14	68	46	23	23			

Comments:

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Date Reported: 30/05/2018

Signed:

Darren Berrill
Geotechnical General Manager

for and on behalf of i2 Analytical Ltd

"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 are representative of the samples submitted for analysis.
The analysis was carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland."

TEST CERTIFICATE

Determination of Particle Size Distribution

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

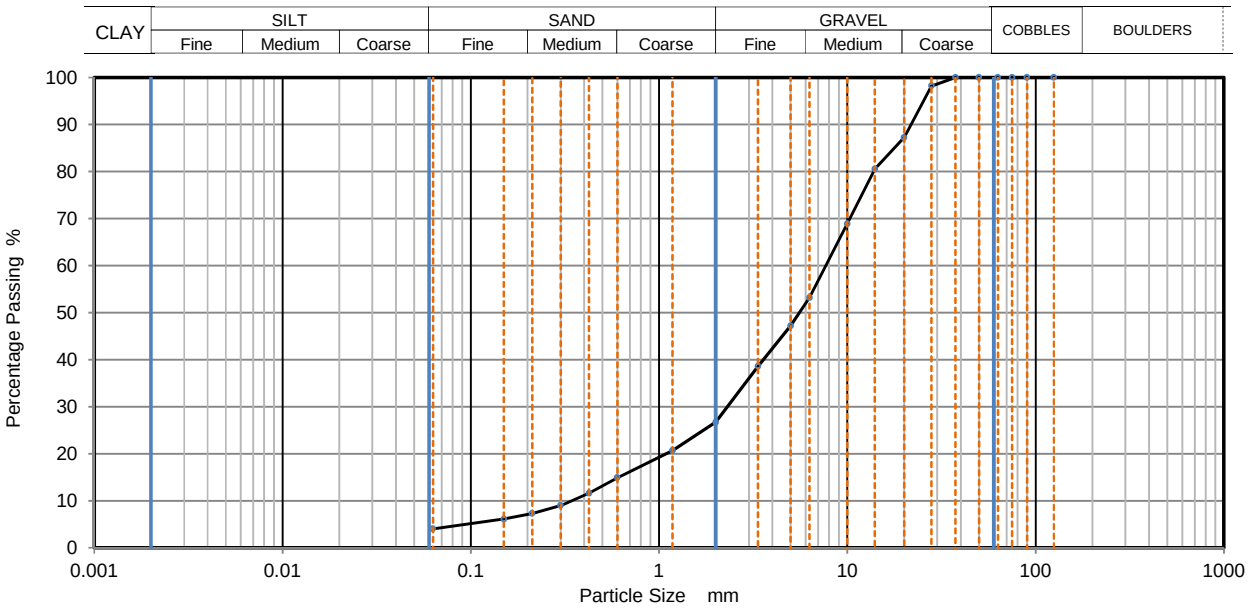
4041

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

Client:	Hydrock Consultants Ltd	Client Reference:	C-09612-C
Client Address:	Over Court Barns Over Lane Bristol BS32 4DF	Job Number:	18-85802
		Date Sampled:	10/05/2018
		Date Received:	16/05/2018
Contact:	Shay Marriott	Date Tested:	23/05/2018
Site Name:	Cotsworld Community School, Ashton Keynes	Sampled By:	SM
Site Address:	Not Given		

TEST RESULTS Laboratory Reference: 962869

Sample description:	Light brown sandy GRAVEL	Sample Reference:	Not Given
Location:	TP01	Sample Type:	D
Supplier:	Not Given	Depth Top [m]:	2.00
		Depth Base [m]:	Not Given



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	98		
20	87		
14	81		
10	69		
6.3	53		
5	47		
3.35	39		
2	27		
1.18	21		
0.6	15		
0.425	12		
0.3	9		
0.212	7		
0.15	6		
0.063	5		

Dry Mass of sample [g]: 8555

Sample Proportions	% dry mass
Very coarse	0.00
Gravel	73.30
Sand	21.80
Fines <0.063mm	4.80

Grading Analysis		
D100	mm	37.5
D60	mm	7.69
D30	mm	2.31
D10	mm	0.343
Uniformity Coefficient		22
Curvature Coefficient		2

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Signed:

Darren Berrill
Geotechnical General Manager

Date Reported: 30/05/2018

for and on behalf of i2 Analytical Ltd

"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 are representative of the samples submitted for analysis.
The analysis was carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland."

TEST CERTIFICATE

Determination of Particle Size Distribution

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

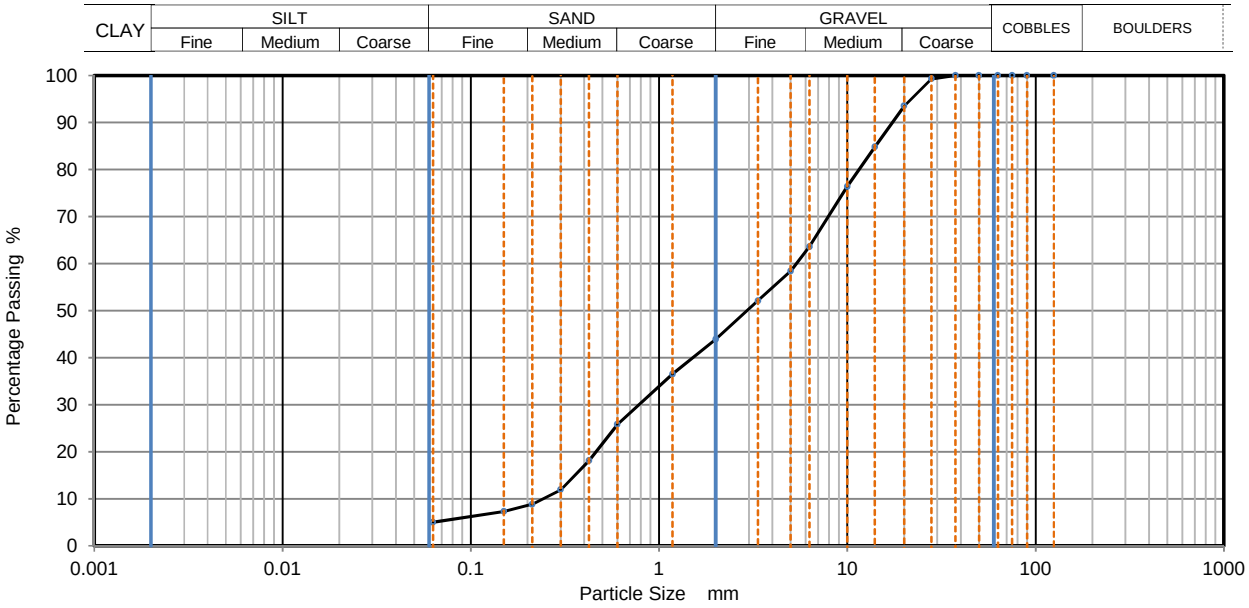
4041

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

Client:	Hydrock Consultants Ltd	Client Reference:	C-09612-C
Client Address:	Over Court Barns Over Lane Bristol BS32 4DF	Job Number:	18-85802
		Date Sampled:	10/05/2018
		Date Received:	16/05/2018
Contact:	Shay Marriott	Date Tested:	23/05/2018
Site Name:	Cotsworld Community School, Ashton Keynes	Sampled By:	SM
Site Address:	Not Given		

TEST RESULTS Laboratory Reference: 962871

Sample description:	Yellowish brown very sandy GRAVEL	Sample Reference:	Not Given
Location:	TP02	Sample Type:	D
Supplier:	Not Given	Depth Top [m]:	1.70
		Depth Base [m]:	Not Given



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	99		
20	94		
14	85		
10	76		
6.3	64		
5	58		
3.35	52		
2	44		
1.18	37		
0.6	26		
0.425	18		
0.3	12		
0.212	9		
0.15	7		
0.063	6		

Dry Mass of sample [g]: 8557

Sample Proportions	% dry mass
Very coarse	0.00
Gravel	56.10
Sand	38.30
Fines <0.063mm	5.60

Grading Analysis		
D100	mm	37.5
D60	mm	5.37
D30	mm	0.782
D10	mm	0.242
Uniformity Coefficient		22
Curvature Coefficient		0.47

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Signed:

Darren Berrill
Geotechnical General Manager

Date Reported: 30/05/2018

for and on behalf of i2 Analytical Ltd

"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 are representative of the samples submitted for analysis.
The analysis was carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland."

TEST CERTIFICATE

Determination of Particle Size Distribution

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

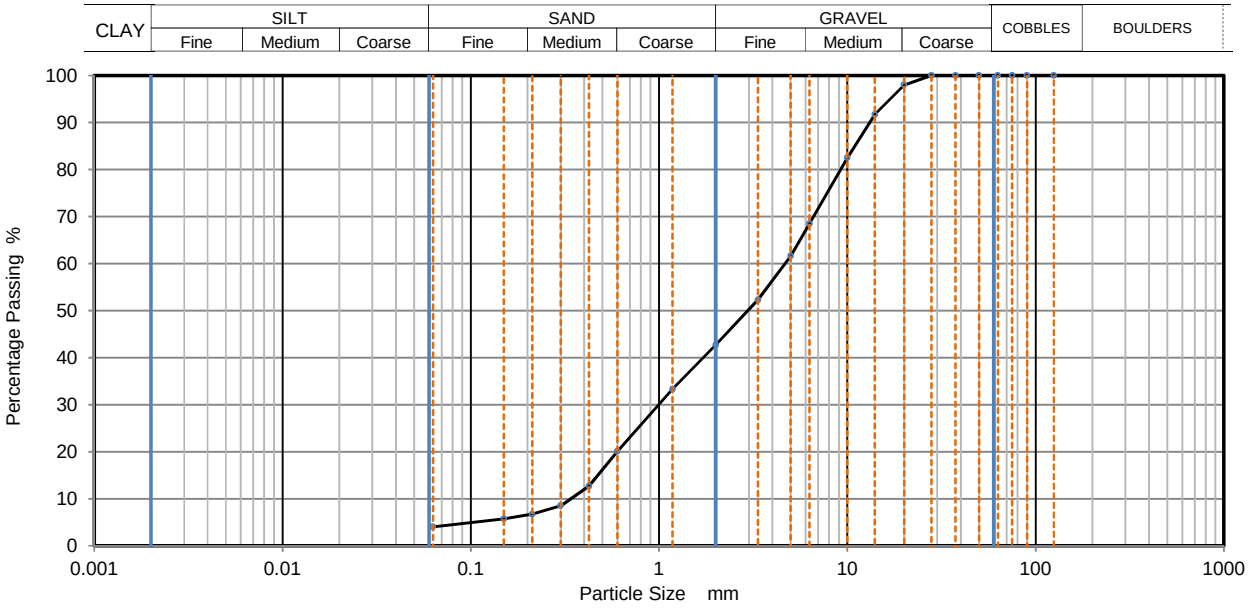
4041

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

Client:	Hydrock Consultants Ltd	Client Reference:	C-09612-C
Client Address:	Over Court Barns Over Lane Bristol BS32 4DF	Job Number:	18-85802
		Date Sampled:	10/05/2018
		Date Received:	16/05/2018
Contact:	Shay Marriott	Date Tested:	23/05/2018
Site Name:	Cotsworld Community School, Ashton Keynes	Sampled By:	SM
Site Address:	Not Given		

TEST RESULTS Laboratory Reference: 962873

Sample description:	Light brown very sandy GRAVEL	Sample Reference:	Not Given
Location:	TP03	Sample Type:	D
Supplier:	Not Given	Depth Top [m]:	1.60
		Depth Base [m]:	Not Given



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	98		
14	92		
10	83		
6.3	69		
5	62		
3.35	52		
2	43		
1.18	33		
0.6	20		
0.425	13		
0.3	9		
0.212	7		
0.15	6		
0.063	4		

Dry Mass of sample [g]: 2642

Sample Proportions	% dry mass
Very coarse	0.00
Gravel	57.30
Sand	38.60
Fines <0.063mm	4.10

Grading Analysis		
D100	mm	28
D60	mm	4.66
D30	mm	0.996
D10	mm	0.341
Uniformity Coefficient		14
Curvature Coefficient		0.62

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Signed:

Darren Berrill
Geotechnical General Manager

Date Reported: 30/05/2018

for and on behalf of i2 Analytical Ltd

"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 are representative of the samples submitted for analysis.
The analysis was carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland."

TEST CERTIFICATE

Determination of Particle Size Distribution

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

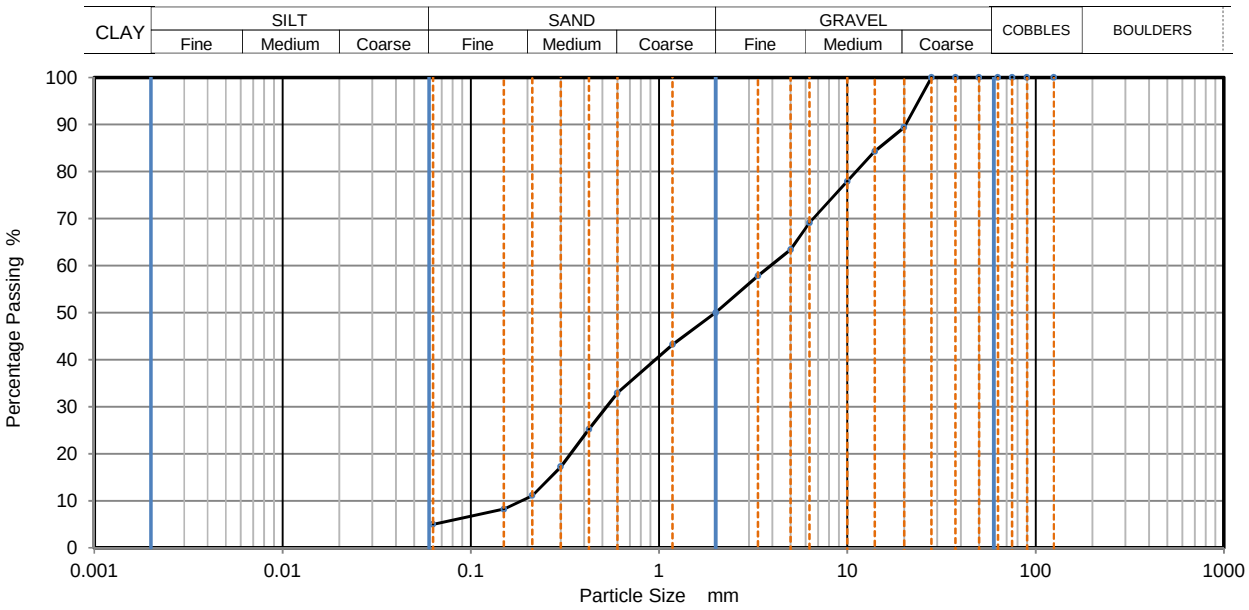
4041

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

Client:	Hydrock Consultants Ltd	Client Reference:	C-09612-C
Client Address:	Over Court Barns Over Lane Bristol BS32 4DF	Job Number:	18-85802
		Date Sampled:	10/05/2018
		Date Received:	16/05/2018
Contact:	Shay Marriott	Date Tested:	23/05/2018
Site Name:	Cotsworld Community School, Ashton Keynes	Sampled By:	SM
Site Address:	Not Given		

TEST RESULTS Laboratory Reference: 962874

Sample description:	Yellowish brown very sandy GRAVEL	Sample Reference:	Not Given
Location:	TP05	Sample Type:	D
Supplier:	Not Given	Depth Top [m]:	1.60
		Depth Base [m]:	Not Given



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	89		
14	84		
10	78		
6.3	69		
5	63		
3.35	58		
2	50		
1.18	43		
0.6	33		
0.425	25		
0.3	17		
0.212	11		
0.15	8		
0.063	6		

Dry Mass of sample [g]: 3760

Sample Proportions	% dry mass
Very coarse	0.00
Gravel	50.00
Sand	44.10
Fines <0.063mm	5.80

Grading Analysis		
D100	mm	28
D60	mm	3.93
D30	mm	0.528
D10	mm	0.187
Uniformity Coefficient		21
Curvature Coefficient		0.38

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Signed:

Darren Berrill
Geotechnical General Manager

Date Reported: 30/05/2018

for and on behalf of i2 Analytical Ltd

"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 are representative of the samples submitted for analysis.
The analysis was carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland."

Hydrock

Client	Location or material to which this assessment applies
Acorn Property Group	Made Ground, Northmoor Sands and Gravels and Groundwater
Project	
Cotswold Community School, Ashton Keynes	
Job number	
C-09612-C	

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	5
No. tests in 20% data set	1	1	1
No. tests with suspected pyrite		0	
Maximum value	18.2	0.1	2.7
Mean of highest two values	16	0	3
Mean of highest 20%			
Characteristic Value	**16**	**0**	**3**
			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)	27	0 **Mg not required**
DS Class	**DS-1**	

pH data

	Soil	Water
Number of tests	5	1
No. tests in 20% data set	1	0
Lowest pH	8.3	7.4
Mean of lowest 20%	8.3	
Characteristic value	**8.3**	**7.4**
Design value	**7.4**	
Number of soil pH results less than 5.5	0	

DS Class design value

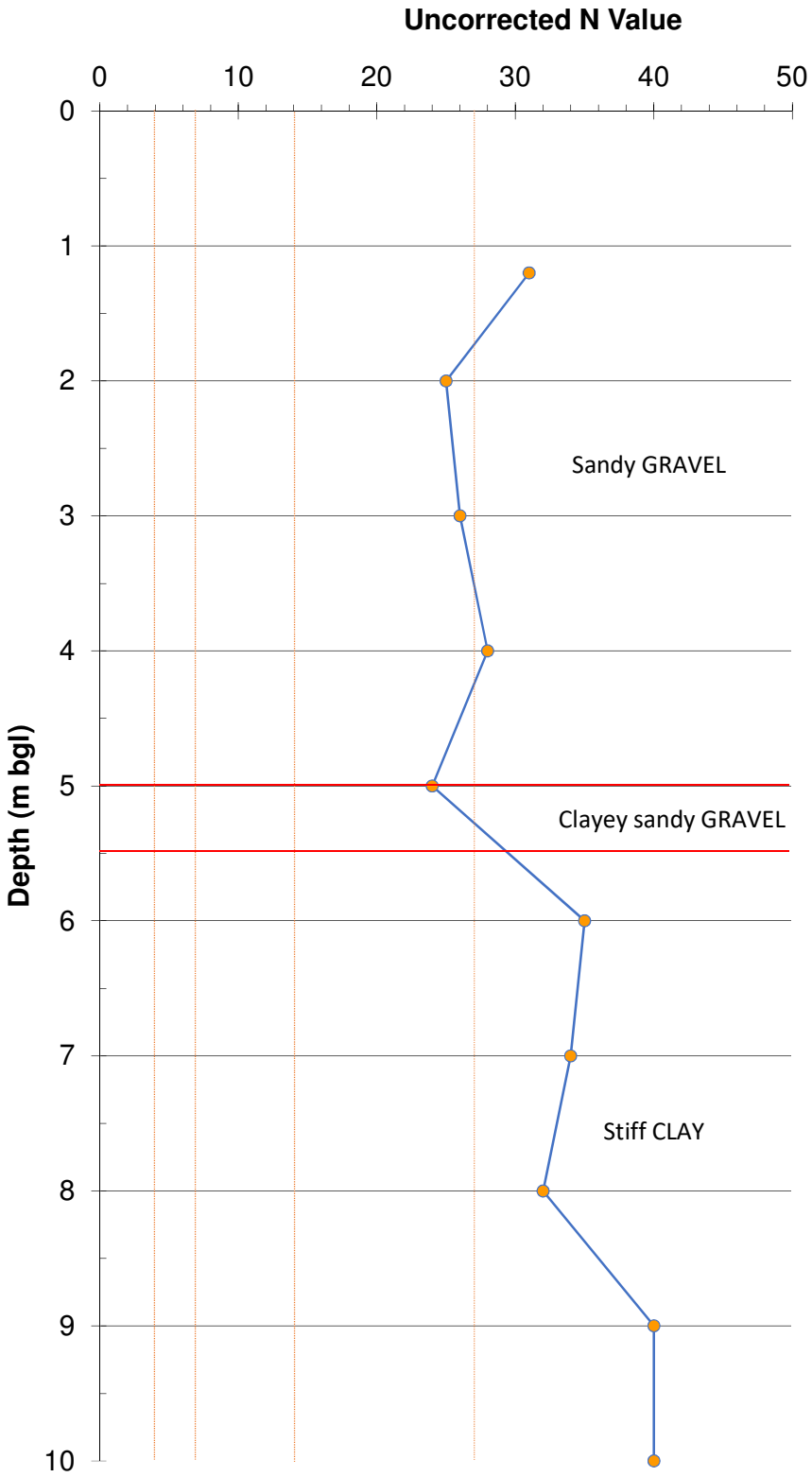
Based on higher of soil and water data **DS-1**

ACEC Class design value

Brownfield

Mobile groundwater **AC-1**

SPT vs Depth Plot - Cotswold Community School



Hydrock Consultants

Construction
Infrastructure
Environment

3 Hawthorn Park
Holdenby Road
Spratton
Northampton
NN6 8LD

United Kingdom

Tel: +44 (0)1604 842888
Fax: +44 (0)1604 842666

Email: northampton@hydrock.com

TEST CERTIFICATE

Determination of TRL Dynamic Cone Penetrometer

Tested in accordance with In TRL Road Note 31 & 8 and IAN 73/06 (2009 amendment)

Client: Acorn Property Group

Client Address: Thorens House
Beck Court
Cardiff

Postcode: CF23 8RP

Contact:

Site Name: Cotswold Community School

Site Address: Ashton Keynes
SN6 6QU

Certificate Number:

Client Reference:

Job Number: C-09612-C

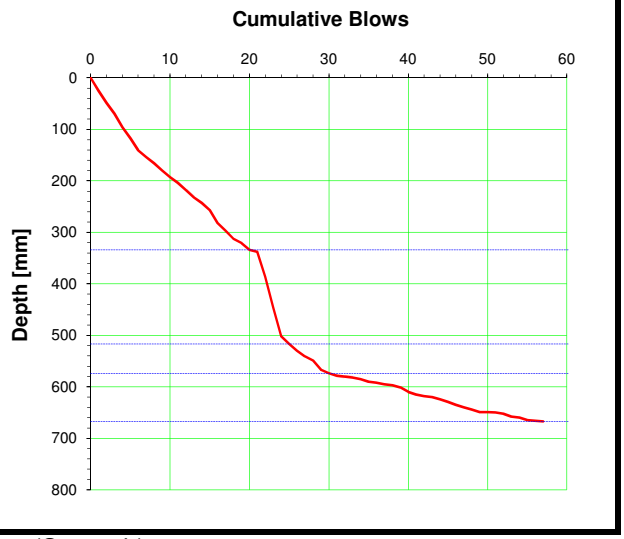
Date Received:

Date Tested: 11th May 2018

Test Results:

Sample Description: TRL DCP
Sample Number: DCP01
Start Depth [mm]: Surface
Test Location: TP01

Layer	No of Blows	Cumulative Blows	CBR [%]	Layer Thickness [mm]	Total Depth [mm]
MG	20	20		334	334
Topsoil	5	25		183	517
Layer 3	5	30	23	57	574
Layer 4	27	57	82	93	667



Comments: TRL Equation : $Log_{10}(CBR) = 2.480 - 1.057 \times Log_{10}(Strength)$

Approved Signatory:

Name: Shay Marriott

Signed:

Position: Geotechnical Engineer

Date Reported: 15th June 2018

Form Number: HD-TRL-DCP ver1

for and behalf of
Hydrock

Registered Office:
Hydrock Consultants Ltd
Over Court Barns
Over Lane Almondsbury
Bristol BS32 4DF U.K.

Hydrock
Consultants

Construction
Infrastructure
Environment

3 Hawthorn Park
Holdenby Road
Spratton
Northampton
NN6 8LD

United Kingdom

Tel: +44 (0)1604 842888
Fax: +44 (0)1604 842666

Email: northampton@hydrock.com

TEST CERTIFICATE

Determination of TRL Dynamic Cone Penetrometer

Tested in accordance with In TRL Road Note 31 & 8 and IAN 73/06 (2009 amendment)

Client: Acorn Property Group

Client Address: Thorens House
Beck Court
Cardiff

Postcode: CF23 8RP

Contact:

Site Name: Cotswold Community School

Site Address: Ashton Keynes
SN6 6QU

Certificate Number:

Client Reference:

Job Number: C-09612-C

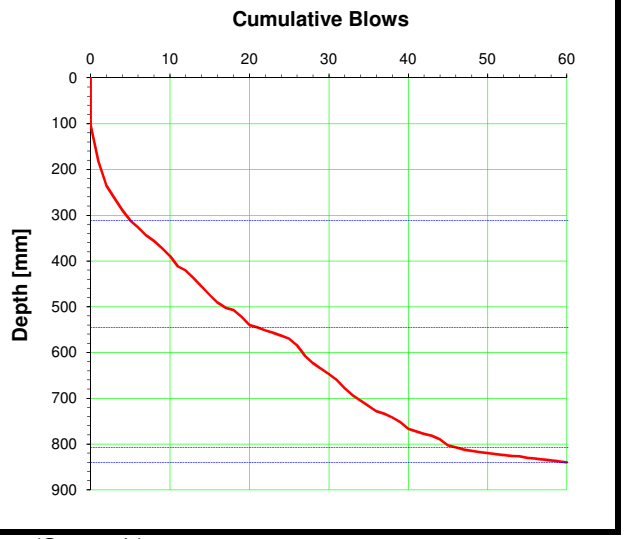
Date Received:

Date Tested: 11th May 2018

Test Results:

Sample Description: TRL DCP
Sample Number: DCP02
Start Depth [mm]: Surface
Test Location: TP02

Layer	No of Blows	Cumulative Blows	CBR [%]	Layer Thickness [mm]	Total Depth [mm]
TOPSOIL	5	5		312	312
Layer 2	16	21	18	233	545
Layer 3	25	46	25	262	807
Layer 4	14	60	>100	33	840



Comments: TRL Equation : $Log_{10}(CBR) = 2.480 - 1.057 \times Log_{10}(Strength)$

Approved Signatory:

Name: Shay Marriott

Signed:

Position: Geotechnical Engineer

Date Reported: 15th June 2018

Page 1 of 1

Form Number: HD-TRL-DCP ver1

for and behalf of
Hydrock

Registered Office:
Hydrock Consultants Ltd
Over Court Barns
Over Lane Almondsbury
Bristol BS32 4DF U.K.

Hydrock Consultants

Construction
Infrastructure
Environment

3 Hawthorn Park
Holdenby Road
Spratton
Northampton
NN6 8LD

United Kingdom

Tel: +44 (0)1604 842888
Fax: +44 (0)1604 842666

Email: northampton@hydrock.com

TEST CERTIFICATE

Determination of TRL Dynamic Cone Penetrometer

Tested in accordance with In TRL Road Note 31 & 8 and IAN 73/06 (2009 amendment)

Client: Acorn Property Group

Client Address: Thorens House
Beck Court
Cardiff

Postcode: CF23 8RP

Contact:

Site Name: Cotswold Community School

Site Address: Ashton Keynes
SN6 6QU

Certificate Number:

Client Reference:

Job Number: C-09612-C

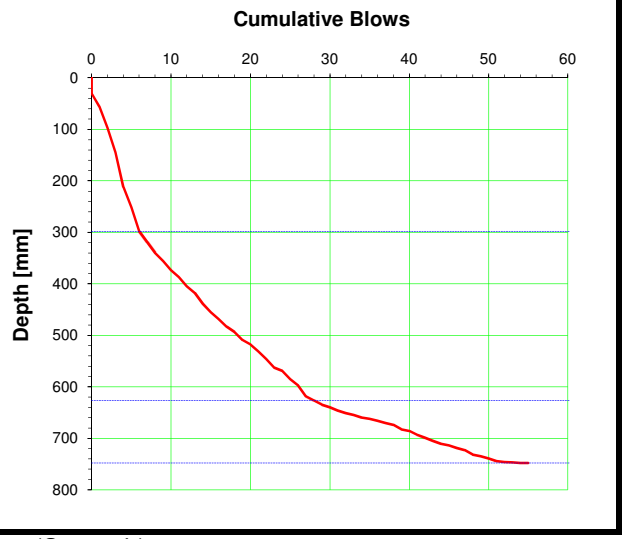
Date Received:

Date Tested: 11th May 2018

Test Results:

Sample Description: TRL DCP
Sample Number: DCP03
Start Depth [mm]: Surface
Test Location: TP03

Layer	No of Blows	Cumulative Blows	CBR [%]	Layer Thickness [mm]	Total Depth [mm]
TOPSOIL	6	6		298	298
Layer 2	22	28	17	329	627
Layer 3	27	55	62	121	748



Comments: TRL Equation : $Log_{10}(CBR) = 2.480 - 1.057 \times Log_{10}(Strength)$

Approved Signatory:

Name: Shay Marriott

Signed:

Position: Geotechnical Engineer

Date Reported: 15th June 2018

Form Number: HD-TRL-DCP ver1

for and behalf of
Hydrock

Registered Office:
Hydrock Consultants Ltd
Over Court Barns
Over Lane Almondsbury
Bristol BS32 4DF U.K.

Hydrock Consultants

Construction
Infrastructure
Environment

3 Hawthorn Park
Holdenby Road
Spratton
Northampton
NN6 8LD

United Kingdom

Tel: +44 (0)1604 842888
Fax: +44 (0)1604 842666

Email: northampton@hydrock.com

TEST CERTIFICATE

Determination of TRL Dynamic Cone Penetrometer

Tested in accordance with In TRL Road Note 31 & 8 and IAN 73/06 (2009 amendment)

Client: Acorn Property Group

Client Address: Thorens House
Beck Court
Cardiff

Postcode: CF23 8RP

Contact:

Site Name: Cotswold Community School

Site Address: Ashton Keynes
SN6 6QU

Certificate Number:

Client Reference:

Job Number: C-09612-C

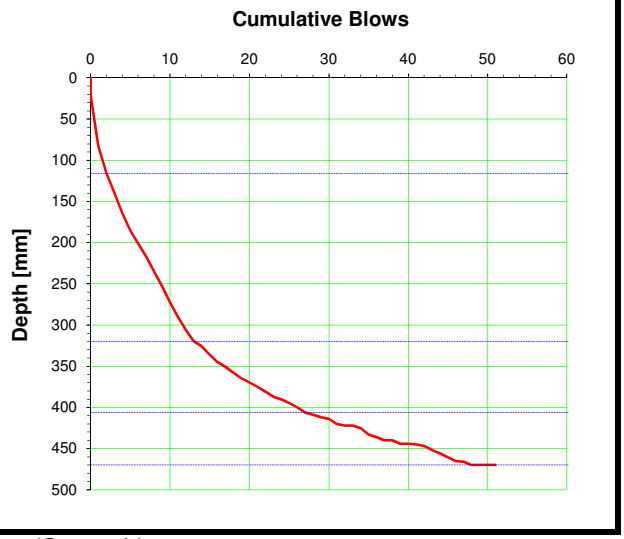
Date Received:

Date Tested: 11th May 2018

Test Results:

Sample Description: TRL DCP
Sample Number: DCP04
Start Depth [mm]: Surface
Test Location: BH01

Layer	No of Blows	Cumulative Blows	CBR [%]	Layer Thickness [mm]	Total Depth [mm]
TOPSOIL	2	2		116	116
Layer 2	11	13	14	204	320
Layer 3	14	27	44	86	406
Layer 4	24	51	>100	64	470



Comments: TRL Equation : $Log_{10}(CBR) = 2.480 - 1.057 \times Log_{10}(Strength)$

Approved Signatory:

Name: Shay Marriott

Signed:

Position: Geotechnical Engineer

Date Reported: 15th June 2018

Form Number: HD-TRL-DCP ver1

for and behalf of
Hydrock

Registered Office:
Hydrock Consultants Ltd
Over Court Barns
Over Lane Almondsbury
Bristol BS32 4DF U.K.

Hydrock Consultants

Construction
Infrastructure
Environment

3 Hawthorn Park
Holdenby Road
Spratton
Northampton
NN6 8LD

United Kingdom

Tel: +44 (0)1604 842888
Fax: +44 (0)1604 842666

Email: northampton@hydrock.com

TEST CERTIFICATE

Determination of TRL Dynamic Cone Penetrometer

Tested in accordance with In TRL Road Note 31 & 8 and IAN 73/06 (2009 amendment)

Client: Acorn Property Group

Client Address: Thorens House
Beck Court
Cardiff

Postcode: CF23 8RP

Contact:

Site Name: Cotswold Community School

Site Address: Ashton Keynes
SN6 6QU

Certificate Number:

Client Reference:

Job Number: C-09612-C

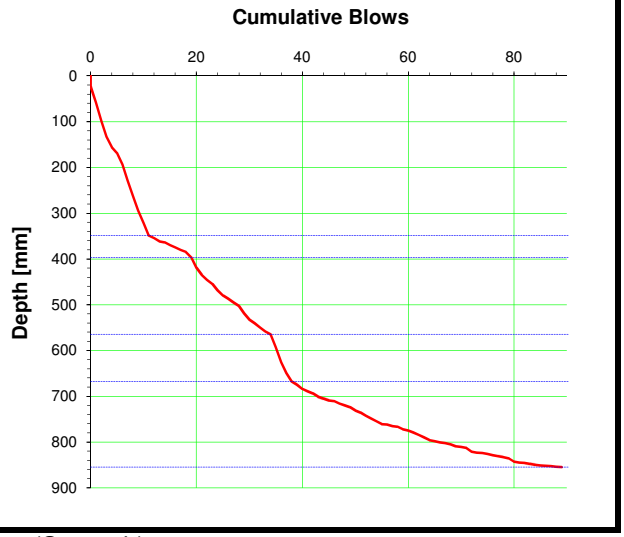
Date Received:

Date Tested: 11th May 2018

Test Results:

Sample Description: TRL DCP
Sample Number: DCP05
Start Depth [mm]: Surface
Test Location: TP05

Layer	No of Blows	Cumulative Blows	CBR [%]	Layer Thickness [mm]	Total Depth [mm]
Made Ground	11	11	8	349	349
	8	19	45	48	397
	15	34	23	168	565
Layer 4	1	35	2	103	668
Layer 5	54	89	81	187	855



Comments: TRL Equation : $Log_{10}(CBR) = 2.480 - 1.057 \times Log_{10}(Strength)$
Attempt 3 due to refusals on attempts 1 and 2.

Approved Signatory: Name: Shay Marriott Signed:

Position: Geotechnical Engineer

Date Reported: 15th June 2018 Page 1 of 1
Form Number: HD-TRL-DCP ver1

for and behalf of
Hydrock
Registered Office:
Hydrock Consultants Ltd
Over Court Barns
Over Lane Almondsbury
Bristol BS32 4DF U.K.

Hydrock Consultants

Construction
Infrastructure
Environment

3 Hawthorn Park
Holdenby Road
Spratton
Northampton
NN6 8LD

United Kingdom

Tel: +44 (0)1604 842888
Fax: +44 (0)1604 842666

Email: northampton@hydrock.com

TEST CERTIFICATE

Determination of TRL Dynamic Cone Penetrometer

Tested in accordance with In TRL Road Note 31 & 8 and IAN 73/06 (2009 amendment)

Client: Acorn Property Group

Client Address: Thorens House
Beck Court
Cardiff

Postcode: CF23 8RP

Contact:

Site Name: Cotswold Community School

Site Address: Ashton Keynes
SN6 6QU

Certificate Number:

Client Reference:

Job Number: C-09612-C

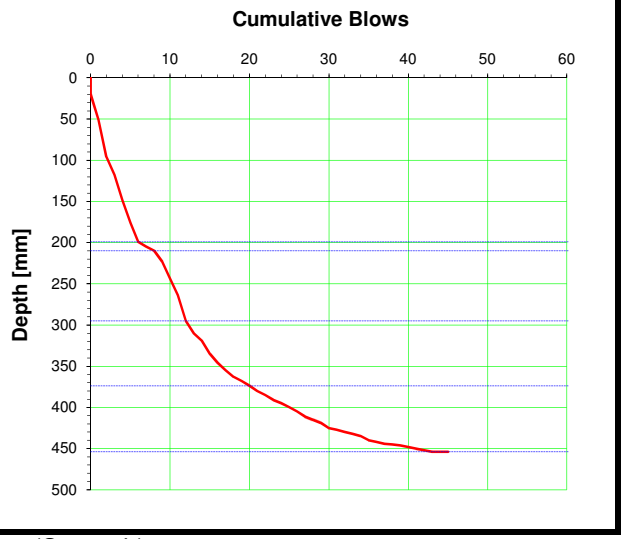
Date Received:

Date Tested: 11th May 2018

Test Results:

Sample Description: TRL DCP
Sample Number: DCP06
Start Depth [mm]: Surface
Test Location: TP06

Layer	No of Blows	Cumulative Blows	CBR [%]	Layer Thickness [mm]	Total Depth [mm]
Made Ground	6	6	7	199	199
	2	8	50	11	210
	4	12	12	85	295
Layer 4	8	20	27	79	374
Layer 5	25	45	88	80	454



Comments: TRL Equation : $Log_{10}(CBR) = 2.480 - 1.057 \times Log_{10}(Strength)$

Approved Signatory:

Name: Shay Marriott

Signed:

Position: Geotechnical Engineer

Date Reported: 15th June 2018

Form Number: HD-TRL-DCP ver1

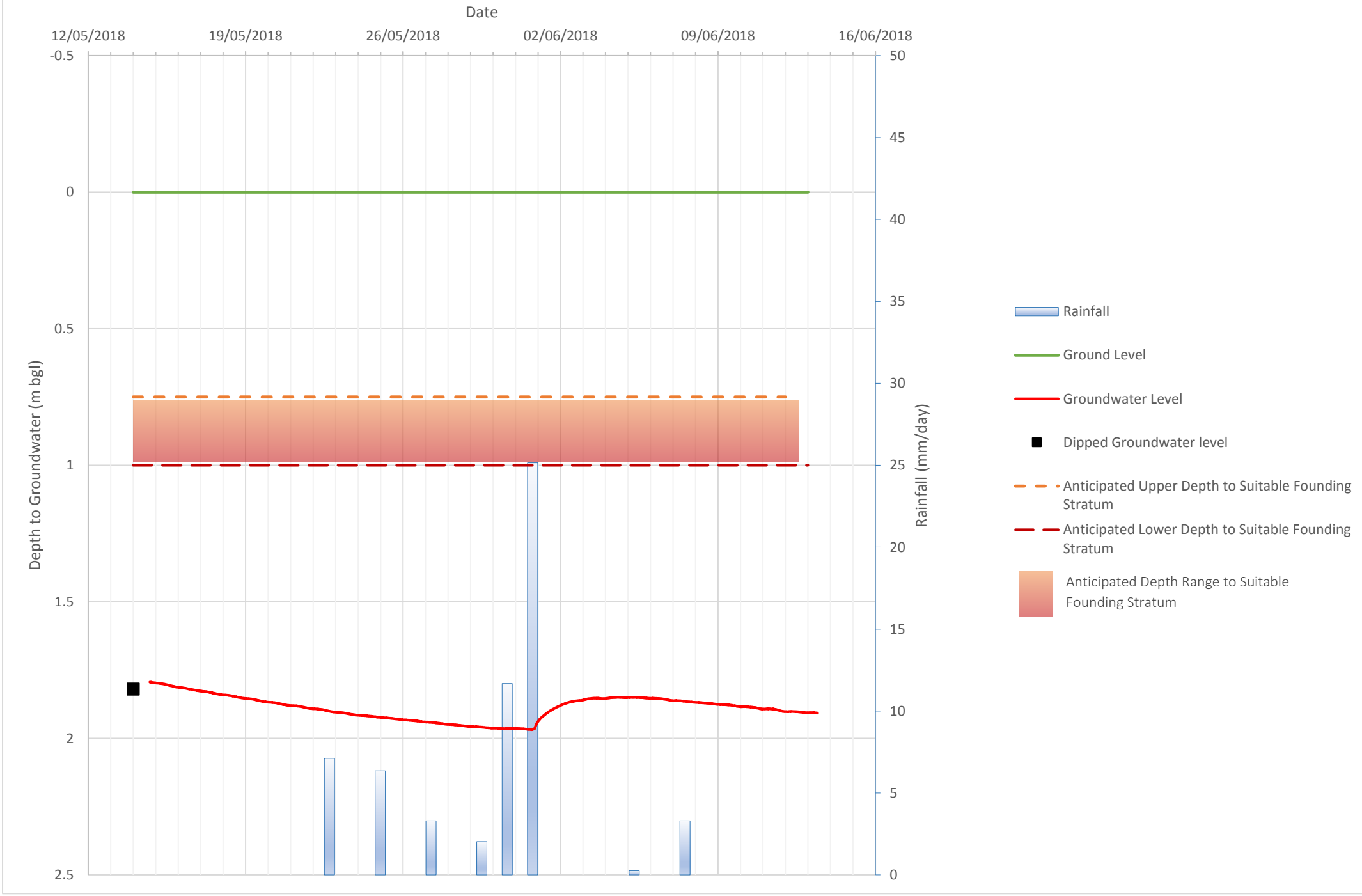
for and behalf of
Hydrock

Registered Office:
Hydrock Consultants Ltd
Over Court Barns
Over Lane Almondsbury
Bristol BS32 4DF U.K.

Appendix G

Site Monitoring Data

C-09612-C Cotswold Community School, Ashton Keynes - BH01 - Groundwater Level Monitoring



Appendix H

Hydrock Methodolody

1.0 HYDROCK REPORT APPENDIX ON HYDROCK METHODOLOGY

This appendix provides additional background information on certain approaches and methods used by Hydrock Consultants Ltd in the preparation of this report.

Throughout the report the term 'geotechnical' is used to describe aspects relating to the physical nature of the site (such as foundation requirements) and the term 'geo-environmental' is used to describe aspects relating to ground-related environmental issues (such as potential contamination). However, it should be appreciated that this is an integrated investigation and these two main aspects are inter-related. The geo-environmental sections are written in broad agreement with BS 10175:2011+A1:2013.

The **first stage** of a two-staged investigation and assessment of a site is the Preliminary Investigation (BS 10175:2011+A1:2013), often referred to as the Phase 1 Study[1], comprising desk study and walk-over survey, which culminates in the Preliminary Risk Assessment. A preliminary conceptual site model (CSM) is developed. From this are identified any geotechnical and geo-environmental hazards and the qualitative degree of risk associated with them. From the geo-environmental perspective, the Hazard Identification process uses professional judgement to evaluate all the hazards in terms of **possible contaminant linkages** (of source-pathway-receptor). Possible contaminant linkages are potentially unacceptable risks in terms of the current contaminated land regime legal framework and require either remediation or further assessment. These are normally addressed via intrusive ground investigation and generic risk assessment.

The **second stage** is the Ground Investigation, Generic Risk Assessment and Geotechnical Interpretation. This represents the further assessment mentioned above. The Ground Investigation comprises field work and laboratory testing based on the findings of the Preliminary Risk Assessment, to reduce uncertainty in the geotechnical and geo-environmental hazard identification. This may include the Exploratory, Main and Supplementary Investigations described in BS 10175:2011+A1:2013.

For the geotechnical aspects of the report, the general requirements of Eurocode 7 (BS EN 1997-2:2007) are to produce a Ground Investigation Report (GIR) which shall form part of the Geotechnical Design Report (GDR). The geotechnical section of this report is intended to fulfil the general requirements of the GIR as outlined in BS EN 1997-2, Section 6.

The GIR contains the factual information including geological features and relevant data, and a geotechnical evaluation of the information stating the assumptions made in the interpretation of the test results.

[1] Please note that it does not refer to a site development phase.

2.0 SITE INVESTIGATION INFORMATION

2.1 Unexploded Ordnance

Clients have a legal duty under the CDM 2015 Regulations to provide designers and contractors with project-specific health and safety information needed to identify hazards and risks. This includes the possibility of unexploded ordnance (UXO) being encountered on the site. Further details are given in CIRIA report C681 (Stone *et al* 2009).

A non-specialist UXO screening exercise has been carried out for the site by considering (a) any evidence of UK defence activities on or near the site evident from the gathered desk study information and (b) the unexploded aerial delivered bomb (UXB) regional risk maps produced by Zetica. Other data sources are available, but as a first stage screening exercise the freely available Zetica maps have been used. The level of risk stated is that determined by Zetica, a company experience in the desk study, field investigation and clearance of UX0/UXB.

2.2 Hydrogeology

Under the Water Framework Directive the designations of principal and secondary aquifers is based on the Environment Agency interactive aquifer designation map. Where aquifers have been mapped, and they are capable of sustaining a yield of 10 m^3/day or supplying 50 people on a continuous basis, the Environment Agency has designated a number of Groundwater Bodies to help manage water quality under the River Basin Management Plans. Groundwater Bodies are defined based on their support for ecosystems as well as their capacity to supply drinking water. Note that some localised small aquifers capable of supporting the above supply may be too small to map and can be identified only by investigation.

Where an aquifer exists and it contains groundwater but is incapable of sustaining the above supply, the groundwater is not part of a Groundwater Body and may not be considered a strategic resource. In which case the groundwater is not a receptor, but can be a pathway to other receptors by virtue of its ability to transport contaminants.

2.3 Geotechnical Testing

Derived values of geotechnical parameters and/or coefficients are obtained from test results, by theory, correlation or empiricism in line with BS EN 1997-2:2007, Section 1.6.

Where derived geotechnical parameters are to be used in designs in accordance with EC7, there are two further stages of interpretation that will be carried out by the geotechnical designer. The first of these is the selection of **characteristic values** for geotechnical parameters using the derived values and complemented by well-established experience as per EN BS 1997-1:2004, Section 2.4.5.2. The characteristic value is a cautious estimate of the value affecting the occurrence of the limit state. Consequently, any particular material type may have more than one characteristic value for each parameter because there may be more than one limit state depending what is being designed.

The second stage is the selection of **design values** as per EN BS 1997-1:2004, Section 2.4.6.2. The design values is either derived from the characteristic value by applying the relevant partial

factor or is assessed directly. Similarly, there can be several design values for the same material type.

In the event that geotechnical designs are included in this report, selection of the characteristic and design values is included. Otherwise, it is the duty of the geotechnical designer to determine these within a separate design report.

3.0 RISK ASSESSMENT RATIONALE

The work presented in this report has been carried out in accordance with recognised best practice as detailed in guidance documents such as in the CLR 11 Model Procedures (Environment Agency 2004a), GP3 (Environment Agency August 2013), BS 5930:2015 and BS 10175:2011+A1:2013. Important aspects of the risk assessment process are transparency and justification. The particular rationale behind the risk assessments presented is given in this appendix.

A preliminary risk assessment is made of both geotechnical and geo-environmental hazards identified at the desk study stage and confirmed (or amended) at the ground investigation stage. In the case of geo-environmental hazards this is based on a simple matrix of probability of occurrence versus the consequence, as explained below, and is referred to as the **exposure model**. In the case of the geotechnical hazard identification, this is referred to as the **ground model**.

The geo-environmental risk assessment process proceeds to the next level, the generic risk assessment, in which actual contaminant concentrations are considered.

3.1 Preliminary Risk Assessment

In line with the CLR 11 Model Procedures (Environment Agency 2004a), the Preliminary Risk Assessment includes a geo-environmental Hazard Identification, which seeks to list all the suspected contaminant **sources**, the **receptors** that might be harmed by those sources and the **pathways** via which the sources might reach the receptors to cause the harm. The source-pathway-receptor concept is known as a contaminant linkage (formerly a pollutant linkage) and only when a linkage is complete is there any possibility of risk of harm arising.

The Hazard Identification process uses professional judgement to evaluate all the hazards in terms of **possible contaminant linkages**. Possible contaminant linkages are potentially unacceptable risks in terms of the current contaminated land regime legal framework and require either remediation or further assessment. These are normally addressed via intrusive ground investigation and the chemical analysis of soil and water samples.

Where no ground investigation has been carried out (i.e. in a desk study only report) there is greater uncertainty in the information available and so a geoenvironmental consequences and probability assessment is undertaken.

Some linkages may be identified which constitute a theoretical connection between a source and a receptor, but professional judgement shows them not to be possible for some reason. These are labelled ‘no linkage’ in the summary table and no further action is required. If a linkage is possible, a comparison is made of consequence against probability in accordance with the guidance given in CIRIA Report C552 (Rudland *et al* 2001), but is modified as mentioned below.

Classification of consequences and probability are given in CIRIA Report C552 Tables 6.3 and 6.4, respectively, but there are a number of inconsistencies in the original Table 6.3, in particular relating to ‘significant harm or significant possibility of significant harm’ (SH/SPOSH). Consequently, the table has been updated by Hydrock in line with current practice and the

revision presented in R&D Publication 66, Annex 4 (NHBC and Environment Agency. 2008, and is given in Table 3.1 below.

The basis of the classification is that 'severe' and 'medium' are likely to result in SH/SPOSH as defined by the EPA 1990, Part 2A, with 'severe' resulting in acute harm. 'Mild' lies below the level of SH/SPOSH but above the level of 'no harm' as implied by the relevant Generic assessment criterion (GAC, see below). Minor lies below the 'no harm' level.

Table 3.1: Classification of Consequences of Geo-environmental Risks

Classification of Consequences for Geo-environmental Risks		
Classification	**Definition**	**Examples**
Severe	Concentration of contaminants is likely to (or is known from previous data to) exceed that indicative of unacceptable intake or contact. Highly elevated concentrations **likely** to result in "significant harm" to human health as defined by the EPA 1990, Part 2A, if exposure occurs. I.e. >>SH/SPOSH, concentrations are high enough to cause acute (short-term) effects. Equivalent to EA **Category 1** pollution incident including persistent and/or extensive effects on water quality; leading to closure of a potable abstraction point; major impact on amenity value or major damage to agriculture or commerce. Major damage to aquatic or other ecosystems, which is likely to result in a substantial adverse change in its functioning or harm to a species of special interest that endangers the long-term maintenance of the population. Catastrophic damage to crops, buildings or property.	Human health: short-term (acute) effects likely to result in significant harm. E.g. high conc. of cyanide on the surface of an informal recreational area. Significant harm to humans is defined as death, disease*, serious injury, genetic mutation, birth defects or the impairment of reproductive functions. Planting: complete and rapid die-back of landscaped areas. Controlled waters: short-term pollution, e.g. major spillage into controlled water. Major fish kill in surface water from large spillage of contaminants from site. Highly elevated concentrations of List I and II substances present in groundwater close to small potable abstraction (high sensitivity). Buildings etc.: catastrophic damage, e.g. explosion causing collapse. (can also equate to immediate human health risk if buildings are occupied). Ecosystems: acute risk to a particular ecosystem or organism forming part of that ecosystem in a designated protected area, e.g. by contamination spillage. Damage to a protected area of international significance (e.g. Ramsar site). Site workers: risk assessment required to determine PPE and this may involve USEPA Level A, B or C protection.

Classification of Consequences for Geo-environmental Risks		
Classification	**Definition**	**Examples**
Medium	Concentration of contaminants is likely to (or is known from previous data to) exceed that indicative of unacceptable intake or contact. Elevated concentrations which could result in "significant harm" to human health as defined by the EPA 1990, Part 2A if exposure occurs. I.e. >SH/SPOSH. Equivalent to **EA Category 2** pollution incident including significant effect on water quality; notification required to abstractors; reduction in amenity value or significant damage to agriculture or commerce. Significant damage to aquatic or other ecosystems, which may result in a substantial adverse change in its functioning or harm to a species of special interest that may endanger the long-term maintenance of the population. Significant damage to crops, buildings or property.	Human health: long-term (chronic) effects likely to result in significant harm. E.g. high conc. of contaminants close to the surface of a development site. Significant harm to humans is defined as death, disease*, serious injury, genetic mutation, birth defects or the impairment of reproductive functions. Planting: stressed or dead plants in landscaped areas. Controlled waters: pollution of sensitive water resources, e.g. leaching into principal or secondary aquifers or rivers. Buildings etc.: damage renders unsafe to occupy e.g. foundation damage resulting in instability. Ingress of contaminants through plastic potable water pipes. Ecosystems: chronic death of species in a particular ecosystem in a designated protected area, e.g. by contamination spillage. Damage to a protected area of national significance (e.g. Site of Special Scientific Interest). Site workers: risk assessment required to determine PPE and this may involve USEPA Level B, C or D protection.
Mild	Concentration of contaminants is likely to (or is known from previous data to) exceed that indicative of no harm but not unacceptable intake or contact. Exposure to human health **unlikely** to lead to "significant harm". I.e. >SVG/GAC but <SH/SPOSH. Equivalent to **EA Category 3** pollution incident including minimal or short lived effect on water quality; marginal effect on amenity value, agriculture or commerce. Minor or short lived damage to aquatic or other ecosystems, which is unlikely to result in a substantial adverse change in its functioning or harm to a species of special interest that would endanger the long-term maintenance of the population. Minor damage to crops, buildings or property.	Human health: harm but probably not significant harm unless particularly sensitive individual within the receptor group. May be aesthetic/olfactory impacts. Exposure could lead to slight short-term effects (e.g. mild skin rash). Planting: damage to plants in landscaped areas, e.g. stunted growth, discoloration. Controlled waters: pollution of non-sensitive water bodies e.g. leaching into non-classified groundwater or minor ditches. Buildings etc.: damage to sensitive buildings etc. Surface spalling of concrete. Ecosystems: minor change in a particular ecosystem in a designated protected area, but not significant harm. Damage to a locally important area. Site workers: risk assessment required to determine PPE and this may involve USEPA Level C or D protection.

Classification of Consequences for Geo-environmental Risks		
Classification	**Definition**	**Examples**
Minor	Concentration of contaminants is likely to (or is known from previous data to) be less than that indicative of no harm. No measurable effects on humans. I.e. <SGV/GAC. Equivalent to insubstantial pollution incident with no observed effect on water quality or ecosystems. Repairable effects of damage to buildings, structures and services.	No measurable effects, but simple PPE required (USEPA Level D protection, i.e. overalls, boots, goggles, hard hat). The loss of plants in a landscaping scheme. Discoloration of concrete.

CIRIA Report C552 Table 6.4 is reproduced as Table 3.2 below. This provides an estimate of the probability that the event described by the contaminant linkage will occur. For example, the likelihood that pollution of groundwater will occur by leaching of metals into the aquifer.

Table 3.2: Classification of Probability of Geo-environmental Risks

Classification of Probability of Geo-environmental Risks	
Classification	**Definition**
High Likelihood	There is a contaminant linkage and an event that either appears very likely in the short term and almost inevitable over the long term, or there is evidence at the receptor of harm or pollution.
Likely	There is a contaminant linkage and all the elements are present and in the right place, which means that it is probable that an event will occur. Circumstances are such that an event in not inevitable, but possible in the short term and likely over the long term.
Low Likelihood	There is a contaminant linkage and circumstances are possible under which an event could occur. However, it is no means certain that even over a longer period such event could take place, and is less likely in the shorter term.
Unlikely	There is a contaminant linkage but circumstances are such that it is improbable that an event would occur even in the very long term.

The perceived level of risk for each pathway is then derived from the probability versus consequences matrix, modified after CIRIA Report C552 Table 6.5, given in Table 3.3 below. Note that by definition, no contaminant linkage equates to no risk.

Table 3.3: Qualitative Risk Level from Consequence and Probability

		Consequence			
Probability	*product*	**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			

This approach assumes an equivalence between probability and consequences and ignores the difficulty that can arise where to probability of occurrence appears to be almost negligible but the consequences are very severe. In such conditions there is a degree of subjectivity in assessing the level of risk and it could be low, moderate or high. Such risks may require specialist consideration beyond the scope of this standard report.

Finally, a description of the classified risks and the likely action required can be determined from Table 3.4 below.

Table 3.4: Description of the Classified Risks and Likely Action Required

Description of Classified Risks and Likely Action Required	
Very High Risk	A significant contaminant linkage, including actual evidence of significant harm or significant possibility and significant harm, is clearly identifiable at the site (e.g. from visual or documentary evidence) under current conditions, with potential for legal and/or financial consequences for the site owner or other Responsible Person. Remediation advisable based on acute impacts being likely. Immediate action should be considered.
High Risk	A contaminant linkage is identifiable at the site under current and future use conditions. Although likely, there is no obvious actual evidence of significant harm or significant possibility and significant harm under current conditions. Extent of risk is therefore subject to confirmation by investigation and risk assessment and most likely to be deemed significant. Realisation of the risk is likely to present a substantial liability to the site owner or other Responsible Person. Remediation required for redevelopment and may also be required under Part 2A for existing receptors.
Moderate Risk	A contaminant linkage is identifiable at the site under current and future use conditions. However, it is not likely to be a significant linkage under current conditions. It is either relatively unlikely that any such harm would be severe, and if any harm were to occur it is more likely, that the harm would be relatively mild. Actual extent of risk subject to confirmation by additional investigation and risk assessment and most likely to lie between no possibility of harm (under current conditions) and significant possibility of significant harm (under conditions created by new use). Remediation may be required for redevelopment.
Low risk	Potential pathways and receptors exist but history of contaminative use or site conditions indicates that contamination is likely to be of limited extent and below the level of no possibility of harm. It is unlikely that the site owner or other Responsible Person would face substantial liabilities from suck a risk. Precautionary investigations and risk assessment advisable on change of use. Any subsequent remedial works are likely to be relatively limited.
Very Low Risk	No contaminant linkage likely to exist under current or future conditions, but this cannot be completely discounted. If harm is realised, it is likely at worst to be mild or minor. Site not capable of being determined under Part 2A where the local authority inspects the site. No further action recommended.
No Risk	No contaminant linkage exists.

3.2 Contaminant Analysis of Samples

The Model Procedures of CLR 11 provide guidance on key information sources with respect to potential contamination arising from past land uses of a site. In particular, the now withdrawn CLR 8 (Environment Agency 2002b), the DoE Industry Profile documents and ISO10381-5 provide good summaries of priority pollutants for UK sites. Additionally, the Environment Agency (2004b) has produced a list of priority pollutants for ecological risk assessment. These documents have been used, with the findings of the Phase 1 investigation, to scope the analyses of chemicals of potential concern. It should be noted that whilst CLR 8 was withdrawn in August 2008 it was not replaced and its findings are still considered useful.

Hydrock considers there to be a minimum requirement for soil chemical analysis, even for greenfield sites, in order to satisfy the 'suitable for use' criterion of the planning regime. This is represented by the 'Hydrock default list of determinands for solids'. The default list is derived

from the above guidance, particularly Tables 2.1 and 2.2 of CLR 8, listing potential inorganic and organic contaminants on typical former **industrial** land in the UK.

Since not all redevelopment sites have former industrial land uses, the default list designed to screen for unacceptable risks to property development and future occupiers comprises those substances with human, vegetation and construction materials receptors. The list includes common metals, metalloids and inorganic species, pH, asbestos fibres and screening tests for common organic compound groups which are deemed chemicals of potential concern. Sulfate is a contaminant whose principal receptor is concrete in the ground and is not considered toxic except in extreme conditions. Sulfate analysis is included in the list of geotechnical tests. Some common determinands such as elemental sulfur and sulfide are not included because there is insufficient information available to calculate meaningful assessment criteria.

The Hydrock default list of determinands for water or soil leaching samples is based on the prevailing UK drinking water standards and the environmental quality standards (EQS) values under the UK's obligations under the European Water Framework Directive (WFD). It includes the most common contaminants for use as a screening exercise but does not represent a complete list.

The two Hydrock default lists of determinands are used as a minimum requirement whatever the findings of the Phase 1 investigation. Added to this may be other suites of determinands based on the findings and review of the aforementioned documents.

Assessment is made of all chemicals of potential concern recorded on the site above the laboratory reporting limit. The reporting limits are less than the generic assessment criteria where this is possible. There are two main reasons why this may not be the case.

Firstly, low-level detection may be available using a more detailed analysis method, but this would be disproportionally expensive for routine screening purposes. More detailed testing may be recommended in some instances as an additional phase of investigation once the results of the screening exercise are known.

Secondly, there may be no suitable laboratory method available. In which case it is impossible to give a definitive opinion.

3.3 Generic Risk Assessment Criteria for Human Health

3.3.1 Policy

Generic assessment criteria (GAC) are criteria derived using largely generic assumptions about the characteristics and behaviour of sources, pathways and receptors. These assumptions will be conservative in a defined range of conditions. The Contaminated Land Exposure Assessment (CLEA) framework uses Soil Guideline Values (SGV) in assessing risks to human health from exposure to soils contaminated with selected contaminants. It has been assumed in this report that the exposure conditions are within the generic conditions used to derive the SGVs.

It should be noted that exceedance of GACs does not automatically mean that the soil is "contaminated". The derivation of GACs includes a number of precautionary assumptions such that non-exceedance will indicate that risk to human health is acceptable and that the land is

suitable for use, with regard to the contaminant in question. SGVs are not binding standards, but may be used to inform judgments about the need for action and the selection of remediation standards or target values for individual sites.

However, the legal test for land contamination under the statutory guidance of Part 2A of the Environment Protection Act 1990 (i.e. "significant harm or significant possibility of significant harm") is **unacceptable** intake or direct bodily contact. Defra (September 2005 and July 2008) has made it clear that exceedance of a GAC does not necessarily meet this legal test, i.e. exceedance of a GAC does not necessarily equate to unacceptable risk. Consequently, the GACs must be considered as screening values only. The situation was clarified by Defra (July 2008) in its guidance on the legal definition of contaminated land and in 2012 by the publication of revised contaminated land statutory guidance. One of the key policy aspects of this revision is to clarify that GACs are only one tool in the decision-making process and that background concentrations and a number of other relevant factors should also be taken into account. The aim is to prevent over-cautious determination of land as being contaminated.

The Environment Agency (2009a) has stated that the Health Criteria Values (HCV) used to derive GACs represent minimal or tolerable risk for long-term human exposure to chemicals in the soil. "Science alone cannot answer the question of whether or not a given *possibility of significant harm* is *significant*, since what is either *significant* or *unacceptable* is a matter of socio-political judgement, and the law entrusts decisions on this to the enforcing authorities (Defra July 2008)."

The former Health Protection Agency (2009) (now Public Health England) also described how HCVs do not represent unacceptable intake and that unacceptable intake is not a toxicological parameter. It further asserts that "unacceptable intake is a policy decision which can only be taken by the local authority." Pointers provided to local authorities in this regard are provided by the following: "The HCVs, and GACs based upon them represent trigger values above which there might be a possibility of significant harm. Whether there is a significant possibility will be linked to factors such as the margin of exceedance, the duration and frequency of exposure, and other site-specific factors."

The 2012 National Planning Policy Framework states that the standard of remediation to be achieved through the grant of planning permission for new development, including permission for land remediation activities, is the removal of unacceptable risk and making sure the site is suitable for its new use. As a minimum, after carrying out the development and commencement of its use, the land should not be capable of being determined as contaminated under Part 2A. The requirements for planning are, therefore, the same as for Part 2A.

The 2012 contaminated land statutory guidance says that GAC represent cautious estimates of levels of contaminants in soil at which there is considered to be no risk to health or, at most, a minimal risk to health. They may be used to indicate when land is very unlikely to pose a significant possibility of significant harm to human health. They should not:

- be used as direct indicators of whether a significant possibility of significant harm to human health may exist. Also, the local authority should not view the degree by which GACs are exceeded (in itself) as being particularly relevant to this consideration, given that the degree of risk posed by land would normally depend on many factors other than simply the amount of contaminants in soil.

- be seen as screening levels which describe the boundary between Categories 3 and 4 (see below);
- be viewed as indicators of levels of contamination above which detailed risk assessment would automatically be required under Part 2A or, under the planning system, in relation to ensuring that land affected by contamination does not meet the Part 2A definition of contaminated land after it has been developed; nor
- be used as generic remediation targets under the Part 2A regime.

Where it is judged that significant uncertainties remain following assessment against generic criteria, there are two options for the developer: either the implementation of an agreed remedial strategy, or to undertake additional testing and/or a detailed quantifiable risk assessment to determine whether remediation is indeed necessary.

Category 4 Screening Levels (C4SL) are criteria developed to screen out land affected by contamination under Part 2A of the EPA 1990 (see Section 3.12 below). They represent a low level of risk, whilst still being protective of human health. The Defra policy document (March 2014) states that "it is anticipated that, where they exist, C4SLs will be used as generic screening criteria that can be used within a GQRA, albeit describing a higher level of risk than the currently or previously available SGVs."

Defra also states that "the Part 2A regime and the planning regime are inter-linked such that the National Planning Policy Framework states that "after development, as a minimum, land should not be capable of being determined as contaminated land under Part 2A of the Environmental Protection Act 1990" and that "Where a site is affected by contamination or land stability issues, responsibility for securing a safe development rests with the developer and/or landowner." The Part 2A Statutory Guidance and accompanying Impact Assessment were developed on the basis that Category 4 Screening Levels could be used under the planning regime, as they would be in Part 2A investigations directly. The estimated benefits that were expected to accrue from the changes to the Part 2A Statutory Guidance and specifically from the use of the new Category 4 Screening Levels were based on this assumption. However, policy responsibility for the National Planning Policy Framework and associated Planning Practice Guidance falls to the Department for Communities and Local Government."

DCLG's Planning Policy Guidance (Reference ID: 33-007-20140612 Land affected by contamination, dated 12 June 2014) states that "if there is a reason to believe contamination could be an issue, developers should provide proportionate but sufficient site investigation information (a risk assessment) to determine the existence or otherwise of contamination, its nature and extent, the risks it may pose and to whom/what (the 'receptors') so that these risks can be assessed and satisfactorily reduced to an acceptable level. Defra has published a policy companion document considering the use of 'Category 4 Screening Levels' in providing a simple test for deciding when land is suitable for use and definitely not contaminated land."

In a letter to Local Authorities dated 3 September 2014, Defra Parliamentary Under Secretary Lord de Mauley confirmed that the Impact Assessment agreed during the revision of the Part 2A Statutory Guidance was developed on the basis that C4SLs could be used under the planning regime, and noted this intent is reflected in the above-mentioned revision of the Planning Policy Guidance. He highlighted that C4SLs provide a simple test for deciding when land is suitable for use. He concluded that the introduction of C4SLs has an important part to play in the

assessment of potentially contaminated land and encouraged Local Authority officials to read Defra's Policy Companion Document.

The NHBC (October 2014) has endorsed the use of C4SLs in the planning framework. "NHBC considers that:

- C4SLs may be used for schemes in England and Wales as generic screening levels for contaminants in soils, as long as they are justifiable and defensible in the conceptual site model for the site. Where representative contaminant concentrations exceed C4SLs, remediation or further detailed assessment will normally be required.
- Developers should, however, check that the use of C4SLs would be accepted by regulators under the relevant planning regime.
- Where a land use scenario covered by a C4SL applies in England and Wales, that use of C4SLs will satisfy NHBC Standards – Chapter 4.1 requirements. For lead, the C4SL value should be adopted as the screening level, though normal background concentrations can be considered when appropriate."

Public Health England has also communicated with Hydrock on a site-specific basis, confirming (in this instance) that the soil benzo(a)pyrene levels below C4SL not to be of particular concern as long as the Local Authority as the regulator is also satisfied.

On this basis, Hydrock considers the C4SLs to be more pragmatic assessment criteria for use in the planning regime. However, it is recommended that the opinion be sought of the Local Authority in question.

3.3.2 Methodology

The sample analyses are divided into representative data sets for the assessment, based on the conceptual model and taking into account such characteristics as variation in soil properties or historical, existing or proposed land uses. The 'averaging area' is the area of soil to which a receptor is exposed or which otherwise contributes to the creation of hazardous conditions.

The determination of averaging areas is clarified in the CLEA Frequently Asked Questions (30 January 2006) document available from the Agency CLEA web pages. In applying statistical tests, the risk assessor is asking the question "are mean (95 percentile upper confidence limit) soil concentrations within the averaging area equal to, or greater than, the SGV/GAC?" If a garden lies within a larger averaging area, but that averaging area is representative of conditions within the garden, then this is the average concentration a receptor using the garden will be exposed to. An averaging area can, therefore, be larger than a single garden and part of a larger zoned area if:

- contaminant concentrations are within the same statistical population, the sample data being representative of the averaging area and the mean concentration of the averaging area;
- hot spots are treated as separate zones or averaging areas; and
- the sampling strategy takes into account uncertainty (spatial heterogeneity) in contaminant concentration.

The approach taken in this report is to characterize the materials that are likely to form the ground cover in garden areas by zoning the site. Each averaging area has been chosen to describe the area(s) of the site, zoned according to material type and existing conditions, within which assessment against GACs has taken place. As pointed out in P5-066/TR (Environment Agency 2000) and by Nathanail (2004), this is a logical way of investigating a large plot of land that is intended for residential use, particularly if the development layout may not have been finalised.

The original Soil Guideline Values were all withdrawn in August 2008 and the Agency started a programme of publishing replacements using its 'new approach', which involves a number of changes to the way exposure is assessed. This was started using the CLEA 1.04 software. The current version is CLEA 1.07. This programme was put in abeyance when Defra started to re-draft the Part 2A statutory guidance and was never re-started.

This new approach included SGVs only at 6% soil organic matter (SOM) content and none for the residential without plant uptake land use. The contaminated land community has addressed this deficiency by publishing other lists of GACs (EIC/AGS/CL:AIRE 2009 and LQM/CIEH (Nathanail *et al* 2009)) and these have been given equal status to the SGVs in the 2012 revised statutory guidance. Hydrock adopted all these SGVs and GACs and where none are published has derived in-house values using generic assumptions about the characteristics and behaviour of sources, pathways and receptors, the CLEA 1.07 software and research of the recommended data sources.

Since the publication of these lists, CL:AIRE (December 2013) has highlighted that several of the original USEPA data sets used as default input parameters in CLEA have been revised based on a better understanding of the science. These are the outdoor soil-to-skin adherence factor, the exposure frequency for dermal contact, the indoor soil vapour inhalation rates and the produce consumption rates. The first three of these changes are based on updated research in a USEPA 2011 document cited by CL:AIRE. These supersede a draft 2006 USEPA document that was used in the default CLEA model and represent new science. The produce consumption rates used by CL:AIRE are from the most recent National Diet and Nutrition Survey (NSDS) (2008/2009 to 2010/11).

In November 2014 Hydrock used these revised parameters to update all the previously published GACs using modifications to CLEA 1.06. These changes are now built into CLEA 1.07 when the C4SL land uses are selected.

The mean and 90th percentile consumption rates from SP1010 Table 3.4 are used. In the derivation of the C4SLs, CL:AIRE used the 90th percentile consumption rates for the "top two" produce types for each substance and mean consumption rates are used for the remaining produce types (SP1010 Table 3.3). This approach has been followed by Hydrock for the C4SL substances. However, the procedure for determining which are the "top two" is time consuming and has not been replicated by Hydrock for all the other chemicals. The 90th percentile values have been taken for all produce types (and is slightly more conservative).

The GACs adopted by Hydrock for the standard CLEA land uses are given in Table 3.5 together with the source of the GAC. The table also lists GACs for open space (see below).

Please note also that CLEA 1.07 allows for other variations, most notably of soil type (9 options) and building type (5 residential options). The defaults are a sandy loam soil, a small terraced house in the residential setting and a pre-1970s office block in the commercial setting. These are generally conservative and the resultant SGV/GAC are protective of other combinations (unlike the default SOM mentioned above). It is not practical to include all permutations in Table 3.5 and in the cases where specific GACs have been derived, this is referred to in the text of the report and the relevant values included in the assessment tables.

Lead is a special case as the former SGV was not based on the CLEA model, but equations utilising blood lead concentrations. There is currently no guidance on how to risk assess lead in order to produce a GAC. The provisional C4SL for lead was derived using a number approaches, again based on blood lead concentrations, but for three different toxicological effects. The use of biokinetic modelling allows conversion to units suitable for use in the CLEA model. The final C4SLs for residential (with home-ground produce) stipulated in the Defra policy document is less than the withdrawn SGV although the SGV was supposed to represent a lower level of risk. It is clear from the work undertaken to develop the C4SLs why the SGVs were withdrawn. Consequently, and in view of the Defra policy document, Hydrock has adopted the C4SLs for lead *in lieu* of the withdrawn SGV or any specifically derived GAC (which would require a thorough review of lead toxicology). The lead C4SLs are, therefore, included under the term "GACs" in this report.

Further details including data sources can be obtained on request. It is Hydrock's policy to continually review GACs and updates are made in response to the latest Government guidance or as more data on the substances becomes available. The date of the last update of the table is indicated.

Table 3.5: Soil GACs Adopted by Hydrock (mg/kg) - on following pages

Updated 18/11/15		Human Health Generic Assessment Criteria (mg/kg)											
Contaminant	**Source of GAC**	Human health - residential without plant uptake (1%SOM)	Human health - residential without plant uptake (2.5%SOM)	Human health - residential without plant uptake (6%SOM)	Human health - residential with plant uptake (1%SOM)	Human health - residential with plant uptake (2.5%SOM)	Human health - residential with plant uptake (6%SOM)	Human health - allotments (1%SOM)	Human health - allotments (2.5%SOM)	Human health - allotments (6%SOM)	Human health - commercial (1%SOM)	Human health - commercial (2.5%SOM)	Human health - commercial (6%SOM)
							Default for SGV			Default for SGV			Default for SGV
Hydrock Default Suite													
Arsenic	SGV report + CLEA 1.07	40	40	40	37	37	37	49	49	49	640	640	640
Beryllium	LQM/CIEH + CLEA 1.07	73	73	73	73	73	73	56	56	56	390	390	390
Boron	LQM/CIEH + CLEA 1.07	11000	11000	11000	300	300	300	47	47	47	190000	190000	190000
Cadmium	SGV report + CLEA 1.07	87	87	87	14	14	14	2.4	2.4	2.4	220	220	220
Chromium (III)	LQM/CIEH + CLEA 1.07	890	890	890	890	890	890	15000	15000	15000	8400	8400	8400
Chromium (VI)	LQM/CIEH + CLEA 1.07	6.1	6.1	6.1	6.1	6.1	6.1	2.3	2.3	2.3	33	33	33
Copper	LQM/CIEH + CLEA 1.07	7300	7300	7300	2500	2500	2500	540	540	540	69000	69000	69000
Lead	C4SL (NB not minimal risk)	310	310	310	200	200	200	80	80	80	2300	2300	2300
Mercury, inorganic	SGV report + CLEA 1.07	240	240	240	170	170	170	81	81	81	3600	3600	3600
Nickel	Hydrock + CLEA 1.07	180	180	180	130	130	130	55	55	55	1700	1700	1700
Selenium	SGV report + CLEA 1.07	600	600	600	360	360	360	130	130	130	13000	13000	13000
Vanadium	LQM/CIEH + CLEA 1.07	1200	1200	1200	410	410	410	94	94	94	9000	9000	9000
Zinc	LQM/CIEH + CLEA 1.07	40000	40000	40000	3900	3900	3900	640	640	640	670000	670000	670000
Cyanide (free)	Hydrock + CLEA 1.07	800	800	800	790	790	790	2300	2300	2300	16000	16000	16000
Phenol	SGV report + CLEA 1.07	750	1300	2300	290	560	1100	69	140	290	760	1500	3200
Acenaphthene	LQM/CIEH + CLEA 1.07	3000	4700	6000	220	520	1100	35	95	210	84000	97000	100000
Acenaphthylene	LQM/CIEH + CLEA 1.07	2900	4600	6000	180	430	940	29	71	170	83000	97000	100000
Anthracene	LQM/CIEH + CLEA 1.07	31000	35000	37000	2400	5500	11000	390	940	2300	520000	540000	540000
Benz(a)anthracene	LQM/CIEH + CLEA 1.07	5.5	7.8	9.4	4.2	6.7	8.6	2.5	5.4	10	86	91	94
Benzo(a)pyrene	LQM/CIEH + CLEA 1.07	1.5	1.6	1.6	1.50	1.50	1.5	2.10	2.2	2.4	14	14	14
Benzo(b)fluoranthene	LQM/CIEH + CLEA 1.07	11.0	11.0	11.0	7.6	9.4	10.0	3.5	7.3	13	97	98	99
Benzo(ghi)perylene	LQM/CIEH + CLEA 1.07	71	72	72	64	69	71	69	110	150	630	640	640
Benzo(k)fluoranthene	LQM/CIEH + CLEA 1.07	15	16	16	12.0	14.0	15	6.7	13	23	140	140	140
Chrysene	LQM/CIEH + CLEA 1.07	13.0	16.0	15	7.7	11.0	13.0	2.6	5.8	12	140	140	140
Dibenz(ah)anthracene	LQM/CIEH + CLEA 1.07	1.30	1.40	1.40	1.10	1.30	1.40	0.75	1.4	2.3	12	12	13
Fluoranthene	LQM/CIEH + CLEA 1.07	1500	1600	1600	290	560	900	52	130	290	23000	23000	23000
Fluorene	LQM/CIEH + CLEA 1.07	2800	3800	4500	170	410	880	28	68	160	63000	68000	71000
Indeno(123cd)pyrene	LQM/CIEH + CLEA 1.07	6.3	6.6	6.7	4.3	5.5	6.2	1.8	3.8	7.1	58	59	60
Naphthalene	LQM/CIEH + CLEA 1.07	2.3	5.6	13.0	2.2	5.2	12.0	4.2	10	24	190	460	1100
Phenanthrene	LQM/CIEH + CLEA 1.07	1300	1500	1500	97	220	440	16	39	92	22000	22000	23000
Pyrene	LQM/CIEH + CLEA 1.07	3700	3800	3800	620	1200	2000	110	270	620	54000	54000	55000
TPH fractions													
TPH ali EC05-EC06	LQM/CIEH + CLEA 1.07	42	78	160	42	78	160	760	1800	4000	300	560	1200
TPH ali >EC06-EC08	LQM/CIEH + CLEA 1.07	100	230	530	100	230	530	2400	5700	13000	140	320	740
TPH ali >EC08-EC10	LQM/CIEH + CLEA 1.07	27	65	160	27	65	150	320	760	1700	78	190	450
TPH ali >EC10-EC12	LQM/CIEH + CLEA 1.07	48	120	280	48	120	280	2100	4200	7000	48	120	280
TPH ali >EC12-EC16	LQM/CIEH + CLEA 1.07	24	59	140	24	59	140	11000	13000	13000	24	59	140
TPH ali >EC16-EC35	LQM/CIEH + CLEA 1.07	65000	93000	110000	65000	92000	110000	260000	270000	270000	1000000	1000000	1000000
TPH ali >EC35-EC44	LQM/CIEH + CLEA 1.07	65000	93000	110000	65000	92000	110000	260000	270000	270000	1000000	1000000	1000000
TPH aro EC05-EC07	LQM/CIEH + CLEA 1.07	370	690	1400	73	150	310	14	28	60	1200	2300	4700
TPH aro >EC07-EC08	LQM/CIEH + CLEA 1.07	860	1800	3900	130	300	680	23	53	120	870	1900	4400
TPH aro >EC08-EC10	LQM/CIEH + CLEA 1.07	47	120	270	35	84	190	8.9	22	52	610	1500	3600
TPH aro >EC10-EC12	LQM/CIEH + CLEA 1.07	250	590	1200	75	180	390	13	32	76	360	900	2200
TPH aro >EC12-EC16	LQM/CIEH + CLEA 1.07	1800	2300	2500	150	330	670	23	58	140	36000	37000	38000
TPH aro >EC16-EC21	LQM/CIEH + CLEA 1.07	1900	1900	1900	260	550	930	46	110	260	28000	28000	28000
TPH aro >EC21-EC35	LQM/CIEH + CLEA 1.07	1900	1900	1900	1100	1500	1700	360	790	1500	28000	28000	28000
TPH aro >EC35-EC44	LQM/CIEH + CLEA 1.07	1900	1900	1900	1100	1500	1700	360	790	1500	28000	28000	28000
TPH >EC44-EC70	LQM/CIEH + CLEA 1.07	1900	1900	1900	1600	1800	1900	1100	2000	2900	28000	28000	28000
VOCs - BTEX & MTBE													
Benzene	SGV report + CLEA 1.07	0.38	0.70	1.4	0.099	0.2	0.42	0.02	0.041	0.09	27	48	90
Toluene	SGV report + CLEA 1.07	860	1800	3900	130	300	680	23	53	120	870	1900	4400
Ethylbenzene	SGV report + CLEA 1.07	240	540	1200	76	180	410	17	40	94	520	1200	2800
Xylene, o-	SGV report + CLEA 1.07	85	200	460	59	140	320	29	70	160	480	1100	2600
Xylene, m-	SGV report + CLEA 1.07	79	190	430	58	140	320	32	77	180	630	1500	3500
Xylene, p- (use this for combined m & p)	SGV report + CLEA 1.07	76	180	410	55	130	300	30	72	170	580	1400	3200
MTBE	EIC/AGS/CL:AIRE + CLEA 1.07	100	170	320	62	110	210	23	45	92	7500	12000	27000
VOCs - other benzenes													
Iso-propylbenzene	EIC/AGS/CL:AIRE + CLEA 1.07	17	40	95	15	38	89	33	81	190	390	950	2300
Propylbenzene	EIC/AGS/CL:AIRE + CLEA 1.07	57	140	320	46	110	260	35	86	200	400	980	2300
1,2,4-Trimethylbenzene	EIC/AGS/CL:AIRE + CLEA 1.07	0.58	1.4	3.3	0.47	1.2	2.7	0.39	0.96	2.3	39	94	210

Updated 18/11/15		Human Health Generic Assessment Criteria (mg/kg)											
Contaminant	**Source of GAC**	Human health - residential without plant uptake (1%SOM)	Human health - residential without plant uptake (2.5%SOM)	Human health - residential without plant uptake (6%SOM)	Human health - residential with plant uptake (1%SOM)	Human health - residential with plant uptake (2.5%SOM)	Human health - residential with plant uptake (6%SOM)	Human health - allotments (1%SOM)	Human health - allotments (2.5%SOM)	Human health - allotments (6%SOM)	Human health - commercial (1%SOM)	Human health - commercial (2.5%SOM)	Human health - commercial (6%SOM)
VOCs - chlorobenzenes													
Bromobenzene	EIC/AGS/CL:AIRE + CLEA 1.07	1.3	3	7	1.2	2.8	6.6	3.3	7.9	18	92	210	490
Chlorobenzene	LQM/CIEH + CLEA 1.07	0.47	1.1	2.4	0.46	1.0	2.4	6.1	14	33	56	130	290
1,2-Dichlorobenzene	LQM/CIEH + CLEA 1.07	24	57	130	23	55	130	97	240	560	570	1400	3200
1,3-Dichlorobenzene	LQM/CIEH + CLEA 1.07	0.44	1.1	2.5	0.41	0.98	2.3	0.26	0.63	1.5	30	73	170
1,4-Dichlorobenzene	LQM/CIEH + CLEA 1.07	60	140	330	38	92	220	16	38	91	230	540	1300
Hexachlorobenzene	LQM/CIEH + CLEA 1.07	0.20	0.50	2.5	0.20	0.50	1.9	0.17	0.42	0.91	0.2	53	55
Pentachlorobenzene	LQM/CIEH + CLEA 1.07	20	30	38	5.9	12	22	1.3	3.1	7.1	640	770	830
1,2,3-trichlorobenzene	LQM/CIEH + CLEA 1.07	1.5	3.7	8.8	1.5	3.6	8.6	4.8	12	28	100	250	590
1,2,4-trichlorobenzene	LQM/CIEH + CLEA 1.07	2.6	3.4	15	2.6	6.4	15	31	77	180	220	530	1300
1,3,5-trichlorobenzene	LQM/CIEH + CLEA 1.07	0.33	0.81	1.9	0.33	0.81	1.9	4.9	12	28	23	55	130
1,2,3,4-tetrachlorobenzene	LQM/CIEH + CLEA 1.07	24	56	120	15	36	78	4.5	11	26	120	300	730
1,2,3,5-tetrachlorobenzene	LQM/CIEH + CLEA 1.07	0.75	1.9	4.3	0.67	1.6	3.7	0.39	0.95	2.2	39	98	240
1,2,4,5-tetrachlorobenzene	LQM/CIEH + CLEA 1.07	0.73	1.7	3.5	0.34	0.78	1.6	0.065	0.16	0.38	20	49	96
VOCs - chloroalkanes & alkanes													
Bromodichloromethane	EIC/AGS/CL:AIRE + CLEA 1.07	0.027	0.049	0.10	0.022	0.040	0.082	0.017	0.033	0.070	2.0	3.5	7.1
Bromoform	EIC/AGS/CL:AIRE + CLEA 1.07	7.4	15	32	3.5	7.3	16	0.98	2.1	4.8	710	1400	3000
Chloroethane	EIC/AGS/CL:AIRE + CLEA 1.07	12	16	26	12	16	26	120	210	390	900	1200	2000
Chloroethene (aka vinyl chloride)	LQM/CIEH + CLEA 1.07	0.00077	0.0010	0.0015	0.00064	0.00087	0.0014	0.00057	0.0010	0.0019	0.059	0.077	0.12
Chloromethane	EIC/AGS/CL:AIRE + CLEA 1.07	0.012	0.014	0.019	0.012	0.014	0.019	0.068	0.13	0.24	1.0	1.1	1.5
1,1-Dichloroethane	EIC/AGS/CL:AIRE + CLEA 1.07	3.6	5.8	11	3.4	5.5	11	9.6	18	37	260	430	800
1,2-Dichloroethane	LQM/CIEH + CLEA 1.07	0.0092	0.013	0.023	0.0071	0.011	0.019	0.0048	0.0086	0.016	0.67	0.97	1.7
1,1-Dichloroethene	EIC/AGS/CL:AIRE + CLEA 1.07	0.33	0.58	1.2	0.32	0.57	1.2	2.9	5.8	12	24	43	87
Cis 1,2 Dichloroethene	EIC/AGS/CL:AIRE + CLEA 1.07	0.17	0.29	0.56	0.16	0.27	0.52	0.27	0.52	1.1	14	23	44
Trans 1,2 Dichloroethene	EIC/AGS/CL:AIRE + CLEA 1.07	0.28	0.50	1.0	0.27	0.48	0.98	0.97	1.9	4.2	21	37	76
Dichloromethane	EIC/AGS/CL:AIRE + CLEA 1.07	3.0	4.0	6.4	0.62	1.1	1.9	0.11	0.19	0.35	260	340	530
1,2-Dichloropropane	EIC/AGS/CL:AIRE + CLEA 1.07	0.034	0.06	0.12	0.034	0.060	0.12	0.64	1.3	2.7	3.1	5.5	11
Hexachloroethane	EIC/AGS/CL:AIRE + CLEA 1.07	0.31	0.77	1.8	0.27	0.66	1.6	0.28	0.069	1.6	8.2	20	48
Tetrachloroethene	LQM/CIEH + CLEA 1.07	1.5	3.3	7.5	1.3	2.9	6.7	1.7	3.9	9.0	120	280	620
1,1,1,2-Tetrachloroethane	LQM/CIEH + CLEA 1.07	1.5	3.6	8.2	1.2	2.8	6.5	0.82	1.9	4.6	110	250	560
1,1,2,2-Tetrachloroethane	LQM/CIEH + CLEA 1.07	4.1	8.3	18	1.7	3.5	7.8	0.42	0.92	2.1	280	560	1200
Tetrachloromethane	LQM/CIEH + CLEA 1.07	0.026	0.056	0.13	0.026	0.056	0.13	0.17	0.38	0.88	2.9	6.3	14
Trichloroethene	LQM/CIEH + CLEA 1.07	0.16	0.33	0.73	0.15	0.31	0.69	0.44	0.99	2.2	11	24	52
1,1,1-Trichloroethane	LQM/CIEH + CLEA 1.07	9.0	18	40	8.8	18	39	50	110	250	660	1400	3000
1,1,2 Trichloroethane	EIC/AGS/CL:AIRE + CLEA 1.07	1.3	2.5	5.5	0.76	1.6	3.5	0.29	0.64	1.4	89	180	380
Trichloromethane	LQM/CIEH + CLEA 1.07	1.3	2.3	4.6	0.98	1.8	3.6	0.37	0.73	1.5	100	180	350
Other phenols & chlorophenols													
2-Chlorophenol	LQM/CIEH + CLEA 1.07	110	170	220	3.9	9.1	20	0.60	1.4	3.4	3600	4000	4300
2,4-Dichlorophenol	LQM/CIEH + CLEA 1.07	94	150	200	0.91	2.1	4.7	0.14	0.31	0.72	3500	3900	4200
2,4-Dimethylphenol	EIC/AGS/CL:AIRE + CLEA 1.07	300	590	1000	20	46	100	3.2	7.4	17	1400	3100	7200
2-Methylphenol	EIC/AGS/CL:AIRE + CLEA 1.07	5300	7700	9900	85	190	430	13	29	67	160000	180000	180000
3-Methylphenol	EIC/AGS/CL:AIRE + CLEA 1.07	6800	9100	11000	85	190	420	13	29	65	170000	180000	190000
4-Methylphenol	EIC/AGS/CL:AIRE + CLEA 1.07	5400	7900	10000	84	190	420	13	29	65	160000	180000	180000
Pentachlorophenol	LQM/CIEH + CLEA 1.07	37	56	69	0.56	1.3	3.1	0.085	0.21	0.49	1200	1300	1400
2,3,4,6-Tetrachlorophenol	LQM/CIEH + CLEA 1.07	140	200	240	0.89	2.1	4.8	0.14	0.32	0.74	3900	4200	4300
2,4,6-Trichlorophenol	LQM/CIEH + CLEA 1.07	140	200	250	1.5	3.5	7.8	0.22	0.53	1.2	3900	4200	4400
Phthalates													
Bis (2-ethylhexyl) phthalate	EIC/AGS/CL:AIRE + CLEA 1.07	3900	4000	4100	290	660	1300	48	120	280	85000	86000	86000
Butyl benzyl phthalate	EIC/AGS/CL:AIRE + CLEA 1.07	61000	63000	64000	1500	3500	7800	230	560	1300	940000	940000	950000
Diethyl Phthalate	EIC/AGS/CL:AIRE + CLEA 1.07	14	29	65	120	270	610	19	43	98	14	29	65
Di-n-butyl phthalate	EIC/AGS/CL:AIRE + CLEA 1.07	650	650	650	13	32	72	2.1	5.1	12	15000	15000	15000
Di-n-octyl phthalate	EIC/AGS/CL:AIRE + CLEA 1.07	4900	4900	4900	2800	3800	4300	920	2000	3900	89000	89000	89000
Pesticides													
Aldrin	LQM/CIEH + CLEA 1.07	3.0	3.1	3.1	2.3	2.7	2.9	1.3	2.5	4.0	54	54	54
Atrazine	LQM/CIEH + CLEA 1.07	45	46	46	0.25	0.58	1.3	0.038	0.089	0.21	870	880	880
DDD	Hydrock + CLEA 1.07	1300	1300	1300	910	1100	1200	400	780	1200	22000	22000	22000
DDE	Hydrock + CLEA 1.07	1300	1300	1300	870	1100	1200	360	740	1300	22000	22000	22000
DDT	Hydrock + CLEA 1.07	1300	1300	1300	830	1000	1200	320	650	1100	21000	21000	21000
Dichlorvos	LQM/CIEH + CLEA 1.07	36	45	53	0.30	0.62	1.3	0.046	0.094	0.20	840	870	890
Dieldrin	LQM/CIEH + CLEA 1.07	5.0	5.4	5.6	0.74	1.5	2.7	0.13	0.32	0.74	90	91	92
Endosulfan - alpha	LQM/CIEH + CLEA 1.07	62	110	160	3.1	7.4	17	0.49	1.2	2.8	2300	3000	3400
Endosulfan - beta	LQM/CIEH + CLEA 1.07	76	130	180	2.9	7.0	16	0.46	1.1	2.6	2500	3100	3500
Hexachlorocyclohexanes - alpha (inc. Lindane)	LQM/CIEH + CLEA 1.07	660	840	940	20	48	110	3.1	7.7	18	14000	15000	15000
Hexachlorocyclohexanes - beta (inc. Lindane)	LQM/CIEH + CLEA 1.07	73	75	76	1.7	4.1	9.2	0.27	0.66	1.6	1100	1100	1100
Hexachlorocyclohexanes - gamma (inc. Lindane)	LQM/CIEH + CLEA 1.07	27	31	33	0.60	1.4	3.3	0.092	0.23	0.54	530	550	550

Updated 18/11/15		Human Health Generic Assessment Criteria (mg/kg)											
Contaminant	**Source of GAC**	**Human health - residential without plant uptake (1%SOM)**	**Human health - residential without plant uptake (2.5%SOM)**	**Human health - residential without plant uptake (6%SOM)**	**Human health - residential with plant uptake (1%SOM)**	**Human health - residential with plant uptake (2.5%SOM)**	**Human health - residential with plant uptake (6%SOM)**	**Human health - allotments (1%SOM)**	**Human health - allotments (2.5%SOM)**	**Human health - allotments (6%SOM)**	**Human health - commercial (1%SOM)**	**Human health - commercial (2.5%SOM)**	**Human health - commercial (6%SOM)**
Dioxins, furans & dioxin-like-PCBs													
Total dioxins, furans & DL-PCB (aerial dep.)	SGV report + CLEA 1.07	0.012	0.012	0.012	0.0099	0.010	0.010	0.0075	0.0083	0.0086	0.24	0.24	0.24
Non-dioxin-like PCBs													
PCB-28	Hydrock + CLEA 1.07	0.63	0.63	0.63	0.24	0.37	0.47	0.056	0.12	0.22	9.0	9.0	9.0
PCB-52	Hydrock + CLEA 1.07	0.63	0.63	0.63	0.24	0.38	0.49	0.058	0.13	0.26	9.0	9.0	9.0
PCB-101	Hydrock + CLEA 1.07	0.63	0.63	0.63	0.50	0.57	0.60	0.290	0.52	0.74	9.0	9.0	9.0
PCB-138	Hydrock + CLEA 1.07	0.63	0.63	0.63	0.54	0.59	0.61	0.39	0.65	0.88	9.0	9.0	9.0
PCB-153	Hydrock + CLEA 1.07	0.63	0.63	0.63	0.56	0.60	0.61	0.49	0.75	0.95	9.0	9.0	9.0
PCB-180	Hydrock + CLEA 1.07	0.63	0.63	0.63	0.58	0.61	0.62	0.58	0.85	1.0	9.0	9.0	9.0
Explosives													
HMX	LQM/CIEH + CLEA 1.07	6700	6700	6700	5.9	13	27	0.89	2.0	4.0	110000	110000	110000
RDX	LQM/CIEH + CLEA 1.07	400	400	400	3.5	7.6	17	0.54	1.2	2.6	6400	6400	6400
2,4,6-Trinitrotoluene	LQM/CIEH + CLEA 1.07	65	65	66	1.6	3.8	8.4	0.25	0.61	1.4	1000	1000	1100
Other inorganics													
Antimony	EIC/AGS/CL:AIRE + CLEA 1.07	380	380	380	190	190	190	54	54	54	6600	6600	6600
Barium	EIC/AGS/CL:AIRE + CLEA 1.07	1400	1400	1400	790	790	790	270	270	270	22000	22000	22000
Mercury, elemental	SGV report + CLEA 1.07	0.24	0.60	1.5	0.24	0.60	1.5	4.3	11	26	4.3	11	26
Molybdenum	EIC/AGS/CL:AIRE + CLEA 1.07	670	670	670	250	250	250	59	59	59	18000	18000	18000
Thiocyanate	Hydrock + CLEA 1.07	13	13	13	13	13	13	28	28	28	190	190	190
Other organics													
Biphenyl	EIC/AGS/CL:AIRE + CLEA 1.07	34	84	200	34	84	200	15	36	86	34	84	200
Carbon disulphide	LQM/CIEH + CLEA 1.07	0.14	0.29	0.62	0.14	0.29	0.62	5.0	11	24	11	22	47
2,4-Dinitrotoluene	EIC/AGS/CL:AIRE + CLEA 1.07	240	250	250	1.5	3.4	7.6	0.23	0.51	1.2	3700	3800	3800
2,6-Dinitrotoluene	EIC/AGS/CL:AIRE + CLEA 1.07	110	120	130	0.82	1.8	4.1	0.12	0.28	0.63	1900	1900	1900
Hexachloro-1,3-butadiene	LQM/CIEH + CLEA 1.07	0.32	0.78	1.8	0.29	0.70	1.6	0.25	0.62	1.4	31	66	120
Mercury, methyl	SGV report + CLEA 1.07	12	16	20	10	13	15	8.0	8.0	8.0	370	390	410
Styrene	EIC/AGS/CL:AIRE + CLEA 1.07	52	120	280	11	25	58	1.6	3.9	9.1	630	1400	3400
Tributyl tin oxide	EIC/AGS/CL:AIRE + CLEA 1.07	12	14	15	0.28	0.67	1.5	0.040	0.11	0.25	230	230	240
2-Chloronaphthalene	EIC/AGS/CL:AIRE + CLEA 1.07	5.4	13	32	5.3	13	31	42	100	230	370	900	2100
Insufficient data to derive GAC													
n butylbenzene	Insufficient data (EIC)	-	-	-	-	-	-	-	-	-	-	-	-
sec butylbenzene	Insufficient data (EIC)	-	-	-	-	-	-	-	-	-	-	-	-
Carbazole	Insufficient data (EIC)	-	-	-	-	-	-	-	-	-	-	-	-
Dimethyl phthalate	Insufficient data (EIC)	-	-	-	-	-	-	-	-	-	-	-	-
Isopropyltoluene	Insufficient data (EIC)	-	-	-	-	-	-	-	-	-	-	-	-
1-Methylnaphthalene	Insufficient data (EIC)	-	-	-	-	-	-	-	-	-	-	-	-
2-Methylnaphthalene	Insufficient data (EIC)	-	-	-	-	-	-	-	-	-	-	-	-
Sulfur (elemental)	Insufficient data (Hydrock)	-	-	-	-	-	-	-	-	-	-	-	-
1,3,5-Trimethylbenzene	Insufficient data (EIC)	-	-	-	-	-	-	-	-	-	-	-	-
tert butylbenzene	Insufficient data (EIC)	-	-	-	-	-	-	-	-	-	-	-	-
NOTES													
If >1,000,000 is calculated, 1,000,000 is adopted.													
Red text - liquid at ambient temperature, calculated GAC exceeds saturation value and highlighed in red in CLEA - saturation value adopted for GAC													
Orange text - solid at ambient temperature, calculated GAC exceeds saturation value and highlighted red in CLEA - manual calculation not possible as only one HCV - saturated vapour concentration exceed, so saturation value adopted for GAC.													
Blue text - solid at ambient temperature, calculated GAC exceeds saturation value and highlighted red in CLEA - manual calculation not possible as only one HCV - aqueous solubility exceed, so original red-highlighted value adopted for GAC.													
Green text - solid at ambient temperature, calculated GAC exceeds saturation value and highlighted red in CLEA - manual calculation undertaken but result is greater than original red-highlighted value, so original red-highlighted value adopted for GAC.													

Updated 18/11/15							
Contaminant	**Source of GAC**	**Human health - POSresi (1%SOM)**	**Human health - POSresi (2.5%SOM)**	**Human health - POSresi (6%SOM)**	**Human health - POSpark (1%SOM)**	**Human health - POSpark (2.5%SOM)**	**Human health - POSpark (6%SOM)**
Hydrock Default Suite							
Arsenic	SGV report + CLEA 1.07	79	79	79	170	170	170
Beryllium	LQM/CIEH + CLEA 1.07	92	92	92	670	670	670
Boron	LQM/CIEH + CLEA 1.07	21000	21000	21000	46000	46000	46000
Cadmium	SGV report + CLEA 1.07	120	120	120	560	560	560
Chromium (III)	LQM/CIEH + CLEA 1.07	1500	1500	1500	27000	27000	27000
Chromium (VI)	LQM/CIEH + CLEA 1.07	7.7	7.7	7.7	220	220	220
Copper	LQM/CIEH + CLEA 1.07	12000	12000	12000	44000	44000	44000
Lead	C4SL (NB not minimal risk)	630	630	630	1300	1300	1300
Mercury, inorganic	SGV report + CLEA 1.07	470	470	470	1100	1100	1100
Nickel	Hydrock + CLEA 1.07	290	290	290	800	800	800
Selenium	SGV report + CLEA 1.07	1400	1400	1400	2600	2600	2600
Vanadium	LQM/CIEH + CLEA 1.07	2000	2000	2000	5000	5000	5000
Zinc	LQM/CIEH + CLEA 1.07	81000	81000	81000	170000	170000	170000
Cyanide (free)	Hydrock + CLEA 1.07	1600	1600	1600	3400	3400	3400
Phenol	SGV report + CLEA 1.07	760	1500	3200	760	1500	3200
Acenaphthene	LQM/CIEH + CLEA 1.07	15000	15000	15000	29000	30000	30000
Acenaphthylene	LQM/CIEH + CLEA 1.07	15000	15000	15000	29000	30000	30000
Anthracene	LQM/CIEH + CLEA 1.07	74000	74000	74000	150000	150000	150000
Benz(a)anthracene	LQM/CIEH + CLEA 1.07	17	18	18	26	33	40
Benzo(a)pyrene	LQM/CIEH + CLEA 1.07	2.6	2.6	2.6	4.5	5.6	6.5
Benzo(b)fluoranthene	LQM/CIEH + CLEA 1.07	18	18	18	30	38	45
Benzo(ghi)perylene	LQM/CIEH + CLEA 1.07	120	120	120	270	310	350
Benzo(k)fluoranthene	LQM/CIEH + CLEA 1.07	26	26	26	46	57	67
Chrysene	LQM/CIEH + CLEA 1.07	25	26	26	34	45	55
Dibenz(ah)anthracene	LQM/CIEH + CLEA 1.07	2.3	2.3	2.3	4.5	5.5	6.3
Fluoranthene	LQM/CIEH + CLEA 1.07	3100	3100	3100	6300	6300	6400
Fluorene	LQM/CIEH + CLEA 1.07	9900	9900	9900	20000	20000	20000
Indeno(123cd)pyrene	LQM/CIEH + CLEA 1.07	11	11	11	17	22	26
Naphthalene	LQM/CIEH + CLEA 1.07	3900	4100	4200	1100	1600	2300
Phenanthrene	LQM/CIEH + CLEA 1.07	3100	3100	3100	6200	6300	6300
Pyrene	LQM/CIEH + CLEA 1.07	7400	7400	7400	15000	15000	15000
TPH fractions							
TPH ali EC05-EC06	LQM/CIEH + CLEA 1.07	300	590000	600000	300	560	1200
TPH ali >EC06-EC08	LQM/CIEH + CLEA 1.07	600000	610000	620000	140	320	740
TPH ali >EC08-EC10	LQM/CIEH + CLEA 1.07	13000	13000	13000	77	190	450
TPH ali >EC10-EC12	LQM/CIEH + CLEA 1.07	13000	13000	13000	48	120	280
TPH ali >EC12-EC16	LQM/CIEH + CLEA 1.07	13000	13000	13000	24	59	140
TPH ali >EC16-EC35	LQM/CIEH + CLEA 1.07	250000	250000	250000	460000	480000	490000
TPH ali >EC35-EC44	LQM/CIEH + CLEA 1.07	250000	250000	250000	460000	480000	490000
TPH aro EC05-EC07	LQM/CIEH + CLEA 1.07	56000	56000	56000	1200	2300	4700
TPH aro >EC07-EC08	LQM/CIEH + CLEA 1.07	56000	56000	56000	870	1900	4400
TPH aro >EC08-EC10	LQM/CIEH + CLEA 1.07	5000	5000	5000	610	1500	3600
TPH aro >EC10-EC12	LQM/CIEH + CLEA 1.07	5000	5000	5000	360	900	10000
TPH aro >EC12-EC16	LQM/CIEH + CLEA 1.07	5000	5000	5000	10000	10000	10000
TPH aro >EC16-EC21	LQM/CIEH + CLEA 1.07	3800	3800	3800	7600	7700	7800
TPH aro >EC21-EC35	LQM/CIEH + CLEA 1.07	3800	3800	3800	7800	7800	7900
TPH aro >EC35-EC44	LQM/CIEH + CLEA 1.07	3800	3800	3800	7800	7800	7900
TPH >EC44-EC70	LQM/CIEH + CLEA 1.07	3800	3800	3800	7800	7800	7900
VOCs - BTEX & MTBE							
Benzene	SGV report + CLEA 1.07	72	72	73	90	100	110
Toluene	SGV report + CLEA 1.07	56000	56000	56000	870	1900	4400
Ethylbenzene	SGV report + CLEA 1.07	25000	25000	25000	520	1200	2800
Xylene, o-	SGV report + CLEA 1.07	41000	42000	43000	480	1100	2600
Xylene, m-	SGV report + CLEA 1.07	41000	42000	43000	630	1500	3500
Xylene, p- (use this for combined m & p)	SGV report + CLEA 1.07	41000	42000	43000	580	1400	3200
MTBE	EIC/AGS/CL:AIRE + CLEA 1.07	75000	75000	75000	20000	33000	63000
VOCs - other benzenes							
Iso-propylbenzene	EIC/AGS/CL:AIRE + CLEA 1.07	25000	25000	25000	390	950	2300
Propylbenzene	EIC/AGS/CL:AIRE + CLEA 1.07	25000	25000	25000	400	980	2300
1,2,4-Trimethylbenzene	EIC/AGS/CL:AIRE + CLEA 1.07	250	250	250	310	360	410

Updated 18/11/15							
Contaminant	**Source of GAC**	**Human health - POSresi (1%SOM)**	**Human health - POSresi (2.5%SOM)**	**Human health - POSresi (6%SOM)**	**Human health - POSpark (1%SOM)**	**Human health - POSpark (2.5%SOM)**	**Human health - POSpark (6%SOM)**
VOCs - chlorobenzenes							
Bromobenzene	EIC/AGS/CL:AIRE + CLEA 1.07	5200	5400	5600	850	2000	3500
Chlorobenzene	LQM/CIEH + CLEA 1.07	12000	13000	14000	680	1500	2900
1,2-Dichlorobenzene	LQM/CIEH + CLEA 1.07	95000	100000	100000	570	1400	3300
1,3-Dichlorobenzene	LQM/CIEH + CLEA 1.07	300	300	300	390	440	470
1,4-Dichlorobenzene	LQM/CIEH + CLEA 1.07	17000	17000	17000	220	540	1300
Hexachlorobenzene	LQM/CIEH + CLEA 1.07	6.5	6.5	6.5	11	11	11
Pentachlorobenzene	LQM/CIEH + CLEA 1.07	110	110	110	190	190	190
1,2,3-trichlorobenzene	LQM/CIEH + CLEA 1.07	1700	1800	1800	130	330	1600
1,2,4-trichlorobenzene	LQM/CIEH + CLEA 1.07	10000	11000	12000	320	790	1900
1,3,5-trichlorobenzene	LQM/CIEH + CLEA 1.07	1600	1700	1800	37	91	220
1,2,3,4-tetrachlorobenzene	LQM/CIEH + CLEA 1.07	830	830	830	120	1600	1600
1,2,3,5-tetrachlorobenzene	LQM/CIEH + CLEA 1.07	79	79	79	39	120	130
1,2,4,5-tetrachlorobenzene	LQM/CIEH + CLEA 1.07	13	13	13	25	26	26
VOCs - chloroalkanes & alkanes							
Bromodichloromethane	EIC/AGS/CL:AIRE + CLEA 1.07	73	73	74	56	67	81
Bromoform	EIC/AGS/CL:AIRE + CLEA 1.07	3900	3900	4000	2700	4700	5200
Chloroethane	EIC/AGS/CL:AIRE + CLEA 1.07	2600	3500	5700	2600	3500	5700
Chloroethene (aka vinyl chloride)	LQM/CIEH + CLEA 1.07	3.5	3.5	3.5	4.8	5	5.4
Chloromethane	EIC/AGS/CL:AIRE + CLEA 1.07	540	550	560	140	150	170
1,1-Dichloroethane	EIC/AGS/CL:AIRE + CLEA 1.07	46000	47000	48000	1800	3000	5600
1,2-Dichloroethane	LQM/CIEH + CLEA 1.07	29	29	29	21	24	28
1,1-Dichloroethene	EIC/AGS/CL:AIRE + CLEA 1.07	2200	3900	11000	2200	3900	5900
Cis 1,2 Dichloroethene	EIC/AGS/CL:AIRE + CLEA 1.07	1300	1300	1400	690	840	1000
Trans 1,2 Dichloroethene	EIC/AGS/CL:AIRE + CLEA 1.07	3800	4000	4000	1700	2100	2700
Dichloromethane	EIC/AGS/CL:AIRE + CLEA 1.07	760	760	760	1500	1500	1500
1,2-Dichloropropane	EIC/AGS/CL:AIRE + CLEA 1.07	1700	1900	2200	160	210	290
Hexachloroethane	EIC/AGS/CL:AIRE + CLEA 1.07	120	130	130	8.2	20	48
Tetrachloroethene	LQM/CIEH + CLEA 1.07	3400	3400	3400	420	950	2200
1,1,1,2-Tetrachloroethane	LQM/CIEH + CLEA 1.07	1400	1400	1400	1500	1800	2100
1,1,2,2-Tetrachloroethane	LQM/CIEH + CLEA 1.07	1400	1400	1400	1800	2100	2300
Tetrachloromethane	LQM/CIEH + CLEA 1.07	340	350	350	170	240	320
Trichloroethene	LQM/CIEH + CLEA 1.07	1200	1300	1300	660	860	1100
1,1,1-Trichloroethane	LQM/CIEH + CLEA 1.07	140000	140000	140000	1400	2900	6400
1,1,2 Trichloroethane	EIC/AGS/CL:AIRE + CLEA 1.07	990	990	1000	1100	1300	1500
Trichloromethane	LQM/CIEH + CLEA 1.07	1700	1700	1700	2700	2900	3100
Other phenols & chlorophenols							
2-Chlorophenol	LQM/CIEH + CLEA 1.07	610	610	610	1100	1100	1100
2,4-Dichlorophenol	LQM/CIEH + CLEA 1.07	610	610	610	1000	1100	1100
2,4-Dimethylphenol	EIC/AGS/CL:AIRE + CLEA 1.07	5000	5000	5000	1400	9600	9900
2-Methylphenol	EIC/AGS/CL:AIRE + CLEA 1.07	25000	25000	25000	15000	48000	49000
3-Methylphenol	EIC/AGS/CL:AIRE + CLEA 1.07	25000	25000	25000	27000	48000	49000
4-Methylphenol	EIC/AGS/CL:AIRE + CLEA 1.07	25000	25000	25000	27000	48000	49000
Pentachlorophenol	LQM/CIEH + CLEA 1.07	180	180	180	220	250	270
2,3,4,6-Tetrachlorophenol	LQM/CIEH + CLEA 1.07	610	610	610	1000	1100	1100
2,4,6-Trichlorophenol	LQM/CIEH + CLEA 1.07	610	610	610	1100	1100	1100
Phthalates							
Bis (2-ethylhexyl) phthalate	EIC/AGS/CL:AIRE + CLEA 1.07	9700	9700	9700	17000	17000	17000
Butyl benzyl phthalate	EIC/AGS/CL:AIRE + CLEA 1.07	130000	130000	130000	250000	260000	260000
Diethyl Phthalate	EIC/AGS/CL:AIRE + CLEA 1.07	49000	50000	50000	14	93000	96000
Di-n-butyl phthalate	EIC/AGS/CL:AIRE + CLEA 1.07	1300	1300	1300	2600	2700	2600
Di-n-octyl phthalate	EIC/AGS/CL:AIRE + CLEA 1.07	11000	11000	11000	20000	20000	20000
Pesticides							
Aldrin	LQM/CIEH + CLEA 1.07	6.6	6.6	6.6	13	13	13
Atrazine	LQM/CIEH + CLEA 1.07	100	100	100	180	180	180
DDD	Hydrock + CLEA 1.07	2700	2700	2700	5700	5700	5700
DDE	Hydrock + CLEA 1.07	2700	2700	2700	5700	5700	5700
DDT	Hydrock + CLEA 1.07	2600	2600	2600	5500	5500	5500
Dichlorvos	LQM/CIEH + CLEA 1.07	120	120	120	140	160	180
Dieldrin	LQM/CIEH + CLEA 1.07	12	12	12	23	23	23
Endosulfan - alpha	LQM/CIEH + CLEA 1.07	490	490	490	940	970	990
Endosulfan - beta	LQM/CIEH + CLEA 1.07	490	490	490	950	980	990
Hexachlorocyclohexanes - alpha (inc. Lindane)	LQM/CIEH + CLEA 1.07	2000	2000	2000	4000	4100	4100
Hexachlorocyclohexanes - beta (inc. Lindane)	LQM/CIEH + CLEA 1.07	150	150	150	300	300	310
Hexachlorocyclohexanes - gamma (inc. Lindane)	LQM/CIEH + CLEA 1.07	71	71	71	140	140	140

Updated 18/11/15							
Contaminant	**Source of GAC**	**Human health - POSresi (1%SOM)**	**Human health - POSresi (2.5%SOM)**	**Human health - POSresi (6%SOM)**	**Human health - POSpark (1%SOM)**	**Human health - POSpark (2.5%SOM)**	**Human health - POSpark (6%SOM)**
Dioxins, furans & dioxin-like-PCBs							
Total dioxins, furans & DL-PCB (aerial dep.)	SGV report + CLEA 1.07	0.023	0.023	0.023	0.049	0.049	0.049
Non-dioxin-like PCBs							
PCB-28	Hydrock + CLEA 1.07	1.2	1.2	1.2	2.5	2.5	2.5
PCB-52	Hydrock + CLEA 1.07	1.2	1.2	1.2	2.5	2.5	2.5
PCB-101	Hydrock + CLEA 1.07	1.2	1.2	1.2	2.5	2.5	2.5
PCB-138	Hydrock + CLEA 1.07	1.2	1.2	1.2	2.5	2.5	2.5
PCB-153	Hydrock + CLEA 1.07	1.2	1.2	1.2	2.5	2.5	2.5
PCB-180	Hydrock + CLEA 1.07	1.2	1.2	1.2	2.5	2.5	2.5
Explosives							
HMX	LQM/CIEH + CLEA 1.07	13000	13000	13000	23000	23000	24000
RDX	LQM/CIEH + CLEA 1.07	790	790	800	19	1500	1600
2,4,6-Trinitrotoluene	LQM/CIEH + CLEA 1.07	130	130	130	260	270	270
Other inorganics							
Antimony	EIC/AGS/CL:AIRE + CLEA 1.07	740	740	740	1700	1700	1700
Barium	EIC/AGS/CL:AIRE + CLEA 1.07	2700	2700	2700	5800	5800	5800
Mercury, elemental	SGV report + CLEA 1.07	4.3	11	26	4.3	11	26
Molybdenum	EIC/AGS/CL:AIRE + CLEA 1.07	1400	1400	1400	2900	2900	2900
Thiocyanate	Hydrock + CLEA 1.07	25	25	25	53	53	53
Other organics							
Biphenyl	EIC/AGS/CL:AIRE + CLEA 1.07	9500	9500	9500	34	84	19000
Carbon disulphide	LQM/CIEH + CLEA 1.07	11000	11000	12000	1300	1900	2700
2,4-Dinitrotoluene	EIC/AGS/CL:AIRE + CLEA 1.07	500	500	500	140	960	990
2,6-Dinitrotoluene	EIC/AGS/CL:AIRE + CLEA 1.07	250	250	250	290	490	500
Hexachloro-1,3-butadiene	LQM/CIEH + CLEA 1.07	25	25	25	48	50	51
Mercury, methyl	SGV report + CLEA 1.07	53	53	53	73	93	97
Styrene	EIC/AGS/CL:AIRE + CLEA 1.07	3000	3000	3000	630	1400	3400
Tributyl tin oxide	EIC/AGS/CL:AIRE + CLEA 1.07	31	31	31	63	64	65
2-Chloronaphthalene	EIC/AGS/CL:AIRE + CLEA 1.07	7500	8400	9000	110	1800	2800
Insufficient data to derive GAC							
n butylbenzene	Insufficient data (EIC)	-	-	-	-	-	-
sec butylbenzene	Insufficient data (EIC)	-	-	-	-	-	-
Carbazole	Insufficient data (EIC)	-	-	-	-	-	-
Dimethyl phthalate	Insufficient data (EIC)	-	-	-	-	-	-
Isopropyltoluene	Insufficient data (EIC)	-	-	-	-	-	-
1-Methylnaphthalene	Insufficient data (EIC)	-	-	-	-	-	-
2-Methylnaphthalene	Insufficient data (EIC)	-	-	-	-	-	-
Sulfur (elemental)	Insufficient data (Hydrock)	-	-	-	-	-	-
1,3,5-Trimethylbenzene	Insufficient data (EIC)	-	-	-	-	-	-
tert butylbenzene	Insufficient data (EIC)	-	-	-	-	-	-
NOTES							
If >1,000,000 is calculated, 1,000,000 is adopted.							
Red text - liquid at ambient temperature, calculated GAC exceeds saturation value and							
Orange text - solid at ambient temperature, calculated GAC exceeds saturation value a							
Blue text - solid at ambient temperature, calculated GAC exceeds saturation value and							
Green text - solid at ambient temperature, calculated GAC exceeds saturation value a							

3.3.3 Exceedance of Saturation Limits

In some instances the CLEA 1.07 model produces GACs with a warning that the value exceeds the saturation value, which is either the solubility of the substance in water or the vapour saturation limit. Limited guidance is given in SR4 (Section 4.12) on how to assess the GAC in these circumstances. Precedence is also set in a number of SGV reports, to date those dealing with the BTEX compounds. These two sets of documentation are contradictory. The original issue of SR4 (CLEA 1.04) (Environment Agency 2009b) gives an example of how to carry out a manual calculation using data for ethylbenzene, whereas the BTEX SGV reports (e.g. Environment Agency March 2009) state that the GAC should be limited to the saturation level. The revised version of SR4 (CLEA 1.05/6) (Environment Agency 2009c) retains the example, but the name ethylbenzene has been removed.

There are three options: to adopt the value as calculated, to limit the GAC to the saturation value, or to undertake a manual calculation as per Section 4.12 of SR4. Again, the guidance is confusing. SR3 (Environment Agency 2009b) cautions against adopting the saturation limit, which is the most conservative, saying that it may be over-conservative. However, this is the approach taken in the BTEX SGV reports.

Clearly, the adoption of a GAC under conditions where the saturation level is exceeded is subjective and professional judgement is involved. With this in mind, the protocol adopted by Hydrock is as follows, and has been derived at by considering the possible values from the three methods given above.

1. For substances where the GAC is highlighted in amber in CLEA, this is adopted as the GAC. For substances where the GAC is highlighted in red, the following apply.

2. For VOCs including BTEX and the volatile TPH Fractions (less than EC10), the saturation value is adopted in line with the latest recommendations in the BTEX SGV reports.

3. For substances which are liquid at ambient temperature, the saturation value is adopted.

4. For substances which are solid at ambient temperature, the manual calculation is undertaken provided there are both oral and inhalation HCVs. The result is compared with the red-highlighted GAC and the lower of the two adopted as the GAC. If there is only one HCV and the calculation cannot be performed, the red-highlighted value is adopted as the GAC where the saturation limit exceed the aqueous solubility, but the saturation value is adopted where the saturation limit exceed the saturated vapour concentration.

5. In some instances the GACs shows a large difference between different SOM where the saturation value has been taken for, say, 1% SOM and the calculated values for 2.5% and 6% SOM. Whilst this may appear inconsistent on first inspection, the results have been adopted as they are and the difference must be attributed to the physico-chemical influence of organic matter in the soil as modelled by CLEA.

3.3.4 GACs for Public Open Space

The first UK methodology for assessing public open space (POS) was published for the C4SLs (CL:AIRE December 2013) based on two land use scenarios:

- Public open space near residential housing (POS_{resi}) includes the predominantly grassed areas adjacent to high density housing and the central green area around which houses are located, as on many housing estates from the 1930s to 1970s. It also includes the smaller areas commonly incorporated in new developments as informal grassed areas or more formal landscaped areas with a mixture of open space and covered soil with planting. It is considered to be a predominantly grassed area up to 0.05 ha and a considerable portion of this (up to 50%) may be bare soil. The site is regularly used by children for playing and may be used for informal sports activities such as a football "kickabout".
- Public park (POS_{park}) is an area of open space provided for recreational use and usually owned and maintained by the Local Authority and could be used for a wide range of activities such as family visits and picnics, children's play area, sporting activities such as football on an informal basis (although this POS is not considered as a dedicated sports pitch) and dog walking. It is considered to be a relatively large are (>0.5 ha) of predominantly grassed open space with no more than 25% of exposed soil.

Hydrock has calculated GACs for these two standard land uses using the land use scenarios given in Tables 3.6 and 3.7 of the CL:AIRE report, but with the following modifications:

- POS_{resi} (Table 3.6), items omitted from the published table in error: building = small terraced house; occupancy period for lifetime averaging (for Cd) AC10-12 = 19, AC13-16 = 15 & AC17-18 = 16; and indoor inhalation rates updated according to a USEPA 2011 publication that supersedes the draft 2006 version used in the CLEA model previously.
- POS_{park} (Table 3.7), typographic errors in the published table: soil ingestion rate for AC1-12 = 50 mg/day and for AC13-18 = 20 mg/day.

Note that these corrections are included in the revised CLEA 1.07 when the C4SL land uses are selected. The calculated GACs are presented in Table 3.5 and are based on a sandy loam soil of pH 7 su.

3.4 Note on Petroleum Hydrocarbons

Petroleum hydrocarbon contamination is complex. The type of crude oil, its distillation, processing and blending, and the subsequent weathering in the environment all result in the development of petroleum residues of extreme chemical complexity (Environment Agency, 2003). The laboratory analysis of petroleum hydrocarbons is highly method dependent. In addition to contaminants such as fuels and lubricating oils, the analyses also pick up a range of other chemicals such as PAHs and phenols, together with naturally occurring substances like humic and fulvic matter in organic soils. For example, TPH determination on dried oak leaves can give a result of 18,000 mg/kg of TPH.

TPH can only be used as a surrogate for estimating the petroleum load of a soil if a spill is well defined but is generally not a sound basis for risk management and regulatory control. International approaches for assessing risks from petroleum hydrocarbons focus on dividing the components into groups and assigning toxicologically potency and fate-transport to each group.

Approaches have been developed internationally, one such proposal is discussed by the Dutch National Institute of Public Health and the Environment (RIVM) (Franken *et al* 1999). The approach is broadly to sub-divide the TPH into fractions based on equivalent carbon length for aliphatic (straight chain) and aromatic (cyclic) compounds. The choice of the fractions is based

on work carried out by, amongst others, the Total Petroleum Hydrocarbon Criteria Working Group (TPHCWG). The Working Group is guided by a steering committee consisting of representatives from industry, government and academia, with the remit *to develop scientifically defensible information for establishing soil cleanup levels that are protective of human health at petroleum contaminated sites.*

Generic assessment criteria can be developed for each TPH fraction in the same way as they can be for named substances, providing certain assumptions are made regarding the applicability of the data to all the compounds in each fraction. A significant part of the TPHCWG activity has been in determining fraction boundaries to maximize confidence in the eventual criteria.

A modified TPHCWG approach has been adopted in a framework developed by the Environment Agency (2005) for use within the UK. The 13 original TPHCWG fractions have been adopted, with the addition of >EC35-EC44. An undifferentiated (i.e. without aliphatic – aromatic split) fraction of >EC44-EC70 has also been suggested but the Agency says it will be reviewing the need for this in due course, once research has been carried out into the toxicity of these heavy-end products like resins and asphaltenes.

The UK suggested approach to petroleum hydrocarbon risk assessment is summarised as follows:

- Measure indicator chemicals and compare with their GAC – these are chemicals which are considered as key risk drivers at petroleum hydrocarbon contaminated sites. The chemicals of potential concern depend on the type of hydrocarbon product, but a (non-exhaustive) list has been suggested by the Environment Agency (2005):

  Non-threshold: benzene, benzo(a)pyrene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenz(a,h)anthracene, indeno(1,2,3,cd)pyrene.

  Threshold: toluene, ethylbenzene, xylene, naphthalene, fluoranthene, phenanthrene, pyrene.

- Measure TPH fractions and compare with their GAC, based on threshold toxicity only.

  Aliphatic fractions: >EC5-EC6, >EC6-EC8, >EC8-EC10, >EC10-EC12, >EC12-EC16, >EC16-EC35, >EC35-EC44.

  Undifferentiated: >EC44-EC77 (subject to review and confirmation by Agency).

  Aromatic fractions: >EC5-EC7, >EC7-EC8, >EC8-EC10, >EC10-EC12, >EC12-EC16, >EC16-EC21, >EC21-EC35, >EC35-EC44.

- Carry out an additivity check on the TPH fractions if none of the individual fractions exceed their GAC. A Hazard Quotient is calculated for each fraction by dividing the measured concentration by the GAC and these are summed to give the Hazard Index. Where the Hazard Index exceeds unity, this can indicate a potentially significant risk to human health and consideration should proceed to the next stage (remediation or further assessment). Including all the fractions in a Hazard Index is conservative as it assumes all fractions add together in acting on the same target organ within the critical receptor. The Environment Agency (2005) has stated that fractions exhibiting different toxicological properties might be excluded from this process in due course, once research has been completed and further guidance published. The Louisiana Department of Environmental Quality (LDEQ) (2003) has published more detailed guidance, suggesting the following fractions be grouped: (a)

aliphatic >EC8-EC10, >EC10-EC12 & >EC12-EC16, (b) aromatic >EC8-EC10, >EC10-EC12 & >EC12-EC16 and (c) aromatic >EC16-EC21 & >EC21-EC35.

Hydrock has adopted the first two points from above approach and has developed generic assessment criteria for the TPH fractions up to EC35. These are used for assessment where an appropriate level of sampling and laboratory analysis has been carried out, but cannot be used where more generalised TPH analysis has been scheduled (such as DRO/GRO only).

There is, however, some uncertainty concerning the validity of the additivity check. The Environment Agency (2002a) stated in the now withdrawn CLR 9, Section 4.4, "that it is not valid to simply calculate the sum of the fractions 'soil concentration divided by SGV', and compare this with 1.", because total intake, not just intake from soil, needs to be included. It is assumed that the 2005 document takes this into account and that it is erring on the side of conservatism. Until this is formally resolved, Hydrock will report the additivity check for information, using the LDEQ groupings, but will caution against its use in setting remedial goals without further study or publication of definitive guidance. It is more realistic to carry out the additivity test on individual samples rather than on US_{95} values for the whole population, because it is unlikely that the TPH profile of the averaging area will be represented by the US_{95}s of every fraction. More likely, a sample high in one fraction will be low in another, particularly where a mixture of products is present in the ground.

The analysis required for the above methodology, using the aliphatic / aromatic split of TPH fractions, is referred to by Hydrock its "**TPH Level 2 suite**" of determinands. In instances where a full numerical risk assessment is not required, Hydrock carries out a screening analysis known as its "**TPH Level 1 suite**" of determinands. The TPH is divided into fractions, but without the aliphatic / aromatic split. This allows a semi-quantitative risk assessment on the basis of taking a worst case condition. The fraction split with the lowest GAC is deemed to apply to the whole fraction. For example, if the Level 1 analysis indicates the presence of >EC8-EC10, the result is compared to the GACs for the aliphatic >C8-C10 and the aromatic >EC8-EC10 fractions. The worst case would be to assume the whole fraction is aliphatic because this is the lower of the two GACs. This is a conservative approach, and if the test is passed, there is no need to proceed further. However, if the test is failed this does not necessarily indicate unacceptable risks and a more detailed risk assessment is required, with the full TPH Level 2 analysis suite.

3.5 Note on PAHs

A number of authors have used to concept of PAH double ratio plots to investigate the possible source of PAHs in environmental samples.

NAVFAC (Appendix A, April 2003) defines three major source type: petrogenic - generated from organic matter in ancient sediments by geologic conditions (i.e. including petroleum hydrocarbons and refined products); pyrogenic – generated by combustion of organic matter (wood, coal, petroleum, wastes etc.); and biogenic – generated by modern biological processes or by diagenetic processes (e.g. oxidation of organic matter). The following broad trends in the data were recognised:

- a ratio of fluoranthene to pyrene (Fl/Py) of <1 is indicative petrogenic sources, and of >1 is indicative of pyrogenic sources; and

- a ratio of anthracene to phenanthrene (An/Ph) of <0.2 is indicative of pyrogenic sources and of >0.2 is indicative of petrogenic sources.

Yunker *et al* (2002) carried out a literature study of published PAH ratios for a number of petroleum sources, combustion sources and environmental sources. They identified the following broad trends in the data:

- a ratio of fluoranthene to fluoranthene plus pyrene (Fl/(Fl+Py)) of <0.4 is indicative of petroleum hydrocarbon sources; of 0.4-0.5 is indicative of liquid fossil fuel combustion products; and of >0.5 is indicative of grass, wood and coal combustion products;

- a ratio of benzo(a)anthracene to benzo(a)anthracene plus chyrsene (BaA/(BaA+Ch)) of <0.2 is indicative of petroleum hydrocarbon sources; of 0.2-0.35 is indicative of either petroleum hydrocarbon sources or combustion and of >0.35 is indicative of combustion products;

- a ratio of anthracene to anthracene plus phenanthrene (An/(An+Ph)) of <0.1 is indicative petroleum hydrocarbon sources, but can be emissions from lignite, diesel or oil combustion, and of >0.1 is indicative of combustion sources, but can be diesel, coal or some crude oil hydrocarbons;

- a ratio of indeno(1,2,3)pyrene to indeno(1,2,3)pyrene plus benzo(ghi)perylene (IP/(IP+Bghi)) of <0.2 is indicative of petroleum hydrocarbon sources; of 0.2-0.5 is indicative of petroleum hydrocarbon combustion; and >0.5 is indicative of grass, wood or coal combustion products.

Note that in these authors' study of these and a number of other ratios they cautioned there are exceptions to these generalisations on account of the variability and complexity of, for example, different crude oil sources.

Costa *et al* (2004) and Costa and Sauer (2005) used plots of fluoranthene to pyrene (Fl/Py) against benzo(a)anthracene to chrysene (BaA/Ch), benzo(a)anthracene to benzo(a)pyrene (BaA/BaP) and chrysene to benzo(a)pyrene (Ch/BaP) to distinguish coal tar and creosote contaminants from combustion products they referred to as urban background. They report distinctive areas on the plots relating to the sites being studied. Litton (2006) has also used these ratios to similar effect on other sites.

ALcontrol Laboratories (2006) also uses plots of fluoranthene to pyrene (Fl/Py) against benzo(a)anthracene to chrysene (BaA/Ch). Jones (2008) confirms that the following broad trends are derived from unpublished work at the laboratory:

- a ratio of Fl/Py of <0.65 is indicative of used engine oil when the ratio of BaA/Ch is higher (approaching 1.40) or other petroleum products when the ratio of BaA/Ch is lower (above about 0.35);

- a ratio of F/Py of 0.65-1 is indicative of petroleum combustion products; and

- a ratio of Fl/Py of <1 is indicative of coal when the ratio of BaA/Ch is higher (approaching 1.40) or other combustion soots when the ratio of BaA/Ch is lower (above about 0.35).

Stogiannidis and Laane (2015) undertook a review of published literature and produced a summary (their Table 4 plus supporting text) of a number of PAH ratios and threshold values for the initial screening or identification of pyrogenic or petrogenic PAHs.

It is evident from the literature that if a cross plot is made of two ratios it is often possible to see a separation in samples from different sources and, together with other supporting information, gain a better understanding of the likely source of the PAHs. Different ratios may give differing degrees of separation and so trying several plots is often useful. The work of Stogiannidis and Laane can help distinguish between oil-spill related PAHs and those produced by combustion.

3.6 Note on Cyanide

Cyanide toxicity is complicated but it is generally accepted that cyanide species exist in 'free' and 'complex' forms. Free cyanide species are toxic and it is generally agreed that free cyanide provides a more scientifically correct basis for the establishment of generic criteria. This approach has been followed in this report.

Metal-cyanide complexes (complex cyanide) are generally not considered toxic but in certain environmental fate reactions it is possible that dissociation may release toxic free cyanide into the water environment. This might occur where complex cyanides are exposed to direct sunlight and photolysis takes place. Such circumstances are considered very rare.

There is no published approach to assessing acute toxicity, but this can be a concern on gas works sites where spent oxide or, more particularly foul lime (aka "blue billy") from the older processes, may contain significant concentrations of free cyanide. This is a particular problem because young children may be attracted to the bright blue deposits.

A methodology was presented by Macklin *et al* (December 2012): an acute oral LOAEL dose was identified by the then Health Protection Agency as 0.4 mg/kg bw/day; a dose of 5 g of soil was selected based on USEPA studies, eaten by a 10 kg weight child. This equates to a trigger level of 800 mg/kg free cyanide in soil. Above this concentration, there is a plausible hazard of ingestion of a harmful or fatal dose.

3.7 Note on Polychlorinated Biphenyls

PCBs fall into two groups, the dioxin-like (DL) and the non-dioxin-like (NDL), by virtue of their toxicity.

The Environment Agency methodology for DL-PCBs is included with dioxins and furans in the published dioxins SGV report (Science Report SC050021 / Dioxins SGV). The basis of this report is that because of the additive nature of these substances it is inappropriate to produce individual SGVs. The approach is to obtain speciated analyses of 12 DL-PCBs and, using an Agency spreadsheet, calculate a Hazard Index for a prescribed mixture of substances. SGVs can only be produced for atmospheric fall-out sites where the proportions of the individual substances are assumed to be uniform across the UK according to a table listed in the document.

For potentially industrially contaminated sites (such as where PCBs have escaped from transformers) only a Hazard Index can be produced. This can be converted into a GAC by

calculation, but such a GAC is only applicable to conditions where the mixture of substances is unchanged. In effect, Hazard Indices will be calculated for each soil sample and provided these are all less than unity, the site poses no significant risk.

There is not Agency guidance with respect to NDL-PCBs. Hydrock has produced individual GACs for a number of these. A precautionary approach has been taken, in that the NDL-PCBs are assumed to have additive effects and the same approach is taken as with Hydrock's assessment of contamination by TPH fractions. Namely, each substance is compared with its GAC, but there is an additional stage in which a Hazard Index is also calculated. This is similar to the Agency's approach for DL-PCBs, but the Hazard Index calculation is performed at a different stage in the process.

Currently, these two approaches are separate. That is to say, there is no assumption of additvity of effect between DL- and NDL-PCBs. The logic for this is the fact that these two groups where established in the first place on account of their different effects.

The toxicity of the DL-PCBs is far greater than that of the NDL-PCBs. For example, the residential SGV for the full list of dioxins, furans and DL-PCBs under atmospheric fall-out conditions is 0.0087 mg/kg (NB: using only the 12 DL-PCBs in this list gives a GAC of 0.051 mg/kg), whist the lowest GAC for the NDL-PCBs is 0.32 mg/kg under the same exposure conditions. Analyses for DL-PCBs must be undertaken with very low laboratory reporting limits (typically 1ng/kg).

In real life examples, it is almost certain that both forms of PCBs will be present at a site. This is because the marketed products (known as Aroclors) were mixtures of many PCB congeners and they all appear to contain members from both groups (according to literature researched by Hydrock). Perhaps this is why the Agency has only issued guidance on the DL-PCBs.

Logically, if a site contains any PCBs (for example as a 'total' analysis) it is likely to contain DL-PCBs. In which case, the safe concentrations will be very low and can only be confirmed by re-analysing using low detection methods and following the Agency methodology on a sample-by-sample basis. This is effect means that GACs for NDL-PCBs are redundant. The implications of the Agency methodology have yet to be fully understood by the contaminated land community. For example, it would appear that standard laboratory tests for NDL-PCBs are irrelevant. Furthermore, standard reporting limits are far too high, typically 1ug/kg. The only instance where NDL-PCBs become the risk driver at a PCB contaminated site would be if for some reason the DL-PCBs had preferentially degraded.

The Hydrock methodology for PCB risk assessment is to carry out analyses for the 12 DL-PCBs (commonly referred to as the WHO-12) and the 7 most persistent NDL-PCBs (commonly referred to as the ICES-7) at a detection limit of 1 ng/kg (Table 3.6). This is considered conservative because it covers both groups even though the risk driver is most likely to be the DL-PCB group.

The WHO-12 are assessed using the Environment Agency SGV report methodology, to produce a Hazard Index, and the ICES-7 are compared to Hydrock-derived GACs with additivity check. Note that PCB118 appears in both lists and so in assessed under the Environment Agency methodology as a DL-PCB.

Table 3.6: PCB Suites

WHO-12 (dioxin-like)	ICES-7 (most persistent)
PCB-77	PCB-28
PCB-81	PCB-52
PCB-126	PCB-101
PCB-169	PCB-118
PCB-105	PCB-138
PCB-114	PCB-153
PCB-118	PCB-180
PCB-123	(Non-dioxin-like apart
PCB-156	from PCB-118)
PCB-157	
PCB-167	
PCB-189	

3.8 Note on Pesticides and Herbicides

Unless there is evidence to suggest that a certain pesticide or herbicide has been used on the land, the standard approach adopted by Hydrock is to screen for the presence of common pesticides in the organochlorine, organophosphorous and organonitrogen groups (OCP, OPP & OPN), for example on agricultural land. Note that the only available GACs are for pesticides in these groups (and then only a sub-set of the whole).

3.9 Note on Radon

Advice on radon protection in England is provided by Public Health England (www.ukradon.org), formerly the Health Protection Agency (*The Indicative Atlas of Radon in England and Wales,* HPA-RPD-033 (Miles *et al* 2007) and RCE-15 (2010)), and by the BRE (BRE Report BR 211 (Scivyer 2015)). An area of the country can be categorised according to the percentage of existing homes where radon is present above the Action Level: 0-1% lower probability, 1-3% and 3-10% intermediate probability and >10% higher probability. It is important to understand that the database on which these numbers are based is incomplete and contains more data points in areas of the country that have traditionally been known for high radon concentrations. As more properties are monitored, the categorisation may change.

The areas where >1% of homes exceed the Action Level are known as Radon Affected Areas.

The Building Regulations cite BR 211 and require basic radon protection measures in new buildings in areas of England and Wales where 3-10% of properties exceed the Action Level and full radon protection measures where >10% exceed the Action Level.

Landlords and employers have a legal duty to keep radon levels as low as practicable and to install remedial measures if levels are too high. Commercial new build includes protection measures similar to those for new homes, but once occupied they are subject to the HSW Act and the Ionising Radiations Regulations 1999.

Private residents are advised to have a radon test where their property is in a Radon Affected Area, and to fit remedial measures if levels are too high.

The Law Society's advice to conveyancing solicitors is to ask the vendor standard questions concerning whether the property is in a radon affected area, whether it was constructed with radon protection measures and whether a radon test has been carried out by the vendor. Hydrock understands that PHE is discussing with the Law Society the adoption of stronger wording to these questions.

In 2009 the then Health Protection Agency recommended that Building Regulations and supporting documents should be amended to ensure that *all* new buildings, extensions, conversions and refurbished buildings in the UK include basic radon protective measures as a minimum. This recommendation was rejected by the Government. Consequently, the current situation is that a developer is *required* only to install protective measures in buildings where >3% of existing properties are above the Action Level, but is not required to install them in Radon Affected Areas where 1-3% of existing properties exceed the Action Level (even though there may be future implications for occupiers of these buildings).

Note that whilst membranes intended to protect against radon *may* also protect against methane and carbon dioxide, this will only be the case if they have also been specifically designed (and installed) to protect against those gases (BS 8485:2015, Annex G).

3.10 Note on the Use of Non-UK Assessment Criteria

In rare instances reference to assessment criteria or other trigger values published by other authoritative bodies (other than those concerned with the UK contaminated land regime) may provide background information on the likely degree of contamination of a substance. Trigger levels indicative of naturally occurring concentrations or risk-based guidance from other countries often help place site analysis results into context. It must be remembered that use of non-UK assessment criteria is not in compliance with the UK contaminated land assessment regime given in the Model Procedures. However, these criteria can be of use as an aid to professional judgement and can help in determining a cost-effective and sustainable remedial strategy for a site, in consultation with the regulatory authorities.

3.11 Site-specific Assessment Criteria for Volatile Substances

The CLEA methodology includes the inhalation of indoor vapours where there are occupied buildings in the standard land use scenarios. For volatile substances such as those listed in Table 3.7 the percentage contribution of the indoor vapour pathway to the average daily exposure (ADE) can be seen to be significant (up to 100%). Consequently, if this pathway can be severed by the installation of a suitably designed and installed organic vapour barrier in the buildings only the remaining CLEA exposure pathways need to be considered for the site. Assessment criteria can be calculated for the remaining exposure pathways.

Site Specific Assessment Criteria (SSAC) have been calculated using CLEA UK using the same input parameters etc. as for the Hydrock GACs but with the indoor vapour pathway turned off in the model. The resulting SSACs can be used to inform on risk from these contaminants in the same way as GACs are used, but apply only if suitable membranes are provided and verified.

Table 3.7: Derivation of Site Specific Assessment Criteria for Volatile Substances for CLEA Standard Land Uses *Excluding the Indoor Vapour Pathway* (mg/kg) – on following page(s).

Updated 18/11/15		Human Health Generic Assessment Criteria (no indoor vapour pathway) (mg/kg)								
Contaminant	**Source of GAC**	Human health - residential without plant uptake, no indoor vapour (1%SOM)	Human health - residential without plant uptake, no indoor vapour (2.5%SOM)	Human health - residential without plant uptake, no indoor vapour (6%SOM)	Human health - residential with plant uptake, no indoor vapour (1%SOM)	Human health - residential with plant uptake, no indoor vapour (2.5%SOM)	Human health - residential with plant uptake, no indoor vapour (6%SOM)	Human health - commercial, no indoor vapour (1%SOM)	Human health - commercial, no indoor vapour (2.5%SOM)	Human health - commercial, no indoor vapour (6%SOM)
TPH fractions										
TPH ali EC05-EC06	LQM/CIEH + CLEA 1.07	320000	320000	320000	5000	11000	25000	300	560	1200
TPH ali >EC06-EC08	LQM/CIEH + CLEA 1.07	320000	320000	320000	15000	34000	71000	140	320	740
TPH ali >EC08-EC10	LQM/CIEH + CLEA 1.07	6400	6400	6400	1600	2900	4300	78	94000	94000
TPH ali >EC10-EC12	LQM/CIEH + CLEA 1.07	6500	6500	6500	4600	5500	6000	94000	95000	95000
TPH ali >EC12-EC16	LQM/CIEH + CLEA 1.07	6500	6500	6500	6300	6300	6400	95000	95000	95000
TPH ali >EC16-EC35	LQM/CIEH + CLEA 1.07	-	-	-	-	-	-	-	-	-
TPH ali >EC35-EC44	LQM/CIEH + CLEA 1.07	-	-	-	-	-	-	-	-	-
TPH aro EC05-EC07	LQM/CIEH + CLEA 1.07	29000	29000	29000	90	180	390	1200	2300	4700
TPH aro >EC07-EC08	LQM/CIEH + CLEA 1.07	29000	29000	29000	150	350	800	870	420000	420000
TPH aro >EC08-EC10	LQM/CIEH + CLEA 1.07	2600	2600	2600	58	140	310	38000	38000	38000
TPH aro >EC10-EC12	LQM/CIEH + CLEA 1.07	1800	1800	1800	83	200	430	38000	38000	38000
TPH aro >EC12-EC16	LQM/CIEH + CLEA 1.07	-	-	-	-	-	-	-	-	-
TPH aro >EC16-EC21	LQM/CIEH + CLEA 1.07	-	-	-	-	-	-	-	-	-
TPH aro >EC21-EC35	LQM/CIEH + CLEA 1.07	-	-	-	-	-	-	-	-	-
TPH aro >EC35-EC44	LQM/CIEH + CLEA 1.07	-	-	-	-	-	-	-	-	-
TPH >EC44-EC70	LQM/CIEH + CLEA 1.07	-	-	-	-	-	-	-	-	-
VOCs - BTEX & MTBE										
Benzene	SGV report + CLEA 1.07	37	37	37	0.13	0.27	0.59	530	530	540
Toluene	SGV report + CLEA 1.07	29000	29000	29000	150	350	800	870	420000	420000
Ethylbenzene	SGV report + CLEA 1.07	13000	13000	13000	110	260	600	180000	180000	190000
Xylene, o-	SGV report + CLEA 1.07	22000	22000	22000	190	460	1100	260000	280000	300000
Xylene, m-	SGV report + CLEA 1.07	22000	22000	22000	210	500	1200	260000	280000	300000
Xylene, p- (use this for combined m & p)	SGV report + CLEA 1.07	22000	22000	22000	200	470	1100	260000	280000	300000
MTBE	EIC/AGS/CL:AIRE + CLEA 1.07	39000	39000	39000	150	300	600	550000	550000	560000
VOCs - other benzenes										
Iso-propylbenzene	EIC/AGS/CL:AIRE + CLEA 1.07	13000	13000	13000	220	520	1200	180000	180000	180000
Propylbenzene	EIC/AGS/CL:AIRE + CLEA 1.07	13000	13000	13000	230	550	1200	180000	190000	190000
1,2,4-Trimethylbenzene	EIC/AGS/CL:AIRE + CLEA 1.07	130	130	130	2.5	6.1	14	1800	1800	1900
VOCs - chlorobenzenes										
Bromobenzene	EIC/AGS/CL:AIRE + CLEA 1.07	2900	3000	3000	22	52	120	31000	34000	37000
Chlorobenzene	LQM/CIEH + CLEA 1.07	6200	6300	6400	40	94	210	63000	77000	91000
1,2-Dichlorobenzene	LQM/CIEH + CLEA 1.07	54000	55000	56000	640	1500	3500	580000	670000	730000
1,3-Dichlorobenzene	LQM/CIEH + CLEA 1.07	130	130	130	1.7	4.1	9.3	3000	3100	3100
1,4-Dichlorobenzene	LQM/CIEH + CLEA 1.07	8800	8900	8900	100	250	570	130000	130000	130000
Hexachlorobenzene	LQM/CIEH + CLEA 1.07	-	-	-	-	-	-	-	-	-
Pentachlorobenzene	LQM/CIEH + CLEA 1.07	-	-	-	-	-	-	-	-	-
1,2,3-trichlorobenzene	LQM/CIEH + CLEA 1.07	950	960	960	31	74	160	12000	13000	13000
1,2,4-trichlorobenzene	LQM/CIEH + CLEA 1.07	6300	6500	6600	200	480	1100	49000	60000	69000
1,3,5-trichlorobenzene	LQM/CIEH + CLEA 1.07	920	940	940	31	74	160	9300	11000	12000
1,2,3,4-tetrachlorobenzene	LQM/CIEH + CLEA 1.07	-	-	-	-	-	-	-	-	-
1,2,3,5-tetrachlorobenzene	LQM/CIEH + CLEA 1.07	34	34	34	2.4	5.4	11.0	690	700	700
1,2,4,5-tetrachlorobenzene	LQM/CIEH + CLEA 1.07	-	-	-	-	-	-	-	-	-
VOCs - chloroalkanes & alkanes										
Bromodichloromethane	EIC/AGS/CL:AIRE + CLEA 1.07	38	38	38	0.11	0.22	0.46	500	520	530
Bromoform	EIC/AGS/CL:AIRE + CLEA 1.07	-	-	-	-	-	-	-	-	-
Chloroethane	EIC/AGS/CL:AIRE + CLEA 1.07	350000	350000	350000	780	1400	2600	2600	3500	5700
Chloroethene (aka vinyl chloride)	LQM/CIEH + CLEA 1.07	1.8	1.8	1.8	0.0038	0.0069	0.013	26	26	26
Chloromethane	EIC/AGS/CL:AIRE + CLEA 1.07	310	310	310	0.45	0.88	1.6	1900	2200	3000
1,1-Dichloroethane	EIC/AGS/CL:AIRE + CLEA 1.07	25000	25000	25000	64	120	240	1800	3000	5600
1,2-Dichloroethane	LQM/CIEH + CLEA 1.07	15	15	15	0.032	0.057	0.11	200	200	210
1,1-Dichloroethene	EIC/AGS/CL:AIRE + CLEA 1.07	5700	5700	5700	19	39	82	2200	3900	8000
Cis 1,2 Dichloroethene	EIC/AGS/CL:AIRE + CLEA 1.07	680	690	690	1.8	3.5	7.1	3900	6600	9900
Trans 1,2 Dichloroethene	EIC/AGS/CL:AIRE + CLEA 1.07	2100	2100	2100	6.5	13	27	3400	6200	13000
Dichloromethane	EIC/AGS/CL:AIRE + CLEA 1.07	390	390	390	0.70	1.3	2.3	7300	9000	9000
1,2-Dichloropropane	EIC/AGS/CL:AIRE + CLEA 1.07	1200	1300	1400	4.3	8.4	18	1200	2100	11000
Hexachloroethane	EIC/AGS/CL:AIRE + CLEA 1.07	64	64	64	1.8	4.3	9.3	900	920	930
Tetrachloroethene	LQM/CIEH + CLEA 1.07	1700	1700	1700	11	26	58	420	950	26000
1,1,1,2-Tetrachloroethane	LQM/CIEH + CLEA 1.07	730	730	730	5.4	13	29	10000	10000	11000
1,1,2,2-Tetrachloroethane	LQM/CIEH + CLEA 1.07	730	730	730	2.8	6.1	14	11000	11000	11000
Tetrachloromethane	LQM/CIEH + CLEA 1.07	180	180	180	1.1	2.5	5.7	1500	2500	2500
Trichloroethene	LQM/CIEH + CLEA 1.07	660	660	660	3.0	6.5	15	1500	3200	9000
1,1,1-Trichloroethane	LQM/CIEH + CLEA 1.07	75000	76000	76000	330	730	1600	1400	2900	6400
1,1,2 Trichloroethane	EIC/AGS/CL:AIRE + CLEA 1.07	510	510	510	2.0	4.2	9.4	7100	7300	7400
Trichloromethane	LQM/CIEH + CLEA 1.07	880	880	880	2.5	4.8	10	5200	9100	20000
Other inorganics										
Antimony	EIC/AGS/CL:AIRE + CLEA 1.07	-	-	-	-	-	-	-	-	-
Barium	EIC/AGS/CL:AIRE + CLEA 1.07	-	-	-	-	-	-	-	-	-

Updated 18/11/15		Human Health Generic Assessment Criteria (no indoor vapour pathway) (mg/kg)								
Contaminant	**Source of GAC**	Human health - residential without plant uptake, no indoor vapour (1%SOM)	Human health - residential without plant uptake, no indoor vapour (2.5%SOM)	Human health - residential without plant uptake, no indoor vapour (6%SOM)	Human health - residential with plant uptake, no indoor vapour (1%SOM)	Human health - residential with plant uptake, no indoor vapour (2.5%SOM)	Human health - residential with plant uptake, no indoor vapour (6%SOM)	Human health - commercial, no indoor vapour (1%SOM)	Human health - commercial, no indoor vapour (2.5%SOM)	Human health - commercial, no indoor vapour (6%SOM)
Mercury, elemental	SGV report + CLEA 1.07	4.3	11	26	4.3	11	26	4.3	11	26
Molybdenum	EIC/AGS/CL:AIRE + CLEA 1.07	-	-	-	-	-	-	-	-	-
Thiocyanate	Hydrock + CLEA 1.07									
Other organics										
Biphenyl	EIC/AGS/CL:AIRE + CLEA 1.07	-	-	-	-	-	-	-	-	-
Carbon disulphide	LQM/CIEH + CLEA 1.07	6200	6300	6300	33	70	150	2100	4200	75000
2,4-Dinitrotoluene	EIC/AGS/CL:AIRE + CLEA 1.07	-	-	-	-	-	-	-	-	-
2,6-Dinitrotoluene	EIC/AGS/CL:AIRE + CLEA 1.07	-	-	-	-	-	-	-	-	-
Hexachloro-1,3-butadiene	LQM/CIEH + CLEA 1.07	13	13	13	1.5	3.1	5.6	290	290	290
Mercury, methyl	SGV report + CLEA 1.07	-	-	-	-	-	-	-	-	-
Styrene	EIC/AGS/CL:AIRE + CLEA 1.07	1500	1500	1500	11	25	58	23000	23000	23000
Tributyl tin oxide	EIC/AGS/CL:AIRE + CLEA 1.07	-	-	-	-	-	-	-	-	-
2-Chloronaphthalene	EIC/AGS/CL:AIRE + CLEA 1.07	-	-	-	-	-	-	-	-	-
NOTES										
If >1,000,000 is calculated, 1,000,000 is adopted.										
Red text - liquid at ambient temperature, calculated GAC exceeds saturation value and highlighed in red in CLEA - saturation value adopted for GAC										
Orange text - solid at ambient temperature, calculated GAC exceeds saturation value and highlighted red in CLEA - manual calculation not possible as only one HCV - saturated vapour concentration exceed, so saturation valu										
Blue text - solid at ambient temperature, calculated GAC exceeds saturation value and highlighted red in CLEA - manual calculation not possible as only one HCV - aqueous solubility exceed, so original red-highlighted value ad										
Green text - solid at ambient temperature, calculated GAC exceeds saturation value and highlighted red in CLEA - manual calculation undertaken but result is greater than original red-highlighted value, so original red-highlighte										

3.12 Determination of Contaminated Land Under Part 2A of the Environmental Protection Act 1990

The legal test for land contamination under the statutory guidance of Part 2A of the Environment Protection Act 1990 (i.e. "significant harm or significant possibility of significant harm") is **unacceptable** intake or direct bodily contact.

The situation was clarified by Defra (July 2008) in its guidance on the legal definition of contaminated land.

Part 2A does not prescribe number-based thresholds because it would be very difficult to produce numbers which are meaningful and proportionate, given the lack of scientific information about many substances and the site specific nature of risks. Instead, it relies on local authorities to assess risks posed on individual sites, then decide whether (in their view) the risks represent SPOSH, and thus whether land qualifies as **contaminated**.

The intention of the approach is that local authorities can use their judgement to ensure that Part 2A focuses on the SPOSH it was designed to address, whilst avoiding unnecessary burdens on land where contaminants may be present but there is no SPOSH.

In making Part 2A decisions, local authorities are likely to face some difficult decisions caused by uncertainty on the nature of risks. But they should be confident in exercising their judgement on the basis of available information. Part 2A clearly leaves judgements about what constitutes a SPOSH to local authorities, and it is up to them to make decisions.

GACs are not proxy thresholds for SPOSH, and should not be used as such. They describe levels (based on cautious estimates and assumptions in hypothetical example situations) at which concentrations of contaminants in soil may cease to pose **no appreciable/ minimal** risk. They do not seek to describe levels at which there might be a SPOSH.

Thus, if a GAC is exceeded, the assessor will usually need to conduct a detailed quantitative risk assessment to discover whether there is a **possibility of significant harm** and, if so, the nature of that risk. Whether or not SPOSH exists will depend on the results of risk assessment, the existence and nature of any pollutant linkages, and (ultimately) the judgement of the local authority.

As a general guide:

(i) For substances where there is a GAC, the more the GAC is exceeded, the more likely it is that an authority should consider the risks to be SPOSH.

(ii) Generally, the cautious nature of GACs means that local authorities may conclude that SPOSH is unlikely to exist at concentrations close to GACs.

(iii) In some cases, land with concentrations of contaminants which marginally exceed a GAC (say, up to a few times the GAC) might give rise to SPOSH if, for example, the receptor is particularly sensitive; or if further assessment finds that exposure is higher than that estimated in the GAC; or if there is little uncertainty in the underlying toxicology and HCV.

(iv) In other cases a GAC may be exceeded by tens of times and there might be no SPOSH (e.g. if further assessment found that exposure was much lower than that estimated using the GAC).

In view of the above, Hydrock has not to attempted to derive numerical SPOSH concentrations, but to use GACs as screening values. Where GACs are exceeded, it is recommended that the linkages and the uncertainties in the data are reviewed in consultation the regulatory authority to aid its judgment on determination.

A possible next phase would be to refine the generic risk assessment with a detailed risk assessment. This would involve using site-specific input parameters relevant to the particular site, in the CLEA model.

Revised contaminated land statutory guidance was published by Defra in 2012 with respect to Part 2A. The Act itself is unchanged. A new four category test (and associated classifications) has been introduced to ensure a high standard without being excessive. The aims are to make the regime target higher risk sites more efficiently, remove excessive cost burdens and facilitate the development of technical tools to increase consistency over time. This includes supporting non-technical guidance including a possible framework to aid in deciding into which of the proposed four new Categories of land a site should be placed.

Conversely, the regime is not intended to intervene where there is only a low level of risk, particularly in cases where it is difficult to demonstrate anything other than a very small hypothetical risk, as might be the case with vast swathes of land.

Defra states that there is a need for a more pragmatic approach. In practice, deciding when regulatory intervention is justified involves making decisions about when to act on a wide spectrum of risk, with varying levels of uncertainty over the precise nature of the risks. A number of the changes are intended to clarify when land is “contaminated land”. These are most likely to affect the assessment and remediation of contaminated land and are listed below.

1. Statutory explanation of broad objectives of the regime to explain that regulators should seek a reasonable balance between dealing with unacceptable risks whilst ensuring that burdens on businesses and society are manageable and sustainable. The regime should be seen as an option of last resort; that land is in effect “innocent until proven guilty”. This should give greater clarity for all concerned on what the regime seeks to achieve, and what it seeks to avoid.

2. Local Authorities to produce risk summaries before land may be determined as “contaminated”. Summaries must be understandable to non-experts to provide greater transparency and accountability. Easier for all involved to understand what local authority considers risks to be. It should be easier for Local Authorities managers, lawyers and councillors to be involved in decision making, particularly more difficult sites where wider socio-economic effects need to be take into account. Easier to share experience between Local Authorities leading to greater consistency in decision making.

3. Clarification of the legal test of significant harm to human health to mean serious unhealthy conditions of the body or part of it, and not minor/trivial complaints. This is unlikely to have a major effect because, to date, no site in England and Wales has been determined on

grounds that significant harm to human health has actually been caused. However, greater clarity on the meaning of significant harm is likely to help clarify the related legal test of significant possibility of significant harm.

4. Explanation of how to decide when land is (and is not) "contaminated land". A new four category test which recognises the spectrum of risk encountered by assessors, and the reality that some sites are clearly contaminated land (Category 1), some clearly are not (Category 4), and others need more detailed consideration before a decision can be taken (Categories 2 and 3). Greater clarity that decision making is a two stage process in which the regulator must first understand the risk before deciding whether the risk is sufficiently high to justify regulatory intervention. The aim is to create legal certainty around what definitely is, and is not, contaminated land, whilst leaving Local Authorities with discretion to exercise local judgement on less straightforward land.

5. Category 4 will include normal background levels of contamination unless there is some exceptional reason to consider otherwise. Clarification that land at SGV/GAC levels is likely to be well into Category 4. Statutory backing for the sector to develop new tests to describe the top of Category 4 (including the production of Category 4 Screening Levels). This should provide clarity on when land will not be caught, reduced uncertainty and costs for landowners and businesses and faster decision making on non-problematic land.

6. Clarify the status of GACs and how they should (and should not) be used including a legal backing for the use of robust GACs produced by reputable, non-governmental, organisations within the sector (LQM/CIEH, EIC/AGS/CL:AIRE). Backing the development of new GACs (or similar tools) as might be developed by the sector to help implement the new Guidance. Specific legal backing for the current set of SGVs/GACs, and clarity on how they can (and cannot) be used.

7. Category 1 land is clearly caught by the regime when there is clear evidence of an unacceptable risk (e.g. similar land is known to have caused significant harm). This should give clarity on when land is definitely "contaminated land", and help frame the spectrum of risk raised by land contamination.

8. New category of land under which Local Authorities would decide whether a site is in Category 2 (contaminated land) or Category 3 (not contaminated land). The new test would rest on whether or not the local authority believes there is a strong case for regulatory action, taking account of the scientific evidence, the objectives of the regime, and other factors. The local authority would start by considering health risks alone, and if they clearly tend towards the Category 4 or the Category 1 the decision could be taken at this point. However, if this does not lead to a decision, the local authority would consider wider socio-economic factors (e.g. cost, views of local people, etc) before deciding. If the local authority still cannot decide, the default decision is that the site is not contaminated land.

9. Reduce "regulatory creep" (excessive remediation of land forced by regulatory uncertainty) with greater clarity on what the enforcing authority can "reasonably" require by way of remediation. Clarity that SGVs/GACs must not be used as "one size fits all" remediation requirements; and that Part 2A can only be used to force remediation to a level where land

is no longer contaminated land (i.e. to a point where land is in Category 3), but it should not be used to force remediation beyond this point.

10. Guidance on the process of risk assessment: the need to take a strategic approach; the aim of dismissing low risk sites as soon as possible in order to focus on finding higher risk sites; and the general need to ensure that risk assessment is conducted in a timely and efficient manner. Clarify that in considering possible future risks the local authority should consider likely future situations (e.g. rather than hypothetical worst possible case situations). Recognise that in practice there is often a need for authorities to bring in external experts and act in accordance with their advice. Recognise that scientific and technical uncertainty is an inevitable part of contaminated land risk assessment, and set out broadly how regulators should deal with it. It is important that this is recognised in the Guidance to support the regulators who have to make decisions in the face of uncertainty.

In deciding whether or not a significant possibility of significant harm to human health exists, the local authority should first understand the possibility of significant harm from the relevant contaminant linkage(s) and the levels of uncertainty attached to that understanding, before it goes on to decide whether or not the possibility of significant harm is significant.

The term “possibility of significant harm” means the risk posed by one or more relevant contaminant linkage(s) relating to the land. It comprises:

- the estimated likelihood that significant harm might occur to an identified receptor, taking account of the current use of the land in question; and
- the estimated impact if the significant harm did occur i.e. the nature of the harm, the seriousness of the harm to any person who might suffer it, and (where relevant) the extent of the harm in terms of how many people might suffer it.

Having completed its estimation of the possibility of significant harm, the local authority should produce a risk summary.

The decision on whether the possibility of significant harm being caused is significant (SPOSH) is a regulatory decision to be taken by the relevant local authority. In deciding whether the possibility of significant harm being caused is significant, the authority is deciding whether the possibility of significant harm posed by contamination in, on or under the land is sufficiently high that regulatory action should be taken to reduce it, with all that would entail.

In deciding whether or not land is contaminated land on grounds of significant possibility of significant harm to human health, the local authority should use the four categorisations.

The decision between Categories 2 and 3 is a positive legal test, which means that the starting assumption should be that land does not pose a significant possibility of significant harm unless there is reason to consider otherwise. Category 3 may include land where the risks are not low, but nonetheless the authority considers that regulatory intervention under Part 2A is not warranted.

The local authority should first consider its assessment of the possibility of significant harm to human health, including the estimated likelihood of such harm, the estimated impact if it did occur, the timescale over which it might occur, and the levels of certainty attached to these

estimates. If the authority considers, on the basis of this consideration alone, that the strong case does or does not exist, the authority should make its decision on whether the land falls into Category 2 or Category 3 on this basis regardless of any other factors.

However, if the authority considers that it cannot make a decision, it should consider other factors which it considers are relevant, including:

- The likely direct and indirect health benefits and impacts of regulatory intervention including benefits of reducing or removing the risk posed by contamination, any risks from contaminants being mobilised during remediation and any indirect impacts such as stress-related health effects that may be experienced by affected people, particularly local residents. If it is not clear to the authority that the health benefits of remediation would outweigh the health impacts, the authority should presume the land falls into Category 3 unless there is strong reason to consider otherwise.
- The authority's initial estimate of what remediation would involve; how long it would take; what benefit it would be likely to bring; whether the benefits would outweigh the financial and economic costs; and any impacts on local society or the environment from taking action that the authority considers to be relevant.

Deregulatory Change to Definition of Contaminated Land as it Relates to Water Pollution.

Defra will commence Section 86 of the Water Act 2003 so that in future this would only be the case if there is significant pollution of controlled waters or significant possibility of such pollution. To explain how to decide whether or not "significant" pollution is being caused, the Statutory Guidance introduced new Category 1-4 tests similar to those for deciding when there is a significant risk to human health as described above. There will be new technical guidance produced by the Environment Agency. In practice, this change is likely to have little effect on the practical implementation of the Part 2A regime because the Environment Agency has already been prioritising sites likely to meet the new "significance" test.

The 'pollution of Controlled Waters' means the entry into controlled Waters of any poisonous, noxious or polluting matter or any solid waste matter. Given that the Part 2A regime seeks to identify and deal with significant pollution (rather than lesser levels of pollution), the local authority should seek to focus on pollution which: (i) may be harmful to human health or the quality of aquatic ecosystems or terrestrial ecosystems directly depending on aquatic ecosystems; (ii) which may result in damage to material property; or (iii) which may impair or interfere with amenities and other legitimate uses of the environment.

In deciding whether significant pollution of Controlled Waters is being caused, the local authority should consider that this test is only met where it is satisfied that the substances in question are continuing to enter controlled Waters; or that they have already entered the waters and are likely to do so again in such a manner that past and likely future entry in effect constitutes on-going pollution.

3.13 Generic Risk Assessment Criteria for Risk to Plants

Soil contaminants, if present at sufficient concentrations, can have an adverse effect on the plant population. Phytotoxic effects can be manifested by a variety of responses, such as growth inhibition, interference with plant processes, contaminant-induced nutrient deficiencies and

chlorosis (yellowing of leaves). All chemicals are probably capable of causing phytotoxic effects. Thus the phytotoxic potential of substances is dependent on the concentrations capable of having adverse effects on plants and the concentrations likely to be found at contaminated sites. Phytotoxicity is a difficult parameter to quantify given that experimental techniques vary widely and variations exist in plant tolerances, soil effects and synergistic/antagonistic reactions between chemicals.

Contaminants may be taken up and accumulated by plants through a range of mechanisms. The principal pathways are active and/or passive uptake through the plant root, adsorption to root surfaces and volatilisation from the soil surface followed by foliar uptake. After plant uptake, contaminants may be metabolised or excreted, or they may be bioaccumulated.

Many of the substances capable of adversely affecting vegetation exert this effect because of their water solubility, a characteristic that could result in their transport from contaminated sites into adjacent locations where the chemical may generate a phytotoxic response. This could be important if, for example, the adjacent site has important conservation status.

Whilst many contaminants may be phytotoxic, data are limited. Some heavy metals are essential as trace elements for plant growth but may become toxic at higher concentrations. Toxicity may be displayed in many forms, including signs of stress such as reduction in growth or yellowing of the tissue. The concentration in soil at which substances become phytotoxic depend on a range of factors including plant type, soil type, pH, the form and availability of the contaminant and other vegetation stress factors that may be present (such as drought).

Hydrock has carried out a review of a number of current and former guidance documents and other texts on phytotoxicity. It is not possible to produce a definitive list of phytotoxic substances on account of the variables mentioned above. However, a number of metals are repeatedly cited as commonly occurring priority pollutants. As a result, the following list is adopted as Hydrock's indicators of the potential for phytotoxicity: As, B, Cr, Cu, Ni and Zn.

As the CLEA framework is a risk based approach, applied to humans, an alternative strategy is required to assess the risk to plants from substances that are phytotoxic. Reference to published criteria and background concentrations can help put site data into context.

Published assessment criteria for the protection of plant life from a number of countries are given in Table 3.8. Also included in the table are some measures of natural background concentrations in typical soils.

The most authoritative source is the British Standard for topsoil, but this only lists three elements. CLR 11 states that the ICRCL Guidance Note 70/90 can be used for initial screening criteria. This approach has been adopted by Hydrock where BS 3882 is lacking, but where an ICRCL 70/90 criterion is lacking, the lowest criterion in Table 3.8 from, firstly MAFF, and, secondly, another country has been adopted. The adopted criteria are highlighted in Table 3.8. The MAFF value of 250 mg/kg has been chosen for As over the ICRCL value of 50 mg/kg as MAFF explains the 50 is applicable to vegetables and human health, whereas 250 is applicable to the plants themselves.

Table 3.8: Published Assessment Criteria and Natural Background Concentrations for Phytotoxic Elements (mg/kg)

Reference	As	B	Cr (total)	Cr (III)	Cr (VI)	Cu	Ni	Zn
Published assessment criteria (mg/kg)								
British Standard for topsoil (BS 3882:2015)						200 (pH>7) 135 (pH 6-7) 100 (pH 5.5-6.0)	110 (pH>7) 75 (pH 6-7) 60 (pH 5.5-6.0)	300 (pH>7) 200 (pH 6-7) 200 (pH 5.5-6.0)
MAFF Code of Good Agricultural Practice for the Protection of Soil (1998)	250			unlikely to be toxic except in v low pH. 400 for sites containing sewage sludge		500 (grass) but may fall to 250 for clover and sensitive species (at pH≥6)	110 (pH>7) 75 (pH 6-7) 60 (pH 5.5-6.0)	1000 (clover & grass at pH 6), may fall to 300 for sensitive species (at pH 6-7)
Australian Guideline B(1) (1999), Interim Urban Ecological Investigation Level (EIL). Soils not generally considered phytotoxic below these EILs.	20			400	1	100	60	200
Considered toxic to plants - Ponnamperuma *et al* (1979)		5 (hot water soluble)						
Dutch ecotoxicological intervention value (Swartjes 1993 & 1994) *	40	7	230			190		
Alberta Environment (1990) Tier 1 (draft) *	10 acid sandy soils			600 acid sandy soils	25 acid sandy soils	130 acid sandy soils		
Ontario MoE (1989) *	20 acid sandy soils 25 clay soils							
ICRCL 59/83 (1987) now withdrawn for human health assessment		3 (hot water soluble)				130	70	300
ICRCL 70/90 (1990) threshold trigger value	50				25	250		1000
New Zealand guidelines for timber treatment sites (1997), estimated based on Cu bioavailability *						500-1000 clay soils		
New Zealand guidelines for timber treatment sites (1997), soil criteria for protection of plant life (residential/agricultural setting)	10-20	3 (soluble)		600	25	130		

Reference	As	B	Cr (total)	Cr (III)	Cr (VI)	Cu	Ni	Zn
Natural Background Concentrations (mg/kg)								
Dutch background level (target value) (VROM 2000)	29		100			36	35	140
UK ICRCL 42/80 (2nd ed. 1983) - Normal conc. In agricultural soil	0.1-40	2-100	5-500			2-100	5-500	10-300
UK ICRCL 70/90 (1st ed. 1990) - Typical range (and mean) in agricultural soils	2.3 - 53 (11.0)					5.8-62 (19) [1.2-19 4.9) extractable]		29-210 (78.1) [1.5-21 (5.6) extractable]
Canadian assessment criteria (i.e. background) (CCME 1991)	5	1(hot water soluble)	20		2.5	30		60
New Zealand timber sites (1997) – background	2-30							
Australian Guideline B(1) (1999), typical background levels	1-50		5-1000			2-100	5-500	10-300
* cited in New Zealand Ministry for the Environment (1997) timber treatment chemicals guidelines.								

3.14 Generic Risk Assessment Criteria for Controlled Waters

The following aquifer definitions are adopted.

- **Principal aquifers** - These are layers of rock or drift deposits that have high intergranular and/or fracture permeability - meaning they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale. In most cases, principal aquifers are aquifers previously designated as major aquifer.
- **Secondary aquifers** - These include a wide range of rock layers or drift deposits with an equally wide range of water permeability and storage. Secondary aquifers are subdivided into two types:
- **Secondary A** - permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers; and
- **Secondary B** - predominantly lower permeability layers which may store and yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering. These are generally the water-bearing parts of the former non-aquifers.
- **Secondary undifferentiated** - has been assigned in cases where it has not been possible to attribute either category A or B to a rock type. In most cases, this means that the layer in question has previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type
- **Unproductive strata** - These are rock layers or drift deposits with low permeability that have negligible significance for water supply or river base flow.

The Environment Agency (August 2013) Groundwater Protection Policy (known as GP3) contains the legal framework, detailed policies, technical background and the tools to be used in the protection of groundwater.

The European Water Framework Directive (2000/60/EC) (WFD) and its daughter Directives establish a consolidated way of controlling water quality of the whole water environment. The UK Government has revised its guidance to the Environment Agency and Natural Resources Wales (the Agencies) to remain relevant to the second and subsequent planning cycles. *River basin planning guidance* (Defra and Welsh Government July 2014) is a point of reference for other regulators, bodies and individuals affected by or contributing to the river basin planning process. Parts of this guidance are transposed into The Water Framework Directive (Standards and Classification) Directions (England and Wales) 2015, which support The Water Environment (Water Framework Directive) (England and Wales) (Amendment) Regulations 2015 (Statutory Instrument 2015 No. 1623) which came into force on 14 September 2015. This updates the 2003 Regulations to include the revised EQS Directive (2013/39/EU) which has been amended to cover the second planning cycle, starting on 22 December 2015.

Water Framework Directive implementation in England and Wales: new and updated standards to protect the water environment (Defra and Welsh Government May 2014) informs interested parties of the new and updated environmental standards. There are a number of support documents produced by the UK Technical Advisory Group on the Water Framework Directive (UKTAG), including *Updated Recommendations on Environmental Standards* for the 2015-21 river basin management programme.

A groundwater body is defined as groundwater in an aquifer capable of supporting an abstraction of 10 m^3/day or 50 people over a sustained period under the WFD. Groundwater bodies are a strategic resource, even if there is no current abstraction. Lesser amounts of groundwater in an aquifer may not be considered as receptors in their own right, but may still be pathways to other receptors such as surface water bodies or aquatic ecosystems. However, if the conceptual site model indicates a potable supply of less than 10 m^3/day, this source will be included in the risk assessment.

One of the main objectives of the Agencies is to 'prevent or limit' inputs of substances. Substances are defined as either 'hazardous substances' or 'non-hazardous pollutants'. Directive 2006/118/EC include the objective of preventing the input of hazardous substances into groundwater and limiting inputs of other (non-hazardous) pollutants so as to avoid deterioration of the groundwater body. The revised EQS Directive 2013/39/EU Annex I contains a list of 'priority substances' in the field of water policy and includes those identified as 'priority hazardous substances'.

For practical purposes, the Agency interprets prevention of inputs of hazardous substances and any other substances which meet the criteria for persistence, toxicity and bioaccumulation taking into account those substances listed in WFD (2000/60/EC) Annex VIII.

The 'prevent' objective applies to active inputs such as industrial discharges and *de minimus* concentrations are set as a series of minimum reporting values (MRV). Inputs to Controlled Waters from contaminated land sites are classed as passive inputs under the WFD and, as such, were regulated under the Agency's 'limit' objective. However, paragraph 9.3 of the revised *River*

basin planning guidance (Defra and Welsh Government July 2014) states that the governments will issue revised Directions to take into account the recommendations of UKTAG (November 2013, amended January 2014) as well as Directive 2013/39/EU. These recommendations provide approached for hazardous and non-hazardous substances as follows.

- Hazardous substances – standards in groundwater help to assess whether or not measures to prevent inputs from identified sources have been successful and are based on 'limits of quantification' achieved routinely by competent laboratories (also known as minimum reporting values, MRV). Recommended standards are given in Table 13 of the UKTAG document. These standards are recommended for use in assessing risks posed by new developments (such as landfills) and whether or not existing activities and contaminated land with the potential to cause inputs are doing so.

  This is potentially more onerous than the previous 'limit' objective and the UKTAG document states that actions currently taken with respect to contaminated land are not always sufficient to prevent inputs of hazardous substances and additional remediation may be required. However, it also states that exemptions are available where measures would be disproportionately costly.

- Non-hazardous pollutants – standards in groundwater help to assess the extent to which inputs need to be limited to ensure they do not cause deterioration. Standards vary depending on the receptor at risk. Acceptable water quality targets are defined for protection of human health (based on drinking water standards (DWS)) and for protection of aquatic ecosystems (environmental quality standards (EQS)).

In the event, when the revised Directions were issued (namely, The Water Framework Directive (Standards and Classification) Directions (England and Wales) 2015) there was no mention of the use of MRVs with respect to inputs from land subjected to contamination. Consequently, MRVs are not used by Hydrock in this report.

All substances which are not determined to be hazardous are potentially non-hazardous pollutants. The final say lies with the Agencies as to which chemicals they consider to be of potential concern and whilst the indicator substances analysed for by Hydrock in this report may be indicative of the likely risk of pollution of Controlled Waters, this report may not be definitive and the relevant Agency may require additional work.

The definition of pollution is "the direct or indirect introduction, as a result of human activity, of substances or heat into the air water or land which may be harmful to human health or the quality of aquatic ecosystems or terrestrial ecosystems directly depending on aquatic ecosystems, which result in damage to material property, or which impair or interfere with amenities and other legitimate uses of the environment."

Pollution equates to harm. In order to protect receptors there is a regulatory regime. This involves setting an environmental standard at the receptor (i.e. minimum acceptable water quality). In recognition that pollutants may degrade *en route* to the receptor it is possible to set a limit value at the source of the pollution and compliance values at locations along the pathway, such that water reaching the receptor does not exceed the environmental standard. By definition, the target value is greater than or equal to the compliance value, which in turn is greater than or equal to the environmental standard, depending on the amount of degradation

expected. This concept is used in the Remedial Targets Methodology (Environment Agency 2006a) to determine how land contamination impacts on groundwater and surface water quality.

The applied environmental standards vary with the hydrogeological conditions and the perceived value of the water resource, and are subject to local assessment by the relevant Agency. Note that protection of Controlled Waters may involve work over and above that required for 'suitable use' of a site for the proposed development.

Note also that Article 6.3(e)(ii) of the WFD enables the regulatory authorities to exempt measures from the prevent and limit requirements where it would be disproportionately costly to remove or control the further movement of pollutants that are already in the ground. Where a continuing source that has given rise in the past to land contamination this must be brought under control to prevent further unacceptable inputs to groundwater, but it is clear that the extent is limited by what is considered to be 'reasonableness'.

This report provides an initial assessment of the risks of pollution of Controlled Waters using water quality targets (WQT) as screening values. These are the drinking water standards (DWS) and the environmental quality standards (EQS), the latter designed to protect the surface water ecosystems. EQS are available for inland surface waters (freshwater) and other surface waters (transitional and marine). In addition, the recommended standards for hazardous substances in groundwater (UKTAG November 2013, amended January 2014, Table 13, Column 2) are also used where appropriate.

DWS are given in the Water Supply Regulations 2010 (which amends to Water Quality (Water Supply) Regulations 2000, Schedule 1, Table B, Part 1 (Directive requirements) and Part 2 (national requirements)). Where no UK or EU drinking water standard exists, reference is made to the World Health Organization (2011).

The list of EQS for priority substances is published in Directive 2013/39/EU. In addition, each Member State has to define country-specific substances and their EQS (river basin specific pollutants). Those adopted by the UK listed by Defra and Welsh Government (May 2014) and the 2015 Directions. These documents form the basis for the DWS and EQS used in this report.

It is noted that the EQS for iron in *Water Framework Directive implementation in England and Wales: new and updated standards to protect the water environment* is given in Table 5.2a as 1 µg/l. The 'standard status' in that table is listed as an existing standard. However, the existing standard was 1 mg/l (i.e. 1000 µg/l) and the tabulated value appears to be an error. This has been carried forward to the 2015 Directions. Consequently, Hydrock continues to use 1000 µg/l in its assessments.

Several EQS are based on bioavailable metal proportions (i.e. copper, lead, manganese, nickel and zinc). For zinc, this is the concentration in excess of the ambient background concentration (ABC). A software tool (M-BAT) is available from the Water Framework Directive - UK TAG web site for calculating the bioavailable fraction of Cu, Mn, Ni and Zn, but not Pb, and it also lists regional ABC values (WFD-UKTAG July 2014). Use of the tool requires knowledge of certain determinants of the receiving waters. Consequently, unless otherwise stated in the report text, this modelling has not been used in Hydrock's initial screening exercise and so an assessment

based on the total dissolved metal concentrations will be conservative and a further level of risk assessment may be required.

Where this tool has been used, the bioavailability has been taken into account by calculating site-specific $PNEC_{dissolved}$ (Predicted No Effect Concentration) values. These enable the dissolved concentration data to be compared with the PNEC as if it were an EQS.

The WFD imposes a duty on the Agencies to classify surface water and groundwater bodies and to ensure long-term improvement (where necessary) to achieve acceptable standards. Threshold Values (TV) for individual groundwater bodies (GWB) are published. Each GWB has been identified by the Agencies and specific TVs calculated based on the perceived risks to that GWB. Failure of a TV is an indicator of potential adverse impact in specific circumstances. These TVs are not intended to be applied to meet the 'prevent or limit' objective of the Agencies (UKTAG September 2008) and are not to be used as part of specific site investigations (The Water Framework Directive (Standards and Classification) Directions (England and Wales) 2015) and they are not used by Hydrock in this report.

Generic criteria for contaminated soils which might result in groundwater contamination can be derived from generic assumptions using the Environment Agency (2006) Remedial Targets Methodology. A tiered approach is detailed in this document. In accordance with CLR 11, EQS and DWS can be used as generic water quality targets with respect to contamination of controlled waters.

It is clearly not cost-effective to analyse every water sample for all determinands. Hydrock has produced a default *de minimus* suite which includes a number of common water quality indicators plus a selection of the more common chemicals of potential concern, drawn from the lists of Specific Pollutants and Priority Substances / Priority Hazardous Substances plus additional common contaminants listed in the EPA-H1 Part 2 document, as being indicators of Good water quality under the terms of the Directive.

In addition to this, Hydrock will add to this list any chemicals identified as potential risks by reference to the conceptual site model.

Using the WQTs discussed above, the risks to groundwater and surface water from contaminants on site have been assessed according to the remedial targets methodology (RTM) prescribed by the Environment Agency (2006a).

The Level 1 soil zone assessment considers whether the contaminant concentrations in the soil moisture are sufficient to impact the water receptor(s). It is a conservative model and compares soil pore water concentrations with the above criteria, taking no account of dilution, dispersion or attenuation. Pore water concentrations can be estimated by analysis of perched water samples, analysis of eluates produced in the laboratory by standard leaching of soil samples, or by calculation from physico-chemical properties of the substances. Calculation may be more appropriate for poorly soluble substances where retention times may not be long enough during the standard leaching tests to reach equilibrium. However, the Environment Agency (2009d) cautions that the use of published k_d values to calculate pore water concentrations "can lead to a conservative estimate of risk" and suggest that leaching tests may be designed for non-volatile organics using BS 18772:2008.

The Level 2 groundwater assessment is applicable where groundwater quality data are available and compares these with the above criteria, again taking no account of dilution, dispersion or attenuation.

The remedial targets methodology also allows for more detailed assessment (soil Level 2, 3 or 4, or groundwater Level 3 or 4) for substances which fail the above-mentioned assessments. These are progressively more complex assessments and do take into account attenuation and/or dilution, as applicable to the conceptual exposure model. Such assessment is beyond the scope of this report.

Where more than one water quality target is available it is important to apply the one relevant to the critical receptor. The DWS apply to groundwater or to surface water used for abstraction and the EQS apply to surface water where the aquatic ecosystem is the receptor. EQS are available for *inland* surface waters (freshwater) and *other* surface waters (transitional and marine). Where the most appropriate water quality target cannot be determined with certainty, the lowest one is adopted in line with the precautionary principle.

For the purposes of this report, the site data are compared with the various targets as set out in Table 3.9

Table 3.9: Summary of Water Quality Risk Assessment Protocol

Scenario	Water body Receptors	Secondary Receptors	Example Contaminant Linkages	RTM Level and Samples Used (if Available)	Water Quality Targets
A	Groundwater.	Human health (abstraction).	Contaminants from site leach or seep into groundwater body and this is a (potential/actual) source of human consumption or a strategic resource.	RTM Level 2 - Groundwater. RTM Level 1 - Soil leachate (including any calculated pore water concentrations) or pore water.	DWS
A	Groundwater. Surface water.	Human health (abstraction).	Contaminants from site leach or seep into groundwater body and this feeds surface water by base flow. The surface water may be used for human consumption.		DWS
B	Groundwater. Surface water.	Aquatic ecosystem.	Contaminants from site leach or seep into groundwater body and this feeds surface water by base flow. The surface water may be an aquatic ecosystem.		EQS (inland)
C	Groundwater. Surface water.	Aquatic ecosystem.	Contaminants from site leach or seep into groundwater body and this feeds surface water by base flow. The surface water may be an aquatic ecosystem.		EQS (other)
D	Groundwater. Surface water.	Human health (abstraction). Aquatic ecosystem.	Contaminants from site leach or seep into groundwater body and this feeds surface water by base flow. The surface water may be used for human consumption and is an aquatic ecosystem.		DWS EQS (inland)

Scenario	Water body Receptors	Secondary Receptors	Example Contaminant Linkages	RTM Level and Samples Used (if Available)	Water Quality Targets
E	Surface water.	Human health (abstraction).	Contaminants from site leach or seep into surface water which may be used for human consumption.	RTM Level 1 - Soil leachate (including any calculated pore water concentrations) or pore water. Although not part of the RTM, these scenarios are used to compare surface water data to the water quality targets.	DWS
F	Surface water.	Aquatic ecosystem.	Contaminants from site leach or seep into surface water which may be an aquatic ecosystem.		EQS (inland)
G	Surface water.	Aquatic ecosystem.	Contaminants from site leach or seep into surface water which may be an aquatic ecosystem.		EQS (other)
H	Surface water.	Human health (abstraction). Aquatic ecosystem.	Contaminants from site leach or seep into surface water which may be used for human consumption and is an aquatic ecosystem.		DWS EQS (inland)

Notes:
Some EQS are water hardness dependent. This is measured either in the receiving water or in groundwater (if it is part of the pathway), or is estimated from national maps.
Inland waters EQS applicable to freshwater, other waters EQS applicable to marine or transitional waters.
Where both DWS and EQS are applicable, it is assumed that the EQS is for inland waters.
This table and the results of the assessment are considered as a first screening for potential risks of pollution of Controlled Waters. More specific requirements may be stipulated by the Environment Agency.

Note that in some instances the reporting limit (or detection limit) quoted by the laboratory may be greater than the water quality target that it is being assessed against. Where this is the case it is noted in the table. The current exercise is an initial screening assessment.

There are three main possible reasons for this. Firstly, it may be that the 'standard' method gives a relatively higher reporting limit, but that a lower one could be obtained using a more specialised technique. However, it would be disproportionately expensive to adopt the more costly specialist technique for this initial screening exercise. Secondly, it may be that the sample in question was not 'clean' because the matrix was contaminated by other substances which interfere with the analysis and so a less sensitive method has been used to protect the laboratory equipment. Thirdly, it may be that no method exists that can reach the required limit. Hydrock has contacted the Environment Agency's own National Laboratory Service and even they cannot reach low enough limits for several of the substances in the Hydrock default suite (Cr(VI), total cyanide, phenols and certain PAHs). Consequently, and depending on the particular chemicals, it may be possible with additional effort to refine the assessment, or it may be the case that it is not possible to say for certainty because suitable techniques are not available. Methods are being continually updated and new ones may become available.

The problem is compounded when EQS are revised downwards (eg the PAHs in 2013/39/EU Annex II) on the basis of toxicology, but laboratory techniques have yet to catch up. Indeed, the Directive acknowledges this in the revised Article 3b and where it states "... measurement, when carried out using the best available technique not entailing excessive costs, is referred to as "less than limit of quantification", and the limit of quantification of that technique is above the EQS, the result for the substance being measured shall not be considered for the purposes of assessing the overall chemical status of that water body."

In some cases all samples are below the detection limit but above the water quality target. It is not possible to make any judgement about these. However, in other cases, even though the detection limit is greater than the water quality target, some sample results do exceed the target.

3.14.1 Petroleum Hydrocarbons in Water

With respect to hydrocarbons in water, the Water Supply (Water Quality) Regulations 1989 (as amended 1999) contained a prescribed concentration of 10 µg/l for "dissolved or emulsified hydrocarbons (after extraction with petroleum ether); mineral oils". This was removed from the 2000 (consolidated 2007) Regulations. It was confirmed by email from the Drinking Water Inspectorate to Hydrock (1 November 2005) that dissolved hydrocarbons are no longer a prescribed substance under the Regulations. However, the 10 µg/l limit did remain in the Private Drinking Water Regulations 1991 until their revision at the end of 2009.

In the absence of a prescribed concentration for drinking water, many Environment Agency officers continue to use the superseded value. This is perhaps because petroleum hydrocarbons are a hazardous substance (former List 1) under the WFD. There is, however, no clear UK policy on hydrocarbon contamination of controlled waters. This is partly because analyses for 'petroleum hydrocarbons' are fraught with complications concerning false positives, the results being method dependent and not restricted to petroleum products.

Guidance written by the Environment Agency on risk assessment of hydrocarbons in groundwater is dated 2009 but has never been officially released through the Agency's website, although the dissemination status of the document is given as publicly available. This gives a table of water quality targets for hydrocarbons and lists "TPH (dissolved or emulsified hydrocarbons)". No minimum reporting value (MRV) is quoted, the value that would equate to a *de minimus* concentration under the prevention objective. The target of 10 µg/l is given and this is described as coming from the "Private Water Supply Regulations 1991 No. 2790 (due to be updated in 2009)". As mentioned above, the 2009 Regulations no longer list dissolved hydrocarbons.

Furthermore, the guidance also states that in cases where petroleum hydrocarbons have already entered the water, the Agency will regulate under its limit objective, rather than the prevention objective. This means that EQS or DWS will be appropriate. However, none exist.

In the absence of definitive guidance on petroleum hydrocarbons in water Hydrock recognises that it is not possible to provide EQS and so regulation with respect to aquatic ecosystems is impossible. However, it is possible to extend the use of DWS by calculating screening criteria for the speciated TPH fractions. This provides a rational, transparent and risk-based approach using established scientific principles, rather than simply adopting a withdrawn standard.

Whilst not strictly applicable to aquatic ecosystems, at least this approach can help inform the judgement as to the degree of degradation of a water body.

Accordingly Hydrock has calculated guidelines for drinking water quality based on the methodology proposed by the World Health Organisation (WHO, 2005). This is based on an adult consuming 2 litres of water per day. Whereas the WHO document assumes a body weight of 60kg, Hydrock has assumed 70kg in keeping with the UK Contaminated Land CLEA methodology.

A conservative allocation of 10% of the oral Tolerable Daily Intake (TDI) has been attributed to intake from drinking water. It is noted by the WHO (2005) that exposure from other sources would be expected to be very small and that it would be possible to allocate a greater percentage to drinking water if required. In other words, this approach is very conservative and is appropriate as an initial screening value and allows for potential additive toxicity and simultaneous exposure from other sources.

The TDIs used are the same as those used in the derivation of soil GACs and are listed in Table 3.10 along with the calculated health-based water quality targets for drinking water. Note, however, that the Environment Agency (2009d) states that when considering carbon bands, one does not know the range of toxicities and health effects of the individual chemicals, and it is precautionary to assume that the toxicological effects are additive when setting water quality targets even though the toxic endpoints and modes of action might in reality be quite different. The recommendation is to adopt a precautionary approach whereby the water quality target for each band is divided by the number of bands with detected concentrations.

Table 3.10: Calculated Water Quality Targets for Petroleum Hydrocarbons in Drinking Water

Determinand	TDI (µg/kg/day)	Solubility (µg/l)	Water Quality Target (see Note 1) (µg/l)	Notes
Ali EC5-EC6	5000	35900	**17500**[1]	
Ali >EC6-EC8	5000	5370	**17500**[1]	This concentration would be significantly above the solubility in water.
Ali >EC8-EC10	100	427	**350**[1]	
Ali >EC10-EC12	100	33.9	**350**[1]	This concentration would be significantly above the solubility in water.
Ali >EC12-EC16	100	0.759	**350**[1]	This concentration would be significantly above the solubility in water.
Ali >EC16-EC44	2000	0.00254	**7000**[1]	This concentration would be significantly above the solubility in water.
Aro EC5-EC7	223	1780000	**1**[1]	Based on the TDI for toluene as recommended by Environment Agency (2005) P5-080/TR3 gives 780. In reality the UK DWS for benzene = **1** takes precedence.
Aro >EC7-EC8	223	590000	**700**[1]	Calculated as 780, WHO DWS = **700** takes precedence.
Aro >EC8-EC10	40	64600	**140**[1]	
Aro >EC10-EC12	40	24500	**140**[1]	
Aro > EC12-EC16	40	5750	**140**[1]	
Aro >EC16-EC21	30	653	**105**[1]	
Aro >EC21-EC44	30	6.61	**105**[1]	This concentration would be significantly above the solubility in water.
Benzene	n/a	1780000	**1**	Calculation not possible as non-threshold substance, UK DWS = **1** takes precedence.
Toluene	223	590000	**700**	Calculated as 780, WHO DWS = **700** takes precedence.
Ethylbenzene	100	180000	**300**	Calculated as 350, WHO DWS = **300** takes precedence.
Xylene	180	200000	**500**	Calculated as 630, WHO DWS = **500** takes precedence.
MTBE	300	48000000	**15**	Calculated as 1050 so the odour threshold = **15** is adopted.

Determinand	TDI (µg/kg/day)	Solubility (µg/l)	Water Quality Target (see Note 1) (µg/l)	Notes
Note 1: The value to be used in a risk assessment (for carbon bands) is the value in the table divided by the number of bands with detected concentrations. Last updated 29/06/10				

In instances where a simple 'total' TPH is reported for water samples this should be considered indicative only. This is particularly the case if groundwater or surface water samples were not available and an indication of pore water quality has been derived by subjecting soil samples to a standard leaching procedure or calculation.

Where petroleum hydrocarbon contamination of Controlled Waters is suspected, Hydrock recommends that discussion with the Environment Agency is entered into at the earliest opportunity.

3.15 Statistical Tests of Soil Contamination Results

As discussed above, the sample analyses are divided into representative data sets for the assessment, based on the conceptual site model, and are referred to as 'averaging areas'. In this case it has been chosen to characterize materials that are likely to form the ground cover in critical receptor areas (e.g. gardens), on a material by material basis. The critical part of the soil column is the upper metre in terms of contact with end users of a development site.

Under the **land use planning system** where the aim is to demonstrate 'suitability for use' the key question will usually be "can we say confidently that the level of contamination of this land is low relative to some appropriate measure of risk, sometimes referred to as the critical concentration?" The critical concentration can be, for example, the relevant GAC.

It is necessary to demonstrate that (for each contaminant) the mean concentration on the site is **below** the critical concentration. The true mean concentration of a contaminant is not known because all the site soil has not been tested. An estimation of the true mean can be obtained from the samples tested during the investigation. The greater the number of samples tested, the closer the mean of these values is to the true mean.

In practice, this involves calculation of a quantity known as the 95th Upper Confidence Limit (UCL) of the true population mean, also known as the US_{95}. This is the estimate of the true mean at a 95% level of confidence (i.e. there is a 95% probability that the true mean will not be greater than this, given the values obtained from the investigation sample testing).

The statistical test that is carried out, therefore, is used to demonstrate that there is a 95% probability that the true mean falls below critical concentration (typically the GAC in a screening exercise).

In statistical language, a **null hypothesis** is stated; that the level of contamination is the same as, or higher than, the critical concentration. The **alternative hypothesis** is that the level of contamination is lower than the critical concentration. The statistical test is used to decide whether or not the null hypothesis is rejected.

If it is rejected, the assessor can conclude that the alternative hypothesis is more likely to be true, i.e. that contaminant concentrations are low relative to the critical concentration and that, potentially, the land is suitable for use. Conversely, if the null hypothesis is not rejected, the assessor should conclude that contaminant concentrations may be the same as, or higher than, the critical concentration and further measures may be needed.

A useful summary of the methodology is provided by CIEH & CL:AIRE (May 2008), which forms the basis for the approach adopted by Hydrock, and is described below. Appendix I of the C4SL report SP1010 (CL:AIRE, December 2013) contains a review of this methodology.

Firstly, the data set is assessed for outliers and normality. This is mainly a visual exercise rather than following a particular statistical method. Two graphs are considered, the data frequency histogram with a normal 'bell curve' for comparison and a quantlie-quantile (q-q) plot. The closer the data points lie to the 45° line, the closer they are to a normal distribution. Kinks in the q-q plot are indicative of more than one data set. Individual points away from the 45° line are indicative of outliers.

Additional evidence of outliers is obtained through a simple method of robust statistics advocated by the Royal Society of Chemistry (2001) and others. The measure of the mean is taken to be the median value because this is less susceptible to outliers and non-normal data sets. A value known as the mean absolute deviation (MAD) is calculated and from this can be calculated a robust standard deviation estimate by multiplying by 1.483.

A z-score can then be calculated, which is the absolute value of the data value minus the median, divided by the robust standard deviation. This is then compared with a critical value which, if exceeded, suggests a possible outlier. The critical value represents the number of standard deviations from the mean (or in this case the median). A critical value of 3 to 3.5 is generally considered appropriate. The attraction of this approach is that it is a robust, non-parametric method suitable for all data sets. It is not considered as definitive, but merely a tool to aid decision making.

If a potential outlier is identified it could be a laboratory or typographic error. If this is not the case it could be representative of a different contaminative incident and, therefore, be a hot-spot. However, it could also be simply the result of heterogeneous ground conditions and a relatively low number of sampling points. The initial review of the data is then coupled to a knowledge of the conceptual site model before an outlier is removed from the data set. A good reason is required to justify the removal of outliers and this will be reported in the text.

The second stage of the assessment is to carry out the statistical test as described previously. Two alternative methods are highlighted in the CIEH/CL:AIRE document. The one-sample t-test is said to be appropriate for normally distributed data (it is a parametric test) but is not sensitive to moderate departures from normality. The Chebychev Theorem is a non-parametric test which is said to be suitable for all data distributions. It is a less powerful test (statistically) and gives a more cautious result than the t-test because there is less certainty about the shape of the distribution.

The CL:AIRE review of 2013 considers the use of the t-test in more detail and states that if enough samples have been taken the distribution that describes the uncertainty about the mean depends only on the mean concentration and the size of between-location variation (as

measured by the observed standard deviation, not the shape of the variation. The review goes on to say that in certain circumstances, the use of the Chebychev Theorem may be unsound and suggests the use of statistical tests not based on the null hypothesis test.

The method of determining when there are enough samples to be able to use the t-test is based on the condition that the relative standard error (RSE) is less than 0.25. The RSE is calculated from the relative standard deviation (RSD) by dividing my the square root of the number of samples. The RSD is the standard deviation divided by the mean. The number of samples required for an unbiased estimate of the average concentration are listed in Table 2 of Appendix I of SP1010, for various values of RSD and based on RSE of 0.25. The number of samples required and the RSE are calculated for each chemical on the Hydrock statistics spreadsheet and a note appears as to whether or not the t-test is applicable on this basis.

The risk assessor ultimately decides, based on all the evidence, whether to use the t-test (by selecting the data as being treated as normally distributed) or the Chebychev Theorem (data treated as non-normal). The chosen method is applied and the outcome recorded with respect to whether or not the null hypothesis is rejected and the site is potentially suitable for use.

Please note that under certain circumstances a 'divided by 0' error can occur in the spreadsheets used in the statistical analyses. This happens when all the data points are the same integer value, for example where all results are <3 mg/kg and they have been assumed to be 3 mg/kg. To prevent this error, one of the results can be altered by a small amount (e.g. 3 becomes 2.99999). This allows the statistical tests to be carried out but makes no difference to the outcome. However, it does mean that the q-q and histogram plots show a spurious point, which should be ignored.

It should be noted that a similar, but opposite, set of propositions applies in the case of a potential Part 2A determination where the level of contamination must be higher than some appropriate level of risk (critical concentration) (e.g. that indicative of SPOSH). In this case, however, a lower standard of proof may be accepted and the guidance suggests that if the statistical test of significance at the 95% confidence level does not indicate rejection of the null hypothesis, then the test should be repeated at the 51% level to see if there is evidence to suggest the null hypothesis be rejected on the balance of probabilities. Where no SPOSH concentrations are available and, say C4SLs, are being used as a low-level screen under Part 2A, the same approach as for the planning regime is appropriate.

When considering potential Part 2A sites, updated guidance published by Barnes *et al* (2010) recommends the t-test for all data sets where exceedance of a critical concentration is being tested (unless the data are negatively skewed, something these authors have never seen in contaminated land data sets).

3.15.1 Note on Clustered Data Sets

The assumption behind the statistical tests is that each sample represents an equal fraction of the averaging area (Nathanail, 2004). If the data are clustered, i.e. the sampling points are not equally spaced, the calculated US_{95} would be too high if targeted sampling has taken place around suspected high concentration areas to determine the extent of the high contamination. Conversely, the calculated US_{95} would be too low if there is a high density of sampling in an area of low contaminant concentration.

The sampling pattern used in this report has been reviewed to determine if clustering of data points is likely to affect the statistical tests significantly. In cases where the area represented by each sample is judged to be similar, the tests have been carried out without modification. The error in this approach is likely to be conservative to human health because the Hydrock approach to targeted sampling is more likely to produce more closely spaced higher concentrations than more closely spaced lower concentrations.

Erring on the conservative side is, however, counter-productive when it would indicate unnecessary remediation, i.e. remediation triggered by a US_{95} which is skewed by clustered data. This is taken into consideration in the risk evaluation part of the risk assessment exercise and can take the form of professional judgement, the modification of the averaging area datasets to decluster them, or the weighting of sample results to decluster the data set. The latter method involves weighting the measured concentrations according the proportion of the area they represent, giving greater weight to samples representative of a larger area.

3.15.2 Statistical Tests and Risk to Controlled Waters

Where only a few water quality tests are available, the maximum concentrations are compared with the standards because the 95 percentile will be close to the maximum value. However, where a larger population is available, the 95 percentile is compared with the standards, as recommended by the Environment Agency.

3.16 Ground Gas Risk Assessment

The permanent ground gases methane (CH_4) and carbon dioxide (CO_2) are monitored in accordance with the principles of BS 8576:2013 and the site records are reported in an appendix. Instrument calibration records are kept in accordance with Hydrock's in-house protocol for ground gas monitoring.

The risks associated with the methane and carbon dioxide are assessed using BS 8485:2015 and guidelines from CIRIA (Wilson *et al* 2007), the NHBC (Boyle and Witherington 2007) and CL:AIRE RB17 (Card *et al* 2012).

In the above guidance, 'Situation B' is defined as the specific development of low-rise (1 or 2 storey) housing with beam and block floors, vented sub-floor void and gardens. Initial risk classification can be made according to NHBC Table 8.1. This determines the appropriate risk strategy for protection, including the need to progress to generic quantitative risk assessment (GQRA). Even where no risk assessment is recommended by this table, one may be carried out if so desired. The GQRA is known as the 'NHBC traffic light classification' as it uses red, amber and green designations to portray levels of risk.

'Situation A' covers all other forms of development. This uses a modified version of the Wilson and Card (1999) methodology.

The idealised frequency of monitoring is suggested in CIRIA Tables 5.5a and 5.5b. These tables are adapted from Wilson and Haines (2005) Table 3 which gives examples of ground conditions with the various gas generation potentials, ranging from inert Made Ground (very low potential) to post 1960s domestic landfill (very high potential).

The report does not constitute a design for gas protection measures, but lists the recommendations given by the above-mentioned guidance for the particular "Situation" considered relevant. Reference should be made to BS 8485:2015 which provides guidance for the design, based on a system of scoring depending on the type of building, the type of structural barrier, ventilation protection measures and the gas membrane. The design of gas protection measures according to BS 8485:2015 requires the building(s), or different parts thereof, to be categorized into one of four building types: Type A, Type B, Type C or Type D. This is because the construction and use of the building, together with the control of future structural changes to the building and its maintenance (the building's management) should be assessed, since potential risks posed by ground gases are strongly influenced by these factors. Note that if a membrane is installed it must be verified in accordance with CIRIA C735 (Mallet *et al* 2014) or it will score zero points and will not be deemed to afford any protection.

CL:AIRE RB17 (Card *et al* 2012) is a pragmatic approach to ground gas risk assessment and was developed because gas concentration, pressure and flow rate measured in a well headspace may not be representative of the conditions in the surrounding formation. This approach is endorsed in BS 8485:2015. This is particularly the case where landfill or mine gases are not present, but there is scope for gas generation from Made Ground or naturally occurring organic matter in the soil. If generation rates are low, relatively high concentrations may be present in the soil pores but there is no driving force to expel gases at sufficiently high fluxes so as to represent a risk by entering enclosed living spaces.

In these low risk situations, the approach is to use the conceptual site model and the estimation of the likely gas generation from a source to identify:

- where gas monitoring is required to better define the risks;
- where it may be appropriate to reduce the period of monitoring required (or avoid extra monitoring in response to anomalous results); or
- gas protection measures where the total organic content (TOC) is not greater than 6%.

In summary:

Natural soils only with no credible methane source:

- no action required (monitoring or gas protection measures) as this represents Characteristic Situation 1 (CS1).

Natural soils with peat/organic alluvium or Made Ground with low organic content and a radon barrier is being provided:

- no action required (monitoring or gas protection measures).

Natural soils with peat/organic alluvium or Made Ground with low organic content and a radon barrier is *not* being provided:

- no gas monitoring required;
- if peat/organic alluvium is present this represents CS2 (note Table A1 in RB17 reads CS3 and this is an error according to Wilson (pers. Comm.);

- if Made Ground is present, is less than 1 m thick and is inert material such as sub-base of mineral soils no gas protection is required as this represents CS1;
- if Made Ground is present, is less than 5 m (maximum) and less than 3 m (average) thick determine TOC and forensic description (Table 3.11) and Characteristic Situation (and hence gas protection measures) (Table 3.12);
- if Made Ground is present, is greater than 5 m thick (for example and 'old refuse tip' on the Ordnance Survey map) determine Characteristic Situation (and hence gas protection measures) from TOC with forensic description plus gas generation modelling and gas monitoring to provide a lines of evidence approach. The findings of the TOC and gas modelling may mean gas monitoring for a period shorter than recommended by CIRIA.

Table 3.11: TOC and Forensic Description

Made Ground Fraction	TOC (%)
Fine soil <10mm organic	Laboratory test for TOC
Fine soil <10mm inorganic	Zero (inert) or confirm TOC with lab test
Coarse inert – clinker, gravel, concrete, brick etc.	Zero (inert)
Wood, trees, branches etc.	57 (=IPCC (2006) DOC of 43% x 1.33 according to Hesse (1971))
Vegetable matter	27 (=IPCC (2006) DOC of 20% x 1.33 according to Hesse (1971))
Metal, glass, ceramic and other inert matter	Zero (inert)
Paper and card	53 (=IPCC (2006) DOC of 40% x 1.33 according to Hesse (1971))
Other degradable matter	Food: 20 (=IPCC (2006) DOC of 15% x 1.33 according to Hesse (1971) Nappies: 32 (=IPCC (2006) DOC of 24% x 1.33 according to Hesse (1971) Construction / demolition waste: 5 (=IPCC (2006) DOC of 4% x 1.33 according to Hesse (1971)
Cloth and leather	32 (=IPCC (2006) DOC of 24% x 1.33 according to Hesse (1971))
Total TOC for the sample	**Weighted average of above based on mass of fractions**

Table 3.12: Characteristic Situation Based on TOC of Made Ground Maximum 5 m Thick, Average 3 m Thick

Maximum TOC (%) Made Ground in Place for 20 years or Less	Maximum TOC (%) Made Ground in Place for More Than 20 years	Characteristic Situation (CIRIA C665)
≤ 1.0	≤ 1.0	CS1
≤ 1.5	≤ 3.0	CS2
≤ 4.0	≤ 6.0	CS3
Not applicable for >CS3. Gas monitoring required if TOC > 4% (or 6% in old Made Ground)		

In a scenario where Made Ground is greater than 5 m thick the gas generation potential can be calculated according to the equation on page 10 of RB17, but ignoring the summation as no iteration is required if no new Made Ground is placed every year (Wilson, pers. comm.). The equation comes from LTGN03 (Environment Agency 2004c) and was originally developed to calculate the gas generation potential of landfill sites based on iterations representing the amount of waste deposited year by year. The rate constants (half-life) Hydrock uses as default

are the fast, medium and slow degradation waste types from LTGN03 (viz 0.185/yr, 0.1/yr and 0.03/yr, respectively).

The result of the above calculation is assumed to represent the surface emission rate from a given area and mass of degradable Made Ground. This can be converted into a borehole emission rate (rounded up to the nearest 0.5%) for comparison with CIRIA C665 by assuming one borehole is equivalent to 10 m^2 of ground surface (Pecksen 1986).

Furthermore, the above calculated surface emission rate can be used with the equations from the NHBC Appendix F (Boyle and Witherington 2007) to estimate gas content in as house and compare this with the permissible concentrations.

4.0 WATER SUPPLY PIPES

The current guidance on selection of materials for potable water supply pipes to be laid in contaminated land is contained in a document published jointly by Water UK and the Home Builders Federation (Water UK HBF 2014). The protocols in that document are for guidance and are not subject to enforcement by Water UK or any agency, but have been adopted by Water UK and by HBF as best practice for their members. It has been produced to replace the guidance published by UK Water Industry Research (UKWIR) (Report 10/WM/03/02 and reissued in 2010), which came under criticism from contaminated land specialists. Accordingly this guidance is used in the following assessment.

The contaminants are divided into a number of 'parameter groups'. Threshold values for a selection of organic contaminants that may have a detrimental effect on pipes and fittings, together with threshold values for certain parameters that could cause corrosion of metal pipes, are presented.

It is generally accepted that the UKWIR document contains a number of technical errors and inconsistencies and was not universally accepted (AGS June 2014). The Water UK guidance document states that UKWIR Tables 3.1 and G1 are "not considered a definitive guide" and replaces these with its own Table 1 which clarifies the guidance. This is reproduced as within Table 4.1 below and although not stated in the document, it is assumed the units are mg/kg.

With respect to VOCs it is not clear whether or not BTEX and MTBE are to be included within the total VOC category. They appear in the USEPA method 8260C list of priority pollutants, but the text does not say to exclude them from the VOC total even though there is a separate group for BTEX and MTBE. The text does specifically exclude certain sub-sets of the SVOC list and so Hydrock has taken the guidance at face value and includes BTEX and MTBE in the VOC total.

Table 4.1: Water UK Threshold Values for Water Pipes

Parameter Group	Testing Required?	PE Pipe Threshold (mg/kg)	Metal or Barrier Pipe Threshold
Total VOC Sum of all USEPA 8260C VOC >10ug/kg and TIC >20ug/kg	Where preliminary risk assessment has identified land potentially affected by contamination	0.5	No limit
Total BTEX and MTBE		0.1	No limit
Total SVOC Sum of all USEPA 8270D SVOC >10ug/kg and TIC >20ug/kg but excluding PAH and those substances marked with an asterisk below.		2	No limit
TPH >EC5-EC10		2	No limit

Parameter Group	Testing Required?	PE Pipe Threshold (mg/kg)	Metal or Barrier Pipe Threshold
TPH >EC10-EC16		10	No limit
TPH >EC16-EC40		500	No limit
Phenols* from SVOC analysis		2	No limit
Cresols* and chlorinated phenols* from SVOC analysis		2	No limit
Ethers*	Only where identified from former land use	0.5	No limit
Nitrobenzene*		0.5	No limit
Ketones*		0.5	No limit
Aldehydes*		0.5	No limit
Amines*		Nothing >LoD	No limit
Corrosive indicators, pH, conductivity EC and redox potential Eh	Where metal pipes are contemplated	No limit	Wrapped steel: corrosive if pH<7 and EC>400uS/cm. Wrapped ductile iron corrosive if pH<5, Eh not neutral and EC>400uS/cm. Copper: corrosive if pH<5 or >* and Eh positive.
Presence of liquid free phase hydrocarbons	Observation	None allowed	None allowed

Within the guidance the soil tested must be representative of that in which the pipes will be laid, be it existing ground, remediated ground or imported soil, and should be sampled to at least 0.5 m below the underside of the pipe and along the pipe runs with sufficient number of samples to satisfy sampling strategies set out in CLR 4, CRL 11 and P5-066/TR. Following this, the data are to be incorporated into a specified risk assessment methodology.

Note that, unless stated otherwise, the Hydrock report does not constitute a formal water pipe risk assessment. Rather, the findings of the standard site investigation are screened against the threshold values in Table 4.1 insofar as is practicable given the data availability to give an indication of the possible restrictions to the use of plastic water pipes.

Note that the use of barrier pipe (PE-Al-PE) is applicable for all brownfield sites according to the guidelines, unless there are liquid free phase hydrocarbons present.

Note also that the Water UK guidance also includes greenfield sites where the preliminary risk assessment indicates there is a potential for contamination to be present.

The Water UK guidance above concentrates on direct contact of pipes with contaminated soil. It also refers to contact with excessive vapour phase and contaminated groundwater, but does not define either of these nor give any threshold concentrations.

The guidance also cautions against the creation of new pathways during construction, mainly the ability of contaminated groundwater to flow into granular pipe bedding.

It is **strongly recommended** that site-specific approval of the materials for underground pipes to be used for water supply be obtained from the water company that will be supplying this site and/or adopting the pipe work.

5.0 FLOOD RISK

The following additional information concerns the background to flood risk mentioned in the report. Guidance is given in the document *Technical Guidance to the National Planning Policy Framework* (DCLG March 2012) which retains key elements from the withdrawn Planning Policy Statement 25.

The Environment Agency flood maps are divided into Flood Zones, as follows.

- Flood Zone 1 is land outside the extent of extreme flooding and the annual risk is less than 1:1000, low probability (depicted as white on the web-based map).

- Flood Zone 2 is land unlikely to flood except in extreme conditions if no defences are present and the annual risk is between 1:100 and 1:1000 (for rivers) or 1:200 and 1:1000 (for the sea), medium probability (depicted as light blue on the web-based map).

- Flood Zone 3 is land within the floodplain at risk of flooding if no defences are present and the annual risk is greater than or equal to 1:100 (for rivers) or 1:200 (for the sea), high probability (depicted as dark blue on the web-based map).

The Agency flood maps also define the risk of flooding: as 'low' (≤1:200), 'moderate' (>1:200 to ≤1:75) or 'significant' (>1:75), which are not the same divisions as those in the guidance mentioned above. Note that the published flood map only relates to flooding from rivers, estuaries and the sea and does not include other potential sources such as surface water, groundwater, sewers, canals and reservoirs. Note also that the presence on the map of flood defences, or areas benefiting from flood defences, should not be taken to imply that a proposed development in these areas is acceptable.

The **Environment Agency in England** has issued Flood Risk Standing Advice. However, this is to be reviewed following the publication of the NPPF (see http://www.environment-agency.gov.uk/research/planning/33098.aspx for updates and details).

The flood map mentioned above can be accessed at the Agency's website.

The Technical Guidance states:

- Within Flood Zone 1 all uses of land are appropriate. For development proposals on sites comprising one hectare or above, the vulnerability to flooding from other sources as well as from river and sea flooding; and the potential to increase flood risk elsewhere through the addition of hard surfaces and the effect of the new development on surface water run-off, should be incorporated in a flood risk assessment (FRA) to accompany the planning application. This need only be brief unless the factors above or other local considerations require particular attention. For development proposals less than one hectare no flood risk assessment (FRA) is required.

- Within Flood Zone 2, water-compatible, less vulnerable and more vulnerable uses of land and essential infrastructure (as defined in Technical Guidance, Table 2) are appropriate in this zone. The Sequential Test is required and must be passed and for highly vulnerable uses in Table 2 the Exception Test must be applied and passed also. All

development proposals in this zone should be accompanied by a flood risk assessment (FRA).

- Flood Zone 3 is sub-divided into 3a and 3b, but these are not distinguished on the published maps. Flood Zone 3a is land having an annual probability of flooding of >1:100 (from rivers) or >1:200 (from the sea). The water-compatible and less vulnerable uses of land (as defined in Technical Guidance, Table 2) are appropriate in this zone. The highly vulnerable uses in Table 2 should not be permitted in this zone. The Sequential Test is required and must be passed and for the more vulnerable and essential infrastructure uses in Table 2 the Exception Test must be applied and passed also. Essential infrastructure permitted in this zone should be designed and constructed to remain operational and safe for users in times of flood. All development proposals in this zone should be accompanied by a flood risk assessment (FRA).

  Flood Zone 3b is known as the 'functional floodplain' and comprises land where water has to flow or be stored in times of flood and should be identified on Strategic Flood Risk Assessments (SFRA) undertaken by the Local Planning Authority. Such land is defined as land which would flood with an annual probability of 1:20 or greater, or is *designed* to flood in an extreme (1:1000) flood, or at another probability to be agreed between the Local Planning Authority and the Environment Agency, including water conveyance routes). Only the water-compatible uses and the essential infrastructure (as defined in Technical Guidance, Table 2) that has to be there should be permitted in this zone. It should be designed and constructed to: remain operational and safe for users in times of flood; result in no net loss of floodplain storage; not impede water flows; and not increase flood risk elsewhere. The Sequential Test is required and must be passed and for essential infrastructure the Exception Test must be applied and passed also. All development proposals in this zone should be accompanied by a FRA.

Natural Resources Wales points users to the Environment Agency flood map, but it is not used for planning purposes (only to provide information on flood risk and to raise awareness). Development advice with respect to flooding is provided by the Welsh Assembly Government (July 2004) Technical Advice Note 15 (TAN15) and the accompanying development advice maps. An interactive map is available from the WAG web site.

The development advice map containing three zones (A, B and C with subdivision into C1 and C2) should be used to trigger the appropriate planning tests.

- Zone A is considered to be at little or no risk of fluvial or tidal/coastal flooding. The justification test (TAN15, Section 6) is not applicable and there is no need to consider flood risk further. This equates to Flood Zone 1 on the Agency maps.

- Zone B is land known to have been flooded in the past evidenced by sedimentary deposits. As part of a precautionary approach site levels should be checked against the extreme (1:1000) flood level. If site levels are greater than the flood levels used to define adjacent extreme flood outline there is no need to consider flood risk further. This land within Flood Zone 1 of the Agency maps but close to Flood Zone 2 or 3.

- Zone C is based on the Environment Agency extreme flood outline, equal to or greater than 1:1000 (river, tidal or coastal) and equates to Flood Zones 2 and 3 on the Agency map. Flooding issues should be considered as an integral part of decision making by the application of the justification test (TAN15, Section 6) including assessment of consequences (TAN15, Section 7) is required. Sub-division C1 is land in the floodplain which are developed and served by significant infrastructure, including flood defences. Development can take place subject to application of the justification test, including acceptability of consequences. Sub-division C2 is land in the floodplain without significant flood defence infrastructure. Only less vulnerable development should be considered subject to application of the justification test, including acceptability of consequences. Emergency services and highly vulnerable development should not be considered. The categories of land use are defined in TAN15, Figure 2.

6.0 WASTE MANAGEMENT

6.1 Introduction

Any material excavated on site may be classified as waste and it is the responsibility of the holder of a material to form their own view on whether or not it is waste. This includes determining when waste that has been treated in some way can cease to be classed as waste for a particular purpose.

One of the ways this can be achieved is set out in the Development Industry Code of Practice (CoP) (CL:AIRE, March 2011). This builds on the Environment Agency guidance document Definition of waste: developing greenfield and brownfield sites (2006b).

The handling, re-use or disposal of waste is regulated by the Environment Agency. The Agency will take into account the use of the CoP in deciding whether to regulate materials as waste. If materials are dealt with in accordance with the CoP, the Agency considers that those materials are unlikely to be waste at the point when they are to be used for the purpose of land development. This may be because the materials were never discarded in the first place, or because they have been submitted to a recovery operation and have been completely recovered so that they have ceased to be waste.

Further details are provided in the CoP.

The chemical analyses in this report 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 may be required should waste classification be required for consideration of off-site disposal of contaminated soils. As part of the report, Hydrock may have undertaken a preliminary exercise to characterise the soils encountered in the investigation in order to inform the waste characterisation process. This has been undertaken using a proprietary web-based tool and in not necessarily identical to the assessment that could be made by a particular landfill operator.

Separate analyses are required to meet the Waste Acceptance Criteria for specific landfill sites.

6.2 Classification of Materials for Off-Site Disposal Purposes

With respect to the possible waste streams from a site, it is recommended that a phased approach is implemented. This phased approach comprises Waste Characterisation and Waste Acceptance Criteria.

6.2.1 Waste Characterisation

Background

All wastes going to landfill must be classified as ‘inert’, ‘non-hazardous’ or ‘hazardous’, with a sub-category of hazardous waste known as ‘stable non-reactive hazardous waste’. Individual landfill sites must operate in accordance with their Environmental Permits.

Basic Characterisation

The first step is to determine if a waste is hazardous or non-hazardous.

Contaminated soil is a 'mirror entry' in the Consolidated European Waste Catalogue, and is not necessarily a hazardous waste. It is only classified as hazardous if it contains dangerous substances above certain threshold concentrations. The Environment Agency document *Waste Sampling and Testing for Disposal to Landfill* (March 2013) suggests that waste holders should use the information collected as part of the contaminated land risk assessment to inform decisions as to the concentrations that might reasonably be expected to be present in the contaminated soil, given the past and current uses of the site.

The waste must be assessed against all the appropriate hazards in accordance with the Environment Agency Technical Guidance WM3. This makes certain worst case assumptions about the chemical composition if specific compounds are not analysed for.

The classification of the soils as waste in England and Wales is undertaken in accordance with the revised Waste Framework Directive (WFD) (2008/98/EC).

Defining the class of waste is carried out on the actual waste being disposed of and the destination landfill site will have the final decision on acceptability of the waste. Therefore, it is recommended that if soils are to be removed from the site, the appointed contractor should approach a landfill site with the available chemical data and seek a formal waste characterisation.

The waste characterisation in this report is for information purposes only and should be considered in the light of the final decision made by the landfill site.

6.2.2 Waste Acceptance Criteria

If the waste is destined for landfill, the second step is Waste Acceptance Criteria (WAC) testing to determine if the receiving landfill can accept the waste. Further sampling and testing may be required.

WAC testing must be carried out on waste classified as non-hazardous to check if it can be disposed of at an inert landfill. Otherwise, it can be disposed of at a non-hazardous landfill without WAC testing.

WAC testing must be carried out on waste classified as hazardous to check if it can be disposed of at a hazardous landfill (or in a special stable non-reactive hazardous waste landfill site/cell).

The WAC are a list of limit values for certain parameters obtained from total content tests and standard leaching tests. If the limit values are exceeded, the waste is not suitable for disposal at that class of landfill site and alternative disposal methods have to be found.

Maximum permissible limit values are determined by the EU (part of what is known as 'full waste acceptance criteria') but individual landfills may have more stringent values to take into account the environmental setting, liner system or additional nature of specific waste streams.

WAC tests should be performed on the soils leaving the site and is not normally part of a site investigation exercise.

6.3 Materials Management

Any material excavated on site may be classified as waste and it is the responsibility of the holder of a material to form their own view on whether or not it is waste. This includes determining when waste that has been treated in some way can cease to be classed as waste for a particular purpose. One of the ways this can be achieved is set out in the Development Industry Code of Practice (CoP) (CL:AIRE, March 2011).

The handling, re-use or disposal of waste is regulated by the Environment Agency. The Agency will take into account the use of the CoP in deciding whether to regulate materials as waste. If materials are dealt with in accordance with the CoP, the Agency considers that those materials are unlikely to be waste at the point when they are to be used for the purpose of land development. The MMP must be signed off by a Qualified Person as defined in the CoP.

7.0 REFERENCES

AGS. June 2014. AGS Position Paper. Potable water supply pipes in land potentially affected by contamination. Association of Geotechnical and Geoenvironmental Specialists. <<ags.og.uk>>.

ALBERTA ENVIRONMENT. 1990. Alberta Tier 1 Criteria for Contaminated Soil Assessment and Remediation. Waste Management and Chemicals Division, Soil Protection Branch. Draft.

ALCONTROL LABORATORIES. 2006. Land Division – Information Sheet: *Where have my PAHs come from??*

BARNES, B., GLENNIE, E., DAVEY, A,. and THOMAS, J. 2010. Cheby or not Cheby? Is that the question? L*and Contamination and Reclamation,* **18(2)**, 121-33.

BOYLE, R. and WITHERINGTON, P. JANUARY 2007. Guidance on evaluation of development proposals on sites where methane and carbon dioxide are present. Report No. 10627-R01(04). NHBC, Milton Keynes. 93pp + apps.

BRITISH STANDARDS INSTITUTION. 2004. Eurocode 7 – Geotechnical design - Part 1: General rules. *BS EN 1997-1. Incorporating Corrigendum No.1.* BSI, London.

BRITISH STANDARDS INSTITUTION. 2007. Eurocode 7 – Geotechnical design - Part 2: Geotechnical investigation and testing. *BS EN 1997-2.* BSI, London.

BRITISH STANDARDS INSTITUTION. 2011. Code of Practice for Investigation of Potentially Contaminated sites. *BS 10175 Incorporating Amendment No.1:2013.* BSI, London.

BRITISH STANDARDS INSTITUTION. 2014. Soil quality. Guidance on leaching procedures for subsequent chemical and ecotoxicological testing of soils and soil materials. *BS EN ISO 18772.* BSI, London.

BRITISH STANDARDS INSTITUTION. 2015. Specification of topsoil and requirements for use. *BS 3882.* BSI, London.

BRITISH STANDARDS INSTITUTION. 2015. Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings. *BS 8485.* BSI, London.

BRITISH STANDARDS INSTITUTION. 2015. Code of practice for ground investigations. *BS 5930.* BSI, London.

CANADIAN COUNCIL OF MINISTERS OF THE ENVIRONMENT (CCME). 1991. Review and recommendations for Canadian Interim Environmental Quality Criteria for contaminated sites. Environment Canada.

CARD, G., WILSON, s. and MORTIMER, S. 2012. *A pragmatic approach to ground gas risk assessment*. CL:AIRE Research Bulletin RB17. CL:AIRE, London.

CIEH and CL:AIRE. May 2008. Guidance on comparing soil contamination data with a critical concentration. The Chartered Institute of Environmental Health and Contaminated Land: Applications in Real Environments. 66pp.

CL:AIRE. March 2011. The Definition of Waste: Development Industry Code of Practice, Version 2. Contaminated Land: Applications in the Real Environment (CL:AIRE), London.

CL:AIRE. December 2013. Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination. *Final Project Report SP1010,* 20 December 2013, Contaminated Land: Applications in Real Environments (CL:AIRE), London.

COSTA, H. J. and SAUER, T. C. 2005. Forensic approaches and considerations in identifying PAH background. *Environmental Forensics,* **6,** 9-16.

COSTA, H. J., WHITE, K. A. and RUSPANTINI, J. J. 2004. Distinguishing PAH background and MGP residues in sediments of a freshwater creek. *Environmental Forensics,* **5,** 171-182.

DCLG. March 2012. National Planning Policy Framework. DCLG, London.

DCLG. March 2012. Technical Guidance to the National Planning Policy Framework. DCLG, London.

DEPARTMENT OF THE ENVIRONMENT. 1994. Sampling strategies for contaminated land. DoE *Contaminated Land Research Report CLR Report No. 4.* DETR, Rotherham.

DEFRA. 1 September 2005. Soil Guideline Values and the Determination of Land as Contaminated Land under Part 2A. *Guidance Note CLAN 2/05*. Defra/LEQ, London.

DEFRA. July 2008. Guidance on the legal definition of contaminated land. Defra, London.

DEFRA. April 2012. Contaminated Land Statutory Guidance. Defra, London.

DEFRA. March 2014. SP1010: Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination – Policy Companion Document. Defra, London.

DEFRA and WELSH GOVERNMENT. May 2014. *Water Framework Directive implementation in England and Wales: new and updated standards to protect the water environment.*

DEFRA and WELSH GOVERNMENT. July 2014. *River basin planning guidance.*

EIC, AGS and CL:AIRE. 2009. The EIC/AGS/CL:AIRE Soil Generic Assessment Criteria for Human Health Risk Assessment. Environmental Industries Commission, Association of Geotechnical and Geoenvironmental Specialists and Contaminated Land: Applications in Real Environments. Available from <www.claire.co.uk>.

ENVIRONMENT AGENCY. 2000. Secondary Model Procedure for the Development of Appropriate Soil Sampling Strategies for Land Contamination. *R&D Technical Report P5-066/TR1*. The Environment Agency.

ENVIRONMENT AGENCY. 2002a. Contaminants in soils: collation of toxicological data and intake values for humans. *Contaminated Land Report 9.* The Environment Agency.

ENVIRONMENT AGENCY. 2002b. Possible contaminants for the assessment of land. *Contaminated Land Report 8.* The Environment Agency.

ENVIRONMENT AGENCY. 2003. Principles for Evaluation the Human Health Risks from Petroleum Hydrocarbons in Soils: A Consultation paper. *R&D Technical Report P5-080/TR1*. The Environment Agency.

ENVIRONMENT AGENCY. 2004a. Model procedures for the management of land contamination. *Contaminated Land Report 11.* The Environment Agency.

ENVIRONMENT AGENCY. 2004b. Soil screening values for use in UK ecological risk assessment. *R&D Technical Report P5-091/TR1*. The Environment Agency.

ENVIRONMENT AGENCY. 2004c. *Guidance on the management of landfill gas*. Landfill Technical Guidance Note 3 (LTGN03).

ENVIRONMENT AGENCY. 2005. The UK Approach for Evaluating Human Health Risks from Petroleum Hydrocarbons in Soils. *Science Report P5-080/TR3*. The Environment Agency.

ENVIRONMENT AGENCY. 2006a. Remedial Targets Methodology. Hydrogeological Risk Assessment for Land Contamination. The Environment Agency, Bristol, 123pp.

ENVIRONMENT AGENCY. 2006b. Definition of waste: developing greenfield and brownfield sites. The Environment Agency, Bristol.

ENVIRONMENT AGENCY. 2009a. Updated technical background to the CLEA model. *Science Report – SC050021/SR3.* The Environment Agency, Bristol, 164pp.

ENVIRONMENT AGENCY. 2009b. CLEA Software (Version 1.04) Handbook. *Science Report – SC050021/SR4.* The Environment Agency, Bristol, 121pp.

ENVIRONMENT AGENCY. 2009c. CLEA Software (Version 1.05) Handbook. *Science Report – SC050021/SR4.* The Environment Agency, Bristol, 129pp.

ENVIRONMENT AGENCY. 2009d. Petroleum Hydrocarbons in Groundwater: Supplementary Guidance for Hydrogeological Risk Assessment. The Environment Agency, Bristol, 48pp.

ENVIRONMENT AGENCY. March 2009. S*cience Report – SC050021/benzene SGV.* The Environment Agency, Bristol, 10pp.

ENVIRONMENT AGENCY. June 2009. S*cience Report – SC050021/Cd SGV.* The Environment Agency, Bristol, 11pp.

ENVIRONMENT AGENCY. September 2009. S*cience Report – SC050021/Dioxins SGV.* The Environment Agency, Bristol.

ENVIRONMENT AGENCY. March 2013. Waste sampling and Testing for Disposal to Landfill. Report EBPRI 11507B. The Environment Agency, Bristol, 36pp.

ENVIRONMENT AGENCY. August 2013. *Groundwater protection: Principles and practice (GP3).* Version 1.1. The Environment Agency, Bristol, 207pp.

ENVIRONMENT AGENCY. 2015. Waste classification. Guidance on the classification and assessment of waste (1st Ed.) *Technical Guidance WM3.* The Environment Agency.

FRANKEN, R.O.G., BAARS, A.J., CROMMENTUIJN, G.H. & OTTE, P. 1999. A proposal for revised Intervention Values for petroleum hydrocarbons ('minerale olie') on base of fractions of petroleum hydrocarbons. *RIVM Report 711701015*. (Dutch) National Institute of Public Health and the Environment. P.O. Box 1, 3720 BA Bilthoven.

HARTLESS, R. 1991. Construction of new buildings on gas-contaminated land. Building Research Establishment Report BR 212. BRE, Garston.

HEALTH PROTECTION AGENCY. 2009. An introduction to land contamination for public health professionals, Ver 1.2. HPA, Cardiff.

HEALTH PROTECTION AGENCY. 2010. Limitation of human exposure to radon. Advice from the Health Protection Agency. *Report RCE-15*. HPA, Cardiff.

HESSE, P. R. 1971*. A textbook of soil chemical analysis.* John Murray (Publishers) Ltd, London.

INTERDEPARTMENTAL COMMITTEE ON THE REDEVELOPMENT OF CONTAMINATED LAND. 1983. Notes on the Redevelopment of Scrap Yards and Similar Sites. *ICRCL 42/80 (2nd Ed).* DETR, Rotherham.

INTERDEPARTMENTAL COMMITTEE ON THE REDEVELOPMENT OF CONTAMINATED LAND. 1987. Guidance on the assessment of contaminated land. *ICRCL 59/83 (2nd Ed).* DETR, Rotherham.

INTERDEPARTMENTAL COMMITTEE ON THE REDEVELOPMENT OF CONTAMINATED LAND. 1990. Notes on the restoration and aftercare of metalliferous mining sites for pasture and grazing. *ICRCL 70/90.* DETR, Rotherham.

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION. 2005. Soil quality - Sampling - Part 5: Guidance on the procedure for the investigation of urban and industrial sites with regard to soil contamination. ISO 10381-5:2005.

IPCC. 2006 *2006 IPCC Guidelines for National Greenhouse Gas Inventories.* Volume 5, Waste. Prepared by the National Greenhouse Gas Inventories Programme, Eggleston H.S., Buendia L., Miwa K., Ngara T. and Tanabe K. (eds). Published: IGES, Japan.

JONES, J. 2008. Personal Communication.

LITTON, P. J. 2006. Personal Communication. Determining the source of hydrocarbon sheen using chromatogram fingerprinting and dual-ratio scatter plot analysis. Poster produced by BBL Inc, Tampa, Florida.

LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY. 2003. Risk Evaluation / Corrective Action Program. Appendix D. Louisiana Department of Environmental Quality Corrective Action Group, 20 October 2003.

MALLETT, H., COX, L., WILSON, S., and CORBAN, M. 2014. Good practice on the testing and verification of protection systems for buildings against hazardous ground gases. CIRIA Report C735. CIRIA, London.

MAKLIN, Y., KOWALCZYK, G., McCANN, R., WELFARE, W. and BROWN, M. December 2012. *Acute risks from soil contaminants: "Blue Billy".* SoBRA & RSC Toxicology Group Conference: Current Issues in Contaminated Land Risk Assessment, London, December 2012.

MILES, J. C. H., APPLETON, J. D., REES, D. M., GREEN, B. M. R., ADLAM. K. A. M. and MYRES. A. H. 2007. Indicative Atlas of Radon in England and Wales. Health Protection Agency and British Geological Survey. Report HPA-RPD-033.

MINISTRY OF AGRICULTURE FISHERIES AND FOOD. October 1998. Code of Good Agricultural Practice for the Protection of Soil.

MINISTRY OF HOUSING, SPATIAL PLANNING AND ENVIRONMENT. February 2000. Circular on Target Values and Intervention Values for Soil Remediation. DBO/1999226863. VROM, The Hague.

NATHANAIL, C. P. 2004. The use and misuse of CLR 7 acceptance tests for assessment of risks to human health from contaminated land. *Quarterly Journal of Engineering Geology and Hydrogeology*, **37**, 361-367.

NATHANAIL, P., McCAFFREY, C., ASHMORE, M., CHENG, Y., GILLETT, A., OGDEN, R. and SCOTT, D. 2009. The LQM/CIEH Generic Assessment Criteria for Human Health Risk Assessment (2nd ed.). Land Quality Press, Nottingham.

NATIONAL ENVIRONMENTAL PROTECTION COUNCIL. 1999. National Environmental Protection (Assessment of Site Contamination) Measure 1999. Schedule B(1) – Guideline on Investigation Levels for Soil and Groundwater. National Environmental Protection Council Service Corporation, Adelaide, Australia.

NAVFAC. April 2003. Guidance for Environmental Background Analysis, Vol. II: Sediment. *NFESC User's Guide UG-2054-ENV.* Naval Facilities Engineering Command, Washington DC, USA.

NEW ZEALAND MINISTRY FOR THE ENVIRONMENT. June 1997. Health and Environmental Guidelines for Selected Timber Treatment Chemicals. NZ Ministry for the Environment, Wellington.

NHBC. October 2014. Publication of Category 4 Screening Levels for land affected by contamination. *Technical Extra*, **15**, 14-17.

NHBC and ENVIRONMENT AGENCY. 2008. Guidance for the safe development of housing on land affected by contamination. R&D Publication 66, 2 Volumes.

ONTARIO MINISTRY OF THE ENVIRONMENT. 1990. Guidelines for the decommissioning and clean-up of contaminated sites in Ontario.

PECKSEN, G. N. 1986. Methane and the development of derelict land. London Environmental Supplement, Summer 1985, No. 13. London Scientific Services, Land Pollution Group.

PONNAMPERUMA, F. N., LANTIN, R. S. and CLAYTON, M. T. C. 1979. Boron toxicity in rice soils. *Int. Rice Res. Newsletter,* **4, 8.**

ROYAL SOCIETY OF CHEMISTRY. 2001. Robust statistics: a method of coping with outliers. AMC Technical Brief No. 6.. Analytical Methods Committee, Royal Society of Chemistry.

RUDLAND, D. J., LANCEFIELD, R. M. and MAYELL, P. N. 2001. Contaminated land risk assessment. A guide to good practice. *CIRIA Report C552*. CIRIA, London. 158 pp.

SCIVYER, C. 2015. Radon: Guidance on protective measures for new buildings. Building Research Establishment Report BR 211. BRE, Garston.

STOGIANNIDIS, E. and LAANE, R. 2015. Source characterization of polycyclic aromatic hydrocarbons by using their molecular indices: an overview of possibilities. *In: WHITACRE, D. M. (ed.), Reviews of Environmental Contamination and Toxicology.* **234,** 49-133.

STONE, K., MURRAY, A., COOKE, S., FORAN, J. and GOODERHAM, L. 2009. Unexploded ordnance (UXO), a guide to the construction industry. *CIRIA Report C681*. CIRIA, London. 141 pp.

SWARTJES, F. and van den Berg, R. 1993. Remediation of contaminated soil and groundwater: proposals for criteria and priority setting. *Proc. Workshop on Contaminated Soils*, *October 1993*, Stockholm.

UKTAG. November 2013 (updated January 2014). *Updated recommendations on environmental standards. River Basin Management (2015-21)*. UK Technical Advisory Group on the Water Framework Directive.

UK WATER INDUSTRY RESEARCH (UKWIR). 2010 re-issued. Guidance for the Selection of Water Supply Pipes to be used in Brownfield Sites. *Report 10/WM/03/21*.

WATER UK HBF. January 2014. Contaminated Land Assessment Guidance. Water UK and the Home Builders Federation. 12pp.

WELSH ASSEMBLY GOVERNMENT. July 2004. Development and flood risk. Planning Policy Wales, Technical Advice Note 15.

WFD-UKTAG. July 2014. UKTAG River & Lake Assessment Method, Specific Pollutants (Metals), Metal Bioavailability Assessment Tool (M-BAT). Water Framework Directive – United Kingdom Technical Advisory Group. Stirling.WILSON, S.A. and CARD, G.B. 1999. Reliability and risk in gas protection design. *Ground Engineering,* February 1999, 33-36, plus letters in March 1999.

WILSON, S. and HAINES, S. 2005. Site investigation and monitoring for ground gas assessment – back to basics. *Land Contamination and Reclamation* **13(3),** 211-222.

WILSON, S., OLIVER, S., MALLETT, H., HUTCHINGS, H. and CARD, G. 2007. Assessing risks posed by hazardous ground gases to buildings. *CIRIA Report C665*. CIRIA, London. 182pp.

WORLD HEALTH ORGANIZATION. 2011. Guidelines for drinking-water quality (4th Edition). WHO, Geneva.

WORLD HEALTH ORGANIZATION. 2005. Petroleum products in drinking-water. Background documentation for development of WHO guidelines for Drinking-water Quality. *Report WHO/SDE/WSH/05.08/123*. WHO, Geneva.

YUNKER, M.B., MACDONALD, R.W., VINGARZAN, R., MITCHELL, R.H., GOYETTE, D AND SYLVESTRE, S. 2002. PAHs in the Fraser River basin: a critical appraisal of PAH ratios as indicators of PAH source and composition. *Organic Geochemistry*, **33,** 489-515.

Appendix I

Contamination Test Results and Statistical Analysis

Shay Marriott
Hydrock Consultants Ltd
Over Court Barns
Over Lane
Bristol
BS32 4DF

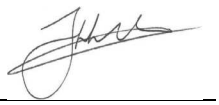
t: 01454 619533
f: 01454 614125
e: shaymarriott@hydrock.com

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 : 18-85563

Project / Site name:	Cotswold Community School, Ashton Keynes	**Samples received on:**	15/05/2018
Your job number:	C-09612-C	**Samples instructed on:**	15/05/2018
Your order number:	POP021215	**Analysis completed by:**	23/05/2018
Report Issue Number:	1	**Report issued on:**	23/05/2018
Samples Analysed:	12 soil samples - 1 water sample		

Signed: 

Jordan Hill
Reporting Manager
For & on behalf of i2 Analytical Ltd.

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

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

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

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

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

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 18-85563

Project / Site name: Cotswold Community School, Ashton Keynes
Your Order No: POP021215

Lab Sample Number				961597	961598	961599	961600	961601
Sample Reference				TP01	TP01	TP01	TP02	TP02
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.20	0.40	0.80	0.50	1.00
Date Sampled				10/05/2018	10/05/2018	10/05/2018	10/05/2018	10/05/2018
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	38	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	3.6	15	4.3	12	5.6
Total mass of sample received	kg	0.001	NONE	1.3	0.92	1.4	0.39	1.3
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	-
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	8.4	8.1	8.7	8.3	8.7
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1	< 1	-
Total Sulphate as SO_4	mg/kg	50	MCERTS	-	-	-	-	1100
Total Sulphate as SO_4	%	0.005	MCERTS	-	-	-	-	0.108
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.022	0.014	0.010	0.016	0.0099
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	-	-	-	-	9.9
Water Soluble Chloride (2:1)	mg/kg	1	MCERTS	-	-	-	-	3.7
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	-	-	-	-	1.9
Total Sulphur	mg/kg	50	MCERTS	-	-	-	-	390
Total Sulphur	%	0.005	MCERTS	-	-	-	-	0.039
Ammonium as NH_4	mg/kg	0.5	MCERTS	-	-	-	-	0.5
Ammonium as NH_4 (leachate equivalent)	mg/l	0.05	MCERTS	-	-	-	-	0.05
Fraction Organic Carbon (FOC)	N/A	0.001	NONE	0.0031	0.024	0.0019	0.017	-
Water Soluble Nitrate (2:1) as NO_3	mg/kg	2	NONE	-	-	-	-	< 2.0
Water Soluble Nitrate (2:1) as NO_3 (leachate equivalent)	mg/l	5	NONE	-	-	-	-	< 5.0
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	-
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
Pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
Chrysene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	-
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	< 0.80	< 0.80	< 0.80	-

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 18-85563

Project / Site name: Cotswold Community School, Ashton Keynes
Your Order No: POP021215

Lab Sample Number				961597	961598	961599	961600	961601
Sample Reference				TP01	TP01	TP01	TP02	TP02
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.20	0.40	0.80	0.50	1.00
Date Sampled				10/05/2018	10/05/2018	10/05/2018	10/05/2018	10/05/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	8.6	17	7.3	15	-
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.13	0.93	0.13	0.81	-
Boron (water soluble)	mg/kg	0.2	MCERTS	0.6	3.4	0.5	2.3	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	-
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	< 1.2	< 1.2	-
Chromium (III)	mg/kg	1	NONE	8.2	34	7.9	25	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	8.1	34	7.8	25	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	4.7	12	2.2	10	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	8.0	26	2.9	20	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	5.0	14	4.3	12	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	13	43	12	38	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	40	55	9.1	46	-
Magnesium (water soluble)	mg/kg	5	NONE	-	-	-	-	< 5.0
Magnesium (leachate equivalent)	mg/l	2.5	NONE	-	-	-	-	< 2.5
Monoaromatics								
Benzene	ug/kg	1	MCERTS	-	-	< 1.0	< 1.0	-
Toluene	µg/kg	1	MCERTS	-	-	< 1.0	< 1.0	-
Ethylbenzene	µg/kg	1	MCERTS	-	-	< 1.0	< 1.0	-
p & m-xylene	µg/kg	1	MCERTS	-	-	< 1.0	< 1.0	-
o-xylene	µg/kg	1	MCERTS	-	-	< 1.0	< 1.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-	< 1.0	< 1.0	-
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	-	-	< 0.001	< 0.001	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	-	-	< 0.001	< 0.001	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-	< 0.001	< 0.001	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	< 1.0	< 1.0	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	< 2.0	< 2.0	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	-	< 8.0	< 8.0	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	-	< 8.0	< 8.0	-
TPH-CWG - Aliphatic > EC35 - EC44	mg/kg	8.4	NONE	-	-	< 8.4	< 8.4	-
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	-	-	< 0.001	< 0.001	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	-	-	< 0.001	< 0.001	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-	< 0.001	< 0.001	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	-	< 1.0	< 1.0	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	-	< 2.0	< 2.0	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	-	< 10	< 10	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	-	< 10	< 10	-
TPH-CWG - Aromatic > EC35 - EC44	mg/kg	8.4	NONE	-	-	< 8.4	< 8.4	-

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 18-85563

Project / Site name: Cotswold Community School, Ashton Keynes
Your Order No: POP021215

Lab Sample Number				961602	961603	961604	961605	961606
Sample Reference				TP03	TP04	TP05	TP05	TP05
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.50	0.20	0.50	1.00
Date Sampled				10/05/2018	10/05/2018	10/05/2018	10/05/2018	10/05/2018
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	< 0.1	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	10	7.2	9.0	8.6	5.6
Total mass of sample received	kg	0.001	NONE	0.34	1.3	1.4	1.3	1.4
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	-	Not-detected	-
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	8.3	9.1	-	8.4	8.6
Free Cyanide	mg/kg	1	MCERTS	< 1	< 1	-	< 1	-
Total Sulphate as SO_4	mg/kg	50	MCERTS	1000	-	-	1100	930
Total Sulphate as SO_4	%	0.005	MCERTS	0.103	-	-	0.111	0.093
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.018	0.037	-	0.0098	0.011
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	18.2	-	-	9.8	10.8
Water Soluble Chloride (2:1)	mg/kg	1	MCERTS	3.0	-	-	3.4	3.4
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	1.5	-	-	1.7	1.7
Total Sulphur	mg/kg	50	MCERTS	410	-	-	400	360
Total Sulphur	%	0.005	MCERTS	0.041	-	-	0.040	0.036
Ammonium as NH_4	mg/kg	0.5	MCERTS	0.8	-	-	< 0.5	< 0.5
Ammonium as NH_4 (leachate equivalent)	mg/l	0.05	MCERTS	0.08	-	-	< 0.05	< 0.05
Fraction Organic Carbon (FOC)	N/A	0.001	NONE	0.012	0.0042	-	0.012	-
Water Soluble Nitrate (2:1) as NO_3	mg/kg	2	NONE	5.9	-	-	6.3	< 2.0
Water Soluble Nitrate (2:1) as NO_3 (leachate equivalent)	mg/l	5	NONE	< 5.0	-	-	< 5.0	< 5.0
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	-	< 1.0	-
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	-
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	-
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	-
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	-	< 0.05	-
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	1.8	-	< 0.05	-
Anthracene	mg/kg	0.05	MCERTS	< 0.05	0.47	-	< 0.05	-
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	6.7	-	< 0.05	-
Pyrene	mg/kg	0.05	MCERTS	< 0.05	5.9	-	< 0.05	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	3.4	-	< 0.05	-
Chrysene	mg/kg	0.05	MCERTS	< 0.05	3.1	-	< 0.05	-
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	5.1	-	< 0.05	-
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	1.5	-	< 0.05	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	3.6	-	< 0.05	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	1.9	-	< 0.05	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.49	-	< 0.05	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	2.0	-	< 0.05	-
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	36.0	-	< 0.80	-

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 18-85563

Project / Site name: Cotswold Community School, Ashton Keynes
Your Order No: POP021215

Lab Sample Number				961602	961603	961604	961605	961606
Sample Reference				TP03	TP04	TP05	TP05	TP05
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.50	0.50	0.20	0.50	1.00
Date Sampled				10/05/2018	10/05/2018	10/05/2018	10/05/2018	10/05/2018
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	15	8.8	-	15	-
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.63	0.29	-	0.48	-
Boron (water soluble)	mg/kg	0.2	MCERTS	1.6	0.6	-	1.3	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	-	< 0.2	-
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	< 1.2	-	< 1.2	-
Chromium (III)	mg/kg	1	NONE	22	11	-	21	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	21	11	-	22	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	12	12	-	9.6	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	22	14	-	18	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.4	< 0.3	-	0.4	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	11	6.7	-	9.9	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	-	< 1.0	-
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	35	18	-	30	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	42	28	-	63	-
Magnesium (water soluble)	mg/kg	5	NONE	5.4	-	-	5.2	< 5.0
Magnesium (leachate equivalent)	mg/l	2.5	NONE	2.7	-	-	2.6	< 2.5
Monoaromatics								
Benzene	ug/kg	1	MCERTS	-	< 1.0	< 1.0	-	-
Toluene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	-
Ethylbenzene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	-
p & m-xylene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	-
o-xylene	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	< 1.0	< 1.0	-	-
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	-	< 0.001	< 0.001	-	-
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	-	< 0.001	< 0.001	-	-
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	< 0.001	< 0.001	-	-
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0	< 1.0	-	-
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	< 2.0	< 2.0	-	-
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	< 8.0	< 8.0	-	-
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	< 8.0	< 8.0	-	-
TPH-CWG - Aliphatic > EC35 - EC44	mg/kg	8.4	NONE	-	< 8.4	< 8.4	-	-
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	-	< 0.001	< 0.001	-	-
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	-	< 0.001	< 0.001	-	-
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	< 0.001	< 0.001	-	-
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	< 1.0	< 1.0	-	-
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	< 2.0	< 2.0	-	-
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	27	< 10	-	-
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	61	37	-	-
TPH-CWG - Aromatic > EC35 - EC44	mg/kg	8.4	NONE	-	19	25	-	-

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 18-85563

Project / Site name: Cotswold Community School, Ashton Keynes
Your Order No: POP021215

Lab Sample Number				961607	961608			
Sample Reference				TP06	TP06			
Sample Number				None Supplied	None Supplied			
Depth (m)				0.20	0.50			
Date Sampled				10/05/2018	10/05/2018			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1			
Moisture Content	%	N/A	NONE	10	4.9			
Total mass of sample received	kg	0.001	NONE	1.2	1.3			
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	-			
General Inorganics								
pH - Automated	pH Units	N/A	MCERTS	8.4	8.9			
Free Cyanide	mg/kg	1	MCERTS	< 1	-			
Total Sulphate as SO_4	mg/kg	50	MCERTS	-	1000			
Total Sulphate as SO_4	%	0.005	MCERTS	-	0.100			
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.023	0.013			
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	-	12.9			
Water Soluble Chloride (2:1)	mg/kg	1	MCERTS	-	3.1			
Water Soluble Chloride (2:1) (leachate equivalent)	mg/l	0.5	MCERTS	-	1.5			
Total Sulphur	mg/kg	50	MCERTS	-	380			
Total Sulphur	%	0.005	MCERTS	-	0.038			
Ammonium as NH_4	mg/kg	0.5	MCERTS	-	< 0.5			
Ammonium as NH_4 (leachate equivalent)	mg/l	0.05	MCERTS	-	< 0.05			
Fraction Organic Carbon (FOC)	N/A	0.001	NONE	0.012	-			
Water Soluble Nitrate (2:1) as NO_3	mg/kg	2	NONE	-	< 2.0			
Water Soluble Nitrate (2:1) as NO_3 (leachate equivalent)	mg/l	5	NONE	-	< 5.0			
Total Phenols								
Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	-			
Speciated PAHs								
Naphthalene	mg/kg	0.05	MCERTS	< 0.05	-			
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	-			
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	-			
Fluorene	mg/kg	0.05	MCERTS	< 0.05	-			
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	-			
Anthracene	mg/kg	0.05	MCERTS	< 0.05	-			
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	-			
Pyrene	mg/kg	0.05	MCERTS	< 0.05	-			
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	-			
Chrysene	mg/kg	0.05	MCERTS	< 0.05	-			
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	-			
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	-			
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	-			
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	-			
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	-			
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	-			
Total PAH								
Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	-			

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 18-85563

Project / Site name: Cotswold Community School, Ashton Keynes
Your Order No: POP021215

Lab Sample Number				961607	961608			
Sample Reference				TP06	TP06			
Sample Number				None Supplied	None Supplied			
Depth (m)				0.20	0.50			
Date Sampled				10/05/2018	10/05/2018			
Time Taken				None Supplied	None Supplied			
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	19	-			
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.74	-			
Boron (water soluble)	mg/kg	0.2	MCERTS	1.2	-			
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	-			
Chromium (hexavalent)	mg/kg	1.2	MCERTS	< 1.2	-			
Chromium (III)	mg/kg	1	NONE	25	-			
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	25	-			
Copper (aqua regia extractable)	mg/kg	1	MCERTS	17	-			
Lead (aqua regia extractable)	mg/kg	1	MCERTS	32	-			
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	-			
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	13	-			
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	-			
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	39	-			
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	61	-			
Magnesium (water soluble)	mg/kg	5	NONE	-	< 5.0			
Magnesium (leachate equivalent)	mg/l	2.5	NONE	-	< 2.5			
Monoaromatics								
Benzene	ug/kg	1	MCERTS	-	-			
Toluene	µg/kg	1	MCERTS	-	-			
Ethylbenzene	µg/kg	1	MCERTS	-	-			
p & m-xylene	µg/kg	1	MCERTS	-	-			
o-xylene	µg/kg	1	MCERTS	-	-			
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	-	-			
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6	mg/kg	0.001	MCERTS	-	-			
TPH-CWG - Aliphatic >EC6 - EC8	mg/kg	0.001	MCERTS	-	-			
TPH-CWG - Aliphatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-			
TPH-CWG - Aliphatic >EC10 - EC12	mg/kg	1	MCERTS	-	-			
TPH-CWG - Aliphatic >EC12 - EC16	mg/kg	2	MCERTS	-	-			
TPH-CWG - Aliphatic >EC16 - EC21	mg/kg	8	MCERTS	-	-			
TPH-CWG - Aliphatic >EC21 - EC35	mg/kg	8	MCERTS	-	-			
TPH-CWG - Aliphatic > EC35 - EC44	mg/kg	8.4	NONE	-	-			
TPH-CWG - Aromatic >EC5 - EC7	mg/kg	0.001	MCERTS	-	-			
TPH-CWG - Aromatic >EC7 - EC8	mg/kg	0.001	MCERTS	-	-			
TPH-CWG - Aromatic >EC8 - EC10	mg/kg	0.001	MCERTS	-	-			
TPH-CWG - Aromatic >EC10 - EC12	mg/kg	1	MCERTS	-	-			
TPH-CWG - Aromatic >EC12 - EC16	mg/kg	2	MCERTS	-	-			
TPH-CWG - Aromatic >EC16 - EC21	mg/kg	10	MCERTS	-	-			
TPH-CWG - Aromatic >EC21 - EC35	mg/kg	10	MCERTS	-	-			
TPH-CWG - Aromatic > EC35 - EC44	mg/kg	8.4	NONE	-	-			

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 18-85563

Project / Site name: Cotswold Community School, Ashton Keynes

Your Order No: POP021215

Lab Sample Number				961596				
Sample Reference				BH01				
Sample Number				None Supplied				
Depth (m)				None Supplied				
Date Sampled				Deviating				
Time Taken				None Supplied				
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
General Inorganics								
pH	pH Units	N/A	ISO 17025	7.4				
Electrical Conductivity at 20 °C	µS/cm	10	ISO 17025	550				
Total Cyanide	µg/l	10	ISO 17025	< 10				
Free Cyanide	µg/l	10	ISO 17025	< 10				
Sulphate as SO_4	µg/l	45	ISO 17025	27000				
Chloride	mg/l	0.15	ISO 17025	16				
Fluoride	µg/l	50	ISO 17025	330				
Ammonium as NH_4	µg/l	15	ISO 17025	160				
Nitrate as N	mg/l	0.01	ISO 17025	4.38				
Nitrate as NO_3	mg/l	0.05	ISO 17025	19.4				
Nitrite as N	µg/l	1	ISO 17025	110				
Nitrite as NO_2	µg/l	5	ISO 17025	350				
Hardness - Total	mgCaCO3/l	1	ISO 17025	296				
Bromate by IC	mg/l	0.002	ISO 17025	< 0.002				
Total Phenols								
Total Phenols	µg/l	0.5	NONE	< 0.50				
Speciated PAHs								
Naphthalene	µg/l	0.01	ISO 17025	< 0.01				
Anthracene	µg/l	0.01	ISO 17025	< 0.01				
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01				
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01				
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01				
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01				
Indeno(1,2,3-cd)pyrene	µg/l	0.001	NONE	< 0.001				
Benzo(ghi)perylene	µg/l	0.001	NONE	< 0.001				
PAH Sums								
Sum of Benzo(b)fluoranthene & Benzo(k)fluoranthene	µg/l	0.02	NONE	< 0.02				
Sum of Benzo(ghi)fluoranthene & Indeno(1,2,3-cd)pyrene	µg/l	0.002	NONE	< 0.002				
Sum of Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(ghi)fluoranthene & Indeno(1,2,3-cd)pyrene	µg/l	0.022	NONE	< 0.02				

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number: 18-85563

Project / Site name: Cotswold Community School, Ashton Keynes

Your Order No: POP021215

Lab Sample Number				961596				
Sample Reference				BH01				
Sample Number				None Supplied				
Depth (m)				None Supplied				
Date Sampled				Deviating				
Time Taken				None Supplied				
Analytical Parameter (Water Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Zinc (total)	µg/l	0.5	ISO 17025	6.5				
Aluminium (dissolved)	mg/l	0.001	ISO 17025	0.0297				
Antimony (dissolved)	µg/l	0.4	ISO 17025	0.8				
Arsenic (dissolved)	µg/l	0.15	ISO 17025	0.45				
Barium (dissolved)	µg/l	0.06	ISO 17025	55				
Boron (dissolved)	µg/l	10	ISO 17025	170				
Cadmium (dissolved)	µg/l	0.02	ISO 17025	< 0.02				
Calcium (dissolved)	mg/l	0.012	ISO 17025	110				
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0				
Chromium (III)	µg/l	1	NONE	< 1.0				
Chromium (dissolved)	µg/l	0.2	ISO 17025	< 0.2				
Cobalt (dissolved)	µg/l	0.2	ISO 17025	0.6				
Copper (dissolved)	µg/l	0.5	ISO 17025	0.5				
Iron (dissolved)	mg/l	0.004	ISO 17025	0.26				
Lead (dissolved)	µg/l	0.2	ISO 17025	< 0.2				
Magnesium (dissolved)	mg/l	0.005	ISO 17025	4.1				
Manganese (dissolved)	µg/l	0.05	ISO 17025	36				
Mercury (dissolved) CV-AFS	ug/l	0.005	ISO 17025	< 0.0050				
Molybdenum (dissolved)	µg/l	0.05	ISO 17025	0.82				
Nickel (dissolved)	µg/l	0.5	ISO 17025	3.9				
Selenium (dissolved)	µg/l	0.6	ISO 17025	1.6				
Silver (dissolved)	µg/l	0.05	NONE	< 0.05				
Sodium (dissolved)	mg/l	0.01	ISO 17025	14				
Tin (dissolved)	µg/l	0.2	ISO 17025	< 0.20				
Vanadium (dissolved)	µg/l	0.2	ISO 17025	0.3				
Zinc (dissolved)	µg/l	0.5	ISO 17025	< 0.5				

U/S = Unsuitable Sample I/S = Insufficient Sample

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number : 18-85563

Project / Site name: Cotswold Community School, 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 topsoil/loam 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 *
961597	TP01	None Supplied	0.20	Light brown sand with gravel and stones.
961598	TP01	None Supplied	0.40	Brown loam and clay with gravel and vegetation.
961599	TP01	None Supplied	0.80	Light brown sand with gravel.
961600	TP02	None Supplied	0.50	Brown clay and sand with gravel and vegetation.
961601	TP02	None Supplied	1.00	Light brown sand with gravel and vegetation.
961602	TP03	None Supplied	0.50	Brown clay and sand with gravel.
961603	TP04	None Supplied	0.50	Light brown gravelly sand.
961604	TP05	None Supplied	0.20	Brown loam with vegetation and gravel
961605	TP05	None Supplied	0.50	Brown loam and gravel with vegetation.
961606	TP05	None Supplied	1.00	Light brown gravelly sand.
961607	TP06	None Supplied	0.20	Brown loam and sand with vegetation.
961608	TP06	None Supplied	0.50	Light brown gravelly sand.

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number : 18-85563

Project / Site name: Cotswold Community School, Ashton Keynes

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Ammonium as NH4 in soil	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method, 10:1 water extraction.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	MCERTS
Ammonium as NH4 in water	Determination of Ammonium/Ammonia/ Ammoniacal Nitrogen by the colorimetric salicylate/nitroprusside method. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron in water	Determination of boron in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW	In-house method based on MEWAM	L039-PL	W	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Bromate in Water	Determination of bromate in waters based on ion chromatography. Accredited matrices GW, PW, SW.	In house method based on Standard Methods for the Analysis of Water and Waste Water, method 4500	L008-PL	W	ISO 17025
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
Chloride in water	Determination of Chloride colorimetrically by discrete analyser.	In house based on MEWAM Method ISBN 0117516260. Accredited matrices: SW, PW, GW.	L082-PL	W	ISO 17025
Chloride, water soluble, in soil	Determination of Chloride colorimetrically by discrete analyser.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests. 2:1 extraction.	L082-PL	D	MCERTS
Cr (III) in water	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
Electrical conductivity at 20oC of water	Determination of electrical conductivity in water by electrometric measurement. Accredited Matrices SW, GW, PW	In-house method	L031-PL	W	ISO 17025
Fluoride in water	Determination of fluoride in water by 1:1 ratio with a buffer solution followed by Ion Selective Electrode. Accredited matrices: SW, PW, GW.	In-house method based on Use of Total Ionic Strength Adjustment Buffer for Electrode Determination"	L033B-PL	W	ISO 17025
Fraction of Organic Carbon in soil	Determination of fraction of organic carbon in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L009-PL	D	NONE
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Free cyanide in water	Determination of free cyanide by distillation followed by colorimetry.Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
Hexavalent chromium in soil (Lower Level)	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Hexavalent chromium in water	Determination of hexavalent chromium in water by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method by continuous flow analyser. Accredited Matrices SW, GW, PW.	L080-PL	W	ISO 17025

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number : 18-85563

Project / Site name: Cotswold Community School, Ashton Keynes

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
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
Mercury Low Level (Dissolved) in Water	Dissolved mercury in water by CV-AFS, accredited matrices GW, SW, and PW.	In-house method based on USEPA method 1631	L085-PL	W	ISO 17025
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Metals in water by ICP-MS (total)	Determination of metals in water by acidification followed by ICP-MS. Accredited Matrices: SW, GW, PW except B=SW,GW, Hg=SW,PW, Al=SW,PW.	In-house method based on USEPA Method 6020 & 200.8 "for the determination of trace elements in water by ICP-MS.	L012-PL	W	ISO 17025
Metals in water by ICP-OES (dissolved)	Determination of metals in water by acidification followed by ICP-OES. Accredited Matrices SW, GW, PW, PrW.(Al, Cu,Fe,Zn).	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Nitrate as N in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewatern & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	ISO 17025
Nitrate in water	Determination of nitrate by reaction with sodium salicylate and colorimetry. Accredited matrices SW, GW, PW	In-house method based on Examination of Water and Wastewatern & Polish Standard Method PN-82/C-04579.08,	L078-PL	W	ISO 17025
Nitrate, water soluble, 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	D	NONE
Nitrite as N in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry). Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
Nitrite in water	Determination of nitrite in water by addition of sulphanilamide and NED followed by discrete analyser (colorimetry).Accredited matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L082-PL	W	ISO 17025
pH at 20oC in water (automated)	Determination of pH in water by electrometric measurement. Accredited matrices: SW PW GW	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	W	ISO 17025
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	MCERTS
Phenols, speciated, in water, by GCMS	Determination of speciated phenols in water by extraction in hexane followed by GC-MS.	In-house method based on USEPA 8270	L070-PL	W	NONE
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Speciated EPA-16 PAHs in water	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards. Accredited matrices: SW PW GW	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report are representative of the samples submitted for analysis.

Analytical Report Number : 18-85563

Project / Site name: Cotswold Community School, Ashton Keynes

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

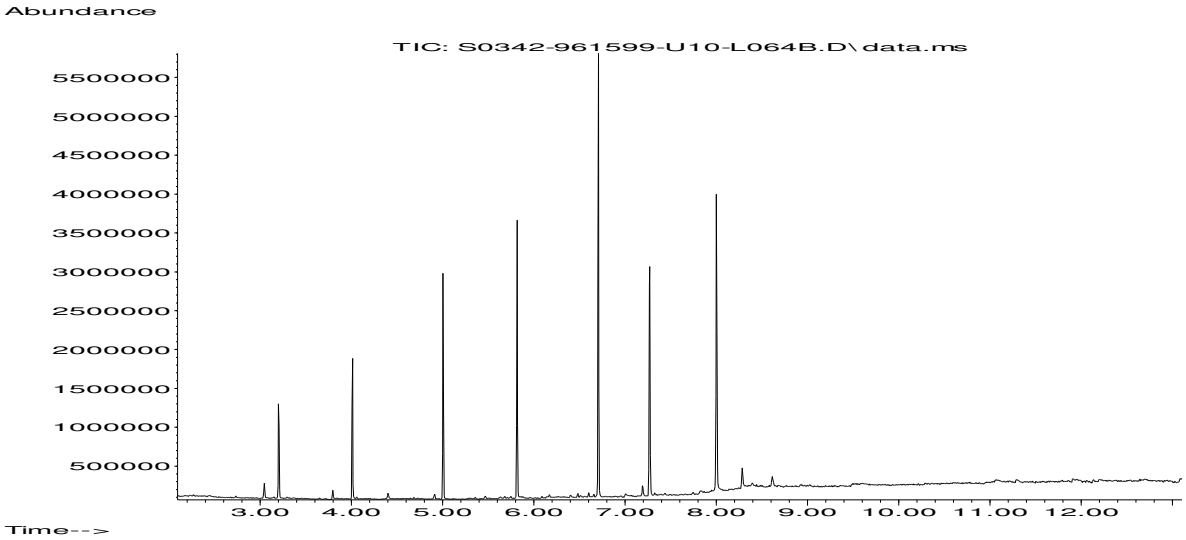
Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Speciated EPA-16 PAHs in water (LOW LEVEL Dets)	Determination of PAH compounds in water by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270 (low level)	L102B-PL	W	NONE
Specific PAH sums in water	Determination of PAH compounds in water by extraction in hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L070-PL	W	NONE
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Sulphate in water	Determination of sulphate in water by acidification followed by ICP-OES. Accredited matrices: SW PW GW, PrW.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS
Total cyanide in water	Determination of total cyanide by distillation followed by colorimetry. Accredited matrices: SW PW GW	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	ISO 17025
Total Hardness of water	Determination of hardness in waters by calculation from calcium and magnesium. Accredited Matrices SW, GW, PW.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton	L045-PL	W	ISO 17025
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	MCERTS
Total Sulphate in soil as %	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests""	L038	D	MCERTS
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, and MEWAM 2006 Methods for the Determination of Metals in Soil	L038-PL	D	MCERTS
TPH Chromatogram	TPH Chromatogram.	In-house method	L064-PL	D	NONE
TPH in (Soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method, TPH with carbon banding.	L076-PL	D	NONE
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method	L088/76-PL	W	MCERTS

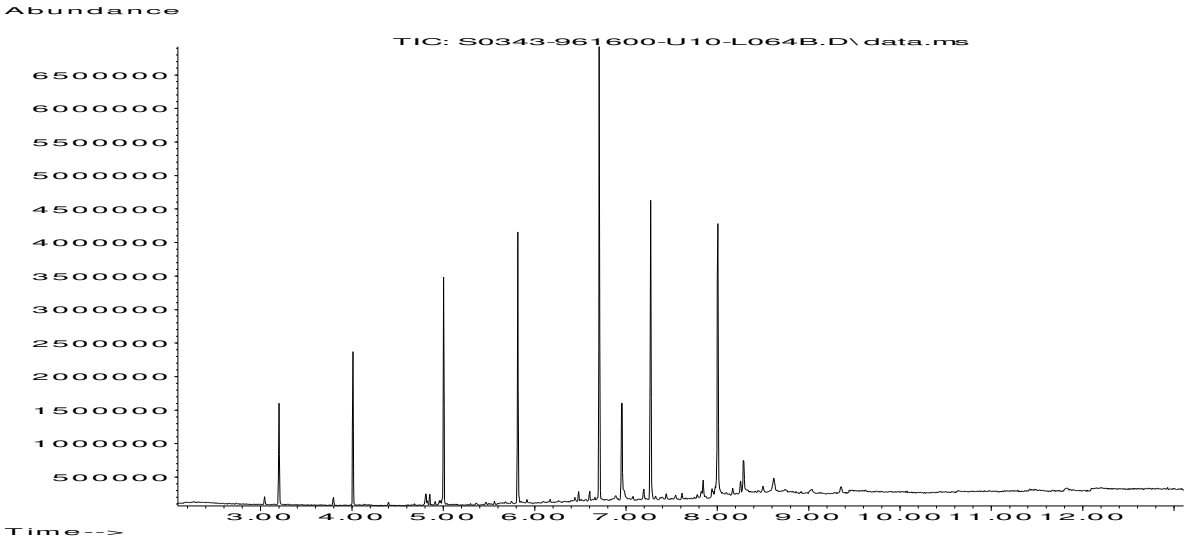
For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.
For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

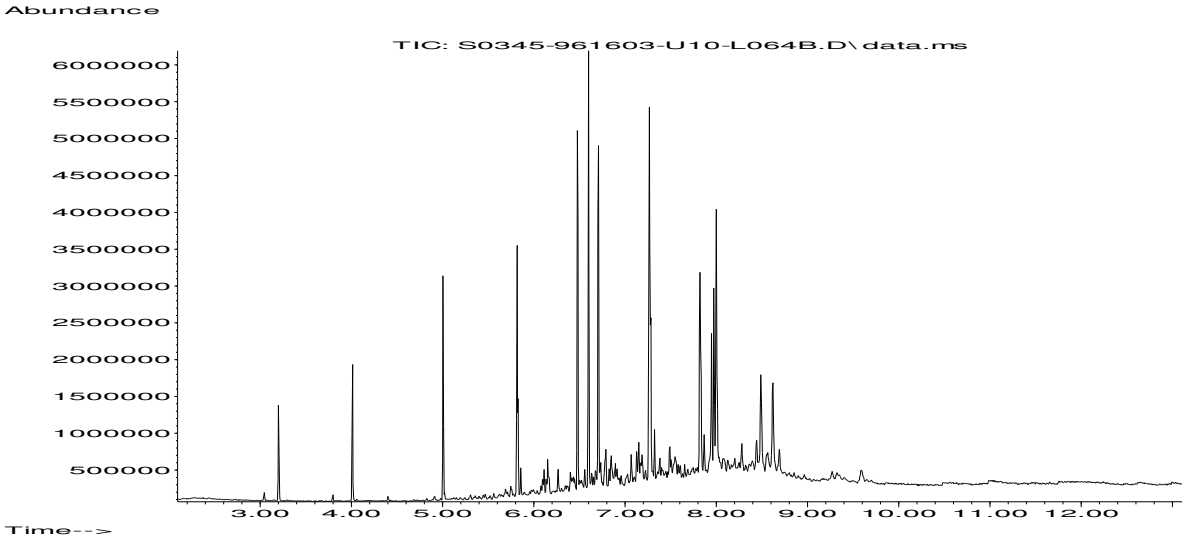
This certificate should not be reproduced, except in full, without the express permission of the laboratory.
The results included within the report are representative of the samples submitted for analysis.

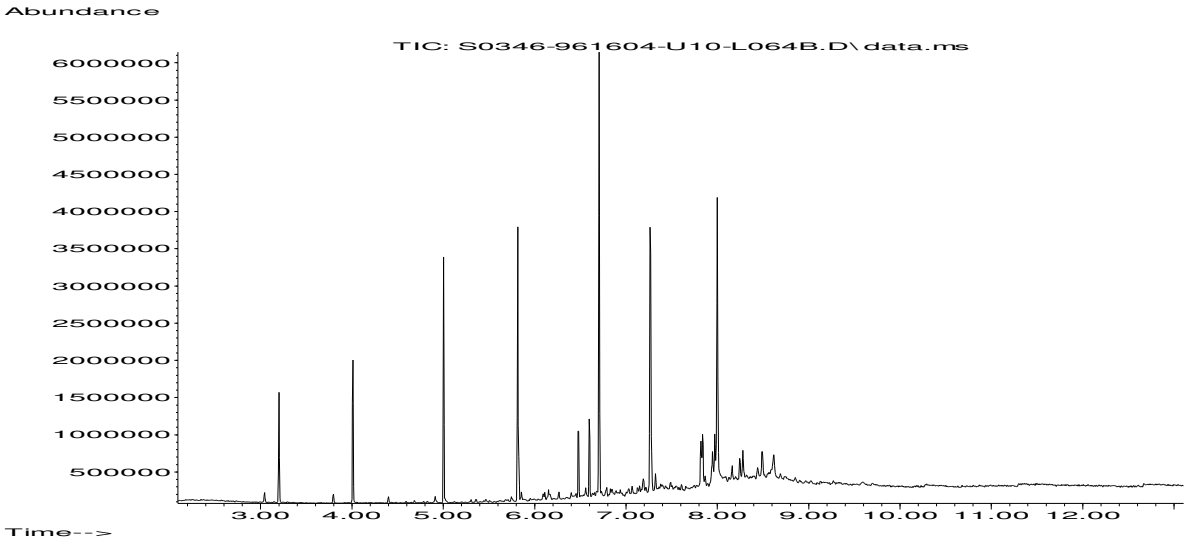
Sample ID	Other_ID	Sample Type	Job	Sample Number	Sample Deviation Code	test_name	test_ref	Test Deviation code
BH01		W	18-85563	961596	a			
TP01		S	18-85563	961599	b	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	b
TP01		S	18-85563	961599	b	TPHCWG (Soil)	L088/76-PL	b
TP02		S	18-85563	961600	b	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	b
TP02		S	18-85563	961600	b	TPHCWG (Soil)	L088/76-PL	b
TP04		S	18-85563	961603	b	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	b
TP04		S	18-85563	961603	b	TPHCWG (Soil)	L088/76-PL	b
TP05		S	18-85563	961604	b	BTEX and MTBE in soil (Monoaromatics)	L073B-PL	b
TP05		S	18-85563	961604	b	TPHCWG (Soil)	L088/76-PL	b

Key: a - No sampling date b - Incorrect container
c - Holding time d - Headspace e - Temperature


Abundance
TIC: S0342-961599-U10-L064B.D\ data.ms
5500000
5000000
4500000
4000000
3500000
3000000
2500000
2000000
1500000
1000000
500000
3.00
4.00
5.00
6.00
7.00
8.00
9.00
10.00
11.00
12.00
Time-->


Abundance
TIC: S0343-961600-U10-L064B.D\data.ms
6500000
6000000
5500000
5000000
4500000
4000000
3500000
3000000
2500000
2000000
1500000
1000000
500000
3.00
4.00
5.00
6.00
7.00
8.00
9.00
10.00
11.00
12.00
Time-->


Abundance
TIC: S0345-961603-U10-L064B.D\ data.ms
6000000
5500000
5000000
4500000
4000000
3500000
3000000
2500000
2000000
1500000
1000000
500000
3.00
4.00
5.00
6.00
7.00
8.00
9.00
10.00
11.00
12.00
Time-->


Abundance
TIC: S0346-961604-U10-L064B.D\data.ms
6000000
5500000
5000000
4500000
4000000
3500000
3000000
2500000
2000000
1500000
1000000
500000
3.00
4.00
5.00
6.00
7.00
8.00
9.00
10.00
11.00
12.00
Time-->

Scenario D - Summary of Remedial Targets Methodology

Hydrock

RTM Level 2 - Groundwater Beneath Source Assessment - groundwater samples

Water body receptor(s): Groundwater and surface water
Secondary receptor(s): Human health (abstraction) and aquatic ecosystem
Data set: Groundwater
Client: Acorn Property Group
Site: Cotswold Community School
Job no: C-09612-C

2008/105/EC Annex II: [P]= priority substance, [PH] = priority hazardous substances.

Chemicals of Potential Concern (concentrations in µg/l)	Summary of Sample Data					Value Being Compared to Target = Maximum Value	Water Quality Target (Exceeded if Red Text)		No. Samples Exceeding Water Quality Target		Notes
	No. of Samples	Limit of Detection	Minimum Value	Maximum Value	95-%ile Value		DWS	Inland Waters EQS	DWS	Inland Waters EQS	EQS compared to dissolved metals as an initial screen, with no adjustment for bioavailability or ABC.
Hardness as mg/l CaCO3	-	-	296	-	-	-		-			Used with some EQS.
Ag (dissolved)	0	0.05	0	0		0	n/a	0.05	0	0	
Al (dissolved)	1	1	29.7	29.7	29.7	29.7	200	n/a	0	0	
As (dissolved)	1	0.15	0.45	0.45	0.45	0.45	10	50	0	0	
B (dissolved)	1	10	170	170	170	170	1000	2000	0	0	
Ba (dissolved)	1	0.06	55	55	55	55	700	n/a	0	0	
Cd (dissolved) [PH]	0	0.02	0	0		0	5	0.25	0	0	
Co (dissolved)	1	0.2	0.6	0.6	0.6	0.6	n/a	3	0	0	
Cr (VI) (dissolved)	0	5	0	0		0	n/a	3.4	0	0	
Cr (III) (dissolved)	1	1	1	1	1	1	n/a	4.7	0	0	
Cr (total) (dissolved)	1	0.2	0.2	0.2	0.2	0.2	50	n/a	0	0	
Cu (dissolved)	1	0.5	0.5	0.5	0.5	0.5	2000	1	0	0	EQS based on bioavailable fraction.
Fe (dissolved)	1	4	260	260	260	260	200	1000	1	0	Minor Exceedance
Hg (dissolved) [PH]	1	0.005	0.005	0.005	0.005	0.005	1	0.07	0	0	
Mn (dissolved)	1	0.05	36	36	36	36	50	123	0	0	EQS based on bioavailable fraction.
Mo (dissolved)	1	0.05	0.82	0.82	0.82	0.82	n/a	n/a	0	0	
Na (dissolved)	1	10	14000	14000	14000	14000	200000	n/a	0	0	
Ni (dissolved) [P]	1	0.5	3.9	3.9	3.9	3.9	20	4	0	0	EQS based on bioavailable fraction.
Pb (dissolved) [P]	1	0.2	0.2	0.2	0.2	0.2	10	1.2	0	0	EQS based on bioavailable fraction.
Sb (dissolved)	1	0.4	0.8	0.8	0.8	0.8	5	n/a	0	0	
Se (dissolved)	1	0.6	1.6	1.6	1.6	1.6	10	n/a	0	0	
Sn (dissolved)	1	0.2	0.2	0.2	0.2	0.2	n/a	25	0	0	
V (dissolved)	1	0.2	0.3	0.3	0.3	0.3	n/a	60	0	0	
Zn (dissolved)	1	0.5	0.5	0.5	0.5	0.5	n/a	10.9	0	0	EQS based on bioavailable fraction and is added to ambient background conc..
Cyanide (free)	1	10	10	10	10	10	n/a	1	0	1	WQT less than LOD
Cyanide (total)	1	10	10	10	10	10	50	n/a	0	0	
Ammonium (NH4+)	1	15	160	160	160	160	500	n/a	0	0	
Bromate (BrO3)	1	0.002	0.002	0.002	0.002	0.002	10	n/a	0	0	
Chloride (Cl-)	1	150	16000	16000	16000	16000	250000	250000	0	0	
Fluoride (F-)	1	50	330	330	330	330	1500	5000	0	0	
Nitrate (NO3-)	1	50	19400	19400	19400	19400	50000	n/a	0	0	
Nitrite (NO2-)	1	5	350	350	350	350	500	n/a	0	0	
Sulfate (SO42-)	1	45	27000	27000	27000	27000	250000	400000	0	0	
pH (min.) (su)	1	0	7.4	7.4	7.4	7.4	6.5	6.0	0	0	Max & Min interchanged to compare min. value.
pH (max.) (su)	1	0	7.4	7.4	7.4	7.4	9.5	9.0	0	0	

Scenario D - Summary of Remedial Targets Methodology

Hydrock

RTM Level 2 - Groundwater Beneath Source Assessment - groundwater samples

Water body receptor(s): Groundwater and surface water
Secondary receptor(s): Human health (abstraction) and aquatic ecosystem
Data set: Groundwater
Client: Acorn Property Group
Site: Cotswold Community School
Job no: C-09612-C

2008/105/EC Annex II: [P]= priority substance, [PH] = priority hazardous substances.

Chemicals of Potential Concern (concentrations in µg/l)	Summary of Sample Data					Value Being Compared to Target = Maximum Value	Water Quality Target (Exceeded if Red Text)		No. Samples Exceeding Water Quality Target		Notes
	No. of Samples	Limit of Detection	Minimum Value	Maximum Value	95-%ile Value		DWS	Inland Waters EQS	DWS	Inland Waters EQS	EQS compared to dissolved metals as an initial screen, with no adjustment for bioavailability or ABC.
Electrical conductivity (µS/cm)	1	10	550	550	550	550	2500	n/a	0	0	
Anthracene [PH]	1	0.01	0.01	0.01	0.01	0.01	n/a	0.1	0	0	
Benzo(a)pyrene [PH]	1	0.01	0.01	0.01	0.01	0.01	0.01	0.00017	0	1	WQT less than LOD
Fluoranthene [P]	1	0.01	0.01	0.01	0.01	0.01	n/a	0.0063	0	1	WQT less than LOD
Naphthalene [P]	1	0.01	0.01	0.01	0.01	0.01	n/a	2	0	0	
PAHs = sum of benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(ghi)perylene, indeno(1,2,3-cd)pyrene [PH]	1	0.002	0.002	0.002	0.002	0.002	0.1	n/a	0	0	
Phenol	1	0.5	0.5	0.5	0.5	0.5	n/a	7.7	0	0	

Assessment of Chemicals of Potential Concern to Human Health

Hydrock

All values in mg/kg unless otherwise stated							MG	TS	GRAV	CLAY	CLAY	MG	MG	MG							
							TP01	TP01	TP01	TP02	TP03	TP04	TP05	TP06							
Chemical of Potential Concern	**Lab. RL**	**No. Samples**	**Min. Value**	**Max. Value**	**No. Samples > or = GAC**	**GAC**	**0.20**	**0.40**	**0.80**	**0.50**	**0.50**	**0.50**	**0.50**	**0.20**							
Arsenic	1	8	7.3	19	0	37	8.6	17	7.3	15	15	8.8	15	19							
Beryllium	0.06	8	0.13	0.93	0	73	0.13	0.93	0.13	0.81	0.63	0.29	0.48	0.74							
Boron	0.2	8	0.5	3.4	0	300	0.6	3.4	0.5	2.3	1.6	0.6	1.3	1.2							
Cadmium	0.2	8	0.2	0.2	0	14	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2							
Chromium (III)	1	8	7.9	34	0	890	8.2	34	7.9	25	22	11	21	25							
Chromium (VI)	1.2	8	1.2	1.2	0	6.1	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2							
Copper	1	8	2.2	17	0	2500	4.7	12	2.2	10	12	12	9.6	17							
Lead	2	8	2.9	32	0	200	8	26	2.9	20	22	14	18	32							
Mercury, inorganic	0.3	8	0.3	0.4	0	170	0.3	0.3	0.3	0.3	0.4	0.3	0.4	0.3							
Nickel	2	8	4.3	14	0	130	5	14	4.3	12	11	6.7	9.9	13							
Selenium	1	8	1	1	0	360	1	1	1	1	1	1	1	1							
Vanadium	1	8	12	43	0	410	13	43	12	38	35	18	30	39							
Zinc	2	8	9.1	63	0	3900	40	55	9.1	46	42	28	63	61							
Cyanide (free)	1	8	1	1	0	790	1	1	1	1	1	1	1	1							
Phenol (total)	2	8	1	1	0	290	1	1	1	1	1	1	1	1							
Acenaphthene	0.05	8	0.05	0.05	0	220	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05							
Acenaphthylene	0.05	8	0.05	0.05	0	180	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05							
Anthracene	0.05	8	0.05	0.47	0	2400	0.05	0.05	0.05	0.05	0.05	0.47	0.05	0.05							
Benz(a)anthracene	0.05	8	0.05	3.4	0	4.2	0.05	0.05	0.05	0.05	0.05	3.4	0.05	0.05							
Benzo(a)pyrene	0.05	8	0.05	3.6	1	1.5	0.05	0.05	0.05	0.05	0.05	3.6	0.05	0.05							
Benzo(b)fluoranthene	0.05	8	0.05	5.1	0	7.6	0.05	0.05	0.05	0.05	0.05	5.1	0.05	0.05							
Benzo(ghi)perylene	0.05	8	0.05	2	0	64	0.05	0.05	0.05	0.05	0.05	2	0.05	0.05							
Benzo(k)fluoranthene	0.05	8	0.05	1.5	0	12	0.05	0.05	0.05	0.05	0.05	1.5	0.05	0.05							
Chrysene	0.05	8	0.05	3.1	0	7.7	0.05	0.05	0.05	0.05	0.05	3.1	0.05	0.05							
Dibenz(a,h)anthracene	0.05	8	0.05	0.49	0	1.1	0.05	0.05	0.05	0.05	0.05	0.49	0.05	0.05							
Fluoranthene	0.05	8	0.05	6.7	0	290	0.05	0.05	0.05	0.05	0.05	6.7	0.05	0.05							
Fluorene	0.05	8	0.05	0.05	0	170	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05							
Indeno(1,2,3,cd)pyrene	0.05	8	0.05	1.9	0	4.3	0.05	0.05	0.05	0.05	0.05	1.9	0.05	0.05							
Naphthalene	0.05	8	0.05	0.05	0	2.2	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05							
Phenanthrene	0.05	8	0.05	1.8	0	97	0.05	0.05	0.05	0.05	0.05	1.8	0.05	0.05							
Pyrene	0.05	8	0.05	5.9	0	620	0.05	0.05	0.05	0.05	0.05	5.9	0.05	0.05							
Asbestos identified	Y/N						N	N	N	N	N	N	N	N							
FOC (dimensionless)	0.010775	**(mean)**					0.0031	0.024	0.0019	0.017	0.012	0.0042	0.012	0.012							
SOM (calculated)	1.86%	**(mean)**					0.53%	4.14%	0.33%	2.93%	2.07%	0.72%	2.07%	2.07%							
pH (su)	8.5	**(mean)**					8.4	8.1	8.7	8.3	8.3	9.1	8.4	8.4							

Risk parameter: **Human health - residential with plant uptake (1%SOM)**
Data set: All data
Client: Acorn Property Group
Site: Cotswold Community School
Job no.: C-09612-C
Lab. report no(s).: 18-85563

Legend: Values in blue are at or below the laboratory reporting limit (where a single value is indicated) and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate.
Values in red are equal to, or greater than, the generic assessment criterion (GAC) or +ve asbestos ID.
MG denotes Made Ground
NAT denotes natural ground

Assessment of Chemicals of Potential Concern to Plant Life

Hydrock

						Soil Type	MG	Nat	Nat	Nat	Nat	MG	MG	MG							
All values in mg/kg unless otherwise stated						Location & Depth	TP01	TP01	TP01	TP02	TP03	TP04	TP05	TP06							
Chemical of Potential Concern	**Lab. RL**	**No. Samples**	**Min. Value**	**Max. Value**	**No. Samples > or = GAC**	**GAC**	**0.20**	**0.40**	**0.80**	**0.50**	**0.50**	**0.50**	**0.50**	**0.20**							
Arsenic	1	8	7.3	19	0	250	8.6	17	7.3	15	15	8.8	15	19							
Boron	0.2	8	0.5	3.4	1	3	0.6	3.4	0.5	2.3	1.6	0.6	1.3	1.2							
Chromium (III)	1	8	7.9	34	0	400	8.2	34	7.9	25	22	11	21	25							
Chromium (VI)	1.2	8	1.2	1.2	0	25	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2							
Copper	1	8	2.2	17	0	200	4.7	12	2.2	10	12	12	9.6	17							
Nickel	2	8	4.3	14	0	110	5	14	4.3	12	11	6.7	9.9	13							
Zinc	2	8	9.1	63	0	300	40	55	9.1	46	42	28	63	61							
	Mean																				
pH (su)	8.5						8.4	8.1	8.7	8.3	8.3	9.1	8.4	8.4							

Risk parameter: Plant life pH >7
Data set: All data
Client: Acorn Property Group
Site: Cotswold Community School
Job no.: C-09612-C
Lab. report no(s).: 18-85563

Legend: Values in blue are at or below the laboratory reporting limit (where a single value is indicated) and are considered as being at the detection limit for the purposes of statistical analysis, as a conservative estimate.
Values in red are equal to, or greater than, the generic assessment criterion (GAC).
MG denotes Made Ground
NAT denotes natural ground

Soil type		Nat	Nat	MG	MG
Location	**Laboratory**	TP01	TP02	TP04	TP05
Depth (m)	**Reporting limit**	0.80	0.50	0.50	0.20
Aliphatics EC5-EC6	0.001	0.001	0.001	0.001	0.001
Aliphatics >EC6-EC8	0.001	0.001	0.001	0.001	0.001
Aliphatics >EC8-EC10	0.001	0.001	0.001	0.001	0.001
Aliphatics >EC10-EC12	1	1	1	1	1
Aliphatics >EC12-EC16	2	2	2	2	2
Aliphatics >EC16-EC35	10	10	10	10	10
Aliphatics >EC35-EC44	8.4	8.4	8.4	8.4	8.4
Aromatics EC5-EC7	0.001	0.001	0.001	0.001	0.001
Aromatics >EC7-EC8	0.001	0.001	0.001	0.001	0.001
Aromatics >EC8-EC10	0.001	0.001	0.001	0.001	0.001
Aromatics >EC10-EC12	1	1	1	1	1
Aromatics >EC12-EC16	2	2	2	2	2
Aromatics >EC16-EC21	10	10	10	27	10
Aromatics >EC21-EC35	10	10	10	61	37
Aromatics >EC35-EC44	8.4	8.4	8.4	19	25
All >EC44-EC70	0.1				

Data set: **All Data**
Client: **Acorn Property Group**
Site: **Ashton Keynes**
Job no.: **C-09612-C**
Lab. report no(s).: **18-85563**

All concentrations in mg/kg
Suggested soil types
MG denotes Made Ground
NAT denotes natural ground

Appendix J

Waste Classification

Waste Classification Report

PX9MB-R2Z4E-YVS29

Job name

Cotswold Community School

Description/Comments

Project

C-09612-C

Site

Waste Stream Template

Hydrock Standard plus Cresol (ammended Lead)

Classified by

Name:
Sarah Newell
Date:
12 Jun 2018 10:44 GMT
Telephone:
01454 619533

Company:
Hydrock Group Limited
Over Court Barns
Over Lane, Almondsbury
Bristol
BS32 4DF

Report

Created by: Sarah Newell
Created date: 12 Jun 2018 10:44 GMT

Job summary

#	Sample Name	Depth [m]	Classification Result	Hazard properties	Page
1	TP01	0.20	Non Hazardous		2
2	TP01[1]	0.40	Non Hazardous		4
3	TP01[2]	0.80	Non Hazardous		6
4	TP02	0.50	Non Hazardous		9
5	TP03	0.50	Non Hazardous		12
6	TP04	0.50	Non Hazardous		14
7	TP05	0.50	Non Hazardous		17
8	TP05[1]	1	Non Hazardous		19
9	TP06	0.20	Non Hazardous		20
10	TP06[1]	0.5	Non Hazardous		22

Appendices	Page
Appendix A: Classifier defined and non CLP determinands	23
Appendix B: Rationale for selection of metal species	25
Appendix C: Version	26

Classification of sample: TP01

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:
TP01
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	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		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
3	anthracene		204-371-1	120-12-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		8.6 mg/kg	1.32	11.355 mg/kg	0.00114 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.13 mg/kg	2.775	0.361 mg/kg	0.0000361 %		
11	boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		0.6 mg/kg	13.43	8.058 mg/kg	0.000806 %		
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 }		215-160-9	1308-38-9		8.2 mg/kg	1.462	11.985 mg/kg	0.0012 %		
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
15		chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-048-00-0	205-923-4	218-01-9									
16		copper { dicopper oxide; copper (I) oxide }				4.7	mg/kg	1.126	5.292	mg/kg	0.000529 %		
		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				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
19		fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-912-4	206-44-0									
20		fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-695-5	86-73-7									
21		indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**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 }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<**LOD**
		080-010-00-X	231-299-8	7487-94-7									
24		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
25		nickel { nickel dihydroxide }				5	mg/kg	1.579	7.897	mg/kg	0.00079 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
26		pH				8.4	pH		8.4	pH	8.4 pH		
				PH									
27		phenanthrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-581-5	85-01-8									
28		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
		604-001-00-2	203-632-7	108-95-2									
29		pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			204-927-3	129-00-0									
30		zinc { zinc oxide }				40	mg/kg	1.245	49.789	mg/kg	0.00498 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.0109 %		

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: TP01[1]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:
TP01[1]
Sample Depth:
0.40 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	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		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
3	anthracene		204-371-1	120-12-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		17 mg/kg	1.32	22.446 mg/kg	0.00224 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.93 mg/kg	2.775	2.581 mg/kg	0.000258 %		
11	boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		3.4 mg/kg	13.43	45.662 mg/kg	0.00457 %		
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 }		215-160-9	1308-38-9		34 mg/kg	1.462	49.693 mg/kg	0.00497 %		
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
15		chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-048-00-0	205-923-4	218-01-9									
16		copper { dicopper oxide; copper (I) oxide }				12	mg/kg	1.126	13.511	mg/kg	0.00135 %		
		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				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
19		fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-912-4	206-44-0									
20		fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-695-5	86-73-7									
21		indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-893-2	193-39-5									
22		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	26	mg/kg		26	mg/kg	0.0026 %		
		082-001-00-6											
23		mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<**LOD**
		080-010-00-X	231-299-8	7487-94-7									
24		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
25		nickel { nickel dihydroxide }				14	mg/kg	1.579	22.113	mg/kg	0.00221 %		
		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				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-581-5	85-01-8									
28		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
		604-001-00-2	203-632-7	108-95-2									
29		pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			204-927-3	129-00-0									
30		zinc { zinc oxide }				55	mg/kg	1.245	68.459	mg/kg	0.00685 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.0257 %		

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: TP01[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:
TP01[2]
Sample Depth:
0.80 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	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		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
3	anthracene		204-371-1	120-12-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		7.3 mg/kg	1.32	9.638 mg/kg	0.000964 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.13 mg/kg	2.775	0.361 mg/kg	0.0000361 %		
11	boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		0.5 mg/kg	13.43	6.715 mg/kg	0.000672 %		
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 }		215-160-9	1308-38-9		7.9 mg/kg	1.462	11.546 mg/kg	0.00115 %		
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
15		chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
16		copper { dicopper oxide; copper (I) oxide }				2.2	mg/kg	1.126	2.477	mg/kg	0.000248 %		
		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				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
19		diesel petroleum group				19.333	mg/kg		19.333	mg/kg	0.00193 %		
				68334-30-5, 68476-34-6, 94114-59-7, 1159170-26-9									
20		ethylbenzene				0.001	mg/kg		0.001	mg/kg	0.0000001 %		
		601-023-00-4	202-849-4	100-41-4									
21		fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-912-4	206-44-0									
22		fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-695-5	86-73-7									
23		indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-893-2	193-39-5									
24		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	2.9	mg/kg		2.9	mg/kg	0.00029 %		
		082-001-00-6											
25		mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
		080-010-00-X	231-299-8	7487-94-7									
26		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
27		nickel { nickel dihydroxide }				4.3	mg/kg	1.579	6.792	mg/kg	0.000679 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
28		pH				8.7	pH		8.7	pH	8.7 pH		
				PH									
29		phenanthrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-581-5	85-01-8									
30		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
31		pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			204-927-3	129-00-0									
32		TPH (C6 to C40) petroleum group				69.606	mg/kg		69.606	mg/kg	0.00696 %		
				TPH									
33		zinc { zinc oxide }				9.1	mg/kg	1.245	11.327	mg/kg	0.00113 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.0147 %		

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

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because Not present in free phase and therefore not flammable

Hazard Statements hit:

Flam. Liq. 2; H225 "Highly flammable liquid and vapour."

Because of determinand:

ethylbenzene: (conc.: 1.0e-07%)

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinands:

diesel petroleum group: (conc.: 0.00193%)
TPH (C6 to C40) petroleum group: (conc.: 0.00696%)

Classification of sample: TP02

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:
TP02
Sample Depth:
0.50 m
Moisture content:
20%
(no correction)

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: 20% No Moisture Correction applied (MC)

#		Determinand	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		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
2		acenaphthylene		205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
3		anthracene		204-371-1	120-12-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<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		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
6		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
7		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
8		benzo[ghi]perylene		205-883-8	191-24-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
9		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
10		beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.81	mg/kg	2.775	2.248	mg/kg	0.000225 %		
11		boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		2.3	mg/kg	13.43	30.889	mg/kg	0.00309 %		
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 }		215-160-9	1308-38-9		25	mg/kg	1.462	36.539	mg/kg	0.00365 %		

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		chromium in chromium(VI) compounds { chromium(VI) oxide }				<1.2	mg/kg	1.923	<2.308	mg/kg	<0.000231 %		<LOD
		024-001-00-0	215-607-8	1333-82-0									
15		chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
16		copper { dicopper oxide; copper (I) oxide }				10	mg/kg	1.126	11.259	mg/kg	0.00113 %		
		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				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
19		diesel petroleum group				19.333	mg/kg		19.333	mg/kg	0.00193 %		
				68334-30-5, 68476-34-6, 94114-59-7, 1159170-26-9									
20		ethylbenzene				0.001	mg/kg		0.001	mg/kg	0.0000001 %		
		601-023-00-4	202-849-4	100-41-4									
21		fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-912-4	206-44-0									
22		fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-695-5	86-73-7									
23		indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-893-2	193-39-5									
24		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	20	mg/kg		20	mg/kg	0.002 %		
		082-001-00-6											
25		mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
		080-010-00-X	231-299-8	7487-94-7									
26		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
27		nickel { nickel dihydroxide }				12	mg/kg	1.579	18.954	mg/kg	0.0019 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
28		pH				8.3	pH		8.3	pH	8.3 pH		
				PH									
29		phenanthrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-581-5	85-01-8									
30		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
31		pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			204-927-3	129-00-0									
32		TPH (C6 to C40) petroleum group				69.606	mg/kg		69.606	mg/kg	0.00696 %		
				TPH									
33		zinc { zinc oxide }				46	mg/kg	1.245	57.257	mg/kg	0.00573 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.0292 %		

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

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because Not present in free phase and therefore not flammable

Hazard Statements hit:

Flam. Liq. 2; H225 "Highly flammable liquid and vapour."

Because of determinand:

ethylbenzene: (conc.: 1.0e-07%)

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinands:

diesel petroleum group: (conc.: 0.00193%)
TPH (C6 to C40) petroleum group: (conc.: 0.00696%)

Classification of sample: TP03

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:
TP03
Sample Depth:
0.50 m
Moisture content:
14%
(no correction)

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: 14% No Moisture Correction applied (MC)

#	Determinand	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		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
3	anthracene		204-371-1	120-12-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<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		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.63 mg/kg	2.775	1.748 mg/kg	0.000175 %		
11	boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		1.6 mg/kg	13.43	21.488 mg/kg	0.00215 %		
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 }		215-160-9	1308-38-9		22 mg/kg	1.462	32.154 mg/kg	0.00322 %		

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		chromium in chromium(VI) compounds { chromium(VI) oxide }				<1.2	mg/kg	1.923	<2.308	mg/kg	<0.000231 %		<**LOD**
		024-001-00-0	215-607-8	1333-82-0									
15		chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-048-00-0	205-923-4	218-01-9									
16		copper { dicopper oxide; copper (I) oxide }				12	mg/kg	1.126	13.511	mg/kg	0.00135 %		
		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				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
19		fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-912-4	206-44-0									
20		fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-695-5	86-73-7									
21		indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-893-2	193-39-5									
22		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	22	mg/kg		22	mg/kg	0.0022 %		
		082-001-00-6											
23		mercury { mercury dichloride }				0.4	mg/kg	1.353	0.541	mg/kg	0.0000541 %		
		080-010-00-X	231-299-8	7487-94-7									
24		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
25		nickel { nickel dihydroxide }				11	mg/kg	1.579	17.374	mg/kg	0.00174 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
26		pH				8.3	pH		8.3	pH	8.3 pH		
				PH									
27		phenanthrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-581-5	85-01-8									
28		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
		604-001-00-2	203-632-7	108-95-2									
29		pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			204-927-3	129-00-0									
30		zinc { zinc oxide }				42	mg/kg	1.245	52.278	mg/kg	0.00523 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.0187 %		

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: TP04

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:
TP04
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	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		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
3	anthracene		204-371-1	120-12-7		0.47 mg/kg		0.47 mg/kg	0.000047 %		
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		8.8 mg/kg	1.32	11.619 mg/kg	0.00116 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		3.4 mg/kg		3.4 mg/kg	0.00034 %		
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		3.6 mg/kg		3.6 mg/kg	0.00036 %		
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		5.1 mg/kg		5.1 mg/kg	0.00051 %		
8	benzo[ghi]perylene		205-883-8	191-24-2		2 mg/kg		2 mg/kg	0.0002 %		
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		1.5 mg/kg		1.5 mg/kg	0.00015 %		
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.29 mg/kg	2.775	0.805 mg/kg	0.0000805 %		
11	boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		0.6 mg/kg	13.43	8.058 mg/kg	0.000806 %		
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 }		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		<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
15		chrysene				3.1	mg/kg		3.1	mg/kg	0.00031 %		
		601-048-00-0	205-923-4	218-01-9									
16		copper { dicopper oxide; copper (I) oxide }				12	mg/kg	1.126	13.511	mg/kg	0.00135 %		
		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				0.49	mg/kg		0.49	mg/kg	0.000049 %		
		601-041-00-2	200-181-8	53-70-3									
19		diesel petroleum group				53.333	mg/kg		53.333	mg/kg	0.00533 %		
				68334-30-5, 68476-34-6, 94114-59-7, 1159170-26-9									
20		ethylbenzene				0.001	mg/kg		0.001	mg/kg	0.0000001 %		
		601-023-00-4	202-849-4	100-41-4									
21		fluoranthene				6.7	mg/kg		6.7	mg/kg	0.00067 %		
			205-912-4	206-44-0									
22		fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-695-5	86-73-7									
23		indeno[123-cd]pyrene				1.9	mg/kg		1.9	mg/kg	0.00019 %		
			205-893-2	193-39-5									
24		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	14	mg/kg		14	mg/kg	0.0014 %		
		082-001-00-6											
25		mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<**LOD**
		080-010-00-X	231-299-8	7487-94-7									
26		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
27		nickel { nickel dihydroxide }				6.7	mg/kg	1.579	10.583	mg/kg	0.00106 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
28		pH				9.1	pH		9.1	pH	9.1 pH		
				PH									
29		phenanthrene				1.8	mg/kg		1.8	mg/kg	0.00018 %		
			201-581-5	85-01-8									
30		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
		604-001-00-2	203-632-7	108-95-2									
31		pyrene				5.9	mg/kg		5.9	mg/kg	0.00059 %		
			204-927-3	129-00-0									
32		TPH (C6 to C40) petroleum group				209.806	mg/kg		209.806	mg/kg	0.021 %		
				TPH									
33		zinc { zinc oxide }				28	mg/kg	1.245	34.852	mg/kg	0.00349 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.0415 %		

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

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because Not present in free phase and therefore not flammable

Hazard Statements hit:

Flam. Liq. 2; H225 "Highly flammable liquid and vapour."

Because of determinand:

ethylbenzene: (conc.: 1.0e-07%)

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinands:

diesel petroleum group: (conc.: 0.00533%)
TPH (C6 to C40) petroleum group: (conc.: 0.021%)

Classification of sample: TP05

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:	LoW Code:
TP05	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	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		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<**LOD**
2	acenaphthylene		205-917-1	208-96-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<**LOD**
3	anthracene		204-371-1	120-12-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<**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		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<**LOD**
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<**LOD**
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<**LOD**
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<**LOD**
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<**LOD**
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.48 mg/kg	2.775	1.332 mg/kg	0.000133 %		
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	<0.2 mg/kg	1.285	<0.257 mg/kg	<0.00002 %		<**LOD**
13	chromium in chromium(III) compounds { chromium(III) oxide }		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		<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
15		chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
16		copper { dicopper oxide; copper (I) oxide }				9.6	mg/kg	1.126	10.809	mg/kg	0.00108 %		
		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				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
19		fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-912-4	206-44-0									
20		fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-695-5	86-73-7									
21		indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-893-2	193-39-5									
22		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	18	mg/kg		18	mg/kg	0.0018 %		
		082-001-00-6											
23		mercury { mercury dichloride }				0.4	mg/kg	1.353	0.541	mg/kg	0.0000541 %		
		080-010-00-X	231-299-8	7487-94-7									
24		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
25		nickel { nickel dihydroxide }				9.9	mg/kg	1.579	15.637	mg/kg	0.00156 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
26		pH				8.4	pH		8.4	pH	8.4 pH		
				PH									
27		phenanthrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			201-581-5	85-01-8									
28		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
29		pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			204-927-3	129-00-0									
30		zinc { zinc oxide }				63	mg/kg	1.245	78.417	mg/kg	0.00784 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.0199 %		

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: TP05[1]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:	LoW Code:	
TP05[1]	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:		
1 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			CLP Note	**User entered data**	Conv. Factor	Compound conc.	**Classification value**	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number							
								Total:	0%		

Key

User supplied data

Classification of sample: TP06

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:
TP06
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	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		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
3	anthracene		204-371-1	120-12-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		19 mg/kg	1.32	25.086 mg/kg	0.00251 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.74 mg/kg	2.775	2.054 mg/kg	0.000205 %		
11	boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		1.2 mg/kg	13.43	16.116 mg/kg	0.00161 %		
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 }		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		<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
15		chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-048-00-0	205-923-4	218-01-9									
16		copper { dicopper oxide; copper (I) oxide }				17	mg/kg	1.126	19.14	mg/kg	0.00191 %		
		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				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
19		fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-912-4	206-44-0									
20		fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-695-5	86-73-7									
21		indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-893-2	193-39-5									
22		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	32	mg/kg		32	mg/kg	0.0032 %		
		082-001-00-6											
23		mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<**LOD**
		080-010-00-X	231-299-8	7487-94-7									
24		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**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				8.4	pH		8.4	pH	8.4 pH		
				PH									
27		phenanthrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-581-5	85-01-8									
28		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
		604-001-00-2	203-632-7	108-95-2									
29		pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			204-927-3	129-00-0									
30		zinc { zinc oxide }				61	mg/kg	1.245	75.928	mg/kg	0.00759 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.0234 %		

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: TP06[1]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:
TP06[1]
Sample Depth:
0.5 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			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number							
								Total:	0%		

Key

User supplied data

Appendix A: Classifier defined and non CLP 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
Risk Phrases: N R51/53 , N R50/53 , R38 , R37 , R36
Hazard Statements: Aquatic Chronic 2 H411 , Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Skin Irrit. 2 H315 , STOT SE 3 H335 , Eye Irrit. 2 H319

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
Risk Phrases: R38 , R37 , R36 , R27 , R26 , R22
Hazard Statements: Skin Irrit. 2 H315 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Acute Tox. 1 H310 , Acute Tox. 1 H330 , Acute Tox. 4 H302

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
Risk Phrases: N R50/53 , R43 , R38 , R37 , R36
Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Skin Sens. 1 H317 , Skin Irrit. 2 H315 , STOT SE 3 H335 , Eye Irrit. 2 H319

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
Risk Phrases: N R50/53
Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400

boron tribromide/trichloride/trifluoride (combined) (CAS Number: 10294-33-4, 10294-34-5, 7637-07-2)

Conversion factor: 13.43
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
Risk Phrases: C R35 , C R34 , T+ R26/28 , R14
Hazard Statements: Skin Corr. 1B H314 , Skin Corr. 1A H314 , Acute Tox. 2 H300 , Acute Tox. 2 H330 , EUH014

chromium(III) oxide (EC Number: 215-160-9, CAS Number: 1308-38-9)

Conversion factor: 1.462
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
Risk Phrases: R61 , R60 , R50/53 , R43 , R42 , R38 , R37 , R36 , R22 , R20
Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Repr. 1B H360FD , Skin Sens. 1 H317 , Resp. Sens. 1 H334 , Skin Irrit. 2 H315 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Acute Tox. 4 H302 , Acute Tox. 4 H332

dicopper oxide; copper (I) oxide (EC Number: 215-270-7, CAS Number: 1317-39-1)

CLP index number: 029-002-00-X
Description/Comments: M-factor for long-term aquatic hazard not included as per paragraph (5), ATP9
Data source: Regulation (EU) 2016/1179 of 19 July 2016 (ATP9)
Additional Risk Phrases: N R50/53 >= 0.25 %, N R50/53
Additional Hazard Statement(s): None.
Reason for additional Hazards Statement(s)/Risk Phrase(s):
10 Oct 2016 - N R50/53 >= 0.25 % risk phrase sourced from: WM3 v1 still uses ecotoxic risk phrases
10 Oct 2016 - N R50/53 risk phrase sourced from: WM3 v1 still uses ecotoxic risk phrases

salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex

CLP index number: 006-007-00-5
Description/Comments: Conversion factor based on a worst case compound: sodium cyanide
Data source: Commission Regulation (EC) No 790/2009 - 1st Adaptation to Technical Progress for Regulation (EC) No 1272/2008. (ATP1)
Additional Risk Phrases: None.
Additional Hazard Statement(s): EUH032 >= 0.2 %
Reason for additional Hazards Statement(s)/Risk Phrase(s):
14 Dec 2015 - 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
Risk Phrases: N R50/53 , Xn R22
Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Acute Tox. 4 H302

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
Risk Phrases: N R50/53
Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400

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
Risk Phrases: R40
Hazard Statements: Carc. 2 H351

lead compounds with the exception of those specified elsewhere in this Annex

CLP index number: 082-001-00-6
Description/Comments: Least-worst case: Lead REACH Consortium considers some lead compounds Carcinogenic category 2B
Data source: Regulation 1272/2008/EC - Classification, labelling and packaging of substances and mixtures. (CLP)
Additional Risk Phrases: None.
Additional Hazard Statement(s): Carc. 2 H351
Reason for additional Hazards Statement(s)/Risk Phrase(s):
03 Jun 2015 - 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
Risk Phrases: None.
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
Risk Phrases: N R50/53 , R43 , R40 , R38 , R37 , R36 , R22
Hazard Statements: Skin Irrit. 2 H315 , Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , Skin Sens. 1 H317 , Carc. 2 H351 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Acute Tox. 4 H302

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
Risk Phrases: N R50/53 , Xi R36/37/38
Hazard Statements: Aquatic Chronic 1 H410 , Aquatic Acute 1 H400 , STOT SE 3 H335 , Eye Irrit. 2 H319 , Skin Irrit. 2 H315

diesel petroleum group (CAS Number: 68334-30-5, 68476-34-6, 94114-59-7, 1159170-26-9)

Description/Comments: Hazard statements taken from WM3 1st Edition 2015; Risk phrases: WM2 3rd Edition 2013
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Risk Phrases: R66 , R65 , R51/53 , R40
Hazard Statements: Aquatic Chronic 2 H411 , STOT RE 2 H373 , Asp. Tox. 1 H304 , Carc. 2 H351 , Acute Tox. 4 H332 , Skin Irrit. 2 H315 , Flam. Liq. 3 H226

ethylbenzene (EC Number: 202-849-4, CAS Number: 100-41-4)

CLP index number: 601-023-00-4
Description/Comments:
Data source: Commission Regulation (EU) No 605/2014 – 6th Adaptation to Technical Progress for Regulation (EC) No 1272/2008. (ATP6)
Additional Risk Phrases: None.
Additional Hazard Statement(s): Carc. 2 H351
Reason for additional Hazards Statement(s)/Risk Phrase(s):
03 Jun 2015 - Carc. 2 H351 hazard statement sourced from: IARC Group 2B (77) 2000

TPH (C6 to C40) petroleum group (CAS Number: TPH)

Description/Comments: Hazard statements taken from WM3 1st Edition 2015; Risk phrases: WM2 3rd Edition 2013
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Risk Phrases: R65 , R63 , R51/53 , R46 , R45 , R10
Hazard Statements: Aquatic Chronic 2 H411 , Repr. 2 H361d , Carc. 1B H350 , Muta. 1B H340 , STOT RE 2 H373 , Asp. Tox. 1 H304 , Flam. Liq. 3 H226

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 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

zinc {zinc oxide}

Worst case species based on hazard statements

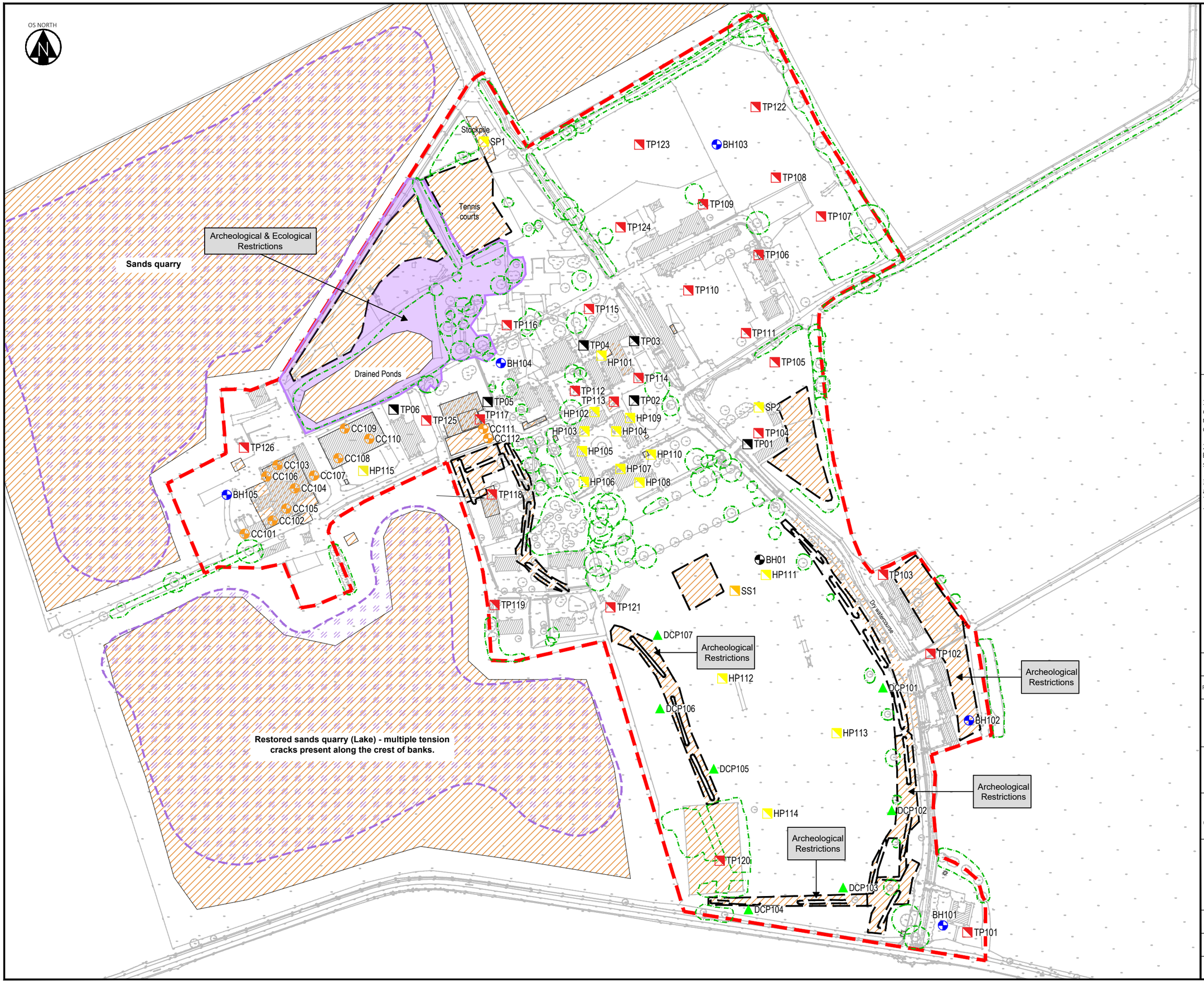
Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition, May 2015
HazWasteOnline Classification Engine Version: 2018.157.3544.7274 (06 Jun 2018)
HazWasteOnline Database: 2018.157.3544.7274 (06 Jun 2018)

This classification utilises the following guidance and legislation:
WM3 - Waste Classification - May 2015
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 Wastes 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
POPs Regulation 2004 - Regulation 850/2004/EC of 29 April 2004
1st ATP to POPs Regulation - Regulation 756/2010/EU of 24 August 2010
2nd ATP to POPs Regulation - Regulation 757/2010/EU of 24 August 2010

Appendix C Exploratory hole location plan, exploratory hole logs and photographs

Exploratory hole location plan



KEY

- Wider Site Boundary
- BHi Borehole
- HPi Hand Pit / Stockpile
- TPi Trial Pit
- DCP TRL DCP
- CCii Concrete Core
- BHi Borehole 2018
- TPi Trial Pit 2018
- Restricted Zones
- Tree to be Retained

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	07/09/23	SW	07/09/23	SW	07/09/23
	REVISION NOTES/COMMENTS					
	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE

Hydrock
Over Court Barns
Over Lane
Almondsbury, Bristol BS32 4DF
TEL: 01454 619 533
FAX: 01454 614 125
E-Mail: bristol@hydrock.com
or visit www.hydrock.com

CLIENT
BEWLEY HOMES

PROJECT
COTSWOLD COMMUNITY SCHOOL, ASHTON KEYNES

TITLE
EXPLORATORY HOLE LOCATION PLAN

HYDROCK PROJECT NO.	SCALE @ A3
C-28470-C	1:2000

PURPOSE OF ISSUE	STATUS
SUITABLE FOR INFORMATION	S2

DRAWING NO. (PROJECT CODE-ORGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER) 28470- HYD-XX-GI-DR-G-1002

REVISION P2

Exploratory hole logs

Hydrock

Project: Cotswold Community School, Ashton Keynes

Borehole No
BH01
Page No. 1 of 2

Method: Cable Percussion	Date(s): 10/05/2018 - 11/05/2018	Logged By: SM	Drilled By: CJA
Client: Bewley Homes		Checked By: KS	Flush: Water
Hydrock Project No: 28470			Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
0.20	D			Dark brown slightly sandy gravelly CLAY. Gravel is sub-angular to sub-rounded fine to medium of limestone. Frequent fine rootlets. (TOPSOIL)	0.20	(0.20)			
0.50	D			Medium dense creamy brown sandy sub-angular to sub-rounded fine to coarse GRAVEL of limestone. Sand is medium to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)					
1.00	D								
1.20	SPT	N=31 (4,7,7,7,8,9)							
1.50	D								
2.00	SPT	N=25 (3,5,5,6,7,7)							
2.50	D					(4.80)			
3.00	SPT	N=26 (7,5,6,7,6,7)							
3.50	D								
4.00	SPT	N=28 (3,7,6,7,7,8)							
4.50	D								
5.00	SPT	N=24 (5,4,5,6,6,7)		Medium dense creamy brown clayey sandy to dense sub-angular to sub-rounded fine to coarse GRAVEL of limestone. Sand is medium to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)	5.00	(0.50)			
5.50	D			Stiff blue grey slightly sandy CLAY with occasional fossil shell fragments. (KELLAWAYS CLAY MEMBER)	5.50				
6.00	SPT	N=35 (3,5,8,9,9,9)							
6.50	D								
7.00	SPT	N=34 (4,7,8,8,9,9)							
7.50	D								
8.00	SPT	N=32 (4,6,7,7,9,9)				(4.95)			
8.50	D								
9.00	SPT	N=40 (6,7,8,10,11,11)							
9.50	D								

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
CP	10/05	0900	0.00	0.00			Water	Grey
CP	10/05	1700	8.00	6.00	103	1.90	Water	Grey
CP	11/05	0009	8.00	6.00	103	1.90	Water	Grey
CP	11/05	0014	10.45	6.00	103	1.90	Water	Grey

Chiselling

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

General Remarks:
Location scanned with CAT and Genny prior to excavation. Handpit excavated to 1.2m prior to drilling. Borehole terminated at proposed base depth with SPT at 10.45m.

Groundwater: Encountered at 2.1m (rising to 1.9m) and 5.2m (rising to 3.3m)

Logged in general accordance with BS5930:2015

Hydrock	Project: Cotswold Community School, Ashton Keynes	Borehole No BH01 Page No. 2 of 2

Method: Cable Percussion	Date(s): 10/05/2018 - 11/05/2018	Logged By: SM	Drilled By: CJA
Client: Bewley Homes		Checked By: KS	Flush: Water
Hydrock Project No: 28470			Scale: 1:50

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend	Instrumentation / Backfill
Depth (m)	Type	Results							
10.00	SPT	N=40 (5,7,8,8,11,13)		Stiff blue grey slightly sandy CLAY with occasional fossil shell fragments. (KELLAWAYS CLAY MEMBER)					
				End of Borehole at 10.45m	10.45				

Progress and Observations									Chiselling		
Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)	From (m)	To (m)	Duration (HH:MM)

General Remarks:
Location scanned with CAT and Genny prior to excavation. Handpit excavated to 1.2m prior to drilling. Borehole terminated at proposed base depth with SPT at 10.45m.

Groundwater: Encountered at 2.1m (rising to 1.9m) and 5.2m (rising to 3.3m)

Logged in general accordance with BS5930:2015

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	Borehole No BH103 Page No. 1 of 1

Method: Cable Percussion	Date(s): 08/08/2023 - 09/08/2023	Logged By: AT	Drilled By: CCGI
Client: Bewley Homes	Co-ords: 403511.68, 195762.69	Checked By: SW	Flush:
Hydrock Project No: 28470	Ground Level: 89.59m 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 slightly gravelly CLAY with frequent rootlets. Sand is fine to coarse. Gravel is subangular to subrounded fine to medium of limestone. (TOPSOIL)	0.30	(0.30)	89.29		
0.20	ES			Yellowish brown sandy slightly silty subangular to subrounded fine to medium GRAVEL of limestone. Sand is fine to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)					
0.40 - 0.80	B								
0.50	ES								
0.80 - 1.20	B								
1.00	ES								
1.20	SPT	37/140mm (9,15,17,20)		*... below 1.20m bgl: becoming dense.*		(2.30)			
1.20 - 1.65	B								
1.70	D								
1.70 - 2.20	B								
2.20	SPT	N=12 (2,2,2,3,3,4)		*... below 2.20m bgl: becoming medium dense.*					
2.20 - 2.65	B								
2.70	D								
2.70 - 3.20	B								
3.00	ES			Stiff dark grey slightly sandy CLAY with rare shell fragments. Sand is fine to medium. (KELLAWAYS CLAY MEMBER)	2.60		86.99		
3.20	SPT	N=23 (2,4,5,5,6,7)							
3.20 - 3.65	D								
3.70 - 4.20	B								
4.20 - 4.65	UT					(3.05)			
4.65 - 4.70	D								
4.70 - 5.20	B								
5.20	SPT	N=33 (4,5,9,8,8,8)							
				End of Borehole at 5.65m	5.65		83.94		

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
Dando 3000	08/08	1515	0.00					
Dando 3000	08/08	1715	2.65	2.20	150			
Dando 3000	09/08	0800	2.65	2.20	150			
Dando 3000	09/08	1000	5.65					

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 1.20m bgl. 3. No groundwater encountered. 4. 50mm monitoring well installed, response zone between 1.00m - 2.60m bgl.

Logged in general accordance with BS5930:2015

Hydrock

Project: Cotswold Community School, Ashton Keynes

Borehole No
BH104
Page No. 1 of 1

Method: Cable Percussion	Date(s): 09/08/2023 - 10/08/2023	Logged By: AT	Drilled By: CCGI
Client: Bewley Homes	Co-ords: 403371.23, 195619.62	Checked By: SW	Flush:
Hydrock Project No: 28470	Ground Level: 89.78m 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 sandy SILT with frequent rootlets. Sand is fine to coarse. (TOPSOIL)	0.10	(0.10)	89.68		
0.20	ES			Firm brown slightly sandy slightly gravelly CLAY with occasional rootlets. Sand is fine to coarse. Gravel is subangular to subrounded fine to medium of limestone. (TOPSOIL)	0.45	(0.35)	89.33		
0.60	ES			Yellowish brown very sandy slightly silty subangular to rounded fine to medium GRAVEL of limestone. Sand is fine to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)	1.20	(0.75)	88.58		
0.60 - 1.20	B								
1.00	ES								
1.20	SPT	55/285mm (6,9,11,10,15,19)		Very dense yellowish brown very sandy slightly silty subangular to rounded fine to medium GRAVEL of limestone. Sand is fine to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)					
1.20 - 1.65	B								
1.70	D								
1.70 - 2.20	B								
2.20	SPT	50/290mm (2,5,9,12,15,14)			3.20	(2.00)	86.58		
2.20 - 2.65	B								
2.70	D								
2.70 - 3.20	B								
3.20	SPT	N=21 (3,4,5,5,6,5)		Medium dense yellowish brown very sandy slightly silty subangular to rounded fine to medium GRAVEL of limestone. Sand is fine to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)	4.20	(1.00)	85.58		
3.20 - 3.65	B								
3.70	D								
3.70 - 4.20	B								
4.20	SPT	44/285mm (4,5,6,7,14,17)		Dense yellowish brown very sandy slightly silty subangular 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								
4.70 - 5.20	B								
5.20	SPT	N=9 (2,3,2,2,3,2)		*... below 5.20m bgl: becoming loose.*	5.50	(1.30)	84.28		
5.50 - 6.50	B								
6.00	ES			Stiff grey thinly laminated slightly sandy CLAY with some silt. Sand is fine. (KELLAWAYS CLAY MEMBER)					
6.50 - 6.95	UT				7.00	(1.50)	82.78		
7.00 - 8.00	B								
8.00	SPT	N=44 (8,10,10,11,13,10)		Very stiff grey thinly laminated slightly sandy locally sandy CLAY with rare pockets of fine sand sized pyrite up to 2mm. Sand is fine. (KELLAWAYS CLAY MEMBER)					
8.00 - 8.45	D				8.45	(1.45)	81.33		
				End of Borehole at 8.45m					

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
Dando 3000	09/08	1130	0.00					
Dando 3000	09/08	1730	5.65	5.20	150			
Dando 3000	10/08	0830	5.65	6.00	150			
Dando 3000	10/08	1130	8.45					

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 - 5.50m bgl.

Logged in general accordance with BS5930:2015

Hydrock	Project: Cotswold Community School, Ashton Keynes	Borehole No BH105 Page No. 1 of 2

Method: Cable Percussion	Date(s): 10/08/2023 - 11/08/2023	Logged By: AT	Drilled By: CCGI
Client: Bewley Homes	Co-ords: 403193.10, 195534.02	Checked By: SW	Flush:
Hydrock Project No: 28470	Ground Level: 89.67m 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			MADE GROUND: Firm brown sandy slightly gravelly SILT with frequent rootlets. Sand is fine to coarse. Gravel is subangular to subrounded fine to coarse of brick fragments limestone and rare glass. (MADE GROUND)	0.40	(0.40)	89.27		
0.20	ES			Firm brown very sandy slightly gravelly SILT with occasional rootlets. Sand is fine to coarse. Gravel is subrounded fine to medium of limestone. (SUPERFICIAL DEPOSITS)	0.70	(0.30)	88.97		
0.40 - 0.70	B			Very dense yellowish brown very sandy subangular to rounded occasionally tabular fine to medium GRAVEL of limestone. Sand is fine to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)	1				
0.60	ES								
0.70 - 1.20	B					(1.50)			
1.00	ES								
1.20	SPT	53/275mm (7,8,11,14,13,15)							
1.20 - 1.65	B								
1.70	D								
1.70 - 2.20	B				2				
2.20	SPT	N=34 (2,3,5,5,10,14)		Dense yellowish brown very sandy subangular to rounded occasionally tabular fine to medium GRAVEL of limestone. Sand is fine to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)	2.20		87.47		
2.20 - 2.65	B								
2.70	D					(1.00)			
2.70 - 3.20	B				3				
3.20	SPT	N=26 (2,4,5,5,7,9)		Medium dense yellowish brown very sandy subangular to rounded occasionally tabular fine to medium GRAVEL of limestone. Sand is fine to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)	3.20		86.47		
3.20 - 3.65	B								
3.70	D								
3.70 - 4.20	B				4				
4.20	SPT	N=11 (1,0,1,0,4,6)		*... below 4.20m bgl: becoming loose.*		(2.00)			
4.20 - 4.65	B								
4.70	D								
4.70 - 5.20	B				5				
5.20	SPT	50/225mm (8,11,14,21,15)		Dense yellowish brown very sandy subangular to rounded occasionally tabular fine to medium GRAVEL of limestone. Sand is fine to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)	5.20		84.47		
5.20 - 5.65	B								
5.70	D								
5.70 - 6.50	B				6	(1.30)			
6.50	SPT	N=24 (4,4,7,6,5,6)		Medium dense yellowish brown very sandy subangular to rounded occasionally tabular fine to medium GRAVEL of limestone. Sand is fine to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)	6.50		83.17		
6.50 - 6.95	B								
7.00	D								
7.00 - 8.00	B				7				
8.00	SPT	N=23 (8,7,5,5,6,7)				(1.60)			
8.00 - 9.00	B				8				
8.50	ES			Very stiff dark grey thinly laminated slightly sandy CLAY with occasional shells and rare pockets of fine sand sized pyrite up to 2mm. Sand is fine. (KELLAWAYS CLAY MEMBER)	8.10		81.57		
9.00 - 9.45	UT				9	(1.90)			
9.45 - 9.50	D								
9.50	SPT	N=43 (5,5,8,10,10,15)							
9.50 - 10.00	B								
9.50 - 9.95	D				10				
					10.00		79.67		

Progress and Observations

Rig	Date	Time	Borehole Depth (m)	Casing Depth (m)	Casing Diam.(mm)	Water Depth (m)	Flush Type	Returns (colour)
Dando 3000	10/08	1230	0.00					
Dando 3000	10/08	1730	6.95	7.00	150			
Dando 3000	11/08	0830	6.95	7.00	150			
Dando 3000	11/08	1330	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 1.10m bgl unable to progress further due with hand tools. 3. No groundwater encountered. 4. 50mm monitoring well installed, response zone between 1.00m - 8.10m bgl.

Logged in general accordance with BS5930:2015

Hydrock	Project: Cotswold Community School, Ashton Keynes	Borehole No BH105 Page No. 2 of 2

Method: Cable Percussion	Date(s): 10/08/2023 - 11/08/2023	Logged By: AT	Drilled By: CCGI
Client: Bewley Homes	Co-ords: 403193.10, 195534.02	Checked By: SW	Flush:
Hydrock Project No: 28470	Ground Level: 89.67m 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)

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 1.10m bgl unable to progress further due with hand tools. 3. No groundwater encountered. 4. 50mm monitoring well installed, response zone between 1.00m - 8.10m bgl.

Logged in general accordance with BS5930:2015

Hydrock

Project: Cotswold Community School, Ashton Keynes

Trialpit No
HP101
Page No. 1 of 1

Method: Hand-dug Pit	Date(s): 04/08/2023	Logged By: AT	Checked By: SW
Client: Bewley Homes		Stability: Stable.	Dimensions: 0.40m x 0.35m / Scale: 1:10
Hydrock Project No: 28470		Plant: Hand Tools.	

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
				CONCRETE. (MADE GROUND)	0.18	(0.18)		
				Yellowish brown slightly sandy subangular fine to coarse GRAVEL of limestone and subrounded COBBLES. Sand is fine to coarse. Cobbles are of concrete. (MADE GROUND)	0.23	(0.05)		
0.30	ES			Brown very sandy silty subrounded to rounded fine to medium GRAVEL of limestone. Sand is fine to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)	0.70	(0.47)		
0.75	ES			Yellowish brown very sandy subrounded fine to medium GRAVEL of limestone. (NORTHMOOR SAND AND GRAVEL MEMBER)	0.80	(0.10)		
				Base of Excavation at 0.80m				

General Remarks:
1. Position cleared by GPR by Clifton Surveys Ltd and by CAT and Genny prior to excavation. 2. Hand excavated to 0.80m bgl. 3. No visual or olfactory evidence of contamination encountered. 4. No groundwater encountered. 5. Pit remained stable. 6. Hand pit backfilled with arisings.

Logged in general accordance with BS5930:2015

Hydrock

Project: Cotswold Community School, Ashton Keynes	Trialpit No HP102 Page No. 1 of 1

Method: Hand-dug Pit	Date(s): 03/08/2023	Logged By: KB	Checked By: SW
Client: Bewley Homes		Stability: Stable.	Dimensions: 0.40m x 0.30m / Scale: 1:10
Hydrock Project No: 28470		Plant: Hand Tools.	

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
				Dark brown sandy slightly gravelly SILT. Sand is fine to coarse. Gravel is subangular fine to coarse of limestone (MADE GROUND)	0.20	(0.20)		
				Yellowish brown sandy slightly silty subangular to subrounded fine to coarse GRAVEL of limestone. Sand is fine to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)	0.70	(0.50)		
				Base of Excavation at 0.70m				

General Remarks:
1. Position cleared by GPR by Clifton Surveys Ltd and by CAT and Genny prior to excavation. 2. Hand excavated to 0.60m bgl. 3. No visual or olfactory evidence of contamination encountered. 4. No groundwater encountered. 5. Pit remained stable. 6. Hand pit backfilled with arisings.

Logged in general accordance with BS5930:2015

Hydrock

Project: Cotswold Community School, Ashton Keynes	Trialpit No HP103 Page No. 1 of 1

Method: Hand-dug Pit	Date(s): 03/08/2023	Logged By: KB	Checked By: SW
Client: Bewley Homes		Stability: Stable.	Dimensions: 0.35m x 0.30m / Scale: 1:10
Hydrock Project No: 28470		Plant: Hand Tools.	

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
				Firm dark brown sandy slightly gravelly SILT. Sand is fine to coarse. Gravel is angular to subangular fine to medium of limestone. (MADE GROUND)		(0.20)		
					0.20			
				Yellowish brown sandy subangular to subrounded fine to medium GRAVEL of limestone. Sand is fine to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)		(0.25)		
					0.45			
				Base of Excavation at 0.45m				
					1			
					2			

General Remarks:
1. Position cleared by GPR by Clifton Surveys Ltd and by CAT and Genny prior to excavation. 2. Hand excavated to 0.45m bgl. 3. No visual or olfactory evidence of contamination encountered. 4. No groundwater encountered. 5. Pit remained stable. 6. Hand pit backfilled with arisings.

Logged in general accordance with BS5930:2015

Hydrock	Project: Cotswold Community School, Ashton Keynes	Trialpit No HP104 Page No. 1 of 1

Method: Hand-dug Pit	Date(s): 03/08/2023	Logged By: KB	Checked By: SW
Client: Bewley Homes		Stability: Stable.	Dimensions: 0.35m x 0.42m / Scale: 1:10
Hydrock Project No: 28470		Plant: Hand Tools.	

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
				Brown gravelly silty fine to coarse SAND. Gravel is subangular to rounded fine to medium of limestone. (MADE GROUND)	0.35	(0.35)		
				Cream sandy subangular to rounded fine to medium GRAVEL of limestone. Sand is fine to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)	0.60	(0.25)		
				Base of Excavation at 0.60m				

General Remarks:
1. Position cleared by GPR by Clifton Surveys Ltd and by CAT and Genny prior to excavation. 2. Hand excavated to 0.25m bgl. 3. No visual or olfactory evidence of contamination encountered. 4. No groundwater encountered. 5. Pit remained stable. 6. Hand pit backfilled with arisings.

Logged in general accordance with BS5930:2015

Hydrock

Project: Cotswold Community School, Ashton Keynes

Trialpit No
HP105
Page No. 1 of 1

Method: Hand-dug Pit	Date(s): 04/08/2023	Logged By: AT	Checked By: SW
Client: Bewley Homes		Stability: Stable.	Dimensions: 0.40m x 0.28m / Scale: 1:10
Hydrock Project No: 28470		Plant: Hand Tools.	

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
				Dark grey ASPHALT. (MADE GROUND)	0.12	(0.12)		
				Yellowish brown very sandy fine to medium GRAVEL of limestone with occasional rootlets. Sand is fine to coarse. (MADE GROUND)	0.25	(0.13)		
				Brown very sandy subrounded to rounded fine to medium GRAVEL of limestone with occasional rootlets. Sand is fine to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER) *... 0.36m - 0.46m bgl: brown with occasional roots and rootlets.*	0.77	(0.52)		
				Base of Excavation at 0.77m				
					1			
					2			

General Remarks:
1. Position cleared by GPR by Clifton Surveys Ltd and by CAT and Genny prior to excavation. 2. Hand excavated to 0.77m bgl. 3. No visual or olfactory evidence of contamination encountered. 4. No groundwater encountered. 5. Pit remained stable. 6. Hand pit backfilled with arisings.

Logged in general accordance with BS5930:2015

Hydrock

Project: Cotswold Community School, Ashton Keynes	Trialpit No HP106 Page No. 1 of 1

Method: Hand-dug Pit	Date(s): 04/08/2023	Logged By: AT	Checked By: SW
Client: Bewley Homes		Stability: Stable.	Dimensions: 0.42m x 0.32m / Scale: 1:10
Hydrock Project No: 28470		Plant: Hand Tools.	

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
				Light yellowish grey CONCRETE. (MADE GROUND)	0.18	(0.18)		
				Dark yellowish brown gravelly silty fine to coarse SAND. Gravel is angular to subangular fine to coarse of brick concrete and limestone. (MADE GROUND)	0.35	(0.17)		
				Brown very gravelly slightly clayey fine to coarse SAND. Gravel is subrounded fine to coarse of limestone and rare brick. Cobbles are subangular of brick up to 150mm. (MADE GROUND)	0.50	(0.15)		
				Base of Excavation at 0.50m				

General Remarks:
1. Position cleared by GPR by Clifton Surveys Ltd and by CAT and Genny prior to excavation. 2. Hand excavated to 0.50m bgl. 3. No visual or olfactory evidence of contamination encountered. 4. No groundwater encountered. 5. Pit remained stable. 6. Hand pit backfilled with arisings.

Logged in general accordance with BS5930:2015

Hydrock

Project: Cotswold Community School, Ashton Keynes

Trialpit No
HP107
Page No. 1 of 1

Method: Hand-dug Pit	Date(s): 03/08/2023	Logged By: KB	Checked By: SW
Client: Bewley Homes		Stability: Stable.	Dimensions: 0.42m x 0.37m / Scale: 1:10
Hydrock Project No: 28470		Plant: Hand Tools.	

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
				Yellowish brown gravelly silty fine to coarse SAND. Gravel is angular to subangular fine to medium of limestone. (MADE GROUND)	0.20	(0.20)		
				Yellowish brown sandy subangular to subrounded fine to medium GRAVEL of limestone. Sand is fine to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)	0.60	(0.40)		
				Base of Excavation at 0.60m				

General Remarks:
1. Position cleared by GPR by Clifton Surveys Ltd and by CAT and Genny prior to excavation. 2. Hand excavated to 0.60m bgl. 3. No visual or olfactory evidence of contamination encountered. 4. No groundwater encountered. 5. Pit remained stable. 6. Hand pit backfilled with arisings.

Logged in general accordance with BS5930:2015

Hydrock	Project: Cotswold Community School, Ashton Keynes	Trialpit No HP108 Page No. 1 of 1

Method: Hand-dug Pit	Date(s): 03/08/2023	Logged By: KB	Checked By: SW
Client: Bewley Homes		Stability: Stable.	Dimensions: 0.40m x 0.40m / Scale: 1:10
Hydrock Project No: 28470		Plant: Hand Tools.	

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
				Dark brown gravelly silty fine to coarse SAND. Gravel is angular to subangular fine to coarse of brick and limestone. (MADE GROUND)		(0.25)		
					0.25			
				Yellowish brown sandy subangular to subrounded fine to medium GRAVEL of limestone. Sand is fine to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)		(0.35)		
					0.60			
				Base of Excavation at 0.60m				
					1			
					2			

General Remarks:
1. Position cleared by GPR by Clifton Surveys Ltd and by CAT and Genny prior to excavation. 2. Hand excavated to 0.60m bgl. 3. No visual or olfactory evidence of contamination encountered. 4. No groundwater encountered. 5. Pit remained stable. 6. Hand pit backfilled with arisings.

Logged in general accordance with BS5930:2015

Hydrock	Project: Cotswold Community School, Ashton Keynes	Trialpit No HP109 Page No. 1 of 1

Method: Hand-dug Pit	Date(s): 03/08/2023	Logged By: KB	Checked By: SW
Client: Bewley Homes		Stability: Stable.	Dimensions: 0.40m x 0.35m / Scale: 1:10
Hydrock Project No: 28470		Plant: Hand Tools.	

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
				Brown gravelly silty fine to coarse SAND. Gravel is angular to subrounded fine to medium of limestone. (MADE GROUND)	0.25	(0.25)		
				Yellowish brown gravelly silty fine to coarse SAND. Gravel is subangular to rounded fine to coarse of limestone. (NORTHMOOR SAND AND GRAVEL MEMBER)	0.55	(0.30)		
				Base of Excavation at 0.55m				

General Remarks:
1. Position cleared by GPR by Clifton Surveys Ltd and by CAT and Genny prior to excavation. 2. Hand excavated to 0.55m bgl. 3. No visual or olfactory evidence of contamination encountered. 4. No groundwater encountered. 5. Pit remained stable. 6. Hand pit backfilled with arisings.

Logged in general accordance with BS5930:2015

Hydrock	Project: Cotswold Community School, Ashton Keynes	Trialpit No HP110 Page No. 1 of 1

Method: Hand-dug Pit	Date(s): 04/08/2023	Logged By: AT	Checked By: SW
Client: Bewley Homes		Stability: Stable.	Dimensions: 0.38m x 0.30m / Scale: 1:10
Hydrock Project No: 28470		Plant: Hand Tools.	

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
				CONCRETE. (MADE GROUND)		(0.18)		
					0.18			
				Dark yellowish brown very sandy subrounded to rounded fine to medium GRAVEL of limestone. (MADE GROUND) *... 0.26 m - 0.42m bgl: blackish brown ashy fien to coarse SAND in south pit wall.*		(0.54)		
0.30	ES							
0.50	ES							
					0.72			
				Base of Excavation at 0.72m				
					1			
					2			

General Remarks:
1. Position cleared by GPR by Clifton Surveys Ltd and by CAT and Genny prior to excavation. 2. Hand excavated to 0.72m bgl. 3. No visual or olfactory evidence of contamination encountered. 4. No groundwater encountered. 5. Pit remained stable. 6. Hand pit backfilled with arisings.

Logged in general accordance with BS5930:2015

Hydrock	Project: Cotswold Community School, Ashton Keynes	Trialpit No HP111 Page No. 1 of 1

Method: Hand-dug Pit	Date(s): 03/08/2023	Logged By: SW	Checked By: SW
Client: Bewley Homes		Stability: Stable.	Dimensions: 0.30m x 0.30m
Hydrock Project No: 28470		Plant: Hand Tools.	Scale: 1:10

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
0.10	ES			Grass over brown silty slightly gravelly fine to coarse SAND. Gravel is subrounded fine to medium of limestone. (TOPSOIL)		(0.40)		
					0.40			
0.50	ES			Brown slightly gravelly silty fine to coarse SAND. Gravel is subrounded fine to coarse of limestone. (NORTHMOOR SAND AND GRAVEL MEMBER)		(0.10)		
					0.50			
				Base of Excavation at 0.50m				
					1			
					2			

General Remarks:
1. Position cleared by GPR by Clifton Surveys Ltd and by CAT and Genny prior to excavation. 2. Hand excavated to 0.50m bgl. 3. No visual or olfactory evidence of contamination encountered. 4. No groundwater encountered. 5. Pit remained stable. 6. Hand pit backfilled with arisings.

Logged in general accordance with BS5930:2015

Hydrock	Project: Cotswold Community School, Ashton Keynes	Trialpit No HP112 Page No. 1 of 1

Method: Hand-dug Pit	Date(s): 03/08/2023	Logged By: SW	Checked By: SW
Client: Bewley Homes		Stability: Stable.	Dimensions: 0.30m x 0.30m
Hydrock Project No: 28470		Plant: Hand Tools.	Scale: 1:10

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
0.10	ES			Grass over brown silty slightly gravelly fine to coarse SAND. Gravel is subrounded fine to medium of limestone. (TOPSOIL)		(0.40)		
0.40	ES			Brown slightly gravelly silty fine to coarse SAND. Gravel is subrounded fine to coarse of limestone. (NORTHMOOR SAND AND GRAVEL MEMBER)	0.40	(0.10)		
				Base of Excavation at 0.50m	0.50			

General Remarks:
1. Position cleared by GPR by Clifton Surveys Ltd and by CAT and Genny prior to excavation. 2. Hand excavated to 0.50m bgl. 3. No visual or olfactory evidence of contamination encountered. 4. No groundwater encountered. 5. Pit remained stable. 6. Hand pit backfilled with arisings.

Logged in general accordance with BS5930:2015

Hydrock	Project: Cotswold Community School, Ashton Keynes	Trialpit No HP113 Page No. 1 of 1

Method: Hand-dug Pit	Date(s): 03/08/2023	Logged By: SW	Checked By: SW
Client: Bewley Homes		Stability: Stable.	Dimensions: 0.30m x 0.35m
Hydrock Project No: 28470		Plant: Hand Tools.	Scale: 1:10

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
0.10	ES			Grass over brown silty slightly gravelly fine to coarse SAND. Gravel is subrounded fine to medium of limestone. (TOPSOIL)		(0.40)		
					0.40			
0.50	ES			Brown slightly gravelly silty fine to coarse SAND. Gravel is subrounded fine to coarse of limestone. (NORTHMOOR SAND AND GRAVEL MEMBER)		(0.10)		
					0.50			
				Base of Excavation at 0.50m				
					1			
					2			

General Remarks:

Logged in general accordance with BS5930:2015

Hydrock	Project: Cotswold Community School, Ashton Keynes	Trialpit No HP114 Page No. 1 of 1

Method: Hand-dug Pit	Date(s): 03/08/2023	Logged By: SW	Checked By: SW
Client: Bewley Homes		Stability: Stable.	Dimensions: 0.30m x 0.35m
Hydrock Project No: 28470		Plant: Hand Tools.	Scale: 1:10

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
0.10	ES			Grass over brown silty slightly gravelly fine to coarse SAND. Gravel is subrounded fine to medium of limestone. (TOPSOIL)		(0.40)		
0.40	ES			Brown slightly gravelly silty fine to coarse SAND. Gravel is subrounded fine to coarse of limestone. (NORTHMOOR SAND AND GRAVEL MEMBER)	0.40	(0.10)		
				Base of Excavation at 0.50m	0.50			

General Remarks:

Logged in general accordance with BS5930:2015

Hydrock	Project: Cotswold Community School, Ashton Keynes	Trialpit No HP115 Page No. 1 of 1

Method: Hand-dug Pit	Date(s): 11/08/2023	Logged By: AT	Checked By: SW
Client: Bewley Homes	Co-ords: 403288.39, 195550.56	Stability: Stable.	Dimensions: 0.30m x 0.30m
Hydrock Project No: 28470	Ground Level: 89.48m OD	Plant: Hand Tools.	Scale: 1:10

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
0.20	ES			Firm brown slightly sandy slightly gravelly CLAY with frequent rootlets and rare brick. Sand is fine to coarse. Gravel is subangular to subrounded fine to medium of limestone. (TOPSOIL)	0.35	(0.35)	89.13	
0.50	ES			Yellowish brown sandy slightly silty subangular to subrounded fine to coarse GRAVEL of limestone. Sand is fine to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)	1.00	(0.65)	88.48	
1.00	ES			Base of Excavation at 1.00m				

General Remarks:
1. Position cleared by GPR by Clifton Surveys Ltd and by CAT and Genny prior to excavation. 2. Hand excavated to 1.0m bgl. 3. No visual or olfactory evidence of contamination encountered. 4. No groundwater encountered. 5. Pit remained stable. 6. Hand pit backfilled with arisings.

Logged in general accordance with BS5930:2015

Hydrock	Project: Cotswold Community School, Ashton Keynes	Trialpit No SS1 Page No. 1 of 1

Method: Hand-dug Pit	Date(s): 13/09/2023	Logged By: AT	Checked By: SW
Client: Bewley Homes		Stability: Stable.	Dimensions: 0.30m x 0.30m
Hydrock Project No: 28470		Plant: Hand Tools.	Scale: 1:10

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
0.10	ES			Grass over brown silty slightly gravelly fine to coarse SAND. Gravel is subrounded fine to medium of limestone. (TOPSOIL)		(0.40)		
					0.40			
0.50	ES			Brown slightly gravelly silty fine to coarse SAND. Gravel is subrounded fine to coarse of limestone. (NORTHMOOR SAND AND GRAVEL MEMBER)		(0.15)		
					0.55			
				Base of Excavation at 0.55m				
					1			
					2			

General Remarks:
1. Position cleared by CAT and Genny prior to excavation. 2. Hand excavated to 0.55m bgl. 3. No visual or olfactory evidence of contamination encountered. 4. No groundwater encountered. 5. Pit remained stable. 6. Hand pit backfilled with arisings.

Logged in general accordance with BS5930:2015

Hydrock	Project: Cotswold Community School, Ashton Keynes	Trialpit No TP01 Page No. 1 of 1

Method: Trial Pit	Date(s): 10/05/2018	Logged By: SM	Checked By:
Client: Bewley Homes		Stability: Stable	Dimensions: 2.20m x 0.60m / Scale: 1:25
Hydrock Project No: 28470		Plant: JCB 3CX	

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
0.20 0.20	D ES			Brown and grey sandy sub-angular to sub-rounded fine to coarse gravel of mixed lithologies. Sand fine to coarse. (MADE GROUND)	0.35	(0.35)		
0.40 0.40	D ES			Dark brown gravelly CLAY. Gravel is sub-angular to sub-rounded fine to medium of limestone. (TOPSOIL)	0.50	(0.15)		
0.80 0.80	D ES			Medium dense [inferred] creamy brown sandy sub-angular to sub-rounded fine to coarse GRAVEL of limestone. Sand is fine to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)				
1.30 1.30	D ES					(1.50)		
2.00 2.00 2.00	B D ES			Base of Excavation at 2.00m	2.00			

General Remarks:
Location scanned with CAT & Genny prior to excavation. Groundwater encountered at 2.0m bgl. No visual or olfactory evidence of contamination. Trial pit backfilled with arisings.

Logged in general accordance with BS5930:2015

Hydrock	Project: Cotswold Community School, Ashton Keynes	Trialpit No TP02 Page No. 1 of 1

Method: Trial Pit	Date(s): 10/05/2018	Logged By: SM	Checked By:
Client: Bewley Homes		Stability: Stable	Dimensions: 2.20m / 0.60m; Scale: 1:25
Hydrock Project No: 28470		Plant: JCB 3CX	

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
0.20 0.20	D ES			Dark brown gravelly CLAY. Gravel is sub-angular to sub-rounded fine to medium of limestone. (TOPSOIL)	0.30	(0.30)		
0.50 0.50	D ES			Soft brown sandy gravelly CLAY. Gravel is sub-angular to sub-rounded fine to medium of limestone. (SUPERFICIAL DEPOSITS)	0.80	(0.50)		
1.00 1.00	D ES			Medium dense [inferred] creamy brown very sandy sub-angular to sub-rounded fine to coarse GRAVEL of limestone. Sand is fine to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)	1.80	(1.00)		
1.70 1.70	B D		▼	Base of Excavation at 1.80m				

General Remarks:
Location scanned with CAT & Genny prior to excavation. Groundwater encountered at 1.7m bgl. No visual or olfactory evidence of contamination. Trial pit backfilled with arisings.

Logged in general accordance with BS5930:2015

Hydrock

Project: Cotswold Community School, Ashton Keynes	Trialpit No TP03 Page No. 1 of 1

Method: Trial Pit	Date(s): 10/05/2018	Logged By: SM	Checked By:
Client: Bewley Homes		Stability: Stable	Dimensions: 2.20m x 0.60m / Scale: 1:25
Hydrock Project No: 28470		Plant: JCB 3CX	

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
0.20 0.20	D ES			Dark brown gravelly CLAY. Gravel is sub-angular to sub-rounded fine to medium of limestone. (TOPSOIL)	0.30	(0.30)		
0.50 0.50	D ES			Soft brown sandy gravelly CLAY. Gravel is sub-angular to sub-rounded fine to medium of limestone. (SUPERFICIAL DEPOSITS)	0.60	(0.30)		
1.00 1.00	D ES			Medium dense [inferred] creamy brown sandy sub-angular to sub-rounded fine to coarse GRAVEL of limestone. Sand is fine to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)	1.50	(0.90)		
1.60 1.60	B D			Medium dense [inferred] yellow brown very sandy sub-angular to sub-rounded fine to coarse GRAVEL of limestone. Sand is fine to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)	1.80	(0.30)		
				Base of Excavation at 1.80m				

General Remarks:
Location scanned with CAT & Genny prior to excavation. Groundwater encountered at 1.8m bgl. No visual or olfactory evidence of contamination. Trial pit backfilled with arisings.

Logged in general accordance with BS5930:2015

Hydrock	Project: Cotswold Community School, Ashton Keynes	Trialpit No TP04 Page No. 1 of 1

Method: Trial Pit	Date(s): 10/05/2018	Logged By: SM	Checked By:
Client: Bewley Homes		Stability: Stable	Dimensions: 1.50m x 0.60m / Scale: 1:25
Hydrock Project No: 28470		Plant: JCB 3CX	

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
				CONCRETE (MADE GROUND)	0.15	(0.15)		
0.20 0.20	D ES			Soft brown and grey CLAY with frequent medium to coarse gravel of brick and concrete fragments and occasional brick and concrete cobbles. (MADE GROUND)		(0.55)		
0.50 0.50	D ES				0.70			
				Base of Excavation at 0.70m				

General Remarks:
Location scanned with CAT & Genny prior to excavation. Water pipe access cover encountered below concrete. Trial pit progressed beyond this point using handpitting methodology. Unidentified service encountered at 0.7m. No groundwater encountered. Trial pit backfilled with arisings.

Logged in general accordance with BS5930:2015

Hydrock

Project: Cotswold Community School, Ashton Keynes

Trialpit No
TP05
Page No. 1 of 1

Method: Trial Pit	Date(s): 10/05/2018	Logged By: SM	Checked By:
Client: Bewley Homes		Stability: Stable	Dimensions: 2.20m x 0.60m / Scale: 1:25
Hydrock Project No: 28470		Plant: JCB 3CX	

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
0.20 0.20	D ES			Soft brown sandy gravelly CLAY. Gravel is sub-angular to sub-rounded fine to medium of limestone. Occasional brick and concrete fragments. (MADE GROUND) *... Concrete block at 0.4m.*	0.60	(0.60)		
0.50 0.50	D ES			Medium dense [inferred] creamy brown very sandy sub-angular to sub-rounded fine to coarse GRAVEL of limestone. Sand is coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)				
1.00 1.00	D ES				1	(1.20)		
1.60 1.60	B D		▼		1.80			
				Base of Excavation at 1.80m				
					2			
					3			
					4			
					5			

General Remarks:
Location scanned with CAT & Genny prior to excavation. Groundwater encountered at 1.7m bgl. No visual or olfactory evidence of contamination. Trial pit backfilled with arisings.

Logged in general accordance with BS5930:2015

Hydrock	Project: Cotswold Community School, Ashton Keynes	Trialpit No TP06 Page No. 1 of 1

Method: Trial Pit	Date(s): 10/05/2018	Logged By: SM	Checked By:
Client: Bewley Homes		Stability: Stable	Dimensions: 2.20m x 0.60m / Scale: 1:25
Hydrock Project No: 28470		Plant: JCB 3CX	

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
0.20 0.20	D ES			Brown and grey sandy sub-angular to sub-rounded fine to coarse gravel of mixed lithologies. Occasional fine to medium gravel of asphalt. Sand is fine to coarse. (MADE GROUND)	0.30	(0.30)		
0.50 0.50	D ES			Medium dense [inferred] creamy brown sandy sub-angular to sub-rounded fine to coarse GRAVEL of limestone. Sand is medium to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)				
1.00 1.00	D ES					(1.60)		
1.50	D							
				Base of Excavation at 1.90m	1.90			

General Remarks:
Location scanned with CAT & Genny prior to excavation. Groundwater encountered at 1.9m bgl. No visual or olfactory evidence of contamination. Trial pit backfilled with arisings.

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
Hydrock Project No: 28470		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)		
0.50	ES			Brown sandy silty subangular to rounded fine to coarse GRAVEL of limestone quartzite 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

Hydrock	Project: Cotswold Community School, Ashton Keynes	Trialpit No TP104 Page No. 1 of 1

Method: Trial Pit	Date(s): 04/08/2023	Logged By: KB	Checked By: SW
Client: Bewley Homes	Co-ords: 403535.14, 195578.61	Stability: Stable.	Dimensions: 3.50m / 0.60m; Scale: 1:25
Hydrock Project No: 28470	Ground Level: 89.50m OD	Plant: 8 Ton.	

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
0.20	ES			Yellowish brown sandy slightly silty subangular to rounded fine to coarse GRAVEL of limestone and quartzite with coal fragments. Sand is fine to coarse. (MADE GROUND)	0.40	(0.40)	89.10	
0.60	ES			Firm dark brown slightly sandy slightly gravelly SILT with roots. Sand is fine to coarse. Gravel is subangular to subrounded fine of limestone . (RELICT TOPSOIL)	0.50	(0.10)	89.00	
				Yellowish brown sandy slightly silty subangular to rounded fine to medium GRAVEL of limestone and quartzite. (NORTHMOOR SAND AND GRAVEL MEMBER)	1.00	(0.50)	88.50	
1.20 1.20 - 1.40	ES B			Yellowish brown sandy silty subangular to rounded fine to medium subangular to subrounded GRAVEL of limestone. (NORTHMOOR SAND AND GRAVEL MEMBER)	1.50	(0.50)	88.00	
2.00	D			Yellowish cream very sandy fine to medium subangular to subrounded GRAVEL of limestone and quartzite. (NORTHMOOR SAND AND GRAVEL MEMBER)	2.80	(1.30)	86.70	
				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

Hydrock

Project: Cotswold Community School, Ashton Keynes

Trialpit No
TP105
Page No. 1 of 1

Method: Trial Pit	Date(s): 04/08/2023	Logged By: KB	Checked By: SW
Client: Bewley Homes	Co-ords: 403550.61, 195614.28	Stability: Stable.	Dimensions: 3.50m x 0.60m
Hydrock Project No: 28470	Ground Level: 89.20m 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 slightly sandy SILT with rootlets. Sand is fine to medium. (TOPSOIL)	0.30	(0.30)	88.90	
0.50	ES			Yellowish cream very sandy fine to medium subangular to subrounded GRAVEL of limestone and quartzite. (NORTHMOOR SAND AND GRAVEL MEMBER)				
0.70 - 1.00	B							
						(2.70)		
2.10	D			*... 2.00 - 2.10 very thin bed of dark brownish grey slightly sandy SILT. Sand is fine.*				
3.00 - 3.50	B				3.00		86.20	
				Firm dark brownish grey sandy silty CLAY. Sand is fine to coarse. (KELLAWAYS CLAY MEMBER)		(0.50)		
				Base of Excavation at 3.50m	3.50		85.70	

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 3.20m 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 TP106 Page No. 1 of 1

Method: Trial Pit	Date(s): 07/08/2023	Logged By: KB	Checked By: SW
Client: Bewley Homes	Co-ords: 403541.17, 195690.33	Stability: Stable.	Dimensions: 2.80m / 0.60m; Scale: 1:25
Hydrock Project No: 28470	Ground Level: 89.77m OD	Plant: 8 Ton.	

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
0.20	ES			Brown and black sandy silty fine to coarse SAND. Gravel is subangular to subrounded fine to medium of limestone and frequent coal fragments. (MADE GROUND)	0.30	(0.30)	89.47	
0.40	ES			Soft brown slightly sandy slightly gravelly clayey SILT. Sand is fine to coarse. Gravel is subangular to subrounded fine of limestone. (SUPERFICIAL DEPOSITS)	0.60	(0.30)	89.17	
0.80	ES			Yellowish cream very sandy subangular to rounded fine to medium GRAVEL of limestone. Sand is fine to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)	1.10	(0.50)	88.67	
				Base of Excavation at 1.10m				

General Remarks:
1. Position cleared by GPR by Clifton Surveys Ltd and by CAT and Genny prior to excavation. 2. Machine excavated to 1.10m 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 TP107 Page No. 1 of 1

Method: Trial Pit	Date(s): 07/08/2023	Logged By: KB	Checked By: SW
Client: Bewley Homes	Co-ords: 403579.35, 195714.91	Stability: Stable.	Dimensions: 3.10m / 0.60m; Scale: 1:25
Hydrock Project No: 28470	Ground Level: 89.55m OD	Plant: 8 Ton.	

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
				Soft dark brown slightly sandy SILT with rootlets. Sand is fine to medium. (TOPSOIL)	0.20	(0.20)	89.35	
0.30 0.30	D ES			Firm very high strength brown slightly sandy locally clayey SILT. Sand is fine to medium. (SUPERFICIAL DEPOSITS)	0.40	(0.20)	89.15	
0.80 0.80 - 1.00	ES B			Yellowish brown very sandy silty subangular to rounded fine to medium GRAVEL of limestone. Sand is fine to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)	1.50	(1.10)	88.05	
2.00 2.00	D HSV	180kPa		Stiff dark grey CLAY. (KELLAWAYS CLAY MEMBER) *... below 2.00m bgl: becoming very stiff.*	2.90	(1.40)	86.65	
				Base of Excavation at 2.90m				

General Remarks:
1. Position cleared by GPR by Clifton Surveys Ltd and by CAT and Genny prior to excavation. 2. Machine excavated to 2.90m 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 TP108 Page No. 1 of 1

Method: Trial Pit	Date(s): 07/08/2023	Logged By: KB	Checked By: SW
Client: Bewley Homes	Co-ords: 403550.17, 195739.98	Stability: Stable.	Dimensions: 3.20m x 0.60m; Scale: 1:25
Hydrock Project No: 28470	Ground Level: 89.50m OD	Plant: 8 Ton.	

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
0.20 0.20	D ES			Soft dark brown slightly sandy slightly gravelly SILT. Sand is fine to coarse. Gravel is subangular to subrounded fine of limestone. (TOPSOIL)	0.30	(0.30)	89.20	
0.80 0.80 0.80 - 1.00	D ES B			Yellowish brown very sandy slightly silty subangular to rounded fine to medium GRAVEL of limestone. Sand is fine to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)	1.20	(0.90)	88.30	
1.30 1.30	D ES			Soft brown slightly gravelly very sandy SILT. Sand is fine to coarse. Gravel is subangular to rounded fine of limestone. (NORTHMOOR SAND AND GRAVEL MEMBER)	1.50	(0.30)	88.00	
2.00 2.00	D HSV	144kPa		Stiff high strength dark grey CLAY. (KELLAWAYS CLAY MEMBER)	2.50	(1.00)	87.00	
				Base of Excavation at 2.50m				

General Remarks:
1. Position cleared by GPR by Clifton Surveys Ltd and by CAT and Genny prior to excavation. 2. Machine excavated to 2.50m 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 TP109 Page No. 1 of 1

Method: Trial Pit	Date(s): 07/08/2023	Logged By: KB	Checked By: SW
Client: Bewley Homes	Co-ords: 403500.87, 195723.15	Stability: Stable.	Dimensions: 2.80m / 0.60m; Scale: 1:25
Hydrock Project No: 28470	Ground Level: 89.70m OD	Plant: 8 Ton.	

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
0.20	ES			Brown and black sandy silty fine to coarse SAND. Gravel is subangular to subrounded fine to medium of limestone and frequent coal fragments. (MADE GROUND)	0.40	(0.40)	89.30	
0.70	ES			Yellowish cream very sandy subangular to rounded fine to medium GRAVEL of limestone. Sand is fine to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)	1.10	(0.70)	88.60	
				Base of Excavation at 1.10m				

General Remarks:
1. Position cleared by GPR by Clifton Surveys Ltd and by CAT and Genny prior to excavation. 2. Machine excavated to 1.10m 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 TP110 Page No. 1 of 1

Method: Trial Pit	Date(s): 07/08/2023	Logged By: KB	Checked By: SW
Client: Bewley Homes	Co-ords: 403491.34, 195668.21	Stability: Stable.	Dimensions: 3.40m x 0.60m; Scale: 1:25
Hydrock Project No: 28470	Ground Level: 89.24m OD	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 slightly sandy slightly gravelly SILT with rootlets. Sand is fine to coarse. Gravel is subangular to subrounded fine of limestone. (TOPSOIL)	0.30	(0.30)	88.94	
0.50	ES			Yellowish brown very sandy slightly silty subangular to rounded fine to medium GRAVEL of limestone and quartzite. Sand is fine to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)				
1.00 1.00	D ES							
				... 1.7m - 1.80m bgl: Sandy SILT lense.				
1.80 - 2.00	B					(3.00)		
3.00 - 3.20	B							
				Base of Excavation at 3.30m	3.30		85.94	

General Remarks:
1. Position cleared by GPR by Clifton Surveys Ltd and by CAT and Genny prior to excavation. 2. Machine excavated to 3.30m bgl. 3. No visual or olfactory evidence of contamination encountered. 4. Groundwater encountered at 3.10m 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 TP111 Page No. 1 of 1

Method: Trial Pit	Date(s): 07/08/2023	Logged By: KB	Checked By: SW
Client: Bewley Homes	Co-ords: 403528.77, 195642.10	Stability: Stable.	Dimensions: 3.10m x 0.60m; Scale: 1:25
Hydrock Project No: 28470	Ground Level: 89.26m OD	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 slightly sandy slightly gravelly SILT with rootlets. Sand is fine to coarse. Gravel is subangular to subrounded fine of limestone. (TOPSOIL)	0.30	(0.30)	88.96	
0.50 0.50 - 0.70	ES B			Yellowish brown very sandy slightly silty subangular to rounded fine to medium GRAVEL of limestone and quartzite. Sand is fine to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)	2.20	(1.90)	87.06	
				Base of Excavation at 2.20m				

General Remarks:
1. Position cleared by GPR by Clifton Surveys Ltd and by CAT and Genny prior to excavation. 2. Machine excavated to 2.20m 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 TP112 Page No. 1 of 1

Method: Trial Pit	Date(s): 07/08/2023	Logged By: KB	Checked By: SW
Client: Bewley Homes	Co-ords: 403417.84, 195602.88	Stability: Stable.	Dimensions: 3.40m x 0.60m / Scale: 1:25
Hydrock Project No: 28470	Ground Level: 89.71m OD	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 slightly gravelly sandy SILT. Sand is fine to coarse. Gravel is subangular to subrounded fine to medium of limestone. (TOPSOIL)	0.25	(0.25)	89.46	
0.40	ES			Yellowish brown very gravelly fine to coarse SAND. Gravel is subangular to rounded fine to medium of limestone. (MADE GROUND)	0.40	(0.15)	89.31	
0.70	ES			Brown slightly clayey sandy angular to subrounded fine to coarse GRAVEL of limestone brick concrete metal and clinker. (MADE GROUND)	0.80	(0.40)	88.91	
1.00 1.00	D ES			Yellowish brown with darker lenses of very sandy subangular to rounded fine to medium GRAVEL of limestone and quartzite. Sand is fine to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)	1.70	(0.90)	88.01	
1.50	ES							
1.80 - 2.00	B			Brownish yellow very sandy subangular to rounded fine to medium GRAVEL of limestone and quartzite. Sand is fine to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)	3.00	(1.30)	86.71	
2.80 - 3.00	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 TP113 Page No. 1 of 1

Method: Trial Pit	Date(s): 07/08/2023	Logged By: KB	Checked By: SW
Client: Bewley Homes	Co-ords: 403442.95, 195594.16	Stability: Stable.	Dimensions: 2.00m / 0.60m; Scale: 1:25
Hydrock Project No: 28470	Ground Level: 91.06m OD	Plant: 8 Ton.	

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
0.30	ES			Dark brown sandy gravelly SILT with roots. Sand is fine to coarse. Gravel is subangular to subrounded fine to medium of limestone brick and tile fragments. (MADE GROUND)		(0.70)		
				... at 0.2m dead 40mm diameter power cable.				
0.50	ES				0.70		90.36	
0.80	ES			Yellowish brown very sandy slightly silty subangular to rounded fine to medium GRAVEL of limestone. Sand is fine to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)		(0.20)		
					0.90		90.16	
				Base of Excavation at 0.90m				

1
2
3
4
5

General Remarks:
1. Position cleared by GPR by Clifton Surveys Ltd and by CAT and Genny prior to excavation. 2. Machine excavated to 0.90m 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 TP114 Page No. 1 of 1

Method: Trial Pit	Date(s): 08/08/2023	Logged By: KB	Checked By: SW
Client: Bewley Homes	Co-ords: 403457.94, 195609.47	Stability: Stable.	Dimensions: 2.80m / 0.60m; Scale: 1:25
Hydrock Project No: 28470	Ground Level: 89.71m OD	Plant: 8 Ton.	

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
				Grey coarse grained CONCRETE. (MADE GROUND)	0.15	(0.15)	89.56	
0.15	ES			Black angular fine to medium GRAVEL of limestone with a bitumen matrix. (MADE GROUND)	0.20	(0.05)	89.51	
0.30	ES			Yellowish brown sandy slightly silty angular to subrounded fine to coarse GRAVEL of limestone with a low cobble content. Sand is fine to coarse. Cobbles are subangular of concrete and brick. (MADE GROUND)	0.60	(0.40)	89.11	
0.50	ES			Stiff brown sandy gravelly SILT with rootlets. Sand is fine to coarse. Gravel is subangular to subrounded fine to medium of limestone. (RELICT TOPSOIL)	1.10	(0.50)	88.61	
1.20	D			Brownish yellow gravelly fine to coarse SAND. Gravel is subangular to rounded fine to medium of limestone and quartzite. (NORTHMOOR SAND AND GRAVEL MEMBER)	2.00	(0.90)	87.71	
1.20	ES							
2.10	D			Brownish yellow sandy silty subangular to rounded fine to medium GRAVEL of limestone Sand is fine to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)	2.20	(0.20)	87.51	
				Base of Excavation at 2.20m				

General Remarks:
1. Position cleared by GPR by Clifton Surveys Ltd and by CAT and Genny prior to excavation. 2. Machine excavated to 2.20m 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 TP115 Page No. 1 of 1

Method: Trial Pit	Date(s): 08/08/2023	Logged By: KB	Checked By: SW
Client: Bewley Homes	Co-ords: 403427.11, 195654.79	Stability: Stable.	Dimensions: 3.10m x 0.60m
Hydrock Project No: 28470	Ground Level: 89.56m 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						
0.30	ES			Soft dark brown gravelly sandy SILT with rootlets. Sand is fine to coarse. Gravel is subangular to subrounded fine to medium of limestone. (TOPSOIL)	0.40	(0.40)	89.16	
0.60 0.60 0.70 - 1.00	D ES B			Yellowish brown very sandy silty subangular to rounded fine to medium GRAVEL of limestone. Sand is fine to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)	1.00	(0.60)	88.56	
1.80 - 2.00	B			Brownish yellow very gravelly fine to coarse SAND. Gravel is subangular to rounded fine to medium of limestone and quartzite. (NORTHMOOR SAND AND GRAVEL MEMBER)	3.10	(2.10)	86.46	
				Base of Excavation at 3.10m				

General Remarks:
1. Position cleared by GPR by Clifton Surveys Ltd and by CAT and Genny prior to excavation. 2. Machine excavated to 3.10m 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 TP116 Page No. 1 of 1

Method: Trial Pit	Date(s): 08/08/2023	Logged By: KB	Checked By: SW
Client: Bewley Homes	Co-ords: 403381.22, 195644.50	Stability: Stable.	Dimensions: 3.00m x 0.60m; Scale: 1:25
Hydrock Project No: 28470	Ground Level: 90.21m OD	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 slightly gravelly sandy SILT with rootlets. Sand is fine to coarse. Gravel is subangular to subrounded fine to medium of limestone. (TOPSOIL)	0.30	(0.30)	89.91	
0.40	ES			Brown gravelly silty fine to coarse SAND. Gravel is subangular to subrounded fine to medium of limestone. (NORTHMOOR SAND AND GRAVEL MEMBER)	0.60	(0.30)	89.61	
0.90	ES			Brownish yellow very sandy subangular to rounded fine to medium GRAVEL of limestone and quartzite. Sand is fine to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)				
1.00	D				1			
				... at 1.5m: dark iron rich band.		(1.50)		
2.00	D				2			
				Base of Excavation at 2.10m	2.10		88.11	
					3			
					4			
					5			

General Remarks:
1. Position cleared by GPR by Clifton Surveys Ltd and by CAT and Genny prior to excavation. 2. Machine excavated to 2.10m 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 TP117 Page No. 1 of 1

Method: Trial Pit	Date(s): 08/08/2023	Logged By: KB	Checked By: SW
Client: Bewley Homes	Co-ords: 403358.56, 195585.66	Stability: Stable.	Dimensions: 3.00m x 0.60m; Scale: 1:25
Hydrock Project No: 28470	Ground Level: 89.69m OD	Plant: 8 Ton.	

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
				Grey coarse grained CONCRETE. (MADE GROUND)	0.15	(0.15)	89.54	
0.20	ES			Yellowish brown sandy slightly silty angular to subrounded fine to coarse GRAVEL of limestone with anthropogenic cobbles of concrete and brick. Sand is fine to coarse. (MADE GROUND)	0.30	(0.15)	89.39	
0.60	ES			Yellowish brown very sandy silty subangular to rounded fine to medium GRAVEL of limestone. Sand is fine to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)	1.80	(1.50)	87.89	
1.50	ES			Brownish yellow gravelly silty fine to coarse SAND. Gravel is subangular to rounded fine to medium of limestone and quartz (NORTHMOOR SAND AND GRAVEL MEMBER)	2.10	(0.30)	87.59	
2.00	ES			Base of Excavation at 2.10m				

General Remarks:
1. Position cleared by GPR by Clifton Surveys Ltd and by CAT and Genny prior to excavation. 2. Machine excavated to 2.10m 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 TP118 Page No. 1 of 1

Method: Trial Pit	Date(s): 08/08/2023	Logged By: KB	Checked By: SW
Client: Bewley Homes	Co-ords: 403362.73, 195535.62	Stability: Stable.	Dimensions: 3.20m x 0.60m; Scale: 1:25
Hydrock Project No: 28470	Ground Level: 91.00m OD	Plant: 8 Ton.	

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
				Soft dark brown sandy SILT with moss and rootlets. (TOPSOIL)	0.05	(0.05)	90.95	
0.20	ES			Yellowish brown slightly sandy subrounded to rounded fine to coarse GRAVEL of limestone. (NORTHMOOR SAND AND GRAVEL MEMBER)	0.20	(0.15)	90.80	
0.70	ES			Brown gravelly silty fine to coarse SAND with roots. Gravel is subangular to subrounded fine to medium of limestone. (NORTHMOOR SAND AND GRAVEL MEMBER)	1.00	(0.80)	90.00	
1.50 1.50	D ES			Brownish yellow very gravelly fine to coarse SAND. Gravel is subangular to rounded fine to medium of limestone and quartzite. (NORTHMOOR SAND AND GRAVEL MEMBER)	2.30	(1.30)	88.70	
2.50 2.50	D ES			Brownish yellow gravelly silty fine to coarse SAND. Gravel is subangular to rounded fine to medium of limestone and quartzite. (NORTHMOOR SAND AND GRAVEL MEMBER)	2.60	(0.30)	88.40	
				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. 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 TP119 Page No. 1 of 1

Method: Trial Pit	Date(s): 08/08/2023	Logged By: KB	Checked By: SW
Client: Bewley Homes	Co-ords: 403366.62, 195464.82	Stability: Stable.	Dimensions: 2.90m x 0.60m / Scale: 1:25
Hydrock Project No: 28470	Ground Level: 89.40m OD	Plant: 8 Ton.	

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
0.20	ES			Yellowish brown gravelly silty fine to coarse SAND. Gravel is subangular to subrounded fine to medium of limestone. (TOPSOIL)	0.30	(0.30)	89.10	
0.40	ES			Brown slightly gravelly sandy SILT with roots. Sand is fine to coarse. Gravel is subangular to subrounded fine to medium of limestone. (SUPERFICIAL DEPOSITS)	0.60	(0.30)	88.80	
1.00 1.00 1.00 - 1.20	D ES B			Brownish yellow very gravelly fine to coarse SAND. Gravel is subangular to rounded fine to medium of limestone and quartzite. (NORTHMOOR SAND AND GRAVEL MEMBER)		(1.40)		
1.90	D			Base of Excavation at 2.00m	2.00		87.40	

General Remarks:
1. Position cleared by GPR by Clifton Surveys Ltd and by CAT and Genny prior to excavation. 2. Machine excavated to 2.00m 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 TP120 Page No. 1 of 1

Method: Trial Pit	Date(s): 09/08/2023	Logged By: KB	Checked By: SW
Client: Bewley Homes		Stability: Stable.	Dimensions: 3.20m 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 slightly gravelly sandy SILT with rootlets. Sand is fine to coarse. Gravel is subangular to subrounded fine to medium of limestone. (TOPSOIL)	0.30	(0.30)		
0.40	ES			Yellowish brown very sandy fine to medium subangular to subrounded GRAVEL of limestone and quartzite. (NORTHMOOR SAND AND GRAVEL MEMBER)	0.50	(0.20)		
1.00 1.00 1.00 - 1.20	D ES B			Brownish yellow very gravelly fine to coarse SAND. Gravel is subangular to rounded fine to medium of limestone and quartzite. (NORTHMOOR SAND AND GRAVEL MEMBER) *... 0.6m - 0.8m bgl: Gravelly band.*	1	(2.30)		
1.80 1.80 - 2.00	D B				2			
2.50 - 2.80 2.60	B D		▼	*... below 2.5m bgl: becoming silty.*	2.80			
				Base of Excavation at 2.80m	3			
					4			
					5			

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. Groundwater encountered at 2.70m 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 TP121 Page No. 1 of 1

Method: Trial Pit	Date(s): 09/08/2023	Logged By: KB	Checked By: SW
Client: Bewley Homes	Co-ords: 403438.34, 195470.63	Stability: Stable.	Dimensions: 3.40m x 0.60m / Scale: 1:25
Hydrock Project No: 28470	Ground Level: 89.62m OD	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 slightly gravelly sandy SILT with rootlets. Sand is fine to coarse. Gravel is subangular to subrounded fine to medium of limestone. (TOPSOIL)	0.30	(0.30)	89.32	
0.50 0.50	D ES			Brownish yellow sandy subangular to rounded fine to medium GRAVEL of limestone and quartzite. (NORTHMOOR SAND AND GRAVEL MEMBER)				
				... below 1.0m bgl: becoming very sandy.				
1.20 1.20	D ES							
2.00	D					(2.70)		
					3.00		86.62	
3.20	D			Brownish yellow sandy subangular to rounded fine to medium slightly silty GRAVEL of limestone and quartzite. (NORTHMOOR SAND AND GRAVEL MEMBER)		(0.30)		
				Base of Excavation at 3.30m	3.30		86.32	

General Remarks:
1. Position cleared by GPR by Clifton Surveys Ltd and by CAT and Genny prior to excavation. 2. Machine excavated to 3.30m bgl. 3. No visual or olfactory evidence of contamination encountered. 4. Groundwater encountered at 3.10m 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 TP122 Page No. 1 of 1

Method: Trial Pit	Date(s): 09/08/2023	Logged By: KB	Checked By: SW
Client: Bewley Homes	Co-ords: 403537.02, 195786.19	Stability: Stable.	Dimensions: 3.10m / 0.60m; Scale: 1:25
Hydrock Project No: 28470	Ground Level: 89.66m OD	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 slightly sandy slightly gravelly SILT with rootlets. Sand is fine to coarse. Gravel is subangular to subrounded fine of limestone. (TOPSOIL)	0.30	(0.30)	89.36	
0.40	ES			Firm brown sandy slightly gravelly SILT. Sand is fine to coarse. Gravel is subangular to subrounded fine of limestone. (SUPERFICIAL DEPOSITS)	0.50	(0.20)	89.16	
1.00 1.00 1.00 - 1.20	D ES B			Yellowish brown very sandy fine to medium subangular to subrounded GRAVEL of limestone and quartzite. (NORTHMOOR SAND AND GRAVEL MEMBER)	1.40	(0.90)	88.26	
1.60 - 1.80	B			Brownish yellow very sandy silty fine to medium subangular to subrounded GRAVEL of limestone and quartzite. (NORTHMOOR SAND AND GRAVEL MEMBER)	1.80	(0.40)	87.86	
2.40	D			Very stiff grey sandy CLAY. Sand is fine. (KELLAWAYS CLAY MEMBER)	2.50	(0.70)	87.16	
				Base of Excavation at 2.50m				

General Remarks:
1. Position cleared by GPR by Clifton Surveys Ltd and by CAT and Genny prior to excavation. 2. Machine excavated to 2.50m 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 TP123 Page No. 1 of 1

Method: Trial Pit	Date(s): 09/08/2023	Logged By: KB	Checked By: SW
Client: Bewley Homes	Co-ords: 403459.99, 195763.49	Stability: Stable.	Dimensions: 3.20m / 0.60m; Scale: 1:25
Hydrock Project No: 28470	Ground Level: 89.47m OD	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 slightly sandy slightly gravelly SILT with rootlets. Sand is fine to coarse. Gravel is subangular to subrounded fine of limestone. (TOPSOIL)	0.30	(0.30)	89.17	
0.50	ES			Brownish yellow very gravelly fine to coarse SAND. Gravel is subangular to rounded fine to medium of limestone and quartzite. (NORTHMOOR SAND AND GRAVEL MEMBER)				
1.00	D							
1.00	ES							
						(2.60)		
2.00	D							
2.80	D				2.90		86.57	
				Base of Excavation at 2.90m				

General Remarks:
1. Position cleared by GPR by Clifton Surveys Ltd and by CAT and Genny prior to excavation. 2. Machine excavated to 2.90m 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 TP124 Page No. 1 of 1

Method: Trial Pit	Date(s): 09/08/2023	Logged By: KB	Checked By: SW
Client: Bewley Homes	Co-ords: 403451.06, 195709.55	Stability: Stable.	Dimensions: 3.50m / 0.60m; Scale: 1:25
Hydrock Project No: 28470	Ground Level: 89.52m OD	Plant: 8 Ton.	

Samples / Tests			Water-Strikes	Stratum Description	Depth mbgl	Thickness (m)	Level m OD	Legend
Depth (m)	Type	Results						
0.20	ES			Dark brown silty gravelly fine to coarse SAND. Gravel is subangular to subrounded fine to coarse of concrete brick slate tiles ceramic fragments and glass. (MADE GROUND BURIED CONSTRUCTION WASTE)	0.30	(0.30)	89.22	
0.40	ES			Stiff brown sandy gravelly SILT with rootlets. Sand is fine to coarse. Gravel is subangular to subrounded fine to medium of limestone. (RELICT TOPSOIL)	0.50	(0.20)	89.02	
0.80 - 1.00	B			Very sandy subangular to rounded fine to medium GRAVEL of limestone. (NORTHMOOR SAND AND GRAVEL MEMBER)				
1.00	D							
1.00	ES					(1.70)		
					2.20		87.32	
2.30	D			Grey slightly gravelly sandy SILT. Sand is fine to coarse. Gravel is subangular to subrounded fine to medium of limestone. (NORTHMOOR SAND AND GRAVEL MEMBER)		(0.30)		
2.30 - 2.50	B				2.50		87.02	
				Brownish yellow silty sandy subangular to subrounded fine to medium GRAVEL of limestone. Sand is fine to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)		(0.60)		
					3.10		86.42	
				Base of Excavation at 3.10m				

General Remarks:
1. Position cleared by GPR by Clifton Surveys Ltd and by CAT and Genny prior to excavation. 2. Machine excavated to 3.10m 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 TP125 Page No. 1 of 1

Method: Trial Pit	Date(s): 09/08/2023	Logged By: KB	Checked By: SW
Client: Bewley Homes	Co-ords: 403317.03, 195596.21	Stability: Stable.	Dimensions: 3.20m / 0.60m
Hydrock Project No: 28470	Ground Level: 89.80m 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			Firm brown slightly sandy gravelly SILT with rootlets. Sand is fine to coarse Gravel is subangular to rounded fine to medium of limestone. (TOPSOIL)	0.30	(0.30)	89.50	
0.50 0.50	D ES			Brownish yellow silty sandy subangular to subrounded fine to medium GRAVEL of limestone. Sand is fine to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)				
0.80 - 1.00	B							
1.00	D				1			
						(2.50)		
2.00 - 2.20	B				2			
					2.80		87.00	
				Base of Excavation at 2.80m				
					3			
					4			
					5			

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

Hydrock	Project: Cotswold Community School, Ashton Keynes	Trialpit No TP126 Page No. 1 of 1

Method: Trial Pit	Date(s): 09/08/2023	Logged By: KB	Checked By: SW
Client: Bewley Homes	Co-ords: 403207.31, 195558.80	Stability: Stable.	Dimensions: 3.10m x 0.60m / Scale: 1:25
Hydrock Project No: 28470	Ground Level: 89.44m OD	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 slightly sandy slightly gravelly SILT with rootlets. Sand is fine to coarse. Gravel is subangular to subrounded fine of limestone. (TOPSOIL)	0.30	(0.30)	89.14	
0.50 0.60 - 0.80	ES B			Yellowish brown sandy becoming very sandy subrounded to rounded fine to coarse GRAVEL of limestone. Sand is fine to coarse. (NORTHMOOR SAND AND GRAVEL MEMBER)				
1.50 1.50 - 1.70	ES B			*... below 1.40m blg: strata is damp.*	2.60	(2.30)	86.84	
				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. No groundwater encountered. 5. Pit remained stable. 6. Trial pit backfilled with arisings.

Logged in general accordance with BS5930:2015

Exploratory hole photographs

Site Investigation Photograph 1	
Date: 04/08/23	
Direction Photograph Taken: Noth.	
Description: TP01 showing the Northmoor Sand & Gravel Member (NMS) 0.0m – 2.60m bgl.	

Site Investigation Photograph 2	
Date: 04/08/23	
Direction Photograph Taken: n/a.	
Description: TP101 showing the Northmoor Sand & Gravel Member (NMS) and groundwater strike.	

Site Investigation Photograph 3	
Date: 04/08/23	
Direction Photograph Taken: n/a.	
Description: TP101 spoil.	

Site Investigation Photograph 4	
Date: 04/08/23	
Direction Photograph Taken: West.	
Description: TP102 0.0m – 2.0m bgl looking west.	

Site Investigation Photograph 5	
Date: 04/08/23	
Direction Photograph Taken: West.	
Description: TP102 showing topsoil over Made Ground over NMS.	

Site Investigation Photograph 6	
Date: 04/08/23	
Direction Photograph Taken: n/a.	
Description: TP102 Spoil.	

Site Investigation Photograph 7	
Date: 04/08/23	
Direction Photograph Taken: n/a.	
Description: TP103 showing ground profile though the topsoil and NMS 0.0m – 2.80m bgl.	

Site Investigation Photograph 8	
Date: 04/08/23	
Direction Photograph Taken: n/a.	
Description: TP103 showing ground profile though the topsoil and NMS.	

Site Investigation Photograph 9	
Date: 04/08/23	
Direction Photograph Taken: n/a.	
Description: TP103 spoil.	

Site Investigation Photograph 10	
Date: 04/08/23	
Direction Photograph Taken: n/a.	
Description: TP104 0.0m – 2.80m bgl.	

Site Investigation Photograph 11	
Date: 04/08/23	
Direction Photograph Taken: n/a.	
Description: TP104 ground conditions.	

Site Investigation Photograph 12	
Date: 04/08/23	
Direction Photograph Taken: n/a.	
Description: TP104 Spoil.	

Site Investigation Photograph 13	
Date: 07/08/23	
Direction Photograph Taken: n/a.	
Description: TP106 ground conditions 0.0m – 1.10m bgl.	

Site Investigation Photograph 14	
Date: 07/08/23	
Direction Photograph Taken: n/a.	
Description: TP106 encountered ground conditions.	

Site Investigation Photograph 15	
Date: 07/08/23	
Direction Photograph Taken: n/a.	
Description: TP107.	

Site Investigation Photograph 16	
Date: 07/08/23	
Direction Photograph Taken: n/a.	
Description: TP107 0.0m – 2.90m bgl showing NMS with Kellaways Clay Member below.	

Site Investigation Photograph 17	
Date: 07/08/23	
Direction Photograph Taken: n/a.	
Description: TP107 Spoil.	

Site Investigation Photograph 18	
Date: 07/08/23	
Direction Photograph Taken: n/a.	
Description: TP108 0.0m – 2.50m bgl.	

Site Investigation Photograph 19	
Date: 07/08/23	
Direction Photograph Taken: n/a.	
Description: TP108 showing NMS with Kellaways Clay Member below.	

Site Investigation Photograph 20	
Date: 07/08/23	
Direction Photograph Taken: n/a.	
Description: TP108 spoil.	

Site Investigation Photograph 21	
Date: 07/08/23	
Direction Photograph Taken: n/a.	
Description: TP109 0.0m – 1.10m bgl.	

Site Investigation Photograph 22	
Date: 07/08/23	
Direction Photograph Taken: n/a.	
Description: TP109 encountered ground conditions.	

Site Investigation Photograph 23	
Date: 07/08/23	
Direction Photograph Taken: n/a.	
Description: TP110 0.0m – 3.30m bgl, showing encountered ground conditions.	

Site Investigation Photograph 24	
Date: 07/08/23	
Direction Photograph Taken: n/a.	
Description: TP110 showing encountered groundwater.	

Site Investigation Photograph 25	
Date: 07/08/23	
Direction Photograph Taken: n/a.	
Description: TP111 0.0m – 2.20m bgl.	

Site Investigation Photograph 26	
Date: 07/08/23	
Direction Photograph Taken: n/a.	
Description: TP111 showing NMS.	

Site Investigation Photograph 27	
Date: 07/08/23	
Direction Photograph Taken: n/a.	
Description: TP112 0.0m – 3.0m bgl.	

Site Investigation Photograph 28	
Date: 07/08/23	
Direction Photograph Taken: n/a.	
Description: TP112 showing Made Ground over the NMS.	

Site Investigation Photograph 29	
Date: 07/08/23	
Direction Photograph Taken: n/a.	
Description: TP112 Spoil.	

Site Investigation Photograph 30	
Date: 07/08/23	
Direction Photograph Taken: n/a.	
Description: TP113 encountered ground conditions 0.0m – 0.90m bgl.	

Site Investigation Photograph 31	
Date: 07/08/23	
Direction Photograph Taken: n/a.	
Description: TP113 encountered ground conditions.	

Site Investigation Photograph 32	
Date: 07/08/23	
Direction Photograph Taken: n/a.	
Description: TP113 Spoil.	

Site Investigation Photograph 33	
Date: 08/08/23	
Direction Photograph Taken: n/a.	
Description: TP114 0.0m – 2.20, bgl.	

Site Investigation Photograph 34	
Date: 08/08/23	
Direction Photograph Taken: n/a.	
Description: TP114.	

Site Investigation Photograph 35	
Date: 08/08/23	
Direction Photograph Taken: n/a.	
Description: TP114 Spoil.	

Site Investigation Photograph 36	
Date: 08/08/23	
Direction Photograph Taken: n/a.	
Description: TP115 0.0m – 3.10m bgl.	

Site Investigation Photograph 37	
Date: 08/08/23	
Direction Photograph Taken: n/a.	
Description: TP115 encountered ground conditions.	

Site Investigation Photograph 38	
Date: 08/08/23	
Direction Photograph Taken: n/a.	
Description: TP115 Spoil.	

Site Investigation Photograph 39	
Date: 08/08/23	
Direction Photograph Taken: n/a.	
Description: TP116 0.0m – 2.10m bgl.	

Site Investigation Photograph 40	
Date: 08/08/23	
Direction Photograph Taken: n/a.	
Description: TP116.	

Site Investigation Photograph 41	
Date: 08/08/23	
Direction Photograph Taken: n/a.	
Description: TP116 Spoil.	

Site Investigation Photograph 42	
Date: 08/08/23	
Direction Photograph Taken: n/a.	
Description: TP117 encountered ground conditions.	

Site Investigation Photograph 43	
Date: 08/08/23	
Direction Photograph Taken: n/a.	
Description: TP117 ground conditions between 0.0 – 2.10m bgl.	

Site Investigation Photograph 44	
Date: 08/08/23	
Direction Photograph Taken: n/a.	
Description: TP117 Spoil.	

Site Investigation Photograph 45	
Date: 08/08/23	
Direction Photograph Taken: n/a.	
Description: TP118.	

Site Investigation Photograph 46	
Date: 08/08/23	
Direction Photograph Taken: n/a.	
Description: TP118 showing ground conditions between 0.0 – 2.60m bgl.	

Site Investigation Photograph 47	
Date: 08/08/23	
Direction Photograph Taken: n/a.	
Description: TP118 Spoil.	

Site Investigation Photograph 48	
Date: 08/08/23	
Direction Photograph Taken: n/a.	
Description: TP119.	

Site Investigation Photograph 49	
Date: 08/08/23	
Direction Photograph Taken: n/a.	
Description: TP119 ground conditions between 0.0m – 2.0m bgl.	

Site Investigation Photograph 50	
Date: 08/08/23	
Direction Photograph Taken: n/a.	
Description: TP119 Spoil.	

Site Investigation Photograph 51	
Date: 09/08/23	
Direction Photograph Taken: n/a.	
Description: TP120.	

Site Investigation Photograph 52	
Date: 09/08/23	
Direction Photograph Taken: n/a.	
Description: TP120 ground conditions between 0.0m – 2.30m bgl.	

Site Investigation Photograph 53	
Date: 09/08/23	
Direction Photograph Taken: n/a.	
Description: TP120 Spoil.	

Site Investigation Photograph 54	
Date: 09/08/23	
Direction Photograph Taken: n/a.	
Description: TP121.	

Site Investigation Photograph 55	
Date: 09/08/23	
Direction Photograph Taken: n/a.	
Description: TP121 showing 0.0m – 3.30m bgl.	

Site Investigation Photograph 56	
Date: 09/08/23	
Direction Photograph Taken: n/a.	
Description: TP121 Spoil.	

Site Investigation Photograph 57	
Date: 09/08/23	
Direction Photograph Taken: n/a.	
Description: TP122.	

Site Investigation Photograph 58	
Date: 09/08/23	
Direction Photograph Taken: n/a.	
Description: TP122 showing NMS overlying the Kellaways Clay.	

Site Investigation Photograph 59	
Date: 09/08/23	
Direction Photograph Taken: n/a.	
Description: TP122 Spoil.	

Site Investigation Photograph 60	
Date: 09/08/23	
Direction Photograph Taken: n/a.	
Description: TP123 0.0m – 2.90m bgl.	

Site Investigation Photograph 61	
Date: 09/08/23	
Direction Photograph Taken: n/a.	
Description: TP123 Northmoor Sand and Gravel Member.	

Site Investigation Photograph 62	
Date: 09/08/23	
Direction Photograph Taken: n/a.	
Description: TP123 Spoil.	

Site Investigation Photograph 63	
Date: 09/08/23	
Direction Photograph Taken: n/a.	
Description: TP124.	

Site Investigation Photograph 64	
Date: 09/08/23	
Direction Photograph Taken: n/a.	
Description: TP124 encountered ground conditions.	

Site Investigation Photograph 65	
Date: 09/08/23	
Direction Photograph Taken: n/a.	
Description: TP124 Spoil.	

Site Investigation Photograph 66	
Date: 09/08/23	
Direction Photograph Taken: n/a.	
Description: TP125.	

Site Investigation Photograph 67	
Date: 09/08/23	
Direction Photograph Taken: n/a.	
Description: TP125 Spoil.	

Site Investigation Photograph 68	
Date: 09/08/23	
Direction Photograph Taken: n/a.	
Description: TP126 0.0m – 2.60m bgl.	

Site Investigation Photograph 69	
Date: 09/08/23	
Direction Photograph Taken: n/a.	
Description: TP126.	

Site Investigation Photograph 70	
Date: 09/08/23	
Direction Photograph Taken: n/a.	
Description: TP126 Spoil.	

Appendix D Geotechnical test results and geotechnical plots

Geotechnical laboratory test results

TEST CERTIFICATE

Determination of Liquid and Plastic Limits

Tested in Accordance with BS1377-2: 1990: Clause 4.4 & 5: One Point Method

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

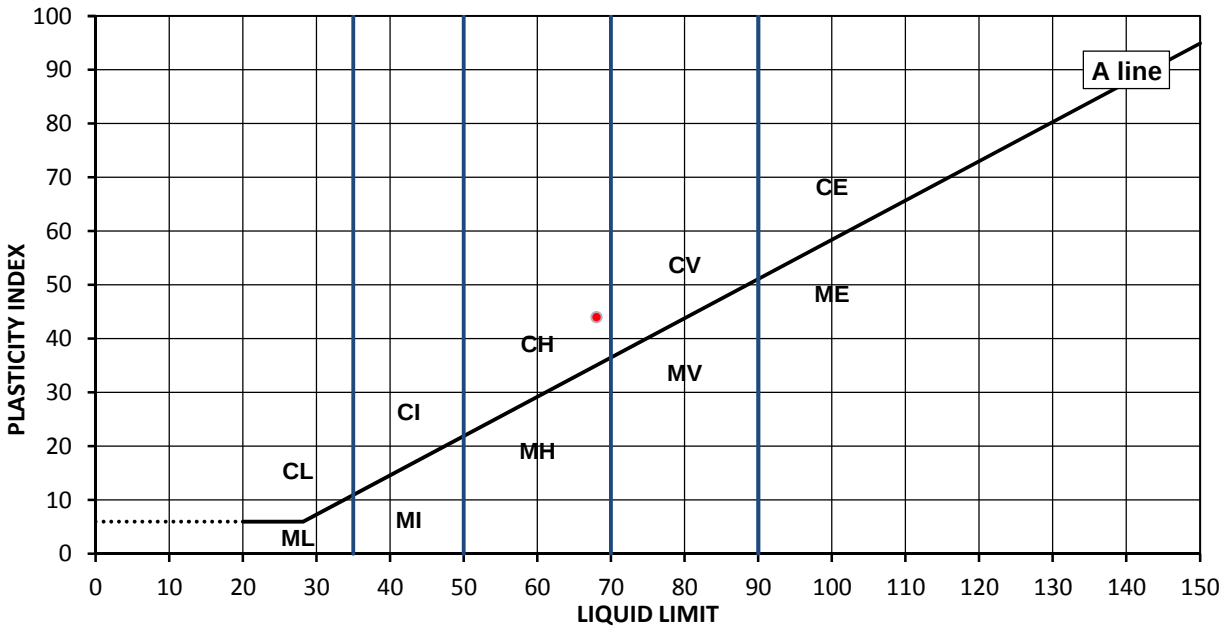
4041

Client:	Hydrock Consultants Ltd	Client Reference:	C-09612-C
Client Address:	Over Court Barns Over Lane Bristol BS32 4DF	Job Number:	18-85802
		Date Sampled:	10/05/2018
		Date Received:	16/05/2018
Contact:	Shay Marriott	Date Tested:	23/05/2018
Site Name:	Cotsworld Community School, Ashton Keynes	Sampled By:	SM
Site Address:	Not Given		

Test Results

Laboratory Reference:	962870	Depth Top [m]:	0.50
Hole No.:	TP02	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Brown slightly gravelly CLAY		
Sample Preparation:	Tested after washing to remove >425um		

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
20	68	24	44	66



Legend, based on BS 5930:2015 Code of practice for site investigations

		Plasticity		Liquid Limit
C	Clay	L	Low	below 35
M	Silt	I	Medium	35 to 50
		H	High	50 to 70
		V	Very high	70 to 90
		E	Extremely high	exceeding 90
	Organic	O	append to classification for organic material (eg CHO)	

Remarks:

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Date Reported: 30/05/2018

Signed:

Darren Berrill
Geotechnical General Manager

for and on behalf of i2 Analytical Ltd

"Opinions and interpretations expressed here in 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 are representative of the samples submitted for analysis.
The analysis was carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland."

TEST CERTIFICATE

Determination of Liquid and Plastic Limits

Tested in Accordance with BS1377-2: 1990: Clause 4.4 & 5: One Point Method

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

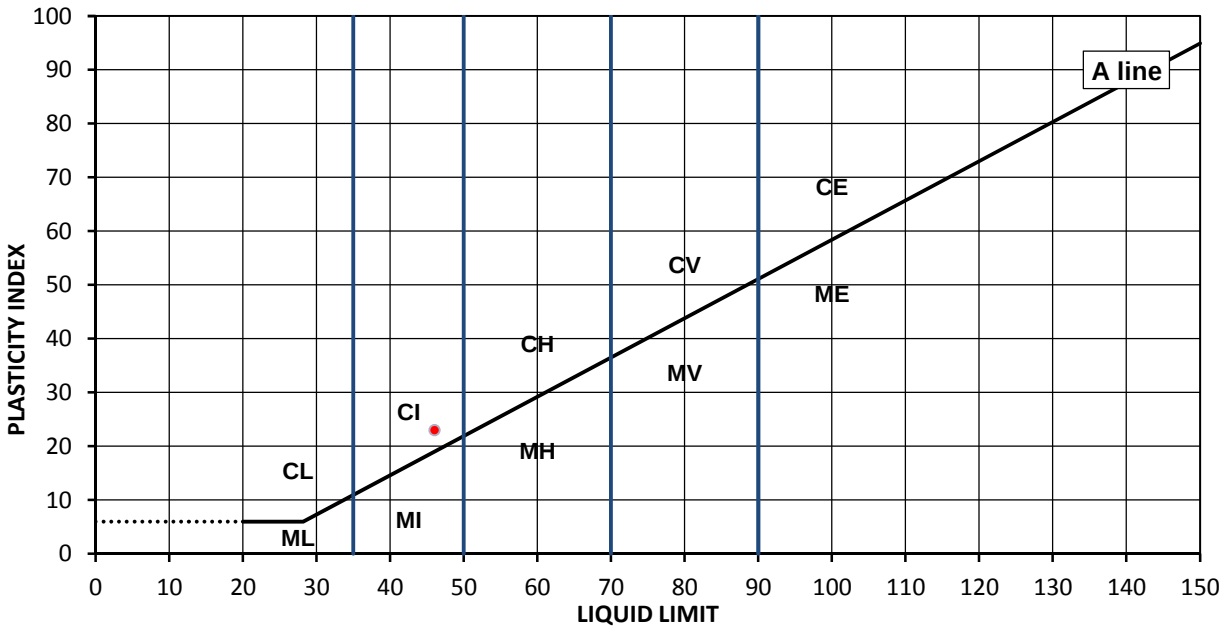
4041

Client:	Hydrock Consultants Ltd	Client Reference:	C-09612-C
Client Address:	Over Court Barns Over Lane Bristol BS32 4DF	Job Number:	18-85802
		Date Sampled:	10/05/2018
		Date Received:	16/05/2018
Contact:	Shay Marriott	Date Tested:	22/05/2018
Site Name:	Cotsworld Community School, Ashton Keynes	Sampled By:	SM
Site Address:	Not Given		

Test Results

Laboratory Reference:	962872	Depth Top [m]:	0.50
Hole No.:	TP03	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	D
Soil Description:	Yellowish brown slightly gravelly slightly sandy CLAY		
Sample Preparation:	Tested after washing to remove >425um		

As Received Moisture Content [%]	Liquid Limit [%]	Plastic Limit [%]	Plasticity Index [%]	% Passing 425µm BS Test Sieve
14	46	23	23	68



Legend, based on BS 5930:2015 Code of practice for site investigations

		Plasticity		Liquid Limit
C	Clay	L	Low	below 35
M	Silt	I	Medium	35 to 50
		H	High	50 to 70
		V	Very high	70 to 90
		E	Extremely high	exceeding 90
	Organic	O	append to classification for organic material (eg CHO)	

Remarks:

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Date Reported: 30/05/2018

Signed:

Darren Berrill
Geotechnical General Manager

for and on behalf of i2 Analytical Ltd

"Opinions and interpretations expressed here in 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 are representative of the samples submitted for analysis.
The analysis was carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland."

TEST CERTIFICATE

Summary of Classification Test Results

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

Client: Hydrock Consultants Ltd
Client Address: Over Court Barns
Over Lane
Bristol
BS32 4DF
Contact: Shay Marriott
Site Name: Cotsworld Community School, Ashton Keynes
Site Address: Not Given

Client Reference: C-09612-C
Job Number: 18-85802
Date Sampled: 10/05/2018
Date Received: 16/05/2018
Date Tested: 22/05 - 23/05/2018
Sampled By: SM

Test results

Laboratory Reference	Hole No.	Sample				Soil Description	M/C	Atterberg				Density		Total Porosity
		Reference	Top depth [m]	Base depth [m]	Type		%	% Passing 425um %	LL %	PL %	PI %	bulk Mg/m3	PD Mg/m3	Mg/m3
962870	TP02	Not Given	0.50	Not Given	D	Brown slightly gravelly CLAY	20	66	68	24	44			
962872	TP03	Not Given	0.50	Not Given	D	Yellowish brown slightly gravelly slightly sandy CLAY	14	68	46	23	23			

Comments:

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Date Reported: 30/05/2018

Signed:

Darren Berrill
Geotechnical General Manager

for and on behalf of i2 Analytical Ltd

"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 are representative of the samples submitted for analysis.
The analysis was carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland."

TEST CERTIFICATE

Determination of Particle Size Distribution

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

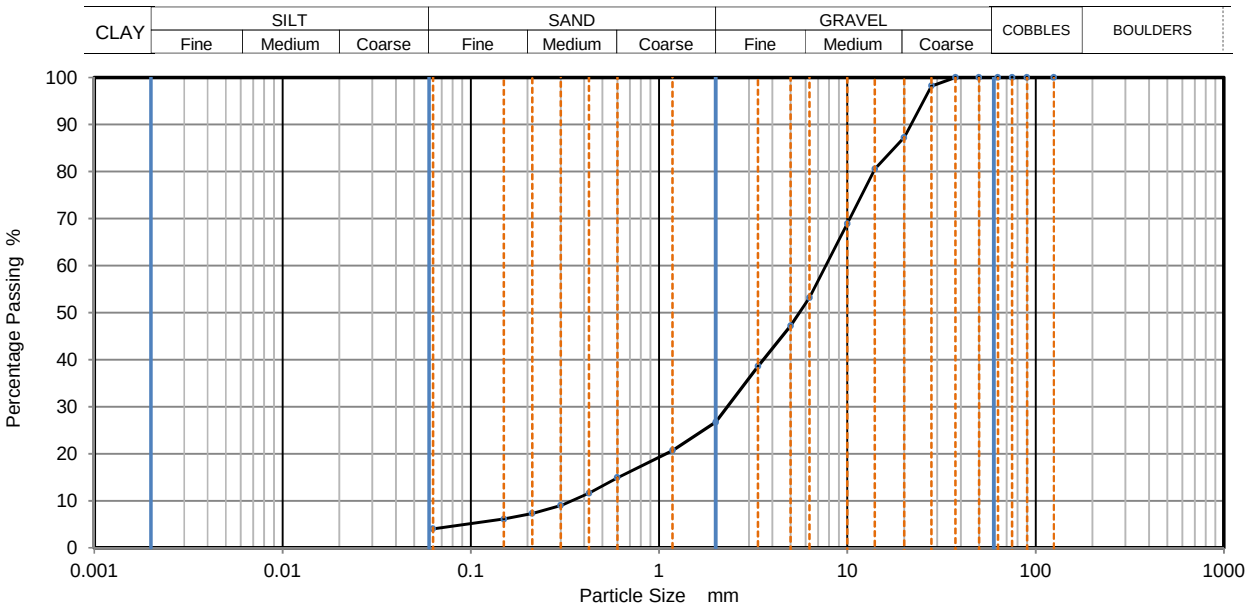
4041

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

Client:	Hydrock Consultants Ltd	Client Reference:	C-09612-C
Client Address:	Over Court Barns Over Lane Bristol BS32 4DF	Job Number:	18-85802
		Date Sampled:	10/05/2018
		Date Received:	16/05/2018
Contact:	Shay Marriott	Date Tested:	23/05/2018
Site Name:	Cotsworld Community School, Ashton Keynes	Sampled By:	SM
Site Address:	Not Given		

TEST RESULTS Laboratory Reference: 962869

Sample description:	Light brown sandy GRAVEL	Sample Reference:	Not Given
Location:	TP01	Sample Type:	D
Supplier:	Not Given	Depth Top [m]:	2.00
		Depth Base [m]:	Not Given



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	98		
20	87		
14	81		
10	69		
6.3	53		
5	47		
3.35	39		
2	27		
1.18	21		
0.6	15		
0.425	12		
0.3	9		
0.212	7		
0.15	6		
0.063	5		

Dry Mass of sample [g]: 8555

Sample Proportions	% dry mass
Very coarse	0.00
Gravel	73.30
Sand	21.80
Fines <0.063mm	4.80

Grading Analysis		
D100	mm	37.5
D60	mm	7.69
D30	mm	2.31
D10	mm	0.343
Uniformity Coefficient		22
Curvature Coefficient		2

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Signed:

Darren Berrill
Geotechnical General Manager

Date Reported: 30/05/2018

for and on behalf of i2 Analytical Ltd

"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 are representative of the samples submitted for analysis.
The analysis was carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland."

TEST CERTIFICATE

Determination of Particle Size Distribution

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

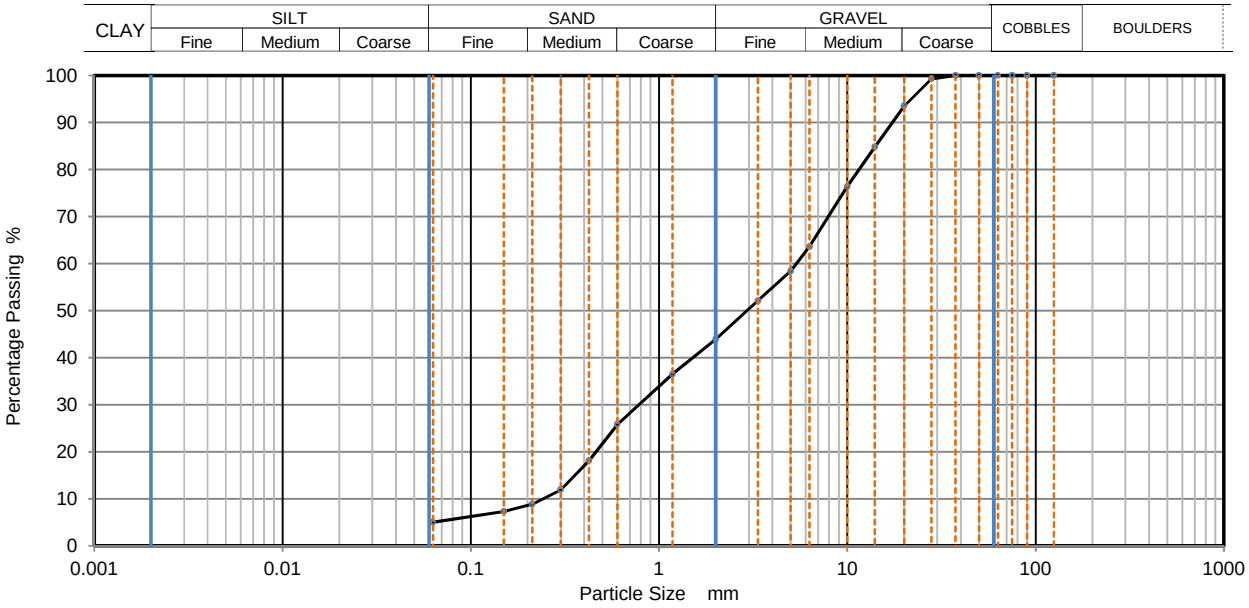
4041

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

Client:	Hydrock Consultants Ltd	Client Reference:	C-09612-C
Client Address:	Over Court Barns Over Lane Bristol BS32 4DF	Job Number:	18-85802
		Date Sampled:	10/05/2018
		Date Received:	16/05/2018
Contact:	Shay Marriott	Date Tested:	23/05/2018
Site Name:	Cotsworld Community School, Ashton Keynes	Sampled By:	SM
Site Address:	Not Given		

TEST RESULTS Laboratory Reference: 962871

Sample description:	Yellowish brown very sandy GRAVEL	Sample Reference:	Not Given
Location:	TP02	Sample Type:	D
Supplier:	Not Given	Depth Top [m]:	1.70
		Depth Base [m]:	Not Given



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	99		
20	94		
14	85		
10	76		
6.3	64		
5	58		
3.35	52		
2	44		
1.18	37		
0.6	26		
0.425	18		
0.3	12		
0.212	9		
0.15	7		
0.063	6		

Dry Mass of sample [g]: 8557

Sample Proportions	% dry mass
Very coarse	0.00
Gravel	56.10
Sand	38.30
Fines <0.063mm	5.60

Grading Analysis		
D100	mm	37.5
D60	mm	5.37
D30	mm	0.782
D10	mm	0.242
Uniformity Coefficient		22
Curvature Coefficient		0.47

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Signed:

Darren Berrill
Geotechnical General Manager

Date Reported: 30/05/2018

for and on behalf of i2 Analytical Ltd

"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 are representative of the samples submitted for analysis.
The analysis was carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland."

TEST CERTIFICATE

Determination of Particle Size Distribution

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

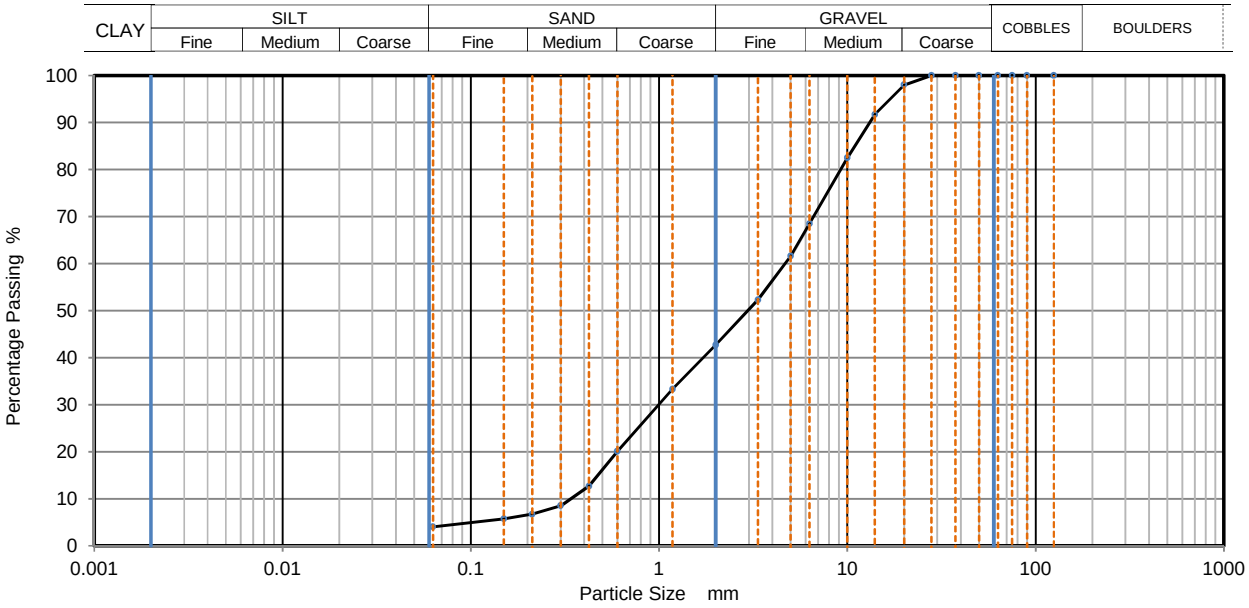
4041

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

Client:	Hydrock Consultants Ltd	Client Reference:	C-09612-C
Client Address:	Over Court Barns Over Lane Bristol BS32 4DF	Job Number:	18-85802
		Date Sampled:	10/05/2018
		Date Received:	16/05/2018
Contact:	Shay Marriott	Date Tested:	23/05/2018
Site Name:	Cotsworld Community School, Ashton Keynes	Sampled By:	SM
Site Address:	Not Given		

TEST RESULTS Laboratory Reference: 962873

Sample description:	Light brown very sandy GRAVEL	Sample Reference:	Not Given
Location:	TP03	Sample Type:	D
Supplier:	Not Given	Depth Top [m]:	1.60
		Depth Base [m]:	Not Given



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	98		
14	92		
10	83		
6.3	69		
5	62		
3.35	52		
2	43		
1.18	33		
0.6	20		
0.425	13		
0.3	9		
0.212	7		
0.15	6		
0.063	4		

Dry Mass of sample [g]: 2642

Sample Proportions	% dry mass
Very coarse	0.00
Gravel	57.30
Sand	38.60
Fines <0.063mm	4.10

Grading Analysis		
D100	mm	28
D60	mm	4.66
D30	mm	0.996
D10	mm	0.341
Uniformity Coefficient		14
Curvature Coefficient		0.62

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Signed:

Darren Berrill
Geotechnical General Manager

Date Reported: 30/05/2018

for and on behalf of i2 Analytical Ltd

"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 are representative of the samples submitted for analysis.
The analysis was carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland."

TEST CERTIFICATE

Determination of Particle Size Distribution

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

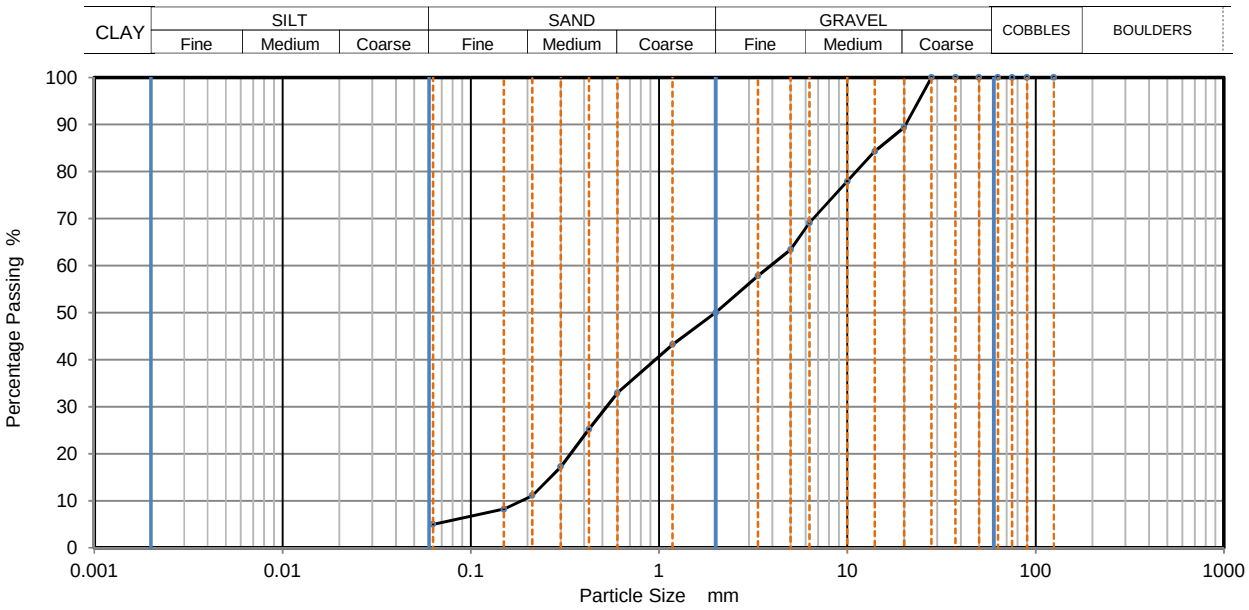
4041

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

Client:	Hydrock Consultants Ltd	Client Reference:	C-09612-C
Client Address:	Over Court Barns Over Lane Bristol BS32 4DF	Job Number:	18-85802
		Date Sampled:	10/05/2018
		Date Received:	16/05/2018
Contact:	Shay Marriott	Date Tested:	23/05/2018
Site Name:	Cotsworld Community School, Ashton Keynes	Sampled By:	SM
Site Address:	Not Given		

TEST RESULTS Laboratory Reference: 962874

Sample description:	Yellowish brown very sandy GRAVEL	Sample Reference:	Not Given
Location:	TP05	Sample Type:	D
Supplier:	Not Given	Depth Top [m]:	1.60
		Depth Base [m]:	Not Given



Sieving		Sedimentation	
Particle Size mm	% Passing	Particle Size mm	% Passing
125	100		
90	100		
75	100		
63	100		
50	100		
37.5	100		
28	100		
20	89		
14	84		
10	78		
6.3	69		
5	63		
3.35	58		
2	50		
1.18	43		
0.6	33		
0.425	25		
0.3	17		
0.212	11		
0.15	8		
0.063	6		

Dry Mass of sample [g]: 3760

Sample Proportions	% dry mass
Very coarse	0.00
Gravel	50.00
Sand	44.10
Fines <0.063mm	5.80

Grading Analysis		
D100	mm	28
D60	mm	3.93
D30	mm	0.528
D10	mm	0.187
Uniformity Coefficient		21
Curvature Coefficient		0.38

Remarks

Preparation and testing in accordance with BS1377 unless noted below

Approved:

Dariusz Piotrowski
PL Laboratory Manager
Geotechnical Section

Signed:

Darren Berrill
Geotechnical General Manager

Date Reported: 30/05/2018

for and on behalf of i2 Analytical Ltd

"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 are representative of the samples submitted for analysis.
The analysis was carried out at i2 Analytical Limited, ul. Pionierow 39, 41-711 Ruda Slaska, Poland."

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

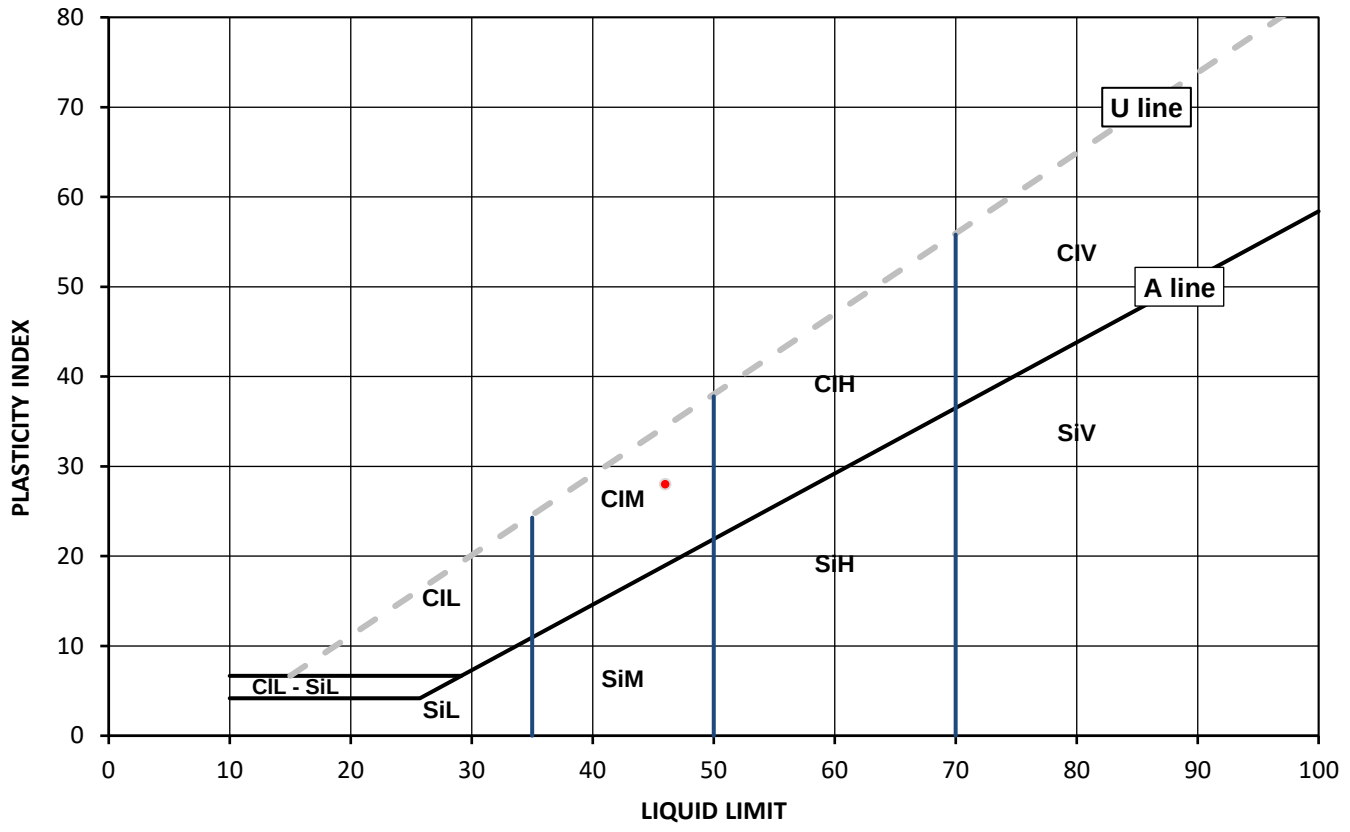
Client:	Hydrock Consultants Ltd	Client Reference:	C 28470 C
Client Address:	Over Court Barns, Over Lane, Bristol, BS32 4DF	Job Number:	23-51825-1
		Date Sampled:	08/08/2023
		Date Received:	17/08/2023
Contact:	Scott Williams	Date Tested:	28/08/2023
Site Address:	Ashton Keynes	Sampled By:	Client - A.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

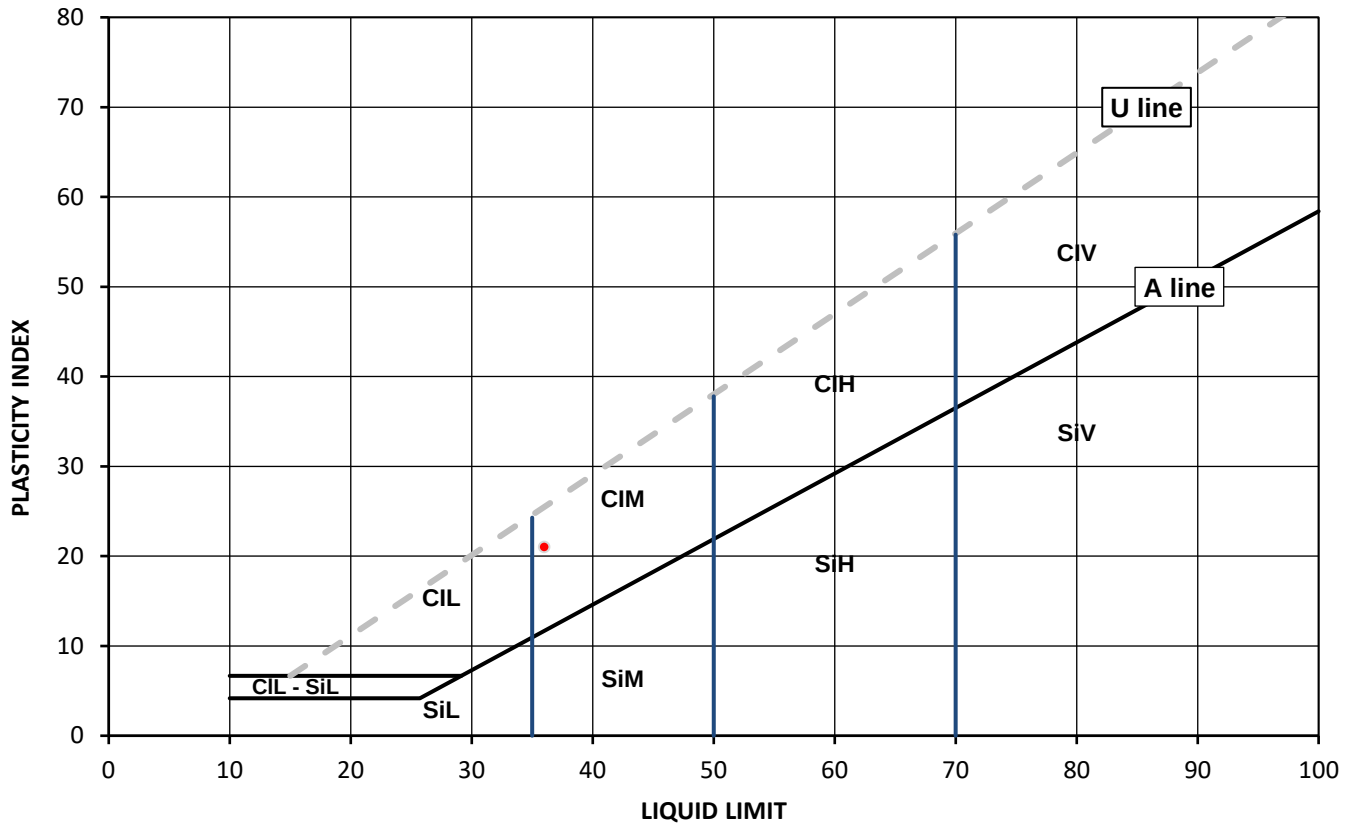
Client:	Hydrock Consultants Ltd	Client Reference:	C 28470 C
Client Address:	Over Court Barns, Over Lane, Bristol, BS32 4DF	Job Number:	23-51825-1
		Date Sampled:	09/08/2023
		Date Received:	17/08/2023
Contact:	Scott Williams	Date Tested:	28/08/2023
Site Address:	Ashton Keynes	Sampled By:	Client - A.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

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

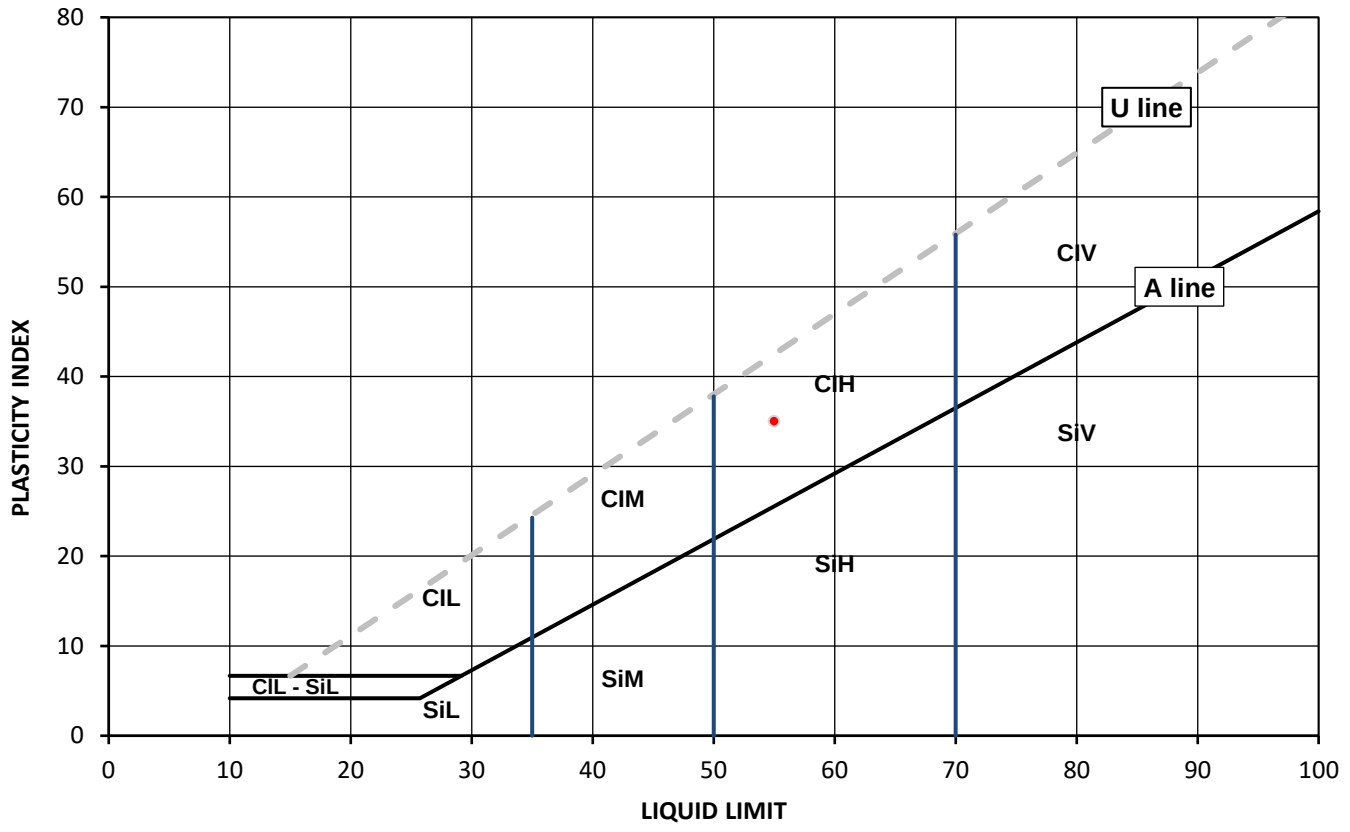
Client:	Hydrock Consultants Ltd	Client Reference:	C 28470 C
Client Address:	Over Court Barns, Over Lane, Bristol, BS32 4DF	Job Number:	23-51825-1
		Date Sampled:	07/08/2023
		Date Received:	17/08/2023
Contact:	Scott Williams	Date Tested:	25/08/2023
Site Address:	Ashton Keynes	Sampled By:	Client - A.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

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

Test Results:

Laboratory Reference:	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

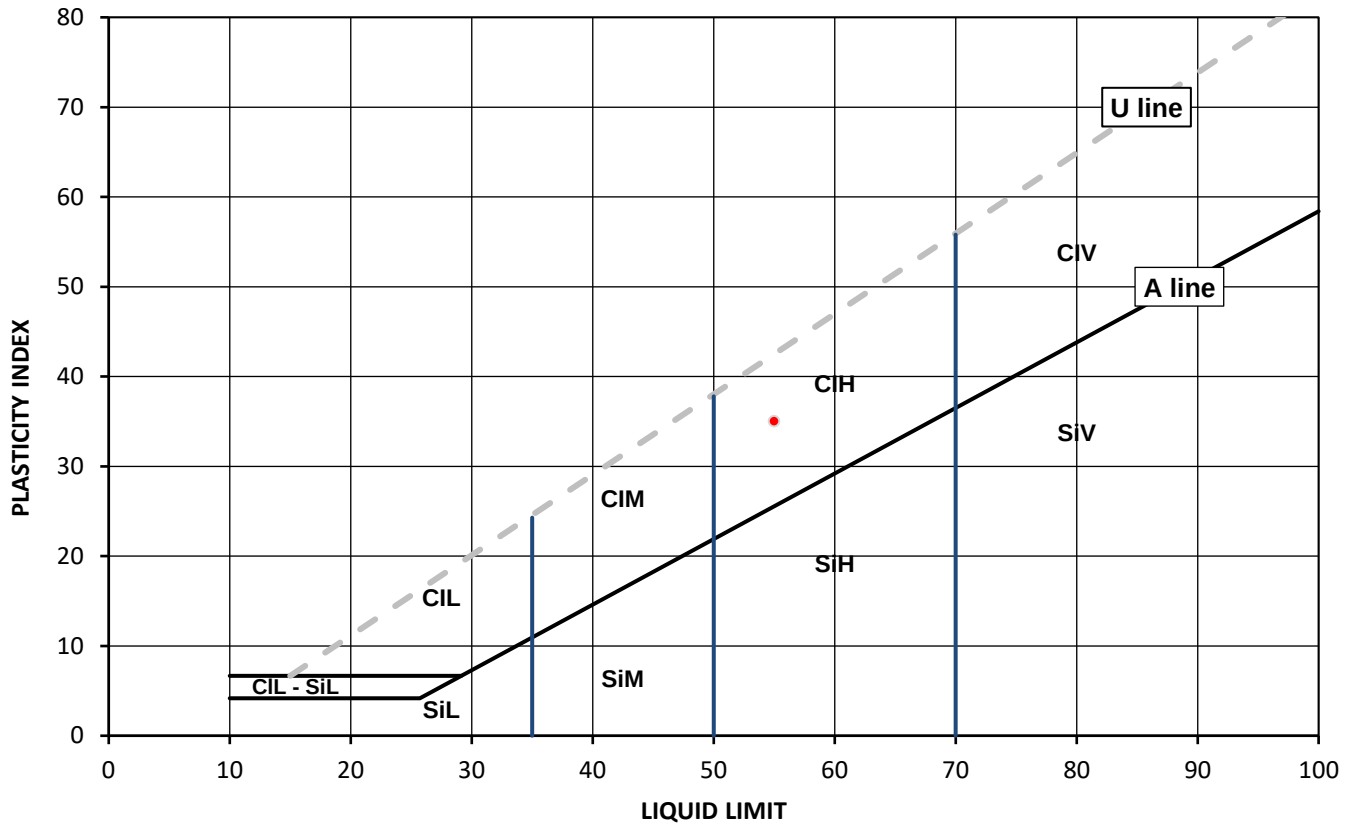
Client:	Hydrock Consultants Ltd	Client Reference:	C 28470 C
Client Address:	Over Court Barns, Over Lane, Bristol, BS32 4DF	Job Number:	23-51825-1
		Date Sampled:	07/08/2023
		Date Received:	17/08/2023
Contact:	Scott Williams	Date Tested:	25/08/2023
Site Address:	Ashton Keynes	Sampled By:	Client - A.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

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

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

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.

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

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.

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

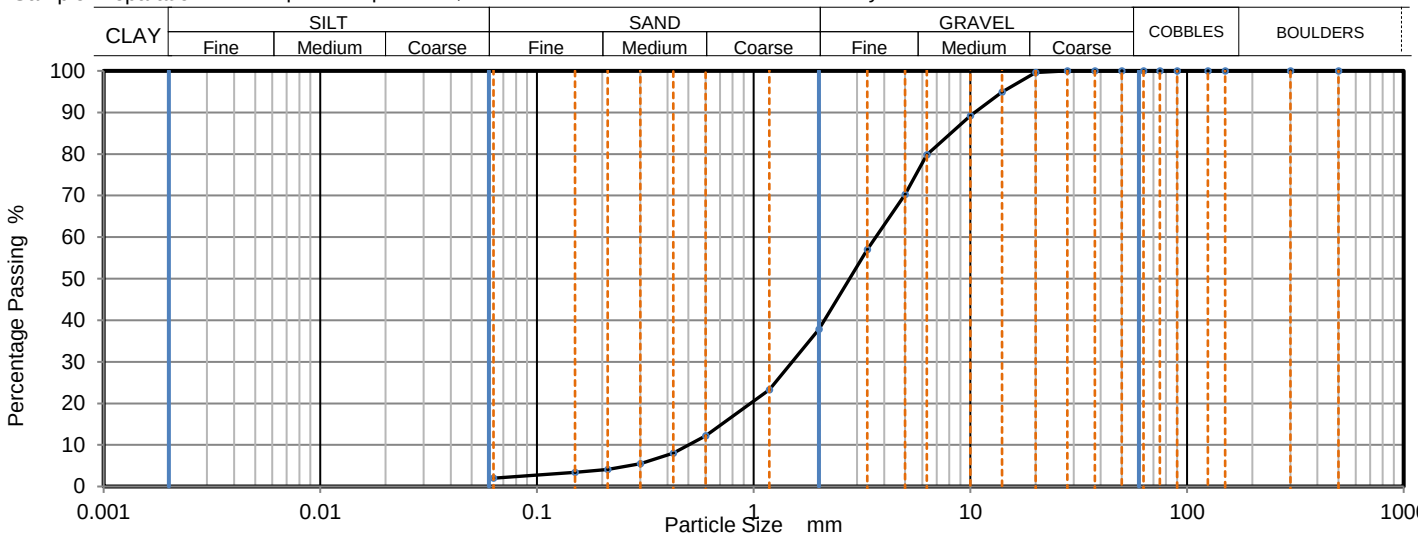
Environmental Science

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:

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 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

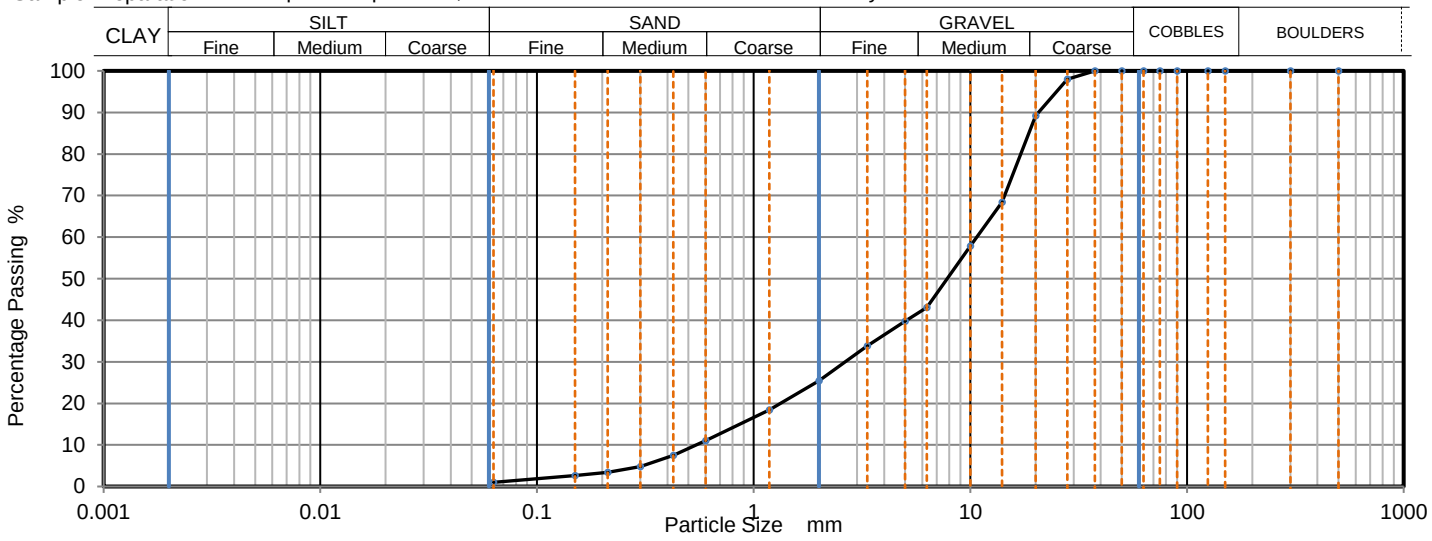
4041

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:

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 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

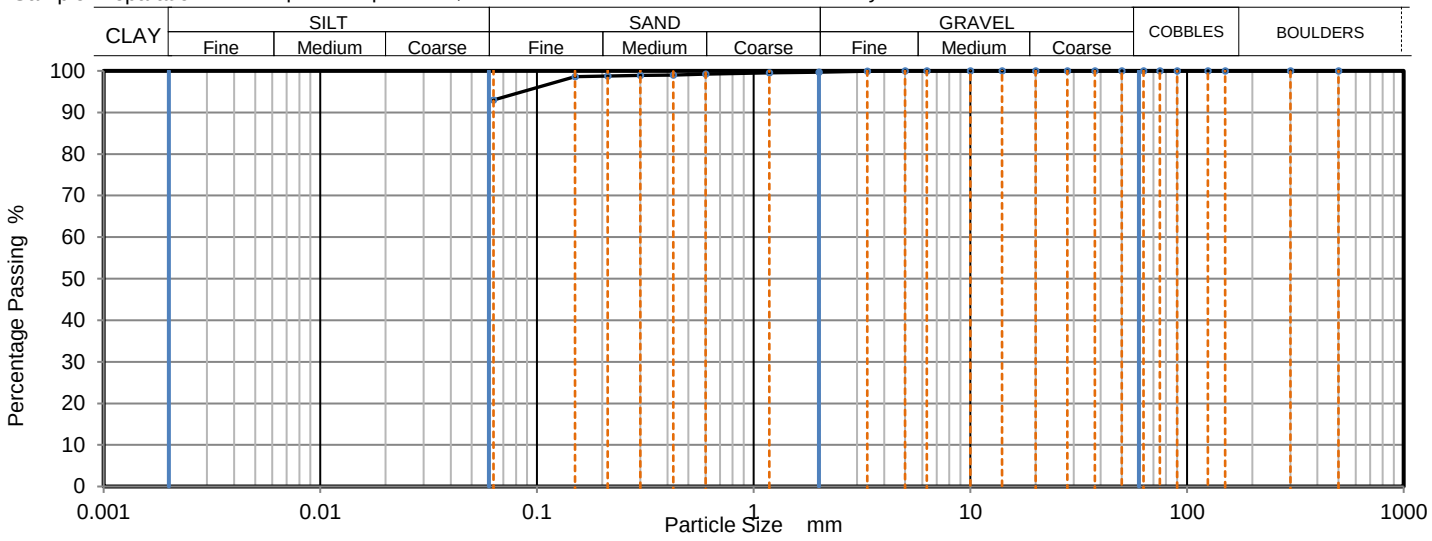
4041

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:

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 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

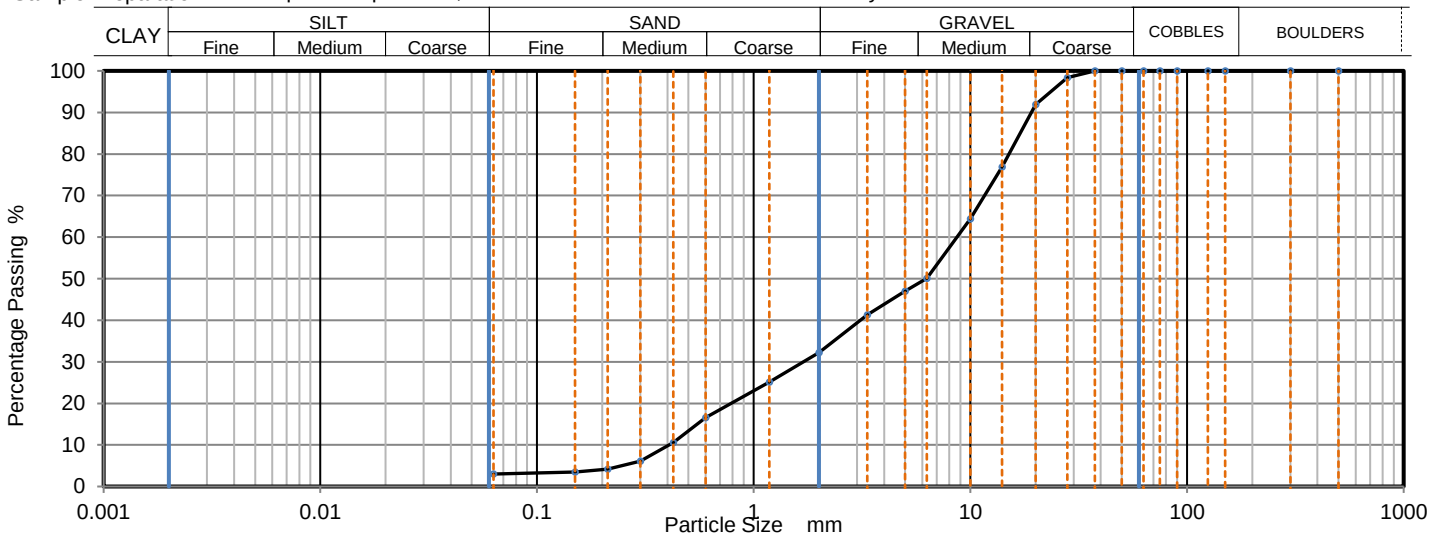
4041

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:

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 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

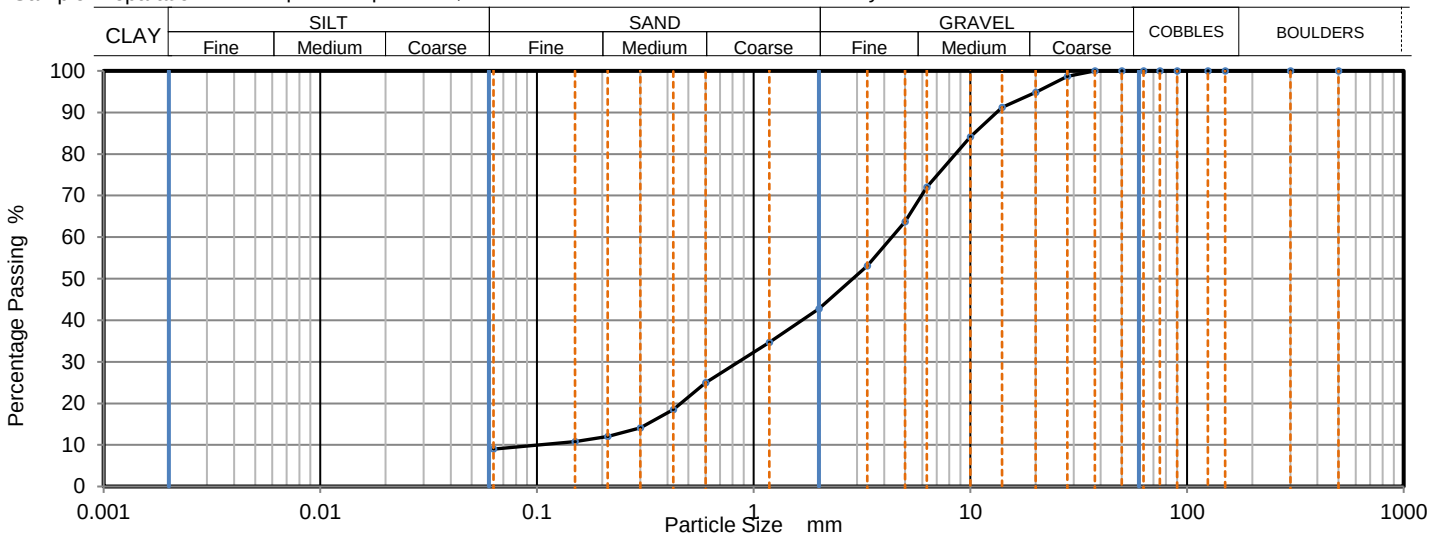
4041

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:

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 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

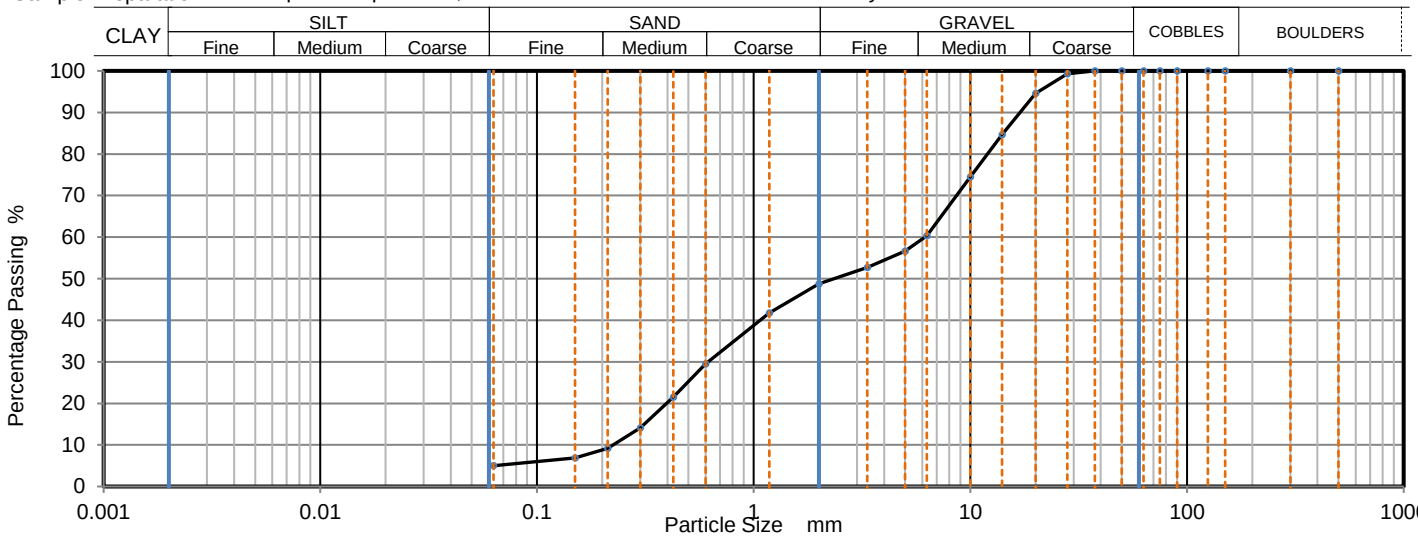
4041

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:

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 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

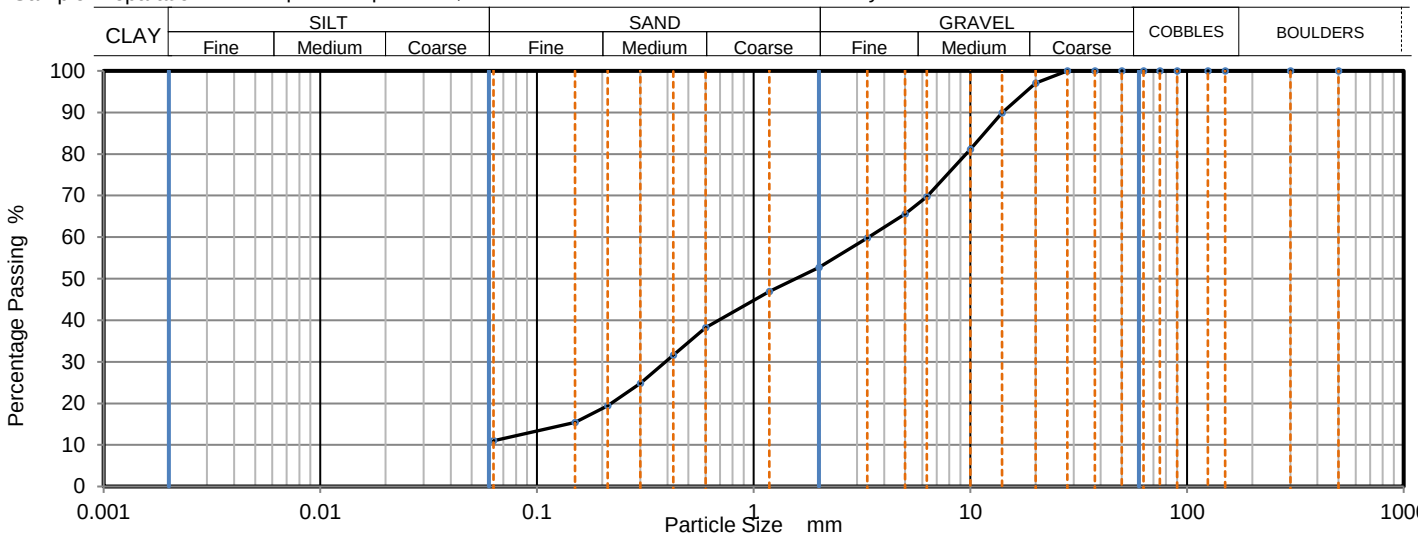
4041

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:

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 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

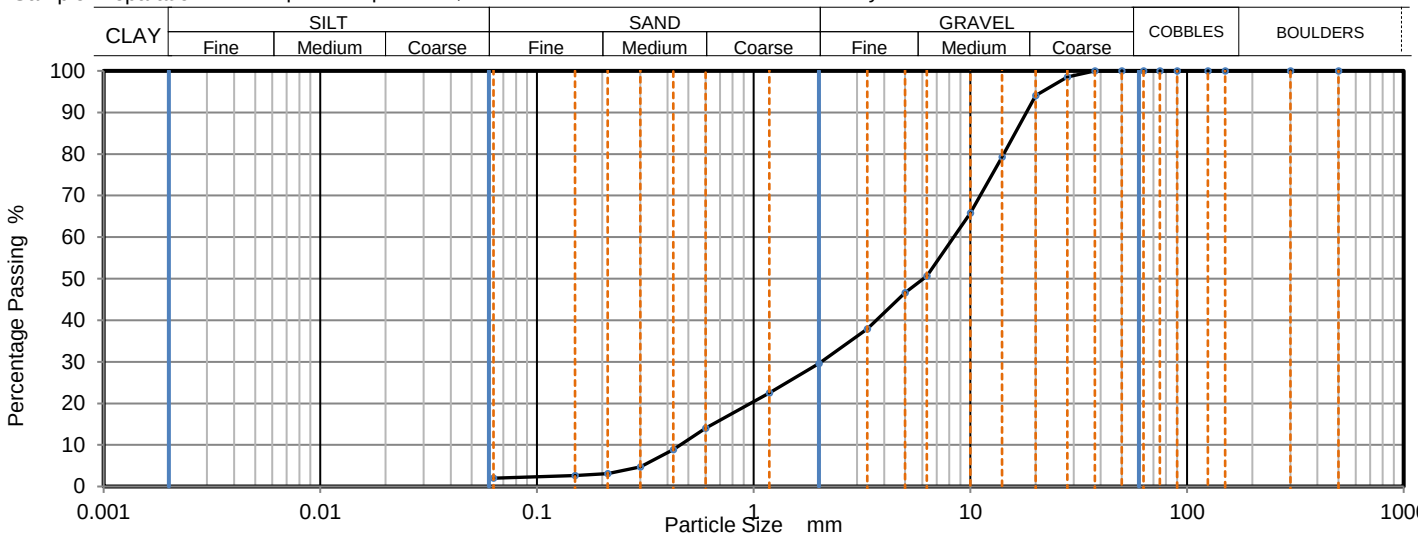
4041

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:

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 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

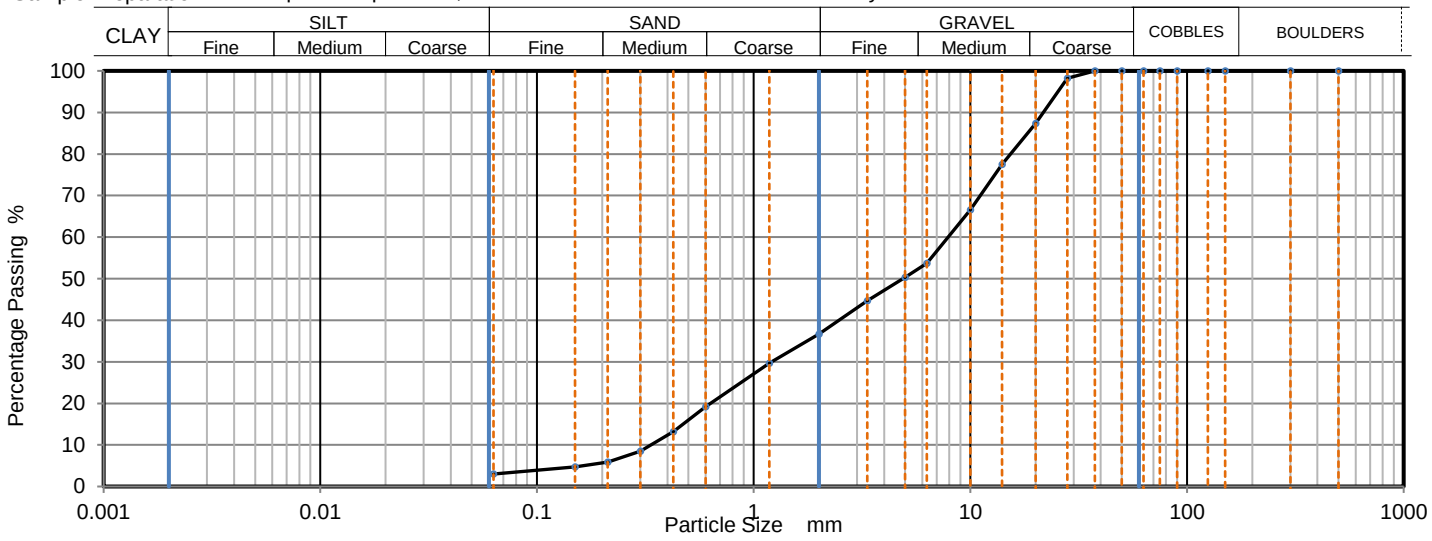
4041

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:	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:

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 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

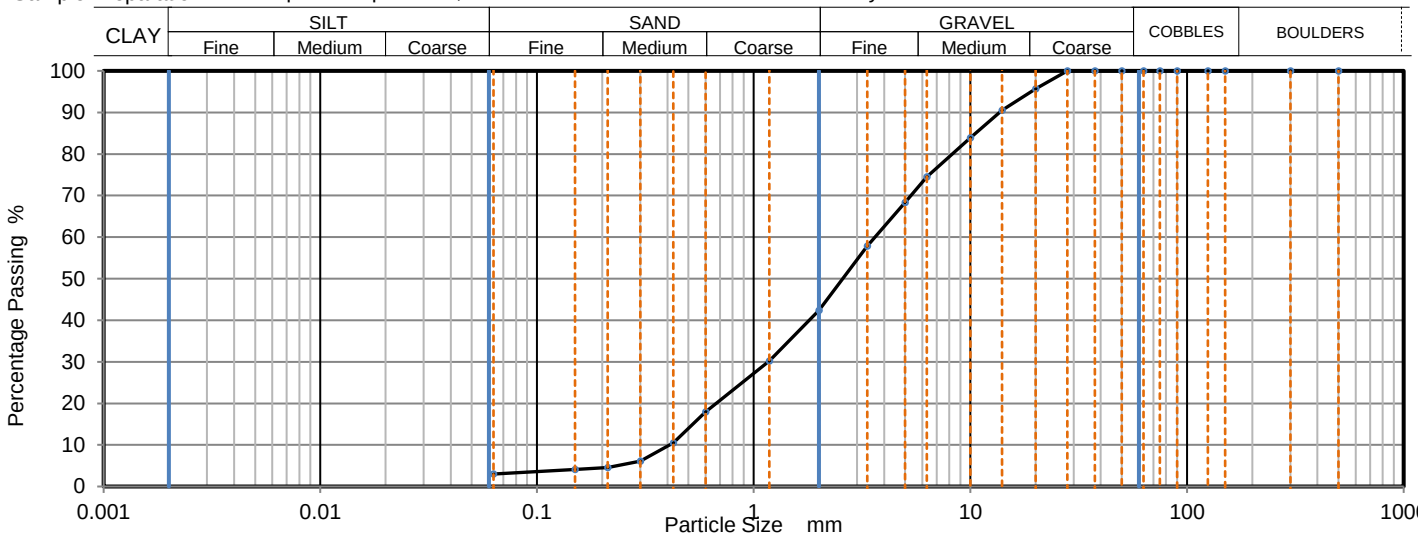
4041

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:	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

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 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

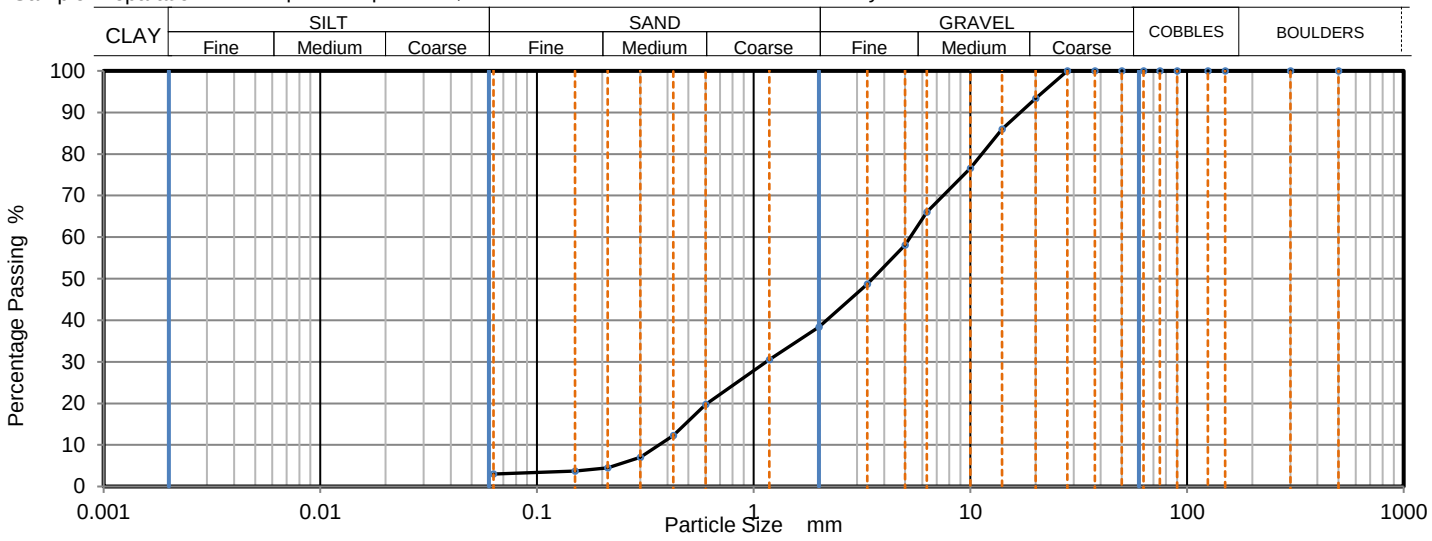
4041

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:	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

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 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

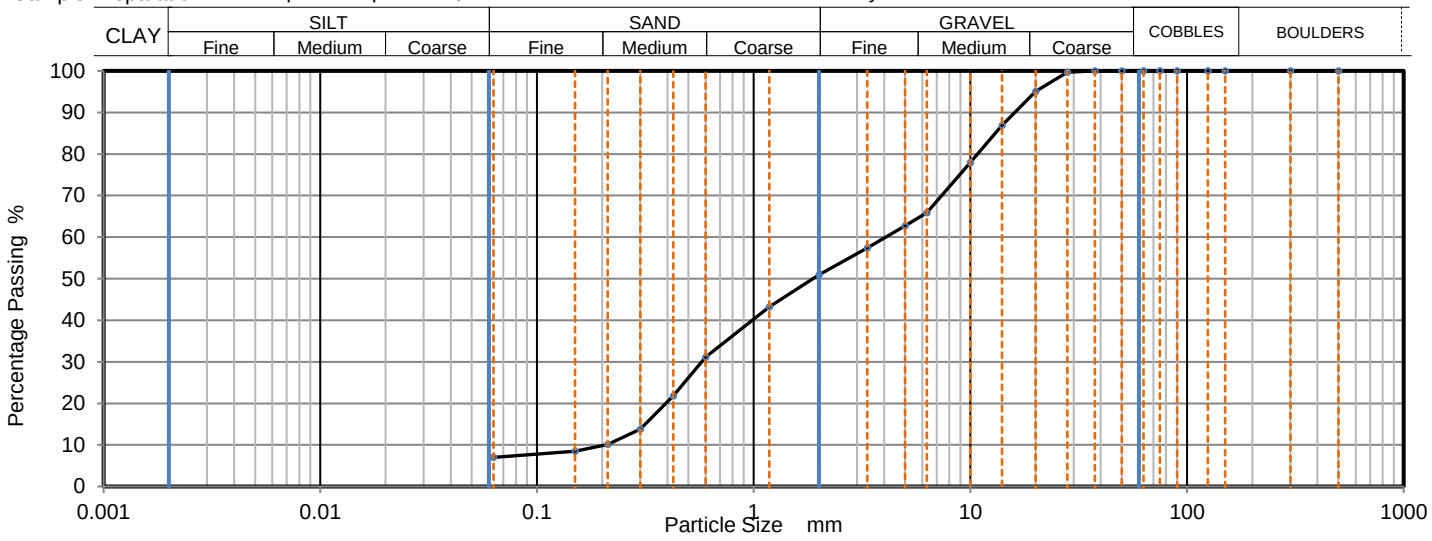
4041

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:	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

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 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

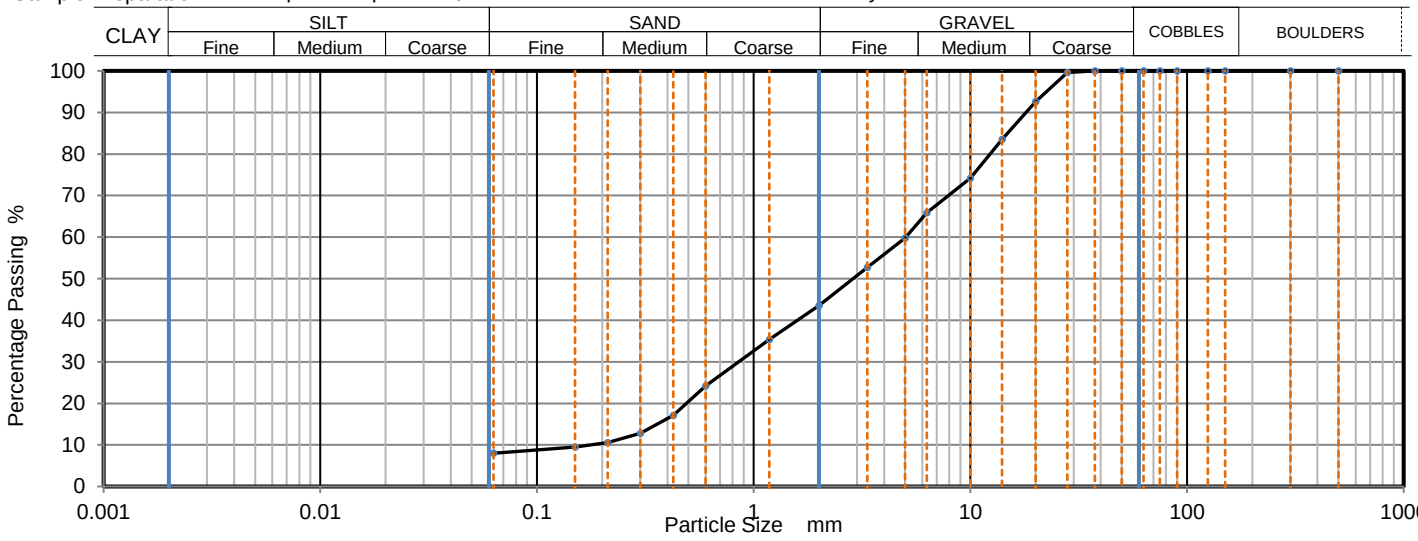
4041

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:	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:

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 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

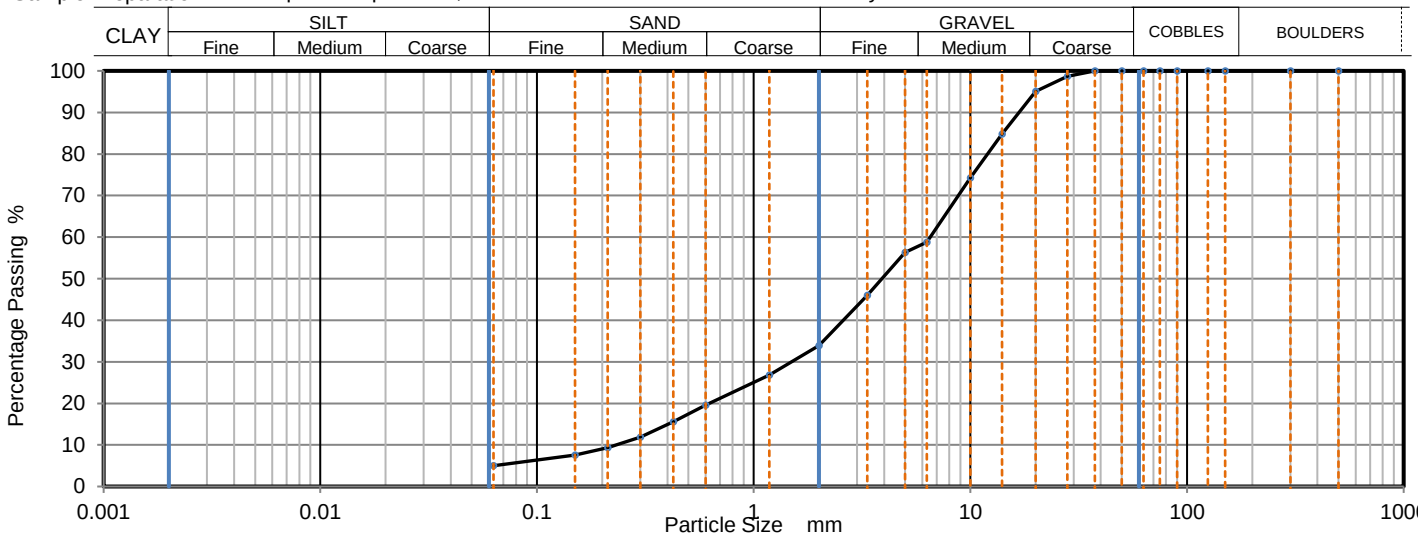
4041

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:	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

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 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

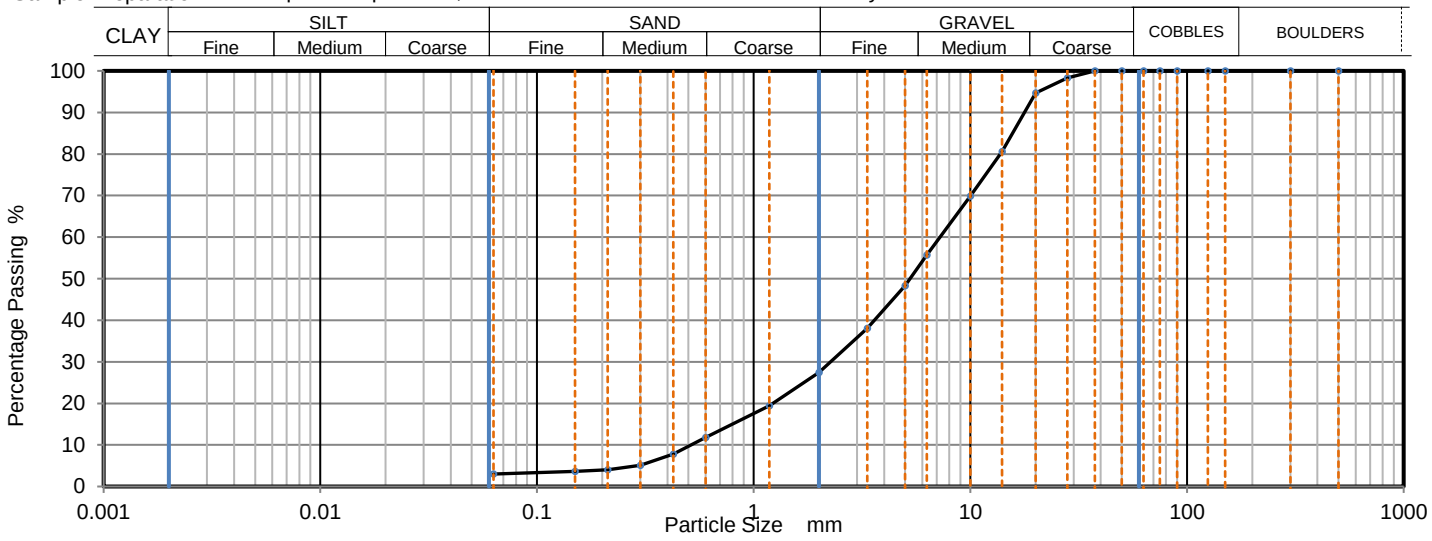
4041

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:	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

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 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

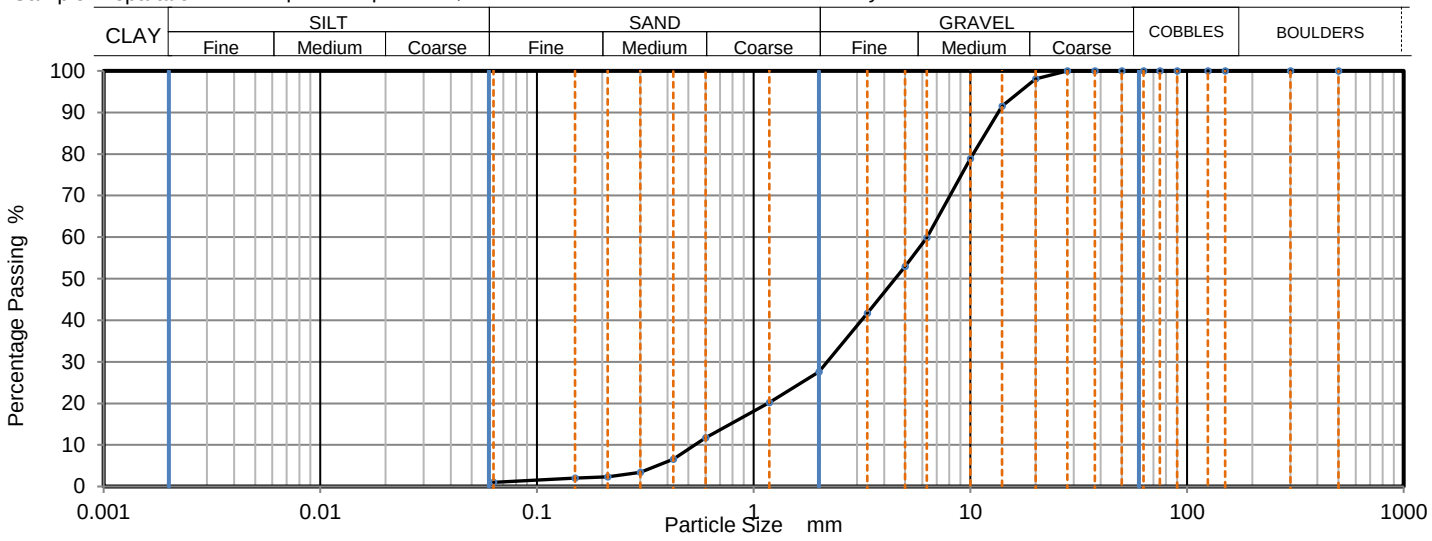
4041

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:	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

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 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

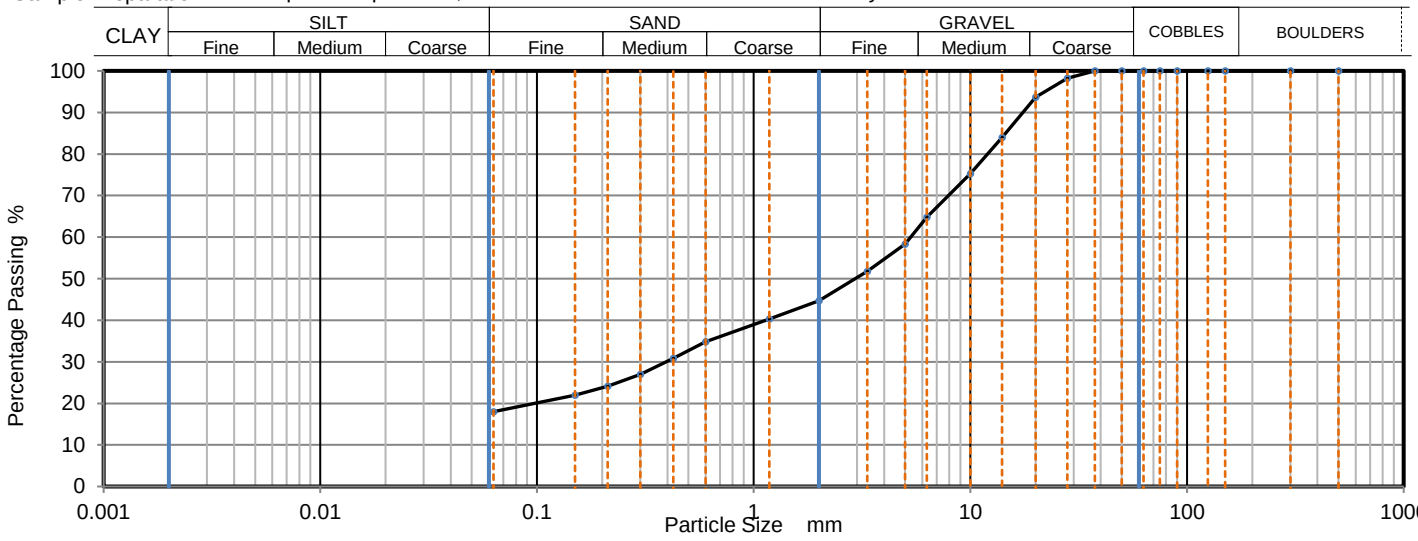
4041

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

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.

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

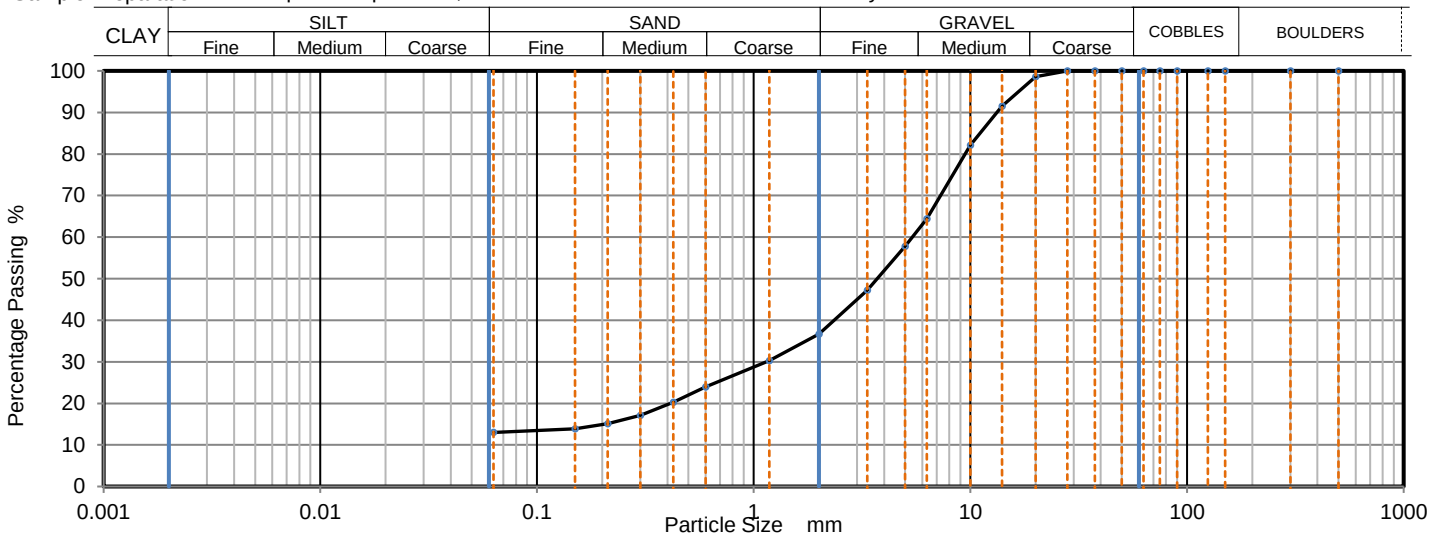
4041

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:

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 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

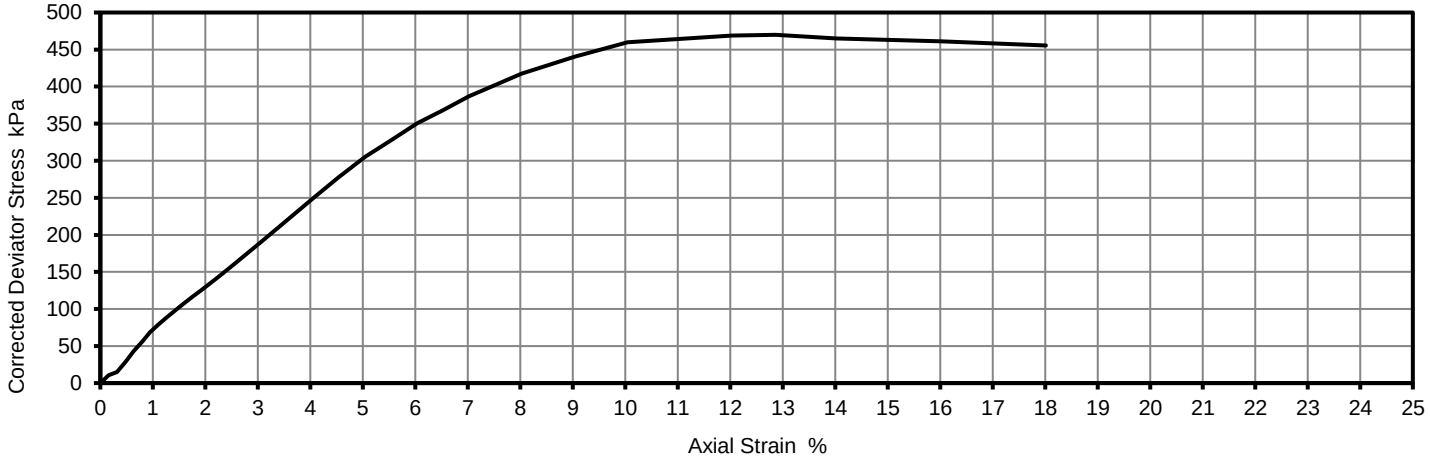
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

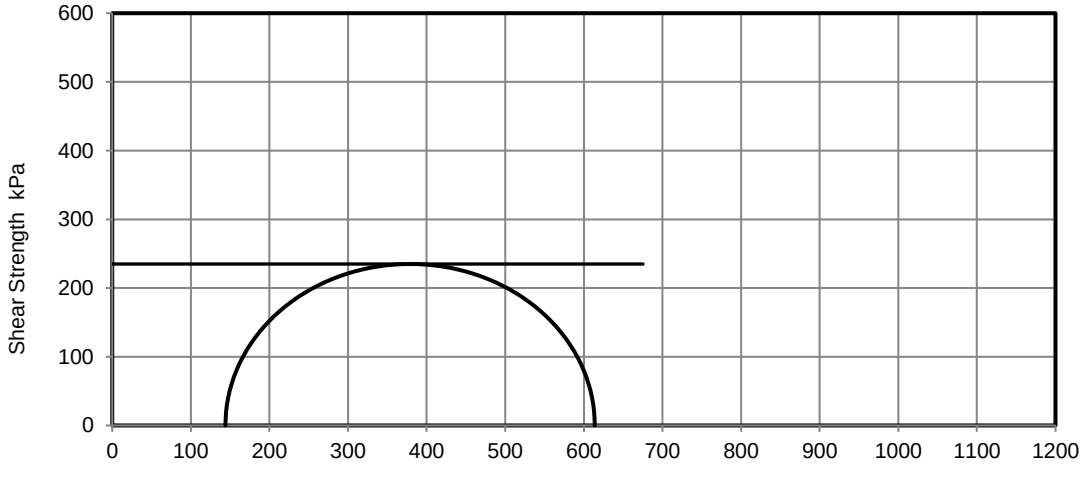
Laboratory Reference:	2785568	Depth Top [m]:	8.00
Hole No.:	BH102	Depth Base [m]:	8.24
Sample Reference:	Not Given	Sample Type:	U
Sample Description:	Grey slightly silty CLAY		
Sample Preparation:	Sample prepared in accordance with BS 1377-1:2016 Clause 9.1.1.		

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

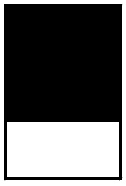


Mohr Circles





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:

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 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

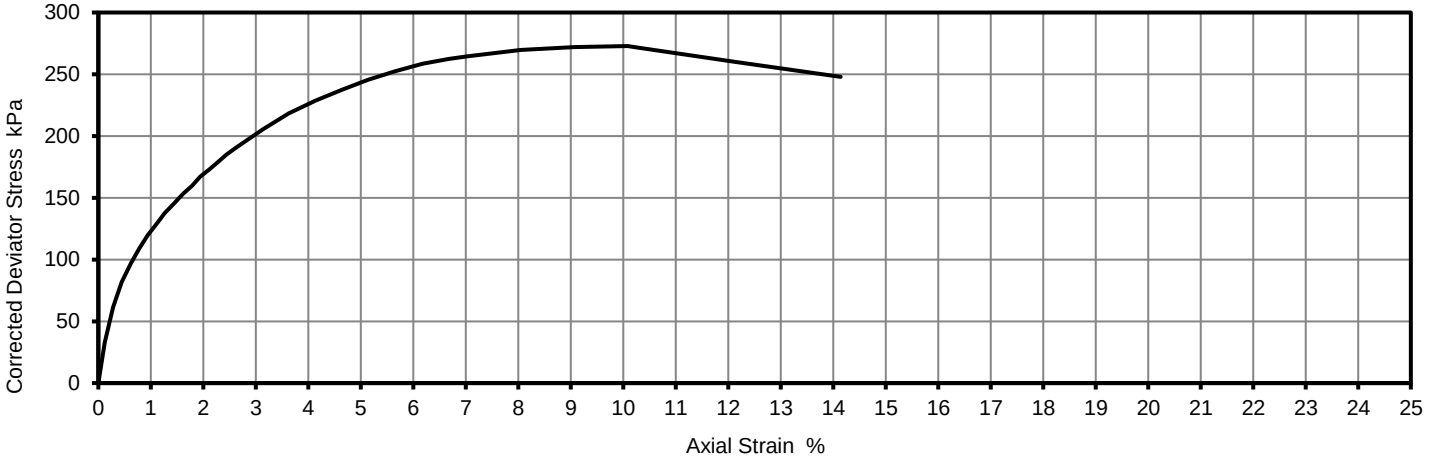
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

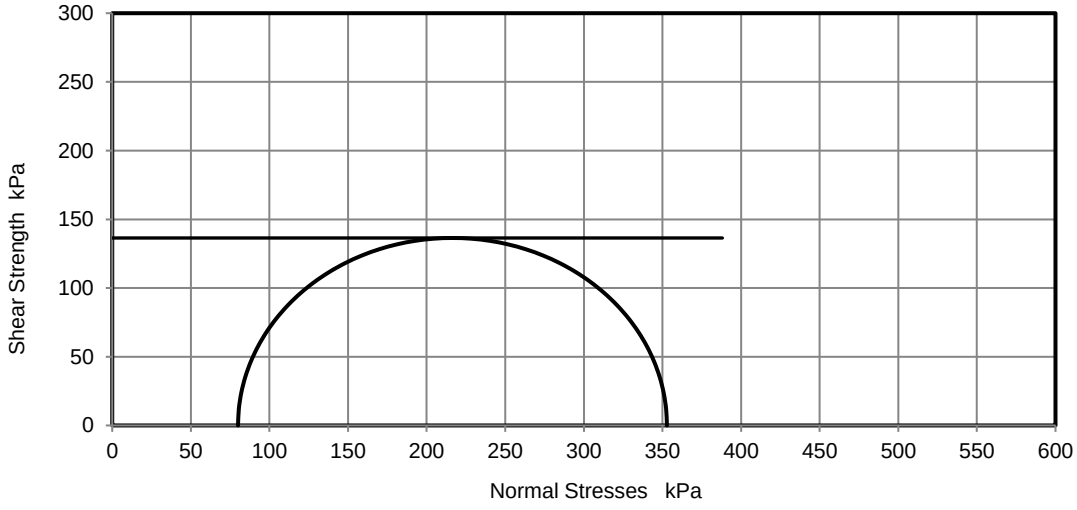
Laboratory Reference:	2785570	Depth Top [m]:	4.20
Hole No.:	BH103	Depth Base [m]:	4.65
Sample Reference:	Not Given	Sample Type:	U
Sample Description:	Grey slightly silty CLAY		
Sample Preparation:	Sample prepared in accordance with BS 1377-1:2016 Clause 9.1.1.		

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

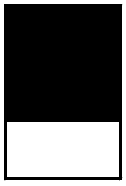


Mohr Circles





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:

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 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

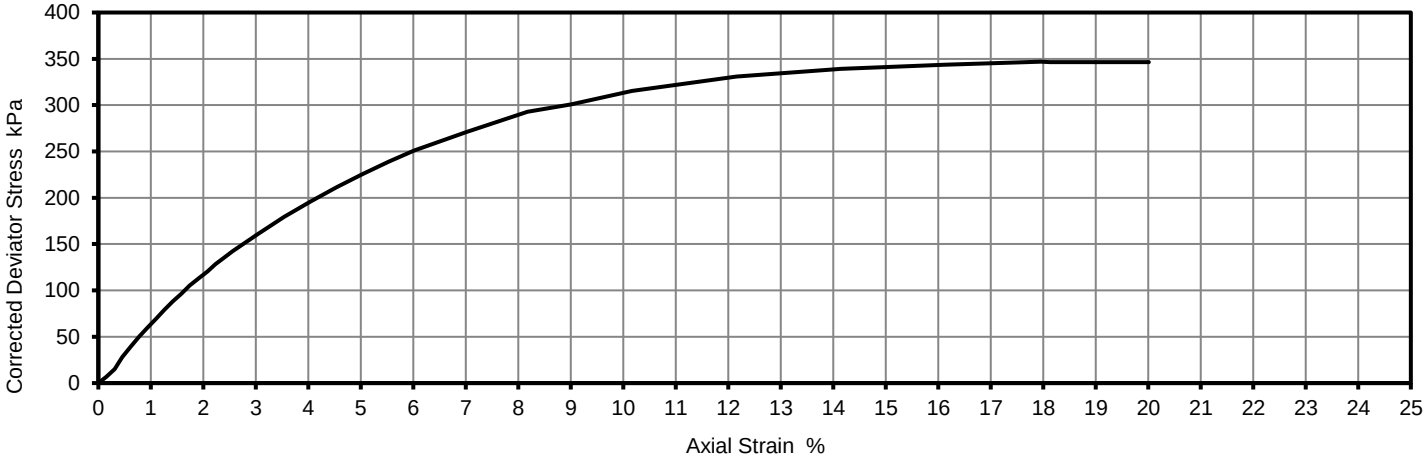
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

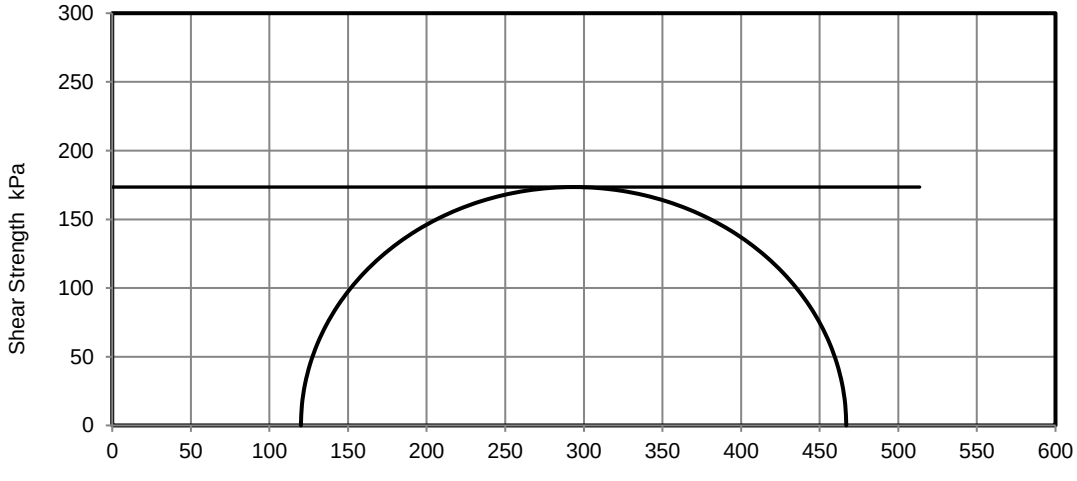
Laboratory Reference:	2785572	Depth Top [m]:	6.50
Hole No.:	BH104	Depth Base [m]:	6.95
Sample Reference:	Not Given	Sample Type:	U
Sample Description:	Grey silty CLAY		
Sample Preparation:	Sample prepared in accordance with BS 1377-1:2016 Clause 9.1.1.		

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

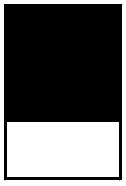


Mohr Circles





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

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.

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

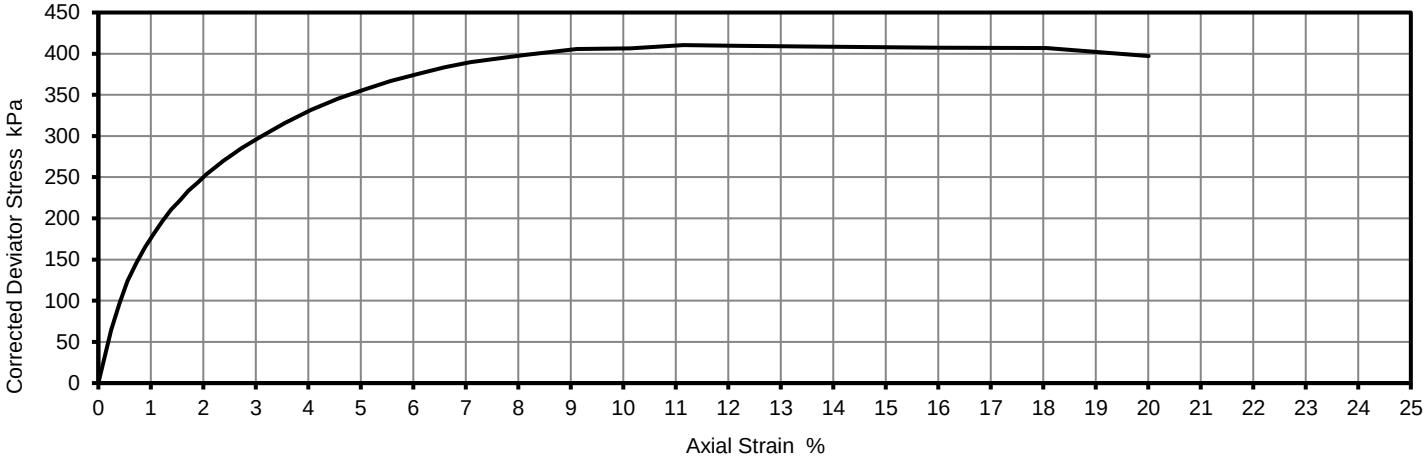
Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

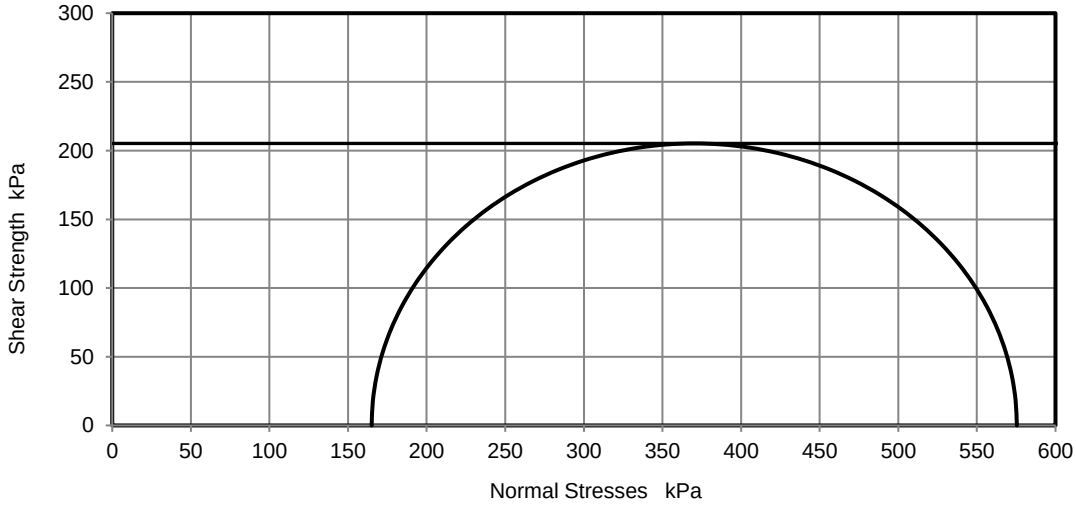
Laboratory Reference:	2785573	Depth Top [m]:	9.00
Hole No.:	BH105	Depth Base [m]:	9.45
Sample Reference:	Not Given	Sample Type:	U
Sample Description:	Grey CLAY		
Sample Preparation:	Sample prepared in accordance with BS 1377-1:2016 Clause 9.1.1.		

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

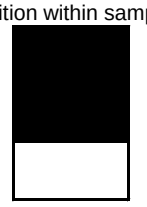


Mohr Circles





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

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.

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

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

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.

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
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

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
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

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
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

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
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				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

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
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

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
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				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

This certificate should not be reproduced, except in full, without the express permission of the laboratory.
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.

Geotechnical plots

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	7	7	0
No. tests in 20% data set	1	1	
No. tests with suspected pyrite		7	
Maximum value	1.06	4.7	
Mean of highest two values	1	5	
Mean of highest 20%			
Characteristic Value	**1**	**5**	

	[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	7	0
No. tests in 20% data set	1	
Lowest pH	7.7	
Mean of lowest 20%	7.7	
Characteristic value	**7.7**	
Design value	**7.7**	

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	20	20	0
No. tests in 20% data set	4	4	
No. tests with suspected pyrite		0	
Maximum value	0.0271	0.1	
Mean of highest two values	0	0	
Mean of highest 20%	0	0	
Characteristic Value	**0**	**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	20	0
No. tests in 20% data set	4	
Lowest pH	8.5	
Mean of lowest 20%	8.6	
Characteristic value	**8.6**	
Design value	**8.6**	

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)

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)

Hydrock Consultants

Construction
Infrastructure
Environment

3 Hawthorn Park
Holdenby Road
Spratton
Northampton
NN6 8LD

United Kingdom

Tel: +44 (0)1604 842888
Fax: +44 (0)1604 842666

Email: northampton@hydrock.com

TEST CERTIFICATE

Determination of TRL Dynamic Cone Penetrometer

Tested in accordance with In TRL Road Note 31 & 8 and IAN 73/06 (2009 amendment)

Client: Bewley Homes

Client Address:

Postcode:

Contact:

Site Name: Cotswold Community School, Ashton Keynes

Site Address:

Certificate Number:

Client Reference:

Job Number: 28470

Date Received:

Date Tested: 10/08/2023

Test Results:

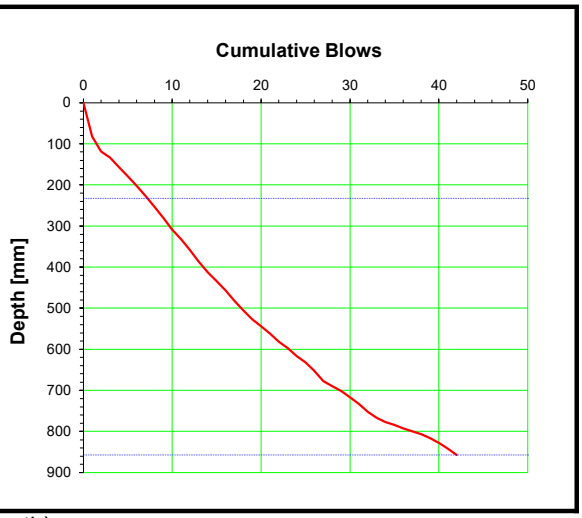
Sample Description:

Sample Number:

Start Depth [mm]:

Test Location: DCP-101

Layer	No of Blows	Cumulative Blows	CBR [%]	Layer Thickness [mm]	Total Depth [mm]
Topsoil	14	14	9	400	232
NMS	28	42	16	457	857



Comments: TRL Equation : $Log_{10}(CBR) = 2.480 - 1.057 \times Log_{10}(Strength)$

Approved Signatory:

Name:

Signed:

Position: Geotechnical Engineer

Date Reported:

Form Number: HD-TRL-DCP ver1

for and behalf of
Hydrock
Registered Office:
Hydrock Consultants Ltd
Over Court Barns
Over Lane Almondsbury
Bristol BS32 4DF U.K.

Hydrock Consultants

Construction
Infrastructure
Environment

3 Hawthorn Park
Holdenby Road
Spratton
Northampton
NN6 8LD

United Kingdom

Tel: +44 (0)1604 842888
Fax: +44 (0)1604 842666

Email: northampton@hydrock.com

TEST CERTIFICATE

Determination of TRL Dynamic Cone Penetrometer

Tested in accordance with In TRL Road Note 31 & 8 and IAN 73/06 (2009 amendment)

Client: Bewley Homes

Client Address:

Postcode:

Contact:

Site Name: Cotswold Community School, Ashton Key

Site Address:

Certificate Number:

Client Reference:

Job Number: 28470

Date Received:

Date Tested: 10/08/2023

Test Results:

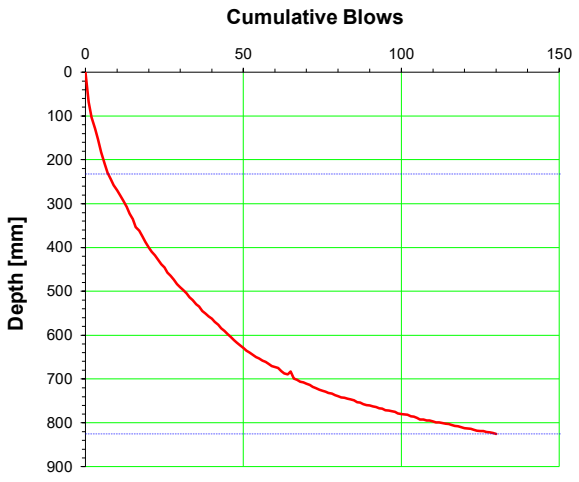
Sample Description:

Sample Number: DCP-102

Start Depth [mm]:

Test Location:

Layer	No of Blows	Cumulative Blows	CBR [%]	Layer Thickness [mm]	Total Depth [mm]
Topsoil	20	20	13	400	232
NMS	110	130	51	593	825



Comments: TRL Equation : $Log_{10}(CBR) = 2.480 - 1.057 \times Log_{10}(Strength)$

Approved Signatory:

Name:

Signed:

Position: Geotechnical Engineer

Date Reported:

Form Number: HD-TRL-DCP ver1

for and behalf of
Hydrock
Registered Office:
Hydrock Consultants Ltd
Over Court Barns
Over Lane Almondsbury
Bristol BS32 4DF U.K.

Hydrock Consultants

Construction
Infrastructure
Environment

3 Hawthorn Park
Holdenby Road
Spratton
Northampton
NN6 8LD

United Kingdom

Tel: +44 (0)1604 842888
Fax: +44 (0)1604 842666

Email: northampton@hydrock.com

TEST CERTIFICATE

Determination of TRL Dynamic Cone Penetrometer

Tested in accordance with In TRL Road Note 31 & 8 and IAN 73/06 (2009 amendment)

Client:

Client Address:

Certificate Number:

Postcode:
Contact:

Client Reference:
Job Number:

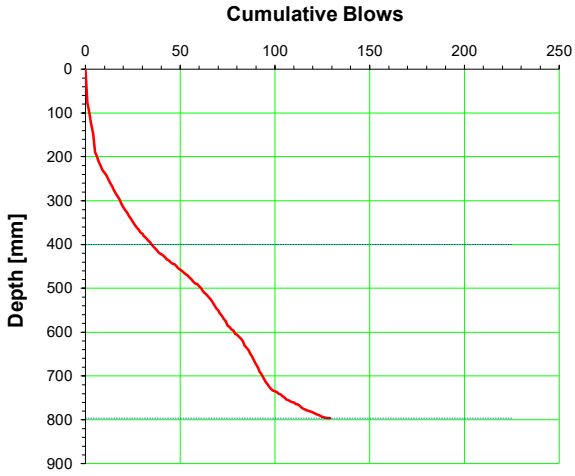
Site Name:
Site Address:

Date Received:
Date Tested:

Test Results:

Sample Description:
Sample Number: DCP-103
Start Depth [mm]:
Test Location:

Layer	No of Blows	Cumulative Blows	CBR [%]	Layer Thickness [mm]	Total Depth [mm]
Topsoil	35	35	23	400	400
NMS	94	129	32	796	796



Comments: TRL Equation : $Log_{10}(CBR) = 2.480 - 1.057 \times Log_{10}(Strength)$

Approved Signatory:

Name:

Signed:

Position: Geotechnical Engineer

Date Reported:
Form Number: HD-TRL-DCP ver1

for and behalf of
Hydrock
Registered Office:
Hydrock Consultants Ltd
Over Court Barns
Over Lane Almondsbury
Bristol BS32 4DF U.K.

Hydrock
Consultants

TEST CERTIFICATE

Determination of TRL Dynamic Cone Penetrometer

Tested in accordance with In TRL Road Note 31 & 8 and IAN 73/06 (2009 amendment)

Construction
Infrastructure
Environment

3 Hawthorn Park
Holdenby Road
Spratton
Northampton
NN6 8LD

United Kingdom

Tel: +44 (0)1604 842888
Fax: +44 (0)1604 842666

Email: northampton@hydrock.com

Client:

Client Address:

Certificate Number:

Postcode:

Contact:

Client Reference:

Job Number:

Site Name:

Date Received:

Site Address:

Date Tested:

Test Results:

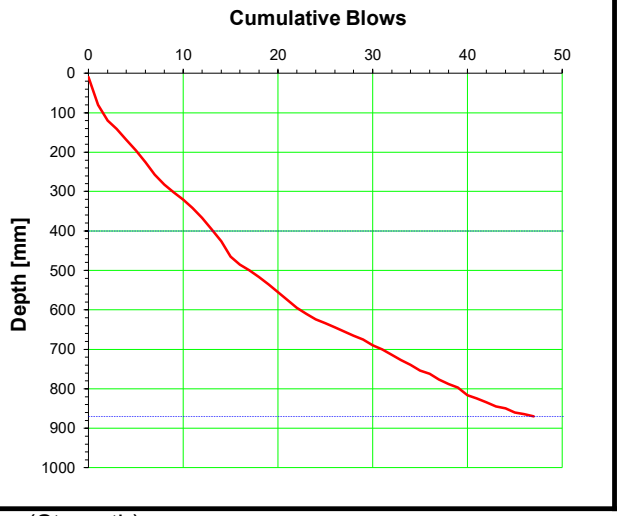
Sample Description:

Sample Number: DCP-104

Start Depth [mm]:

Test Location:

Layer	No of Blows	Cumulative Blows	CBR [%]	Layer Thickness [mm]	Total Depth [mm]
Topsoil	13	13	8	400	400
NMS	34	47	19	470	870



Comments: TRL Equation : $Log_{10}(CBR) = 2.480 - 1.057 \times Log_{10}(Strength)$

Approved Signatory:

Name:

Signed:

Position: Geotechnical Engineer

Date Reported:

Page 1 of 1

Form Number: HD-TRL-DCP ver1

for and behalf of
Hydrock
Registered Office:
Hydrock Consultants Ltd
Over Court Barns
Over Lane Almondsbury
Bristol BS32 4DF U.K.

Hydrock Consultants

Construction
Infrastructure
Environment

3 Hawthorn Park
Holdenby Road
Spratton
Northampton
NN6 8LD

United Kingdom

Tel: +44 (0)1604 842888
Fax: +44 (0)1604 842666

Email: northampton@hydrock.com

TEST CERTIFICATE

Determination of TRL Dynamic Cone Penetrometer

Tested in accordance with In TRL Road Note 31 & 8 and IAN 73/06 (2009 amendment)

Client: Bewley Homes

Client Address:

Postcode:

Contact:

Certificate Number:

Client Reference:

Job Number: 28470

Site Name: Cotswold Community School, Ashton Keynes

Site Address:

Date Received:

Date Tested: 10/08/2023

Test Results:

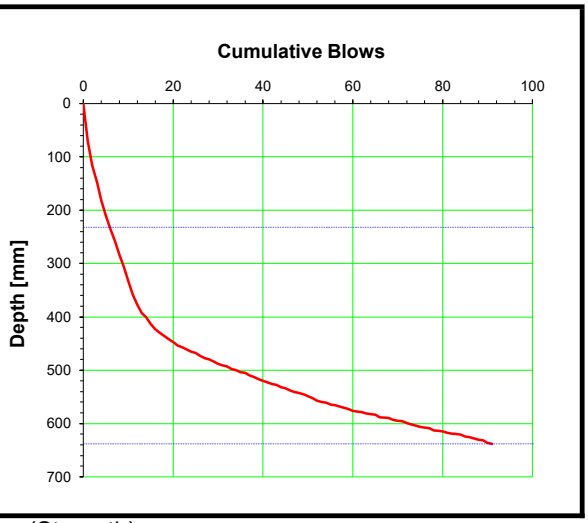
Sample Description:

Sample Number: DCP-105

Start Depth [mm]:

Test Location:

Layer	No of Blows	Cumulative Blows	CBR [%]	Layer Thickness [mm]	Total Depth [mm]
Topsoil	14	14	9	400	232
NMS	77	91	52	406	638



Comments: TRL Equation : $Log_{10}(CBR) = 2.480 - 1.057 \times Log_{10}(Strength)$

Approved Signatory:

Name:

Signed:

Position: Geotechnical Engineer

Date Reported:

Form Number: HD-TRL-DCP ver1

for and behalf of
Hydrock
Registered Office:
Hydrock Consultants Ltd
Over Court Barns
Over Lane Almondsbury
Bristol BS32 4DF U.K.

Hydrock Consultants

Construction
Infrastructure
Environment

3 Hawthorn Park
Holdenby Road
Spratton
Northampton
NN6 8LD

United Kingdom

Tel: +44 (0)1604 842888
Fax: +44 (0)1604 842666

Email: northampton@hydrock.com

TEST CERTIFICATE

Determination of TRL Dynamic Cone Penetrometer

Tested in accordance with In TRL Road Note 31 & 8 and IAN 73/06 (2009 amendment)

Client: Bewley Homes

Client Address:

Postcode:

Contact:

Site Name: Cotswold Community School, Ashton Keynes

Site Address:

Certificate Number:

Client Reference:

Job Number: 28470

Date Received:

Date Tested: 10/08/2023

Test Results:

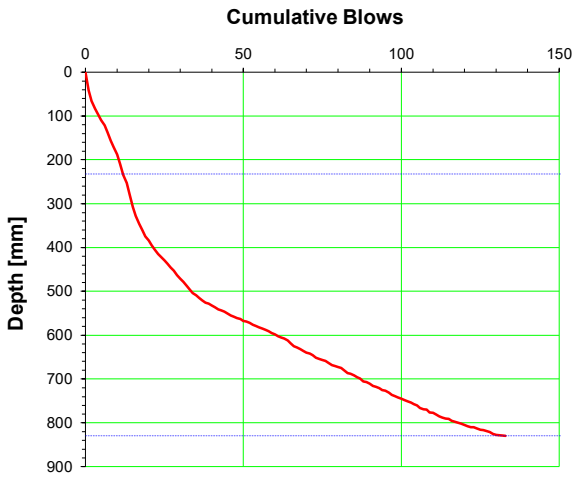
Sample Description:

Sample Number: DCP-106

Start Depth [mm]:

Test Location:

Layer	No of Blows	Cumulative Blows	CBR [%]	Layer Thickness [mm]	Total Depth [mm]
Topsoil	20	20	13	400	232
NMS	113	133	74	425	830



Comments: TRL Equation : $Log_{10}(CBR) = 2.480 - 1.057 \times Log_{10}(Strength)$

Approved Signatory: Name: Signed:

Position: Geotechnical Engineer

Date Reported:

Form Number: HD-TRL-DCP ver1

for and behalf of
Hydrock
Registered Office:
Hydrock Consultants Ltd
Over Court Barns
Over Lane Almondsbury
Bristol BS32 4DF U.K.

Hydrock Consultants

Construction
Infrastructure
Environment

3 Hawthorn Park
Holdenby Road
Spratton
Northampton
NN6 8LD

United Kingdom

Tel: +44 (0)1604 842888
Fax: +44 (0)1604 842666

Email: northampton@hydrock.com

TEST CERTIFICATE

Determination of TRL Dynamic Cone Penetrometer

Tested in accordance with In TRL Road Note 31 & 8 and IAN 73/06 (2009 amendment)

Client: Bewley Homes

Client Address:

Postcode:

Contact:

Site Name: Cotswold Community School, Ashton Keynes

Site Address: Ashton Keynes,
SN6 6QU

Certificate Number:

Client Reference:

Job Number: 28470

Date Received:

Date Tested: 10/08/2023

Test Results:

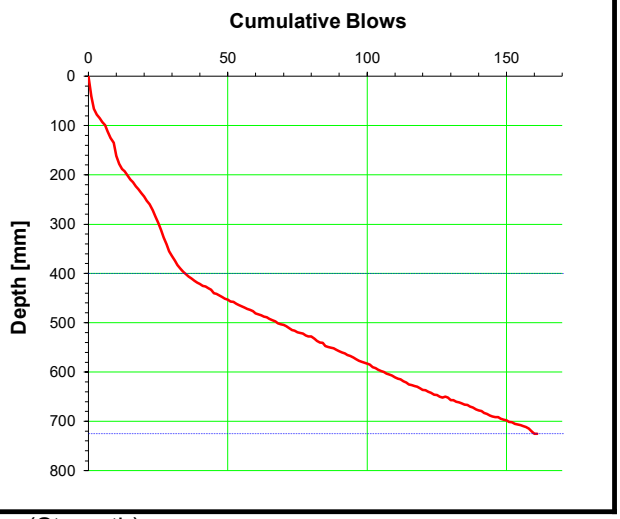
Sample Description:

Sample Number: DCP-107

Start Depth [mm]:

Test Location:

Layer	No of Blows	Cumulative Blows	CBR [%]	Layer Thickness [mm]	Total Depth [mm]
Topsoil	35	35	23	400	400
NMS	126	161	>100	325	725



Comments: TRL Equation : $Log_{10}(CBR) = 2.480 - 1.057 \times Log_{10}(Strength)$

Approved Signatory:

Name:

Signed:

Position: Geotechnical Engineer

Date Reported:

Form Number: HD-TRL-DCP ver1

for and behalf of
Hydrock
Registered Office:
Hydrock Consultants Ltd
Over Court Barns
Over Lane Almondsbury
Bristol BS32 4DF U.K.

Grading Curves

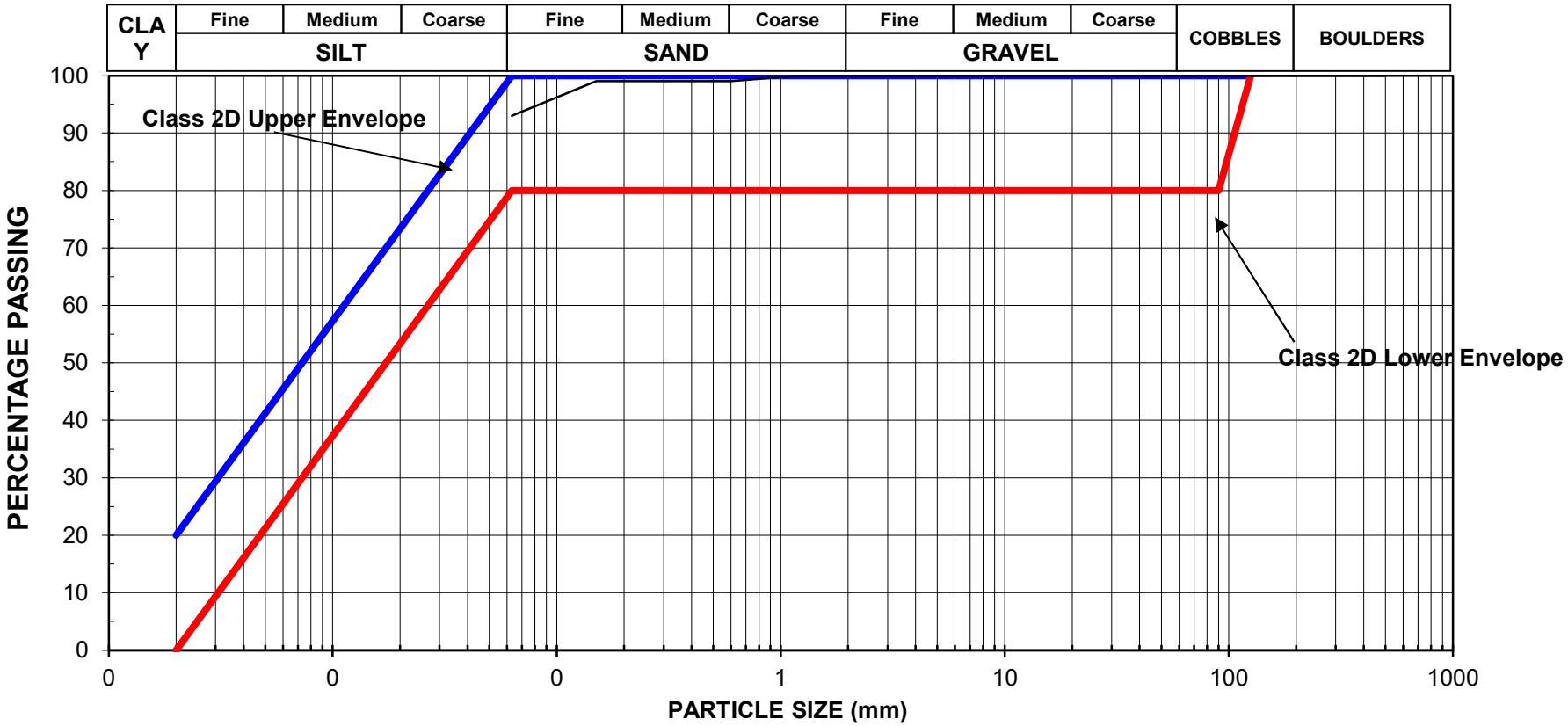


Figure 1: Summary Chart Particle Size Distribution

Grading Curves

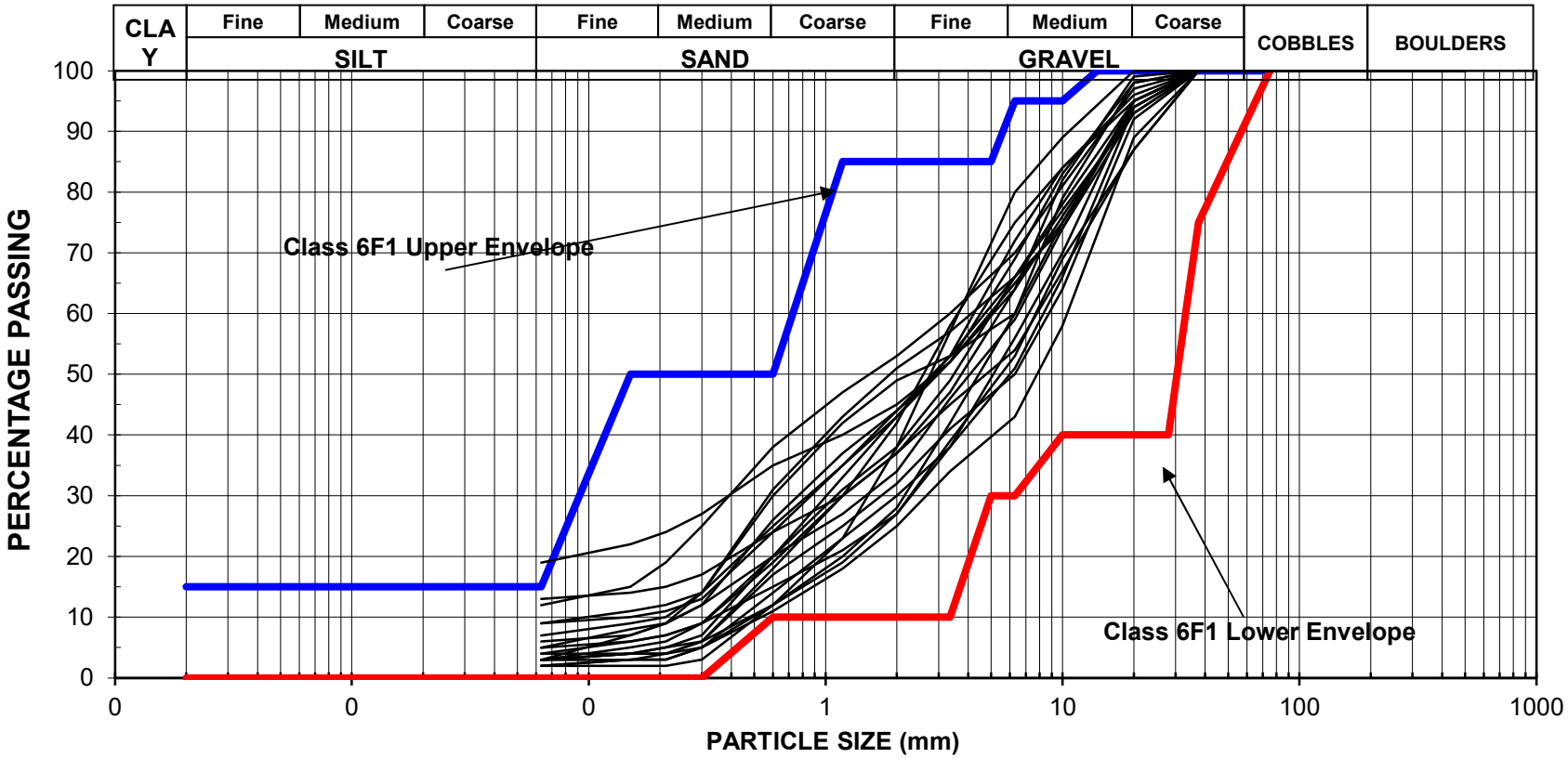


Figure 1: Summary Chart Particle Size Distribution

Hydrock

Client	Location or material to which this assessment applies
Acorn Property Group	Made Ground, Northmoor Sands and Gravels and Groundwater
Project	
Cotswold Community School, Ashton Keynes	
Job number	
C-09612-C	

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	5
No. tests in 20% data set	1	1	1
No. tests with suspected pyrite		0	
Maximum value	18.2	0.1	2.7
Mean of highest two values	16	0	3
Mean of highest 20%			
Characteristic Value	**16**	**0**	**3**
			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)	27	0 **Mg not required**
DS Class	**DS-1**	

pH data

	Soil	Water
Number of tests	5	1
No. tests in 20% data set	1	0
Lowest pH	8.3	7.4
Mean of lowest 20%	8.3	
Characteristic value	**8.3**	**7.4**
Design value	**7.4**	
Number of soil pH results less than 5.5	0	

DS Class design value

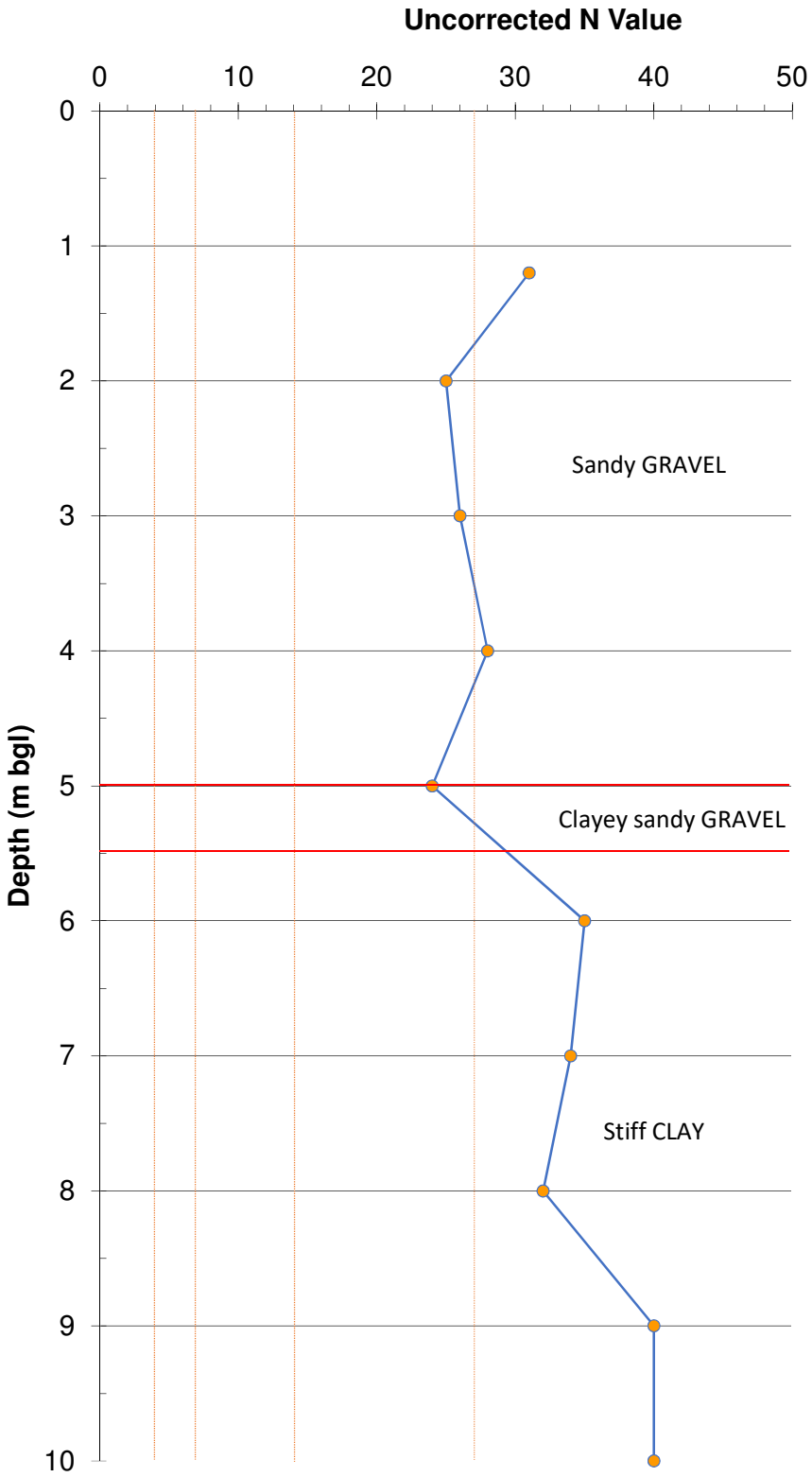
Based on higher of soil and water data **DS-1**

ACEC Class design value

Brownfield

Mobile groundwater **AC-1**

SPT vs Depth Plot - Cotswold Community School



Hydrock Consultants

Construction
Infrastructure
Environment

3 Hawthorn Park
Holdenby Road
Spratton
Northampton
NN6 8LD

United Kingdom

Tel: +44 (0)1604 842888
Fax: +44 (0)1604 842666

Email: northampton@hydrock.com

TEST CERTIFICATE

Determination of TRL Dynamic Cone Penetrometer

Tested in accordance with In TRL Road Note 31 & 8 and IAN 73/06 (2009 amendment)

Client: Acorn Property Group

Client Address: Thorens House
Beck Court
Cardiff

Postcode: CF23 8RP

Contact:

Site Name: Cotswold Community School

Site Address: Ashton Keynes
SN6 6QU

Certificate Number:

Client Reference:

Job Number: C-09612-C

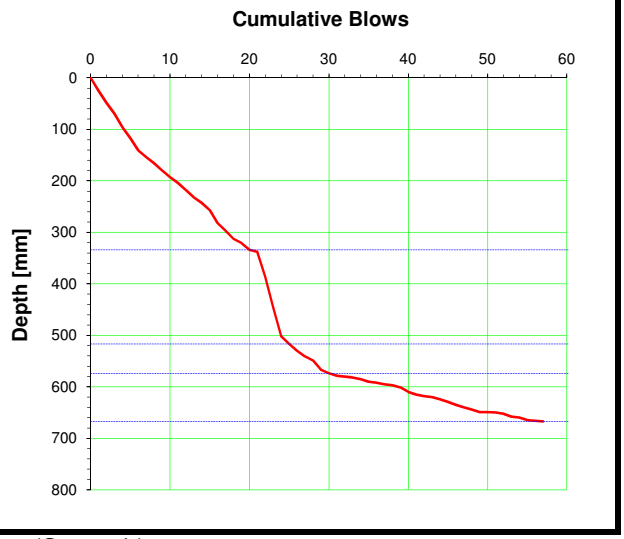
Date Received:

Date Tested: 11th May 2018

Test Results:

Sample Description: TRL DCP
Sample Number: DCP01
Start Depth [mm]: Surface
Test Location: TP01

Layer	No of Blows	Cumulative Blows	CBR [%]	Layer Thickness [mm]	Total Depth [mm]
MG	20	20		334	334
Topsoil	5	25		183	517
Layer 3	5	30	23	57	574
Layer 4	27	57	82	93	667



Comments: TRL Equation : $Log_{10}(CBR) = 2.480 - 1.057 \times Log_{10}(Strength)$

Approved Signatory:

Name: Shay Marriott

Signed:

Position: Geotechnical Engineer

Date Reported: 15th June 2018

Form Number: HD-TRL-DCP ver1

for and behalf of
Hydrock

Registered Office:
Hydrock Consultants Ltd
Over Court Barns
Over Lane Almondsbury
Bristol BS32 4DF U.K.

Hydrock
Consultants

Construction
Infrastructure
Environment

3 Hawthorn Park
Holdenby Road
Spratton
Northampton
NN6 8LD

United Kingdom

Tel: +44 (0)1604 842888
Fax: +44 (0)1604 842666

Email: northampton@hydrock.com

TEST CERTIFICATE

Determination of TRL Dynamic Cone Penetrometer

Tested in accordance with In TRL Road Note 31 & 8 and IAN 73/06 (2009 amendment)

Client: Acorn Property Group

Client Address: Thorens House
Beck Court
Cardiff

Postcode: CF23 8RP

Contact:

Site Name: Cotswold Community School

Site Address: Ashton Keynes
SN6 6QU

Certificate Number:

Client Reference:

Job Number: C-09612-C

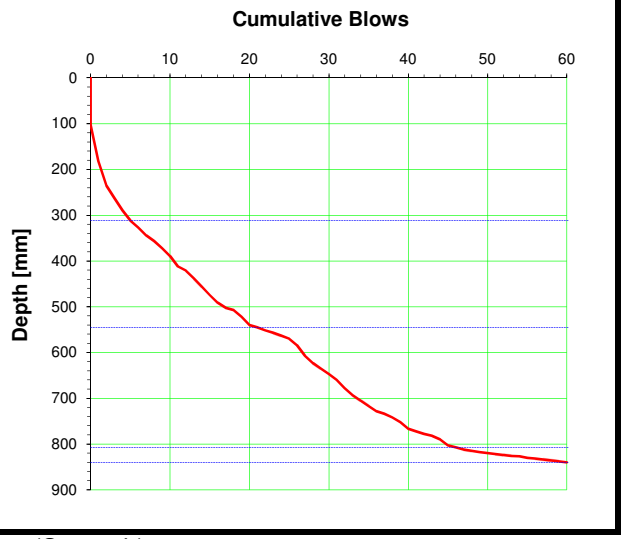
Date Received:

Date Tested: 11th May 2018

Test Results:

Sample Description: TRL DCP
Sample Number: DCP02
Start Depth [mm]: Surface
Test Location: TP02

Layer	No of Blows	Cumulative Blows	CBR [%]	Layer Thickness [mm]	Total Depth [mm]
TOPSOIL	5	5		312	312
Layer 2	16	21	18	233	545
Layer 3	25	46	25	262	807
Layer 4	14	60	>100	33	840



Comments: TRL Equation : $Log_{10}(CBR) = 2.480 - 1.057 \times Log_{10}(Strength)$

Approved Signatory:

Name: Shay Marriott

Signed:

Position: Geotechnical Engineer

Date Reported: 15th June 2018

Page 1 of 1

Form Number: HD-TRL-DCP ver1

for and behalf of
Hydrock

Registered Office:
Hydrock Consultants Ltd
Over Court Barns
Over Lane Almondsbury
Bristol BS32 4DF U.K.

Hydrock Consultants

Construction
Infrastructure
Environment

3 Hawthorn Park
Holdenby Road
Spratton
Northampton
NN6 8LD

United Kingdom

Tel: +44 (0)1604 842888
Fax: +44 (0)1604 842666

Email: northampton@hydrock.com

TEST CERTIFICATE

Determination of TRL Dynamic Cone Penetrometer

Tested in accordance with In TRL Road Note 31 & 8 and IAN 73/06 (2009 amendment)

Client: Acorn Property Group

Client Address: Thorens House
Beck Court
Cardiff

Postcode: CF23 8RP

Contact:

Site Name: Cotswold Community School

Site Address: Ashton Keynes
SN6 6QU

Certificate Number:

Client Reference:

Job Number: C-09612-C

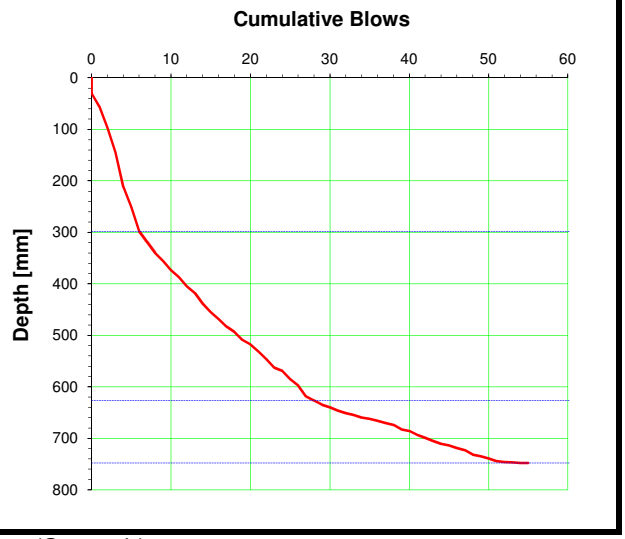
Date Received:

Date Tested: 11th May 2018

Test Results:

Sample Description: TRL DCP
Sample Number: DCP03
Start Depth [mm]: Surface
Test Location: TP03

Layer	No of Blows	Cumulative Blows	CBR [%]	Layer Thickness [mm]	Total Depth [mm]
TOPSOIL	6	6		298	298
Layer 2	22	28	17	329	627
Layer 3	27	55	62	121	748



Comments: TRL Equation : $Log_{10}(CBR) = 2.480 - 1.057 \times Log_{10}(Strength)$

Approved Signatory:

Name: Shay Marriott

Signed:

Position: Geotechnical Engineer

Date Reported: 15th June 2018

Form Number: HD-TRL-DCP ver1

for and behalf of
Hydrock

Registered Office:
Hydrock Consultants Ltd
Over Court Barns
Over Lane Almondsbury
Bristol BS32 4DF U.K.

Hydrock Consultants

Construction
Infrastructure
Environment

3 Hawthorn Park
Holdenby Road
Spratton
Northampton
NN6 8LD

United Kingdom

Tel: +44 (0)1604 842888
Fax: +44 (0)1604 842666

Email: northampton@hydrock.com

TEST CERTIFICATE

Determination of TRL Dynamic Cone Penetrometer

Tested in accordance with In TRL Road Note 31 & 8 and IAN 73/06 (2009 amendment)

Client: Acorn Property Group

Client Address: Thorens House
Beck Court
Cardiff

Postcode: CF23 8RP

Contact:

Site Name: Cotswold Community School

Site Address: Ashton Keynes
SN6 6QU

Certificate Number:

Client Reference:

Job Number: C-09612-C

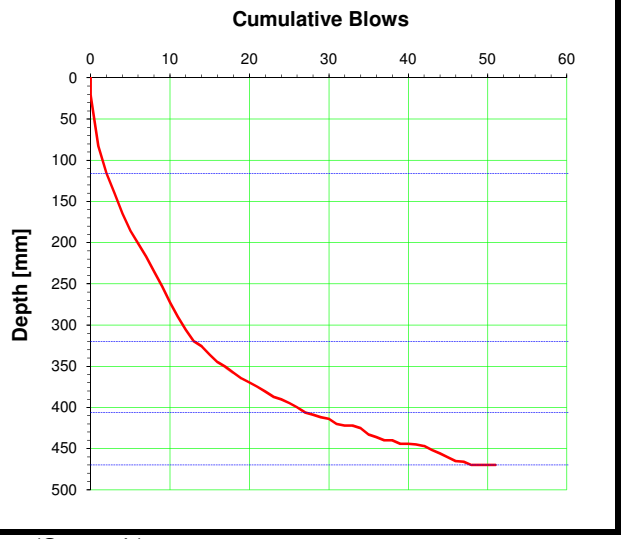
Date Received:

Date Tested: 11th May 2018

Test Results:

Sample Description: TRL DCP
Sample Number: DCP04
Start Depth [mm]: Surface
Test Location: BH01

Layer	No of Blows	Cumulative Blows	CBR [%]	Layer Thickness [mm]	Total Depth [mm]
TOPSOIL	2	2		116	116
Layer 2	11	13	14	204	320
Layer 3	14	27	44	86	406
Layer 4	24	51	>100	64	470



Comments: TRL Equation : $Log_{10}(CBR) = 2.480 - 1.057 \times Log_{10}(Strength)$

Approved Signatory:

Name: Shay Marriott

Signed:

Position: Geotechnical Engineer

Date Reported: 15th June 2018

Form Number: HD-TRL-DCP ver1

for and behalf of
Hydrock

Registered Office:
Hydrock Consultants Ltd
Over Court Barns
Over Lane Almondsbury
Bristol BS32 4DF U.K.

Hydrock Consultants

Construction
Infrastructure
Environment

3 Hawthorn Park
Holdenby Road
Spratton
Northampton
NN6 8LD

United Kingdom

Tel: +44 (0)1604 842888
Fax: +44 (0)1604 842666

Email: northampton@hydrock.com

TEST CERTIFICATE

Determination of TRL Dynamic Cone Penetrometer

Tested in accordance with In TRL Road Note 31 & 8 and IAN 73/06 (2009 amendment)

Client: Acorn Property Group

Client Address: Thorens House
Beck Court
Cardiff

Postcode: CF23 8RP

Contact:

Site Name: Cotswold Community School

Site Address: Ashton Keynes
SN6 6QU

Certificate Number:

Client Reference:

Job Number: C-09612-C

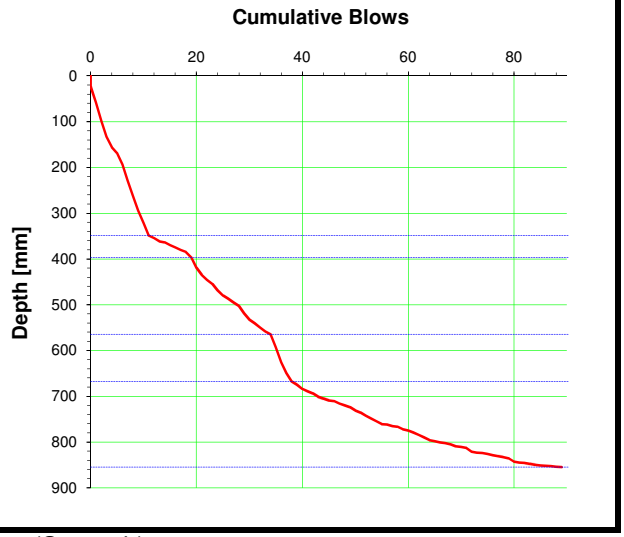
Date Received:

Date Tested: 11th May 2018

Test Results:

Sample Description: TRL DCP
Sample Number: DCP05
Start Depth [mm]: Surface
Test Location: TP05

Layer	No of Blows	Cumulative Blows	CBR [%]	Layer Thickness [mm]	Total Depth [mm]
Made Ground	11	11	8	349	349
	8	19	45	48	397
	15	34	23	168	565
Layer 4	1	35	2	103	668
Layer 5	54	89	81	187	855



Comments: TRL Equation : $Log_{10}(CBR) = 2.480 - 1.057 \times Log_{10}(Strength)$
Attempt 3 due to refusals on attempts 1 and 2.

Approved Signatory: Name: Shay Marriott Signed:

Position: Geotechnical Engineer

Date Reported: 15th June 2018 Page 1 of 1
Form Number: HD-TRL-DCP ver1

for and behalf of
Hydrock
Registered Office:
Hydrock Consultants Ltd
Over Court Barns
Over Lane Almondsbury
Bristol BS32 4DF U.K.

Hydrock Consultants

Construction
Infrastructure
Environment

3 Hawthorn Park
Holdenby Road
Spratton
Northampton
NN6 8LD

United Kingdom

Tel: +44 (0)1604 842888
Fax: +44 (0)1604 842666

Email: northampton@hydrock.com

TEST CERTIFICATE

Determination of TRL Dynamic Cone Penetrometer

Tested in accordance with In TRL Road Note 31 & 8 and IAN 73/06 (2009 amendment)

Client: Acorn Property Group

Client Address: Thorens House
Beck Court
Cardiff

Postcode: CF23 8RP

Contact:

Site Name: Cotswold Community School

Site Address: Ashton Keynes
SN6 6QU

Certificate Number:

Client Reference:

Job Number: C-09612-C

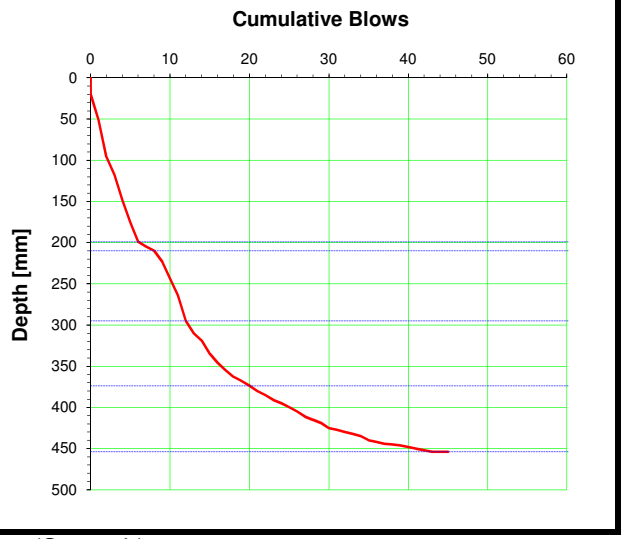
Date Received:

Date Tested: 11th May 2018

Test Results:

Sample Description: TRL DCP
Sample Number: DCP06
Start Depth [mm]: Surface
Test Location: TP06

Layer	No of Blows	Cumulative Blows	CBR [%]	Layer Thickness [mm]	Total Depth [mm]
Made Ground	6	6	7	199	199
	2	8	50	11	210
	4	12	12	85	295
Layer 4	8	20	27	79	374
Layer 5	25	45	88	80	454



Comments: TRL Equation : $Log_{10}(CBR) = 2.480 - 1.057 \times Log_{10}(Strength)$

Approved Signatory:

Name: Shay Marriott

Signed:

Position: Geotechnical Engineer

Date Reported: 15th June 2018

Form Number: HD-TRL-DCP ver1

for and behalf of
Hydrock

Registered Office:
Hydrock Consultants Ltd
Over Court Barns
Over Lane Almondsbury
Bristol BS32 4DF U.K.

Appendix E Site monitoring data

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 &2) AH (3)

Notes on site conditions:
21.09.23 - Very low pressure, previous heavy rainfall, mild 18°C, overcast with sunny intervals, breezy.

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
													VOC (as ppm using PID)	CH_4 (%v/v)		CH_4 (%LEL)		CO_2 (%v/v)		O_2 (%v/v)				
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)		Initial	Steady	Initial	Steady	Initial	Steady	Initial	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**		**20.4**			**0.0003**	**0.0114**	
								Min. individual values:				0.0			0.0		0.9		17.0			0	0.0027	**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		0.00471	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		0.00514	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	0.3	0.3	0	0	0			1.6	1.6	18.8	18.8		0	0.0048	
13/09/23		BH101	S	1.00 - 8.50	2.42		0.00475	1012	S	0.02	0.3	0.3	0	0	0			3.6	3.6	18	18		0	0.0108	
13/09/23		BH102	S	1.00 - 7.8	2.64		0.00518	1013	S	0.02	0.3	0.3	0	0	0			1.6	2.3	18.9	18.9		0	0.0069	
13/09/23		BH103	S	1.00 - 2.6	2.8	D	0.00550	1013	S	0.02	0.3	0.3	0	0	0			2	2.4	19.2	18.7		0	0.0072	
13/09/23		BH104	S	1.00 - 5.5	3.45		0.00677	1013	S	0.02	0.3	0.3	0	0	0			0.2	1.8	20.7	19.6		0	0.0054	
13/09/23		BH105	S	1.00 - 8.1	3.45		0.00677	1013	S	0.04	0.3	0.3	0	0	0			1.3	1.9	19.5	18.6		0	0.0057	
13/09/23		BH01	S	1.00 - 10.00	2.78		0.00546	1013	S	0.11	0.3	0.3	0	0	0			1.3	1.8	19.9			0	0.0054	
21.09.23	14:55	BH101	S	1.00 - 8.50	2.38		0.00467	985	F	0.05	0.3	0.3	0	0.1	0.1			2.0	2.9	20.5	18.0	0	0.0003	0.0087	DTB = 7.59m bgl. Flow steady at 0.0l/hr over 2 mins. CO = 1ppm.
21.09.23	15:25	BH102	S	1.00 - 7.8	2.61		0.00512	985	F	0.07	0.3	0.3	0	0.1	0			2.3	2.3	19.7	18.7	0	0	0.0069	DTB = 7.71m bgl. Flow steady at 0.1l/hr over 2 mins. CO = 1ppm.
21.09.23	16:10	BH103	S	1.00 - 2.6	2.85	D	0.00560	985	F	-0.02	0.3	0.3	0	0.1	0.1			2.2	2.4	21.1	18.8	0	0.0003	0.0072	DTB = 2.85m bgl. Flow steady at 0.1l/hr over 2 mins.
21.09.23	16:25	BH104	S	1.00 - 5.5	3.42		0.00672	985	F	0.00	0.3	0.3	0	0.1	0.1			1.1	1.5	20.9	20.2	0	0.0003	0.0045	DTB = 5.59m bgl. Flow steady at 0.0l/hr over 2 mins.
21.09.23	16:40	BH105	S	1.00 - 8.1	3.39		0.00666	985	F	0.05	0.3	0.3	0	0.1	0.1			2.1	2.4	21.2	18.3	0	0.0003	0.0072	DTB = 7.94m bgl. Flow steady at 0.0l/hr over 2 mins. CO = 1-0ppm.
21.09.23	15:45	BH01	S	1.00 - 10.00	2.77		0.00544	982	F	0.02	0.3	0.3	0.2-0.0	0.1	0.1			0.7	0.9	20.5	20.4	0.2-0.0	0.0003	0.0027	DTB = 9.79m bgl. Flow steady at 0.1l/hr over 2 mins. CO = 1ppm.

Hydrock

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 pipie & 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)		CH_4 (%LEL)		CO_2 (%v/v)		O_2 (%v/v)		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
														Initial	Steady	Initial	Steady	Initial	Steady	Initial	Steady				

Appendix F Contamination test results and GQRA

Contamination test results

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)

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**	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)

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**	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					

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
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**	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					

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
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**	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					

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
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**	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					

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
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**	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
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**	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					

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
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**	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				

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

4480

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)

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	
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)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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		

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

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

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

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

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

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

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

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		

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

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

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: 23-10755

Site Reference:	Ashton Keynes
Project / Job Ref:	28470
Order No:	PO28046
Sample Receipt Date:	18/08/2023
Sample Scheduled Date:	22/08/2023
Report Issue Number:	1
Reporting Date:	29/08/2023

Authorised by:

Dave Ashworth
Technical 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

UKAS TESTING
4480

Soil Analysis Certificate						
DETS Report No: 23-10755	**Date Sampled**	17/08/23				
Hydrock Consultants ltd	**Time Sampled**	None Supplied				
Site Reference: Ashton Keynes	**TP / BH No**	TP120				
Project / Job Ref: 28470	**Additional Refs**	ES103				
Order No: PO28046	**Depth (m)**	1.00				
Reporting Date: 29/08/2023	**DETS Sample No**	671119				

Determinand	Unit	RL	Accreditation	(n)				
Asbestos Screen (S)	N/a	N/a	ISO17025	Not Detected				
pH	pH Units	N/a	ISO17025	8.4				
Free Cyanide	mg/kg	< 1	NONE	< 1				
Fraction Organic Carbon (FOC)	Units	< 0.001	ISO17025	0.050				
Arsenic (As)	mg/kg	< 2	ISO17025	7				
Beryllium (Be)	mg/kg	< 0.5	ISO17025	< 0.5				
W/S Boron	mg/kg	< 1	NONE	< 1				
Cadmium (Cd)	mg/kg	< 0.2	ISO17025	< 0.2				
Chromium (III)	mg/kg	< 2	NONE	4				
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2				
Copper (Cu)	mg/kg	< 4	ISO17025	6				
Lead (Pb)	mg/kg	< 3	ISO17025	< 3				
Mercury (Hg)	mg/kg	< 1	ISO17025	< 1				
Nickel (Ni)	mg/kg	< 3	ISO17025	< 3				
Selenium (Se)	mg/kg	< 2	ISO17025	< 2				
Vanadium (V)	mg/kg	< 1	ISO17025	8				
Zinc (Zn)	mg/kg	< 3	ISO17025	7				
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2				

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

UKAS TESTING
4480

Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 23-10755	**Date Sampled**	17/08/23				
Hydrock Consultants ltd	**Time Sampled**	None Supplied				
Site Reference: Ashton Keynes	**TP / BH No**	TP120				
Project / Job Ref: 28470	**Additional Refs**	ES103				
Order No: PO28046	**Depth (m)**	1.00				
Reporting Date: 29/08/2023	**DETS Sample No**	671119				

Determinand	Unit	RL	Accreditation	(n)				
Naphthalene	mg/kg	< 0.1	ISO17025	< 0.1				
Acenaphthylene	mg/kg	< 0.1	ISO17025	< 0.1				
Acenaphthene	mg/kg	< 0.1	ISO17025	< 0.1				
Fluorene	mg/kg	< 0.1	ISO17025	< 0.1				
Phenanthrene	mg/kg	< 0.1	ISO17025	< 0.1				
Anthracene	mg/kg	< 0.1	ISO17025	< 0.1				
Fluoranthene	mg/kg	< 0.1	ISO17025	< 0.1				
Pyrene	mg/kg	< 0.1	ISO17025	< 0.1				
Benzo(a)anthracene	mg/kg	< 0.1	ISO17025	< 0.1				
Chrysene	mg/kg	< 0.1	ISO17025	< 0.1				
Benzo(b)fluoranthene	mg/kg	< 0.1	ISO17025	< 0.1				
Benzo(k)fluoranthene	mg/kg	< 0.1	ISO17025	< 0.1				
Benzo(a)pyrene	mg/kg	< 0.1	ISO17025	< 0.1				
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.1	ISO17025	< 0.1				
Dibenz(a,h)anthracene	mg/kg	< 0.1	ISO17025	< 0.1				
Benzo(ghi)perylene	mg/kg	< 0.1	ISO17025	< 0.1				
Total EPA-16 PAHs	mg/kg	< 1.6	ISO17025	< 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

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

UKAS TESTING
4480

Soil Analysis Certificate - Sample Descriptions	
DETS Report No: 23-10755	
Hydrock Consultants ltd	
Site Reference: Ashton Keynes	
Project / Job Ref: 28470	
Order No: PO28046	
Reporting Date: 29/08/2023	

DETS Sample No	TP / BH No	Additional Refs	Depth (m)	Moisture Content (%)	Sample Matrix Description
671119	TP120	ES103	1.00	3.2	Light brown sandy gravel with stones and concrete

Moisture content is part of procedure E003 & is not an accredited test
Insufficient Sample I/S
Unsuitable Sample U/S

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

UKAS TESTING
4480

Soil Analysis Certificate - Methodology & Miscellaneous Information
DETS Report No: 23-10755
Hydrock Consultants ltd
Site Reference: Ashton Keynes
Project / Job Ref: 28470
Order No: PO28046
Reporting Date: 29/08/2023

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

4480

List of HWOL Acronyms and Operators
DETS Report No: 23-10755
Hydrock Consultants ltd
Site Reference: Ashton Keynes
Project / Job Ref: 28470
Order No: PO28046
Reporting Date: 29/08/2023

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

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: 23-11144

Site Reference:	Ashton Keynes
Project / Job Ref:	28470
Order No:	PO28357
Sample Receipt Date:	04/09/2023
Sample Scheduled Date:	04/09/2023
Report Issue Number:	1
Reporting Date:	08/09/2023

Authorised by:

Kevin Old
Operations Director

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

4480

Soil Analysis Certificate						
DETS Report No: 23-11144	**Date Sampled**	09/08/23				
Hydrock Consultants ltd	**Time Sampled**	None Supplied				
Site Reference: Ashton Keynes	**TP / BH No**	TP124				
Project / Job Ref: 28470	**Additional Refs**	ES102				
Order No: PO28357	**Depth (m)**	0.40				
Reporting Date: 08/09/2023	**DETS Sample No**	672848				

Determinand	**Unit**	**RL**	**Accreditation**					
Asbestos Screen (S)	N/a	N/a	**ISO17025**	Not Detected				
pH	pH Units	N/a	**MCERTS**	8.0				
Free Cyanide	mg/kg	< 1	NONE	< 1				
Fraction Organic Carbon (FOC)	Units	< 0.001	**MCERTS**	0.043				
Arsenic (As)	mg/kg	< 2	**MCERTS**	18				
Beryllium (Be)	mg/kg	< 0.5	**MCERTS**	1.3				
W/S Boron	mg/kg	< 1	NONE	1.6				
Cadmium (Cd)	mg/kg	< 0.2	**MCERTS**	< 0.2				
Chromium (III)	mg/kg	< 2	NONE	30				
Chromium (hexavalent)	mg/kg	< 2	NONE	< 2				
Copper (Cu)	mg/kg	< 4	**MCERTS**	12				
Lead (Pb)	mg/kg	< 3	**MCERTS**	50				
Mercury (Hg)	mg/kg	< 1	**MCERTS**	< 1				
Nickel (Ni)	mg/kg	< 3	**MCERTS**	16				
Selenium (Se)	mg/kg	< 2	**MCERTS**	< 2				
Vanadium (V)	mg/kg	< 1	**MCERTS**	51				
Zinc (Zn)	mg/kg	< 3	**MCERTS**	72				
Total Phenols (monohydric)	mg/kg	< 2	NONE	< 2				

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

4480

Soil Analysis Certificate - Speciated PAHs						
DETS Report No: 23-11144	**Date Sampled**	09/08/23				
Hydrock Consultants ltd	**Time Sampled**	None Supplied				
Site Reference: Ashton Keynes	**TP / BH No**	TP124				
Project / Job Ref: 28470	**Additional Refs**	ES102				
Order No: PO28357	**Depth (m)**	0.40				
Reporting Date: 08/09/2023	**DETS Sample No**	672848				

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

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

Soil Analysis Certificate - Sample Descriptions	
DETS Report No: 23-11144	
Hydrock Consultants ltd	
Site Reference: Ashton Keynes	
Project / Job Ref: 28470	
Order No: PO28357	
Reporting Date: 08/09/2023	

DETS Sample No	TP / BH No	Additional Refs	Depth (m)	Moisture Content (%)	Sample Matrix Description
$ 672848	TP124	ES102	0.40	17.5	Brown sandy clay with stones

Moisture content is part of procedure E003 & is not an accredited test
Insufficient Sample I/S
Unsuitable Sample U/S

$ samples exceeded recommended holding times

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

Soil Analysis Certificate - Methodology & Miscellaneous Information
DETS Report No: 23-11144
Hydrock Consultants ltd
Site Reference: Ashton Keynes
Project / Job Ref: 28470
Order No: PO28357
Reporting Date: 08/09/2023

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: 23-11144
Hydrock Consultants ltd
Site Reference: Ashton Keynes
Project / Job Ref: 28470
Order No: PO28357
Reporting Date: 08/09/2023

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

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: 23-11145

Site Reference:	Ashton Keynes
Project / Job Ref:	28470
Order No:	PO28338
Sample Receipt Date:	04/09/2023
Sample Scheduled Date:	04/09/2023
Report Issue Number:	1
Reporting Date:	08/09/2023

Authorised by:

Kevin Old
Operations Director

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

4480

Soil Analysis Certificate							
DETS Report No: 23-11145	**Date Sampled**	23/08/23					
Hydrock Consultants ltd	**Time Sampled**	None Supplied					
Site Reference: Ashton Keynes	**TP / BH No**	CC111					
Project / Job Ref: 28470	**Additional Refs**	ES101					
Order No: PO28338	**Depth (m)**	0.65					
Reporting Date: 08/09/2023	**DETS Sample No**	672849					

Determinand	Unit	RL	Accreditation	(n)				
Asbestos Screen (S)	N/a	N/a	ISO17025	Not Detected				

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

UKAS TESTING 4480

Soil Analysis Certificate - TPH LQM Banded						
DETS Report No: 23-11145	Date Sampled	23/08/23				
Hydrock Consultants ltd	Time Sampled	None Supplied				
Site Reference: Ashton Keynes	TP / BH No	CC111				
Project / Job Ref: 28470	Additional Refs	ES101				
Order No: PO28338	Depth (m)	0.65				
Reporting Date: 08/09/2023	DETS Sample No	672849				

Determinand	Unit	RL	Accreditation	(n)				
Aliphatic >C5 - C6 : HS_1D_MS_AL	mg/kg	< 0.01	NONE	< 0.01				
Aliphatic >C6 - C8 : HS_1D_MS_AL	mg/kg	< 0.05	NONE	< 0.05				
Aliphatic >C8 - C10 : EH_CU_1D_AL	mg/kg	< 2	ISO17025	< 2				
Aliphatic >C10 - C12 : EH_CU_1D_AL	mg/kg	< 2	ISO17025	< 2				
Aliphatic >C12 - C16 : EH_CU_1D_AL	mg/kg	< 3	ISO17025	< 3				
Aliphatic >C16 - C35 : EH_CU_1D_AL	mg/kg	< 10	ISO17025	< 10				
Aliphatic >C35 - C44 : EH_CU_1D_AL	mg/kg	< 10	NONE	< 10				
Aliphatic (C5 - C44) : HS_1D_MS+EH_CU_1D_AL	mg/kg	< 30	NONE	< 30				
Aromatic >C5 - C7 : HS_1D_MS_AR	mg/kg	< 0.01	NONE	< 0.01				
Aromatic >C7 - C8 : HS_1D_MS_AR	mg/kg	< 0.05	NONE	< 0.05				
Aromatic >C8 - C10 : EH_CU_1D_AR	mg/kg	< 2	ISO17025	< 2				
Aromatic >C10 - C12 : EH_CU_1D_AR	mg/kg	< 2	ISO17025	< 2				
Aromatic >C12 - C16 : EH_CU_1D_AR	mg/kg	< 2	ISO17025	< 2				
Aromatic >C16 - C21 : EH_CU_1D_AR	mg/kg	< 3	ISO17025	< 3				
Aromatic >C21 - C35 : EH_CU_1D_AR	mg/kg	< 10	ISO17025	< 10				
Aromatic >C35 - C44 : EH_CU_1D_AR	mg/kg	< 10	NONE	< 10				
Aromatic (>C5 - C44) : HS_1D_MS+EH_CU_1D_AR	mg/kg	< 30	NONE	< 30				
Total >C5 - C44 : HS_1D_MS+EH_CU_1D_Total	mg/kg	< 60	NONE	< 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

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

4480

Soil Analysis Certificate - BTEX / MTBE						
DETS Report No: 23-11145	**Date Sampled**	23/08/23				
Hydrock Consultants ltd	**Time Sampled**	None Supplied				
Site Reference: Ashton Keynes	**TP / BH No**	CC111				
Project / Job Ref: 28470	**Additional Refs**	ES101				
Order No: PO28338	**Depth (m)**	0.65				
Reporting Date: 08/09/2023	**DETS Sample No**	672849				

Determinand	Unit	RL	Accreditation	(n)				
Benzene : HS_1D_MS	ug/kg	< 2	ISO17025	< 2				
Toluene : HS_1D_MS	ug/kg	< 5	ISO17025	< 5				
Ethylbenzene : HS_1D_MS	ug/kg	< 2	ISO17025	< 2				
p & m-xylene : HS_1D_MS	ug/kg	< 2	ISO17025	< 2				
o-xylene : HS_1D_MS	ug/kg	< 2	ISO17025	< 2				
MTBE : HS_1D_MS	ug/kg	< 5	ISO17025	< 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

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

UKAS TESTING
4480

Soil Analysis Certificate - Sample Descriptions	
DETS Report No: 23-11145	
Hydrock Consultants ltd	
Site Reference: Ashton Keynes	
Project / Job Ref: 28470	
Order No: PO28338	
Reporting Date: 08/09/2023	

DETS Sample No	TP / BH No	Additional Refs	Depth (m)	Moisture Content (%)	Sample Matrix Description
$ 672849	CC111	ES101	0.65	7.7	Brown sandy gravel with stones

Moisture content is part of procedure E003 & is not an accredited test
Insufficient Sample I/S
Unsuitable Sample U/S

$ samples exceeded recommended holding times

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

UKAS TESTING
4480

Soil Analysis Certificate - Methodology & Miscellaneous Information
DETS Report No: 23-11145
Hydrock Consultants ltd
Site Reference: Ashton Keynes
Project / Job Ref: 28470
Order No: PO28338
Reporting Date: 08/09/2023

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

UKAS TESTING 4480

List of HWOL Acronyms and Operators
DETS Report No: 23-11145
Hydrock Consultants ltd
Site Reference: Ashton Keynes
Project / Job Ref: 28470
Order No: PO28338
Reporting Date: 08/09/2023

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

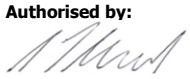
Andrew Tidswell
Hydrock Consultants ltd
Over Court Barns
Over lane
Almondsbury
Bristol
BS32 4DF

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

DETS Report No: 23-11683

Site Reference:	Ashton Keynes
Project / Job Ref:	28470
Order No:	PO28634
Sample Receipt Date:	18/09/2023
Sample Scheduled Date:	18/09/2023
Report Issue Number:	1
Reporting Date:	25/09/2023

Authorised by:



Dave Ashworth
Technical 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: 23-11683	**Date Sampled**	13/09/23	13/09/23			
Hydrock Consultants ltd	**Time Sampled**	None Supplied	None Supplied			
Site Reference: Ashton Keynes	**TP / BH No**	SS1	SS1			
Project / Job Ref: 28470	**Additional Refs**	ES101	ES102			
Order No: PO28634	**Depth (m)**	0.10	0.50			
Reporting Date: 25/09/2023	**DETS Sample No**	675206	675207			

Determinand	Unit	RL	Accreditation	(n)				
Total Coliforms (S)	MPN/g	N/a	NONE	220	0			
Faecal Coliforms (S)	MPN/g	< 10	NONE	< 10	< 10			
Faecal Streptococci (S)	CFU/g	< 10	NONE	< 10	< 10			
Clostridium Perfringens (S)	CFU/g	N/a	NONE	0	0			

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 - Sample Descriptions	
DETS Report No: 23-11683	
Hydrock Consultants ltd	
Site Reference: Ashton Keynes	
Project / Job Ref: 28470	
Order No: PO28634	
Reporting Date: 25/09/2023	

DETS Sample No	TP / BH No	Additional Refs	Depth (m)	Moisture Content (%)	Sample Matrix Description
675206	SS1	ES101	0.10	13.6	Brown sandy clay with stones and vegetation
675207	SS1	ES102	0.50	3.5	Light brown sandy gravel with stones

Moisture content is part of procedure E003 & is not an accredited test
Insufficient Sample I/S
Unsuitable Sample U/S

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

Soil Analysis Certificate - Methodology & Miscellaneous Information
DETS Report No: 23-11683
Hydrock Consultants ltd
Site Reference: Ashton Keynes
Project / Job Ref: 28470
Order No: PO28634
Reporting Date: 25/09/2023

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

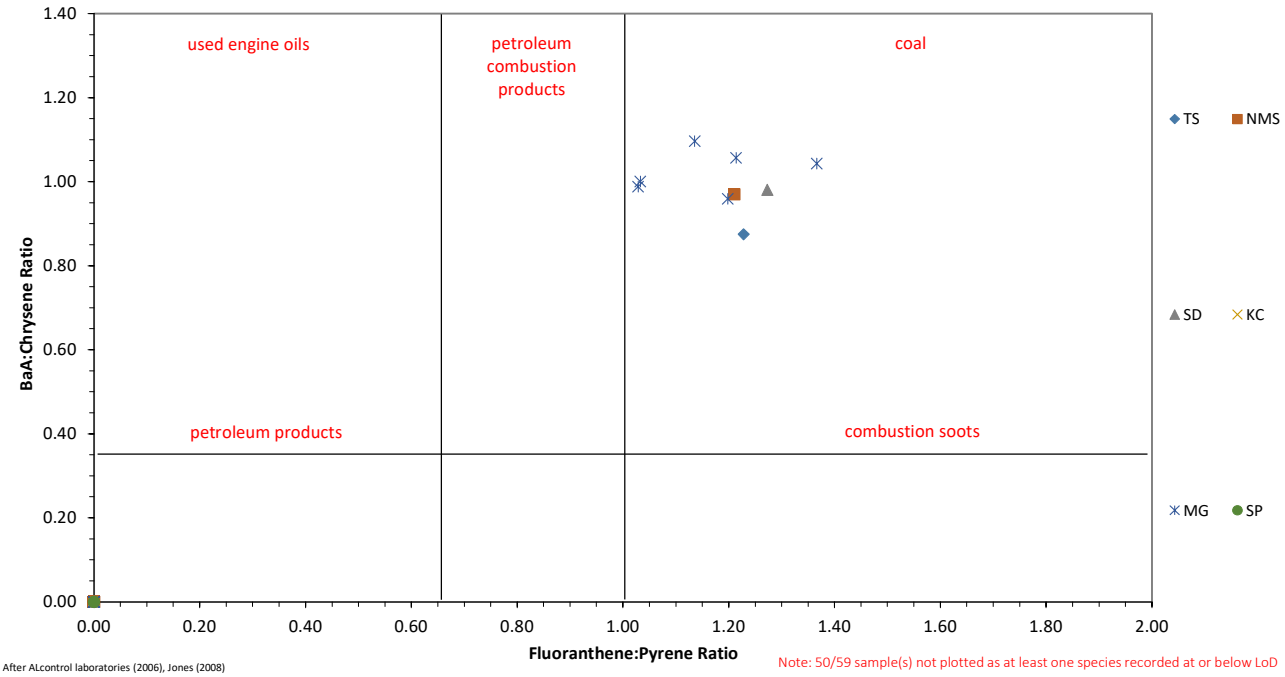
D Dried
AR As Received

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: 23-11683
Hydrock Consultants ltd
Site Reference: Ashton Keynes
Project / Job Ref: 28470
Order No: PO28634
Reporting Date: 25/09/2023

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



After ALcontrol laboratories (2006), Jones (2008)

Note: 50/59 sample(s) not plotted as at least one species recorded at or below LoD

GAC derivation

Background

Initially, the Hydrock GAC were derived following the publishing of soil guideline values (SGV), toxicological (TOX) reports and associated publications by the Environment Agency (EA) in 2009 referenced under Science Report SC050021 (EA, 2009a, b, c, d). The Hydrock GAC have then been periodically updated following publication of new information on toxicological, physico-chemical, land use or receptor parameters, namely:

- LQM/CIEH, 2009. LQM/CIEH Generic Assessment Criteria for Human Health Risk Assessment, second edition. Nathanial, C. P., McCaffrey, C., Ashmore, M., Cheng, Y., Gillet, A. G., Ogden, R. C. and Scott, D.
- CL:AIRE, 2010. 'The EIC/AGS/CL:AIRE Soil Generic Assessment Criteria for Human Health Risk Assessment'. Environmental Industries Commission, The Association of Geotechnical and Geoenvironmental Specialists and Contaminated Land: Applications in Real Environment.
- CL:AIRE, 2014. 'Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination', Revision 2, DEFRA research project SP1010. Contaminated Land: Applications in Real Environment.
- LQM/CIEH, 2015. 'The LQM/CIEH S4ULs for Human Health Risk Assessment'. Nathanial, C. P., McCaffrey, C., Gillet, A. G., Ogden, R. C. and Nathanial, J. F.
- CL:AIRE, 2021. 'C4SL Phase 2 Technical Reports'. Contaminated Land: Applications in Real Environment.

Land use scenarios

Hydrock has derived generic assessment criteria (GAC) for human health based on the six exposure scenarios defined in CL:AIRE (2014) using generic default assumptions from published guidance. GAC for each exposure scenario have been derived for three soil organic matter (SOM) contents, 1%, 2.5% and 6%.

All GAC have been rounded to two significant figures.

Exposure parameters

The exposure parameters used for the Hydrock GAC are the default parameters stated in SR3, unless updated in CL:AIRE (2014) where the CL:AIRE (2014) values have been adopted.

Approach to consumption rates

Hydrock have adopted the 90th percentile consumption rates from Table 3.4 of CL:AIRE (2014) for all produce types. This is noted to be more conservative than the "top two" approach taken in the derivation of C4SLs.

Approach to plant uptake for GAC omitted in CL:AIRE (2010)

Plant uptake factors were not identified in CL:AIRE (2010) for antimony, barium and molybdenum. Hydrock has sourced the required parameter values from ORNL (1984) in order to derive GAC that are inclusive of the homegrown produce exposure pathway.

Chemical and toxicity parameters

The chemical and toxicity parameters have been adopted based on the following documents:

- IRIS, 2016. 'Toxicological Review of Trimethylbenzenes'. Integrated Risk Information System, National Centre for Environmental Assessment, office of Research and Development, U.S. Environmental Protection Agency.
- LQM/CIEH, 2015.

- ORNL, 1984. 'ORNL-5786. A Review and Analysis of Parameters for Assessing Transport of Environmentally released Radionuclides through Agriculture'. Oak Ridge National Laboratory.
- CL:AIRE, 2010.
- RIVM, 2001. RIVM Report 711701 025 'HCV Re-evaluation of human-toxicological maximum-permissible risk levels'. National Institute of Public Health and the Environment.
- LQM/CIEH, 2009.
- EA, 2009a.

Approach to Cyanide GAC

The Hydrock GAC for free cyanide have been derived based on ingestion of a bolus of contaminated soil. The GAC are derived for acute exposure of a child (0-6 years old) for all land uses except commercial, where the GAC are derived for acute exposure of an adult (16-65 years old). For the purpose of GQRA, the child value may be adopted for all land use scenarios.

For complex cyanide, the GAC have been derived based on chronic exposure, using the default exposure scenarios but excluding the consumption of homegrown produce, soil attached to homegrown produce, indoor vapour and outdoor vapour pathways. The chronic health criteria value (HCV) for complex cyanide is based on the EA (2009a) HCV for free cyanide and the ratio of toxicity between free and complex cyanide proposed by RIVM (2001).

Approach to Phenol GAC

In accordance with the EA Science Report SC050021 / Phenol SGV, a $GAC_{ing/inh}$ has been derived for ingested and inhaled phenol using the CLEA model, with a GAC_{derm} derived for dermal contact using Equation 5.7 within SR3. The lower of the $GAC_{ing/inh}$ and GAC_{derm} has been adopted as the final GAC.

Approach to PCB GAC

GAC for assessing the non-dioxin-like risk from PCBs have been based on the "Dutch 7". As the TDI used by the authors of the Dutch guidance is for the sum of the 7 individual congeners, the TDI has been divided by 7 to create a TDI for each congener. The non-dioxin-like risk from PCBs is therefore assessed using a Hazard Index approach as for total petroleum hydrocarbons (TPH).

Sub-surface soil to indoor air correction factors

Reflecting the approach taken by the Environment Agency in the development of revised SGV in 2009 for BTEX, a sub-surface soil to indoor air correction factor of 10 has been applied for petroleum hydrocarbons in order to account for over-prediction of vapour intrusion into building using the Johnson and Ettinger approach.

The correction factor of 10 has been applied to the following petroleum hydrocarbons (it makes negligible difference to less volatile TPH and PAH compounds):

- TPHCWG fractions, namely aliphatic EC>5-44 and aromatic EC>6-44;
- PAHs (acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene), benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, dibenz(a,h,)anthracene, fluoranthene, fluorene, indeno(1,2,3-c,d)pyrene, naphthalene, phenanthrene, pyrene);
- BTEX;
- Isopropylbenzene;
- Propylbenzene;
- 1,2,4- and 1,3,5-trimethylbenzene; and
- Styrene.

Approach to saturation limits

The CLEA model includes a traffic light colour system to highlight when saturated soil conditions have potentially been exceeded for the vapour pathways during calculation of assessment criteria. The colours represent:

- Green: the assessment criteria do not exceed the saturated soil concentration.
- Amber: the assessment criteria exceed the saturated soil concentration but the contribution of the indoor and outdoor vapour pathway to total exposure is less than 10% and will not significantly affect the assessment criteria.
- Red: the assessment criteria exceed the saturated soil concentration and the contribution of the indoor and outdoor vapour pathway to total exposure is greater than 10% and will significantly affect the assessment criteria.

Hydrock have not applied any further calculations or assessment in relation to saturation limits during GAC derivation, with the CLEA-modelled GAC being presented as the GAC. Consideration of saturation limits is undertaken during the data assessment stage.

References

CL:AIRE, 2010. 'The EIC/AGS/CL:AIRE Soil Generic Assessment Criteria for Human Health Risk Assessment'. Environmental Industries Commission, The Association of Geotechnical and Geoenvironmental Specialists and Contaminated Land: Applications in Real Environment.

CL:AIRE, 2014. 'Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination', Revision 2, DEFRA research project SP1010. Contaminated Land: Applications in Real Environment

CL:AIRE, 2021. C4SL Phase 2 Technical Reports for tetrachloroethene, trichloroethene and vinyl chloride. Contaminated Land: Applications in Real Environment.

EA, 2009a. 'Science Reports SC050021 – SGV and TOX reports for: benzene, toluene, ethylbenzene, xylene, arsenic, nickel, mercury, selenium, cadmium, inorganic cyanide, phenol, dioxins, furans and dioxin-like PCBs'; 'Supplementary information for the derivation of SGV for: benzene, toluene, ethylbenzene, xylene, arsenic, nickel, mercury, selenium, cadmium, inorganic cyanide, phenol, dioxins, furans and dioxin-like PCBs', and 'Contaminants in soil: updated collation of toxicological data and intake values for humans: benzene, toluene, ethylbenzene, xylene, arsenic, nickel, mercury, selenium, cadmium, inorganic cyanide, phenol, dioxins, furans and dioxin-like PCBs'. Environment Agency.

EA, 2009b. 'Science Report – SC050021/SR2. Human health toxicological assessment of contaminants in soil'. Environment Agency.

EA, 2009c. 'Science Report – SC050021/SR3. Updated technical background to the CLEA model'. Environment Agency.

EA, 2009d. 'Science Report – SC050021/SR4. CLEA Software (version 1.05) Handbook'. Environment Agency.

IRIS, 2016. 'Toxicological Review of Trimethylbenzenes'. Integrated Risk Information System, National Centre for Environmental Assessment, office of Research and Development, U.S. Environmental Protection Agency.

LQM/CIEH, 2009. LQM/CIEH Generic Assessment Criteria for Human Health Risk Assessment, second edition. Nathanial, C. P., McCaffrey, C., Ashmore, M., Cheng, Y., Gillet, A. G., Ogden, R. C. and Scott, D.

LQM/CIEH, 2015. 'The LQM/CIEH S4ULs for Human Health Risk Assessment'. Nathanial, C. P., McCaffrey, C., Gillet, A. G., Ogden, R. C. and Nathanial, J. F.

ORNL, 1984. 'ORNL-5786. A Review and Analysis of Parameters for Assessing Transport of Environmentally released Radionuclides through Agriculture'. Oak Ridge National Laboratory.

RIVM, 2001. RIVM Report 711701 025 'HCV Re-evaluation of human-toxicological maximum-permissible risk levels'. National Institute of Public Health and the Environment.

Human health GQRA

Assessment of Chemicals of Potential Concern to Human Health

Risk parameter:	Default - Human Health - POSpark (1%SOM)
Client:	Bewley Homes
Site:	Ashton Keynes
Job no.:	28470
Lab. report no(s).:	23-10755.1 and 23-10664.0

Data Filters

Zone	S
Strata	KC
Depth Min (m bgl)	0
Depth Max (m bgl)	9
Dataset mean SOM%	1.38
Scenario SOM%	1

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 @1% SOM	GAC	GAC Source	Strata	BH102	BH105
														Date	17/08/2023	17/08/2023
														Zone	S	S
														Location	BH102	BH105
														Depth (m bgl)	9	8.5
-	**Asbestos**															
P1020	Asbestos Identified	text	Y/N	69	-	-	-	-	No. of detects:	0	-	-	-		N	N
P1889	Asbestos Screen Name	text		12	-	-	-	-	-		-	-	-			
P1880	Asbestos Containing Material Types Detected (ACM)	text		18	-	-	-	-	-		-	-	-			
o	**Hydrock Default Suite - FOC / SOM / pH**										-					
P1085	FOC (dimensionless)	[]	0.001	2	0.006	0.010	0.008	0.008	0.00		-	-	-		0.006	0.01
-	SOM (calculated)	%	0.1724	2	1.03	1.72	1.38	1.38	0.49		-	-	-		1.0344	1.724
P1334	pH (su)	pH Units	0.1	2	7.90	8.00	7.95	7.95	0.07		-	-	-		8	7.9
-	**Hydrock Default Suite - Metals & PAH**															
7440-38-2	Arsenic	mg/kg	2	2	5.00	6.00	5.50	5.50	0.71	0	NR	170	C4SL - CL:AIRE 2014		6	5
7440-41-7	Beryllium	mg/kg	0.5	2	0.50	0.50	0.50	0.50	0.00	0	NR	63	Hydrock Derived		<0.5	0.5
7440-42-8	Boron	mg/kg	1	2	1.00	1.60	1.30	1.30	0.42	0	NR	46000	Hydrock Derived		1.6	<1
7440-43-9	Cadmium	mg/kg	0.2	2	0.20	1.40	0.80	0.80	0.85	0	NR	880	C4SL - CL:AIRE 2014		1.4	<0.2
16065-83-1	Chromium (III)	mg/kg	2	2	7.00	8.00	7.50	7.50	0.71	0	NR	27000	Hydrock Derived		8	7
18540-29-9	Chromium (VI)	mg/kg	2	2	2.00	2.00	2.00	2.00	0.00	0	NR	250	C4SL - CL:AIRE 2014		<2	<2
7440-50-8	Copper	mg/kg	4	2	9.00	16.00	12.50	12.50	4.95	0	NR	44000	Hydrock Derived		9	16
7439-92-1	Lead	mg/kg	3	2	7.00	7.00	7.00	7.00	0.00	0	NR	1300	C4SL - CL:AIRE 2014		7	7
7439-97-6	Mercury, inorganic	mg/kg	1	2	1.00	1.00	1.00	1.00	0.00	0	NR	240	Hydrock Derived		<1	<1
7440-02-0	Nickel	mg/kg	3	2	12.00	14.00	13.00	13.00	1.41	0	NR	800	Hydrock Derived		14	12
7782-49-2	Selenium	mg/kg	2	2	2.00	2.00	2.00	2.00	0.00	0	NR	1800	Hydrock Derived		<2	<2
7440-62-2	Vanadium	mg/kg	1	2	11.00	11.00	11.00	11.00	0.00	0	NR	5000	Hydrock Derived		11	11
7440-66-6	Zinc	mg/kg	3	2	36.00	190.00	113.00	113.00	108.89	0	NR	170000	Hydrock Derived		190	36
P1095	Cyanide (free)	mg/kg	1	2	1.00	1.00	1.00	1.00	0.00	0	NR	24	Acute Risk - SoBRA 2020		<1	<1
P1186	Total Phenols (Monohydric)	mg/kg	2	2	2.00	2.00	2.00	2.00	0.00	0	24237	440	Hydrock Derived		<2	<2
83-32-9	Acenaphthene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	57	29000	Hydrock Derived		<0.1	<0.1
208-96-8	Acenaphthylene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	86	29000	Hydrock Derived		<0.1	<0.1
120-12-7	Anthracene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	1.17	150000	Hydrock Derived		<0.1	<0.1
56-55-3	Benz(a)anthracene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	1.71	49	Hydrock Derived		<0.1	<0.1
50-32-8	Benzo(a)pyrene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	0.91	21	C4SL - CL:AIRE 2014		<0.1	<0.1
205-99-2	Benzo(b)fluoranthene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	1.22	13	Hydrock Derived		<0.1	<0.1
191-24-2	Benzo(ghi)perylene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	0.02	1400	Hydrock Derived		<0.1	<0.1
207-08-9	Benzo(k)fluoranthene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	0.69	370	Hydrock Derived		<0.1	<0.1
218-01-9	Chrysene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	0.44	93	Hydrock Derived		<0.1	<0.1
53-70-3	Dibenz(ah)anthracene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	0.004	1.1	Hydrock Derived		<0.1	<0.1
206-44-0	Fluoranthene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	19	6300	Hydrock Derived		<0.1	<0.1
86-73-7	Fluorene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	31	20000	Hydrock Derived		<0.1	<0.1
193-39-5	Indeno(123cd)pyrene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	0.06	150	Hydrock Derived		<0.1	<0.1
91-20-3	Naphthalene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	76	1100	Hydrock Derived		<0.1	<0.1
85-01-8	Phenanthrene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	36	6200	Hydrock Derived		<0.1	<0.1
129-00-0	Pyrene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	2.2	15000	Hydrock Derived		<0.1	<0.1
P1310	PAH 16 Total	mg/kg	1.6	2	1.60	1.60	1.60	1.60	0.00			-			<1.6	<1.6

Legend:

TS	Topsoil
MG	Made Ground
TS	Topsoil
RTS	Relict Topsoil
SD	Superficial Deposits
NMS	Northmorr Sand and Gravel

<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

Risk parameter:	Default - Human Health - POSresi (1%SOM)
Client:	Bewley Homes
Site:	Ashton Keynes
Job no.:	28470
Lab. report no(s).:	23-10755.1 and 23-10664.0

Data Filters

Zone	S
Strata	KC
Depth Min (m bgl)	0
Depth Max (m bgl)	9
Dataset mean SOM%	1.38
Scenario SOM%	1

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 @1% SOM	GAC	GAC Source	Strata	17/08/2023	17/08/2023
														Date	17/08/2023	17/08/2023
														Zone	S	S
														Location	BH102	BH105
														Depth (m bgl)	9	8.5
-	**Asbestos**															
P1020	Asbestos Identified	text	Y/N	67	-	-	-	-	No. of detects:	0	-	-	-		N	N
P1889	Asbestos Screen Name	text		12	-	-	-	-	-		-	-	-			
P1880	Asbestos Containing Material Types Detected (ACM)	text		18	-	-	-	-	-		-	-	-			
0	**Hydrock Default Suite - FOC / SOM / pH**										-					
P1085	FOC (dimensionless)	fl	0.001	2	0.006	0.010	0.008	0.008	0.00		-	-	-		0.006	0.01
-	SOM (calculated)	%	0.1724	2	1.03	1.72	1.38	1.38	0.49		-	-	-		1.0344	1.724
P1334	pH (su)	pH Units	0.1	2	7.90	8.00	7.95	7.95	0.07		-	-	-		8	7.9
-	**Hydrock Default Suite - Metals & PAH**															
7440-38-2	Arsenic	mg/kg	2	2	5.00	6.00	5.50	5.50	0.71	0	NR	79	C4SL - CL:AIRE 2014		6	5
7440-41-7	Beryllium	mg/kg	0.5	2	0.50	0.50	0.50	0.50	0.00	0	NR	2.2	Hydrock Derived		<0.5	0.5
7440-42-8	Boron	mg/kg	1	2	1.00	1.60	1.30	1.30	0.42	0	NR	21000	Hydrock Derived		1.6	<1
7440-43-9	Cadmium	mg/kg	0.2	2	0.20	1.40	0.80	0.80	0.85	0	NR	220	C4SL - CL:AIRE 2014		1.4	<0.2
16065-83-1	Chromium (III)	mg/kg	2	2	7.00	8.00	7.50	7.50	0.71	0	NR	1500	Hydrock Derived		8	7
18540-29-9	Chromium (VI)	mg/kg	2	2	2.00	2.00	2.00	2.00	0.00	0	NR	23	C4SL - CL:AIRE 2014		<2	<2
7440-50-8	Copper	mg/kg	4	2	9.00	16.00	12.50	12.50	4.95	0	NR	12000	Hydrock Derived		9	16
7439-92-1	Lead	mg/kg	3	2	7.00	7.00	7.00	7.00	0.00	0	NR	630	C4SL - CL:AIRE 2014		7	7
7439-97-6	Mercury, inorganic	mg/kg	1	2	1.00	1.00	1.00	1.00	0.00	0	NR	120	Hydrock Derived		<1	<1
7440-02-0	Nickel	mg/kg	3	2	12.00	14.00	13.00	13.00	1.41	0	NR	230	Hydrock Derived		14	12
7782-49-2	Selenium	mg/kg	2	2	2.00	2.00	2.00	2.00	0.00	0	NR	1100	Hydrock Derived		<2	<2
7440-62-2	Vanadium	mg/kg	1	2	11.00	11.00	11.00	11.00	0.00	0	NR	2000	Hydrock Derived		11	11
7440-66-6	Zinc	mg/kg	3	2	36.00	190.00	113.00	113.00	108.89	0	NR	81000	Hydrock Derived		190	36
P1095	Cyanide (free)	mg/kg	1	2	1.00	1.00	1.00	1.00	0.00	0	NR	24	Acute Risk - SoBRA 2020		<1	<1
P1186	Total Phenols (Monohydric)	mg/kg	2	2	2.00	2.00	2.00	2.00	0.00	0	24237	440	Hydrock Derived		<2	<2
83-32-9	Acenaphthene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	57	15000	Hydrock Derived		<0.1	<0.1
208-96-8	Acenaphthylene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	86	15000	Hydrock Derived		<0.1	<0.1
120-12-7	Anthracene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	1.17	74000	Hydrock Derived		<0.1	<0.1
56-55-3	Benz(a)anthracene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	1.71	29	Hydrock Derived		<0.1	<0.1
50-32-8	Benzo(a)pyrene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	0.91	10	C4SL - CL:AIRE 2014		<0.1	<0.1
205-99-2	Benzo(b)fluoranthene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	1.22	7.2	Hydrock Derived		<0.1	<0.1
191-24-2	Benzo(ghi)perylene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	0.02	640	Hydrock Derived		<0.1	<0.1
207-08-9	Benzo(k)fluoranthene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	0.69	190	Hydrock Derived		<0.1	<0.1
218-01-9	Chrysene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	0.44	57	Hydrock Derived		<0.1	<0.1
53-70-3	Dibenz(ah)anthracene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	0.004	0.57	Hydrock Derived		<0.1	<0.1
206-44-0	Fluoranthene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	19	3100	Hydrock Derived		<0.1	<0.1
86-73-7	Fluorene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	31	9900	Hydrock Derived		<0.1	<0.1
193-39-5	Indeno(123cd)pyrene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	0.06	82	Hydrock Derived		<0.1	<0.1
91-20-3	Naphthalene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	76	3900	Hydrock Derived		<0.1	<0.1
85-01-8	Phenanthrene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	36	3100	Hydrock Derived		<0.1	<0.1
129-00-0	Pyrene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	2.2	7400	Hydrock Derived		<0.1	<0.1
P1310	PAH 16 Total	mg/kg	1.6	2	1.60	1.60	1.60	1.60	0.00			-			<1.6	<1.6

Legend:

TS	Topsoil
MG	Made Ground
MGS	Made Ground Surfacing
MGSB	Made Ground Subbase
TS	Topsoil
RTS	Relict Topsoil
SP	Stockpile

<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 - POSpark (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	S
Strata	MG
Depth Min (m bgl)	0
Depth Max (m bgl)	9
Dataset mean SOM%	6.36
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
-	**Asbestos**												
P1020	Asbestos Identified	text	Y/N	68	-	-	-	-	No. of detects:	2	-	-	-
P1889	Asbestos Screen Name	text		13	-	-	-	-	-		-	-	-
P1935	Asbestos Quant. Total	%	0.001	2	0.001	0.001	0.001	0.001	No. > LOD:	0	-	-	-
P1880	Asbestos Containing Material Types Detected (ACM)	text		19	-	-	-	-	-		-	-	-
o	**Hydrock Default Suite - FOC / SOM / pH**										-		
P1085	FOC (dimensionless)	[]	0.001	16	0.003	0.072	0.037	0.040	0.02		-	-	-
-	SOM (calculated)	%	0.1724	16	0.53	12.41	6.36	6.90	3.77		-	-	-
P1334	pH (su)	pH Units	0.1	16	7.60	9.70	8.18	8.05	0.55		-	-	-
-	**Hydrock Default Suite - Metals & PAH**												
7440-38-2	Arsenic	mg/kg	2	15	8.00	21.00	14.09	13.00	4.50	0	NR	170	C4SL - CL:AIRE 2014
7440-41-7	Beryllium	mg/kg	0.5	15	0.13	1.10	0.60	0.50	0.24	0	NR	63	Hydrock Derived
7440-42-8	Boron	mg/kg	1	15	0.60	1.30	1.01	1.00	0.20	0	NR	46000	Hydrock Derived
7440-43-9	Cadmium	mg/kg	0.2	15	0.20	0.70	0.30	0.20	0.16	0	NR	880	C4SL - CL:AIRE 2014
16065-83-1	Chromium (III)	mg/kg	2	15	7.00	29.00	15.48	13.00	6.52	0	NR	27000	Hydrock Derived
18540-29-9	Chromium (VI)	mg/kg	2	15	1.20	2.00	1.79	2.00	0.37	0	NR	250	C4SL - CL:AIRE 2014
7440-47-3	Chromium (Total)	mg/kg		4	8.10	25.00	16.53	16.50	8.23			-	
7440-50-8	Copper	mg/kg	4	15	4.70	36.00	15.95	15.00	7.48	0	NR	44000	Hydrock Derived
7439-92-1	Lead	mg/kg	3	16	8.00	781.00	83.13	24.50	189.63	0	NR	1300	C4SL - CL:AIRE 2014
7439-97-6	Mercury, inorganic	mg/kg	1	16	0.30	1.00	0.83	1.00	0.30	0	NR	240	Hydrock Derived
7440-02-0	Nickel	mg/kg	3	16	3.00	35.00	10.35	8.50	7.32	0	NR	800	Hydrock Derived
7782-49-2	Selenium	mg/kg	2	16	1.00	2.00	1.75	2.00	0.45	0	NR	1800	Hydrock Derived
7440-62-2	Vanadium	mg/kg	1	16	13.00	47.00	26.44	25.50	10.24	0	NR	5000	Hydrock Derived
7440-66-6	Zinc	mg/kg	3	16	15.00	318.00	72.88	47.50	74.39	0	NR	170000	Hydrock Derived
P1095	Cyanide (free)	mg/kg	1	16	1.00	1.00	1.00	1.00	0.00	0	NR	24	Acute Risk - SoBRA 2020
P1186	Total Phenols (Monohydric)	mg/kg	2	16	1.00	4.80	1.94	2.00	0.89	0	70308	1300	Hydrock Derived
83-32-9	Acenaphthene	mg/kg	0.1	16	0.05	3.06	0.46	0.10	1.01	0	336	30000	Hydrock Derived
208-96-8	Acenaphthylene	mg/kg	0.1	16	0.05	0.22	0.10	0.10	0.04	0	506	30000	Hydrock Derived
120-12-7	Anthracene	mg/kg	0.1	16	0.05	8.95	1.15	0.10	2.75	0	6.96	150000	Hydrock Derived
56-55-3	Benz(a)anthracene	mg/kg	0.1	16	0.05	21.70	3.00	0.10	6.55	0	10.27	62	Hydrock Derived
50-32-8	Benzo(a)pyrene	mg/kg	0.1	16	0.05	14.60	2.37	0.10	4.83	0	5.46	21	C4SL - CL:AIRE 2014
205-99-2	Benzo(b)fluoranthene	mg/kg	0.1	16	0.05	20.80	3.14	0.10	6.48	2	7.29	16	Hydrock Derived
191-24-2	Benzo(ghi)perylene	mg/kg	0.1	16	0.05	7.08	1.18	0.10	2.24	0	0.09	1600	Hydrock Derived
207-08-9	Benzo(k)fluoranthene	mg/kg	0.1	16	0.05	5.35	0.90	0.10	1.73	0	4.12	440	Hydrock Derived
218-01-9	Chrysene	mg/kg	0.1	16	0.05	20.80	2.87	0.10	6.25	0	2.64	120	Hydrock Derived
53-70-3	Dibenz(ah)anthracene	mg/kg	0.1	16	0.05	2.13	0.37	0.10	0.62	2	0.024	1.4	Hydrock Derived
206-44-0	Fluoranthene	mg/kg	0.1	16	0.05	43.70	6.49	0.10	14.50	0	113	6400	Hydrock Derived
86-73-7	Fluorene	mg/kg	0.1	16	0.05	2.62	0.39	0.10	0.83	0	183	20000	Hydrock Derived
193-39-5	Indeno(123cd)pyrene	mg/kg	0.1	16	0.05	8.14	1.35	0.10	2.65	0	0.37	180	Hydrock Derived
91-20-3	Naphthalene	mg/kg	0.1	16	0.05	0.13	0.09	0.10	0.02	0	432	2300	Hydrock Derived
85-01-8	Phenanthrene	mg/kg	0.1	16	0.05	31.20	4.01	0.10	9.91	0	214	6300	Hydrock Derived
129-00-0	Pyrene	mg/kg	0.1	16	0.05	36.00	5.23	0.10	11.36	0	13.2	15000	Hydrock Derived
P1310	PAH 16 Total	mg/kg	1.6	12	1.60	212.00	40.82	1.60	81.04			-	
o	**TPH fractions**												
P1407	TPH ali EC05-EC06	mg/kg	0.01	12	0.00	0.01	0.01	0.01	0.004	0	1150	180000	Hydrock Derived
P1408	TPH ali >EC06-EC08	mg/kg	0.05	12	0.00	0.05	0.04	0.05	0.019	0	736	320000	Hydrock Derived
P1409	TPH ali >EC08-EC10	mg/kg	2	12	0.00	2.00	1.67	2.00	0.778	0	451	21000	Hydrock Derived
P1410	TPH ali >EC10-EC12	mg/kg	2	12	1.00	2.00	1.83	2.00	0.39	0	283	24000	Hydrock Derived
P1411	TPH ali >EC12-EC16	mg/kg	3	12	2.00	3.00	2.83	3.00	0.39	0	142	26000	Hydrock Derived

Date	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	10/05/18
Zone	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Location	BH105	TP102	TP104	TP106	TP109	TP112	TP112	TP113	TP113	TP114	TP117	HP110	HP110	TP01
Depth (m bgl)	0.2	0.5	0.2	0.2	0.2	0.4	0.7	0.3	0.5	0.3	0.2	0.3	0.5	0.2
Strata	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG
	N	N	N	N	Y	N	N	N		Y	N	N	N	N
					<0.001					<0.001				
					Chrysotile present in microscopic insulation					Chrysotile present in bundles				
	0.068	0.053	0.043	0.05	0.055	0.05	0.029	0.052		0.072	0.025	0.025	0.037	0.0031
	11.7232	9.1372	7.4132	8.62	9.482	8.62	4.9996	8.9648		12.4128	4.31	4.31	6.3788	0.53444
	7.6	7.7	8.1	7.9	7.8	7.9	7.8	7.7		9.7	8	8.2	8.1	8.4
	9	13	8	15	21		20	20		13	12	17	12	8.6
	<0.5	0.7	<0.5	0.8	1.1		0.7	0.9		0.5	<0.5	0.6	<0.5	0.13
	<1	1.3	<1	<1	1.2		<1	<1		<1	<1	<1	<1	0.6
	0.5	0.4	0.3	<0.2	0.5		<0.2	0.7		0.2	0.2	0.3	<0.2	<0.2
	13	17	7	17	29		18	22		10	13	11	10	8.2
	<2	<2	<2	<2	<2		<2	<2		<2	<2	<2	<2	<1.2
														8.1
	17	16	9	15	36		17	22		25	13	14	12	4.7
	105	36	8	25	781	8	135	69		34	21	24	12	8
	<1	<1	<1	<1	<1	<1	<1	<1		<1	<1	<1	<1	<0.3
	7	8	4	10	14	3	13	12		8	8	35	9	5
	<2	<2	<2	<2	<2	<2	<2	<2		<2	<2	<2	<2	<1
	20	30	14	32	47	14	36	39		26	25	20	20	13
	157	69	36	41	318	15	45	118		47	56	48	24	40
	<1	<1	<1	<1	<1	<1	<1	<1		<1	<1	<1	<1	<1
	<2	<2	<2	<2	4.8	<2	<2	2.2		<2	<2	<2	<2	<1
	3.06	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.14		3.04	<0.1	<0.1	<0.1	<0.05
	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		0.22	<0.1	<0.1	<0.1	<0.05
	7.36	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.6		8.95	<0.1	<0.1	<0.1	<0.05
	21.7	<0.1	<0.1	<0.1	0.18	<0.1	<0.1	5.04		16.7	<0.1	<0.1	<0.1	<0.05
	13.8	<0.1	<0.1	<0.1	0.17	<0.1	<0.1	4.79		14.6	<0.1	<0.1	<0.1	<0.05
	20.8	<0.1	<0.1	<0.1	0.21	<0.1	<0.1	6.06		17.1	<0.1	<0.1	<0.1	<0.05
	5.97	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	2.8		7.08	<0.1	<0.1	<0.1	<0.05
	5.35	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	1.65		4.9	<0.1	<0.1	<0.1	<0.05
	20.8	<0.1	<0.1	<0.1	0.18	<0.1	<0.1	5.1		15.8	<0.1	<0.1	<0.1	<0.05
	2.13	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.56		1.65	<0.1	<0.1	<0.1	<0.05
	42.1	0.11	<0.1	<0.1	0.31	<0.1	<0.1	10		43.7	<0.1	<0.1	<0.1	<0.05
	2.42	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		2.62	<0.1	<0.1	<0.1	<0.05
	7.35	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	3.22		8.14	<0.1	<0.1	<0.1	<0.05
	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		0.13	<0.1	<0.1	<0.1	<0.05
	27.3	<0.1	<0.1	<0.1	0.14	<0.1	<0.1	2.69		31.2	<0.1	<0.1	<0.1	<0.05
	30.8	<0.1	<0.1	<0.1	0.3	<0.1	<0.1	9.72		36	<0.1	<0.1	<0.1	<0.05
	211	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	52.4		212	<1.6	<1.6	<1.6	
			<0.01	<0.01	<0.01		<0.01	<0.01	<0.01		<0.01	<0.01	<0.01	
			<0.05	<0.05	<0.05		<0.05	<0.05	<0.05		<0.05	<0.05	<0.05	
			<2	<2	<2		<2	<2	<2		<2	<2	<2	
			<2	<2	<2		<2	<2	<2		<2	<2	<2	
			<3	<3	<3		<3	<3	<3		<3	<3	<3	

Assessment of Chemicals of Potential Concern to Human Health

Risk parameter:	Default - Human Health - POSpark (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	S
Strata	MG
Depth Min (m bgl)	0
Depth Max (m bgl)	9

Dataset mean SOM% 6.36

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	Date	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	10/05/18
														Zone	S	S	S	S	S	S	S	S	S	S	S	S	S
														Location	BH105	TP102	TP104	TP106	TP109	TP112	TP112	TP113	TP113	TP114	TP117	HP110	HP110	TP01
														Depth (m bgl)	0.2	0.5	0.2	0.2	0.2	0.4	0.7	0.3	0.5	0.3	0.2	0.3	0.5	0.2
														Strata	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG
P1938	TPH ali >EC16-EC35	mg/kg	10	10	10.00	10.00	10.00	10.00	0.00	0	51	490000	Hydrock Derived				<10	<10	<10		<10	<10	<10		<10	<10	<10	
P1415	TPH ali >EC35-EC44	mg/kg	10	12	8.40	10.00	9.73	10.00	0.62	0	51	490000	Hydrock Derived				<10	<10	<10		<10	<10	<10		<10	<10	<10	
P1420	TPH ali >EC5-EC44	mg/kg	30	10	30.00	30.00	30.00	30.00	0.00			-					<30	<30	<30		<30	<30	<30		<30	<30	<30	
P1441	TPH aro EC05-EC07	mg/kg	0.01	12	0.00	0.01	0.01	0.01	0.00	0	4708	92000	Hydrock Derived				<0.01	<0.01	<0.01		<0.01	<0.01	<0.01		<0.01	<0.01	<0.01	
P1355	TPH aro >EC07-EC08	mg/kg	0.05	12	0.00	0.05	0.04	0.05	0.02	0	4357	100000	Hydrock Derived				<0.05	<0.05	<0.05		<0.05	<0.05	<0.05		<0.05	<0.05	<0.05	
P1356	TPH aro >EC08-EC10	mg/kg	2	12	0.00	2.00	1.67	2.00	0.78	0	3578	9300	Hydrock Derived				<2	<2	<2		<2	<2	<2		<2	<2	<2	
P1357	TPH aro >EC10-EC12	mg/kg	2	12	1.00	2.00	1.83	2.00	0.39	0	2149	10000	Hydrock Derived				<2	<2	<2		<2	<2	<2		<2	<2	<2	
P1358	TPH aro >EC12-EC16	mg/kg	2	12	2.00	7.00	2.58	2.00	1.51	0	1004	10000	Hydrock Derived				<2	<2	<2		<2	4	7		<2	<2	<2	
P1359	TPH aro >EC16-EC21	mg/kg	3	10	3.00	123.00	19.00	3.00	38.64	0	321	7800	Hydrock Derived				<3	<3	<3		<3	43	123		<3	<3	<3	
P1360	TPH aro >EC21-EC35	mg/kg	10	12	10.00	292.00	54.08	10.00	89.49	0	29	7900	Hydrock Derived				<10	<10	<10		<10	179	292		<10	<10	<10	
P1362	TPH aro >EC35-EC44	mg/kg	10	12	10.00	25.00	12.00	10.00	4.84	0	29	7900	Hydrock Derived				<10	<10	<10		<10	<10	<10		<10	<10	<10	
P1941	TPH aro >EC5-EC44	mg/kg	30	10	30.00	421.00	88.60	30.00	131.89			-					<30	<30	<30		<30	225	421		<30	<30	<30	
P1373	Total TPH >EC5-EC44	mg/kg	60	10	60.00	421.00	112.60	60.00	120.13			-					<60	<60	<60		<60	225	421		<60	<60	<60	
o	**VOCs - BTEX & MTBE**																											
71-43-2	Benzene	mg/kg	< 2	11	0.00	0.00	0.00	0.00	0.00	0	4708	230	C4SL - CL:AIRE 2014				<0.002	<0.002	<0.002		<0.002	<0.002	<0.002		<0.002	<0.002	<0.002	
108-88-3	Toluene	mg/kg	< 5	11	0.00	0.01	0.00	0.01	0.00	0	4357	100000	Hydrock Derived				<0.005	<0.005	<0.005		<0.005	<0.005	<0.005		<0.005	<0.005	<0.005	
100-41-4	Ethylbenzene	mg/kg	< 2	11	0.00	0.00	0.00	0.00	0.00	0	2844	27000	Hydrock Derived				<0.002	<0.002	<0.002		<0.002	<0.002	<0.002		<0.002	<0.002	<0.002	
95-47-6	Xylene, o-	mg/kg	< 2	11	0.00	0.00	0.00	0.00	0.00	0	2618	33000	Hydrock Derived				<0.002	<0.002	<0.002		<0.002	<0.002	<0.002		<0.002	<0.002	<0.002	
1330-20-7	Xylene, p- (or combined m & p)	mg/kg	< 2	11	0.00	0.00	0.00	0.00	0.00	0	3167	31000	Hydrock Derived				<0.002	<0.002	<0.002		<0.002	<0.002	<0.002		<0.002	<0.002	<0.002	
1634-04-4	MTBE	mg/kg	< 5	11	0.00	0.01	0.00	0.01	0.00	0	62749	120000	Hydrock Derived				<0.005	<0.005	<0.005		<0.005	<0.005	<0.005		<0.005	<0.005	<0.005	
	TPH Additivity Check			**HAZARD QUOTIENTS FOR EACH FRACTION**																								
													Aliphatics >EC5-EC6				5.55556E-08	5.55556E-08	5.55556E-08		5.55556E-08	5.55556E-08	5.55556E-08		5.55556E-08	5.55556E-08	5.55556E-08	
													Aliphatics >EC6-EC8				1.5625E-07	1.5625E-07	1.5625E-07		1.5625E-07	1.5625E-07	1.5625E-07		1.5625E-07	1.5625E-07	1.5625E-07	
													Aliphatics >EC8-EC10				9.52381E-05	9.52381E-05	9.52381E-05		9.52381E-05	9.52381E-05	9.52381E-05		9.52381E-05	9.52381E-05	9.52381E-05	
													Aliphatics >EC10-EC12				8.33333E-05	8.33333E-05	8.33333E-05		8.33333E-05	8.33333E-05	8.33333E-05		8.33333E-05	8.33333E-05	8.33333E-05	
													Aliphatics >EC12-EC16				0.000115385	0.000115385	0.000115385		0.000115385	0.000115385	0.000115385		0.000115385	0.000115385	0.000115385	
													Aliphatics >EC16-EC35				2.04082E-05	2.04082E-05	2.04082E-05		2.04082E-05	2.04082E-05	2.04082E-05		2.04082E-05	2.04082E-05	2.04082E-05	
													Aliphatics >EC35-EC44				2.04082E-05	2.04082E-05	2.04082E-05		2.04082E-05	2.04082E-05	2.04082E-05		2.04082E-05	2.04082E-05	2.04082E-05	
													Aromatics EC5-EC7				1.08696E-07	1.08696E-07	1.08696E-07		1.08696E-07	1.08696E-07	1.08696E-07		1.08696E-07	1.08696E-07	1.08696E-07	
													Aromatics >EC7-EC8				0.0000005	0.0000005	0.0000005		0.0000005	0.0000005	0.0000005		0.0000005	0.0000005	0.0000005	
													Aromatics >EC8-EC10				0.000215054	0.000215054	0.000215054		0.000215054	0.000215054	0.000215054		0.000215054	0.000215054	0.000215054	
													Aromatics >EC10-EC12				0.0002	0.0002	0.0002		0.0002	0.0002	0.0002		0.0002	0.0002	0.0002	
													Aromatics >EC12-EC16				0.0002	0.0002	0.0002		0.0002	0.0004	0.0007		0.0002	0.0002	0.0002	
													Aromatics >EC16-EC21				0.000384615	0.000384615	0.000384615		0.000384615	0.005512821	0.015769231		0.000384615	0.000384615	0.000384615	
													Aromatics >EC21-EC35				0.001265823	0.001265823	0.001265823		0.001265823	0.022658228	0.036962025		0.001265823	0.001265823	0.001265823	
													Aromatics >EC35-EC44				0.001265823	0.001265823	0.001265823		0.001265823	0.001265823	0.001265823		0.001265823	0.001265823	0.001265823	
													Hazard Index for ali>C8-C16				**0.000293956**	**0.000293956**	**0.000293956**		**0.000293956**	**0.000293956**	**0.000293956**		**0.000293956**	**0.000293956**	**0.000293956**	
													Hazard Index for aro>C8-C16				**0.000615054**	**0.000615054**	**0.000615054**		**0.000615054**	**0.000815054**	**0.001115054**		**0.000615054**	**0.000615054**	**0.000615054**	
													Hazard Index for aro>C16-C35				**0.001650438**	**0.001650438**	**0.001650438**		**0.001650438**	**0.028171048**	**0.052731256**		**0.001650438**	**0.001650438**	**0.001650438**	

Considered additive: Aliphatics >EC8-EC10, Aliphatics >EC10-EC12, Aliphatics >EC12-EC16

Considered additive: Aromatics >EC8-EC10, Aromatics >EC10-EC12, Aromatics >EC12-EC16

Considered additive: Aromatics >EC16-EC21, Aromatics >EC21-EC35

Hazard Index table - HI or HQ greater than 1 highlighted with orange shading.

Legend:

TS	Topsoil	<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.
MG	Made Ground		
TS	Topsoil	0.02	Value greater than, or equal to, the generic assessment criterion (GAC).
RTS	Relict Topsoil	*'<10*	Value excluded from statistical analysis
SD	Superficial Deposits	*Y*	Text result
NMS	Northmoor Sand and Gravel	-	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

Risk parameter:	**Default - Human Health - POSpark (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	**S**
Strata	**MG**
Depth Min (m bgl)	**0**
Depth Max (m bgl)	**9**
Dataset mean SOM%	**6.36**
Scenario SOM%	**6**

Hydrock

TP04 0.2 | TP05 0.2 | TP05 0.5 | TP06 0.2 | CC111 0.65

/kg unless otherwise stated													10/05/18	10/05/18	10/05/18	10/05/18	23/08/23
													S	S	S	S	S
													TP04	TP05	TP05	TP06	CC111
													0.5	0.2	0.5	0.2	0.65
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**	MG	MG	MG	MG	MG
Asbestos																	
Asbestos Identified	text	Y/N	68	-	-	-	-	No. of detects:	2	-	-	-	N		N	N	N
Asbestos Screen Name	text		13	-	-	-	-	-		-	-	-					
Asbestos Quant. Total	%	0.001	2	0.001	0.001	0.001	0.001	No. > LOD:	0	-	-	-					
Asbestos Containing Material Types Detected (ACM)	text		19	-	-	-	-	-		-	-	-					
Hydrock Default Suite - FOC / SOM / pH										-							
FOC (dimensionless)	[]	0.001	16	0.003	0.072	0.037	0.040	0.02		-	-	-	0.0042		0.012	0.012	
SOM (calculated)	%	0.1724	16	0.53	12.41	6.36	6.90	3.77		-	-	-	0.72408		2.0688	2.0688	
pH (su)	pH Units	0.1	16	7.60	9.70	8.18	8.05	0.55		-	-	-	9.1		8.4	8.4	
Hydrock Default Suite - Metals & PAH																	
Arsenic	mg/kg	2	15	8.00	21.00	14.09	13.00	4.50	0	NR	170	C4SL - CL:AIRE 2014	8.8		15	19	
Beryllium	mg/kg	0.5	15	0.13	1.10	0.60	0.50	0.24	0	NR	63	Hydrock Derived	0.29		0.48	0.74	
Boron	mg/kg	1	15	0.60	1.30	1.01	1.00	0.20	0	NR	46000	Hydrock Derived	0.6		1.3	1.2	
Cadmium	mg/kg	0.2	15	0.20	0.70	0.30	0.20	0.16	0	NR	880	C4SL - CL:AIRE 2014	<0.2		<0.2	<0.2	
Chromium (III)	mg/kg	2	15	7.00	29.00	15.48	13.00	6.52	0	NR	27000	Hydrock Derived	11		21	25	
Chromium (VI)	mg/kg	2	15	1.20	2.00	1.79	2.00	0.37	0	NR	250	C4SL - CL:AIRE 2014	<1.2		<1.2	<1.2	
Chromium (Total)	mg/kg		4	8.10	25.00	16.53	16.50	8.23			-		11		22	25	
Copper	mg/kg	4	15	4.70	36.00	15.95	15.00	7.48	0	NR	44000	Hydrock Derived	12		9.6	17	
Lead	mg/kg	3	16	8.00	781.00	83.13	24.50	189.63	0	NR	1300	C4SL - CL:AIRE 2014	14		18	32	
Mercury, inorganic	mg/kg	1	16	0.30	1.00	0.83	1.00	0.30	0	NR	240	Hydrock Derived	<0.3		0.4	<0.3	
Nickel	mg/kg	3	16	3.00	35.00	10.35	8.50	7.32	0	NR	800	Hydrock Derived	6.7		9.9	13	
Selenium	mg/kg	2	16	1.00	2.00	1.75	2.00	0.45	0	NR	1800	Hydrock Derived	<1		<1	<1	
Vanadium	mg/kg	1	16	13.00	47.00	26.44	25.50	10.24	0	NR	5000	Hydrock Derived	18		30	39	
Zinc	mg/kg	3	16	15.00	318.00	72.88	47.50	74.39	0	NR	170000	Hydrock Derived	28		63	61	
Cyanide (free)	mg/kg	1	16	1.00	1.00	1.00	1.00	0.00	0	NR	24	Acute Risk - SoBRA 2020	<1		<1	<1	
Total Phenols (Monohydric)	mg/kg	2	16	1.00	4.80	1.94	2.00	0.89	0	70308	1300	Hydrock Derived	<1		<1	<1	
Acenaphthene	mg/kg	0.1	16	0.05	3.06	0.46	0.10	1.01	0	336	30000	Hydrock Derived	<0.05		<0.05	<0.05	
Acenaphthylene	mg/kg	0.1	16	0.05	0.22	0.10	0.10	0.04	0	506	30000	Hydrock Derived	<0.05		<0.05	<0.05	
Anthracene	mg/kg	0.1	16	0.05	8.95	1.15	0.10	2.75	0	6.96	150000	Hydrock Derived	0.47		<0.05	<0.05	
Benz(a)anthracene	mg/kg	0.1	16	0.05	21.70	3.00	0.10	6.55	0	10.27	62	Hydrock Derived	3.4		<0.05	<0.05	
Benzo(a)pyrene	mg/kg	0.1	16	0.05	14.60	2.37	0.10	4.83	0	5.46	21	C4SL - CL:AIRE 2014	3.6		<0.05	<0.05	
Benzo(b)fluoranthene	mg/kg	0.1	16	0.05	**20.80**	3.14	0.10	6.48	**2**	7.29	16	Hydrock Derived	5.1		<0.05	<0.05	
Benzo(ghi)perylene	mg/kg	0.1	16	0.05	7.08	1.18	0.10	2.24	0	0.09	1600	Hydrock Derived	2		<0.05	<0.05	
Benzo(k)fluoranthene	mg/kg	0.1	16	0.05	5.35	0.90	0.10	1.73	0	4.12	440	Hydrock Derived	1.5		<0.05	<0.05	
Chrysene	mg/kg	0.1	16	0.05	20.80	2.87	0.10	6.25	0	2.64	120	Hydrock Derived	3.1		<0.05	<0.05	
Dibenz(ah)anthracene	mg/kg	0.1	16	0.05	**2.13**	0.37	0.10	0.62	**2**	0.024	1.4	Hydrock Derived	0.49		<0.05	<0.05	
Fluoranthene	mg/kg	0.1	16	0.05	43.70	6.49	0.10	14.50	0	113	6400	Hydrock Derived	6.7		<0.05	<0.05	
Fluorene	mg/kg	0.1	16	0.05	2.62	0.39	0.10	0.83	0	183	20000	Hydrock Derived	<0.05		<0.05	<0.05	
Indeno(123cd)pyrene	mg/kg	0.1	16	0.05	8.14	1.35	0.10	2.65	0	0.37	180	Hydrock Derived	1.9		<0.05	<0.05	
Naphthalene	mg/kg	0.1	16	0.05	0.13	0.09	0.10	0.02	0	432	2300	Hydrock Derived	<0.05		<0.05	<0.05	
Phenanthrene	mg/kg	0.1	16	0.05	31.20	4.01	0.10	9.91	0	214	6300	Hydrock Derived	1.8		<0.05	<0.05	
Pyrene	mg/kg	0.1	16	0.05	36.00	5.23	0.10	11.36	0	13.2	15000	Hydrock Derived	5.9		<0.05	<0.05	
PAH 16 Total	mg/kg	1.6	12	1.60	212.00	40.82	1.60	81.04			-						
TPH fractions																	
TPH ali EC05-EC06	mg/kg	0.01	12	0.00	0.01	0.01	0.01	0.004	0	1150	180000	Hydrock Derived	<0.001	<0.001			<0.01
TPH ali >EC06-EC08	mg/kg	0.05	12	0.00	0.05	0.04	0.05	0.019	0	736	320000	Hydrock Derived	<0.001	<0.001			<0.05
TPH ali >EC08-EC10	mg/kg	2	12	0.00	2.00	1.67	2.00	0.778	0	451	21000	Hydrock Derived	<0.001	<0.001			<2
TPH ali >EC10-EC12	mg/kg	2	12	1.00	2.00	1.83	2.00	0.39	0	283	24000	Hydrock Derived	<1	<1			<2
TPH ali >EC12-EC16	mg/kg	3	12	2.00	3.00	2.83	3.00	0.39	0	142	26000	Hydrock Derived	<2	<2			<3

Risk parameter:	**Default - Human Health - POSpark (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	S
Strata	MG
Depth Min (m bgl)	0
Depth Max (m bgl)	9
Dataset mean SOM%	6.36
Scenario SOM%	6

Hydrock

TP04 0.5-0.5 | TP05 0.2-0.2 | TP05 0.5-0.5 | TP06 0.2-0.2 | CC111 0.65-0.65

/kg unless otherwise stated													10/05/18	10/05/18	10/05/18	10/05/18	23/08/23
													S	S	S	S	S
													TP04	TP05	TP05	TP06	CC111
													0.5	0.2	0.5	0.2	0.65
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**	MG	MG	MG	MG	MG
TPH ali >EC16-EC35	mg/kg	10	10	10.00	10.00	10.00	10.00	0.00	0	51	490000	Hydrock Derived	***N/A***	***N/A***			<10
TPH ali >EC35-EC44	mg/kg	10	12	8.40	10.00	9.73	10.00	0.62	0	51	490000	Hydrock Derived	<8.4	<8.4			<10
TPH ali >EC5-EC44	mg/kg	30	10	30.00	30.00	30.00	30.00	0.00			-						<30
TPH aro EC05-EC07	mg/kg	0.01	12	0.00	0.01	0.01	0.01	0.00	0	4708	92000	Hydrock Derived	<0.001	<0.001			<0.01
TPH aro >EC07-EC08	mg/kg	0.05	12	0.00	0.05	0.04	0.05	0.02	0	4357	100000	Hydrock Derived	<0.001	<0.001			<0.05
TPH aro >EC08-EC10	mg/kg	2	12	0.00	2.00	1.67	2.00	0.78	0	3578	9300	Hydrock Derived	<0.001	<0.001			<2
TPH aro >EC10-EC12	mg/kg	2	12	1.00	2.00	1.83	2.00	0.39	0	2149	10000	Hydrock Derived	<1	<1			<2
TPH aro >EC12-EC16	mg/kg	2	12	2.00	7.00	2.58	2.00	1.51	0	1004	10000	Hydrock Derived	<2	<2			<2
TPH aro >EC16-EC21	mg/kg	3	10	3.00	123.00	19.00	3.00	38.64	0	321	7800	Hydrock Derived					<3
TPH aro >EC21-EC35	mg/kg	10	12	10.00	292.00	54.08	10.00	89.49	0	29	7900	Hydrock Derived	61	37			<10
TPH aro >EC35-EC44	mg/kg	10	12	10.00	25.00	12.00	10.00	4.84	0	29	7900	Hydrock Derived	19	25			<10
TPH aro >EC5-EC44	mg/kg	30	10	30.00	421.00	88.60	30.00	131.89			-						<30
Total TPH >EC5-EC44	mg/kg	60	10	60.00	421.00	112.60	60.00	120.13			-						<60
VOCs - BTEX & MTBE																	
Benzene	mg/kg	< 2	11	0.00	0.00	0.00	0.00	0.00	0	4708	230	C4SL - CL:AIRE 2014	<0.000001	<0.000001			
Toluene	mg/kg	< 5	11	0.00	0.01	0.00	0.01	0.00	0	4357	100000	Hydrock Derived	<0.000001	<0.000001			
Ethylbenzene	mg/kg	< 2	11	0.00	0.00	0.00	0.00	0.00	0	2844	27000	Hydrock Derived	<0.000001	<0.000001			
Xylene, o-	mg/kg	< 2	11	0.00	0.00	0.00	0.00	0.00	0	2618	33000	Hydrock Derived	<0.000001	<0.000001			
Xylene, p- (or combined m & p)	mg/kg	< 2	11	0.00	0.00	0.00	0.00	0.00	0	3167	31000	Hydrock Derived	<0.000001	<0.000001			
MTBE	mg/kg	< 5	11	0.00	0.01	0.00	0.01	0.00	0	62749	120000	Hydrock Derived	<0.000001	<0.000001			
TPH Additivity Check			**HAZARD QUOTIENTS FOR EACH FRACTION**														
												Aliph	5.55556E-09	5.55556E-09			5.55556E-08
												Aliph	3.125E-09	3.125E-09			1.5625E-07
												Alipha	4.7619E-08	4.7619E-08			9.52381E-05
												Alipha	4.16667E-05	4.16667E-05			8.33333E-05
												Alipha	7.69231E-05	7.69231E-05			0.000115385
												Aliphat					2.04082E-05
												Aliphat	1.71429E-05	1.71429E-05			2.04082E-05
												Aro	1.08696E-08	1.08696E-08			1.08696E-07
												Arom	0.00000001	0.00000001			0.0000005
												Aroma	1.07527E-07	1.07527E-07			0.000215054
												Aroma	0.0001	0.0001			0.0002
												Aroma	0.0002	0.0002			0.0002
												Aroma					0.000384615
												Aroma	0.007721519	0.004683544			0.001265823
												Aromat	0.002405063	0.003164557			0.001265823
												Hazard Index	**0.000118637**	**0.000118637**			**0.000293956**
												Hazard Index	**0.000300108**	**0.000300108**			**0.000615054**
												Hazard Index f	**0.007721519**	**0.004683544**			**0.001650438**

Considered additive

Considered additive

Considered additive

Hazard Index table - HI or HQ greater than 1 highlighted with orange shading.

Legend:

TS	Topsoil	<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.
MG	Made Ground		
TS	Topsoil	0.02	Value greater than, or equal to, the generic assessment criterion (GAC).
RTS	Relict Topsoil	***'<10***	Value excluded from statistical analysis
SD	Superficial Deposits	***Y***	Text result
NMS	Northmoor Sand and Gravel	-	Represents a determinand that was not tested.
		*	represents a data point that is not included in the current filter settings

n:

Assessment of Chemicals of Potential Concern to Human Health

Risk parameter: Default - Human Health - residential without 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: S
Strata: MG
Depth Min (m bgl): 0
Depth Max (m bgl): 9

Dataset mean SOM%: 6.36
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
-	**Asbestos**												
P1020	Asbestos Identified	text	Y/N	68	-	-	-	-	No. of detects:	2	-	-	-
P1889	Asbestos Screen Name	text		13	-	-	-	-	-		-	-	-
P1935	Asbestos Quant. Total	%	0.001	2	0.001	0.001	0.001	0.001	No. > LOD:	0	-	-	-
P1880	Asbestos Containing Material Types Detected (ACM)	text		19	-	-	-	-	-		-	-	-
o	**Hydrock Default Suite - FOC / SOM / pH**										-		
P1085	FOC (dimensionless)	[]	0.001	16	0.003	0.072	0.037	0.040	0.02		-	-	-
-	SOM (calculated)	%	0.1724	16	0.53	12.41	6.36	6.90	3.77		-	-	-
P1334	pH (su)	pH Units	0.1	16	7.60	9.70	8.18	8.05	0.55		-	-	-
-	**Hydrock Default Suite - Metals & PAH**												
7440-38-2	Arsenic	mg/kg	2	15	8.00	21.00	14.09	13.00	4.50	0	NR	40	C4SL - CL:AIRE 2014
7440-41-7	Beryllium	mg/kg	0.5	15	0.13	1.10	0.60	0.50	0.24	0	NR	1.7	Hydrock Derived
7440-42-8	Boron	mg/kg	1	15	0.60	1.30	1.01	1.00	0.20	0	NR	11000	Hydrock Derived
7440-43-9	Cadmium	mg/kg	0.2	15	0.20	0.70	0.30	0.20	0.16	0	NR	150	C4SL - CL:AIRE 2014
16065-83-1	Chromium (III)	mg/kg	2	15	7.00	29.00	15.48	13.00	6.52	0	NR	890	Hydrock Derived
18540-29-9	Chromium (VI)	mg/kg	2	15	1.20	2.00	1.79	2.00	0.37	0	NR	21	C4SL - CL:AIRE 2014
7440-47-3	Chromium (Total)	mg/kg		4	8.10	25.00	16.53	16.50	8.23			-	
7440-50-8	Copper	mg/kg	4	15	4.70	36.00	15.95	15.00	7.48	0	NR	7100	Hydrock Derived
7439-92-1	Lead	mg/kg	3	16	8.00	**781.00**	83.13	24.50	189.63	1	NR	310	C4SL - CL:AIRE 2014
7439-97-6	Mercury, inorganic	mg/kg	1	16	0.30	1.00	0.83	1.00	0.30	0	NR	56	Hydrock Derived
7440-02-0	Nickel	mg/kg	3	16	3.00	35.00	10.35	8.50	7.32	0	NR	180	Hydrock Derived
7782-49-2	Selenium	mg/kg	2	16	1.00	2.00	1.75	2.00	0.45	0	NR	430	Hydrock Derived
7440-62-2	Vanadium	mg/kg	1	16	13.00	47.00	26.44	25.50	10.24	0	NR	1200	Hydrock Derived
7440-66-6	Zinc	mg/kg	3	16	15.00	318.00	72.88	47.50	74.39	0	NR	40000	Hydrock Derived
P1095	Cyanide (free)	mg/kg	1	16	1.00	1.00	1.00	1.00	0.00	0	NR	24	Acute Risk - SoBRA 2020
P1186	Total Phenols (Monohydric)	mg/kg	2	16	1.00	4.80	1.94	2.00	0.89	0	70308	690	Hydrock Derived
83-32-9	Acenaphthene	mg/kg	0.1	16	0.05	3.06	0.46	0.10	1.01	0	336	7400	Hydrock Derived
208-96-8	Acenaphthylene	mg/kg	0.1	16	0.05	0.22	0.10	0.10	0.04	0	506	7400	Hydrock Derived
120-12-7	Anthracene	mg/kg	0.1	16	0.05	8.95	1.15	0.10	2.75	0	6.96	38000	Hydrock Derived
56-55-3	Benz(a)anthracene	mg/kg	0.1	16	0.05	**21.70**	3.00	0.10	6.55	2	10.27	16	Hydrock Derived
50-32-8	Benzo(a)pyrene	mg/kg	0.1	16	0.05	**14.60**	2.37	0.10	4.83	2	5.46	5.3	C4SL - CL:AIRE 2014
205-99-2	Benzo(b)fluoranthene	mg/kg	0.1	16	0.05	**20.80**	3.14	0.10	6.48	4	7.29	4.1	Hydrock Derived
191-24-2	Benzo(ghi)perylene	mg/kg	0.1	16	0.05	7.08	1.18	0.10	2.24	0	0.09	360	Hydrock Derived
207-08-9	Benzo(k)fluoranthene	mg/kg	0.1	16	0.05	5.35	0.90	0.10	1.73	0	4.12	110	Hydrock Derived
218-01-9	Chrysene	mg/kg	0.1	16	0.05	20.80	2.87	0.10	6.25	0	2.64	32	Hydrock Derived
53-70-3	Dibenz(ah)anthracene	mg/kg	0.1	16	0.05	**2.13**	**0.37**	0.10	0.62	4	0.024	0.32	Hydrock Derived
206-44-0	Fluoranthene	mg/kg	0.1	16	0.05	43.70	6.49	0.10	14.50	0	113	1600	Hydrock Derived
86-73-7	Fluorene	mg/kg	0.1	16	0.05	2.62	0.39	0.10	0.83	0	183	5000	Hydrock Derived
193-39-5	Indeno(123cd)pyrene	mg/kg	0.1	16	0.05	8.14	1.35	0.10	2.65	0	0.37	46	Hydrock Derived
91-20-3	Naphthalene	mg/kg	0.1	16	0.05	0.13	0.09	0.10	0.02	0	432	120	Hydrock Derived
85-01-8	Phenanthrene	mg/kg	0.1	16	0.05	31.20	4.01	0.10	9.91	0	214	1600	Hydrock Derived
129-00-0	Pyrene	mg/kg	0.1	16	0.05	36.00	5.23	0.10	11.36	0	13.2	3800	Hydrock Derived
P1310	PAH 16 Total	mg/kg	1.6	12	1.60	212.00	40.82	1.60	81.04			-	
o	**TPH fractions**												
P1407	TPH ali EC05-EC06	mg/kg	0.01	12	0.00	0.01	0.01	0.01	0.004	0	1150	160	Hydrock Derived
P1408	TPH ali >EC06-EC08	mg/kg	0.05	12	0.00	0.05	0.04	0.05	0.019	0	736	530	Hydrock Derived
P1409	TPH ali >EC08-EC10	mg/kg	2	12	0.00	2.00	1.67	2.00	0.778	0	451	150	Hydrock Derived
P1410	TPH ali >EC10-EC12	mg/kg	2	12	1.00	2.00	1.83	2.00	0.39	0	283	770	Hydrock Derived
P1411	TPH ali >EC12-EC16	mg/kg	3	12	2.00	3.00	2.83	3.00	0.39	0	142	4400	Hydrock Derived

Date	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	10/05/18
Zone	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Location	BH105	TP102	TP104	TP106	TP109	TP112	TP112	TP113	TP113	TP114	TP117	HP110	HP110	TP01
Depth (m bgl)	0.2	0.5	0.2	0.2	0.2	0.4	0.7	0.3	0.5	0.3	0.2	0.3	0.5	0.2
Strata	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG
	N	N	N	N	**Y**	N	N	N		**Y**	N	N	N	N
					<0.001					<0.001				
					Chrysotile present in microscopic insulation					Chrysotile present in bundles				
	0.068	0.053	0.043	0.05	0.055	0.05	0.029	0.052		0.072	0.025	0.025	0.037	0.0031
	11.7232	9.1372	7.4132	8.62	9.482	8.62	4.9996	8.9648		12.4128	4.31	4.31	6.3788	0.53444
	7.6	7.7	8.1	7.9	7.8	7.9	7.8	7.7		9.7	8	8.2	8.1	8.4
	9	13	8	15	21		20	20		13	12	17	12	8.6
	<0.5	0.7	<0.5	0.8	1.1		0.7	0.9		0.5	<0.5	0.6	<0.5	0.13
	<1	1.3	<1	<1	1.2		<1	<1		<1	<1	<1	<1	0.6
	0.5	0.4	0.3	<0.2	0.5		<0.2	0.7		0.2	0.2	0.3	<0.2	<0.2
	13	17	7	17	29		18	22		10	13	11	10	8.2
	<2	<2	<2	<2	<2		<2	<2		<2	<2	<2	<2	<1.2
														8.1
	17	16	9	15	36		17	22		25	13	14	12	4.7
	105	36	8	25	781	8	135	69		34	21	24	12	8
	<1	<1	<1	<1	<1	<1	<1	<1		<1	<1	<1	<1	<0.3
	7	8	4	10	14	3	13	12		8	8	35	9	5
	<2	<2	<2	<2	<2	<2	<2	<2		<2	<2	<2	<2	<1
	20	30	14	32	47	14	36	39		26	25	20	20	13
	157	69	36	41	318	15	45	118		47	56	48	24	40
	<1	<1	<1	<1	<1	<1	<1	<1		<1	<1	<1	<1	<1
	<2	<2	<2	<2	4.8	<2	<2	2.2		<2	<2	<2	<2	<1
	3.06	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.14		3.04	<0.1	<0.1	<0.1	<0.05
	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		0.22	<0.1	<0.1	<0.1	<0.05
	7.36	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.6		8.95	<0.1	<0.1	<0.1	<0.05
	21.7	<0.1	<0.1	<0.1	0.18	<0.1	<0.1	5.04		16.7	<0.1	<0.1	<0.1	<0.05
	13.8	<0.1	<0.1	<0.1	0.17	<0.1	<0.1	4.79		14.6	<0.1	<0.1	<0.1	<0.05
	20.8	<0.1	<0.1	<0.1	0.21	<0.1	<0.1	6.06		17.1	<0.1	<0.1	<0.1	<0.05
	5.97	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	2.8		7.08	<0.1	<0.1	<0.1	<0.05
	5.35	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	1.65		4.9	<0.1	<0.1	<0.1	<0.05
	20.8	<0.1	<0.1	<0.1	0.18	<0.1	<0.1	5.1		15.8	<0.1	<0.1	<0.1	<0.05
	2.13	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.56		1.65	<0.1	<0.1	<0.1	<0.05
	42.1	0.11	<0.1	<0.1	0.31	<0.1	<0.1	10		43.7	<0.1	<0.1	<0.1	<0.05
	2.42	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		2.62	<0.1	<0.1	<0.1	<0.05
	7.35	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	3.22		8.14	<0.1	<0.1	<0.1	<0.05
	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		0.13	<0.1	<0.1	<0.1	<0.05
	27.3	<0.1	<0.1	<0.1	0.14	<0.1	<0.1	2.69		31.2	<0.1	<0.1	<0.1	<0.05
	30.8	<0.1	<0.1	<0.1	0.3	<0.1	<0.1	9.72		36	<0.1	<0.1	<0.1	<0.05
	211	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	52.4		212	<1.6	<1.6	<1.6	
			<0.01	<0.01	<0.01		<0.01	<0.01	<0.01		<0.01	<0.01	<0.01	
			<0.05	<0.05	<0.05		<0.05	<0.05	<0.05		<0.05	<0.05	<0.05	
			<2	<2	<2		<2	<2	<2		<2	<2	<2	
			<2	<2	<2		<2	<2	<2		<2	<2	<2	
			<3	<3	<3		<3	<3	<3		<3	<3	<3	

Assessment of Chemicals of Potential Concern to Human Health

Risk parameter:	Default - Human Health - residential without 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	S
Strata	MG
Depth Min (m bgl)	0
Depth Max (m bgl)	9

Dataset mean SOM% 6.36

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	Date	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	10/05/18
														Zone	S	S	S	S	S	S	S	S	S	S	S	S	S
														Location	BH105	TP102	TP104	TP106	TP109	TP112	TP112	TP113	TP113	TP114	TP117	HP110	HP110	TP01
														Depth (m bgl)	0.2	0.5	0.2	0.2	0.2	0.4	0.7	0.3	0.5	0.3	0.2	0.3	0.5	0.2
														Strata	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG	MG
P1938	TPH ali >EC16-EC35	mg/kg	10	10	10.00	10.00	10.00	10.00	0.00	0	51	110000	Hydrock Derived				<10	<10	<10		<10	<10	<10		<10	<10	<10	
P1415	TPH ali >EC35-EC44	mg/kg	10	12	8.40	10.00	9.73	10.00	0.62	0	51	110000	Hydrock Derived				<10	<10	<10		<10	<10	<10		<10	<10	<10	
P1420	TPH ali >EC5-EC44	mg/kg	30	10	30.00	30.00	30.00	30.00	0.00			-					<30	<30	<30		<30	<30	<30		<30	<30	<30	
P1441	TPH aro EC05-EC07	mg/kg	0.01	12	0.00	0.01	0.01	0.01	0.00	0	4708	1400	Hydrock Derived				<0.01	<0.01	<0.01		<0.01	<0.01	<0.01		<0.01	<0.01	<0.01	
P1355	TPH aro >EC07-EC08	mg/kg	0.05	12	0.00	0.05	0.04	0.05	0.02	0	4357	3900	Hydrock Derived				<0.05	<0.05	<0.05		<0.05	<0.05	<0.05		<0.05	<0.05	<0.05	
P1356	TPH aro >EC08-EC10	mg/kg	2	12	0.00	2.00	1.67	2.00	0.78	0	3578	270	Hydrock Derived				<2	<2	<2		<2	<2	<2		<2	<2	<2	
P1357	TPH aro >EC10-EC12	mg/kg	2	12	1.00	2.00	1.83	2.00	0.39	0	2149	1200	Hydrock Derived				<2	<2	<2		<2	<2	<2		<2	<2	<2	
P1358	TPH aro >EC12-EC16	mg/kg	2	12	2.00	7.00	2.58	2.00	1.51	0	1004	2500	Hydrock Derived				<2	<2	<2		<2	4	7		<2	<2	<2	
P1359	TPH aro >EC16-EC21	mg/kg	3	10	3.00	123.00	19.00	3.00	38.64	0	321	1900	Hydrock Derived				<3	<3	<3		<3	43	123		<3	<3	<3	
P1360	TPH aro >EC21-EC35	mg/kg	10	12	10.00	292.00	54.08	10.00	89.49	0	29	1900	Hydrock Derived				<10	<10	<10		<10	179	292		<10	<10	<10	
P1362	TPH aro >EC35-EC44	mg/kg	10	12	10.00	25.00	12.00	10.00	4.84	0	29	1900	Hydrock Derived				<10	<10	<10		<10	<10	<10		<10	<10	<10	
P1941	TPH aro >EC5-EC44	mg/kg	30	10	30.00	421.00	88.60	30.00	131.89			-					<30	<30	<30		<30	225	421		<30	<30	<30	
P1373	Total TPH >EC5-EC44	mg/kg	60	10	60.00	421.00	112.60	60.00	120.13			-					<60	<60	<60		<60	225	421		<60	<60	<60	
o	**VOCs - BTEX & MTBE**																											
71-43-2	Benzene	mg/kg	< 2	11	0.00	0.00	0.00	0.00	0.00	0	4708	3.3	C4SL - CL:AIRE 2014				<0.002	<0.002	<0.002		<0.002	<0.002	<0.002		<0.002	<0.002	<0.002	
108-88-3	Toluene	mg/kg	< 5	11	0.00	0.01	0.00	0.01	0.00	0	4357	3900	Hydrock Derived				<0.005	<0.005	<0.005		<0.005	<0.005	<0.005		<0.005	<0.005	<0.005	
100-41-4	Ethylbenzene	mg/kg	< 2	11	0.00	0.00	0.00	0.00	0.00	0	2844	440	Hydrock Derived				<0.002	<0.002	<0.002		<0.002	<0.002	<0.002		<0.002	<0.002	<0.002	
95-47-6	Xylene, o-	mg/kg	< 2	11	0.00	0.00	0.00	0.00	0.00	0	2618	480	Hydrock Derived				<0.002	<0.002	<0.002		<0.002	<0.002	<0.002		<0.002	<0.002	<0.002	
1330-20-7	Xylene, p- (or combined m & p)	mg/kg	< 2	11	0.00	0.00	0.00	0.00	0.00	0	3167	430	Hydrock Derived				<0.002	<0.002	<0.002		<0.002	<0.002	<0.002		<0.002	<0.002	<0.002	
1634-04-4	MTBE	mg/kg	< 5	11	0.00	0.01	0.00	0.01	0.00	0	62749	320	Hydrock Derived				<0.005	<0.005	<0.005		<0.005	<0.005	<0.005		<0.005	<0.005	<0.005	
	TPH Additivity Check			**HAZARD QUOTIENTS FOR EACH FRACTION**																								
													Aliphatics >EC5-EC6				0.0000625	0.0000625	0.0000625		0.0000625	0.0000625	0.0000625		0.0000625	0.0000625	0.0000625	
													Aliphatics >EC6-EC8				9.43396E-05	9.43396E-05	9.43396E-05		9.43396E-05	9.43396E-05	9.43396E-05		9.43396E-05	9.43396E-05	9.43396E-05	
													Aliphatics >EC8-EC10				0.013333333	0.013333333	0.013333333		0.013333333	0.013333333	0.013333333		0.013333333	0.013333333	0.013333333	
													Aliphatics >EC10-EC12				0.002597403	0.002597403	0.002597403		0.002597403	0.002597403	0.002597403		0.002597403	0.002597403	0.002597403	
													Aliphatics >EC12-EC16				0.000681818	0.000681818	0.000681818		0.000681818	0.000681818	0.000681818		0.000681818	0.000681818	0.000681818	
													Aliphatics >EC16-EC35				9.09091E-05	9.09091E-05	9.09091E-05		9.09091E-05	9.09091E-05	9.09091E-05		9.09091E-05	9.09091E-05	9.09091E-05	
													Aliphatics >EC35-EC44				9.09091E-05	9.09091E-05	9.09091E-05		9.09091E-05	9.09091E-05	9.09091E-05		9.09091E-05	9.09091E-05	9.09091E-05	
													Aromatics EC5-EC7				7.14286E-06	7.14286E-06	7.14286E-06		7.14286E-06	7.14286E-06	7.14286E-06		7.14286E-06	7.14286E-06	7.14286E-06	
													Aromatics >EC7-EC8				1.28205E-05	1.28205E-05	1.28205E-05		1.28205E-05	1.28205E-05	1.28205E-05		1.28205E-05	1.28205E-05	1.28205E-05	
													Aromatics >EC8-EC10				0.007407407	0.007407407	0.007407407		0.007407407	0.007407407	0.007407407		0.007407407	0.007407407	0.007407407	
													Aromatics >EC10-EC12				0.001666667	0.001666667	0.001666667		0.001666667	0.001666667	0.001666667		0.001666667	0.001666667	0.001666667	
													Aromatics >EC12-EC16				0.0008	0.0008	0.0008		0.0008	0.0016	0.0028		0.0008	0.0008	0.0008	
													Aromatics >EC16-EC21				0.001578947	0.001578947	0.001578947		0.001578947	0.022631579	0.064736842		0.001578947	0.001578947	0.001578947	
													Aromatics >EC21-EC35				0.005263158	0.005263158	0.005263158		0.005263158	0.094210526	0.153684211		0.005263158	0.005263158	0.005263158	
													Aromatics >EC35-EC44				0.005263158	0.005263158	0.005263158		0.005263158	0.005263158	0.005263158		0.005263158	0.005263158	0.005263158	
													Hazard Index for ali>C8-C16				**0.016612554**	**0.016612554**	**0.016612554**		**0.016612554**	**0.016612554**	**0.016612554**		**0.016612554**	**0.016612554**	**0.016612554**	
													Hazard Index for aro>C8-C16				**0.009874074**	**0.009874074**	**0.009874074**		**0.009874074**	**0.010674074**	**0.011874074**		**0.009874074**	**0.009874074**	**0.009874074**	
													Hazard Index for aro>C16-C35				**0.006842105**	**0.006842105**	**0.006842105**		**0.006842105**	**0.116842105**	**0.218421053**		**0.006842105**	**0.006842105**	**0.006842105**	

Considered additive: Aliphatics >EC8-EC10; Aliphatics >EC10-EC12; Aliphatics >EC12-EC16

Considered additive: Aromatics >EC8-EC10; Aromatics >EC10-EC12; Aromatics >EC12-EC16

Considered additive: Aromatics >EC16-EC21; Aromatics >EC21-EC35

Hazard Index table - HI or HQ greater than 1 highlighted with orange shading.

Legend:

TS	Topsoil	<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.
MG	Made Ground		
TS	Topsoil	0.02	Value greater than, or equal to, the generic assessment criterion (GAC).
RTS	Relict Topsoil	*'<10*	Value excluded from statistical analysis
SD	Superficial Deposits	*Y*	Text result
NMS	Northmoor Sand and Gravel	-	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 without 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	S
Strata	MG
Depth Min (m bgl)	0
Depth Max (m bgl)	9
Dataset mean SOM%	6.36
Scenario SOM%	6

Hydrock

TP04 0.5-0.5 | TP05 0.2-0.2 | TP05 0.5-0.5 | TP06 0.2-0.2 | CC111 0.65-0.65

/kg unless otherwise stated																	
													10/05/18	10/05/18	10/05/18	10/05/18	23/08/23
													S	S	S	S	S
													TP04	TP05	TP05	TP06	CC111
													0.5	0.2	0.5	0.2	0.65
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**	MG	MG	MG	MG	MG
Asbestos																	
Asbestos Identified	text	Y/N	68	-	-	-	-	No. of detects:	2	-	-	-	N		N	N	N
Asbestos Screen Name	text		13	-	-	-	-	-		-	-	-					
Asbestos Quant. Total	%	0.001	2	0.001	0.001	0.001	0.001	No. > LOD:	0	-	-	-					
Asbestos Containing Material Types Detected (ACM)	text		19	-	-	-	-	-		-	-	-					
Hydrock Default Suite - FOC / SOM / pH										-							
FOC (dimensionless)	[]	0.001	16	0.003	0.072	0.037	0.040	0.02		-	-	-	0.0042		0.012	0.012	
SOM (calculated)	%	0.1724	16	0.53	12.41	6.36	6.90	3.77		-	-	-	0.72408		2.0688	2.0688	
pH (su)	pH Units	0.1	16	7.60	9.70	8.18	8.05	0.55		-	-	-	9.1		8.4	8.4	
Hydrock Default Suite - Metals & PAH																	
Arsenic	mg/kg	2	15	8.00	21.00	14.09	13.00	4.50	0	NR	40	C4SL - CL:AIRE 2014	8.8		15	19	
Beryllium	mg/kg	0.5	15	0.13	1.10	0.60	0.50	0.24	0	NR	1.7	Hydrock Derived	0.29		0.48	0.74	
Boron	mg/kg	1	15	0.60	1.30	1.01	1.00	0.20	0	NR	11000	Hydrock Derived	0.6		1.3	1.2	
Cadmium	mg/kg	0.2	15	0.20	0.70	0.30	0.20	0.16	0	NR	150	C4SL - CL:AIRE 2014	<0.2		<0.2	<0.2	
Chromium (III)	mg/kg	2	15	7.00	29.00	15.48	13.00	6.52	0	NR	890	Hydrock Derived	11		21	25	
Chromium (VI)	mg/kg	2	15	1.20	2.00	1.79	2.00	0.37	0	NR	21	C4SL - CL:AIRE 2014	<1.2		<1.2	<1.2	
Chromium (Total)	mg/kg		4	8.10	25.00	16.53	16.50	8.23			-		11		22	25	
Copper	mg/kg	4	15	4.70	36.00	15.95	15.00	7.48	0	NR	7100	Hydrock Derived	12		9.6	17	
Lead	mg/kg	3	16	8.00	781.00	83.13	24.50	189.63	1	NR	310	C4SL - CL:AIRE 2014	14		18	32	
Mercury, inorganic	mg/kg	1	16	0.30	1.00	0.83	1.00	0.30	0	NR	56	Hydrock Derived	<0.3		0.4	<0.3	
Nickel	mg/kg	3	16	3.00	35.00	10.35	8.50	7.32	0	NR	180	Hydrock Derived	6.7		9.9	13	
Selenium	mg/kg	2	16	1.00	2.00	1.75	2.00	0.45	0	NR	430	Hydrock Derived	<1		<1	<1	
Vanadium	mg/kg	1	16	13.00	47.00	26.44	25.50	10.24	0	NR	1200	Hydrock Derived	18		30	39	
Zinc	mg/kg	3	16	15.00	318.00	72.88	47.50	74.39	0	NR	40000	Hydrock Derived	28		63	61	
Cyanide (free)	mg/kg	1	16	1.00	1.00	1.00	1.00	0.00	0	NR	24	Acute Risk - SoBRA 2020	<1		<1	<1	
Total Phenols (Monohydric)	mg/kg	2	16	1.00	4.80	1.94	2.00	0.89	0	70308	690	Hydrock Derived	<1		<1	<1	
Acenaphthene	mg/kg	0.1	16	0.05	3.06	0.46	0.10	1.01	0	336	7400	Hydrock Derived	<0.05		<0.05	<0.05	
Acenaphthylene	mg/kg	0.1	16	0.05	0.22	0.10	0.10	0.04	0	506	7400	Hydrock Derived	<0.05		<0.05	<0.05	
Anthracene	mg/kg	0.1	16	0.05	8.95	1.15	0.10	2.75	0	6.96	38000	Hydrock Derived	0.47		<0.05	<0.05	
Benz(a)anthracene	mg/kg	0.1	16	0.05	21.70	3.00	0.10	6.55	2	10.27	16	Hydrock Derived	3.4		<0.05	<0.05	
Benzo(a)pyrene	mg/kg	0.1	16	0.05	14.60	2.37	0.10	4.83	2	5.46	5.3	C4SL - CL:AIRE 2014	3.6		<0.05	<0.05	
Benzo(b)fluoranthene	mg/kg	0.1	16	0.05	20.80	3.14	0.10	6.48	4	7.29	4.1	Hydrock Derived	5.1		<0.05	<0.05	
Benzo(ghi)perylene	mg/kg	0.1	16	0.05	7.08	1.18	0.10	2.24	0	0.09	360	Hydrock Derived	2		<0.05	<0.05	
Benzo(k)fluoranthene	mg/kg	0.1	16	0.05	5.35	0.90	0.10	1.73	0	4.12	110	Hydrock Derived	1.5		<0.05	<0.05	
Chrysene	mg/kg	0.1	16	0.05	20.80	2.87	0.10	6.25	0	2.64	32	Hydrock Derived	3.1		<0.05	<0.05	
Dibenz(ah)anthracene	mg/kg	0.1	16	0.05	2.13	0.37	0.10	0.62	4	0.024	0.32	Hydrock Derived	0.49		<0.05	<0.05	
Fluoranthene	mg/kg	0.1	16	0.05	43.70	6.49	0.10	14.50	0	113	1600	Hydrock Derived	6.7		<0.05	<0.05	
Fluorene	mg/kg	0.1	16	0.05	2.62	0.39	0.10	0.83	0	183	5000	Hydrock Derived	<0.05		<0.05	<0.05	
Indeno(123cd)pyrene	mg/kg	0.1	16	0.05	8.14	1.35	0.10	2.65	0	0.37	46	Hydrock Derived	1.9		<0.05	<0.05	
Naphthalene	mg/kg	0.1	16	0.05	0.13	0.09	0.10	0.02	0	432	120	Hydrock Derived	<0.05		<0.05	<0.05	
Phenanthrene	mg/kg	0.1	16	0.05	31.20	4.01	0.10	9.91	0	214	1600	Hydrock Derived	1.8		<0.05	<0.05	
Pyrene	mg/kg	0.1	16	0.05	36.00	5.23	0.10	11.36	0	13.2	3800	Hydrock Derived	5.9		<0.05	<0.05	
PAH 16 Total	mg/kg	1.6	12	1.60	212.00	40.82	1.60	81.04			-						
TPH fractions																	
TPH ali EC05-EC06	mg/kg	0.01	12	0.00	0.01	0.01	0.01	0.004	0	1150	160	Hydrock Derived	<0.001	<0.001			<0.01
TPH ali >EC06-EC08	mg/kg	0.05	12	0.00	0.05	0.04	0.05	0.019	0	736	530	Hydrock Derived	<0.001	<0.001			<0.05
TPH ali >EC08-EC10	mg/kg	2	12	0.00	2.00	1.67	2.00	0.778	0	451	150	Hydrock Derived	<0.001	<0.001			<2
TPH ali >EC10-EC12	mg/kg	2	12	1.00	2.00	1.83	2.00	0.39	0	283	770	Hydrock Derived	<1	<1			<2
TPH ali >EC12-EC16	mg/kg	3	12	2.00	3.00	2.83	3.00	0.39	0	142	4400	Hydrock Derived	<2	<2			<3

Risk parameter:	**Default - Human Health - residential without 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	S
Strata	MG
Depth Min (m bgl)	0
Depth Max (m bgl)	9
Dataset mean SOM%	6.36
Scenario SOM%	6

Hydrock

TP04 0.5-0.5 | TP05 0.2-0.2 | TP05 0.5-0.5 | TP06 0.2-0.2 | CC111 0.65-0.65

/kg unless otherwise stated													10/05/18	10/05/18	10/05/18	10/05/18	23/08/23
													S	S	S	S	S
													TP04	TP05	TP05	TP06	CC111
													0.5	0.2	0.5	0.2	0.65
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**	MG	MG	MG	MG	MG
TPH ali >EC16-EC35	mg/kg	10	10	10.00	10.00	10.00	10.00	0.00	0	51	110000	Hydrock Derived	***N/A***	***N/A***			<10
TPH ali >EC35-EC44	mg/kg	10	12	8.40	10.00	9.73	10.00	0.62	0	51	110000	Hydrock Derived	<8.4	<8.4			<10
TPH ali >EC5-EC44	mg/kg	30	10	30.00	30.00	30.00	30.00	0.00			-						<30
TPH aro EC05-EC07	mg/kg	0.01	12	0.00	0.01	0.01	0.01	0.00	0	4708	1400	Hydrock Derived	<0.001	<0.001			<0.01
TPH aro >EC07-EC08	mg/kg	0.05	12	0.00	0.05	0.04	0.05	0.02	0	4357	3900	Hydrock Derived	<0.001	<0.001			<0.05
TPH aro >EC08-EC10	mg/kg	2	12	0.00	2.00	1.67	2.00	0.78	0	3578	270	Hydrock Derived	<0.001	<0.001			<2
TPH aro >EC10-EC12	mg/kg	2	12	1.00	2.00	1.83	2.00	0.39	0	2149	1200	Hydrock Derived	<1	<1			<2
TPH aro >EC12-EC16	mg/kg	2	12	2.00	7.00	2.58	2.00	1.51	0	1004	2500	Hydrock Derived	<2	<2			<2
TPH aro >EC16-EC21	mg/kg	3	10	3.00	123.00	19.00	3.00	38.64	0	321	1900	Hydrock Derived					<3
TPH aro >EC21-EC35	mg/kg	10	12	10.00	292.00	54.08	10.00	89.49	0	29	1900	Hydrock Derived	61	37			<10
TPH aro >EC35-EC44	mg/kg	10	12	10.00	25.00	12.00	10.00	4.84	0	29	1900	Hydrock Derived	19	25			<10
TPH aro >EC5-EC44	mg/kg	30	10	30.00	421.00	88.60	30.00	131.89			-						<30
Total TPH >EC5-EC44	mg/kg	60	10	60.00	421.00	112.60	60.00	120.13			-						<60
VOCs - BTEX & MTBE																	
Benzene	mg/kg	< 2	11	0.00	0.00	0.00	0.00	0.00	0	4708	3.3	C4SL - CL:AIRE 2014	<0.000001	<0.000001			
Toluene	mg/kg	< 5	11	0.00	0.01	0.00	0.01	0.00	0	4357	3900	Hydrock Derived	<0.000001	<0.000001			
Ethylbenzene	mg/kg	< 2	11	0.00	0.00	0.00	0.00	0.00	0	2844	440	Hydrock Derived	<0.000001	<0.000001			
Xylene, o-	mg/kg	< 2	11	0.00	0.00	0.00	0.00	0.00	0	2618	480	Hydrock Derived	<0.000001	<0.000001			
Xylene, p- (or combined m & p)	mg/kg	< 2	11	0.00	0.00	0.00	0.00	0.00	0	3167	430	Hydrock Derived	<0.000001	<0.000001			
MTBE	mg/kg	< 5	11	0.00	0.01	0.00	0.01	0.00	0	62749	320	Hydrock Derived	<0.000001	<0.000001			
TPH Additivity Check			**HAZARD QUOTIENTS FOR EACH FRACTION**														
												Aliph	0.00000625	0.00000625			0.0000625
												Aliph	1.88679E-06	1.88679E-06			9.43396E-05
												Alipha	6.66667E-06	6.66667E-06			0.013333333
												Alipha	0.001298701	0.001298701			0.002597403
												Alipha	0.000454545	0.000454545			0.000681818
												Aliphat					9.09091E-05
												Aliphat	7.63636E-05	7.63636E-05			9.09091E-05
												Aro	7.14286E-07	7.14286E-07			7.14286E-06
												Arom	2.5641E-07	2.5641E-07			1.28205E-05
												Aroma	3.7037E-06	3.7037E-06			0.007407407
												Aroma	0.000833333	0.000833333			0.001666667
												Aroma	0.0008	0.0008			0.0008
												Aroma					0.001578947
												Aroma	0.032105263	0.019473684			0.005263158
												Aromat	0.01	0.013157895			0.005263158
												Hazard Index	**0.001759913**	**0.001759913**			**0.016612554**
												Hazard Index	**0.001637037**	**0.001637037**			**0.009874074**
												Hazard Index f	**0.032105263**	**0.019473684**			**0.006842105**

Considered additive

Considered additive

Considered additive

Hazard Index table - HI or HQ greater than 1 highlighted with orange shading.

Legend:

TS	Topsoil	<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.
MG	Made Ground		
TS	Topsoil	0.02	Value greater than, or equal to, the generic assessment criterion (GAC).
RTS	Relict Topsoil	***'<10***	Value excluded from statistical analysis
SD	Superficial Deposits	***Y***	Text result
NMS	Northmoor Sand and Gravel	-	Represents a determinand that was not tested.
		*	represents a data point that is not included in the current filter settings

n:

Assessment of Chemicals of Potential Concern to Human Health

Risk parameter:	Default - Human Health - POSpark (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	S
Strata	MGBCW
Depth Min (m bgl)	0
Depth Max (m bgl)	9
Dataset mean SOM%	9.14
Scenario SOM%	6

Hydrock

TP124_0.2_S

Date	17/08/2023
Zone	S
Location	TP124
Depth (m bgl)	0.2
Strata	MGBCW

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	69	-	-	-	-	No. of detects:	1	-	-	-		Y
P1889	Asbestos Screen Name	text		14	-	-	-	-	-		-	-	-		
P1935	Asbestos Quant. Total	%	0.001	1	0.001	0.001	0.001	0.001	No. > LOD:	0	-	-	-		<0.001
P1880	Asbestos Containing Material Types Detected (ACM)	text		20	-	-	-	-	-		-	-	-		Chrysotile present in microscopic insulation debri
0	**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	15.00	15.00	15.00	15.00	-	0	NR	170	C4SL - CL:AIRE 2014		15
7440-41-7	Beryllium	mg/kg	0.5	1	0.80	0.80	0.80	0.80	-	0	NR	63	Hydrock Derived		0.8
7440-42-8	Boron	mg/kg	1	1	1.00	1.00	1.00	1.00	-	0	NR	46000	Hydrock Derived		<1
7440-43-9	Cadmium	mg/kg	0.2	1	35.10	35.10	35.10	35.10	-	0	NR	880	C4SL - CL:AIRE 2014		35.1
16065-83-1	Chromium (III)	mg/kg	2	1	67.00	67.00	67.00	67.00	-	0	NR	27000	Hydrock Derived		67
18540-29-9	Chromium (VI)	mg/kg	2	1	2.00	2.00	2.00	2.00	-	0	NR	250	C4SL - CL:AIRE 2014		<2
7440-50-8	Copper	mg/kg	4	1	1880.00	1880.00	1880.00	1880.00	-	0	NR	44000	Hydrock Derived		1880
7439-92-1	Lead	mg/kg	3	1	1840.00	1840.00	1840.00	1840.00	-	1	NR	1300	C4SL - CL:AIRE 2014		1840
7439-97-6	Mercury, inorganic	mg/kg	1	1	1.00	1.00	1.00	1.00	-	0	NR	240	Hydrock Derived		<1
7440-02-0	Nickel	mg/kg	3	1	145.00	145.00	145.00	145.00	-	0	NR	800	Hydrock Derived		145
7782-49-2	Selenium	mg/kg	2	1	2.00	2.00	2.00	2.00	-	0	NR	1800	Hydrock Derived		<2
7440-62-2	Vanadium	mg/kg	1	1	32.00	32.00	32.00	32.00	-	0	NR	5000	Hydrock Derived		32
7440-66-6	Zinc	mg/kg	3	1	5510.00	5510.00	5510.00	5510.00	-	0	NR	170000	Hydrock Derived		5510
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	1300	Hydrock Derived		<2
83-32-9	Acenaphthene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	336	30000	Hydrock Derived		<0.1
208-96-8	Acenaphthylene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	506	30000	Hydrock Derived		<0.1
120-12-7	Anthracene	mg/kg	0.1	1	0.35	0.35	0.35	0.35	-	0	6.96	150000	Hydrock Derived		0.35
56-55-3	Benz(a)anthracene	mg/kg	0.1	1	1.18	1.18	1.18	1.18	-	0	10.27	62	Hydrock Derived		1.18
50-32-8	Benzo(a)pyrene	mg/kg	0.1	1	0.96	0.96	0.96	0.96	-	0	5.46	21	C4SL - CL:AIRE 2014		0.96
205-99-2	Benzo(b)fluoranthene	mg/kg	0.1	1	1.21	1.21	1.21	1.21	-	0	7.29	16	Hydrock Derived		1.21
191-24-2	Benzo(ghi)perylene	mg/kg	0.1	1	0.49	0.49	0.49	0.49	-	0	0.09	1600	Hydrock Derived		0.49
207-08-9	Benzo(k)fluoranthene	mg/kg	0.1	1	0.44	0.44	0.44	0.44	-	0	4.12	440	Hydrock Derived		0.44
218-01-9	Chrysene	mg/kg	0.1	1	1.23	1.23	1.23	1.23	-	0	2.64	120	Hydrock Derived		1.23
53-70-3	Dibenz(ah)anthracene	mg/kg	0.1	1	0.13	0.13	0.13	0.13	-	0	0.024	1.4	Hydrock Derived		0.13
206-44-0	Fluoranthene	mg/kg	0.1	1	2.72	2.72	2.72	2.72	-	0	113	6400	Hydrock Derived		2.72
86-73-7	Fluorene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	183	20000	Hydrock Derived		<0.1
193-39-5	Indeno(123cd)pyrene	mg/kg	0.1	1	0.59	0.59	0.59	0.59	-	0	0.37	180	Hydrock Derived		0.59
91-20-3	Naphthalene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	432	2300	Hydrock Derived		<0.1
85-01-8	Phenanthrene	mg/kg	0.1	1	1.30	1.30	1.30	1.30	-	0	214	6300	Hydrock Derived		1.3
129-00-0	Pyrene	mg/kg	0.1	1	2.27	2.27	2.27	2.27	-	0	13.2	15000	Hydrock Derived		2.27
P1310	PAH 16 Total	mg/kg	1.6	1	12.90	12.90	12.90	12.90	-			-			12.9
0	**TPH fractions**														
P1407	TPH ali EC05-EC06	mg/kg	0.01	1	0.01	0.01	0.01	0.01	-	0	1150	180000	Hydrock Derived		<0.01
P1408	TPH ali >EC06-EC08	mg/kg	0.05	1	0.05	0.05	0.05	0.05	-	0	736	320000	Hydrock Derived		<0.05
P1409	TPH ali >EC08-EC10	mg/kg	2	1	2.00	2.00	2.00	2.00	-	0	451	21000	Hydrock Derived		<2
P1410	TPH ali >EC10-EC12	mg/kg	2	1	2.00	2.00	2.00	2.00	-	0	283	24000	Hydrock Derived		<2
P1411	TPH ali >EC12-EC16	mg/kg	3	1	3.00	3.00	3.00	3.00	-	0	142	26000	Hydrock Derived		<3
P1938	TPH ali >EC16-EC35	mg/kg	10	1	16.00	16.00	16.00	16.00	-	0	51	490000	Hydrock Derived		16

Risk parameter:	Default - Human Health - POSpark (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	S
Strata	MGBCW
Depth Min (m bgl)	0
Depth Max (m bgl)	9
Dataset mean SOM%	9.14
Scenario SOM%	6

TP124_0.2_S

Hydrock

All values in mg/kg unless otherwise stated

Date	17/08/2023
Zone	S
Location	TP124
Depth (m bgl)	0.2
Strata	MGBCW

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	
P1415	TPH ali >EC35-EC44	mg/kg	10	1	10.00	10.00	10.00	10.00	-	0	51	490000	Hydrock Derived	<10
P1420	TPH ali >EC5-EC44	mg/kg	30	1	30.00	30.00	30.00	30.00	-			-		<30
P1441	TPH aro EC05-EC07	mg/kg	0.01	1	0.01	0.01	0.01	0.01	-	0	4708	92000	Hydrock Derived	<0.01
P1355	TPH aro >EC07-EC08	mg/kg	0.05	1	0.05	0.05	0.05	0.05	-	0	4357	100000	Hydrock Derived	<0.05
P1356	TPH aro >EC08-EC10	mg/kg	2	1	2.00	2.00	2.00	2.00	-	0	3578	9300	Hydrock Derived	<2
P1357	TPH aro >EC10-EC12	mg/kg	2	1	2.00	2.00	2.00	2.00	-	0	2149	10000	Hydrock Derived	<2
P1358	TPH aro >EC12-EC16	mg/kg	2	1	2.00	2.00	2.00	2.00	-	0	1004	10000	Hydrock Derived	2
P1359	TPH aro >EC16-EC21	mg/kg	3	1	17.00	17.00	17.00	17.00	-	0	321	7800	Hydrock Derived	17
P1360	TPH aro >EC21-EC35	mg/kg	10	1	67.00	67.00	67.00	67.00	-	0	29	7900	Hydrock Derived	67
P1362	TPH aro >EC35-EC44	mg/kg	10	1	10.00	10.00	10.00	10.00	-	0	29	7900	Hydrock Derived	<10
P1941	TPH aro >EC5-EC44	mg/kg	30	1	86.00	86.00	86.00	86.00	-			-		86
P1373	Total TPH >EC5-EC44	mg/kg	60	1	102.00	102.00	102.00	102.00	-			-		102
o	**VOCs - BTEX & MTBE**													
71-43-2	Benzene	mg/kg	< 2	1	0.00	0.00	0.00	0.00	-	0	4708	230	C4SL - CL:AIRE 2014	<0.002
108-88-3	Toluene	mg/kg	< 5	1	0.01	0.01	0.01	0.01	-	0	4357	100000	Hydrock Derived	<0.005
100-41-4	Ethylbenzene	mg/kg	< 2	1	0.00	0.00	0.00	0.00	-	0	2844	27000	Hydrock Derived	<0.002
95-47-6	Xylene, o-	mg/kg	< 2	1	0.00	0.00	0.00	0.00	-	0	2618	33000	Hydrock Derived	<0.002
1330-20-7	Xylene, p- (or combined m & p)	mg/kg	< 2	1	0.00	0.00	0.00	0.00	-	0	3167	31000	Hydrock Derived	<0.002
1634-04-4	MTBE	mg/kg	< 5	1	0.01	0.01	0.01	0.01	-	0	62749	120000	Hydrock Derived	<0.005
	TPH Additivity Check			**HAZARD QUOTIENTS FOR EACH FRACTION**										
													Aliphatics >EC5-EC6	5.55556E-08
													Aliphatics >EC6-EC8	1.5625E-07
												Considered additive	Aliphatics >EC8-EC10	9.52381E-05
													Aliphatics >EC10-EC12	8.33333E-05
													Aliphatics >EC12-EC16	0.000115385
													Aliphatics >EC16-EC35	3.26531E-05
													Aliphatics >EC35-EC44	2.04082E-05
													Aromatics EC5-EC7	1.08696E-07
													Aromatics >EC7-EC8	0.0000005
												Considered additive	Aromatics >EC8-EC10	0.000215054
													Aromatics >EC10-EC12	0.0002
													Aromatics >EC12-EC16	0.0002
												Considered additive	Aromatics >EC16-EC21	0.002179487
													Aromatics >EC21-EC35	0.008481013
													Aromatics >EC35-EC44	0.001265823
												Hydrock Index table - HI or HQ greater than 1 highlighted with orange shading.	**Hazard Index for ali>C8-C16**	**0.000293956**
													Hazard Index for aro>C8-C16	**0.000615054**
													Hazard Index for aro>C16-C35	**0.0106605**

Legend:

TS	Topsoil
MG	Made Ground
TS	Topsoil
RTS	Relict Topsoil
SD	Superficial Deposits
NMS	Northmoor Sand and Gravel

<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	S
Strata	MGBCW
Depth Min (m bgl)	0
Depth Max (m bgl)	9
Dataset mean SOM%	9.14
Scenario SOM%	6

Hydrock

Date	17/08/2023
Zone	S
Location	TP124
Depth (m bgl)	0.2
Strata	MGBCW

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	69	-	-	-	-	No. of detects:	1	-	-	-		Y
P1889	Asbestos Screen Name	text		14	-	-	-	-	-		-	-	-		
P1935	Asbestos Quant. Total	%	0.001	1	0.001	0.001	0.001	0.001	No. > LOD:	0	-	-	-		<0.001
P1880	Asbestos Containing Material Types Detected (ACM)	text		20	-	-	-	-	-		-	-	-		Chrysotile present in microscopic insulation debri
0	**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	15.00	15.00	15.00	15.00	-	0	NR	37	C4SL - CL:AIRE 2014		15
7440-41-7	Beryllium	mg/kg	0.5	1	0.80	0.80	0.80	0.80	-	0	NR	1.7	Hydrock Derived		0.8
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	**35.10**	**35.10**	**35.10**	**35.10**	-	**1**	NR	22	C4SL - CL:AIRE 2014		35.1
16065-83-1	Chromium (III)	mg/kg	2	1	67.00	67.00	67.00	67.00	-	0	NR	890	Hydrock Derived		67
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	1880.00	1880.00	1880.00	1880.00	-	0	NR	2500	Hydrock Derived		1880
7439-92-1	Lead	mg/kg	3	1	**1840.00**	**1840.00**	**1840.00**	**1840.00**	-	**1**	NR	200	C4SL - CL:AIRE 2014		1840
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	**145.00**	**145.00**	**145.00**	**145.00**	-	**1**	NR	130	Hydrock Derived		145
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	32.00	32.00	32.00	32.00	-	0	NR	410	Hydrock Derived		32
7440-66-6	Zinc	mg/kg	3	1	**5510.00**	**5510.00**	**5510.00**	**5510.00**	-	**1**	NR	3900	Hydrock Derived		5510
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	0.35	0.35	0.35	0.35	-	0	6.96	11000	Hydrock Derived		0.35
56-55-3	Benz(a)anthracene	mg/kg	0.1	1	1.18	1.18	1.18	1.18	-	0	10.27	14	Hydrock Derived		1.18
50-32-8	Benzo(a)pyrene	mg/kg	0.1	1	0.96	0.96	0.96	0.96	-	0	5.46	5	C4SL - CL:AIRE 2014		0.96
205-99-2	Benzo(b)fluoranthene	mg/kg	0.1	1	1.21	1.21	1.21	1.21	-	0	7.29	3.7	Hydrock Derived		1.21
191-24-2	Benzo(ghi)perylene	mg/kg	0.1	1	0.49	0.49	0.49	0.49	-	0	0.09	350	Hydrock Derived		0.49
207-08-9	Benzo(k)fluoranthene	mg/kg	0.1	1	0.44	0.44	0.44	0.44	-	0	4.12	100	Hydrock Derived		0.44
218-01-9	Chrysene	mg/kg	0.1	1	1.23	1.23	1.23	1.23	-	0	2.64	27	Hydrock Derived		1.23
53-70-3	Dibenz(ah)anthracene	mg/kg	0.1	1	0.13	0.13	0.13	0.13	-	0	0.024	0.31	Hydrock Derived		0.13
206-44-0	Fluoranthene	mg/kg	0.1	1	2.72	2.72	2.72	2.72	-	0	113	900	Hydrock Derived		2.72
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	0.59	0.59	0.59	0.59	-	0	0.37	41	Hydrock Derived		0.59
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	1.30	1.30	1.30	1.30	-	0	214	450	Hydrock Derived		1.3
129-00-0	Pyrene	mg/kg	0.1	1	2.27	2.27	2.27	2.27	-	0	13.2	2000	Hydrock Derived		2.27
P1310	PAH 16 Total	mg/kg	1.6	1	12.90	12.90	12.90	12.90	-			-			12.9
0	**TPH fractions**														
P1407	TPH ali EC05-EC06	mg/kg	0.01	1	0.01	0.01	0.01	0.01	-	0	1150	160	Hydrock Derived		<0.01
P1408	TPH ali >EC06-EC08	mg/kg	0.05	1	0.05	0.05	0.05	0.05	-	0	736	530	Hydrock Derived		<0.05
P1409	TPH ali >EC08-EC10	mg/kg	2	1	2.00	2.00	2.00	2.00	-	0	451	150	Hydrock Derived		<2
P1410	TPH ali >EC10-EC12	mg/kg	2	1	2.00	2.00	2.00	2.00	-	0	283	760	Hydrock Derived		<2
P1411	TPH ali >EC12-EC16	mg/kg	3	1	3.00	3.00	3.00	3.00	-	0	142	4300	Hydrock Derived		<3
P1938	TPH ali >EC16-EC35	mg/kg	10	1	16.00	16.00	16.00	16.00	-	0	51	110000	Hydrock Derived		16

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	S
Strata	MGBCW
Depth Min (m bgl)	0
Depth Max (m bgl)	9
Dataset mean SOM%	9.14
Scenario SOM%	6

Hydrock

TP124_0.2_S

Date	17/08/2023
Zone	S
Location	TP124
Depth (m bgl)	0.2
Strata	MGBCW

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	
P1415	TPH ali >EC35-EC44	mg/kg	10	1	10.00	10.00	10.00	10.00	-	0	51	110000	Hydrock Derived	<10
P1420	TPH ali >EC5-EC44	mg/kg	30	1	30.00	30.00	30.00	30.00	-			-		<30
P1441	TPH aro EC05-EC07	mg/kg	0.01	1	0.01	0.01	0.01	0.01	-	0	4708	310	Hydrock Derived	<0.01
P1355	TPH aro >EC07-EC08	mg/kg	0.05	1	0.05	0.05	0.05	0.05	-	0	4357	680	Hydrock Derived	<0.05
P1356	TPH aro >EC08-EC10	mg/kg	2	1	2.00	2.00	2.00	2.00	-	0	3578	190	Hydrock Derived	<2
P1357	TPH aro >EC10-EC12	mg/kg	2	1	2.00	2.00	2.00	2.00	-	0	2149	390	Hydrock Derived	<2
P1358	TPH aro >EC12-EC16	mg/kg	2	1	2.00	2.00	2.00	2.00	-	0	1004	670	Hydrock Derived	2
P1359	TPH aro >EC16-EC21	mg/kg	3	1	17.00	17.00	17.00	17.00	-	0	321	930	Hydrock Derived	17
P1360	TPH aro >EC21-EC35	mg/kg	10	1	67.00	67.00	67.00	67.00	-	0	29	1700	Hydrock Derived	67
P1362	TPH aro >EC35-EC44	mg/kg	10	1	10.00	10.00	10.00	10.00	-	0	29	1700	Hydrock Derived	<10
P1941	TPH aro >EC5-EC44	mg/kg	30	1	86.00	86.00	86.00	86.00	-			-		86
P1373	Total TPH >EC5-EC44	mg/kg	60	1	102.00	102.00	102.00	102.00	-			-		102
0	**VOCs - BTEX & MTBE**													
71-43-2	Benzene	mg/kg	< 2	1	0.00	0.00	0.00	0.00	-	0	4708	0.87	C4SL - CL:AIRE 2014	<0.002
108-88-3	Toluene	mg/kg	< 5	1	0.01	0.01	0.01	0.01	-	0	4357	680	Hydrock Derived	<0.005
100-41-4	Ethylbenzene	mg/kg	< 2	1	0.00	0.00	0.00	0.00	-	0	2844	260	Hydrock Derived	<0.002
95-47-6	Xylene, o-	mg/kg	< 2	1	0.00	0.00	0.00	0.00	-	0	2618	330	Hydrock Derived	<0.002
1330-20-7	Xylene, p- (or combined m & p)	mg/kg	< 2	1	0.00	0.00	0.00	0.00	-	0	3167	310	Hydrock Derived	<0.002
1634-04-4	MTBE	mg/kg	< 5	1	0.01	0.01	0.01	0.01	-	0	62749	210	Hydrock Derived	<0.005
	TPH Additivity Check			**HAZARD QUOTIENTS FOR EACH FRACTION**										

	Aliphatics >EC5-EC6	0.0000625
	Aliphatics >EC6-EC8	9.43396E-05
Considered additive	Aliphatics >EC8-EC10	0.013333333
	Aliphatics >EC10-EC12	0.002631579
	Aliphatics >EC12-EC16	0.000697674
	Aliphatics >EC16-EC35	0.000145455
	Aliphatics >EC35-EC44	9.09091E-05
	Aromatics EC5-EC7	3.22581E-05
	Aromatics >EC7-EC8	7.35294E-05
Considered additive	Aromatics >EC8-EC10	0.010526316
	Aromatics >EC10-EC12	0.005128205
	Aromatics >EC12-EC16	0.002985075
Considered additive	Aromatics >EC16-EC21	0.01827957
	Aromatics >EC21-EC35	0.039411765
	Aromatics >EC35-EC44	0.005882353
Hazard Index table - HI or HQ greater than 1 highlighted with orange shading.	**Hazard Index for ali>C8-C16**	**0.016662587**
	Hazard Index for aro>C8-C16	**0.018639596**
	Hazard Index for aro>C16-C35	**0.057691335**

Legend:

TS	Topsoil
MG	Made Ground
TS	Topsoil
RTS	Relict Topsoil
SD	Superficial Deposits
NMS	Northmoor Sand and Gravel

<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 - POSpark (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	ROS
Strata	NMS
Depth Min (m bgl)	0
Depth Max (m bgl)	9
Dataset mean SOM%	6.67
Scenario SOM%	6

Hydrock

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	67	-	-	-	-	No. of detects:	0	-	-	-
P1889	Asbestos Screen Name	text		14	-	-	-	-	-		-	-	-
P1880	Asbestos Containing Material Types Detected (ACM)	text		20	-	-	-	-	-		-	-	-
0	**Hydrock Default Suite - FOC / SOM / pH**										-		
P1085	FOC (dimensionless)	[]	0.001	3	0.033	0.050	0.039	0.033	0.01		-	-	-
-	SOM (calculated)	%	0.1724	3	5.69	8.62	6.67	5.69	1.69		-	-	-
P1334	pH (su)	pH Units	0.1	3	7.60	8.40	7.93	7.80	0.42		-	-	-
-	**Hydrock Default Suite - Metals & PAH**												
7440-38-2	Arsenic	mg/kg	2	3	7.00	16.00	12.00	13.00	4.58	0	NR	170	C4SL - CL:AIRE 2014
7440-41-7	Beryllium	mg/kg	0.5	3	0.50	0.80	0.60	0.50	0.17	0	NR	63	Hydrock Derived
7440-42-8	Boron	mg/kg	1	3	1.00	1.00	1.00	1.00	0.00	0	NR	46000	Hydrock Derived
7440-43-9	Cadmium	mg/kg	0.2	3	0.20	0.30	0.23	0.20	0.06	0	NR	880	C4SL - CL:AIRE 2014
16065-83-1	Chromium (III)	mg/kg	2	3	4.00	20.00	13.00	15.00	8.19	0	NR	27000	Hydrock Derived
18540-29-9	Chromium (VI)	mg/kg	2	3	2.00	2.00	2.00	2.00	0.00	0	NR	250	C4SL - CL:AIRE 2014
7440-50-8	Copper	mg/kg	4	3	6.00	12.00	9.67	11.00	3.21	0	NR	44000	Hydrock Derived
7439-92-1	Lead	mg/kg	3	3	3.00	22.00	12.00	11.00	9.54	0	NR	1300	C4SL - CL:AIRE 2014
7439-97-6	Mercury, inorganic	mg/kg	1	3	1.00	1.00	1.00	1.00	0.00	0	NR	240	Hydrock Derived
7440-02-0	Nickel	mg/kg	3	3	3.00	10.00	7.00	8.00	3.61	0	NR	800	Hydrock Derived
7782-49-2	Selenium	mg/kg	2	3	2.00	2.00	2.00	2.00	0.00	0	NR	1800	Hydrock Derived
7440-62-2	Vanadium	mg/kg	1	3	8.00	37.00	24.33	28.00	14.84	0	NR	5000	Hydrock Derived
7440-66-6	Zinc	mg/kg	3	3	7.00	44.00	26.00	27.00	18.52	0	NR	170000	Hydrock Derived
P1095	Cyanide (free)	mg/kg	1	3	1.00	1.00	1.00	1.00	0.00	0	NR	24	Acute Risk - SoBRA 2020
P1186	Total Phenols (Monohydric)	mg/kg	2	3	2.00	2.00	2.00	2.00	0.00	0	70308	1300	Hydrock Derived
83-32-9	Acenaphthene	mg/kg	0.1	3	0.10	0.10	0.10	0.10	0.00	0	336	30000	Hydrock Derived
208-96-8	Acenaphthylene	mg/kg	0.1	3	0.10	0.10	0.10	0.10	0.00	0	506	30000	Hydrock Derived
120-12-7	Anthracene	mg/kg	0.1	3	0.10	0.10	0.10	0.10	0.00	0	6.96	150000	Hydrock Derived
56-55-3	Benz(a)anthracene	mg/kg	0.1	3	0.10	0.10	0.10	0.10	0.00	0	10.27	62	Hydrock Derived
50-32-8	Benzo(a)pyrene	mg/kg	0.1	3	0.10	0.10	0.10	0.10	0.00	0	5.46	21	C4SL - CL:AIRE 2014
205-99-2	Benzo(b)fluoranthene	mg/kg	0.1	3	0.10	0.10	0.10	0.10	0.00	0	7.29	16	Hydrock Derived
191-24-2	Benzo(ghi)perylene	mg/kg	0.1	3	0.10	0.10	0.10	0.10	0.00	0	0.09	1600	Hydrock Derived
207-08-9	Benzo(k)fluoranthene	mg/kg	0.1	3	0.10	0.10	0.10	0.10	0.00	0	4.12	440	Hydrock Derived
218-01-9	Chrysene	mg/kg	0.1	3	0.10	0.10	0.10	0.10	0.00	0	2.64	120	Hydrock Derived
53-70-3	Dibenz(ah)anthracene	mg/kg	0.1	3	0.10	0.10	0.10	0.10	0.00	0	0.024	1.4	Hydrock Derived
206-44-0	Fluoranthene	mg/kg	0.1	3	0.10	0.10	0.10	0.10	0.00	0	113	6400	Hydrock Derived
86-73-7	Fluorene	mg/kg	0.1	3	0.10	0.10	0.10	0.10	0.00	0	183	20000	Hydrock Derived
193-39-5	Indeno(123cd)pyrene	mg/kg	0.1	3	0.10	0.10	0.10	0.10	0.00	0	0.37	180	Hydrock Derived
91-20-3	Naphthalene	mg/kg	0.1	3	0.10	0.10	0.10	0.10	0.00	0	432	2300	Hydrock Derived
85-01-8	Phenanthrene	mg/kg	0.1	3	0.10	0.10	0.10	0.10	0.00	0	214	6300	Hydrock Derived
129-00-0	Pyrene	mg/kg	0.1	3	0.10	0.10	0.10	0.10	0.00	0	13.2	15000	Hydrock Derived
P1310	PAH 16 Total	mg/kg	1.6	3	1.60	1.60	1.60	1.60	0.00			-	

Date	17/08/2023	17/08/2023	17/08/2023
Zone	ROS	ROS	ROS
Location	HP112	HP114	TP120
Depth (m bgl)	0.4	0.4	1
Strata	NMS	NMS	NMS
	N	N	N
	0.033	0.033	0.05
	5.6892	5.6892	8.62
	7.8	7.6	8.4
	13	16	7
	0.5	0.8	<0.5
	<1	<1	<1
	0.2	0.3	<0.2
	15	20	4
	<2	<2	<2
	11	12	6
	11	22	<3
	<1	<1	<1
	8	10	<3
	<2	<2	<2
	28	37	8
	27	44	7
	<1	<1	<1
	<2	<2	2
	<0.1	<0.1	<0.1
	<0.1	<0.1	<0.1
	<0.1	<0.1	<0.1
	<0.1	<0.1	<0.1
	<0.1	<0.1	<0.1
	<0.1	<0.1	<0.1
	<0.1	<0.1	<0.1
	<0.1	<0.1	<0.1
	<0.1	<0.1	<0.1
	<0.1	<0.1	<0.1
	<0.1	<0.1	<0.1
	<0.1	<0.1	<0.1
	<0.1	<0.1	<0.1
	<0.1	<0.1	<0.1
	<1.6	<1.6	<1.6

Legend:

TS	Topsoil
MG	Made Ground
MGS	Made Ground Surfacing
MGSB	Made Ground Subbase
TS	Topsoil
RTS	Relict Topsoil
SP	Stockpile

<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	**ROS**
Strata	**NMS**
Depth Min (m bgl)	**0**
Depth Max (m bgl)	**9**
Dataset mean SOM%	**6.67**
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	ROS	HP112	0.4
															17/08/2023	ROS	HP114	0.4
															17/08/2023	ROS	TP120	1
-	**Asbestos**																	
P1020	Asbestos Identified	text	Y/N	67	-	-	-	-	No. of detects:	0	-	-	-		N	N	N	
P1889	Asbestos Screen Name	text		14	-	-	-	-	-		-	-	-					
P1880	Asbestos Containing Material Types Detected (ACM)	text		20	-	-	-	-	-		-	-	-					
0	**Hydrock Default Suite - FOC / SOM / pH**										-							
P1085	FOC (dimensionless)	[]	0.001	3	0.033	0.050	0.039	0.033	0.01		-	-	-		0.033	0.033	0.05	
-	SOM (calculated)	%	0.1724	3	5.69	8.62	6.67	5.69	1.69		-	-	-		5.6892	5.6892	8.62	
P1334	pH (su)	pH Units	0.1	3	7.60	8.40	7.93	7.80	0.42		-	-	-		7.8	7.6	8.4	
-	**Hydrock Default Suite - Metals & PAH**																	
7440-38-2	Arsenic	mg/kg	2	3	7.00	16.00	12.00	13.00	4.58	0	NR	37	C4SL - CL:AIRE 2014		13	16	7	
7440-41-7	Beryllium	mg/kg	0.5	3	0.50	0.80	0.60	0.50	0.17	0	NR	1.7	Hydrock Derived		0.5	0.8	<0.5	
7440-42-8	Boron	mg/kg	1	3	1.00	1.00	1.00	1.00	0.00	0	NR	300	Hydrock Derived		<1	<1	<1	
7440-43-9	Cadmium	mg/kg	0.2	3	0.20	0.30	0.23	0.20	0.06	0	NR	22	C4SL - CL:AIRE 2014		0.2	0.3	<0.2	
16065-83-1	Chromium (III)	mg/kg	2	3	4.00	20.00	13.00	15.00	8.19	0	NR	890	Hydrock Derived		15	20	4	
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	6.00	12.00	9.67	11.00	3.21	0	NR	2500	Hydrock Derived		11	12	6	
7439-92-1	Lead	mg/kg	3	3	3.00	22.00	12.00	11.00	9.54	0	NR	200	C4SL - CL:AIRE 2014		11	22	<3	
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	3.00	10.00	7.00	8.00	3.61	0	NR	130	Hydrock Derived		8	10	<3	
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	8.00	37.00	24.33	28.00	14.84	0	NR	410	Hydrock Derived		28	37	8	
7440-66-6	Zinc	mg/kg	3	3	7.00	44.00	26.00	27.00	18.52	0	NR	3900	Hydrock Derived		27	44	7	
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	<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.
MG	Made Ground		
MGS	Made Ground Surfacing	0.02	Value greater than, or equal to, the generic assessment criterion (GAC).
MGSB	Made Ground Subbase	***<10***	Value excluded from statistical analysis
TS	Topsoil	***Y***	Text result
RTS	Relict Topsoil	**-**	Represents a determinand that was not tested.
SP	Stockpile	**•**	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 - POSpark (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	S
Strata	NMS
Depth Min (m bgl)	0
Depth Max (m bgl)	9
Dataset mean SOM%	7.35
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
-	**Asbestos**												
P1020	Asbestos Identified	text	Y/N	61	-	-	-	-	No. of detects:	0	-	-	-
P1889	Asbestos Screen Name	text		8	-	-	-	-	-		-	-	-
P1880	Asbestos Containing Material Types Detected (ACM)	text		12	-	-	-	-	-		-	-	-
0	**Hydrock Default Suite - FOC / SOM / pH**										-		
P1085	FOC (dimensionless)	fl	0.001	18	0.002	0.071	0.043	0.046	0.02		-	-	-
-	SOM (calculated)	%	0.1724	18	0.33	12.24	7.35	7.93	3.24		-	-	-
P1334	pH (su)	pH Units	0.1	23	7.80	8.90	8.20	8.10	0.31		-	-	-
-	**Hydrock Default Suite - Metals & PAH**												
7440-38-2	Arsenic	mg/kg	2	18	4.00	18.00	8.07	7.65	3.96	0	NR	170	C4SL - CL:AIRE 2014
7440-41-7	Beryllium	mg/kg	0.5	18	0.13	0.80	0.51	0.50	0.12	0	NR	63	Hydrock Derived
7440-42-8	Boron	mg/kg	1	18	0.50	1.00	0.97	1.00	0.12	0	NR	46000	Hydrock Derived
7440-43-9	Cadmium	mg/kg	0.2	18	0.20	0.60	0.23	0.20	0.10	0	NR	880	C4SL - CL:AIRE 2014
16065-83-1	Chromium (III)	mg/kg	2	18	4.00	20.00	8.55	7.45	4.64	0	NR	27000	Hydrock Derived
18540-29-9	Chromium (VI)	mg/kg	2	18	1.20	2.00	1.96	2.00	0.19	0	NR	250	C4SL - CL:AIRE 2014
7440-47-3	Chromium (Total)	mg/kg		1	7.80	7.80	7.80	7.80	-			-	
7440-50-8	Copper	mg/kg	4	18	2.20	27.00	9.90	9.00	5.26	0	NR	44000	Hydrock Derived
7439-92-1	Lead	mg/kg	3	18	2.90	27.00	8.99	6.00	7.73	0	NR	1300	C4SL - CL:AIRE 2014
7439-97-6	Mercury, inorganic	mg/kg	1	18	0.30	1.00	0.96	1.00	0.16	0	NR	240	Hydrock Derived
7440-02-0	Nickel	mg/kg	3	18	3.00	11.00	4.63	3.50	2.50	0	NR	800	Hydrock Derived
7782-49-2	Selenium	mg/kg	2	18	1.00	2.00	1.94	2.00	0.24	0	NR	1800	Hydrock Derived
7440-62-2	Vanadium	mg/kg	1	18	7.00	38.00	16.28	12.00	8.76	0	NR	5000	Hydrock Derived
7440-66-6	Zinc	mg/kg	3	18	4.00	69.00	20.95	14.50	17.66	0	NR	170000	Hydrock Derived
P1095	Cyanide (free)	mg/kg	1	18	1.00	1.00	1.00	1.00	0.00	0	NR	24	Acute Risk - SoBRA 2020
P1186	Total Phenols (Monohydric)	mg/kg	2	18	1.00	2.00	1.94	2.00	0.24	0	70308	1300	Hydrock Derived
83-32-9	Acenaphthene	mg/kg	0.1	18	0.05	0.10	0.10	0.10	0.01	0	336	30000	Hydrock Derived
208-96-8	Acenaphthylene	mg/kg	0.1	18	0.05	0.10	0.10	0.10	0.01	0	506	30000	Hydrock Derived
120-12-7	Anthracene	mg/kg	0.1	18	0.05	0.10	0.10	0.10	0.01	0	6.96	150000	Hydrock Derived
56-55-3	Benz(a)anthracene	mg/kg	0.1	18	0.05	0.32	0.11	0.10	0.05	0	10.27	62	Hydrock Derived
50-32-8	Benzo(a)pyrene	mg/kg	0.1	18	0.05	0.30	0.11	0.10	0.05	0	5.46	21	C4SL - CL:AIRE 2014
205-99-2	Benzo(b)fluoranthene	mg/kg	0.1	18	0.05	0.43	0.12	0.10	0.08	0	7.29	16	Hydrock Derived
191-24-2	Benzo(ghi)perylene	mg/kg	0.1	18	0.05	0.17	0.10	0.10	0.02	0	0.09	1600	Hydrock Derived
207-08-9	Benzo(k)fluoranthene	mg/kg	0.1	18	0.05	0.10	0.10	0.10	0.01	0	4.12	440	Hydrock Derived
218-01-9	Chrysene	mg/kg	0.1	18	0.05	0.33	0.11	0.10	0.06	0	2.64	120	Hydrock Derived
53-70-3	Dibenz(ah)anthracene	mg/kg	0.1	18	0.05	0.10	0.10	0.10	0.01	0	0.024	1.4	Hydrock Derived
206-44-0	Fluoranthene	mg/kg	0.1	18	0.05	0.46	0.12	0.10	0.09	0	113	6400	Hydrock Derived
86-73-7	Fluorene	mg/kg	0.1	18	0.05	0.10	0.10	0.10	0.01	0	183	20000	Hydrock Derived
193-39-5	Indeno(123cd)pyrene	mg/kg	0.1	18	0.05	0.20	0.10	0.10	0.03	0	0.37	180	Hydrock Derived
91-20-3	Naphthalene	mg/kg	0.1	18	0.05	0.10	0.10	0.10	0.01	0	432	2300	Hydrock Derived
85-01-8	Phenanthrene	mg/kg	0.1	18	0.05	0.16	0.10	0.10	0.02	0	214	6300	Hydrock Derived
129-00-0	Pyrene	mg/kg	0.1	18	0.05	0.38	0.11	0.10	0.07	0	13.2	15000	Hydrock Derived
P1310	PAH 16 Total	mg/kg	1.6	17	1.60	2.70	1.66	1.60	0.27			-	
0	**TPH fractions**												
P1407	TPH ali EC05-EC06	mg/kg	0.01	8	0.00	0.01	0.01	0.01	0.003	0	1150	180000	Hydrock Derived
P1408	TPH ali >EC06-EC08	mg/kg	0.05	8	0.00	0.05	0.04	0.05	0.017	0	736	320000	Hydrock Derived
P1409	TPH ali >EC08-EC10	mg/kg	2	8	0.00	2.00	1.75	2.00	0.707	0	451	21000	Hydrock Derived
P1410	TPH ali >EC10-EC12	mg/kg	2	8	1.00	2.00	1.88	2.00	0.35	0	283	24000	Hydrock Derived
P1411	TPH ali >EC12-EC16	mg/kg	3	8	2.00	3.00	2.88	3.00	0.35	0	142	26000	Hydrock Derived
P1938	TPH ali >EC16-EC35	mg/kg	10	7	10.00	10.00	10.00	10.00	0.00	0	51	490000	Hydrock Derived

Date	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023
Zone	S	S	S	S	S	S	S	S	S	S	S	S	S	S
Location	BH101	BH101	BH102	BH103	BH104	BH105	TP101	TP101	TP102	TP103	TP104	TP104	TP105	TP107
Depth (m bgl)	0.6	1	1	1	0.6	1	0.5	1	1	1	0.6	1.2	0.5	0.8
Strata	NMS	NMS	NMS	NMS	NMS	NMS	NMS	NMS	NMS	NMS	NMS	NMS	NMS	NMS
	N	N		N	N	N	N		N	N	N		N	N
	0.055	0.067		0.04	0.061	0.066	0.013		0.044	0.05	0.05		0.037	0.033
	9.482	11.5508		6.896	10.5164	11.3784	2.2412		7.5856	8.62	8.62		6.3788	5.6892
	8.1	8.1	8.1	8.1	8.1	8	7.9	8.1	7.9	8.1	8.1		8	8.2
	6	5		6	7	8	8		8	5	8		4	4
	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5		<0.5	<0.5
	<1	<1		<1	<1	<1	<1		<1	<1	<1		<1	<1
	<0.2	<0.2		<0.2	<0.2	<0.2	<0.2		<0.2	<0.2	<0.2		<0.2	<0.2
	8	5		6	5	5	11		8	6	8		5	4
	<2	<2		<2	<2	<2	<2		<2	<2	<2		<2	<2
	9	8		8	8	9	9		9	8	9		6	5
	5	<3		<3	3	7	15		8	<3	7		4	<3
	<1	<1		<1	<1	<1	<1		<1	<1	<1		<1	<1
	4	<3		<3	<3	3	6		<3	<3	4		<3	<3
	<2	<2		<2	<2	<2	<2		<2	<2	<2		<2	<2
	15	11		12	12	12	19		17	11	15		9	7
	18	9		8	9	14	35		15	7	17		11	4
	<1	<1		<1	<1	<1	<1		<1	<1	<1		<1	<1
	<2	<2		<2	<2	<2	<2		<2	<2	<2		<2	<2
	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1		<0.1	<0.1
	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1		<0.1	<0.1
	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1		<0.1	<0.1
	<0.1	<0.1		<0.1	<0.1	0.32	<0.1		<0.1	<0.1	<0.1		<0.1	<0.1
	<0.1	<0.1		<0.1	<0.1	0.3	<0.1		<0.1	<0.1	<0.1		<0.1	<0.1
	<0.1	<0.1		<0.1	<0.1	0.43	<0.1		<0.1	<0.1	<0.1		<0.1	<0.1
	<0.1	<0.1		<0.1	<0.1	0.17	<0.1		<0.1	<0.1	<0.1		<0.1	<0.1
	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1		<0.1	<0.1
	<0.1	<0.1		<0.1	<0.1	0.33	<0.1		<0.1	<0.1	<0.1		<0.1	<0.1
	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1		<0.1	<0.1
	<0.1	<0.1		<0.1	<0.1	0.46	<0.1		<0.1	<0.1	<0.1		<0.1	<0.1
	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1		<0.1	<0.1
	<0.1	<0.1		<0.1	<0.1	0.2	<0.1		<0.1	<0.1	<0.1		<0.1	<0.1
	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1		<0.1	<0.1
	<0.1	<0.1		<0.1	<0.1	0.16	<0.1		<0.1	<0.1	<0.1		<0.1	<0.1
	<0.1	<0.1		<0.1	<0.1	0.38	<0.1		<0.1	<0.1	<0.1		<0.1	<0.1
	<1.6	<1.6		<1.6	<1.6	2.7	<1.6		<1.6	<1.6	<1.6		<1.6	<1.6
											<0.01	<0.01		
											<0.05	<0.05		
											<2	<2		
											<2	<2		
											<3	<3		
											<10	<10		

Assessment of Chemicals of Potential Concern to Human Health

Risk parameter:	Default - Human Health - POSpark (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	S
Strata	NMS
Depth Min (m bgl)	0
Depth Max (m bgl)	9
Dataset mean SOM%	7.35
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	S	BH101	0.6	NMS
															17/08/2023	S	BH101	1	NMS
															17/08/2023	S	BH102	1	NMS
															17/08/2023	S	BH103	1	NMS
															17/08/2023	S	BH104	0.6	NMS
															17/08/2023	S	BH105	1	NMS
															17/08/2023	S	TP101	0.5	NMS
															17/08/2023	S	TP101	1	NMS
															17/08/2023	S	TP102	1	NMS
															17/08/2023	S	TP103	1	NMS
															17/08/2023	S	TP104	0.6	NMS
															17/08/2023	S	TP104	1.2	NMS
															17/08/2023	S	TP105	0.5	NMS
															17/08/2023	S	TP107	0.8	NMS
P1415	TPH ali >EC35-EC44	mg/kg	10	8	8.40	10.00	9.80	10.00	0.57	0	51	490000	Hydrock Derived						
P1420	TPH ali >EC5-EC44	mg/kg	30	7	30.00	30.00	30.00	30.00	0.00			-							
P1441	TPH aro EC05-EC07	mg/kg	0.01	8	0.00	0.01	0.01	0.01	0.00	0	4708	92000	Hydrock Derived						
P1355	TPH aro >EC07-EC08	mg/kg	0.05	8	0.00	0.05	0.04	0.05	0.02	0	4357	100000	Hydrock Derived						
P1356	TPH aro >EC08-EC10	mg/kg	2	8	0.00	2.00	1.75	2.00	0.71	0	3578	9300	Hydrock Derived						
P1357	TPH aro >EC10-EC12	mg/kg	2	8	1.00	2.00	1.88	2.00	0.35	0	2149	10000	Hydrock Derived						
P1358	TPH aro >EC12-EC16	mg/kg	2	8	2.00	2.00	2.00	2.00	0.00	0	1004	10000	Hydrock Derived						
P1359	TPH aro >EC16-EC21	mg/kg	3	7	3.00	3.00	3.00	3.00	0.00	0	321	7800	Hydrock Derived						
P1360	TPH aro >EC21-EC35	mg/kg	10	8	10.00	10.00	10.00	10.00	0.00	0	29	7900	Hydrock Derived						
P1362	TPH aro >EC35-EC44	mg/kg	10	8	8.40	10.00	9.80	10.00	0.57	0	29	7900	Hydrock Derived						
P1941	TPH aro >EC5-EC44	mg/kg	30	7	30.00	30.00	30.00	30.00	0.00			-							
P1373	Total TPH >EC5-EC44	mg/kg	60	7	60.00	60.00	60.00	60.00	0.00			-							
o	**VOCs - BTEX & MTBE**																		
71-43-2	Benzene	mg/kg	< 2	8	0.00	0.00	0.00	0.00	0.00	0	4708	230	C4SL - CL:AIRE 2014						
108-88-3	Toluene	mg/kg	< 5	8	0.00	0.01	0.00	0.01	0.00	0	4357	100000	Hydrock Derived						
100-41-4	Ethylbenzene	mg/kg	< 2	8	0.00	0.00	0.00	0.00	0.00	0	2844	27000	Hydrock Derived						
95-47-6	Xylene, o-	mg/kg	< 2	8	0.00	0.00	0.00	0.00	0.00	0	2618	33000	Hydrock Derived						
1330-20-7	Xylene, p- (or combined m & p)	mg/kg	< 2	8	0.00	0.00	0.00	0.00	0.00	0	3167	31000	Hydrock Derived						
1634-04-4	MTBE	mg/kg	< 5	8	0.00	0.01	0.00	0.01	0.00	0	62749	120000	Hydrock Derived						
	TPH Additivity Check			**HAZARD QUOTIENTS FOR EACH FRACTION**															
													Aliphatics >EC5-EC6					5.55556E-08	5.55556E-08
													Aliphatics >EC6-EC8					1.5625E-07	1.5625E-07
													Aliphatics >EC8-EC10	Considered additive				9.52381E-05	9.52381E-05
													Aliphatics >EC10-EC12					8.33333E-05	8.33333E-05
													Aliphatics >EC12-EC16					0.000115385	0.000115385
													Aliphatics >EC16-EC35					2.04082E-05	2.04082E-05
													Aliphatics >EC35-EC44					2.04082E-05	2.04082E-05
													Aromatics EC5-EC7					1.08696E-07	1.08696E-07
													Aromatics >EC7-EC8					0.0000005	0.0000005
													Aromatics >EC8-EC10	Considered additive				0.000215054	0.000215054
													Aromatics >EC10-EC12					0.0002	0.0002
													Aromatics >EC12-EC16					0.0002	0.0002
													Aromatics >EC16-EC21	Considered additive				0.000384615	0.000384615
													Aromatics >EC21-EC35					0.001265823	0.001265823
													Aromatics >EC35-EC44					0.001265823	0.001265823
													Hazard Index for ali>C8-C16	Hazard Index table - HI or HQ greater than 1 highlighted with orange shading.				**0.000293956**	**0.000293956**
													Hazard Index for aro>C8-C16					**0.000615054**	**0.000615054**
													Hazard Index for aro>C16-C35					**0.001650438**	**0.001650438**

Legend:

TS	Topsoil	<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.
MG	Made Ground		
MGS	Made Ground Surfacing	0.02	Value greater than, or equal to, the generic assessment criterion (GAC).
MGSB	Made Ground Subbase	*'<10*	Value excluded from statistical analysis
TS	Topsoil	*Y*	Text result
RTS	Relict Topsoil	-	Represents a determinand that was not tested.
SP	Stockpile	*	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 - POSpark (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	**S**
Strata	**NMS**
Depth Min (m bgl)	**0**
Depth Max (m bgl)	**9**
Dataset mean SOM%	**7.35**
Scenario SOM%	**6**

Hydrock

/kg unless otherwise stated

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	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	10/05/18	10/05/18	10/05/18	10/05/18
													S	S	S	S	S	S	S	S	S	S	S	S	S	S
													TP109	TP113	TP114	TP116	TP117	TP118	TP120	TP125	HP101	HP101	TP01	TP02	TP05	TP06
													0.7	0.8	1.2	0.4	0.4	0.7	1	0.5	0.3	0.75	0.8	1	1	0.5
													NMS	NMS	NMS	NMS	NMS	NMS	NMS	NMS	NMS	NMS	NMS	NMS	NMS	NMS
Asbestos																										
Asbestos Identified	text	Y/N	61	-	-	-	-	No. of detects:	0	-	-	-			N	N		N		N	N	N	N			
Asbestos Screen Name	text		8	-	-	-	-	-		-	-	-														
Asbestos Containing Material Types Detected (ACM)	text		12	-	-	-	-	-		-	-	-														
Hydrock Default Suite - FOC / SOM / pH										-																
FOC (dimensionless)	[]	0.001	18	0.002	0.071	0.043	0.046	0.02		-	-	-			0.071	0.031		0.024		0.048	0.027	0.049	0.0019			
SOM (calculated)	%	0.1724	18	0.33	12.24	7.35	7.93	3.24		-	-	-			12.2404	5.3444		4.1376		8.2752	4.6548	8.4476	0.32756			
pH (su)	pH Units	0.1	23	7.80	8.90	8.20	8.10	0.31		-	-	-			8.3	8		7.9		7.8	8.1	8.8	8.7	8.7	8.6	8.9
Hydrock Default Suite - Metals & PAH																										
Arsenic	mg/kg	2	18	4.00	18.00	8.07	7.65	3.96	0	NR	170	C4SL - CL:AIRE 2014			5	18		15		8	15	8	7.3			
Beryllium	mg/kg	0.5	18	0.13	0.80	0.51	0.50	0.12	0	NR	63	Hydrock Derived			<0.5	0.8		0.6		<0.5	0.6	<0.5	0.13			
Boron	mg/kg	1	18	0.50	1.00	0.97	1.00	0.12	0	NR	46000	Hydrock Derived			<1	<1		<1		<1	<1	<1	0.5			
Cadmium	mg/kg	0.2	18	0.20	0.60	0.23	0.20	0.10	0	NR	880	C4SL - CL:AIRE 2014			<0.2	0.3		<0.2		0.6	0.3	<0.2	<0.2			
Chromium (III)	mg/kg	2	18	4.00	20.00	8.55	7.45	4.64	0	NR	27000	Hydrock Derived			5	20		16		7	17	10	7.9			
Chromium (VI)	mg/kg	2	18	1.20	2.00	1.96	2.00	0.19	0	NR	250	C4SL - CL:AIRE 2014			<2	<2		<2		<2	<2	<2	<1.2			
Chromium (Total)	mg/kg		1	7.80	7.80	7.80	7.80	-			-												7.8			
Copper	mg/kg	4	18	2.20	27.00	9.90	9.00	5.26	0	NR	44000	Hydrock Derived			8	15		12		27	15	11	2.2			
Lead	mg/kg	3	18	2.90	27.00	8.99	6.00	7.73	0	NR	1300	C4SL - CL:AIRE 2014			4	27		14		18	25	10	2.9			
Mercury, inorganic	mg/kg	1	18	0.30	1.00	0.96	1.00	0.16	0	NR	240	Hydrock Derived			<1	<1		<1		<1	<1	<1	<0.3			
Nickel	mg/kg	3	18	3.00	11.00	4.63	3.50	2.50	0	NR	800	Hydrock Derived			<3	11		9		4	9	5	4.3			
Selenium	mg/kg	2	18	1.00	2.00	1.94	2.00	0.24	0	NR	1800	Hydrock Derived			<2	<2		<2		<2	<2	<2	<1			
Vanadium	mg/kg	1	18	7.00	38.00	16.28	12.00	8.76	0	NR	5000	Hydrock Derived			10	38		31		12	33	17	12			
Zinc	mg/kg	3	18	4.00	69.00	20.95	14.50	17.66	0	NR	170000	Hydrock Derived			7	47		35		69	42	21	9.1			
Cyanide (free)	mg/kg	1	18	1.00	1.00	1.00	1.00	0.00	0	NR	24	Acute Risk - SoBRA 2020			<1	<1		<1		<1	<1	<1	<1			
Total Phenols (Monohydric)	mg/kg	2	18	1.00	2.00	1.94	2.00	0.24	0	70308	1300	Hydrock Derived			<2	<2		<2		<2	<2	<2	<1			
Acenaphthene	mg/kg	0.1	18	0.05	0.10	0.10	0.10	0.01	0	336	30000	Hydrock Derived			<0.1	<0.1		<0.1		<0.1	<0.1	<0.1	<0.05			
Acenaphthylene	mg/kg	0.1	18	0.05	0.10	0.10	0.10	0.01	0	506	30000	Hydrock Derived			<0.1	<0.1		<0.1		<0.1	<0.1	<0.1	<0.05			
Anthracene	mg/kg	0.1	18	0.05	0.10	0.10	0.10	0.01	0	6.96	150000	Hydrock Derived			<0.1	<0.1		<0.1		<0.1	<0.1	<0.1	<0.05			
Benz(a)anthracene	mg/kg	0.1	18	0.05	0.32	0.11	0.10	0.05	0	10.27	62	Hydrock Derived			<0.1	<0.1		<0.1		<0.1	<0.1	<0.1	<0.05			
Benzo(a)pyrene	mg/kg	0.1	18	0.05	0.30	0.11	0.10	0.05	0	5.46	21	C4SL - CL:AIRE 2014			<0.1	<0.1		<0.1		<0.1	<0.1	<0.1	<0.05			
Benzo(b)fluoranthene	mg/kg	0.1	18	0.05	0.43	0.12	0.10	0.08	0	7.29	16	Hydrock Derived			<0.1	<0.1		<0.1		<0.1	<0.1	<0.1	<0.05			
Benzo(ghi)perylene	mg/kg	0.1	18	0.05	0.17	0.10	0.10	0.02	0	0.09	1600	Hydrock Derived			<0.1	<0.1		<0.1		<0.1	<0.1	<0.1	<0.05			
Benzo(k)fluoranthene	mg/kg	0.1	18	0.05	0.10	0.10	0.10	0.01	0	4.12	440	Hydrock Derived			<0.1	<0.1		<0.1		<0.1	<0.1	<0.1	<0.05			
Chrysene	mg/kg	0.1	18	0.05	0.33	0.11	0.10	0.06	0	2.64	120	Hydrock Derived			<0.1	<0.1		<0.1		<0.1	<0.1	<0.1	<0.05			
Dibenz(ah)anthracene	mg/kg	0.1	18	0.05	0.10	0.10	0.10	0.01	0	0.024	1.4	Hydrock Derived			<0.1	<0.1		<0.1		<0.1	<0.1	<0.1	<0.05			
Fluoranthene	mg/kg	0.1	18	0.05	0.46	0.12	0.10	0.09	0	113	6400	Hydrock Derived			<0.1	<0.1		<0.1		<0.1	<0.1	<0.1	<0.05			
Fluorene	mg/kg	0.1	18	0.05	0.10	0.10	0.10	0.01	0	183	20000	Hydrock Derived			<0.1	<0.1		<0.1		<0.1	<0.1	<0.1	<0.05			
Indeno(123cd)pyrene	mg/kg	0.1	18	0.05	0.20	0.10	0.10	0.03	0	0.37	180	Hydrock Derived			<0.1	<0.1		<0.1		<0.1	<0.1	<0.1	<0.05			
Naphthalene	mg/kg	0.1	18	0.05	0.10	0.10	0.10	0.01	0	432	2300	Hydrock Derived			<0.1	<0.1		<0.1		<0.1	<0.1	<0.1	<0.05			
Phenanthrene	mg/kg	0.1	18	0.05	0.16	0.10	0.10	0.02	0	214	6300	Hydrock Derived			<0.1	<0.1		<0.1		<0.1	<0.1	<0.1	<0.05			
Pyrene	mg/kg	0.1	18	0.05	0.38	0.11	0.10	0.07	0	13.2	15000	Hydrock Derived			<0.1	<0.1		<0.1		<0.1	<0.1	<0.1	<0.05			
PAH 16 Total	mg/kg	1.6	17	1.60	2.70	1.66	1.60	0.27			-				<1.6	<1.6		<1.6		<1.6	<1.6	<1.6				
TPH fractions																										
TPH ali EC05-EC06	mg/kg	0.01	8	0.00	0.01	0.01	0.01	0.003	0	1150	180000	Hydrock Derived	<0.01	<0.01			<0.01				<0.01	<0.01	<0.001			
TPH ali >EC06-EC08	mg/kg	0.05	8	0.00	0.05	0.04	0.05	0.017	0	736	320000	Hydrock Derived	<0.05	<0.05			<0.05				<0.05	<0.05	<0.001			
TPH ali >EC08-EC10	mg/kg	2	8	0.00	2.00	1.75	2.00	0.707	0	451	21000	Hydrock Derived	<2	<2			<2				<2	<2	<0.001			
TPH ali >EC10-EC12	mg/kg	2	8	1.00	2.00	1.88	2.00	0.35	0	283	24000	Hydrock Derived	<2	<2			<2				<2	<2	<1			
TPH ali >EC12-EC16	mg/kg	3	8	2.00	3.00	2.88	3.00	0.35	0	142	26000	Hydrock Derived	<3	<3			<3				<3	<3	<2			
TPH ali >EC16-EC35	mg/kg	10	7	10.00	10.00	10.00	10.00	0.00	0	51	490000	Hydrock Derived	<10	<10			<10				<10	<10	***N/A***			

Assessment of Chemicals of Potential Concern to Human Health

Risk parameter:	**Default - Human Health - POSpark (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	S
Strata	NMS
Depth Min (m bgl)	0
Depth Max (m bgl)	9
Dataset mean SOM%	7.35
Scenario SOM%	6

Hydrock

/kg unless otherwise stated

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	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	10/05/18	10/05/18	10/05/18	10/05/18
													S	S	S	S	S	S	S	S	S	S	S	S	S	S
													TP109	TP113	TP114	TP116	TP117	TP118	TP120	TP125	HP101	HP101	TP01	TP02	TP05	TP06
													0.7	0.8	1.2	0.4	0.4	0.7	1	0.5	0.3	0.75	0.8	1	1	0.5
													NMS	NMS	NMS	NMS	NMS	NMS	NMS	NMS	NMS	NMS	NMS	NMS	NMS	NMS
TPH ali >EC35-EC44	mg/kg	10	8	8.40	10.00	9.80	10.00	0.57	0	51	490000	Hydrock Derived	<10	<10			<10				<10	<10	<8.4			
TPH ali >EC5-EC44	mg/kg	30	7	30.00	30.00	30.00	30.00	0.00			-		<30	<30			<30				<30	<30				
TPH aro EC05-EC07	mg/kg	0.01	8	0.00	0.01	0.01	0.01	0.00	0	4708	92000	Hydrock Derived	<0.01	<0.01			<0.01				<0.01	<0.01	<0.001			
TPH aro >EC07-EC08	mg/kg	0.05	8	0.00	0.05	0.04	0.05	0.02	0	4357	100000	Hydrock Derived	<0.05	<0.05			<0.05				<0.05	<0.05	<0.001			
TPH aro >EC08-EC10	mg/kg	2	8	0.00	2.00	1.75	2.00	0.71	0	3578	9300	Hydrock Derived	<2	<2			<2				<2	<2	<0.001			
TPH aro >EC10-EC12	mg/kg	2	8	1.00	2.00	1.88	2.00	0.35	0	2149	10000	Hydrock Derived	<2	<2			<2				<2	<2	<1			
TPH aro >EC12-EC16	mg/kg	2	8	2.00	2.00	2.00	2.00	0.00	0	1004	10000	Hydrock Derived	<2	<2			<2				<2	<2	<2			
TPH aro >EC16-EC21	mg/kg	3	7	3.00	3.00	3.00	3.00	0.00	0	321	7800	Hydrock Derived	<3	<3			<3				<3	<3				
TPH aro >EC21-EC35	mg/kg	10	8	10.00	10.00	10.00	10.00	0.00	0	29	7900	Hydrock Derived	<10	<10			<10				<10	<10	<10			
TPH aro >EC35-EC44	mg/kg	10	8	8.40	10.00	9.80	10.00	0.57	0	29	7900	Hydrock Derived	<10	<10			<10				<10	<10	<8.4			
TPH aro >EC5-EC44	mg/kg	30	7	30.00	30.00	30.00	30.00	0.00			-		<30	<30			<30				<30	<30				
Total TPH >EC5-EC44	mg/kg	60	7	60.00	60.00	60.00	60.00	0.00			-		<60	<60			<60				<60	<60				
VOCs - BTEX & MTBE																										
Benzene	mg/kg	< 2	8	0.00	0.00	0.00	0.00	0.00	0	4708	230	C4SL - CL:AIRE 2014	<0.002	<0.002			<0.002				<0.002	<0.002	<0.000001			
Toluene	mg/kg	< 5	8	0.00	0.01	0.00	0.01	0.00	0	4357	100000	Hydrock Derived	<0.005	<0.005			<0.005				<0.005	<0.005	<0.000001			
Ethylbenzene	mg/kg	< 2	8	0.00	0.00	0.00	0.00	0.00	0	2844	27000	Hydrock Derived	<0.002	<0.002			<0.002				<0.002	<0.002	<0.000001			
Xylene, o-	mg/kg	< 2	8	0.00	0.00	0.00	0.00	0.00	0	2618	33000	Hydrock Derived	<0.002	<0.002			<0.002				<0.002	<0.002	<0.000001			
Xylene, p- (or combined m & p)	mg/kg	< 2	8	0.00	0.00	0.00	0.00	0.00	0	3167	31000	Hydrock Derived	<0.002	<0.002			<0.002				<0.002	<0.002	<0.000001			
MTBE	mg/kg	< 5	8	0.00	0.01	0.00	0.01	0.00	0	62749	120000	Hydrock Derived	<0.005	<0.005			<0.005				<0.005	<0.005	<0.000001			
TPH Additivity Check			**HAZARD QUOTIENTS FOR EACH FRACTION**																							
												Aliph	5.55556E-08	5.55556E-08			5.55556E-08				5.55556E-08	5.55556E-08	5.55556E-09			
												Aliph	1.5625E-07	1.5625E-07			1.5625E-07				1.5625E-07	1.5625E-07	3.125E-09			
												Alipha	9.52381E-05	9.52381E-05			9.52381E-05				9.52381E-05	9.52381E-05	4.7619E-08			
												Alipha	8.33333E-05	8.33333E-05			8.33333E-05				8.33333E-05	8.33333E-05	4.16667E-05			
												Alipha	0.000115385	0.000115385			0.000115385				0.000115385	0.000115385	7.69231E-05			
												Aliphat	2.04082E-05	2.04082E-05			2.04082E-05				2.04082E-05	2.04082E-05				
												Aliphat	2.04082E-05	2.04082E-05			2.04082E-05				2.04082E-05	2.04082E-05	1.71429E-05			
												Aro	1.08696E-07	1.08696E-07			1.08696E-07				1.08696E-07	1.08696E-07	1.08696E-08			
												Arom	0.0000005	0.0000005			0.0000005				0.0000005	0.0000005	0.00000001			
												Aroma	0.000215054	0.000215054			0.000215054				0.000215054	0.000215054	1.07527E-07			
												Aromal	0.0002	0.0002			0.0002				0.0002	0.0002	0.0001			
												Aromal	0.0002	0.0002			0.0002				0.0002	0.0002	0.0002			
												Aromal	0.000384615	0.000384615			0.000384615				0.000384615	0.000384615				
												Aromal	0.001265823	0.001265823			0.001265823				0.001265823	0.001265823	0.001265823			
												Aromat	0.001265823	0.001265823			0.001265823				0.001265823	0.001265823	0.001063291			
												Hazard Index	**0.000293956**	**0.000293956**			**0.000293956**				**0.000293956**	**0.000293956**	**0.000118637**			
												Hazard Index	**0.000615054**	**0.000615054**			**0.000615054**				**0.000615054**	**0.000615054**	**0.000300108**			
												Hazard Index f	**0.001650438**	**0.001650438**			**0.001650438**				**0.001650438**	**0.001650438**	**0.001265823**			

Considered additive

Considered additive

Considered additive

Hazard Index table - HI or HQ greater than 1 highlighted with orange shading.

Legend:

TS	Topsoil	<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.
MG	Made Ground		
MGS	Made Ground Surfacing	0.02	Value greater than, or equal to, the generic assessment criterion (GAC).
MGSB	Made Ground Subbase	*<10	Value excluded from statistical analysis
TS	Topsoil	Y	Text result
RTS	Relict Topsoil	-	Represents a determinand that was not tested.
SP	Stockpile	+	represents a data point that is not included in the current filter settings

n:

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	S
Strata	NMS
Depth Min (m bgl)	0
Depth Max (m bgl)	9
Dataset mean SOM%	7.35
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	S	BH101	0.6	NMS
															17/08/2023	S	BH101	1	NMS
															17/08/2023	S	BH102	1	NMS
															17/08/2023	S	BH103	1	NMS
															17/08/2023	S	BH104	0.6	NMS
															17/08/2023	S	BH105	1	NMS
															17/08/2023	S	TP101	0.5	NMS
															17/08/2023	S	TP101	1	NMS
															17/08/2023	S	TP102	1	NMS
															17/08/2023	S	TP103	1	NMS
															17/08/2023	S	TP104	0.6	NMS
															17/08/2023	S	TP104	1.2	NMS
															17/08/2023	S	TP105	0.5	NMS
															17/08/2023	S	TP107	0.8	NMS
-	**Asbestos**																		
P1020	Asbestos Identified	text	Y/N	61	-	-	-	-	No. of detects:	0	-	-	-		N	N		N	N
P1889	Asbestos Screen Name	text		8	-	-	-	-	-		-	-	-						
P1880	Asbestos Containing Material Types Detected (ACM)	text		12	-	-	-	-	-		-	-	-						
0	**Hydrock Default Suite - FOC / SOM / pH**										-								
P1085	FOC (dimensionless)	[]	0.001	18	0.002	0.071	0.043	0.046	0.02		-	-	-		0.055	0.067		0.04	0.061
-	SOM (calculated)	%	0.1724	18	0.33	12.24	7.35	7.93	3.24		-	-	-		9.482	11.5508		6.896	10.5164
P1334	pH (su)	pH Units	0.1	23	7.80	8.90	8.20	8.10	0.31		-	-	-		8.1	8.1	8.1	8.1	8.1
-	**Hydrock Default Suite - Metals & PAH**																		
7440-38-2	Arsenic	mg/kg	2	18	4.00	18.00	8.07	7.65	3.96	0	NR	37	C4SL - CL:AIRE 2014		6	5		6	7
7440-41-7	Beryllium	mg/kg	0.5	18	0.13	0.80	0.51	0.50	0.12	0	NR	1.7	Hydrock Derived		<0.5	<0.5		<0.5	<0.5
7440-42-8	Boron	mg/kg	1	18	0.50	1.00	0.97	1.00	0.12	0	NR	300	Hydrock Derived		<1	<1		<1	<1
7440-43-9	Cadmium	mg/kg	0.2	18	0.20	0.60	0.23	0.20	0.10	0	NR	22	C4SL - CL:AIRE 2014		<0.2	<0.2		<0.2	<0.2
16065-83-1	Chromium (III)	mg/kg	2	18	4.00	20.00	8.55	7.45	4.64	0	NR	890	Hydrock Derived		8	5		6	5
18540-29-9	Chromium (VI)	mg/kg	2	18	1.20	2.00	1.96	2.00	0.19	0	NR	21	C4SL - CL:AIRE 2014		<2	<2		<2	<2
7440-47-3	Chromium (Total)	mg/kg		1	7.80	7.80	7.80	7.80	-			-							
7440-50-8	Copper	mg/kg	4	18	2.20	27.00	9.90	9.00	5.26	0	NR	2500	Hydrock Derived		9	8		8	8
7439-92-1	Lead	mg/kg	3	18	2.90	27.00	8.99	6.00	7.73	0	NR	200	C4SL - CL:AIRE 2014		5	<3		<3	3
7439-97-6	Mercury, inorganic	mg/kg	1	18	0.30	1.00	0.96	1.00	0.16	0	NR	40	Hydrock Derived		<1	<1		<1	<1
7440-02-0	Nickel	mg/kg	3	18	3.00	11.00	4.63	3.50	2.50	0	NR	130	Hydrock Derived		4	<3		<3	<3
7782-49-2	Selenium	mg/kg	2	18	1.00	2.00	1.94	2.00	0.24	0	NR	260	Hydrock Derived		<2	<2		<2	<2
7440-62-2	Vanadium	mg/kg	1	18	7.00	38.00	16.28	12.00	8.76	0	NR	410	Hydrock Derived		15	11		12	12
7440-66-6	Zinc	mg/kg	3	18	4.00	69.00	20.95	14.50	17.66	0	NR	3900	Hydrock Derived		18	9		8	9
P1095	Cyanide (free)	mg/kg	1	18	1.00	1.00	1.00	1.00	0.00	0	NR	24	Acute Risk - SoBRA 2020		<1	<1		<1	<1
P1186	Total Phenols (Monohydric)	mg/kg	2	18	1.00	2.00	1.94	2.00	0.24	0	70308	390	Hydrock Derived		<2	<2		<2	<2
83-32-9	Acenaphthene	mg/kg	0.1	18	0.05	0.10	0.10	0.10	0.01	0	336	1200	Hydrock Derived		<0.1	<0.1		<0.1	<0.1
208-96-8	Acenaphthylene	mg/kg	0.1	18	0.05	0.10	0.10	0.10	0.01	0	506	970	Hydrock Derived		<0.1	<0.1		<0.1	<0.1
120-12-7	Anthracene	mg/kg	0.1	18	0.05	0.10	0.10	0.10	0.01	0	6.96	11000	Hydrock Derived		<0.1	<0.1		<0.1	<0.1
56-55-3	Benz(a)anthracene	mg/kg	0.1	18	0.05	0.32	0.11	0.10	0.05	0	10.27	14	Hydrock Derived		<0.1	<0.1		<0.1	<0.1
50-32-8	Benzo(a)pyrene	mg/kg	0.1	18	0.05	0.30	0.11	0.10	0.05	0	5.46	5	C4SL - CL:AIRE 2014		<0.1	<0.1		<0.1	<0.1
205-99-2	Benzo(b)fluoranthene	mg/kg	0.1	18	0.05	0.43	0.12	0.10	0.08	0	7.29	3.7	Hydrock Derived		<0.1	<0.1		<0.1	<0.1
191-24-2	Benzo(ghi)perylene	mg/kg	0.1	18	0.05	0.17	0.10	0.10	0.02	0	0.09	350	Hydrock Derived		<0.1	<0.1		<0.1	<0.1
207-08-9	Benzo(k)fluoranthene	mg/kg	0.1	18	0.05	0.10	0.10	0.10	0.01	0	4.12	100	Hydrock Derived		<0.1	<0.1		<0.1	<0.1
218-01-9	Chrysene	mg/kg	0.1	18	0.05	0.33	0.11	0.10	0.06	0	2.64	27	Hydrock Derived		<0.1	<0.1		<0.1	<0.1
53-70-3	Dibenz(ah)anthracene	mg/kg	0.1	18	0.05	0.10	0.10	0.10	0.01	0	0.024	0.31	Hydrock Derived		<0.1	<0.1		<0.1	<0.1
206-44-0	Fluoranthene	mg/kg	0.1	18	0.05	0.46	0.12	0.10	0.09	0	113	900	Hydrock Derived		<0.1	<0.1		<0.1	<0.1
86-73-7	Fluorene	mg/kg	0.1	18	0.05	0.10	0.10	0.10	0.01	0	183	900	Hydrock Derived		<0.1	<0.1		<0.1	<0.1
193-39-5	Indeno(123cd)pyrene	mg/kg	0.1	18	0.05	0.20	0.10	0.10	0.03	0	0.37	41	Hydrock Derived		<0.1	<0.1		<0.1	<0.1
91-20-3	Naphthalene	mg/kg	0.1	18	0.05	0.10	0.10	0.10	0.01	0	432	71	Hydrock Derived		<0.1	<0.1		<0.1	<0.1
85-01-8	Phenanthrene	mg/kg	0.1	18	0.05	0.16	0.10	0.10	0.02	0	214	450	Hydrock Derived		<0.1	<0.1		<0.1	<0.1
129-00-0	Pyrene	mg/kg	0.1	18	0.05	0.38	0.11	0.10	0.07	0	13.2	2000	Hydrock Derived		<0.1	<0.1		<0.1	<0.1
P1310	PAH 16 Total	mg/kg	1.6	17	1.60	2.70	1.66	1.60	0.27			-			<1.6	<1.6		<1.6	<1.6
0	**TPH fractions**																		
P1407	TPH ali EC05-EC06	mg/kg	0.01	8	0.00	0.01	0.01	0.01	0.003	0	1150	160	Hydrock Derived						
P1408	TPH ali >EC06-EC08	mg/kg	0.05	8	0.00	0.05	0.04	0.05	0.017	0	736	530	Hydrock Derived						
P1409	TPH ali >EC08-EC10	mg/kg	2	8	0.00	2.00	1.75	2.00	0.707	0	451	150	Hydrock Derived						
P1410	TPH ali >EC10-EC12	mg/kg	2	8	1.00	2.00	1.88	2.00	0.35	0	283	760	Hydrock Derived						
P1411	TPH ali >EC12-EC16	mg/kg	3	8	2.00	3.00	2.88	3.00	0.35	0	142	4300	Hydrock Derived						
P1938	TPH ali >EC16-EC35	mg/kg	10	7	10.00	10.00	10.00	10.00	0.00	0	51	110000	Hydrock Derived						

															17/08/2023	S	TP107	0.8	NMS
															17/08/2023	S	TP108	0.5	NMS
															17/08/2023	S	TP108	1	NMS
															17/08/2023	S	TP109	0.5	NMS
															17/08/2023	S	TP109	1	NMS
															17/08/2023	S	TP110	0.5	NMS
															17/08/2023	S	TP110	1	NMS
															17/08/2023	S	TP111	0.5	NMS
															17/08/2023	S	TP111	1	NMS
															17/08/2023	S	TP112	0.5	NMS
															17/08/2023	S	TP112	1	NMS
															17/08/2023	S	TP113	0.5	NMS
															17/08/2023	S	TP113	1	NMS
															N	N	N	N	N
															0.055	0.067	0.04	0.061	0.066
															9.482	11.5508	6.896	10.5164	11.3784
															8.1	8.1	8.1	8.1	8
															6	5	6	7	8
															<0.5	<0.5	<0.5	<0.5	<0.5
															<1	<1	<1	<1	<1
															<0.2	<0.2	<0.2	<0.2	<0.2
															8	5	6	5	5
															<2	<2	<2	<2	<2
															5	<3	<3	3	7
															<1	<1	<1	<1	<1
															4	<3	<3	<3	3
															<2	<2	<2	<2	<2
															15	11	12	12	12
															18	9	8	9	14
															<1	<1	<1	<1	<1
															<2	<2	<2	<2	<2
															<0.1	<0.1	<0.1	<0.1	<0.1
															<0.1	<0.1	<0.1	<0.1	<0.1
															<0.1	<0.1	<0.1	<0.1	<0.1
															<0.1	<0.1	<0.1	<0.1	0.32
															<0.1	<0.1	<0.1	<0.1	0.3
															<0.1	<0.1	<0.1	<0.1	0.43
															<0.1	<0.1	<0.1	<0.1	0.17
															<0.1	<0.1	<0.1	<0.1	<0.1
															<0.1	<0.1	<0.1	<0.1	0.33
															<0.1	<0.1	<0.1	<0.1	0.46
															<0.1	<0.1	<0.1	<0.1	<0.1
															<0.1	<0.1	<0.1	<0.1	0.2
															<0.1	<0.1	<0.1	<0.1	<0.1
															<0.1	<0.1	<0.1	<0.1	0.16
															<0.1	<0.1	<0.1	<0.1	0.38
															<1.6	<1.6	<1.6	<1.6	2.7

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	S
Strata	NMS
Depth Min (m bgl)	0
Depth Max (m bgl)	9
Dataset mean SOM%	7.35
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	Date	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023
														Zone	S	S	S	S	S	S	S	S	S	S	S	S	S
														Location	BH101	BH101	BH102	BH103	BH104	BH105	TP101	TP101	TP102	TP103	TP104	TP104	TP105	TP107
														Depth (m bgl)	0.6	1	1	1	0.6	1	0.5	1	1	1	0.6	1.2	0.5	0.8
														Strata	NMS	NMS	NMS	NMS	NMS	NMS	NMS	NMS	NMS	NMS	NMS	NMS	NMS	NMS
P1415	TPH ali >EC35-EC44	mg/kg	10	8	8.40	10.00	9.80	10.00	0.57	0	51	110000	Hydrock Derived												<10	<10		
P1420	TPH ali >EC5-EC44	mg/kg	30	7	30.00	30.00	30.00	30.00	0.00			-													<30	<30		
P1441	TPH aro EC05-EC07	mg/kg	0.01	8	0.00	0.01	0.01	0.01	0.00	0	4708	310	Hydrock Derived												<0.01	<0.01		
P1355	TPH aro >EC07-EC08	mg/kg	0.05	8	0.00	0.05	0.04	0.05	0.02	0	4357	680	Hydrock Derived												<0.05	<0.05		
P1356	TPH aro >EC08-EC10	mg/kg	2	8	0.00	2.00	1.75	2.00	0.71	0	3578	190	Hydrock Derived												<2	<2		
P1357	TPH aro >EC10-EC12	mg/kg	2	8	1.00	2.00	1.88	2.00	0.35	0	2149	390	Hydrock Derived												<2	<2		
P1358	TPH aro >EC12-EC16	mg/kg	2	8	2.00	2.00	2.00	2.00	0.00	0	1004	670	Hydrock Derived												<2	<2		
P1359	TPH aro >EC16-EC21	mg/kg	3	7	3.00	3.00	3.00	3.00	0.00	0	321	930	Hydrock Derived												<3	<3		
P1360	TPH aro >EC21-EC35	mg/kg	10	8	10.00	10.00	10.00	10.00	0.00	0	29	1700	Hydrock Derived												<10	<10		
P1362	TPH aro >EC35-EC44	mg/kg	10	8	8.40	10.00	9.80	10.00	0.57	0	29	1700	Hydrock Derived												<10	<10		
P1941	TPH aro >EC5-EC44	mg/kg	30	7	30.00	30.00	30.00	30.00	0.00			-													<30	<30		
P1373	Total TPH >EC5-EC44	mg/kg	60	7	60.00	60.00	60.00	60.00	0.00			-													<60	<60		
o	**VOCs - BTEX & MTBE**																											
71-43-2	Benzene	mg/kg	< 2	8	0.00	0.00	0.00	0.00	0.00	0	4708	0.87	C4SL - CL:AIRE 2014												<0.002	<0.002		
108-88-3	Toluene	mg/kg	< 5	8	0.00	0.01	0.00	0.01	0.00	0	4357	680	Hydrock Derived												<0.005	<0.005		
100-41-4	Ethylbenzene	mg/kg	< 2	8	0.00	0.00	0.00	0.00	0.00	0	2844	260	Hydrock Derived												<0.002	<0.002		
95-47-6	Xylene, o-	mg/kg	< 2	8	0.00	0.00	0.00	0.00	0.00	0	2618	330	Hydrock Derived												<0.002	<0.002		
1330-20-7	Xylene, p- (or combined m & p)	mg/kg	< 2	8	0.00	0.00	0.00	0.00	0.00	0	3167	310	Hydrock Derived												<0.002	<0.002		
1634-04-4	MTBE	mg/kg	< 5	8	0.00	0.01	0.00	0.01	0.00	0	62749	210	Hydrock Derived												<0.005	<0.005		
	TPH Additivity Check			**HAZARD QUOTIENTS FOR EACH FRACTION**																								
													Aliphatics >EC5-EC6												0.0000625	0.0000625		
													Aliphatics >EC6-EC8												9.43396E-05	9.43396E-05		
													Aliphatics >EC8-EC10												0.013333333	0.013333333		
													Aliphatics >EC10-EC12												0.002631579	0.002631579		
													Aliphatics >EC12-EC16												0.000697674	0.000697674		
													Aliphatics >EC16-EC35												9.09091E-05	9.09091E-05		
													Aliphatics >EC35-EC44												9.09091E-05	9.09091E-05		
													Aromatics EC5-EC7												3.22581E-05	3.22581E-05		
													Aromatics >EC7-EC8												7.35294E-05	7.35294E-05		
													Aromatics >EC8-EC10												0.010526316	0.010526316		
													Aromatics >EC10-EC12												0.005128205	0.005128205		
													Aromatics >EC12-EC16												0.002985075	0.002985075		
													Aromatics >EC16-EC21												0.003225806	0.003225806		
													Aromatics >EC21-EC35												0.005882353	0.005882353		
													Aromatics >EC35-EC44												0.005882353	0.005882353		
													Hazard Index for ali>C8-C16												**0.016662587**	**0.016662587**		
													Hazard Index for aro>C8-C16												**0.018639596**	**0.018639596**		
													Hazard Index for aro>C16-C35												**0.009108159**	**0.009108159**		

Considered additive: Aliphatics >EC8-EC10, Aliphatics >EC10-EC12, Aliphatics >EC12-EC16

Considered additive: Aromatics >EC8-EC10, Aromatics >EC10-EC12, Aromatics >EC12-EC16

Considered additive: Aromatics >EC16-EC21, Aromatics >EC21-EC35

Hazard Index table - HI or HQ greater than 1 highlighted with orange shading.

Legend:

TS	Topsoil	<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.
MG	Made Ground		
MGS	Made Ground Surfacing	0.02	Value greater than, or equal to, the generic assessment criterion (GAC).
MGSB	Made Ground Subbase	*'<10*	Value excluded from statistical analysis
TS	Topsoil	*Y*	Text result
RTS	Relict Topsoil	-	Represents a determinand that was not tested.
SP	Stockpile	*	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	**S**
Strata	**NMS**
Depth Min (m bgl)	**0**
Depth Max (m bgl)	**9**
Dataset mean SOM%	**7.35**
Scenario SOM%	**6**

Hydrock

/kg unless otherwise stated

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	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	10/05/18	10/05/18	10/05/18	10/05/18
													S	S	S	S	S	S	S	S	S	S	S	S	S	S
													TP109	TP113	TP114	TP116	TP117	TP118	TP120	TP125	HP101	HP101	TP01	TP02	TP05	TP06
													0.7	0.8	1.2	0.4	0.4	0.7	1	0.5	0.3	0.75	0.8	1	1	0.5
													NMS	NMS	NMS	NMS	NMS	NMS	NMS	NMS	NMS	NMS	NMS	NMS	NMS	NMS
Asbestos																										
Asbestos Identified	text	Y/N	61	-	-	-	-	No. of detects:	0	-	-	-			N	N		N		N	N	N	N			
Asbestos Screen Name	text		8	-	-	-	-	-		-	-	-														
Asbestos Containing Material Types Detected (ACM)	text		12	-	-	-	-	-		-	-	-														
Hydrock Default Suite - FOC / SOM / pH										-																
FOC (dimensionless)	[]	0.001	18	0.002	0.071	0.043	0.046	0.02		-	-	-			0.071	0.031		0.024		0.048	0.027	0.049	0.0019			
SOM (calculated)	%	0.1724	18	0.33	12.24	7.35	7.93	3.24		-	-	-			12.2404	5.3444		4.1376		8.2752	4.6548	8.4476	0.32756			
pH (su)	pH Units	0.1	23	7.80	8.90	8.20	8.10	0.31		-	-	-			8.3	8		7.9		7.8	8.1	8.8	8.7	8.7	8.6	8.9
Hydrock Default Suite - Metals & PAH																										
Arsenic	mg/kg	2	18	4.00	18.00	8.07	7.65	3.96	0	NR	37	C4SL - CL:AIRE 2014			5	18		15		8	15	8	7.3			
Beryllium	mg/kg	0.5	18	0.13	0.80	0.51	0.50	0.12	0	NR	1.7	Hydrock Derived			<0.5	0.8		0.6		<0.5	0.6	<0.5	0.13			
Boron	mg/kg	1	18	0.50	1.00	0.97	1.00	0.12	0	NR	300	Hydrock Derived			<1	<1		<1		<1	<1	<1	0.5			
Cadmium	mg/kg	0.2	18	0.20	0.60	0.23	0.20	0.10	0	NR	22	C4SL - CL:AIRE 2014			<0.2	0.3		<0.2		0.6	0.3	<0.2	<0.2			
Chromium (III)	mg/kg	2	18	4.00	20.00	8.55	7.45	4.64	0	NR	890	Hydrock Derived			5	20		16		7	17	10	7.9			
Chromium (VI)	mg/kg	2	18	1.20	2.00	1.96	2.00	0.19	0	NR	21	C4SL - CL:AIRE 2014			<2	<2		<2		<2	<2	<2	<1.2			
Chromium (Total)	mg/kg		1	7.80	7.80	7.80	7.80	-			-												7.8			
Copper	mg/kg	4	18	2.20	27.00	9.90	9.00	5.26	0	NR	2500	Hydrock Derived			8	15		12		27	15	11	2.2			
Lead	mg/kg	3	18	2.90	27.00	8.99	6.00	7.73	0	NR	200	C4SL - CL:AIRE 2014			4	27		14		18	25	10	2.9			
Mercury, inorganic	mg/kg	1	18	0.30	1.00	0.96	1.00	0.16	0	NR	40	Hydrock Derived			<1	<1		<1		<1	<1	<1	<0.3			
Nickel	mg/kg	3	18	3.00	11.00	4.63	3.50	2.50	0	NR	130	Hydrock Derived			<3	11		9		4	9	5	4.3			
Selenium	mg/kg	2	18	1.00	2.00	1.94	2.00	0.24	0	NR	260	Hydrock Derived			<2	<2		<2		<2	<2	<2	<1			
Vanadium	mg/kg	1	18	7.00	38.00	16.28	12.00	8.76	0	NR	410	Hydrock Derived			10	38		31		12	33	17	12			
Zinc	mg/kg	3	18	4.00	69.00	20.95	14.50	17.66	0	NR	3900	Hydrock Derived			7	47		35		69	42	21	9.1			
Cyanide (free)	mg/kg	1	18	1.00	1.00	1.00	1.00	0.00	0	NR	24	Acute Risk - SoBRA 2020			<1	<1		<1		<1	<1	<1	<1			
Total Phenols (Monohydric)	mg/kg	2	18	1.00	2.00	1.94	2.00	0.24	0	70308	390	Hydrock Derived			<2	<2		<2		<2	<2	<2	<1			
Acenaphthene	mg/kg	0.1	18	0.05	0.10	0.10	0.10	0.01	0	336	1200	Hydrock Derived			<0.1	<0.1		<0.1		<0.1	<0.1	<0.1	<0.05			
Acenaphthylene	mg/kg	0.1	18	0.05	0.10	0.10	0.10	0.01	0	506	970	Hydrock Derived			<0.1	<0.1		<0.1		<0.1	<0.1	<0.1	<0.05			
Anthracene	mg/kg	0.1	18	0.05	0.10	0.10	0.10	0.01	0	6.96	11000	Hydrock Derived			<0.1	<0.1		<0.1		<0.1	<0.1	<0.1	<0.05			
Benz(a)anthracene	mg/kg	0.1	18	0.05	0.32	0.11	0.10	0.05	0	10.27	14	Hydrock Derived			<0.1	<0.1		<0.1		<0.1	<0.1	<0.1	<0.05			
Benzo(a)pyrene	mg/kg	0.1	18	0.05	0.30	0.11	0.10	0.05	0	5.46	5	C4SL - CL:AIRE 2014			<0.1	<0.1		<0.1		<0.1	<0.1	<0.1	<0.05			
Benzo(b)fluoranthene	mg/kg	0.1	18	0.05	0.43	0.12	0.10	0.08	0	7.29	3.7	Hydrock Derived			<0.1	<0.1		<0.1		<0.1	<0.1	<0.1	<0.05			
Benzo(ghi)perylene	mg/kg	0.1	18	0.05	0.17	0.10	0.10	0.02	0	0.09	350	Hydrock Derived			<0.1	<0.1		<0.1		<0.1	<0.1	<0.1	<0.05			
Benzo(k)fluoranthene	mg/kg	0.1	18	0.05	0.10	0.10	0.10	0.01	0	4.12	100	Hydrock Derived			<0.1	<0.1		<0.1		<0.1	<0.1	<0.1	<0.05			
Chrysene	mg/kg	0.1	18	0.05	0.33	0.11	0.10	0.06	0	2.64	27	Hydrock Derived			<0.1	<0.1		<0.1		<0.1	<0.1	<0.1	<0.05			
Dibenz(ah)anthracene	mg/kg	0.1	18	0.05	0.10	0.10	0.10	0.01	0	0.024	0.31	Hydrock Derived			<0.1	<0.1		<0.1		<0.1	<0.1	<0.1	<0.05			
Fluoranthene	mg/kg	0.1	18	0.05	0.46	0.12	0.10	0.09	0	113	900	Hydrock Derived			<0.1	<0.1		<0.1		<0.1	<0.1	<0.1	<0.05			
Fluorene	mg/kg	0.1	18	0.05	0.10	0.10	0.10	0.01	0	183	900	Hydrock Derived			<0.1	<0.1		<0.1		<0.1	<0.1	<0.1	<0.05			
Indeno(123cd)pyrene	mg/kg	0.1	18	0.05	0.20	0.10	0.10	0.03	0	0.37	41	Hydrock Derived			<0.1	<0.1		<0.1		<0.1	<0.1	<0.1	<0.05			
Naphthalene	mg/kg	0.1	18	0.05	0.10	0.10	0.10	0.01	0	432	71	Hydrock Derived			<0.1	<0.1		<0.1		<0.1	<0.1	<0.1	<0.05			
Phenanthrene	mg/kg	0.1	18	0.05	0.16	0.10	0.10	0.02	0	214	450	Hydrock Derived			<0.1	<0.1		<0.1		<0.1	<0.1	<0.1	<0.05			
Pyrene	mg/kg	0.1	18	0.05	0.38	0.11	0.10	0.07	0	13.2	2000	Hydrock Derived			<0.1	<0.1		<0.1		<0.1	<0.1	<0.1	<0.05			
PAH 16 Total	mg/kg	1.6	17	1.60	2.70	1.66	1.60	0.27			-				<1.6	<1.6		<1.6		<1.6	<1.6	<1.6				
TPH fractions																										
TPH ali EC05-EC06	mg/kg	0.01	8	0.00	0.01	0.01	0.01	0.003	0	1150	160	Hydrock Derived	<0.01	<0.01			<0.01				<0.01	<0.01	<0.001			
TPH ali >EC06-EC08	mg/kg	0.05	8	0.00	0.05	0.04	0.05	0.017	0	736	530	Hydrock Derived	<0.05	<0.05			<0.05				<0.05	<0.05	<0.001			
TPH ali >EC08-EC10	mg/kg	2	8	0.00	2.00	1.75	2.00	0.707	0	451	150	Hydrock Derived	<2	<2			<2				<2	<2	<0.001			
TPH ali >EC10-EC12	mg/kg	2	8	1.00	2.00	1.88	2.00	0.35	0	283	760	Hydrock Derived	<2	<2			<2				<2	<2	<1			
TPH ali >EC12-EC16	mg/kg	3	8	2.00	3.00	2.88	3.00	0.35	0	142	4300	Hydrock Derived	<3	<3			<3				<3	<3	<2			
TPH ali >EC16-EC35	mg/kg	10	7	10.00	10.00	10.00	10.00	0.00	0	51	110000	Hydrock Derived	<10	<10			<10				<10	<10	***N/A***			

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	S
Strata	NMS
Depth Min (m bgl)	0
Depth Max (m bgl)	9
Dataset mean SOM%	7.35
Scenario SOM%	6

Hydrock

/kg unless otherwise stated

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	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	10/05/18	10/05/18	10/05/18	10/05/18
													S	S	S	S	S	S	S	S	S	S	S	S	S	S
													TP109	TP113	TP114	TP116	TP117	TP118	TP120	TP125	HP101	HP101	TP01	TP02	TP05	TP06
													0.7	0.8	1.2	0.4	0.4	0.7	1	0.5	0.3	0.75	0.8	1	1	0.5
													NMS	NMS	NMS	NMS	NMS	NMS	NMS	NMS	NMS	NMS	NMS	NMS	NMS	NMS
TPH ali >EC35-EC44	mg/kg	10	8	8.40	10.00	9.80	10.00	0.57	0	51	110000	Hydrock Derived	<10	<10			<10				<10	<10	<8.4			
TPH ali >EC5-EC44	mg/kg	30	7	30.00	30.00	30.00	30.00	0.00			-		<30	<30			<30				<30	<30				
TPH aro EC05-EC07	mg/kg	0.01	8	0.00	0.01	0.01	0.01	0.00	0	4708	310	Hydrock Derived	<0.01	<0.01			<0.01				<0.01	<0.01	<0.001			
TPH aro >EC07-EC08	mg/kg	0.05	8	0.00	0.05	0.04	0.05	0.02	0	4357	680	Hydrock Derived	<0.05	<0.05			<0.05				<0.05	<0.05	<0.001			
TPH aro >EC08-EC10	mg/kg	2	8	0.00	2.00	1.75	2.00	0.71	0	3578	190	Hydrock Derived	<2	<2			<2				<2	<2	<0.001			
TPH aro >EC10-EC12	mg/kg	2	8	1.00	2.00	1.88	2.00	0.35	0	2149	390	Hydrock Derived	<2	<2			<2				<2	<2	<1			
TPH aro >EC12-EC16	mg/kg	2	8	2.00	2.00	2.00	2.00	0.00	0	1004	670	Hydrock Derived	<2	<2			<2				<2	<2	<2			
TPH aro >EC16-EC21	mg/kg	3	7	3.00	3.00	3.00	3.00	0.00	0	321	930	Hydrock Derived	<3	<3			<3				<3	<3				
TPH aro >EC21-EC35	mg/kg	10	8	10.00	10.00	10.00	10.00	0.00	0	29	1700	Hydrock Derived	<10	<10			<10				<10	<10	<10			
TPH aro >EC35-EC44	mg/kg	10	8	8.40	10.00	9.80	10.00	0.57	0	29	1700	Hydrock Derived	<10	<10			<10				<10	<10	<8.4			
TPH aro >EC5-EC44	mg/kg	30	7	30.00	30.00	30.00	30.00	0.00			-		<30	<30			<30				<30	<30				
Total TPH >EC5-EC44	mg/kg	60	7	60.00	60.00	60.00	60.00	0.00			-		<60	<60			<60				<60	<60				
VOCs - BTEX & MTBE																										
Benzene	mg/kg	< 2	8	0.00	0.00	0.00	0.00	0.00	0	4708	0.87	C4SL - CL:AIRE 2014	<0.002	<0.002			<0.002				<0.002	<0.002	<0.000001			
Toluene	mg/kg	< 5	8	0.00	0.01	0.00	0.01	0.00	0	4357	680	Hydrock Derived	<0.005	<0.005			<0.005				<0.005	<0.005	<0.000001			
Ethylbenzene	mg/kg	< 2	8	0.00	0.00	0.00	0.00	0.00	0	2844	260	Hydrock Derived	<0.002	<0.002			<0.002				<0.002	<0.002	<0.000001			
Xylene, o-	mg/kg	< 2	8	0.00	0.00	0.00	0.00	0.00	0	2618	330	Hydrock Derived	<0.002	<0.002			<0.002				<0.002	<0.002	<0.000001			
Xylene, p- (or combined m & p)	mg/kg	< 2	8	0.00	0.00	0.00	0.00	0.00	0	3167	310	Hydrock Derived	<0.002	<0.002			<0.002				<0.002	<0.002	<0.000001			
MTBE	mg/kg	< 5	8	0.00	0.01	0.00	0.01	0.00	0	62749	210	Hydrock Derived	<0.005	<0.005			<0.005				<0.005	<0.005	<0.000001			
TPH Additivity Check			**HAZARD QUOTIENTS FOR EACH FRACTION**																							
												Aliph	0.0000625	0.0000625			0.0000625				0.0000625	0.0000625	0.00000625			
												Aliph	9.43396E-05	9.43396E-05			9.43396E-05				9.43396E-05	9.43396E-05	1.88679E-06			
												Alipha	0.013333333	0.013333333			0.013333333				0.013333333	0.013333333	6.66667E-06			
												Alipha	0.002631579	0.002631579			0.002631579				0.002631579	0.002631579	0.001315789			
												Alipha	0.000697674	0.000697674			0.000697674				0.000697674	0.000697674	0.000465116			
												Aliphat	9.09091E-05	9.09091E-05			9.09091E-05				9.09091E-05	9.09091E-05				
												Aliphat	9.09091E-05	9.09091E-05			9.09091E-05				9.09091E-05	9.09091E-05	7.63636E-05			
												Aro	3.22581E-05	3.22581E-05			3.22581E-05				3.22581E-05	3.22581E-05	3.22581E-06			
												Arom	7.35294E-05	7.35294E-05			7.35294E-05				7.35294E-05	7.35294E-05	1.47059E-06			
												Aroma	0.010526316	0.010526316			0.010526316				0.010526316	0.010526316	5.26316E-06			
												Aromal	0.005128205	0.005128205			0.005128205				0.005128205	0.005128205	0.002564103			
												Aromal	0.002985075	0.002985075			0.002985075				0.002985075	0.002985075	0.002985075			
												Aromal	0.003225806	0.003225806			0.003225806				0.003225806	0.003225806				
												Aromal	0.005882353	0.005882353			0.005882353				0.005882353	0.005882353	0.005882353			
												Aromat	0.005882353	0.005882353			0.005882353				0.005882353	0.005882353	0.004941176			
												Hazard Index	**0.016662587**	**0.016662587**			**0.016662587**				**0.016662587**	**0.016662587**	**0.001787572**			
												Hazard Index	**0.018639596**	**0.018639596**			**0.018639596**				**0.018639596**	**0.018639596**	**0.00555444**			
												Hazard Index f	**0.009108159**	**0.009108159**			**0.009108159**				**0.009108159**	**0.009108159**	**0.005882353**			

Considered additive

Considered additive

Considered additive

Hazard Index table - HI or HQ greater than 1 highlighted with orange shading.

Legend:

TS	Topsoil	<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.
MG	Made Ground		
MGS	Made Ground Surfacing	0.02	Value greater than, or equal to, the generic assessment criterion (GAC).
MGSB	Made Ground Subbase	*<10	Value excluded from statistical analysis
TS	Topsoil	Y	Text result
RTS	Relict Topsoil	-	Represents a determinand that was not tested.
SP	Stockpile	+	represents a data point that is not included in the current filter settings

n:

Risk parameter:	Default - Human Health - POSpark (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	S
Strata	RTS
Depth Min (m bgl)	0
Depth Max (m bgl)	9
Dataset mean SOM%	7.41
Scenario SOM%	6

Hydrock

TP124 (0.4m)

Date	09/08/23
Zone	S
Location	TP124
Depth (m bgl)	0.4
Strata	RTS

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	68	-	-	-	-	No. of detects:	0	-	-	-		N
P1889	Asbestos Screen Name	text		14	-	-	-	-	-		-	-	-		
P1880	Asbestos Containing Material Types Detected (ACM)	text		20	-	-	-	-	-		-	-	-		
0	**Hydrock Default Suite - FOC / SOM / pH**										-				
P1085	FOC (dimensionless)	fl	0.001	1	0.043	0.043	0.043	0.043	-		-	-	-		0.043
-	SOM (calculated)	%	0.1724	1	7.41	7.41	7.41	7.41	-		-	-	-		7.4132
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	18.00	18.00	18.00	18.00	-	0	NR	170	C4SL - CL:AIRE 2014		18
7440-41-7	Beryllium	mg/kg	0.5	1	1.30	1.30	1.30	1.30	-	0	NR	63	Hydrock Derived		1.3
7440-42-8	Boron	mg/kg	1	1	1.60	1.60	1.60	1.60	-	0	NR	46000	Hydrock Derived		1.6
7440-43-9	Cadmium	mg/kg	0.2	1	0.20	0.20	0.20	0.20	-	0	NR	880	C4SL - CL:AIRE 2014		<0.2
16065-83-1	Chromium (III)	mg/kg	2	1	30.00	30.00	30.00	30.00	-	0	NR	27000	Hydrock Derived		30
18540-29-9	Chromium (VI)	mg/kg	2	1	2.00	2.00	2.00	2.00	-	0	NR	250	C4SL - CL:AIRE 2014		<2
7440-50-8	Copper	mg/kg	4	1	12.00	12.00	12.00	12.00	-	0	NR	44000	Hydrock Derived		12
7439-92-1	Lead	mg/kg	3	1	50.00	50.00	50.00	50.00	-	0	NR	1300	C4SL - CL:AIRE 2014		50
7439-97-6	Mercury, inorganic	mg/kg	1	1	1.00	1.00	1.00	1.00	-	0	NR	240	Hydrock Derived		<1
7440-02-0	Nickel	mg/kg	3	1	16.00	16.00	16.00	16.00	-	0	NR	800	Hydrock Derived		16
7782-49-2	Selenium	mg/kg	2	1	2.00	2.00	2.00	2.00	-	0	NR	1800	Hydrock Derived		<2
7440-62-2	Vanadium	mg/kg	1	1	51.00	51.00	51.00	51.00	-	0	NR	5000	Hydrock Derived		51
7440-66-6	Zinc	mg/kg	3	1	72.00	72.00	72.00	72.00	-	0	NR	170000	Hydrock Derived		72
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	1300	Hydrock Derived		<2
83-32-9	Acenaphthene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	336	30000	Hydrock Derived		<0.1
208-96-8	Acenaphthylene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	506	30000	Hydrock Derived		<0.1
120-12-7	Anthracene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	6.96	150000	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	62	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	21	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	16	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	1600	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	440	Hydrock Derived		<0.1
218-01-9	Chrysene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	2.64	120	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	1.4	Hydrock Derived		<0.1
206-44-0	Fluoranthene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	113	6400	Hydrock Derived		<0.1
86-73-7	Fluorene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	183	20000	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	180	Hydrock Derived		<0.1
91-20-3	Naphthalene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	432	2300	Hydrock Derived		<0.1
85-01-8	Phenanthrene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	214	6300	Hydrock Derived		<0.1
129-00-0	Pyrene	mg/kg	0.1	1	0.10	0.10	0.10	0.10	-	0	13.2	15000	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
TS	Topsoil
RTS	Relict Topsoil
SD	Superficial Deposits
NMS	Northmorr Sand and Gravel

<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

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	S
Strata	RTS
Depth Min (m bgl)	0
Depth Max (m bgl)	9
Dataset mean SOM%	7.41
Scenario SOM%	6

Hydrock

Date	09/08/23
Zone	S
Location	TP124
Depth (m bgl)	0.4
Strata	RTS

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	RTS
-	**Asbestos**														
P1020	Asbestos Identified	text	Y/N	68	-	-	-	-	No. of detects:	0	-	-	-		N
P1889	Asbestos Screen Name	text		14	-	-	-	-	-		-	-	-		
P1880	Asbestos Containing Material Types Detected (ACM)	text		20	-	-	-	-	-		-	-	-		
0	**Hydrock Default Suite - FOC / SOM / pH**										-				
P1085	FOC (dimensionless)	fl	0.001	1	0.043	0.043	0.043	0.043	-		-	-	-		0.043
-	SOM (calculated)	%	0.1724	1	7.41	7.41	7.41	7.41	-		-	-	-		7.4132
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	18.00	18.00	18.00	18.00	-	0	NR	37	C4SL - CL:AIRE 2014		18
7440-41-7	Beryllium	mg/kg	0.5	1	1.30	1.30	1.30	1.30	-	0	NR	1.7	Hydrock Derived		1.3
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	0.20	0.20	0.20	0.20	-	0	NR	22	C4SL - CL:AIRE 2014		<0.2
16065-83-1	Chromium (III)	mg/kg	2	1	30.00	30.00	30.00	30.00	-	0	NR	890	Hydrock Derived		30
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	12.00	12.00	12.00	12.00	-	0	NR	2500	Hydrock Derived		12
7439-92-1	Lead	mg/kg	3	1	50.00	50.00	50.00	50.00	-	0	NR	200	C4SL - CL:AIRE 2014		50
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	16.00	16.00	16.00	16.00	-	0	NR	130	Hydrock Derived		16
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	51.00	51.00	51.00	51.00	-	0	NR	410	Hydrock Derived		51
7440-66-6	Zinc	mg/kg	3	1	72.00	72.00	72.00	72.00	-	0	NR	3900	Hydrock Derived		72
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	0.10	0.10	0.10	0.10	-	0	113	900	Hydrock Derived		<0.1
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
TS	Topsoil
RTS	Relict Topsoil
SD	Superficial Deposits
NMS	Northmorr Sand and Gravel

<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

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	SP
Strata	ALL
Depth Min (m bgl)	0
Depth Max (m bgl)	9
Dataset mean SOM%	6.03
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	17/08/2023	17/08/2023
															Zone	SP	SP
															Location	SP1	SP2
															Depth (m bgl)	0	0
-	**Asbestos**																
P1020	Asbestos Identified	text	Y/N	67	-	-	-	-	No. of detects:	0	-	-	-			N	N
P1889	Asbestos Screen Name	text		14	-	-	-	-	-		-	-	-				
P1880	Asbestos Containing Material Types Detected (ACM)	text		20	-	-	-	-	-		-	-	-				
0	**Hydrock Default Suite - FOC / SOM / pH**										-						
P1085	FOC (dimensionless)	[]	0.001	2	0.024	0.046	0.035	0.035	0.02		-	-	-			0.024	0.046
-	SOM (calculated)	%	0.1724	2	4.14	7.93	6.03	6.03	2.68		-	-	-			4.1376	7.9304
P1334	pH (su)	pH Units	0.1	2	7.20	7.70	7.45	7.45	0.35		-	-	-			7.2	7.7
-	**Hydrock Default Suite - Metals & PAH**																
7440-38-2	Arsenic	mg/kg	2	2	9.00	29.00	19.00	19.00	14.14	0	NR	37	C4SL - CL:AIRE 2014			9	29
7440-41-7	Beryllium	mg/kg	0.5	2	0.50	0.70	0.60	0.60	0.14	0	NR	1.7	Hydrock Derived			0.7	<0.5
7440-42-8	Boron	mg/kg	1	2	1.10	3.70	2.40	2.40	1.84	0	NR	300	Hydrock Derived			3.7	1.1
7440-43-9	Cadmium	mg/kg	0.2	2	0.20	0.40	0.30	0.30	0.14	0	NR	22	C4SL - CL:AIRE 2014			<0.2	0.4
16065-83-1	Chromium (III)	mg/kg	2	2	19.00	19.00	19.00	19.00	0.00	0	NR	890	Hydrock Derived			19	19
18540-29-9	Chromium (VI)	mg/kg	2	2	2.00	2.00	2.00	2.00	0.00	0	NR	21	C4SL - CL:AIRE 2014			<2	<2
7440-50-8	Copper	mg/kg	4	2	22.00	109.00	65.50	65.50	61.52	0	NR	2500	Hydrock Derived			22	109
7439-92-1	Lead	mg/kg	3	2	13.00	50.00	31.50	31.50	26.16	0	NR	200	C4SL - CL:AIRE 2014			13	50
7439-97-6	Mercury, inorganic	mg/kg	1	2	1.00	1.00	1.00	1.00	0.00	0	NR	40	Hydrock Derived			<1	<1
7440-02-0	Nickel	mg/kg	3	2	5.00	26.00	15.50	15.50	14.85	0	NR	130	Hydrock Derived			26	5
7782-49-2	Selenium	mg/kg	2	2	2.00	2.00	2.00	2.00	0.00	0	NR	260	Hydrock Derived			<2	<2
7440-62-2	Vanadium	mg/kg	1	2	16.00	18.00	17.00	17.00	1.41	0	NR	410	Hydrock Derived			18	16
7440-66-6	Zinc	mg/kg	3	2	111.00	459.00	285.00	285.00	246.07	0	NR	3900	Hydrock Derived			111	459
P1095	Cyanide (free)	mg/kg	1	2	1.00	1.00	1.00	1.00	0.00	0	NR	24	Acute Risk - SoBRA 2020			<1	<1
P1186	Total Phenols (Monohydric)	mg/kg	2	2	2.00	3.40	2.70	2.70	0.99	0	70308	390	Hydrock Derived			3.4	<2
83-32-9	Acenaphthene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	336	1200	Hydrock Derived			<0.1	<0.1
208-96-8	Acenaphthylene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	506	970	Hydrock Derived			<0.1	<0.1
120-12-7	Anthracene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	6.96	11000	Hydrock Derived			<0.1	<0.1
56-55-3	Benz(a)anthracene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	10.27	14	Hydrock Derived			<0.1	<0.1
50-32-8	Benzo(a)pyrene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	5.46	5	C4SL - CL:AIRE 2014			<0.1	<0.1
205-99-2	Benzo(b)fluoranthene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	7.29	3.7	Hydrock Derived			<0.1	<0.1
191-24-2	Benzo(ghi)perylene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	0.09	350	Hydrock Derived			<0.1	<0.1
207-08-9	Benzo(k)fluoranthene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	4.12	100	Hydrock Derived			<0.1	<0.1
218-01-9	Chrysene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	2.64	27	Hydrock Derived			<0.1	<0.1
53-70-3	Dibenz(ah)anthracene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	0.024	0.31	Hydrock Derived			<0.1	<0.1
206-44-0	Fluoranthene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	113	900	Hydrock Derived			<0.1	<0.1
86-73-7	Fluorene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	183	900	Hydrock Derived			<0.1	<0.1
193-39-5	Indeno(123cd)pyrene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	0.37	41	Hydrock Derived			<0.1	<0.1
91-20-3	Naphthalene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	432	71	Hydrock Derived			<0.1	<0.1
85-01-8	Phenanthrene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	214	450	Hydrock Derived			<0.1	<0.1
129-00-0	Pyrene	mg/kg	0.1	2	0.10	0.12	0.11	0.11	0.01	0	13.2	2000	Hydrock Derived			<0.1	0.12
P1310	PAH 16 Total	mg/kg	1.6	2	1.60	1.60	1.60	1.60	0.00			-				<1.6	<1.6

Legend:

TS	Topsoil
MG	Made Ground
TS	Topsoil
RTS	Relict Topsoil
SD	Superficial Deposits
NMS	Northmorr Sand and Gravel

<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 - POSpark (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	S
Strata	SD
Depth Min (m bgl)	0
Depth Max (m bgl)	9

Dataset mean SOM% **4.25**

Scenario SOM% **2.5**

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	Date	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	10/05/18	10/05/18
														Zone	S	S	S	S	S	S	S
														Location	BH102	BH105	TP106	TP107	TP119	TP02	TP03
														Depth (m bgl)	0.2	0.6	0.4	0.3	0.4	0.5	0.5
														Strata	SD	SD	SD	SD	SD	SD	SD
-	**Asbestos**																				
P1020	Asbestos Identified	text	Y/N	66	-	-	-	-	No. of detects:	0	-	-	-		N	N		N	N	N	N
P1889	Asbestos Screen Name	text		12	-	-	-	-	-		-	-	-								
P1880	Asbestos Containing Material Types Detected (ACM)	text		18	-	-	-	-	-		-	-	-								
0	**Hydrock Default Suite - FOC / SOM / pH**										-										
P1085	FOC (dimensionless)	[]	0.001	6	0.012	0.037	0.025	0.023	0.01		-	-	-		0.027	0.037		0.037	0.018	0.017	0.012
-	SOM (calculated)	%	0.1724	6	2.07	6.38	4.25	3.88	1.85		-	-	-		4.6548	6.3788		6.3788	3.1032	2.9308	2.0688
P1334	pH (su)	pH Units	0.1	6	7.70	8.30	8.02	8.00	0.26		-	-	-		7.8	8.1		7.7	7.9	8.3	8.3
-	**Hydrock Default Suite - Metals & PAH**																				
7440-38-2	Arsenic	mg/kg	2	6	15.00	25.00	17.83	16.00	3.97	0	NR	170	C4SL - CL:AIRE 2014		16	16		20	25	15	15
7440-41-7	Beryllium	mg/kg	0.5	6	0.63	1.40	0.94	0.91	0.29	0	NR	63	Hydrock Derived		1	0.7		1.4	1.1	0.81	0.63
7440-42-8	Boron	mg/kg	1	6	1.00	2.30	1.32	1.00	0.54	0	NR	46000	Hydrock Derived		<1	<1		<1	<1	2.3	1.6
7440-43-9	Cadmium	mg/kg	0.2	6	0.20	0.40	0.30	0.30	0.09	0	NR	880	C4SL - CL:AIRE 2014		0.4	0.3		0.3	0.4	<0.2	<0.2
16065-83-1	Chromium (III)	mg/kg	2	6	19.00	35.00	26.00	25.00	5.73	0	NR	27000	Hydrock Derived		25	19		35	30	25	22
18540-29-9	Chromium (VI)	mg/kg	2	6	1.20	2.00	1.73	2.00	0.41	0	NR	250	C4SL - CL:AIRE 2014		<2	<2		<2	<2	<1.2	<1.2
7440-47-3	Chromium (Total)	mg/kg		2	21.00	25.00	23.00	23.00	2.83			-								25	21
7440-50-8	Copper	mg/kg	4	6	10.00	16.00	13.50	14.00	2.17	0	NR	44000	Hydrock Derived		16	15		14	14	10	12
7439-92-1	Lead	mg/kg	3	6	20.00	36.00	28.33	28.50	6.53	0	NR	1300	C4SL - CL:AIRE 2014		36	35		28	29	20	22
7439-97-6	Mercury, inorganic	mg/kg	1	6	0.30	1.00	0.78	1.00	0.34	0	NR	240	Hydrock Derived		<1	<1		<1	<1	<0.3	0.4
7440-02-0	Nickel	mg/kg	3	6	11.00	18.00	13.33	11.50	3.27	0	NR	800	Hydrock Derived		11	11		18	17	12	11
7782-49-2	Selenium	mg/kg	2	6	1.00	2.00	1.67	2.00	0.52	0	NR	1800	Hydrock Derived		<2	<2		<2	<2	<1	<1
7440-62-2	Vanadium	mg/kg	1	6	35.00	63.00	44.67	39.50	11.91	0	NR	5000	Hydrock Derived		41	35		63	56	38	35
7440-66-6	Zinc	mg/kg	3	6	42.00	81.00	61.50	61.50	15.91	0	NR	170000	Hydrock Derived		65	81		77	58	46	42
P1095	Cyanide (free)	mg/kg	1	6	1.00	1.00	1.00	1.00	0.00	0	NR	24	Acute Risk - SoBRA 2020		<1	<1		<1	<1	<1	<1
P1186	Total Phenols (Monohydric)	mg/kg	2	6	1.00	2.00	1.67	2.00	0.52	0	38058	690	Hydrock Derived		<2	<2		<2	<2	<1	<1
83-32-9	Acenaphthene	mg/kg	0.1	6	0.05	0.10	0.08	0.10	0.03	0	141	30000	Hydrock Derived		<0.1	<0.1		<0.1	<0.1	<0.05	<0.05
208-96-8	Acenaphthylene	mg/kg	0.1	6	0.05	0.10	0.08	0.10	0.03	0	212	30000	Hydrock Derived		<0.1	<0.1		<0.1	<0.1	<0.05	<0.05
120-12-7	Anthracene	mg/kg	0.1	6	0.05	0.28	0.11	0.10	0.09	0	2.91	150000	Hydrock Derived		<0.1	0.28		<0.1	<0.1	<0.05	<0.05
56-55-3	Benz(a)anthracene	mg/kg	0.1	6	0.05	1.49	0.32	0.10	0.58	0	4.28	56	Hydrock Derived		<0.1	1.49		<0.1	<0.1	<0.05	<0.05
50-32-8	Benzo(a)pyrene	mg/kg	0.1	6	0.05	1.27	0.28	0.10	0.49	0	2.28	21	C4SL - CL:AIRE 2014		<0.1	1.27		<0.1	<0.1	<0.05	<0.05
205-99-2	Benzo(b)fluoranthene	mg/kg	0.1	6	0.05	1.87	0.38	0.10	0.73	0	3.04	15	Hydrock Derived		<0.1	1.87		<0.1	<0.1	<0.05	<0.05
191-24-2	Benzo(ghi)perylene	mg/kg	0.1	6	0.05	0.67	0.18	0.10	0.24	0	0.04	1500	Hydrock Derived		<0.1	0.67		<0.1	<0.1	<0.05	<0.05
207-08-9	Benzo(k)fluoranthene	mg/kg	0.1	6	0.05	0.48	0.15	0.10	0.17	0	1.72	410	Hydrock Derived		<0.1	0.48		<0.1	<0.1	<0.05	<0.05
218-01-9	Chrysene	mg/kg	0.1	6	0.05	1.52	0.32	0.10	0.59	0	1.10	110	Hydrock Derived		<0.1	1.52		<0.1	<0.1	<0.05	<0.05
53-70-3	Dibenz(ah)anthracene	mg/kg	0.1	6	0.05	0.21	0.10	0.10	0.06	0	0.010	1.3	Hydrock Derived		<0.1	0.21		<0.1	<0.1	<0.05	<0.05
206-44-0	Fluoranthene	mg/kg	0.1	6	0.05	2.33	0.46	0.10	0.92	0	47	6300	Hydrock Derived		<0.1	2.33		<0.1	<0.1	<0.05	<0.05
86-73-7	Fluorene	mg/kg	0.1	6	0.05	0.10	0.08	0.10	0.03	0	77	20000	Hydrock Derived		<0.1	<0.1		<0.1	<0.1	<0.05	<0.05
193-39-5	Indeno(123cd)pyrene	mg/kg	0.1	6	0.05	0.80	0.20	0.10	0.29	0	0.15	170	Hydrock Derived		<0.1	0.8		<0.1	<0.1	<0.05	<0.05
91-20-3	Naphthalene	mg/kg	0.1	6	0.05	0.10	0.08	0.10	0.03	0	183	1600	Hydrock Derived		<0.1	<0.1		<0.1	<0.1	<0.05	<0.05
85-01-8	Phenanthrene	mg/kg	0.1	6	0.05	0.95	0.23	0.10	0.36	0	90	6200	Hydrock Derived		<0.1	0.95		<0.1	<0.1	<0.05	<0.05
129-00-0	Pyrene	mg/kg	0.1	6	0.05	1.83	0.37	0.10	0.71	0	5.5	15000	Hydrock Derived		<0.1	1.83		<0.1	<0.1	<0.05	<0.05
P1310	PAH 16 Total	mg/kg	1.6	4	1.60	13.70	4.63	1.60	6.05			-			<1.6	13.7		<1.6	<1.6		
0	**TPH fractions**																				
P1407	TPH ali EC05-EC06	mg/kg	0.01	2	0.00	0.01	0.01	0.01	0.006	0	558	130000	Hydrock Derived				<0.01			<0.001	
P1408	TPH ali >EC06-EC08	mg/kg	0.05	2	0.00	0.05	0.03	0.03	0.035	0	322	210000	Hydrock Derived				<0.05			<0.001	
P1409	TPH ali >EC08-EC10	mg/kg	2	2	0.00	2.00	1.00	1.00	1.414	0	190	18000	Hydrock Derived				<2			<0.001	
P1410	TPH ali >EC10-EC12	mg/kg	2	2	1.00	2.00	1.50	1.50	0.71	0	118	23000	Hydrock Derived				<2			<1	
P1411	TPH ali >EC12-EC16	mg/kg	3	2	2.00	3.00	2.50	2.50	0.71	0	59	25000	Hydrock Derived				<3			<2	
P1938	TPH ali >EC16-EC35	mg/kg	10	1	10.00	10.00	10.00	10.00	-	0	21	480000	Hydrock Derived				<10			***N/A***	

Assessment of Chemicals of Potential Concern to Human Health

Risk parameter:	Default - Human Health - POSpark (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	S
Strata	SD
Depth Min (m bgl)	0
Depth Max (m bgl)	9

Dataset mean SOM% **4.25**

Scenario SOM% **2.5**

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	Date	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	10/05/18	10/05/18
														Zone	S	S	S	S	S	S	S
														Location	BH102	BH105	TP106	TP107	TP119	TP02	TP03
														Depth (m bgl)	0.2	0.6	0.4	0.3	0.4	0.5	0.5
														Strata	SD	SD	SD	SD	SD	SD	SD
P1415	TPH ali >EC35-EC44	mg/kg	10	2	8.40	10.00	9.20	9.20	1.13	0	21	480000	Hydrock Derived				<10			<8.4	
P1420	TPH ali >EC5-EC44	mg/kg	30	1	30.00	30.00	30.00	30.00	-			-					<30				
P1441	TPH aro EC05-EC07	mg/kg	0.01	2	0.00	0.01	0.01	0.01	0.01	0	2265	84000	Hydrock Derived				<0.01			<0.001	
P1355	TPH aro >EC07-EC08	mg/kg	0.05	2	0.00	0.05	0.03	0.03	0.03	0	1916	95000	Hydrock Derived				<0.05			<0.001	
P1356	TPH aro >EC08-EC10	mg/kg	2	2	0.00	2.00	1.00	1.00	1.41	0	1503	8500	Hydrock Derived				<2			<0.001	
P1357	TPH aro >EC10-EC12	mg/kg	2	2	1.00	2.00	1.50	1.50	0.71	0	899	9700	Hydrock Derived				<2			<1	
P1358	TPH aro >EC12-EC16	mg/kg	2	2	2.00	2.00	2.00	2.00	0.00	0	419	10000	Hydrock Derived				<2			<2	
P1359	TPH aro >EC16-EC21	mg/kg	3	1	3.00	3.00	3.00	3.00	-	0	134	7700	Hydrock Derived				<3				
P1360	TPH aro >EC21-EC35	mg/kg	10	2	10.00	10.00	10.00	10.00	0.00	0	12	7800	Hydrock Derived				<10			<10	
P1362	TPH aro >EC35-EC44	mg/kg	10	2	8.40	10.00	9.20	9.20	1.13	0	12	7800	Hydrock Derived				<10			<8.4	
P1941	TPH aro >EC5-EC44	mg/kg	30	1	30.00	30.00	30.00	30.00	-			-					<30				
P1373	Total TPH >EC5-EC44	mg/kg	60	1	60.00	60.00	60.00	60.00	-			-					<60				
o	**VOCs - BTEX & MTBE**																				
71-43-2	Benzene	mg/kg	< 2	2	0.00	0.00	0.00	0.00	0.00	0	2265	210	C4SL - CL:AIRE 2014				<0.002			<0.000001	
108-88-3	Toluene	mg/kg	< 5	2	0.00	0.01	0.00	0.00	0.00	0	1916	95000	Hydrock Derived				<0.005			<0.000001	
100-41-4	Ethylbenzene	mg/kg	< 2	2	0.00	0.00	0.00	0.00	0.00	0	1216	22000	Hydrock Derived				<0.002			<0.000001	
95-47-6	Xylene, o-	mg/kg	< 2	2	0.00	0.00	0.00	0.00	0.00	0	1120	24000	Hydrock Derived				<0.002			<0.000001	
1330-20-7	Xylene, p- (or combined m & p)	mg/kg	< 2	2	0.00	0.00	0.00	0.00	0.00	0	1353	23000	Hydrock Derived				<0.002			<0.000001	
1634-04-4	MTBE	mg/kg	< 5	2	0.00	0.01	0.00	0.00	0.00	0	33075	110000	Hydrock Derived				<0.005			<0.000001	
	TPH Additivity Check			**HAZARD QUOTIENTS FOR EACH FRACTION**																	
														Aliphatics >EC5-EC6			7.69231E-08			7.69231E-09	
														Aliphatics >EC6-EC8			2.38095E-07			4.7619E-09	
													Considered additive	Aliphatics >EC8-EC10			0.000111111			5.55556E-08	
													Considered additive	Aliphatics >EC10-EC12			8.69565E-05			4.34783E-05	
													Considered additive	Aliphatics >EC12-EC16			0.00012			0.00008	
														Aliphatics >EC16-EC35			2.08333E-05				
														Aliphatics >EC35-EC44			2.08333E-05			0.0000175	
														Aromatics EC5-EC7			1.19048E-07			1.19048E-08	
														Aromatics >EC7-EC8			5.26316E-07			1.05263E-08	
													Considered additive	Aromatics >EC8-EC10			0.000235294			1.17647E-07	
													Considered additive	Aromatics >EC10-EC12			0.000206186			0.000103093	
													Considered additive	Aromatics >EC12-EC16			0.0002			0.0002	
													Considered additive	Aromatics >EC16-EC21			0.00038961				
													Considered additive	Aromatics >EC21-EC35			0.001282051			0.001282051	
														Aromatics >EC35-EC44			0.001282051			0.001076923	
													Hazard Index table - HI or HQ greater than 1 highlighted with orange shading.	**Hazard Index for ali>C8-C16**			**0.000318068**			**0.000123534**	
													Hazard Index table - HI or HQ greater than 1 highlighted with orange shading.	**Hazard Index for aro>C8-C16**			**0.00064148**			**0.00030321**	
													Hazard Index table - HI or HQ greater than 1 highlighted with orange shading.	**Hazard Index for aro>C16-C35**			**0.001671662**			**0.001282051**	

Legend:

TS	Topsoil	<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.
MG	Made Ground		
MGS	Made Ground Surfacing	0.02	Value greater than, or equal to, the generic assessment criterion (GAC).
MGSB	Made Ground Subbase	*'<10*	Value excluded from statistical analysis
TS	Topsoil	*Y*	Text result
RTS	Relict Topsoil	-	Represents a determinand that was not tested.
SP	Stockpile	*	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	S
Strata	SD
Depth Min (m bgl)	0
Depth Max (m bgl)	9

Dataset mean SOM% **4.25**

Scenario SOM% **2.5**

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	Date	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	10/05/18	10/05/18
														Zone	S	S	S	S	S	S	S
														Location	BH102	BH105	TP106	TP107	TP119	TP02	TP03
														Depth (m bgl)	0.2	0.6	0.4	0.3	0.4	0.5	0.5
														Strata	SD	SD	SD	SD	SD	SD	SD
-	**Asbestos**																				
P1020	Asbestos Identified	text	Y/N	66	-	-	-	-	No. of detects:	0	-	-	-		N	N		N	N	N	N
P1889	Asbestos Screen Name	text		12	-	-	-	-	-		-	-	-								
P1880	Asbestos Containing Material Types Detected (ACM)	text		18	-	-	-	-	-		-	-	-								
0	**Hydrock Default Suite - FOC / SOM / pH**										-										
P1085	FOC (dimensionless)	[]	0.001	6	0.012	0.037	0.025	0.023	0.01		-	-	-		0.027	0.037		0.037	0.018	0.017	0.012
-	SOM (calculated)	%	0.1724	6	2.07	6.38	4.25	3.88	1.85		-	-	-		4.6548	6.3788		6.3788	3.1032	2.9308	2.0688
P1334	pH (su)	pH Units	0.1	6	7.70	8.30	8.02	8.00	0.26		-	-	-		7.8	8.1		7.7	7.9	8.3	8.3
-	**Hydrock Default Suite - Metals & PAH**																				
7440-38-2	Arsenic	mg/kg	2	6	15.00	25.00	17.83	16.00	3.97	0	NR	37	C4SL - CL:AIRE 2014		16	16		20	25	15	15
7440-41-7	Beryllium	mg/kg	0.5	6	0.63	1.40	0.94	0.91	0.29	0	NR	1.7	Hydrock Derived		1	0.7		1.4	1.1	0.81	0.63
7440-42-8	Boron	mg/kg	1	6	1.00	2.30	1.32	1.00	0.54	0	NR	300	Hydrock Derived		<1	<1		<1	<1	2.3	1.6
7440-43-9	Cadmium	mg/kg	0.2	6	0.20	0.40	0.30	0.30	0.09	0	NR	22	C4SL - CL:AIRE 2014		0.4	0.3		0.3	0.4	<0.2	<0.2
16065-83-1	Chromium (III)	mg/kg	2	6	19.00	35.00	26.00	25.00	5.73	0	NR	890	Hydrock Derived		25	19		35	30	25	22
18540-29-9	Chromium (VI)	mg/kg	2	6	1.20	2.00	1.73	2.00	0.41	0	NR	21	C4SL - CL:AIRE 2014		<2	<2		<2	<2	<1.2	<1.2
7440-47-3	Chromium (Total)	mg/kg		2	21.00	25.00	23.00	23.00	2.83			-								25	21
7440-50-8	Copper	mg/kg	4	6	10.00	16.00	13.50	14.00	2.17	0	NR	2500	Hydrock Derived		16	15		14	14	10	12
7439-92-1	Lead	mg/kg	3	6	20.00	36.00	28.33	28.50	6.53	0	NR	200	C4SL - CL:AIRE 2014		36	35		28	29	20	22
7439-97-6	Mercury, inorganic	mg/kg	1	6	0.30	1.00	0.78	1.00	0.34	0	NR	40	Hydrock Derived		<1	<1		<1	<1	<0.3	0.4
7440-02-0	Nickel	mg/kg	3	6	11.00	18.00	13.33	11.50	3.27	0	NR	130	Hydrock Derived		11	11		18	17	12	11
7782-49-2	Selenium	mg/kg	2	6	1.00	2.00	1.67	2.00	0.52	0	NR	260	Hydrock Derived		<2	<2		<2	<2	<1	<1
7440-62-2	Vanadium	mg/kg	1	6	35.00	63.00	44.67	39.50	11.91	0	NR	410	Hydrock Derived		41	35		63	56	38	35
7440-66-6	Zinc	mg/kg	3	6	42.00	81.00	61.50	61.50	15.91	0	NR	3900	Hydrock Derived		65	81		77	58	46	42
P1095	Cyanide (free)	mg/kg	1	6	1.00	1.00	1.00	1.00	0.00	0	NR	24	Acute Risk - SoBRA 2020		<1	<1		<1	<1	<1	<1
P1186	Total Phenols (Monohydric)	mg/kg	2	6	1.00	2.00	1.67	2.00	0.52	0	38058	210	Hydrock Derived		<2	<2		<2	<2	<1	<1
83-32-9	Acenaphthene	mg/kg	0.1	6	0.05	0.10	0.08	0.10	0.03	0	141	540	Hydrock Derived		<0.1	<0.1		<0.1	<0.1	<0.05	<0.05
208-96-8	Acenaphthylene	mg/kg	0.1	6	0.05	0.10	0.08	0.10	0.03	0	212	440	Hydrock Derived		<0.1	<0.1		<0.1	<0.1	<0.05	<0.05
120-12-7	Anthracene	mg/kg	0.1	6	0.05	0.28	0.11	0.10	0.09	0	2.91	5500	Hydrock Derived		<0.1	0.28		<0.1	<0.1	<0.05	<0.05
56-55-3	Benz(a)anthracene	mg/kg	0.1	6	0.05	1.49	0.32	0.10	0.58	0	4.28	12	Hydrock Derived		<0.1	1.49		<0.1	<0.1	<0.05	<0.05
50-32-8	Benzo(a)pyrene	mg/kg	0.1	6	0.05	1.27	0.28	0.10	0.49	0	2.28	5	C4SL - CL:AIRE 2014		<0.1	1.27		<0.1	<0.1	<0.05	<0.05
205-99-2	Benzo(b)fluoranthene	mg/kg	0.1	6	0.05	1.87	0.38	0.10	0.73	0	3.04	3.3	Hydrock Derived		<0.1	1.87		<0.1	<0.1	<0.05	<0.05
191-24-2	Benzo(ghi)perylene	mg/kg	0.1	6	0.05	0.67	0.18	0.10	0.24	0	0.04	340	Hydrock Derived		<0.1	0.67		<0.1	<0.1	<0.05	<0.05
207-08-9	Benzo(k)fluoranthene	mg/kg	0.1	6	0.05	0.48	0.15	0.10	0.17	0	1.72	93	Hydrock Derived		<0.1	0.48		<0.1	<0.1	<0.05	<0.05
218-01-9	Chrysene	mg/kg	0.1	6	0.05	1.52	0.32	0.10	0.59	0	1.10	22	Hydrock Derived		<0.1	1.52		<0.1	<0.1	<0.05	<0.05
53-70-3	Dibenz(ah)anthracene	mg/kg	0.1	6	0.05	0.21	0.10	0.10	0.06	0	0.010	0.29	Hydrock Derived		<0.1	0.21		<0.1	<0.1	<0.05	<0.05
206-44-0	Fluoranthene	mg/kg	0.1	6	0.05	2.33	0.46	0.10	0.92	0	47	560	Hydrock Derived		<0.1	2.33		<0.1	<0.1	<0.05	<0.05
86-73-7	Fluorene	mg/kg	0.1	6	0.05	0.10	0.08	0.10	0.03	0	77	420	Hydrock Derived		<0.1	<0.1		<0.1	<0.1	<0.05	<0.05
193-39-5	Indeno(123cd)pyrene	mg/kg	0.1	6	0.05	0.80	0.20	0.10	0.29	0	0.15	36	Hydrock Derived		<0.1	0.8		<0.1	<0.1	<0.05	<0.05
91-20-3	Naphthalene	mg/kg	0.1	6	0.05	0.10	0.08	0.10	0.03	0	183	30	Hydrock Derived		<0.1	<0.1		<0.1	<0.1	<0.05	<0.05
85-01-8	Phenanthrene	mg/kg	0.1	6	0.05	0.95	0.23	0.10	0.36	0	90	220	Hydrock Derived		<0.1	0.95		<0.1	<0.1	<0.05	<0.05
129-00-0	Pyrene	mg/kg	0.1	6	0.05	1.83	0.37	0.10	0.71	0	5.5	1200	Hydrock Derived		<0.1	1.83		<0.1	<0.1	<0.05	<0.05
P1310	PAH 16 Total	mg/kg	1.6	4	1.60	13.70	4.63	1.60	6.05			-			<1.6	13.7		<1.6	<1.6		
0	**TPH fractions**																				
P1407	TPH ali EC05-EC06	mg/kg	0.01	2	0.00	0.01	0.01	0.01	0.006	0	558	78	Hydrock Derived				<0.01			<0.001	
P1408	TPH ali >EC06-EC08	mg/kg	0.05	2	0.00	0.05	0.03	0.03	0.035	0	322	230	Hydrock Derived				<0.05			<0.001	
P1409	TPH ali >EC08-EC10	mg/kg	2	2	0.00	2.00	1.00	1.00	1.414	0	190	65	Hydrock Derived				<2			<0.001	
P1410	TPH ali >EC10-EC12	mg/kg	2	2	1.00	2.00	1.50	1.50	0.71	0	118	330	Hydrock Derived				<2			<1	
P1411	TPH ali >EC12-EC16	mg/kg	3	2	2.00	3.00	2.50	2.50	0.71	0	59	2400	Hydrock Derived				<3			<2	
P1938	TPH ali >EC16-EC35	mg/kg	10	1	10.00	10.00	10.00	10.00	-	0	21	92000	Hydrock Derived				<10			***N/A***	

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	**S**
Strata	**SD**
Depth Min (m bgl)	**0**
Depth Max (m bgl)	**9**

Hydrock

Dataset mean SOM% **4.25**

Scenario SOM% **2.5**

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	Date	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	10/05/18	10/05/18
														Zone	S	S	S	S	S	S	S
														Location	BH102	BH105	TP106	TP107	TP119	TP02	TP03
														Depth (m bgl)	0.2	0.6	0.4	0.3	0.4	0.5	0.5
														Strata	SD	SD	SD	SD	SD	SD	SD
P1415	TPH ali >EC35-EC44	mg/kg	10	2	8.40	10.00	9.20	9.20	1.13	0	21	92000	Hydrock Derived				<10			<8.4	
P1420	TPH ali >EC5-EC44	mg/kg	30	1	30.00	30.00	30.00	30.00	-			-					<30				
P1441	TPH aro EC05-EC07	mg/kg	0.01	2	0.00	0.01	0.01	0.01	0.01	0	2265	150	Hydrock Derived				<0.01			<0.001	
P1355	TPH aro >EC07-EC08	mg/kg	0.05	2	0.00	0.05	0.03	0.03	0.03	0	1916	300	Hydrock Derived				<0.05			<0.001	
P1356	TPH aro >EC08-EC10	mg/kg	2	2	0.00	2.00	1.00	1.00	1.41	0	1503	84	Hydrock Derived				<2			<0.001	
P1357	TPH aro >EC10-EC12	mg/kg	2	2	1.00	2.00	1.50	1.50	0.71	0	899	180	Hydrock Derived				<2			<1	
P1358	TPH aro >EC12-EC16	mg/kg	2	2	2.00	2.00	2.00	2.00	0.00	0	419	330	Hydrock Derived				<2			<2	
P1359	TPH aro >EC16-EC21	mg/kg	3	1	3.00	3.00	3.00	3.00	-	0	134	540	Hydrock Derived				<3				
P1360	TPH aro >EC21-EC35	mg/kg	10	2	10.00	10.00	10.00	10.00	0.00	0	12	1500	Hydrock Derived				<10			<10	
P1362	TPH aro >EC35-EC44	mg/kg	10	2	8.40	10.00	9.20	9.20	1.13	0	12	1500	Hydrock Derived				<10			<8.4	
P1941	TPH aro >EC5-EC44	mg/kg	30	1	30.00	30.00	30.00	30.00	-			-					<30				
P1373	Total TPH >EC5-EC44	mg/kg	60	1	60.00	60.00	60.00	60.00	-			-					<60				
o	**VOCs - BTEX & MTBE**																				
71-43-2	Benzene	mg/kg	< 2	2	0.00	0.00	0.00	0.00	0.00	0	2265	0.41	C4SL - CL:AIRE 2014				<0.002			<0.000001	
108-88-3	Toluene	mg/kg	< 5	2	0.00	0.01	0.00	0.00	0.00	0	1916	300	Hydrock Derived				<0.005			<0.000001	
100-41-4	Ethylbenzene	mg/kg	< 2	2	0.00	0.00	0.00	0.00	0.00	0	1216	110	Hydrock Derived				<0.002			<0.000001	
95-47-6	Xylene, o-	mg/kg	< 2	2	0.00	0.00	0.00	0.00	0.00	0	1120	140	Hydrock Derived				<0.002			<0.000001	
1330-20-7	Xylene, p- (or combined m & p)	mg/kg	< 2	2	0.00	0.00	0.00	0.00	0.00	0	1353	130	Hydrock Derived				<0.002			<0.000001	
1634-04-4	MTBE	mg/kg	< 5	2	0.00	0.01	0.00	0.00	0.00	0	33075	110	Hydrock Derived				<0.005			<0.000001	
	TPH Additivity Check			**HAZARD QUOTIENTS FOR EACH FRACTION**																	
													Aliphatics >EC5-EC6				0.000128205			1.28205E-05	
													Aliphatics >EC6-EC8				0.000217391			4.34783E-06	
													Aliphatics >EC8-EC10				0.030769231			1.53846E-05	
													Aliphatics >EC10-EC12				0.006060606			0.003030303	
													Aliphatics >EC12-EC16				0.00125			0.000833333	
													Aliphatics >EC16-EC35				0.000108696				
													Aliphatics >EC35-EC44				0.000108696			9.13043E-05	
													Aromatics EC5-EC7				6.66667E-05			6.66667E-06	
													Aromatics >EC7-EC8				0.000166667			3.33333E-06	
													Aromatics >EC8-EC10				0.023809524			1.19048E-05	
													Aromatics >EC10-EC12				0.011111111			0.005555556	
													Aromatics >EC12-EC16				0.006060606			0.006060606	
													Aromatics >EC16-EC21				0.005555556				
													Aromatics >EC21-EC35				0.006666667			0.006666667	
													Aromatics >EC35-EC44				0.006666667			0.0056	
													Hazard Index for ali>C8-C16				**0.038079837**			**0.003879021**	
													Hazard Index for aro>C8-C16				**0.040981241**			**0.011628066**	
													Hazard Index for aro>C16-C35				**0.012222222**			**0.006666667**	

Considered additive (Aliphatics >EC8-EC10, >EC10-EC12, >EC12-EC16)

Considered additive (Aromatics >EC8-EC10, >EC10-EC12, >EC12-EC16)

Considered additive (Aromatics >EC16-EC21, >EC21-EC35)

Hazard Index table - HI or HQ greater than 1 highlighted with orange shading.

Legend:

TS	Topsoil	<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.
MG	Made Ground		
MGS	Made Ground Surfacing	0.02	Value greater than, or equal to, the generic assessment criterion (GAC).
MGSB	Made Ground Subbase	***<10***	Value excluded from statistical analysis
TS	Topsoil	***Y***	Text result
RTS	Relict Topsoil	**-**	Represents a determinand that was not tested.
SP	Stockpile	**•**	represents a data point that is not included in the current filter settings

Template Version:
1.06: 20/07/23

Risk parameter:	Default - Human Health - POSpark (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	ROS
Strata	TS
Depth Min (m bgl)	0
Depth Max (m bgl)	9
Dataset mean SOM%	6.81
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	ROS	HP111	0.1
															17/08/2023	ROS	HP115	0.2
-	**Asbestos**																	
P1020	Asbestos Identified	text	Y/N	67	-	-	-	-	No. of detects:	0	-	-	-		N	N		
P1889	Asbestos Screen Name	text		14	-	-	-	-	-		-	-	-					
P1880	Asbestos Containing Material Types Detected (ACM)	text		20	-	-	-	-	-		-	-	-					
0	**Hydrock Default Suite - FOC / SOM / pH**										-							
P1085	FOC (dimensionless)	[]	0.001	2	0.030	0.049	0.040	0.040	0.01		-	-	-		0.03	0.049		
-	SOM (calculated)	%	0.1724	2	5.17	8.45	6.81	6.81	2.32		-	-	-		5.172	8.4476		
P1334	pH (su)	pH Units	0.1	2	7.40	7.80	7.60	7.60	0.28		-	-	-		7.8	7.4		
-	**Hydrock Default Suite - Metals & PAH**																	
7440-38-2	Arsenic	mg/kg	2	2	18.00	19.00	18.50	18.50	0.71	0	NR	170	C4SL - CL:AIRE 2014		19	18		
7440-41-7	Beryllium	mg/kg	0.5	2	0.80	0.80	0.80	0.80	0.00	0	NR	63	Hydrock Derived		0.8	0.8		
7440-42-8	Boron	mg/kg	1	2	1.00	1.00	1.00	1.00	0.00	0	NR	46000	Hydrock Derived		<1	<1		
7440-43-9	Cadmium	mg/kg	0.2	2	0.40	0.40	0.40	0.40	0.00	0	NR	880	C4SL - CL:AIRE 2014		0.4	0.4		
16065-83-1	Chromium (III)	mg/kg	2	2	21.00	21.00	21.00	21.00	0.00	0	NR	27000	Hydrock Derived		21	21		
18540-29-9	Chromium (VI)	mg/kg	2	2	2.00	2.00	2.00	2.00	0.00	0	NR	250	C4SL - CL:AIRE 2014		<2	<2		
7440-50-8	Copper	mg/kg	4	2	14.00	17.00	15.50	15.50	2.12	0	NR	44000	Hydrock Derived		14	17		
7439-92-1	Lead	mg/kg	3	2	32.00	42.00	37.00	37.00	7.07	0	NR	1300	C4SL - CL:AIRE 2014		32	42		
7439-97-6	Mercury, inorganic	mg/kg	1	2	1.00	1.00	1.00	1.00	0.00	0	NR	240	Hydrock Derived		<1	<1		
7440-02-0	Nickel	mg/kg	3	2	11.00	12.00	11.50	11.50	0.71	0	NR	800	Hydrock Derived		11	12		
7782-49-2	Selenium	mg/kg	2	2	2.00	2.00	2.00	2.00	0.00	0	NR	1800	Hydrock Derived		<2	<2		
7440-62-2	Vanadium	mg/kg	1	2	39.00	41.00	40.00	40.00	1.41	0	NR	5000	Hydrock Derived		41	39		
7440-66-6	Zinc	mg/kg	3	2	52.00	89.00	70.50	70.50	26.16	0	NR	170000	Hydrock Derived		52	89		
P1095	Cyanide (free)	mg/kg	1	2	1.00	1.00	1.00	1.00	0.00	0	NR	24	Acute Risk - SoBRA 2020		<1	<1		
P1186	Total Phenols (Monohydric)	mg/kg	2	2	2.00	6.40	4.20	4.20	3.11	0	70308	1300	Hydrock Derived		<2	6.4		
83-32-9	Acenaphthene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	336	30000	Hydrock Derived		<0.1	<0.1		
208-96-8	Acenaphthylene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	506	30000	Hydrock Derived		<0.1	<0.1		
120-12-7	Anthracene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	6.96	150000	Hydrock Derived		<0.1	<0.1		
56-55-3	Benz(a)anthracene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	10.27	62	Hydrock Derived		<0.1	<0.1		
50-32-8	Benzo(a)pyrene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	5.46	21	C4SL - CL:AIRE 2014		<0.1	<0.1		
205-99-2	Benzo(b)fluoranthene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	7.29	16	Hydrock Derived		<0.1	<0.1		
191-24-2	Benzo(ghi)perylene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	0.09	1600	Hydrock Derived		<0.1	<0.1		
207-08-9	Benzo(k)fluoranthene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	4.12	440	Hydrock Derived		<0.1	<0.1		
218-01-9	Chrysene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	2.64	120	Hydrock Derived		<0.1	<0.1		
53-70-3	Dibenz(ah)anthracene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	0.024	1.4	Hydrock Derived		<0.1	<0.1		
206-44-0	Fluoranthene	mg/kg	0.1	2	0.10	0.14	0.12	0.12	0.03	0	113	6400	Hydrock Derived		<0.1	0.14		
86-73-7	Fluorene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	183	20000	Hydrock Derived		<0.1	<0.1		
193-39-5	Indeno(123cd)pyrene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	0.37	180	Hydrock Derived		<0.1	<0.1		
91-20-3	Naphthalene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	432	2300	Hydrock Derived		<0.1	<0.1		
85-01-8	Phenanthrene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	214	6300	Hydrock Derived		<0.1	<0.1		
129-00-0	Pyrene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	13.2	15000	Hydrock Derived		<0.1	<0.1		
P1310	PAH 16 Total	mg/kg	1.6	2	1.60	1.60	1.60	1.60	0.00			-			<1.6	<1.6		

Legend:

TS	Topsoil
MG	Made Ground
MGS	Made Ground Surfacing
MGSB	Made Ground Subbase
TS	Topsoil
RTS	Relict Topsoil
SP	Stockpile

<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

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	ROS
Strata	TS
Depth Min (m bgl)	0
Depth Max (m bgl)	9
Dataset mean SOM%	6.81
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	ROS	HP111	0.1
															17/08/2023	ROS	HP115	0.2
-	**Asbestos**																	
P1020	Asbestos Identified	text	Y/N	67	-	-	-	-	No. of detects:	0	-	-	-		N			
P1889	Asbestos Screen Name	text		14	-	-	-	-	-		-	-	-					
P1880	Asbestos Containing Material Types Detected (ACM)	text		20	-	-	-	-	-		-	-	-					
0	**Hydrock Default Suite - FOC / SOM / pH**										-							
P1085	FOC (dimensionless)	[]	0.001	2	0.030	0.049	0.040	0.040	0.01		-	-	-		0.03			0.049
-	SOM (calculated)	%	0.1724	2	5.17	8.45	6.81	6.81	2.32		-	-	-		5.172			8.4476
P1334	pH (su)	pH Units	0.1	2	7.40	7.80	7.60	7.60	0.28		-	-	-		7.8			7.4
-	**Hydrock Default Suite - Metals & PAH**																	
7440-38-2	Arsenic	mg/kg	2	2	18.00	19.00	18.50	18.50	0.71	0	NR	37	C4SL - CL:AIRE 2014		19			18
7440-41-7	Beryllium	mg/kg	0.5	2	0.80	0.80	0.80	0.80	0.00	0	NR	1.7	Hydrock Derived		0.8			0.8
7440-42-8	Boron	mg/kg	1	2	1.00	1.00	1.00	1.00	0.00	0	NR	300	Hydrock Derived		<1			<1
7440-43-9	Cadmium	mg/kg	0.2	2	0.40	0.40	0.40	0.40	0.00	0	NR	22	C4SL - CL:AIRE 2014		0.4			0.4
16065-83-1	Chromium (III)	mg/kg	2	2	21.00	21.00	21.00	21.00	0.00	0	NR	890	Hydrock Derived		21			21
18540-29-9	Chromium (VI)	mg/kg	2	2	2.00	2.00	2.00	2.00	0.00	0	NR	21	C4SL - CL:AIRE 2014		<2			<2
7440-50-8	Copper	mg/kg	4	2	14.00	17.00	15.50	15.50	2.12	0	NR	2500	Hydrock Derived		14			17
7439-92-1	Lead	mg/kg	3	2	32.00	42.00	37.00	37.00	7.07	0	NR	200	C4SL - CL:AIRE 2014		32			42
7439-97-6	Mercury, inorganic	mg/kg	1	2	1.00	1.00	1.00	1.00	0.00	0	NR	40	Hydrock Derived		<1			<1
7440-02-0	Nickel	mg/kg	3	2	11.00	12.00	11.50	11.50	0.71	0	NR	130	Hydrock Derived		11			12
7782-49-2	Selenium	mg/kg	2	2	2.00	2.00	2.00	2.00	0.00	0	NR	260	Hydrock Derived		<2			<2
7440-62-2	Vanadium	mg/kg	1	2	39.00	41.00	40.00	40.00	1.41	0	NR	410	Hydrock Derived		41			39
7440-66-6	Zinc	mg/kg	3	2	52.00	89.00	70.50	70.50	26.16	0	NR	3900	Hydrock Derived		52			89
P1095	Cyanide (free)	mg/kg	1	2	1.00	1.00	1.00	1.00	0.00	0	NR	24	Acute Risk - SoBRA 2020		<1			<1
P1186	Total Phenols (Monohydric)	mg/kg	2	2	2.00	6.40	4.20	4.20	3.11	0	70308	390	Hydrock Derived		<2			6.4
83-32-9	Acenaphthene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	336	1200	Hydrock Derived		<0.1			<0.1
208-96-8	Acenaphthylene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	506	970	Hydrock Derived		<0.1			<0.1
120-12-7	Anthracene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	6.96	11000	Hydrock Derived		<0.1			<0.1
56-55-3	Benz(a)anthracene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	10.27	14	Hydrock Derived		<0.1			<0.1
50-32-8	Benzo(a)pyrene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	5.46	5	C4SL - CL:AIRE 2014		<0.1			<0.1
205-99-2	Benzo(b)fluoranthene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	7.29	3.7	Hydrock Derived		<0.1			<0.1
191-24-2	Benzo(ghi)perylene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	0.09	350	Hydrock Derived		<0.1			<0.1
207-08-9	Benzo(k)fluoranthene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	4.12	100	Hydrock Derived		<0.1			<0.1
218-01-9	Chrysene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	2.64	27	Hydrock Derived		<0.1			<0.1
53-70-3	Dibenz(ah)anthracene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	0.024	0.31	Hydrock Derived		<0.1			<0.1
206-44-0	Fluoranthene	mg/kg	0.1	2	0.10	0.14	0.12	0.12	0.03	0	113	900	Hydrock Derived		<0.1			0.14
86-73-7	Fluorene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	183	900	Hydrock Derived		<0.1			<0.1
193-39-5	Indeno(123cd)pyrene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	0.37	41	Hydrock Derived		<0.1			<0.1
91-20-3	Naphthalene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	432	71	Hydrock Derived		<0.1			<0.1
85-01-8	Phenanthrene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	214	450	Hydrock Derived		<0.1			<0.1
129-00-0	Pyrene	mg/kg	0.1	2	0.10	0.10	0.10	0.10	0.00	0	13.2	2000	Hydrock Derived		<0.1			<0.1
P1310	PAH 16 Total	mg/kg	1.6	2	1.60	1.60	1.60	1.60	0.00			-			<1.6			<1.6

Legend:

TS	Topsoil	<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.
MG	Made Ground		
MGS	Made Ground Surfacing	0.02	Value greater than, or equal to, the generic assessment criterion (GAC).
MGSB	Made Ground Subbase	***<10***	Value excluded from statistical analysis
TS	Topsoil	***Y***	Text result
RTS	Relict Topsoil	**-**	Represents a determinand that was not tested.
KC	Kellaways Clay Member	*	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 - POSpark (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	S
Strata	TS
Depth Min (m bgl)	0
Depth Max (m bgl)	9

Dataset mean SOM% **5.92**

Scenario SOM% **2.5**

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	Date	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	10/05/18
														Zone	S	S	S	S	S	S	S	S	S
														Location	BH101	BH103	BH104	TP102	TP103	TP105	TP110	TP126	TP01
														Depth (m bgl)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.4
														Strata	TS	TS	TS	TS	TS	TS	TS	TS	TS
-	**Asbestos**																						
P1020	Asbestos Identified	text	Y/N	67	-	-	-	-	No. of detects:	0	-	-	-		N	N	N	N	N	N	N	N	N
P1889	Asbestos Screen Name	text		11	-	-	-	-	-		-	-	-										
P1880	Asbestos Containing Material Types Detected (ACM)	text		16	-	-	-	-	-		-	-	-										
0	**Hydrock Default Suite - FOC / SOM / pH**										-												
P1085	FOC (dimensionless)	[]	0.001	9	0.011	0.057	0.034	0.035	0.02		-	-	-		0.035	0.046	0.011	0.057	0.02	0.048	0.057	0.011	0.024
-	SOM (calculated)	%	0.1724	9	1.90	9.83	5.92	6.03	3.20		-	-	-		6.034	7.9304	1.8964	9.8268	3.448	8.2752	9.8268	1.8964	4.1376
P1334	pH (su)	pH Units	0.1	9	7.50	8.10	7.80	7.80	0.19		-	-	-		7.9	7.6	8	7.8	7.9	7.7	7.5	7.7	8.1
-	**Hydrock Default Suite - Metals & PAH**																						
7440-38-2	Arsenic	mg/kg	2	9	8.00	20.00	15.22	16.00	4.15	0	NR	170	C4SL - CL:AIRE 2014		16	20	8	12	15	20	18	11	17
7440-41-7	Beryllium	mg/kg	0.5	9	0.50	1.40	0.89	0.93	0.34	0	NR	63	Hydrock Derived		1	1.4	<0.5	0.6	0.7	1.1	1.3	<0.5	0.93
7440-42-8	Boron	mg/kg	1	9	1.00	3.40	1.41	1.20	0.77	0	NR	46000	Hydrock Derived		<1	1.2	<1	1.3	<1	1.2	1.6	<1	3.4
7440-43-9	Cadmium	mg/kg	0.2	9	0.20	0.40	0.30	0.30	0.10	0	NR	880	C4SL - CL:AIRE 2014		0.2	0.4	<0.2	0.4	0.3	0.4	0.4	0.2	<0.2
16065-83-1	Chromium (III)	mg/kg	2	9	10.00	43.00	24.44	23.00	10.78	0	NR	27000	Hydrock Derived		23	43	10	16	21	28	32	13	34
18540-29-9	Chromium (VI)	mg/kg	2	9	1.20	2.00	1.91	2.00	0.27	0	NR	250	C4SL - CL:AIRE 2014		<2	<2	<2	<2	<2	<2	<2	<2	<1.2
7440-47-3	Chromium (Total)	mg/kg		1	34.00	34.00	34.00	34.00	-			-											34
7440-50-8	Copper	mg/kg	4	9	7.00	38.00	16.44	15.00	8.80	0	NR	44000	Hydrock Derived		15	17	7	17	17	38	15	10	12
7439-92-1	Lead	mg/kg	3	9	8.00	72.00	34.67	34.00	20.02	0	NR	1300	C4SL - CL:AIRE 2014		34	41	8	31	34	55	72	11	26
7439-97-6	Mercury, inorganic	mg/kg	1	9	0.30	1.00	0.92	1.00	0.23	0	NR	240	Hydrock Derived		<1	<1	<1	<1	<1	<1	<1	<1	<0.3
7440-02-0	Nickel	mg/kg	3	9	5.00	18.00	11.44	13.00	4.45	0	NR	800	Hydrock Derived		13	18	5	7	10	13	16	7	14
7782-49-2	Selenium	mg/kg	2	9	1.00	2.00	1.89	2.00	0.33	0	NR	1800	Hydrock Derived		<2	<2	<2	<2	<2	<2	<2	<2	<1
7440-62-2	Vanadium	mg/kg	1	9	19.00	58.00	39.44	40.00	13.55	0	NR	5000	Hydrock Derived		39	58	19	28	40	50	54	24	43
7440-66-6	Zinc	mg/kg	3	9	25.00	269.00	86.89	66.00	72.58	0	NR	170000	Hydrock Derived		66	107	25	62	68	269	91	39	55
P1095	Cyanide (free)	mg/kg	1	9	1.00	1.00	1.00	1.00	0.00	0	NR	24	Acute Risk - SoBRA 2020		<1	<1	<1	<1	<1	<1	<1	<1	<1
P1186	Total Phenols (Monohydric)	mg/kg	2	9	1.00	7.20	2.47	2.00	1.81	0	38058	690	Hydrock Derived		<2	<2	<2	<2	<2	<2	7.2	<2	<1
83-32-9	Acenaphthene	mg/kg	0.1	9	0.05	0.10	0.09	0.10	0.02	0	141	30000	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05
208-96-8	Acenaphthylene	mg/kg	0.1	9	0.05	0.10	0.09	0.10	0.02	0	212	30000	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05
120-12-7	Anthracene	mg/kg	0.1	9	0.05	0.10	0.09	0.10	0.02	0	2.91	150000	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05
56-55-3	Benz(a)anthracene	mg/kg	0.1	9	0.05	0.14	0.10	0.10	0.02	0	4.28	56	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1	0.14	<0.1	<0.1	<0.05
50-32-8	Benzo(a)pyrene	mg/kg	0.1	9	0.05	0.10	0.09	0.10	0.02	0	2.28	21	C4SL - CL:AIRE 2014		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05
205-99-2	Benzo(b)fluoranthene	mg/kg	0.1	9	0.05	0.16	0.10	0.10	0.03	0	3.04	15	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1	0.16	<0.1	<0.1	<0.05
191-24-2	Benzo(ghi)perylene	mg/kg	0.1	9	0.05	0.10	0.09	0.10	0.02	0	0.04	1500	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05
207-08-9	Benzo(k)fluoranthene	mg/kg	0.1	9	0.05	0.10	0.09	0.10	0.02	0	1.72	410	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05
218-01-9	Chrysene	mg/kg	0.1	9	0.05	0.16	0.10	0.10	0.03	0	1.10	110	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1	0.16	<0.1	<0.1	<0.05
53-70-3	Dibenz(ah)anthracene	mg/kg	0.1	9	0.05	0.10	0.09	0.10	0.02	0	0.010	1.3	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05
206-44-0	Fluoranthene	mg/kg	0.1	9	0.05	0.43	0.13	0.10	0.11	0	47	6300	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1	0.43	<0.1	<0.1	<0.05
86-73-7	Fluorene	mg/kg	0.1	9	0.05	0.10	0.09	0.10	0.02	0	77	20000	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05
193-39-5	Indeno(123cd)pyrene	mg/kg	0.1	9	0.05	0.10	0.09	0.10	0.02	0	0.15	170	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05
91-20-3	Naphthalene	mg/kg	0.1	9	0.05	0.10	0.09	0.10	0.02	0	183	1600	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05
85-01-8	Phenanthrene	mg/kg	0.1	9	0.05	0.30	0.12	0.10	0.07	0	90	6200	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1	0.3	<0.1	<0.1	<0.05
129-00-0	Pyrene	mg/kg	0.1	9	0.05	0.35	0.12	0.10	0.09	0	5.5	15000	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1	0.35	<0.1	<0.1	<0.05
P1310	PAH 16 Total	mg/kg	1.6	8	1.60	1.60	1.60	1.60	0.00			-			<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	

Legend:

TS	Topsoil	<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.
MG	Made Ground		
MGS	Made Ground Surfacing	0.02	Value greater than, or equal to, the generic assessment criterion (GAC).
MGSB	Made Ground Subbase	***<10**	Value excluded from statistical analysis
TS	Topsoil	***Y***	Text result
RTS	Relict Topsoil	**-**	Represents a determinand that was not tested.
SP	Stockpile	**•**	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	**S**
Strata	**TS**
Depth Min (m bgl)	**0**
Depth Max (m bgl)	**9**

Dataset mean SOM% **5.92**

Scenario SOM% **2.5**

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	Date	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	10/05/18
														Zone	S	S	S	S	S	S	S	S	S
														Location	BH101	BH103	BH104	TP102	TP103	TP105	TP110	TP126	TP01
														Depth (m bgl)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.4
														Strata	TS	TS	TS	TS	TS	TS	TS	TS	TS
-	**Asbestos**																						
P1020	Asbestos Identified	text	Y/N	67	-	-	-	-	No. of detects:	0	-	-	-		N	N	N	N	N	N	N	N	N
P1889	Asbestos Screen Name	text		11	-	-	-	-	-		-	-	-										
P1880	Asbestos Containing Material Types Detected (ACM)	text		16	-	-	-	-	-		-	-	-										
0	**Hydrock Default Suite - FOC / SOM / pH**										-												
P1085	FOC (dimensionless)	[]	0.001	9	0.011	0.057	0.034	0.035	0.02		-	-	-		0.035	0.046	0.011	0.057	0.02	0.048	0.057	0.011	0.024
-	SOM (calculated)	%	0.1724	9	1.90	9.83	5.92	6.03	3.20		-	-	-		6.034	7.9304	1.8964	9.8268	3.448	8.2752	9.8268	1.8964	4.1376
P1334	pH (su)	pH Units	0.1	9	7.50	8.10	7.80	7.80	0.19		-	-	-		7.9	7.6	8	7.8	7.9	7.7	7.5	7.7	8.1
-	**Hydrock Default Suite - Metals & PAH**																						
7440-38-2	Arsenic	mg/kg	2	9	8.00	20.00	15.22	16.00	4.15	0	NR	37	C4SL - CL:AIRE 2014		16	20	8	12	15	20	18	11	17
7440-41-7	Beryllium	mg/kg	0.5	9	0.50	1.40	0.89	0.93	0.34	0	NR	1.7	Hydrock Derived		1	1.4	<0.5	0.6	0.7	1.1	1.3	<0.5	0.93
7440-42-8	Boron	mg/kg	1	9	1.00	3.40	1.41	1.20	0.77	0	NR	300	Hydrock Derived		<1	1.2	<1	1.3	<1	1.2	1.6	<1	3.4
7440-43-9	Cadmium	mg/kg	0.2	9	0.20	0.40	0.30	0.30	0.10	0	NR	22	C4SL - CL:AIRE 2014		0.2	0.4	<0.2	0.4	0.3	0.4	0.4	0.2	<0.2
16065-83-1	Chromium (III)	mg/kg	2	9	10.00	43.00	24.44	23.00	10.78	0	NR	890	Hydrock Derived		23	43	10	16	21	28	32	13	34
18540-29-9	Chromium (VI)	mg/kg	2	9	1.20	2.00	1.91	2.00	0.27	0	NR	21	C4SL - CL:AIRE 2014		<2	<2	<2	<2	<2	<2	<2	<2	<1.2
7440-47-3	Chromium (Total)	mg/kg		1	34.00	34.00	34.00	34.00	-			-											34
7440-50-8	Copper	mg/kg	4	9	7.00	38.00	16.44	15.00	8.80	0	NR	2500	Hydrock Derived		15	17	7	17	17	38	15	10	12
7439-92-1	Lead	mg/kg	3	9	8.00	72.00	34.67	34.00	20.02	0	NR	200	C4SL - CL:AIRE 2014		34	41	8	31	34	55	72	11	26
7439-97-6	Mercury, inorganic	mg/kg	1	9	0.30	1.00	0.92	1.00	0.23	0	NR	40	Hydrock Derived		<1	<1	<1	<1	<1	<1	<1	<1	<0.3
7440-02-0	Nickel	mg/kg	3	9	5.00	18.00	11.44	13.00	4.45	0	NR	130	Hydrock Derived		13	18	5	7	10	13	16	7	14
7782-49-2	Selenium	mg/kg	2	9	1.00	2.00	1.89	2.00	0.33	0	NR	260	Hydrock Derived		<2	<2	<2	<2	<2	<2	<2	<2	<1
7440-62-2	Vanadium	mg/kg	1	9	19.00	58.00	39.44	40.00	13.55	0	NR	410	Hydrock Derived		39	58	19	28	40	50	54	24	43
7440-66-6	Zinc	mg/kg	3	9	25.00	269.00	86.89	66.00	72.58	0	NR	3900	Hydrock Derived		66	107	25	62	68	269	91	39	55
P1095	Cyanide (free)	mg/kg	1	9	1.00	1.00	1.00	1.00	0.00	0	NR	24	Acute Risk - SoBRA 2020		<1	<1	<1	<1	<1	<1	<1	<1	<1
P1186	Total Phenols (Monohydric)	mg/kg	2	9	1.00	7.20	2.47	2.00	1.81	0	38058	210	Hydrock Derived		<2	<2	<2	<2	<2	<2	7.2	<2	<1
83-32-9	Acenaphthene	mg/kg	0.1	9	0.05	0.10	0.09	0.10	0.02	0	141	540	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05
208-96-8	Acenaphthylene	mg/kg	0.1	9	0.05	0.10	0.09	0.10	0.02	0	212	440	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05
120-12-7	Anthracene	mg/kg	0.1	9	0.05	0.10	0.09	0.10	0.02	0	2.91	5500	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05
56-55-3	Benz(a)anthracene	mg/kg	0.1	9	0.05	0.14	0.10	0.10	0.02	0	4.28	12	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1	0.14	<0.1	<0.1	<0.05
50-32-8	Benzo(a)pyrene	mg/kg	0.1	9	0.05	0.10	0.09	0.10	0.02	0	2.28	5	C4SL - CL:AIRE 2014		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05
205-99-2	Benzo(b)fluoranthene	mg/kg	0.1	9	0.05	0.16	0.10	0.10	0.03	0	3.04	3.3	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1	0.16	<0.1	<0.1	<0.05
191-24-2	Benzo(ghi)perylene	mg/kg	0.1	9	0.05	0.10	0.09	0.10	0.02	0	0.04	340	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05
207-08-9	Benzo(k)fluoranthene	mg/kg	0.1	9	0.05	0.10	0.09	0.10	0.02	0	1.72	93	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05
218-01-9	Chrysene	mg/kg	0.1	9	0.05	0.16	0.10	0.10	0.03	0	1.10	22	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1	0.16	<0.1	<0.1	<0.05
53-70-3	Dibenz(ah)anthracene	mg/kg	0.1	9	0.05	0.10	0.09	0.10	0.02	0	0.010	0.29	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05
206-44-0	Fluoranthene	mg/kg	0.1	9	0.05	0.43	0.13	0.10	0.11	0	47	560	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1	0.43	<0.1	<0.1	<0.05
86-73-7	Fluorene	mg/kg	0.1	9	0.05	0.10	0.09	0.10	0.02	0	77	420	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05
193-39-5	Indeno(123cd)pyrene	mg/kg	0.1	9	0.05	0.10	0.09	0.10	0.02	0	0.15	36	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05
91-20-3	Naphthalene	mg/kg	0.1	9	0.05	0.10	0.09	0.10	0.02	0	183	30	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05
85-01-8	Phenanthrene	mg/kg	0.1	9	0.05	0.30	0.12	0.10	0.07	0	90	220	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1	0.3	<0.1	<0.1	<0.05
129-00-0	Pyrene	mg/kg	0.1	9	0.05	0.35	0.12	0.10	0.09	0	5.5	1200	Hydrock Derived		<0.1	<0.1	<0.1	<0.1	<0.1	0.35	<0.1	<0.1	<0.05
P1310	PAH 16 Total	mg/kg	1.6	8	1.60	1.60	1.60	1.60	0.00			-			<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	<1.6	

Legend:

TS	Topsoil	<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.
MG	Made Ground		
MGS	Made Ground Surfacing	0.02	Value greater than, or equal to, the generic assessment criterion (GAC).
MGSB	Made Ground Subbase	***<10**	Value excluded from statistical analysis
TS	Topsoil	***Y***	Text result
RTS	Relict Topsoil	**-**	Represents a determinand that was not tested.
SP	Stockpile	**•**	represents a data point that is not included in the current filter settings

Template Version:

1.06: 20/07/23

Phytotoxic GQRA

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	S
Strata	KC
Depth Min (m bgl)	0
Depth Max (m bgl)	9

Dataset mean pH **7.95**

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	Date: 17/08/2023
													Zone	S	S
													Location	BH102	BH105
													Depth (m bgl)	9	8.5
0	**Hydrock Default Suite - FOC / SOM / pH**														
P1334	pH (su)	pH Units	0.1	2	7.90	8.00	7.95	7.95	0.07		-	-		8	7.9
-	**Hydrock Default Suite - Metals & PAH**														
7440-38-2	Arsenic	mg/kg	2	2	5.00	6.00	5.50	5.50	0.71	0	250	MAFF 1998		6	5
7440-42-8	Boron	mg/kg	1	2	1.00	1.60	1.30	1.30	0.42	0	5	Nable, et al. 1997		1.6	<1
16065-83-1	Chromium (III)	mg/kg	2	2	7.00	8.00	7.50	7.50	0.71	0	400	MAFF 1998 (Cr(T))		8	7
18540-29-9	Chromium (VI)	mg/kg	2	2	2.00	2.00	2.00	2.00	0.00	0	25	ICRCL 70/90 1990		<2	<2
7440-50-8	Copper	mg/kg	4	2	9.00	16.00	12.50	12.50	4.95	0	135	BS3882 2015		9	16
7440-02-0	Nickel	mg/kg	3	2	12.00	14.00	13.00	13.00	1.41	0	75	BS3882 2015		14	12
7440-66-6	Zinc	mg/kg	3	2	36.00	190.00	113.00	113.00	108.89	0	300	BS3882 2015		190	36

Legend:

TS	Topsoil
MG	Made Ground
TS	Topsoil
RTS	Relict Topsoil
SD	Superficial Deposits
NMS	Northmorr Sand and Gravel

<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	**S**
Strata	**MG**
Depth Min (m bgl)	**0**
Depth Max (m bgl)	**9**
Dataset mean pH	**8.15**
Scenario pH	**7**

Hydrock

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	BH105 @ 0.2	TP102 @ 0.5	TP104 @ 0.2	TP106 @ 0.2	TP109 @ 0.2	TP112 @ 0.4
													Date	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023
													Zone	S	S	S	S	S	S
													Location	BH105	TP102	TP104	TP106	TP109	TP112
													Depth (m bgl)	0.2	0.5	0.2	0.2	0.2	0.4
0	**Hydrock Default Suite - FOC / SOM / pH**																		
P1334	pH (su)	pH Units	0.1	17	7.60	9.70	8.15	8.00	0.55		-	-		7.6	7.7	8.1	7.9	7.8	7.9
-	**Hydrock Default Suite - Metals & PAH**																		
7440-38-2	Arsenic	mg/kg	2	16	8.00	21.00	14.15	14.00	4.36	0	250	MAFF 1998		9	13	8	15	21	
7440-42-8	Boron	mg/kg	1	16	0.60	1.30	1.01	1.00	0.20	0	5	Nable, et al. 1997		<1	1.3	<1	<1	1.2	
16065-83-1	Chromium (III)	mg/kg	2	16	7.00	67.00	18.70	15.00	14.34	0	400	MAFF 1998 (Cr(T))		13	17	7	17	29	
18540-29-9	Chromium (VI)	mg/kg	2	16	1.20	2.00	1.80	2.00	0.36	0	25	ICRCL 70/90 1990		<2	<2	<2	<2	<2	
7440-50-8	Copper	mg/kg	4	16	4.70	1880.00	132.46	15.50	466.07	1	135	BS3882 2015		17	16	9	15	36	
7440-02-0	Nickel	mg/kg	3	17	3.00	145.00	18.27	9.00	33.42	1	75	BS3882 2015		7	8	4	10	14	3
7440-66-6	Zinc	mg/kg	3	17	15.00	5510.00	392.71	48.00	1320.66	2	300	BS3882 2015		157	69	36	41	318	15

Legend:

TS	Topsoil
MG	Made Ground
TS	Topsoil
RTS	Relict Topsoil
SD	Superficial Deposits
NMS	Northmorr Sand and Gravel

<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	S
Strata	MG
Depth Min (m bgl)	0
Depth Max (m bgl)	9
Dataset mean pH	8.15
Scenario pH	7

Hydrock

ng/kg unless otherwise stated

Chemical of Potential Concern	Units	LoD	No. Samples	Min. Value	Max. Value	Mean	Median	Standard Deviation	No. Samples >= GAC & > LoD	GAC	GAC Source	TP112 @ 0.7	TP113 @ 0.3	TP113 @ 0.5	TP114 @ 0.3	TP117 @ 0.2	TP124 @ 0.2	HP110 @ 0.3	HP110 @ 0.5	TP01 @ 0.2
												17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	10/05/18
												S	S	S	S	S	S	S	S	S
												TP112	TP113	TP113	TP114	TP117	TP124	HP110	HP110	TP01
												0.7	0.3	0.5	0.3	0.2	0.2	0.3	0.5	0.2
												MG	MG	MG	MG	MG	MG	MG	MG	MG
Hydrock Default Suite - FOC / SOM / pH																				
pH (su)	pH Units	0.1	17	7.60	9.70	8.15	8.00	0.55		-	-	7.8	7.7		9.7	8	7.7	8.2	8.1	8.4
Hydrock Default Suite - Metals & PAH																				
Arsenic	mg/kg	2	16	8.00	21.00	14.15	14.00	4.36	0	250	MAFF 1998	20	20		13	12	15	17	12	8.6
Boron	mg/kg	1	16	0.60	1.30	1.01	1.00	0.20	0	5	Nable, et al. 1997	<1	<1		<1	<1	<1	<1	<1	0.6
Chromium (III)	mg/kg	2	16	7.00	67.00	18.70	15.00	14.34	0	400	MAFF 1998 (Cr(T))	18	22		10	13	67	11	10	8.2
Chromium (VI)	mg/kg	2	16	1.20	2.00	1.80	2.00	0.36	0	25	ICRCL 70/90 1990	<2	<2		<2	<2	<2	<2	<2	<1.2
Copper	mg/kg	4	16	4.70	1880.00	132.46	15.50	466.07	1	135	BS3882 2015	17	22		25	13	1880	14	12	4.7
Nickel	mg/kg	3	17	3.00	145.00	18.27	9.00	33.42	1	75	BS3882 2015	13	12		8	8	145	35	9	5
Zinc	mg/kg	3	17	15.00	5510.00	392.71	48.00	1320.66	2	300	BS3882 2015	45	118		47	56	5510	48	24	40

Legend:

TS	Topsoil
MG	Made Ground
TS	Topsoil
RTS	Relict Topsoil
SD	Superficial Deposits
NMS	Northmorr Sand and Gravel

<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

sion:
3

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	S
Strata	MG
Depth Min (m bgl)	0
Depth Max (m bgl)	9
Dataset mean pH	8.15
Scenario pH	7

Hydrock

TP04 @ 0.5 TP05 @ 0.2 TP05 @ 0.5 TP06 @ 0.2 CC111 @ 0.6

ng/kg unless otherwise stated

Chemical of Potential Concern	Units	LoD	No. Samples	Min. Value	Max. Value	Mean	Median	Standard Deviation	No. Samples >= GAC & > LoD	GAC	GAC Source	10/05/18	10/05/18	10/05/18	10/05/18	23/08/23
												S	S	S	S	S
												TP04	TP05	TP05	TP06	CC111
												0.5	0.2	0.5	0.2	0.65
												MG	MG	MG	MG	MG
Hydrock Default Suite - FOC / SOM / pH																
pH (su)	pH Units	0.1	17	7.60	9.70	8.15	8.00	0.55		-	-	9.1		8.4	8.4	
Hydrock Default Suite - Metals & PAH																
Arsenic	mg/kg	2	16	8.00	21.00	14.15	14.00	4.36	0	250	MAFF 1998	8.8		15	19	
Boron	mg/kg	1	16	0.60	1.30	1.01	1.00	0.20	0	5	Nable, et al. 1997	0.6		1.3	1.2	
Chromium (III)	mg/kg	2	16	7.00	67.00	18.70	15.00	14.34	0	400	MAFF 1998 (Cr(T))	11		21	25	
Chromium (VI)	mg/kg	2	16	1.20	2.00	1.80	2.00	0.36	0	25	ICRCL 70/90 1990	<1.2		<1.2	<1.2	
Copper	mg/kg	4	16	4.70	1880.00	132.46	15.50	466.07	1	135	BS3882 2015	12		9.6	17	
Nickel	mg/kg	3	17	3.00	145.00	18.27	9.00	33.42	1	75	BS3882 2015	6.7		9.9	13	
Zinc	mg/kg	3	17	15.00	5510.00	392.71	48.00	1320.66	2	300	BS3882 2015	28		63	61	

Legend:

TS	Topsoil	
MG	Made Ground	
TS	Topsoil	
RTS	Relict Topsoil	
SD	Superficial Deposits	
NMS	Northmorr Sand and Gravel	

<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

sion:

3

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	S
Strata	MG
Depth Min (m bgl)	0
Depth Max (m bgl)	9
Dataset mean pH	8.18
Scenario pH	7

Hydrock

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	16	7.60	9.70	8.18	8.05	0.55		-	-
-	**Hydrock Default Suite - Metals & PAH**											
7440-38-2	Arsenic	mg/kg	2	15	8.00	21.00	14.09	13.00	4.50	0	250	MAFF 1998
7440-42-8	Boron	mg/kg	1	15	0.60	1.30	1.01	1.00	0.20	0	5	Nable, et al. 1997
16065-83-1	Chromium (III)	mg/kg	2	15	7.00	29.00	15.48	13.00	6.52	0	400	MAFF 1998 (Cr(T))
18540-29-9	Chromium (VI)	mg/kg	2	15	1.20	2.00	1.79	2.00	0.37	0	25	ICRCL 70/90 1990
7440-50-8	Copper	mg/kg	4	15	4.70	36.00	15.95	15.00	7.48	0	135	BS3882 2015
7440-02-0	Nickel	mg/kg	3	16	3.00	35.00	10.35	8.50	7.32	0	75	BS3882 2015
7440-66-6	Zinc	mg/kg	3	16	15.00	318.00	72.88	47.50	74.39	1	300	BS3882 2015

Location	Date	Zone	Strata	Depth (m bgl)
BH105	17/08/2023	S	MG	0.2
TP102	17/08/2023	S	MG	0.5
TP104	17/08/2023	S	MG	0.2
TP106	17/08/2023	S	MG	0.2
TP109	17/08/2023	S	MG	0.2
TP112	17/08/2023	S	MG	0.4
BH105	17/08/2023	S	MG	0.2
TP102	17/08/2023	S	MG	0.5
TP104	17/08/2023	S	MG	0.2
TP106	17/08/2023	S	MG	0.2
TP109	17/08/2023	S	MG	0.2
TP112	17/08/2023	S	MG	0.4

Legend:

TS	Topsoil
MG	Made Ground
TS	Topsoil
RTS	Relict Topsoil
SD	Superficial Deposits
NMS	Northmoor Sand and Gravel

<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	S
Strata	MG
Depth Min (m bgl)	0
Depth Max (m bgl)	9
Dataset mean pH	8.18
Scenario pH	7

Hydrock

ng/kg unless otherwise stated

Chemical of Potential Concern	Units	LoD	No. Samples	Min. Value	Max. Value	Mean	Median	Standard Deviation	No. Samples >= GAC & > LoD	GAC	GAC Source	TP112 @ 0.7	TP113 @ 0.3	TP113 @ 0.5	TP114 @ 0.3	TP117 @ 0.2	HP110 @ 0.3	HP110 @ 0.5	TP01 @ 0.2	TP04 @ 0.5
												17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	10/05/18	10/05/18
												S	S	S	S	S	S	S	S	S
												TP112	TP113	TP113	TP114	TP117	HP110	HP110	TP01	TP04
												0.7	0.3	0.5	0.3	0.2	0.3	0.5	0.2	0.5
												MG	MG	MG	MG	MG	MG	MG	MG	MG
Hydrock Default Suite - FOC / SOM / pH																				
pH (su)	pH Units	0.1	16	7.60	9.70	8.18	8.05	0.55		-	-	7.8	7.7		9.7	8	8.2	8.1	8.4	9.1
Hydrock Default Suite - Metals & PAH																				
Arsenic	mg/kg	2	15	8.00	21.00	14.09	13.00	4.50	0	250	MAFF 1998	20	20		13	12	17	12	8.6	8.8
Boron	mg/kg	1	15	0.60	1.30	1.01	1.00	0.20	0	5	Nable, et al. 1997	<1	<1		<1	<1	<1	<1	0.6	0.6
Chromium (III)	mg/kg	2	15	7.00	29.00	15.48	13.00	6.52	0	400	MAFF 1998 (Cr(T))	18	22		10	13	11	10	8.2	11
Chromium (VI)	mg/kg	2	15	1.20	2.00	1.79	2.00	0.37	0	25	ICRCL 70/90 1990	<2	<2		<2	<2	<2	<2	<1.2	<1.2
Copper	mg/kg	4	15	4.70	36.00	15.95	15.00	7.48	0	135	BS3882 2015	17	22		25	13	14	12	4.7	12
Nickel	mg/kg	3	16	3.00	35.00	10.35	8.50	7.32	0	75	BS3882 2015	13	12		8	8	35	9	5	6.7
Zinc	mg/kg	3	16	15.00	318.00	72.88	47.50	74.39	1	300	BS3882 2015	45	118		47	56	48	24	40	28

Legend:

TS	Topsoil	<0.02
MG	Made Ground	
TS	Topsoil	0.02
RTS	Relict Topsoil	*<10
SD	Superficial Deposits	Y
NMS	Northmoor Sand and Gravel	-
		+

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.

Value greater than, or equal to, the generic assessment criterion (GAC).

Value excluded from statistical analysis

Text result

Represents a determinand that was not tested.

represents a data point that is not included in the current filter settings

sion:

3

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	S
Strata	MG
Depth Min (m bgl)	0
Depth Max (m bgl)	9
Dataset mean pH	8.18
Scenario pH	7

Hydrock

TP05 @ 0.2 TP05 @ 0.5 TP06 @ 0.2 CC111 @ 0.6

ng/kg unless otherwise stated

Chemical of Potential Concern	Units	LoD	No. Samples	Min. Value	Max. Value	Mean	Median	Standard Deviation	No. Samples >= GAC & > LoD	GAC	GAC Source				
												10/05/18	10/05/18	10/05/18	23/08/23
												S	S	S	S
												TP05	TP05	TP06	CC111
												0.2	0.5	0.2	0.65
												MG	MG	MG	MG
Hydrock Default Suite - FOC / SOM / pH															
pH (su)	pH Units	0.1	16	7.60	9.70	8.18	8.05	0.55		-	-		8.4	8.4	
Hydrock Default Suite - Metals & PAH															
Arsenic	mg/kg	2	15	8.00	21.00	14.09	13.00	4.50	0	250	MAFF 1998		15	19	
Boron	mg/kg	1	15	0.60	1.30	1.01	1.00	0.20	0	5	Nable, et al. 1997		1.3	1.2	
Chromium (III)	mg/kg	2	15	7.00	29.00	15.48	13.00	6.52	0	400	MAFF 1998 (Cr(T))		21	25	
Chromium (VI)	mg/kg	2	15	1.20	2.00	1.79	2.00	0.37	0	25	ICRCL 70/90 1990		<1.2	<1.2	
Copper	mg/kg	4	15	4.70	36.00	15.95	15.00	7.48	0	135	BS3882 2015		9.6	17	
Nickel	mg/kg	3	16	3.00	35.00	10.35	8.50	7.32	0	75	BS3882 2015		9.9	13	
Zinc	mg/kg	3	16	15.00	318.00	72.88	47.50	74.39	1	300	BS3882 2015		63	61	

Legend:

TS	Topsoil	
MG	Made Ground	
TS	Topsoil	
RTS	Relict Topsoil	
SD	Superficial Deposits	
NMS	Northmoor Sand and Gravel	

<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

sion:
3

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	**S**
Strata	**MGBCW**
Depth Min (m bgl)	**0**
Depth Max (m bgl)	**9**
Dataset mean pH	**7.70**
Scenario pH	**7**

TP124 @ 0.2

Date	17/08/2023
Zone	S
Location	TP124
Depth (m bgl)	0.2
Strata	MGBCW

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	MGBCW
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	15.00	15.00	15.00	15.00	-	0	250	MAFF 1998		15
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	67.00	67.00	67.00	67.00	-	0	400	MAFF 1998 (Cr(T))		67
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	1880.00	1880.00	1880.00	1880.00	-	1	135	BS3882 2015		1880
7440-02-0	Nickel	mg/kg	3	1	145.00	145.00	145.00	145.00	-	1	75	BS3882 2015		145
7440-66-6	Zinc	mg/kg	3	1	5510.00	5510.00	5510.00	5510.00	-	1	300	BS3882 2015		5510

Legend:

TS	Topsoil	<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.
MG	Made Ground		
TS	Topsoil	0.02	Value greater than, or equal to, the generic assessment criterion (GAC).
RTS	Relict Topsoil	***<10**	Value excluded from statistical analysis
SD	Superficial Deposits	***Y***	Text result
NMS	Northmoor Sand and Gravel	**-**	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	**S**
Strata	**NMS**
Depth Min (m bgl)	**0**
Depth Max (m bgl)	**9**

Dataset mean pH **8.20**

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	Zone	Location	Depth (m bgl)	Strata
														17/08/2023	S	BH101	0.6	NMS
														17/08/2023	S	BH101	1	NMS
														17/08/2023	S	BH102	1	NMS
														17/08/2023	S	BH103	1	NMS
														17/08/2023	S	BH104	0.6	NMS
														17/08/2023	S	BH105	1	NMS
														17/08/2023	S	TP101	0.5	NMS
														17/08/2023	S	TP101	1	NMS
														17/08/2023	S	TP102	1	NMS
														17/08/2023	S	TP103	1	NMS
														17/08/2023	S	TP104	0.6	NMS
														17/08/2023	S	TP104	1.2	NMS
														17/08/2023	S	TP105	0.5	NMS
														17/08/2023	S	TP107	0.8	NMS
														17/08/2023	S	TP109	0.7	NMS
														17/08/2023	S	TP113	0.8	NMS
														17/08/2023	S	TP114	1.2	NMS
														17/08/2023	S	TP116	0.4	NMS
														17/08/2023	S	TP117	0.4	NMS
														17/08/2023	S	TP118	0.7	NMS
0	**Hydrock Default Suite - FOC / SOM / pH**																	
P1334	pH (su)	pH Units	0.1	23	7.80	8.90	8.20	8.10	0.31		-	-		8.1	8.1	8.1	8.1	8.1
														8	8.1	7.9	8.1	7.9
														8.1	8.1	8.2		8.3
														8		7.9		
-	**Hydrock Default Suite - Metals & PAH**																	
7440-38-2	Arsenic	mg/kg	2	18	4.00	18.00	8.07	7.65	3.96	0	250	MAFF 1998		6	5		6	7
														8	5	8		4
														4	4			5
														18		15		
7440-42-8	Boron	mg/kg	1	18	0.50	1.00	0.97	1.00	0.12	0	5	Nable, et al. 1997		<1	<1		<1	<1
														<1	<1	<1		<1
														<1	<1			<1
														<1		<1		
16065-83-1	Chromium (III)	mg/kg	2	18	4.00	20.00	8.55	7.45	4.64	0	400	MAFF 1998 (Cr(T))		8	5		6	5
														8	6	8		5
														4		16		
18540-29-9	Chromium (VI)	mg/kg	2	18	1.20	2.00	1.96	2.00	0.19	0	25	ICRCL 70/90 1990		<2	<2		<2	<2
														<2	<2	<2		<2
														<2		<2		
7440-50-8	Copper	mg/kg	4	18	2.20	27.00	9.90	9.00	5.26	0	135	BS3882 2015		9	8		8	8
														9	8	9		6
														5		8		
														15		12		
7440-02-0	Nickel	mg/kg	3	18	3.00	11.00	4.63	3.50	2.50	0	75	BS3882 2015		4	<3		<3	<3
														<3	<3	<3		<3
														11		9		
7440-66-6	Zinc	mg/kg	3	18	4.00	69.00	20.95	14.50	17.66	0	300	BS3882 2015		18	9		8	9
														14	35		15	7
														17		11		
														4		47		
														35				

Legend:

TS	Topsoil
MG	Made Ground
TS	Topsoil
RTS	Relict Topsoil
SD	Superficial Deposits
NMS	Northmorr Sand and Gravel

<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	**S**
Strata	**NMS**
Depth Min (m bgl)	**0**
Depth Max (m bgl)	**9**
Dataset mean pH	**8.20**
Scenario pH	**7**

Hydrock

ng/kg unless otherwise stated

Chemical of Potential Concern	Units	LoD	No. Samples	Min. Value	Max. Value	Mean	Median	Standard Deviation	No. Samples >= GAC & > LoD	GAC	GAC Source	17/08/2023	17/08/2023	17/08/2023	17/08/2023	10/05/18	10/05/18	10/05/18	10/05/18
												S	S	S	S	S	S	S	S
												TP120	TP125	HP101	HP101	TP01	TP02	TP05	TP06
												1	0.5	0.3	0.75	0.8	1	1	0.5
												NMS	NMS	NMS	NMS	NMS	NMS	NMS	NMS
Hydrock Default Suite - FOC / SOM / pH																			
pH (su)	pH Units	0.1	23	7.80	8.90	8.20	8.10	0.31		-	-		7.8	8.1	8.8	8.7	8.7	8.6	8.9
Hydrock Default Suite - Metals & PAH																			
Arsenic	mg/kg	2	18	4.00	18.00	8.07	7.65	3.96	0	250	MAFF 1998		8	15	8	7.3			
Boron	mg/kg	1	18	0.50	1.00	0.97	1.00	0.12	0	5	Nable, et al. 1997		<1	<1	<1	0.5			
Chromium (III)	mg/kg	2	18	4.00	20.00	8.55	7.45	4.64	0	400	MAFF 1998 (Cr(T))		7	17	10	7.9			
Chromium (VI)	mg/kg	2	18	1.20	2.00	1.96	2.00	0.19	0	25	ICRCL 70/90 1990		<2	<2	<2	<1.2			
Copper	mg/kg	4	18	2.20	27.00	9.90	9.00	5.26	0	135	BS3882 2015		27	15	11	2.2			
Nickel	mg/kg	3	18	3.00	11.00	4.63	3.50	2.50	0	75	BS3882 2015		4	9	5	4.3			
Zinc	mg/kg	3	18	4.00	69.00	20.95	14.50	17.66	0	300	BS3882 2015		69	42	21	9.1			

Legend:

TS	Topsoil
MG	Made Ground
TS	Topsoil
RTS	Relict Topsoil
SD	Superficial Deposits
NMS	Northmorr Sand and Gravel

<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

sion:
3

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	**S**
Strata	**RTS**
Depth Min (m bgl)	**0**
Depth Max (m bgl)	**9**
Dataset mean pH	**8.00**
Scenario pH	**>7**

Date	09/08/23
Zone	S
Location	TP124
Depth (m bgl)	0.4
Strata	RTS

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	18.00	18.00	18.00	18.00	-	0	250	MAFF 1998		18
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	30.00	30.00	30.00	30.00	-	0	400	MAFF 1998 (Cr(T))		30
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	12.00	12.00	12.00	12.00	-	0	200	BS3882 2015		12
7440-02-0	Nickel	mg/kg	3	1	16.00	16.00	16.00	16.00	-	0	110	BS3882 2015		16
7440-66-6	Zinc	mg/kg	3	1	72.00	72.00	72.00	72.00	-	0	300	BS3882 2015		72

Legend:

TS	Topsoil
MG	Made Ground
TS	Topsoil
RTS	Relict Topsoil
SD	Superficial Deposits
NMS	Northmorr Sand and Gravel

<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	**S**
Strata	**SD**
Depth Min (m bgl)	**0**
Depth Max (m bgl)	**9**

Dataset mean pH **8.02**

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	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	10/05/18	10/05/18
Date														17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	10/05/18	10/05/18
Zone														S	S	S	S	S	S	S	S
Location														BH102	BH105	TP106	TP107	TP119	TP02	TP03	
Depth (m bgl)														0.2	0.6	0.4	0.3	0.4	0.5	0.5	
0	**Hydrock Default Suite - FOC / SOM / pH**																				
P1334	pH (su)	pH Units	0.1	6	7.70	8.30	8.02	8.00	0.26		-	-		7.8	8.1		7.7	7.9	8.3	8.3	
-	**Hydrock Default Suite - Metals & PAH**																				
7440-38-2	Arsenic	mg/kg	2	6	15.00	25.00	17.83	16.00	3.97	0	250	MAFF 1998		16	16		20	25	15	15	
7440-42-8	Boron	mg/kg	1	6	1.00	2.30	1.32	1.00	0.54	0	5	Nable, et al. 1997		<1	<1		<1	<1	2.3	1.6	
16065-83-1	Chromium (III)	mg/kg	2	6	19.00	35.00	26.00	25.00	5.73	0	400	MAFF 1998 (Cr(T))		25	19		35	30	25	22	
18540-29-9	Chromium (VI)	mg/kg	2	6	1.20	2.00	1.73	2.00	0.41	0	25	ICRCL 70/90 1990		<2	<2		<2	<2	<1.2	<1.2	
7440-50-8	Copper	mg/kg	4	6	10.00	16.00	13.50	14.00	2.17	0	135	BS3882 2015		16	15		14	14	10	12	
7440-02-0	Nickel	mg/kg	3	6	11.00	18.00	13.33	11.50	3.27	0	75	BS3882 2015		11	11		18	17	12	11	
7440-66-6	Zinc	mg/kg	3	6	42.00	81.00	61.50	61.50	15.91	0	300	BS3882 2015		65	81		77	58	46	42	

Legend:

TS	Topsoil
MG	Made Ground
TS	Topsoil
RTS	Relict Topsoil
SD	Superficial Deposits
NMS	Northmorr Sand and Gravel

<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	SP
Strata	ALL
Depth Min (m bgl)	0
Depth Max (m bgl)	9

Dataset mean pH **7.45**

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
														Zone	SP	SP
														Location	SP1	SP2
														Depth (m bgl)	0	0
0	**Hydrock Default Suite - FOC / SOM / pH**															
P1334	pH (su)	pH Units	0.1	2	7.20	7.70	7.45	7.45	0.35		-	-			7.2	7.7
-	**Hydrock Default Suite - Metals & PAH**															
7440-38-2	Arsenic	mg/kg	2	2	9.00	29.00	19.00	19.00	14.14	0	250	MAFF 1998			9	29
7440-42-8	Boron	mg/kg	1	2	1.10	3.70	2.40	2.40	1.84	0	5	Nable, et al. 1997			3.7	1.1
16065-83-1	Chromium (III)	mg/kg	2	2	19.00	19.00	19.00	19.00	0.00	0	400	MAFF 1998 (Cr(T))			19	19
18540-29-9	Chromium (VI)	mg/kg	2	2	2.00	2.00	2.00	2.00	0.00	0	25	ICRCL 70/90 1990			<2	<2
7440-50-8	Copper	mg/kg	4	2	22.00	109.00	65.50	65.50	61.52	0	135	BS3882 2015			22	109
7440-02-0	Nickel	mg/kg	3	2	5.00	26.00	15.50	15.50	14.85	0	75	BS3882 2015			26	5
7440-66-6	Zinc	mg/kg	3	2	111.00	**459.00**	285.00	285.00	246.07	**1**	300	BS3882 2015			111	459

Legend:

TS	Topsoil
MG	Made Ground
TS	Topsoil
RTS	Relict Topsoil
SD	Superficial Deposits
NMS	Northmorr Sand and Gravel

<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	**S**
Strata	**TS**
Depth Min (m bgl)	**0**
Depth Max (m bgl)	**9**

Dataset mean pH **7.80**

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	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	10/05/18
Date														17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	17/08/2023	10/05/18
Zone														S	S	S	S	S	S	S	S	S
Location														BH101	BH103	BH104	TP102	TP103	TP105	TP110	TP126	TP01
Depth (m bgl)														0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.4
0	**Hydrock Default Suite - FOC / SOM / pH**																					
P1334	pH (su)	pH Units	0.1	9	7.50	8.10	7.80	7.80	0.19		-	-		7.9	7.6	8	7.8	7.9	7.7	7.5	7.7	8.1
-	**Hydrock Default Suite - Metals & PAH**																					
7440-38-2	Arsenic	mg/kg	2	9	8.00	20.00	15.22	16.00	4.15	0	250	MAFF 1998		16	20	8	12	15	20	18	11	17
7440-42-8	Boron	mg/kg	1	9	1.00	3.40	1.41	1.20	0.77	0	5	Nable, et al. 1997		<1	1.2	<1	1.3	<1	1.2	1.6	<1	3.4
16065-83-1	Chromium (III)	mg/kg	2	9	10.00	43.00	24.44	23.00	10.78	0	400	MAFF 1998 (Cr(T))		23	43	10	16	21	28	32	13	34
18540-29-9	Chromium (VI)	mg/kg	2	9	1.20	2.00	1.91	2.00	0.27	0	25	ICRCL 70/90 1990		<2	<2	<2	<2	<2	<2	<2	<2	<1.2
7440-50-8	Copper	mg/kg	4	9	7.00	38.00	16.44	15.00	8.80	0	135	BS3882 2015		15	17	7	17	17	38	15	10	12
7440-02-0	Nickel	mg/kg	3	9	5.00	18.00	11.44	13.00	4.45	0	75	BS3882 2015		13	18	5	7	10	13	16	7	14
7440-66-6	Zinc	mg/kg	3	9	25.00	269.00	86.89	66.00	72.58	0	300	BS3882 2015		66	107	25	62	68	269	91	39	55

Legend:

TS	Topsoil
MG	Made Ground
TS	Topsoil
RTS	Relict Topsoil
SD	Superficial Deposits
NMS	Northmorr Sand and Gravel

<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

Remedial Targets Methodology Data Table

Hydrock

Hydrock Scenario: Scenario D - DWS & EQS (inland)

RTM Level: RTM Level 2 - Groundwater Beneath Source Assessment - groundwater samples

Water body receptor(s): Groundwater and surface water
Secondary receptor(s): Human health (abstraction)
Data set: Groundwater
Client: Bewley Homes
Site: Cotswol Community School, Ashton Keynes
Job no: C28470
Test Certificates(s): 23-54944
Dataset NMS

PNEC calculated (inland EQS)

123* Exceeds solubility value
<1 Grey text and "<" sign if value <= LoD
999 Red text if value > DWS
Red fill if value > Inland Waters EQS

Surface Water Representative Hardness as mg/l $CaCO_3$ 10

CAS / AGS Number	Chemical of Potential Concern (µg/l)	WFD Designation	Hazardous Substance Status	Solubility Limit (µg/l)	No. of samples	Limit of Detection	DWS	Inland Waters EQS	BH01	BH101	BH102	BH104	BH105
	Strata / Zone								NMS	NMS	NMS	NMS	NMS
	Date sampled:								05/09/2023	05/09/2023	05/09/2023	05/09/2023	05/09/2023
7440-22-4	Silver (Ag) (dissolved)				5	0.05	n/a	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
7429-90-5	Aluminium (Al) (dissolved)				5	1	200	n/a	1.3	79	70	30	430
7440-38-2	Arsenic (As) (dissolved)	SP	H		5	0.15	10	50	0.16	0.26	0.47	0.32	0.48
7440-42-8	Boron (B) (dissolved)		NP		5	10	1000	2000	42	72	58	91	100
7440-39-3	Barium (Ba) (dissolved)				5	0.06	1300	n/a	17	21	20	16	18
7440-43-9	Cadmium (Cd) (dissolved)	PH	NP		5	0.02	5	0.08	<0.02	<0.02	<0.02	<0.02	<0.02
7440-48-4	Cobalt (Co) (dissolved)		NP		5	0.2	n/a	3	<0.2	<0.2	<0.2	<0.2	<0.2
18540-29-9	Chromium (VI) (Cr) (dissolved)	SP	H		5	5	n/a	3.4	<5	<5	<5	<5	<5
16065-83-1	Chromium (III) (Cr) (dissolved)	SP			5	5	n/a	4.7	<5	<5	<5	<5	<5
7440-47-3	Chromium (Cr) (total) (dissolved)				0		50	n/a					
7440-50-8	Copper (Cu) (dissolved)	SP	NP		5	0.5	2000	1	3.5	0.6	2.2	1.3	1.6
7439-89-6	Iron (Fe) (dissolved)	SP			5	4	200	1000	<4	12	65	<4	29
7439-97-6	Mercury (Hg) (dissolved)	PH	H		5	0.05	1	0.07	<0.05	<0.05	<0.05	<0.05	<0.05
P1286	Manganese (Mn) (dissolved)	SP			5	0.05	50	123	2.2	1.8	2.2	1.3	16
7440-23-5	Sodium (Na) (dissolved)				5	0.01	200000	n/a	6.1	14	15	9.4	16
7440-02-0	Nickel (Ni) (dissolved)	P	NP		5	0.5	20	4	<0.5	1.2	2	1.1	0.7
7439-92-1	Lead (Pb) (dissolved)	P	H		5	0.2	10	1.2	<0.2	<0.2	<0.2	<0.2	0.5
7440-36-0	Antimony (Sb) (dissolved)		NP		5	0.4	5	n/a	<0.4	<0.4	0.5	<0.4	<0.4
7782-49-2	Selenium (Se) (dissolved)		NP		5	0.6	10	n/a	<0.6	<0.6	0.8	1.1	<0.6
7440-31-5	Tin (Sn) (dissolved)				5	0.2	n/a	25	1.9	0.25	1.6	1.9	0.62
7440-62-2	Vanadium (V) (dissolved)				5	0.2	n/a	20	<0.2	<0.2	<0.2	<0.2	1
7440-66-6	Zinc (Zn) (dissolved)	SP	NP		5	0.5	n/a	12.3	3.1	0.7	2.1	0.8	1.5
P1095	Cyanide (free) (hydrogen cyanide)	SP	NP		5	1	n/a	1	<1	<1	<1	<1	<1
57-12-5	Cyanide (total)				5	1	50	n/a	<1	<1	<1	<1	<1
P1140	Ammonium (NH_4^+)		NP		5	15	500	n/a	17	17	21	28	21
P1238	Ammnoniacal Nitrogen (as N)		NP		5	15	n/a	300	<15	<15	16	22	16
P1720	Ammonia (unionised) (NH_3 as N) (free ammonia)	SP	NP		5	15	n/a	n/a	16	16	20	26	20
15541-45-4	Bromate (BrO_3)				5	0.002	10	n/a	<0.002	<0.002	<0.002	<0.002	<0.002
16887-00-6	Chloride (Cl^-)				5	0.15	250000	250000	8.6	24	28	13	23
16984-48-8	Fluoride (F^-)				5	50	1500	1000	140	150	150	150	100
P1348	Nitrate (NO_3^-)				5	0.05	50000	n/a	28.5	6.41	12.8	13.2	6.57
P1349	Nitrite (NO_2^-)				5	5	500	n/a	14	94	49	35	20
14808-79-8	Sulfate (SO_4^{2-})				5	45	250000	400000	18300	63200	56000	35300	74200
P1134	pH (min.) (su)				5	0	6.5	6	7.6	7.5	7.5	7.5	7.5
P1134	pH (max.) (su)				0		9.5	9					
P1287	Electrical conductivity (µS/cm)				5	10	2500	n/a	500	560	560	510	550
120-12-7	Anthracene	PH	H	56	5	0.01	n/a	0.1	<0.01	<0.01	<0.01	<0.01	<0.01
50-32-8	Benzo(a)pyrene	PH	H	3.8	5	0.01	0.01	0.00017	<0.01	<0.01	<0.01	<0.01	<0.01
206-44-0	Fluoranthene	P	H	230	5	0.01	n/a	0.0063	<0.01	<0.01	<0.01	<0.01	<0.01
91-20-3	Naphthalene	P	NP	19000	5	0.01	n/a	2	<0.01	<0.01	<0.01	<0.01	<0.01
GRP01	PAHs = sum of benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(ghi)perylene, indeno(1,2,3-cd)pyrene	P	H		5	0	0.1	n/a	0.01	0.01	0.01	0.01	0.01
P1877	Phenol	SP	NP	84100000	5	1	n/a	7.7	<1	<1	<1	<1	<1
P1407	Ali EC5-EC6			35900	5	1	15000	10	<1	<1	<1	<1	<1
P1408	Ali >EC6-EC8			5370	5	1	15000	10	<1	<1	<1	<1	<1
P1409	Ali >EC8-EC10			427	5	1	300	10	<1	<1	<1	<1	<1
P1410	Ali >EC10-EC12			33.9	5	10	300	10	<10	<10	<10	<10	<10
P1411	Ali >EC12-EC16			0.759	5	10	300	10	<10	<10	<10	<10	<10
P1938	Ali >EC16-EC35			0.00254	5	10	n/a	10	<10	<10	<10	<10	<10
P1415	Ali >EC35-EC44			0.00254	5	10	n/a	10	<10	<10	<10	<10	<10
P1441	Aro EC5-EC7			1780000	5	1	1	10	<1	<1	<1	<1	<1
P1355	Aro >EC7-EC8			590000	5	1	700	10	<1	<1	<1	<1	<1
P1356	Aro >EC8-EC10			64600	5	1	300	10	<1	<1	<1	<1	<1
P1357	Aro >EC10-EC12			24500	5	10	90	10	<10	<10	<10	<10	<10
P1358	Aro > EC12-EC16			5750	5	10	90	10	<10	<10	<10	<10	<10
P1359	Aro >EC16-EC21			653	5	10	90	10	<10	<10	<10	<10	<10
P1360	Aro >EC21-EC35			6.61	5	10	90	10	<10	<10	<10	<10	<10
P1362	Aro >EC35-EC44			6.61	5	10	n/a	10	<10	<10	<10	<10	<10
71-43-2	Benzene	P	H	1780000	5	3	1	10	<3	<3	<3	<3	<3
108-88-3	Toluene	SP	H	590000	5	3	700	74	<3	<3	<3	<3	<3
100-41-4	Ethylbenzene		H	180000	5	3	300	20	<3	<3	<3	<3	<3
95-47-6	o-Xylene		H	173000	5	3	500	30	<3	<3	<3	<3	<3
P1374	m,p-Xylene		H	200000	5	3	500	30	<3	<3	<3	<3	<3
1634-04-04	Methyl tertiary butyl ether (MTBE)		NP	48000000	5	3	15	n/a	<3	<3	<3	<3	<3

Appendix G 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.

HHUTP-I8Y0Z-AMPID

Job name

28470 - Cotswold Community School, Ashton Keynes

Description/Comments

DETS lab certs: 23-10664; 23-10755 & 23-11107 (Asb quants)

Project

28470

Site

Cotswold Community School, Ashton Keynes

Classified by

Name:
Alison Holland
Date:
12 Sep 2023 10:12 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: -

Course	Date
Hazardous Waste Classification	08 Sep 2020
3 year Refresher overdue	-

Purpose of classification

2 - Material Characterisation

Address of the waste

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

Part developed - previous residential development and school buildings. Part greenfield agricultural land with some farm buildings. Also small sewage treatment plant in south of site.

Description of the specific process, sub-process and/or activity that created the waste

Waste will be from excavations for new development (some cut and fill). There will also be demolition of existing buildings on site.

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		4
2	BH101[2]	0.60	Non Hazardous		6
3	BH101[3]	1.00	Non Hazardous		8
4	BH102	0.20	Non Hazardous		10
5	BH102[3]	9.00	Non Hazardous		12
6	BH103	0.20	Non Hazardous		14
7	BH103[2]	1.00	Non Hazardous		16
8	BH104	0.20	Non Hazardous		18
9	BH104[2]	0.60	Non Hazardous		20
10	BH105	0.20	Non Hazardous		22
11	BH105[2]	0.60	Non Hazardous		24
12	BH105[3]	1.00	Non Hazardous		26
13	BH105[4]	8.50	Non Hazardous		28
14	TP101	0.50	Non Hazardous		30
15	TP102	0.20	Non Hazardous		32
16	TP102[2]	0.50	Non Hazardous		34
17	TP102[3]	1.00	Non Hazardous		36
18	TP103	0.20	Non Hazardous		38
19	TP103[2]	1.00	Non Hazardous		40
20	TP104	0.20	Non Hazardous		42
21	TP104[2]	0.60	Non Hazardous		44
22	TP105	0.20	Non Hazardous		46
23	TP105[2]	0.50	Non Hazardous		48
24	TP106	0.20	Non Hazardous		50
25	TP107	0.30	Non Hazardous		52
26	TP107[2]	0.80	Non Hazardous		54
27	TP109	0.20	Non Hazardous		56
28	TP110	0.20	Non Hazardous		59
29	TP112	0.40	Non Hazardous		61
30	TP112[2]	0.70	Non Hazardous		63
31	TP113	0.30	Non Hazardous		65
32	TP114	0.30	Non Hazardous		68
33	TP114[2]	1.20	Non Hazardous		70
34	TP116	0.40	Non Hazardous		72
35	TP117	0.20	Non Hazardous		74
36	TP118	0.70	Non Hazardous		76
37	TP119	0.40	Non Hazardous		78
38	TP124	0.2	Hazardous	HP 14	80
39	TP125	0.50	Non Hazardous		83
40	TP126	0.20	Non Hazardous		85
41	HP101	0.30	Non Hazardous		87
42	HP101[2]	0.75	Non Hazardous		89
43	HP110	0.30	Non Hazardous		91
44	HP110[2]	0.50	Non Hazardous		93
45	HP111	0.10	Non Hazardous		95
46	HP112	0.40	Non Hazardous		97
47	HP114	0.4	Non Hazardous		99
48	HP115	0.20	Non Hazardous		101
49	SP1		Non Hazardous		103
50	SP2		Non Hazardous		105
51	TP120[2]	1.00	Non Hazardous		107
52	TP01	0.20	Non Hazardous		109
53	TP01[2]	0.40	Non Hazardous		111
54	TP01[3]	0.80	Non Hazardous		113
55	TP02	0.50	Non Hazardous		115
56	TP03	0.50	Non Hazardous		117

Related documents

#	Name	Description
1	Hydrock Standard plus Cresol (ammended Lead)	waste stream template used to create this Job

Report

Created by: Alison Holland

Created date: 12 Sep 2023 10:12 GMT

Appendices	Page
Appendix A: Classifier defined and non GB MCL determinands	119
Appendix B: Rationale for selection of metal species	120
Appendix C: Version	121

Classification of sample: BH101

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BH101
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	0.2 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 }				0.035	mg/kg	1.405	0.0492	mg/kg	0.00000492 %		
		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:	0.0237 %		

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:
BH101[2]
Sample Depth:
0.60 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		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 }				0.055	mg/kg	1.405	0.0773	mg/kg	0.00000773 %		
		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:	0.00911 %		

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:
BH101[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		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 }				0.067	mg/kg	1.405	0.0941	mg/kg	0.00000941 %		
		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:	0.00696 %		

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			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				<0.1	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	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 }				11	mg/kg	1.579	17.374	mg/kg	0.00174 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
26		pH				7.8	pH		7.8	pH	7.8 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 }				0.027	mg/kg	1.405	0.0379	mg/kg	0.00000379 %		
		034-002-00-8											
31		zinc { zinc oxide }				65	mg/kg	1.245	80.906	mg/kg	0.00809 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.0239 %		

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[3]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BH102[3]
Sample Depth:
9.00 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		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		1.6 mg/kg	13.43	21.488 mg/kg	0.00215 %		
12	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	1.4 mg/kg	1.285	1.799 mg/kg	0.00014 %		
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	7	mg/kg		7	mg/kg	0.0007 %		
		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 }				14	mg/kg	1.579	22.113	mg/kg	0.00221 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
26		pH				8	pH		8	pH	8pH		
				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 }				0.006	mg/kg	1.405	0.0084	mg/kg	0.000000843 %		
		034-002-00-8											
31		zinc { zinc oxide }				190	mg/kg	1.245	236.496	mg/kg	0.0236 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.0332 %		

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: BH103

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BH103
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		20 mg/kg	1.32	26.407 mg/kg	0.00264 %		
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		1.4 mg/kg	2.775	3.885 mg/kg	0.000389 %		
11	boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		1.2 mg/kg	13.43	16.116 mg/kg	0.00161 %		
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		43 mg/kg	1.462	62.847 mg/kg	0.00628 %		
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 }				17	mg/kg	1.126	19.14	mg/kg	0.00191 %		
		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	41	mg/kg		41	mg/kg	0.0041 %		
		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 }				18	mg/kg	1.579	28.431	mg/kg	0.00284 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
26		pH				7.6	pH		7.6	pH	7.6 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 }				0.046	mg/kg	1.405	0.0646	mg/kg	0.00000646 %		
		034-002-00-8											
31		zinc { zinc oxide }				107	mg/kg	1.245	133.184	mg/kg	0.0133 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.0344 %		

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: BH103[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BH103[2]
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		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		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 }				0.04	mg/kg	1.405	0.0562	mg/kg	0.00000562 %		
		034-002-00-8											
31		zinc { zinc oxide }				8	mg/kg	1.245	9.958	mg/kg	0.000996 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.00711 %		

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: BH104

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BH104
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		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		10 mg/kg	1.462	14.616 mg/kg	0.00146 %		
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 }				7	mg/kg	1.126	7.881	mg/kg	0.000788 %		
		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 }				5	mg/kg	1.579	7.897	mg/kg	0.00079 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
26		pH				8	pH		8	pH	8pH		
				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 }				0.011	mg/kg	1.405	0.0155	mg/kg	0.00000155 %		
		034-002-00-8											
31		zinc { zinc oxide }				25	mg/kg	1.245	31.118	mg/kg	0.00311 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.0108 %		

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: BH104[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BH104[2]
Sample Depth:
0.60 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		7 mg/kg	1.32	9.242 mg/kg	0.000924 %		
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 %		
		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 }				0.061	mg/kg	1.405	0.0857	mg/kg	0.00000857 %		
		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:	0.00722 %		

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: BH105

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BH105
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		3.06 mg/kg		3.06 mg/kg	0.000306 %		
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		7.36 mg/kg		7.36 mg/kg	0.000736 %		
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		9 mg/kg	1.32	11.883 mg/kg	0.00119 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		21.7 mg/kg		21.7 mg/kg	0.00217 %		
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		13.8 mg/kg		13.8 mg/kg	0.00138 %		
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		20.8 mg/kg		20.8 mg/kg	0.00208 %		
8	benzo[ghi]perylene		205-883-8	191-24-2		5.97 mg/kg		5.97 mg/kg	0.000597 %		
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		5.35 mg/kg		5.35 mg/kg	0.000535 %		
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	0.5 mg/kg	1.285	0.643 mg/kg	0.00005 %		
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		13 mg/kg	1.462	19 mg/kg	0.0019 %		
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		20.8 mg/kg		20.8 mg/kg	0.00208 %		

#		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 }				17	mg/kg	1.126	19.14	mg/kg	0.00191 %		
		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				2.13	mg/kg		2.13	mg/kg	0.000213 %		
		601-041-00-2	200-181-8	53-70-3									
19		fluoranthene				42.1	mg/kg		42.1	mg/kg	0.00421 %		
			205-912-4	206-44-0									
20		fluorene				2.42	mg/kg		2.42	mg/kg	0.000242 %		
			201-695-5	86-73-7									
21		indeno[123-cd]pyrene				7.35	mg/kg		7.35	mg/kg	0.000735 %		
			205-893-2	193-39-5									
22		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	105	mg/kg		105	mg/kg	0.0105 %		
		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 }				7	mg/kg	1.579	11.056	mg/kg	0.00111 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
26		pH				7.6	pH		7.6	pH	7.6 pH		
				PH									
27		phenanthrene				27.3	mg/kg		27.3	mg/kg	0.00273 %		
			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 }				0.068	mg/kg	1.405	0.0955	mg/kg	0.00000955 %		
		034-002-00-8											
31		zinc { zinc oxide }				157	mg/kg	1.245	195.42	mg/kg	0.0195 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.0568 %		

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: BH105[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BH105[2]
Sample Depth:
0.60 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		0.28 mg/kg		0.28 mg/kg	0.000028 %		
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		1.49 mg/kg		1.49 mg/kg	0.000149 %		
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		1.27 mg/kg		1.27 mg/kg	0.000127 %		
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		1.87 mg/kg		1.87 mg/kg	0.000187 %		
8	benzo[ghi]perylene		205-883-8	191-24-2		0.67 mg/kg		0.67 mg/kg	0.000067 %		
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.48 mg/kg		0.48 mg/kg	0.000048 %		
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		19 mg/kg	1.462	27.77 mg/kg	0.00278 %		
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		1.52 mg/kg		1.52 mg/kg	0.000152 %		

#		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				0.21	mg/kg		0.21	mg/kg	0.000021 %		
		601-041-00-2	200-181-8	53-70-3									
19		fluoranthene				2.33	mg/kg		2.33	mg/kg	0.000233 %		
			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				0.8	mg/kg		0.8	mg/kg	0.00008 %		
			205-893-2	193-39-5									
22		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	35	mg/kg		35	mg/kg	0.0035 %		
		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 }				11	mg/kg	1.579	17.374	mg/kg	0.00174 %		
		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				0.95	mg/kg		0.95	mg/kg	0.000095 %		
			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 }				0.037	mg/kg	1.405	0.052	mg/kg	0.0000052 %		
		034-002-00-8											
31		zinc { zinc oxide }				81	mg/kg	1.245	100.822	mg/kg	0.0101 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.0258 %		

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: BH105[3]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BH105[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		0.32 mg/kg		0.32 mg/kg	0.000032 %		
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.3 mg/kg		0.3 mg/kg	0.00003 %		
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		0.43 mg/kg		0.43 mg/kg	0.000043 %		
8	benzo[ghi]perylene		205-883-8	191-24-2		0.17 mg/kg		0.17 mg/kg	0.000017 %		
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		0.33 mg/kg		0.33 mg/kg	0.000033 %		

#		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				0.46	mg/kg		0.46	mg/kg	0.000046 %		
			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				0.2	mg/kg		0.2	mg/kg	0.00002 %		
			205-893-2	193-39-5									
22		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	7	mg/kg		7	mg/kg	0.0007 %		
		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 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
26		pH				8	pH		8	pH	8pH		
				PH									
27		phenanthrene				0.16	mg/kg		0.16	mg/kg	0.000016 %		
			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 }				0.066	mg/kg	1.405	0.0927	mg/kg	0.00000927 %		
		034-002-00-8											
31		zinc { zinc oxide }				14	mg/kg	1.245	17.426	mg/kg	0.00174 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.00864 %		

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: BH105[4]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
BH105[4]
Sample Depth:
8.50 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		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 %		
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		7 mg/kg	1.462	10.231 mg/kg	0.00102 %		
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				<0.1	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	7	mg/kg		7	mg/kg	0.0007 %		
		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 }				12	mg/kg	1.579	18.954	mg/kg	0.0019 %		
		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 }				0.01	mg/kg	1.405	0.0141	mg/kg	0.00000141 %		
		034-002-00-8											
31		zinc { zinc oxide }				36	mg/kg	1.245	44.81	mg/kg	0.00448 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.0133 %		

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:
TP101
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		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 }				0.013	mg/kg	1.405	0.0183	mg/kg	0.00000183 %		
		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:	0.0132 %		

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:
TP102
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		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			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 }				17	mg/kg	1.126	19.14	mg/kg	0.00191 %		
		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	31	mg/kg		31	mg/kg	0.0031 %		
		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 }				7	mg/kg	1.579	11.056	mg/kg	0.00111 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
26		pH				7.8	pH		7.8	pH	7.8 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 }				0.057	mg/kg	1.405	0.0801	mg/kg	0.00000801 %		
		034-002-00-8											
31		zinc { zinc oxide }				62	mg/kg	1.245	77.172	mg/kg	0.00772 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.021 %		

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 }				0.053	mg/kg	1.405	0.0745	mg/kg	0.00000745 %		
		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:	0.0227 %		

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 }				0.044	mg/kg	1.405	0.0618	mg/kg	0.00000618 %		
		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:	0.00915 %		

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:
TP103
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		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			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 }				17	mg/kg	1.126	19.14	mg/kg	0.00191 %		
		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 }				10	mg/kg	1.579	15.795	mg/kg	0.00158 %		
		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 }				0.02	mg/kg	1.405	0.0281	mg/kg	0.00000281 %		
		034-002-00-8											
31		zinc { zinc oxide }				68	mg/kg	1.245	84.641	mg/kg	0.00846 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.0232 %		

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:
TP103[2]
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		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 }				0.05	mg/kg	1.405	0.0703	mg/kg	0.00000703 %		
		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:	0.00685 %		

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: TP104

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP104
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		8 mg/kg	1.32	10.563 mg/kg	0.00106 %		
5	benzene	601-020-00-8	200-753-7	71-43-2		<2 mg/kg		<2 mg/kg	<0.0002 %		<LOD
6	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
7	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
8	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
9	benzo[ghi]perylene		205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
10	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
11	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
12	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
13	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 %		
14	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		7 mg/kg	1.462	10.231 mg/kg	0.00102 %		
15	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

#		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		chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		601-048-00-0	205-923-4	218-01-9									
17		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									
18		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											
19		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									
20		ethylbenzene				<2	mg/kg		<2	mg/kg	<0.0002 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
21		fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			205-912-4	206-44-0									
22		fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			201-695-5	86-73-7									
23		indeno[123-cd]pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			205-893-2	193-39-5									
24		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											
25		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									
26		naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
27		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]									
28		pH				8.1	pH		8.1	pH	8.1 pH		
				PH									
29		phenanthrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			201-581-5	85-01-8									
30		phenol				<2	mg/kg		<2	mg/kg	<0.0002 %		<**LOD**
		604-001-00-2	203-632-7	108-95-2									
31		pyrene				<2	mg/kg		<2	mg/kg	<0.0002 %		<**LOD**
			204-927-3	129-00-0									
32		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				0.043	mg/kg	1.405	0.0604	mg/kg	0.00000604 %		
		034-002-00-8											
33		toluene				<5	mg/kg		<5	mg/kg	<0.0005 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
34		xylene				<2	mg/kg		<2	mg/kg	<0.0002 %		<**LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
35		zinc { zinc oxide }				36	mg/kg	1.245	44.81	mg/kg	0.00448 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.0129 %		

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: TP104[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP104[2]
Sample Depth:
0.60 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	benzene	601-020-00-8	200-753-7	71-43-2		<2 mg/kg		<2 mg/kg	<0.0002 %		<LOD
6	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
7	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
8	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
9	benzo[ghi]perylene		205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
10	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
11	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
12	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
13	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
14	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 %		
15	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

#		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		chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		601-048-00-0	205-923-4	218-01-9									
17		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									
18		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											
19		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									
20		ethylbenzene				<2	mg/kg		<2	mg/kg	<0.0002 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
21		fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			205-912-4	206-44-0									
22		fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			201-695-5	86-73-7									
23		indeno[123-cd]pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			205-893-2	193-39-5									
24		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	7	mg/kg		7	mg/kg	0.0007 %		
		082-001-00-6											
25		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									
26		naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
27		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]									
28		pH				8.1	pH		8.1	pH	8.1 pH		
				PH									
29		phenanthrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			201-581-5	85-01-8									
30		phenol				<2	mg/kg		<2	mg/kg	<0.0002 %		<**LOD**
		604-001-00-2	203-632-7	108-95-2									
31		pyrene				<2	mg/kg		<2	mg/kg	<0.0002 %		<**LOD**
			204-927-3	129-00-0									
32		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				0.05	mg/kg	1.405	0.0703	mg/kg	0.00000703 %		
		034-002-00-8											
33		toluene				<5	mg/kg		<5	mg/kg	<0.0005 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
34		xylene				<2	mg/kg		<2	mg/kg	<0.0002 %		<**LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
35		zinc { zinc oxide }				17	mg/kg	1.245	21.16	mg/kg	0.00212 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.0106 %		

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: TP105

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP105
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		20 mg/kg	1.32	26.407 mg/kg	0.00264 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.14 mg/kg		0.14 mg/kg	0.000014 %		
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		0.16 mg/kg		0.16 mg/kg	0.000016 %		
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		1.1 mg/kg	2.775	3.053 mg/kg	0.000305 %		
11	boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		1.2 mg/kg	13.43	16.116 mg/kg	0.00161 %		
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		28 mg/kg	1.462	40.924 mg/kg	0.00409 %		
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		0.16 mg/kg		0.16 mg/kg	0.000016 %		

#		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 }				38	mg/kg	1.126	42.784	mg/kg	0.00428 %		
		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				0.43	mg/kg		0.43	mg/kg	0.000043 %		
			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	55	mg/kg		55	mg/kg	0.0055 %		
		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				7.7	pH		7.7	pH	7.7 pH		
				PH									
27		phenanthrene				0.3	mg/kg		0.3	mg/kg	0.00003 %		
			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 }				0.048	mg/kg	1.405	0.0674	mg/kg	0.00000674 %		
		034-002-00-8											
31		zinc { zinc oxide }				269	mg/kg	1.245	334.828	mg/kg	0.0335 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.0553 %		

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: TP105[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP105[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		4 mg/kg	1.32	5.281 mg/kg	0.000528 %		
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 }				6	mg/kg	1.126	6.755	mg/kg	0.000676 %		
		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	4	mg/kg		4	mg/kg	0.0004 %		
		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	pH		8	pH	8pH		
				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 }				0.037	mg/kg	1.405	0.052	mg/kg	0.0000052 %		
		034-002-00-8											
31		zinc { zinc oxide }				11	mg/kg	1.245	13.692	mg/kg	0.00137 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.00694 %		

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: TP106

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP106
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		15 mg/kg	1.32	19.805 mg/kg	0.00198 %		
5	benzene	601-020-00-8	200-753-7	71-43-2		<2 mg/kg		<2 mg/kg	<0.0002 %		<LOD
6	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
7	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
8	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
9	benzo[ghi]perylene		205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
10	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
11	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.8 mg/kg	2.775	2.22 mg/kg	0.000222 %		
12	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
13	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
14	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 %		
15	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

#		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		chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		601-048-00-0	205-923-4	218-01-9									
17		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									
18		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											
19		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									
20		ethylbenzene				<2	mg/kg		<2	mg/kg	<0.0002 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
21		fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			205-912-4	206-44-0									
22		fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			201-695-5	86-73-7									
23		indeno[123-cd]pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			205-893-2	193-39-5									
24		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	25	mg/kg		25	mg/kg	0.0025 %		
		082-001-00-6											
25		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									
26		naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
27		nickel { nickel dihydroxide }				10	mg/kg	1.579	15.795	mg/kg	0.00158 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
28		pH				7.9	pH		7.9	pH	7.9 pH		
				PH									
29		phenanthrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			201-581-5	85-01-8									
30		phenol				<2	mg/kg		<2	mg/kg	<0.0002 %		<**LOD**
		604-001-00-2	203-632-7	108-95-2									
31		pyrene				<2	mg/kg		<2	mg/kg	<0.0002 %		<**LOD**
			204-927-3	129-00-0									
32		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				0.05	mg/kg	1.405	0.0703	mg/kg	0.00000703 %		
		034-002-00-8											
33		toluene				<5	mg/kg		<5	mg/kg	<0.0005 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
34		xylene				<2	mg/kg		<2	mg/kg	<0.0002 %		<**LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
35		zinc { zinc oxide }				41	mg/kg	1.245	51.033	mg/kg	0.0051 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.0193 %		

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: TP107

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP107
Sample Depth:
0.30 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		20 mg/kg	1.32	26.407 mg/kg	0.00264 %		
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		1.4 mg/kg	2.775	3.885 mg/kg	0.000389 %		
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		35 mg/kg	1.462	51.154 mg/kg	0.00512 %		
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 }				14	mg/kg	1.126	15.762	mg/kg	0.00158 %		
		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	28	mg/kg		28	mg/kg	0.0028 %		
		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 }				18	mg/kg	1.579	28.431	mg/kg	0.00284 %		
		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 }				0.037	mg/kg	1.405	0.052	mg/kg	0.0000052 %		
		034-002-00-8											
31		zinc { zinc oxide }				77	mg/kg	1.245	95.843	mg/kg	0.00958 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.0276 %		

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: TP107[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP107[2]
Sample Depth:
0.80 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		4 mg/kg	1.32	5.281 mg/kg	0.000528 %		
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		4 mg/kg	1.462	5.846 mg/kg	0.000585 %		
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 }				5	mg/kg	1.126	5.629	mg/kg	0.000563 %		
		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				8.2	pH		8.2	pH	8.2 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 }				0.033	mg/kg	1.405	0.0464	mg/kg	0.00000464 %		
		034-002-00-8											
31		zinc { zinc oxide }				4	mg/kg	1.245	4.979	mg/kg	0.000498 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.00571 %		

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: TP109

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP109
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		21 mg/kg	1.32	27.727 mg/kg	0.00277 %		
5	benzene	601-020-00-8	200-753-7	71-43-2		<2 mg/kg		<2 mg/kg	<0.0002 %		<LOD
6	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		0.18 mg/kg		0.18 mg/kg	0.000018 %		
7	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.17 mg/kg		0.17 mg/kg	0.000017 %		
8	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		0.21 mg/kg		0.21 mg/kg	0.000021 %		
9	benzo[ghi]perylene		205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
10	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
11	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		1.1 mg/kg	2.775	3.053 mg/kg	0.000305 %		
12	boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		1.2 mg/kg	13.43	16.116 mg/kg	0.00161 %		
13	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	0.5 mg/kg	1.285	0.643 mg/kg	0.00005 %		
14	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		29 mg/kg	1.462	42.385 mg/kg	0.00424 %		
15	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

#		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		chrysene				0.18	mg/kg		0.18	mg/kg	0.000018 %		
		601-048-00-0	205-923-4	218-01-9									
17		copper { dicopper oxide; copper (I) oxide }				36	mg/kg	1.126	40.532	mg/kg	0.00405 %		
		029-002-00-X	215-270-7	1317-39-1									
18		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											
19		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									
20		ethylbenzene				<2	mg/kg		<2	mg/kg	<0.0002 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
21		fluoranthene				0.31	mg/kg		0.31	mg/kg	0.000031 %		
			205-912-4	206-44-0									
22		fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			201-695-5	86-73-7									
23		indeno[123-cd]pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			205-893-2	193-39-5									
24		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	781	mg/kg		781	mg/kg	0.0781 %		
		082-001-00-6											
25		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									
26		naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
27		nickel { nickel dihydroxide }				14	mg/kg	1.579	22.113	mg/kg	0.00221 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
28		pH				7.8	pH		7.8	pH	7.8 pH		
				PH									
29		phenanthrene				0.14	mg/kg		0.14	mg/kg	0.000014 %		
			201-581-5	85-01-8									
30		phenol				4.8	mg/kg		4.8	mg/kg	0.00048 %		
		604-001-00-2	203-632-7	108-95-2									
31		pyrene				<2	mg/kg		<2	mg/kg	<0.0002 %		<**LOD**
			204-927-3	129-00-0									
32		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				0.055	mg/kg	1.405	0.0773	mg/kg	0.00000773 %		
		034-002-00-8											
33		toluene				<5	mg/kg		<5	mg/kg	<0.0005 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
34		xylene				<2	mg/kg		<2	mg/kg	<0.0002 %		<**LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
35		zinc { zinc oxide }				318	mg/kg	1.245	395.819	mg/kg	0.0396 %		
		030-013-00-7	215-222-5	1314-13-2									
36		asbestos				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<**LOD**
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5									
										Total:	0.136 %		

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: TP110

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP110
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		18 mg/kg	1.32	23.766 mg/kg	0.00238 %		
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		1.3 mg/kg	2.775	3.608 mg/kg	0.000361 %		
11	boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		1.6 mg/kg	13.43	21.488 mg/kg	0.00215 %		
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		32 mg/kg	1.462	46.77 mg/kg	0.00468 %		
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	72	mg/kg		72	mg/kg	0.0072 %		
		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 }				16	mg/kg	1.579	25.272	mg/kg	0.00253 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
26		pH				7.5	pH		7.5	pH	7.5 pH		
				PH									
27		phenanthrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-581-5	85-01-8									
28		phenol				7.2	mg/kg		7.2	mg/kg	0.00072 %		
		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 }				0.057	mg/kg	1.405	0.0801	mg/kg	0.00000801 %		
		034-002-00-8											
31		zinc { zinc oxide }				91	mg/kg	1.245	113.269	mg/kg	0.0113 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.0341 %		

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: TP112

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:	
TP112	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:		
0.40 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	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
5	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
6	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
7	benzo[ghi]perylene		205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
8	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
9	chrysene	601-048-00-0	205-923-4	218-01-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
10	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
11	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
12	fluoranthene		205-912-4	206-44-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
13	fluorene		201-695-5	86-73-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
14	indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
15	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	8 mg/kg		8 mg/kg	0.0008 %		
16	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

#		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									
17		naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
18		nickel { nickel dihydroxide }				3	mg/kg	1.579	4.738	mg/kg	0.000474 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
19		pH				7.9	pH		7.9	pH	7.9 pH		
				PH									
20		phenanthrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			201-581-5	85-01-8									
21		phenol				<2	mg/kg		<2	mg/kg	<0.0002 %		<**LOD**
		604-001-00-2	203-632-7	108-95-2									
22		pyrene				<2	mg/kg		<2	mg/kg	<0.0002 %		<**LOD**
			204-927-3	129-00-0									
23		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				0.05	mg/kg	1.405	0.0703	mg/kg	0.00000703 %		
		034-002-00-8											
24		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:	0.00402 %		

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: TP112[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:		LoW Code:	
TP112[2]		Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:			
0.70 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		20 mg/kg	1.32	26.407 mg/kg	0.00264 %		
5	benzene	601-020-00-8	200-753-7	71-43-2		<2 mg/kg		<2 mg/kg	<0.0002 %		<LOD
6	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
7	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
8	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
9	benzo[ghi]perylene		205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
10	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
11	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 %		
12	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
13	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
14	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		18 mg/kg	1.462	26.308 mg/kg	0.00263 %		
15	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

#		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		chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
17		copper { dicopper oxide; copper (I) oxide }				17	mg/kg	1.126	19.14	mg/kg	0.00191 %		
		029-002-00-X	215-270-7	1317-39-1									
18		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											
19		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									
20		ethylbenzene				<2	mg/kg		<2	mg/kg	<0.0002 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
21		fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-912-4	206-44-0									
22		fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-695-5	86-73-7									
23		indeno[123-cd]pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-893-2	193-39-5									
24		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	135	mg/kg		135	mg/kg	0.0135 %		
		082-001-00-6											
25		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									
26		naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
27		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]									
28		pH				7.8	pH		7.8	pH	7.8 pH		
				PH									
29		phenanthrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-581-5	85-01-8									
30		phenol				<2	mg/kg		<2	mg/kg	<0.0002 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
31		pyrene				<2	mg/kg		<2	mg/kg	<0.0002 %		<LOD
			204-927-3	129-00-0									
32		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				0.029	mg/kg	1.405	0.0407	mg/kg	0.00000407 %		
		034-002-00-8											
33		toluene				<5	mg/kg		<5	mg/kg	<0.0005 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
34		xylene				<2	mg/kg		<2	mg/kg	<0.0002 %		<LOD
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
35		zinc { zinc oxide }				45	mg/kg	1.245	56.012	mg/kg	0.0056 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.0323 %		

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: TP113

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:	
TP113	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:		
0.30 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		0.14 mg/kg		0.14 mg/kg	0.000014 %		
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		0.6 mg/kg		0.6 mg/kg	0.00006 %		
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		20 mg/kg	1.32	26.407 mg/kg	0.00264 %		
5	benzene	601-020-00-8	200-753-7	71-43-2		<2 mg/kg		<2 mg/kg	<0.0002 %		<**LOD**
6	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		5.04 mg/kg		5.04 mg/kg	0.000504 %		
7	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		4.79 mg/kg		4.79 mg/kg	0.000479 %		
8	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		6.06 mg/kg		6.06 mg/kg	0.000606 %		
9	benzo[ghi]perylene		205-883-8	191-24-2		2.8 mg/kg		2.8 mg/kg	0.00028 %		
10	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		1.65 mg/kg		1.65 mg/kg	0.000165 %		
11	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.9 mg/kg	2.775	2.498 mg/kg	0.00025 %		
12	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**
13	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	0.7 mg/kg	1.285	0.9 mg/kg	0.00007 %		
14	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		22 mg/kg	1.462	32.154 mg/kg	0.00322 %		
15	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**

#		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		chrysene				5.1	mg/kg		5.1	mg/kg	0.00051 %		
		601-048-00-0	205-923-4	218-01-9									
17		copper { dicopper oxide; copper (I) oxide }				22	mg/kg	1.126	24.77	mg/kg	0.00248 %		
		029-002-00-X	215-270-7	1317-39-1									
18		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											
19		dibenz[a,h]anthracene				0.56	mg/kg		0.56	mg/kg	0.000056 %		
		601-041-00-2	200-181-8	53-70-3									
20		ethylbenzene				<2	mg/kg		<2	mg/kg	<0.0002 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
21		fluoranthene				10	mg/kg		10	mg/kg	0.001 %		
			205-912-4	206-44-0									
22		fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			201-695-5	86-73-7									
23		indeno[123-cd]pyrene				3.22	mg/kg		3.22	mg/kg	0.000322 %		
			205-893-2	193-39-5									
24		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	69	mg/kg		69	mg/kg	0.0069 %		
		082-001-00-6											
25		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									
26		naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
27		nickel { nickel dihydroxide }				12	mg/kg	1.579	18.954	mg/kg	0.0019 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
28		pH				7.7	pH		7.7	pH	7.7 pH		
				PH									
29		phenanthrene				2.69	mg/kg		2.69	mg/kg	0.000269 %		
			201-581-5	85-01-8									
30		phenol				2.2	mg/kg		2.2	mg/kg	0.00022 %		
		604-001-00-2	203-632-7	108-95-2									
31		pyrene				<2	mg/kg		<2	mg/kg	<0.0002 %		<**LOD**
			204-927-3	129-00-0									
32		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				0.052	mg/kg	1.405	0.0731	mg/kg	0.00000731 %		
		034-002-00-8											
33		toluene				<5	mg/kg		<5	mg/kg	<0.0005 %		<**LOD**
		601-021-00-3	203-625-9	108-88-3									
34		TPH (C6 to C40) petroleum group				226	mg/kg		226	mg/kg	0.0226 %		
				TPH									
35		xylene				<2	mg/kg		<2	mg/kg	<0.0002 %		<**LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
36		zinc { zinc oxide }				118	mg/kg	1.245	146.876	mg/kg	0.0147 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.0626 %		

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

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because Flammability of soils due to TPH is likely to be in the region of 10,000mg/kg. Anything below 1000mg/kg is unlikely to be flammable and is therefore considered non-hazardous.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0226%)

Classification of sample: TP114

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP114
Sample Depth:
0.30 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		3.04 mg/kg		3.04 mg/kg	0.000304 %		
2	acenaphthylene		205-917-1	208-96-8		0.22 mg/kg		0.22 mg/kg	0.000022 %		
3	anthracene		204-371-1	120-12-7		8.95 mg/kg		8.95 mg/kg	0.000895 %		
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		16.7 mg/kg		16.7 mg/kg	0.00167 %		
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		14.6 mg/kg		14.6 mg/kg	0.00146 %		
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		17.1 mg/kg		17.1 mg/kg	0.00171 %		
8	benzo[ghi]perylene		205-883-8	191-24-2		7.08 mg/kg		7.08 mg/kg	0.000708 %		
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		4.9 mg/kg		4.9 mg/kg	0.00049 %		
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 %		
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		10 mg/kg	1.462	14.616 mg/kg	0.00146 %		
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		15.8 mg/kg		15.8 mg/kg	0.00158 %		

#		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 }				25	mg/kg	1.126	28.147	mg/kg	0.00281 %		
		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				1.65	mg/kg		1.65	mg/kg	0.000165 %		
		601-041-00-2	200-181-8	53-70-3									
19		fluoranthene				43.7	mg/kg		43.7	mg/kg	0.00437 %		
			205-912-4	206-44-0									
20		fluorene				2.62	mg/kg		2.62	mg/kg	0.000262 %		
			201-695-5	86-73-7									
21		indeno[123-cd]pyrene				8.14	mg/kg		8.14	mg/kg	0.000814 %		
			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				0.13	mg/kg		0.13	mg/kg	0.000013 %		
		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				9.7	pH		9.7	pH	9.7 pH		
				PH									
27		phenanthrene				31.2	mg/kg		31.2	mg/kg	0.00312 %		
			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 }				0.072	mg/kg	1.405	0.101	mg/kg	0.0000101 %		
		034-002-00-8											
31		zinc { zinc oxide }				47	mg/kg	1.245	58.502	mg/kg	0.00585 %		
		030-013-00-7	215-222-5	1314-13-2									
32		asbestos				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<**LOD**
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5									
										Total:	0.0367 %		

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: TP114[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP114[2]
Sample Depth:
1.20 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		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	4	mg/kg		4	mg/kg	0.0004 %		
		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				8.3	pH		8.3	pH	8.3 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				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			204-927-3	129-00-0									
30		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:	0.00661 %		

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: TP116

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP116
Sample Depth:
0.40 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		18 mg/kg	1.32	23.766 mg/kg	0.00238 %		
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		0.8 mg/kg	2.775	2.22 mg/kg	0.000222 %		
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		20 mg/kg	1.462	29.231 mg/kg	0.00292 %		
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	27	mg/kg		27	mg/kg	0.0027 %		
		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 }				11	mg/kg	1.579	17.374	mg/kg	0.00174 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
26		pH				8	pH		8	pH	8pH		
				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				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			204-927-3	129-00-0									
30		zinc { zinc oxide }				47	mg/kg	1.245	58.502	mg/kg	0.00585 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.0199 %		

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: TP117

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP117
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		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		<0.5 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 %		
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		13 mg/kg	1.462	19 mg/kg	0.0019 %		
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 }				13	mg/kg	1.126	14.637	mg/kg	0.00146 %		
		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		ethylbenzene				<2	mg/kg		<2	mg/kg	<0.0002 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
20		fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			205-912-4	206-44-0									
21		fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			201-695-5	86-73-7									
22		indeno[123-cd]pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			205-893-2	193-39-5									
23		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	21	mg/kg		21	mg/kg	0.0021 %		
		082-001-00-6											
24		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									
25		naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
26		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]									
27		pH				8	pH		8	pH	8pH		
				PH									
28		phenanthrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			201-581-5	85-01-8									
29		phenol				<2	mg/kg		<2	mg/kg	<0.0002 %		<**LOD**
		604-001-00-2	203-632-7	108-95-2									
30		pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			204-927-3	129-00-0									
31		zinc { zinc oxide }				56	mg/kg	1.245	69.704	mg/kg	0.00697 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.0181 %		

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: TP118

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP118
Sample Depth:
0.70 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		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		0.6 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 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		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			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 }				12	mg/kg	1.126	13.511	mg/kg	0.00135 %		
		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	14	mg/kg		14	mg/kg	0.0014 %		
		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 }				9	mg/kg	1.579	14.215	mg/kg	0.00142 %		
		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				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			204-927-3	129-00-0									
30		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:	0.0154 %		

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: TP119

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP119
Sample Depth:
0.40 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		25 mg/kg	1.32	33.008 mg/kg	0.0033 %		
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		1.1 mg/kg	2.775	3.053 mg/kg	0.000305 %		
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		30 mg/kg	1.462	43.847 mg/kg	0.00438 %		
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 }				14	mg/kg	1.126	15.762	mg/kg	0.00158 %		
		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	29	mg/kg		29	mg/kg	0.0029 %		
		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 }				17	mg/kg	1.579	26.851	mg/kg	0.00269 %		
		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				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			204-927-3	129-00-0									
30		zinc { zinc oxide }				58	mg/kg	1.245	72.193	mg/kg	0.00722 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.0248 %		

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: TP124

Hazardous Waste
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample name:
TP124
Sample Depth:
0.2 m

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 03 * (Soil and stones containing hazardous substances)

Hazard properties

HP 14: Ecotoxic "waste which presents or may present immediate or delayed risks for one or more sectors of the environment"

Hazard Statements hit:

Aquatic Chronic 1; H410 "Very toxic to aquatic life with long lasting effects."

Because of determinands:

dicopper oxide; copper (I) oxide: (compound conc.: 0.212%)
lead compounds with the exception of those specified elsewhere in this Annex: (Note 1 conc.: 0.184%)
zinc oxide: (compound conc.: 0.686%)

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		0.35 mg/kg		0.35 mg/kg	0.000035 %		
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		1.18 mg/kg		1.18 mg/kg	0.000118 %		
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		0.96 mg/kg		0.96 mg/kg	0.000096 %		
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		1.21 mg/kg		1.21 mg/kg	0.000121 %		
8	benzo[ghi]perylene		205-883-8	191-24-2		0.49 mg/kg		0.49 mg/kg	0.000049 %		
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		0.44 mg/kg		0.44 mg/kg	0.000044 %		
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.8 mg/kg	2.775	2.22 mg/kg	0.000222 %		
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	35.1 mg/kg	1.285	45.112 mg/kg	0.00351 %		

#		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									
13		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				67	mg/kg	1.462	97.924	mg/kg	0.00979 %		
			215-160-9	1308-38-9									
14		chromium in chromium(VI) compounds { chromium(VI) oxide }				<2	mg/kg	1.923	<3.846	mg/kg	<0.000385 %		<LOD
		024-001-00-0	215-607-8	1333-82-0									
15		chrysene				1.23	mg/kg		1.23	mg/kg	0.000123 %		
		601-048-00-0	205-923-4	218-01-9									
16		copper { dicopper oxide; copper (I) oxide }				1880	mg/kg	1.126	2116.67	mg/kg	0.212 %		
		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				0.13	mg/kg		0.13	mg/kg	0.000013 %		
		601-041-00-2	200-181-8	53-70-3									
19		ethylbenzene				<2	mg/kg		<2	mg/kg	<0.0002 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
20		fluoranthene				2.72	mg/kg		2.72	mg/kg	0.000272 %		
			205-912-4	206-44-0									
21		fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-695-5	86-73-7									
22		indeno[123-cd]pyrene				0.59	mg/kg		0.59	mg/kg	0.000059 %		
			205-893-2	193-39-5									
23		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	1840	mg/kg		1840	mg/kg	0.184 %		
		082-001-00-6											
24		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									
25		naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
26		nickel { nickel dihydroxide }				145	mg/kg	1.579	229.027	mg/kg	0.0229 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
27		pH				7.7	pH		7.7	pH	7.7 pH		
				PH									
28		phenanthrene				1.3	mg/kg		1.3	mg/kg	0.00013 %		
			201-581-5	85-01-8									
29		phenol				<2	mg/kg		<2	mg/kg	<0.0002 %		<LOD
		604-001-00-2	203-632-7	108-95-2									
30		pyrene				2.27	mg/kg		2.27	mg/kg	0.000227 %		
			204-927-3	129-00-0									
31		TPH (C6 to C40) petroleum group				102	mg/kg		102	mg/kg	0.0102 %		
				TPH									
32		zinc { zinc oxide }				5510	mg/kg	1.245	6858.374	mg/kg	0.686 %		
		030-013-00-7	215-222-5	1314-13-2									
33		asbestos				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		650-013-00-6	- - - - - - -	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5									
										Total:	1.134 %		

Key	
	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Hazardous result
	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

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because Flammability of soils due to TPH is likely to be in the region of 10,000mg/kg. Anything below 1000mg/kg is unlikely to be flammable and is therefore considered non-hazardous.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0102%)

Classification of sample: TP125

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP125
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		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	0.6 mg/kg	1.285	0.771 mg/kg	0.00006 %		
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		7 mg/kg	1.462	10.231 mg/kg	0.00102 %		
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 }				27	mg/kg	1.126	30.399	mg/kg	0.00304 %		
		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	18	mg/kg		18	mg/kg	0.0018 %		
		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				7.8	pH		7.8	pH	7.8 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				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			204-927-3	129-00-0									
30		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:	0.0187 %		

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: TP126

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:	
TP126	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		11 mg/kg	1.32	14.524 mg/kg	0.00145 %		
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 %		
13	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		13 mg/kg	1.462	19 mg/kg	0.0019 %		
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 }				10	mg/kg	1.126	11.259	mg/kg	0.00113 %		
		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	11	mg/kg		11	mg/kg	0.0011 %		
		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 }				7	mg/kg	1.579	11.056	mg/kg	0.00111 %		
		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				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			204-927-3	129-00-0									
30		zinc { zinc oxide }				39	mg/kg	1.245	48.544	mg/kg	0.00485 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.0141 %		

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: HP101

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:		LoW Code:	
HP101		Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:			
0.30 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		0.6 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 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		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	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		15	mg/kg	1.126	16.888	mg/kg	0.00169 %		
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		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<2	mg/kg		<2	mg/kg	<0.0002 %		<**LOD**
20		fluoranthene		205-912-4	206-44-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
21		fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
22		indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
23		lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	25	mg/kg		25	mg/kg	0.0025 %		
24		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**
25		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
26		nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		9	mg/kg	1.579	14.215	mg/kg	0.00142 %		
27		pH			PH		8.1	pH		8.1	pH	8.1 pH		
28		phenanthrene		201-581-5	85-01-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
29		phenol	604-001-00-2	203-632-7	108-95-2		<2	mg/kg		<2	mg/kg	<0.0002 %		<**LOD**
30		pyrene		204-927-3	129-00-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
31		zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		42	mg/kg	1.245	52.278	mg/kg	0.00523 %		
											Total:	0.0181 %		

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: HP101[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
HP101[2]
Sample Depth:
0.75 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		10 mg/kg	1.462	14.616 mg/kg	0.00146 %		
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 }				11	mg/kg	1.126	12.385	mg/kg	0.00124 %		
		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		ethylbenzene				<2	mg/kg		<2	mg/kg	<0.0002 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
20		fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			205-912-4	206-44-0									
21		fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			201-695-5	86-73-7									
22		indeno[123-cd]pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			205-893-2	193-39-5									
23		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	10	mg/kg		10	mg/kg	0.001 %		
		082-001-00-6											
24		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									
25		naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
26		nickel { nickel dihydroxide }				5	mg/kg	1.579	7.897	mg/kg	0.00079 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
27		pH				8.8	pH		8.8	pH	8.8 pH		
				PH									
28		phenanthrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			201-581-5	85-01-8									
29		phenol				<2	mg/kg		<2	mg/kg	<0.0002 %		<**LOD**
		604-001-00-2	203-632-7	108-95-2									
30		pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			204-927-3	129-00-0									
31		zinc { zinc oxide }				21	mg/kg	1.245	26.139	mg/kg	0.00261 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.0109 %		

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: HP110

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:		LoW Code:	
HP110		Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:			
0.30 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		17 mg/kg	1.32	22.446 mg/kg	0.00224 %		
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 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		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 }				14	mg/kg	1.126	15.762	mg/kg	0.00158 %		
		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		ethylbenzene				<2	mg/kg		<2	mg/kg	<0.0002 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
20		fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			205-912-4	206-44-0									
21		fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			201-695-5	86-73-7									
22		indeno[123-cd]pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			205-893-2	193-39-5									
23		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	24	mg/kg		24	mg/kg	0.0024 %		
		082-001-00-6											
24		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									
25		naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
26		nickel { nickel dihydroxide }				35	mg/kg	1.579	55.282	mg/kg	0.00553 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
27		pH				8.2	pH		8.2	pH	8.2 pH		
				PH									
28		phenanthrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			201-581-5	85-01-8									
29		phenol				<2	mg/kg		<2	mg/kg	<0.0002 %		<**LOD**
		604-001-00-2	203-632-7	108-95-2									
30		pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			204-927-3	129-00-0									
31		zinc { zinc oxide }				48	mg/kg	1.245	59.746	mg/kg	0.00597 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.0221 %		

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: HP110[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
HP110[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		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		<0.5 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		10 mg/kg	1.462	14.616 mg/kg	0.00146 %		
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 }				12	mg/kg	1.126	13.511	mg/kg	0.00135 %		
		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		ethylbenzene				<2	mg/kg		<2	mg/kg	<0.0002 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
20		fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			205-912-4	206-44-0									
21		fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			201-695-5	86-73-7									
22		indeno[123-cd]pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			205-893-2	193-39-5									
23		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	12	mg/kg		12	mg/kg	0.0012 %		
		082-001-00-6											
24		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									
25		naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
26		nickel { nickel dihydroxide }				9	mg/kg	1.579	14.215	mg/kg	0.00142 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
27		pH				8.1	pH		8.1	pH	8.1 pH		
				PH									
28		phenanthrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			201-581-5	85-01-8									
29		phenol				<2	mg/kg		<2	mg/kg	<0.0002 %		<**LOD**
		604-001-00-2	203-632-7	108-95-2									
30		pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			204-927-3	129-00-0									
31		zinc { zinc oxide }				24	mg/kg	1.245	29.873	mg/kg	0.00299 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.0128 %		

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: HP111

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:		LoW Code:	
HP111		Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:			
0.10 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		19 mg/kg	1.32	25.086 mg/kg	0.00251 %		
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		0.8 mg/kg	2.775	2.22 mg/kg	0.000222 %		
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		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			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 }				14	mg/kg	1.126	15.762	mg/kg	0.00158 %		
		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	32	mg/kg		32	mg/kg	0.0032 %		
		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 }				11	mg/kg	1.579	17.374	mg/kg	0.00174 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
26		pH				7.8	pH		7.8	pH	7.8 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				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			204-927-3	129-00-0									
30		zinc { zinc oxide }				52	mg/kg	1.245	64.725	mg/kg	0.00647 %		
		030-013-00-7	215-222-5	1314-13-2									
										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: HP112

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:	
HP112	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:		
0.40 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		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		0.5 mg/kg	2.775	1.388 mg/kg	0.000139 %		
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		15 mg/kg	1.462	21.923 mg/kg	0.00219 %		
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 }				11	mg/kg	1.126	12.385	mg/kg	0.00124 %		
		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	11	mg/kg		11	mg/kg	0.0011 %		
		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				7.8	pH		7.8	pH	7.8 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				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			204-927-3	129-00-0									
30		zinc { zinc oxide }				27	mg/kg	1.245	33.607	mg/kg	0.00336 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.0134 %		

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: HP114

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:		LoW Code:	
HP114		Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:			
0.4 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		0.8 mg/kg	2.775	2.22 mg/kg	0.000222 %		
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		20 mg/kg	1.462	29.231 mg/kg	0.00292 %		
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 }				12	mg/kg	1.126	13.511	mg/kg	0.00135 %		
		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	22	mg/kg		22	mg/kg	0.0022 %		
		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 }				10	mg/kg	1.579	15.795	mg/kg	0.00158 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
26		pH				7.6	pH		7.6	pH	7.6 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				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			204-927-3	129-00-0									
30		zinc { zinc oxide }				44	mg/kg	1.245	54.767	mg/kg	0.00548 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.0183 %		

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: HP115

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:		LoW Code:	
HP115		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		18 mg/kg	1.32	23.766 mg/kg	0.00238 %		
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		0.8 mg/kg	2.775	2.22 mg/kg	0.000222 %		
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		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			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 }				17	mg/kg	1.126	19.14	mg/kg	0.00191 %		
		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				0.14	mg/kg		0.14	mg/kg	0.000014 %		
			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	42	mg/kg		42	mg/kg	0.0042 %		
		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 }				12	mg/kg	1.579	18.954	mg/kg	0.0019 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
26		pH				7.4	pH		7.4	pH	7.4 pH		
				PH									
27		phenanthrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			201-581-5	85-01-8									
28		phenol				6.4	mg/kg		6.4	mg/kg	0.00064 %		
		604-001-00-2	203-632-7	108-95-2									
29		pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
			204-927-3	129-00-0									
30		zinc { zinc oxide }				89	mg/kg	1.245	110.78	mg/kg	0.0111 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.0277 %		

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: SP1

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
SP1

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		9 mg/kg	1.32	11.883 mg/kg	0.00119 %		
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		3.7 mg/kg	13.43	49.691 mg/kg	0.00497 %		
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		19 mg/kg	1.462	27.77 mg/kg	0.00278 %		
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 }				22	mg/kg	1.126	24.77	mg/kg	0.00248 %		
		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	13	mg/kg		13	mg/kg	0.0013 %		
		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 }				26	mg/kg	1.579	41.067	mg/kg	0.00411 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
26		pH				7.2	pH		7.2	pH	7.2 pH		
				PH									
27		phenanthrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-581-5	85-01-8									
28		phenol				3.4	mg/kg		3.4	mg/kg	0.00034 %		
		604-001-00-2	203-632-7	108-95-2									
29		pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			204-927-3	129-00-0									
30		zinc { zinc oxide }				111	mg/kg	1.245	138.163	mg/kg	0.0138 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.0321 %		

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: SP2

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
SP2

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		29 mg/kg	1.32	38.289 mg/kg	0.00383 %		
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		1.1 mg/kg	13.43	14.773 mg/kg	0.00148 %		
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		19 mg/kg	1.462	27.77 mg/kg	0.00278 %		
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		109	mg/kg	1.126	122.722	mg/kg	0.0123 %		
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	50	mg/kg		50	mg/kg	0.005 %		
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]		5	mg/kg	1.579	7.897	mg/kg	0.00079 %		
26		pH			PH		7.7	pH		7.7	pH	7.7 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		0.12	mg/kg		0.12	mg/kg	0.000012 %		
30		zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		459	mg/kg	1.245	571.324	mg/kg	0.0571 %		
											Total:	0.0845 %		

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: TP120[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:	LoW Code:	
TP120[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		7 mg/kg	1.32	9.242 mg/kg	0.000924 %		
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		4 mg/kg	1.462	5.846 mg/kg	0.000585 %		
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		6	mg/kg	1.126	6.755	mg/kg	0.000676 %		
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	<3	mg/kg		<3	mg/kg	<0.0003 %		<**LOD**
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]		<3	mg/kg	1.579	<4.738	mg/kg	<0.000474 %		<**LOD**
26		pH			PH		8.4	pH		8.4	pH	8.4 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 %		
29		pyrene		204-927-3	129-00-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<**LOD**
30		zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		7	mg/kg	1.245	8.713	mg/kg	0.000871 %		
											Total:	0.0064 %		

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: TP01

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP01
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		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
3	anthracene		204-371-1	120-12-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		8.6 mg/kg	1.32	11.355 mg/kg	0.00114 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.13 mg/kg	2.775	0.361 mg/kg	0.0000361 %		
11	boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		0.6 mg/kg	13.43	8.058 mg/kg	0.000806 %		
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		8.2 mg/kg	1.462	11.985 mg/kg	0.0012 %		
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<LOD
15	chrysene	601-048-00-0	205-923-4	218-01-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<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 }				4.7	mg/kg	1.126	5.292	mg/kg	0.000529 %		
		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				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
19		fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-912-4	206-44-0									
20		fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-695-5	86-73-7									
21		indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**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 }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<**LOD**
		080-010-00-X	231-299-8	7487-94-7									
24		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
25		nickel { nickel dihydroxide }				5	mg/kg	1.579	7.897	mg/kg	0.00079 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
26		pH				8.4	pH		8.4	pH	8.4 pH		
				PH									
27		phenanthrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-581-5	85-01-8									
28		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
		604-001-00-2	203-632-7	108-95-2									
29		pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			204-927-3	129-00-0									
30		zinc { zinc oxide }				40	mg/kg	1.245	49.789	mg/kg	0.00498 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.0109 %		

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: TP01[2]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP01[2]
Sample Depth:
0.40 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		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
3	anthracene		204-371-1	120-12-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		17 mg/kg	1.32	22.446 mg/kg	0.00224 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.93 mg/kg	2.775	2.581 mg/kg	0.000258 %		
11	boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		3.4 mg/kg	13.43	45.662 mg/kg	0.00457 %		
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		34 mg/kg	1.462	49.693 mg/kg	0.00497 %		
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<LOD
15	chrysene	601-048-00-0	205-923-4	218-01-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<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 }				12	mg/kg	1.126	13.511	mg/kg	0.00135 %		
		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				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
19		fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-912-4	206-44-0									
20		fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-695-5	86-73-7									
21		indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-893-2	193-39-5									
22		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	26	mg/kg		26	mg/kg	0.0026 %		
		082-001-00-6											
23		mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<**LOD**
		080-010-00-X	231-299-8	7487-94-7									
24		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
25		nickel { nickel dihydroxide }				14	mg/kg	1.579	22.113	mg/kg	0.00221 %		
		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				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-581-5	85-01-8									
28		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
		604-001-00-2	203-632-7	108-95-2									
29		pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			204-927-3	129-00-0									
30		zinc { zinc oxide }				55	mg/kg	1.245	68.459	mg/kg	0.00685 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.0257 %		

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: TP01[3]

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP01[3]
Sample Depth:
0.80 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		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
3	anthracene		204-371-1	120-12-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
4	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		7.3 mg/kg	1.32	9.638 mg/kg	0.000964 %		
5	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.13 mg/kg	2.775	0.361 mg/kg	0.0000361 %		
11	boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		0.5 mg/kg	13.43	6.715 mg/kg	0.000672 %		
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		7.9 mg/kg	1.462	11.546 mg/kg	0.00115 %		
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<LOD
15	chrysene	601-048-00-0	205-923-4	218-01-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<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 }				2.2	mg/kg	1.126	2.477	mg/kg	0.000248 %		
		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				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
19		ethylbenzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<**LOD**
		601-023-00-4	202-849-4	100-41-4									
20		fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-912-4	206-44-0									
21		fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-695-5	86-73-7									
22		indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-893-2	193-39-5									
23		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	2.9	mg/kg		2.9	mg/kg	0.00029 %		
		082-001-00-6											
24		mercury { mercury dichloride }				<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<**LOD**
		080-010-00-X	231-299-8	7487-94-7									
25		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
26		nickel { nickel dihydroxide }				4.3	mg/kg	1.579	6.792	mg/kg	0.000679 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
27		pH				8.7	pH		8.7	pH	8.7 pH		
				PH									
28		phenanthrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-581-5	85-01-8									
29		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
		604-001-00-2	203-632-7	108-95-2									
30		pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			204-927-3	129-00-0									
31		zinc { zinc oxide }				9.1	mg/kg	1.245	11.327	mg/kg	0.00113 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.00584 %		

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: TP02

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:		LoW Code:	
TP02		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		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
2		acenaphthylene		205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
3		anthracene		204-371-1	120-12-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<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		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
6		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
7		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
8		benzo[ghi]perylene		205-883-8	191-24-2		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
9		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<LOD**
10		beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.81	mg/kg	2.775	2.248	mg/kg	0.000225 %		
11		boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		2.3	mg/kg	13.43	30.889	mg/kg	0.00309 %		
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		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		<1.2	mg/kg	1.923	<2.308	mg/kg	<0.000231 %		**<LOD**
15		chrysene	601-048-00-0	205-923-4	218-01-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		**<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		10	mg/kg	1.126	11.259	mg/kg	0.00113 %		
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		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
19		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<**LOD**
20		fluoranthene		205-912-4	206-44-0		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
21		fluorene		201-695-5	86-73-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
22		indeno[123-cd]pyrene		205-893-2	193-39-5		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
23		lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	20	mg/kg		20	mg/kg	0.002 %		
24		mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<**LOD**
25		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
26		nickel { nickel dihydroxide }	028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]		12	mg/kg	1.579	18.954	mg/kg	0.0019 %		
27		pH			PH		8.3	pH		8.3	pH	8.3 pH		
28		phenanthrene		201-581-5	85-01-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
29		phenol	604-001-00-2	203-632-7	108-95-2		<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
30		pyrene		204-927-3	129-00-0		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
31		zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		46	mg/kg	1.245	57.257	mg/kg	0.00573 %		
											Total:	0.0204 %		

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: TP03

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP03
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		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
2	acenaphthylene		205-917-1	208-96-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
3	anthracene		204-371-1	120-12-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<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		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
6	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
7	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
8	benzo[ghi]perylene		205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
9	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
10	beryllium { beryllium oxide }	004-003-00-8	215-133-1	1304-56-9		0.63 mg/kg	2.775	1.748 mg/kg	0.000175 %		
11	boron { boron tribromide/trichloride/trifluoride (combined) }			10294-33-4, 10294-34-5, 7637-07-2		1.6 mg/kg	13.43	21.488 mg/kg	0.00215 %		
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		22 mg/kg	1.462	32.154 mg/kg	0.00322 %		
14	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<LOD
15	chrysene	601-048-00-0	205-923-4	218-01-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<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 }				12	mg/kg	1.126	13.511	mg/kg	0.00135 %		
		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				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
19		fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-912-4	206-44-0									
20		fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-695-5	86-73-7									
21		indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-893-2	193-39-5									
22		lead { lead compounds with the exception of those specified elsewhere in this Annex }			1	22	mg/kg		22	mg/kg	0.0022 %		
		082-001-00-6											
23		mercury { mercury dichloride }				0.4	mg/kg	1.353	0.541	mg/kg	0.0000541 %		
		080-010-00-X	231-299-8	7487-94-7									
24		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
25		nickel { nickel dihydroxide }				11	mg/kg	1.579	17.374	mg/kg	0.00174 %		
		028-008-00-X	235-008-5 [1] 234-348-1 [2]	12054-48-7 [1] 11113-74-9 [2]									
26		pH				8.3	pH		8.3	pH	8.3 pH		
				PH									
27		phenanthrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-581-5	85-01-8									
28		phenol				<1	mg/kg		<1	mg/kg	<0.0001 %		<**LOD**
		604-001-00-2	203-632-7	108-95-2									
29		pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			204-927-3	129-00-0									
30		zinc { zinc oxide }				42	mg/kg	1.245	52.278	mg/kg	0.00523 %		
		030-013-00-7	215-222-5	1314-13-2									
										Total:	0.0187 %		

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

ethylbenzene (EC Number: 202-849-4, CAS Number: 100-41-4)

GB MCL index number: 601-023-00-4
Description/Comments:
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 2B (77) 2000

TPH (C6 to C40) petroleum group (CAS Number: TPH)

Description/Comments: Hazard statements taken from WM3 1st Edition 2015; Risk phrases: WM2 3rd Edition 2013
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: Flam. Liq. 3; H226 , Asp. Tox. 1; H304 , STOT RE 2; H373 , Muta. 1B; H340 , Carc. 1B; H350 , Repr. 2; H361d , Aquatic Chronic 2; H411

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 H Preliminary 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 H.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 H.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).		✓	-
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 Sands 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.	✓	-

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
Adverse chemical ground conditions, (e.g. expansive slag).	Not considered a risk.	-	✓
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.	The desk study reports state a very low hazard for running sands. However, loose Made Ground may be present on site.	✓	-
Slope stability issues – general slopes.	Slopes located on the south, east and north-west site boundary.	✓	-
Slope stability issues – retaining walls.	No retaining walls present on-site, however tension cracks have been noted on the bank crests of adjacent off-site restored quarry to the south-west.	✓	-
Earthworks – settlement (due to placement of fill on soft / loose ground).		✓	-

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
Earthworks – poor bearing capacity of new fill.	Earthworks will form part of the proposed development, with cut and fill activities taking place on site.	✓	-
Earthworks – unsuitability of site won material to be reused as fill.		✓	-
Solution features in Chalk.	Not a risk.	-	✓
Cavities in the Superficial Deposits due to solution features.	Not a risk.	-	✓
Dissolution (associated with "wet rock head").	Not a risk.	-	✓
Brine extraction.	Not a risk.	-	✓
Mining.	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 H.3.

The probability and impact of a hazard have been judged on a qualitative scale as set out in Table H.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 H.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).	Made Ground of varying depth and consistency has been proven to be present beneath the site as a result of historical construction activities and burial of waste. The Made Ground is up to 0.80m thick.	Residential Dwellings.	Bearing capacity failure, settlement (total and differential).	3	4	12	Design foundations to found below Made Ground or excavate and dispose of Made Ground during the enabling works.
			Floor slab failure.	3	4	12	Design floor slabs as suspended.
		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	Anticipated settlements are significant with regard to services. There is a requirement to improve the Made Ground prior to installation of services. 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 to firm silt and clay up to 0.80m bgl.	Residential Dwellings.	Foundation bearing capacity failure, settlement (total and differential).	3	4	12	Design foundations to found below any Superficial Deposits.
			Floor slab failure.	3	4	12	Design floor slab as suspended or remove materials and import granular fill.
		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.

Hazard	Comments	Who is at Risk	Consequence	Risk Before Mitigation			Actions Required
				P	I	R	
		Services.	Settlement (differential), causing damage to services.	3	3	9	Ground levels are being raised and settlements may be significant. It is recommended to remove the localised Superficial Deposits.
		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 and Kellaways Clay Member 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.
		Floor slabs.	Floor slab failure.	3	4	12	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).
Variable lateral and vertical changes in ground conditions.	The Made Ground soils vary laterally and vertically, both in composition and strength. The Superficial Deposits were encountered at a local level only.	Residential Dwellings.	Foundation bearing capacity failure, settlement (total and differential).	3	4	12	Design foundations to found below Made Ground or remove Made Ground from below building footprint. Design foundations to found below any soft clay of the Superficial Deposits, or ensure Superficial Deposits are removed.
			Floor slab failure.	3	4	12	Design floor slab as suspended or remove Made Ground and Superficial Deposits 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.

Hazard	Comments	Who is at Risk	Consequence	Risk Before Mitigation			Actions Required
				P	I	R	
		Gardens.	Settlement (differential), in gardens.	2	3	6	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. 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 on site are classified as DS-1 and the deeper Kellaways Clay Member is 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.	Obstructions have been proven by the investigation and there is a potential for additional obstructions to be present due to historical construction	Construction staff, vehicles and plant operators.	Risk of collapse of excavation as obstructions are pulled out.	3	3	9	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	3	3	9	

Hazard	Comments	Who is at Risk	Consequence	Risk Before Mitigation			Actions Required
				P	I	R	
	activity, or unknown fill in Made Ground.		piles / columns and re-design of foundations.				
Existing below ground structures to remain (foundations of the retained grade listed buildings).	The existing grade listed buildings are to remain on site for redevelopment and as such their foundations will remain.	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 of trenches.	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 between March - August 2023.	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 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.

Hazard	Comments	Who is at Risk	Consequence	Risk Before Mitigation			Actions Required
				P	I	R	
		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 site is partially located within 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 is therefore at risk from 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	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.
			Risk of collapse of excavation.	3	3	9	
Slope stability issues – General Slopes.	Adjacent off-site banks of the restored quarry have tension cracks.	Residential Dwellings.	Serviceability issues.	4	4	16	Safe slope angles to be assessed during design. Engineered fill requirements to be defined at outline design stage.
		Roads and Pavements.	Serviceability issues.	4	3	12	Drainage requirements to be assessed during design. Slopes to be constructed at a safe angle.
		Gardens.	Serviceability issues.		2		
Slope stability issues – retaining walls.	There will be 2 retaining walls in Plot 2 and Plot 17, which will retain placed soils and protect against tree roots.	Residential Dwellings.	Serviceability issues.	4	4	16	Design of the retaining walls to be undertaken in accordance with EC7. Adequate drainage to be designed behind the structure, or for water seepage through the face of the wall.
		Pavement construction and long-term	Serviceability issues.	4	3	12	Lateral earth pressure parameters to be characterised during investigation and design.

Hazard	Comments	Who is at Risk	Consequence	Risk Before Mitigation			Actions Required
				P	I	R	
		durability highways and external areas.					Engineered fill requirements to be defined at outline design stage.
		Gardens.	Serviceability issues.	3	2	6	
Earthworks – Settlement (due to placement of fill on soft / loose ground / Deep Made Ground).	The ground conditions at the site include medium dense to dense gravels of the Northmoor Sands and Gravel Member at the level of cut. No deep Made Ground was encountered during the site investigation.	Residential Dwellings.	Foundation bearing capacity failure, settlement (total and differential).	2	4	8	Design foundations to found below the Alluvium i.e. piled foundations.
			Floor slab failure.	2	4	8	Design floor slab as suspended or ensure any Made Ground or soft softs are removed.
		Roads and Pavements.	Settlement (total and differential), of roads and pavements.	2	3	6	Settlements are anticipated to be significant with regard to roads and pavements. 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 anticipated to be significant with regard to services. Detailed design works are required to assess the impact and design mitigation measures.
		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 / or settlement of new fill.	There is a requirement for cut to fill to create the development platform and filling of	Residential Dwellings.	Foundation bearing capacity failure, settlement (total and differential).	3	4	12	Minimum engineering performance to be defined in an Earthworks Specification. Earthworks to be designed in accordance with 1) Manual of Contract Documents for Highway Works (MCHW), Volume 1;
			Floor slab failure.	3	4	12	

Hazard	Comments	Who is at Risk	Consequence	Risk Before Mitigation			Actions Required
				P	I	R	
	remediation excavations. This will require reuse of soils excavated from the site.	Roads and Pavements.	Settlement (total and differential).	3	3	9	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.
		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	6	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. Some fill may be unsuitable for use.
		Project Budgets - Insufficient fill to complete earthworks.	Additional Costs, due to importation of fill or having to modify designs.	2	2	4	
Quarrying	The Phase 1 review identified a backfilled historical gravel pit on site.	Residential Dwellings.	Reduction of lateral support potentially affecting stability of the structure.	2	5	10	Post-demolition ground investigation required to delineate the depth and extent of backfilled gravel pit. Deepen foundations below the base of the gravel pit. Design roads and pavements using suitable geotechnical parameters and increase the sub-base and use geo-grids as appropriate. Design working platform to suit the ground conditions.
			Floor slab failure.	2	5	10	
		Roads and Pavements.	Serviceability affected.	2	3	6	

Hazard	Comments	Who is at Risk	Consequence	Risk Before Mitigation			Actions Required
				P	I	R	
		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. Ground conditions are only defined at exploratory hole locations.	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.

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 I Plausible source-pathway-receptor contaminant linkages

Summary of potential contaminant linkages

Table I.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 I.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 I.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 I.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. (P01).	Site users, Neighbours (R01)	Likely	Medium	Moderate	There is localised Made Ground below the site, and there are metals and PAH at levels in excess of the GAC. Asbestos fibres were also detected within the Made Ground.	Contact with these materials is likely in gardens and areas of Public Open Space. Mitigation measures will be required to break the SPR linkage.
	Uptake by flora and fauna. (P06).	Ecology flora and fauna (R05).	Likely	Medium	Moderate		Concentrations of metals are in significant exceedance of the GACs for plant life within the Made Ground. Mitigation measures will be required to break the SPR linkage.
	Inhalation of fugitive dust (P01)	Neighbours (R01).	Low likelihood	Medium	Low		The risks of significant dust generation is likely only to be during the construction process and can therefore be controlled.
	Migration and leaching through unsaturated and saturated zones. (P04). Surface water via baseflow from groundwater. (P05).	Groundwater and Surface water bodies (R03 & R04).	Low likelihood	Medium	Low	There is a watercourse running approximately north – south through the site. The proposed development drainage will link into existing drainage network.	Slight elevations of heavy metals detected; however, the wider waterbody is listed as having high levels of heavy metals. All TPH testing was below the laboratory limit of detection. If Made Ground is a source then it is likely to be removed during the enabling works, breaking the S-P-R linkage.
Made Ground associated with the	Ingestion, inhalation or	Site users, Neighbours (R01)	Low likelihood	Medium	Low	No Made Ground was encountered at the location of the backfilled gravel pit.	

Sources	Possible Pathways	Receptors	Probability	Consequence	Risk Level	Comments
backfilling of the gravel pit in the west of the site possibly including elevated concentrations of metals, metalloids, asbestos fibres, Asbestos Containing Materials, PAH and petroleum hydrocarbons (S02).	direct contact. (P01).					Investigation indicated no exceedances of metals, metalloids or PAHs. No asbestos was detected.
	Uptake by flora and fauna. (P06).	Ecology flora and fauna. (R05).	Low likelihood	Medium	Low	
	Migration and leaching through unsaturated and saturated zones. (P04). Surface water via baseflow from groundwater. (P05).	Groundwater and Surface water bodies (P03 & P04). Ecology flora and fauna. (R05).	Low likelihood	Medium	Low	Slight elevations of heavy metals detected; however, the wider waterbody is listed as having high levels of heavy metals. All TPH testing was below the laboratory limit of detection. If Made Ground is a source then it is likely to be removed during the enabling works, breaking the S-P-R linkage.
Hydrocarbon fuels and vapours, associated with the multiple Above Ground Storage Tanks (ASTs) and operation of plant rooms including possible leakage from filling. (S03).	Ingestion, inhalation or direct contact. (P01).	Site users. (R01).	Low likelihood	Medium	Low	There are a number of ASTs across the site. No exceedances of both Human Health and Phytotoxicity GACs for Petroleum Hydrocarbons have been recorded at the site. No visual or olfactory evidence of petroleum hydrocarbons were identified during the ground investigation. If gross contamination is encountered during demolition and / or construction then further assessment by a suitably qualified geo-environmental engineer will be required. VOC concentrations were below the laboratory limit of detection.
		Ecology flora and fauna. (R05)				
	Petroleum hydrocarbon vapour migration, ingress, build-up and explosion via permeable soils and/or construction gaps (P03).	Site users (R01). Development End Use (R02).	Unlikely	Severe	Low	

Sources	Possible Pathways	Receptors	Probability	Consequence	Risk Level	Comments
	Migration and leaching through unsaturated and saturated zones. (P04).	Groundwater Aquifer (R03)	Low likelihood	Medium	Low	No Hydrocarbons detected within the groundwater.
	Surface water via baseflow from groundwater. (P05).	Surface water bodies (R04).	Low likelihood	Medium	Low	
Hydrocarbon fuels and vapours from the historical fuel spillage in the east of the site (S04).	Ingestion, inhalation or direct contact. (P01).	Site users. (R01).	Low likelihood	Medium	Low	Historically, there was a fuel spill in the east of the site. No visual or olfactory evidence of petroleum hydrocarbons were identified during the ground investigation.
	Petroleum hydrocarbon vapour migration, ingress, build-up and explosion via permeable soils and/or construction gaps (P03).	Development end use. (R02).	Unlikely	Severe	Low	And no recorded exceedances of the GACS were found and VOC concentrations were below the laboratory limit of detection. However, if gross contamination is encountered during demolition and / or construction then further assessment by a suitably qualified geo-environmental engineer will be required.
	Migration and leaching through unsaturated	Groundwater and surface	Low likelihood	Medium	Low	No hydrocarbons were detected within the groundwater.

Sources	Possible Pathways	Receptors	Probability	Consequence	Risk Level	Comments
	and saturated zones. (P04).	water. (R03 & R04).				
	Surface water via baseflow from groundwater. (P05).		Low likelihood	Medium	Low	
Ground gasses (carbon dioxide and methane) from organic material within any Made Ground across the site (S05).	Migration, build-up and asphyxiation	Site users (R01)	Unlikely	Severe	Low	Ground gas monitoring has indicated no concentrations of ground gases at levels that pose a risk to human health. CS1 conditions and no mitigation required for ground gases.
	Migration, build-up and explosion	Development end use (R02)	Unlikely	Severe		
Ground Gases (carbon dioxide and methane) from organic materials within the Made Ground of the back-filled gravel pit in the west of the site (S06).	Migration, build-up and asphyxiation	Site users (R01)	Unlikely	Severe	Low	Ground gas monitoring has indicated no concentrations of ground gases at levels that pose a risk to human health. CS1 conditions and no mitigation required for ground gases.
	Migration, build-up and explosion	Development end use (R02)	Unlikely	Severe		
Ground gases (carbon dioxide and methane) from organic materials within cohesive superficial deposits on site (S07).	Migration, build-up and asphyxiation	Site users. (R01).	Unlikely	Severe	Low	Ground gas monitoring has indicated no concentrations of ground gases at levels that pose a risk to human health. Superficial Deposits were only locally encountered during the investigation and were not recorded below 0.80m bgl.
	Migration, build-up and explosion	Development end use. (R02).	Unlikely	Severe		

Sources	Possible Pathways	Receptors	Probability	Consequence	Risk Level	Comments	
						No putrescible materials were observed within the Superficial Deposits. CS1 conditions and no mitigation required for ground gases.	
Residual contamination from sewage in the settlement beds, potentially containing elevated metals, detergents, inorganic and organic contaminants and possibly pathogenic contaminants such as faecal coliforms (S08).	Ingestion, inhalation or direct contact. (P01).	Site users. (R01).	Low Likelihood	Medium	Low	The area where of the disused sewage treatment plant STP is to be retained Public Open Space. Faecal Coliforms were detected in elevated concentrations within soils adjacent to the treatment plant.	Contact between faecal coliforms and site end users is likely to be low. Removal of the STP will likely removal any food source for the coliforms and the coliform count will likely reduce with time.
	Migration and leaching through unsaturated and saturated zones. (P04).	Groundwater (R03).	Low Likelihood	Medium			
Asbestos within existing and former buildings (S09).	Fugitive dust (P01)	Site users. (R01).	Likely	Severe	High	Asbestos is present within existing buildings and in the Made Ground. 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 (R01).	Unlikely	Severe	Low		
Existing stockpiles potentially including elevated concentrations of metals, metalloids,	Ingestion, inhalation or direct contact. (P01).	Site users. (R01).	Low Likelihood	Medium	Low	No exceedances of contaminants that pose a risk to human health were detected within samples of the stockpiles.	

Sources	Possible Pathways	Receptors	Probability	Consequence	Risk Level	Comments	
asbestos fibres, Asbestos Containing Materials, PAH and petroleum hydrocarbons (S10).	Migration and leaching through unsaturated and saturated zones. (P04). Surface water via baseflow from groundwater. (P05).	Groundwater and Surface water bodies (R03 & R04).	Low likelihood	Medium		A minor exceedance of zinc (459 mg/kg) was encountered in stockpile 2, However, it is not considered to pose a significant risk to plant life.	
Made Ground, associated with historical buried construction waste possibly including elevated concentrations of metals, metalloids, asbestos fibres, Asbestos Containing Materials, PAH and petroleum hydrocarbons (S12).	Ingestion, inhalation or direct contact. (P01).	Site users, (R01)	Likely	Medium	Moderate	There is localised Made Ground resulting from historical waste burial and there are metals at levels in excess of the GAC. Asbestos fibres were also detected within the Made Ground.	Contact with these materials is likely in gardens and areas of Public Open Space. Mitigation measures will be required to break the SPR linkage.
	Uptake by flora and fauna. (P06).	Ecology flora and fauna (R05).	Likely	Medium	Moderate		
	Migration and leaching through unsaturated and saturated zones. (P04).	Groundwater (R03).	Low likelihood	Medium	Low	Slight elevations of heavy metals detected; however, the wider waterbody is listed as having high levels of heavy metals. All PAH and TPH testing were below the laboratory limit of detection. If Made Ground is a source then it is likely to be removed during the enabling works, breaking the S-P-R linkage.	
	Surface water via baseflow from groundwater. (P05).	Surface water (R04).	Low likelihood	Medium	Low		
Off-Site Sources							

Sources	Possible Pathways	Receptors	Probability	Consequence	Risk Level	Comments
Ground gases (carbon dioxide and methane) generated from organic materials within the landfill to the east 210m from. (S11).	Migration build-up and asphyxiation. (P02).	Site users. (R01).	Unlikely	Severe	Low	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.
		Buildings. (R02).				
	Migration build-up and explosion. (P02).	Site users. (R01).				
		Buildings. (R02).				