PHASE II GEO-ENVIRONMENTAL ASSESSMENT REPORT

Proposed Corneli Primary School, North Cornelly, Bridgend

October 2020

hsp consulting

CIVIL | STRUCTURAL | GEOTECHNICAL & ENVIRONMENTAL | TRAFFIC AND TRANSPORT

Lawrence House | 6 Meadowbank Way | Nottingham | NG16 3SB

01773 535555 | design@hspconsulting.com | www.hspconsulting.com

Proposed Corneli Primary School, Greenfield Terrace, North Cornelly

Phase II Geo-Environmental Assessment Report

This report was produced by HSP Consulting Engineers Ltd for Gleeds Management Services Ltd on behalf of the Department for Education as the Phase II Geo-environmental Assessment Report for the proposed Corneli Primary School to identify possible areas of contamination and provide an assessment of potential ground related development constraints to inform feasibility.

This report may not be used by any person other than Gleeds Management Services Ltd on behalf of the Department for Education and must not be relied upon by any other party without the explicit written permission of HSP Consulting Engineers Ltd. In any event, HSP Consulting Engineers Ltd accepts no liability for any costs, liabilities or losses arising as a result of the use or reliance upon the contents of this report by any person other than Gleeds Management Services Ltd and the Department for Education.

All parties to this report do not intend any of the terms of the Contracts (Rights of Third Party Act 1999) to apply to this report. Please note that this report does not purport to provide definitive legal advice.

Issue & Revision History

Revision	Status	Originated	Checked	Approved	Date
-	FINAL	H. Brown B.Sc. (Hons), FGS	J. P. Bridgman BSc (Hons), CGeol, FGS	H.Pratt B.Eng (Hons), C.Eng, F.Cons.E, M.I.C.E, MI Mgt.	23.10.2020
Project Number: C3342				**Document Reference:** C3342/PII	

This document is available in hard copy, please contact the author to obtain a copy.

HSP Consulting Engineers Ltd, Lawrence House, 6 Meadowbank Way, Nottingham, NG16 3SB
T 01773 535 555 **W** www.hspconsulting.com

Contents

Appendices

Executive Summary

HSP Consulting has been commissioned by Gleeds Management Services Ltd to undertake an intrusive ground investigation at the site to confirm the existing ground conditions within a specific boundary and to provide information on likely constraints to the development, parameters for preliminary design and recommendations for any mitigation measures should they be required to inform a feasibility study.

The site is located centrally within North Cornelly Village, approximately 9km north east of Bridgend. The approximate National Grid Reference for the centre of the site is (NGR) 281929, 181653

The exploratory methods of investigation were 6No. windowless sample boreholes, 2No. Cable percussive boreholes and a single soakaway test. The ground conditions encountered were generally Hardstanding or Made Ground Topsoil to a maximum depth of 0.70m begl, overlying superficial Head and Till deposits to a maximum depth of 10.30m begl.

Traditional strip footings may be appropriate within the preferred location 3 and should be at a minimum depth of 0.75m. However, soft spots were encountered within the proposed development area and coarse strata was encountered. Therefore, it is likely that deepening of foundations will be required to ensure they bear upon competent strata. Where straddling of both fine and coarse soils is unavoidable nominal mesh reinforcement may be required to limit differential settlement.

It is considered appropriate to adopt a basic Design Sulphate Class of DS-1 together with and Aggressive Chemical Environment for Concrete (ACEC) of AC-1 within the fine and coarse materials across the site. However, the very soft grey organic encountered within WS03 may be aggressive to concrete therefore it is considered appropriate to adopt a basic Design Sulphate Class of DS-4 together with an Aggressive Chemical Environment for Concrete (ACEC) of AC-4 within this material.

Comparison of infiltration data with table 7.1 Permeability and Drainage Characteristics of Soils Terzaghi and Peck indicates the soils generally to be of good drainage. Therefore, infiltration drainage may be feasible on site.

The screening process for on-site human health receptors show that the GACs, representative of minimal risk for a residential without plant uptake setting were not exceeded.

Ground gas concentrations have been monitored on four occasions in order to obtain an indication of the ground gas regime at the site. Comparison of the steady state gas screening value with Table 8.5 of the CIRIA document indicates the site falls in a Characteristic Situation 1 and therefore gas protection measures will not be required for the proposed development.

The executive summary contains an overview of key findings and conclusions. However, no reliance should be placed on the executive summary until the whole of the report has been read. Other sections of the report may contain information which puts into context the findings noted within the executive summary.

1. Introduction

1.1 Background

This report has been prepared to support a feasibility study and no detailed development plans have been provided. However, it is understood that the intention is to provide a new school with car parking and associated hard and soft landscaping.

1.2 Client Brief & Scope

HSP Consulting has been commissioned by Gleeds Management Services Ltd on behalf of the DfE to undertake an intrusive ground investigation at the site to investigate the existing ground conditions and provide information on likely constraints to the development, preliminary parameters for design and recommendations for any mitigation measures.

The report presents the following information:

- a summary of the previous Geo-environmental Reports (Section 1.5 below).
- details of the ground investigation undertaken and the ground conditions encountered.
- details and results of the geotechnical testing and contamination analysis.
- recommendations for mitigating constraints to the proposed redevelopment where appropriate and providing parameters for foundation design.

Where applicable, the fieldwork was undertaken in accordance with BS5930:2015 Code of Practice for Site Investigations and BS10175:2011+A1:2013 Investigation of Potentially Contaminated Sites.

1.3 Report Objectives

The objectives of this report are to:

- establish the geological and hydrogeological conditions using existing available/published information.
- summarise available information and identify site specific geotechnical and environmental hazards which may place a constraint upon the proposed site use.
- produce an updated Conceptual Site Model identifying potential pollution linkages between sources of contamination, pathways and receptors.

1.4 Limitations

The recommendations made in this report are based on the findings of the intrusive ground investigation undertaken by HSP Consulting Ltd on the 6th and 24th to 25th August 2020.

1.5 Previous Reports

HSP Consulting Engineers Ltd has previously produced a Phase I Desk Study report for the site, details of which can be found below:

- HSP Consulting Engineers Limited, Corneli Primary School, Bridgend - Phase I Geo-Environmental Desk Study Report, September 2020, Ref: C3342/PI.

2. Review of Existing Information & Geoenvironmental Setting

2.1 The Site

2.1.1 Location

The site is located centrally within North Cornelly Village, approximately 9km north east of Bridgend. The approximate National Grid Reference for the centre of the site is (NGR) 281929, 181653. A Site Location Plan is included in Appendix I.

2.1.2 Description

The site is irregular in shape and approximately 3.08ha in area. The site is occupied by a Children's Centre located centrally, and two primary schools, Corneli Primary in the west and Ysgol Y Ferch O'r Sger in the north of the site. The buildings vary in age, construction and are a mix of single and two storeys.

Hard surfacing including car parking, footpaths and play areas are in close proximity to each of the buildings. Grassed playing fields set out for rugby are located in the south east of the site.

The site is bound by a mix of low level fencing, including metal railings and post and wire with vehicle and pedestrian access gates on the southern and north western boundaries. A belt of mature trees bounds the south eastern boundary.

The site is reasonably level with gentle falls in elevation from north east to south west across the site. There are small slopes (of approximately 1m in height) and some terracing in the south east of the site to provide a level surface for the rugby pitch.

2.1.3 Surrounding Land Use

The main features of interest identified are:

North:	Greenfield Terrace (highway) and Heol-Y-Parc (highway) with residential properties and gardens beyond.
East:	Gardens and residential properties with Heol-Y-Parc (highway) beyond.
South:	Gardens, residential properties and a small supermarket with Hall Drive (highway) beyond.
West:	Gardens and residential properties with Heol Fach (highway) beyond.

2.1.4 Proposed End Use

The proposed development will include a new school building, the existing car parking and associated soft and hard landscaping will be retained. The location of the school is currently undecided. There are three option locations and it is understood that No. 3 is preferred. The Locations Review plan is provided within Appendix I..

2.2 Geology

2.2.1 Made Ground

The BGS mapping does not indicate any made ground on the site. However, given the historical development on the site some made ground should be expected.

2.2.2 Superficial Deposits

The BGS mapping indicates the majority of the site to be underlain by superficial Till deposits.

A band of Head deposits is expected to be encountered in the centre east of the site orientated in a north to south direction. The BGS describes these deposits as 'poorly sorted and poorly stratified, angular rock debris and/or clayey hillwash and soil creep, mantling a hillslope and deposited by solifluction and gelifluction processes. The flow is initiated by meltwater from thawing ice lenses. Polymict deposit: comprises gravel, sand and clay depending on upslope source and distance from source. Locally with lenses of silt, clay or peat and organic material.

2.2.3 Bedrock Geology

BGS bedrock mapping indicates the majority of the site is underlain by the Mercia Mudstone Group (Marginal Facies) – Conglomerate of the Triassic Period, with Mercia Mudstone Group - Mudstone of the Triassic Period in the east of the site. Respectively described by the BGS as 'Variable, typically consisting of conglomerate and/or breccia with clasts derived locally from rocks lying immediately below the unconformable base of these deposits. The matrix generally consists of finer-grained rock fragments or, less commonly, siltstone, sandstone or micritic limestone.' and 'Dominantly red, less commonly green-grey, mudstones and subordinate siltstones with thick halite-bearing units in some basinal areas. Thin beds of gypsum/anhydrite widespread; sandstones are also present.

2.2 Pertinent Site Sensitivity Information

Based on the information collated for the desk study, the geo-environmental setting of the site is summarised as follows:

- The site is recorded as part of five fields on the 1st Edition mapping (1881). Marias Infants and Corneli Junior School were constructed upon the site by 1969. An additional building (A Children's Centre) is shown in the centre of the site from 2010.
- Historically, the surrounding land use has been predominantly agricultural with limited development until the mid 1960's where the village of North Cornelly expands and the land uses becomes mainly residential.
- The BGS mapping does not indicate any made ground on the site. However, limited made ground may be present associated with the historical development of the site. Any Made Ground encountered would be of an unknown composition.
- The majority of the site is underlain by superficial Till deposits. A band of Head deposits is expected to be encountered in the centre east of the site orientated in a north to south direction

- Bedrock geology belonging to the Mercia Mudstone Group (Marginal Facies) – Conglomerate is expected to be encountered across the majority of the site with Mercia Mudstone Group - Mudstone expected in the east of the site.
- The superficial deposits are both designated as Secondary Undifferentiated Aquifers. The bedrock Mercia Mudstone Group (Marginal Facies) – Conglomerate deposits is designated Principle Aquifer and the Mercia Mudstone Group – Mudstone is a Secondary B Aquifer.

Based on the above, the environmental sensitivity of the site can be considered to be Low to Moderate at this stage.

3. Fieldwork & Factual Information

Site work was carried out during the 20th to 21st July and 6 to 11th August 2020 with soakaway testing undertaken between the 24th to 25th August 2020. Where applicable, the fieldwork was undertaken in accordance with BS5930:2015 Code of Practice for Site Investigations (Ref. 6) and BS10175:2011+A1:2013 Investigation of Potentially Contaminated Sites (Ref. 8).

The exploratory holes were positioned to provide spatial coverage across the site to provide information for foundation design and obtain representative soil samples for geotechnical and geo-environmental analysis.

3.1 Exploratory Methods

The exploratory methods are detailed in the table below.

Table 1 - Exploratory Methods

Type	Quantity	Maximum Depth (m)	Details
Windowless Sampling Borehole	6	3.00	WS01 to WS07
Cable Percussive Boreholes	2	10.30	BH01 – BH02
In-Situ Infiltration Tests (Soakaways)	1	1.30	SK01
Mexecone Probe Tests	5	0.60	MEXE01 to MEXE05

The exploratory holes were logged and sampled by an Engineer from HSP Consulting Ltd and the logs are presented in Appendix II. The exploratory hole locations are shown on the Ground Investigation Layout Plan presented in Appendix III.

Fragmentary bulk and disturbed samples were recovered from materials revealed within all the exploratory holes. Geo-environmental samples, placed in plastic tubs and glass jars supplied by the laboratory, were also obtained specifically for chemical analysis. The samples were taken to UKAS accredited laboratories for further examination and testing.

3.2 In-situ Testing

3.2.1 Standard Penetration Tests

Standard Penetration Tests (SPTs) were carried out at 1.00m intervals in the boreholes to 5m and every 1.5m thereafter. The SPTs were undertaken in accordance with BS 1377:1990 and the results are included on the appended borehole logs (Appendix II).

3.2.2 Mexecone Probe Tests

Mexecone Probe Tests were positioned across the area of the proposed option location 3 to obtain an indication of the likely California Bearing Ratio within these areas. The results are included within Appendix VIII.

3.3 Laboratory Testing

The laboratory testing schedules were prepared by HSP Consulting Ltd.

3.3.1 Geotechnical Testing

Geotechnical testing has been undertaken by a UKAS accredited laboratory as part of the works at the site:

- Plasticity Index
- Particle Size Distribution
- Natural Moisture Contents

The laboratory testing was carried out by Professional Soils Laboratory (UKAS accredited, laboratory No.4043) in accordance with BS1377:1990 using calibrated equipment specifically for the British Standard.

3.3.2 Chemical Analysis

The geo-environmental samples retained specifically for chemical analysis were stored in cooled containers until delivery to the laboratory by courier.

Chemical analysis was scheduled on twelve samples for the presence of a selected suite of potential contaminants as outlined in the tables below:

Table 2a – Chemical Analysis

Exploratory Hole Location & Depth	Sample Description
WS01 0.40m	MADE GROUND[1,2,4]
WS01 2.50m	GRAVEL[3]
WS03 0.30m	SAND [1,2,4]
WS03 0.80m	CLAY [1]
WS03 2.40m	CLAY [4]
WS04 0.10m	MADE GROUND [1,2,4]
WS05 0.10m	MADE GROUND [1,4]
WS06 0.20m	MADE GROUND [1,4]
WS06 0.60m	GRAVEL [1,2,4]
BH01 1.50m	CLAY [3]
BH02 7.00m	GRAVEL [3]
BH02 9.80m – 10.00m	GRAVEL [3]

[1] HSP Standard Suite, [2] Organic Matter, [3] BRE Sulphate Suite, [4]Asbestos Screen and ID

Table 2b – Chemical Analysis

Metals	Cadmium	Chromium (III & VI)	Copper
	Lead	Mercury	Nickel
	Zinc		
Semi Metals and Non-metals	Arsenic	Boron	Selenium
Others	pH		
Inorganic Chemicals	Cyanide	Sulphate	Sulphide
Organic Chemicals	PAH (US EPA 16)	TPH (CWG)	phenol

The contamination analysis was carried out by Chemtest Ltd (UKAS accredited, laboratory No. 2183) during the period 13th to 19th August 2020. The results are presented in Appendix IV.

3.4 Ground Conditions

3.4.1 Published Geology

The published geology indicates the site is underlain by superficial deposits of Head and Devensian Till, with bedrock geology of Mercian Mudstone Formation, as described in Sections 2.2.2 and 2.2.3 respectively.

3.4.2 Ground Conditions on site or General Geology & Revealed Strata

The exploratory hole data confirms the published information. The strata generally comprises:

Table 3 – Encountered Ground Conditions

Strata		Depth Range (mbegl)	Max. Thickness (m)	Description
Anthropogenic	MADE GROUND	G.L - 0.10	0.10	MADE GROUND comprising grey weathered concrete asphalt.
		0.05 – 0.40	0.30	MADE GROUND comprising dark grey sandy gravel. (Sub-base material).
		G.L – 0.30	0.30	MADE GROUND comprising dark brown sandy gravelly clayey topsoil.
		0.25 – 0.80	0.45	MADE GROUND comprising brown sandy gravelly clay.
Superficial	TILL & HEAD DEPOSITS	0.70 – 3.00	2.30	Medium dense to very dense brown occasionally clayey sandy GRAVEL.
		0.60 – 2.65	2.30	Firm to stiff brown and occasionally orange mottled sandy gravelly CLAY.
		2.30 – 2.50	0.20	Very soft organic CLAY.
		7.00 – 10.30	2.00	Medium dense reddish brown slightly gravelly clayey SAND.
			1.20	Medium dense to very dense brown clayey sandy GRAVEL.
			2.80	Firm to very stiff dark brown sandy gravelly CLAY.

3.5 Groundwater Levels

Groundwater was encountered within WS03 at 2.00m depth during the intrusive works.

Groundwater levels have been monitored on four occasions during the ground gas monitoring visits. Groundwater levels were encountered at 1.46m and 1.94m begl within WS03 during all visits.

3.6 Ground Gas Monitoring

Dual use gas and groundwater monitoring installations were constructed within three of the boreholes at the site (WS03, WS04 and WS05). Each well has been constructed using 50mm diameter HDPE pipe with the top one metre being plain and the remainder slotted. All of the borehole installations have a 6mm pea gravel surround to the slotted pipe with a bentonite

seal above and a gas tap. The covers are cemented flush with ground level and are round lockable stopcock covers.

HSP Consulting uses a GFM 430 Gas Analyser. Prior to its use a calibration check can be performed against gas readings in air. It is recommended that this check is undertaken once on each day the analyser is used. Annual calibration is undertaken on the unit and a copy of this certificate has been included within Appendix VII with the results of the ground gas and water level monitoring.

The results of the ground gas monitoring are discussed in Section 5.3 below.

3.7 Visual and Olfactory Evidence of Contamination

No visual evidence of contamination was encountered during the investigation. However, a slight hydrocarbon odour was encountered within WS01 at 0.40m depth.

4. Geotechnical Assessment

4.1 Detailed Ground Model

For the purpose of this foundation assessment the information gained from the window sample boreholes and Cable Percussive Boreholes has been included. The exploratory logs are presented in Appendix II.

4.1.1 Made Ground

Made ground materials were encountered within all locations across the site and generally comprised Topsoil like material described as brown sandy gravelly clayey topsoil to a maximum depth of 0.30m depth. Three locations (WS01, WS02 and WS06) were advanced through the asphalt concrete hardstanding in the centre of site. Underlying the Hardstanding, Sub-base like materials were encountered generally comprised Dark grey sandy gravel to a maximum depth of 0.40m begl. The Made Ground underlying the Topsoil and sub-base generally comprised Brown and black mottled sandy slightly gravelly clay, encountered to a maximum depth of 0.80m begl. The Made Ground was penetrated in all locations.

4.1.2 Superficial Deposits

Superficial deposits of Till and Head were encountered within all locations across the site. The deposits were variable in composition with both fine and coarse soils recorded. The fine deposits generally comprised firm to stiff (very stiff at depth in the cable percussive boreholes) brown and occasionally orange mottled sandy gravelly CLAY with coarse deposits generally comprising medium dense to very dense brown occasionally clayey sandy GRAVEL and medium dense reddish brown slightly gravelly clayey SAND. The base of the deposits were not penetrated

4.1.3 In-situ Testing and Assessment

A series of Standard Penetration Tests (SPT's) have been undertaken within all the boreholes. The following table summarises the N values at depth across the site.

Table 4 – SPT N Values

Depth (m)	Range of 'N' Values	Mean 'N' Value	Description
1.00	10 – 50	23	CLAY / GRAVEL
2.00	9 - 43	30	CLAY / GRAVEL
3.00	22 - 31	27	CLAY / GRAVEL
4.00	27 - 35	31	CLAY / GRAVEL
5.00 – 7.00	9 - 48	35	CLAY / GRAVEL / SAND
8.00 – 10.00	16 - 50	31	CLAY / GRAVEL

Two Particle Size Distribution and two Plasticity Index tests have been undertaken to confirm the visual description and engineering behaviour of the soils. The results are presented within Appendix V.

The results indicate compliance with the definition of soils of low plasticity (CL) after the classification system of BS5930: 2015. Fine soils across the site are considered to be of a Low

Volume Change potential in accordance with the National House Building Council (NHBC) Standards, Chapter 4.2: 2007.

Table 5 - Plasticity and Volume Change Potential

Sample Ref:	Laboratory Material Descriptions	LL (%)	PL (%)	PI (%)	% passing 425µm	Modified PI (%)*	Soil Class	MC (%)
WS03 @ 1.60m	Brown very gravelly very sandy very silty CLAY.	27	15	12	62	8.2	CL	13
WS05 @ 1.30m	Brown very sandy silty GRAVEL	Non - Plastic						7.9

* Rounded up

4.2 Earthworks

The site is relatively flat, with the exception of slopes which provide access to the playing field in the south east of the site, which is lower in elevation. Limited earthworks may be required within this area to allow access.

Should any earthworks be required, further investigation and materials testing of site soils would be required to classify and make an assessment of the suitability for re-use as engineered fill.

4.3 Excavations

Excavations to proposed formation level for new foundations and infrastructure may be readily achievable using standard plant due. Random and potentially severe falls are anticipated from the faces of near vertically sided unsupported excavations carried out at the site. Therefore, where personnel are required to enter near vertically sided excavations, it is considered that support should be provided to the full depth of all excavations.

It is recommended that all support systems are continually assessed by fully trained or experienced personnel.

Groundwater entries were encountered within WS03 at 2.00m depth during the intrusive works, with levels of between 1.46m and 1.94m within WS03 during subsequent monitoring. Should shallow groundwater entries be encountered at the site during groundwork operations traditional sump and pump dewatering should be sufficient if required.

4.4 Foundations

Test to fit options plan (Appendix I) indicate three potential locations for a school building across the site.

Preferred Option – Location 3

For the purpose of this foundation assessment the information gained from WS03, WS04, SK01, BH01 and BH02 have been used for this foundation assessment.

The table below shows the indicative allowable bearing pressure (ABP) that could be achieved using strip or pad foundations across the building footprint. The ground conditions are consistent across the building footprint and therefore an ABP has been calculated using and average SPT of 15 at 1.00m begl.

Table 5 – Allowable Bearing Capacity

Depth (m)	SPT $(N_1)_{60}$ Value	Eurocode 7 Soil Strength Description	Consistency (BS5930) Description	Approximate ABP (k/Nm^2) – 0.60m wide strip footing	Approximate ABP (kN/m^2) – 2x2m pad footing
1.00	16	Medium Strength	Firm / Medium Dense	125	135
2.00	35	High Strength	Stiff	200*	200*

*A greater ABP could be achieved subject to the likely loadings at the proposed school

From the above table HSP would recommend that an ABP of 125kN/m^2 could be utilised for design for traditional foundations at a minimum of 0.75m depth.

However, within WS03 a very soft grey CLAY was encountered from 2.00m depth, therefore it is likely that localised deepening of foundations will be required within the area of WS03 to bear upon the competent firm to stiff fine deposits below, encountered at 2.50m begl.

Coarse soils were encountered within SK01 from 0.30m begl, where straddling of both fine and coarse soils at founding depth is unavoidable nominal mesh reinforcement may be required to limit differential settlement. An alternative would be to step foundations, so they bear within one soil type where possible.

For the coarse soils, the allowable bearing capacity value incorporates a factor of safety of 3 and total settlements are not expected to exceed approximately 25mm.

The shallow fine soils on site are of low volume change potential. Foundations should be deepened and designed in accordance with NHBC Chapter 4.2 Building near trees (Ref. 10) where appropriate.

From the above table HSP would recommend that an ABP of 125kN/m^2 could be utilised for design for traditional foundations within coarse deposits encountered at a minimum of 0.60m depth.

Loose coarse deposits were encountered within localised locations across the remainder of the site. If the preferred option plans change, a Geotechnical Engineer from HSP should be consulted and proposals reviewed.

4.5 Ground Floor Slab

A ground bearing slab may be appropriate for the school building due to the likely light loadings and location of the proposed building on site.

In addition to the above, the use of ground bearing floor slabs would also be dependent on any associated ground gas protection measures, see section 5.6 below. Reference should also be made to NHBC Standards Chapter 4.2 to confirm the floor slab type.

4.6 Concrete Classification

The results of sulphate and pH testing carried out on selected soil samples taken during this investigation have been compared with the recommendations outlined in BRE Special Digest 1, Part 1: 2005. (Ref 12)

The guidelines given in BRE Special Digest 1 are based upon a site classification relating to its previous usage. It is considered appropriate to define this site as a 'Brownfield Site' location for the purposes of concrete classification.

On the basis of the above, it is considered appropriate to adopt a basic Design Sulphate Class of DS-1 together with an Aggressive Chemical Environment for Concrete (ACEC) of AC-1 generally for coarse and fine deposits across the site.

However, the very soft grey organic encountered within WS03 at 2.00m – 2.50m depth may be aggressive to concrete with the chemical analysis indicating a basic Design Sulphate Class of DS-4 together with an Aggressive Chemical Environment for Concrete (ACEC) of AC-4 within this material. As this is based on one sample it would be prudent, once layouts are confirmed, to undertake further sampling to confirm the design sulphate class for this soil type.

4.7 Pavement Design

MEXE probe tests were undertaken at five locations across the site. From this an indicative California Bearing Ratio (CBR) can be provided. The results are included in Appendix VI

Made Ground was encountered across the proposed building and generally comprising of slightly sandy gravelly clay, with gravels of brick fragments and concrete. The MEXE Probe tests recorded results ranging between 2% and 14% at depths between 150mm and 600mm. The maximum results could be overstated due to the presence of brick and concrete within the made ground encountered.

Following guidance provided within 'Design Manual for Roads and Bridges Volume 7 Section 2 Chapter 2' the CBR value chosen for design should be the minimum measured value, not the average. Due to the variability in the test results on relatively similar materials it is recommended that further testing is undertaken once the development is at formation level to confirm the design CBR value for the site. Until further testing is undertaken a CBR value of 2% should be adopted for the site area.

4.8 Soakaway Testing

Soakaway testing was undertaken at the site between the 24th and 25th August 2020 in a single location at a depth between 0.30m and 1.30m begl. The test pit was positioned within

the preferred area of Location 3 within natural coarse soils, outside of the proposed building footprint.

SK01 returned an infiltration rate of 1.44×10^{-4} m/s.

It must be noted that the above infiltration rate has been extrapolated from the available data, as during testing water that enter the pit infiltrated into the surrounding coarse materials faster than it could be filled. Therefore, the basis of the calculation has been calculated off a conservative movement of 0.06m every 1 minute.

Comparison of this data with table 7.1 Permeability and Drainage Characteristics of Soils Terzaghi and Peck indicates the ground to be of good drainage and it is therefore considered that the natural coarse soils in the area of SK01 are suitable for soakaway drainage.

5. Environmental Assessment

5.1 Introduction

The approach to the human health risk assessment reported here follows the principals given in CLR 11, i.e. application of the following assessment hierarchy:

- Tier 1 risk screening by establishment of potential pollutant linkages, i.e. the preliminary conceptual site model (PCSM), or
- Tier 2 generic quantitative assessment using generic assessment criteria (GACs) that represent 'acceptably low' risk, or
- Tier 3 quantitative risk assessment using site specific assessment criteria (SSACs) that represent 'unacceptable risk', or where generic assessment criteria are not available or they are not applicable to the CSM.

The results of laboratory analysis have been screened against GACs including the Defra Category 4 Screening Levels (C4SL) and LQM and CIEH S4ULs for Human Health Risk Assessment (Copyright Land Quality Management Limited reproduced with permission; Publication Number S4UL3180. All rights reserved). (Refs 10 and 11 respectively).

In the absence of a standard scenario for a school environment the standard exposure scenario of residential without home grown produce has been used to identify potential exposure pathways for human health receptors. Controlled water, flora and fauna and property receptors have also been included within the CSM. Our Tier 2 HHRAs for school sites are screened against the GACs representative of minimal risk for residential without home grown produce end use, we believe this to be appropriate based on the precautionary principle the CLR guidance advocates.

It should be noted that organic contamination (PAH, TPH and BTEX) have been screened against the GAC for 1% Soil Organic Matter (SOM).

The assessment of PAHs is undertaken using the surrogate marker approach; recommended by Health Protection Agency (2010) guidance (Ref 17), providing the PAH profile is sufficiently similar to the coal tars tested by Culp et al (1998). Where PAH profile is not sufficiently coal tar like the TEF method is adopted using the LQM and CIEH S4ULs. Prior to assessment a PAH profile is generated for all samples analysed for PAH using the LQM PAH Profiling Tool v1.3, the graphical output is presented in Appendix IV.

5.2 Assessment of Soil Analysis Results

Seven samples, as detailed in section 3.3.2, were scheduled for analysis from the development area. These provide a basis for characterising the soils to outline the potential impacts on human health and any environmental receptors from any contamination found.

The screening process for on-site human health receptors show that the GACs, representative of minimal risk for a residential without plant uptake setting were not exceeded.

5.3 Human Health Mitigation

The concentrations of potential contaminants recorded at the site indicates an acceptably low risk and therefore mitigation measures are not required as part of the development.

Should any obvious evidence of unexpected contamination be encountered during the redevelopment works it should be reported to HSP so that an inspection can be made and appropriate sampling and assessment work be carried out.

Appropriate health and safety precautions should be adopted during any excavation works to avoid exposure to contaminated soils and dust. Reference to the HSE document HSG 66 'Protection of workers and the General Public during Redevelopment of Contaminated Land'.

The approval of the local Environmental Health Officer should be sought with respect to the soil contamination assessment and mitigation proposals.

5.4 Ground Gas Risk Assessment

For the purpose of this assessment, the school is classified as Building Type B; as outlined in Table 3 of BS8485:2015 Code of Practice of the design of protective measures for methane and carbon dioxide ground gas for new buildings (Ref 14). This is a conservative assessment, subject to change once the building occupancy and maintenance controls are better defined.

Ground gas concentrations have been monitored on four occasions in order to obtain an indication of the ground gas regime at the site. The results indicate that methane has not been recorded above the monitor's limit of detection (<0.1%vol). Carbon dioxide has been recorded at a maximum concentration of 4.2% vol in air in WS04. Steady state gas have not been recorded on site. From the results of above, the maximum steady state gas screening value (GSV) for the site is 0.042l/hr.

The results have been assessed in line with the guidance provided in BS8485:2015+A1:2019 Code of Practice of the design of protective measures for methane and carbon dioxide ground gas for new buildings (Ref 14) and CIRIA Document C665 'Assessing Risks Posed by Hazardous Ground Gases to Buildings' (Ref 15). Comparison of the steady state gas screening value with Table 8.5 of the CIRIA document indicates that the site falls into a Characteristic Situation 1, and therefore ground gas protection measures are not required at this stage as part of a school development.

Depleted oxygen levels were occasionally observed within WS04 during the monitoring. This poses a risk of asphyxiation to construction and maintenance workers in confined spaces such as excavations or manhole chambers. A confined spaces risk assessment should be carried out prior to working in any buried structures or excavations.

The results of the ground gas monitoring can be found within Appendix VII.

5.5 Water Supply

The environmental analysis for the site has been compared to the following document in order to assess the most appropriate pipe material that should be used upon the site for mains water supply:

> 'Guidance for the selection of water supply pipes to be used in Brownfield sites – UK Water Industry Research – Ref: 10/WM/03/21.' (Ref. 20)

The chemical results show no exceedances of the threshold values for PE and PVC pipes. It is therefore considered that specialist materials are unlikely to be required for water supply pipes at the site. Confirmation of supply pipes should always be sought from utility providers.

5.6 Waste Classification

The results of the chemical testing have been assessed using web-based software for classifying hazardous waste, using HazWasteOnline™. The materials tested are likely to be classified as non-hazardous. The results are included in Appendix VI.

5.7 Updated Conceptual Site Model

The PCSM and Summary of plausible pollutant linkages was produced by undertaking a Source-Pathway-Receptor analysis of the site and is present in the Desk Study (Ref. 1). Based on the findings of this and the previous investigation the conceptual site model has been updated and is presented in the table below.

Table 9 – Updated Conceptual Site Model

Source	Pathway	Receptor	Consequence	Probability	Risk	Comments
On site **S1:** Historical and Contemporary land use: Agricultural land, Historical Sandstone Quarry **Off Site (within 250m)** **S2:** Historical and Contemporary land use: Agricultural land, industrial processes relating to furniture production.	**P1:** Human uptake pathways • direct contact, • ingestion of soils and dust, • inhalation of fugitive dust.	**R1:** End Users **R2:** Construction and maintenance workers	Minor	Low	Very Low	Concentrations of contaminants of concern were below the relevant GACs within the near surface deposits sampled across the site and therefore the risk is considered to be VERY LOW
	P2: Horizontal and vertical migration of contaminants through potentially permeable soils and rocks. **P3:** Migration of contaminants along preferential pathways (man- made). **P4:** Surface runoff.	**R3:** Controlled Water: Groundwater & Surface Water	Mild	Low	Very Low	The Superficial deposits underlying the site are both designated as Undifferentiated Aquifers with the bedrock geology classified as a Secondary B Aquifer and Principle Aquifer. No significant contamination was identified during the ground investigation and therefore the risk to controlled water is considered to be VERY LOW.
	P5: Vertical and lateral migration of ground gases and/or vapour	**R1:** End Users **R5:** Adjacent Residential Properties	Mild	Unlikely	Very Low	Ground gas concentrations have been monitored on four occasions, in order to obtain an indication of the ground gas regime at the site. The results indicate the site is characterised as CS1. Gas protection measures are therefore not considered necessary and the risk is considered to be VERY LOW.
	P2: Horizontal and vertical migration of contaminants through potentially permeable soils and rocks. **P3:** Migration of contaminants along preferential pathways (man- made). **P4:** Surface runoff.	**R4:** Property, services and substructures	Mild	Likely	Low to Moderate	The natural soils may contain sulphates that present a risk to buried concrete. Testing indicates Design Sulphate Class of DS-1 together with an Aggressive Chemical Environment for Concrete (ACEC) of AC-1 generally for coarse and fine deposits across the site. However, the very soft grey organic encountered within WS03 at 2.00m – 2.50m depth may be aggressive to concrete with the chemical analysis indicating a basic Design Sulphate Class of DS-4 together with an Aggressive Chemical Environment for Concrete (ACEC) of AC-4 within this material. As this is based on one sample it would be prudent, once layouts are confirmed, to undertake further sampling to confirm the design sulphate class for this soil type The chemical analysis of the soils indicates specialist materials are unlikely to be required for water supply pipes at the site. However, confirmation of supply pipes should be sought from utility providers.

						Given the above, it is considered that the risk to property, services and substructures is LOW to MODERATE.
	P6: Root uptake.	**R6:** Proposed Flora and fauna	Minor	Low	Very Low	Extensive planting is unlikely therefore the risk of uptake to proposed flora and fauna is VERY LOW.

6. References

1. HSP Consulting Engineers Limited, Corneli Primary School, 9 Heol Fach, Bridgend, Cf33 4LB - Phase I Geo-Environmental Desk Study Report, August 2020, Ref: C3342/PI.
2. BRITISH GEOLOGICAL SURVEY. 1990. Bridgend. England and Wales Sheet 261&262. Solid and Drift. 1:50 000 (Keyworth), Nottingham: British geological Survey).
3. British Geological Survey Lexicon Search - http://www.bgs.ac.uk/lexicon/
4. Department of the Environment Industry Profiles.
5. Site Investigation in Construction, Volume 3, Specification for Ground Investigation 2nd Edition.
6. BS 5930:2015 Code of Practice for Ground Investigations.
7. BS 8576:2013 Guidance on investigations for ground gas. Permanent gases and Volatile Organic Compounds (VOCs)
8. BS10175:2011 +A1:2013 Investigation of Potentially Contaminated Sites - Code of Practice.
9. NHBC Standards, Chapter 4.2, Building near trees.
10. Department for Environment, Food and Rural Affairs and Contaminated Land: Applications in Real Environments (CL:AIRE) (December 2013). SP1010: Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination.
11. Nathanail, C.P., McCaffrey, C., Gillett, A.G., Ogden, R.C. and Nathanail, J.F. 2015. The LQM/CIEH S4ULs for Human Health Risk Assessment. Land Quality Press, Nottingham.
12. BRE Special Digest 1:Concrete in Aggressive Ground, 2005, Building Research Establishment.
13. CL:AIRE The definition of Waste: Development Industry Code of Practice, 2008.
14. BS8485:2015 + A1:2019 Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings.
15. CIRIA C665 ‘Assessing Risks Posed by Hazardous Ground Gases to Buildings’
16. NHBC & RSK Group Plc, March 2007. Guidance on evaluation of development proposals on sites where methane and carbon dioxide are present. Ed 4.
17. Department for Environment, Food and Rural Affairs and Contaminated Land: Applications in Real Environments (CL:AIRE) (December 2013). SP1010: Appendix E Provisional C4SLs for Benzo(a)pyrene as a surrogate marker for PAHs.
18. www.environment-agency.gov.uk
19. Environment Agency, Freshwater Environmental Quality Standards (EQS) contained in the Hydrogeological Risk Assessment for Landfills and the Derivation of Groundwater Control and Trigger Levels, 2015.
20. HMSO, Water Supply (Water Quality) Regulations, 2002.
21. Design Manual for Roads and Bridges Volume 7 Section 2 Chapter 2
22. UK Water Industry Research, Guidance for the selection of water supply pipes to be used in Brownfield sites, Ref:10/WM/03/21.
23. BS3882:2015. Specification for Topsoil.
24. Terzaghi, K., Peck, R.B., Mesri, G. 1996. Soil Mechanics in Engineering Practices.

Appendix I

DO NOT SCALE

NOTES:

- Approximate Red Line Boundary

hsp consulting

Lawrence House, Meadowbank Way,
Eastwood, Nottingham, NG16 3SB
Tel: 01773 535 555 Fax: 0870 600 6091
www.hspconsulting.com

CLIENT:

Gleeds Management Services Ltd

PROJECT:

Corneli Primary School

TITLE:

Red Line Plan

SCALE@SIZE :	ISSUE:
NTS	FINAL
DESIGN/DRAWN:	DATE:
HEB	Jan. 2020
PROJECT No:	DRAWING No:
TBC	500

Subterranean service

No structures within this zone - proximity to neighbouring properties

Red line boundary

Pedestrian Access

Vehicular Access

Current Access Points

Main Vehicular Route

Drainage Ditches

Existing Trees

Existing Hedgerow

Noise

Overhead Cables

Foot Bridge

Existing Right of Way

Building for Demolition

1

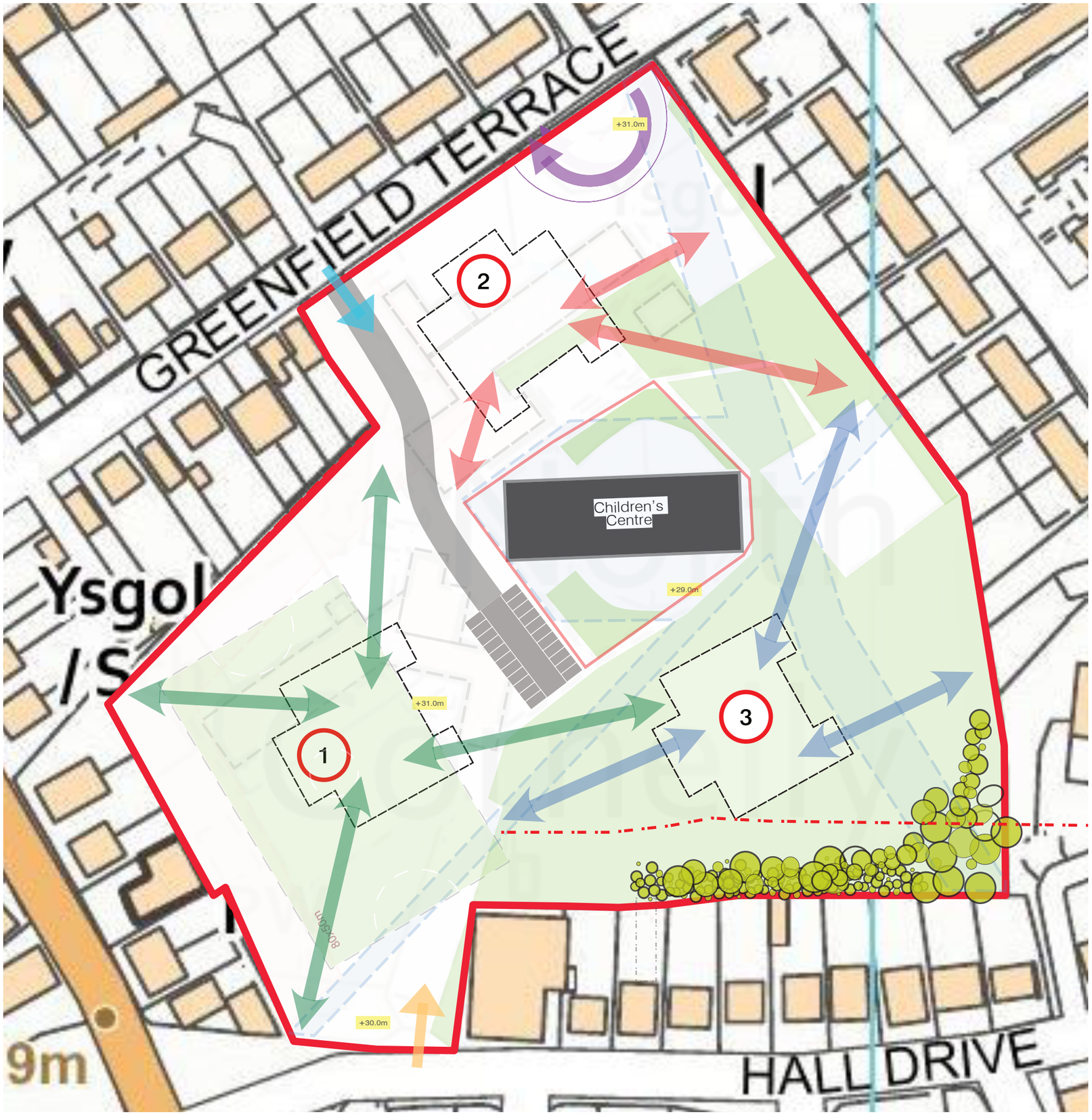
Photo View

Gradient / Embankment

+39.0m

Level

N



Siting Locations - Alternative positions for the new school.

Location 1 - Current Position

- Significant amount of space surrounding the school.
- Significant space between the school and the children's centre.
- Existing bus drop off point retained.
- This location provides greatest distancing from the Children's Centre.
- Some degree of street presence to Hall Drive.
- Does require the existing English medium school to be vacated and demolished.

Location 2 - Adjacent to Greenfield Terrace

- Greatest street presence of all of the locations.
- School footprint curtailed by
  - Site access road.
  - Coach turning circle.
  - Children's centre.
- Single aspect to external play areas to the east.
- Directly accessible external play areas would be limited
- Access to the rest of the site obstructed by the children's centre and the access road.
- Monitoring of external play areas is difficult due to them being dissipated across the site.
- Can be built once the existing Welsh medium school is vacated and demolished.

Location 3 - Playing Field

- Footprint just fits between subterranean service routes.
- Location allows reasonable clearance from the boundary of the adjacent properties.
- New location will require significant service routes (Water, electricity, gas) to be extended.
- School would have no street presence.
- Limited external space to the north for classroom breakout due to the proximity of the Children's Centre.
- Location is identified as most susceptible area on the site to flood.
- School playing fields would need to be relocated - likely that a new 50x80m pitch would be in Location 1, requiring extensive ground works to regrade that part of the site.

Conclusions.

- Location 3 is the only position that is not reliant on vacating and demolishing one of the existing schools.
- Consequently it is the only location that would allow two schools to be built simultaneously without temporary accommodation.
- The best location for functionality is Location 1 as it has the most space immediately surrounding it, allowing external amenities to be very accessible for the pupils.

Scale: 1:1000 @ A3

0 5m 10m 20m 50m

Appendix II

Borehole Log

Borehole No. **WS01**

Sheet 1 of 1

Project Name: Cornelli Primary School	Project No. C3342	Co-ords: -	Hole Type WS
Location: North Cornelly		Level:	Scale 1:50
Client: Gleeds Management Services Ltd		Dates: 07/08/2020 -	Logged By HB

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.05			MADE GROUND - Dark grey concrete asphalt.
					0.25			MADE GROUND - Dark grey sandy gravel. Sand is fine to coarse. Gravel is angular of mixed lithologies and concrete.
		0.40	TJ					
					0.70			MADE GROUND - Brown and black mottled sandy slightly gravelly clay. Sand is fine to medium. Gravel is angular of concrete.
		0.80	TJ					
		1.00		N=10 (3,2/1,3,3,3)				*...With a slight hydrocarbon odour at 0.40m depth.*
								Medium dense brown very sandy GRAVEL (possible cobble). Sand is fine to coarse. Gravel is angular to sub rounded of mixed lithologies including sandstone.
		2.00		N=9 (2,4/3,2,2,2)				
	▼	2.50	T					
		3.00		N=22 (5,7/5,6,5,6)	3.00			End of borehole at 3.00 m

Remarks

Borehole terminated on collapse at 2.80m depth.

Borehole Log

Borehole No. **WS02**

Sheet 1 of 1

Project Name: Cornelli Primary School	Project No. C3342	Co-ords: -	Hole Type WS
Location: North Cornelly		Level:	Scale 1:50
Client: Gleeds Management Services Ltd		Dates: 11/08/2020 -	Logged By HB

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.30	TJ		0.10			MADE GROUND - Dark grey concrete asphalt.
		0.65	B		0.40			MADE GROUND - Dark grey sandy gravel. Sand is fine to coarse. Gravel is angular of mixed lithologies and concrete.
		1.00		N=50 (8,8/12,10,13,15)	0.80 1.00			MADE GROUND - Brown sandy gravelly clay. Sand is fine to coarse. Gravel is angular of mixed lithologies and concrete. Very dense sandy GRAVEL (possible cobble). Sand is fine to coarse. Gravel is angular of mixed lithologies. End of borehole at 1.00 m

Remarks

Groundwater was not encountered during the advancement of the exploratory hole.

Borehole Log

Borehole No. **WS03**

Sheet 1 of 1

Project Name: Cornelli Primary School	Project No. C3342	Co-ords: -	Hole Type WS
Location: North Cornelly		Level:	Scale 1:50
Client: Gleeds Management Services Ltd		Dates: 11/08/2020 -	Logged By HB

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.30	TJ		0.60			MADE GROUND - Grass overlying brown sandy gravelly clayey topsoil. Sand is fine to coarse. Gravel is angular to sub rounded of mixed lithologies, brick and concrete.
		0.80	TJ					Firm to stiff brown sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to sub rounded of mixed lithologies.
		1.60	B		2.00			No recovery.
		2.40	T		2.30			Very soft grey organic CLAY.
					2.50			Stiff brown sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to sub rounded of mixed lithologies.
					2.65			Very dense brown slightly clayey sandy GRAVEL. Sand is fine to coarse. Gravel is fine to coarse, sub rounded to angular of limestone.
					2.70			End of borehole at 2.70 m

Remarks

AGS

Borehole Log

Borehole No. **WS04**

Sheet 1 of 1

Project Name: Cornelli Primary School	Project No. C3342	Co-ords: -	Hole Type WS
Location: North Cornelly		Level:	Scale 1:50
Client: Gleeds Management Services Ltd		Dates: 11/08/2020 -	Logged By HB

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.10	TJ		0.25			MADE GROUND - Brown slightly sandy gravelly clayey topsoil.
					0.60			MADE GROUND - Brown slightly sandy gravelly clay. Sand is fine to coarse. Gravel is angular of mixed lithologies and brick fragments.
		1.50	T					Firm to stiff brown and slightly orange mottled sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular of mixed lithologies.
					2.20			Loose to medium dense brown and grey mottled slightly clayey very sandy GRAVEL. Sand is fine to coarse. Gravel is angular to sub rounded of mixed lithologies.
		2.60	B		2.80			End of borehole at 2.80 m

Remarks

Groundwater was not encountered during the advancement of the exploratory hole.

Borehole Log

Borehole No. **WS05**

Sheet 1 of 1

Project Name: Cornelli Primary School	Project No. C3342	Co-ords: -	Hole Type WS
Location: North Cornelly		Level:	Scale 1:50
Client: Gleeds Management Services Ltd		Dates: 11/08/2020 -	Logged By HB

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.10	TJ		0.30			MADE GROUND - Grass overlying brown sandy gravelly clayey topsoil. Sand is fine to coarse. Gravel is angular to sub rounded of mixed lithologies, brick and concrete.
		1.00		N=27 (3,3/2,5,9,11)	0.70			MADE GROUND - Brown sandy gravelly clay. Sand is fine to coarse. Gravel is sub angular to rounded of mixed lithologies and occasional concrete.
		1.30	B		1.20			Dense brown very clayey sandy GRAVEL. Sand is fine to coarse. Gravel is angular of mixed lithologies including limestone.
		1.40		N=43 (5,10/16,10,8,9)	1.40			Very dense brown slightly clayey sandy GRAVEL. Sand is fine to coarse. Gravel is angular of mixed lithologies including limestone.
								End of borehole at 1.40 m

Remarks

Groundwater was not encountered during the advancement of the exploratory hole.

Borehole Log

Borehole No. **WS06**

Sheet 1 of 1

Project Name: Cornelli Primary School	Project No. C3342	Co-ords: -	Hole Type WS
Location: North Cornelly		Level:	Scale 1:50
Client: Gleeds Management Services Ltd		Dates: 11/08/2020 -	Logged By HB

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.20	TJ		0.10			MADE GROUND - Grey concrete asphalt.
					0.35			MADE GROUND - Dark grey sandy gravel. Sand is fine to coarse. Gravel is angular of mixed lithologies and concrete.
		0.60	TJ					Dense brown sandy GRAVEL. Sand is fine to coarse. Gravel is angular of mixed lithologies including limestone.
					1.10			End of borehole at 1.10 m

Remarks

Borehole terminated at potential underground service at 1.10m depth.

Borehole Log

Borehole No. **BH01**

Sheet 1 of 2

Project Name: Cornelli Primary School	Project No. C3342	Co-ords: -	Hole Type CP
Location: North Cornelly		Level:	Scale 1:50
Client: Gleeds Management Services Ltd		Dates: 20/07/2020 - 21/07/2020	Logged By HB

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.10 - 0.50	B		0.30			MADE GROUND - dark brown sandy slightly gravelly clayey topsoil.
		0.50 - 1.00	B					Firm orangish brown sandy gravelly CLAY. Sand is fine to medium. Gravel is sub angular to sub rounded of mixed lithologies.
		1.00		N=13 (0,0/1,1,2,9)				
		1.00 - 2.00	B					
		1.50	T					*...Becoming gravelly from 1.30m depth.*
		2.00		N=32 (1,1/5,9,8,10)	2.00			
		2.00 - 2.50	B					Dense brown slightly clayey sandy GRAVEL. Sand is fine to coarse. Gravel is sub angular to sub rounded of mixed lithologies including limestone.
		3.00		N=31 (8,9/8,7,8,8)				
		3.00 - 3.50	B					
		4.00		N=35 (15,10/10,9,9,7)				
		4.00 - 4.50	B					
		5.00		N=17 (7,11/6,3,4,4)				
		5.00 - 6.00	B					
		6.00		N=11 (1,1/2,2,3,4)				
		6.00 - 6.50	B					
		7.00		N=9 (2,2/2,1,2,4)	7.00			
		7.00 - 7.50	B					Medium dense reddish brown slightly gravelly clayey SAND. Sand is fine to coarse. Gravel is angular of mixed lithologies.
		7.80 - 8.00	D					
		8.00		N=16 (3,3/3,4,5,4)				
		8.00 - 9.00	B					
		9.00		N=16 (3,4/4,5,4,3)	9.00			
		9.00 - 9.50	B					Medium dense to very dense brown clayey sandy GRAVEL. Sand is fine to coarse. Gravel is sub angular to sub rounded of limestone.
		9.90 - 10.10	B					

Continued on next sheet

Remarks

Groundwater was not encountered during the advancement of the exploratory hole.

Borehole Log

Borehole No. **BH01**

Sheet 2 of 2

Project Name: Cornelli Primary School	Project No. C3342	Co-ords: -	Hole Type CP
Location: North Cornelly		Level:	Scale 1:50
Client: Gleeds Management Services Ltd		Dates: 20/07/2020 - 21/07/2020	Logged By HB

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		10.00		50 (5,4/50 for 180mm)	10.20			End of borehole at 10.20 m

Remarks
Groundwater was not encountered during the advancement of the exploratory hole.

Borehole Log

Borehole No. **BH02**

Sheet 1 of 2

Project Name: Cornelli Primary School	Project No. C3342	Co-ords: -	Hole Type CP
Location: North Cornelly		Level:	Scale 1:50
Client: Gleeds Management Services Ltd		Dates: 21/07/2020 - 22/07/2020	Logged By HB

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.10 - 1.00	B		0.30			Dark brown sandy slightly gravelly clayey TOPSOIL.
		1.00 1.00 - 1.50	B	N=17 (2,2/4,4,4,5)				Firm to stiff brown sandy slightly gravelly CLAY. Sand is fine to coarse. Gravel is angular to sub rounded of mixed lithologies.
		2.00 2.00 - 2.50	B	N=36 (6,7/10,12,8,6)				
		3.00 3.00 - 3.50	B	N=29 (7,9/9,9,5,6)	3.00			Medium dense to dense brown slightly clayey sandy GRAVEL. Sand is fine to coarse. Gravel is sub angular to sub rounded of mixed lithologies including limestone.
		4.00 4.00 - 4.50	B	N=27 (6,6/6,7,6,8)				*...With a clayey band from 4.00m to 4.50m depth.*
		5.00 5.00 - 5.50	B	N=32 (9,7/7,7,9,9)				
		6.00 6.00 - 6.50	B	N=35 (6,7/7,9,9,10)				
		7.00 7.00 - 7.50	B	N=48 (3,7/9,16,14,9)				
					7.50			Very stiff dark brown sandy gravelly CLAY. Sand is fine to coarse. Gravel is angular to sub rounded of limestone and mudstone.
		8.00 8.00 - 9.00	B	N=27 (5,7/7,6,7,7)				
		9.00 9.00 - 9.80	B	N=28 (3,3/6,6,7,9)				
		9.80 - 10.00	B					

Continued on next sheet

Remarks

Groundwater was not encountered during the advancement of the exploratory hole.

Borehole Log

Borehole No. **BH02**

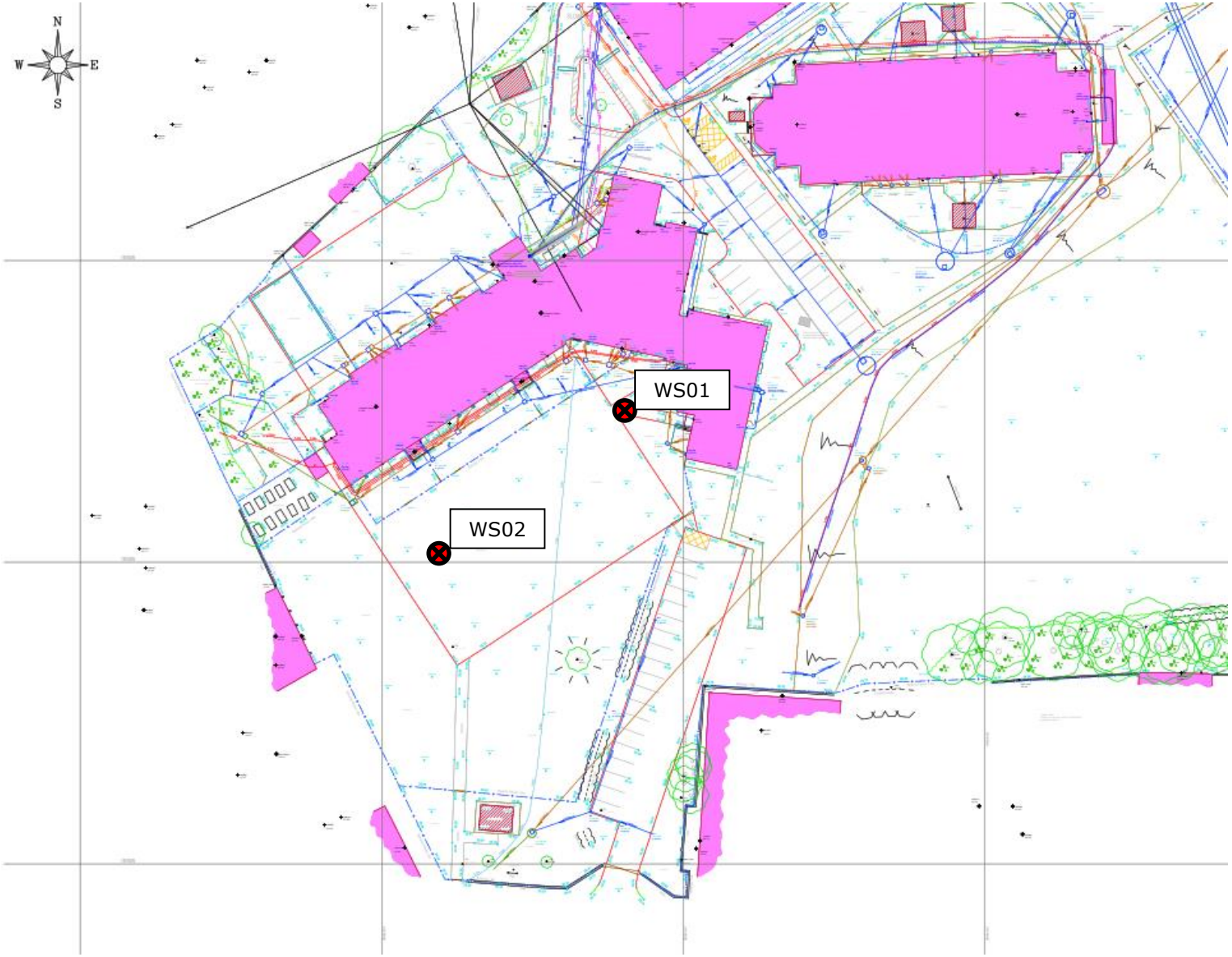
Sheet 2 of 2

Project Name: Cornelli Primary School	Project No. C3342	Co-ords: -	Hole Type CP
Location: North Cornelly		Level:	Scale 1:50
Client: Gleeds Management Services Ltd		Dates: 21/07/2020 - 22/07/2020	Logged By HB

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		10.00		50 (7,7/50 for 150mm)	10.30			End of borehole at 10.30 m

Remarks
Groundwater was not encountered during the advancement of the exploratory hole.

Appendix III



DO NOT SCALE

NOTES:

- Approximate Window Sample Borehole Location

- Approximate Cable Percussive Borehole Location

hsp consulting

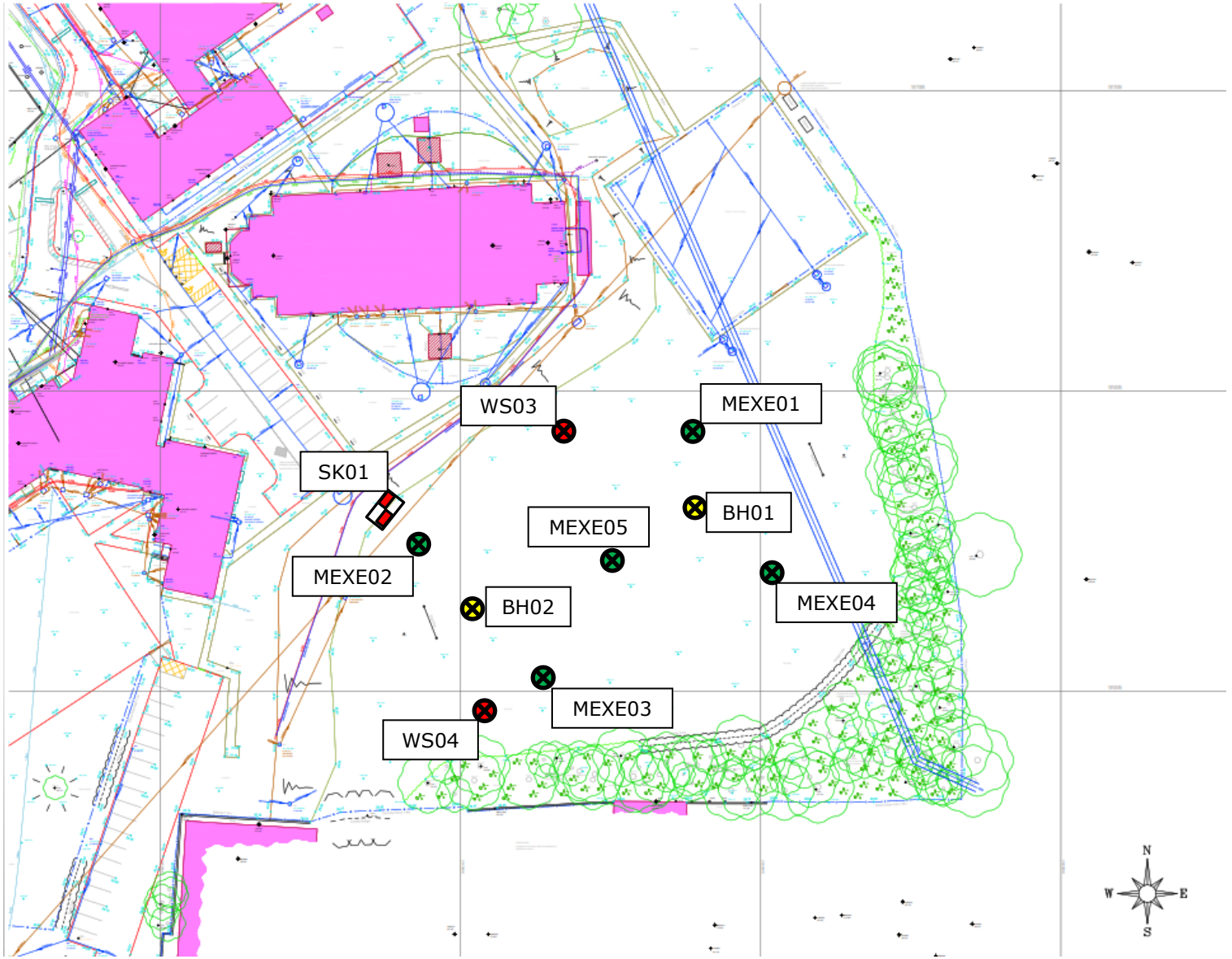
Lawrence House, Meadowbank Way,
Eastwood, Nottingham, NG16 3SB
Tel: 01773 535 555 Fax: 0870 600 6091
www.hspconsulting.com

CLIENT:
Gleeds Management Services Ltd

PROJECT:
Cornelli Primary School

TITLE:
Draft Exploratory Location Plan

SCALE@SIZE :	ISSUE:
NTS	DRAFT
DESIGN/DRAWN :	DATE:
HEB	August 2020
PROJECT No:	DRAWING No:
C3342	504a



DO NOT SCALE

NOTES:

N

- Approximate Window Sample Borehole Location

- Approximate Cable Percussive Borehole Location

- Approximate MEXE Probe Location

hsp consulting

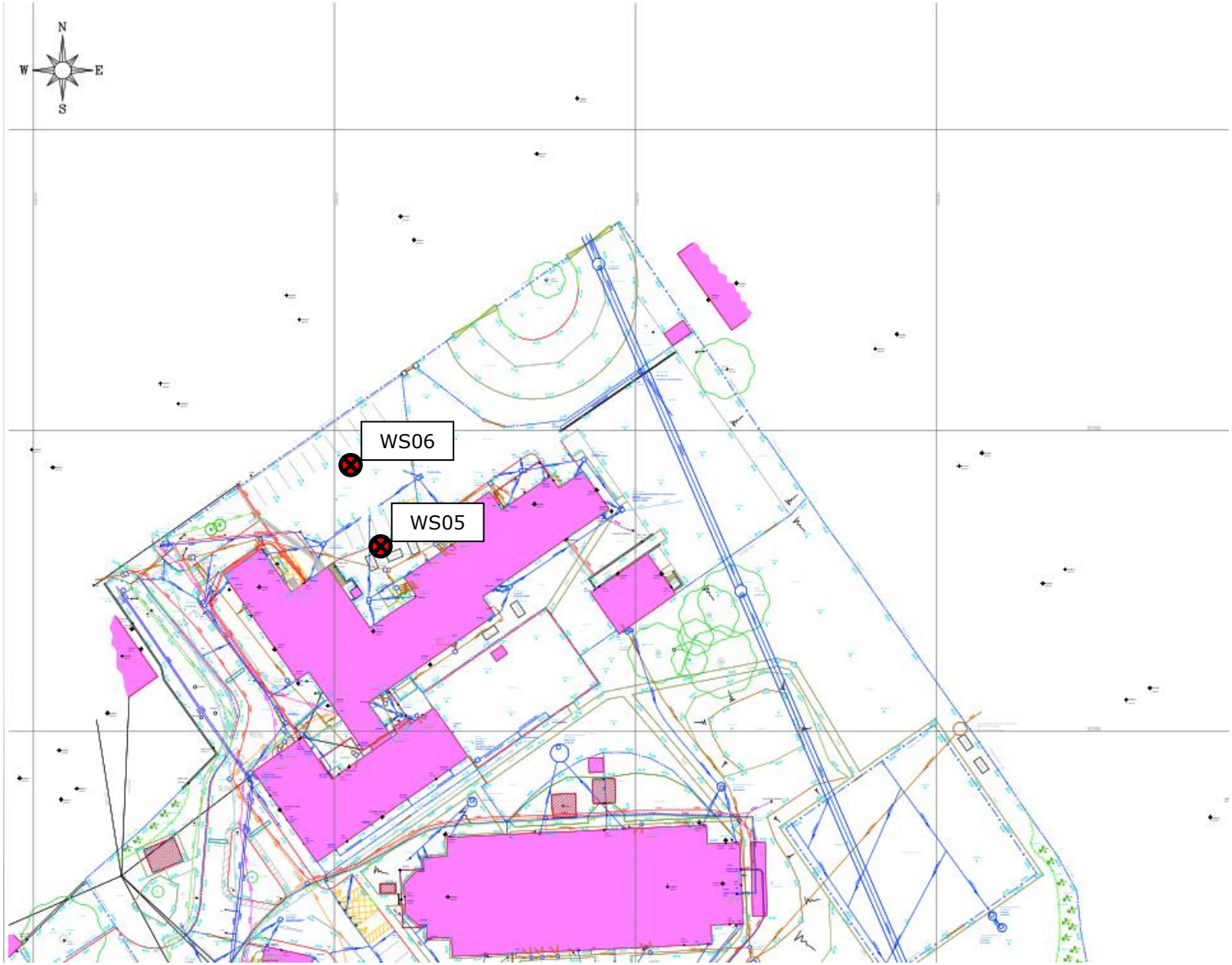
Lawrence House, Meadowbank Way,
Eastwood, Nottingham, NG16 3SB
Tel: 01773 535 555 Fax: 0870 600 6091
www.hspconsulting.com

CLIENT:
Gleeds Management Services Ltd

PROJECT:
Cornelli Primary School

TITLE:
Draft Exploratory Location Plan

SCALE@SIZE :	ISSUE:
NTS	DRAFT
DESIGN/DRAWN :	DATE:
HEB	August 2020
PROJECT No:	DRAWING No:
C3342	504b



DO NOT SCALE

NOTES:

- Approximate Window Sample Borehole Location

- Approximate Cable Percussive Borehole Location

hsp consulting

Lawrence House, Meadowbank Way,
Eastwood, Nottingham, NG16 3SB
Tel: 01773 535 555 Fax: 0870 600 6091
www.hspconsulting.com

CLIENT:
Gleeds Management Services Ltd

PROJECT:
Cornelli Primary School

TITLE:
Draft Exploratory Location Plan

SCALE@SIZE :	ISSUE:
NTS	DRAFT
DESIGN/DRAWN :	DATE:
HEB	August 2020
PROJECT No:	DRAWING No:
C3342	504c

Appendix IV

INSITU SOAKAWAY TEST RESULTS

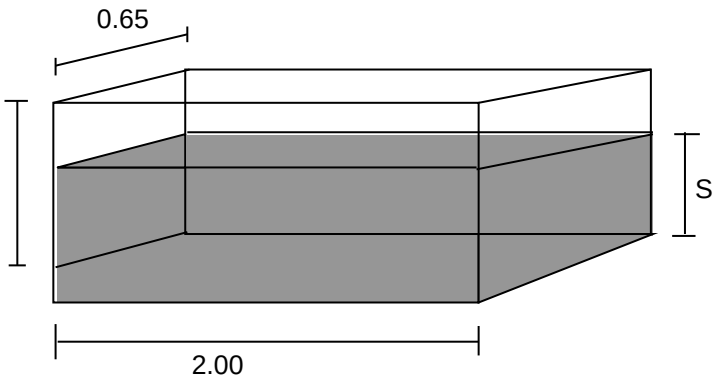
Trialpit No.: SK01

Soil Profile:

Depth (m) From:	To:	Description
0.00	0.30	TOPSOIL - Brown sandy slightly clayey sandy gravelly topsoil.
0.30	1.30	Loose brown slightly clayey sandy GRAVEL. High cobble content.

Sketch plan of test zone

Not to scale
All dimensions in metres.

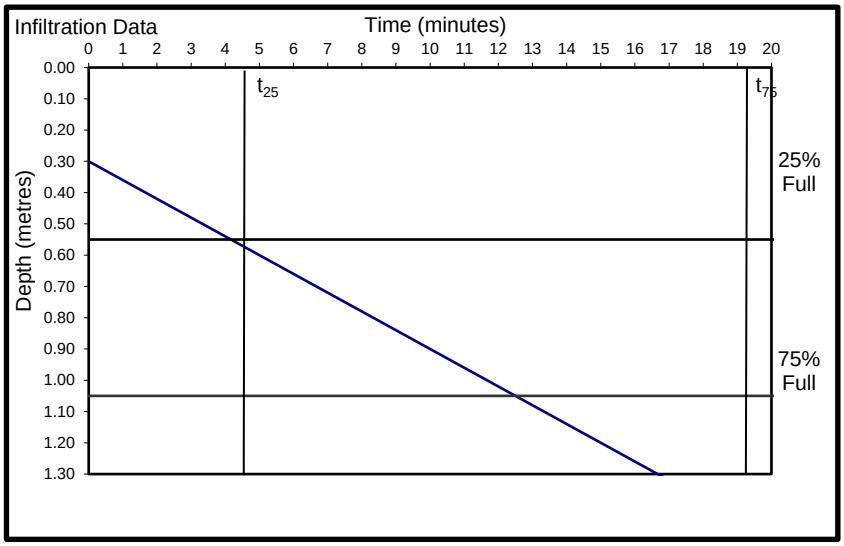


porosity (N) = 0.42
(measured in laboratory)
S= Storage depth (m) 1.30
Water level from 0.30m to 1.30m
No Groundwater was encountered

Gives the Figures

S=	1.00	m
a_{p50}=	3.95	m^2
V_{p75-25}=	0.65	m^3

Soakaway Test Run 1 Test Date: 24/08/2020



Time (minutes)	Depth (m)
0	0.300
1	0.360
2	0.42
3	0.48
4	0.54
5	0.60
6	0.66
7	0.720
8	0.78
9	0.84
10	0.90
11	0.96
12	1.02
13	1.080
14	1.14
15	1.20
16	1.26
17	1.32

From the above graph,

t_{p25}= 0.5 (min) $t_{p75=}$ 1 (min)

Soil Infiltration Rate: $f = \frac{V_{p75-25} \times N}{a_{p50} \times t_{p75-25}}$ = 1.44E-04 f_{run1}= 1.44×10^{-4} m/s

Test and analysis carried out in general accordance with BRE Digest 365 : 2003

Job No.: C3341
Site: Corneli Primary School
Client: Gleeds Management Services Ltd

hsp consulting

INSITU SOAKAWAY TEST RESULTS

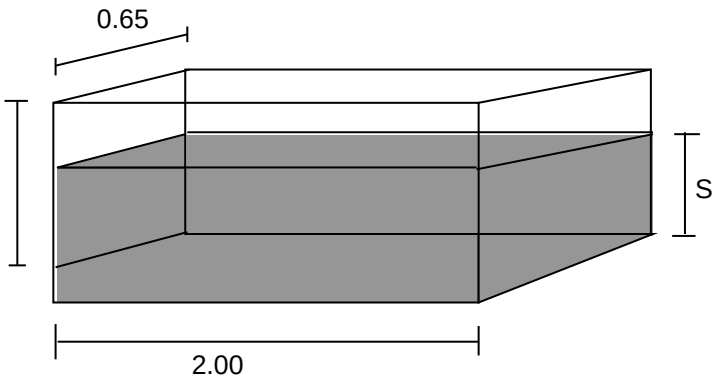
Trialpit No.: SK01

Soil Profile:

Depth (m) From:	To:	Description
0.00	0.30	TOPSOIL - Brown sandy slightly clayey sandy gravelly topsoil.
0.30	1.30	Loose brown slightly clayey sandy GRAVEL. High cobble content.

Sketch plan of test zone

Not to scale
All dimensions in metres.

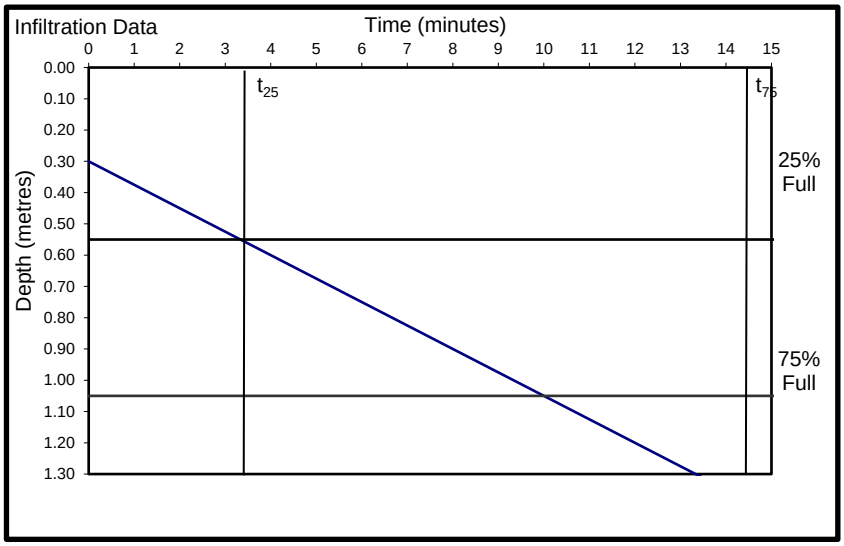


porosity (N) = 0.42
(measured in laboratory)
S= Storage depth (m) 1.30
Water level from 0.30m to 1.30m
No Groundwater was encountered

Gives the Figures

S=	1.00	m
a_{p50}=	3.95	m^2
V_{p75-25}=	0.65	m^3

Soakaway Test Run 1 Test Date: 24/08/2020



Time (minutes)	Depth (m)
0	0.300
2	0.450
4	0.60
6	0.75
8	0.90
10	1.05
12	1.20
14	1.350

From the above graph,

t_{p25}= 3 (min) $t_{p75=}$ 10 (min)

Soil Infiltration Rate: $f = \frac{V_{p75-25} \times N}{a_{p50} \times t_{p75-25}}$ = 1.65E-04 f_{run1}= 1.65×10^{-4} m/s

Test and analysis carried out in general accordance with BRE Digest 365 : 2003

Job No.: C3341
Site: Corneli Primary School
Client: Gleeds Management Services Ltd

hsp consulting

INSITU SOAKAWAY TEST RESULTS

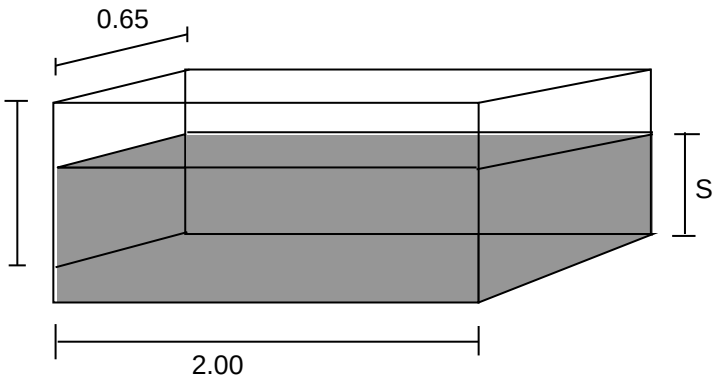
Trialpit No.: SK01

Soil Profile:

Depth (m) From:	To:	Description
0.00	0.30	TOPSOIL - Brown sandy slightly clayey sandy gravelly topsoil.
0.30	1.30	Loose brown slightly clayey sandy GRAVEL. High cobble content.

Sketch plan of test zone

Not to scale
All dimensions in metres.

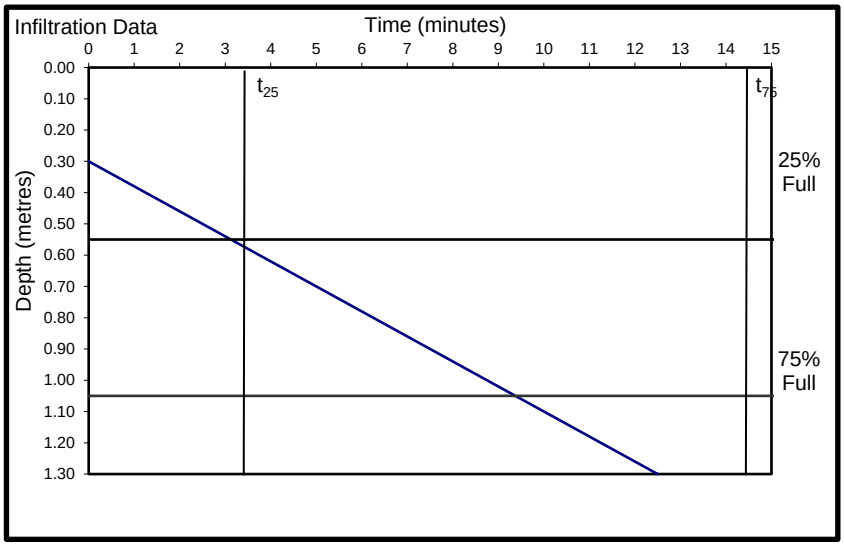


porosity (N) = 0.42
(measured in laboratory)
S= Storage depth (m) 1.30
Water level from 0.30m to 1.30m
No Groundwater was encountered

Gives the Figures

S= 1.00 m
a_{p50}= 3.95 m^2
V_{p75-25}= 0.65 m^3

Soakaway Test Run 1 Test Date: 24/08/2020



Time (minutes)	Depth (m)
0	0.300
3	0.500
5	0.70
8	0.90
10	1.10
13	1.30

From the above graph,
t_{p25}= 3 (min) $t_{p75=}$ 9.5 (min)

Soil Infiltration Rate: $f = \frac{V_{p75-25} \times N}{a_{p50} \times t_{p75-25}}$ = 1.77E-04 f_{run1}= 1.77×10^{-4} m/s

Test and analysis carried out in general accordance with BRE Digest 365 : 2003

Job No.: C3341
Site: Corneli Primary School
Client: Gleeds Management Services Ltd

hsp consulting

LABORATORY REPORT

4043

Contract Number: PSL20/4512

Report Date: 17 September 2020

Client's Reference: C3342

Client Name: HSP Consulting
Lawrence House
4 Meadowbank Way
Eastwood
Nottingham
NG16 3SB

For the attention of: Hallam Brown

Contract Title: Cornelli Primary School

Date Received: 28/8/2020
Date Commenced: 28/8/2020
Date Completed: 17/9/2020

Notes: Opinions and Interpretations are outside the UKAS Accreditation

A copy of the Laboratory Schedule of accredited tests as issued by UKAS is attached to this report. 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 other than in full, without the prior written approval of the laboratory.

Checked and Approved Signatories:

R Gunson (Director)	A Watkins (Director)	R Berriman (Quality Manager)
L Knight (Senior Technician)	S Eyre (Senior Technician)	S Royle (Laboratory Manager)

5 – 7 Hexthorpe Road, Hexthorpe,
Doncaster DN4 0AR
tel: +44 (0)844 815 6641
fax: +44 (0)844 815 6642
e-mail: rgunson@prosoils.co.uk
awatkins@prosoils.co.uk

SUMMARY OF LABORATORY SOIL DESCRIPTIONS

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Description of Sample
WS03		B	1.60		Brown very gravelly very sandy very silty CLAY.
WS05		B	1.30		Brown very sandy silty GRAVEL.
BH01		B	1.00	2.00	Brown gravelly very sandy CLAY.
BH02		B	3.00		Brown very sandy slightly clayey silty GRAVEL.

SUMMARY OF SOIL CLASSIFICATION TESTS

(BS1377 : PART 2 : 1990)

Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Moisture Content % Clause 3.2	Linear Shrinkage % Clause 6.5	Particle Density Mg/m^3 Clause 8.2	Liquid Limit % Clause 4.3/4	Plastic Limit % Clause 5.3	Plasticity Index % Clause 5.4	Passing .425mm %	Remarks
WS03		B	1.60		13			27	15	12	62	Low plasticity CL.
WS05		B	1.30		7.9				NP			
BH01		B	1.00	2.00	16							
BH02		B	3.00		6.5							

SYMBOLS : **NP : Non Plastic** *** : Liquid Limit and Plastic Limit Wet Sieved.**

UKAS TESTING 4043

PSL Professional Soils Laboratory

Cornelli Primary School

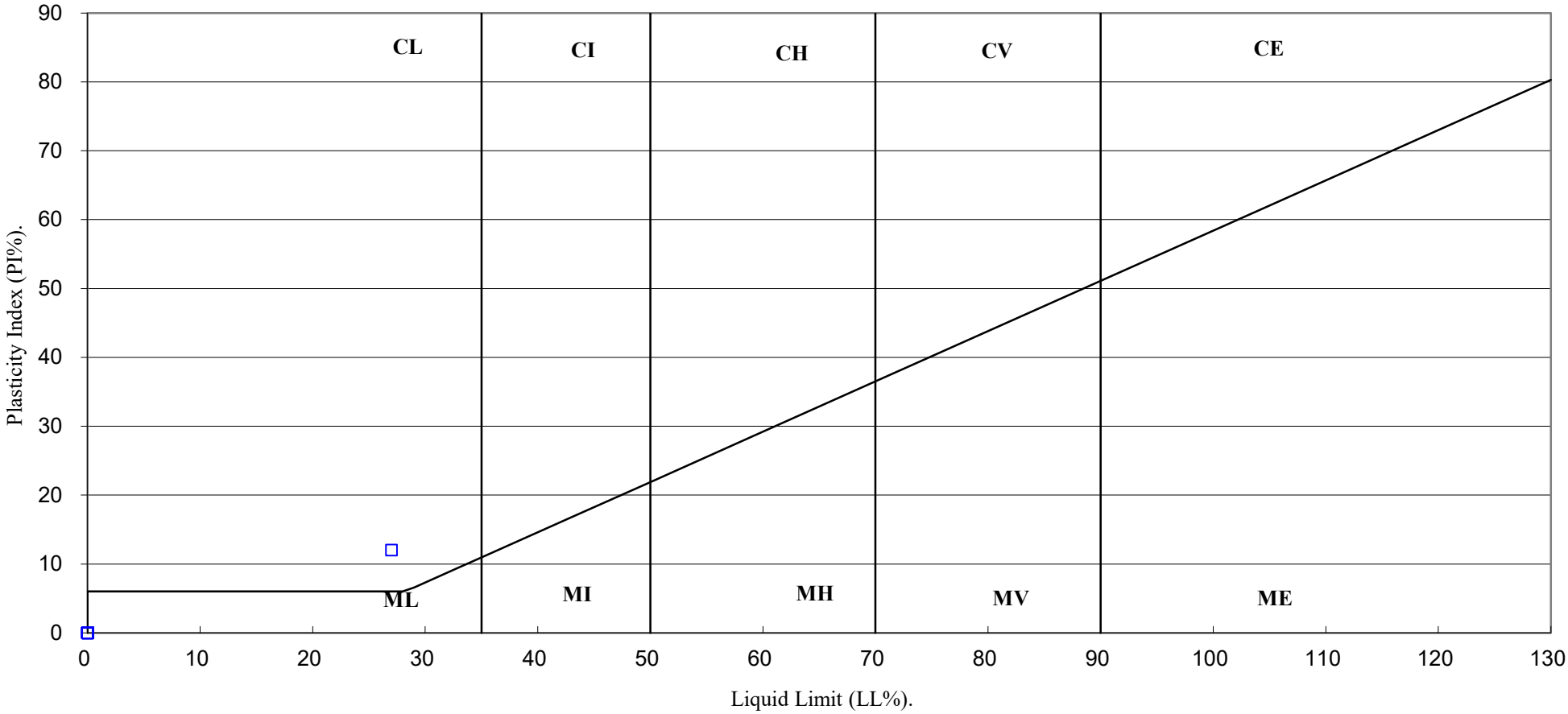
Contract No:

PSL20/4512

Client Ref:

C3342

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.



UKAS TESTING 4043	PSL Professional Soils Laboratory	Cornelli Primary School	Contract No: PSL20/4512 Client Ref: C3342

PARTICLE SIZE DISTRIBUTION TEST

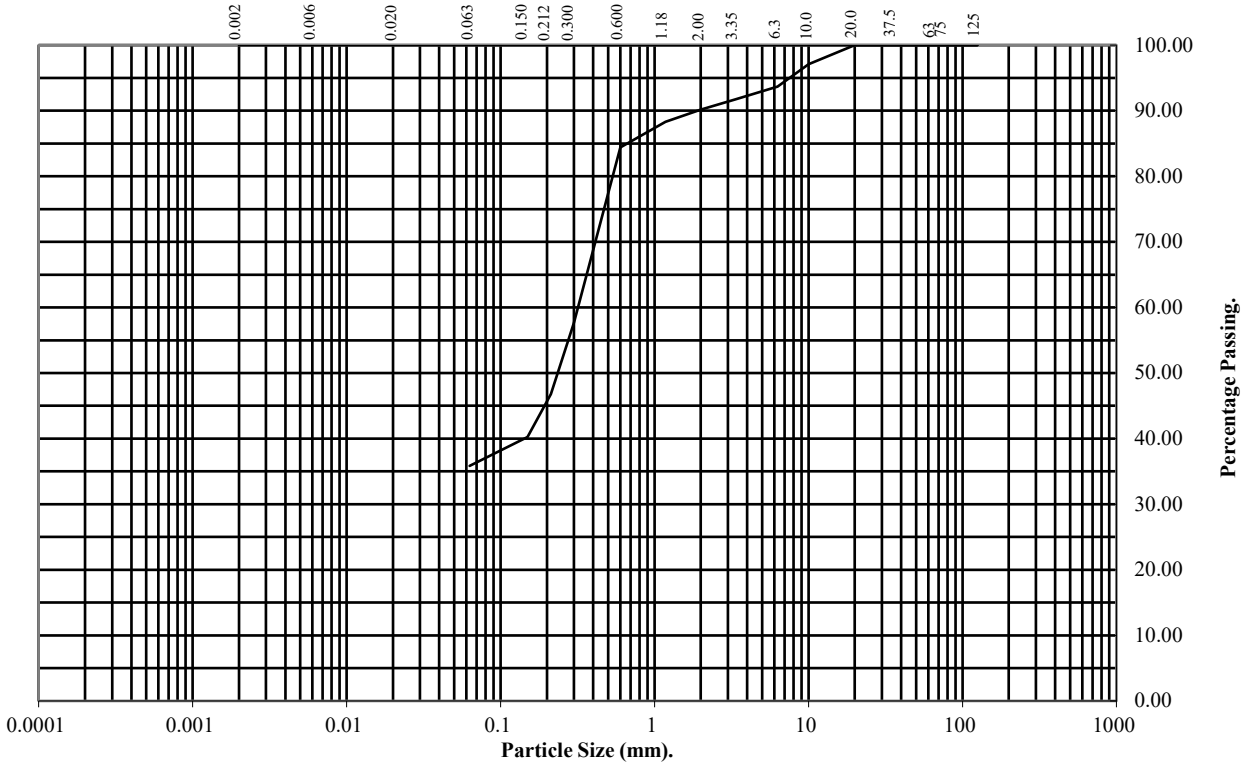
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: **BH01** **Top Depth (m):** **1.00**

Sample Number: **Base Depth(m):** **2.00**

Sample Type: **B**



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	100
20	100
10	97
6.3	94
3.35	92
2	90
1.18	88
0.6	84
0.3	58
0.212	47
0.15	40
0.063	36

Soil Fraction	Total Percentage
Cobbles	0
Gravel	10
Sand	54
Silt/Clay	36

Remarks:

See Summary of Soil Descriptions

PARTICLE SIZE DISTRIBUTION TEST

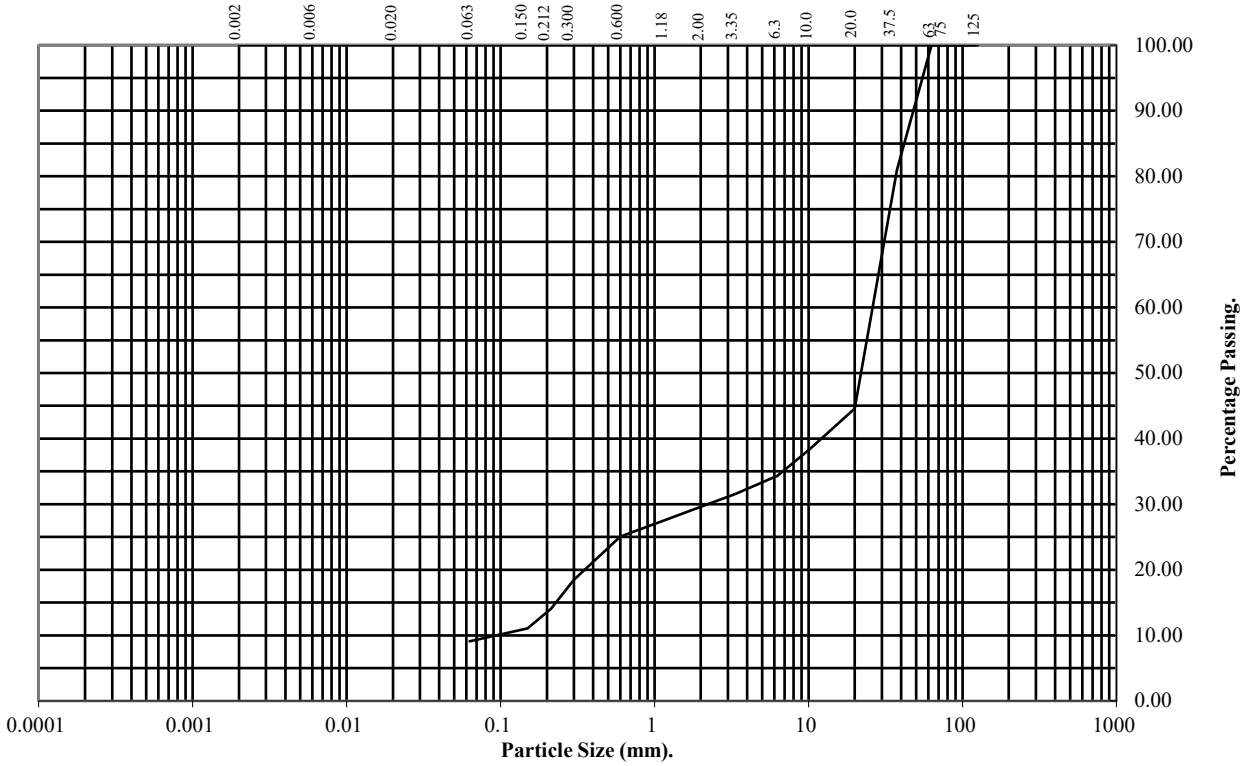
BS1377 : Part 2 : 1990

Wet Sieve, Clause 9.2

Hole Number: **BH02** **Top Depth (m):** **3.00**

Sample Number: **Base Depth(m):**

Sample Type: **B**



BS Test Sieve (mm)	Percentage Passing
125	100
75	100
63	100
37.5	81
20	45
10	38
6.3	34
3.35	32
2	30
1.18	28
0.6	25
0.3	18
0.212	14
0.15	11
0.063	9

Soil Fraction	Total Percentage
Cobbles	0
Gravel	70
Sand	21
Silt/Clay	9

Remarks:

See Summary of Soil Descriptions

Appendix V

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	20-21265-1
Initial Date of Issue:	22-Aug-2020
Client	HSP Consulting Engineers Limited
Client Address:	Lawrence House Meadowbank Way Eastwood Nottinghamshire NG16 3SB
Contact(s):	Hallam Brown
Project	C3342 Cornelli Primary School / Ysgol Y Ferch o'r Sger

Quotation No.:		**Date Received:**	13-Aug-2020
Order No.:		**Date Instructed:**	13-Aug-2020
No. of Samples:	10		
Turnaround (Wkdays):	5	**Results Due:**	19-Aug-2020
Date Approved:	22-Aug-2020		

Approved By:

Details: Glynn Harvey, Technical Manager

Results - Soil

Project: C3342 Cornelli Primary School / Ysgol Y Ferch o'r Sger

Client: HSP Consulting Engineers Limited		**Chemtest Job No.:**			20-21265	20-21265	20-21265	20-21265	20-21265	20-21265	20-21265	20-21265
Quotation No.:		**Chemtest Sample ID.:**			1047621	1047623	1047625	1047626	1047627	1047628	1047630	1047631
		Sample Location:			WS01	WS01	WS03	WS03	WS03	WS04	WS05	WS06
		Sample Type:			SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
		Top Depth (m):			0.40	2.50	0.30	0.80	2.40	0.10	0.10	0.20
		Date Sampled:			06-Aug-2020	06-Aug-2020	06-Aug-2020	06-Aug-2020	06-Aug-2020	06-Aug-2020	06-Aug-2020	06-Aug-2020
		Asbestos Lab:			DURHAM		DURHAM			DURHAM	DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
ACM Type	U	2192		N/A	-		-			-	-	-
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected		No Asbestos Detected			No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
ACM Detection Stage	U	2192		N/A	-		-			-	-	-
Moisture	N	2030	%	0.020	22	4.8	15	15	61	35	11	5.5
pH	U	2010		4.0	8.1	8.9	6.7	7.2	6.9	6.7	7.6	8.2
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	1.7		0.50	< 0.40		0.52	0.52	0.70
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	0.048	< 0.010	< 0.010	< 0.010	0.22	0.017	< 0.010	0.022
Total Sulphur	U	2175	%	0.010		0.027			0.57			
Sulphur (Elemental)	U	2180	mg/kg	1.0	26		< 1.0	3.7		4.8	< 1.0	7.1
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50		< 0.50	< 0.50		< 0.50	< 0.50	< 0.50
Cyanide (Total)	U	2300	mg/kg	0.50	< 0.50		< 0.50	< 0.50		< 0.50	< 0.50	< 0.50
Sulphide (Easily Liberatable)	N	2325	mg/kg	0.50	5.5		45	1.8		3.2	26	15
Sulphate (Acid Soluble)	U	2430	%	0.010		< 0.010			0.14			
Arsenic	U	2450	mg/kg	1.0	17		10	11		10	16	17
Cadmium	U	2450	mg/kg	0.10	0.68		0.21	< 0.10		0.47	0.48	0.34
Chromium	U	2450	mg/kg	1.0	19		16	25		14	23	12
Copper	U	2450	mg/kg	0.50	25		16	18		21	34	13
Mercury	U	2450	mg/kg	0.10	< 0.10		< 0.10	< 0.10		0.10	0.10	< 0.10
Nickel	U	2450	mg/kg	0.50	26		20	32		16	27	16
Lead	U	2450	mg/kg	0.50	45		32	31		45	48	23
Selenium	U	2450	mg/kg	0.20	0.61		0.48	0.41		0.39	0.64	< 0.20
Zinc	U	2450	mg/kg	0.50	120		68	83		120	140	55
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50		< 0.50	< 0.50		< 0.50	< 0.50	< 0.50
Organic Matter	U	2625	%	0.40	4.5		2.4			9.0		
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0		< 1.0	< 1.0		< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0		< 1.0	< 1.0		< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0		< 1.0	< 1.0		< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0		< 1.0	< 1.0		< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0		< 1.0	< 1.0		< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0		< 1.0	< 1.0		< 1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0		< 1.0	< 1.0		< 1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0		< 1.0	< 1.0		< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0		< 5.0	< 5.0		< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0		< 1.0	< 1.0		< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0		< 1.0	< 1.0		< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0		< 1.0	< 1.0		< 1.0	< 1.0	< 1.0

Results - Soil

Project: C3342 Cornelli Primary School / Ysgol Y Ferch o'r Sger

Client: HSP Consulting Engineers Limited			**Chemtest Job No.:**		20-21265	20-21265	20-21265	20-21265	20-21265	20-21265	20-21265	20-21265
Quotation No.:			**Chemtest Sample ID.:**		1047621	1047623	1047625	1047626	1047627	1047628	1047630	1047631
			Sample Location:		WS01	WS01	WS03	WS03	WS03	WS04	WS05	WS06
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.40	2.50	0.30	0.80	2.40	0.10	0.10	0.20
			Date Sampled:		06-Aug-2020	06-Aug-2020	06-Aug-2020	06-Aug-2020	06-Aug-2020	06-Aug-2020	06-Aug-2020	06-Aug-2020
			Asbestos Lab:		DURHAM		DURHAM			DURHAM	DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0		< 1.0	< 1.0		< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0		< 1.0	< 1.0		< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0		< 1.0	< 1.0		< 1.0	< 1.0	< 1.0
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0		< 1.0	< 1.0		< 1.0	< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0		< 1.0	< 1.0		< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0		< 5.0	< 5.0		< 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10		< 10	< 10		< 10	< 10	< 10
Naphthalene	U	2700	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10	< 0.10
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10	< 0.10
Acenaphthene	U	2700	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10	< 0.10
Fluorene	U	2700	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10	< 0.10
Phenanthrene	U	2700	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10	0.17
Anthracene	U	2700	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10	0.14
Fluoranthene	U	2700	mg/kg	0.10	< 0.10		< 0.10	1.2		0.68	< 0.10	0.25
Pyrene	U	2700	mg/kg	0.10	< 0.10		< 0.10	1.4		0.77	< 0.10	0.30
Benzo[a]anthracene	U	2700	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10	< 0.10
Chrysene	U	2700	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10	< 0.10
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10		< 0.10	< 0.10		< 0.10	< 0.10	< 0.10
Total Of 16 PAH's	U	2700	mg/kg	2.0	< 2.0		< 2.0	2.6		< 2.0	< 2.0	< 2.0
Benzene	U	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0		< 1.0	< 1.0	< 1.0
Toluene	U	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0		< 1.0	< 1.0	< 1.0
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0		< 1.0	< 1.0	< 1.0
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0		< 1.0	< 1.0	< 1.0
o-Xylene	U	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0		< 1.0	< 1.0	< 1.0
Methyl Tert-Butyl Ether	U	2760	µg/kg	1.0	< 1.0		< 1.0	< 1.0		< 1.0	< 1.0	< 1.0
Total Phenols	U	2920	mg/kg	0.30	< 0.30		< 0.30	< 0.30		< 0.30	< 0.30	< 0.30

Results - Soil

Project: C3342 Cornelli Primary School / Ysgol Y Ferch o'r Sger

Client: HSP Consulting Engineers Limited		**Chemtest Job No.:**			20-21265	20-21265
Quotation No.:		**Chemtest Sample ID.:**			1047632	1047633
		Sample Location:			WS06	BH01
		Sample Type:			SOIL	SOIL
		Top Depth (m):			0.60	1.50
		Date Sampled:			06-Aug-2020	11-Aug-2020
		Asbestos Lab:			COVENTRY	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
ACM Type	U	2192		N/A	-	
Asbestos Identification	U	2192	%	0.001	No Asbestos Detected	
ACM Detection Stage	U	2192		N/A	-	
Moisture	N	2030	%	0.020	6.0	14
pH	U	2010		4.0	8.3	7.6
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	< 0.40	
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	< 0.010	< 0.010
Total Sulphur	U	2175	%	0.010		0.015
Sulphur (Elemental)	U	2180	mg/kg	1.0	< 1.0	
Cyanide (Free)	U	2300	mg/kg	0.50	< 0.50	
Cyanide (Total)	U	2300	mg/kg	0.50	< 0.50	
Sulphide (Easily Liberatable)	N	2325	mg/kg	0.50	2.9	
Sulphate (Acid Soluble)	U	2430	%	0.010		0.017
Arsenic	U	2450	mg/kg	1.0	17	
Cadmium	U	2450	mg/kg	0.10	0.12	
Chromium	U	2450	mg/kg	1.0	20	
Copper	U	2450	mg/kg	0.50	18	
Mercury	U	2450	mg/kg	0.10	< 0.10	
Nickel	U	2450	mg/kg	0.50	38	
Lead	U	2450	mg/kg	0.50	18	
Selenium	U	2450	mg/kg	0.20	0.71	
Zinc	U	2450	mg/kg	0.50	110	
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	
Organic Matter	U	2625	%	0.40	1.1	
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	
Aromatic TPH >C8-C10	U	2680	mg/kg	1.0	< 1.0	

Results - Soil

Project: C3342 Cornelli Primary School / Ysgol Y Ferch o'r Sger

Client: HSP Consulting Engineers Limited			**Chemtest Job No.:**		20-21265	20-21265
Quotation No.:			**Chemtest Sample ID.:**		1047632	1047633
			Sample Location:		WS06	BH01
			Sample Type:		SOIL	SOIL
			Top Depth (m):		0.60	1.50
			Date Sampled:		06-Aug-2020	11-Aug-2020
			Asbestos Lab:		COVENTRY	
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
Aromatic TPH >C10-C12	U	2680	mg/kg	1.0	< 1.0	
Aromatic TPH >C12-C16	U	2680	mg/kg	1.0	< 1.0	
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	
Aromatic TPH >C21-C35	U	2680	mg/kg	1.0	< 1.0	
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	
Naphthalene	U	2700	mg/kg	0.10	< 0.10	
Acenaphthylene	U	2700	mg/kg	0.10	< 0.10	
Acenaphthene	U	2700	mg/kg	0.10	< 0.10	
Fluorene	U	2700	mg/kg	0.10	< 0.10	
Phenanthrene	U	2700	mg/kg	0.10	< 0.10	
Anthracene	U	2700	mg/kg	0.10	< 0.10	
Fluoranthene	U	2700	mg/kg	0.10	0.12	
Pyrene	U	2700	mg/kg	0.10	0.14	
Benzo[a]anthracene	U	2700	mg/kg	0.10	< 0.10	
Chrysene	U	2700	mg/kg	0.10	< 0.10	
Benzo[b]fluoranthene	U	2700	mg/kg	0.10	< 0.10	
Benzo[k]fluoranthene	U	2700	mg/kg	0.10	< 0.10	
Benzo[a]pyrene	U	2700	mg/kg	0.10	< 0.10	
Indeno(1,2,3-c,d)Pyrene	U	2700	mg/kg	0.10	< 0.10	
Dibenz(a,h)Anthracene	U	2700	mg/kg	0.10	< 0.10	
Benzo[g,h,i]perylene	U	2700	mg/kg	0.10	< 0.10	
Total Of 16 PAH's	U	2700	mg/kg	2.0	< 2.0	
Benzene	U	2760	µg/kg	1.0	< 1.0	
Toluene	U	2760	µg/kg	1.0	< 1.0	
Ethylbenzene	U	2760	µg/kg	1.0	< 1.0	
m & p-Xylene	U	2760	µg/kg	1.0	< 1.0	
o-Xylene	U	2760	µg/kg	1.0	< 1.0	
Methyl Tert-Butyl Ether	U	2760	µg/kg	1.0	< 1.0	
Total Phenols	U	2920	mg/kg	0.30	< 0.30	

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2180	Sulphur (Elemental) in Soils by HPLC	Sulphur	Dichloromethane extraction / HPLC with UV detection
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N–dimethyl-p-phenylenediamine.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection
2700	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-FID	Acenaphthene; Acenaphthylene; Anthracene; Benzo[a]Anthracene; Benzo[a]Pyrene; Benzo[b]Fluoranthene; Benzo[ghi]Perylene; Benzo[k]Fluoranthene; Chrysene; Dibenz[ah]Anthracene; Fluoranthene; Fluorene; Indeno[123cd]Pyrene; Naphthalene; Phenanthrene; Pyrene	Dichloromethane extraction / GC-FID (GC-FID detection is non-selective and can be subject to interference from co-eluting compounds)
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

Report Information

Key

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

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

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

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

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

Sample Deviation Codes

A - Date of sampling not supplied

B - Sample age exceeds stability time (sampling to extraction)

C - Sample not received in appropriate containers

D - Broken Container

E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt

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

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:

customerservices@chemtest.com

Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	20-21664-1		
Initial Date of Issue:	20-Aug-2020		
Client	HSP Consulting Engineers Limited		
Client Address:	Lawrence House Meadowbank Way Eastwood Nottinghamshire NG16 3SB		
Contact(s):	Hallam Brown		
Project	C3342 Cornelli Primary School		
Quotation No.:	Q14-00343	**Date Received:**	17-Aug-2020
Order No.:		**Date Instructed:**	17-Aug-2020
No. of Samples:	2		
Turnaround (Wkdays):	5	**Results Due:**	21-Aug-2020
Date Approved:	20-Aug-2020		

Approved By:

Details: Glynn Harvey, Technical Manager

Results - Soil

Project: C3342 Cornelli Primary School

Client: HSP Consulting Engineers Limited			**Chemtest Job No.:**		20-21664	20-21664
Quotation No.: Q14-00343			**Chemtest Sample ID.:**		1049477	1049479
			Sample Location:		BH01	BH02
			Sample Type:		SOIL	SOIL
			Top Depth (m):		7	9.80
			Bottom Depth (m):			10.00
			Date Sampled:		11-Aug-2020	11-Aug-2020
Determinand	**Accred.**	**SOP**	**Units**	**LOD**		
Moisture	N	2030	%	0.020	13	13
pH	U	2010		4.0	8.4	8.7
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	< 0.010	< 0.010
Total Sulphur	U	2175	%	0.010	0.028	0.018
Sulphate (Acid Soluble)	U	2430	%	0.010	< 0.010	< 0.010

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.

Report Information

Key

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

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

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

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

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

Sample Retention and Disposal

All soil samples will be retained for a period of 45 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

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

Appendix VI

HazWasteOnline™

Waste Classification Report

RXVZX-N3A53-44PEY

Job name

C3342 Cornelli Primary School - Concrete Classification Samples

Description/Comments

Project

C3342 Cornelli Primary School

Site

Cornelli Primary School

Related Documents

#	Name	Description
1	HWOL_20-21664-20200820 090330.hwol	.hwol file used to create the Job

Waste Stream Template

Example waste stream template for contaminated soils

Classified by

Name:
Howard Daley
Date:
11 Sep 2020 09:47 GMT
Telephone:
01773 535555

Company:
HSP Consulting Engineers Limited
Lawrence House 4 Meadowbank Way
Eastwood
4 Meadowbank Way, Eastwood
Nottingham
NG16 3SB

HazWasteOnline™ Training Record:

Course	Date
Hazardous Waste Classification	11 Feb 2020
Advanced Hazardous Waste Classification	12 Feb 2020

Report

Created by: Howard Daley
Created date: 11 Sep 2020 09:47 GMT

Job summary

#	Sample Name	Depth [m]	Classification Result	Hazard properties	Page
1	BH01 7.00m	7	Non Hazardous		2
2	BH02 9.80m	9.80-10.00	Non Hazardous		3

Classification of sample: BH01 7.00m

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:
BH01 7.00m
Sample Depth:
7 m
Moisture content:
13%
(wet weight 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: 13% Wet Weight 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							
1		pH		PH		8.4 pH		8.4 pH	8.4 pH		
								Total:	0%		

Key

	User supplied data
	Determinand defined or amended by HazWasteOnline (see Appendix A)

Classification of sample: BH02 9.80m

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:
BH02 9.80m
Sample Depth:
9.80-10.00 m
Moisture content:
13%
(wet weight 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: 13% Wet Weight 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							
1		pH		PH		8.7 pH		8.7 pH	8.7 pH		
								Total:	0%		

Key

	User supplied data
	Determinand defined or amended by HazWasteOnline (see Appendix A)

Appendix A: Classifier defined and non CLP determinands

- **pH** (CAS Number: PH)

Description/Comments: Appendix C4
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: None.

Appendix B: Rationale for selection of metal species

None used in this classification

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.1, May 2018
HazWasteOnline Classification Engine Version: 2020.241.4455.8692 (28 Aug 2020)
HazWasteOnline Database: 2020.241.4455.8692 (28 Aug 2020)

This classification utilises the following guidance and legislation:
WM3 v1.1 - Waste Classification - 1st Edition v1.1 - May 2018
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
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
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

Waste Classification Report

C3S8G-EARM9-S6F5W

Job name

C3342 Cornelli Primary School

Description/Comments

Project

C3342 Cornelli Primary School

Site

Cornelli Primary School

Related Documents

#	Name	Description
1	HWOL_20-21265-20200822 173259.hwol	.hwol file used to create the Job

Waste Stream Template

Example waste stream template for contaminated soils

Classified by

Name:
Howard Daley
Date:
11 Sep 2020 09:52 GMT
Telephone:
01773 535555

Company:
HSP Consulting Engineers Limited
Lawrence House 4 Meadowbank Way
Eastwood
4 Meadowbank Way, Eastwood
Nottingham
NG16 3SB

HazWasteOnline™ Training Record:

Course	Date
Hazardous Waste Classification	11 Feb 2020
Advanced Hazardous Waste Classification	12 Feb 2020

Report

Created by: Howard Daley
Created date: 11 Sep 2020 09:52 GMT

Job summary

#	Sample Name	Depth [m]	Classification Result	Hazard properties	Page
1	WS01 0.40m	0.40	Non Hazardous		3
2	WS01 2.50m	2.50	Non Hazardous		6
3	WS03 0.30m	0.30	Non Hazardous		7
4	WS03 0.80m	0.80	Non Hazardous		10
5	WS03 2.40m	2.40	Non Hazardous		13
6	WS04 0.10m	0.10	Non Hazardous		14
7	WS05 0.10m	0.10	Non Hazardous		17
8	WS06 0.20m	0.20	Non Hazardous		20
9	WS06 0.60m	0.60	Non Hazardous		23
10	BH01 1.50m	1.50	Non Hazardous		26

Classification of sample: WS01 0.40m

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:
WS01 0.40m
Sample Depth:
0.40 m
Moisture content:
22%
(wet weight 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: 22% Wet Weight 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	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		17 mg/kg	1.32	17.508 mg/kg	0.00175 %	✓	
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		1.7 mg/kg	3.22	4.27 mg/kg	0.000427 %	✓	
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.68 mg/kg	1.142	0.606 mg/kg	0.0000606 %	✓	
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		19 mg/kg	1.462	21.66 mg/kg	0.00217 %	✓	
5	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5 mg/kg	1.923	<0.962 mg/kg	<0.0000962 %		<**LOD**
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		25 mg/kg	1.126	21.955 mg/kg	0.0022 %	✓	
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	45 mg/kg	1.56	54.75 mg/kg	0.00351 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.1 mg/kg	1.353	<0.135 mg/kg	<0.0000135 %		<**LOD**
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		26 mg/kg	2.976	60.359 mg/kg	0.00604 %	✓	
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.61 mg/kg	2.554	1.215 mg/kg	0.000122 %	✓	
11	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		120 mg/kg	2.774	259.66 mg/kg	0.026 %	✓	
12	TPH (C6 to C40) petroleum group			TPH		<10 mg/kg		<10 mg/kg	<0.001 %		<**LOD**
13	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<**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									
14		benzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
15		toluene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
16		ethylbenzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
17		xylene				<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<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]									
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 }				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		<LOD
		006-007-00-5											
19		pH				8.1	pH		8.1	pH	8.1 pH		
				PH									
20		naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
21		acenaphthylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-917-1	208-96-8									
22		acenaphthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-469-6	83-32-9									
23		fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-695-5	86-73-7									
24		phenanthrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-581-5	85-01-8									
25		anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			204-371-1	120-12-7									
26		fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-912-4	206-44-0									
27		pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			204-927-3	129-00-0									
28		benzo[a]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
29		chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
30		benzo[b]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
31		benzo[k]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
32		benzo[a]pyrene; benzo[def]chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
33		indeno[123-cd]pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-893-2	193-39-5									
34		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									
35		benzo[ghi]perylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-883-8	191-24-2									
36		sulfur { sulfur }				26	mg/kg		20.28	mg/kg	0.00203 %	✓	
		016-094-00-1	231-722-6	7704-34-9									
										Total:	0.0456 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS01 2.50m

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:
WS01 2.50m
Sample Depth:
2.50 m
Moisture content:
4.8%
(wet weight 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: 4.8% Wet Weight 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							
1		pH		PH		8.9 pH		8.9 pH	8.9 pH		
								Total:	0%		

Key

	User supplied data
	Determinand defined or amended by HazWasteOnline (see Appendix A)

Classification of sample: WS03 0.30m

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:
WS03 0.30m
Sample Depth:
0.30 m
Moisture content:
15%
(wet weight 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: 15% Wet Weight 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	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		10 mg/kg	1.32	11.223 mg/kg	0.00112 %	✓	
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.5 mg/kg	3.22	1.368 mg/kg	0.000137 %	✓	
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.21 mg/kg	1.142	0.204 mg/kg	0.0000204 %	✓	
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		16 mg/kg	1.462	19.877 mg/kg	0.00199 %	✓	
5	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5 mg/kg	1.923	<0.962 mg/kg	<0.0000962 %		<**LOD**
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		16 mg/kg	1.126	15.312 mg/kg	0.00153 %	✓	
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	32 mg/kg	1.56	42.427 mg/kg	0.00272 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.1 mg/kg	1.353	<0.135 mg/kg	<0.0000135 %		<**LOD**
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		20 mg/kg	2.976	50.597 mg/kg	0.00506 %	✓	
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.48 mg/kg	2.554	1.042 mg/kg	0.000104 %	✓	
11	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		68 mg/kg	2.774	160.346 mg/kg	0.016 %	✓	
12	TPH (C6 to C40) petroleum group			TPH		<10 mg/kg		<10 mg/kg	<0.001 %		<**LOD**
13	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<**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									
14		benzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
15		toluene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
16		ethylbenzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
17		xylene				<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<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]									
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 }				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		<LOD
		006-007-00-5											
19		pH				6.7	pH		6.7	pH	6.7 pH		
				PH									
20		naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
21		acenaphthylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-917-1	208-96-8									
22		acenaphthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-469-6	83-32-9									
23		fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-695-5	86-73-7									
24		phenanthrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-581-5	85-01-8									
25		anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			204-371-1	120-12-7									
26		fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-912-4	206-44-0									
27		pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			204-927-3	129-00-0									
28		benzo[a]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
29		chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
30		benzo[b]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
31		benzo[k]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
32		benzo[a]pyrene; benzo[def]chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
33		indeno[123-cd]pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-893-2	193-39-5									
34		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									
35		benzo[ghi]perylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-883-8	191-24-2									
36		sulfur { sulfur }				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		016-094-00-1	231-722-6	7704-34-9									
										Total:	0.0302 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS03 0.80m

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:
WS03 0.80m
Sample Depth:
0.80 m
Moisture content:
15%
(wet weight 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: 15% Wet Weight 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							
1	arsenic { arsenic trioxide }		11 mg/kg	1.32	12.345 mg/kg	0.00123 %	✓	
	033-003-00-0 / 215-481-4 / 1327-53-3							
2	boron { diboron trioxide; boric oxide }		<0.4 mg/kg	3.22	<1.288 mg/kg	<0.000129 %		<LOD
	005-008-00-8 / 215-125-8 / 1303-86-2							
3	cadmium { cadmium oxide }		<0.1 mg/kg	1.142	<0.114 mg/kg	<0.0000114 %		<LOD
	048-002-00-0 / 215-146-2 / 1306-19-0							
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		25 mg/kg	1.462	31.058 mg/kg	0.00311 %	✓	
	/ 215-160-9 / 1308-38-9							
5	chromium in chromium(VI) compounds { chromium(VI) oxide }		<0.5 mg/kg	1.923	<0.962 mg/kg	<0.0000962 %		<LOD
	024-001-00-0 / 215-607-8 / 1333-82-0							
6	copper { dicopper oxide; copper (I) oxide }		18 mg/kg	1.126	17.226 mg/kg	0.00172 %	✓	
	029-002-00-X / 215-270-7 / 1317-39-1							
7	lead { lead chromate }	1	31 mg/kg	1.56	41.101 mg/kg	0.00264 %	✓	
	082-004-00-2 / 231-846-0 / 7758-97-6							
8	mercury { mercury dichloride }		<0.1 mg/kg	1.353	<0.135 mg/kg	<0.0000135 %		<LOD
	080-010-00-X / 231-299-8 / 7487-94-7							
9	nickel { nickel chromate }		32 mg/kg	2.976	80.954 mg/kg	0.0081 %	✓	
	028-035-00-7 / 238-766-5 / 14721-18-7							
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }		0.41 mg/kg	2.554	0.89 mg/kg	0.000089 %	✓	
	034-002-00-8 / /							
11	zinc { zinc chromate }		83 mg/kg	2.774	195.716 mg/kg	0.0196 %	✓	
	024-007-00-3 / 236-878-9 / 13530-65-9							
12	TPH (C6 to C40) petroleum group		<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
	/ / TPH							
13	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	603-181-00-X / 216-653-1 / 1634-04-4							

#		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		benzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
15		toluene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
16		ethylbenzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
17		xylene				<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<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]									
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 }				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		<LOD
		006-007-00-5											
19		pH				7.2	pH		7.2	pH	7.2 pH		
				PH									
20		naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
21		acenaphthylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-917-1	208-96-8									
22		acenaphthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-469-6	83-32-9									
23		fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-695-5	86-73-7									
24		phenanthrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-581-5	85-01-8									
25		anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			204-371-1	120-12-7									
26		fluoranthene				1.2	mg/kg		1.02	mg/kg	0.000102 %	✓	
			205-912-4	206-44-0									
27		pyrene				1.4	mg/kg		1.19	mg/kg	0.000119 %	✓	
			204-927-3	129-00-0									
28		benzo[a]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
29		chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
30		benzo[b]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
31		benzo[k]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
32		benzo[a]pyrene; benzo[def]chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
33		indeno[123-cd]pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-893-2	193-39-5									
34		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									
35		benzo[ghi]perylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-883-8	191-24-2									
36		sulfur { sulfur }				3.7	mg/kg		3.145	mg/kg	0.000315 %	✓	
		016-094-00-1	231-722-6	7704-34-9									
										Total:	0.0385 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS03 2.40m

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:
WS03 2.40m
Sample Depth:
2.40 m
Moisture content:
61%
(wet weight 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: 61% Wet Weight 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							
1		pH		PH		6.9 pH		6.9 pH	6.9 pH		
								Total:	0%		

Key

	User supplied data
	Determinand defined or amended by HazWasteOnline (see Appendix A)

Classification of sample: WS04 0.10m

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:
WS04 0.10m
Sample Depth:
0.10 m
Moisture content:
35%
(wet weight 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: 35% Wet Weight 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							
1	arsenic { arsenic trioxide }		10 mg/kg	1.32	8.582 mg/kg	0.000858 %	✓	
	033-003-00-0 / 215-481-4 / 1327-53-3							
2	boron { diboron trioxide; boric oxide }		0.52 mg/kg	3.22	1.088 mg/kg	0.000109 %	✓	
	005-008-00-8 / 215-125-8 / 1303-86-2							
3	cadmium { cadmium oxide }		0.47 mg/kg	1.142	0.349 mg/kg	0.0000349 %	✓	
	048-002-00-0 / 215-146-2 / 1306-19-0							
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		14 mg/kg	1.462	13.3 mg/kg	0.00133 %	✓	
	/ 215-160-9 / 1308-38-9							
5	chromium in chromium(VI) compounds { chromium(VI) oxide }		<0.5 mg/kg	1.923	<0.962 mg/kg	<0.0000962 %		<LOD
	024-001-00-0 / 215-607-8 / 1333-82-0							
6	copper { dicopper oxide; copper (I) oxide }		21 mg/kg	1.126	15.368 mg/kg	0.00154 %	✓	
	029-002-00-X / 215-270-7 / 1317-39-1							
7	lead { lead chromate }	1	45 mg/kg	1.56	45.625 mg/kg	0.00293 %	✓	
	082-004-00-2 / 231-846-0 / 7758-97-6							
8	mercury { mercury dichloride }		0.1 mg/kg	1.353	0.088 mg/kg	0.0000088 %	✓	
	080-010-00-X / 231-299-8 / 7487-94-7							
9	nickel { nickel chromate }		16 mg/kg	2.976	30.953 mg/kg	0.0031 %	✓	
	028-035-00-7 / 238-766-5 / 14721-18-7							
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }		0.39 mg/kg	2.554	0.647 mg/kg	0.0000647 %	✓	
	034-002-00-8 / /							
11	zinc { zinc chromate }		120 mg/kg	2.774	216.383 mg/kg	0.0216 %	✓	
	024-007-00-3 / 236-878-9 / 13530-65-9							
12	TPH (C6 to C40) petroleum group		<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
	/ / TPH							
13	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	603-181-00-X / 216-653-1 / 1634-04-4							

#		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		benzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
15		toluene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
16		ethylbenzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
17		xylene				<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<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]									
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 }				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		<LOD
		006-007-00-5											
19		pH				6.7	pH		6.7	pH	6.7 pH		
				PH									
20		naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
21		acenaphthylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-917-1	208-96-8									
22		acenaphthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-469-6	83-32-9									
23		fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-695-5	86-73-7									
24		phenanthrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-581-5	85-01-8									
25		anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			204-371-1	120-12-7									
26		fluoranthene				0.68	mg/kg		0.442	mg/kg	0.0000442 %	✓	
			205-912-4	206-44-0									
27		pyrene				0.77	mg/kg		0.501	mg/kg	0.0000501 %	✓	
			204-927-3	129-00-0									
28		benzo[a]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
29		chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
30		benzo[b]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
31		benzo[k]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
32		benzo[a]pyrene; benzo[def]chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
33		indeno[123-cd]pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-893-2	193-39-5									
34		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									
35		benzo[ghi]perylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-883-8	191-24-2									
36		sulfur { sulfur }				4.8	mg/kg		3.12	mg/kg	0.000312 %	✓	
		016-094-00-1	231-722-6	7704-34-9									
										Total:	0.0333 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS05 0.10m

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:
WS05 0.10m
Sample Depth:
0.10 m
Moisture content:
11%
(wet weight 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: 11% Wet Weight 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	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		16 mg/kg	1.32	18.801 mg/kg	0.00188 %	✓	
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.52 mg/kg	3.22	1.49 mg/kg	0.000149 %	✓	
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.48 mg/kg	1.142	0.488 mg/kg	0.0000488 %	✓	
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		23 mg/kg	1.462	29.918 mg/kg	0.00299 %	✓	
5	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5 mg/kg	1.923	<0.962 mg/kg	<0.0000962 %		<**LOD**
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		34 mg/kg	1.126	34.069 mg/kg	0.00341 %	✓	
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	48 mg/kg	1.56	66.635 mg/kg	0.00427 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.1 mg/kg	1.353	0.12 mg/kg	0.000012 %	✓	
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		27 mg/kg	2.976	71.52 mg/kg	0.00715 %	✓	
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.64 mg/kg	2.554	1.455 mg/kg	0.000145 %	✓	
11	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		140 mg/kg	2.774	345.659 mg/kg	0.0346 %	✓	
12	TPH (C6 to C40) petroleum group			TPH		<10 mg/kg		<10 mg/kg	<0.001 %		<**LOD**
13	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<**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									
14		benzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
15		toluene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
16		ethylbenzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
17		xylene				<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<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]									
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 }				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		<LOD
		006-007-00-5											
19		pH				7.6	pH		7.6	pH	7.6 pH		
				PH									
20		naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
21		acenaphthylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-917-1	208-96-8									
22		acenaphthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-469-6	83-32-9									
23		fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-695-5	86-73-7									
24		phenanthrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-581-5	85-01-8									
25		anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			204-371-1	120-12-7									
26		fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-912-4	206-44-0									
27		pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			204-927-3	129-00-0									
28		benzo[a]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
29		chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
30		benzo[b]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
31		benzo[k]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
32		benzo[a]pyrene; benzo[def]chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
33		indeno[123-cd]pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-893-2	193-39-5									
34		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									
35		benzo[ghi]perylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-883-8	191-24-2									
36		sulfur { sulfur }				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		016-094-00-1	231-722-6	7704-34-9									
										Total:	0.0561 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS06 0.20m

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:
WS06 0.20m
Sample Depth:
0.20 m
Moisture content:
5.5%
(wet weight 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: 5.5% Wet Weight 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							
1	arsenic { arsenic trioxide }		17 mg/kg	1.32	21.211 mg/kg	0.00212 %	✓	
	033-003-00-0 / 215-481-4 / 1327-53-3							
2	boron { diboron trioxide; boric oxide }		0.7 mg/kg	3.22	2.13 mg/kg	0.000213 %	✓	
	005-008-00-8 / 215-125-8 / 1303-86-2							
3	cadmium { cadmium oxide }		0.34 mg/kg	1.142	0.367 mg/kg	0.0000367 %	✓	
	048-002-00-0 / 215-146-2 / 1306-19-0							
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		12 mg/kg	1.462	16.574 mg/kg	0.00166 %	✓	
	/ 215-160-9 / 1308-38-9							
5	chromium in chromium(VI) compounds { chromium(VI) oxide }		<0.5 mg/kg	1.923	<0.962 mg/kg	<0.0000962 %		<LOD
	024-001-00-0 / 215-607-8 / 1333-82-0							
6	copper { dicopper oxide; copper (I) oxide }		13 mg/kg	1.126	13.832 mg/kg	0.00138 %	✓	
	029-002-00-X / 215-270-7 / 1317-39-1							
7	lead { lead chromate }	1	23 mg/kg	1.56	33.903 mg/kg	0.00217 %	✓	
	082-004-00-2 / 231-846-0 / 7758-97-6							
8	mercury { mercury dichloride }		<0.1 mg/kg	1.353	<0.135 mg/kg	<0.0000135 %		<LOD
	080-010-00-X / 231-299-8 / 7487-94-7							
9	nickel { nickel chromate }		16 mg/kg	2.976	45.001 mg/kg	0.0045 %	✓	
	028-035-00-7 / 238-766-5 / 14721-18-7							
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }		<0.2 mg/kg	2.554	<0.511 mg/kg	<0.0000511 %		<LOD
	034-002-00-8 / /							
11	zinc { zinc chromate }		55 mg/kg	2.774	144.186 mg/kg	0.0144 %	✓	
	024-007-00-3 / 236-878-9 / 13530-65-9							
12	TPH (C6 to C40) petroleum group		<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
	/ / TPH							
13	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
	603-181-00-X / 216-653-1 / 1634-04-4							

#		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		benzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
15		toluene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
16		ethylbenzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
17		xylene				<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<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]									
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 }				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		<LOD
		006-007-00-5											
19		pH				8.2	pH		8.2	pH	8.2 pH		
				PH									
20		naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
21		acenaphthylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-917-1	208-96-8									
22		acenaphthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-469-6	83-32-9									
23		fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-695-5	86-73-7									
24		phenanthrene				0.17	mg/kg		0.161	mg/kg	0.0000161 %	✓	
			201-581-5	85-01-8									
25		anthracene				0.14	mg/kg		0.132	mg/kg	0.0000132 %	✓	
			204-371-1	120-12-7									
26		fluoranthene				0.25	mg/kg		0.236	mg/kg	0.0000236 %	✓	
			205-912-4	206-44-0									
27		pyrene				0.3	mg/kg		0.284	mg/kg	0.0000284 %	✓	
			204-927-3	129-00-0									
28		benzo[a]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
29		chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
30		benzo[b]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
31		benzo[k]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
32		benzo[a]pyrene; benzo[def]chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
33		indeno[123-cd]pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-893-2	193-39-5									
34		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									
35		benzo[ghi]perylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-883-8	191-24-2									
36		sulfur { sulfur }				7.1	mg/kg		6.709	mg/kg	0.000671 %	✓	
		016-094-00-1	231-722-6	7704-34-9									
										Total:	0.0286 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS06 0.60m

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:
WS06 0.60m
Sample Depth:
0.60 m
Moisture content:
6%
(wet weight 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: 6% Wet Weight 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	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		17 mg/kg	1.32	21.099 mg/kg	0.00211 %	✓	
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		<0.4 mg/kg	3.22	<1.288 mg/kg	<0.000129 %		<LOD
3	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.12 mg/kg	1.142	0.129 mg/kg	0.0000129 %	✓	
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		20 mg/kg	1.462	27.477 mg/kg	0.00275 %	✓	
5	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5 mg/kg	1.923	<0.962 mg/kg	<0.0000962 %		<LOD
6	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1		18 mg/kg	1.126	19.05 mg/kg	0.00191 %	✓	
7	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	18 mg/kg	1.56	26.392 mg/kg	0.00169 %	✓	
8	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.1 mg/kg	1.353	<0.135 mg/kg	<0.0000135 %		<LOD
9	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		38 mg/kg	2.976	106.312 mg/kg	0.0106 %	✓	
10	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.71 mg/kg	2.554	1.704 mg/kg	0.00017 %	✓	
11	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		110 mg/kg	2.774	286.847 mg/kg	0.0287 %	✓	
12	TPH (C6 to C40) petroleum group			TPH		<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
13	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<0.001 mg/kg		<0.001 mg/kg	<0.0000001 %		<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									
14		benzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
15		toluene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
16		ethylbenzene				<0.001	mg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
17		xylene				<0.002	mg/kg		<0.002	mg/kg	<0.0000002 %		<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]									
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 }				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		<LOD
		006-007-00-5											
19		pH				8.3	pH		8.3	pH	8.3 pH		
				PH									
20		naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
21		acenaphthylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-917-1	208-96-8									
22		acenaphthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-469-6	83-32-9									
23		fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-695-5	86-73-7									
24		phenanthrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-581-5	85-01-8									
25		anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			204-371-1	120-12-7									
26		fluoranthene				0.12	mg/kg		0.113	mg/kg	0.0000113 %	✓	
			205-912-4	206-44-0									
27		pyrene				0.14	mg/kg		0.132	mg/kg	0.0000132 %	✓	
			204-927-3	129-00-0									
28		benzo[a]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
29		chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
30		benzo[b]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
31		benzo[k]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
32		benzo[a]pyrene; benzo[def]chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
33		indeno[123-cd]pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-893-2	193-39-5									
34		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									
35		benzo[ghi]perylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-883-8	191-24-2									
36		sulfur { sulfur }				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
		016-094-00-1	231-722-6	7704-34-9									
										Total:	0.0496 %		

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
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: BH01 1.50m

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample Name:
BH01 1.50m
Sample Depth:
1.50 m
Moisture content:
14%
(wet weight 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% Wet Weight 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							
1		pH		PH		7.6 pH		7.6 pH	7.6 pH		
								Total:	0%		

Key

	User supplied data
	Determinand defined or amended by HazWasteOnline (see Appendix A)

Appendix A: Classifier defined and non CLP determinands

pH (CAS Number: PH)

Description/Comments: Appendix C4
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: None.

chromium(III) oxide (worst case) (EC Number: 215-160-9, CAS Number: 1308-38-9)

Conversion factor: 1.462
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

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

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 Hazard Statement(s): Carc. 2 H351
Reason for additional Hazards Statement(s):
03 Jun 2015 - Carc. 2 H351 hazard statement sourced from: IARC Group 2B (77) 2000

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 Hazard Statement(s): EUH032 >= 0.2 %
Reason for additional Hazards Statement(s):
14 Dec 2015 - EUH032 >= 0.2 % hazard statement sourced from: WM3, Table C12.2

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

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

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

- **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

- **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

- **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

- **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

- **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

- **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

Appendix B: Rationale for selection of metal species

arsenic {arsenic trioxide}

Reasonable case CLP species based on hazard statements/molecular weight and most common (stable) oxide of arsenic. Industrial sources include: smelting; main precursor to other arsenic compounds (edit as required)

boron {diboron trioxide; boric oxide}

Reasonable case CLP species based on hazard statements/ molecular weight, physical form and low solubility. Industrial sources include: fluxing agent for glass/enamels; additive for fibre optics, borosilicate glass (edit as required)

cadmium {cadmium oxide}

Reasonable case CLP species based on hazard statements/molecular weight, very low solubility in water. Industrial sources include: electroplating baths, electrodes for storage batteries, catalysts, ceramic glazes, phosphors, pigments and nematocides. (edit as required) Worst case compounds in CLP: cadmium sulphate, chloride, fluoride & iodide not expected as either very soluble and/or compound's industrial usage not related to site history (edit as required)

chromium in chromium(III) compounds {chromium(III) oxide (worst case)}

Reasonable case species based on hazard statements/molecular weight. Industrial sources include: tanning, pigment in paint, inks and glass (edit as required)

chromium in chromium(VI) compounds {chromium(VI) oxide}

Worst case CLP species based on hazard statements/molecular weight. Industrial sources include: production stainless steel, electroplating, wood preservation, anti-corrosion agents or coatings, pigments (edit as required)

copper {dicopper oxide; copper (I) oxide}

Reasonable case CLP species based on hazard statements/molecular weight and insolubility in water. Industrial sources include: oxidised copper metal, brake pads, pigments, antifouling paints, fungicide. (edit as required) Worse case copper sulphate is very soluble and likely to have been leached away if ever present and/or not enough soluble sulphate detected. (edit as required)

lead {lead chromate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

mercury {mercury dichloride}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

nickel {nickel chromate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

selenium {selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex}

Harmonised group entry used as most reasonable case. Pigment cadmium sulphoselenide not likely to be present in this soil. No evidence for the other CLP entries: sodium selenite, nickel II selenite and nickel selenide, to be present in this soil. (edit as required)

zinc {zinc chromate}

Worst case CLP species based on hazard statements/molecular weight (edit as required)

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}

Harmonised group entry used as most reasonable case as complex cyanides and those specified elsewhere in the annex are not likely to be present in this soil: [Note conversion factor based on a worst case compound: sodium cyanide] (edit as required)

sulfur {sulfur}

Elemental sulfur most likely to be worst case scenario hazardous

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.1, May 2018
HazWasteOnline Classification Engine Version: 2020.241.4455.8692 (28 Aug 2020)
HazWasteOnline Database: 2020.241.4455.8692 (28 Aug 2020)

This classification utilises the following guidance and legislation:
WM3 v1.1 - Waste Classification - 1st Edition v1.1 - May 2018
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
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
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

CBR Test Results (MEXE Probe)

Job No.	C3242
Job Name	Corneli Primary School, North Cornelly
Date	7th August 2020

MP1

Position	Depth (mm)			
	150	300	450	600
P1	2	13	<14	
P2	6	9	<14	
P3	3	<14		
P4	5	9	<14	
P5	8	<14		
Minimum CBR Value	2.0	9.0	14.0	

MP2

Position	Depth (mm)			
	150	300	450	600
P1	6	<14		
P2	7	<14		
P3	5	12	<14	
P4	3	<14		
P5	4	11	<14	
Minimum CBR Value	3.0	11.0	14.0	

MP3

Position	Depth (mm)			
	150	300	450	600
P1	8	<14		
P2	6	<14		
P3	5	<14		
P4	7	<14		
P5	5	<14		
Minimum CBR Value	5.0	14.0		

MP4

Position	Depth (mm)			
	150	300	450	600
P1	5	9	12	<14
P2	3	8	<14	
P3	8	<14		
P4	6	10	<14	
P5	6	13	<14	
Minimum CBR Value	3.0	8.0	12.0	

If Empty - Means unable to penetrate further due to strata strength

CBR Test Results (Mexecone)

Job No.	C3242
Job Name	Corneli Primary School, North Cornelly
Date	7th August 2020

MP5				
Position	Depth (mm)			
	150	300	450	600
P1	2	7	<14	
P2	5	12	<14	
P3	9	<14		
P4	4	11	<14	
P5	9	<14		
Minimum CBR Value	2.0	7.0	14.0	

If Empty - Means unable to penetrate further due to strata strength