

PHASE II GROUND INVESTIGATION REPORT



PLOTS 2 & 3 THE STEADINGS, GULDEN ROAD, WARKWORTH,
MORPETH, NORTHUMBERLAND, NE65 0WR
PREPARED FOR CATH BASILIO



QUALITY CONTROL

Project No.	GEOL22-8277	Client	Cath Basilio
Design Team	Croft Design Collective		
Report Type	Phase II Ground Investigation Report		
Planning Ref.	18/02096/FUL		
Project Type	Change of use to residential (C3 use) with the erection of 2 no. dwellinghouses with associated gardens and off street parking		
Site Address	Plots 2 and 3 The Steadings, Guilden Road, Warkworth, Morpeth, Northumberland, NE65 0WR		
NGR	424870, 605170		
Date	23/09/2022		
Prepared by	Richard Stripp		
Qualifications	BSc (Hons) MSc FGS MIEnvSc		
Position	Director		
Checked by	Martin Davidson		
Qualifications	BSc (Hons) FGS		
Position	Principal Geoenvironmental Engineer		
Approved by	Terry M^cMenam		
Qualifications	BSc (Hons) CSci CEnv FGS MIEnvSc FCMI MoID		
Position	Director		

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REPORT REVISION HISTORY				
Issue	Description	Date	Author	Approval
1	Final Issue	23/09/2022	RS	TMc



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PHASE II GROUND INVESTIGATION REPORT

1.0 Introduction

Geol Consultants Limited (GEOL) were instructed by Cath Basilio to undertake an appropriate programme of intrusive ground investigation works for a parcel of land designated as Plots 2 & 3 positioned within the boundaries of an area known as The Steadings, located off Guilden Road in Warkworth, Northumberland, where proposals have been made to develop the site with 2 no. dwellinghouses with associated gardens and off street parking. A copy of the proposed development layout plan produced by Croft Design Collective, reference 1912WRK _105 Rev D, dated April 2020, can be seen attached in Appendix I. The National Grid Reference for the centre of the development area is 424870, 605170.

The purpose of this Phase II report is to provide information relating to the following to assist with the new residential development proposals.

- 🚧 Identify the ground conditions below the site area, where access would allow to assess the geotechnical properties of the underlying made ground and natural deposits to assist with determining suitable and appropriate new building foundation designs
- 🚧 Determine the levels of contamination within the existing shallow soil deposits, to assess the impacts from those contaminants towards the construction workforce and future site end-users (Human Health) based on a Residential with homegrown produce end-use
- 🚧 Determine the scope of any further investigation works or remediation measures required for the site prior to commencing with the proposed residential development

As part of the Land Contamination Risk Management (LCRM) guidance, dated April 2021, this report should be read in conjunction with the Phase I Preliminary Contamination Risk Assessment (PCRA) produced for the site by GEOL, reference GEOL22-8277, dated July 2022. The findings contained in the PCRA report were considered to aid the design and scope of the intrusive investigation works carried out on site by GEOL.

The information contained in this Phase II report is limited to the area of the site as shown on the existing and proposed development layout plans attached in Appendix I, and to those areas accessible at the time of the ground investigation works being undertaken. When considering the scope of works completed for the development proposals, any features or issues not specifically mentioned cannot be assumed to have been covered.

PHASE II GROUND INVESTIGATION REPORT

2.0 Scope of Works

To determine the shallow ground conditions below the site area, ground investigation works were completed by GEOL and comprised the sinking of 5 no. boreholes (labelled BH01 to BH05) to assist with foundation designs. In addition, 4 no. TRL Dynamic Cone Penetration (DCP) tests were completed to assist with the construction of new areas of hardstanding and floor slabs.

Detailed descriptions of the strata encountered during the investigation works, together with the results of all insitu field testing, are presented on the borehole record sheets, copies of which can be seen attached in Appendix II. The borehole positions can be seen on the investigation location plan attached in Appendix II.

3.0 Ground Conditions

3.1 Soil Profile

A summary of the ground conditions encountered at the investigation locations (BH01 to BH05) are given in the Table below.

Strata	Depths Recorded	Description & Comments
MADE GROUND Variable	From 0.00m (GL) to between 0.50m and 1.15m	Made ground was recorded comprising grass & dark brown sandy soil and grey sandy dolerite gravel overlying typically dark brown gravelly sand and dark brown sandy gravelly clay with fragments of brick, dolerite, sandstone and limestone
TOPSOIL	From 0.00m (GL) to 0.30m	At the borehole location of BH04 only, undisturbed overgrown grass and dark brown sandy SOIL was recorded
SUPERFICIAL GEOLOGY Glacial Till	From 0.30m to 1.15m up to at least 5.45m	The natural deposits comprise stiff dark brown CLAY with bands of loose and medium dense fine to medium grained SAND

There was no obvious visual or olfactory evidence of any fuel / oil type contamination, 'ashy' materials, potential asbestos containing materials (ACM's) or bundles of fibres noted at the investigation locations. Similarly, there was also no evidence of any biodegradable or putrescible deposits.

3.2 Groundwater

Water ingresses were recorded upon encountering shallow sand bands ranging between depths of 3.00m and 3.50m. Standing water levels of between 2.20m and 3.10m were observed on completion of the boreholes prior to backfilling.

PHASE II GROUND INVESTIGATION REPORT

3.0 Ground Conditions (Cont'd)

3.2 Groundwater (Cont'd)

Based on the water observations made at the investigation locations, heavy ingresses of water are unlikely to occur within shallow construction related excavations (i.e. <3m), although it would be deemed prudent to allow for the introduction of temporary groundwater control techniques (i.e. sump pumping), to take care of any localised ingresses of groundwater, during the construction period, especially during the wetter periods of the year.

For future site works, adequate lateral trench support will be required for excavations, to prevent trench wall collapse or over excavations, as well as to create a safe working environment below a depth of 1.20m, and any excavations on this site should remain open for as short a period as possible, since some of these materials may be susceptible to deterioration, if left open to the natural elements for any significant period.

4.0 Insitu Geotechnical Testing

4.1 Insitu CBR Tests

Dynamic Cone Penetrometer (DCP) and MEXE cone penetrometer tests were completed to determine the insitu strength / density of the underlying made ground and natural deposits to provide characteristic design CBR values for the soil deposits.

The DCP field results are analysed using the UK DCP 3.1 software package to calculate the thickness and strength / density of differing layers. The calculated results provided comprise penetration rates (mm / blow) & CBR values (%), and the DCP test results, including a graphical representation, can be seen within the DCP test reports attached in Appendix II.

The results have identified variable values for the deposits tested. However, where new areas of hardstanding surfacing and ground bearing slabs are to be constructed and where the initial made ground and natural deposits are to be used as an undisturbed subgrade in their present condition, an equivalent CBR design value of 3% should be taken for design purposes. It would be prudent to proof roll the exposed subgrade to identify any potential 'soft spots' which can be taken care of with the introduction of additional subbase and / or the use of geogrid.

PHASE II GROUND INVESTIGATION REPORT

4.0 Insitu Geotechnical Testing (Cont'd)

4.2 Insitu Hand Shear Vane Tests

Insitu hand shear vane tests were undertaken within the natural clay deposits encountered at the borehole locations and a summary of the results obtained can be seen in the Table below.

Strata	Results	Comments
Natural CLAY Deposits	Shear strength values ranging between 50kN/m ² and >130kN/m ² have been recorded	The hand shear vane test results for the natural clay deposits are indicative of medium and high strength deposits

4.3 Insitu Cone Penetration Tests

Insitu cone penetration tests (CPT's) were undertaken within the natural sand and clay deposits encountered at the borehole locations. A summary of the results obtained can be seen in the Table below.

Strata	SPT Results	Comments
SAND Deposits	CPT 'N' values ranging between 5 up to 24 have been recorded	The results obtained for the natural sand deposits are indicative of loose and medium dense deposits
CLAY Deposits	CPT 'N' values ranging between 6 up to 40 have been recorded	The results obtained for the natural clay deposits are suggestive of soft, firm and stiff strata

5.0 Laboratory Testing

5.1 Determination of Liquid & Plastic Limits

Six representative samples of the natural clay deposits recovered from the site were tested to determine their moisture content and liquid & plastic limits, to ascertain their volume change potential (shrinkage or swelling), to help assist with future foundation designs. The results of the tests are contained in the Professional Soils Laboratory (PSL) Laboratory Report (reference PSL22/5167), a copy of which can be seen attached in Appendix III.

The natural clay deposits tested fall within the intermediate and high plasticity range, and when considering the amount passing the 425um sieve, they display a medium volume change (shrinkage or swelling) potential. Therefore, these natural deposits may undergo significant changes in volume if large changes in their natural moisture content were to occur due to seasonal variations or the like, and as such if new foundations were to be based within these deposits, they should be placed at a minimum depth of 0.90m below finished ground levels.

PHASE II GROUND INVESTIGATION REPORT

5.0 Laboratory Testing (Cont'd)

5.1 Determination of Liquid & Plastic Limits (Cont'd)

It should be noted that the natural clay deposits at the location of the BH04, and adjacent to an existing hedgerow, were observed to be 'dry' / desiccated to a depth of at least 1.00m. This is confirmed by the results of the testing identifying slightly lower moisture contents (16%) compared the natural clays tested away from the hedgerow (between 18% & 19%).

As such, consideration will need to be given to the presence of existing, proposed or recently removed vegetation to avoid the effects of future shrinkage and swelling of the natural deposits, and as such minimum foundation depths may need to be increased to take this into account. Reference should be made to the NHBC Technical Standards guidance, Part 4.2 Building Near Trees, and BS5837:2012 – Trees in relation to design, demolition and construction – Recommendations.

5.2 Determination of Chemical Attack on Buried Concrete

Eleven representative samples of the made ground, topsoil and natural deposits encountered at the investigation locations were tested by Derwentside Environmental Testing Services Limited (DETS) to determine their pH value and soluble sulphate levels, so these materials can be classified in accordance with the guidance BRE Special Digest 1:2005, Concrete in Aggressive Ground. The results of the tests are contained in the DETS Certificate of Analysis, report reference 22-15348, a copy of which can be seen in Appendix III.

The laboratory test results have recorded soluble sulphate concentrations ranging between 17mg/l up to 180mg/l, and pH values ranging between 7.0 to 9.8. Therefore, where future foundations and buried concrete are to be constructed the site can be given a Design Sulphate Class classification of DS-1. The Aggressive Chemical Environment for Concrete (ACEC) class for the deposits present can be assessed as AC-1, assuming mobile water ground conditions and based on brownfield locations.

5.3 Contamination Screening / Screening Strategy

Eight representative samples of the made ground and topsoil deposits encountered at the investigation locations were screened for a wide range of chemical analytes to determine the levels of contamination present, to allow an assessment of the risks these materials may pose to the future site end-users and construction workforce. Ground contamination laboratory testing was completed by DETS of Consett, Co. Durham (UKAS & MCERTS accredited), and the suite of chemical analysis carried out is summarised on the following page.

PHASE II GROUND INVESTIGATION REPORT

5.0 Laboratory Testing (Cont'd)

5.3 Contamination Screening / Screening Strategy (Cont'd)

- 8 no. soil samples tested for Arsenic, Cadmium, Chromium (III & VI), Copper, Lead, Mercury, Nickel, Selenium, Zinc, Cyanide (free) and Total Organic Carbon (TOC)
- 8 no. soil samples screened for Speciated Polycyclic Aromatic Hydrocarbons (PAH's) – based on the current USEPA 16 PAH's
- 6 no. soil sample screened for Petroleum Hydrocarbons (EPH C6-C40) – used for the purposes of completing a waste classification assessment for the off-site disposal of soils if required
- 8 no. soil samples tested for Asbestos (presence)

The results of the tests are contained in the DETS Certificate of Analysis, report reference 22-15348, a copy of which can be seen in Appendix III, and a summary of the contamination results can be seen in the Table on the following page.

6.0 Ground Contamination Risk Assessment

6.1 Human Health Risk Assessment

A Human Health Generic Quantitative Risk Assessment (GQRA) is carried out by comparing measured concentrations in soil with generic screening values appropriate for the Conceptual Model and pollutant linkage(s) being assessed. Provided the measured concentrations are below appropriate generic screening criteria, the risk from the pollutant linkages(s) being assessed are unlikely to represent a significant risk. The generic screening values referred to above usually take the form of risk-based Generic Assessment Criteria (GAC) values, that are most typically derived using the Environment Agency's Contaminated Land Exposure Assessment (CLEA) Model.

For the purpose of this Human Health contamination risk assessment, and when considering the nature and sensitivity of the proposed development (Residential with homegrown produce), the results have been compared against currently available assessment values published by LQM / CIEH (Suitable 4 Use Levels – S4UL's), CL:AIRE Category 4 Screening Levels (C4SL's) and Atkins ATRISKsoil Soil Screening Values (SSVs) for Cyanide only. To allow an assessment of the level of risk to be made, the shallow soil deposits present on this site has been assessed by comparing the maximum recorded value against the appropriate critical concentration.

PHASE II GROUND INVESTIGATION REPORT

6.0 Ground Contamination Risk Assessment (Cont'd)

6.1 Human Health Risk Assessment (Cont'd)

Generic Analytes	Critical concentration (mg/kg)	No. of samples screened	Max. concentration recorded (mg/kg)
Arsenic	37 ⁽¹⁾	8	15
Cadmium	11 ⁽¹⁾	8	0.6
Chromium III	910 ⁽¹⁾	8	34
Chromium VI	6 ⁽¹⁾	8	<1.0
Copper	2,400 ⁽¹⁾	8	150
Lead	200 ⁽³⁾	8	120
Mercury	40 ⁽¹⁾	8	0.16
Nickel	180 ⁽¹⁾	8	27
Selenium	250 ⁽¹⁾	8	1.2
Zinc	3700 ⁽¹⁾	8	260
Cyanide	34 ⁽²⁾	8	0.3
Asbestos	Presence	8	No asbestos detected
Speciated PAH's			
Acenaphthene	1,100 ⁽¹⁾	8	1.7
Acenaphthylene	920 ⁽¹⁾	8	0.6
Anthracene	11,000 ⁽¹⁾	8	3.3
Benzo(a)anthracene	13 ⁽¹⁾	8	6.1
Benzo(a)pyrene	3.0 ⁽¹⁾	8	5.2
Benzo(b)fluoranthene	3.7 ⁽¹⁾	8	4.1
Benzo(ghi)perylene	350 ⁽¹⁾	8	3.4
Benzo(k)fluoranthene	100 ⁽¹⁾	8	2.8
Chrysene	27 ⁽¹⁾	8	6.4
Dibenz(ah)anthracene	0.3 ⁽¹⁾	8	8.2
Fluoranthene	890 ⁽¹⁾	8	18
Fluorene	860 ⁽¹⁾	8	3.1
Indeno(123cd)pyrene	41 ⁽¹⁾	8	3.5
Naphthalene	13 ⁽¹⁾	8	0.2
Phenanthrene	440 ⁽¹⁾	8	19
Pyrene	2,000 ⁽¹⁾	8	14

⁽¹⁾ = The LQM/CIEH Suitable 4 Use Levels (Residential with homegrown produce, 6% SOM) [GEOL S4UL3816](#), ⁽²⁾ = ATRISK^{SOIL} SSV (2015), ⁽³⁾ = CL:AIRE C4SLs (Residential with homegrown produce)

PHASE II GROUND INVESTIGATION REPORT

6.0 Ground Contamination Risk Assessment (Cont'd)

6.1 Human Health Risk Assessment (Cont'd)

The maximum concentration values for most of the contaminants listed in the Table on the previous page do not exceed the critical concentration values adopted for this site, based on an end-use of Residential with homegrown produce.

However, exceedances of Benzo(a)pyrene, Benzo(b)fluoranthene and Dibenz(ah)anthracene have been recorded within the initial made ground and soil deposits recorded at several investigation locations. As such the levels of PAH's will represent an unacceptable risk to the future site end-users where exposure pathways are available post completion of the proposed development (i.e. within gardens and areas of soft landscaping). Therefore, remedial measures in the form of either removal of all made ground deposits / or the provision of clean (inert) soil will be required for all proposed gardens and areas of soft landscaping to make the development safe for future occupation.

It should be noted the made ground deposits can remain on site below areas of future hardcover (buildings and roadways) without representing a significant risk towards the future end-users.

Based on the contamination results obtained for the made ground, a Remediation Strategy (RS) will need to be produced for this development site and the contents will need to be agreed with the Local Planning Authority, prior to undertaking / implementing the necessary protection measures.

7.0 Preliminary Waste Disposal Assessment

An assessment of any excavated materials which are generated from the creation of foundations, services, and the like, which cannot be accommodated on site and are required to be discarded and removed from site as a waste should be assessed and classified in accordance with the Environment Agency's Technical Guidance WM3: Waste Classification - Guidance on the classification and assessment of waste (1st Edition v1.1, June 2018).

Where any materials are being removed from site they should be disposed of at a suitably licensed and appropriate Landfill based on their classification, with a duty of care system in place and maintained throughout the disposal operation. Excavated materials should be segregated into different waste streams (i.e. made ground, impacted strata and natural strata) so that the materials can be appropriately assessed, classified and sent to the correct waste facility. It should be noted that prior to offsite disposal of any soils from this site, that additional sampling, analysis and screening may be required once the waste stream has been identified and volumes of material requiring disposal have been determined.

PHASE II GROUND INVESTIGATION REPORT

7.0 Preliminary Waste Disposal Assessment (Cont'd)

The made ground and soil deposits have been assessed using the WM3 technical guidance in conjunction with the on-line classification software tool HazWasteOnline™. The soil screening results for each sample have been assessed individually to determine if the materials can be considered as a single waste stream or whether different areas of the site represent separate waste streams.

Based on the physical (visual and olfactory) appearance of the materials / samples tested, the materials have been assessed from the WM3 List of Waste (LoW) codes as either 17 05 03 (waste and stones containing hazardous substances) or 17 05 04 (waste and stones other than those mentioned in 17 05 03).

In order to determine the correct waste code to assign to each sample tested, the contamination screening results have been assessed by the HazWasteOnline™ software, and the full Classification Reports can be seen in Appendix IV. A summary of the results can be seen in the Table below.

Position	Sample Depth (m)	Strata	Waste Code	WM3 Waste Classification
SS1	-	MG	17 05 04	Non-Hazardous
BH01	0.05-0.50	MG	17 05 04	Non-Hazardous
BH02	0.00-0.20	MG / TS	17 05 04	Non-Hazardous
BH02	0.20-0.55	MG	17 05 04	Non-Hazardous
BH03	0.20-0.45	MG	17 05 04	Non-Hazardous
BH04	0.00-0.30	TS	17 05 04	Non-Hazardous
BH05	0.30-0.60	MG	17 05 04	Non-Hazardous
BH05	0.80-1.15	MG	17 05 04	Non-Hazardous

MG = Made ground, TS = Topsoil

The made ground and topsoil deposits present across the site can be considered as Non-Hazardous Waste (LoW code 17 05 04) and can be disposed of at a Non-Hazardous Landfill, without the requirement for any further testing. Based on the TOC values recorded for the made ground and topsoil deposits (between 1.3% up to 15%) not all of these materials would meet the Inert Waste acceptance criteria for disposal at an Inert Landfill, and therefore there would be no merit in carrying out further WAC testing on these materials if they are intended to be disposed of off-site.

Excavated materials (i.e. made ground free of significant contamination and natural strata) can be reused on this site as a general fill providing this material meets any geotechnical requirements for its intended end-use, however, these materials should be inspected to determine if any unforeseen potential contamination not previously identified requires an assessment. It may be necessary for confirmatory contamination screening to be carried out to confirm the suitability of the reuse of these materials.

7.0 Preliminary Waste Disposal Assessment (Cont'd)

Where natural strata is to be disposed of as a waste it is likely that subject to the completion of WAC testing, that these materials should meet the criteria for disposal at an Inert Waste Landfill. The number of samples to be screened would be dependent on the volume requiring disposal.

8.0 Recommendations for New Building Foundations

For the purposes of the following discussion, it is assumed that there will be only limited changes to the ground levels across the site area investigated, and recommendations are provided from existing ground levels. If significant changes in site levels are envisaged, then a reassessment of the foundation recommendations should be undertaken taking these changes into account.

From the shallow boreholes sunk on site by GEOL, the topsoil and made ground was recorded over the site to depths ranging between 0.30m up to 1.15m, in turn underlain by natural clay deposits, which are thought to be representative of Devensian Till.

Based on the findings of these ground investigation works and the insitu geotechnical testing, foundations based within the natural clay deposits can be designed to a maximum allowable bearing pressure of 150kN/m². Foundations should be maintained at a minimum depth of 0.90m below finished ground levels. However, consideration will need to be given to foundation depths where the existing hedgerow will influence the construction of new foundations within the natural clays, to take into account shrinkage / swell potential.

For all foundation excavations it would be prudent to make an allowance for these to be inspected by a suitably qualified Geotechnical Engineer during the construction phase of works, to verify the correct founding strata and depths have been achieved, and to ensure there are no significant changes or variations in the ground conditions below parts of the site where boreholes were not sunk.

9.0 Recommendations & General Comments

During the ground preparation works and the development of the site, should the ground conditions appear to differ from those already identified as part of these investigation works, then advice should be sought from a suitably qualified Engineer to determine if a reassessment of the ground conditions and recommendations is required before the development progresses further.

From the results of the contamination screening and risk assessments carried out, and based on the sensitive nature of the proposed development (Residential end-use), it can be seen that the initial shallow soil and made ground deposits present below the site will represent an unacceptable level of risk towards future end-users (Human Health).

9.0 Recommendations & General Comments (Cont'd)

Therefore, these materials should either be covered with a layer of clean cover and / or excavated and removed from site to negate future risks to human health post-development of the residential dwellings. As such, there is a requirement for remediation and validation works to be completed on this site associated with ground contamination.

Furthermore and in accordance with Northumberland County Councils policy on mine gas protection, which is uniform over all Coal Authority low and high risk development areas within Northumberland, gas protection measures will need to be installed to a minimum classification of Characteristic Situation 2 (CS2). This level of protection would also provide the necessary level of protection to meet the required basic radon protection measures. As such, appropriate gas protection measures will be needed for the proposed development and should be selected based on the characteristic situation using the guidance contained in Section 7 of the BS8485:2015 + A1:2019 document.

When considering the above points, a Remediation Strategy will need to be compiled for the site / proposed development and submitted to Northumberland County Council for approval prior to the development commencing detailing the design of the gas protection measures in accordance with the guidance BS8485:2015 + A1:2019 Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings and the proposed remediation for dealing with ground contamination.

For future site works, adequate lateral trench support will be required for excavations, in order to prevent trench wall collapse or over excavations, as well as to create a safe working environment below a depth of 1.20m, and any excavations on this site should remain open for as short a period as possible, since some of these materials may be susceptible to deterioration, if left open to the natural elements for any significant period of time.

It is also recommended for any new developments, adequate surface drainage should be designed and installed by a competent contractor, to prevent surface water 'ponding' or collection, during and post construction, particularly where the existing surface drainage system is disrupted or damaged.

In addition, for deeper excavations, drainage, service runs or the like that may pass close to or beneath any proposed new foundations, these should be undertaken with care and completed prior to the preparation of any new foundations, so as not to allow any loose or granular material to move or 'flow', thus causing settlement to occur to any new foundations based at a higher level.

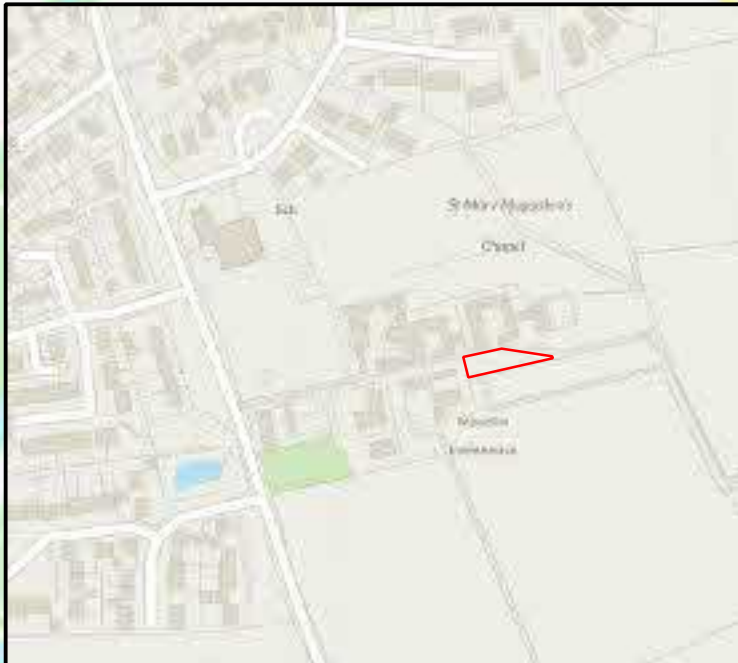
End of Report

APPENDIX I

Site Location Plan Existing Site Layout Plan & Proposed Development Layout Plan



3 Gladstone Terrace
Gateshead
Tyne & Wear
NE8 4DY
Tel: 0191 477 2020
Email: enquiries@geolconsultants.co.uk



SITE LOCATION PLAN



Purpose of Plan: Phase II Ground Investigation Report

Site Address: Plots 2 and 3 The Steadings, Guilden Road, Warkworth, Northumberland, NE65 0WR

Project No.: GEOL22-8277

- Notes
- Do not scale from this drawing, work to figured dimensions only.
 - All information is to be checked onsite for accuracy
 - Report any discrepancies or omissions to Croft Design Collective
 - Unless noted, changes made to the design intent on site have not been incorporated into this drawing.
 - Unless noted information on this drawing is intended as 'design intent' and not to be used for Construction.

Drawing Key

Revision Schedule:

Rev	Description	Date	By
A	Issued to Clients & Passivhaus Consultant	28/04/2020	JK
B	Issued to Clients	25/06/2020	JK
C	Issued for Planning	03/07/2020	JK

Drawing Title
Site Plan - Existing

Drawing Status
Planning

Drawn by
JK

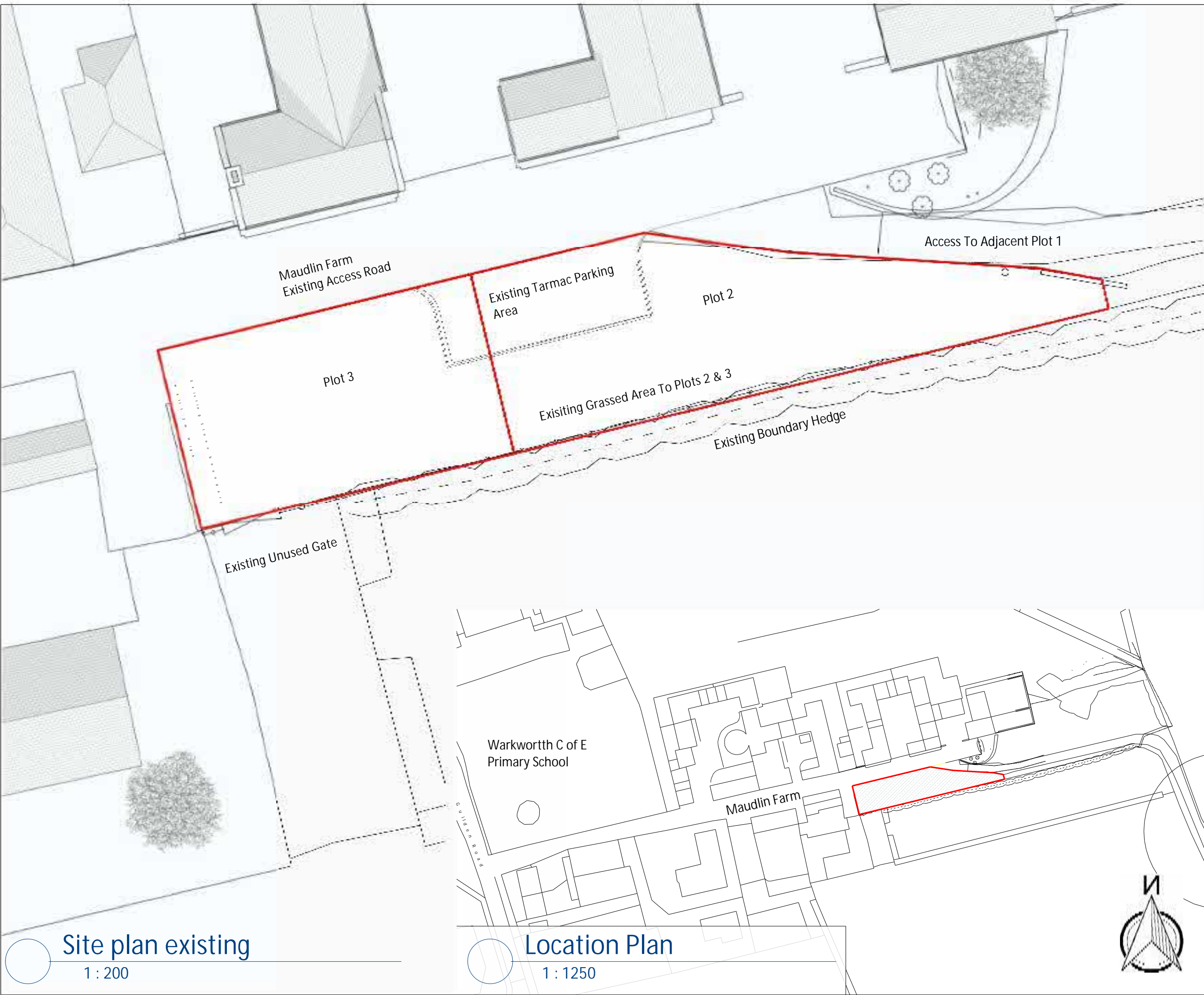
Checked by
FmK

Scale (@ A3)
As indicated

Date
Feb 2020

Drawing no.
1912WRK_100

Rev
C



Site plan existing

1 : 200

Location Plan

1 : 1250



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D	Re-issued for Planning	28/08/2020	JK

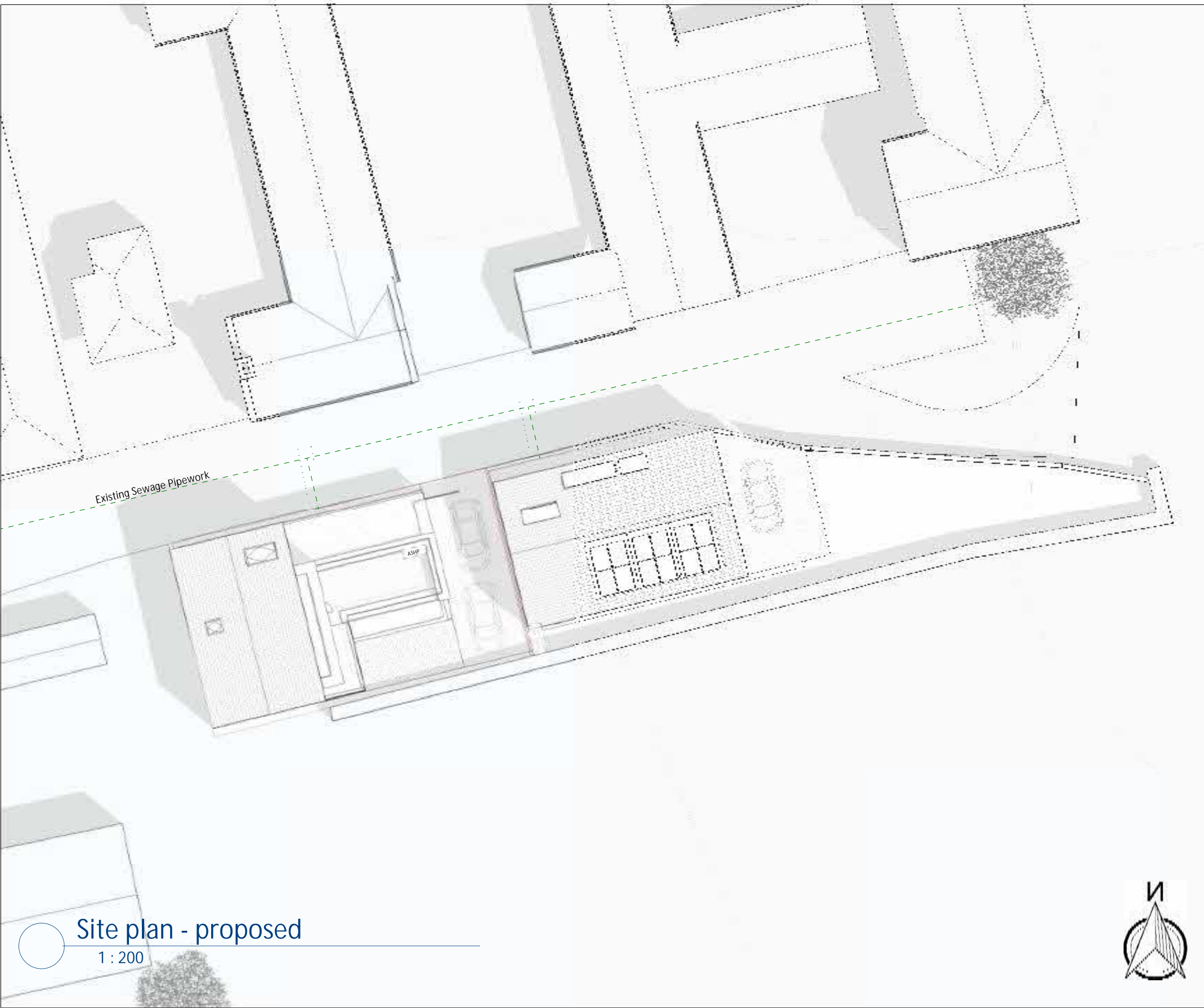
Drawing Title
Site Plan Proposed

Drawing Status
Planning

Drawn by JK | Checked by FmK

Scale (@ A3) | Date
As indicated | Apr 2020

Drawing no. | Rev
1912WRK_105 | D



Existing Sewage Pipework

ASHP

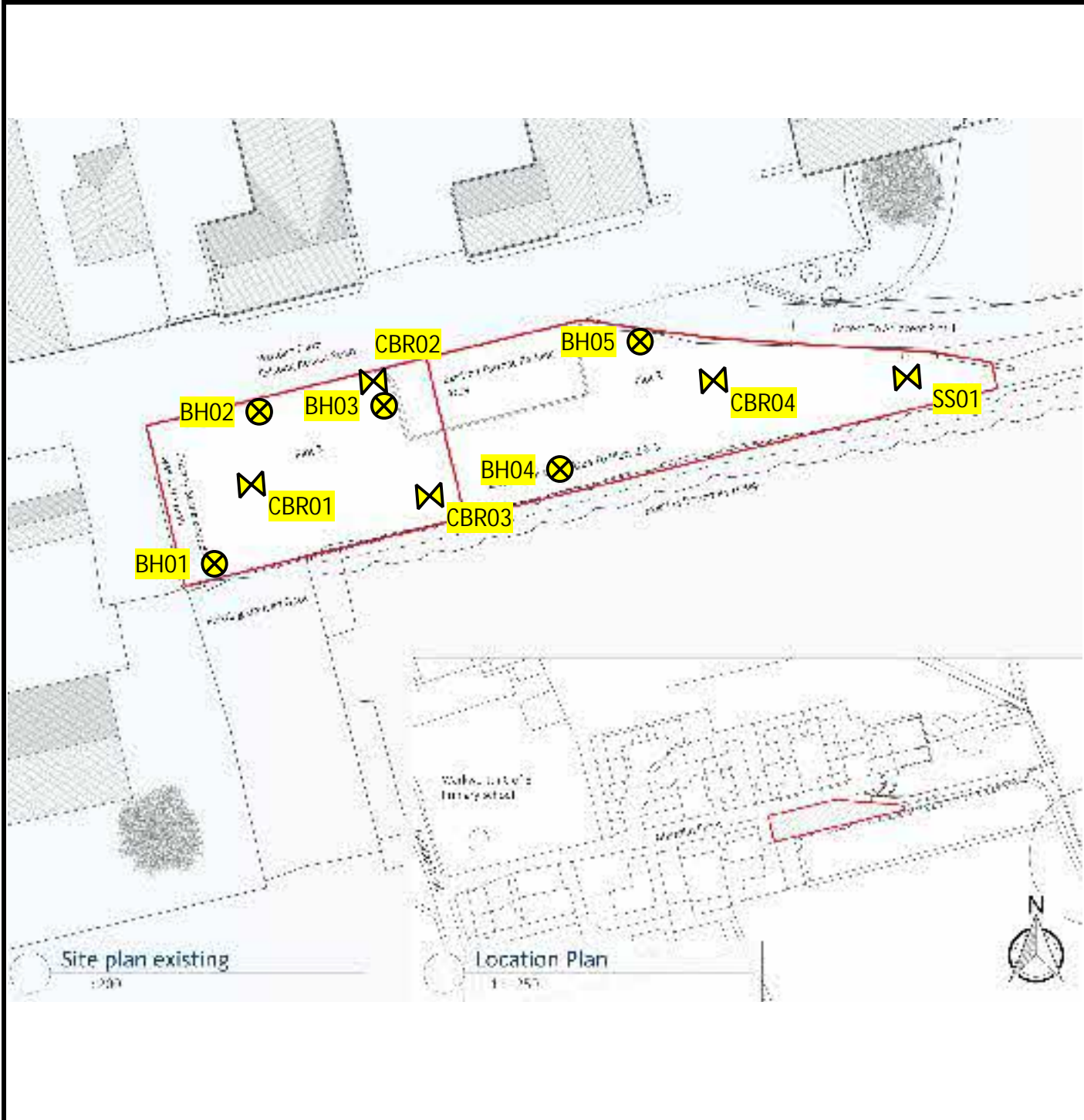
Site plan - proposed
1 : 200

APPENDIX II

Investigation Location Plan Borehole Record Sheets & TRL DCP Record Sheets



3 Gladstone Terrace
Gateshead
Tyne & Wear
NE8 4DY
Tel: 0191 477 2020
Email: enquiries@geolconsultants.co.uk



INVESTIGATION LOCATION PLAN

Purpose of Plan: Phase II Ground Investigation Report
Site Address: Plots 2 & 3 The Steadings, Warkworth, Northumberland, NE65 0WR
Project No.: GEOL22-8277



BOREHOLE LOG

Project Plots 2 & 3 The Steadings, Warkworth, Northumberland				BOREHOLE No BH01
Job No GEOL22-8277	Date 01-08-22	Ground Level (m)	Co-Ordinates ()	
Contractor Geol Consultants Limited				Sheet 1 of 1

SAMPLES & TESTS			STRATA					Geology	Instrument/ Backfill
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	DESCRIPTION		
0.05-0.50	ES					0.05 (0.45) 0.50	Grass overlying dark brown sandy soil (MADE GROUND). Medium and dark brown slightly clayey sand with abundant brick fragments and dolerite gravel (MADE GROUND).		
						0.70	Stiff medium brown sandy gravelly CLAY.		
1.00 1.00	B HSV	>130kN/m ²				(1.30)	Stiff (high strength) dark brown and grey slightly sandy slightly gravelly CLAY (GLACIAL TILL).		
1.90	HSV	>130kN/m ²				2.00			
						(1.00)	Stiff (high strength) dark brown slightly silty slightly gravelly CLAY (GLACIAL TILL).		
2.90 3.00-3.45	HSV CPT	>130kN/m ² N=11				3.00 (0.60)	Medium dense medium brown fine to medium grained SAND (GLACIAL TILL).		
						(0.30)	Firm (medium strength) dark brown slightly silty slightly laminated CLAY (GLACIAL TILL).		
3.80 4.00-4.45	HSV CPT	50kN/m ² N=9				3.90 (0.84)	Loose medium brown fine to medium grained SAND (GLACIAL TILL).		
						4.74			
5.00-5.45 5.00	CPT HSV	N=40 74kN/m ²				(0.71) 5.45	Stiff (high strength) dark brown slightly silty slightly laminated CLAY (GLACIAL TILL).		
						Borehole terminated at 5.45m.			

GEOL WS LOG GEOL22-8277- WARKWORTH BH LOGS.GPJ GINT STD AGS.3.1.GDT. 1/8/22

Windowless Sampling Drilling Progress						GENERAL REMARKS
Depth	Casing	Diameter	Recovery	Remarks		
5.45		5.45				
All dimensions in metres Scale 1:37.5					Client Cath Basilio	Method/ Plant Used Competitor Dart Rig
						Logged By RS



BOREHOLE LOG

Project Plots 2 & 3 The Steadings, Warkworth, Northumberland				BOREHOLE No BH02
Job No GEOL22-8277	Date 01-08-22	Ground Level (m)	Co-Ordinates ()	
Contractor Geol Consultants Limited				Sheet 1 of 1

SAMPLES & TESTS			STRATA					Geology	Instrument/ Backfill
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	DESCRIPTION		
0.00-0.20	ES					0.20	Grass overlying dark brown sandy soil (MADE GROUND).		
0.20-0.55	ES					(0.35) 0.55	Medium brown gravelly sand with occasional coal, brick fragments, sandstone and large cobbles (MADE GROUND).		
						0.60	Stiff dark brown sandy CLAY.		
0.90	HSV B	>130kN/m ²				(0.40) 1.00	Stiff (high strength) initially light brown and orange-brown becoming medium brown, dark orange-brown and grey slightly sandy slightly gravelly CLAY.		
1.00							Stiff (high strength) dark brown and grey slightly silty CLAY (GLACIAL TILL).		
2.00	HSV	>130kN/m ²				(2.00)			
2.90	HSV CPT	>130kN/m ² N=22				3.00	Medium dense medium brown fine to medium grained SAND (GLACIAL TILL).		
3.00-3.45					(0.90)				
4.00-4.45	CPT	N=6			3.90 (0.55) 4.45	Stiff dark brown and grey slightly silty CLAY (GLACIAL TILL).			
						Borehole terminated at 4.45m.			

GEOL WS LOG GEOL22-8277- WARKWORTH BH LOGS.GPJ GINT STD.AGS.3.1.GDT. 1/8/22

Windowless Sampling Drilling Progress						GENERAL REMARKS WATER: Strike at 3.00m, standing level at 2.50m on completion.
Depth	Casing	Diameter	Recovery	Remarks		
4.45		4.45				
All dimensions in metres Scale 1:37.5			Client Cath Basilio	Method/ Plant Used Competitor Dart Rig	Logged By RS	



BOREHOLE LOG

Project Plots 2 & 3 The Steadings, Warkworth, Northumberland				BOREHOLE No BH03
Job No GEOL22-8277	Date 01-08-22	Ground Level (m)	Co-Ordinates ()	
Contractor Geol Consultants Limited				Sheet 1 of 1

SAMPLES & TESTS			STRATA					Geology	Instrument/ Backfill
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	DESCRIPTION		
0.00-0.20	ES					0.20	Grass overlying dark brown sandy soil (MADE GROUND).		
0.20-0.45	ES					0.45	Dark brown clayey gravelly sand with large rubble sized fragment of brick and occasional grey limestone gravel (MADE GROUND).		
						0.70	Dark brown slightly sandy slightly gravelly disturbed clay with occasional pieces of ceramic (MADE GROUND).		
0.90-1.00	HSV B	>130kN/m ²				(1.30)	Stiff (high strength) medium brown and grey slightly sandy slightly gravelly CLAY (GLACIAL TILL).		
1.90-2.00	HSV CPT	>130kN/m ² N=15				2.00			
2.00-2.45						(1.00)	Firm to stiff dark brown slightly silty CLAY with thin sand band (0.05m) at 2.70m (GLACIAL TILL).		
3.00-3.45	CPT	N=11			3.00	Medium dense medium brown fine to medium grained SAND (GLACIAL TILL).			
					(1.45)				
4.00-4.45	CPT	N=24			4.45	Borehole terminated at 4.45m.			

GEOL WS LOG GEOL22-8277- WARKWORTH BH LOGS.GPJ GINT STD.AGS.3.1.GDT. 1/8/22

Windowless Sampling Drilling Progress						GENERAL REMARKS
Depth	Casing	Diameter	Recovery	Remarks		
4.45		4.45				

All dimensions in metres Scale 1:37.5	Client Cath Basilio	Method/ Plant Used Competitor Dart Rig	Logged By RS
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BOREHOLE LOG

Project Plots 2 & 3 The Steadings, Warkworth, Northumberland				BOREHOLE No BH04
Job No GEOL22-8277	Date 01-08-22	Ground Level (m)	Co-Ordinates ()	
Contractor Geol Consultants Limited				Sheet 1 of 1

SAMPLES & TESTS			STRATA					Geology	Instrument/ Backfill	
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	DESCRIPTION			
0.00-0.30	ES					(0.30) 0.30	Grass overlying dark brown sandy soil (TOPSOIL).			
0.60	B					0.55	Stiff medium brown sandy gravelly CLAY.			
						0.80	Stiff light brown slightly sandy 'dry' CLAY with roots.			
						(1.20)	Stiff (high strength) dark brown and grey slightly sandy slightly gravelly 'dry' CLAY (GLACIAL TILL).			
1.00	B					(1.20)				
1.00	HSV	>130kN/m ²					2.00			
1.90	HSV	>130kN/m ²					2.00			
2.00	B						(1.00)		Stiff dark brown slightly silty CLAY (GLACIAL TILL).	
2.00-2.45	CPT	N=15				(1.00)				
2.70	HSV	>130kN/m ²				3.00				
3.00-3.45	CPT	N=5				(0.75)	Loose medium brown fine to medium grained SAND (GLACIAL TILL).			
						3.75				
4.00-4.45	CPT	N=21				(0.70)	Firm to stiff dark brown silty CLAY (GLACIAL TILL).			
						4.45				
							Borehole terminated at 4.45m.			

GEOL WS LOG GEOL22-8277- WARKWORTH BH LOGS.GPJ GINT STD.AGS.3.1.GDT. 1/8/22

Windowless Sampling Drilling Progress						GENERAL REMARKS WATER: Strike at 3.00m, standing level at 2.35m on completion.
Depth	Casing	Diameter	Recovery	Remarks		
4.45		4.45				
All dimensions in metres Scale 1:37.5			Client Cath Basilio	Method/ Plant Used Competitor Dart Rig	Logged By RS	



BOREHOLE LOG

Project Plots 2 & 3 The Steadings, Warkworth, Northumberland				BOREHOLE No BH05
Job No GEOL22-8277	Date 01-08-22	Ground Level (m)	Co-Ordinates ()	
Contractor Geol Consultants Limited				Sheet 1 of 1

SAMPLES & TESTS			STRATA					Geology	Instrument/ Backfill
Depth	Type No	Test Result	Water	Reduced Level	Legend	Depth (Thickness)	DESCRIPTION		
0.00-0.30	ES		 ↓ 			(0.30) 0.30	Grey sandy gravelly Dolerite (MADE GROUND).		
0.30-0.60	ES					(0.30) 0.60	Dark brown very sandy gravelly clay with fragments of brick, sandstone, limestone and coal (MADE GROUND).		
						0.80	Stiff medium brown slightly sandy clay (MADE GROUND).		
0.80-1.15	ES					(0.35) 1.15	Stiff dark greyish-brown very sandy gravelly disturbed clay (MADE GROUND).		
1.00-1.45	CPT	N=10				(0.50)	Stiff (high strength) medium brown, orange-brown and grey slightly sandy slightly gravelly CLAY.		
1.40	B					1.65			
1.40	HSV	94kN/m ²				(0.35) 2.00	Stiff (high strength) medium brown and grey slightly sandy slightly gravelly CLAY (GLACIAL TILL).		
1.90	HSV	130kN/m ²				(1.00)			
2.00-2.45	CPT	N=13				3.00			
3.00-3.45	CPT	N=17				(0.60) 3.60	Medium dense medium brown fine to medium grained SAND (GLACIAL TILL).		
4.00-4.45	CPT	N=14			(0.85) 4.45	Firm to stiff dark brown slightly silty slightly gravelly CLAY (GLACIAL TILL).			
							Borehole terminated at 4.45m.		

GEOL WS LOG GEOL22-8277- WARKWORTH BH LOGS.GPJ GINT STD.AGS.3.1.GDT. 1/8/22

Windowless Sampling Drilling Progress						GENERAL REMARKS
Depth	Casing	Diameter	Recovery	Remarks		
4.45		4.45				
All dimensions in metres Scale 1:37.5					Client Cath Basilio	Method/ Plant Used Competitor Dart Rig
						Logged By RS

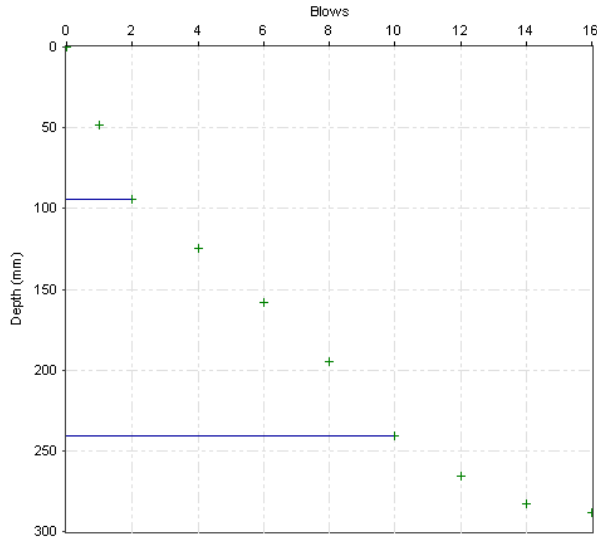
DCP Layer Strength Analysis Report

Project Name: GEOL22-8277- Plots 2 & 3 The Steadings, Warkworth

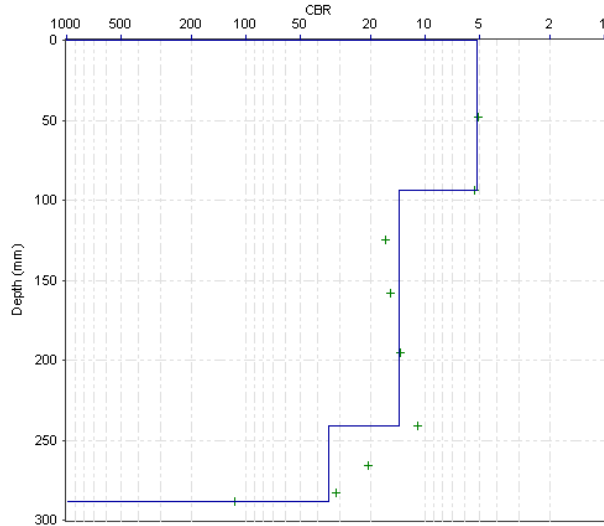
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 Direction:
 Location/Offset: Lay-by / other
 Cone Angle: 60 degrees
 Zero Error (mm): 0
 Test Date: 01/08/2022

Surface Type: Unpaved
 Thickness (mm): 0
 Base Type:
 Thickness (mm):
 Surface Moisture: Unknown
 Moisture adjustment factor: Not adjusted

Layer Boundaries: Chainage 1.000



Layer Boundaries Chart



CBR Chart

Layer Properties

No.	Penetration Rate (mm/blow)	CBR (%)	Thickness (mm)	Depth to layer bottom (mm)
1	47.00	5	94	94
2	18.38	14	147	241
3	7.83	34	47	288

CBR Relationship:

TRL equation: $\log_{10}(\text{CBR}) = 2.48 - 1.057 \times \log_{10}(\text{Strength})$

Report produced by

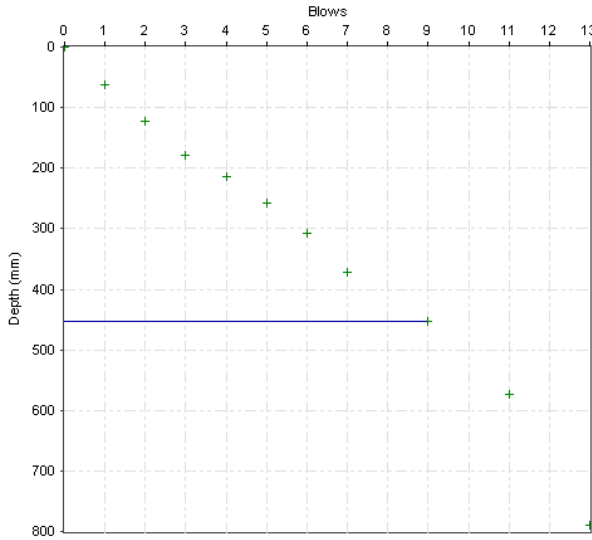
DCP Layer Strength Analysis Report

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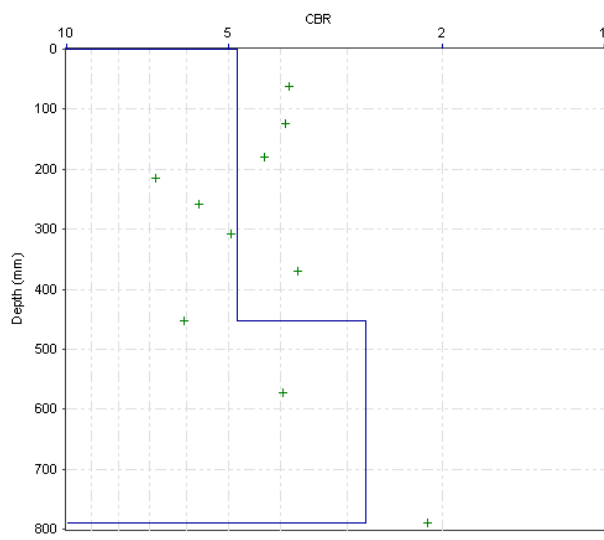
Chainage (km): 2.000
 Direction:
 Location/Offset: Lay-by / other
 Cone Angle: 60 degrees
 Zero Error (mm): 0
 Test Date: 01/08/2022

Surface Type: Unpaved
 Thickness (mm): 0
 Base Type:
 Thickness (mm):
 Surface Moisture: Unknown
 Moisture adjustment factor: Not adjusted

Layer Boundaries: Chainage 2.000



Layer Boundaries Chart



CBR Chart

Layer Properties

No.	Penetration Rate (mm/blow)	CBR (%)	Thickness (mm)	Depth to layer bottom (mm)
1	50.22	5	452	452
2	84.50	3	338	790

CBR Relationship:

TRL equation: $\log_{10}(\text{CBR}) = 2.48 - 1.057 \times \log_{10}(\text{Strength})$

Report produced by

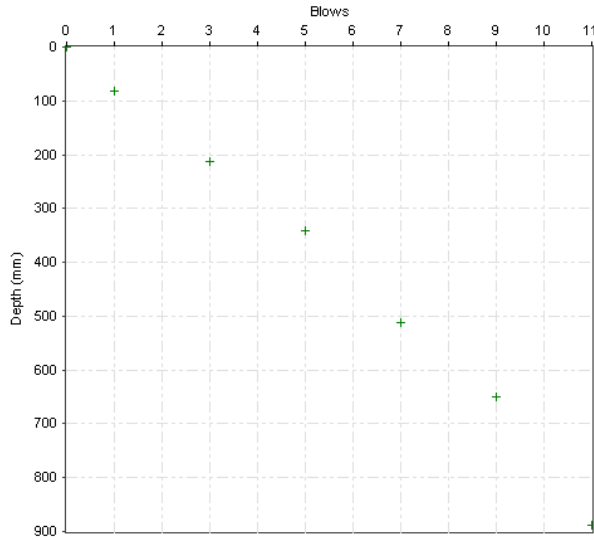
DCP Layer Strength Analysis Report

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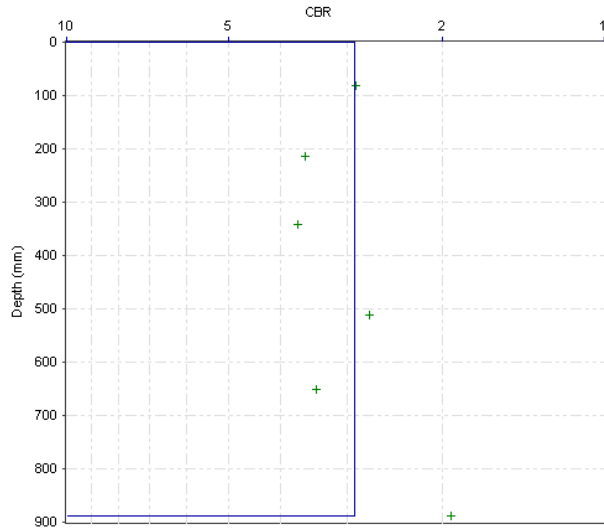
Chainage (km): 3.000
 Direction:
 Location/Offset: Lay-by / other
 Cone Angle: 60 degrees
 Zero Error (mm): 0
 Test Date: 01/08/2022

Surface Type: Unpaved
 Thickness (mm): 0
 Base Type:
 Thickness (mm):
 Surface Moisture: Unknown
 Moisture adjustment factor: Not adjusted

Layer Boundaries: Chainage 3.000



Layer Boundaries Chart



CBR Chart

Layer Properties

No.	Penetration Rate (mm/blow)	CBR (%)	Thickness (mm)	Depth to layer bottom (mm)
1	80.82	3	889	889

CBR Relationship:

TRL equation: $\log_{10}(\text{CBR}) = 2.48 - 1.057 \times \log_{10}(\text{Strength})$

Report produced by

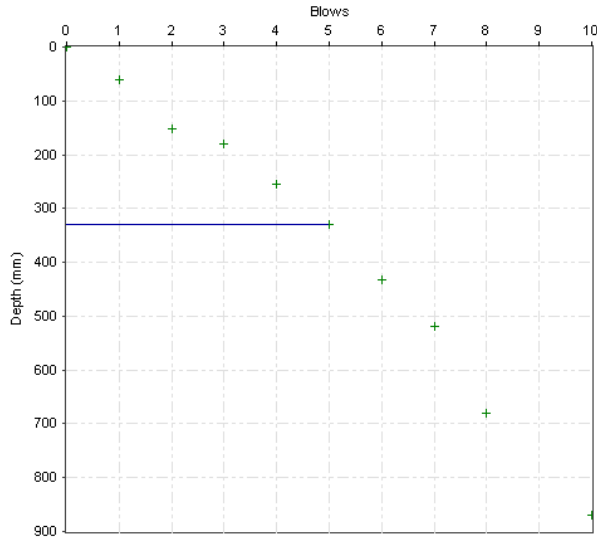
DCP Layer Strength Analysis Report

Project Name: GEOL22-8277- Plots 2 & 3 The Steadings, Warkworth

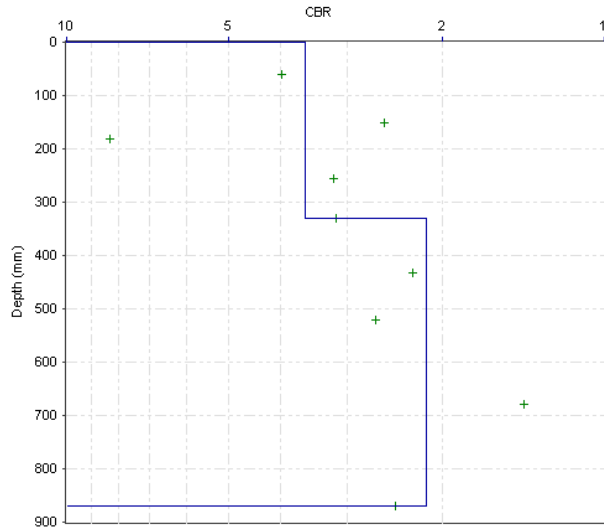
Chainage (km): 4.000
 Direction:
 Location/Offset: Lay-by / other
 Cone Angle: 60 degrees
 Zero Error (mm): 0
 Test Date: 01/08/2022

Surface Type: Unpaved
 Thickness (mm): 0
 Base Type:
 Thickness (mm):
 Surface Moisture: Unknown
 Moisture adjustment factor: Not adjusted

Layer Boundaries: Chainage 4.000



Layer Boundaries Chart



CBR Chart

Layer Properties

No.	Penetration Rate (mm/blow)	CBR (%)	Thickness (mm)	Depth to layer bottom (mm)
1	66.00	4	330	330
2	108.00	2	540	870

CBR Relationship:

TRL equation: $\log_{10}(\text{CBR}) = 2.48 - 1.057 \times \log_{10}(\text{Strength})$

Report produced by

APPENDIX III

Laboratory Testing Results



LABORATORY REPORT



4043

Contract Number: PSL22/5167

Report Date: 17 August 2022
Client's Reference: GEOL22-8277
Client Name: Geol Consultants Ltd
3 Gladstone Terrace
Gateshead
NE8 4DY

For the attention of: Richard Stripp

Contract Title: Plots 2&3 The Steadings, Warkworth
Date Received: 8/8/2022
Date Commenced: 8/8/2022
Date Completed: 17/08/2022

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:

A Watkins
(Director)

R Berriman
(Quality Manager)

S Royle
(Laboratory Manager)



L Knight
(Assistant Laboratory Manager)

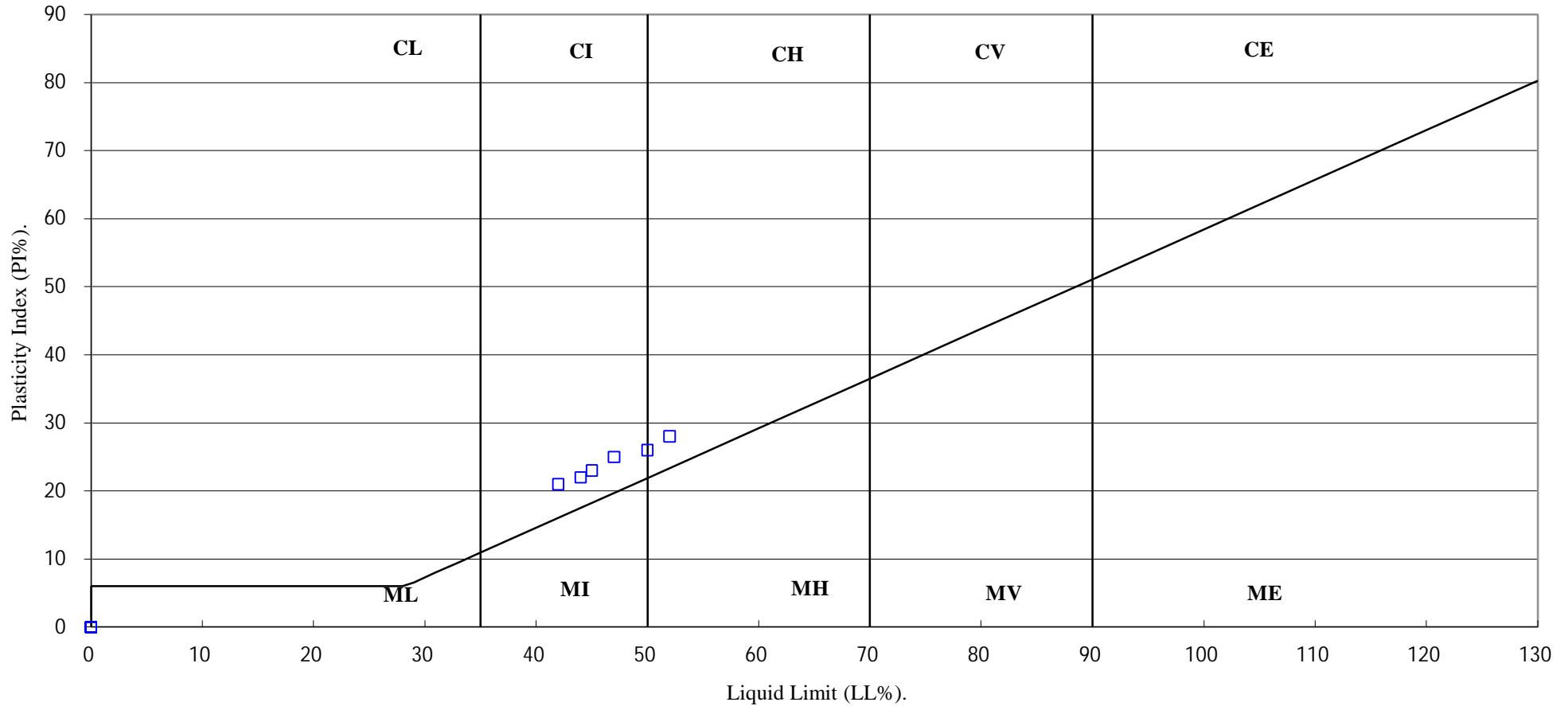
S Eyre
(Senior Technician)

M Fennell
(Senior Technician)

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

Page 1 of

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.



4043

PSL
Professional Soils Laboratory

Plots 2&3 The Steadings, Warkworth

Contract No:

PSL22/5167

Client Ref:

GEOL22-8277



DETS

Certificate of Analysis

Certificate Number 22-15348

Issued: 15-Aug-22

Client Geol-Consultants Ltd.
3, Gladstone Terrace
Gateshead
Tyne & Wear
NE8 4DY

Our Reference 22-15348

Client Reference GEOL22-8277

Order No GEOL22-8277

Contract Title Plots 2 & 3 The Steadings, Warkworth

Description 11 Soil samples.

Date Received 09-Aug-22

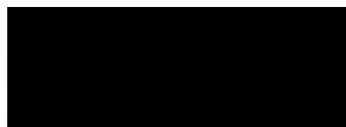
Date Started 09-Aug-22

Date Completed 15-Aug-22

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

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

Approved By



Kirk Bridgewood
General Manager





Summary of Chemical Analysis Soil Samples

Our Ref 22-15348

Client Ref GEOL22-8277

Contract Title Plots 2 & 3 The Steadings, Warkworth

Lab No	2043318	2043319	2043320	2043321	2043322	2043323	2043324
Sample ID	SS1	BH01	BH01	BH02	BH02	BH02	BH03
Depth		0.05-0.50	1.00	0.00-0.20	0.20-0.55	1.00	0.20-0.45
Other ID							
Sample Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
Sampling Date	01/08/2022	01/08/2022	01/08/2022	01/08/2022	01/08/2022	01/08/2022	01/08/2022
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Preparation									
Moisture Content	DETSC 1004	0.1	%	14	9.7		11	7.6	7.2
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg	7.6	5.8		8.7	7.0	7.4
Cadmium	DETSC 2301#	0.1	mg/kg	0.3	0.2		0.6	0.4	0.2
Chromium	DETSC 2301#	0.15	mg/kg	23	34		22	25	25
Chromium III	DETSC 2301*	0.15	mg/kg	23	34		22	25	25
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0		< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	29	34		83	150	35
Lead	DETSC 2301#	0.3	mg/kg	45	28		120	45	36
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05		0.16	0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	20	26		27	26	25
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5		1.2	< 0.5	0.6
Zinc	DETSC 2301#	1	mg/kg	79	82		260	140	94
Inorganics									
pH	DETSC 2008#		pH	8.2	7.6	8.0	7.0	7.7	7.9
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.2	0.1		0.2	< 0.1	< 0.1
Total Organic Carbon	DETSC 2084#	0.5	%	3.4	2.3		15	5.2	1.3
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	160	35	37	24	24	110
Petroleum Hydrocarbons									
EPH (C6-C40)	DETSC 3311*	10	mg/kg	420	110			190	150
EPH (C10-C40) Clean Up	DETSC 3311*	10	mg/kg	500	77			150	170
PAHs									
Naphthalene	DETSC 3301	0.1	mg/kg	0.1	< 0.1		0.2	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	0.4	< 0.1		0.4	0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	1.7	0.2		0.2	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	3.1	0.4		0.6	0.3	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	19	1.2		3.5	1.2	0.4
Anthracene	DETSC 3301	0.1	mg/kg	3.3	0.5		1.2	0.2	0.2
Fluoranthene	DETSC 3301	0.1	mg/kg	18	2.9		7.1	2.0	1.3
Pyrene	DETSC 3301	0.1	mg/kg	14	2.4		5.9	1.8	1.2
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	6.1	1.7		3.2	0.9	0.7
Chrysene	DETSC 3301	0.1	mg/kg	6.4	1.6		3.8	1.0	0.8
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	4.1	1.2		2.4	0.9	0.8
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	2.8	0.8		1.7	0.6	0.4
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	5.2	1.5		2.8	1.0	0.8
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	3.5	1.1		1.9	0.7	0.6
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	0.8	0.4		8.2	0.5	0.3
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	3.4	1.3		2.5	1.1	0.7
PAH 16 Total	DETSC 3301	1.6	mg/kg	92	17		45	13	8.3

Summary of Chemical Analysis

Soil Samples

Our Ref 22-15348

Client Ref GEOL22-8277

Contract Title Plots 2 & 3 The Steadings, Warkworth

Lab No	2043325	2043326	2043327	2043328
Sample ID	BH04	BH05	BH05	BH05
Depth	0.00-0.30	0.30-0.60	0.80-1.15	2.00
Other ID				
Sample Type	SOIL	SOIL	SOIL	SOIL
Sampling Date	01/08/2022	01/08/2022	01/08/2022	01/08/2022
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Preparation							
Moisture Content	DETSC 1004	0.1	%	16	13	20	
Metals							
Arsenic	DETSC 2301#	0.2	mg/kg	8.8	15	7.7	
Cadmium	DETSC 2301#	0.1	mg/kg	0.4	0.3	0.2	
Chromium	DETSC 2301#	0.15	mg/kg	25	18	26	
Chromium III	DETSC 2301*	0.15	mg/kg	25	18	26	
Chromium, Hexavalent	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	
Copper	DETSC 2301#	0.2	mg/kg	51	30	31	
Lead	DETSC 2301#	0.3	mg/kg	78	51	42	
Mercury	DETSC 2325#	0.05	mg/kg	0.14	< 0.05	0.05	
Nickel	DETSC 2301#	1	mg/kg	24	19	22	
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	
Zinc	DETSC 2301#	1	mg/kg	200	87	74	
Inorganics							
pH	DETSC 2008#		pH	7.1	9.8	7.5	8.0
Cyanide, Free	DETSC 2130#	0.1	mg/kg	0.3	< 0.1	0.3	
Total Organic Carbon	DETSC 2084#	0.5	%	10	2.9	4.5	
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	18	160	100	17
Petroleum Hydrocarbons							
EPH (C6-C40)	DETSC 3311*	10	mg/kg		24	< 10	
EPH (C10-C40) Clean Up	DETSC 3311*	10	mg/kg		46	< 10	
PAHs							
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	0.6	< 0.1	
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	0.1	< 0.1	
Phenanthrene	DETSC 3301	0.1	mg/kg	0.5	1.5	< 0.1	
Anthracene	DETSC 3301	0.1	mg/kg	0.1	0.5	< 0.1	
Fluoranthene	DETSC 3301	0.1	mg/kg	0.8	2.9	< 0.1	
Pyrene	DETSC 3301	0.1	mg/kg	0.9	2.4	< 0.1	
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	0.5	1.4	< 0.1	
Chrysene	DETSC 3301	0.1	mg/kg	0.5	1.4	< 0.1	
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	0.4	1.2	< 0.1	
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	0.4	0.7	< 0.1	
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	0.5	1.6	< 0.1	
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	0.4	1.3	< 0.1	
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	0.3	0.5	< 0.1	
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	0.6	1.5	< 0.1	
PAH 16 Total	DETSC 3301	1.6	mg/kg	5.8	18	< 1.6	

Summary of Asbestos Analysis Soil Samples

Our Ref 22-15348

Client Ref GEOL22-8277

Contract Title Plots 2 & 3 The Steadings, Warkworth

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
2043318	SS1	SOIL	NAD	none	Josh Best
2043319	BH01 0.05-0.50	SOIL	NAD	none	Josh Best
2043321	BH02 0.00-0.20	SOIL	NAD	none	Josh Best
2043322	BH02 0.20-0.55	SOIL	NAD	none	Josh Best
2043324	BH03 0.20-0.45	SOIL	NAD	none	Josh Best
2043325	BH04 0.00-0.30	SOIL	NAD	none	Josh Best
2043326	BH05 0.30-0.60	SOIL	NAD	none	Josh Best
2043327	BH05 0.80-1.15	SOIL	NAD	none	Josh Best

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

Information in Support of the Analytical Results

Our Ref 22-15348
 Client Ref GEOL22-8277
 Contract Plots 2 & 3 The Steadings, Warkworth

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
2043318	SS1 SOIL	01/08/22	GJ 250ml, GJ 60ml	pH + Conductivity (7 days)	
2043319	BH01 0.05-0.50 SOIL	01/08/22	GJ 250ml, GJ 60ml	pH + Conductivity (7 days)	
2043320	BH01 1.00 SOIL	01/08/22	PG	pH + Conductivity (7 days)	
2043321	BH02 0.00-0.20 SOIL	01/08/22	GJ 250ml, GJ 60ml	pH + Conductivity (7 days)	
2043322	BH02 0.20-0.55 SOIL	01/08/22	GJ 250ml, GJ 60ml	pH + Conductivity (7 days)	
2043323	BH02 1.00 SOIL	01/08/22	PG	pH + Conductivity (7 days)	
2043324	BH03 0.20-0.45 SOIL	01/08/22	GJ 250ml, GJ 60ml	pH + Conductivity (7 days)	
2043325	BH04 0.00-0.30 SOIL	01/08/22	GJ 250ml, GJ 60ml	pH + Conductivity (7 days)	
2043326	BH05 0.30-0.60 SOIL	01/08/22	GJ 250ml, GJ 60ml	pH + Conductivity (7 days)	
2043327	BH05 0.80-1.15 SOIL	01/08/22	GJ 250ml, GJ 60ml	pH + Conductivity (7 days)	
2043328	BH05 2.00 SOIL	01/08/22	PG	pH + Conductivity (7 days)	

Key: G-Glass J-Jar P-Plastic G-Bag

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

Soil Analysis Notes

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

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

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

Disposal

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

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

End of Report

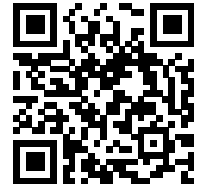
APPENDIX IV

Waste Classification Report

Waste Classification Report

HazWasteOnline™ classifies waste as either **hazardous** or **non-hazardous** based on its chemical composition, related legislation and the rules and data defined in the current UK or EU technical guidance (Appendix C) (note that HP 9 Infectious is not assessed). It is the responsibility of the classifier named below to:

- understand the origin of the waste
- select the correct List of Waste code(s)
- confirm that the list of determinands, results and sampling plan are fit for purpose
- select and justify the chosen metal species (Appendix B)
- correctly apply moisture correction and other available corrections
- add the meta data for their user-defined substances (Appendix A)
- check that the classification engine is suitable with respect to the national destination of the waste (Appendix C)



HBO2D-K27OY-WXP7N

To aid the reviewer, the laboratory results, assumptions and justifications managed by the classifier are highlighted in pale yellow.

Job name

The Steadings

Description/Comments

Waste classification of made ground and soil only - not all types / layers of made ground or natural deposits may have been tested
 Waste classification based on preliminary contamination screening results - DETS lab report references 22-15348
 There was no significant visual or olfactory evidence of fuel, oils or other hydrocarbon / solvent contamination noted at the sample locations during these investigation works

Project

GEOL22-8277

Site

Plots 2 & 3, The Steadings, Guilden Road, Warkworth, Northumberland, NE65 0WR

Classified by

Name: **Richard Stripp**
 Date: **19 Sep 2022 09:31 GMT**
 Telephone: **0191 477 2020**

Company: **Geol Consultants Limited**

HazWasteOnline™ provides a two day, hazardous waste classification course that covers the use of the software and both basic and advanced waste classification techniques. Certification has to be renewed every 3 years.

HazWasteOnline™ Certification: **CERTIFIED**
Course: Hazardous Waste Classification
Date: 04 Jun 2020

Next 3 year Refresher due by Jun 2023

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	SS1		Non Hazardous		2
2	BH01	0.05-0.50	Non Hazardous		4
3	BH02	0.00-0.20	Non Hazardous		7
4	BH02[2]	0.20-0.55	Non Hazardous		9
5	BH03	0.20-0.45	Non Hazardous		12
6	BH04	0.00-0.30	Non Hazardous		15
7	BH05	0.30-0.60	Non Hazardous		17
8	BH05[2]	0.80-1.15	Non Hazardous		20

Related documents

#	Name	Description
1	Waste Soils - Made Ground	waste stream template used to create this Job

Report

Created by: Richard Stripp

Created date: 19 Sep 2022 09:31 GMT

Appendices

Appendix	Page
Appendix A: Classifier defined and non GB MCL determinands	22
Appendix B: Rationale for selection of metal species	23
Appendix C: Version	24

Classification of sample: SS1

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

Sample details

Sample name: SS1	LoW Code: Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content: 14% (dry weight correction)	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 14% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	arsenic { arsenic trioxide }				7.6 mg/kg	1.32	8.802 mg/kg	0.00088 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
2	cadmium { cadmium oxide }				0.3 mg/kg	1.142	0.301 mg/kg	0.0000301 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				23 mg/kg	1.462	29.488 mg/kg	0.00295 %	✓	
		215-160-9	1308-38-9							
4	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
5	copper { dicopper oxide; copper (I) oxide }				29 mg/kg	1.126	28.641 mg/kg	0.00286 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	45 mg/kg		39.474 mg/kg	0.00395 %	✓	
	082-001-00-6									
7	mercury { mercury dichloride }				<0.05 mg/kg	1.353	<0.0677 mg/kg	<0.00000677 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
8	nickel { nickel sulfate }				20 mg/kg	2.637	46.258 mg/kg	0.00463 %	✓	
	028-009-00-5	232-104-9	7786-81-4							
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.405	<0.703 mg/kg	<0.0000703 %		<LOD
	034-002-00-8									
10	zinc { zinc sulphate }				79 mg/kg	2.469	171.118 mg/kg	0.0171 %	✓	
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]							
11	TPH (C6 to C40) petroleum group				920 mg/kg		807.018 mg/kg	0.0807 %	✓	
			TPH							
12	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 }				0.2 mg/kg	1.884	0.331 mg/kg	0.0000331 %	✓	
	006-007-00-5									
13	pH				8.2 pH		8.2 pH	8.2 pH		
			PH							
14	naphthalene				0.1 mg/kg		0.0877 mg/kg	0.00000877 %	✓	
	601-052-00-2	202-049-5	91-20-3							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
15	• acenaphthylene				0.4 mg/kg		0.351 mg/kg	0.0000351 %	✓	
		205-917-1	208-96-8							
16	• acenaphthene				1.7 mg/kg		1.491 mg/kg	0.000149 %	✓	
		201-469-6	83-32-9							
17	• fluorene				3.1 mg/kg		2.719 mg/kg	0.000272 %	✓	
		201-695-5	86-73-7							
18	• phenanthrene				19 mg/kg		16.667 mg/kg	0.00167 %	✓	
		201-581-5	85-01-8							
19	• anthracene				3.3 mg/kg		2.895 mg/kg	0.000289 %	✓	
		204-371-1	120-12-7							
20	• fluoranthene				18 mg/kg		15.789 mg/kg	0.00158 %	✓	
		205-912-4	206-44-0							
21	• pyrene				14 mg/kg		12.281 mg/kg	0.00123 %	✓	
		204-927-3	129-00-0							
22	benzo[a]anthracene				6.1 mg/kg		5.351 mg/kg	0.000535 %	✓	
		601-033-00-9	200-280-6							
23	chrysene				6.4 mg/kg		5.614 mg/kg	0.000561 %	✓	
		601-048-00-0	205-923-4							
24	benzo[b]fluoranthene				4.1 mg/kg		3.596 mg/kg	0.00036 %	✓	
		601-034-00-4	205-911-9							
25	benzo[k]fluoranthene				2.8 mg/kg		2.456 mg/kg	0.000246 %	✓	
		601-036-00-5	205-916-6							
26	benzo[a]pyrene; benzo[def]chrysene				5.2 mg/kg		4.561 mg/kg	0.000456 %	✓	
		601-032-00-3	200-028-5							
27	• indeno[123-cd]pyrene				3.5 mg/kg		3.07 mg/kg	0.000307 %	✓	
		205-893-2	193-39-5							
28	dibenz[a,h]anthracene				0.8 mg/kg		0.702 mg/kg	0.0000702 %	✓	
		601-041-00-2	200-181-8							
29	• benzo[ghi]perylene				3.4 mg/kg		2.982 mg/kg	0.000298 %	✓	
		205-883-8	191-24-2							
30	asbestos				<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
		650-013-00-6	-----							
			12001-28-4							
			132207-32-0							
			12172-73-5							
			77536-66-4							
			77536-68-6							
			77536-67-5							
			12001-29-5							
Total:								0.122 %		

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 Determinand - 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

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because The TPH contamination recorded is not present in a liquid or vapour form and therefore is not flammable

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0807%)

Classification of sample: BH01

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

Sample details

Sample name:	LoW Code:
BH01	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.05-0.50 m	
Moisture content:	
9.7%	
(dry weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 9.7% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	arsenic { arsenic trioxide }				5.8	mg/kg	1.32	6.981	mg/kg	0.000698 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
2	cadmium { cadmium oxide }				0.2	mg/kg	1.142	0.208	mg/kg	0.0000208 %	✓	
	048-002-00-0	215-146-2	1306-19-0									
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				34	mg/kg	1.462	45.299	mg/kg	0.00453 %	✓	
		215-160-9	1308-38-9									
4	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1	mg/kg	1.923	<1.923	mg/kg	<0.000192 %		<LOD
	024-001-00-0	215-607-8	1333-82-0									
5	copper { dicopper oxide; copper (I) oxide }				34	mg/kg	1.126	34.895	mg/kg	0.00349 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	28	mg/kg		25.524	mg/kg	0.00255 %	✓	
	082-001-00-6											
7	mercury { mercury dichloride }				<0.05	mg/kg	1.353	<0.0677	mg/kg	<0.00000677 %		<LOD
	080-010-00-X	231-299-8	7487-94-7									
8	nickel { nickel sulfate }				26	mg/kg	2.637	62.492	mg/kg	0.00625 %	✓	
	028-009-00-5	232-104-9	7786-81-4									
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<0.5	mg/kg	1.405	<0.703	mg/kg	<0.0000703 %		<LOD
	034-002-00-8											
10	zinc { zinc sulphate }				82	mg/kg	2.469	184.578	mg/kg	0.0185 %	✓	
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									
11	TPH (C6 to C40) petroleum group				187	mg/kg		170.465	mg/kg	0.017 %	✓	
			TPH									
12	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 }				0.1	mg/kg	1.884	0.172	mg/kg	0.0000172 %	✓	
	006-007-00-5											
13	pH				7.6	pH		7.6	pH	7.6 pH		
			PH									

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
14	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
15	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-917-1	208-96-8							
16	acenaphthene				0.2 mg/kg		0.182 mg/kg	0.0000182 %	✓	
		201-469-6	83-32-9							
17	fluorene				0.4 mg/kg		0.365 mg/kg	0.0000365 %	✓	
		201-695-5	86-73-7							
18	phenanthrene				1.2 mg/kg		1.094 mg/kg	0.000109 %	✓	
		201-581-5	85-01-8							
19	anthracene				0.5 mg/kg		0.456 mg/kg	0.0000456 %	✓	
		204-371-1	120-12-7							
20	fluoranthene				2.9 mg/kg		2.644 mg/kg	0.000264 %	✓	
		205-912-4	206-44-0							
21	pyrene				2.4 mg/kg		2.188 mg/kg	0.000219 %	✓	
		204-927-3	129-00-0							
22	benzo[a]anthracene				1.7 mg/kg		1.55 mg/kg	0.000155 %	✓	
	601-033-00-9	200-280-6	56-55-3							
23	chrysene				1.6 mg/kg		1.459 mg/kg	0.000146 %	✓	
	601-048-00-0	205-923-4	218-01-9							
24	benzo[b]fluoranthene				1.2 mg/kg		1.094 mg/kg	0.000109 %	✓	
	601-034-00-4	205-911-9	205-99-2							
25	benzo[k]fluoranthene				0.8 mg/kg		0.729 mg/kg	0.0000729 %	✓	
	601-036-00-5	205-916-6	207-08-9							
26	benzo[a]pyrene; benzo[def]chrysene				1.5 mg/kg		1.367 mg/kg	0.000137 %	✓	
	601-032-00-3	200-028-5	50-32-8							
27	indeno[123-cd]pyrene				1.1 mg/kg		1.003 mg/kg	0.0001 %	✓	
		205-893-2	193-39-5							
28	dibenz[a,h]anthracene				0.4 mg/kg		0.365 mg/kg	0.0000365 %	✓	
	601-041-00-2	200-181-8	53-70-3							
29	benzo[ghi]perylene				1.3 mg/kg		1.185 mg/kg	0.000119 %	✓	
		205-883-8	191-24-2							
30	asbestos				<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
	650-013-00-6	-----	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5							
Total:								0.0559 %		

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 Determinand - 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

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because The TPH contamination recorded is not present in a liquid or vapour form and therefore is not flammable

Hazard Statements hit:


Flam. Liq. 3; H226 "Flammable liquid and vapour."



Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.017%)

Classification of sample: BH02

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

Sample details












Sample name:	LoW Code:	
BH02	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.00-0.20 m		
Moisture content:		
11%		
(dry weight correction)		

Hazard properties

None identified

Determinands

Moisture content: 11% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	 arsenic { arsenic trioxide }				8.7	mg/kg	1.32	10.348	mg/kg	0.00103 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
2	 cadmium { cadmium oxide }				0.6	mg/kg	1.142	0.617	mg/kg	0.0000617 %	✓	
	048-002-00-0	215-146-2	1306-19-0									
3	 chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				22	mg/kg	1.462	28.968	mg/kg	0.0029 %	✓	
		215-160-9	1308-38-9									
4	 chromium in chromium(VI) compounds { chromium(VI) oxide }				<1	mg/kg	1.923	<1.923	mg/kg	<0.000192 %		<LOD
	024-001-00-0	215-607-8	1333-82-0									
5	 copper { dicopper oxide; copper (I) oxide }				83	mg/kg	1.126	84.188	mg/kg	0.00842 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
6	 lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	120	mg/kg		108.108	mg/kg	0.0108 %	✓	
	082-001-00-6											
7	 mercury { mercury dichloride }				0.16	mg/kg	1.353	0.195	mg/kg	0.0000195 %	✓	
	080-010-00-X	231-299-8	7487-94-7									
8	 nickel { nickel sulfate }				27	mg/kg	2.637	64.136	mg/kg	0.00641 %	✓	
	028-009-00-5	232-104-9	7786-81-4									
9	 selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				1.2	mg/kg	1.405	1.519	mg/kg	0.000152 %	✓	
	034-002-00-8											
10	 zinc { zinc sulphate }				260	mg/kg	2.469	578.394	mg/kg	0.0578 %	✓	
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]									
11	 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 }				0.2	mg/kg	1.884	0.339	mg/kg	0.0000339 %	✓	
	006-007-00-5											
12	pH				7	pH		7	pH	7pH		
			PH									
13	naphthalene				0.2	mg/kg		0.18	mg/kg	0.000018 %	✓	
	601-052-00-2	202-049-5	91-20-3									




#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
14	• acenaphthylene				0.4 mg/kg		0.36 mg/kg	0.000036 %	✓	
		205-917-1	208-96-8							
15	• acenaphthene				0.2 mg/kg		0.18 mg/kg	0.000018 %	✓	
		201-469-6	83-32-9							
16	• fluorene				0.6 mg/kg		0.541 mg/kg	0.0000541 %	✓	
		201-695-5	86-73-7							
17	• phenanthrene				3.5 mg/kg		3.153 mg/kg	0.000315 %	✓	
		201-581-5	85-01-8							
18	• anthracene				1.2 mg/kg		1.081 mg/kg	0.000108 %	✓	
		204-371-1	120-12-7							
19	• fluoranthene				7.1 mg/kg		6.396 mg/kg	0.00064 %	✓	
		205-912-4	206-44-0							
20	• pyrene				5.9 mg/kg		5.315 mg/kg	0.000532 %	✓	
		204-927-3	129-00-0							
21	benzo[a]anthracene				3.2 mg/kg		2.883 mg/kg	0.000288 %	✓	
	601-033-00-9	200-280-6	56-55-3							
22	chrysene				3.8 mg/kg		3.423 mg/kg	0.000342 %	✓	
	601-048-00-0	205-923-4	218-01-9							
23	benzo[b]fluoranthene				2.4 mg/kg		2.162 mg/kg	0.000216 %	✓	
	601-034-00-4	205-911-9	205-99-2							
24	benzo[k]fluoranthene				1.7 mg/kg		1.532 mg/kg	0.000153 %	✓	
	601-036-00-5	205-916-6	207-08-9							
25	benzo[a]pyrene; benzo[def]chrysene				2.8 mg/kg		2.523 mg/kg	0.000252 %	✓	
	601-032-00-3	200-028-5	50-32-8							
26	• indeno[123-cd]pyrene				1.9 mg/kg		1.712 mg/kg	0.000171 %	✓	
		205-893-2	193-39-5							
27	dibenz[a,h]anthracene				8.2 mg/kg		7.387 mg/kg	0.000739 %	✓	
	601-041-00-2	200-181-8	53-70-3							
28	• benzo[ghi]perylene				2.5 mg/kg		2.252 mg/kg	0.000225 %	✓	
		205-883-8	191-24-2							
29	asbestos				<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
	650-013-00-6	-----	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5							
Total:								0.093 %		

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 Determinand - 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: BH02[2]

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

Sample details














Sample name:	LoW Code:	
BH02[2]	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.20-0.55 m		
Moisture content:		
7.6%		
(dry weight correction)		

Hazard properties

None identified

Determinands

Moisture content: 7.6% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	 arsenic { arsenic trioxide }				7 mg/kg	1.32	8.589 mg/kg	0.000859 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
2	 cadmium { cadmium oxide }				0.4 mg/kg	1.142	0.425 mg/kg	0.0000425 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
3	 chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				25 mg/kg	1.462	33.958 mg/kg	0.0034 %	✓	
		215-160-9	1308-38-9							
4	 chromium in chromium(VI) compounds { chromium(VI) oxide }				<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
5	 copper { dicopper oxide; copper (I) oxide }				150 mg/kg	1.126	156.955 mg/kg	0.0157 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
6	 lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	45 mg/kg		41.822 mg/kg	0.00418 %	✓	
	082-001-00-6									
7	 mercury { mercury dichloride }				0.05 mg/kg	1.353	0.0629 mg/kg	0.00000629 %	✓	
	080-010-00-X	231-299-8	7487-94-7							
8	 nickel { nickel sulfate }				26 mg/kg	2.637	63.712 mg/kg	0.00637 %	✓	
	028-009-00-5	232-104-9	7786-81-4							
9	 selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.405	<0.703 mg/kg	<0.0000703 %		<LOD
	034-002-00-8									
10	 zinc { zinc sulphate }				140 mg/kg	2.469	321.284 mg/kg	0.0321 %	✓	
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]							
11	 TPH (C6 to C40) petroleum group				340 mg/kg		315.985 mg/kg	0.0316 %	✓	
			TPH							
12	 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 }				<0.1 mg/kg	1.884	<0.188 mg/kg	<0.0000188 %		<LOD
	006-007-00-5									
13	 pH				7.7 pH		7.7 pH	7.7 pH		
			PH							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
14	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
15	acenaphthylene				0.1 mg/kg		0.0929 mg/kg	0.00000929 %	✓	
		205-917-1	208-96-8							
16	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-469-6	83-32-9							
17	fluorene				0.3 mg/kg		0.279 mg/kg	0.0000279 %	✓	
		201-695-5	86-73-7							
18	phenanthrene				1.2 mg/kg		1.115 mg/kg	0.000112 %	✓	
		201-581-5	85-01-8							
19	anthracene				0.2 mg/kg		0.186 mg/kg	0.0000186 %	✓	
		204-371-1	120-12-7							
20	fluoranthene				2 mg/kg		1.859 mg/kg	0.000186 %	✓	
		205-912-4	206-44-0							
21	pyrene				1.8 mg/kg		1.673 mg/kg	0.000167 %	✓	
		204-927-3	129-00-0							
22	benzo[a]anthracene				0.9 mg/kg		0.836 mg/kg	0.0000836 %	✓	
	601-033-00-9	200-280-6	56-55-3							
23	chrysene				1 mg/kg		0.929 mg/kg	0.0000929 %	✓	
	601-048-00-0	205-923-4	218-01-9							
24	benzo[b]fluoranthene				0.9 mg/kg		0.836 mg/kg	0.0000836 %	✓	
	601-034-00-4	205-911-9	205-99-2							
25	benzo[k]fluoranthene				0.6 mg/kg		0.558 mg/kg	0.0000558 %	✓	
	601-036-00-5	205-916-6	207-08-9							
26	benzo[a]pyrene; benzo[def]chrysene				1 mg/kg		0.929 mg/kg	0.0000929 %	✓	
	601-032-00-3	200-028-5	50-32-8							
27	indeno[123-cd]pyrene				0.7 mg/kg		0.651 mg/kg	0.0000651 %	✓	
		205-893-2	193-39-5							
28	dibenz[a,h]anthracene				0.5 mg/kg		0.465 mg/kg	0.0000465 %	✓	
	601-041-00-2	200-181-8	53-70-3							
29	benzo[ghi]perylene				1.1 mg/kg		1.022 mg/kg	0.000102 %	✓	
		205-883-8	191-24-2							
30	asbestos				<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
	650-013-00-6	-----	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5							
Total:								0.0967 %		

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 Determinand - 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

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because The TPH contamination recorded is not present in a liquid or vapour form and therefore is not flammable

Hazard Statements hit:


Flam. Liq. 3; H226 "Flammable liquid and vapour."



Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0316%)

Classification of sample: BH03

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

Sample details

Sample name:	LoW Code:
BH03	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.20-0.45 m	
Moisture content:	
7.2%	
(dry weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 7.2% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	arsenic { arsenic trioxide }				7.4 mg/kg	1.32	9.114 mg/kg	0.000911 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
2	cadmium { cadmium oxide }				0.2 mg/kg	1.142	0.213 mg/kg	0.0000213 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				25 mg/kg	1.462	34.085 mg/kg	0.00341 %	✓	
		215-160-9	1308-38-9							
4	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
5	copper { dicopper oxide; copper (I) oxide }				35 mg/kg	1.126	36.759 mg/kg	0.00368 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	36 mg/kg		33.582 mg/kg	0.00336 %	✓	
	082-001-00-6									
7	mercury { mercury dichloride }				<0.05 mg/kg	1.353	<0.0677 mg/kg	<0.00000677 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
8	nickel { nickel sulfate }				25 mg/kg	2.637	61.49 mg/kg	0.00615 %	✓	
	028-009-00-5	232-104-9	7786-81-4							
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				0.6 mg/kg	1.405	0.786 mg/kg	0.0000786 %	✓	
	034-002-00-8									
10	zinc { zinc sulphate }				94 mg/kg	2.469	216.524 mg/kg	0.0217 %	✓	
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]							
11	TPH (C6 to C40) petroleum group				320 mg/kg		298.507 mg/kg	0.0299 %	✓	
			TPH							
12	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 }				<0.1 mg/kg	1.884	<0.188 mg/kg	<0.0000188 %		<LOD
	006-007-00-5									
13	pH				9.4 pH		9.4 pH	9.4 pH		
			PH							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
14	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
15	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-917-1	208-96-8							
16	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-469-6	83-32-9							
17	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-695-5	86-73-7							
18	phenanthrene				0.4 mg/kg		0.373 mg/kg	0.0000373 %	✓	
		201-581-5	85-01-8							
19	anthracene				0.2 mg/kg		0.187 mg/kg	0.0000187 %	✓	
		204-371-1	120-12-7							
20	fluoranthene				1.3 mg/kg		1.213 mg/kg	0.000121 %	✓	
		205-912-4	206-44-0							
21	pyrene				1.2 mg/kg		1.119 mg/kg	0.000112 %	✓	
		204-927-3	129-00-0							
22	benzo[a]anthracene				0.7 mg/kg		0.653 mg/kg	0.0000653 %	✓	
	601-033-00-9	200-280-6	56-55-3							
23	chrysene				0.8 mg/kg		0.746 mg/kg	0.0000746 %	✓	
	601-048-00-0	205-923-4	218-01-9							
24	benzo[b]fluoranthene				0.8 mg/kg		0.746 mg/kg	0.0000746 %	✓	
	601-034-00-4	205-911-9	205-99-2							
25	benzo[k]fluoranthene				0.4 mg/kg		0.373 mg/kg	0.0000373 %	✓	
	601-036-00-5	205-916-6	207-08-9							
26	benzo[a]pyrene; benzo[def]chrysene				0.8 mg/kg		0.746 mg/kg	0.0000746 %	✓	
	601-032-00-3	200-028-5	50-32-8							
27	indeno[123-cd]pyrene				0.6 mg/kg		0.56 mg/kg	0.000056 %	✓	
		205-893-2	193-39-5							
28	dibenz[a,h]anthracene				0.3 mg/kg		0.28 mg/kg	0.000028 %	✓	
	601-041-00-2	200-181-8	53-70-3							
29	benzo[ghi]perylene				0.7 mg/kg		0.653 mg/kg	0.0000653 %	✓	
		205-883-8	191-24-2							
30	asbestos				<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
	650-013-00-6	-----	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5							
Total:								0.0711 %		

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 Determinand - 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

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because The TPH contamination recorded is not present in a liquid or vapour form and therefore is not flammable

Hazard Statements hit:


Flam. Liq. 3; H226 "Flammable liquid and vapour."



Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0299%)

Classification of sample: BH04

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

Sample details

Sample name:	LoW Code:	
BH04	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.00-0.30 m		
Moisture content:		
16%		
(dry weight correction)		

Hazard properties

None identified

Determinands

Moisture content: 16% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	arsenic { arsenic trioxide }				8.8 mg/kg	1.32	10.016 mg/kg	0.001 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
2	cadmium { cadmium oxide }				0.4 mg/kg	1.142	0.394 mg/kg	0.0000394 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				25 mg/kg	1.462	31.499 mg/kg	0.00315 %	✓	
		215-160-9	1308-38-9							
4	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
5	copper { dicopper oxide; copper (I) oxide }				51 mg/kg	1.126	49.5 mg/kg	0.00495 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	78 mg/kg		67.241 mg/kg	0.00672 %	✓	
	082-001-00-6									
7	mercury { mercury dichloride }				0.14 mg/kg	1.353	0.163 mg/kg	0.0000163 %	✓	
	080-010-00-X	231-299-8	7487-94-7							
8	nickel { nickel sulfate }				24 mg/kg	2.637	54.552 mg/kg	0.00546 %	✓	
	028-009-00-5	232-104-9	7786-81-4							
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.405	<0.703 mg/kg	<0.0000703 %		<LOD
	034-002-00-8									
10	zinc { zinc sulphate }				200 mg/kg	2.469	425.741 mg/kg	0.0426 %	✓	
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]							
11	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 }				0.3 mg/kg	1.884	0.487 mg/kg	0.0000487 %	✓	
	006-007-00-5									
12	pH				7.1 pH		7.1 pH	7.1 pH		
			PH							
13	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							




#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
14	• acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-917-1	208-96-8							
15	• acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-469-6	83-32-9							
16	• fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-695-5	86-73-7							
17	• phenanthrene				0.5 mg/kg		0.431 mg/kg	0.0000431 %	✓	
		201-581-5	85-01-8							
18	• anthracene				0.1 mg/kg		0.0862 mg/kg	0.0000862 %	✓	
		204-371-1	120-12-7							
19	• fluoranthene				0.8 mg/kg		0.69 mg/kg	0.000069 %	✓	
		205-912-4	206-44-0							
20	• pyrene				0.9 mg/kg		0.776 mg/kg	0.0000776 %	✓	
		204-927-3	129-00-0							
21	benzo[a]anthracene				0.5 mg/kg		0.431 mg/kg	0.0000431 %	✓	
	601-033-00-9	200-280-6	56-55-3							
22	chrysene				0.5 mg/kg		0.431 mg/kg	0.0000431 %	✓	
	601-048-00-0	205-923-4	218-01-9							
23	benzo[b]fluoranthene				0.4 mg/kg		0.345 mg/kg	0.0000345 %	✓	
	601-034-00-4	205-911-9	205-99-2							
24	benzo[k]fluoranthene				0.4 mg/kg		0.345 mg/kg	0.0000345 %	✓	
	601-036-00-5	205-916-6	207-08-9							
25	benzo[a]pyrene; benzo[def]chrysene				0.5 mg/kg		0.431 mg/kg	0.0000431 %	✓	
	601-032-00-3	200-028-5	50-32-8							
26	• indeno[123-cd]pyrene				0.4 mg/kg		0.345 mg/kg	0.0000345 %	✓	
		205-893-2	193-39-5							
27	dibenz[a,h]anthracene				0.3 mg/kg		0.259 mg/kg	0.0000259 %	✓	
	601-041-00-2	200-181-8	53-70-3							
28	• benzo[ghi]perylene				0.6 mg/kg		0.517 mg/kg	0.0000517 %	✓	
		205-883-8	191-24-2							
29	asbestos				<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
	650-013-00-6	-----	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5							
Total:								0.0658 %		

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 Determinand - 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: BH05

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

Sample details

Sample name:	BH05	LoW Code:	
Sample Depth:	0.30-0.60 m	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	13% (dry weight correction)	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 13% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	arsenic { arsenic trioxide } 033-003-00-0 215-481-4 1327-53-3				15	mg/kg	1.32	17.526	mg/kg	0.00175 %	✓	
2	cadmium { cadmium oxide } 048-002-00-0 215-146-2 1306-19-0				0.3	mg/kg	1.142	0.303	mg/kg	0.0000303 %	✓	
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) } 215-160-9 1308-38-9				18	mg/kg	1.462	23.281	mg/kg	0.00233 %	✓	
4	chromium in chromium(VI) compounds { chromium(VI) oxide } 024-001-00-0 215-607-8 1333-82-0				<1	mg/kg	1.923	<1.923	mg/kg	<0.000192 %		<LOD
5	copper { dicopper oxide; copper (I) oxide } 029-002-00-X 215-270-7 1317-39-1				30	mg/kg	1.126	29.891	mg/kg	0.00299 %	✓	
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) } 082-001-00-6			1	51	mg/kg		45.133	mg/kg	0.00451 %	✓	
7	mercury { mercury dichloride } 080-010-00-X 231-299-8 7487-94-7				<0.05	mg/kg	1.353	<0.0677	mg/kg	<0.0000677 %		<LOD
8	nickel { nickel sulfate } 028-009-00-5 232-104-9 7786-81-4				19	mg/kg	2.637	44.334	mg/kg	0.00443 %	✓	
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex } 034-002-00-8				<0.5	mg/kg	1.405	<0.703	mg/kg	<0.0000703 %		<LOD
10	zinc { zinc sulphate } 030-006-00-9 231-793-3 [1] 7446-19-7 [1] 231-793-3 [2] 7733-02-0 [2]				87	mg/kg	2.469	190.114	mg/kg	0.019 %	✓	
11	TPH (C6 to C40) petroleum group TPH				70	mg/kg		61.947	mg/kg	0.00619 %	✓	
12	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } 006-007-00-5				<0.1	mg/kg	1.884	<0.188	mg/kg	<0.0000188 %		<LOD
13	pH PH				9.8	pH		9.8	pH	9.8 pH		

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
14	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
15	acenaphthylene				0.6 mg/kg		0.531 mg/kg	0.0000531 %	✓	
		205-917-1	208-96-8							
16	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-469-6	83-32-9							
17	fluorene				0.1 mg/kg		0.0885 mg/kg	0.00000885 %	✓	
		201-695-5	86-73-7							
18	phenanthrene				1.5 mg/kg		1.327 mg/kg	0.000133 %	✓	
		201-581-5	85-01-8							
19	anthracene				0.5 mg/kg		0.442 mg/kg	0.0000442 %	✓	
		204-371-1	120-12-7							
20	fluoranthene				2.9 mg/kg		2.566 mg/kg	0.000257 %	✓	
		205-912-4	206-44-0							
21	pyrene				2.4 mg/kg		2.124 mg/kg	0.000212 %	✓	
		204-927-3	129-00-0							
22	benzo[a]anthracene				1.4 mg/kg		1.239 mg/kg	0.000124 %	✓	
	601-033-00-9	200-280-6	56-55-3							
23	chrysene				1.4 mg/kg		1.239 mg/kg	0.000124 %	✓	
	601-048-00-0	205-923-4	218-01-9							
24	benzo[b]fluoranthene				1.2 mg/kg		1.062 mg/kg	0.000106 %	✓	
	601-034-00-4	205-911-9	205-99-2							
25	benzo[k]fluoranthene				0.7 mg/kg		0.619 mg/kg	0.0000619 %	✓	
	601-036-00-5	205-916-6	207-08-9							
26	benzo[a]pyrene; benzo[def]chrysene				1.6 mg/kg		1.416 mg/kg	0.000142 %	✓	
	601-032-00-3	200-028-5	50-32-8							
27	indeno[123-cd]pyrene				1.3 mg/kg		1.15 mg/kg	0.000115 %	✓	
		205-893-2	193-39-5							
28	dibenz[a,h]anthracene				0.5 mg/kg		0.442 mg/kg	0.0000442 %	✓	
	601-041-00-2	200-181-8	53-70-3							
29	benzo[ghi]perylene				1.5 mg/kg		1.327 mg/kg	0.000133 %	✓	
		205-883-8	191-24-2							
30	asbestos				<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
	650-013-00-6	-----	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5							
Total:								0.0441 %		

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 Determinand - 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

Supplementary Hazardous Property Information

HP 3(i): Flammable flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because The TPH contamination recorded is not present in a liquid or vapour form and therefore is not flammable

Hazard Statements hit:


Flam. Liq. 3; H226 "Flammable liquid and vapour."



Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00619%)

Classification of sample: BH05[2]

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

Sample details

Sample name:	LoW Code:
BH05[2]	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.80-1.15 m	
Moisture content:	
20%	
(dry weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 20% Dry Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
1	arsenic { arsenic trioxide }				7.7 mg/kg	1.32	8.472 mg/kg	0.000847 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
2	cadmium { cadmium oxide }				0.2 mg/kg	1.142	0.19 mg/kg	0.000019 %	✓	
	048-002-00-0	215-146-2	1306-19-0							
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				26 mg/kg	1.462	31.667 mg/kg	0.00317 %	✓	
		215-160-9	1308-38-9							
4	chromium in chromium(VI) compounds { chromium(VI) oxide }				<1 mg/kg	1.923	<1.923 mg/kg	<0.000192 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
5	copper { dicopper oxide; copper (I) oxide }				31 mg/kg	1.126	29.085 mg/kg	0.00291 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
6	lead { lead compounds with the exception of those specified elsewhere in this Annex (worst case) }			1	42 mg/kg		35 mg/kg	0.0035 %	✓	
	082-001-00-6									
7	mercury { mercury dichloride }				0.05 mg/kg	1.353	0.0564 mg/kg	0.00000564 %	✓	
	080-010-00-X	231-299-8	7487-94-7							
8	nickel { nickel sulfate }				22 mg/kg	2.637	48.339 mg/kg	0.00483 %	✓	
	028-009-00-5	232-104-9	7786-81-4							
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<0.5 mg/kg	1.405	<0.703 mg/kg	<0.0000703 %		<LOD
	034-002-00-8									
10	zinc { zinc sulphate }				74 mg/kg	2.469	152.273 mg/kg	0.0152 %	✓	
	030-006-00-9	231-793-3 [1] 231-793-3 [2]	7446-19-7 [1] 7733-02-0 [2]							
11	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
			TPH							
12	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 }				0.3 mg/kg	1.884	0.471 mg/kg	0.0000471 %	✓	
	006-007-00-5									
13	pH				7.5 pH		7.5 pH	7.5 pH		
			PH							

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
14	naphthalene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-052-00-2	202-049-5	91-20-3							
15	acenaphthylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-917-1	208-96-8							
16	acenaphthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-469-6	83-32-9							
17	fluorene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-695-5	86-73-7							
18	phenanthrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		201-581-5	85-01-8							
19	anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		204-371-1	120-12-7							
20	fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-912-4	206-44-0							
21	pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		204-927-3	129-00-0							
22	benzo[a]anthracene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-033-00-9	200-280-6	56-55-3							
23	chrysene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-048-00-0	205-923-4	218-01-9							
24	benzo[b]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-034-00-4	205-911-9	205-99-2							
25	benzo[k]fluoranthene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
	601-036-00-5	205-916-6	207-08-9							
26	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							
27	indeno[123-cd]pyrene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-893-2	193-39-5							
28	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							
29	benzo[ghi]perylene				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
		205-883-8	191-24-2							
30	asbestos				<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
	650-013-00-6	-----	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5							
Total:								0.033 %		

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 Determinand - 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

Appendix A: Classifier defined and non GB MCL determinands

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

Description/Comments: Data from C&L Inventory Database

Data source: <https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/33806>

Data source date: 17 Jul 2015

Hazard Statements: Acute Tox. 4; H332, Acute Tox. 4; H302, Eye Irrit. 2; H319, STOT SE 3; H335, Skin Irrit. 2; H315, Resp. Sens. 1; H334, Skin Sens. 1; H317, Repr. 1B; H360FD, Aquatic Acute 1; H400, Aquatic Chronic 1; H410

• lead compounds with the exception of those specified elsewhere in this Annex (worst case)

GB MCL index number: 082-001-00-6

Description/Comments: Worst Case: IARC considers lead compounds Group 2A; Probably carcinogenic to humans; Lead REACH Consortium, following MCL protocols, considers lead compounds from smelting industries, flue dust and similar to be Carcinogenic category 1A

Additional Hazard Statement(s): Carc. 1A; H350

Reason for additional Hazards Statement(s):

20 Nov 2021 - Carc. 1A; H350 hazard statement sourced from: IARC Group 2A (Sup 7, 87) 2006; Lead REACH Consortium www.reach-lead.eu/substanceinformation.html (worst case lead compounds). Review date 29/09/2015

• 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

• salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex

GB MCL index number: 006-007-00-5

Description/Comments: Conversion factor based on a worst case compound: sodium cyanide

Additional Hazard Statement(s): EUH032 >= 0.2 %

Reason for additional Hazards Statement(s):

20 Nov 2021 - EUH032 >= 0.2 % hazard statement sourced from: WM3, Table C12.2

• pH (CAS Number: PH)

Description/Comments: Appendix C4

Data source: WM3 1st Edition 2015

Data source date: 25 May 2015

Hazard Statements: None.

• 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)

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 compounds with the exception of those specified elsewhere in this Annex (worst case)}

No Chromium VI recorded in any samples screened

mercury {mercury dichloride}

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

nickel {nickel sulfate}

No Chromium VI recorded in any samples screened

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 sulphate}

No Chromium VI recorded in any samples screened

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)

Appendix C: Version

HazWasteOnline Classification Engine: **WM3 1st Edition v1.2.GB - Oct 2021**

HazWasteOnline Classification Engine Version: 2022.261.5334.9968 (18 Sep 2022)

HazWasteOnline Database: 2022.261.5334.9968 (18 Sep 2022)

This classification utilises the following guidance and legislation:

WM3 v1.2.GB - Waste Classification - 1stEditionv1.2.GB-Oct2021

CLP Regulation - Regulation1272/2008/ECof16December2008

1st ATP - Regulation790/2009/ECof10August2009

2nd ATP - Regulation286/2011/ECof10March2011

3rd ATP - Regulation618/2012/EUof10July2012

4th ATP - Regulation487/2013/EUof8May2013

Correction to 1st ATP - Regulation758/2013/EUof7August2013

5th ATP - Regulation944/2013/EUof2October2013

6th ATP - Regulation605/2014/EUof5June2014

WFD Annex III replacement - Regulation1357/2014/EUof18December2014

Revised List of Waste 2014 - Decision2014/955/EUof18December2014

7th ATP - Regulation2015/1221/EUof24July2015

8th ATP - Regulation(EU)2016/918of19May2016

9th ATP - Regulation(EU)2016/1179of19July2016

10th ATP - Regulation(EU)2017/776of4May2017

HP14 amendment - Regulation(EU)2017/997of8June2017

13th ATP - Regulation(EU)2018/1480of4October2018

14th ATP - Regulation(EU)2020/217of4October2019

15th ATP - Regulation(EU)2020/1182of19May2020

The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit)

Regulations 2020 - UK:2020No.1567of16thDecember2020

The Waste and Environmental Permitting etc. (Legislative Functions and Amendment etc.) (EU Exit) Regulations 2020 - UK:

2020 No. 1540 of 16th December 2020

GB MCL List - version1.1of09June2021