

GROUND INVESTIGATION REPORT FOR CALNE PHASE 6, SPITFIRE ROAD, CALNE, WILTSHIRE SN11 8GA



PREPARED FOR ROBERT HITCHINS LIMITED

Report No. 5019

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Prepared by	Timothy D Coe BSc(Hons) MSc FGS	
Approved by	David J Wilson BSc(Geol) CGeol FGS MIQ	
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CONTENTS

REPORT	Page No.
1 INTRODUCTION	1
2 SITE LOCATION AND DESCRIPTION	2
3 BACKGROUND SETTING	2
<i>Recorded Geology</i>	2
<i>Hydrogeology</i>	3
<i>Hydrology</i>	3
<i>Site History</i>	4
<i>Landfill and Radon Gas</i>	5
<i>Unexploded Ordnance Risk</i>	5
4 PROPOSED DEVELOPMENT	6
5 PRELIMINARY RISK ASSESSMENT AND CONCEPTUAL SITE MODEL	6
6 GROUND INVESTIGATION REPORT	9
<i>Site Works</i>	
<i>Laboratory Testing – Geotechnical</i>	9
<i>Laboratory Testing – Contamination</i>	12
<i>Discussion on Ground Conditions</i>	13
<i>Percolation Testing – Soakaway Feasibility</i>	15
7 GEOTECHNICAL DESIGN REPORT	15
<i>Foundation Design</i>	16
<i>Pavement Design</i>	19
<i>Recommendations for Monitoring of Ground Conditions During Construction</i>	19
8 CONTAMINATION RISK ASSESSMENT, TOPSOIL SUITABILITY AND SOIL WASTE CLASSIFICATION	19
<i>Human Health</i>	19
<i>Waste Supply Pipework</i>	21
<i>Landfill Gas and Radon Gas</i>	21
<i>Controlled Waters</i>	23
<i>Waste Classification for Offsite Disposal of Arisings</i>	23
<i>Caveats</i>	24

9	REFINED CONCEPTUAL SITE MODEL	25
10	CONCLUSIONS AND RECOMMENDATIONS	26
11	REFERENCES	28

DRAWINGS**No.**

SITE LOCATION	5019/1
EXISTING SITE LAYOUT PLAN SHOWING INVESTIGATION LOCATIONS AND SITE WALKOVER OBSERVATIONS	5019/2
EXTRACTS OF ORDNANCE SURVEY PLANS TO SHOW SITE HISTORY	5019/3

APPENDICES

1	SITE PHOTOGRAPHS
2	BOREHOLE LOGS (INCLUDING PHOTOGRAPHS) AND CPT LOGS
3	CONTAMINATION STATUTORY FRAMEWORK/METHODOLOGY AND CERTIFIED CONTAMINATION TEST RESULTS
4	WASTE CLASSIFICATION REPORT AND WAC TEST RESULTS
5	GAS/WATER MONITORING RESULTS

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1 INTRODUCTION

- 1.1** Development parcel Calne 6 on the eastern outskirts of Calne, Wiltshire, is being considered for development. A ground investigation was requested in order to assess site suitability in respect of its contamination status and geotechnical conditions for appropriate foundation, ground floor slab and external pavement design.
- 1.2** The geotechnical investigation has been carried out in general accordance with Eurocode 7 'Geotechnical Design', in particular BS EN 1997-1:2004 and 1997-2:2007 and BS EN ISO 14688-1:2002 and 14688-2:2004. The proposed development is considered to fall into the Geotechnical Category 2 classification, thus routine field and laboratory testing methods have been adopted. Reference has also been made to BS5930:2015 Code of Practice for Ground Investigations, and National House Building Council (NHBC) Standards Chapter 4.2 – 'Building Near Trees'.
- 1.3** The Geo-environmental assessment comprising Phase 1 desk study followed by Phase 2 testing and quantitative contamination risk assessment has been carried out in accordance with BS10175:2011 "Code of Practice for the Investigation of Potentially Contaminated Sites" and EA document LCRM "Land Contamination Risk Management" (2020).
- 1.4** This report has been prepared in accordance with emailed instruction received 1st June 2022, in acceptance of quote Q22128 of 23rd May 2022, from Edward Argent of Robert Hitchins Limited, to whom reliance on the report is presently restricted.

2 SITE LOCATION AND DESCRIPTION

- 2.1** Centred on National Grid Reference 400908, 171491 the 4.76 hectare site is located on the outskirts of Calne in Wiltshire, approximately 1km east of the town centre, as shown on drawing 5019/1.
- 2.2** At the time of our walkover survey on 19th July 2020 the site was identified as consisting entirely of undeveloped grassed fields and intervening hawthorn hedgerows that front onto Spitfire Road along almost the entire northern and western boundaries. With the exception of two small dilapidated tin roofed farm buildings (barns) situated near the northern boundary and a gravel access track near the western boundary the site the site was otherwise devoid of features. Beyond the site boundaries, to the east are buildings of Abberds Field Farm and open fields. The westerly flowing Abberd Brook passes along the southern boundary with open fields beyond. To the west is an existing attenuation pond, the aforementioned Spitfire Road and a residential housing estate beyond, whilst to the north beyond Spitfire Road is again a mixture of residential housing and open fields. Slightly further afield, a large attenuation pond is present 140m to the east and beyond which is the Waste Management Facility for Hills Waste Solutions. The existing site layout is presented as drawing 5019/2 and representative photos are included within Appendix 1.
- 2.3** Topographic elevation data provided as part of the Google Earth Aerial Imagery suggests that the site is at a general elevation of 74-81m above Ordnance Datum, with a fall in ground level from northwest to southeast in line with the immediate surrounding area.

3 BACKGROUND SETTING

Recorded Geology

- 3.1** The geology of the site is shown on the 1:50,000 scale British Geological Survey (BGS) Sheet 266 for Marlborough and online. Mapping indicates the site to lie entirely within the outcrop of the Kimmeridge Clay Formation (KC), which typically comprises mudstone, siltstone and cementstone (type of limestone) beds locally with sands and silts. The KC often contains naturally elevated sulphides and sulphates in the form of gypsum crystals, which may dictate sulphate protection for concrete foundations. The

southern extreme of the site is recorded as being covered by superficial alluvium due to proximity to the Abberd Brook. There are no areas of mapped made ground or any geological faulting shown either inside or within influencing distance of the site.

- 3.2** This Practice has not previously undertaken any intrusive investigation within the site boundary, however investigation undertaken in close proximity to the west all proved the recorded KC below a thin mantle of surface topsoil and localised topsoil. There are no BGS borehole records on or within useable distance of the site.

Hydrogeology

- 3.3** The EA classifies the KC as 'Unproductive' strata, which are rock layers with such a low permeability that they have negligible significance for water supply or river base flow. The closest recorded groundwater abstraction is s within a 1km radius of the site, and the closest is located approximately 250m to the east, where Henly Bros are permitted to abstract groundwater from a single well point for 'general farming and domestic' purposes. There are no groundwater source protection zones within a 2km radius of the site.
- 3.4** Based upon the above information the site is considered to be within an area of low sensitivity in terms of groundwater resources.

Hydrology

- 3.5** There are no ponds or watercourses present within the site. The closest natural surface water feature is the westerly flowing Abberd Brook (of River Quality C) which marks the site's entire southern boundary and the EA indicates that the lower lying areas of the site lie within the zone of influence of flooding from this watercourse. The closest man-made water feature is an attenuation pond immediately adjacent the western boundary. Given the existing total agricultural/paddock surface coverage, rainwater infiltration can currently be regarded as high, subject to natural permeability. The closest surface water abstraction is located 230m to the east where Camas UK Limited (currently Hills Waste Solutions) are permitted to abstract water from the Abberd Brook for 'Mining/Quarrying and sand and gravel washing' purposes.
- 3.6** Based upon the above information the site is considered to be within an area of high sensitivity in terms of controlled surface waters.

Site History

3.7 The history of the site has been deduced by inspection of historical Ordnance Survey maps dating back to 1889 together with historical aerial imagery provided as part of the online Google Earth mapping service, and a selection of relevant extracts are presented as drawing 5019/3. Any on and/or off-site points of interest that may affect or be affected by the proposed development have been summarised within Table 1 below.

TABLE 1: SITE HISTORY

Date (source map scale)	On-Site	Off-Site	Potential Contaminants	Risk
1889 (1:10,560)	Four undeveloped agricultural/pasture fields with intervening hedgerows	N – Abberd Lane and agricultural fields W & E – Agricultural fields S – Abberd Brook and agricultural fields	None	Negligible
1901 (1:10,560)	Small farm building constructed in central field near northern boundary	600m E – Sand pits	As above	Negligible
1925 (1:10,560)	No significant change	200m SE – Sand pit 600m E – Sand pits now disused	As above	Negligible
1938-1960 (1:10,560)	No significant change	200m SE – Sand pit extended eastwards	As above	Negligible
1980 (1:10,000)	No significant change	E – Farm buildings 200m SE – Sand pit continuing to extend north and east	As above	Negligible
2000-2008 (1:10,000)	No significant change	230m E – Camas UK Ltd Works constructed (currently Hills Quarry Products) 400m E – Some Sand and Gravel pits water filled	Landfill gases	Low
2009-2014 (Google Earth Aerial Mapping)	No significant change	W – Attenuation Pond constructed	As above	Low
2015-2016 (Google Earth Aerial Mapping)	Western field temporarily used for a site compound during construction of adjacent residential development	W – Residential development	Toxic Metals Phytotoxic metals Petroleum hydrocarbons (TPH) Polyaromatic hydrocarbons (PAH)	Low/moderate
2019-2020	No significant change	S – Residential development	As above	Low/moderate

Date (source map scale)	On-Site	Off-Site	Potential Contaminants	Risk
(Google Earth Aerial Mapping)				

- 3.8** Please note that Ordnance Survey plans only represent periodic snapshots in time, and do not provide a continuous record of previous site usage, there is therefore a risk that the site may contain buried remnant foundations of former buildings or waste products associated with unrecorded previous site usage, which may not be evident from the site walkover inspection and desk study researches.

Landfill Gas and Radon Gas

- 3.9** The site lies within potential influencing distance of the Sands Farm sand and gravel pits to the east. According to the website of “Hills Waste Solutions” the site is currently a waste management facility and advanced materials recycling facility (MRF) although it is understood that historically, the site previously operated as Sands Farm Landfill which was licensed to accept waste including inert, commercial/industrial and domestic. Given the proximity, monitoring wells were installed in selected boreholes to enable a quantitative assessment of the gas regime. The monitoring results are presented in Appendix 5 and discussed in Section 8.

- 3.10** Consultation of the BGS National Geoscience Information Service data together with the BRE Report BR211 “Radon: guidance on protective measures for new buildings” (2015) suggests that no radon protection measures are required in new development at this site.

Unexploded Ordnance Risk

- 3.11** A basic review of regional unexploded bomb data indicates that the area of Calne is currently considered as being within a low risk area, on which basis a more-detailed site-specific assessment should be unnecessary.

4 **PROPOSED DEVELOPMENT**

- 4.1 It is proposed to develop land to the south of Abberd Brook in Calne, although a definitive development proposal is yet to be established / provided. The proposed final ground levels are currently not definitively known but are not believed to be substantially changing from existing.

5 **PRELIMINARY RISK ASSESSMENT AND CONCEPTUAL SITE MODEL**

- 5.1 The site and its immediate surroundings have been assessed in terms of current and historical land use and the environmental, geological and hydrogeological setting; the methodology is described in Appendix 3. In the absence of a known development layout a 'worst case' proposed residential development has been adopted for this assessment and for which the **critical receptor** is a female child (age class 1-6).
- 5.2 Historical mapping suggests that the site is unlikely to have been significantly affected by its previous site usage as agricultural/pasture land.
- 5.3 In view of the foregoing the potential sources and the **principal contaminants of concern** are presented in Table 2 below.

TABLE 2: POTENTIAL SOURCES AND PRINCIPAL CONTAMINANTS OF CONCERN

Potential Sources		Principal Contaminants of Concern
ON-SITE	Localised unrecorded made ground during use as construction compound	Toxic and phytotoxic metals PAH
	Organic matter within Alluvium associated with Abberd Brook	Carbon Dioxide Gas Methane Gas
OFF-SITE	Sand Farm Landfill Site (historic); landfill boundary located circa 375m to the East at the closest point	Carbon Dioxide Gas Methane Gas

- 5.4** The above information is converted into the preliminary Conceptual Site Model shown in Figure 1 below, and the **potential pollutant linkages** involving future residents, proposed services and local environmental receptors are discussed in Table 3, with appropriate risk levels:

FIGURE 1: PRELIMINARY CONCEPTUAL SITE MODEL (NTS)

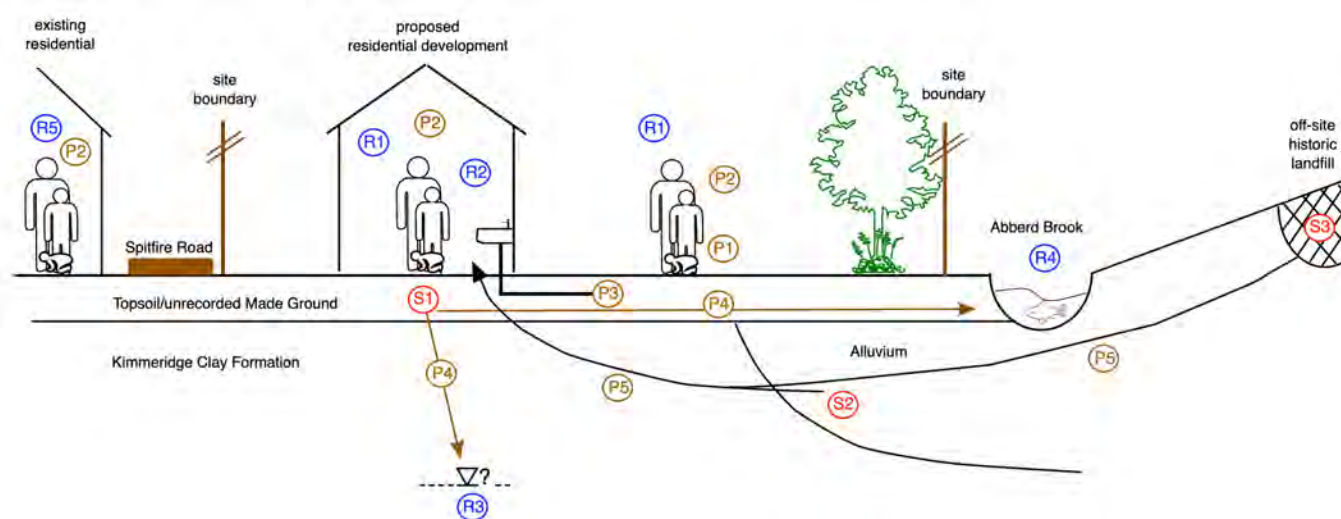


TABLE 3: SUMMARY OF PRELIMINARY POTENTIAL POLLUTANT LINKAGES

Potential Sources	Pathways	Receptors						Comments	Preliminary Risk Assessment
		R1	R2	R3	R4	R5	R6		
ON-SITE									
S1	P1	X					X	Undeveloped “Greenfield” site. Possible localised made ground present below area used as a temporary construction compound.	Low
	P2	X							
	P3		X						
	P4			X	X				
	P5								
	P6								
S2	P1							Alluvium may contain localised trapped organic material which upon degradation would be gas producing	Very Low
	P2								
	P3								
	P4								
	P5	X							
	P6								
OFF-SITE									
S3	P1							Historical landfill site within potential influencing distance, albeit on the opposite side of the Abberd Brook	Low/Moderate
	P2								
	P3								
	P4								
	P5	X							
	P6								
SOURCES	S1	Unrecorded made ground							
	S2	Natural Alluvium							
	S3	Historical landfill site within potential influencing distance							
PATHWAYS	P1	Direct dermal contact or ingestion and via soil attached to vegetables							
	P2	Inhalation of dust and vapours							
	P3	Permeation into new water supply pipework							
	P4	Vertical leaching of leachable contaminants in unsaturated zone and lateral migration in saturated zone							
	P5	Landfill gas migration through unsaturated zone and accumulation within confined spaces							
	P6	Radon gas migration through unsaturated zone and accumulation within confined spaces							
RECEPTORS	R1	Future site users (critical residential receptor is female child age class 1-6)							
	R2	Potable water supply							
	R3	Groundwater (KC is unproductive)							
	R4	Surface waters (Abberd Brook immediately adjacent southeastern site boundary)							
	R5	Adjacent site users (Residential)							

- 5.5** The findings of the Phase 1 desk study suggest a low risk that the site itself may contain contaminants at elevations sufficient to pose a significant risk to human health or environmental receptors. Despite the foregoing, the presence of alluvium below the site together with proximity to a large historical landfill site may pose a risk from landfill-type gases.
- 5.6** Given the high-sensitivity of a proposed residential development it was considered prudent to undertake a ground investigation and gas monitoring program and the results of which are reported below. All contamination test results have been incorporated into an appropriate quantitative risk assessment to determine risk levels to the obvious receptors in the form of future site users and groundwater quality, as well as those less obvious such as the proposed buildings and infrastructure, such that any necessary remedial measures can be identified and recommended to ensure that the developed site will be “fit for purpose”.

6 GROUND INVESTIGATION REPORT

Site Works

- 6.1** The Phase 2 intrusive investigation took place on 21st-22nd July and 14th September 2022 by way of window-sample borehole drilling. The locations of all exploratory hole positions were selected by this Practice with non-targeted positions selected to acquire a good general site coverage. Positions were subsequently marked out on site (again by this Practice) using on and off-site reference points and these are indicated on existing site layout drawing 5019/2. All available service plans were reviewed and as an added precaution a CAT electrical service scanner was deployed and inspection pits were manually excavated prior to all intrusive drilling works. No services (recorded or unrecorded) were physically encountered during the intrusive works.
- 6.2** A total of fourteen windowless sampling (small diameter) boreholes (WS1-14) were drilled to depths of 2.0-3.0m using an Archway Competitor Dart window-sampling rig. The boreholes were logged on-site in accordance with Eurocode 7 (BS EN ISO 14688-1:2002 and 14688-2:2004) by a suitably qualified engineer from this Practice, and representative disturbed samples taken for geotechnical and contamination testing as appropriate. In-situ dynamic cone penetration tests (CPT) were completed at 1.0m depth intervals in accordance with BS EN ISO 22476-3:2005 to assess the relative

density of the material penetrated and these results are indicated on the respective logs in Appendix 2.

6.3 Supplementary to the above, the Archway Dart window sampling rig was also used to undertake in-situ CPT to assess the depth and extent of soft alluvium in proximity to the Abberd Brook. Although this is a non-sampling method, it does enable ground strength/resistance assessment to a significant meterage depth in a reasonably short space of time. CPT logs are provided in Appendix 2.

6.4 Upon completion of drilling, selected boreholes were installed with gas/groundwater monitoring wells, with response zones between 1.0m and 3.0m depth. Following an initial period to allow any soil gas to reach equilibrium, monitoring visits have since been undertaken on 27th July, the 8th and 30th September and 13th and 28th October 2022. The results of the groundwater-monitoring programme are presented in Table 8 and discussed in Section 6.15. All those boreholes not installed with monitoring wells were backfilled using arisings nominally compacted by hand and surface topsoil replaced flush with surface.

Laboratory Testing - Geotechnical

6.5 A number of disturbed samples were taken for routine geotechnical classification testing, comprising moisture content and plasticity determinations, along with classification to the Unified Soil Classification Scheme (USCS) and NHBC Standards, plus acidity and sulphate analysis to BRE Special Digest 1 requirements. Results are tabulated below.

TABLE 4: INDEX TEST RESULTS AND CLASSIFICATION

BH No	Depth (m)	Sample of	Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Plasticity / USCS	Consistency Index	<425um (%)	Modified Plasticity Index (%)	Volume Change Potential (NHBC)
BH1	0.75	KC	21	65	25	40	CIH	1.1	100	40	High
BH1	2.25	KC	22	53	21	32	CIH	0.97	100	32	Medium
BH2	0.5	MG	28	71	26	45	CIV	0.96	100	45	High
BH2	1.0	KC	25	66	28	38	CIH	1.08	100	38	Medium
BH3	1.5	KC	22	65	25	40	CIH	1.08	100	40	High
BH4	1.0	KC	21	53	21	32	CIH	1.0	100	32	Medium
BH4	1.5	KC	21	53	21	32	CIH	1.0	100	32	Medium

BH No	Depth (m)	Sample of	Moisture Content (%)	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Plasticity / USCS	Consistency Index	<425um (%)	Modified Plasticity Index (%)	Volume Change Potential (NHBC)
BH5	2.0	KC	30	47	18	29	CIM	0.59	100	29	Medium
BH6	3.0	KC	29	64	24	40	CIH	0.88	100	40	High
BH7	1.0	KC	25	52	20	32	CIH	0.84	100	32	Medium
BH7	1.5	KC	32	64	23	41	CIH	0.78	100	41	High
BH9	0.5	MG	40	88	30	58	CIV	0.83	100	58	High
BH9	2.5	KC	32	69	26	43	CIH	0.86	100	43	High
BH10	2.25	KC	31	65	28	37	CIH	0.92	100	37	Medium
BH11	0.5	MG	19	64	23	41	CIH	1.1	100	41	High
BH12	1.0	MG	26	66	26	40	CIH	1.0	100	40	High
BH12	2.0	KC	19	50	19	31	CIH	1.0	100	31	Medium
BH13	1.75	KC	18	62	23	39	CIH	1.13	100	39	Medium
BH13	1.4	KC	22	52	23	29	CIH	1.03	100	29	Medium
BH14	0.5	KC	20	64	25	39	CIH	1.13	100	39	Medium
BH14	0.9	KC	21	44	16	28	CIM	0.82	100	28	Medium

MG: Made Ground KC = Kimmeridge Clay Formation

TABLE 5: CHEMICAL TEST RESULTS AND CLASSIFICATION

BH No.	Depth (m)	Sample of	Total sulphate SO ₄ (%)	Total sulphur (%)	Total potential sulphate SO ₄ (%)	Oxidisable Sulphides SO ₄ (%)	pH value in soil	Water soluble sulphate SO ₄ (mg/l)	Design sulphate class	Aggressive chemical concrete class
BH1	0.75	KC	0.19	0.066	0.198	0.008	7.3	936	DS-2	AC-2
BH1	2.25	KC	2.16	0.929	2.787	0.627	7.4	2650	DS-4	AC-4
BH4	1.0	KC	0.073	0.036	0.108	0.035	7.8	273	DS-1	AC-1
BH5	2.0	KC	2.94	1.29	3.87	0.93	7.5	1140	DS-4	AC-4
BH7	1.0	KC	0.115	0.057	0.171	0.056	7.7	879	DS-2	AC-2
BH7	1.5	KC	0.054	0.311	0.933	0.879	7.8	464	DS-3	AC-3
BH8	2.0	AL	0.127	0.063	0.189	0.062	7.7	613	DS-2	AC-2
BH8	3.0	AL	4.92	1.81	5.43	0.51	6.9	1850	DS-4	AC-4
BH9	0.5	MG	1.52	0.61	1.83	0.31	7.5	1610	DS-4	AC-4
BH9	2.5	KC	0.404	0.206	0.618	0.214	7.0	1840	DS-3	AC-3
BH12	1.0	MG	0.096	0.055	0.165	0.069	7.5	471	DS-1	AC-1
BH12	2.0	KC	2.36	1.07	3.21	0.85	7.2	2700	DS-4	AC-4
BH14	0.6	KC	0.203	0.07	0.21	0.007	7.1	800	DS-2	AC-2
BH14	1.0	KC	13.3	6.8	20.4	7.1	7.3	1900	DS-4	AC-4

BH No.	Depth (m)	Sample of	Total sulphate SO ₄ (%)	Total sulphur (%)	Total potential sulphate SO ₄ (%)	Oxidisable Sulphides SO ₄ (%)	pH value in soil	Water soluble sulphate SO ₄ (mg/l)	Design sulphate class	Aggressive chemical concrete class
BH14	1.5	KC	5.9	2.67	8.01	2.11	7.2	2160	DS-4	AC-4

MG: Made Ground AL = Alluvium KC = Kimmeridge Clay Formation

6.6 Two representative samples of near surface disturbed cohesive material were subject to laboratory recompact California Bearing Ratio (CBR) tests and the results are presented in Table 6 below.

TABLE 6: MOISTURE CONTENT, DENSITY AND CBR DETERMINATIONS

BH No	Depth (m)	Sample of	Moisture Content (%)	Bulk Density (Mg/m ³)	Dry Density (Mg/m ³)	CBR Value (%)			
						Top		Base	
						2.5mm	5mm	2.5mm	5mm
BH10	0.5	KC	20	1.69	1.41	13.0	11.0	9.2	8.3
BH12	0.45	MG	21	1.80	1.49	5.3	6.8	4.1	7.0

MG: Made Ground KC = Kimmeridge Clay Formation

Laboratory Testing - Contamination

6.7 The contamination sampling scheme was conducted in accordance with BS10175:2011. Representative samples of topsoil and natural undisturbed soil were taken from the upper 1.0m of extracted ground. Those soils to be scheduled for organic analysis were sealed within opaque amber glass jars to prevent loss of any volatiles during transit, whilst those for inorganic testing were placed in plastic tubs, all with chain of custody labelling. All soils were sent to UKAS accredited I2 laboratories in Watford under chain of custody labelling where based upon the desk study findings analysis selectively comprised the following:

- Toxic and phytotoxic metals
- pH
- Total Petroleum Hydrocarbons (TPH) Carbon range C6-C40
- Speciated Polyaromatic Hydrocarbons (PAH)
- Soil organic matter content
- Asbestos screen and identification

6.8 The potential risk to groundwater resources was determined by leachate analysis of four representative samples of near surface topsoil and made ground, with samples tested to determine the leachable content of toxic and phytotoxic metals.

6.9 The certified laboratory test results are presented as Appendix 1 and for convenience these have also been summarised to facilitate comparison against assessment criteria. All results and their implications upon the preliminary CSM are further discussed in Sections 8 and 9.

Discussion on Ground Conditions

6.10 Ground conditions appear to be commensurate with geological mapping. Beneath a thin mantle of topsoil and localised made ground all boreholes encountered undisturbed clay to termination, representing the recorded Kimmeridge Clay Formation. A summary of the observed strata is presented in Table 7 below.

TABLE 7: SUMMARY OF OBSERVED STRATA

Stratum	Base Depth (m)	Notes
TOPSOIL: probable soft, dark brown, organic, slightly gravelly, slightly sandy, mostly plastic (locally desiccated) CLAY with frequent roots from overlying grass. Gravel is sub-angular to sub-rounded fine to medium siltstone, limestone, charcoal and brick	0.10 – 0.40	Encountered in all boreholes
MADE GROUND: probable stiff to very stiff, orangish-brown and grey, slightly sandy, slightly gravelly CLAY. With frequent roots. Gravel is fine brick and charcoal	0.40 – 1.30	Encountered in all boreholes except BH8 & BH10
CLAY: initially firm, orangish-brown and mottled bluish grey CLAY. Becoming extremely soft below 1.2m depth (ALLUVIUM)	2.10	Encountered in BH8 only
SAND: very loose, dark grey, silty, clayey, fine SAND. Becoming loose below 3.0m depth (ALLUVIUM)	>3.00	Encountered in BH8 only to terminal depth
CLAY: soft to firm, bluish grey and brown, plastic CLAY, locally with pockets of crystalline gypsum deposits (KIMMERIDGE CLAY FORMATION))	>3.00m	Encountered to terminal depth in all boreholes except BH8
Perched/Groundwater	BH1-14 – dry	
Roots	Evident in near surface topsoil and made ground only	
Desiccation	Evident in near surface topsoil and made ground only	

- 6.11** Extremely soft/very loose alluvium was encountered within BH8 only. On 14th September further investigation by CPT drilling was undertaken in this locale to assess the depth of the soft ground and its extent into the site. Nine CPT holes were drilled and the findings identified extremely soft subsoil up to 2.35m depth in CPT1 only, which as can be seen on drawing 5019/2, suggests that such ground is actually localised to the area immediately adjacent BH8. With increasing distance northeast, northwest and southwest away from BH8 the near surface subsoil rapidly becomes soft to firm. Whilst results suggest that the extremely soft/very loose alluvium does not extend significantly into the site, given the proximity of BH8 to the Abberd Brook it should be assumed that with increasing proximity to the brook, similarly extremely soft /very loose alluvium will be encountered.
- 6.12** Based upon on-site visual and olfactory examination of the subsoil there was nothing to suggest the presence of obviously significantly contaminated subsoil although it is recognised that made ground has been identified which has the potential to be contaminated.
- 6.13** Near surface soil was identified as predominantly cohesive in composition and index testing on the KC classifies this undisturbed material as inorganic clay of moderate to very high plasticity and medium to high volume change potential in accordance with NHBC Standards. Consistency index (CI) values were typically <1.1 which implies that soil beneath the site is currently normally hydrated, although obviously with increasing proximity to existing hedgerows, current and/or relict desiccation of the clay soil should be expected. Depending upon the time of year of development the foregoing may change from that reported.
- 6.14** All boreholes remained dry and stable during the works. Five boreholes were installed with monitoring wells and water level monitoring has been undertaken on four separate occasions post installation. These results are presented in Table 8 below.

TABLE 8: PERCHED/GROUNDWATER MONITORING

BH No.	Depth to standing water (m,begl)				
	27 July 2022	8 September 2022	30 September 2022	13 October 2022	28 October 2022
BH1	2.86	2.54	2.31		
BH5	2.92	2.74	2.61		
BH8	2.82	1.82	1.93		

BH10	2.88	2.83	2.73		
BH14			2.91	2.69	0.72

- 6.15** In the short-term perched water/groundwater is unlikely to be encountered within newly excavated foundation or service trenches within the KC. The groundwater level is of course subject to seasonal fluctuation according to prevailing weather conditions, and the situation encountered and described above could potentially change in the future, especially in a period of seemingly ever-apparent but unpredictable climate change.

Soakaway Feasibility

- 6.16** With the exception of some localised superficial sand (Alluvium) located in the southeastern corner proximal to the Abberd Brook, the ground investigation identified a predominantly cohesive near surface soil profile. Whilst the results in Table 8 suggest that some water infiltration is taking place through natural soil, in this Practice's extensive experience of percolation testing in the local area (also within the KC), an insufficient rate infiltration is anticipated within soils beneath this site to facilitate the adoption of a conventional SUDS-type drainage system. It is therefore recommended that alternative drainage options be considered such as rainwater harvesting, attenuation ponds or transmission of surface water run-off to the existing drainage network. In the case of the latter it may be necessary to provide evidence that the construction of soakaways within the site is not practical given the impermeable nature of the underlying geology, and this Practice would be happy to assist further if required.

7 GEOTECHNICAL DESIGN REPORT

- 7.1** The site investigation works achieved by the fourteen boreholes have proven ground conditions beneath the site to be in accordance with recorded mapping and this Practices local experience. Beneath a very thin surface mantle of topsoil and localised made ground, all boreholes terminated in undisturbed clay representing the recorded Kimmeridge Clay Formation.

Foundation Design

- 7.2** Representative samples of the natural weathered cohesive soil of the KC classify as medium to high volume change potential, therefore (following NHBC Standards for high) a minimum founding depth of 1.0m is considered appropriate, locally deepened

within the radius of influence of trees and obviously subject to those foundations also penetrating through any localised softer, infilled or disturbed deposits to found in competent undisturbed and normally hydrated natural material.

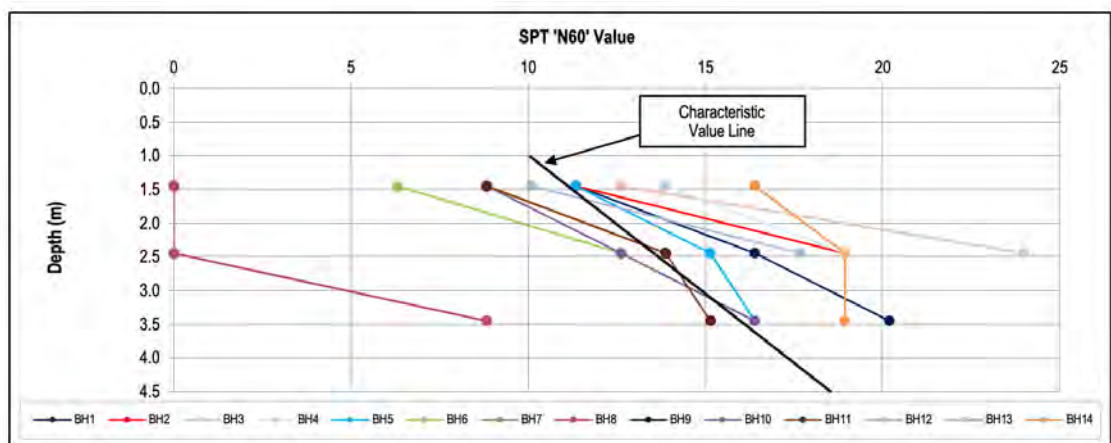
- 7.3** Extremely soft/very loose alluvium was encountered within BH8 only. Foundation deepening to minimum 2.5m depth will be necessary for any foundations in this location.
- 7.4** Consideration has been given as to whether any foundation deepening is required (beyond the above minimum) to account for potential tree root activity. Site observations indicate that all boundary and internal hedgerows are tree lined. All hedgerows were identified as comprising predominantly of mature hawthorn (of high-water demand) interspersed with a small number of larger individual trees including oak and willow (again of high water demand). Whilst the biggest specimens are shown on the existing site drawing 5019/2, it is recommended that an arboriculturist undertakes a more detailed tree assessment. Plot-specific foundation depths will need to be calculated for those buildings potentially affected by future root growth and desiccation and this Practice would be happy to assist further if required once a final proposed development layout is made available.
- 7.5** Those buildings within the zone of influence of trees will require heave protection in the form of a 70mm thick compressible membrane against the inside face of all external foundations deeper than 1.5m in order to overcome potential unbalanced lateral heave forces (unless the appointed Building Control inspector is satisfied that the soil is not desiccated at that time). Such protection should be applied on the inner face of external foundation walls only, with the lower 0.5m left unprotected. The same buildings will also require suspended ground floor slabs, which should incorporate a subfloor void of 150mm for insitu concrete or 300mm for pre-cast concrete and timber floors.
- 7.6** Design calculations in Eurocode 7 (BS EN 1997-1) require the establishment of design values for actions, ground properties and ground resistances, definition of the limits that must not be exceeded (usually a serviceability limit state), the setting up of calculation models for the relevant ultimate or serviceability limit state, and showing by such calculation that these limits will not be exceeded. Design values for such calculations are derived by applying partial factors to characteristic values for actions, ground properties and ground resistances, and based upon the foregoing geotechnical model and following the requirements of Design Approach 1, both Combination 1 and

Combination 2 calculations have been undertaken. Calculation sheets can be presented upon request.

7.7 BS EN 1997-2:2007 and BS EN ISO 22475-1:2006 require quality class 1 samples for determination of soil shear strength, and such samples can only be obtained by category A sampling methods. To avoid the costly complexities of such sampling in-situ tests can alternatively be undertaken, the borehole cone penetration test (CPT) being a commonly adopted method. Field results are adjusted or 'normalised' in accordance with Eurocode requirements (BS EN ISO 22476-9:2009), to enable the generation of characteristic values of undrained shear strength that can then be used for determination of bearing resistance as described above.

7.8 The results of the insitu CPT's are shown on the respective logs in Appendix 2 and the normalised 'N' values have been presented as N_{60} versus depth in Figure 2 below. Equivalent undrained shear strength has subsequently been calculated which also takes account of plasticity index values.

FIGURE 2: CPT ' N_{60} ' VALUES -v- DEPTH

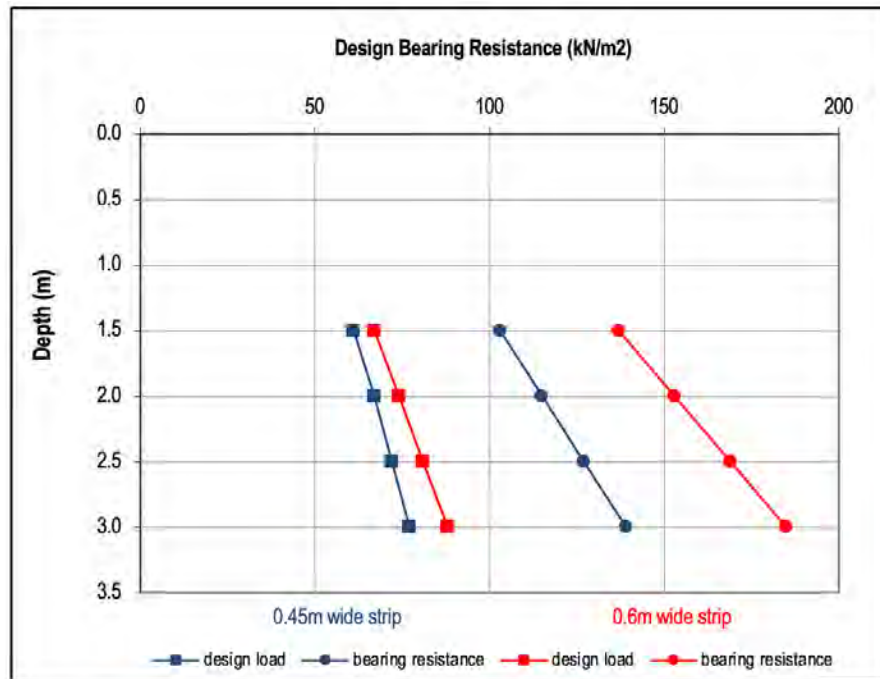


7.9 Using the characteristic value line in Figure 2, characteristic CPT N_{60} values have been adopted at the minimum founding depth from which to determine the design bearing resistance (bearing capacity).

7.10 By adopting a characteristic CPT N_{60} value of 10 at 1.0m depth, based on a conventional two-storey residential line load of 45kN/m, the design bearing resistance (bearing capacity) for a standard 0.6m wide strip foundation is estimated to be approximately 111kN/m², which exceeds the likely bearing pressure of 59kN/m² and confirms suitability. Similar calculations demonstrate suitability for 0.45m wide

foundations at this depth (bearing capacity of 83kN/m²). Design bearing resistance is plotted against depth in Figure 3 below, so that values can be assigned to any other depths as necessary due to tree influence.

FIGURE 3: DESIGN BEARING RESISTANCE -v- DEPTH



- 7.11** The results of acidity and sulphate testing presented in Table 5 show that all buried concrete associated with foundations, floor slabs and service entries will require designed to a minimum Design Sulphate Class DS-4 and Aggressive Chemical Environment for Concrete Class ACEC-4 in accordance with BRE Special Digest 1 (2005).
- 7.12** Shallow excavations should remain stable and in the short term it is not anticipated that groundwater will be encountered. As always it is recommended that any excavations are not left open and unsupported for any longer than necessary and if encountered water should not be permitted to sit on the foundation base to avoid potential softening. As always groundwater levels may vary seasonally, and water may therefore be encountered at levels in variance to those recorded by this investigation.

Pavement Design

- 7.13** With regard to pavement design for external hardstand, the results of laboratory recompacted CBR testing across the site at a 0.35-0.5m founding horizon suggests that CBR value of 4% ought to be suitable for initial design purposes. As always it is recommended that insitu testing be carried out closer to the time of construction to obtain a more accurate bearing ratio, since CBR value will vary seasonally. The clay soil is not considered to be frost-susceptible, however the Local Authority should be able to advise based upon their previous experience in the area.

Recommendations for Monitoring of Ground Conditions During Construction

- 7.14** In view of the importance of founding on natural ground, a careful watch must be maintained during all foundation excavations to ensure that this requirement has been satisfied.
- 7.15** Consideration should be given to access into/around the site since the surface soils have the potential to be subject to softening during periods of sustained wet weather.
- 7.16** Due to the potential for cohesive soils to shrink and swell, inspection during foundation excavations should ensure that no live roots or evidence of desiccation is visible at the founding horizon.
- 7.17** In the event of any doubt in the above matters, this Practice would be pleased to attend site as instructed.

8 **CONTAMINATION RISK ASSESSMENT, TOPSOIL SUITABILITY AND SOIL WASTE CLASSIFICATION**

Human Health

- 8.1** The contamination risk assessment has been carried out in general accordance with the methodology described within Appendix 3. Testing has included samples of the near-surface topsoil, made ground and natural soil to assess their suitability for retention within a proposed development. In the absence of a definitive development proposal Tier 1 risk modelling has adopted the most-sensitive '***Residential with Plant***

Uptake' land use scenario, including the pathway of direct ingestion via vegetables grown for consumption, and the 'critical receptor' is taken as a female child of age class 1-6. Based on the findings of the Phase 1 desk study suggesting that the site poses a low risk to a proposed residential development, a non-targeted sampling approach was considered appropriate together with a 'low' sampling density.

8.2 A number of disturbed samples were taken for laboratory contamination testing as previously detailed in Section 6.7. Whilst these results are presented in full in Appendix 3, for ease of reference Table 9 below provides a summary of the maximum measured concentration of each determinant against respective Tier 1 GAC.

TABLE 9: COMPARISON OF SOIL CHEMICAL TEST RESULTS WITH GUIDELINE VALUES

Determinand	Maximum Measured Concentration (mg/kg)	LQM/CIEH S4UL Residential with plant uptake (mg/kg) \$	Tests Undertaken (No.)	Exceedances (No.)	Notes
Arsenic	38	37	17	1	BH8/0.35
Cadmium	<0.2	11	17	0	
Chromium III	62	910	17	0	
Chromium VI	<1.2	6	17	0	
Lead	110	200*	17	0	
Mercury	0.4	40	17	0	
Selenium	<1.0	250	17	0	
Nickel	44	180	17	0	
Copper	72	2400	17	0	
Zinc	160	3700	17	0	
TPH (C6-C40)	Various	Various	3	0	
Speciated PAH	Various	Various	7	0	
Asbestos	ND	N/A	4		
Notes:					
* C4SL used in absence of S4UL					
\$ based on soil organic matter = 6%					

8.3 The findings presented in Table 9 indicate that there are no elevations of phytotoxic metals, TPH or PAH and additionally no loose fibres of asbestos were identified. A single sample did record an elevation of the toxic metal arsenic and this has been considered in more detail below.

- 8.4** Considering arsenic, out of the fourteen samples tested, a single value of 38mg/kg was recorded in near surface superficial alluvium in BH8 that very mildly exceeds the GAC of 37mg/kg. The value is not an outlier to the main population of results and therefore is not considered to represent a potentially larger source of contamination. Given the very mild exceedance and isolated occurrence there is not considered to be a significant risk to human health and no further assessment or remedial/mitigation action is considered necessary.

Water Supply Pipework

- 8.5** In addition to the above, consideration has been given to the potential effects of recorded concentrations on new water utility pipework. Given the negligible perceived risk from organic contaminants there ought to be no requirement for upgraded barrier pipework and the results of the contamination testing undertaken as part of this investigation would seem to support this. As always it is recommended that advice be sought from the local regulatory authority prior to ordering, since it is possible that their specific in-house thresholds may differ markedly from those within the most recent guidance by UK Water Industry Research (UKWIR) report “Guidance for the Selection of Water Supply Pipes to be used in Brownfield Sites” (2010).

Landfill Gas and Radon Gas

- 8.6** The Phase 1 desk study identified a potential off-site source of landfill gas from a historical landfill. A landfill gas risk assessment has therefore been undertaken in general accordance with BS8485:2015 “Code of Practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings”, and with reference to Construction Industry Research and Information Association (CIRIA) 665: ‘Assessing risks posed by hazardous ground gases to buildings’ (2015).
- 8.7** Whilst risk of gas migration to the site is considered relatively low (given the intervening brook, cohesive geology etc) as a precaution gas monitoring wells were installed in boreholes BH1, BH5, BH8, BH10 & BH14. Gas monitoring took place on five separate occasions, the results of which are presented in Appendix 5. Results record low levels of carbon dioxide (0.1-1.9%), low methane (0.0-0.1%) and nil/negligible flow (between -0.1 and 0.1 l/hr).
- 8.8** Two of the five gas monitoring visits (8th and 30th September 2022) were completed during an optimum period of both low and rapidly-falling atmospheric pressure and

therefore the results obtained are considered acceptable for determining if gas protection measures are necessary.

- 8.9** On this basis the implied maximum Characteristic Situation (CS) is derived by consideration of the maximum hazardous gas flow rate calculated from each monitoring well during the recent monitoring rounds, as shown in Table 10 below.

TABLE 10: SUMMARY GAS MONITORING RESULTS AND MAXIMUM CHARACTERISTIC SITUATION

BH Ref	Maximum Steady State Flow (l/hr)	Maximum Peak Gas Concentrations (%)		Peak Hazardous Gas Flow Rate (l/hr)		Implied Characteristic Situation		Worst-Case Hazardous Gas Flow Rate (l/hr) Q _{hg}		Worst-Case Characteristic Situation	
		Methane	Carbon Dioxide	Q _{hg} CH ₄	Q _{hg} CO ₂	CH ₄	CO ₂	CH ₄	CO ₂	CH ₄	CO ₂
BH1	0.0	0.1	1.9	0.0001	0.0019	1	1	0.0001	0.0019	1	1
BH5	0.0	0.1	1.9	0.0001	0.0019	1	1				
BH8	0.0	0.1	1.9	0.0001	0.0019	1	1				
BH10	0.1	0.1	1.5	0.0001	0.0015	1	1				
BH14	0.1	0.1	0.6	0.0001	0.0006	1	1				
NOTES:											
Q _{hg} = equivalent to GSV in C665											
Implied Characteristic Situation based on individual borehole data											
Worst-case gas flow rate and Characteristic Situation based on maximum observed flow rate and concentrations from all boreholes											

- 8.10** As shown in Table 10 above, based on both peak and worst-case monitoring results the overall site classification is 'CS1' indicating a very low hazard potential. In accordance with BS8485:2015 the worst case development scenario is for Type A 'typical private housing of conventional building construction' which classify as **High Risk**. As the buildings are of residential usage they are also considered to be of **High Sensitivity**. From the design Characteristic Situation and the building type a Gas Protection Score of 0 has been determined, for which no landfill gas protection measures are considered necessary.

- 8.11** As previously mentioned in Section 3.10 no radon protection measures are required in new development at this site.

Controlled Waters

- 8.12** The risk to controlled waters has been assessed by leachate analysis on four representative samples of made ground, which were tested to determine the leachable content of toxic and phytotoxic metals. Consistent with the soil phase results it will be seen that there are no significant elevations that exceed EA EQS and/or WFD thresholds. On this basis it is considered that the site does not pose a significant risk to controlled waters or groundwater resources and pre-construction remedial actions is not currently considered necessary.

Waste Classification for Off-Site Disposal of Arisings

- 8.13** In accordance with current legislation all soil arisings generated for disposal as part of this development site are by definition a "commercial waste" and will be classified as both a directive and a controlled waste. Should it be necessary to remove from site any surplus excavation arisings, topsoil or undisturbed ground, then as per the European Waste Catalogue (EWC) these will be coded 1705, that is "soil (including excavated soil from contaminated sites), stones and dredging spoil".
- 8.14** Using the HazWasteOnline software and in accordance with Technical Guidance Waste Management 3 (TGWM3 v1.2, October 2021) the contamination test results for soil beneath the site have been compared with respective threshold data as set out in TGWM3 in order that this specific waste stream can be classified. As shown in Appendix 4, all material would be classified as a "Non-hazardous Mirror Entry" under EWC Code 170504 (soil and stones that do not contain the tested dangerous substances above the respective threshold value). Such materials can therefore be disposed of at a suitably licensed "non-hazardous" landfill site, which will require the contamination test data undertaken as part of this investigation.
- 8.15** On the assumption that non-hazardous arisings would be considered for disposal as inert waste to take advantage of a lower tipping rate, Waste Acceptance Criteria (WAC) testing has been undertaken on all arisings (excluding topsoil) destined for off-site disposal. As shown in Appendix 4, all determinands fall within acceptable thresholds for inert waste. It is recommended that the WAC results together with the contamination test data are provided to the chosen landfill operator for their own assessment of acceptability in advance of soil arrival.

Caveats

- 8.16** In line with best industry practice the scope of contamination testing has been based upon the site history, current land usage and actual findings, with reference where necessary to DoE Industry Profiles and DEFRA/EA guidance. To the best of our knowledge information concerning the land quality assessment is accurate at the date of issue, however subsurface conditions including ground contamination may vary spatially and with time. There may be conditions pertaining to the site not disclosed by the above sources of information, which might have a bearing upon the recommendations made, were such conditions known. We have however used our professional judgement in order to limit this during the investigation.
- 8.17** The conclusions and recommendations made in respect of land quality do not address any potential risks to site operatives or ground workers during the construction stage. These issues should be addressed by the Principal Contractor in accordance with the relevant statutory procedures and regulations (CDM Regulations 2015).
- 8.18** It is important that these limitations be clearly recognised when the findings and recommendations of this report are being interpreted. Additional assessment may be necessary should a significant delay occur between report date and implementation of the proposed scheme to which it relates.

9.1 In view of the above discussions the preliminary conceptual site model has been refined as shown in Figure 4 and Table11 below.

The diagram illustrates the site layout and surrounding features. It shows an existing residential area on the left, a proposed residential development in the center, and an off-site historic landfill on the right. The site is bounded by Spitfire Road to the north and Abberd Brook to the east. The ground is composed of Topsoil/unrecorded Made Ground, Kimmeridge Clay Formation, and Alluvium. Various receptors (R1-R5) and potential receptors (P1-P3) are identified, along with a dashed line indicating a potential receptor (R3) at a distance.

Potential Sources	Pathways	Receptors						Comments	Refined Risk Rating	Remedial/Mitigation Requirements
		R1	R2	R3	R4	R5	R6			
ON-SITE	NONE									
OFF-SITE	NONE									
SOURCES	N/A	N/A								
PATHWAYS	P1	Direct dermal contact or ingestion and via soil attached to vegetables								
	P2	Inhalation of dust and vapours								
	P3	Permeation into new water supply pipework								
	P4	Vertical leaching of leachable contaminants in unsaturated zone and lateral migration in saturated zone								
	P5	Landfill gas migration through unsaturated zone and accumulation within confined spaces								
	P6	Radon gas migration through unsaturated zone and accumulation within confined spaces								
RECEPTORS	R1	Future site users (critical residential receptor is female child age class 1-6)								
	R2	Potable water supply								
	R3	Groundwater (KC is unproductive)								
	R4	Surface waters (Abberd Brook immediately adjacent southeastern site boundary)								
	R5	Adjacent site users (Residential)								

10 CONCLUSIONS AND RECOMMENDATIONS

- 10.1** The foregoing discussions and recommendations are based upon the results of a geo-environmental desk study, followed by intrusive ground investigation comprising boreholes and laboratory geotechnical and contamination testing. The boreholes appear to present a consistent pattern of subsoil conditions concordant with recorded geological mapping, comprising undisturbed Kimmeridge Clay Formation below a thin surface mantle of topsoil and localised made ground. As always however a careful watch should be maintained for any anomalous conditions during site stripping and excavation, which should be reported back to this Practice for further investigation and assessment.
- 10.2** Based upon historic Ordnance Survey mapping the site appears to have remained as primarily undeveloped grazing land since the earliest available mapping of 1889 until the present day. The only building construction appears to be a couple of small agricultural barns that remain until the present day.
- 10.3** The intrusive investigation has proven a near surface mantle of superficial soils including topsoil and made ground up to 1.3m depth. With the exception of a single borehole near the southeastern corner which encountered a thick deposit of superficial alluvium (extremely soft clay and very loose sand) all other boreholes terminated within bedrock of the recorded Kimmeridge Clay Formation which was mostly recovered as soft to firm, bluish-grey and brown plastic clay, locally with pockets of crystalline gypsum deposits. All boreholes remained dry and stable during the works, although standing water has been recorded during subsequent monitoring. The short-term stability of side walls within open excavations for foundations and services is unlikely to be an issue during construction, although as always it is recommended that any excavations are not left open and unsupported for any longer than necessary. As always groundwater levels do vary seasonally and care should be taken if development is proposed during traditionally wetter winter months, as a high-water table may then result in an adverse effect upon short-term side wall stability.
- 10.4** Foundations will need to penetrate any near surface disturbed, softer or desiccated ground to found within normally hydrated soil of the undisturbed KC at a minimum depth of 1.0m (see **Section 7** for specific details). Any building proposed in proximity to the alluvium recorded in BH8 will require foundation deepening and for those buildings within the zone of influence of existing trees, foundation deepening will again

be required together with suspended ground floor slabs and heave protection (further assessment only possible once the proposed development layout is finalised).

- 10.5** Buried concrete for floor slabs and conventional strip/trenchfill foundations in open excavations will need to be designed to DS-4/AC-4.
- 10.6** In terms of proposed external pavement design, whilst a CBR value of 2% is typically adopted for made ground, laboratory recompacted CBR testing suggests that a minimum CBR value of 4% can be achieved at a 0.35-0.5m founding horizon. Soil is unlikely to be frost susceptible. As always we recommend that in-situ tests be undertaken closer to the time of construction once the final development layout is confirmed, since CBR can vary seasonably.
- 10.7** A detailed contamination risk assessment indicates that the site is uncontaminated and there is no perceived risk to human health or controlled waters.
- 10.8** There is no requirement for landfill gas protection measures and in line with BGS and HPA records no radon protection measures are necessary within new construction at this site.
- 10.9** Regarding offsite disposal of surplus excavated arisings, all material classifies as a Non-hazardous Mirror Entry (EWC Code 17-05-04). Whilst those soils containing asbestos will require disposal at a non-hazardous landfill site, WAC testing has identified that all other material proposed for off-site disposal ought to be suitable for disposal as inert waste, however as always it is recommended that clarification is sought from the chosen receiving inert landfill operator closer to the time of disposal, as acceptance of material is at their discretion.
- 10.10** Should planning consent be subject to certain conditions, this report and attachments should be lodged with the local planning authority, such that they can update their records.
- 10.11** The above recommendations must not be used in respect of any development differing in any way from the proposals described in this report, without reference back to this Practice or to another geotechnical specialist. This report is subject to our standard terms and conditions.

11 REFERENCES

Geotechnical

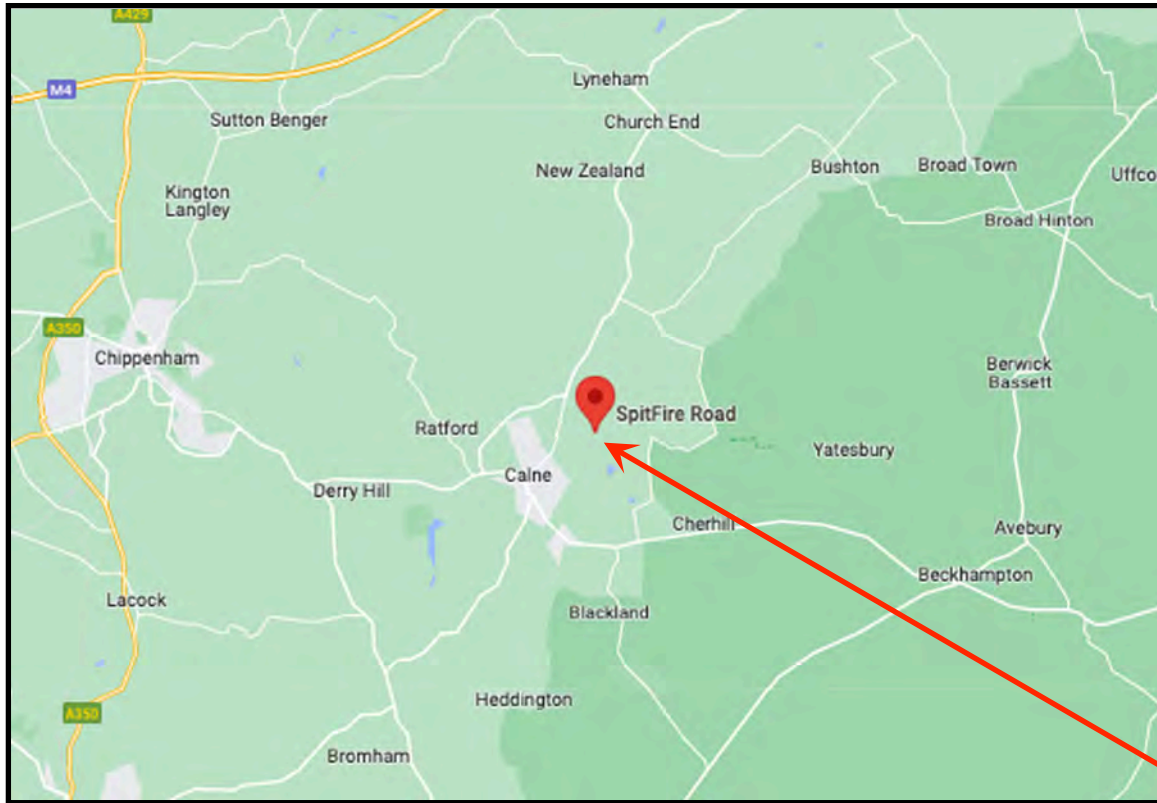
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- UK Grid Reference Finder (www.gridreferencefinder.com)
- HazWaste Online (www.hazwasteonline.com)

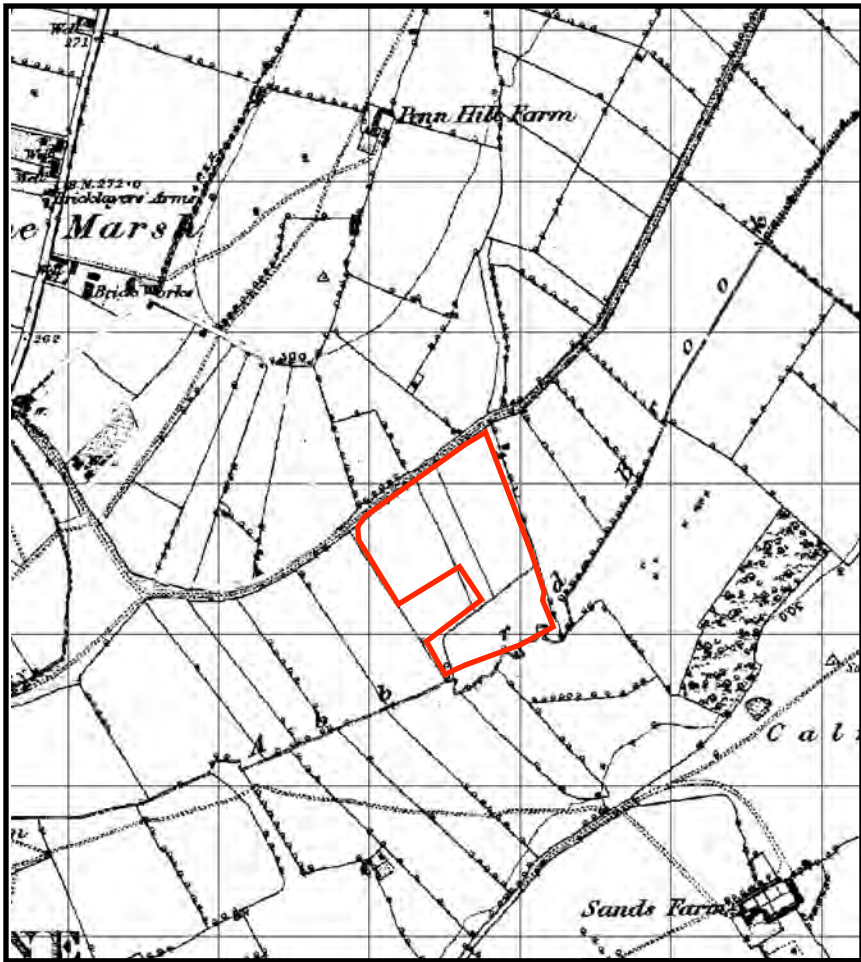
SITE LOCATION (based on Microsoft Bing Mapping)

Job No.	Drawing No.	Scale:	Date:
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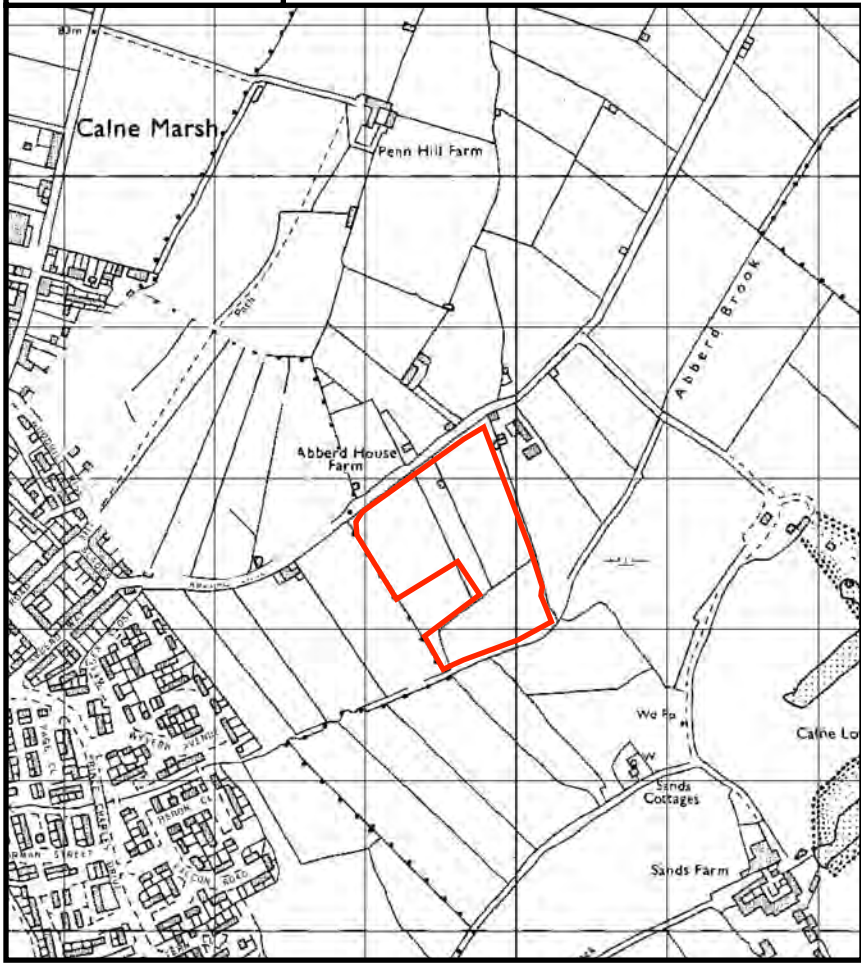


THE SITE

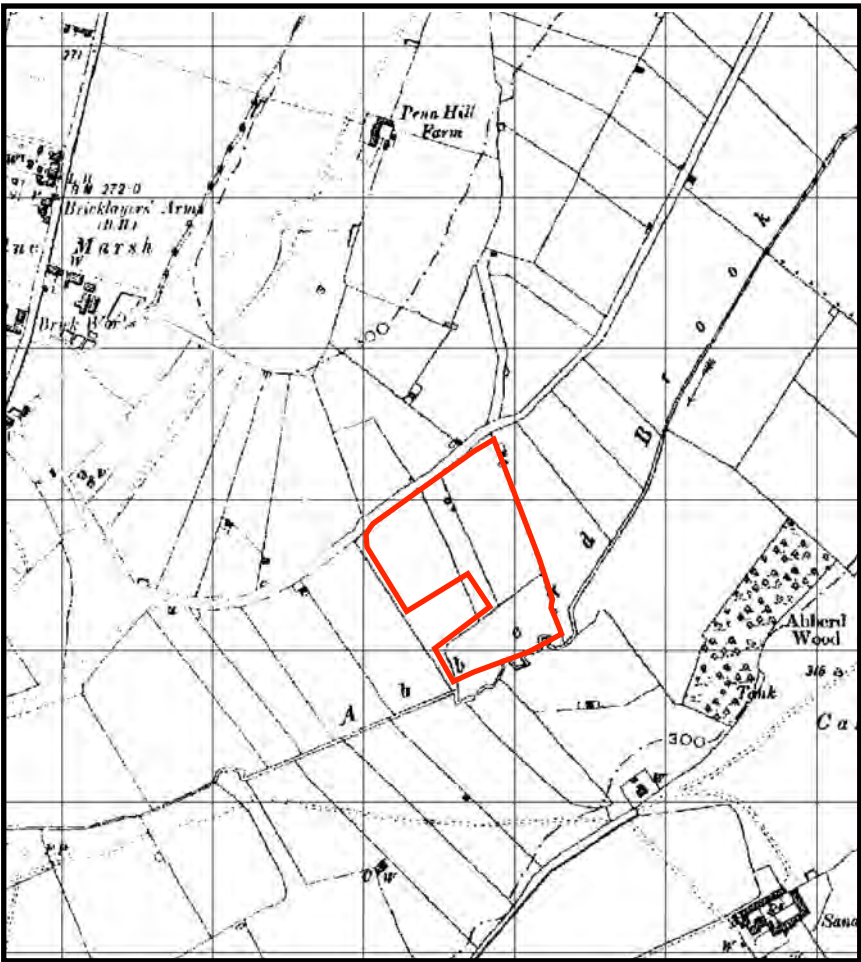




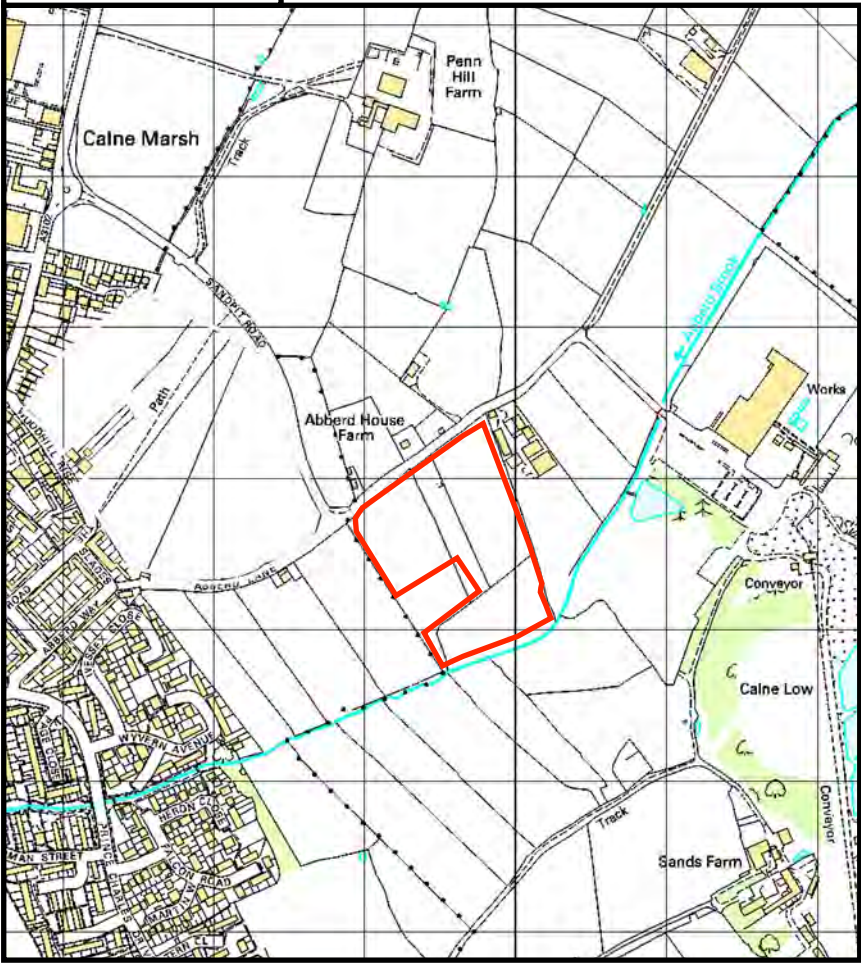
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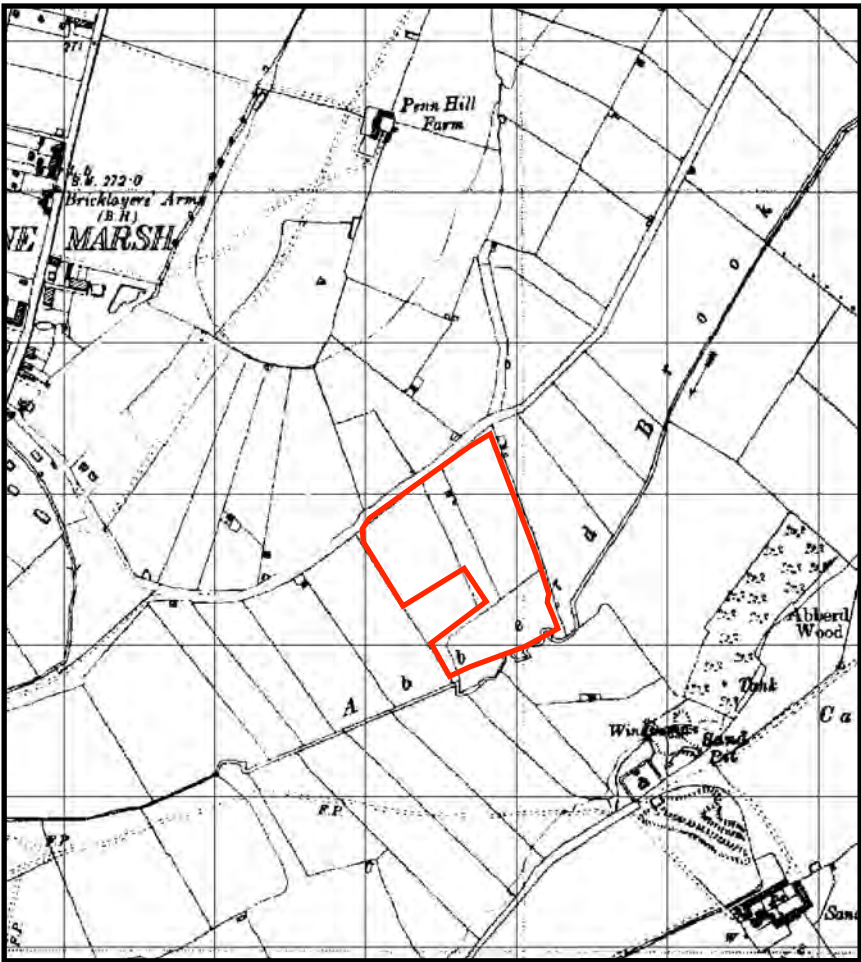
1980
(scale 1:10,000)



1901
(scale 1:10,000)



2008
(scale 1:10,000)



1938
(scale 1:10,000)



2021
(Google Earth NTS)



PHASE 6, LAND OFF SPITFIRE ROAD, CALNE SN11 8GA

EXTRACTS OF ORDNANCE SURVEY PLANS TO SHOW SITE HISTORY

Job No.	Drawing No.	Scale:	Date:
5019	5019/3	as shown	25-10-22



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APPENDIX 1

SITE PHOTOGRAPHS



Photograph **P1**

APPENDIX 2

INVESTIGATION LOGS (INCLUDING PHOTOGRAPHS)

BOREHOLE LOG

Project Phase 6, Land off Spitfire Road, Calne SN11 8GA				BOREHOLE No BH1	
Job No 5019	Date 21-07-22	Ground Level (c.m,AOD) 80.00	Co-Ordinates (c.) E 400,911 N 171,603		
Contractor Cook Ground Investigation Limited				Sheet 1 of 1	

SAMPLES & TESTS			STRATA					Geology	Instrument/ Backfill
Depth	Type No	Test Result	Water	Undrained Shear Strength	Legend	Depth (Thickness)	DESCRIPTION		
0.20	ES					0.20	TOPSOIL: probable soft, dark brown, slightly gravelly, slightly sandy CLAY. Gravel is sub-angular to sub-rounded fine to medium rubble, charcoal, rare brick and siltstone		
0.75	D					0.70	MADE GROUND: probable very stiff, orangish brown and grey, slightly sandy, slightly gravelly CLAY with frequent rootlets. Gravel is fine brick and charcoal		
1.00-1.45	SPT C						CLAY: firm bluish grey and brown CLAY with pockets of gypsum (up to 10mm)		
1.45		N9						KC	
2.00-2.45	SPT C					(2.30)			
2.25	D								
2.45		N13							
3.00-3.45	SPT C					3.00	Core Recovery: 0.00 - 1.00m: hand-dug starter pit 1.00 - 3.00m: 100%		
3.45		N16					Hand dug inspection pit: 0.00-1.00m. Continuous disturbed sampling using 101mm sample barrels: 1.00-3.00m. Upon completion: 50mm ID HDPE plain pipe: 0.00-1.00m. ID HDPE slotted pipe with washed gravel response zone: 1.00-3.00m. No groundwater encountered		

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Hole Dia. mm	Depth	Casing Depth	Casing Dia. mm	Water Dpt	From	To	Hours	From	To	
21/07/2022	101	3									Borehole position scanned using Cable Avoidance Tool (CAT); no services detected KC = Kimmeridge Clay
All dimensions in metres Scale 1:50			Client RHL			Method/ Plant Used Window Sampling (Archway Competitor)			Logged By CD		

BOREHOLE PHOTOGRAPHS

Project PHASE 6, LAND OFF SPITFIRE ROAD, CALNE SN11 8GA		Borehole No. BH1
Job No. 5019	Date: 21/07/2022	



Borehole Core: 1.00-3.00m

Client RHL	Method/Plant Used Window Sampling (Archway Competitor)	Logged By CD
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BOREHOLE LOG

Project Phase 6, Land off Spitfire Road, Calne SN11 8GA				BOREHOLE No BH2	
Job No 5019	Date 21-07-22	Ground Level (c.m,AOD) 80.00	Co-Ordinates (c.) E 400,955 N 171,636		
Contractor Cook Ground Investigation Limited				Sheet 1 of 1	

SAMPLES & TESTS			STRATA					Geology	Instrument/ Backfill
Depth	Type No	Test Result	Water	Undrained Shear Strength	Legend	Depth (Thickness)	DESCRIPTION		
0.40 0.50	ES D	N9				0.10 (0.50) 0.60	TOPSOIL: probable soft, dark brown, slightly gravelly, slightly sandy CLAY. Gravel is sub-angular to sub-rounded fine to medium rubble, charcoal, rare brick and siltstone	KC	
1.00 1.00-1.45	D SPT C					(1.40)	MADE GROUND: probable very stiff, orangish brown and grey, slightly sandy, slightly gravelly CLAY with frequent rootlets. Gravel is fine brick and charcoal CLAY: firm bluish grey and brown CLAY with pockets of gypsum (up to 10mm)		
1.45									
2.00-2.45	SPT C	N15				2.00	Core Recovery; 0.00 - 1.00m: hand-dug starter pit 1.00 - 2.00m: 100%		
2.45							Hand dug inspection pit: 0.00-1.00m. Continuous disturbed sampling using 101mm sample barrels: 1.00-2.00m. Upon completion: borehole backfilled with arisings. No groundwater encountered		

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Hole Dia. mm	Depth	Casing Depth	Casing Dia. mm	Water Dpt	From	To	Hours	From	To	
21/07/2022	101	2									Borehole position scanned using Cable Avoidance Tool (CAT); no services detected KC = Kimmeridge Clay
All dimensions in metres Scale 1:50			Client RHL			Method/ Plant Used Window Sampling (Archway Competitor)			Logged By CD		

BOREHOLE PHOTOGRAPHS

Project PHASE 6, LAND OFF SPITFIRE ROAD, CALNE SN11 8GA		Borehole No. BH2
Job No. 5019	Date: 21/07/2022	

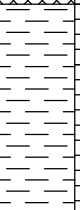


Borehole Core: 1.00-2.00m

Client RHL	Method/Plant Used Window Sampling (Archway Competitor)	Logged By CD
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BOREHOLE LOG

Project Phase 6, Land off Spitfire Road, Calne SN11 8GA				BOREHOLE No BH3	
Job No 5019	Date 21-07-22	Ground Level (c.m,AOD) 77.00	Co-Ordinates (c.) E 400,983 N 171,567		
Contractor Cook Ground Investigation Limited				Sheet 1 of 1	

SAMPLES & TESTS			STRATA					Geology	Instrument/ Backfill
Depth	Type No	Test Result	Water	Undrained Shear Strength	Legend	Depth (Thickness)	DESCRIPTION		
0.15	ES					0.10 (0.50) 0.60	TOPSOIL: probable soft, dark brown, slightly gravelly, slightly sandy CLAY. Gravel is sub-angular to sub-rounded fine to medium rubble, charcoal, rare brick and siltstone		
1.00-1.45	SPT C					(1.40)	MADE GROUND: probable very stiff, orangish brown and grey, slightly sandy, slightly gravelly CLAY with frequent rootlets. Gravel is fine brick and charcoal CLAY: firm bluish grey and brown CLAY with pockets of gypsum (up to 10mm)	KC	
1.45		N10							
1.50	D								
2.00	D					2.00			
2.00-2.45	SPT C						Core Recovery; 0.00 - 1.00m: hand-dug starter pit 1.00 - 2.00m: 100%		
2.45		N19					Hand dug inspection pit: 0.00-1.00m. Continuous disturbed sampling using 101mm sample barrels: 1.00-2.00m. Upon completion: borehole backfilled with arisings. No groundwater encountered		

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Hole Dia. mm	Depth	Casing Depth	Casing Dia. mm	Water Dpt	From	To	Hours	From	To	
21/07/2022	101	2									Borehole position scanned using Cable Avoidance Tool (CAT); no services detected KC = Kimmeridge Clay

All dimensions in metres Scale 1:50	Client RHL	Method/ Plant Used Window Sampling (Archway Competitor)	Logged By CD
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BOREHOLE PHOTOGRAPHS

Project PHASE 6, LAND OFF SPITFIRE ROAD, CALNE SN11 8GA		Borehole No. BH3
Job No. 5019	Date: 21/07/2022	



Borehole Core: 1.00-2.00m

Client RHL	Method/Plant Used Window Sampling (Archway Competitor)	Logged By CD
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BOREHOLE LOG

Project Phase 6, Land off Spitfire Road, Calne SN11 8GA				BOREHOLE No BH4	
Job No 5019	Date 21-07-22	Ground Level (c.m,AOD) 77.00	Co-Ordinates (c.) E 400,951 N 171,550		
Contractor Cook Ground Investigation Limited				Sheet 1 of 1	

SAMPLES & TESTS			STRATA					Geology	Instrument/ Backfill
Depth	Type No	Test Result	Water	Undrained Shear Strength	Legend	Depth (Thick-ness)	DESCRIPTION		
0.30	ES	N11				0.15	TOPSOIL: probable soft, dark brown, slightly gravelly, slightly sandy CLAY. Gravel is sub-angular to sub-rounded fine to medium rubble, charcoal, rare brick and siltstone		
1.00	D					(0.65)	MADE GROUND: probable very stiff, orangish brown and grey, slightly sandy, slightly gravelly CLAY with frequent rootlets. Gravel is fine brick and charcoal		
1.00-1.45	SPT C					0.80	CLAY: firm, bluish grey and brown CLAY with pockets of gypsum (up to 10mm)		
1.45	D					(1.20)			
1.50						2.00			
2.00-2.45	SPT C	N15					Core Recovery; 0.00 - 1.00m: hand-dug starter pit 1.00 - 2.00m: 100%		
2.45							Hand dug inspection pit: 0.00-1.00m. Continuous disturbed sampling using 101mm sample barrels: 1.00-2.00m. Upon completion: borehole backfilled with arisings. No groundwater encountered		

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Hole Dia. mm	Depth	Casing Depth	Casing Dia. mm	Water Dpt	From	To	Hours	From	To	
21/07/2022	101	2									Borehole position scanned using Cable Avoidance Tool (CAT); no services detected KC = Kimmeridge Clay
All dimensions in metres Scale 1:50			Client RHL			Method/ Plant Used Window Sampling (Archway Competitor)			Logged By CD		

Project PHASE 6, LAND OFF SPITFIRE ROAD, CALNE SN11 8GA		Borehole No. BH4
Job No. 5019	Date: 21/07/2022	



Starter Pit: 0.00-1.00m

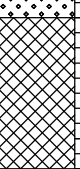
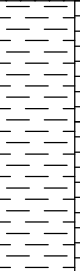
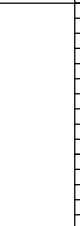


Borehole Core: 1.00-2.00m

Client RHL	Method/Plant Used Window Sampling (Archway Competitor)	Logged By CD
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BOREHOLE LOG

Project Phase 6, Land off Spitfire Road, Calne SN11 8GA				BOREHOLE No BH5	
Job No 5019	Date 21-07-22	Ground Level (c.m,AOD) 76.00	Co-Ordinates (c.) E 400,996 N 171,514		
Contractor Cook Ground Investigation Limited				Sheet 1 of 1	

SAMPLES & TESTS			STRATA					Geology	Instrument/ Backfill
Depth	Type No	Test Result	Water	Undrained Shear Strength	Legend	Depth (Thickness)	DESCRIPTION		
0.25	ES					0.20	TOPSOIL: probable soft, dark brown, slightly gravelly, slightly sandy CLAY. Gravel is sub-angular to sub-rounded fine to medium rubble, charcoal, rare brick and siltstone	KC	
1.00-1.45	SPT C					(1.00)	MADE GROUND: probable very stiff, orangish brown and grey, slightly sandy, slightly gravelly CLAY with frequent rootlets. Gravel is fine brick and charcoal		
1.45		N9				1.20			
2.00	D					(1.80)	CLAY: firm, bluish grey and brown CLAY with pockets of gypsum (up to 10mm) and yellow dissolution features throughout	KC	
2.00-2.45	SPT C								
2.45		N12							
3.00	D					3.00	Core Recovery: 0.00 - 1.00m: hand-dug starter pit 1.00 - 3.00m: 100%		
3.00-3.45	SPT C								
3.45		N13					Hand dug inspection pit: 0.00-1.00m. Continuous disturbed sampling using 101mm sample barrels: 1.00-3.00m. Upon completion: borehole backfilled with arisings. No groundwater encountered		

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Hole Dia. mm	Depth	Casing Depth	Casing Dia. mm	Water Dpt	From	To	Hours	From	To	
21/07/2022	101	3									
All dimensions in metres Scale 1:50						Client RHL			Method/ Plant Used Window Sampling (Archway Competitor)		Logged By CD

Borehole position scanned using Cable Avoidance Tool (CAT); no services detected
KC = Kimmeridge Clay

BOREHOLE PHOTOGRAPHS

Project PHASE 6, LAND OFF SPITFIRE ROAD, CALNE SN11 8GA		Borehole No. BH5
Job No. 5019	Date: 21/07/2022	



Borehole Core: 1.00-3.00m

Client RHL	Method/Plant Used Window Sampling (Archway Competitor)	Logged By CD
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BOREHOLE LOG

Project Phase 6, Land off Spitfire Road, Calne SN11 8GA				BOREHOLE No BH6	
Job No 5019	Date 21-07-22	Ground Level (c.m,AOD) 76.00	Co-Ordinates (c.) E 400,948 N 171,475		
Contractor Cook Ground Investigation Limited				Sheet 1 of 1	

SAMPLES & TESTS			STRATA					Geology	Instrument/ Backfill
Depth	Type No	Test Result	Water	Undrained Shear Strength	Legend	Depth (Thickness)	DESCRIPTION		
0.50	ES					0.30	TOPSOIL: probable soft, dark brown, slightly gravelly, slightly sandy CLAY. Gravel is sub-angular to sub-rounded fine to medium rubble, charcoal, rare brick and siltstone		
1.00-1.45	SPT C					(0.70)	MADE GROUND: probable very stiff, dark brown and mottled grey CLAY with abundant pockets of fine sand (mix of colours)		
1.45		N7				1.00	CLAY: firm dark bluish grey CLAY	KC	
2.00-2.45	SPT C					(2.00)			
2.45		N8							
2.50	D					3.00			
3.00	D						Core Recovery: 0.00 - 1.00m: hand-dug starter pit 1.00 - 3.00m: 100%		
3.00-3.45	SPT C						Hand dug inspection pit: 0.00-1.00m. Continuous disturbed sampling using 101mm sample barrels: 1.00-3.00m. Upon completion: borehole backfilled with arisings. No groundwater encountered		
3.45		N9							
3.90		N15							

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Hole Dia. mm	Depth	Casing Depth	Casing Dia. mm	Water Dpt	From	To	Hours	From	To	
21/07/2022	101	3									Borehole position scanned using Cable Avoidance Tool (CAT); no services detected KC = Kimmeridge Clay
All dimensions in metres Scale 1:50			Client RHL			Method/ Plant Used Window Sampling (Archway Competitor)			Logged By CD		

BOREHOLE PHOTOGRAPHS

Project PHASE 6, LAND OFF SPITFIRE ROAD, CALNE SN11 8GA		Borehole No. BH6
Job No. 5019	Date: 21/07/2022	



Borehole Core: 1.00-3.00m

Client RHL	Method/Plant Used Window Sampling (Archway Competitor)	Logged By CD
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BOREHOLE LOG

Project Phase 6, Land off Spitfire Road, Calne SN11 8GA				BOREHOLE No BH7	
Job No 5019	Date 21-07-22	Ground Level (c.m,AOD) 75.00	Co-Ordinates (c.) E 400,998 N 171,455		
Contractor Cook Ground Investigation Limited				Sheet 1 of 1	

SAMPLES & TESTS			STRATA					Geology	Instrument/ Backfill
Depth	Type No	Test Result	Water	Undrained Shear Strength	Legend	Depth (Thickness)	DESCRIPTION		
0.20	ES	N5				0.20	TOPSOIL: comprising dark brown, slightly gravelly, slightly sandy CLAY. Gravel is sub-angular to sub-rounded fine to medium rubble, charcoal, rare brick and siltstone	KC	
	D					(0.80)	MADE GROUND: probable very stiff, dark brown and mottled grey CLAY with abundant pockets of fine sand (mix of colours)		
1.00						1.00	CLAY: soft dark bluish grey CLAY		
1.45	SPT C	N5				(1.00)			
1.45	D								
1.50						2.00	2.00 - becoming firm		
2.45	SPT C	N10					Core Recovery; 0.00 - 1.00m: hand-dug starter pit 1.00 - 2.00m: 100%		
2.45									
							Hand dug inspection pit: 0.00-1.00m. Continuous disturbed sampling using 101mm sample barrels: 1.00-2.00m. Upon completion: borehole backfilled with arisings. No groundwater encountered		

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Hole Dia. mm	Depth	Casing Depth	Casing Dia. mm	Water Dpt	From	To	Hours	From	To	
21/07/2022	101	2									Borehole position scanned using Cable Avoidance Tool (CAT); no services detected KC = Kimmeridge Clay
All dimensions in metres Scale 1:50			Client RHL			Method/ Plant Used Window Sampling (Archway Competitor)			Logged By CD		

BOREHOLE PHOTOGRAPHS

Project PHASE 6, LAND OFF SPITFIRE ROAD, CALNE SN11 8GA		Borehole No. BH7
Job No. 5019	Date: 21/07/2022	

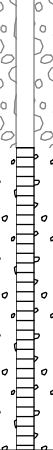
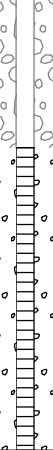
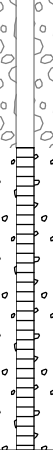


Borehole Core: 1.00-2.00m

Client RHL	Method/Plant Used Window Sampling (Archway Competitor)	Logged By CD
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BOREHOLE LOG

Project Phase 6, Land off Spitfire Road, Calne SN11 8GA				BOREHOLE No BH8	
Job No 5019	Date 21-07-22	Ground Level (c.m,AOD) 75.00	Co-Ordinates (c.) E 400,999 N 171,420		
Contractor Cook Ground Investigation Limited				Sheet 1 of 1	

SAMPLES & TESTS			STRATA					Geology	Instrument/ Backfill
Depth	Type No	Test Result	Water	Undrained Shear Strength	Legend	Depth (Thick-ness)	DESCRIPTION		
0.35	ES					0.15	TOPSOIL: probable soft, dark brown, slightly gravelly, slightly sandy CLAY. Gravel is sub-angular to sub-rounded fine to medium rubble, charcoal, rare brick and siltstone	AL	
1.00-1.45	SPT C					(1.95)	CLAY: probable firm to locally stiff, orangish brown, mottled bluish grey CLAY		
1.45		N0					1.20 - 2.00 - extremely soft		
2.00	D					2.10	SAND: very loose soft dark grey, silty, clayey fine SAND	AL	
2.00-2.45	SPT C					(0.90)			
2.45		N0							
3.00	D					3.00	Core Recovery: 0.00 - 1.00m: hand-dug starter pit 1.00 - 3.00m: 100%		
3.00-3.45	SPT C						Hand dug inspection pit: 0.00-1.00m. Continuous disturbed sampling using 101mm sample barrels: 1.00-3.00m. Upon completion: 50mm ID HDPE plain pipe: 0.00-1.00m. ID HDPE slotted pipe with washed gravel response zone: 1.00-3.00m. No groundwater encountered		
3.45		N7							

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Hole Dia. mm	Depth	Casing Depth	Casing Dia. mm	Water Dpt	From	To	Hours	From	To	
21/07/2022	101	3									Borehole position scanned using Cable Avoidance Tool (CAT); no services detected AL = Alluvium
All dimensions in metres Scale 1:50			Client RHL			Method/ Plant Used Window Sampling (Archway Competitor)			Logged By CD		

BOREHOLE PHOTOGRAPHS

Project PHASE 6, LAND OFF SPITFIRE ROAD, CALNE SN11 8GA		Borehole No. BH8
Job No. 5019	Date: 21/07/2022	



Starter Pit: 0.00-1.00m



Borehole Core: 1.00-3.00m

Client RHL	Method/Plant Used Window Sampling (Archway Competitor)	Logged By CD
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BOREHOLE LOG

Project Phase 6, Land off Spitfire Road, Calne SN11 8GA				BOREHOLE No BH9	
Job No 5019	Date 21-07-22	Ground Level (c.m,AOD) 75.00	Co-Ordinates (c.) E 400,965 N 171,422		
Contractor Cook Ground Investigation Limited				Sheet 1 of 1	

SAMPLES & TESTS			STRATA					Geology	Instrument/ Backfill
Depth	Type No	Test Result	Water	Undrained Shear Strength	Legend	Depth (Thick-ness)	DESCRIPTION		
0.30	ES	N7				0.20	TOPSOIL: probable soft, dark brown, slightly gravelly, slightly sandy CLAY. Gravel is sub-angular to sub-rounded fine to medium rubble, charcoal, rare brick and siltstone	KC	
0.50	D					(0.80)	MADE GROUND: probable very stiff, orangish brown and grey, slightly sandy, slightly gravelly CLAY with frequent rootlets. Gravel is fine brick and charcoal		
1.00-1.45	SPT C					1.00	CLAY: soft to firm, bluish grey and brown CLAY with pockets of gypsum (up to 10mm)		
1.45						(1.00)			
2.00-2.45	SPT C	N11				2.00	2.00 - becoming firm		
2.45							Core Recovery;		
2.50	D						0.00 - 1.00m: hand-dug starter pit 1.00 - 2.00m: 100%		
Hand dug inspection pit: 0.00-1.00m. Continuous disturbed sampling using 101mm sample barrels: 1.00-2.00m. Upon completion: borehole backfilled with arisings. No groundwater encountered									

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Hole Dia. mm	Depth	Casing Depth	Casing Dia. mm	Water Dpt	From	To	Hours	From	To	
21/07/2022	101	2									Borehole position scanned using Cable Avoidance Tool (CAT); no services detected KC = Kimmeridge Clay
All dimensions in metres Scale 1:50			Client RHL			Method/ Plant Used Window Sampling (Archway Competitor)			Logged By CD		

BOREHOLE PHOTOGRAPHS

Project PHASE 6, LAND OFF SPITFIRE ROAD, CALNE SN11 8GA		Borehole No. BH9
Job No. 5019	Date: 21/07/2022	



Borehole Core: 0.50-2.00m

Client RHL	Method/Plant Used Window Sampling (Archway Competitor)	Logged By CD
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BOREHOLE LOG

Project Phase 6, Land off Spitfire Road, Calne SN11 8GA				BOREHOLE No BH10	
Job No 5019	Date 22-07-22	Ground Level (c.m,AOD) 74.00	Co-Ordinates (c.) E 400,946 N 171,390		
Contractor Cook Ground Investigation Limited				Sheet 1 of 1	

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result		Undrained Shear Strength	Legend	Depth (Thick- ness)	DESCRIPTION		
1.00-1.45	SPT C	N7				0.20	TOPSOIL: probable soft slightly sandy, slightly gravelly, desiccated CLAY with frequent roots. Gravel is sub-angular to sub-rounded, fine to coarse brick, siltstone and limestone		
						(0.80)	CLAY: probable firm to stiff brown and orangish brown plastic CLAY with pockets (upto 15mm) of fine to medium sand		
	1.00	CLAY: soft to firm, dark grey plastic CLAY with rare pockets of gypsum (upto 15mm)			KC				
	(2.00)								
									
1.45	SPT C D	N10				3.00	Core Recovery; 0.00 - 1.00m: hand-dug starter pit 1.00 - 3.00m: 100%		
2.00-2.45									
2.25									
2.45	SPT C	N13					Hand dug inspection pit: 0.00-1.00m. Continuous disturbed sampling using 101mm sample barrels: 1.00-3.00m. Upon completion: 50mm ID HDPE plain pipe: 0.00-1.00m. ID HDPE slotted pipe with washed gravel response zone: 1.00-3.00m. No groundwater encountered		
3.00-3.45									
3.45									

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Hole Dia. mm	Depth	Casing Depth	Casing Dia. mm	Water Dpt	From	To	Hours	From	To	
22/07/2022	101	3									Borehole position scanned using Cable Avoidance Tool (CAT); no services detected KC = Kimmeridge Clay
All dimensions in metres Scale 1:50			Client RHL			Method/ Plant Used Window Sampling (Archway Competitor)			Logged By CD		

BOREHOLE PHOTOGRAPHS

Project PHASE 6, LAND OFF SPITFIRE ROAD, CALNE SN11 8GA		Borehole No. BH10
Job No. 5019	Date: 21/07/2022	



Borehole Core: 1.00-3.00m

Client RHL	Method/Plant Used Window Sampling (Archway Competitor)	Logged By CD
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BOREHOLE LOG

Project Phase 6, Land off Spitfire Road, Calne SN11 8GA				BOREHOLE No BH11	
Job No 5019	Date 22-07-22	Ground Level (c.m,AOD) 77.00	Co-Ordinates (c.) E 400,911 N 171,522		
Contractor Cook Ground Investigation Limited				Sheet 1 of 1	

SAMPLES & TESTS			STRATA					Geology	Instrument/ Backfill
Depth	Type No	Test Result	Water	Undrained Shear Strength	Legend	Depth (Thickness)	DESCRIPTION		
0.50	D					(0.40) 0.40	TOPSOIL: probable stiff, brown, slightly gravelly, desiccated CLAY. Gravel is sub-angular to sub-rounded fine to medium concrete, rubble, brick, siltstone and limestone		
1.45 1.45	SPT C	N7				(0.60) 1.00	MADE GROUND: probable firm locally stiff, brown plastic CLAY with rare pockets (15mm) of fine orange sand		
2.45 2.45	SPT C	N11				(2.00) 3.00	CLAY: soft to firm, dark grey plastic CLAY with rare gypsum dusting 2.00 - becoming firm	KC	
3.45 3.45	SPT C	N16					Core Recovery: 0.00 - 1.00m: hand-dug starter pit 1.00 - 3.00m: 100% Hand dug inspection pit: 0.00-1.00m. Continuous disturbed sampling using 101mm sample barrels: 1.00-3.00m. Upon completion: 50mm ID HDPE plain pipe: 0.00-1.00m. ID HDPE slotted pipe with washed gravel response zone: 1.00-3.00m. No groundwater encountered		

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Hole Dia. mm	Depth	Casing Depth	Casing Dia. mm	Water Dpt	From	To	Hours	From	To	
22/07/2022	101	3									Borehole position scanned using Cable Avoidance Tool (CAT); no services detected KC = Kimmeridge Clay
All dimensions in metres Scale 1:50			Client RHL			Method/ Plant Used Window Sampling (Archway Competitor)			Logged By CD		

BOREHOLE PHOTOGRAPHS

Project PHASE 6, LAND OFF SPITFIRE ROAD, CALNE SN11 8GA		Borehole No. BH11
Job No. 5019	Date: 21/07/2022	

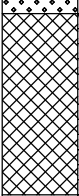


Borehole Core: 1.00-3.00m

Client RHL	Method/Plant Used Window Sampling (Archway Competitor)	Logged By CD
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BOREHOLE LOG

Project Phase 6, Land off Spitfire Road, Calne SN11 8GA				BOREHOLE No BH12	
Job No 5019	Date 22-07-22	Ground Level (c.m,AOD) 80.00	Co-Ordinates (c.) E 400,882 N 171,581		
Contractor Cook Ground Investigation Limited				Sheet 1 of 1	

SAMPLES & TESTS			STRATA					Geology	Instrument/ Backfill	
Depth	Type No	Test Result	Water	Undrained Shear Strength	Legend	Depth (Thick- ness)	DESCRIPTION			
0.40	ES	N8				0.10	TOPSOIL: probable soft, dark brown, slightly gravelly, slightly sandy CLAY. Gravel is sub-angular to sub-rounded fine to medium rubble, charcoal, rare brick and siltstone			
1.00-1.45	D SPT C					(1.20)	MADE GROUND: probable very stiff, orangish brown and grey, slightly sandy, slightly gravelly CLAY with frequent rootlets. Gravel is fine brick and charcoal			
1.45						1.30	CLAY: soft to firm, bluish grey and brown CLAY with pockets of gypsum (up to 10mm)			
2.00-2.45	D SPT C	N14			(0.70)		2.00	2.00 - becoming firm	KC	
2.45								Core Recovery; 0.00 - 1.00m: hand-dug starter pit 1.00 - 2.00m: 100%		
								Hand dug inspection pit: 0.00-1.00m. Continuous disturbed sampling using 101mm sample barrels: 1.00-2.00m. Upon completion: borehole backfilled with arisings. No groundwater encountered		

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Hole Dia. mm	Depth	Casing Depth	Casing Dia. mm	Water Dpt	From	To	Hours	From	To	
22/07/2022	101	2									Borehole position scanned using Cable Avoidance Tool (CAT); no services detected KC = Kimmeridge Clay
All dimensions in metres Scale 1:50			Client RHL			Method/ Plant Used Window Sampling (Archway Competitor)			Logged By CD		

BOREHOLE PHOTOGRAPHS

Project PHASE 6, LAND OFF SPITFIRE ROAD, CALNE SN11 8GA		Borehole No. BH12
Job No. 5019	Date: 21/07/2022	



Borehole Core: 1.00-2.00m

Client RHL	Method/Plant Used Window Sampling (Archway Competitor)	Logged By CD
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BOREHOLE LOG

Project Phase 6, Land off Spitfire Road, Calne SN11 8GA				BOREHOLE No BH13	
Job No 5019	Date 14-09-22	Ground Level (c.m,AOD) 78.00	Co-Ordinates (c.) E 400,846 N 171,509		
Contractor Cook Ground Investigation Limited				Sheet 1 of 1	

SAMPLES & TESTS			STRATA					Geology	Instrument/ Backfill
Depth	Type No	Test Result	Water	Undrained Shear Strength	Legend	Depth (Thickness)	DESCRIPTION		
0.20	ES	N13			                                    	0.25	TOPSOIL: probable firm, dull brown, organic, desiccated CLAY with frequent roots from overlying grass	KC	
0.30	ES					0.40	0.00 - 1.00 - desiccated		
0.50	CBR						MADE GROUND: probable stiff, light brown, friable, desiccated CLAY with rare fine gravel of charcoal and brick		
0.75	D						CLAY: probable stiff, mottled light brown and light grey, plastic CLAY		
1.40	D						1.00 - 2.00 - rare shell fragments and occasional gypsum crystals		
1.45	H	N15				2.00	Core Recovery; 0.00 - 1.00m: hand-dug starter pit 1.00 - 2.00m: 100% Hand dug inspection pit: 0.00-1.00m. Continuous disturbed sampling using 101mm sample barrels: 1.00-2.00m. Upon completion: borehole backfilled with arisings. No groundwater encountered		
1.50	H								
1.70									
2.45									

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Hole Dia. mm	Depth	Casing Depth	Casing Dia. mm	Water Dpt	From	To	Hours	From	To	
14/09/2022	113	2									Borehole position scanned using Cable Avoidance Tool (CAT); no services detected KC = Kimmeridge Clay
All dimensions in metres Scale 1:50			Client RHL			Method/ Plant Used Window Sampling (Archway Competitor)			Logged By TC		

BOREHOLE PHOTOGRAPHS

Project PHASE 6, LAND OFF SPITFIRE ROAD, CALNE SN11 8GA		Borehole No. BH13
Job No. 5019	Date: 14/09/2022	



Borehole Core: 0.00-1.00m



Borehole Core: 1.00-2.00m

Client RHL	Method/Plant Used Window Sampling (Archway Competitor)	Logged By CD
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BOREHOLE LOG

Project Phase 6, Land off Spitfire Road, Calne SN11 8GA				BOREHOLE No BH14	
Job No 5019	Date 14-09-22	Ground Level (c.m,AOD) 76.00	Co-Ordinates (c.) E 400,873 N 171,473		
Contractor Cook Ground Investigation Limited				Sheet 1 of 1	

SAMPLES & TESTS			STRATA					Geology	Instrument/ Backfill
Depth	Type No	Test Result	Water	Undrained Shear Strength	Legend	Depth (Thickness)	DESCRIPTION		
0.10	ES					0.20	TOPSOIL: probable stiff, dark brown, organic dry desiccated CLAY with frequent roots from overlying grass		
0.50	D					0.50	MADE GROUND: probable stiff, light brown, slightly gravelly, dry desiccated CLAY. Gravel is fine charcoal		
0.60	D						CLAY: probable stiff, mottled light brown and grey desiccated CLAY.		
0.90	D						0.75 - many gypsum crystals		
1.00	D						1.00 - normally hydrated		
1.00-1.45	SPT C								
1.45		N13							
1.50	D								
1.50	H								
1.70	H								
1.90	H								
2.00-2.45	SPT C						2.00 - becoming dull grey plastic clay with rare gypsum crystals		
2.45		N15							
2.50	H								
2.70	H								
2.90	H								
3.00-3.45	SPT C					3.00	Core Recovery: 0.00 - 1.00m: hand-dug starter pit 1.00 - 3.00m: 100%		
							Hand dug inspection pit: 0.00-1.00m. Continuous disturbed sampling using 101mm sample barrels: 1.00-3.00m. Upon completion: 50m ID HDPE slotted pipe with washed gravel response zone: 1.00-3.00m. 50 ID HDPE plain pipe with bentonite pellet seal: 0.20-1.00m. Raised cover set in concrete: 0.00-0.20m. No groundwater encountered		

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Hole Dia. mm	Depth	Casing Depth	Casing Dia. mm	Water Dpt	From	To	Hours	From	To	
14/09/2022	113	3									Borehole position scanned using Cable Avoidance Tool (CAT); no services detected KC = Kimmeridge Clay
All dimensions in metres Scale 1:50			Client RHL			Method/ Plant Used Window Sampling (Archway Competitor)			Logged By TC		

BOREHOLE PHOTOGRAPHS

Project PHASE 6, LAND OFF SPITFIRE ROAD, CALNE SN11 8GA		Borehole No. BH14
Job No. 5019	Date: 21/07/2022	



Borehole Core: 0.00-1.00m



Borehole Core: 1.00-3.00m

Client RHL	Method/Plant Used Window Sampling (Archway Competitor)	Logged By CD
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BOREHOLE LOG

Project Phase 6, Land off Spitfire Road, Calne SN11 8GA				BOREHOLE No CPT2	
Job No 5019	Date 14-09-22	Ground Level (c.m,AOD) 75.00	Co-Ordinates (c.) E 401,013 N 171,425		
Contractor Cook Ground Investigation Limited				Sheet 1 of 1	

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result		Undrained Shear Strength	Legend	Depth (Thick- ness)	DESCRIPTION		
1.00-1.45	SPT C								
1.45-1.90	SPT C	N7							
1.45									
1.90-2.35	SPT C	N9							
1.90									
2.35-2.80	SPT C	N7							
2.35									
2.80-3.25	SPT C	N7							
2.80									
3.25-3.70	SPT C	N12							
3.25									
3.70		N18							

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Hole Dia. mm	Depth	Casing Depth	Casing Dia. mm	Water Dpt	From	To	Hours	From	To	
											Borehole position scanned using Cable Avoidance Tool (CAT); no services detected KC = Kimmeridge Clay

All dimensions in metres Scale 1:50	Client RHL	Method/ Plant Used Window Sampling (Archway Competitor)	Logged By TC
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BOREHOLE LOG

Project Phase 6, Land off Spitfire Road, Calne SN11 8GA				BOREHOLE No CPT3	
Job No 5019	Date 14-09-22	Ground Level (c.m,AOD) 75.00	Co-Ordinates (c.) E 401,000 N 171,415		
Contractor Cook Ground Investigation Limited				Sheet 1 of 1	

SAMPLES & TESTS			STRATA					Geology	Instrument/ Backfill
Depth	Type No	Test Result	Water	Undrained Shear Strength	Legend	Depth (Thickness)	DESCRIPTION		
1.00-1.45	SPT C								
1.45-1.90	SPT C	N8							
1.90-2.35	SPT C	N10							
2.35-2.50	SPT C	N9							
2.50-2.80	SPT C								
2.80-3.25	SPT C	N11							
3.25-3.70	SPT C	N16							
3.70		N20							

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Hole Dia. mm	Depth	Casing Depth	Casing Dia. mm	Water Dpt	From	To	Hours	From	To	
											Borehole position scanned using Cable Avoidance Tool (CAT); no services detected KC = Kimmeridge Clay
All dimensions in metres Scale 1:50			Client RHL			Method/ Plant Used Window Sampling (Archway Competitor)			Logged By TC		

BOREHOLE LOG

Project Phase 6, Land off Spitfire Road, Calne SN11 8GA				BOREHOLE No CPT4	
Job No 5019	Date 14-09-22	Ground Level (c.m,AOD) 75.00	Co-Ordinates (c.) E 400,996 N 171,422		
Contractor Cook Ground Investigation Limited				Sheet 1 of 1	

SAMPLES & TESTS			STRATA					Geology	Instrument/ Backfill
Depth	Type No	Test Result	Water	Undrained Shear Strength	Legend	Depth (Thickness)	DESCRIPTION		
1.00-1.45	SPT C								
1.45-1.90	SPT C	N7							
1.90-2.35	SPT C	N9							
2.35-2.80	SPT C	N12							
2.80-3.25	SPT C	N15							
3.25-3.70	SPT C	N20							
3.70		N22							

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Hole Dia. mm	Depth	Casing Depth	Casing Dia. mm	Water Dpt	From	To	Hours	From	To	
											Borehole position scanned using Cable Avoidance Tool (CAT); no services detected KC = Kimmeridge Clay
All dimensions in metres Scale 1:50			Client RHL			Method/ Plant Used Window Sampling (Archway Competitor)			Logged By TC		

BOREHOLE LOG

Project Phase 6, Land off Spitfire Road, Calne SN11 8GA				BOREHOLE No CPT6	
Job No 5019	Date 14-09-22	Ground Level (c.m,AOD) 75.00	Co-Ordinates (c.) E 401,008 N 171,433		
Contractor Cook Ground Investigation Limited				Sheet 1 of 1	

SAMPLES & TESTS			STRATA					Geology	Instrument/ Backfill
Depth	Type No	Test Result	Water	Undrained Shear Strength	Legend	Depth (Thickness)	DESCRIPTION		
1.00-1.45	SPT C	N8							
1.45-1.90	SPT C								
1.90-2.35	SPT C	N12							
2.35-2.80	SPT C	N19							
2.80		N24							

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Hole Dia. mm	Depth	Casing Depth	Casing Dia. mm	Water Dpt	From	To	Hours	From	To	
											Borehole position scanned using Cable Avoidance Tool (CAT); no services detected KC = Kimmeridge Clay
All dimensions in metres Scale 1:50			Client RHL			Method/ Plant Used Window Sampling (Archway Competitor)			Logged By TC		

BOREHOLE LOG

Project Phase 6, Land off Spitfire Road, Calne SN11 8GA				BOREHOLE No CPT7	
Job No 5019	Date 14-09-22	Ground Level (c.m,AOD) 75.00	Co-Ordinates (c.) E 401,004 N 171,440		
Contractor Cook Ground Investigation Limited				Sheet 1 of 1	

SAMPLES & TESTS			STRATA					Geology	Instrument/ Backfill
Depth	Type No	Test Result	Water	Undrained Shear Strength	Legend	Depth (Thickness)	DESCRIPTION		
1.00-1.45	SPT C	N12							
1.45-1.90	SPT C								
1.90-2.35	SPT C	N13							
2.35-2.80	SPT C	N18							
2.80		N22							

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Hole Dia. mm	Depth	Casing Depth	Casing Dia. mm	Water Dpt	From	To	Hours	From	To	
											Borehole position scanned using Cable Avoidance Tool (CAT); no services detected KC = Kimmeridge Clay
All dimensions in metres Scale 1:50			Client RHL			Method/ Plant Used Window Sampling (Archway Competitor)			Logged By TC		

BOREHOLE LOG

Project Phase 6, Land off Spitfire Road, Calne SN11 8GA				BOREHOLE No CPT8	
Job No 5019	Date 14-09-22	Ground Level (c.m,AOD) 75.00	Co-Ordinates (c.) E 400,998 N 171,434		
Contractor Cook Ground Investigation Limited				Sheet 1 of 1	

SAMPLES & TESTS			STRATA					Geology	Instrument/ Backfill
Depth	Type No	Test Result	Water	Undrained Shear Strength	Legend	Depth (Thickness)	DESCRIPTION		
1.00-1.45	SPT C	N11							
1.45-1.90	SPT C								
1.90-2.35	SPT C	N13							
2.35-2.80	SPT C	N17							
2.80		N22							

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Hole Dia. mm	Depth	Casing Depth	Casing Dia. mm	Water Dpt	From	To	Hours	From	To	
											Borehole position scanned using Cable Avoidance Tool (CAT); no services detected KC = Kimmeridge Clay
All dimensions in metres Scale 1:50			Client RHL			Method/ Plant Used Window Sampling (Archway Competitor)			Logged By TC		

KEY TO BOREHOLE LOG SYMBOLS

Symbol	Explanation
D or J	Small Disturbed Sample (tub or jar sample)
B	Large Disturbed Sample
U	Undisturbed Sample
W	Water Sample
U70	Undisturbed Sample

Undrained Shear Strength Test (HSV)

90	Hand vane - direct reading in kN/m ²
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Standard Penetration Test (SPT)

15	SPT 'N' Value (BS EN ISO 22476-3:2005)
125/50	Where full test drive not completed, penetration (125mm) and blow count (50) recorded
NR	No effective penetration

Water



Water struck



Water standing

Test/Core Range

TCR	Total Core Recovery - as percentage of core run. Where value significantly exceeds 100%, a note is given on remarks on log
SCR	Solid Core Recovery - as percentage of core run. Note: assessment of solid core is based on full diameter
RQD	Rock Quality Designation - the amount of solid core greater than 100mm expressed as percentage of core run Where SPT has been carried out at beginning of core run, disturbed section of core excluded from SCR and RQD assessment

Instrumentation



Bentonite Seal



Solid / Perforated Standpipe



Granular Response Zone



SPT Calibration Report

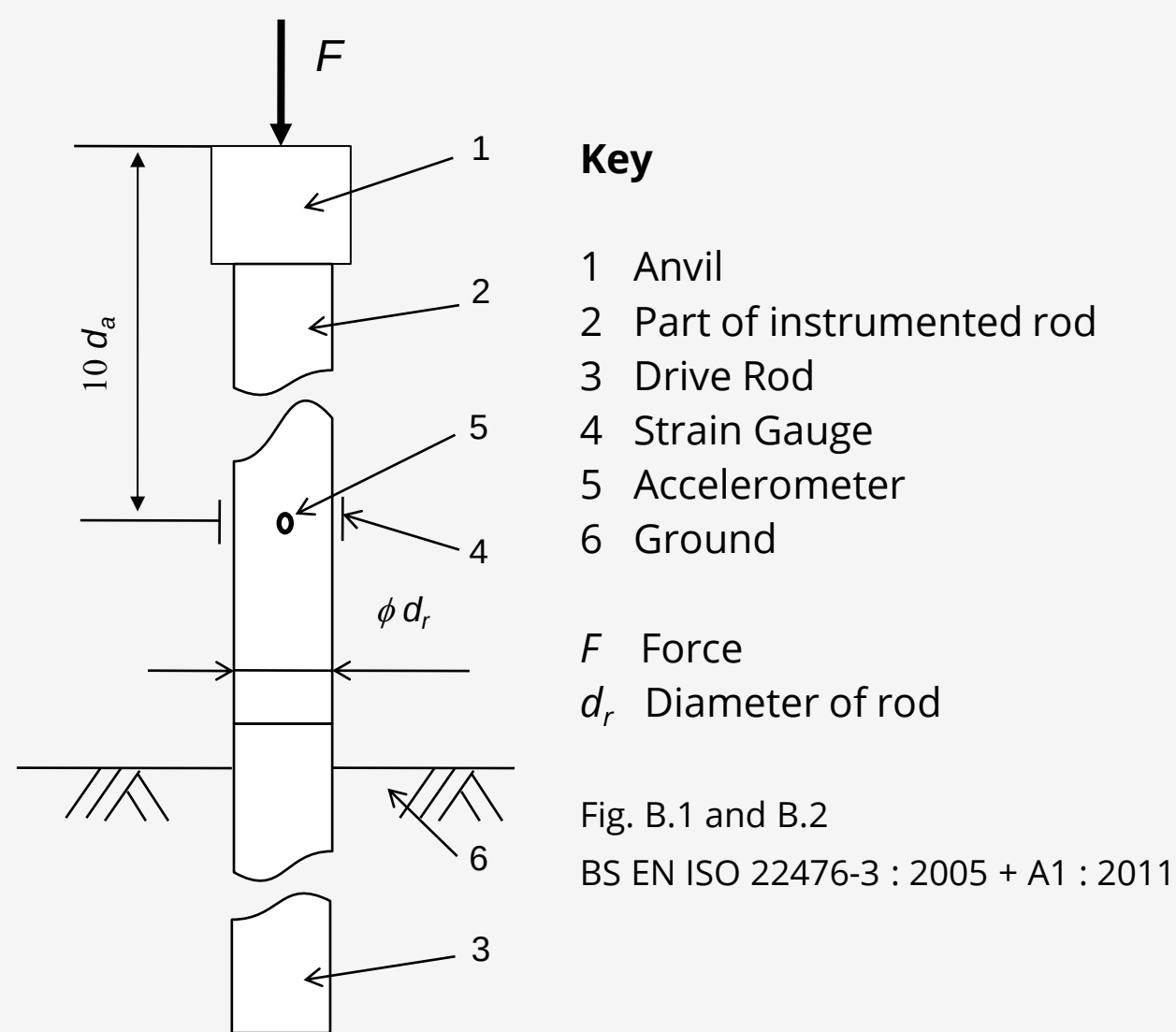
Hammer Energy Measurement Report

Type of Hammer Dart
Test No EQU2022_219
Client Cook GI

Test Depth (m) 9.80
Mass of hammer $m = 63.5\text{kg}$
Falling height $h = 0.76\text{m}$
 $E_{\text{theor}} = m \times g \times h = 473\text{J}$

Characteristics of the instrumented rod

Diameter $d_r = 0.052\text{ m}$
Length of instrumented rod 0.558 m
Area $A = 11.61\text{ cm}^2$
Modulus $E_a = 206843\text{ MPa}$



DATE OF TEST VALID UNTIL HAMMER ID

18/07/2022

18/07/2023

Dart 497

$E_{\text{meas}} = 0.358\text{ kN-m}$

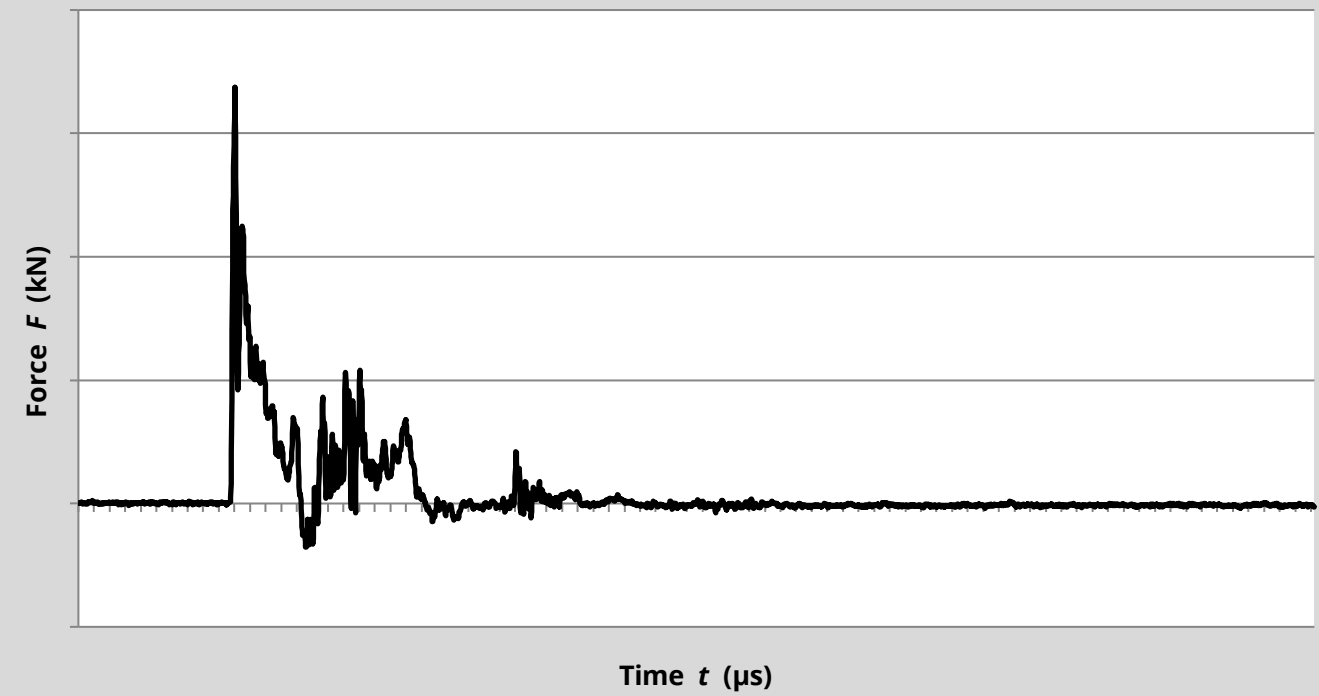
$E_{\text{theor}} = 0.473\text{ kN-m}$

Comments

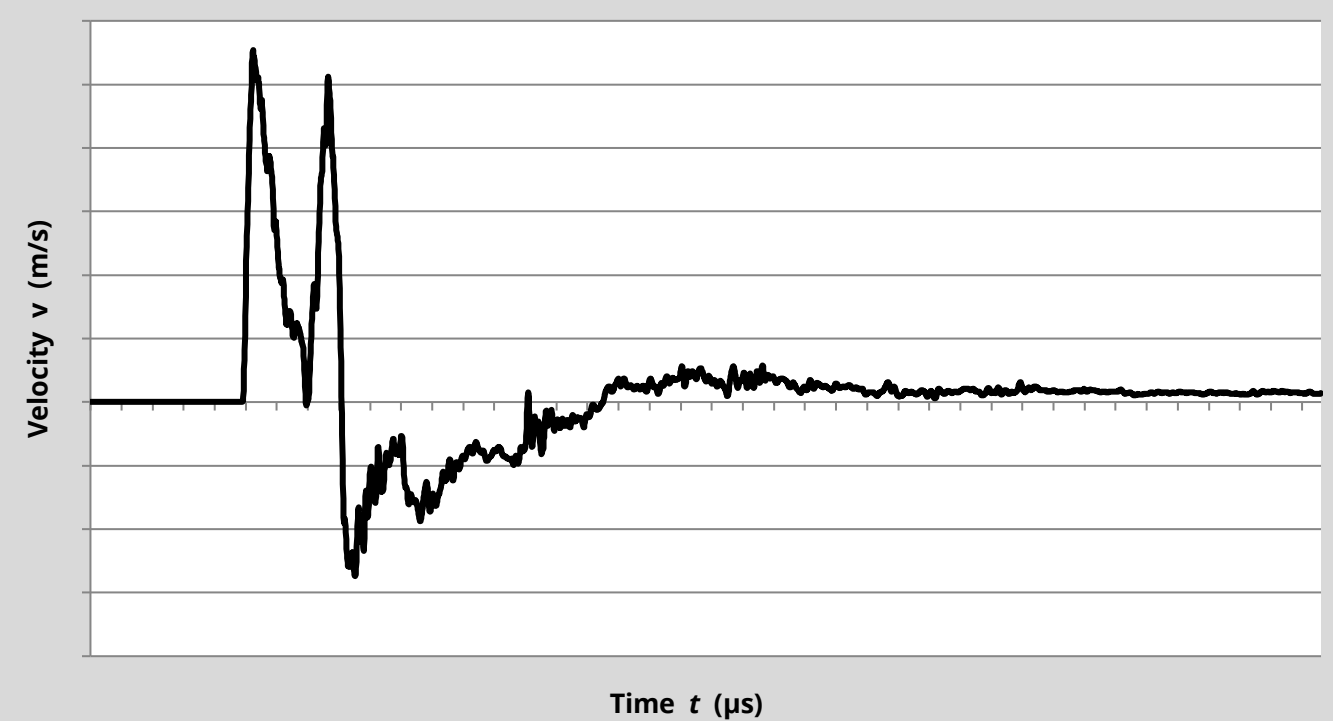
$$\text{Energy Ratio (Er)} = \frac{E_{\text{meas}}}{E_{\text{theor}}}$$

75.73%
© COPYRIGHT 2022

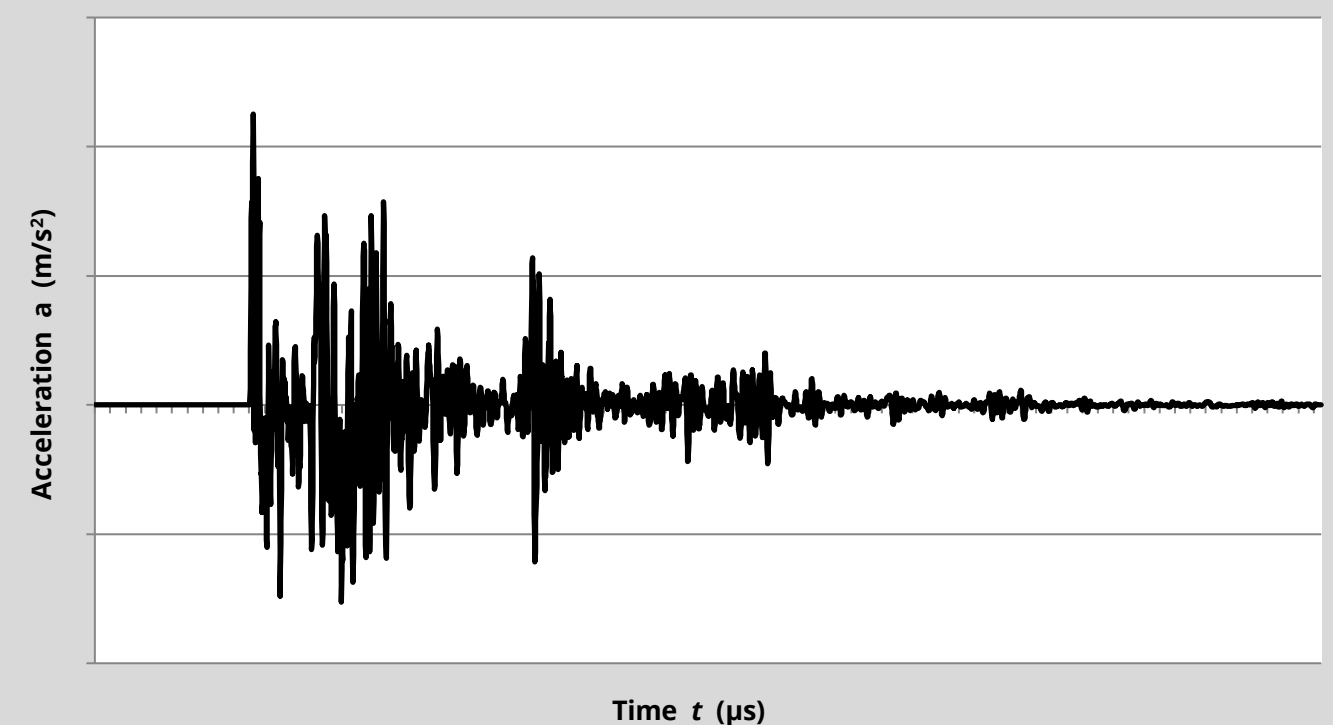
Force



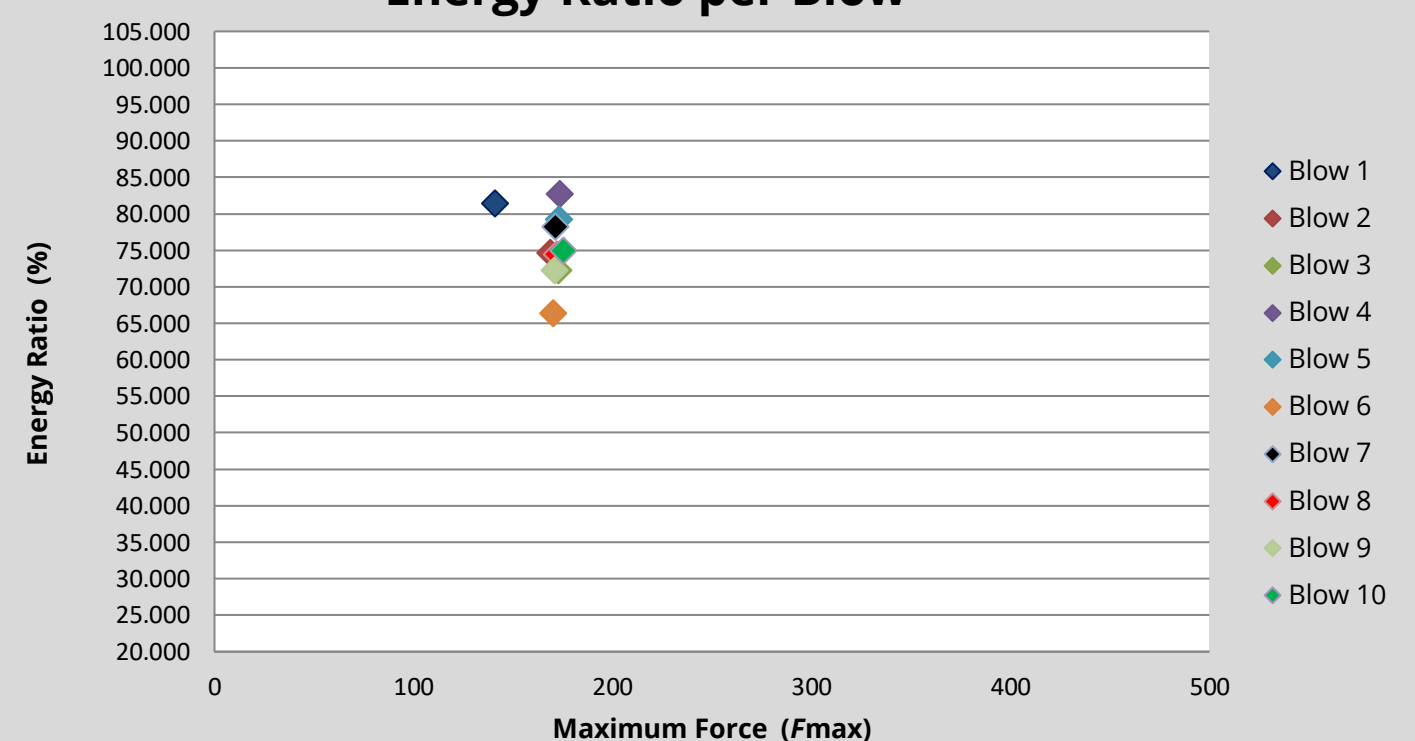
Particle Velocity



Acceleration



Energy Ratio per Blow



Equipe SPT Analyzer Operator

KS

Certificate prepared by

[Signature]

Certificate checked by

[Signature]

Certificate date

21/07/2022

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)



GOQLY-POQ2Y-N8AZF

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

Job name

Phase 6 - Calne

Description/Comments

Project

5019

Site

Phase 6 - Calne

Classified by

Name:

Tim Coe

Date:

08 Dec 2022 16:18 GMT

Telephone:

01452 422843

Company:

Wilson Associates

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

Most recent 3 year Refresher

Date

07 Nov 2019

04 Oct 2022

Next 3 year Refresher due by Oct 2025

Purpose of classification

2 - Material Characterisation

Address of the waste

Spitfire Road, Calne, Wiltshire

Post Code SN11 8GA

SIC for the process giving rise to the waste

41202 Construction of domestic buildings

Description of industry/producer giving rise to the waste

Construction

Description of the specific process, sub-process and/or activity that created the waste

Waste created during the excavation of foundations

Description of the waste

made ground and natural soil

APPENDIX 3

**CONTAMINATION
STATUTORY FRAMEWORK / METHODOLOGY
AND
CERTIFIED CONTAMINATION TEST RESULTS**

A3 CONTAMINATION RISK ASSESSMENT

Statutory Framework

A3.1 Part 2A of the Environmental Protection Act 1990 (inserted by Section 57 of the Environment Act 1995) provides a regime for the control of specific threats to health or the environment from existing land contamination. In accordance with the Act and the statutory guidance document on the Contaminated Land (England) Regulations 2000, the definition of contaminated land is intended to embody the concept of risk assessment. Within the meaning of the Act, land is only 'contaminated land' where it appears to the regulatory authority to be in such a condition, by reason of substances within or under the land, that:

- harm is being caused or has significant possibility of significant harm to be caused to human health, or
- pollution is being caused or has significant possibility of significant pollution to be caused to controlled waters.

A3.2 In 2012 revised Statutory Guidance for Part 2A of the Environmental Protection Act (1990) came into force for England and Wales. This introduced a new four category approach for classifying land affected by contamination to assist decisions by regulators in cases of Significant Possibility of Significant Harm (SPOSH) to specified receptors, including humans, and significant pollution of controlled waters.

Category 1 describes land which is clearly problematic e.g. because similar sites are known to have caused a significant problem in the past. The legal definition is where "there is an unacceptably high probability, supported by robust science-based evidence, that significant harm would occur if no action is taken to stop it".

Categories 2 and 3 cover land where detailed consideration is needed before deciding whether it may be contaminated land. Category 2 is defined as land where "there is a strong case for considering that the risks from the land are of sufficient concern that the land poses a significant possibility of significant harm". Category 3 is defined as land where there is not the strong case described in the test for Category 2, and may include "land where the risks are not low, but nonetheless the authority considers that regulatory intervention under Part 2A is not warranted". The decision basis is initially related to human health risks, and if this is not conclusive due to uncertainty over risks, wider socio-economic factors (e.g. cost, local perception etc).

Category 4 describes land that is clearly not contaminated land, where there is no risk or the level or risk posed is low.

A3.3 This same 4 category system has also been introduced to assist in identifying whether there is a significant possibility of significant pollution of controlled waters. Part 2A states that normal levels of contaminants in soil should not be considered to cause land to qualify as contaminated land, unless there is a particular reason to consider otherwise.

A3.4 Once land has been determined as contaminated land, the enforcing authority must consider how it should be remediated and, where appropriate, it must issue a remediation notice to require such remediation. The enforcing authority for the purposes of remediation may be the local authority which determined the land, or the Environment Agency which takes on responsibility once land has been determined if the land is deemed to be a “special site”. The rules on what land is to be regarded as special sites, and various rules on the issuing of remediation notices, are set out in the Contaminated Land (England) Regulations 2006.

A3.5 The UK guidance on the assessment of land contamination has developed as a direct result of the introduction of the above two Acts. The current technical guidance supporting the legislation has been summarised in the document Land Contamination Risk Management (LCRM), originally published in October 2020 by the Environment Agency (EA).

Contamination Assessment Methodology

A3.6 LCRM guidance proposes a three-stage risk based assessment process for identifying if a hazard exists within a site.

- Stage 1: Risk assessment
- Stage 2: Options appraisal
- Stage 3: Remediation and verification

A3.7 Stage 1 is to collect detailed information about the site, firstly to establish the likelihood of a hazard being present, and if a potential hazard is identified, to assess (through the source-pathway-receptor potential pollutant linkage concept) whether it has the

potential to pose an unacceptable risk. That unacceptable risk is subsequently estimated and /or evaluated.

- A3.8** Stage 1 can be achieved through a preliminary desk-based risk assessment and if considered appropriate, by progression to a generic or detailed quantitative risk assessment using appropriate intrusive investigation methods supported by UKAS accredited laboratory testing.
- A3.9** Quantitative assessment of human health risk posed by ground contamination is achieved by comparison of soil concentrations with Tier 1 Suitable for Use Levels (S4UL) as published by LQM/CIEH (2015) or (in the case of the toxic metal Lead only) with a Category Four Screening Level (C4SL) published by DEFRA (2014). The official Soil Guideline Values utilise a soil organic matter content of 6% which is considered to be higher than typical UK soils, however three sets of S4UL's have been developed for organic matter contents of 1%, 2.5% and 6%, thus the most appropriate set is selected based upon proven site conditions.
- A3.10** Contaminant concentrations below the threshold screening values are considered not to warrant further risk assessment. Concentrations of contaminants above these screening values require further consideration of potential pollutant linkages and may indicate potentially unacceptable risks to site users that warrants either further detailed quantitative risk assessment or progression to Stage 2. It should be noted that S4UL/C4SL's are not absolute thresholds and an exceedance does not necessarily indicate that a potential pollutant linkage is automatically established.
- A3.11** In order to assess any risk to controlled waters posed by contaminants within the underlying soils and groundwater, laboratory results are screened against Level 1 Environmental Quality Standard (EQS) values derived from the Water Framework Directive (Standards & Classification) Directions (England & Wales) 2015 and the current UK Drinking Water Supply (Water Quality) Regulations (DWS), dependent upon the most vulnerable receptor. The EQS is usually an upper concentration set for the receiving watercourse and not the discharge itself. The DWS is established for compliance at the point of use or abstraction and not the source area.
- A3.12** Stage 2 follows on from the risk assessment completed in Stage 1 by firstly identifying all feasible remediation options, then through consideration of additional factors including but not limited to; sustainability, limitations, timescales and budgets and regulatory controls, narrow the list of remediation options down to a favoured

remediation/mitigation approach. Note that this approach is not restrictive and may include the adoption of as many remediation options as necessary in order to achieve the remediation objective(s).

A3.13 Stage 3 takes the chosen remediation/mitigation approach from Stage 2 and from which a remediation strategy 'that can be implemented in practice' is developed and agreed with the regulatory authority. Once agreed the approved remediation works can take place as per the strategy, whilst still being mindful of whether the chosen remedial strategy is working as anticipated and also for the presence of unexpected contamination. Subject to findings, the agreed remedial strategy may require adjustment in order to ensure that the remediation objectives(s) can be met.

A3.14 Upon completion of the remedial works a verification plan is produced detailing the works undertaken and demonstrating that the risk has been reduced, that the remediation objective(s) and criteria have been met and that the site no longer presents a risk to human health and/or controlled waters, and therefore can be considered 'suitable for use'.

Waste Classification

A3.15 In terms of controlled off-site disposal to landfill of site arisings, if/where intended, waste classification is carried out in line with European Waste Catalogue (EWC) and Technical Guidance Waste Management 3 (TGWM3, EA Version 1.2, October 2021) using contamination test results obtained for that material. The assessment utilises the 'HazWasteOnline' software to establish a 'Hazardous' (170503*) / 'Non-hazardous' (170504) classification. Where required, the foregoing may be supplemented by Waste Acceptance Criteria (WAC) analysis, in order that the waste can further be designated as 'Hazardous' / 'Stable non-reactive' / 'Inert', for use by the receiving landfill operator. It should be noted that WAC is only required for disposal of wastes at certain classes of landfill; if arisings are not intended for removal to landfill, then WAC testing is not applicable.

SUMMARY OF CONTAMINATION TEST RESULTS

		SOILS																	TIER 1: GENERIC ASSESSMENT CRITERIA						LEACHATE											
Sample Ref		BH1	BH1	BH2	BH3	BH4	BH6	BH6	BH8	BH7	BH7	BH9	BH10	BH11	BH12	BH13	BH13	BH14	BH14	S4UL (Residential with plant uptake)	S4UL (Residential without plant uptake)	S4UL (Allotments)	S4UL (Commercial)	S4UL (Public Open Space - Residential)	S4UL (Public Open Space - Park)	Sample Ref		BH1	BH3	BH6	BH7	BH13	WFD (Groundwater)	WFD (Fresh Surface Water)	EA EQS	UK DWS
Sample Depth (m)		0.15	0.20	0.40	0.15	0.30	0.25	0.50	0.35	0.20	0.75	0.50	0.35	0.40	0.40	0.20	0.30	0.10	0.40							Sample of		Topsoil	Made Ground - Clay	Made Ground - Clay	Made Ground - Clay	Made Ground - Clay				
Sample of		Topsoil	Made Ground - Clay	Made Ground - Clay	Made Ground - Clay	Made Ground - Clay	Topsoil	Made Ground - Clay	Alluvium - Clay	Made Ground - Clay	Made Ground - Clay	Made Ground - Clay	Clay	Made Ground - Clay	Made Ground - Clay	Topsoil	Made Ground - Clay	Topsoil	Made Ground - Clay																	
DETERMINAND (mg/kg)																																				
TOXIC METALS	pH	7.4	7.5	7.4	7.4	7.4	7.1	7.4	8.2	7.3	8.3	6.5	7.2	7.8	7	7	7.1	7.2	7.6																	
	Arsenic	21	26	19	26	17	26	19	38	27	31	33	20	19	11	15	16		17	37	40	43	640	79	170											
	Cadmium	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	11	85	1.9	190	120	532											
	Chromium VI	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	6	6	1.8	33	8	220											
	Chromium	42	53	40	48	36	51	35	62	59	45	57	39	48	22	27	27		31	910	910	18,000	8,600	1,500	33,000											
	Lead	68	74	39	62	87	37	61	32	110	16	84	40	38	27	59	47		26	200	310	80	2330	630	1300											
	Mercury	0.4	0.4	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	0.4	< 0.3	< 0.3	< 0.3	< 0.3	40	56	19	1100	120	240											
	Nickel	22	27	17	19	15	17	15	28	24	44	23	16	20	13	16	16		18	180	180	230	980	230	800											
Selenium	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	250	430	88	12000	1100	1800												
PHYTOTOXIC METALS	Copper	28	31	18	19	28	13	24	72	37	31	32	10	15	18	22	19		13	2,400	7,100	520	68,000	12,000	44,000											
	Zinc	99	120	70	80	160	59	68	87	150	46	140	59	65	68	85	73		53	3,700	40,000	620	730,000	81,000	170,000											
	Moisture Content (%)	17	13	15	15	13	12	13	19	20	11	18	15	15	30	17	15	15	14																	
	Stone Content (%)	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1																	
	Soil Organic (%)			4.2		7.2		7.6																												
	Asbestos Screen	ND			ND					ND				ND																						
SPECIATED POLYAROMATIC HYDROCARBONS (PAH)	Total PAH		1.65	< 0.80			< 0.80		< 0.80			1.79					< 0.80	< 0.80																		
	Naphthalene		< 0.05	< 0.05			< 0.05		< 0.05			< 0.05					< 0.05	< 0.05		13	13	24	1,100(432)	4,900	3,000											
	Acenaphthylene		< 0.05	< 0.05			< 0.05		< 0.05			< 0.05					< 0.05	< 0.05		920	6,000 (506)	160	100,000	15,000	30,000											
	Acenaphthene		< 0.05	< 0.05			< 0.05		< 0.05			< 0.05					< 0.05	< 0.05		1,100	6,000 (336)	200	100,000	15,000	30,000											
	Fluorene		< 0.05	< 0.05			< 0.05		< 0.05			< 0.05					< 0.05	< 0.05		860	4,500 (183)	160	71,000	9,900	20,000											
	Phenanthrene		< 0.05	< 0.05			< 0.05		< 0.05			< 0.05					< 0.05	< 0.05		440	1,500	90	23,000	3,100	6,300											
	Anthracene		< 0.05	< 0.05			< 0.05		< 0.05			< 0.05					< 0.05	< 0.05		11,000	37,000	2,200	540,000	74,000	150,000											
	Fluoranthene		0.42	< 0.05			< 0.05		< 0.05			0.51					< 0.05	< 0.05		890	1600	290	23,000	3,100	6,400											
	Pyrene		0.39	< 0.05			< 0.05		< 0.05			0.44					< 0.05	< 0.05		2,000	3,800	620	54,000	7,400	15,000											
	Benzo(a)anthracene		0.38	< 0.05			< 0.05		< 0.05			0.35					< 0.05	< 0.05		13	15	13	180	29	62											
	Chrysene		0.46	< 0.05			< 0.05		< 0.05			0.49					< 0.05	< 0.05		27	32	19	350	57	120											
	Benzo(b)fluoranthene		< 0.05	< 0.05			< 0.05		< 0.05			< 0.05					< 0.05	< 0.05		3.7	4	3.9	45	7.2	16											
	Benzo(k)fluoranthene		< 0.05	< 0.05			< 0.05		< 0.05			< 0.05					< 0.05	< 0.05		100	110	130	1200	190	440											
	Benzo(a)pyrene		< 0.05	< 0.05			< 0.05		< 0.05			< 0.05					< 0.05	< 0.05		3.0	3.2	3.5	36	5.7	13											
	Indeno(1,2,3-cd)pyrene		< 0.05	< 0.05			< 0.05		< 0.05			< 0.05					< 0.05	< 0.05		41	46	39	510	82	180											
Dibenz(a,h)anthracene		< 0.05	< 0.05			< 0.05		< 0.05			< 0.05					< 0.05	< 0.05		0.3	0.32	0.43	3.6	0.58	1.4												
Benzo(ghi)perylene		< 0.05	< 0.05			< 0.05		< 0.05			< 0.05					< 0.05	< 0.05		350	360	640	4000	640	1,600												
TOTAL PETROLEUM HYDROCARBONS (TPH) BANDED	C6 - C8		< 0.1				< 0.1						< 0.1							530	530	17,000	4,000	620,000	320,000											
	C8 - C10		< 0.1				< 0.1						< 0.1							150	150	51	11,000	5,000	9,300											
	C10 - C12		< 1.0				< 1.0						< 1.0							380	760	74	34,000	5,000	10,000											
	C12 - C16		< 4.0				< 4.0						< 4.0							660	2,500	130	38,000	5,000	10,000											
	C16 - C21		12				< 10						< 10							930	1,900	260	28,000	3,800	7,800											
	C21 - C40		37				< 10						< 10							1,700	1,900	1,800	28,000	3,800	7,900											
	C6 - C40		50				< 10					< 10							110,000	110,000	270,000	1,800,000	250,000	490,000												

CEIHL_{LOW}

=

GAC/S4UL presented exceeds the solubility saturation limit, which is presented in brackets

CEIHL_{LOW}

=

GAC/S4UL presented exceeds the vapour saturation limit, which is presented in brackets

CEIHL_{LOW}

S4UL

=

S4UL based on a threshold protective of direct skin contact with phenol (guideline in brackets based on health effects following long term exposure provided for illustration only)

S4UL

=

LQM/CEH published Suitable for use levels (2015)

DEFRA

=

CASL (2014)

ND

=

None detected

=

Based on Soil Organic Matter of 6% (all levels expressed as mg/kg)

WFD (groundwater)

=

WFD "Water Framework Directive Standards & Classification (England & Wales)" 2015

WFD (fresh surface water)

=

River Basin Districts Typology, Standards & Groundwater Threshold Values (Water Framework Directive) (England & Wales) Directions 2010

EA EQS

=

UK Drinking Water Standards "The Water Supply (Water Quality) Regulations 2000"

UK DWS

=

World Health Organisation Guidelines

APPENDIX 4

WASTE CLASSIFICATION REPORT AND WAC TEST RESULTS

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	BH1--21072022-0.15		Non Hazardous		3
2	BH1--21072022-0.20		Non Hazardous		4
3	BH2--21072022-0.40		Non Hazardous		6
4	BH3--21072022-0.15		Non Hazardous		8
5	BH4--21072022-0.30		Non Hazardous		9
6	BH6--21072022-0.25		Non Hazardous		10
7	BH6--21072022-0.50		Non Hazardous		12
8	BH8--21072022-0.35		Non Hazardous		13
9	BH7--21072022-0.20		Non Hazardous		15
10	BH7--21072022-0.75		Non Hazardous		16
11	BH9--21072022-0.50		Non Hazardous		17
12	BH10--21072022-0.35		Non Hazardous		19
13	BH11--21072022-0.40		Non Hazardous		21
14	BH12--21072022-0.40		Non Hazardous		22
15	BH13--14092022-0.20		Non Hazardous		23
16	BH13--14092022-0.30		Non Hazardous		24
17	BH14--14092022-0.10		Non Hazardous		26
18	BH14--14092022-0.40		Non Hazardous		28

Related documents

#	Name	Description
1	22-74463_HWOL_Results.hwol	i2 Analytical .hwol file used to populate the Job
2	22-84982_HWOL_Results.hwol	i2 Analytical .hwol file used to populate the Job
3	Example waste stream template for contaminated soils	waste stream template used to create this Job

Report

Created by: Tim Coe

Created date: 08 Dec 2022 16:18 GMT

Appendices	Page
Appendix A: Classifier defined and non GB MCL determinands	29
Appendix B: Rationale for selection of metal species	30
Appendix C: Version	30

Classification of sample: BH1--21072022-0.15

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

Sample details

Sample name:	LoW Code:
BH1--21072022-0.15	Chapter:
Moisture content:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
17%	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 17% Wet 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 }				21 mg/kg	1.32	23.013	mg/kg	0.0023 %	✓	
	033-003-00-0	215-481-4	1327-53-3								
2	 cadmium { cadmium oxide }				<0.2 mg/kg	1.142	<0.228	mg/kg	<0.0000228 %		<LOD
	048-002-00-0	215-146-2	1306-19-0								
3	 chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				42 mg/kg	1.462	61.385	mg/kg	0.00614 %		
		215-160-9	1308-38-9								
4	 chromium in chromium(VI) compounds { chromium(VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1.2 mg/kg	2.27	<2.724	mg/kg	<0.000272 %		<LOD
	024-017-00-8										
5	 copper { dicopper oxide; copper (I) oxide }				28 mg/kg	1.126	26.166	mg/kg	0.00262 %	✓	
	029-002-00-X	215-270-7	1317-39-1								
6	 lead { lead chromate }			1	68 mg/kg	1.56	88.036	mg/kg	0.00564 %	✓	
	082-004-00-2	231-846-0	7758-97-6								
7	 mercury { mercury dichloride }				0.4 mg/kg	1.353	0.449	mg/kg	0.0000449 %	✓	
	080-010-00-X	231-299-8	7487-94-7								
8	 nickel { nickel chromate }				22 mg/kg	2.976	54.347	mg/kg	0.00543 %	✓	
	028-035-00-7	238-766-5	14721-18-7								
9	 selenium { nickel selenate }				<1 mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
	028-031-00-5	239-125-2	15060-62-5								
10	 zinc { zinc chromate }				99 mg/kg	2.774	227.952	mg/kg	0.0228 %	✓	
	024-007-00-3	236-878-9	13530-65-9								
11	 pH				7.4 pH		7.4	pH	7.4 pH		
Total:									0.0455 %		

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: BH1--21072022-0.20

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

Sample details

Sample name:	LoW Code:
BH1--21072022-0.20	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
13% (wet weight correction)	

Hazard properties

None identified

Determinands

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

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				26 mg/kg	1.32	29.866	mg/kg	0.00299 %	✓	
	033-003-00-0	215-481-4	1327-53-3								
2	cadmium { cadmium oxide }				<0.2 mg/kg	1.142	<0.228	mg/kg	<0.0000228 %		<LOD
	048-002-00-0	215-146-2	1306-19-0								
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				53 mg/kg	1.462	77.462	mg/kg	0.00775 %		
		215-160-9	1308-38-9								
4	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1.2 mg/kg	2.27	<2.724	mg/kg	<0.000272 %		<LOD
	024-017-00-8										
5	copper { dicopper oxide; copper (I) oxide }				31 mg/kg	1.126	30.365	mg/kg	0.00304 %	✓	
	029-002-00-X	215-270-7	1317-39-1								
6	lead { lead chromate }			1	74 mg/kg	1.56	100.421	mg/kg	0.00644 %	✓	
	082-004-00-2	231-846-0	7758-97-6								
7	mercury { mercury dichloride }				0.4 mg/kg	1.353	0.471	mg/kg	0.0000471 %	✓	
	080-010-00-X	231-299-8	7487-94-7								
8	nickel { nickel chromate }				27 mg/kg	2.976	69.912	mg/kg	0.00699 %	✓	
	028-035-00-7	238-766-5	14721-18-7								
9	selenium { nickel selenate }				<1 mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
	028-031-00-5	239-125-2	15060-62-5								
10	zinc { zinc chromate }				120 mg/kg	2.774	289.621	mg/kg	0.029 %	✓	
	024-007-00-3	236-878-9	13530-65-9								
11	TPH (C6 to C40) petroleum group				50 mg/kg		43.5	mg/kg	0.00435 %	✓	
			TPH								
12	pH				7.5 pH		7.5	pH	7.5 pH		
			PH								
13	naphthalene				<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3								
14	acenaphthylene				<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8								
15	acenaphthene				<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9								
16	fluorene				<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-695-5	86-73-7								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
17	phenanthrene	201-581-5	85-01-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
18	anthracene	204-371-1	120-12-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
19	fluoranthene	205-912-4	206-44-0		0.42 mg/kg		0.365 mg/kg	0.0000365 %	✓	
20	pyrene	204-927-3	129-00-0		0.39 mg/kg		0.339 mg/kg	0.0000339 %	✓	
21	benzo[a]anthracene	601-033-00-9	200-280-6		0.38 mg/kg		0.331 mg/kg	0.0000331 %	✓	
22	chrysene	601-048-00-0	205-923-4		0.46 mg/kg		0.4 mg/kg	0.00004 %	✓	
23	benzo[b]fluoranthene	601-034-00-4	205-911-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
24	benzo[k]fluoranthene	601-036-00-5	205-916-6		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
25	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
26	indeno[123-cd]pyrene	205-893-2	193-39-5		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
27	dibenz[a,h]anthracene	601-041-00-2	200-181-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
28	benzo[ghi]perylene	205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
Total:								0.0613 %		

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 No liquid phase present

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00435%)

Classification of sample: BH2--21072022-0.40

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

Sample details

Sample name:	LoW Code:
BH2--21072022-0.40	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
15% (wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 15% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				19 mg/kg	1.32	21.323	mg/kg	0.00213 %	✓	
	033-003-00-0	215-481-4	1327-53-3								
2	cadmium { cadmium oxide }				<0.2 mg/kg	1.142	<0.228	mg/kg	<0.0000228 %		<LOD
	048-002-00-0	215-146-2	1306-19-0								
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				40 mg/kg	1.462	58.462	mg/kg	0.00585 %		
		215-160-9	1308-38-9								
4	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1.2 mg/kg	2.27	<2.724	mg/kg	<0.000272 %		<LOD
	024-017-00-8										
5	copper { dicopper oxide; copper (I) oxide }				18 mg/kg	1.126	17.226	mg/kg	0.00172 %	✓	
	029-002-00-X	215-270-7	1317-39-1								
6	lead { lead chromate }			1	39 mg/kg	1.56	51.708	mg/kg	0.00331 %	✓	
	082-004-00-2	231-846-0	7758-97-6								
7	mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7								
8	nickel { nickel chromate }				17 mg/kg	2.976	43.007	mg/kg	0.0043 %	✓	
	028-035-00-7	238-766-5	14721-18-7								
9	selenium { nickel selenate }				<1 mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
	028-031-00-5	239-125-2	15060-62-5								
10	zinc { zinc chromate }				70 mg/kg	2.774	165.062	mg/kg	0.0165 %	✓	
	024-007-00-3	236-878-9	13530-65-9								
11	pH				7.4 pH		7.4	pH	7.4 pH		
			PH								
12	naphthalene				<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3								
13	acenaphthylene				<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8								
14	acenaphthene				<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9								
15	fluorene				<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-695-5	86-73-7								
16	phenanthrene				<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-581-5	85-01-8								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
17	anthracene	204-371-1	120-12-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
18	fluoranthene	205-912-4	206-44-0		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
19	pyrene	204-927-3	129-00-0		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
20	benzo[a]anthracene	601-033-00-9	200-280-6		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
21	chrysene	601-048-00-0	205-923-4		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
22	benzo[b]fluoranthene	601-034-00-4	205-911-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
23	benzo[k]fluoranthene	601-036-00-5	205-916-6		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
24	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
25	indeno[123-cd]pyrene	205-893-2	193-39-5		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
26	dibenz[a,h]anthracene	601-041-00-2	200-181-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
27	benzo[ghi]perylene	205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
Total:								0.0345 %		

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: BH3--21072022-0.15

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

Sample details

Sample name:	LoW Code:
BH3--21072022-0.15	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
15% (wet weight correction)	

Hazard properties

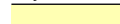
None identified

Determinands

Moisture content: 15% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	 arsenic { arsenic trioxide }				26 mg/kg	1.32	29.179 mg/kg	0.00292 %		✓	
	033-003-00-0	215-481-4	1327-53-3								
2	 cadmium { cadmium oxide }				<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %			<LOD
	048-002-00-0	215-146-2	1306-19-0								
3	 chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				48 mg/kg	1.462	70.155 mg/kg	0.00702 %			
		215-160-9	1308-38-9								
4	 chromium in chromium(VI) compounds { chromium(VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1.2 mg/kg	2.27	<2.724 mg/kg	<0.000272 %			<LOD
	024-017-00-8										
5	 copper { dicopper oxide; copper (I) oxide }				19 mg/kg	1.126	18.183 mg/kg	0.00182 %		✓	
	029-002-00-X	215-270-7	1317-39-1								
6	 lead { lead chromate }			1	62 mg/kg	1.56	82.202 mg/kg	0.00527 %		✓	
	082-004-00-2	231-846-0	7758-97-6								
7	 mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %			<LOD
	080-010-00-X	231-299-8	7487-94-7								
8	 nickel { nickel chromate }				19 mg/kg	2.976	48.067 mg/kg	0.00481 %		✓	
	028-035-00-7	238-766-5	14721-18-7								
9	 selenium { nickel selenate }				<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %			<LOD
	028-031-00-5	239-125-2	15060-62-5								
10	 zinc { zinc chromate }				80 mg/kg	2.774	188.642 mg/kg	0.0189 %		✓	
	024-007-00-3	236-878-9	13530-65-9								
11	 pH				7.4 pH		7.4 pH	7.4 pH			
			PH								
Total:									0.0413 %		

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: BH4--21072022-0.30

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

Sample details

Sample name:	LoW Code:
BH4--21072022-0.30	Chapter:
Moisture content:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
13%	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
(wet weight correction)	Entry:

Hazard properties

None identified

Determinands

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

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	 arsenic { arsenic trioxide }				17 mg/kg	1.32	19.528	mg/kg	0.00195 %	✓	
	033-003-00-0	215-481-4	1327-53-3								
2	 cadmium { cadmium oxide }				<0.2 mg/kg	1.142	<0.228	mg/kg	<0.0000228 %		<LOD
	048-002-00-0	215-146-2	1306-19-0								
3	 chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				36 mg/kg	1.462	52.616	mg/kg	0.00526 %		
		215-160-9	1308-38-9								
4	 chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1.2 mg/kg	2.27	<2.724	mg/kg	<0.000272 %		<LOD
	024-017-00-8										
5	 copper { dicopper oxide; copper (I) oxide }				28 mg/kg	1.126	27.427	mg/kg	0.00274 %	✓	
	029-002-00-X	215-270-7	1317-39-1								
6	 lead { lead chromate }			1	87 mg/kg	1.56	118.062	mg/kg	0.00757 %	✓	
	082-004-00-2	231-846-0	7758-97-6								
7	 mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7								
8	 nickel { nickel chromate }				15 mg/kg	2.976	38.84	mg/kg	0.00388 %	✓	
	028-035-00-7	238-766-5	14721-18-7								
9	 selenium { nickel selenate }				<1 mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
	028-031-00-5	239-125-2	15060-62-5								
10	 zinc { zinc chromate }				160 mg/kg	2.774	386.161	mg/kg	0.0386 %	✓	
	024-007-00-3	236-878-9	13530-65-9								
11	 pH				7.4 pH		7.4	pH	7.4 pH		
Total:									0.0606 %		

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: BH6--21072022-0.25

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

Sample details

Sample name:	LoW Code:
BH6--21072022-0.25	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
12% (wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 12% Wet 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 }				26 mg/kg	1.32	30.209 mg/kg	0.00302 %	✔		
	033-003-00-0	215-481-4	1327-53-3								
2	cadmium { cadmium oxide }				<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %			<LOD
	048-002-00-0	215-146-2	1306-19-0								
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				51 mg/kg	1.462	74.539 mg/kg	0.00745 %			
		215-160-9	1308-38-9								
4	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1.2 mg/kg	2.27	<2.724 mg/kg	<0.000272 %			<LOD
	024-017-00-8										
5	copper { dicopper oxide; copper (I) oxide }				13 mg/kg	1.126	12.88 mg/kg	0.00129 %	✔		
	029-002-00-X	215-270-7	1317-39-1								
6	lead { lead chromate }			1	37 mg/kg	1.56	50.788 mg/kg	0.00326 %	✔		
	082-004-00-2	231-846-0	7758-97-6								
7	mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %			<LOD
	080-010-00-X	231-299-8	7487-94-7								
8	nickel { nickel chromate }				17 mg/kg	2.976	44.525 mg/kg	0.00445 %	✔		
	028-035-00-7	238-766-5	14721-18-7								
9	selenium { nickel selenate }				<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %			<LOD
	028-031-00-5	239-125-2	15060-62-5								
10	zinc { zinc chromate }				59 mg/kg	2.774	144.034 mg/kg	0.0144 %	✔		
	024-007-00-3	236-878-9	13530-65-9								
11	TPH (C6 to C40) petroleum group				<10 mg/kg		<10 mg/kg	<0.001 %			<LOD
			TPH								
12	pH				7.1 pH		7.1 pH	7.1 pH			
			PH								
13	naphthalene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
	601-052-00-2	202-049-5	91-20-3								
14	acenaphthylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		205-917-1	208-96-8								
15	acenaphthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		201-469-6	83-32-9								
16	fluorene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		201-695-5	86-73-7								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
17	phenanthrene	201-581-5	85-01-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
18	anthracene	204-371-1	120-12-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
19	fluoranthene	205-912-4	206-44-0		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
20	pyrene	204-927-3	129-00-0		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
21	benzo[a]anthracene	601-033-00-9	200-280-6		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
22	chrysene	601-048-00-0	205-923-4		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
23	benzo[b]fluoranthene	601-034-00-4	205-911-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
24	benzo[k]fluoranthene	601-036-00-5	205-916-6		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
25	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
26	indeno[123-cd]pyrene	205-893-2	193-39-5		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
27	dibenz[a,h]anthracene	601-041-00-2	200-181-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
28	benzo[ghi]perylene	205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
Total:								0.0355 %		

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: BH6--21072022-0.50

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

Sample details

Sample name:	LoW Code:
BH6--21072022-0.50	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
13% (wet weight correction)	

Hazard properties

None identified

Determinands

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

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	 arsenic { arsenic trioxide }				19 mg/kg	1.32	21.825 mg/kg	0.00218 %		✓	
	033-003-00-0	215-481-4	1327-53-3								
2	 cadmium { cadmium oxide }				<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %			<LOD
	048-002-00-0	215-146-2	1306-19-0								
3	 chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				35 mg/kg	1.462	51.154 mg/kg	0.00512 %			
		215-160-9	1308-38-9								
4	 chromium in chromium(VI) compounds { chromium(VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1.2 mg/kg	2.27	<2.724 mg/kg	<0.000272 %			<LOD
	024-017-00-8										
5	 copper { dicopper oxide; copper (I) oxide }				24 mg/kg	1.126	23.509 mg/kg	0.00235 %		✓	
	029-002-00-X	215-270-7	1317-39-1								
6	 lead { lead chromate }			1	61 mg/kg	1.56	82.779 mg/kg	0.00531 %		✓	
	082-004-00-2	231-846-0	7758-97-6								
7	 mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %			<LOD
	080-010-00-X	231-299-8	7487-94-7								
8	 nickel { nickel chromate }				15 mg/kg	2.976	38.84 mg/kg	0.00388 %		✓	
	028-035-00-7	238-766-5	14721-18-7								
9	 selenium { nickel selenate }				<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %			<LOD
	028-031-00-5	239-125-2	15060-62-5								
10	 zinc { zinc chromate }				68 mg/kg	2.774	164.119 mg/kg	0.0164 %		✓	
	024-007-00-3	236-878-9	13530-65-9								
11	 pH		PH		7.4 pH		7.4 pH	7.4 pH			
Total:									0.0358 %		

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: BH8--21072022-0.35

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

Sample details

Sample name:	LoW Code:
BH8--21072022-0.35	Chapter:
Moisture content:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
19% (wet weight correction)	Entry:
	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 19% Wet 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 }				38 mg/kg	1.32	40.64	mg/kg	0.00406 %	✓	
	033-003-00-0	215-481-4	1327-53-3								
2	cadmium { cadmium oxide }				<0.2 mg/kg	1.142	<0.228	mg/kg	<0.0000228 %		<LOD
	048-002-00-0	215-146-2	1306-19-0								
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				62 mg/kg	1.462	90.616	mg/kg	0.00906 %		
		215-160-9	1308-38-9								
4	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1.2 mg/kg	2.27	<2.724	mg/kg	<0.000272 %		<LOD
	024-017-00-8										
5	copper { dicopper oxide; copper (I) oxide }				72 mg/kg	1.126	65.662	mg/kg	0.00657 %	✓	
	029-002-00-X	215-270-7	1317-39-1								
6	lead { lead chromate }			1	32 mg/kg	1.56	40.43	mg/kg	0.00259 %	✓	
	082-004-00-2	231-846-0	7758-97-6								
7	mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7								
8	nickel { nickel chromate }				28 mg/kg	2.976	67.502	mg/kg	0.00675 %	✓	
	028-035-00-7	238-766-5	14721-18-7								
9	selenium { nickel selenate }				<1 mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
	028-031-00-5	239-125-2	15060-62-5								
10	zinc { zinc chromate }				87 mg/kg	2.774	195.494	mg/kg	0.0195 %	✓	
	024-007-00-3	236-878-9	13530-65-9								
11	pH				8.2 pH		8.2	pH	8.2 pH		
			PH								
12	naphthalene				<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3								
13	acenaphthylene				<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8								
14	acenaphthene				<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9								
15	fluorene				<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-695-5	86-73-7								
16	phenanthrene				<0.05 mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-581-5	85-01-8								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
17	anthracene	204-371-1	120-12-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
18	fluoranthene	205-912-4	206-44-0		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
19	pyrene	204-927-3	129-00-0		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
20	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
21	chrysene	601-048-00-0	205-923-4	218-01-9	<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
22	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
23	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
24	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
25	indeno[123-cd]pyrene	205-893-2	193-39-5		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
26	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
27	benzo[ghi]perylene	205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
Total:								0.0493 %		

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: BH7--21072022-0.20

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

Sample details

Sample name:	LoW Code:
BH7--21072022-0.20	Chapter:
Moisture content:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
20% (wet weight correction)	Entry:
	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 20% Wet 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 }				27 mg/kg	1.32	28.519	mg/kg	0.00285 %	✓	
	033-003-00-0	215-481-4	1327-53-3								
2	 cadmium { cadmium oxide }				<0.2 mg/kg	1.142	<0.228	mg/kg	<0.0000228 %		<LOD
	048-002-00-0	215-146-2	1306-19-0								
3	 chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				59 mg/kg	1.462	86.232	mg/kg	0.00862 %		
		215-160-9	1308-38-9								
4	 chromium in chromium(VI) compounds { chromium(VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1.2 mg/kg	2.27	<2.724	mg/kg	<0.000272 %		<LOD
	024-017-00-8										
5	 copper { dicopper oxide; copper (I) oxide }				37 mg/kg	1.126	33.326	mg/kg	0.00333 %	✓	
	029-002-00-X	215-270-7	1317-39-1								
6	 lead { lead chromate }			1	110 mg/kg	1.56	137.264	mg/kg	0.0088 %	✓	
	082-004-00-2	231-846-0	7758-97-6								
7	 mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7								
8	 nickel { nickel chromate }				24 mg/kg	2.976	57.144	mg/kg	0.00571 %	✓	
	028-035-00-7	238-766-5	14721-18-7								
9	 selenium { nickel selenate }				<1 mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
	028-031-00-5	239-125-2	15060-62-5								
10	 zinc { zinc chromate }				150 mg/kg	2.774	332.898	mg/kg	0.0333 %	✓	
	024-007-00-3	236-878-9	13530-65-9								
11	 pH				7.3 pH		7.3	pH	7.3 pH		
Total:									0.0632 %		

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: BH7--21072022-0.75

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

Sample details

Sample name:	LoW Code:
BH7--21072022-0.75	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
11% (wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 11% Wet 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 }				31 mg/kg	1.32	36.428 mg/kg	0.00364 %		✓	
	033-003-00-0	215-481-4	1327-53-3								
2	 cadmium { cadmium oxide }				<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %			<LOD
	048-002-00-0	215-146-2	1306-19-0								
3	 chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				45 mg/kg	1.462	65.77 mg/kg	0.00658 %			
		215-160-9	1308-38-9								
4	 chromium in chromium(VI) compounds { chromium(VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1.2 mg/kg	2.27	<2.724 mg/kg	<0.000272 %			<LOD
	024-017-00-8										
5	 copper { dicopper oxide; copper (I) oxide }				31 mg/kg	1.126	31.063 mg/kg	0.00311 %		✓	
	029-002-00-X	215-270-7	1317-39-1								
6	 lead { lead chromate }			1	16 mg/kg	1.56	22.212 mg/kg	0.00142 %		✓	
	082-004-00-2	231-846-0	7758-97-6								
7	 mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %			<LOD
	080-010-00-X	231-299-8	7487-94-7								
8	 nickel { nickel chromate }				44 mg/kg	2.976	116.551 mg/kg	0.0117 %		✓	
	028-035-00-7	238-766-5	14721-18-7								
9	 selenium { nickel selenate }				<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %			<LOD
	028-031-00-5	239-125-2	15060-62-5								
10	 zinc { zinc chromate }				46 mg/kg	2.774	113.574 mg/kg	0.0114 %		✓	
	024-007-00-3	236-878-9	13530-65-9								
11	 pH				8.3 pH		8.3 pH	8.3 pH			
			PH								
Total:									0.0384 %		

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: BH9--21072022-0.50

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

Sample details

Sample name:	LoW Code:
BH9--21072022-0.50	Chapter:
Moisture content:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
18%	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 18% Wet 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 }				33 mg/kg	1.32	35.728 mg/kg	0.00357 %	☒		
		033-003-00-0	215-481-4	1327-53-3								
2		cadmium { cadmium oxide }				<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %		<LOD	
		048-002-00-0	215-146-2	1306-19-0								
3		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				57 mg/kg	1.462	83.309 mg/kg	0.00833 %			
			215-160-9	1308-38-9								
4		chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1.2 mg/kg	2.27	<2.724 mg/kg	<0.000272 %		<LOD	
		024-017-00-8										
5		copper { dicopper oxide; copper (I) oxide }				32 mg/kg	1.126	29.543 mg/kg	0.00295 %	☒		
		029-002-00-X	215-270-7	1317-39-1								
6		lead { lead chromate }			1	84 mg/kg	1.56	107.44 mg/kg	0.00689 %	☒		
		082-004-00-2	231-846-0	7758-97-6								
7		mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %		<LOD	
		080-010-00-X	231-299-8	7487-94-7								
8		nickel { nickel chromate }				23 mg/kg	2.976	56.132 mg/kg	0.00561 %	☒		
		028-035-00-7	238-766-5	14721-18-7								
9		selenium { nickel selenate }				<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %		<LOD	
		028-031-00-5	239-125-2	15060-62-5								
10		zinc { zinc chromate }				140 mg/kg	2.774	318.472 mg/kg	0.0318 %	☒		
		024-007-00-3	236-878-9	13530-65-9								
11		pH				6.5 pH		6.5 pH	6.5 pH			
				PH								
12		naphthalene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD	
		601-052-00-2	202-049-5	91-20-3								
13		acenaphthylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD	
			205-917-1	208-96-8								
14		acenaphthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD	
			201-469-6	83-32-9								
15		fluorene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD	
			201-695-5	86-73-7								
16		phenanthrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD	
			201-581-5	85-01-8								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
17	anthracene	204-371-1	120-12-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
18	fluoranthene	205-912-4	206-44-0		0.51 mg/kg		0.418 mg/kg	0.0000418 %	✓	
19	pyrene	204-927-3	129-00-0		0.44 mg/kg		0.361 mg/kg	0.0000361 %	✓	
20	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	0.35 mg/kg		0.287 mg/kg	0.0000287 %	✓	
21	chrysene	601-048-00-0	205-923-4	218-01-9	0.49 mg/kg		0.402 mg/kg	0.0000402 %	✓	
22	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
23	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
24	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
25	indeno[123-cd]pyrene	205-893-2	193-39-5		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
26	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
27	benzo[ghi]perylene	205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
Total:								0.06 %		

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: BH10--21072022-0.35

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

Sample details

Sample name:	LoW Code:	
BH10--21072022-0.35	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
15% (wet weight correction)		

Hazard properties

None identified

Determinands

Moisture content: 15% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	arsenic { arsenic trioxide }				20 mg/kg	1.32	22.446	mg/kg	0.00224 %	✓	
	033-003-00-0	215-481-4	1327-53-3								
2	cadmium { cadmium oxide }				<0.2 mg/kg	1.142	<0.228	mg/kg	<0.0000228 %		<LOD
	048-002-00-0	215-146-2	1306-19-0								
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				39 mg/kg	1.462	57.001	mg/kg	0.0057 %		
		215-160-9	1308-38-9								
4	chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1.2 mg/kg	2.27	<2.724	mg/kg	<0.000272 %		<LOD
	024-017-00-8										
5	copper { dicopper oxide; copper (I) oxide }				10 mg/kg	1.126	9.57	mg/kg	0.000957 %	✓	
	029-002-00-X	215-270-7	1317-39-1								
6	lead { lead chromate }			1	40 mg/kg	1.56	53.034	mg/kg	0.0034 %	✓	
	082-004-00-2	231-846-0	7758-97-6								
7	mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7								
8	nickel { nickel chromate }				16 mg/kg	2.976	40.477	mg/kg	0.00405 %	✓	
	028-035-00-7	238-766-5	14721-18-7								
9	selenium { nickel selenate }				<1 mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
	028-031-00-5	239-125-2	15060-62-5								
10	zinc { zinc chromate }				59 mg/kg	2.774	139.123	mg/kg	0.0139 %	✓	
	024-007-00-3	236-878-9	13530-65-9								
11	TPH (C6 to C40) petroleum group		TPH		<10 mg/kg		<10	mg/kg	<0.001 %		<LOD
12	pH		PH		7.2 pH		7.2	pH	7.2 pH		
Total:									0.0319 %		

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: BH11--21072022-0.40

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

Sample details

Sample name:	LoW Code:
BH11--21072022-0.40	Chapter:
Moisture content:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
15% (wet weight correction)	Entry:
	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 15% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	 arsenic { arsenic trioxide }				19 mg/kg	1.32	21.323	mg/kg	0.00213 %	✓	
	033-003-00-0	215-481-4	1327-53-3								
2	 cadmium { cadmium oxide }				<0.2 mg/kg	1.142	<0.228	mg/kg	<0.0000228 %		<LOD
	048-002-00-0	215-146-2	1306-19-0								
3	 chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				48 mg/kg	1.462	70.155	mg/kg	0.00702 %		
		215-160-9	1308-38-9								
4	 chromium in chromium(VI) compounds { chromium(VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1.2 mg/kg	2.27	<2.724	mg/kg	<0.000272 %		<LOD
	024-017-00-8										
5	 copper { dicopper oxide; copper (I) oxide }				15 mg/kg	1.126	14.355	mg/kg	0.00144 %	✓	
	029-002-00-X	215-270-7	1317-39-1								
6	 lead { lead chromate }			1	38 mg/kg	1.56	50.382	mg/kg	0.00323 %	✓	
	082-004-00-2	231-846-0	7758-97-6								
7	 mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7								
8	 nickel { nickel chromate }				20 mg/kg	2.976	50.597	mg/kg	0.00506 %	✓	
	028-035-00-7	238-766-5	14721-18-7								
9	 selenium { nickel selenate }				<1 mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
	028-031-00-5	239-125-2	15060-62-5								
10	 zinc { zinc chromate }				65 mg/kg	2.774	153.272	mg/kg	0.0153 %	✓	
	024-007-00-3	236-878-9	13530-65-9								
11	 pH				7.8 pH		7.8	pH	7.8 pH		
Total:									0.0348 %		

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: BH12--21072022-0.40

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

Sample details

Sample name:	LoW Code:
BH12--21072022-0.40	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
30% (wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 30% Wet 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 }				11 mg/kg	1.32	10.167	mg/kg	0.00102 %	✓	
	033-003-00-0	215-481-4	1327-53-3								
2	 cadmium { cadmium oxide }				<0.2 mg/kg	1.142	<0.228	mg/kg	<0.0000228 %		<LOD
	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	32.154	mg/kg	0.00322 %		
		215-160-9	1308-38-9								
4	 chromium in chromium(VI) compounds { chromium(VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1.2 mg/kg	2.27	<2.724	mg/kg	<0.000272 %		<LOD
	024-017-00-8										
5	 copper { dicopper oxide; copper (I) oxide }				18 mg/kg	1.126	14.186	mg/kg	0.00142 %	✓	
	029-002-00-X	215-270-7	1317-39-1								
6	 lead { lead chromate }			1	27 mg/kg	1.56	29.481	mg/kg	0.00189 %	✓	
	082-004-00-2	231-846-0	7758-97-6								
7	 mercury { mercury dichloride }				0.4 mg/kg	1.353	0.379	mg/kg	0.0000379 %	✓	
	080-010-00-X	231-299-8	7487-94-7								
8	 nickel { nickel chromate }				13 mg/kg	2.976	27.084	mg/kg	0.00271 %	✓	
	028-035-00-7	238-766-5	14721-18-7								
9	 selenium { nickel selenate }				<1 mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
	028-031-00-5	239-125-2	15060-62-5								
10	 zinc { zinc chromate }				68 mg/kg	2.774	132.049	mg/kg	0.0132 %	✓	
	024-007-00-3	236-878-9	13530-65-9								
11	 pH				7 pH		7	pH	7pH		
			PH								
Total:									0.024 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated 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: BH13--14092022-0.20

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

Sample details

Sample name:	LoW Code:
BH13--14092022-0.20	Chapter:
Moisture content:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
17% (wet weight correction)	Entry:
	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 17% Wet 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 }				15 mg/kg	1.32	16.438	mg/kg	0.00164 %	✓	
	033-003-00-0	215-481-4	1327-53-3								
2	 cadmium { cadmium oxide }				<0.2 mg/kg	1.142	<0.228	mg/kg	<0.0000228 %		<LOD
	048-002-00-0	215-146-2	1306-19-0								
3	 chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				27 mg/kg	1.462	39.462	mg/kg	0.00395 %		
		215-160-9	1308-38-9								
4	 chromium in chromium(VI) compounds { chromium(VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1.2 mg/kg	2.27	<2.724	mg/kg	<0.000272 %		<LOD
	024-017-00-8										
5	 copper { dicopper oxide; copper (I) oxide }				22 mg/kg	1.126	20.559	mg/kg	0.00206 %	✓	
	029-002-00-X	215-270-7	1317-39-1								
6	 lead { lead chromate }			1	59 mg/kg	1.56	76.384	mg/kg	0.0049 %	✓	
	082-004-00-2	231-846-0	7758-97-6								
7	 mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7								
8	 nickel { nickel chromate }				16 mg/kg	2.976	39.525	mg/kg	0.00395 %	✓	
	028-035-00-7	238-766-5	14721-18-7								
9	 selenium { nickel selenate }				<1 mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
	028-031-00-5	239-125-2	15060-62-5								
10	 zinc { zinc chromate }				85 mg/kg	2.774	195.716	mg/kg	0.0196 %	✓	
	024-007-00-3	236-878-9	13530-65-9								
11	 pH				7 pH		7	pH	7pH		
Total:									0.0367 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated 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: BH13--14092022-0.30

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

Sample details

Sample name:	LoW Code:
BH13--14092022-0.30	Chapter:
Moisture content:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
15%	Entry:
(wet weight correction)	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 15% Wet Weight Moisture Correction applied (MC)

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number								
1		arsenic { arsenic trioxide }				16 mg/kg	1.32	17.956 mg/kg	0.0018 %		✓	
		033-003-00-0	215-481-4	1327-53-3								
2		cadmium { cadmium oxide }				<0.2 mg/kg	1.142	<0.228 mg/kg	<0.0000228 %			<LOD
		048-002-00-0	215-146-2	1306-19-0								
3		chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				27 mg/kg	1.462	39.462 mg/kg	0.00395 %			
			215-160-9	1308-38-9								
4		chromium in chromium(VI) compounds { chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1.2 mg/kg	2.27	<2.724 mg/kg	<0.000272 %			<LOD
		024-017-00-8										
5		copper { dicopper oxide; copper (I) oxide }				19 mg/kg	1.126	18.183 mg/kg	0.00182 %		✓	
		029-002-00-X	215-270-7	1317-39-1								
6		lead { lead chromate }			1	47 mg/kg	1.56	62.315 mg/kg	0.004 %		✓	
		082-004-00-2	231-846-0	7758-97-6								
7		mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %			<LOD
		080-010-00-X	231-299-8	7487-94-7								
8		nickel { nickel chromate }				16 mg/kg	2.976	40.477 mg/kg	0.00405 %		✓	
		028-035-00-7	238-766-5	14721-18-7								
9		selenium { nickel selenate }				<1 mg/kg	2.554	<2.554 mg/kg	<0.000255 %			<LOD
		028-031-00-5	239-125-2	15060-62-5								
10		zinc { zinc chromate }				73 mg/kg	2.774	172.136 mg/kg	0.0172 %		✓	
		024-007-00-3	236-878-9	13530-65-9								
11		pH				7.1 pH		7.1 pH	7.1 pH			
				PH								
12		naphthalene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
		601-052-00-2	202-049-5	91-20-3								
13		acenaphthylene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
			205-917-1	208-96-8								
14		acenaphthene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
			201-469-6	83-32-9								
15		fluorene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
			201-695-5	86-73-7								
16		phenanthrene				<0.05 mg/kg		<0.05 mg/kg	<0.000005 %			<LOD
			201-581-5	85-01-8								

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
17	anthracene	204-371-1	120-12-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
18	fluoranthene	205-912-4	206-44-0		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
19	pyrene	204-927-3	129-00-0		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
20	benzo[a]anthracene	601-033-00-9	200-280-6		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
21	chrysene	601-048-00-0	205-923-4		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
22	benzo[b]fluoranthene	601-034-00-4	205-911-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
23	benzo[k]fluoranthene	601-036-00-5	205-916-6		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
24	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
25	indeno[123-cd]pyrene	205-893-2	193-39-5		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
26	dibenz[a,h]anthracene	601-041-00-2	200-181-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
27	benzo[ghi]perylene	205-883-8	191-24-2		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
Total:								0.0335 %		

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: BH14--14092022-0.10



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

Sample details

Sample name:	LoW Code:
BH14--14092022-0.10	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Moisture content:	Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)
15% (wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 15% Wet Weight Moisture Correction applied (MC)

#	Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number									
1	pH		PH		7.2	pH		7.2	pH	7.2 pH		
2	naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-052-00-2	202-049-5	91-20-3									
3	acenaphthylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-917-1	208-96-8									
4	acenaphthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-469-6	83-32-9									
5	fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-695-5	86-73-7									
6	phenanthrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		201-581-5	85-01-8									
7	anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		204-371-1	120-12-7									
8	fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-912-4	206-44-0									
9	pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		204-927-3	129-00-0									
10	benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-033-00-9	200-280-6	56-55-3									
11	chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-048-00-0	205-923-4	218-01-9									
12	benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-034-00-4	205-911-9	205-99-2									
13	benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-036-00-5	205-916-6	207-08-9									
14	benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-032-00-3	200-028-5	50-32-8									
15	indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-893-2	193-39-5									
16	dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
	601-041-00-2	200-181-8	53-70-3									
17	benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		205-883-8	191-24-2									
Total:										0.00008 %		

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)
<LOD	Below limit of detection
ND	Not detected

Classification of sample: BH14--14092022-0.40

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

Sample details

Sample name:	LoW Code:
BH14--14092022-0.40	Chapter:
Moisture content:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
14%	Entry:
(wet weight correction)	17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

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

#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number								
1	 arsenic { arsenic trioxide }				17 mg/kg	1.32	19.303	mg/kg	0.00193 %	✓	
	033-003-00-0	215-481-4	1327-53-3								
2	 cadmium { cadmium oxide }				<0.2 mg/kg	1.142	<0.228	mg/kg	<0.0000228 %		<LOD
	048-002-00-0	215-146-2	1306-19-0								
3	 chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				31 mg/kg	1.462	45.308	mg/kg	0.00453 %		
		215-160-9	1308-38-9								
4	 chromium in chromium(VI) compounds { chromium(VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex }				<1.2 mg/kg	2.27	<2.724	mg/kg	<0.000272 %		<LOD
	024-017-00-8										
5	 copper { dicopper oxide; copper (I) oxide }				13 mg/kg	1.126	12.587	mg/kg	0.00126 %	✓	
	029-002-00-X	215-270-7	1317-39-1								
6	 lead { lead chromate }			1	26 mg/kg	1.56	34.877	mg/kg	0.00224 %	✓	
	082-004-00-2	231-846-0	7758-97-6								
7	 mercury { mercury dichloride }				<0.3 mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
	080-010-00-X	231-299-8	7487-94-7								
8	 nickel { nickel chromate }				18 mg/kg	2.976	46.073	mg/kg	0.00461 %	✓	
	028-035-00-7	238-766-5	14721-18-7								
9	 selenium { nickel selenate }				<1 mg/kg	2.554	<2.554	mg/kg	<0.000255 %		<LOD
	028-031-00-5	239-125-2	15060-62-5								
10	 zinc { zinc chromate }				53 mg/kg	2.774	126.446	mg/kg	0.0126 %	✓	
	024-007-00-3	236-878-9	13530-65-9								
11	 pH				7.6 pH		7.6	pH	7.6 pH		
			PH								
Total:									0.0278 %		

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

■ **pH** (CAS Number: PH)

Description/Comments: Appendix C4

Data source: WM3 1st Edition 2015

Data source date: 25 May 2015

Hazard Statements: None.

■ **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

■ **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) compounds, with the exception of barium chromate and of compounds specified elsewhere in this Annex}

Worst case species based on hazard statements/molecular weight (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) Worst case copper sulphate is very soluble and likely to have been leached away if ever present and/or not enough soluble sulphate detected. (edit as required)

lead {lead chromate}

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

mercury {mercury dichloride}

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

nickel {nickel chromate}

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

selenium {nickel selenate}

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

zinc {zinc chromate}

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

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.2.GB - Oct 2021
HazWasteOnline Classification Engine Version: 2022.325.5408.10064 (21 Nov 2022)
HazWasteOnline Database: 2022.325.5408.10064 (21 Nov 2022)

This classification utilises the following guidance and legislation:

WM3 v1.2.GB - Waste Classification - 1st Edition v1.2.GB - Oct 2021

CLP Regulation - Regulation 1272/2008/EC of 16 December 2008

1st ATP - Regulation 790/2009/EC of 10 August 2009

2nd ATP - Regulation 286/2011/EC of 10 March 2011

3rd ATP - Regulation 618/2012/EU of 10 July 2012

4th ATP - Regulation 487/2013/EU of 8 May 2013

Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013

5th ATP - Regulation 944/2013/EU of 2 October 2013

6th ATP - Regulation 605/2014/EU of 5 June 2014

WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014

Revised List of Waste 2014 - Decision 2014/955/EU of 18 December 2014

7th ATP - Regulation 2015/1221/EU of 24 July 2015

8th ATP - Regulation (EU) 2016/918 of 19 May 2016

9th ATP - Regulation (EU) 2016/1179 of 19 July 2016

10th ATP - Regulation (EU) 2017/776 of 4 May 2017

HP14 amendment - Regulation (EU) 2017/997 of 8 June 2017

13th ATP - Regulation (EU) 2018/1480 of 4 October 2018

14th ATP - Regulation (EU) 2020/217 of 4 October 2019

15th ATP - Regulation (EU) 2020/1182 of 19 May 2020

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

Regulations 2020 - UK: 2020 No. 1567 of 16th December 2020

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

2020 No. 1540 of 16th December 2020

GB MCL List - version 1.1 of 09 June 2021



APPENDIX 5

GAS/WATER MONITORING RESULTS

Monitoring undertaken 27 July 2022

Atmospheric Pressure (mb) and Trend	Temperature (°C) and Weather	BH No	Time (secs/ mins)	Concentrations (%)			Flow rates time (secs/mins)	Flow rates (l/hr)	Standing water level (m, bgl)	Depth and horizon of response zone (m,bgl)
				CH ₄	CO ₂	O ₂				
25-07-22 1008 26-07-22 1007 27-07-22 1011	22° C Sunny	BH1	15s	0.0	1.8	19.6	15s	0.0	2.86	1.0 – 3.0
			30s	0.0	1.9	20.1	30s	0.0		
			45s	0.0	1.9	20.1	45s	0.0		
			1m	0.0	1.9	20.1	1m	0.0		
			2m	0.0	1.9	20.1	2m	0.0		
			3m	0.0	1.9	20.1	3m	0.0		
			4m	0.0	1.9	20.1	4m	0.0		
			5m	0.0	1.9	20.1	5m	0.0		
			Max Peak Steady Values	0.0	1.9		Max Peak Steady Values	0.0		
25-07-22 1007 26-07-22 1008 27-07-22 1011	22° C Sunny	BH5	15s	0.0	1.6	20.1	15s	0.0	2.92	1.0 – 3.0
			30s	0.0	1.8	20.1	30s	0.0		
			45s	0.0	1.9	20.0	45s	0.0		
			1m	0.0	1.9	20.0	1m	0.0		
			2m	0.0	1.9	20.0	2m	0.0		
			3m	0.0	1.9	20.0	3m	0.0		
			4m	0.0	1.9	20.0	4m	0.0		
			5m	0.0	1.9	20.0	5m	0.0		
			6m	0.0	1.9	20.0	6m	0.0		
			7m	0.0	1.9	20.0	7m	0.0		
			8m	0.0	1.9	20.0	8m	0.0		
			9m	0.0	1.9	20.0	9m	0.0		
			10m	0.0	1.9	20.0	10m	0.0		
			Max Peak Steady Values	0.0	1.9		Max Peak Steady Values	0.0		
25-07-22 1008 26-07-22 1007 27-07-22 1011	22° C Sunny	BH8	15s	0.0	1.9	19.7	15s	0.0	2.82	1.0 – 3.0
			30s	0.0	1.9	19.8	30s	0.0		
			45s	0.0	1.9	19.9	45s	0.0		
			1m	0.0	1.9	19.8	1m	0.0		
			2m	0.0	1.9	19.8	2m	0.0		
			3m	0.0	1.9	19.8	3m	0.0		
			4m	0.0	1.9	19.8	4m	0.0		
			5m	0.0	1.9	19.8	5m	0.0		
			Max Peak Steady Values	0.0	1.9		Max Peak Steady Values	0.0		
25-07-22 1008 26-07-22 1007 27-07-22 1011	22° C Sunny	BH10	15s	0.0	1.2	20.1	15s	0.0	2.88	1.0 – 3.0
			30s	0.0	1.4	20.0	30s	0.0		
			45s	0.0	1.5	19.8	45s	0.0		
			1m	0.0	1.5	19.8	1m	0.0		
			2m	0.0	1.5	19.8	2m	0.0		
			3m	0.0	1.5	19.8	3m	0.0		
			4m	0.0	1.5	19.8	4m	0.0		
			Max Peak Steady Values	0.0	1.5		Max Peak Steady Values	0.0		

Monitoring undertaken 8 September 2022

Atmospheric Pressure (mb) and Trend	Temperature (°C) and Weather	BH No	Time (secs/ mins)	Concentrations (%)			Flow rates time (secs/mins)	Flow rates (l/hr)	Standing water level (m, bgl)	Depth and horizon of response zone (m,bgl)
				CH ₄	CO ₂	O ₂				
06-09-22 1009 07-09-22 1006 08-09-22 993	17° C Cloudy with sunny patches and localised rain showers	BH1	1m	0.0	0.3	21.5	1m	0.0	2.54	1.0 – 3.0
			2m	0.0	0.4	21.5	2m	0.0		
			3m	0.0	0.4	21.4	3m	0.0		
			4m	0.0	0.4	21.4	4m	0.0		
			5m	0.0	0.4	21.4	5m	0.0		
			Max Peak	0.0	0.4		Max Peak	0.0		
			Steady Values				Steady Values			
06-09-22 1009 07-09-22 1006 08-09-22 993	17° C Cloudy with sunny patches and localised rain showers	BH5	1m	0.0	0.3	21.4	1m	0.0	2.74	1.0 – 3.0
			2m	0.0	0.3	21.4	2m	0.0		
			3m	0.0	0.4	21.3	3m	0.0		
			4m	0.0	0.5	21.2	4m	0.0		
			5m	0.0	0.5	21.2	5m	0.0		
			6m	0.0	0.6	21.2				
			7m	0.0	0.5	21.1				
			8m	0.0	0.5	21.1				
			9m	0.0	0.5	21.1				
			10m	0.0	0.5	21.1				
			Max Peak	0.0	0.6		Max Peak	0.0		
			Steady Values		0.5		Steady Values			
06-09-22 1009 07-09-22 1006 08-09-22 993	17° C Cloudy with sunny patches and localised rain showers	BH8	1m	0.0	1.1	20.6	1m	0.0	1.82	1.0 – 3.0
			2m	0.0	1.1	20.5	2m	0.0		
			3m	0.0	1.1	20.5	3m	0.0		
			4m	0.0	1.2	20.5	4m	0.0		
			5m	0.0	1.1	20.6	5m	0.0		
			6m	0.0	1.0	20.7	6m	0.0		
			7m	0.0	0.8	20.8	7m	0.0		
			8m	0.0	0.7	20.8	8m	0.0		
			9m	0.0	0.6	20.9	9m	0.0		
			10m	0.0	0.6	20.9	10m	0.0		
			Max Peak	0.0	1.2		Max Peak	0.0		
			Steady Values				Steady Values			
06-09-22 1009 07-09-22 1006 08-09-22 993	17° C Cloudy with sunny patches and localised rain showers	BH10	1m	0.0	0.5	21.1	1m	0.0	2.83	1.0 – 3.0
			2m	0.0	0.6	21.1	2m	-0.1		
			3m	0.0	0.6	21.1	3m	-0.1		
			4m	0.0	0.7	21.0	4m	0.0		
			5m	0.0	0.7	21.0	5m	-0.1		
			6m	0.0	0.6	21.1				
			7m	0.0	0.6	21.2				
			8m	0.0	0.5	21.3				
			9m	0.0	0.4	21.3				
			10m	0.0	0.4	21.3				
			Max Peak	0.0	0.7		Max Peak	0.0		
			Steady Values		0.4		Steady Values			

Monitoring undertaken 30 September 2022

Atmospheric Pressure (mb) and Trend	Temperature (°C) and Weather	BH No	Time (secs/ mins)	Concentrations (%)			Flow rates time (secs/mins)	Flow rates (l/hr)	Standing water level (m, bgl)	Depth and horizon of response zone (m,bgl)
				CH ₄	CO ₂	O ₂				
06-09-22 1009 07-09-22 1006 08-09-22 993	13° C Cloudy and a bit breezy	BH1	1m	0.1	0.4	21.5	1m	0.0	2.31	1.0 – 3.0
			2m	0.1	0.4	21.5	2m	0.0		
			3m	0.1	0.4	21.5	3m	0.0		
			4m	0.1	0.4	21.5	4m	0.0		
			5m	0.1	0.4	21.5	5m	0.0		
			Max Peak	0.1	0.4	21.5	Max Peak	0.0		
			Steady Values				Steady Values			
28-09-22 1009 29-09-22 1006 30-09-22 997	13° C Cloudy and a bit breezy	BH5	1m	0.1	0.4	21.4	1m	0.0	2.61	1.0 – 3.0
			2m	0.1	0.4	21.4	2m	0.0		
			3m	0.1	0.4	21.4	3m	0.0		
			4m	0.1	0.5	21.4	4m	0.0		
			5m	0.1	0.5	21.4	5m	0.0		
			6m	0.1	0.4	21.5				
			7m	0.1	0.4	21.5				
			8m	0.1	0.4	21.5				
			Max Peak	0.1	0.5		Max Peak	0.0		
			Steady Values		0.4		Steady Values			
28-09-22 1009 29-09-22 1006 30-09-22 997	13° C Light rain and breeze	BH8	1m	0.1	1.1	21.2	1m	0.0	1.93	1.0 – 3.0
			2m	0.1	1.1	21.2	2m	0.0		
			3m	0.1	1.1	21.2	3m	0.0		
			4m	0.1	1.0	21.2	4m	0.0		
			5m	0.1	1.0	21.3	5m	0.0		
			6m	0.1	0.9	21.3				
			Max Peak	0.1	1.1		Max Peak	0.0		
			Steady Values				Steady Values			
28-09-22 1009 29-09-22 1006 30-09-22 997	13° C Light rain and breeze	BH10	1m	0.1	0.5	21.6	1m	0.0	2.73	1.0 – 3.0
			2m	0.1	0.6	21.6	2m	0.0		
			3m	0.1	0.6	21.6	3m	0.1		
			4m	0.1	0.6	21.6	4m	0.0		
			5m	0.1	0.6	21.6	5m	0.0		
			Max Peak	0.1	0.6		Max Peak	0.1		
			Steady Values				Steady Values	0.0		
28-09-22 1009 29-09-22 1006 30-09-22 997	13° C Light rain and breeze	BH14	1m	0.1	0.5	21.9	1m	0.1	2.91	1.0 – 3.0
			2m	0.1	0.6	21.9	2m	0.1		
			3m	0.1	0.6	21.9	3m	0.1		
			4m	0.1	0.6	21.9	4m	0.1		
			5m	0.1	0.6	21.9	5m	0.1		
			Max Peak	0.1	0.6		Max Peak	0.1		
			Steady Values				Steady Values			

Monitoring undertaken 13 October 2022

Atmospheric Pressure (mb) and Trend	Temperature (°C) and Weather	BH No	Time (secs/ mins)	Concentrations (%)			Flow rates time (secs/mins)	Flow rates (l/hr)	Standing water level (m, bgl)	Depth and horizon of response zone (m,bgl)
				CH ₄	CO ₂	O ₂				
11-10-22 1025 12-10-22 1020 13-10-22 1007	10° C Cloudy	BH14	1m	0.0	0.4	20.8	1m	0.0	2.69	1.0 – 3.0
			2m	0.0	0.4	20.8	2m	-0.1		
			3m	0.0	0.5	20.8	3m	0.0		
			4m	0.0	0.5	20.8	4m	0.0		
			5m	0.0	0.5	20.7	5m	-0.1		
			6m	0.0	0.4	20.7	6m			
			7m	0.0	0.4	20.8	7m			
			8m	0.0	0.3	20.8	8m			
			9m	0.0	0.3	20.8	9m			
			10m	0.0	0.3	20.8	10m			
			Max Peak	0.0	0.5		Max Peak	0.0		
			Steady Values	0.0	0.3		Steady Values			

Monitoring undertaken 28 October 2022

Atmospheric Pressure (mb) and Trend	Temperature (°C) and Weather	BH No	Time (secs/ mins)	Concentrations (%)			Flow rates time (secs/mins)	Flow rates (l/hr)	Standing water level (m, bgl)	Depth and horizon of response zone (m,bgl)
				CH ₄	CO ₂	O ₂				
26-10-22 991 27-10-22 1000 28-10-22 1009	16° C Clear	BH14	15s	0.0	0.1	20.9	15s	0.0	0.72	1.0 – 3.0
			30s	0.0	0.1	20.8	30s	0.0		
			45s	0.0	0.1	20.8	45s	0.1		
			1m	0.0	0.1	20.8	1m	0.0		
			2m	0.0	0.1	20.9	2m	0.0		
			3m	0.0	0.1	20.9	3m	0.0		
			4m	0.0	0.1	20.9	4m	0.0		
			5m	0.0	0.1	20.9	5m	0.0		
			Max Peak	0.0	0.1		Max Peak	0.1		
			Steady Values	0.0	0.1		Steady Values			

CONDITIONS OF CONTRACT - CONSULTANCY SERVICES

- 1 Wilson Associates (Consulting) Limited ("the Consultant") shall carry out the Services, including any proposal, report or other document, as detailed in any relevant correspondence, which forms part of this Agreement, for the Client with reasonable skill, care and diligence. The Consultant shall use reasonable endeavours to adhere to any agreed programme. Each instruction or acceptance of a quotation shall be deemed to be an offer to purchase the services subject to the conditions laid out in this document.
- 2 An interim invoice will normally be submitted upon completion of the site works, to include all disbursements and fees to date, and for contracts extending over a long period, monthly invoices will be submitted for payment. The final report will not be issued until payment of the first interim invoice has been received, unless agreed with this Practice beforehand. Invoices are not to be assigned to a third party without prior agreement. Should the contract be cancelled after either preparatory or fieldwork has commenced then a claim will be made for work completed to that date.
- 3 The rates quoted, are net of Value Added Tax (VAT) which will be added to invoices at the standard prevailing rate, and are valid for a period of 12 weeks from the date of the quote. The Consultant shall issue accounts monthly in respect of that part of the Services carried out in the preceding period. The Client shall make payment of accounts without discount or retention within 30 days of submission. Disputes should be raised within 10 days. In the event of non-payment of the account(s) within the specified period the Consultant reserves the right to charge, from time to time, interest on the unpaid amount at the rate of 2% per calendar month above the Bank of England base rate (at time of original invoice date).
- 4 In the event of non-payment of the account(s), the Client undertakes to pay to the Consultant all costs and expenses, on an indemnity basis, incurred by the Consultant in: (i) the recovery from the Client of money or arrears (ii) the enforcement of any of the provisions of these conditions of contract (iii) the service of any notice relating to the breach by the Client of any of their obligations under this contract whether or not the same shall result in court proceedings (iv) the cost of any bank or other charges incurred by the Consultant if any cheque written by the Client is dishonoured or if any standing order payment is withdrawn by the Client's bankers (v) compensation for the breach of any terms of this agreement.
- 5 Unless expressly stipulated to the contrary, payment of the account(s) is not dependent upon the Client achieving regulatory approval for or discharge of a planning condition relating to the project, nor is it dependent upon the Client's securing of funding for the development where this may be conditional upon the prior granting of planning or building regulations approval, nor the Client's onward sale of the site to another party. In the case of provision of services to another consultant, payment of our account is not dependent upon the prior settlement of their own account by their Client.
- 6 No work will commence until an official written order or completed Quote Acceptance form has been received by post or email. Such order will be deemed to constitute acceptance of the quotation and these terms and conditions. Where the instruction to undertake the Services may have been issued by an intermediary on behalf of the Client, full Client details including confirmation of and contact details for the person responsible for authorising payment must be provided to the Consultant. In the event that the Client defaults or otherwise fails to pay the due account, the Consultant reserves the right to pursue and recover any unpaid amount from the instructing intermediary.
- 7 Neither party shall assign any obligation or benefit under this Agreement without prior written consent of the other Party. The Client shall not be entitled to assign the report(s) or any part of it without our prior written consent. Re-assignment of reports can be provided on request, subject to liaison with our Insurers and standard administration costs. Any assignment shall exclude the Contracts (Rights of Third Parties) Act 1999. Provision of a Collateral Warranty can only be considered if it is agreed at the pre-works stage, and fees for legal advice and warranty provision agreed before the works commence.
- 8 The Client guarantees that it has the right to have the Services performed and that he has obtained all the necessary certificates, licences, permits and consents required by Statute or any order or regulation made there under or by any regulation or by-law of any authority undertaker. The Client shall indemnify and hold harmless the Consultant from and against all consequences of a failure in this respect. The Client shall arrange such rights of access to property and use of Client's facilities as described in (or reasonably to be inferred from) this Agreement. The Client shall use reasonable endeavours to supply to the Consultant, promptly and free of charge: (a) any other necessary things in accordance with this Agreement; (b) any instructions, decisions, consents and approvals; and (c) any relevant data and information in the Client's possession; all of which the Consultant may reasonably require in order to carry out the Services. The Client will indemnify the Consultant in respect of any failure by the Client under this Clause.
- 9 In line with the Construction (Design & Management) Regulations 2015 and AGS guidance, neither the Consultant nor any sub-contractor shall be held responsible for any accidental damage or the consequences of any damage to buried services such as cables, pipes, sewers, etc., the positions and nature of which have not been clearly indicated to the Consultant in writing prior to the commencement of the work, unless the locating of same is expressly part of the Services. Where necessary it is assumed that the Client will permit the use of their toilet/welfare facilities by Consultant's staff and sub-contractors, including domestic properties. We will normally undertake the role of Contractor on a ground investigation project, but may occasionally 'inherit' the role of Principal Contractor. In either case that role is restricted to the ground investigation phase ONLY and not the subsequent build.
- 10 The Consultant shall not be held responsible for any loss, damage or injury arising from actions or omissions of the Client, his agents, servants and/or independent contractors. The Client shall indemnify the Consultant from any such acts or omissions.
- 11 Each Party shall retain the copyright of its documents. Information relating to the contract will only be disclosed to those employees who require it to carry out their job. If necessary this may include subcontractors. Any other third party enquiry about the purposes of these works will be referred back to the Client. Upon completion any technical information or ground investigation data obtained as part of your commission will thereafter be archived as 'in-house' data, and may be used (without specific reference to your site) on other projects in the future; this specifically excludes any personal data.
- 12 Copyright And Non-Disclosure Notice - The contents and layout of any report produced by the Consultant are subject to copyright owned by Wilson Associates save to the extent that copyright has been legally assigned by us to another party or is used by Wilson Associates under licence. To the extent that we own the copyright of a particular report, it may not be copied or used without our prior written agreement for any purpose other than the purpose indicated in that report. The methodology (if any) contained in that report is provided to you in confidence and must not be disclosed or copied to third parties without the prior written agreement of Wilson Associates. Disclosure of such a information may constitute an actionable breach of confidence or may otherwise prejudice our commercial interests. Any third party who obtains access to that report by any means will, in any event, be subject to the Third Party Disclaimer set out below.
- 13 Third Party Disclaimer - Any disclosure of our report(s) to a third party is subject to this disclaimer. Reports are prepared by Wilson Associates at the instruction of, and for use by, our client named on the front of that report. It does not in any way constitute advice to any third party who is able to access it by any means. Wilson Associates excludes to the fullest extent lawfully permitted all liability whatsoever for any loss or damage howsoever arising from reliance on the contents of that report. We do not however exclude our liability (if any) for personal injury or death resulting from our negligence, for fraud or any other matter in relation to which we cannot legally exclude liability. Legal re-assignment to another party can be arranged - see Clause 7.
- 14 The Consultant's liability under this Agreement shall be limited to £500,000 (five hundred thousand pounds). The Consultant shall maintain professional indemnity insurance in this amount providing that such insurance cover is available at commercially reasonable rates.
- 15 To comply with the General Data Protection Regulation (GDPR) 2018, we will only request contact details sufficient to complete our project with you, name/job title, address/postcode/email. Any data collected will be used only by authorised personnel in the context of that project. We are committed to ensuring that your information is secure and in order to prevent unauthorised access or disclosure, we have put in place suitable physical, electronic and managerial procedures to safeguard and secure the information we collect. We will not share your information with third parties.