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PHASE 2: GROUND INVESTIGATION REPORT

PROPOSED CARE HOME

HAMELDON HOUSE

198 ROSSENDALE ROAD

BURNLEY

BD11 5DE

Project No: 23-320

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Date:

16/02/2024

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Date:

16/02/2024

The information and / or advice contained in this Phase 2: Ground Investigation Report is based solely on, and is limited to, the boundaries of the site, the immediate area around the site, and the historical use(s) unless otherwise stated. This 'Report' has been prepared to collate information relating to the physical, environmental and industrial setting of the site, and to highlight, where possible, the likely problems that might be encountered when considering the future development of this site for the proposed end use. All comments, opinions, diagrams, cross sections and / or sketches contained within the report, and / or any configuration of the findings is conjectural and given for guidance only and confirmation of the anticipated ground conditions should be considered before development proceeds. Agreement for the use or copying of this report by any Third Party must be obtained in writing from Arc Environmental Limited (ARC). If a change in the proposed land use is envisaged, then a reassessment of the site should be carried out.

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1.0 Introduction

February 2024

As requested by Dudleys Consulting Engineers Limited and following the results of the Phase 1: Desk Top Study and Coal Mining Risk Assessment Report (Arc Environmental Limited, Ref. 23-320, January 2024), Phase 2: Ground Investigation works have been carried out at Hameldon House, 198 Rossendale Road, Burnley, where it is proposed to demolish the existing care home, complete a reduced dig to divert the culvert, re-engineer the ground up to formation level and construct a new care home on engineered fill, including soft landscaping, allotments, and a car park.

The intrusive investigation works undertaken comprised 6 no. windowless sampling boreholes (WS01 to WS08) with 3 no. groundwater monitoring installations (WS02, WS04, & WS06).

The positions of the investigation locations can be seen on the Exploratory Hole Location Plan, a copy of which is attached in Appendix II. It should be noted that this plan is for orientating purposes only, as the positions shown are approximate and the plan is not to a standard scale.

2.0 Site Details

Table 2.1

N = north, E = east, S = south & W = west.

Site Name & Address:	Hameldon House, 198 Rossendale Road, Burnley, BB11 5DE
National Grid Reference:	382040 431700 (Representative of the central part of the site).
Description of Location:	The site is located c.1.8km west of Burnley Town Centre on Rossendale Road. The site is accessed off Rossendale Road (on foot) and Harold Avenue (vehicular). It comprises a derelict care home with trees and surrounding hard and soft landscaping.

3.0 Scope of Works

Table 3.1

Client:	Voyage 1 Limited.
Consultants:	Dudleys Consulting Engineers Limited.
Project type:	New care home, including soft landscaping, allotments (vegetable patches), and a car park.
Site Location plan:	See Appendix I.
Layout plan (existing):	See Appendix I.
Layout plan (proposed):	See Appendix I.
Investigation Works:	6 no. windowless sampling boreholes & 3 no. groundwater monitoring installations.
Laboratory Testing:	Geotechnical and Ground Contamination.
CLEA End-Use Classification:	Level 1 GORA –Residential with homegrown produce (best fit).
Summary of Historical Site Information:	The earliest historic maps record a stream traversing the site along with a footpath (c.1848) the stream it then culverted between c.1912 to c.1931. Hameldon house is recorded from c.1970 and from then on here are no significant changes to the site up to present day.

4.0 Investigation Rationale

The information contained in this report is limited to the areas of the site, as indicated on the Existing and Proposed Site Layout Plans shown in Appendix I, and to those areas accessible during the ground investigation. The depths of strata on the record sheets are recorded in m below current ground levels. The site is relatively level at c.164.9m (AOD). When considering the full scope of the development any features and / or issues not specifically mentioned in this report cannot be assumed to have been covered.

This ground investigation has been designed to provide information on the general ground and groundwater conditions where access would allow, within the boundaries of the site. The rationale behind the location of each exploratory hole is summarised in Table 4.1 below.

4.0 Investigation Rationale (Cont'd)

Table 4.1

Potential issue	Exploratory hole
Determine the nature of the underlying ground conditions, including shallow groundwater.	All exploratory positions.
Determination of ground gas regime & shallow groundwater monitoring.	WS02, WS04 and WS06.
Determine the levels of contamination present within the initial deposits with a view to determining the risks posed towards the future site end-users and for possible off-site removal.	All exploratory positions.

4.1 Contamination Related Sampling & Site Protocols: -

All works associated with this ground contamination assessment and investigations have generally been completed in accordance with BS10175:2011+A2:2017: Investigation of potentially contaminated sites –Code of practice & Land Contamination Risk Management (LCRM: October 2020) with the following precautions specific to this project.

4.1.1 Ground Contamination Sampling: -

Samples were recovered by a representative of ARC Environmental Ltd. during the intrusive investigation works.

All samples were stored at approximately c.2-8°C using cool boxes and ice packs prior to delivery to a UKAS / MCERTS accredited laboratory. Sampling was carried out in accordance with 'Technical Policy Statement 63: UKAS Policy on Deviating Samples'.

4.1.2 Onsite Health & Safety Requirements: -

All site representatives wore relevant and appropriate PPE including (where appropriate) safety footwear, high visibility jacket / vest, hard hat, eye protection and overalls.

In addition, disposable latex gloves were used when handling any potentially contaminated materials and when rinsing all sampling tools. Each site vehicle contained a suitable First Aid kit with hand wash station / cleansing products (i.e., sanitary wipes).

4.1.3 Avoiding Cross-Contamination between Sample Locations: -

To avoid cross-contamination of materials between soil horizons, drill casing was used to seal off the made ground. In addition, disposable plastic liners were used to collect samples from the windowless sampling boreholes carried out. The samples were recovered manually using dedicated disposable plastic gloves, replaced between each sample recovery.

5.0 Ground Conditions

For an accurate description of the ground conditions encountered at each investigation position, reference should be made to the Borehole Record Sheets attached in Appendix II. It should be noted that there is always the possibility of variation in the ground conditions around and between the exploratory hole locations.

5.0 Ground Conditions (Cont'd)

5.1 Soil Profile: -

Made ground ranged in thickness from c.1.20m to c.5.50m and comprised very soft to soft clay, soft silty clay, stiff sandy gravelly clay and some sandy ash with coal and brick fragments.

The deeper made ground appeared to correspond with the position of the former water course & line of culvert and partial basement (plant room).

The underlying natural deposits comprised stiff sandy gravelly clay (Glacial Till).

5.2 Groundwater & Stability: -

Water ingress was noted in WS01 and WS04 at depths of c.4.20m and c.4.50m and are considered to represent trapped pockets of surface water infiltration. All the remaining windowless sampling boreholes remained dry.

Combined ground gas & groundwater monitoring wells were installed at the locations of WS02, WS04, and WS06 to carry out a subsequent programme of gas and groundwater monitoring. The results are discussed further in Section 6.3. When excavated the made ground materials will be unstable and will require adequate trench support.

5.3 Coal Mining Risk Assessment: -

Following the results of the Phase 1: Desk Top Study and Coal Mining Risk Assessment the shallowest recorded workings beneath the site are within the Arley coal seam at c.110m bgl, last worked in 1870, whilst the shallowest recorded named coal seam below the site is Yard Bottoms aka China Coal (c.0.20 - 0.70m thick) which sub-crops in the southern portion of the site dipping to the north orientated at 270 degrees.

The Crackers Coal (0.3m to 0.8m thick) is the next named seam in the geological sequence and recorded at c.25m below the China Coal and therefore is not considered to represent a risk to the site if worked. The CA report confirmed there are probable unrecorded shallow mine workings below the site.

Further assessment by means of intrusive investigation works (rotary boreholes using water flush) is planned post demolition of the site to check for potential shallow unrecorded coal workings in the China Coal seam.

6.0 Insitu Testing

6.1 Insitu Standard Penetration Tests: -

Standard penetration tests (SPT's) were carried out with the use of a normal split spoon sampler within the windowless sampling boreholes to determine the relative density / strength of the materials tested.

The results are shown as 'N' values on the borehole record sheets, adjacent to the appropriate sample level. A summary of the results of the tests undertaken can be seen in Table 6.1 on the following page.

Where the full penetration depth, including seating blows (450mm), could not be achieved, the bottom sampling depth is indicated as less than 0.45m from the top (start of test), with the actual depth of penetration and number of blows undertaken also being recorded.

6.0 Insitu Testing (Cont'd)

6.1 Insitu Standard Penetration Tests (Cont'd): -

Table 6.1

<u>Type of Strata</u>	<u>Range of SPT 'N' Values</u>	<u>Result details</u>
Made ground	1 to 20	Very soft, soft firm and stiff deposits. The sandy ash layer was very loose and medium dense.
Glacial Till	11 to 44 and 65 to 73 blows for limited penetration	Typically, stiff deposits.

6.2 Insitu Ground Gas & Water Monitoring: -

From the results of the Phase 1: Desk Top Study Report possible hazardous ground gases include made ground, historical infilled land, landscaped ground and mine gas.

A standard 50mm diameter HDPE standpipe, with gravel and geo-wrap surround, bentonite seal, gas valve cap and security cover, was installed within each borehole, and ground gas and water levels were allowed to reach equilibrium, prior to the first monitoring visit.

Monitoring was undertaken using a Gas Data GFM series soil gas analyser, with integral flow meter, and a Geotechnical Instruments electronic dip meter. The response zones were designed to target any ground gas from both on and off-site sources.

Based on the findings of the intrusive investigation works, in accordance with CIRIA Report C665, November 2007, Report Edition No. 04, March 2007 and BS8485:2015+A1:2019 –Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings, it is felt that an adequate risk assessment can be undertaken based on the limiting factors below.

- The development has been considered as moderate sensitivity (Tables 5.5a & 5.5b –Typical / Idealised frequency and period of monitoring, after Wilson et al, 2005).
- The risk associated with the generation potential of a source is considered as very low (assessment based on the findings of the Phase 1: Desk Top Study Report and intrusive investigation works).
- Monitoring over a minimum of three months with six recorded readings (Tables 5.5a & 5.5b –Typical / idealised frequency and period of monitoring after Wilson et al, 2005).
- Negligible flow rates are recorded during the monitoring period (Table 8.5 –Modified Wilson & Card classification).
- A targeted and phased programme of gas monitoring will be completed, which will obtain gas monitoring readings during varying atmospheric conditions, which covers the 'worst case' scenario for ground gas emissions to occur, particularly during rapid falls in atmospheric pressure (i.e., from c.1020mb and c.1010mb), and also during low atmospheric pressure events (i.e., c.1000mb and below).

Monitoring of the weather conditions and predicted atmospheric pressures (Met Office Surface Pressure Charts) are carried out up to 72 hours in advance of proposed monitoring visits, in order that a reasonable period of data is obtained to determine atmospheric trends, and to target the 'worst case' scenario.

The monitoring visits completed correlate with falling, steady and rising atmospheric pressure trends. A summary of the results for the visits undertaken to date, compared with the 'inert' background gas levels is presented in on a copy of the monitoring certificate is attached in Appendix III.

6.0 Insitu Testing (Cont'd)

6.2 Insitu Ground Gas & Water Monitoring (Cont'd): -

No levels of Methane (CH₄) have been recorded during the monitoring period to date. However, detectible concentrations of Carbon Dioxide (CO₂) have been recorded, up to a maximum recorded level of 3.5% v/v, with associated depleted oxygen (O₂) concentrations (minimum 8% v/v). Negligible flow rates of <0.1 l/hr have been recorded.

Based on the results of the monitoring to date, in accordance with CIRIA Report C665, a risk assessment has been completed for this site, by converting the results to a gas screening value (GSV), calculated by multiplying the typical maximum gas concentrations with the recorded maximum positive flow rates (after Wilson & Card).

As no levels of Methane have been recorded, the GSV for CO₂ only has been calculated, using the maximum recorded value of 3.5% v/v, with a maximum flow rate of <0.1l/hr. The GSV can be calculated as follows:

$$\text{Carbon Dioxide GSV} = 0.035 (3.5\%) \times 0.1 = 0.0035 \text{ l/hr}$$

When considering these results, in accordance with CIRIA C665, and considering the, the GSV value for CO₂ is below the assessment GSV of 0.07l/hr (Characteristic Situation 1 –CS1), resulting in no gas protection measures being required.

However, the depleted oxygen could potentially be attributable to stythe gas which is air containing depleted oxygen caused by oxidisation of coal and timber left behind in old coal mine workings.

Therefore, consideration should be given to the design and installation of Characteristic Situation 2 (CS2) gas protection measures. Following completion of the outstanding monitoring visits further comments and a final assessment will be provided.

The site does not require radon gas protection measures.

Water levels monitored to date have been recorded between depths of c.1.21m and c.4.77m likely to be associated with trapped / perched surface water rather than part of a shallow groundwater surface below the site.

It is considered prudent to allow for the introduction of temporary groundwater control techniques (i.e., pumping equipment), to take care of any localised ingresses of surface water or trapped / perched groundwater which may occur, during the construction period, especially if construction takes place during the wetter periods of the year.

7.0 Laboratory Testing

7.1 Determination of pH & SO₄: -

Representative samples of the made ground and a sample of the natural deposits recovered during the investigation, were tested to determine their acidic (pH) and soluble sulphate (SO₄) levels. The results are shown in Table 7.1 on the following page and are also contained within the Chemtech Analytical Report (Ref. 129346), a copy of which can be seen in Appendix IV.

7.0 Laboratory Testing (Cont'd)

7.1 Determination of pH & SO₄ (Cont'd): -

From these results the pH values for the samples of made ground materials and natural strata tested range from 6.9 to 10.3 and the amount of soluble sulphate present ranges from 13mg/l to 117mg/l. Therefore, in accordance with the BRE Special Digest 1:2005, the site should be given a classification of DS-1.

When considering the nature of the made ground materials tested and assuming mobile groundwater the assessment of the Chemical Environment for concrete is AC-1.

Table 7.1

Position	Depth (m)	Strata	pH	SO ₄ (mg/l)	Design SO ₄ Class	ACEC Class
WS01	0.60	MG	10.3	117	DS-1	AC-1
WS01	2.00	MG	7.9	26	DS-1	AC-1
WS01	3.50	MG	7.1	27	DS-1	AC-1
WS02	0.50	MG	7.3	17	DS-1	AC-1
WS02	1.00	MG	7.8	31	DS-1	AC-1
WS02	3.00	MG	6.9	40	DS-1	AC-1
WS02	5.00	MG	7.8	19	DS-1	AC-1
WS03	0.50	MG	7.8	22	DS-1	AC-1
WS03	1.00	MG	7.5	15	DS-1	AC-1
WS04	0.50	MG	7.5	21	DS-1	AC-1
WS04	2.00	MG	6.9	22	DS-1	AC-1
WS05	0.50	MG	7.0	19	DS-1	AC-1
WS05	1.50	MG	7.3	14	DS-1	AC-1
WS05	3.50	NS	8.2	35	DS-1	AC-1
WS06	0.50	MG	7.2	14	DS-1	AC-1
WS06	1.00	MG	7.1	13	DS-1	AC-1

ACEC = Aggressive Chemical Environment for Concrete site classification

7.2 Determination of Liquid & Plastic Limits: -

Representative samples of the natural clay deposits recorded across the proposed development areas were tested to determine their liquid and plastic limits, so these materials could be classified. The results can be seen in Table 7.2 below and within the PSL Analytical Report (Ref. 24/0099), a copy of which is contained in Appendix IV.

Table 7.2

M/C = Moisture Content, LL = Liquid Limit, PL = Plastic Limit, PI = Plasticity Index

Position	Depth(m)	M/C (%)	LL	PL	PI	Class	% Passing 425µm Sieve
WS01	5.50	18	38	18	20	CI	81
WS02	6.00	17	38	19	19	CI	82
WS03	2.00	20	44	22	22	CI	89
WS04	3.50	20	37	19	8	CI	88
WS05	3.00	14	41	20	21	CI	81
WS06	2.00	16	47	22	25	CI	86
WS06	5.00	15	36	17	19	CI	84

From these results the samples tested, when plotted on the plasticity chart, the samples fall within the intermediate plasticity ranges, and from the resulting plasticity indices, are of low and moderate volume change potential, when considering the amount passing the 425µm sieve.

Therefore, the natural clay deposits may undergo significant changes in volume, if large changes in their natural moisture content were to occur due to seasonal variations or the like.

7.0 Laboratory Testing (Cont'd)

7.2 Determination of Liquid & Plastic Limits (Cont'd): -

If new foundations were to be based within these materials, they would need to be taken down to a minimum depth of 0.90m below finished ground levels. An increase in founding depth may be required to reach competent strata and if the proposed development is within proximity to existing or envisaged vegetation. An increase in the minimum foundation depth may also be required, even if trees are to be removed, to avoid the effects of volume change. Reference should be made to BS5837: 2012, Trees in Relation to Design, Demolition and Construction.

7.3 Contamination Screening / Screening Strategy: -

Representative samples of the made ground materials recovered from across the site were passed onto Chemtech of Stanley, Co Durham, so that soil contamination screening could be carried out. The samples were screened using a standard generic contamination suite (based on the CLEA SGV listed analytes with additions), which is used to assess typical made ground (disturbed natural strata mixed with anthropogenic debris) of an unknown source.

Although no evidence of significant or gross contamination such as fuels oils or Asbestos Containing Materials (ACM's) to aid in an assessment for off-site disposal classification, representative samples were tested for Speciated PAH (Polycyclic Aromatic Hydrocarbons), Speciated TPH (Total Petroleum Hydrocarbons) & Asbestos.

The catalogue of testing results can be found in the Chemtech Analytical Report (Ref. 129346), attached in Appendix IV, and the total analysis carried out is summarised below:

- 8 no. soil samples screened for a generic (metals and non-organics) soil suite including Arsenic, Cadmium, Chromium (III & VI), Copper, Lead, Mercury, Nickel, Selenium, Zinc, Cyanide and Total Organic Carbon (TOC), Speciated Polycyclic Aromatic Hydrocarbons (PAH's), Speciated Total Petroleum Hydrocarbons (based on a full Aliphatic / Aromatic Split & BTEX) and the presence of asbestos.

8.0 Ground Contamination Risk Assessment

8.1 Methodology: -

Following completion of the contamination screening undertaken on various samples from this site, Level 1 quantitative ground contamination risk assessments have been undertaken, generally in accordance with BS10175: British Standard Code of Practice for the Investigation of Potentially Contaminated Sites (2011+A2:2017) & Land Contamination Risk Management (LCRM: October 2020).

This quantitative ground contamination risk assessment uses the current UK practice for assessing the risks from land contamination, which is based on the established *source-pathway-receptor* pollutant linkage methodology and 'suitable for use' approach (Part IIA, EPA 1990 - inserted through Section 57 EA 1995).

8.2 Level 1 Risk Assessment (Human Health): -

The soil screening results from across the site have been assessed by comparing the Maximum Concentration values (C_M) recorded for each analyte to the Critical Concentration (C_c) values chosen for this site. The results of the testing are contained in Appendix IV and are summarised in Table 8.1 on the following page.

8.0 Ground Contamination Risk Assessment (Cont'd)

8.2 Level 1 Risk Assessment (Human Health) (Cont'd): -

Table 8.1

Bold = Elevated concentrations

Analyte	Critical Conc. (C _c) mg/kg	No. of Samples Screened	Max. Conc. (C _M) recorded mg/kg	Does C _M exceed C _c	No. of Samples >C _c
Arsenic	37 ⁽¹⁾	8	41	YES	1 (WS02 1.00m)
Cadmium	11 ⁽¹⁾	8	<2	NO	0
Chromium III	910 ⁽¹⁾	8	27	NO	0
Chromium VI	6 ⁽¹⁾	8	<0.04	NO	0
Copper	2400 ⁽¹⁾	8	204	NO	0
Lead	200 ⁽²⁾	8	200	NO	0
Mercury	40 ⁽¹⁾	8	<2	NO	0
Nickel	130 ⁽¹⁾	8	32	NO	0
Selenium	250 ⁽¹⁾	8	<3	NO	0
Zinc	3700 ⁽¹⁾	8	340	NO	0
Cyanide	34 ⁽³⁾	8	<1	NO	0
Asbestos	Presence	8	NAD	~	~
Acenaphthene	1100 ⁽¹⁾	8	6.26	NO	0
Acenaphthylene	920 ⁽¹⁾	8	0.33	NO	0
Anthracene	11000 ⁽¹⁾	8	11.39	NO	0
Benzo(a)anthracene	13 ⁽¹⁾	8	25.32	YES	2 (WS03 0.50m WS05 0.50m)
Benzo(a)pyrene	3.0 ⁽¹⁾	8	31	YES	3 (WS01 0.60m WS03 0.50m WS04 0.50m)
Benzo(b)fluoranthene	3.7 ⁽¹⁾	8	34.95	YES	3 (WS01 0.60m WS03 0.50m WS04 0.50m)
Benzo(ghi)perylene	350 ⁽¹⁾	8	21.26	NO	0
Benzo(k)fluoranthene	100 ⁽¹⁾	8	16.86	NO	0
Chrysene	27 ⁽¹⁾	8	25.79	NO	0
Dibenz(ah)anthracene	0.3 ⁽¹⁾	8	3.99	YES	3 (WS01 0.60m WS03 0.50m WS04 0.50m)
Fluoranthene	890 ⁽¹⁾	8	47.54	NO	0
Fluorene	860 ⁽¹⁾	8	4.73	NO	0
Indeno(123cd)pyrene	41 ⁽¹⁾	8	24.37	NO	0
Naphthalene	13 ⁽¹⁾	8	1.67	NO	0
Phenanthrene	440 ⁽¹⁾	8	42.96	NO	0
Pyrene	2000 ⁽¹⁾	8	37.69	NO	0
Benzene	0.37 ⁽¹⁾	8	<1	NO	0
Toluene	660 ⁽¹⁾	8	<1	NO	0
Ethylbenzene	260 ⁽¹⁾	8	<1	NO	0
m & p-Xylene	310 ⁽¹⁾	8	<1	NO	0
o-Xylene	330 ⁽¹⁾	8	<1	NO	0
VPH Aliphatic (>C5-C6)	160 ⁽¹⁾	8	<0.05	NO	0
VPH Aliphatic (>C6-C8)	530 ⁽¹⁾	8	<0.05	NO	0
VPH Aliphatic (>C8-C10)	150 ⁽¹⁾	8	<0.05	NO	0
EPH Aliphatic (>C10-C12)	760 ⁽¹⁾	8	<0.5	NO	0
EPH Aliphatic (>C12-C16)	4300 ⁽¹⁾	8	3.45	NO	0
EPH Aliphatic (>C16-C35)	110000 ⁽¹⁾	8	179	NO	0
EPH Aliphatic (>C35-C44)	110000 ⁽¹⁾	8	18	NO	0
VPH Aromatic (>EC5-EC7)	1400 ⁽¹⁾	8	<0.05	NO	0
VPH Aromatic (>EC7-EC8)	3900 ⁽¹⁾	8	<0.05	NO	0
VPH Aromatic (>EC8-EC10)	270 ⁽¹⁾	8	<0.05	NO	0
EPH Aromatic (>EC10-EC12)	1200 ⁽¹⁾	8	47	NO	0
EPH Aromatic (>EC12-EC16)	2500 ⁽¹⁾	8	124	NO	0
EPH Aromatic (>EC16-EC21)	1900 ⁽¹⁾	8	379	NO	0
EPH Aromatic (>EC21-EC35)	1900 ⁽¹⁾	8	1527	NO	0
EPH Aromatic (>EC35-EC44)	1900 ⁽¹⁾	8	214	NO	0

⁽¹⁾ = LQM CIEH Suitable 4 Use Levels (S4UL Nov 2014 (Revised August 2015) –Residential with homegrown produce –6% SOM), ⁽²⁾ = C4SL Values (Residential with homegrown produce), ⁽³⁾ = ATRISK^{501L} SSV. * = Site Value (C_M) less than analytical detection limit, NAD = No asbestos detected

8.0 Ground Contamination Risk Assessment (Cont'd)

8.2 Level 1 Risk Assessment (Human Health) (Cont'd): -

The results of the analysis and risk assessment (Residential without home grown produce) have identified the following: -

- The Maximum Concentration (CM) values for Arsenic and several PAH's (Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, and Dibenz(ah)anthracene) exceed their Critical Concentration (CC) values for this site which represents a potential carcinogenic risk to Human Health where exposure pathways are available.
- None of the Maximum Concentration (C_M) values for any of the remaining analytes screened for exceed their chosen Critical Concentration (C_C) values for this site.
- No asbestos has been identified.
- Where made ground is to remain below any proposed soft landscaping and the proposed allotment area a clean cover system would be recommended to protect the end users against the elevated levels of Arsenic and PAH's.

8.3 Level 1 Controlled Waters Risk Assessment: -

The site is not recorded on or within c.1km of a Source Protection Zone (SPZ) and there are no water abstractions recorded within c.500m of the site boundary. The superficial deposits represent a Secondary Aquifer –Undifferentiated, whilst the underlying Lower Coal Measures are a Secondary Aquifer –A therefore the risk to Controlled Waters is considered very low. Although a culverted watercourse that traverses the site from southeast to northwest below the site this will remain watertight when diverted to prevent ingress of any potentially leachable contaminants. Low permeability superficial deposits will also prevent vertical and lateral migration of any potentially mobile (leachable) contaminants.

8.4 Revised Conceptual Site Model (CSM): -

Table 5.1

* = Not included in the Human Health & Controlled Waters Risk Assessment.

	<i>Sources (S)</i>		<i>Pathways (P)</i>		<i>Receptors (R)</i>
S1	Made ground associated with site development and culverted watercourse – An elevated levels of Arsenic and elevated levels of some PAH's have been recorded which represent a potential risk to the end users.	P1	Ingestion & Dermal Contact.	R1	Human health - future end users and construction workforce.
S2	Possible Hazardous ground gas associated with infilled land, historic landfills, made ground and mining activities (possible mine gas migration) – Depleted Oxygen has been recorded to date and gas protection measures are recommended at this stage.	P2	Plant uptake and attached soils.	R2	Controlled Waters: Groundwater within the underlying solid geology (Secondary Aquifer –A) and superficial deposits (Secondary Aquifer –Undifferentiated).
		P3	Air-inhalation of vapours and direct contact with dust.		
		P4	Migration through existing services / permeable strata.		
		P5	Direct contact with building Materials.	R3	Adjacent sites.
		P6	Surface runoff, infiltration & leachate migration.	R4*	Building materials.
				R5*	Flora and fauna.

8.0 Ground Contamination Risk Assessment (Cont'd)

8.4 Revised Conceptual Site Model (CSM) (Cont'd): -

A graphical representation of the revised Conceptual Site Model (CSM) can be seen in Appendix IV.

8.4.1 Sources: -

The site is covered by a layer of made ground which represents a potential source of ground contamination for this site. The made ground contains anthropogenic debris i.e., ash, coal and brick fragments and these materials have been assessed using a standard generic soil suite, with the insitu made ground within the site considered as a single averaging area for these analytes. There was no evidence of significant or gross contamination such as Asbestos Containing Materials (ACM's) or hydrocarbon odours noted within the exploratory positions.

8.4.2 Pathways: -

When considering the proposed end use, and without considering treatment, removal or protection measures, there are some potential plausible pathways available for direct contact, dermal contact, ingestion, inhalation, wind (dust / particulate), volatilization, and vertical and lateral transportation below the site, where there is no hardcover present.

Within the CLEA Risk Assessment Model for Human Health, there are 3 exposure mediums considered for on-site receptors, comprising ingestion of soil containing contaminants, inhalation of contaminated dust / vapours and dermal contact, with up to 10 no. exposure pathways considered, as shown below.

- 1. Ingestion of soil and indoor dust 2. Consumption of homegrown produce and attached soil 3. Dermal contact (indoor) 4. Dermal contact (outdoor) 5. Inhalation of dust (indoor) 6. Inhalation of dust (outdoor) 7. Inhalation of vapour (indoor) 8. Inhalation of vapour (outdoor) 9. Oral background intake 10. Inhalation background intake.

Where the future site has hard cover and below new structures, a number of these pathways may not be available. In addition, when considering the potential pathways for leachate migration, where either hard cover and / or future surface water drainage systems are present, the potential effects of surface infiltration or contaminated surface water runoff will be greatly reduced. Similarly, when considering the construction work force, exposure pathways through direct contact, ingestion and dust inhalation will be available during part of the construction process, and therefore adequate PPE should be provided to protect the work force during this period.

8.4.3 Receptors: -

Within the CLEA Risk Assessment Model for Human Health, the potential receptors are assessed initially on-site end use, followed by a delineation of age category (i.e., child or adult), with default settings for *Residential*, *A Ilotment* and *Public Open Space (Park)* end uses based on a child aged 0 to 6 years, *Public Open Space (Residential)* based on a child aged 3 to 9 and *Commercial* end uses based upon a working exposure period of up to 49 years (i.e., 16 to 65).

Key generic assumptions for *Residential* and *Public Open Space (Residential)* are based upon a typical residential property, consisting of a two-storey small, terraced house, with private garden, and a *Commercial* end use based upon a typical commercial or light industrial property, consisting of a three-storey office building (pre-1970). No buildings are anticipated for *A Ilotment* or *Public Open Space (Park)* end uses. Within the CLEA Risk Assessment Model for Human Health there are 6 no. generic end use categories presently in use, as follows:

8.0 Ground Contamination Risk Assessment (Cont'd)

8.4 Revised Conceptual Site Model (CSM) (Cont'd): -

8.4.3 Receptors (Cont'd): -

- 1) Residential - with home grown produce, 2) Residential - without home grown produce, 3) Allotments, 4) Commercial
5) Public Open Space – Residential, 6) Public Open Space - Park*

For this Level 1 Risk Assessment when considering the sensitivity of the site the most appropriate end use category for this site has been taken as:

- 1) Residential - with home grown produce (best fit)*

9.0 Conclusions & Recommendations

9.1 Ground Conditions: -

Made ground ranged in thickness from c.1.20m to c.5.50m and comprised very soft to soft clay, soft silty clay, stiff sandy gravelly clay with some sandy ash with coal and brick fragments. The deep made ground appeared to correspond with the position of the former water course & line of a culvert and partial basement (plant room). The underlying natural deposits comprised stiff sandy gravelly clay (Glacial Till).

9.2 Groundwater & Stability: -

Water ingress was noted in WS01 and WS04 at depths of c.4.20m and c.4.50m and are considered to represent trapped pockets of surface water infiltration. All the remaining windowless sampling boreholes remained dry. Combined ground gas & groundwater monitoring wells were installed at the locations of WS02, WS04, and WS06 to carry out a subsequent programme of gas and groundwater monitoring. Water levels monitored to date have been recorded between depths of c.1.21m and c.4.77m and are likely to be associated with trapped / perched surface water rather than part of a shallow groundwater surface below the site. Therefore, it is considered prudent to allow for the introduction of temporary groundwater control techniques (i.e., pumping equipment), to take care of any localised ingresses of surface water or trapped / perched groundwater which may occur, during the construction period, especially if construction takes place during the wetter periods of the year. Adequate trench support will be required for all excavations and existing adjacent properties and infrastructure (highways, public footpaths, services, etc.) will need to be protected (shored) as excavations in the made ground will be unstable if left at too steep a batter or left unsupported.

9.3 Coal Mining Risk Assessment: -

Further assessment by means of intrusive investigation works (rotary boreholes using water flush) is planned post demolition of Hameldon House to investigate potential shallow unrecorded coal workings in the China Coal seam.

9.4 Gas Protection Measures: -

When considering the gas monitoring results to date and the depleted oxygen this could potentially be attributable to stythe gas (air containing depleted oxygen caused by oxidisation of coal and timber left behind in old coal mine workings). Therefore, consideration should be given to the design and installation of Characteristic Situation 2 (CS2) gas protection measures. Following completion of the outstanding monitoring visits further comments and a final assessment will be provided. The site is not affected by radon gas.

9.0 Conclusions & Recommendations (Cont'd)

9.4 Gas Protection Measures (Cont'd): -

For operative entry into excavations the ground works contractor will have to consider the depleted oxygen levels recorded.

9.5 Foundation Options / Earthworks: -

Following the results of the outstanding rotary boreholes Arc will determine whether preparatory works / remedial works are required (drilling and grouting) to consolidate any shallow unrecorded coal workings prior to development.

It is proposed to demolish the existing care home and complete a full site reduced dig to expose and divert the culvert, re-engineer the ground below the proposed building footprint up to formation level and construct a new care home wholly in engineered fill utilising shallow foundations.

The nature of the made ground (very soft and soft clays) is such that it will require modification (drying out possibly including lime / cement stabilisation) to achieve a suitable moisture content and shear strength range where $\geq 95\%$ compaction and $\leq 5\%$ air voids can be achieved.

If a suitable strength or homogenous material cannot be achieved when the made ground is re-engineered, informed from results of validation testing (plate load tests, sand replacement, etc), alternative imported fill materials (ideally granular), a ground improvement scheme (stone columns or similar) or a piled foundation solution may need to be considered.

In the first instance a series of classification testing (plasticity to confirm PI is less than 40% and PSD) and earthworks relationship testing (5-point compaction, 5-point CBR, 5-point shear strength and 5-point MCV) is recommended on representative large bulk samples of the made ground (recovered during /post demolition) to assess the made ground for strength and workability parameters and to determine how these material would perform when modified and compacted, and provide earthworks design criteria. An appropriate detailed Earthworks Specification and Materials Management Plan will then need to be prepared. Any earthworks will need to take into account operative entry in to excavations and the risk of depleted oxygen following the results of the gas monitoring to date.

9.6 Ground Contamination Assessment: -

From the results of the contamination screening carried out, the made ground recorded elevated concentrations of Arsenic and PAH's. Consequently, the made ground is considered to pose a potential risk to Human Health where exposure pathways are available, i.e., where it remains below soft landscaping and remedial action is considered necessary.

A Remediation Strategy will need to be prepared, whilst considering of the Earthworks Specification Report and will likely involve importing a suitable thickness of clean cover soils in areas of proposed soft landscaping and proposed allotment gardens.

No further action is considered necessary in relation to Controlled Waters (Surface Water and Groundwater) as the proposed development will comprise significant hardcover i.e., buildings and hardstanding which will significantly reduce the effects of surface water infiltration thus negating the mobility of contaminants below the site. Over time the elevated concentrations of PAH's are anticipated to reduce by physical attenuation, whilst the lower less permeable clay layers will afford protection to the underlying solid geology.

9.0 Conclusions & Recommendations (Cont'd)

9.6 Ground Contamination Assessment (Cont'd): -

The contamination screening results can also be used by the Main Contractor / Project Coordinator, when devising an adequate Site Health & Safety Plan, in accordance with current CDM Regulations. For further guidance reference should be made to the Health and Safety Executive (HSE) document EH40 / 2005 Workplace exposure limits.

9.7 Waste Classification: -

The made ground materials encountered on this site which may have to be discarded as a waste to landfill, have been assessed using Technical Guidance WM3 'Guidance on the classification and Assessment of Waste', in conjunction with the on-line waste classification software tool HazWasteOnline™. Each sample has been assessed separately to determine whether all the made ground can be considered a single waste stream or whether different areas of the made ground represent separate waste streams.

Based on the physical (visual and olfactory) inspection of all the samples, the made ground has been initially assessed as either 17 05 03 (waste soil and stones containing hazardous substances) or 17 05 04 (waste soil and stones other than those mentioned in 17 05 03) from the List of Waste (LoW). To determine which waste code applies to each sample, the results of the laboratory testing have been assessed using the HazWasteOnline™ software, and the full Waste Classification Report can be found in Appendix IV.

The results of this assessment have identified that the made ground analysed can be classified as both Non-Hazardous (waste code 17 05 04) (6 no. samples) and Hazardous Waste (waste code 17 05 03) (2 no. samples WS01 & WS03).

Most Total Organic Carbon (TOC) results exceed 3% and therefore the Non-Hazardous soils cannot be disposed of at an Inert Landfill facility. WAC testing will be required prior to disposal of any Hazardous made ground if these materials cannot be accommodated on site.

If natural soils generated from the creation of foundation and service (i.e., drainage, etc.) excavations cannot be accommodated on site and require off-site disposal, then it is likely that these types of materials would meet the WAC Inert Waste Criteria for disposal at an Inert Landfill, however prior to the disposal of these materials confirmatory testing (WAC) may be required.

It should be noted that this Waste Classification Report is only applicable to those made ground materials (excluding any relic foundations, sub-surface structures, etc.) which have been sampled and screened as part of the assessment. If materials, other than those covered by this report, are to be discarded from site as a waste to landfill or there is a significant increase in the volume of materials to be discarded, then these additional materials will also need to be assessed using Technical Guidance WM3: Guidance on the Classification and Assessment of Waste.

9.8 General Comments: -

Where we have sampled and tested for asbestos this is discussed in the report. Whilst we would target any asbestos sampling and testing in accordance with a Conceptual Site Model and site findings, there is always the possibility, along with other contamination, that undiscovered asbestos exists between sample locations and the possibility of unknown asbestos exists on all sites, particularly brownfield sites where previous buildings have been demolished, there were previous features that were infilled (old hollows, pits, etc.) or where significant quantities of materials such as demolition and brick rubble exist.

9.0 Conclusions & Recommendations (Cont'd)

9.8 General Comments: -

It is not uncommon for historical asbestos wastes to be deliberately buried on derelict sites or imported old demolition rubble which could contain asbestos to be imported for use as hardstanding / hardcore. Unless otherwise stated we have not assessed any above or below ground features such as existing buildings, service ducts, basements, culverts, partly demolished or dilapidated structures, spoil heaps, fly tipped materials, security bunds, etc.

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

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

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

Consideration should also be given to the protection of any new service pipes for the proposed development, and a suite of contamination testing (UKWIR suite) may be required to meet the requirements of the local utilities service provider for their 'pipe selection risk assessment' (PSRA) once the location and depth of future services have been determined.

An "observational technique" can be applied to the design and construction of this site, and where ground conditions seem to vary from that indicated from the conceptual ground model derived from works to date, then advice from a suitably qualified Engineer should be sought.

END OF REPORT

APPENDIX I

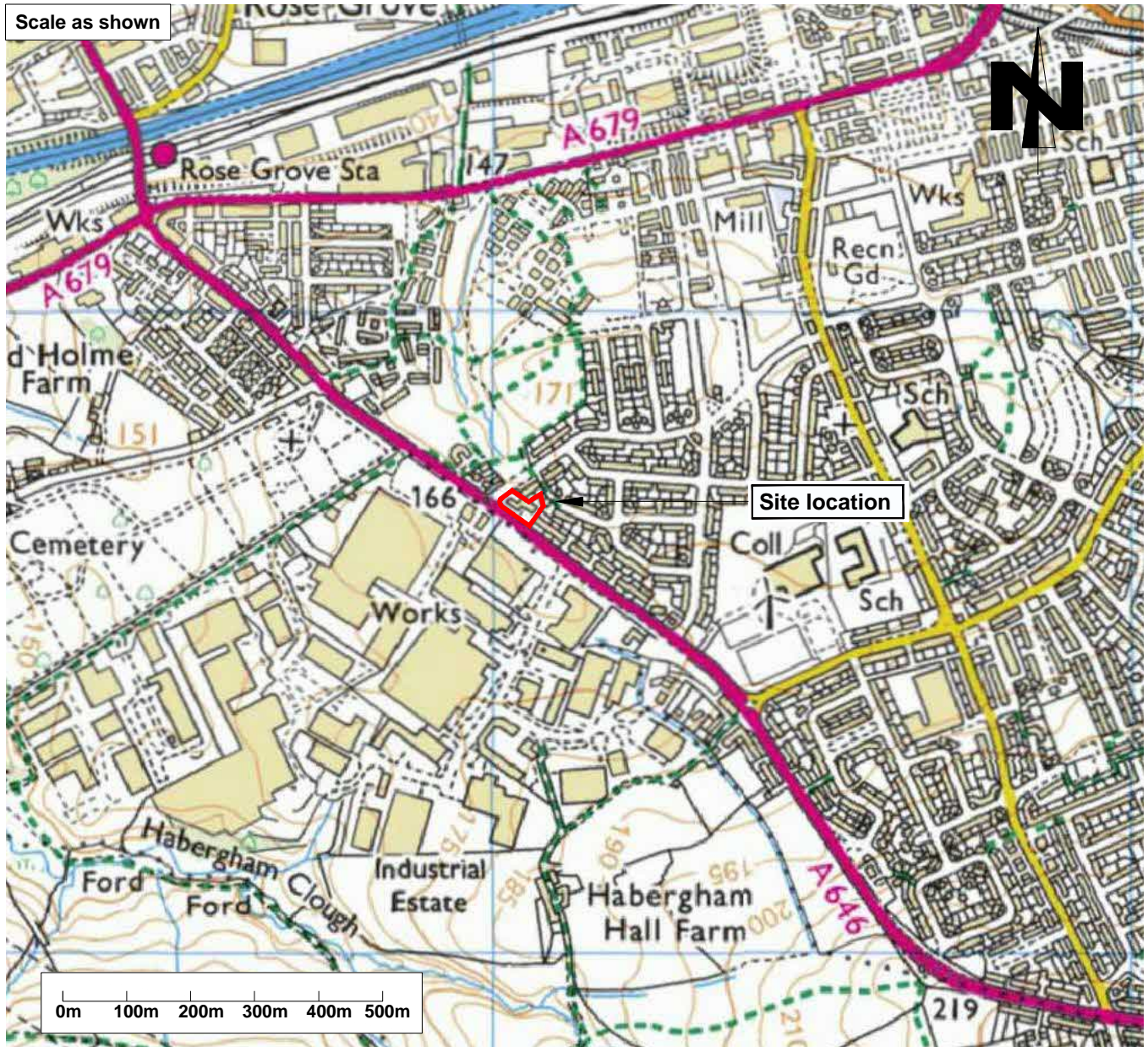
Location Plan

Aerial Photograph

Existing Site Layout Plan

Proposed Development Layout Plan

Scale as shown



Client:

DUDLEYS

Project Title:
Proposed Care Home, Hameldon House
198 Rossendale Road
Burnley, BD11 5DE

Drawing Title:
Location Plan

Job Reference:
23-320

Drawing Number:
-

Revision:
-

Drawn by:
P.D

Date:
20.12.23

Scale at A4:
As Shown

Checked by:
B.E

Approved by:
B.E

The contractor shall check all dimensions on site before commencement of any works. No dimensions to be scaled off this drawing.

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rev.	date	amendments	drawn	chckd

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LEGEND	
	APPROXIMATE SITE BOUNDARY

rev.	date	amendments	drawn	chkd

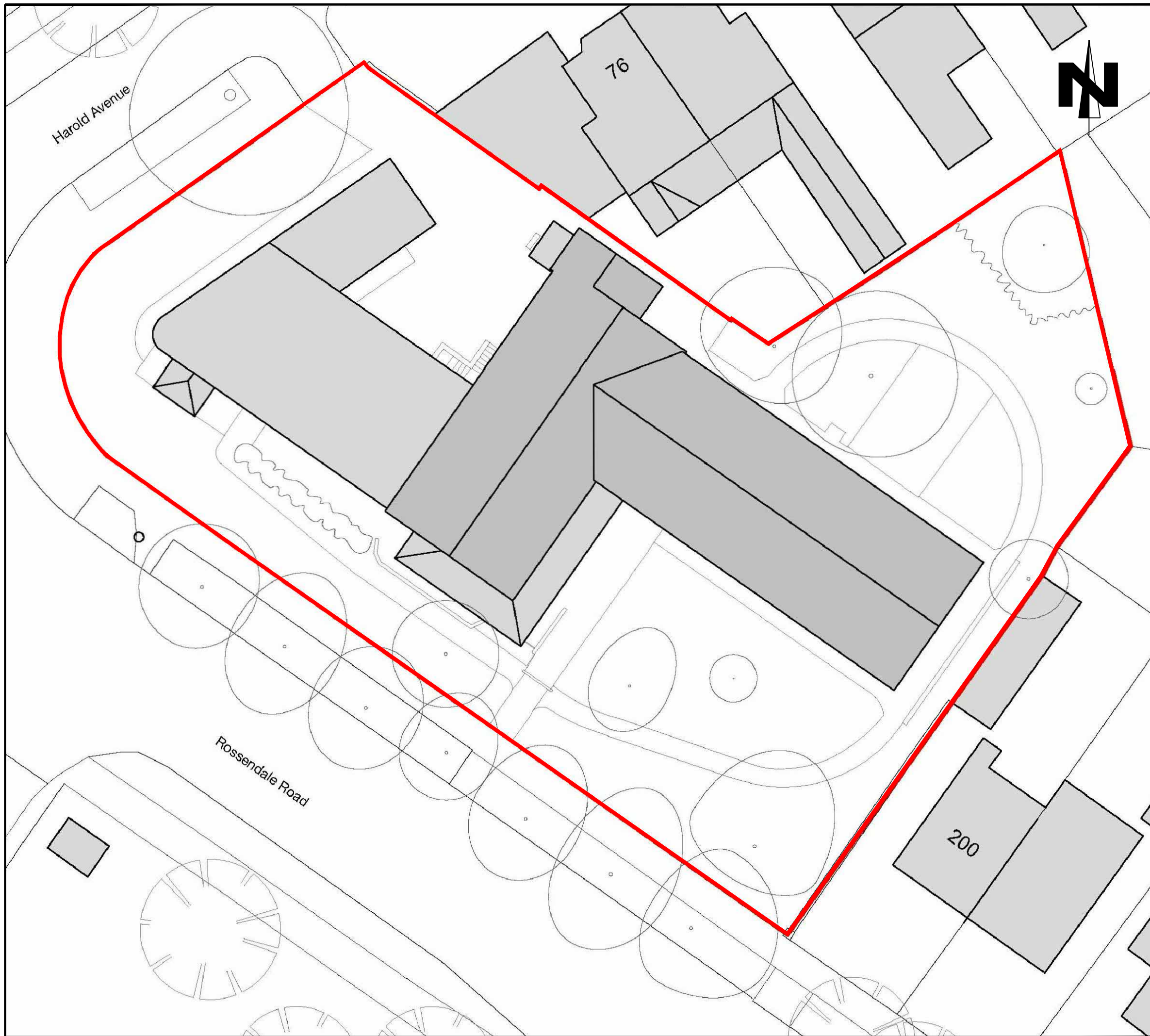
Client: **DUDLEYS**

Project Title:
 Proposed Care Home, Hameldon House
 198 Rossendale Road
 Burnley, BD11 5DE

Drawing Title:
 Aerial Photograph

Scale at A3: NTS @ A3	Date: 19.12.23	Drawn by: P.D	Approved by: B.E
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Job Ref: 23-320	Drg no: -	Rev: -
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LEGEND	
	APPROXIMATE SITE BOUNDARY

rev.	date	amendments	drawn	chckd

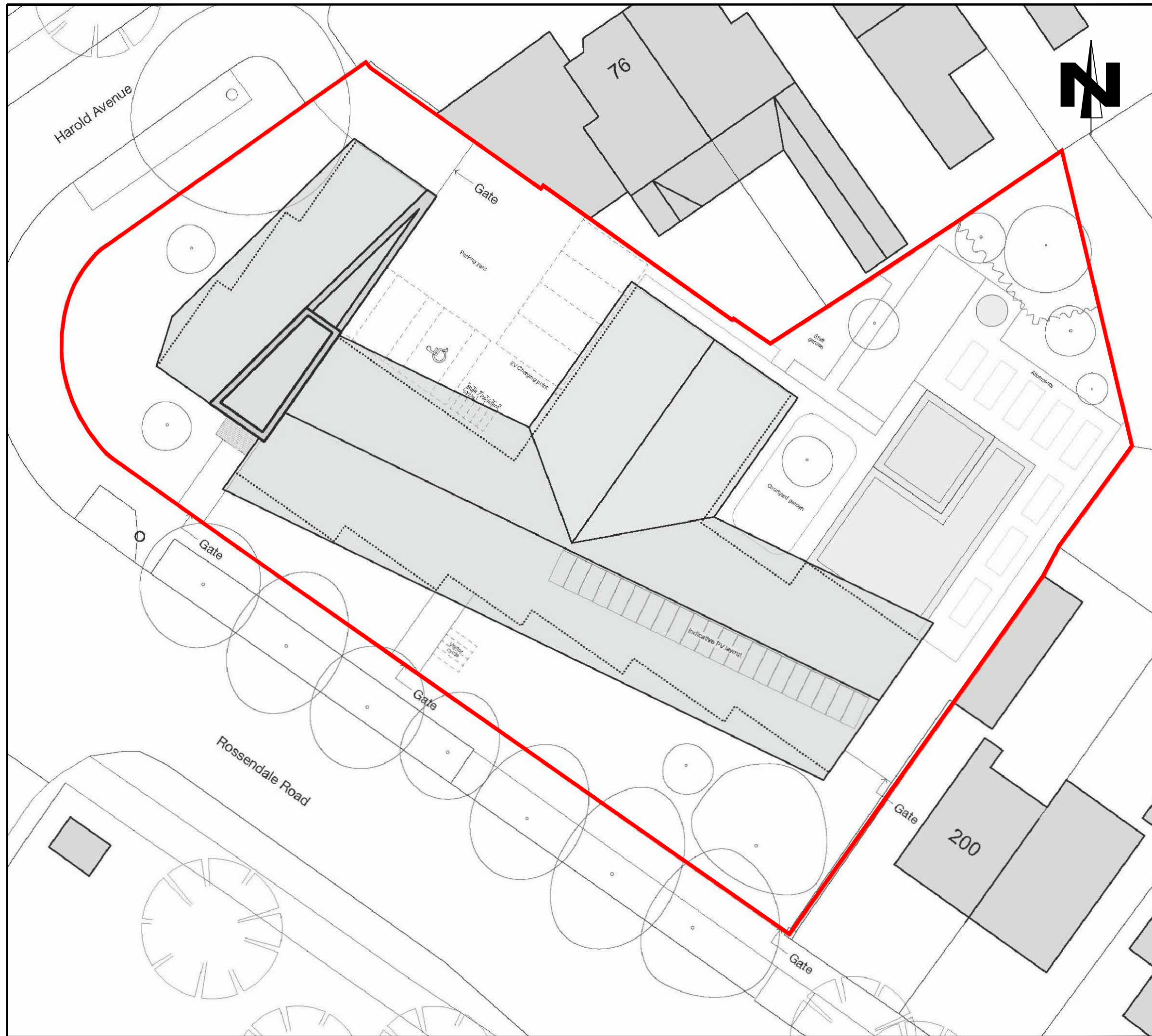
Client: **DUDLEYS**

Project Title:
 Proposed Care Home, Hameldon House
 198 Rossendale Road
 Burnley, BD11 5DE

Drawing Title:
 Existing Site Layout Plan


Scale at A3: NTS @ A3	Date: 19.12.23	Drawn by: P.D	Approved by: B.E
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Job Ref: 23-320	Drg no: -	Rev: -
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LEGEND	
	APPROXIMATE SITE BOUNDARY

rev.	date	amendments	drawn	chckd

Client: **DUDLEYS**

Project Title:
 Proposed Care Home, Hameldon House
 198 Rossendale Road
 Burnley, BD11 5DE

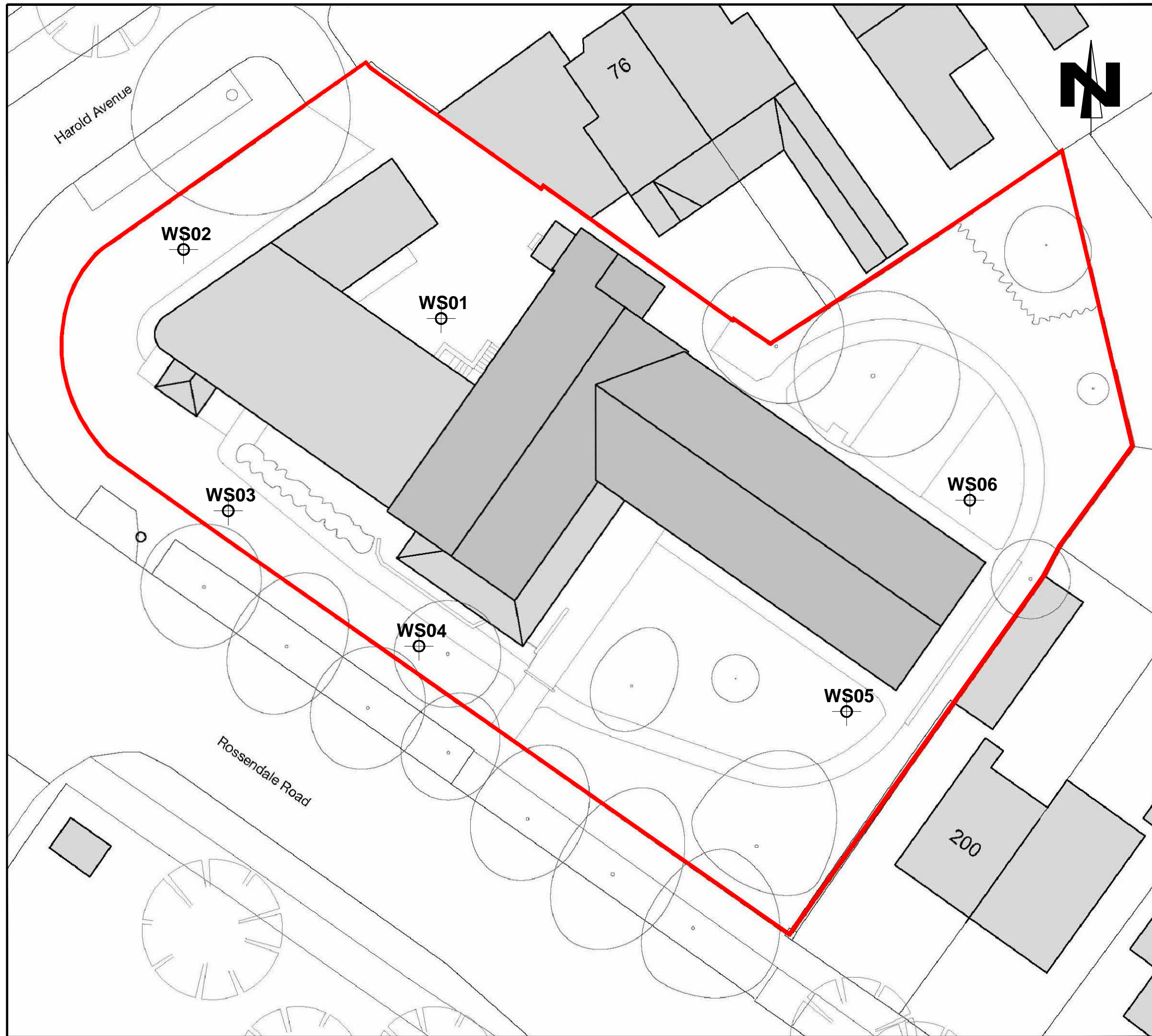
Drawing Title:
 Proposed Development Layout Plan

Scale at A3: NTS @ A3	Date: 19.12.23	Drawn by: P.D	Approved by: B.E
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Job Ref: 23-320	Drg no: -	Rev: -
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APPENDIX II

Exploratory Hole Location Plan Borehole Record Sheets



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LEGEND	
	APPROXIMATE SITE BOUNDARY
	WINDOWLESS SAMPLING BOREHOLE POSITION

rev.	date	amendments	drawn	chckd

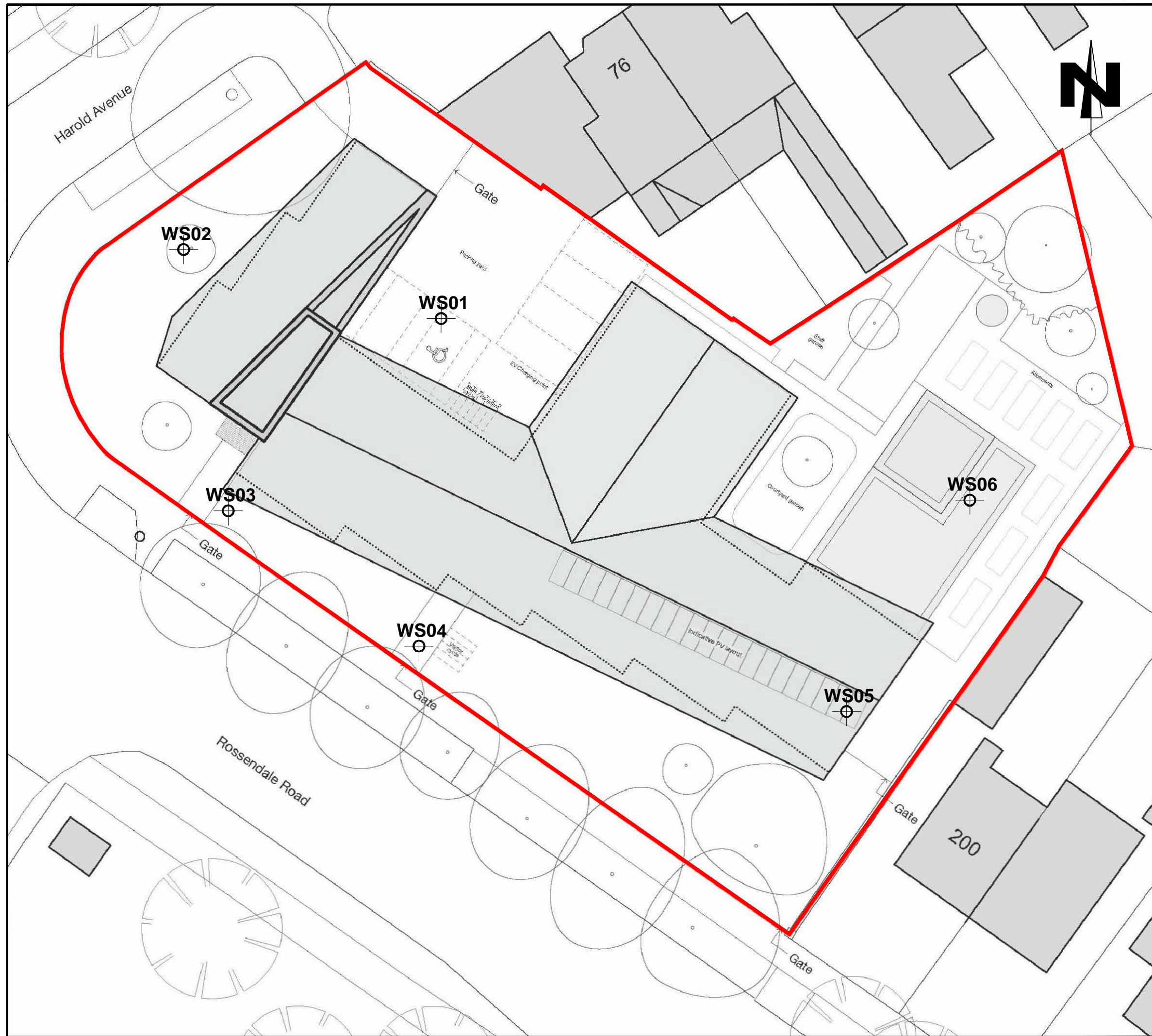
Client: **DUDLEYS**

Project Title:
 Proposed Care Home, Hameldon House
 198 Rossendale Road
 Burnley, BD11 5DE

Drawing Title:
 Exploratory Hole Location Plan (Existing Layout)

Scale at A3: NTS @ A3	Date: 15.02.24	Drawn by: P.D	Approved by: J.P.D
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Job Ref: 23-320	Drg no: -	Rev: -
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LEGEND	
	APPROXIMATE SITE BOUNDARY
	WINDOWLESS SAMPLING BOREHOLE POSITION

rev.	date	amendments	drawn	chckd

Client: **DUDLEYS**

Project Title:
 Proposed Care Home, Hameldon House
 198 Rosendale Road
 Burnley, BD11 5DE

Drawing Title:
 Exploratory Hole Location Plan (Proposed Layout)

Scale at A3: NTS @ A3	Date: 15.02.24	Drawn by: P.D	Approved by: J.P.D
--------------------------	-------------------	------------------	-----------------------

Job Ref: 23-320	Drg no: -	Rev: -
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 Telephone: 0191 378 6380

BOREHOLE LOG

Project Hameldon House, Rossendale Road, Burnley				BOREHOLE No WS01	
Job No 23-320	Date 18-12-23	Ground Level (m)	Co-Ordinates ()		
Contractor Arc Environmental Limited				Sheet 1 of 1	

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill		
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thick-ness)	DESCRIPTION				
						0.03	Black asphalt (MADE GROUND)				
						0.16	Concrete (MADE GROUND)				
						0.40	Grey sandstone cobbles and boulders with some sandy ash (MADE GROUND)				
0.60	B						Soft light brown, grey and dark greyish brown very sandy gravelly clay (MADE GROUND)				
0.60	J/D										
1.00	B										
1.20-1.65	SPT	N=5				(2.10)					
1.50	B										
2.00	D										
2.00-2.45	SPT	N=4									
2.40	B					2.50					
3.00	J/D						Very loose and medium dense dark reddish black sandy ash with coal and brick fragments. Occasional soft to firm dark grey clay inclusions (MADE GROUND)				
3.00-3.45	SPT	N=1									
3.50	B										
4.00	B										
4.00-4.45	SPT	N=13	↓			(2.80)					
4.50	B										
5.00-5.45	SPT	N=31									
5.50	B					5.30					
6.00	B						Stiff grey sandy gravelly CLAY. Gravel is fine to coarse of mudstone and sandstone (GLACIAL TILL)				
6.00-6.45	SPT	N=21				(1.15)					
						6.45					
							Borehole terminated at 6.45m				

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Time	Depth	Casing Depth	Casing Dia. mm	Water Dpt	From	To	Hours	From	To	
											WATER OBSERVATIONS: Water ingress at c.4.20m.

All dimensions in metres Scale 1:43.75	Client Dudleys	Method/ Plant Used Windowless Sampling	Logged By JPD
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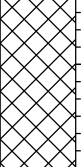
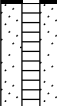
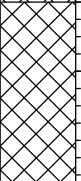
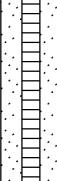
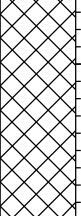
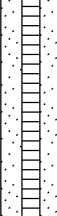
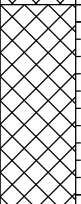
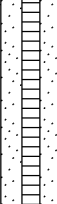

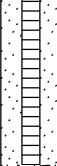


AGS3 UK BH WS02_03 & 06 MPB.GPJ AGS3-ALL.GDT-12/20/23



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BOREHOLE LOG

Project Hameldon House, Rossendale Road, Burnley				BOREHOLE No WS02	
Job No 23-320	Date 18-12-23	Ground Level (m)	Co-Ordinates ()	Sheet 1 of 1	
Contractor Arc Environmental Limited					

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)	DESCRIPTION		
0.50	J/D				0.20	Grass over soft black sandy gravelly clayey soil (MADE GROUND)			
					(0.40) 0.60	Brown sandy gravelly clay of ash with wood noted (MADE GROUND)			
1.00	J/D				(1.00)	Soft brown and grey silty clay (MADE GROUND)			
1.20-1.65	SPT	N=1			1.60	Stiff grey and brown sandy gravelly clay. Gravel is fine to coarse of sandstone and occasional coal. Cobbles noted (MADE GROUND)			
2.00	B SPT	N=16			(2.30)				
2.00-2.45					3.90				
3.00	B SPT	N=20			(1.60)				
3.00-3.45					5.50				
4.00	B SPT	N=1			(0.92)				
4.00-4.45					6.42				
5.00	B SPT	N=4							
5.00-5.45									
6.00	B SPT	67 Blows							
6.00-6.42									
						Borehole terminated at 6.42m due to refusal			

AGS3 UK BH WS02_03 & 06 MPB.GPJ AGS3-ALL.GDT 12/20/23
















Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Time	Depth	Casing Depth	Casing Dia. mm	Water Dpt	From	To	Hours	From	To	
											WATER OBSERVATIONS: Borehole remained dry.
All dimensions in metres Scale 1:43.75			Client Dudleys			Method/ Plant Used Windowless Sampling			Logged By MPB		



Arc Environmental Ltd
 Solum House, Unit 1 Elliott Court, Durham
 DH7 8PN
 Telephone: 0191 378 6380

BOREHOLE LOG

Project Hameldon House, Rossendale Road, Burnley				BOREHOLE No WS03	
Job No 23-320	Date 18-12-23	Ground Level (m)	Co-Ordinates ()		
Contractor Arc Environmental Limited				Sheet 1 of 1	

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)	DESCRIPTION		
0.50	J/D				0.20	Grass over soft black sandy gravelly clayey soil (MADE GROUND)			
					(0.60)	Brown sandy gravelly clay of ash with wood noted (MADE GROUND)			
1.00	J/D				0.80	Soft brown and grey silty clay (MADE GROUND)			
1.20-1.65	SPT	N=11			(0.80)				
2.00	B				1.60	Stiff grey sandy gravelly CLAY. Gravel is fine to coarse of mudstone and sandstone (GLACIAL TILL)			
2.00-2.45	SPT	N=23			(2.73)				
3.00	B				(2.73)				
3.00-2.45	SPT	N=38			4.33				
4.00	B								
4.00-4.33	SPT	65 Blows							
							Borehole terminated at 4.33m due to refusal		

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Time	Depth	Casing Depth	Casing Dia. mm	Water Dpt	From	To	Hours	From	To	
											WATER OBSERVATIONS: Borehole remained dry.

All dimensions in metres Scale 1:43.75	Client Dudleys	Method/ Plant Used Windowless Sampling	Logged By MPB
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AGS3 UK BH WS02_03 & 06 MPB.GPJ AGS3-ALL.GDT 12/20/23



BOREHOLE LOG

Project Hameldon House, Rossendale Road, Burnley				BOREHOLE No WS04
Job No 23-320	Date 18-12-23	Ground Level (m)	Co-Ordinates ()	
Contractor Arc Environmental Limited				Sheet 1 of 1

SAMPLES & TESTS			Water	STRATA			Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)		
0.50	J/D			[Cross-hatch pattern]	(0.70)	Grass over soft black sandy gravelly clayey soil (MADE GROUND)		[Black bar]
1.00 1.20-1.65	B SPT	N=6		[Cross-hatch pattern]	(1.70)	Soft to firm light brown and grey sandy gravelly clay (MADE GROUND)		[Dotted pattern]
2.00 2.00-2.45	D SPT	N=12		[Cross-hatch pattern]	2.40			[Dotted pattern]
2.50 3.00-3.45	B SPT	N=11		[Stippled pattern]	(3.05)	Stiff grey sandy gravelly CLAY. Gravel is fine to coarse of mudstone and sandstone (GLACIAL TILL)		[Stippled pattern]
3.50 4.00-4.45	B SPT	N=33	↓	[Stippled pattern]	5.45			[Stippled pattern]
5.00 5.00-5.45	B SPT	N=30		[Stippled pattern]	5.45	Borehole terminated at 5.45m		[Stippled pattern]

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Time	Depth	Casing Depth	Casing Dia. mm	Water Dpt	From	To	Hours	From	To	
											WATER OBSERVATIONS: Water ingress at c.4.50m.

All dimensions in metres Scale 1:43.75	Client Dudleys	Method/ Plant Used Windowless Sampling	Logged By JPD
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AGS3 UK BH WS02_03 & 06 MPB.GPJ AGS3-ALL.GDT 12/20/23



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BOREHOLE LOG

Project Hameldon House, Rossendale Road, Burnley				BOREHOLE No WS05	
Job No 23-320	Date 18-12-23	Ground Level (m)	Co-Ordinates ()		
Contractor Arc Environmental Limited				Sheet 1 of 1	

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)	DESCRIPTION		
0.50	J/D				0.26	Grass over soft black sandy gravelly clayey soil (MADE GROUND)			
					0.36	Brown ashy gravel (MADE GROUND)			
					(0.50)	Soft to firm brown / grey sandy gravelly clay (MADE GROUND)			
					0.86				
1.20-1.65	SPT	N=1			(1.69)	Soft locally firm light brown sandy gravelly clay. Dark grey from c.1.60m to c.2.40m (MADE GROUND)			
1.50	D				Very soft from c.2.00m				
2.00-2.45	B SPT	N=7							
2.50	B				2.55				
3.00-3.45	B SPT	N=25			(2.90)	Stiff grey sandy gravelly CLAY. Gravel is fine to coarse of mudstone and sandstone (GLACIAL TILL)			
3.50	D								
4.00-4.45	B SPT	N=28							
4.50	B								
5.00-5.45	B SPT	N=44			5.45	Borehole terminated at 5.45m			

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS WATER OBSERVATIONS: Borehole remained dry.
Date	Time	Depth	Casing Depth	Casing Dia. mm	Water Dpt	From	To	Hours	From	To	

All dimensions in metres Scale 1:43.75	Client Dudleys	Method/ Plant Used Windowless Sampling	Logged By JPD
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AGS3 UK BH WS02_03 & 06 MPB.GPJ AGS3-ALL.GDT 12/20/23



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 Telephone: 0191 378 6380

BOREHOLE LOG

Project Hameldon House, Rossendale Road, Burnley				BOREHOLE No WS06
Job No 23-320	Date 18-12-23	Ground Level (m)	Co-Ordinates ()	
Contractor Arc Environmental Limited				Sheet 1 of 1

SAMPLES & TESTS			Water	STRATA				Geology	Instrument/ Backfill
Depth	Type No	Test Result		Reduced Level	Legend	Depth (Thickness)	DESCRIPTION		
0.50	J/D			[Cross-hatch pattern]	0.20	Grass over soft black sandy gravelly clayey soil (MADE GROUND)			
				[Cross-hatch pattern]	(0.40)	Brown sandy gravelly clay of ash with wood noted (MADE GROUND)			
				[Cross-hatch pattern]	0.60	Soft brown and grey silty clay (MADE GROUND)			
1.00	J/D				(0.60)				
1.20-1.65	SPT	N=11		[Stippled pattern]	1.20	Stiff grey sandy gravelly CLAY. Gravel is fine to coarse of mudstone and sandstone (GLACIAL TILL)			
2.00	B SPT	N=43		[Stippled pattern]	(5.00)				
2.00-2.45				[Stippled pattern]					
3.00	B SPT	N=23		[Stippled pattern]					
3.00-3.45				[Stippled pattern]					
4.00	B SPT	N=32		[Stippled pattern]					
4.00-4.45				[Stippled pattern]					
5.00	B SPT	N=26		[Stippled pattern]					
5.00-5.45				[Stippled pattern]					
6.00	B SPT	73 Blows		[Stippled pattern]	6.20				
6.00-6.20				[Stippled pattern]		Borehole terminated at 6.20m due to refusal			

AGS3 UK BH WS02_03 & 06 MPB.GPJ AGS3-ALL.GDT 12/20/23

Boring Progress and Water Observations						Chiselling			Water Added		GENERAL REMARKS
Date	Time	Depth	Casing Depth	Casing Dia. mm	Water Dpt	From	To	Hours	From	To	
											WATER OBSERVATIONS: Borehole remained dry.

All dimensions in metres Scale 1:43.75	Client Dudleys	Method/ Plant Used Windowless Sampling	Logged By MPB
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APPENDIX III

Ground Gas & Groundwater Monitoring Certificate

Arc Environmental Ground Gas & Groundwater Monitoring Certificate



Site: HAMELDON HOUSE, BURNLEY
Ref: 23-320

Visit	Date	Time	Equipment	Weather	Initials	Comments	Borehole	Gas Flow (l/hr)	Atmospheric Pressure (mb)	Trend	Methane (% v/v)		Methane (% LEL)		Carbon Dioxide (% v/v)		Oxygen (% v/v)		Hydrocarbons (GFM 435 only)		Other Gases (PPM)			Water Levels	
										R/F/S	Initial	Steady	Initial	Steady	Initial	Steady	Initial	Steady	Hex %	PID Cf	PID (Isobutylene)	H ₂ S	CO		
1	01/08/2024	1.30pm	GFM435	OVERCAST	PR		WS02	<0.1	1013			0.0		0.0		1.5		16.5				0.0	0.0	4.70	
							WS04	<0.1	1013			0.0		0.0		3.5		14.8				0.0	1.0	1.90	
							WS06	<0.1	1013			0.0		0.0		2.2		12.1				0.0	0.0	1.30	
2	24/01/24	1.45pm	GFM435	OVERCAST	PR		WS02	<0.1	998			0.0		0.0		2.2		12.8				0.0	1.0	4.77	
							WS04	<0.1	998			0.0		0.0		2.3		10.3				0.0	2.0	1.18	
							WS06	<0.1	1000			0.0		0.0		2.3		8.0				0.0	2.0	1.21	

Notes:
 Detection limits - Methane = 0.0%, Carbon Dioxide = 0.0%, LEL = 0.0%, Oxygen = 0.0%, Flow = 0.1l/hr
 Monitoring order is from **Left to Right** across table
 Monitoring should be for **Not Less** than 3 minutes. However, if high concentrations of gasses initially recorded, monitoring should be for up to 10 minutes
 N/A = Not applicable = Off the scale

Cf = PID compensation Factor (1-10) - Must be used to multiply the PID reading to give an accurate measure of the total hydrocarbons in the borehole when methane is present
 Hex = Hexane (Valid and in range up to 2.000%) - Recorded when abnormally high methane is present.
 PID = Photo Ionisation Detector (Calibrated to Isobutylene)

APPENDIX IV

Laboratory Results
Waste Classification Report
Revised Conceptual Site
Model (CSM)



LABORATORY REPORT



Contract Number: PSL24/0099

Report Date: 11 January 2024
Client's Reference: 23-320
Client Name: Arc Environmental
Solum House
Unit 1 Elliott Court
St Johns Road, Meadowfield
Durham
DH7 8PN

For the attention of: John Ditchburn

Contract Title: Hameldon House, Burnley
Date Received: 4/1/2024
Date Commenced: 4/1/2024
Date Completed: 09/01/2024

Notes: Opinions and Interpretations are outside the UKAS Accreditation

A copy of the Laboratory Schedule of accredited tests as issued by UKAS is attached to this report. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. This certificate shall not be reproduced other than in full, without the prior written approval of the laboratory.

Checked and Approved Signatories:

A Watkins
(Managing Director)

R Berriman
(Associate Director)

S Royle
(Laboratory Manager)

L Knight
(Assistant Laboratory Manager)

S Eyre
(Senior Technician)


M Fennell
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Page 1 of


SUMMARY OF SOIL CLASSIFICATION TESTS

(BS1377 : PART 2 : 1990)

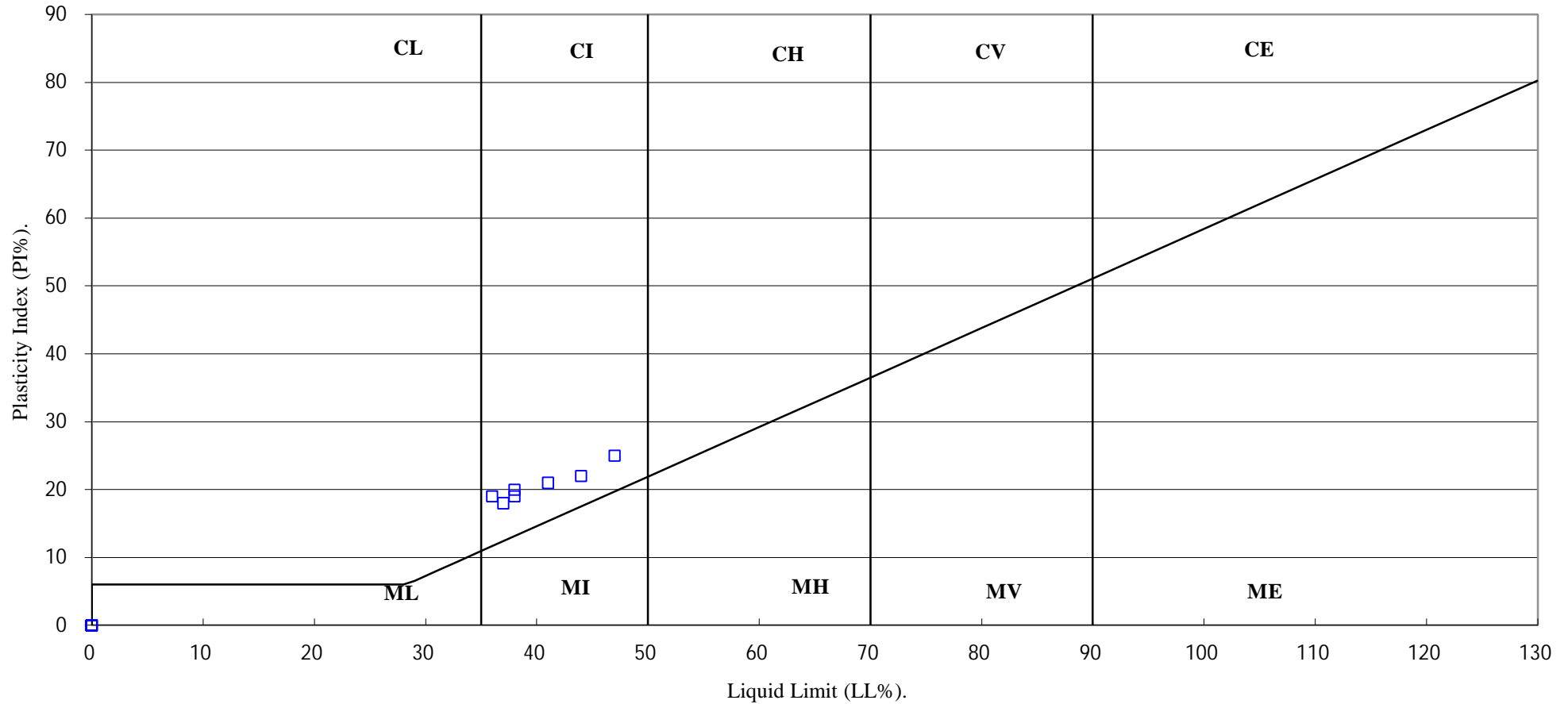
Hole Number	Sample Number	Sample Type	Top Depth m	Base Depth m	Moisture Content % Clause 3.2	Linear Shrinkage % Clause 6.5	Particle Density Mg/m ³ Clause 8.2	Liquid Limit % Clause 4.3/4	Plastic Limit % Clause 5.3	Plasticity Index % Clause 5.4	Passing .425mm %	Remarks
WS01		B	5.50		18			38	18	20	81	Intermediate Plasticity CI
WS02		B	6.00		17			38	19	19	82	Intermediate Plasticity CI
WS03		B	2.00		20			44	22	22	89	Intermediate Plasticity CI
WS04		B	3.50		20			37	19	18	88	Intermediate Plasticity CI
WS05		B	3.00		14			41	20	21	81	Intermediate Plasticity CI
WS06		B	2.00		16			47	22	25	86	Intermediate Plasticity CI
WS06		B	5.00		15			36	17	19	84	Intermediate Plasticity CI

SYMBOLS : NP : Non Plastic

* : Liquid Limit and Plastic Limit Wet Sieved.

		<p style="font-size: 1.2em;">Hameldon House, Burnley</p>	Contract No:
			PSL24/0099
			Client Ref:
			23-320

PLASTICITY CHART FOR CASAGRANDE CLASSIFICATION.



Hameldon House, Burnley

Contract No:

PSL24/0099

Client Ref:

23-320



ANALYTICAL TEST REPORT

Contract no: 129346

Contract name: Hameldon House, Burnley

Client reference: 23-320

Clients name: ARC Environmental

Clients address: Solum House, Unit 1 Elliott Court
St Johns Road
Meadowfield
DH7 8PN

Samples received: 21 December 2023

Analysis started: 21 December 2023

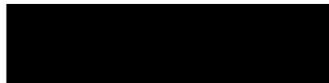
Analysis completed: 09 January 2024

Report issued: 09 January 2024

Key

- U UKAS accredited test
- M MCERTS & UKAS accredited test
- \$ Test carried out by an approved subcontractor
- I/S Insufficient sample to carry out test
- N/S Sample not suitable for testing
- NAD No Asbestos Detected

Approved by:



Abbie Neasham-Bourn
Senior Reporting Administrator

Chemtech Environmental Limited

SAMPLE INFORMATION

MCERTS (Soils):

Soil descriptions are only intended to provide a log of sample matrices with respect to MCERTS validation. They are not intended as full geological descriptions. MCERTS accreditation applies for sand, clay and loam/topsoil, or combinations of these whether these are derived from naturally occurring soils or from made ground, as long as these materials constitute the major part of the sample. Other materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.

Lab ref	Sample id	Depth (m)	Sample description	Material removed	% Removed	% Moisture
129346-1	WS01	0.60	Sand with Gravel	-	-	9.4
129346-2	WS01	2.00	Sandy Clay with Gravel	-	-	16.6
129346-3	WS01	3.50	Sandy Clay with Gravel	-	-	21.9
129346-4	WS02	0.50	Clayey Sandy Loam with Gravel & Roots	-	-	24.7
129346-5	WS02	1.00	Loamy Sand with Gravel	-	-	21.7
129346-6	WS02	3.00	Sandy Clay with Gravel & Roots	-	-	14.8
129346-7	WS02	5.00	Clay with Gravel & Roots	-	-	18.6
129346-8	WS03	0.50	Loam with Gravel & Roots	-	-	23.2
129346-9	WS03	1.00	Sandy Clay with Gravel	-	-	20.7
129346-10	WS04	0.50	Sandy Loamy Clay with Gravel & Roots	-	-	21.7
129346-11	WS04	2.00	Sandy Clay with Gravel	-	-	20.4
129346-12	WS05	0.50	Loamy Sandy Clay with Gravel & Roots	-	-	23.2
129346-13	WS05	1.50	Sandy Clay	-	-	24.4
129346-14	WS05	3.50	Sandy Clay with Gravel	-	-	10.2
129346-15	WS06	0.50	Sandy Clay with Gravel	-	-	20.0
129346-16	WS06	1.00	Sandy Clay with Gravel	-	-	14.1

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SOILS

Lab number			129346-1	129346-2	129346-3	129346-4	129346-5	129346-6
Sample id			WS01	WS01	WS01	WS02	WS02	WS02
Depth (m)			0.60	2.00	3.50	0.50	1.00	3.00
Date sampled			18/12/2023	18/12/2023	18/12/2023	18/12/2023	18/12/2023	18/12/2023
Test	Method	Units						
Moisture Content	CE001	% w/w	9.4	-	21.9	24.7	21.7	-
Arsenic (total)	CE264 ^M	mg/kg As	6.9	-	8.4	37	41	-
Cadmium (total)	CE264 ^M	mg/kg Cd	<2	-	<2	<2	<2	-
Chromium (total)	CE264 ^U	mg/kg Cr	18	-	27	27	24	-
Chromium (III)	CE208	mg/kg CrIII	18	-	27	27	24	-
Chromium (VI)	CE263	mg/kg CrVI	<0.04	-	<0.04	<0.04	<0.04	-
Copper (total)	CE264 ^M	mg/kg Cu	74	-	22	100	204	-
Lead (total)	CE264 ^U	mg/kg Pb	62	-	33	174	200	-
Mercury (total)	CE264 ^U	mg/kg Hg	<2	-	<2	<2	<2	-
Nickel (total)	CE264 ^M	mg/kg Ni	26	-	10	29	32	-
Selenium (total)	CE264	mg/kg Se	<3	-	<3	<3	<3	-
Zinc (total)	CE264 ^M	mg/kg Zn	340	-	84	225	179	-
pH	CE004 ^M	units	10.3	7.9	7.1	7.3	7.8	6.9
Sulphate (2:1 water soluble)	CE061 ^U	mg/l SO ₄	117	26	27	17	31	40
Cyanide (free)	CE077	mg/kg CN	<1	-	<1	<1	<1	-
Total Organic Carbon (TOC)	CE197	% w/w C	4.0	-	2.7	8.2	36.8	-
PAH								
Acenaphthene	CE087 ^M	mg/kg	0.57	-	0.03	0.32	0.05	-
Acenaphthylene	CE087 ^M	mg/kg	0.33	-	<0.02	0.07	0.20	-
Anthracene	CE087 ^U	mg/kg	1.27	-	0.06	0.76	0.31	-
Benzo(a)anthracene	CE087 ^U	mg/kg	6.37	-	0.14	2.08	0.99	-
Benzo(a)pyrene	CE087 ^U	mg/kg	12.69	-	0.13	1.71	0.70	-
Benzo(b)fluoranthene	CE087 ^M	mg/kg	11.12	-	0.17	2.11	0.81	-
Benzo(ghi)perylene	CE087 ^M	mg/kg	7.27	-	0.08	1.07	0.35	-
Benzo(k)fluoranthene	CE087 ^M	mg/kg	4.65	-	0.06	0.85	0.33	-
Chrysene	CE087 ^M	mg/kg	5.14	-	0.13	2.36	1.01	-
Dibenz(ah)anthracene	CE087 ^M	mg/kg	1.42	-	0.02	0.23	0.10	-
Fluoranthene	CE087 ^M	mg/kg	11.35	-	0.32	5.44	2.03	-
Fluorene	CE087 ^U	mg/kg	0.35	-	<0.02	0.24	0.25	-
Indeno(123cd)pyrene	CE087 ^M	mg/kg	8.42	-	0.08	1.15	0.38	-
Naphthalene	CE087 ^M	mg/kg	0.42	-	<0.02	0.21	0.09	-
Phenanthrene	CE087 ^M	mg/kg	3.06	-	0.18	2.33	1.86	-
Pyrene	CE087 ^M	mg/kg	11.53	-	0.28	5.15	1.71	-
PAH (total of USEPA 16)	CE087	mg/kg	85.9	-	1.67	26.1	11.2	-

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SOILS

Lab number			129346-1	129346-2	129346-3	129346-4	129346-5	129346-6
Sample id			WS01	WS01	WS01	WS02	WS02	WS02
Depth (m)			0.60	2.00	3.50	0.50	1.00	3.00
Date sampled			18/12/2023	18/12/2023	18/12/2023	18/12/2023	18/12/2023	18/12/2023
Test	Method	Units						
BTEX & TPH								
Benzene	\$	mg/kg	<1	-	<1	<1	<1	-
Toluene	\$	mg/kg	<1	-	<1	<1	<1	-
Ethylbenzene	\$	mg/kg	<1	-	<1	<1	<1	-
m & p-Xylene	\$	mg/kg	<1	-	<1	<1	<1	-
o-Xylene	\$	mg/kg	<1	-	<1	<1	<1	-
VPH Aliphatic (>C5-C6)	\$	mg/kg	<0.05	-	<0.05	<0.05	<0.05	-
VPH Aliphatic (>C6-C8)	\$	mg/kg	<0.05	-	<0.05	<0.05	<0.05	-
VPH Aliphatic (>C8-C10)	\$	mg/kg	<0.05	-	<0.05	<0.05	<0.05	-
EPH Aliphatic (>C10-C12)	CE250	mg/kg	<0.5	-	<0.5	<0.5	<0.5	-
EPH Aliphatic (>C12-C16)	CE250	mg/kg	8	-	7	<0.5	3	-
EPH Aliphatic (>C16-C35)	CE250	mg/kg	179	-	21	<4.5	10	-
EPH Aliphatic (>C35-C44)	CE250	mg/kg	18	-	2	<1	<1	-
VPH Aromatic (>EC5-EC7)	\$	mg/kg	<0.05	-	<0.05	<0.05	<0.05	-
VPH Aromatic (>EC7-EC8)	\$	mg/kg	<0.05	-	<0.05	<0.05	<0.05	-
VPH Aromatic (>EC8-EC10)	\$	mg/kg	<0.05	-	<0.05	<0.05	<0.05	-
EPH Aromatic (>EC10-EC12)	CE250	mg/kg	2	-	<0.5	<0.5	<0.5	-
EPH Aromatic (>EC12-EC16)	CE250	mg/kg	16	-	<1	5	<1	-
EPH Aromatic (>EC16-EC21)	CE250	mg/kg	194	-	3	43	<2	-
EPH Aromatic (>EC21-EC35)	CE250	mg/kg	1527	-	73	143	18	-
EPH Aromatic (>EC35-EC44)	CE250	mg/kg	214	-	27	16	4	-
Subcontracted analysis								
Asbestos (qualitative)	\$	-	NAD	-	NAD	NAD	NAD	-

Chemtech Environmental Limited

SOILS

Lab number			129346-7	129346-8	129346-9	129346-10	129346-11	129346-12
Sample id			WS02	WS03	WS03	WS04	WS04	WS05
Depth (m)			5.00	0.50	1.00	0.50	2.00	0.50
Date sampled			18/12/2023	18/12/2023	18/12/2023	18/12/2023	18/12/2023	18/12/2023
Test	Method	Units						
Moisture Content	CE001	% w/w	-	23.2	-	21.7	-	23.2
Arsenic (total)	CE264 ^M	mg/kg As	-	29	-	20	-	14
Cadmium (total)	CE264 ^M	mg/kg Cd	-	<2	-	<2	-	<2
Chromium (total)	CE264 ^U	mg/kg Cr	-	26	-	23	-	24
Chromium (III)	CE208	mg/kg CrIII	-	26	-	23	-	24
Chromium (VI)	CE263	mg/kg CrVI	-	<0.04	-	<0.04	-	<0.04
Copper (total)	CE264 ^M	mg/kg Cu	-	110	-	80	-	34
Lead (total)	CE264 ^U	mg/kg Pb	-	159	-	93	-	55
Mercury (total)	CE264 ^U	mg/kg Hg	-	<2	-	<2	-	<2
Nickel (total)	CE264 ^M	mg/kg Ni	-	26	-	18	-	13
Selenium (total)	CE264	mg/kg Se	-	<3	-	<3	-	<3
Zinc (total)	CE264 ^M	mg/kg Zn	-	202	-	187	-	91
pH	CE004 ^M	units	7..8	7.8	7.5	7.5	6.9	7.0
Sulphate (2:1 water soluble)	CE061 ^U	mg/l SO ₄	19	22	15	21	22	19
Cyanide (free)	CE077	mg/kg CN	-	<1	-	<1	-	<1
Total Organic Carbon (TOC)	CE197	% w/w C	-	6.7	-	5.8	-	3.4
PAH								
Acenaphthene	CE087 ^M	mg/kg	-	1.45	-	6.26	-	0.93
Acenaphthylene	CE087 ^M	mg/kg	-	0.24	-	0.24	-	<0.02
Anthracene	CE087 ^U	mg/kg	-	3.81	-	11.39	-	1.52
Benzo(a)anthracene	CE087 ^U	mg/kg	-	25.32	-	18.14	-	2.08
Benzo(a)pyrene	CE087 ^U	mg/kg	-	31.00	-	15.19	-	1.92
Benzo(b)fluoranthene	CE087 ^M	mg/kg	-	34.95	-	17.27	-	1.96
Benzo(ghi)perylene	CE087 ^M	mg/kg	-	21.26	-	9.26	-	1.16
Benzo(k)fluoranthene	CE087 ^M	mg/kg	-	16.86	-	7.26	-	0.84
Chrysene	CE087 ^M	mg/kg	-	25.79	-	18.66	-	2.32
Dibenz(ah)anthracene	CE087 ^M	mg/kg	-	3.99	-	2.06	-	0.25
Fluoranthene	CE087 ^M	mg/kg	-	30.91	-	47.54	-	5.44
Fluorene	CE087 ^U	mg/kg	-	1.07	-	4.73	-	0.60
Indeno(123cd)pyrene	CE087 ^M	mg/kg	-	24.37	-	9.35	-	1.01
Naphthalene	CE087 ^M	mg/kg	-	1.67	-	1.64	-	0.15
Phenanthrene	CE087 ^M	mg/kg	-	8.68	-	42.96	-	4.73
Pyrene	CE087 ^M	mg/kg	-	29.62	-	37.69	-	4.57
PAH (total of USEPA 16)	CE087	mg/kg	-	261	-	250	-	29.5

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SOILS

Lab number			129346-7	129346-8	129346-9	129346-10	129346-11	129346-12
Sample id			WS02	WS03	WS03	WS04	WS04	WS05
Depth (m)			5.00	0.50	1.00	0.50	2.00	0.50
Date sampled			18/12/2023	18/12/2023	18/12/2023	18/12/2023	18/12/2023	18/12/2023
Test	Method	Units						
BTEX & TPH								
Benzene	\$	mg/kg	-	<1	-	<1	-	<1
Toluene	\$	mg/kg	-	<1	-	<1	-	<1
Ethylbenzene	\$	mg/kg	-	<1	-	<1	-	<1
m & p-Xylene	\$	mg/kg	-	<1	-	<1	-	<1
o-Xylene	\$	mg/kg	-	<1	-	<1	-	<1
VPH Aliphatic (>C5-C6)	\$	mg/kg	-	<0.05	-	<0.05	-	<0.05
VPH Aliphatic (>C6-C8)	\$	mg/kg	-	<0.05	-	<0.05	-	<0.05
VPH Aliphatic (>C8-C10)	\$	mg/kg	-	<0.05	-	<0.05	-	<0.05
EPH Aliphatic (>C10-C12)	CE250	mg/kg	-	<0.5	-	<0.5	-	<0.5
EPH Aliphatic (>C12-C16)	CE250	mg/kg	-	3.45	-	1.52	-	<0.5
EPH Aliphatic (>C16-C35)	CE250	mg/kg	-	16.13	-	9.92	-	<4.5
EPH Aliphatic (>C35-C44)	CE250	mg/kg	-	2.85	-	1.14	-	<1
VPH Aromatic (>EC5-EC7)	\$	mg/kg	-	<0.05	-	<0.05	-	<0.05
VPH Aromatic (>EC7-EC8)	\$	mg/kg	-	<0.05	-	<0.05	-	<0.05
VPH Aromatic (>EC8-EC10)	\$	mg/kg	-	<0.05	-	<0.05	-	<0.05
EPH Aromatic (>EC10-EC12)	CE250	mg/kg	-	47	-	<0.5	-	<0.5
EPH Aromatic (>EC12-EC16)	CE250	mg/kg	-	124	-	15	-	2
EPH Aromatic (>EC16-EC21)	CE250	mg/kg	-	379	-	146	-	53
EPH Aromatic (>EC21-EC35)	CE250	mg/kg	-	905	-	377	-	112
EPH Aromatic (>EC35-EC44)	CE250	mg/kg	-	111	-	51	-	12
Subcontracted analysis								
Asbestos (qualitative)	\$	-	-	NAD	-	NAD	-	NAD

Chemtech Environmental Limited

SOILS

Lab number			129346-13	129346-14	129346-15	129346-16
Sample id			WS05	WS05	WS06	WS06
Depth (m)			1.50	3.50	0.50	1.00
Date sampled			18/12/2023	18/12/2023	18/12/2023	18/12/2023
Test	Method	Units				
Moisture Content	CE001	% w/w	-	-	20.0	-
Arsenic (total)	CE264 ^M	mg/kg As	-	-	10	-
Cadmium (total)	CE264 ^M	mg/kg Cd	-	-	<2	-
Chromium (total)	CE264 ^U	mg/kg Cr	-	-	23	-
Chromium (III)	CE208	mg/kg CrIII	-	-	23	-
Chromium (VI)	CE263	mg/kg CrVI	-	-	<0.04	-
Copper (total)	CE264 ^M	mg/kg Cu	-	-	14	-
Lead (total)	CE264 ^U	mg/kg Pb	-	-	22	-
Mercury (total)	CE264 ^U	mg/kg Hg	-	-	<2	-
Nickel (total)	CE264 ^M	mg/kg Ni	-	-	14	-
Selenium (total)	CE264	mg/kg Se	-	-	<3	-
Zinc (total)	CE264 ^M	mg/kg Zn	-	-	42	-
pH	CE004 ^M	units	7.3	8.2	7.2	7.1
Sulphate (2:1 water soluble)	CE061 ^U	mg/l SO ₄	14	35	14	13
Cyanide (free)	CE077	mg/kg CN	-	-	<1	-
Total Organic Carbon (TOC)	CE197	% w/w C	-	-	1.7	-
PAH						
Acenaphthene	CE087 ^M	mg/kg	-	-	<0.02	-
Acenaphthylene	CE087 ^M	mg/kg	-	-	<0.02	-
Anthracene	CE087 ^U	mg/kg	-	-	<0.02	-
Benzo(a)anthracene	CE087 ^U	mg/kg	-	-	<0.02	-
Benzo(a)pyrene	CE087 ^U	mg/kg	-	-	<0.02	-
Benzo(b)fluoranthene	CE087 ^M	mg/kg	-	-	<0.02	-
Benzo(ghi)perylene	CE087 ^M	mg/kg	-	-	<0.02	-
Benzo(k)fluoranthene	CE087 ^M	mg/kg	-	-	<0.03	-
Chrysene	CE087 ^M	mg/kg	-	-	<0.03	-
Dibenz(ah)anthracene	CE087 ^M	mg/kg	-	-	<0.02	-
Fluoranthene	CE087 ^M	mg/kg	-	-	<0.02	-
Fluorene	CE087 ^U	mg/kg	-	-	<0.02	-
Indeno(123cd)pyrene	CE087 ^M	mg/kg	-	-	<0.02	-
Naphthalene	CE087 ^M	mg/kg	-	-	<0.02	-
Phenanthrene	CE087 ^M	mg/kg	-	-	<0.02	-
Pyrene	CE087 ^M	mg/kg	-	-	<0.02	-
PAH (total of USEPA 16)	CE087	mg/kg	-	-	<0.34	-

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SOILS

Lab number			129346-13	129346-14	129346-15	129346-16
Sample id			WS05	WS05	WS06	WS06
Depth (m)			1.50	3.50	0.50	1.00
Date sampled			18/12/2023	18/12/2023	18/12/2023	18/12/2023
Test	Method	Units				
BTEX & TPH						
Benzene	\$	mg/kg	-	-	<1	-
Toluene	\$	mg/kg	-	-	<1	-
Ethylbenzene	\$	mg/kg	-	-	<1	-
m & p-Xylene	\$	mg/kg	-	-	<1	-
o-Xylene	\$	mg/kg	-	-	<1	-
VPH Aliphatic (>C5-C6)	\$	mg/kg	-	-	<0.05	-
VPH Aliphatic (>C6-C8)	\$	mg/kg	-	-	<0.05	-
VPH Aliphatic (>C8-C10)	\$	mg/kg	-	-	<0.05	-
EPH Aliphatic (>C10-C12)	CE250	mg/kg	-	-	<0.5	-
EPH Aliphatic (>C12-C16)	CE250	mg/kg	-	-	<0.5	-
EPH Aliphatic (>C16-C35)	CE250	mg/kg	-	-	<4.5	-
EPH Aliphatic (>C35-C44)	CE250	mg/kg	-	-	<1	-
VPH Aromatic (>EC5-EC7)	\$	mg/kg	-	-	<0.05	-
VPH Aromatic (>EC7-EC8)	\$	mg/kg	-	-	<0.05	-
VPH Aromatic (>EC8-EC10)	\$	mg/kg	-	-	<0.05	-
EPH Aromatic (>EC10-EC12)	CE250	mg/kg	-	-	<0.5	-
EPH Aromatic (>EC12-EC16)	CE250	mg/kg	-	-	<1	-
EPH Aromatic (>EC16-EC21)	CE250	mg/kg	-	-	<2	-
EPH Aromatic (>EC21-EC35)	CE250	mg/kg	-	-	<5	-
EPH Aromatic (>EC35-EC44)	CE250	mg/kg	-	-	<1.5	-
Subcontracted analysis						
Asbestos (qualitative)	\$	-	-	-	NAD	-

Chemtech Environmental Limited

METHOD DETAILS

METHOD	SOILS	METHOD SUMMARY	SAMPLE	STATUS	LOD	UNITS
CE001	Moisture Content	Gravimetry	As received		0.1	% w/w
CE264	Arsenic (total)	Aqua Regia Extraction, ICPOES	Dry	M	3	mg/kg As
CE264	Cadmium (total)	Aqua Regia Extraction, ICPOES	Dry	M	2	mg/kg Cd
CE264	Chromium (total)	Aqua Regia Extraction, ICPOES	Dry	U	2	mg/kg Cr
CE208	Chromium (III)	Calculation: Cr (total) - Cr (VI)	Dry		1	mg/kg CrIII
CE263	Chromium (VI)	Discrete Analyser	Dry		0.04	mg/kg CrVI
CE264	Copper (total)	Aqua Regia Extraction, ICPOES	Dry	M	2	mg/kg Cu
CE264	Lead (total)	Aqua Regia Extraction, ICPOES	Dry	U	3	mg/kg Pb
CE264	Mercury (total)	Aqua Regia Extraction, ICPOES	Dry	U	2	mg/kg Hg
CE264	Nickel (total)	Aqua Regia Extraction, ICPOES	Dry	M	3	mg/kg Ni
CE264	Selenium (total)	Aqua Regia Extraction, ICPOES	Dry	U	3	mg/kg Se
CE264	Zinc (total)	Aqua Regia Extraction, ICPOES	Dry	M	4	mg/kg Zn
CE004	pH	Based on BS 1377, pH Meter	As received	M	-	units
CE061	Sulphate (2:1 water soluble)	Aqueous extraction, ICP-OES	Dry	U	10	mg/l SO ₄
CE077	Cyanide (free)	Extraction, Continuous Flow Colorimetry	As received		1	mg/kg CN
CE197	Total Organic Carbon (TOC)	Carbon Analyser	Dry		0.1	% w/w C
CE087	Acenaphthene	Solvent extraction, GC-MS	As received	M	0.02	mg/kg
CE087	Acenaphthylene	Solvent extraction, GC-MS	As received	M	0.02	mg/kg
CE087	Anthracene	Solvent extraction, GC-MS	As received	U	0.02	mg/kg
CE087	Benzo(a)anthracene	Solvent extraction, GC-MS	As received	U	0.02	mg/kg
CE087	Benzo(a)pyrene	Solvent extraction, GC-MS	As received	U	0.02	mg/kg
CE087	Benzo(b)fluoranthene	Solvent extraction, GC-MS	As received	M	0.02	mg/kg
CE087	Benzo(ghi)perylene	Solvent extraction, GC-MS	As received	M	0.02	mg/kg
CE087	Benzo(k)fluoranthene	Solvent extraction, GC-MS	As received	M	0.03	mg/kg
CE087	Chrysene	Solvent extraction, GC-MS	As received	M	0.03	mg/kg
CE087	Dibenz(ah)anthracene	Solvent extraction, GC-MS	As received	M	0.02	mg/kg
CE087	Fluoranthene	Solvent extraction, GC-MS	As received	M	0.02	mg/kg
CE087	Fluorene	Solvent extraction, GC-MS	As received	U	0.02	mg/kg
CE087	Indeno(123cd)pyrene	Solvent extraction, GC-MS	As received	M	0.02	mg/kg
CE087	Naphthalene	Solvent extraction, GC-MS	As received	M	0.02	mg/kg
CE087	Phenanthrene	Solvent extraction, GC-MS	As received	M	0.02	mg/kg
CE087	Pyrene	Solvent extraction, GC-MS	As received	M	0.02	mg/kg
CE087	PAH (total of USEPA 16)	Solvent extraction, GC-MS	As received		0.34	mg/kg
\$	Benzene	Headspace GC-FID	As received	U	1	mg/kg
\$	Toluene	Headspace GC-FID	As received	U	1	mg/kg
\$	Ethylbenzene	Headspace GC-FID	As received	U	1	mg/kg
\$	m & p-Xylene	Headspace GC-FID	As received	U	1	mg/kg
\$	o-Xylene	Headspace GC-FID	As received	U	1	mg/kg
\$	VPH Aliphatic (>C5-C6)	Headspace GC-FID	As received		0.05	mg/kg
\$	VPH Aliphatic (>C6-C8)	Headspace GC-FID	As received		0.05	mg/kg
\$	VPH Aliphatic (>C8-C10)	Headspace GC-FID	As received		0.05	mg/kg
CE250	EPH Aliphatic (>C10-C12)	Solvent extraction, GCxGC-FID	As received		6	mg/kg
CE250	EPH Aliphatic (>C12-C16)	Solvent extraction, GCxGC-FID	As received		6	mg/kg
CE250	EPH Aliphatic (>C16-C35)	Solvent extraction, GCxGC-FID	As received		15	mg/kg

Chemtech Environmental Limited

METHOD DETAILS

METHOD	SOILS	METHOD SUMMARY	SAMPLE	STATUS	LOD	UNITS
CE250	EPH Aliphatic (>C35-C44)	Solvent extraction, GCxGC-FID	As received		10	mg/kg
\$	VPH Aromatic (>EC5-EC7)	Headspace GC-FID	As received		0.05	mg/kg
\$	VPH Aromatic (>EC7-EC8)	Headspace GC-FID	As received		0.05	mg/kg
\$	VPH Aromatic (>EC8-EC10)	Headspace GC-FID	As received		0.05	mg/kg
CE250	EPH Aromatic (>EC10-EC12)	Solvent extraction, GCxGC-FID	As received		1	mg/kg
CE250	EPH Aromatic (>EC12-EC16)	Solvent extraction, GCxGC-FID	As received		1	mg/kg
CE250	EPH Aromatic (>EC16-EC21)	Solvent extraction, GCxGC-FID	As received		1	mg/kg
CE250	EPH Aromatic (>EC21-EC35)	Solvent extraction, GCxGC-FID	As received		1	mg/kg
CE250	EPH Aromatic (>EC35-EC44)	Solvent extraction, GCxGC-FID	As received		1	mg/kg
\$	Asbestos (qualitative)	HSG 248, Microscopy	Dry	U	-	-

Chemtech Environmental Limited

DEVIATING SAMPLE INFORMATION

Comments

Sample deviation is determined in accordance with the UKAS note "Guidance on Deviating Samples" and based on reference standards and laboratory trials.

For samples identified as deviating, test result(s) may be compromised and may not be representative of the sample at the time of sampling.

Chemtech Environmental Ltd cannot be held responsible for the integrity of sample(s) received if Chemtech Environmental Ltd did not undertake the sampling. Such samples may be deviating.

Key

N	No (not deviating sample)
Y	Yes (deviating sample)
NSD	Sampling date not provided
NST	Sampling time not provided (waters only)
EHT	Sample exceeded holding time(s)
IC	Sample not received in appropriate containers
HP	Headspace present in sample container
NCF	Sample not chemically fixed (where appropriate)
OR	Other (specify)

Lab ref	Sample id	Depth (m)	Deviating	Tests (Reason for deviation)
129346-1	WS01	0.60	N	
129346-2	WS01	2.00	N	
129346-3	WS01	3.50	N	
129346-4	WS02	0.50	N	
129346-5	WS02	1.00	N	
129346-6	WS02	3.00	N	
129346-7	WS02	5.00	N	
129346-8	WS03	0.50	N	
129346-9	WS03	1.00	N	
129346-10	WS04	0.50	N	
129346-11	WS04	2.00	N	
129346-12	WS05	0.50	N	
129346-13	WS05	1.50	N	
129346-14	WS05	3.50	N	
129346-15	WS06	0.50	N	
129346-16	WS06	1.00	N	

Chemtech Environmental Limited

ADDITIONAL INFORMATION

Notes

Opinions and interpretations expressed herein are outside the UKAS accreditation scope.

Unless otherwise stated, Chemtech Environmental Ltd was not responsible for sampling.

All testing carried out at Unit 6 Parkhead, Stanley, DH9 7YB, except for subcontracted testing.

Methods, procedures and performance data are available on request.

Results reported herein relate only to the material supplied to the laboratory.

This report shall not be reproduced except in full, without prior written approval.

Samples will be disposed of 4 weeks from initial receipt unless otherwise instructed.

BTEX compounds are identified by retention time only and may include interference from co-eluting compounds.

All results are reported on a dry basis. Samples dried at no more than 30°C in a drying cabinet.

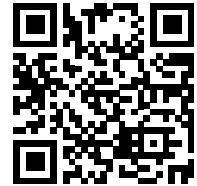
Analytical results are inclusive of stones, where applicable.



Waste Classification Report

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

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



Z4MA7-L42KZ-1G3FT

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

Job name

23-320

Description/Comments

Classification of made ground for off-site disposal

Project

23-320

Site

Hameldon House, Burnley

Classified by

Name: John Ditchburn	Company: Arc Environmental Ltd
Date: 14 Feb 2024 14:30 GMT	Solum House, Unit 1, Elliott Court, St. Johns Road
Telephone: 0191 378 6380	Meadowfield
	DH7 8PN

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

HazWasteOnline™ Certification:	CERTIFIED
Course	Date
Hazardous Waste Classification	03 Dec 2020
Most recent 3 year Refresher	05 Dec 2023

Next 3 year Refresher due by Dec 2026

Purpose of classification

2 - Material Characterisation

Address of the waste

Hameldon House, Burnley

Post Code N/A

SIC for the process giving rise to the waste

Description of industry/producer giving rise to the waste

Construction and demolition waste

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

Arising from foundation and services excavations

Description of the waste

Very soft to soft clay, soft silty clay, stiff sandy gravelly clay with some sandy ash with coal and brick fragments



Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	WS01	0.60	Hazardous	HP 3(i), HP 7, HP 11	3
2	WS01[2]	3.50	Non Hazardous		6
3	WS02	0.50	Non Hazardous		9
4	WS02[2]	1.00	Non Hazardous		12
5	WS03	0.50	Hazardous	HP 3(i), HP 7, HP 11	15
6	WS04	0.50	Non Hazardous		18
7	WS05	0.50	Non Hazardous		21
8	WS06	0.50	Non Hazardous		24

Related documents

#	Name	Description
1	Arc 2021 with acid alkali reserve	waste stream template used to create this Job


Report

Created by: John Ditchburn

Created date: 14 Feb 2024 14:30 GMT

Appendices	Page
Appendix A: Classifier defined and non GB MCL determinands	26
Appendix B: Rationale for selection of metal species	27
Appendix C: Version	28

Classification of sample: WS01

 **Hazardous Waste**
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample name:	LoW Code:
WS01	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 03 * (Soil and stones containing hazardous substances)
0.60 m	
Moisture content:	
9.4% (wet weight correction)	

Hazard properties

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 hazardous because No liquid phase: too low to be flammable

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.196%)

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1B; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.196%)

HP 11: Mutagenic "waste which may cause a mutation, that is a permanent change in the amount or structure of the genetic material in a cell"

Hazard Statements hit:




Muta. 1B; H340 "May cause genetic defects [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.196%)

Determinands

Moisture content: 9.4% 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 }				6.9	mg/kg	1.32	8.254	mg/kg	0.000825 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
2	 cadmium { cadmium oxide }				<2	mg/kg	1.142	<2.285	mg/kg	<0.000228 %		<LOD
	048-002-00-0	215-146-2	1306-19-0									
3	 chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				18.2	mg/kg	1.462	24.1	mg/kg	0.00241 %	✓	
		215-160-9	1308-38-9									



#	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									
4	chromium in chromium(VI) compounds { chromium(VI) oxide }				<0.04	mg/kg	1.923	<0.0769	mg/kg	<0.00000769 %		<LOD
	024-001-00-0	215-607-8	1333-82-0									
5	copper { dicopper oxide; copper (I) oxide }				74.2	mg/kg	1.126	75.688	mg/kg	0.00757 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
6	lead { lead chromate }			1	61.6	mg/kg	1.56	87.053	mg/kg	0.00558 %	✓	
	082-004-00-2	231-846-0	7758-97-6									
7	mercury { mercury dichloride }				<2	mg/kg	1.353	<2.707	mg/kg	<0.000271 %		<LOD
	080-010-00-X	231-299-8	7487-94-7									
8	nickel { nickel chromate }				25.5	mg/kg	2.976	68.761	mg/kg	0.00688 %	✓	
	028-035-00-7	238-766-5	14721-18-7									
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<3	mg/kg	1.405	<4.215	mg/kg	<0.000422 %		<LOD
	034-002-00-8											
10	zinc { zinc chromate }				340	mg/kg	2.774	854.548	mg/kg	0.0855 %	✓	
	024-007-00-3	236-878-9	13530-65-9									
11	pH				10.3	pH		10.3	pH	10.3 pH		
			PH									
12	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
	006-007-00-5											
13	acenaphthene				0.57	mg/kg		0.516	mg/kg	0.0000516 %	✓	
		201-469-6	83-32-9									
14	acenaphthylene				0.33	mg/kg		0.299	mg/kg	0.0000299 %	✓	
		205-917-1	208-96-8									
15	anthracene				1.27	mg/kg		1.151	mg/kg	0.000115 %	✓	
		204-371-1	120-12-7									
16	benzo[a]anthracene				6.37	mg/kg		5.771	mg/kg	0.000577 %	✓	
	601-033-00-9	200-280-6	56-55-3									
17	benzo[a]pyrene; benzo[def]chrysene				12.69	mg/kg		11.497	mg/kg	0.00115 %	✓	
	601-032-00-3	200-028-5	50-32-8									
18	benzo[b]fluoranthene				11.12	mg/kg		10.075	mg/kg	0.00101 %	✓	
	601-034-00-4	205-911-9	205-99-2									
19	benzo[ghi]perylene				7.27	mg/kg		6.587	mg/kg	0.000659 %	✓	
		205-883-8	191-24-2									
20	benzo[k]fluoranthene				4.65	mg/kg		4.213	mg/kg	0.000421 %	✓	
	601-036-00-5	205-916-6	207-08-9									
21	chrysene				5.14	mg/kg		4.657	mg/kg	0.000466 %	✓	
	601-048-00-0	205-923-4	218-01-9									
22	dibenz[a,h]anthracene				1.42	mg/kg		1.287	mg/kg	0.000129 %	✓	
	601-041-00-2	200-181-8	53-70-3									
23	fluoranthene				11.35	mg/kg		10.283	mg/kg	0.00103 %	✓	
		205-912-4	206-44-0									
24	fluorene				0.35	mg/kg		0.317	mg/kg	0.0000317 %	✓	
		201-695-5	86-73-7									
25	indeno[123-cd]pyrene				8.42	mg/kg		7.629	mg/kg	0.000763 %	✓	
		205-893-2	193-39-5									
26	naphthalene				0.42	mg/kg		0.381	mg/kg	0.0000381 %	✓	
	601-052-00-2	202-049-5	91-20-3									
27	phenanthrene				3.06	mg/kg		2.772	mg/kg	0.000277 %	✓	
		201-581-5	85-01-8									
28	pyrene				11.53	mg/kg		10.446	mg/kg	0.00104 %	✓	
		204-927-3	129-00-0									
29	benzene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
	601-020-00-8	200-753-7	71-43-2									
30	toluene				<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
	601-021-00-3	203-625-9	108-88-3									




#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
31	• ethylbenzene 601-023-00-4 202-849-4 100-41-4				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
32	xylene 601-022-00-9 202-422-2 [1] 95-47-6 [1] 203-396-5 [2] 106-42-3 [2] 203-576-3 [3] 108-38-3 [3] 215-535-7 [4] 1330-20-7 [4]				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
33	• TPH (C6 to C40) petroleum group TPH				2157.9 mg/kg		1955.057 mg/kg	0.196 %	✓	
34	• confirm TPH has NOT arisen from diesel or petrol <input checked="" type="checkbox"/>									
35	asbestos 650-013-00-6 ----- 12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5				<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
Total:								0.315 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Hazardous result
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- CLP: Note 1 Only the metal concentration has been used for classification

Classification of sample: WS01[2]

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

Sample details

Sample name:	LoW Code:	
WS01[2]	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
3.50 m		
Moisture content:		
21.9%		
(wet weight correction)		

Hazard properties

None identified

Determinands

Moisture content: 21.9% 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 }				8.4 mg/kg	1.32	8.662 mg/kg	0.000866 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
2	cadmium { cadmium oxide }				<2 mg/kg	1.142	<2.285 mg/kg	<0.000228 %		<LOD
	048-002-00-0	215-146-2	1306-19-0							
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				26.7 mg/kg	1.462	30.477 mg/kg	0.00305 %	✓	
		215-160-9	1308-38-9							
4	chromium in chromium(VI) compounds { chromium(VI) oxide }				<0.04 mg/kg	1.923	<0.0769 mg/kg	<0.00000769 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
5	copper { dicopper oxide; copper (I) oxide }				22 mg/kg	1.126	19.345 mg/kg	0.00193 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
6	lead { lead chromate }			1	33.4 mg/kg	1.56	40.688 mg/kg	0.00261 %	✓	
	082-004-00-2	231-846-0	7758-97-6							
7	mercury { mercury dichloride }				<2 mg/kg	1.353	<2.707 mg/kg	<0.000271 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
8	nickel { nickel chromate }				10.1 mg/kg	2.976	23.477 mg/kg	0.00235 %	✓	
	028-035-00-7	238-766-5	14721-18-7							
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<3 mg/kg	1.405	<4.215 mg/kg	<0.000422 %		<LOD
	034-002-00-8									
10	zinc { zinc chromate }				83.8 mg/kg	2.774	181.562 mg/kg	0.0182 %	✓	
	024-007-00-3	236-878-9	13530-65-9							
11	pH		PH		7.1 pH		7.1 pH	7.1 pH		
12	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
	006-007-00-5									
13	acenaphthene				0.03 mg/kg		0.0234 mg/kg	0.00000234 %	✓	
		201-469-6	83-32-9							
14	acenaphthylene				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
		205-917-1	208-96-8							



#	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							
15	anthracene	204-371-1	120-12-7		0.06 mg/kg		0.0469 mg/kg	0.0000469 %	✓	
16	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	0.14 mg/kg		0.109 mg/kg	0.0000109 %	✓	
17	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	0.13 mg/kg		0.102 mg/kg	0.0000102 %	✓	
18	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	0.17 mg/kg		0.133 mg/kg	0.0000133 %	✓	
19	benzo[ghi]perylene		205-883-8	191-24-2	0.08 mg/kg		0.0625 mg/kg	0.00000625 %	✓	
20	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	0.06 mg/kg		0.0469 mg/kg	0.00000469 %	✓	
21	chrysene	601-048-00-0	205-923-4	218-01-9	0.13 mg/kg		0.102 mg/kg	0.0000102 %	✓	
22	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	0.02 mg/kg		0.0156 mg/kg	0.00000156 %	✓	
23	fluoranthene		205-912-4	206-44-0	0.32 mg/kg		0.25 mg/kg	0.000025 %	✓	
24	fluorene		201-695-5	86-73-7	<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
25	indeno[123-cd]pyrene		205-893-2	193-39-5	0.08 mg/kg		0.0625 mg/kg	0.00000625 %	✓	
26	naphthalene	601-052-00-2	202-049-5	91-20-3	<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
27	phenanthrene		201-581-5	85-01-8	0.18 mg/kg		0.141 mg/kg	0.0000141 %	✓	
28	pyrene		204-927-3	129-00-0	0.28 mg/kg		0.219 mg/kg	0.0000219 %	✓	
29	benzene	601-020-00-8	200-753-7	71-43-2	<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
30	toluene	601-021-00-3	203-625-9	108-88-3	<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
31	ethylbenzene	601-023-00-4	202-849-4	100-41-4	<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
32	xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]	<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
33	TPH (C6 to C40) petroleum group			TPH	134.4 mg/kg		104.966 mg/kg	0.0105 %	✓	
34	confirm TPH has NOT arisen from diesel or petrol				<input checked="" type="checkbox"/>					
35	asbestos	650-013-00-6	-----	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5	<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
Total:								0.0421 %		

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
- 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: too low to be flammable


Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0105%)

Classification of sample: WS02

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

Sample details

Sample name:	LoW Code:	
WS02	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.50 m		
Moisture content:		
24.7%		
(wet weight correction)		

Hazard properties

None identified

Determinands

Moisture content: 24.7% 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 }				37 mg/kg	1.32	36.786 mg/kg	0.00368 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
2	cadmium { cadmium oxide }				<2 mg/kg	1.142	<2.285 mg/kg	<0.000228 %		<LOD
	048-002-00-0	215-146-2	1306-19-0							
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				27.3 mg/kg	1.462	30.045 mg/kg	0.003 %	✓	
		215-160-9	1308-38-9							
4	chromium in chromium(VI) compounds { chromium(VI) oxide }				<0.04 mg/kg	1.923	<0.0769 mg/kg	<0.00000769 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
5	copper { dicopper oxide; copper (I) oxide }				100.4 mg/kg	1.126	85.119 mg/kg	0.00851 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
6	lead { lead chromate }			1	174.2 mg/kg	1.56	204.605 mg/kg	0.0131 %	✓	
	082-004-00-2	231-846-0	7758-97-6							
7	mercury { mercury dichloride }				<2 mg/kg	1.353	<2.707 mg/kg	<0.000271 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
8	nickel { nickel chromate }				29.3 mg/kg	2.976	65.665 mg/kg	0.00657 %	✓	
	028-035-00-7	238-766-5	14721-18-7							
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<3 mg/kg	1.405	<4.215 mg/kg	<0.000422 %		<LOD
	034-002-00-8									
10	zinc { zinc chromate }				225.3 mg/kg	2.774	470.636 mg/kg	0.0471 %	✓	
	024-007-00-3	236-878-9	13530-65-9							
11	pH				7.3 pH		7.3 pH	7.3 pH		
			PH							
12	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
	006-007-00-5									
13	acenaphthene				0.32 mg/kg		0.241 mg/kg	0.0000241 %	✓	
		201-469-6	83-32-9							
14	acenaphthylene				0.07 mg/kg		0.0527 mg/kg	0.00000527 %	✓	
		205-917-1	208-96-8							



#	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							
15	anthracene	204-371-1	120-12-7		0.76 mg/kg		0.572 mg/kg	0.0000572 %	✓	
16	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	2.08 mg/kg		1.566 mg/kg	0.000157 %	✓	
17	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	1.71 mg/kg		1.288 mg/kg	0.000129 %	✓	
18	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	2.11 mg/kg		1.589 mg/kg	0.000159 %	✓	
19	benzo[ghi]perylene	205-883-8	191-24-2		1.07 mg/kg		0.806 mg/kg	0.0000806 %	✓	
20	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	0.85 mg/kg		0.64 mg/kg	0.000064 %	✓	
21	chrysene	601-048-00-0	205-923-4	218-01-9	2.36 mg/kg		1.777 mg/kg	0.000178 %	✓	
22	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	0.23 mg/kg		0.173 mg/kg	0.0000173 %	✓	
23	fluoranthene	205-912-4	206-44-0		5.44 mg/kg		4.096 mg/kg	0.00041 %	✓	
24	fluorene	201-695-5	86-73-7		0.24 mg/kg		0.181 mg/kg	0.0000181 %	✓	
25	indeno[123-cd]pyrene	205-893-2	193-39-5		1.15 mg/kg		0.866 mg/kg	0.0000866 %	✓	
26	naphthalene	601-052-00-2	202-049-5	91-20-3	0.21 mg/kg		0.158 mg/kg	0.0000158 %	✓	
27	phenanthrene	201-581-5	85-01-8		2.33 mg/kg		1.754 mg/kg	0.000175 %	✓	
28	pyrene	204-927-3	129-00-0		5.15 mg/kg		3.878 mg/kg	0.000388 %	✓	
29	benzene	601-020-00-8	200-753-7	71-43-2	<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
30	toluene	601-021-00-3	203-625-9	108-88-3	<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
31	ethylbenzene	601-023-00-4	202-849-4	100-41-4	<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
32	xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]	<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
33	TPH (C6 to C40) petroleum group		TPH		207.4 mg/kg		156.172 mg/kg	0.0156 %	✓	
34	confirm TPH has NOT arisen from diesel or petrol				<input checked="" type="checkbox"/>					
35	asbestos	650-013-00-6	-----	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5	<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
Total:								0.102 %		

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
- 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: too low to be flammable**

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0156%)



Classification of sample: WS02[2]

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

Sample details

Sample name:	LoW Code:
WS02[2]	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:
1.00 m	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
Moisture content:	
21.7%	
(wet weight correction)	

Hazard properties

None identified

Determinands

Moisture content: 21.7% 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 }				41.2 mg/kg	1.32	42.593 mg/kg	0.00426 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
2	cadmium { cadmium oxide }				<2 mg/kg	1.142	<2.285 mg/kg	<0.000228 %		<LOD
	048-002-00-0	215-146-2	1306-19-0							
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				23.6 mg/kg	1.462	27.008 mg/kg	0.0027 %	✓	
		215-160-9	1308-38-9							
4	chromium in chromium(VI) compounds { chromium(VI) oxide }				<0.04 mg/kg	1.923	<0.0769 mg/kg	<0.00000769 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
5	copper { dicopper oxide; copper (I) oxide }				204.4 mg/kg	1.126	180.193 mg/kg	0.018 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
6	lead { lead chromate }			1	200 mg/kg	1.56	244.267 mg/kg	0.0157 %	✓	
	082-004-00-2	231-846-0	7758-97-6							
7	mercury { mercury dichloride }				<2 mg/kg	1.353	<2.707 mg/kg	<0.000271 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
8	nickel { nickel chromate }				31.7 mg/kg	2.976	73.874 mg/kg	0.00739 %	✓	
	028-035-00-7	238-766-5	14721-18-7							
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<3 mg/kg	1.405	<4.215 mg/kg	<0.000422 %		<LOD
	034-002-00-8									
10	zinc { zinc chromate }				178.8 mg/kg	2.774	388.382 mg/kg	0.0388 %	✓	
	024-007-00-3	236-878-9	13530-65-9							
11	pH		PH		7.8 pH		7.8 pH	7.8 pH		
12	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
	006-007-00-5									
13	acenaphthene				0.05 mg/kg		0.0391 mg/kg	0.00000391 %	✓	
		201-469-6	83-32-9							
14	acenaphthylene				0.2 mg/kg		0.157 mg/kg	0.0000157 %	✓	
		205-917-1	208-96-8							



#	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							
15	anthracene	204-371-1	120-12-7		0.31 mg/kg		0.243 mg/kg	0.0000243 %	✓	
16	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	0.99 mg/kg		0.775 mg/kg	0.0000775 %	✓	
17	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	0.7 mg/kg		0.548 mg/kg	0.0000548 %	✓	
18	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	0.81 mg/kg		0.634 mg/kg	0.0000634 %	✓	
19	benzo[ghi]perylene		205-883-8	191-24-2	0.35 mg/kg		0.274 mg/kg	0.0000274 %	✓	
20	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	0.33 mg/kg		0.258 mg/kg	0.0000258 %	✓	
21	chrysene	601-048-00-0	205-923-4	218-01-9	1.01 mg/kg		0.791 mg/kg	0.0000791 %	✓	
22	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	0.1 mg/kg		0.0783 mg/kg	0.00000783 %	✓	
23	fluoranthene		205-912-4	206-44-0	2.03 mg/kg		1.589 mg/kg	0.000159 %	✓	
24	fluorene		201-695-5	86-73-7	0.25 mg/kg		0.196 mg/kg	0.0000196 %	✓	
25	indeno[123-cd]pyrene		205-893-2	193-39-5	0.38 mg/kg		0.298 mg/kg	0.0000298 %	✓	
26	naphthalene	601-052-00-2	202-049-5	91-20-3	0.09 mg/kg		0.0705 mg/kg	0.00000705 %	✓	
27	phenanthrene		201-581-5	85-01-8	1.86 mg/kg		1.456 mg/kg	0.000146 %	✓	
28	pyrene		204-927-3	129-00-0	1.71 mg/kg		1.339 mg/kg	0.000134 %	✓	
29	benzene	601-020-00-8	200-753-7	71-43-2	<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
30	toluene	601-021-00-3	203-625-9	108-88-3	<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
31	ethylbenzene	601-023-00-4	202-849-4	100-41-4	<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
32	xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]	<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
33	TPH (C6 to C40) petroleum group			TPH	34.6 mg/kg		27.092 mg/kg	0.00271 %	✓	
34	confirm TPH has NOT arisen from diesel or petrol				<input checked="" type="checkbox"/>					
35	asbestos	650-013-00-6	-----	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5	<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
Total:								0.093 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- 🧪 Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- 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: too low to be flammable**


Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.00271%)

Classification of sample: WS03

 **Hazardous Waste**
Classified as **17 05 03 ***
in the List of Waste

Sample details

Sample name:	LoW Code:
WS03	Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry: 17 05 03 * (Soil and stones containing hazardous substances)
0.50 m	
Moisture content:	
23.2% (wet weight correction)	

Hazard properties

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 hazardous because No liquid phase: too low to be flammable

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.122%)

HP 7: Carcinogenic "waste which induces cancer or increases its incidence"

Hazard Statements hit:

Carc. 1B; H350 "May cause cancer [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.122%)

HP 11: Mutagenic "waste which may cause a mutation, that is a permanent change in the amount or structure of the genetic material in a cell"

Hazard Statements hit:




Muta. 1B; H340 "May cause genetic defects [state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard]."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.122%)

Determinands

Moisture content: 23.2% 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 }				29.4	mg/kg	1.32	29.812	mg/kg	0.00298 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
2	 cadmium { cadmium oxide }				<2	mg/kg	1.142	<2.285	mg/kg	<0.000228 %		<LOD
	048-002-00-0	215-146-2	1306-19-0									
3	 chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				26.3	mg/kg	1.462	29.521	mg/kg	0.00295 %	✓	
		215-160-9	1308-38-9									



#	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									
4	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0	<0.04	mg/kg	1.923	<0.0769	mg/kg	<0.00000769 %		<LOD
5	copper { dicopper oxide; copper (I) oxide }	029-002-00-X	215-270-7	1317-39-1	110.2	mg/kg	1.126	95.288	mg/kg	0.00953 %	✓	
6	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	159.2	mg/kg	1.56	190.712	mg/kg	0.0122 %	✓	
7	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7	<2	mg/kg	1.353	<2.707	mg/kg	<0.000271 %		<LOD
8	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7	25.6	mg/kg	2.976	58.516	mg/kg	0.00585 %	✓	
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8			<3	mg/kg	1.405	<4.215	mg/kg	<0.000422 %		<LOD
10	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9	201.5	mg/kg	2.774	429.305	mg/kg	0.0429 %	✓	
11	pH			PH	7.8	pH		7.8	pH	7.8 pH		
12	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5			<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
13	acenaphthene		201-469-6	83-32-9	1.45	mg/kg		1.114	mg/kg	0.000111 %	✓	
14	acenaphthylene		205-917-1	208-96-8	0.24	mg/kg		0.184	mg/kg	0.0000184 %	✓	
15	anthracene		204-371-1	120-12-7	3.81	mg/kg		2.926	mg/kg	0.000293 %	✓	
16	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	25.32	mg/kg		19.446	mg/kg	0.00194 %	✓	
17	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	31	mg/kg		23.808	mg/kg	0.00238 %	✓	
18	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	34.95	mg/kg		26.842	mg/kg	0.00268 %	✓	
19	benzo[ghi]perylene		205-883-8	191-24-2	21.26	mg/kg		16.328	mg/kg	0.00163 %	✓	
20	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	16.86	mg/kg		12.948	mg/kg	0.00129 %	✓	
21	chrysene	601-048-00-0	205-923-4	218-01-9	25.79	mg/kg		19.807	mg/kg	0.00198 %	✓	
22	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	3.99	mg/kg		3.064	mg/kg	0.000306 %	✓	
23	fluoranthene		205-912-4	206-44-0	30.91	mg/kg		23.739	mg/kg	0.00237 %	✓	
24	fluorene		201-695-5	86-73-7	1.07	mg/kg		0.822	mg/kg	0.0000822 %	✓	
25	indeno[123-cd]pyrene		205-893-2	193-39-5	24.37	mg/kg		18.716	mg/kg	0.00187 %	✓	
26	naphthalene	601-052-00-2	202-049-5	91-20-3	1.67	mg/kg		1.283	mg/kg	0.000128 %	✓	
27	phenanthrene		201-581-5	85-01-8	8.68	mg/kg		6.666	mg/kg	0.000667 %	✓	
28	pyrene		204-927-3	129-00-0	29.62	mg/kg		22.748	mg/kg	0.00227 %	✓	
29	benzene	601-020-00-8	200-753-7	71-43-2	<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
30	toluene	601-021-00-3	203-625-9	108-88-3	<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD



#	Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	EU CLP index number	EC Number	CAS Number							
31	• ethylbenzene				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
	601-023-00-4	202-849-4	100-41-4							
32	• xylene				<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]							
33	• TPH (C6 to C40) petroleum group				1588.8 mg/kg		1220.198 mg/kg	0.122 %	✓	
			TPH							
34	• confirm TPH has NOT arisen from diesel or petrol				<input checked="" type="checkbox"/>					
35	• asbestos				<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
	650-013-00-6	-----	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5							
Total:								0.221 %		

Key

- User supplied data
- Determinand values ignored for classification, see column 'Conc. Not Used' for reason
- Hazardous result
- Determinand defined or amended by HazWasteOnline (see Appendix A)
- Speciated Determinand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
- <LOD** Below limit of detection
- CLP: Note 1 Only the metal concentration has been used for classification



Classification of sample: WS04

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

Sample details

Sample name:	LoW Code:	
WS04	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.50 m		
Moisture content:		
21.7%		
(wet weight correction)		

Hazard properties

None identified

Determinands

Moisture content: 21.7% 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 }				20.1	mg/kg	1.32	20.78	mg/kg	0.00208 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
2	cadmium { cadmium oxide }				<2	mg/kg	1.142	<2.285	mg/kg	<0.000228 %		<LOD
	048-002-00-0	215-146-2	1306-19-0									
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				22.9	mg/kg	1.462	26.207	mg/kg	0.00262 %	✓	
		215-160-9	1308-38-9									
4	chromium in chromium(VI) compounds { chromium(VI) oxide }				<0.04	mg/kg	1.923	<0.0769	mg/kg	<0.00000769 %		<LOD
	024-001-00-0	215-607-8	1333-82-0									
5	copper { dicopper oxide; copper (I) oxide }				79.7	mg/kg	1.126	70.261	mg/kg	0.00703 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
6	lead { lead chromate }			1	92.9	mg/kg	1.56	113.462	mg/kg	0.00727 %	✓	
	082-004-00-2	231-846-0	7758-97-6									
7	mercury { mercury dichloride }				<2	mg/kg	1.353	<2.707	mg/kg	<0.000271 %		<LOD
	080-010-00-X	231-299-8	7487-94-7									
8	nickel { nickel chromate }				18.1	mg/kg	2.976	42.181	mg/kg	0.00422 %	✓	
	028-035-00-7	238-766-5	14721-18-7									
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<3	mg/kg	1.405	<4.215	mg/kg	<0.000422 %		<LOD
	034-002-00-8											
10	zinc { zinc chromate }				187	mg/kg	2.774	406.193	mg/kg	0.0406 %	✓	
	024-007-00-3	236-878-9	13530-65-9									
11	pH				7.5	pH		7.5	pH	7.5 pH		
			PH									
12	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
	006-007-00-5											
13	acenaphthene				6.26	mg/kg		4.902	mg/kg	0.00049 %	✓	
		201-469-6	83-32-9									
14	acenaphthylene				0.24	mg/kg		0.188	mg/kg	0.0000188 %	✓	
		205-917-1	208-96-8									



#	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							
15	anthracene	204-371-1	120-12-7		11.39 mg/kg		8.918 mg/kg	0.000892 %	✓	
16	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	18.14 mg/kg		14.204 mg/kg	0.00142 %	✓	
17	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	15.19 mg/kg		11.894 mg/kg	0.00119 %	✓	
18	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	17.27 mg/kg		13.522 mg/kg	0.00135 %	✓	
19	benzo[ghi]perylene		205-883-8	191-24-2	9.26 mg/kg		7.251 mg/kg	0.000725 %	✓	
20	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	7.26 mg/kg		5.685 mg/kg	0.000568 %	✓	
21	chrysene	601-048-00-0	205-923-4	218-01-9	18.66 mg/kg		14.611 mg/kg	0.00146 %	✓	
22	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	2.06 mg/kg		1.613 mg/kg	0.000161 %	✓	
23	fluoranthene		205-912-4	206-44-0	47.54 mg/kg		37.224 mg/kg	0.00372 %	✓	
24	fluorene		201-695-5	86-73-7	4.73 mg/kg		3.704 mg/kg	0.00037 %	✓	
25	indeno[123-cd]pyrene		205-893-2	193-39-5	9.35 mg/kg		7.321 mg/kg	0.000732 %	✓	
26	naphthalene	601-052-00-2	202-049-5	91-20-3	1.64 mg/kg		1.284 mg/kg	0.000128 %	✓	
27	phenanthrene		201-581-5	85-01-8	42.96 mg/kg		33.638 mg/kg	0.00336 %	✓	
28	pyrene		204-927-3	129-00-0	37.69 mg/kg		29.511 mg/kg	0.00295 %	✓	
29	benzene	601-020-00-8	200-753-7	71-43-2	<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
30	toluene	601-021-00-3	203-625-9	108-88-3	<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
31	ethylbenzene	601-023-00-4	202-849-4	100-41-4	<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
32	xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]	<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
33	TPH (C6 to C40) petroleum group			TPH	600.6 mg/kg		470.27 mg/kg	0.047 %	✓	
34	confirm TPH has NOT arisen from diesel or petrol				<input checked="" type="checkbox"/>					
35	asbestos	650-013-00-6	-----	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5	<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
Total:								0.133 %		

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
- 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: too low to be flammable


Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.047%)

Classification of sample: WS05

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

Sample details

Sample name:	LoW Code:	
WS05	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.50 m		
Moisture content:		
23.2%		
(wet weight correction)		

Hazard properties

None identified

Determinands

Moisture content: 23.2% 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 }				13.8	mg/kg	1.32	13.993	mg/kg	0.0014 %	✓	
	033-003-00-0	215-481-4	1327-53-3									
2	cadmium { cadmium oxide }				<2	mg/kg	1.142	<2.285	mg/kg	<0.000228 %		<LOD
	048-002-00-0	215-146-2	1306-19-0									
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				23.9	mg/kg	1.462	26.827	mg/kg	0.00268 %	✓	
		215-160-9	1308-38-9									
4	chromium in chromium(VI) compounds { chromium(VI) oxide }				<0.04	mg/kg	1.923	<0.0769	mg/kg	<0.00000769 %		<LOD
	024-001-00-0	215-607-8	1333-82-0									
5	copper { dicopper oxide; copper (I) oxide }				34	mg/kg	1.126	29.399	mg/kg	0.00294 %	✓	
	029-002-00-X	215-270-7	1317-39-1									
6	lead { lead chromate }			1	54.8	mg/kg	1.56	65.647	mg/kg	0.00421 %	✓	
	082-004-00-2	231-846-0	7758-97-6									
7	mercury { mercury dichloride }				<2	mg/kg	1.353	<2.707	mg/kg	<0.000271 %		<LOD
	080-010-00-X	231-299-8	7487-94-7									
8	nickel { nickel chromate }				13.1	mg/kg	2.976	29.944	mg/kg	0.00299 %	✓	
	028-035-00-7	238-766-5	14721-18-7									
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<3	mg/kg	1.405	<4.215	mg/kg	<0.000422 %		<LOD
	034-002-00-8											
10	zinc { zinc chromate }				91.2	mg/kg	2.774	194.306	mg/kg	0.0194 %	✓	
	024-007-00-3	236-878-9	13530-65-9									
11	pH				7	pH		7	pH	7pH		
			PH									
12	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1	mg/kg	1.884	<1.884	mg/kg	<0.000188 %		<LOD
	006-007-00-5											
13	acenaphthene				0.93	mg/kg		0.714	mg/kg	0.0000714 %	✓	
		201-469-6	83-32-9									
14	acenaphthylene				<0.02	mg/kg		<0.02	mg/kg	<0.000002 %		<LOD
		205-917-1	208-96-8									



#	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							
15	anthracene	204-371-1	120-12-7		1.52 mg/kg		1.167 mg/kg	0.000117 %	✓	
16	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	2.08 mg/kg		1.597 mg/kg	0.00016 %	✓	
17	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	1.92 mg/kg		1.475 mg/kg	0.000147 %	✓	
18	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	1.96 mg/kg		1.505 mg/kg	0.000151 %	✓	
19	benzo[ghi]perylene	205-883-8	191-24-2		1.16 mg/kg		0.891 mg/kg	0.0000891 %	✓	
20	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	0.84 mg/kg		0.645 mg/kg	0.0000645 %	✓	
21	chrysene	601-048-00-0	205-923-4	218-01-9	2.32 mg/kg		1.782 mg/kg	0.000178 %	✓	
22	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	0.25 mg/kg		0.192 mg/kg	0.0000192 %	✓	
23	fluoranthene	205-912-4	206-44-0		5.44 mg/kg		4.178 mg/kg	0.000418 %	✓	
24	fluorene	201-695-5	86-73-7		0.6 mg/kg		0.461 mg/kg	0.0000461 %	✓	
25	indeno[123-cd]pyrene	205-893-2	193-39-5		1.01 mg/kg		0.776 mg/kg	0.0000776 %	✓	
26	naphthalene	601-052-00-2	202-049-5	91-20-3	0.15 mg/kg		0.115 mg/kg	0.0000115 %	✓	
27	phenanthrene	201-581-5	85-01-8		4.73 mg/kg		3.633 mg/kg	0.000363 %	✓	
28	pyrene	204-927-3	129-00-0		4.57 mg/kg		3.51 mg/kg	0.000351 %	✓	
29	benzene	601-020-00-8	200-753-7	71-43-2	<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
30	toluene	601-021-00-3	203-625-9	108-88-3	<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
31	ethylbenzene	601-023-00-4	202-849-4	100-41-4	<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
32	xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]	<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
33	TPH (C6 to C40) petroleum group		TPH		178.7 mg/kg		137.242 mg/kg	0.0137 %	✓	
34	confirm TPH has NOT arisen from diesel or petrol				<input checked="" type="checkbox"/>					
35	asbestos	650-013-00-6	-----	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5	<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
Total:								0.0522 %		

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
- 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: too low to be flammable**

Hazard Statements hit:

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

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.0137%)



Classification of sample: WS06

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

Sample details

Sample name:	LoW Code:	
WS06	Chapter:	17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Sample Depth:	Entry:	17 05 04 (Soil and stones other than those mentioned in 17 05 03)
0.50 m		
Moisture content:		
20%		
(wet weight correction)		

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 }				10.4 mg/kg	1.32	10.985 mg/kg	0.0011 %	✓	
	033-003-00-0	215-481-4	1327-53-3							
2	cadmium { cadmium oxide }				<2 mg/kg	1.142	<2.285 mg/kg	<0.000228 %		<LOD
	048-002-00-0	215-146-2	1306-19-0							
3	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }				23.1 mg/kg	1.462	27.01 mg/kg	0.0027 %	✓	
		215-160-9	1308-38-9							
4	chromium in chromium(VI) compounds { chromium(VI) oxide }				<0.04 mg/kg	1.923	<0.0769 mg/kg	<0.00000769 %		<LOD
	024-001-00-0	215-607-8	1333-82-0							
5	copper { dicopper oxide; copper (I) oxide }				13.5 mg/kg	1.126	12.16 mg/kg	0.00122 %	✓	
	029-002-00-X	215-270-7	1317-39-1							
6	lead { lead chromate }			1	22.1 mg/kg	1.56	27.578 mg/kg	0.00177 %	✓	
	082-004-00-2	231-846-0	7758-97-6							
7	mercury { mercury dichloride }				<2 mg/kg	1.353	<2.707 mg/kg	<0.000271 %		<LOD
	080-010-00-X	231-299-8	7487-94-7							
8	nickel { nickel chromate }				14.1 mg/kg	2.976	33.572 mg/kg	0.00336 %	✓	
	028-035-00-7	238-766-5	14721-18-7							
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				<3 mg/kg	1.405	<4.215 mg/kg	<0.000422 %		<LOD
	034-002-00-8									
10	zinc { zinc chromate }				41.6 mg/kg	2.774	92.324 mg/kg	0.00923 %	✓	
	024-007-00-3	236-878-9	13530-65-9							
11	pH		PH		7.2 pH		7.2 pH	7.2 pH		
12	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }				<1 mg/kg	1.884	<1.884 mg/kg	<0.000188 %		<LOD
	006-007-00-5									
13	acenaphthene				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
		201-469-6	83-32-9							
14	acenaphthylene				<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
		205-917-1	208-96-8							



#	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							
15	anthracene	204-371-1	120-12-7		<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
16	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
17	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8	<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
18	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2	<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
19	benzo[ghi]perylene		205-883-8	191-24-2	<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
20	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
21	chrysene	601-048-00-0	205-923-4	218-01-9	<0.03 mg/kg		<0.03 mg/kg	<0.000003 %		<LOD
22	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3	<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
23	fluoranthene		205-912-4	206-44-0	<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
24	fluorene		201-695-5	86-73-7	<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
25	indeno[123-cd]pyrene		205-893-2	193-39-5	<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
26	naphthalene	601-052-00-2	202-049-5	91-20-3	<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
27	phenanthrene		201-581-5	85-01-8	<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
28	pyrene		204-927-3	129-00-0	<0.02 mg/kg		<0.02 mg/kg	<0.000002 %		<LOD
29	benzene	601-020-00-8	200-753-7	71-43-2	<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
30	toluene	601-021-00-3	203-625-9	108-88-3	<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
31	ethylbenzene	601-023-00-4	202-849-4	100-41-4	<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
32	xylene	601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]	<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
33	TPH (C6 to C40) petroleum group			TPH	<4.5 mg/kg		<4.5 mg/kg	<0.00045 %		<LOD
34	confirm TPH has NOT arisen from diesel or petrol				<input checked="" type="checkbox"/>					
35	asbestos	650-013-00-6	-----	12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5 12001-29-5	<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
Total:								0.0224 %		

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
- 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.

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

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

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

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

Reason for additional Hazards Statement(s):

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

• acenaphthene (EC Number: 201-469-6, CAS Number: 83-32-9)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 17 Jul 2015

Hazard Statements: Eye Irrit. 2; H319, STOT SE 3; H335, Skin Irrit. 2; H315, Aquatic Acute 1; H400, Aquatic Chronic 1; H410, Aquatic Chronic 2; H411

• acenaphthylene (EC Number: 205-917-1, CAS Number: 208-96-8)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 17 Jul 2015

Hazard Statements: Acute Tox. 4; H302, Acute Tox. 1; H330, Acute Tox. 1; H310, Eye Irrit. 2; H319, STOT SE 3; H335, Skin Irrit. 2; H315

• anthracene (EC Number: 204-371-1, CAS Number: 120-12-7)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 17 Jul 2015

Hazard Statements: Eye Irrit. 2; H319, STOT SE 3; H335, Skin Irrit. 2; H315, Skin Sens. 1; H317, Aquatic Acute 1; H400, Aquatic Chronic 1; H410

• benzo[ghi]perylene (EC Number: 205-883-8, CAS Number: 191-24-2)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 23 Jul 2015

Hazard Statements: Aquatic Acute 1; H400, Aquatic Chronic 1; H410

• fluoranthene (EC Number: 205-912-4, CAS Number: 206-44-0)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 21 Aug 2015

Hazard Statements: Acute Tox. 4; H302, Aquatic Acute 1; H400, Aquatic Chronic 1; H410

• fluorene (EC Number: 201-695-5, CAS Number: 86-73-7)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 06 Aug 2015

Hazard Statements: Aquatic Acute 1; H400, Aquatic Chronic 1; H410

• indeno[123-cd]pyrene (EC Number: 205-893-2, CAS Number: 193-39-5)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 06 Aug 2015

Hazard Statements: Carc. 2; H351



◆ **phenanthrene** (EC Number: 201-581-5, CAS Number: 85-01-8)

Description/Comments: Data from C&L Inventory Database

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 06 Aug 2015

Hazard Statements: Acute Tox. 4; H302, Eye Irrit. 2; H319, STOT SE 3; H335, Carc. 2; H351, Skin Sens. 1; H317, Aquatic Acute 1; H400, Aquatic Chronic 1; H410, Skin Irrit. 2; H315

◆ **pyrene** (EC Number: 204-927-3, CAS Number: 129-00-0)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 2014

Data source: <http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database>

Data source date: 21 Aug 2015

Hazard Statements: Skin Irrit. 2; H315, Eye Irrit. 2; H319, STOT SE 3; H335, Aquatic Acute 1; H400, Aquatic Chronic 1; H410

◆ **ethylbenzene** (EC Number: 202-849-4, CAS Number: 100-41-4)

GB MCL index number: 601-023-00-4

Description/Comments:

Additional Hazard Statement(s): Carc. 2; H351

Reason for additional Hazards Statement(s):

20 Nov 2021 - Carc. 2; H351 hazard statement sourced from: IARC Group 2B (77) 2000

◆ **TPH (C6 to C40) petroleum group** (CAS Number: TPH)

Description/Comments: Hazard statements taken from WM3 1st Edition 2015; Risk phrases: WM2 3rd Edition 2013

Data source: WM3 1st Edition 2015

Data source date: 25 May 2015

Hazard Statements: Flam. Liq. 3; H226, Asp. Tox. 1; H304, STOT RE 2; H373, Muta. 1B; H340, Carc. 1B; H350, Repr. 2; H361d, Aquatic Chronic 2; H411

◆ **confirm TPH has NOT arisen from diesel or petrol**

Description/Comments: Chapter 3, section 4b requires a positive confirmation for benzo[a]pyrene to be used as a marker in evaluating Carc. 1B; H350 (HP 7) and Muta. 1B; H340 (HP 11)

Data source: WM3 1st Edition 2015

Data source date: 25 May 2015

Hazard Statements: None.

Appendix B: Rationale for selection of metal species

arsenic {arsenic trioxide}

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

cadmium {cadmium oxide}

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

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

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

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

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

copper {dicopper oxide; copper (I) oxide}

Reasonable case CLP species based on hazard statements/molecular weight and insolubility in water. Industrial sources include: oxidised copper metal, brake pads, pigments, antifouling paints, fungicide. (edit as required) 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 {selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex}

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

zinc {zinc chromate}

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

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

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

Appendix C: Version

HazWasteOnline Classification Engine: **WM3 1st Edition v1.2.GB - Oct 2021**
HazWasteOnline Classification Engine Version: 2024.30.5942.10989 (30 Jan 2024)
HazWasteOnline Database: 2024.26.5938.10982 (26 Jan 2024)

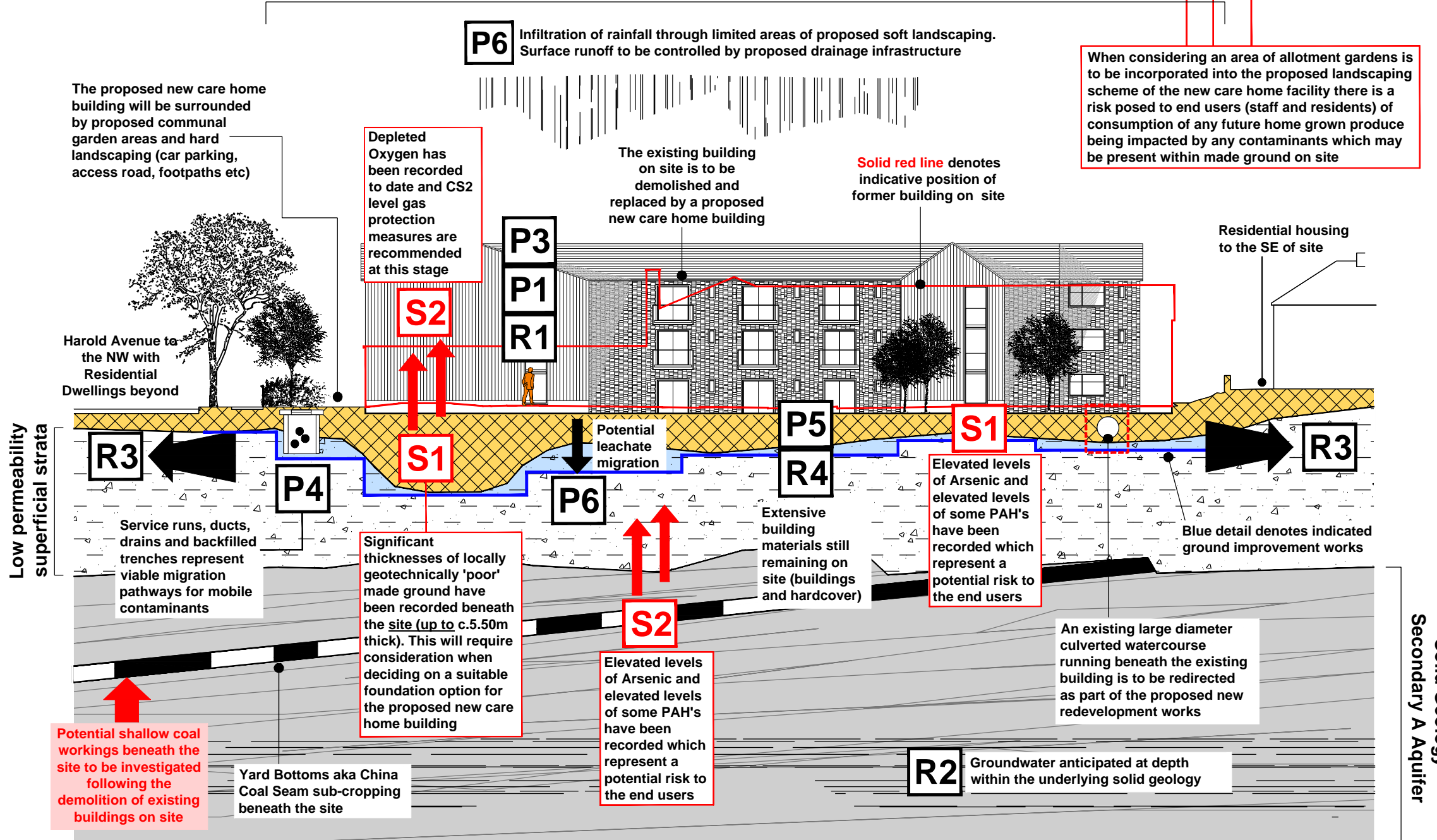
This classification utilises the following guidance and legislation:

- WM3 v1.2.GB - Waste Classification** - 1stEditionv1.2.GB-Oct2021
- CLP Regulation** - Regulation1272/2008/ECof16December2008
- 1st ATP** - Regulation790/2009/ECof10August2009
- 2nd ATP** - Regulation286/2011/ECof10March2011
- 3rd ATP** - Regulation618/2012/EUof10July2012
- 4th ATP** - Regulation487/2013/EUof8May2013
- Correction to 1st ATP** - Regulation758/2013/EUof7August2013
- 5th ATP** - Regulation944/2013/EUof2October2013
- 6th ATP** - Regulation605/2014/EUof5June2014
- WFD Annex III replacement** - Regulation1357/2014/EUof18December2014
- Revised List of Waste 2014** - Decision2014/955/EUof18December2014
- 7th ATP** - Regulation2015/1221/EUof24July2015
- 8th ATP** - Regulation(EU)2016/918of19May2016
- 9th ATP** - Regulation(EU)2016/1179of19July2016
- 10th ATP** - Regulation(EU)2017/776of4May2017
- HP14 amendment** - Regulation(EU)2017/997of8June2017
- 13th ATP** - Regulation(EU)2018/1480of4October2018
- 14th ATP** - Regulation(EU)2020/217of4October2019
- 15th ATP** - Regulation(EU)2020/1182of19May2020
- The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit) Regulations 2020** - UK:2020No.1567of16thDecember2020
- The Waste and Environmental Permitting etc. (Legislative Functions and Amendment etc.) (EU Exit) Regulations 2020** - UK: 2020 No. 1540 of 16th December 2020
- GB MCL List** - version1.1of09June2021
- GB MCL List v2.0** - version2.0of20thOctober2023

CRITICAL POLLUTANT LINKAGES

SOURCE	PATHWAY	RECEPTOR
<p>S</p> <ol style="list-style-type: none"> Made ground associated with site development and culverted watercourse - elevated levels of Arsenic and elevated levels of some PAH's have been recorded which represent a potential risk to the end users Possible Hazardous ground gas associated with infilled land, historic landfills, made ground and mining activities (possible mine gas migration) - Depleted Oxygen has been recorded to date and CS2 level gas protection measures are recommended at this stage 	<p>P</p> <ol style="list-style-type: none"> Ingestion & Dermal Contact Plant uptake and attached soils. Air-inhalation of vapours and direct contact with dust Migration through existing services / permeable strata Direct contact with building materials Surface runoff, infiltration & leachate migration 	<p>R</p> <ol style="list-style-type: none"> Human health - future end users and construction workforce Controlled Waters: Groundwater within the underlying solid geology (Secondary Aquifer - A) and superficial deposits (Secondary Aquifer - Undifferentiated) Adjacent sites Building materials Flora and fauna

Indicative section through site using a N-WEST to S-EAST orientation



When considering an area of allotment gardens is to be incorporated into the proposed landscaping scheme of the new care home facility there is a risk posed to end users (staff and residents) of consumption of any future home grown produce being impacted by any contaminants which may be present within made ground on site

MADE GROUND / FILL*:
 Made ground ranged in thickness from c.1.20m to c.5.50m and comprised very soft to soft clay, soft silty clay, stiff sandy gravelly clay with some sandy ash with coal and brick fragments. The deep made ground appeared to correspond with the position of the former water course & line of culvert and partial basement (plant room)

DRIFT DEPOSITS:
 The underlying natural deposits comprised stiff sandy gravelly clay (Glacial Till)

SOLID GEOLOGY:
 According to published BGS data, the site is underlain by the Pennine Lower Coal Measures Formation (PMCM) deposited during the Carboniferous Period (Langsettian). These deposits typically comprise of interbedded grey mudstones, siltstone, pale grey sandstone, and numerous thick coal seams. Historic boreholes (SD83SW106 / 107) located c.200m - c.250m to the west of the site have recorded dark grey sandstones, mudstones, and siltstones to a depth of at least c.47m bgl

* - EXISTING MADE GROUND TO BE RE-ENGINEERED / GROUND IMPROVED



ARC ENVIRONMENTAL LTD
 Solum House
 Unit 1 Elliott Court
 St. John's Road
 Meadowfield
 Durham, DH7 8PN
 Tel: (0191) 378 6380
 Fax: (0191) 378 0494
 e-mail: admin@arc-environmental.com
 web: www.arc-environmental.com

The contractor shall check all dimensions on site before commencement of any works. No dimensions to be scaled off this drawing.
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rev.	date	amendments	drawn	chckd
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Client: **DUDLEYS**

Project Title:
 Proposed Care Home, Hameldon House
 198 Rossendale Road
 Burnley, BD11 5DE

Drawing Title:
 Revised Conceptual Site Model

Scale at A3: NTS @ A3	Date: 15.02.24	Drawn by: P.D	Approved by: J.P.D
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Job Ref: 23-320	Drg no: -	Rev: -
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