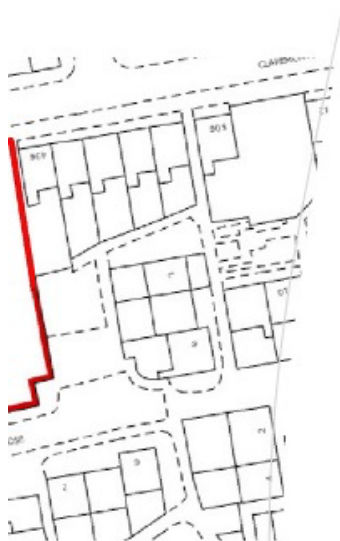




EARTH ENVIRONMENTAL
& GEOTECHNICAL



Remediation Strategy

Claremont Road

Manchester

January 2022

On behalf of

RS Drylining MCR

Earth Environmental & Geotechnical Ltd
Houldsworth Mill Business & Arts Centre
Houldsworth Street
Stockport
SK5 6DA

Tel : 0161 975 6088

Email info@earthenvironmental.co.uk
www.earthenvironmental.co.uk



**CLAREMONT ROAD
MANCHETSER
REMEDATION STRATEGY
FOR
RS DRYLINING MCR**

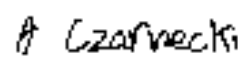
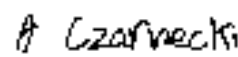
Earth Environmental & Geotechnical Ltd
Houldsworth Mill Business Centre
Houldsworth Street
Stockport
SK5 6DA

www.earthenvironmental.co.uk

Tel 0161 9756088

Report No. A2212/19/RMS

January 2022

Report Title:	Claremont Road, Manchester Remediation Strategy	
Report Reference:	A2212/19/RMS	
Client:	RS Drylining MCR	
Issue Date:	15th January 2022	
Drafted By:	J Sheridan	
Reviewed By:	A Czarnecki	
Authorised By:	A Czarnecki	

This document has been prepared for the titled project (or named part thereof) and should not be relied upon or used for any other project without an independent check being carried out as to its suitability and prior written authorisation being obtained from Earth Environmental & Geotechnical. Earth Environmental & Geotechnical accepts no responsibility or liability for the consequences of the use of this document, wholly or in part, for any other purpose than that for which it was commissioned. Any persons so using or relying upon this document for such other purpose do so at their own risk.

This report was prepared for the sole use of the Client and shall not be relied upon or transferred to any other party without the express written authorisation of Earth Environmental & Geotechnical. It may contain material subject to copyright or obtained subject to license; unauthorised copying of this report will be in breach of copyright/license.

The findings and opinions provided in this document are given in good faith and are subject to the limitations imposed by employing site assessment methods and techniques, appropriate to the time of investigation and within the limitations and constraints defined within this document. The findings and opinions are relevant to the dates when the assessment was undertaken, but should not necessarily be relied upon to represent conditions at a substantially later date.

The findings and opinions conveyed in this report are based on information obtained from a variety of sources as detailed and which Earth Environmental & Geotechnical assumes to be reliable, but have not been independently confirmed. Therefore, Earth Environmental & Geotechnical cannot and does not guarantee the authenticity or reliability of third-party information it has relied upon.

Where opinions expressed in this report are based on current available guidelines and legislation, no liability can be accepted by Earth Environmental & Geotechnical for the effects of any future changes to such guidelines and legislation.

The limitations of liability of Earth Environmental & Geotechnical for the contents of this document have been agreed with the Client, as set out in the terms and conditions of offer and related contract documentation.

CONTENTS

1.0	INTRODUCTION	1
	Appointment	1
	Proposed Development.....	1
	Historical Information.....	1
	Objective	2
	Sources of Information	2
2.0	SITE LOCATION AND DESCRIPTION	3
3.0	PREVIOUS SITE INVESTIGATIONS	4
	Scope of Works	4
	Ground Conditions	4
	Soil Contamination Assessment.....	4
	Asbestos Contamination Assessment.....	5
	Recommendations	5
4.0	LICENCES & APPROVALS	7
5.0	PROPOSED WORKS	8
	Aims	8
	Soil Contamination	8
	<i>Clean Cover Capping System – Specification.....</i>	<i>8</i>
	<i>Clean Cover Capping System – Verification & Validation</i>	<i>8</i>
6.0	SITE WORKS.....	10
	Site Organisation.....	10
	Welfare Facilities/Security	10
	Health & Safety	10
	Site Clearance.....	10
	Excavation of Subsurface Obstructions	10
	Unexpected Contamination.....	11
	Control of Perched Groundwater.....	11
7.0	ENVIRONMENTAL MONITORING & CONTROLS.....	12
	General.....	12
	Noise Control.....	12
	Odour Control.....	12
	Dust Control	13
8.0	OTHER CONSIDERATIONS	14
	Material Management Plan	14
	Waste Soils	14

APPENDICES

Appendix 1	EEG Phase I Geo-Environmental Assessment Report
Appendix 2	EEG Phase II Geo-Environmental Investigation Report
Appendix 3	Assessment Criteria for Clean Cover System
Appendix 4	Report Limitations

FIGURES

Figure 1	Proposed Development Layout Plan
Figure 2	Site Location Plan
Figure 3	Location of Soil Contaminant Exceedances

TABLES

Table 1	Summary of Soil Contamination
Table 2	Summary of Asbestos Contamination

1.0 INTRODUCTION

Appointment

Earth Environmental & Geotechnical Ltd has been commissioned by RS Drylining MCR (the Client) to produce a Remediation Strategy for the site at 492-494 Claremont Road, Manchester, M14 5AB.

Proposed Development

It is understood that the client proposes to construct 7no. two-storey residential houses with associated private gardens, driveways and utility infrastructure.

Figure 1, below, shows extracts from the proposed development plans.

Figure 1 Development Layout Plan



Historical Information

Historically, the site was occupied by residential houses and gardens from the mid-1800s. Later developments on-site included the demolition of the residential housing, followed by the construction of several other structures including a public house in the northern part of the site (1930s), and a works in the centre of the site (1950s).

The works and public house were later demolished in the 1980s and early 2000s respectively. The site is currently vacant and has most recently been used as a storage yard.

Objective

The Remediation Strategy is intended to build on the site characterisation information and provide details on the remediation objectives necessary to protect potential receptors and render the site suitable for the proposed development.

We have included a specification for topsoil quality for gardens, however it is assumed this will lie under the remit of the final developer.

In summary this document presents the technical detail behind the proposed remedial activities at the site and includes:

- Clean Cover System in garden areas.

This report has been prepared for the purpose of satisfying the requirements of the Local Planning Authority (Manchester City Council). Earth Environmental & Geotechnical Ltd reserves the right to amend this remediation strategy in the light of further information which may become available or future changes in contaminated land guidance, prior to site activities.

Sources of Information

The RMS includes a review of the following reports previously produced by Earth Environmental & Geotechnical Ltd;

- Phase I Geo-Environmental Assessment Report, Claremont Road, A2212/17, September 2017
- Phase II Geo-Environmental Investigation Report, Claremont Road, A2212/19/B.0, January 2019

These reports are provided as Appendices 1 and 2 respectively.

2.0 SITE LOCATION AND DESCRIPTION

The site is located at the junction of Claremont Road (north) and Victory Street (west). The approximate National Grid Reference for the centre of the site is SJ 85087 95107 (X: 385087, Y: 395107) with the closest postcode being M14 5AB.

The site is approximately rectangular in shape with maximum dimensions of 50m north-south and 20m east-west, and currently comprises a vacant, completely hard surfaced, storage yard, which is absent of any buildings or permanent structures. The topography of the site appears flat and level.

The site is bound by a combination of brick walls and palisade fencing, and the surrounding area comprises predominantly residential housing with a recreational park to the west.

A location plan is shown below as Figure 2.

Figure 2: Site Location Plan



3.0 PREVIOUS SITE INVESTIGATIONS

A Phase I Desk Study report has been prepared by EEG Ltd. A copy of this report is presented in Appendix 1.

A Phase II Geo-Environmental Site Investigation has also been conducted by EEG Ltd and is presented in Appendix 2.

Scope of Works

The EEG Ltd site investigation was completed on 20th November 2018 and comprised:

- 5no. window sample boreholes (WS1-WS5) to a maximum depth of 3.8m bgl.

Standard Penetration Tests (SPTs) were conducted, and soil samples were retrieved at regular intervals for geotechnical and chemical analysis. Soils were logged by an on-site engineer.

Ground Conditions

The recorded ground conditions are summarised as follows:

- **Asphalt**
- **Made Ground** – variable material encountered in each of the boreholes to a maximum depth of 2.20m bgl (WS1). Typically comprising:
 - Predominantly dark brown/black sandy gravelly clay containing variable proportions of brick, concrete, sandstone, mudstone, wood, tile, coal and clinker fragments. (With relict building materials in WS1).
 - Grey clayey sandy gravel containing variable proportions of brick, concrete, mudstone, coal and clinker fragments.
- **Devensian Till** –
 - Stiff becoming very stiff, brown, silty, slightly sandy, slightly gravelly clay with occasional silty sand bands. The material was noted to become sandier with depth.

Boreholes were terminated at depths of between 3.0m and 3.8m bgl due to SPT refusals (N=50) in the very stiff natural clay (Devensian Till).

Soil Contamination Assessment

As part of the site investigation, 7no. soil samples were retrieved from the site for chemical analysis.

Samples were analysed for the following suite of determinants:

Asbestos Screen, Arsenic, Beryllium, Boron, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Selenium, Vanadium, Zinc, Cyanide, Thiocyanate, Phenol, Sulphate (SO₄), Sulphide, pH, Sulphur, Soil Organic Matter and speciated Polycyclic Aromatic Hydrocarbons (PAH) and speciated Total Petroleum Hydrocarbons (TPH).

Section 7.2 of the Phase II report states that, based on the results of the chemical analysis, each of the samples tested contained concentrations of contaminants in exceedance of screening criteria relevant to

residential end use with plant uptake. The table below summarises the contaminants found to be in exceedance at each location:

Table 1 Summary of Soil Contamination

Determinant	WS1 0.30m MG	WS1 1.00m MG	WS2 0.60m MG	WS3 0.60m MG	WS4 0.40m MG	WS4 0.90m MG	WS5 0.50m MG	Assessment Criteria (mg/kg)
Lead	323	-	-	-	209	268	218	200
Di-benz (a, h) anthracene	0.34	0.55	0.33	0.32	0.31	-	-	0.24
Naphthalene	-	5.02	-	-	-	-	-	2.3

Asbestos Contamination Assessment

Asbestos (Chrysotile) was also detected in two of the seven soil samples tested. Laboratory quantification was carried out for each sample to determine the percentage of asbestos by mass. The results of the quantification are summarised in Table 2 below.

Table 2 Summary of Asbestos Contamination

Asbestos	WS1 0.30m MG	WS1 1.00m MG	WS2 0.60m MG	WS3 0.60m MG	WS4 0.40m MG	WS4 0.90m MG	WS5 0.50m MG	Guideline Concentration by mass (%)
Chrysotile	0.055	-	-	-	<0.001	-	-	< 0.001

Figure 3, overleaf, shows the exploratory locations and corresponding soil contamination in respect of the proposed development.

Recommendations

Due to the presence of potential contaminants and asbestos within the Made Ground at the site, it was recommended that all garden and landscaped areas should be capped with a minimum 600mm of validated clean cover soils, incorporating an appropriate physical barrier at the base of the capping layer, to act as a no dig layer for future residents and to prevent potential bioturbation.

Due to the presence of asbestos at concentration greater than 0.001% (0.055% in WS1 at 0.3m bgl), an Asbestos Management Plan (AMP) was also recommended for the site, to outline necessary precautions to be taken during the construction and remediation works.

The Asbestos Management Plan, reference A2212/19/AMP, should be read to in conjunction with this Remediation Strategy.

Figure 3 Location of Soil Contaminant Exceedances



4.0 LICENCES & APPROVALS

Various licences, permits and approvals are required at various stages before certain works can commence. Some activities can start before all such approvals are in place.

- (i) Approval of this Remediation Method Statement;
- (ii) All documentation in accordance with the CDM 2015 Regulations;
- (iii) A signed declaration by qualified person of the Material Management Plan (MMP) in accordance with CL:AIRE Waste Code of Practice, Version 2, March 2011. This would allow for reuse or removal of excavated soils; and,
- (iv) General condition survey of boundary features.

5.0 PROPOSED WORKS

Aims

The remediation aims are to resolve contamination issues in order to protect human and environmental receptors and render the site suitable for the proposed end use and satisfy the requirements of the Local Planning Authority and Insurance bodies (NHBC).

Soil Contamination

Asbestos

Asbestos Containing Materials and any potentially impacted soils should be dealt with following the Asbestos Management Plan (Reference A2212/19/AMP).

Clean Cover Capping System – Specification

All areas of landscaping and private garden areas will need to be capped with a suitable thickness of uncontaminated cover soils to break the potential contamination linkage, as follows:

- A geotextile will be placed at the base of the clean cover within affected garden areas to maintain soil separation between the inert growing medium and the residual underlying soils and to act as a physical marker for future works.
- A minimum total thickness of imported clean cover of 600mm should be placed in rear gardens, with 450mm in front gardens.
- Clean cover may comprise a combination of subsoil and topsoil. Topsoil is to comprise no less than the upper 150mm.

Clean Cover Capping System – Verification & Validation

Soils to be used as capping layers must not contain contaminant concentrations above the assessment criteria for residential end use (with plant uptake) and be free of deleterious components e.g. glass, plastic, wood, ash and metal solids. Soil must have a complete absence of ACMs and asbestos fibres.

Evidence will be required to demonstrate the suitability of the materials to be used and that the capping has been installed in line with the specification outlined above. Validation will require:

- Chemical analysis of clean cover soils will be carried out at source to ensure suitability for use, prior to being imported and placed.
- Relevant source test data for clean cover soils will be provided to confirm all determinants are at concentrations below the relevant assessment criteria. Testing should be carried out at a frequency of one sample per 100m³ batch of soil.
- Imported soils should be stockpiled on receipt and sampled from the stockpile prior to placement and undergo appropriate chemical analysis to confirm it is suitable for use.

- Following confirmation that material is suitable for use, the material is to be placed in line with the above specification.
- Following placement of clean cover system, trial holes will be formed in each garden to confirm the correct implementation. Each pit will be inspected, photographed and the depths/thicknesses of the subsoil and topsoil measured by the consultant engineer.
- A validation report will be provided for approval by the Environmental Health Contaminated Land Officer at the LA.

6.0 SITE WORKS

Outlined below are some of the main task and activities associated with the remediation works. Reference should also be made to the Asbestos Management Plan (Reference A2212/19/AMP).

Site Organisation

Site works will be supervised throughout by a suitably qualified Engineer, who will report to a Project Manager. Supervision may be part-time for certain activities, but will be full-time during the removal of any contaminated soil/fill and any placement of fill to an engineering specification.

Welfare Facilities/Security

Initial mobilisation works will include the establishment of appropriate office and welfare facilities. Such facilities may include but are not restricted to; office accommodation, canteen facilities, washroom/drying room, toilets, wheel wash, car parking, stores and security unit.

The site should be secured by fencing to prevent unauthorised access onto the site during the enabling works.

Health & Safety

All site personnel will undergo a site-specific health and safety induction prior to commencement of work on site.

The Engineer will be informed prior to any proposed entry of a confined space or deep excavation. Entry will be restricted to suitably qualified and equipped personnel.

Works will be carried out with regard to current statutory requirements and guidance by the Health & Safety Executive "Protection of workers and the general public during the redevelopment of contaminated land". Protective clothing, footwear and gloves will be required with hand washing and boot-washing facilities made available. Smoking will be limited to designated areas.

Specific reference should also be made to the Asbestos Management Plan (Reference A2212/19/AMP).

Site Clearance

Any trees currently under a preservation order should be identified and agreed with relevant authorities prior to the commencement of the works. All trees subject to a Tree Preservation Order should be clearly identified and protected by chestnut paling with fluorescent tape.

The site should then be cleared of all residual debris, fly tipped materials, any vegetation, shrubs, bushes and unprotected trees as instructed by the client.

Excavation of Subsurface Obstructions

During the site investigation, obstructions were not identified within the made ground, which could pose obstacles during excavations and construction. However, obstructions may be present in the southwest of the site.

Any material identified as potentially contaminated should be stockpiled on a non-permeable membrane, and tested for suitability for either re-use on site, or offsite disposal.

Should the material be removed from site, waste acceptance criteria testing should be undertaken and the material disposed of in a suitably licensed facility. The development of a Materials Management Plan (MMP) in line with the CL:AIRE Code of Practice may be required to remove or re-use soils.

Unexpected Contamination

If during site clearance works or other excavations, material with visual or olfactory evidence of previously unrecorded contamination is encountered, the principal contractor should contact the environmental consultant.

These soils should be then sampled, and chemical analysis carried out. The environmental consultant shall decide upon the chemical suitability of the material, to either remain on site or if it is likely to present a risk to receptors.

If the soils present a risk, the materials should be removed from site or remediated as per the specification in Section 5.0.

Any excavated material identified as potentially contaminated should be stockpiled on a non-permeable membrane, and tested for suitability for either re-use on site, or disposed offsite.

If prolonged stockpiling is unavoidable, these soils should be covered with a non-permeable membrane at the end of each working day, to prevent the possibility of leachate migrating from the soils due to infiltration.

Should the material be removed from site, waste acceptance criteria testing should be undertaken and the material disposed of in a suitably licensed facility. The development of a Materials Management Plan (MMP) in line with the CL:AIRE Code of Practice may be required to remove or re-use soils.

Backfill of Excavations

All excavations shall, prior to backfilling, be surveyed to ascertain their spatial extent and depth. Excavations (to remove relict structures, contamination etc) should be backfilled with suitable materials as agreed with the Engineer, and subjected to nominal compaction.

However, where an excavation conflicts with the footprint of a proposed highway, compaction in general accordance with the Specification for Highway Works Table 6/1 will be required.

Control of Perched Groundwater

The regional groundwater table is unlikely to be encountered during remediation earthworks; however, discontinuous perched groundwater may be present within Made Ground. If encountered during the excavation works this perched water will be recovered by pumping from open excavations. Dependant on volumes recovered, some form of temporary storage may also be required.

Provision should be made for pumping from sumps and appropriate excavation support for all excavations.

7.0 ENVIRONMENTAL MONITORING & CONTROLS

General

All works should be carried out in a manner that minimises impact on the environment and generates adequate and accurate records to demonstrate remediation works have been carried out to the required standard and in accordance with all applicable legislation. All such records should be collated on contract completion (or sooner as required) and included within the contract completion report. Appropriate progress reports should be provided in a format and at a frequency as agreed with the client and project manager including on-going monitoring/validation information.

Comprehensive records should be maintained throughout the project. These should be collated on contract completion into a completion and validation report, which should be submitted to the appropriate regulators for approval. It will be presented in an appropriate manner so as to allow interested third parties to fully understand the whole remediation process.

The records should include correspondence with the regulators & other third parties, environmental monitoring data, validation testing, comprehensive as-built drawings, photographs, collation of all site investigation reports, operational method statements & risk assessments, construction phase health & safety plan and confirmation of post remediation considerations especially in respect of interaction with initial construction (groundwork's).

Noise Control

Earthworks will only take place during normal working hours 8.00am – 6.00pm Monday to Friday and 8.00am to 13:00pm on Saturdays with no working on Sundays or Bank Holidays. The site manager shall assess noise and its impact upon neighbours through the working day and to ensure the following mitigation measures are being utilised:

All plant and machinery will be fitted with adequate silencers and will not be operated unless in good condition.

Noise levels will be as per normal for a project of this nature. Pneumatic breakers will be used but location and hours of use controlled whenever possible.

Should local residents make any complaints regarding noise associated with the works, the site manager shall investigate. Such investigation may include the use of portable monitoring equipment to record noise levels at the location of the complainant. The nature of the complaint and findings of the investigation shall be discussed with the local EHO. If the complaint is upheld appropriate remedial action shall be taken. Such action may include the adjustment of working hours or the alteration of site practices and working methods.

Odour Control

Works may produce odours but good site practice and associated mitigation measures should ensure fugitive odours are kept to an absolute minimum. Such controls may include:

- Additional covers will be applied to stockpiles, if they are contributing to fugitive odours.

- Areas of excavation i.e. area of exposed contaminated soils, will be kept to a minimum and covered/re-instated as soon as is practicably possible.
- Odour suppressing equipment shall be utilised at appropriate locations at appropriate times.

In the event that a complaint is made regarding odours from nearby residents, the site manager shall respond by attending the complainant's property to assess the nature and level of odour nuisance including monitoring where appropriate. Appropriate mitigation measures as described herein shall then be enforced including if necessary, suspension of excavation works until the prevailing weather conditions become more favourable.

Dust Control

Earthworks may produce dust during prolonged periods of dry weather. The site manager shall assess dust and its impact upon neighbours through the working day and ensure the following mitigation measures are being utilised to control dust:

- The use and maintenance of good quality site roads;
- Enforcing speed limits of site plant and;
- Dust suppression via water applied by towed bowser, particularly in the vicinity of locations where asbestos has been detected in soils.

8.0 OTHER CONSIDERATIONS

Material Management Plan

The development of a Materials Management Plan (MMP) in line with the CL:AIRE Code of Practice may be required to re-use or remove onsite soils.

The development of an MMP will require a Cut and Fill model to identify the sources of and possible destinations for site-won materials. In respect of re-using site won soils, formation levels should be designed to accommodate the required thickness of clean cover soils in garden/landscaped areas, without the requirement for offsite disposal of significant soil quantities.

Waste Soils

Waste Acceptance Criteria testing should be undertaken to ensure the materials to be disposed of offsite are received by a suitably licensed facility. Chemical testing should be completed by a reputable laboratory with MCERTS accreditation prior to making disposal arrangements.

Where excess soils require offsite disposal, the materials need to be managed under the appropriate legislation e.g. MMP.

APPENDIX 1

EEG LTD PHASE I GEOENVIRONMENTAL ASSESSMENT REPORT

APPENDIX 2

EEG LTD PHASE II GEOENVIRONMENTAL INVESTIGATION REPORT

APPENDIX 3

ASSESSMENT CRITERIA FOR CLEAN COVER SYSTEM

Assessment Criteria Based on Residential with Homegrown Produce End Use

Inorganic Compounds	Assessment Criterial - Residential with Homegrown Produce (mg/kg)		
Arsenic	37		
Cadmium	11		
Chromium (III)	910		
Chromium (VI)	6		
Lead	200		
Mercury	1.2		
Nickel	180		
Selenium	250		
Copper	2400		
Zinc	3700		
Organic Compounds	1% SOM	2.5% SOM	6% SOM
Naphthalene	2.3	5.6	13
Acenaphthene	210	510	1100
Acenaphthylene	170	420	920
Fluorene	170	400	860
Phenanthrene	95	220	440
Anthracene	2400	5400	11000
Fluoranthene	280	560	890
Pyrene	620	1200	2000
Benzo(a)anthracene	7.2	11	13
Chrysene	15	22	27
Benzo(b)fluoranthene	2.6	3.3	3.7
Benzo(k)fluoranthene	77	93	100
Benzo(a)pyrene	2.2	2.7	3.0
Dibenz (a, h) anthracene	0.24	0.28	0.3
Indeno(1,2,3-cd) pyrene	27	36	41
Benzo (g, h, i) perylene	320	340	350
Benzene	0.087	0.17	0.37
Toluene	130	290	660
Ethylbenzene	47	110	260
o-Xylene	60	140	330
m-Xylene	59	140	320
p-Xylene	56	130	310
TPH Fractions	1% SOM	2.5% SOM	6% SOM
Aliphatic EC 5-6	42	78	160
Aliphatic EC >6-8	100	230	530
Aliphatic EC >8-10	27	65	150
Aliphatic EC >10-12	130 (48) ^{vap}	330 (118) ^{vap}	760 (283) ^{vap}
Aliphatic EC >12-16	1100 (24) ^{sol}	2400 (59) ^{sol}	4,300 (142) ^{sol}
Aliphatic EC >16-35	65,000 (8.48) ^{f, sol}	92,000 (21) ^{f, sol}	110,000 ^f
Aliphatic EC >35-44	65,000 (8.48) ^{f, sol}	92,000 (21) ^{f, sol}	110,000 ^f
Aromatic EC 5-7	70	140	300
Aromatic EC >7-8	130	290	660

	Assessment Criterial - Residential with Homegrown Produce (mg/kg)		
TPH Fractions	1% SOM	2.5% SOM	6% SOM
Aromatic EC>8-10	34	83	190
Aromatic EC >10-12	74	180	380
Aromatic EC >12-16	140	330	660
Aromatic EC >16-21	260 ^f	540 ^f	930 ^f
Aromatic EC >21-35	1,100 ^f	1,500 ^f	1,700 ^f
Aromatic EC >35-44	1,100 ^f	1,500 ^f	1,700 ^f
Asbestos Fibres	< 0.001%		

The site-specific risk-based criteria are based upon DEFRA/EA CLEA 1.07 modelling assuming a sandy loam with 1% Soil Organic Matter and pH of 7.

Purpose	Classification	Testing Frequency	Chemical Analysis
Source Testing & Suitability For Use	Topsoil	1 sample per 50m ³ [Minimum of 3 per source]	➤ Inorganic Compounds; ➤ Speciated Polycyclic Aromatic Hydrocarbons; ➤ Speciated Petroleum hydrocarbons; ➤ Asbestos Identification.
	Sub-Soil	1 sample per 250m ³ [Minimum of 3 per source]	
Validation Testing	Topsoil	1 sample per 3 plots	
	Sub-Soil	1 sample per 3 plots	

The sampling frequency for materials intended for gardens is to be managed under the Remediation Strategy.

APPENDIX 4

REPORT LIMITATIONS

LIMITATIONS

This contract was completed by Earth Environmental & Geotechnical Ltd on the basis of a defined programme and scope of works and terms and conditions agreed with the client. This report was compiled with all reasonable skill, and care, bearing in mind the project objectives, the agreed scope of works, the prevailing site conditions, the budget and staff resources allocated to the project.

Other than that, expressly contained in the above paragraph, Earth Environmental & Geotechnical Ltd provides no other representation or warranty whether express or implied, is made in relation to the services. Unless otherwise agreed this report has been prepared exclusively for the use and reliance of the client in accordance with generally accepted consulting practices and for the intended purposes as stated in the agreement under which this work was completed. This report may not be relied upon, or transferred to, by any other party without the written agreement of a Director of Earth Environmental & Geotechnical Ltd.

If a third party relies on this report, it does so wholly at its own and sole risk and Earth Environmental & Geotechnical Ltd disclaims any liability to such parties.

It is Earth Environmental & Geotechnical Ltd understanding that this report is to be used for the purpose described in the introduction to the report. That purpose was an important factor in determining the scope and level of the services. Should the purpose for which the report is used, or the proposed use of the site change, this report will no longer be valid and any further use of, or reliance upon the report in those circumstances by the client without Earth Environmental & Geotechnical Ltd review and advice shall be at the client's sole and own risk.

The report was written in 2022 and should be read considering any subsequent changes in legislation, statutory requirements and industry best practices. Ground conditions can also change over time and further investigations or assessment should be made if there is any significant delay in acting on the findings of this report. The passage of time may result in changes in site conditions, regulatory or other legal provisions, technology or economic conditions which could render the report inaccurate or unreliable. The information and conclusions contained in this report should not be relied upon in the future without the written advice of Earth Environmental & Geotechnical Ltd. In the absence of such written advice of Earth Environmental & Geotechnical Ltd, reliance on the report in the future shall be at the client's own and sole risk. Should Earth Environmental & Geotechnical Ltd be requested to review the report in the future, Earth Environmental & Geotechnical Ltd shall be entitled to additional payment at the then existing rate or such other terms as may be agreed between Earth Environmental & Geotechnical Ltd and the client.

The observations and conclusions described in this report are based solely upon the services that were provided pursuant to the agreement between the client and Earth Environmental & Geotechnical Ltd. Earth Environmental & Geotechnical Ltd has not performed any observations, investigations, studies or testing not specifically set out or mentioned within this report.

Earth Environmental & Geotechnical Ltd is not liable for the existence of any condition, the discovery of which would require performance of services not otherwise contained in the services. For the avoidance of doubt, unless otherwise expressly referred to in the introduction to this report, Earth Environmental & Geotechnical Ltd did not seek to evaluate the presence on or off the site of electromagnetic fields, lead paint, radon gas or other radioactive materials.

The services are based upon Earth Environmental & Geotechnical Ltd observations of existing physical conditions at the site gained from a walkover survey of the site together with Earth Environmental & Geotechnical Ltd interpretation of information including documentation, obtained from third parties and from the client on the history and usage of the site. The findings and recommendations contained in this report are based in part upon information provided by third parties, and whilst Earth Environmental & Geotechnical Ltd have no reason to doubt the accuracy and that it has been provided in full from those it was requested from, the items relied on have not been verified.

No responsibility can be accepted for errors within third party items presented in this report. Further Earth Environmental & Geotechnical Ltd was not authorised and did not attempt to independently verify the accuracy or completeness of information, documentation or materials received from the client or third parties, including laboratories and information services, during the performance of the services. Earth Environmental & Geotechnical Ltd is not liable for any inaccurate information, misrepresentation of data or conclusions, the discovery of which inaccuracies required the doing of any act including the gathering of any information which was not reasonably available to Earth Environmental & Geotechnical Ltd and including the doing of any independent investigation of the information provided to Earth Environmental & Geotechnical Ltd save as otherwise provided in the terms of the contract between the client and Earth Environmental & Geotechnical Ltd.

Where field investigations have been carried out these have been restricted to a level of detail required to achieve the stated objectives of the work. Ground conditions can also be variable and as investigation excavations only allow examination of the ground at discrete locations. The potential exists for ground conditions to be encountered which are different to those considered in this report. The extent of the limited area depends on the soil and groundwater conditions, together with the position of any current structures and underground facilities and natural and other activities on site. In addition, chemical analysis was carried out for a limited number of parameters [as stipulated in the contract between the client and Earth Environmental & Geotechnical Ltd] based on an understanding of the available operational and historical information, and it should not be inferred that other chemical species are not present.

The groundwater conditions entered on the exploratory hole records are those observed at the time of investigation. The normal speed of investigation usually does not permit the recording of an equilibrium water level for any one water strike. Moreover, groundwater levels are subject to seasonal variation or changes in local drainage conditions and higher groundwater levels may occur at other times of the year than were recorded during this investigation.

Any site drawing(s) provided in this report is (are) not meant to be an accurate base plan, but is (are) used to present the general relative locations of features on, and surrounding, the site.