



Our Ref: E21/7893/MD/03

Date: 11 June 2025

FAO Mr M Graves

c/o Marcus Walsh
Martin Walsh Architectural

Dear Sir,

Re: Remediation Method Statement for Chairbarrows Farm, Whitechapel Road, Cleckheaton

1. INTRODUCTION

- 1.1 Haigh Huddleston & Associates have been requested by Martin Walsh Architectural on behalf of Mr M Graves to provide a remediation statement for the proposed development at Chairbarrows Farm, Whitechapel Road, Cleckheaton.
- 1.2 The purpose of the document is to specify the remediation philosophy for the site and to specify the fill materials that are required for the controlled backfilling and capping of the site.
- 1.3 Site investigation works have been undertaken previously and is detailed in HHA Report E21/7893/R001 dated April 2022. Following the investigation works, six rounds of gas monitoring were undertaken in 2022 and are documented in HHA letter reference E21/7893/JF/001 dated 6th May 2022. These reports have been utilised to compile this Remediation Statement.

2. RESULTS OF THE INVESTIGATION

- 2.1 Generally, the site investigation works proved a shallow depth of topsoils, made ground and clays overlying sandstone which was encountered at 0.3-1.5m below existing ground levels. In the lower east of the site, this was proved to be underlain by a layer of clay.
- 2.2 The made ground was predominantly beneath the hardstanding, with some fill material encountered beneath the topsoil in the western field.
- 2.3 Only the fill material in the western field recorded elevated levels of contaminants with an elevated level of lead of 250 mg/kg. No asbestos was recorded in the samples taken from site.
- 2.4 From the gas monitoring undertaken in 2022, No methane was recorded in any of the boreholes, and a maximum Carbon Dioxide level of 3.3% was recorded on site. No flow rates have been detected on site. The site was therefore classified as CS1 by BS 8485:2015+A1:2019 Table 2.
- 2.5 The Lead hotspot is shown on the plan attached to the rear of this report.

2.6 REVISED CONCEPTUAL MODEL

- 2.6.1 In HHA Report E121/7893/R001 dated April 2022, it was noted that the site had been used for farming since 1892, with only farm buildings constructed on site. A colliery was located to the south west from 1905 until 1933 and was partially redeveloped for residential and commercial use.
- 2.6.2 Site investigation works have proved an isolated contamination hotspot of Lead in fill material located in the western field. No other elevated levels of contaminants, or asbestos, were recorded in the samples taken from site.
- 2.6.3 Similarly, the gas monitoring undertaken on the existing site proved low levels of carbon dioxide which were not considered a risk to future site residents and the site was therefore classified as CS1 by BS 8485:2015+A1:2019.
- 2.6.4 The development of the site therefore exposes the developers and future residents to the following risks:
- i) Contamination hotspot identified at TP01
The risk to the developers and future site residents is therefore considered to be low and remediation measures will be required to address there.

2.7 REMEDIATION OBJECTIVES

- 2.7.1 From the above, the remediation works required can be stated as follows:
- Relocation of the Lead contamination hotspot at TP01 to beneath proposed hardstanding where possible. Contaminated material to be removed from site if not.

3. REMEDATION PROPOSALS

3.1 REMOVAL OF CONTAMINATION HOTSPOT

- 3.1.1 The Lead contaminated hotspot at TP01 recorded an elevated level of lead of 250 mg/kg compared to the tier 1 trigger level of 200 mg/kg, an exceedance of 25%.
- 3.1.2 Consulting BR 465 – Cover Systems for Land Regeneration, and using their design methodology, it can be shown that for this elevated level of lead, a clean capping layer of 300mm is required. Calculations confirming this are attached to the rear of this report.
- 3.1.3 It is therefore recommended that the fill material is relocated beneath hardstanding areas where possible, or beneath 300mm of clean topsoil in soft landscaped areas.
- 3.1.4 When the material is removed from site, waste transfer tickets should be retained for inclusion in a final validation report.

3.2 FURTHER TOPSOIL TESTING

- 3.2.1 The existing topsoil on site should be scraped and stockpiled on site behind protective fencing to prevent cross contamination. The topsoil should be screened to remove organic and inorganic waste materials. Testing should be undertaken at a rate of 1 sample per 250m³, or minimum of three samples, of stockpiled material to confirm it is suitable for re-use on site prior to being relaid.
- 3.2.2 Based on a total site area of 3655m², and assuming 50% soft landscaping with 300mm topsoil depth, this equates to approximately 550m³ of topsoil required. We would therefore recommend that 3 further soil samples are required to determine the materials suitability for re-use on site.
- 3.2.3 The results of the chemical analysis should be compared to the tier 1 trigger levels to confirm the suitability of the topsoil to be re-used on site.
- 3.2.4 It is not anticipated that further clean topsoil will need to be imported to site.

4. REMEDIATION VALIDATION

- 4.1 Photographic evidence to be recorded of the depth of clean capping provided to the lead contaminated material or its relocation to areas of proposed hardstanding. Evidence to be compiled into validation report confirming the contamination has been remediated.
- 4.2 Should the topsoil prove suitable to re-use on site, a copy of the chemical analysis results along with covering letter confirming the same should be submitted to the local authority and the warranty provider to discharge the outstanding contaminated land conditions.
- 4.3 If suspected contaminated material is found during remediation works, the independent consultant must be contacted and the extent of it must be established by further testing. All contaminated material must be removed from the site and replaced by equivalent uncontaminated material.
- 4.4 Should the existing topsoil prove unsuitable for use, clean material will need to be imported to site to provide a growing medium to soft landscaped areas. All imported material to be used for the growing medium should be uncontaminated and comply with the specification for Engineering Fill. All imported material should be tested for the full range of contaminants listed to the rear of this report. Only material found to be below published trigger levels should be deemed uncontaminated and accepted for use on site.
- 4.5 If the imported material is from a Greenfield site, a minimum of 3 samples or 1 per 250m³ of imported material should be taken for testing, whichever is greater. If it is from a brownfield site, a minimum of 6 samples, or 1 per 100m³ of imported material should be taken for testing, whichever is greater. Material provided by a commercial supplier should be certified to the same level of testing, with the certificate less than two months old.

- 4.6 All imported certified material should be placed immediately. If this is not possible, or the material is not certified and sampling is to be carried out prior to being laid, it should be securely stored on site prior to use to prevent possible contamination from any materials on site.
- 4.7 Following completion of the removal of contaminated material on site, and the further testing of the topsoil, the detailsAll site records and results of the shallow trial pits should be consolidated into a validation report. The report shall be completed in accordance with 'Yorkshire and Lincolnshire Pollution Advisory Group: Verification Requirements For Cover Systems'.
- 4.8 Clean material imported should be visually inspected to confirm it doesn't contain unsuitable materials (i.e. glass, brick, etc)

We trust that the above is sufficient for your current requirements, however should you need any further information please do not hesitate to contact me direct.

Yours faithfully,

A handwritten signature in black ink, appearing to read 'M Dean', written in a cursive style.

MICHAEL DEAN BSc (Hons) HND
m.dean@haighhuddleston.co.uk



Rev B. Area to be developed highlighted
 Rev A. Amended to suit Site Investigation Works.

27.09.22 MD
 16.02.22 JF



Haigh Huddleston & Associates

Civil Structural Engineering Consultants

Firth Buildings, 99 - 101 Leeds Rd, Dewsbury, WF12 7BU t 01924 464342 f 01924 450662
 e martin@haighhuddleston.co.uk

Client				
MICHAEL GRAVES				
Project				
294 - 298 WHITECHAPEL ROAD, CLECKHEATON				
Detail				
TRIAL PIT LOCATION PLAN				
Scale	Dwn	Chkd	Date	Dwg No.
1:500	IC	ML	18M-22	521/7203/003 01D

CLEAN CAPPING DEPTH CALCULATION

(From BR 465 - Cover Systems for Land Regeneration)

Contaminant:	Lead
Level Recorded:	250 mg/kg (G)
Action Level:	200 mg/kg (Tv)
Assume contaminant concentration in clean capping is maximum of 0.5 x Tv:	100 mg/kg (C)

Depth of clean capping required (x) calculated by using the equation:

$$x = M * \frac{(C_g - 1)}{(C_g - C_c)}$$

Where:

M is the depth of the mixed zone of clean and contaminated material:	600mm
C _g is the ratio of contaminant concentration to Action level in existing ground:	G/T _v =250/200=1.25
C _c is the ratio of contaminant concentration to Action Level in clean capping:	C/T _v =100/200=0.5

Which gives:

$$x = 600 * \frac{(1.25 - 1)}{(1.25 - 0.5)}$$

$$x = 600 * \frac{0.25}{0.75}$$

$$x = 200mm$$

Use 300mm clean topsoils and subsoils

TIER 1 SOIL GUIDANCE VALUES FOR USE IN DOMESTIC GARDENS
(WITH PLANT UPTAKE)

<u>CONTAMINANT</u>	<u>ICRCL – TTV / DEFRA – SGV</u> <u>MG/KG</u>
Arsenic	37 (4)
Cadmium	22 (4)
Chromium	130 (2)
Lead	200 (4)
Mercury	40 (1,5)
Selenium	250 (1)
Copper	2400 (1)
Nickel	180 (1)
Zinc	3700 (1)
Cyanide (total)	25
Sulphate	0.24% (3)
Sulphide	250
Thiocyanate	50
PAH (Total)	40
TPH (Total)	250
Phenols	280 (1)
PH	6-8
Asbestos	No fibres present

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- (2) DEFRA CLR SGV's withdrawn used for initial comparison
- (3) BS 8110 1985 Table 6.1
- (4) Category 4 Screening Level
- (5) Unless there is considered to be historical site usage that would result in elemental and methylmercury compounds to be present, the inorganic mercury SGV is used as this is the most prevalent for of mercury present in the natural environment.

**TIER 1 SOIL GUIDANCE VALUES FOR USE IN DOMESTIC GARDENS WITH
PLANT UPTAKE (SPECIATED PAH)**

<u>CONTAMINANT</u>	<u>SCREENING CRITERIA FOR PAH (mg/kg)</u>		
	<u>1% SOM</u>	<u>2.5% SOM</u>	<u>6% SOM</u>
Acenaphthlene	210 (1)	510 (1)	1100 (1)
Acenaphthylene	170 (1)	420 (1)	920 (1)
Anthracene	2400 (1)	5400 (1)	11000 (1)
Benzo[a]anthracene	7.2 (1)	11 (1)	13 (1)
Benzo(a)pyrene	5 (2)	5 (2)	5 (2)
Benzo[b]fluoranthene	2.6 (1)	3.3 (1)	3.7 (1)
Benzo[ghi]perylene	320 (1)	340 (1)	350 (1)
Benzo[k]fluoranthene	77 (1)	93 (1)	100 (1)
Chrysene	15 (1)	22 (1)	27 (1)
Dibenzo[ah]anthracene	0.24 (1)	0.28 (1)	0.3 (1)
Fluoranthene	280 (1)	560(1)	890 (1)
Fluorene	170 (1)	400 (1)	860 (1)
Indeno[123-cd]pyrene	27 (1)	36 (1)	41 (1)
Naphthalene	2.3 (1)	5.6 (1)	13 (1)
Phenanthrene	95 (1)	220 (1)	440 (1)
Pyrene	620 (1)	1200 (1)	2000 (1)

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(2) Category 4 Screening Level

LQM S4UL SCREENING VALUES FOR SPECIATED TOTAL TPH
(RESIDENTIAL WITH PLANT UPTAKE 1% SOM)

Petroleum Hydrocarbons	LQM S4UL Screening Values (mg/kg)
Aliphatics	
C5-C6	42
C6-C8	100
C8-C10	27
C10-C12	130 (38)
C12-C16	1100 (24)
C16-C35	65000 (8.48)
Aromatics	
C5-C7	70
C7-C8	130
C8-C10	34
C10-C12	74
C12-C16	140
C16-C21	260
C21-C35	1100

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