

Site:	Howgill Street, Openshaw, Manchester
Client	John Southworth Builders Ltd
Date Validated:	22 nd October 2021
Plots:	1 – 4

Remediation	
Remediation Report Reference	Supplementary Geo-Environmental Investigation and Remediation Strategy, Reference 7539G-WML-00-XX-RP-G-0003-Rev A, dated May 2019.
Remediation Requirements	Where underlain by Made Ground, all new garden / landscaped areas will need to be capped with an adequate thickness (600mm) of uncontaminated Topsoil / subsoil (minimum of 150mm Topsoil) underlain by 100mm granular break or geotextile separator. However, Capping is not required where all Made Ground is removed from garden/landscaped areas (down to natural soil); however, a suitable thickness (at least 150mm) of Topsoil should be provided in such areas to support good plant growth.

Validation Information	
Geotextile Separator Required	Not required where underlain by natural cohesive glacial till.
Required Capping Thickness	150mm of uncontaminated Topsoil where underlain by natural cohesive strata. 600mm of uncontaminated Topsoil / subsoil (minimum of 150mm Topsoil). where underlain by Made Ground. During validation the capping thickness was noted to comprise between 400mm and 500mm of subsoil and between 150mm and 200mm of topsoil. The underlying strata was confirmed to be natural cohesive glacial till prior to emplacement as such no geotextile or granular break layer was required.
Chemical Validation	All topsoil required for use as capping soil was imported to site via Freeland Horticulture Limited from a source referred to as in Astley, Greater Manchester. A clean granular material used as a subsoil was obtained via PP O'Connors direct from Fletcher Bank Quarry, Ramsbottom. Chemical analysis carried out at source indicated the soils were suitable for reuse and are appended to this report. Chemical testing of imported materials was carried out during validation of Plots 5 – 12 on 31st August and 2nd September 2021 by WML. The results are appended to this report and indicated that all determinands were below the reference values for residential gardens as outlined within the Remediation Report as referenced above. The capping soils within Plots 1 – 4 are from the same source as those within Plots 5 – 12 and as such are also considered to be suitable for the residential end use. Confirmatory testing of the materials emplaced within Plots 1 – 4 is currently being undertaken with the results reported in due course.

Checked by	
	For WML Consulting



WMLCONSULTING
Project: Howgill St, Openshaw
Drg Title: Validation Plan
Job No: 7539G By: TPB
Drg No: SK-02 Rev: -
Date: 03/11/21 Scale: 1:200 @ A1

Proposed Site Plan - Arbroath Street
1 : 200

Notes
The Contractor is to check all dimensions and conditions on site before commencing. Do not scale from this drawing.
This drawing remains the copyright of POZZONI Architecture Ltd.

Scale Bars		TO BE USED ONLY AS GUIDANCE			
1:100	mm	0	1000	2000	3000
1:200	mm	0	1000	2000	3000
1:500	M	0	10	20	30
1:1250	M	0	10	20	30

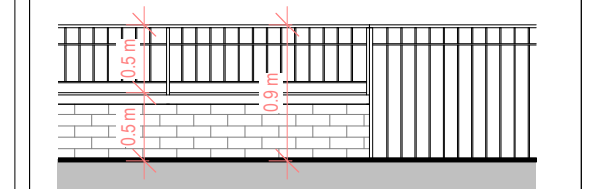
Key

- Site Boundary
- Site within Manchester. Please refer to drawings P4674-02-1101M, P4674-02-1201M,
- Existing tree to be retained
- Existing tree to be removed
- Proposed tree (compensatory planting)
- Visibility Splay to driveways (NB the boundary to street can be seen through)

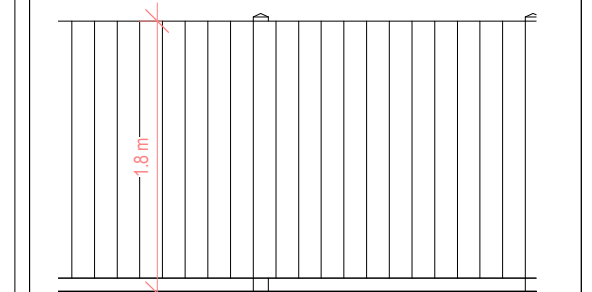
Boundary Types

1 : 50

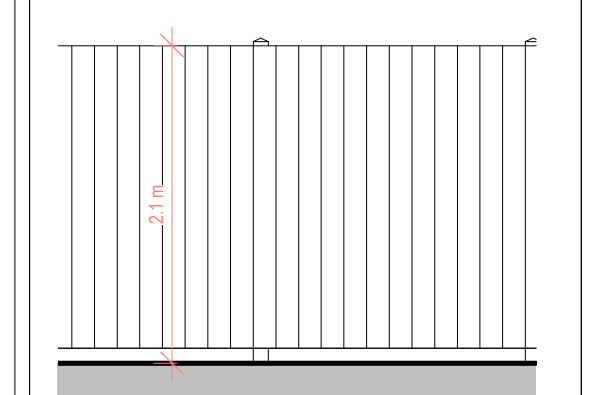
Please refer to the tags on the plan for the location of each boundary type



A - Street boundary, wall with railings over and metal gates.



B - Division between dwellings, 1.8m timber fence



C - Rear boundary, 2.1m timber fence

D	Site Ownership Boundary adjusted on Arbroath Street	BAP	04/02/20
C	FFL levels	BAP	13/08/19
B	Layout adjusted to accommodate keeping some of the existing trees.	EMc	04/12/17
A	Visibility plays added and boundary types indicated	EMc	11/10/17

Rev Description By Date

St Vincent's Housing Association

Howgill Street & Arbroath Street

Planning - Proposed GA Plans

P4674-02_1201T Rev D

1201T

11/05/17 As indicated @ A1

LB JC

Planning Tender Construction

Design Contract As Built

pozzoni

London House
115 Golden Lane
London
EC1Y 0TJ

Woodville House
2 Woodville Road
Altrincham
WA14 2FH

+44 20 7078 0079
architects@pozzoni.co.uk

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P:\MCAD\4651-4700\4674-02\PAL\Design\Modelling\4674-02_SITE.rvt
06/07/2020 11:07:57



Photograph 1
VP01 showing 150mm of topsoil and 450mm of subsoil.



Photograph 2
View of Plot 4 rear garden showing location of VP01.



Photograph 3
VP02 showing 500mm of subsoil.



Photograph 4
View of Plot 3 rear garden showing location of VP02 with topsoil stockpiled prior to emplacement.



Photograph 5
VP03 showing 200mm of topsoil 400mm of subsoil.



Photograph 6
View of Plot 2 rear garden showing location of VP03.



Photograph 7
VP04 showing 150mm of topsoil 400mm of subsoil.



Photograph 8
View of Plot 4 front garden showing location of VP04.



Freeland Horticulture Ltd
Rosedale Nursery
College Road
Hextable
Kent BR8 7LT

Attention: Philippa Lambourne

Our Ref: SLC-924-SA

6 May 2021

Dear Philippa

Topsoil Analysis Report: Astley, Greater Manchester Topsoil – May 2021

We have completed the analysis of the topsoil sample recently taken from the above site and it has been forwarded to an approved laboratory for analysis and have the pleasure of reporting our findings. The purpose of the analysis was to determine the suitability of the topsoil for general landscaping purposes and its compliance with the current British Standard for topsoil (BS3882).

SOIL SAMPLING & EXAMINATION

At the time of our sampling visit the topsoil was stored in a stockpile. A series of 10 hand augered trial holes were constructed across the stockpile for the purpose of soil examination and sample collection. As the soil examination confirmed a consistent topsoil composition, the ten samples were combined together to form one composite sample for analysis purposes. The soil was described as dark brown, slightly moist and friable with a well-developed, fine to medium granular structure. The soil contained a low fraction of small stones and no deleterious materials (eg. building waste materials, glass, roots or rhizomes of pernicious weeds) or unusual odours (eg. hydrocarbons) were recorded.

LABORATORY ANALYSIS

The topsoil sample was submitted to a UKAS and MCERTS accredited laboratory for routine physical and chemical parameters to confirm the composition and fertility of the soil. The following parameters were determined:

- ⊕ pH & electrical conductivity values;
- ⊕ major plant nutrients (N, P, K, Mg) & organic matter content;
- ⊕ particle size distribution and stone content;
- ⊕ heavy metals & potentially toxic elements (As, Cd, Cr, Cu, Pb, Hg, Ni, Se, Zn, B);
- ⊕ sulphate, sulphur, sulphide;
- ⊕ total cyanide and total (mono) phenols;
- ⊕ speciated PAHs (US EPA16)
- ⊕ banded aromatic and aliphatic petroleum hydrocarbons (C₅-C₃₅).
- ⊕ Asbestos

The results are presented on the attached Certificate of Analysis and an interpretation of the results is given below.

Phone: 01322 619161;

***Freeland horticulture Ltd, Registered in England: Rosedale Nursery, College Road, Hextable, Kent BR8 7LT
Company Registration No: 04015968***

COMMENTS**pH & Electrical Conductivity (salinity) Values**

The sample was alkaline in nature (pH 8.3) with a pH value that would be considered suitable for general landscaping purposes.

The electrical conductivity (salinity) value using the soil:water extract was (654 μ S/cm) indicating that soluble salts are not present at levels that would be harmful to plants.

The electrical conductivity values by CaSO₄ extract (BS3882 requirement) fell below the maximum specified value (3300 μ S/cm) given in BS3882:2015.

Organic Matter & Nutrient Status

The sample was rich in organic matter and all major plant nutrients. No further additions of compost or fertiliser are required, or indeed recommended, for at least the first growing season.

The C:N ratio of the sample was acceptable for general landscape purposes

Particle Size Distribution & Stone Content

The sample contained 71% sand and fell into the sandy loam texture class. This particle size distribution is considered suitable for a broad range of landscape applications, including tree and shrub planting, turfing and seeding.

The sample was Virtually free from stones of 50 mm and upwards in diameter and only contained a slight fraction of smaller stones (3.4%). As such, stones will not restrict the use of the soil for landscaping purposes.

Potential Contaminants

We are not aware of any specified contaminant levels set for the proposed end-use of this topsoil. This includes human health, environmental protection and metals considered toxic to plants. In the absence of any site-specific assessment criteria, the concentrations that affect human health have been compared with the 'residential with homegrown produce' land use in the Suitable For Use Levels presented in 'The LQM/CIEH S4UIs' for Human Health Risk Assessment (2015) and DEFRA SP1010: 'Development of Category 4 Screening Levels' for Assessment of Land Affected by Contamination – Policy Companion Document (2014).

Of the potential contaminants determined, none was found at levels that would exceed their respective guideline values.

CONCLUSION

The purpose of the analysis was to determine the suitability of the topsoil for general landscaping purposes. From the soil examination and laboratory analysis, the soil is described as an alkaline, non-saline, loamy sandy. The organic matter and nutrient levels are acceptable, and no significant contamination was found with respect to the parameters determined. This soil would adhere to the current BS3882 specification for 'multipurpose grade'.

To conclude, based on our findings, the topsoil would be considered well-suited to general landscaping purposes provided the physical condition of the soil is maintained.

We hope this report meets with your approval and provides the necessary information. Please do not hesitate to contact the undersigned if you have any queries or comments.

George Longmuir MSc Soil Sci. M.I Soil Sci.

Client	Freeland Horticulture Ltd
Job Name	Topsoil Analysis
Site	Astley, Greater Manchester
Month/Year	May 21
Our Ref	0924-SA
Date	06 May 2021

Composite sample

pH Value & Salinity

pH value (1:2.5 soil/water ext)	units	8.3
Electrical Conductivity (1:2.5 soil/water ext)	µS/cm	654
Electrical Conductivity (1:2.5 soil/CaSO ₄ ext)	µS/cm	2525
Neutralising Value (CaCO ₃ equivalent)	%	4.3

Organic Matter & Nutrient Status

Organic Matter (LOI)	%	3.4
Organic Carbon (Derived)	%	2.0
Total Nitrogen	%	0.107
Carbon:Nitrogen Ratio	:1	18.5
Available Phosphorus	mg/l	25.2
Available Potassium	mg/l	542
Available Magnesium	mg/l	161

Particle Size Analysis & Stones

Clay (<0.002mm)	%	10
Silt (0.063-0.002mm)	%	19
Sand (2.0-0.063mm)	%	71
Texture Class	UK Class	Sandy Loam

Stones 2-20mm	% by DW	3.4
Stones 20-50mm	% by DW	0.0
Stones >50mm	% by DW	0.0

Potential Contaminants

Total Arsenic (As)	mg/kg	3.1
Total Cadmium (Cd)	mg/kg	0.14
Total Chromium (Cr)	mg/kg	16.8
Hexavalent Chromium (Cr ^{VI})	mg/kg	<0.2
Total Copper (Cu)	mg/kg	9.1
Total Lead (Pb)	mg/kg	16.6
Total Mercury (Hg)	mg/kg	<0.2
Total Nickel (Ni)	mg/kg	<10
Total Selenium (Se)	mg/kg	0.13
Total Zinc (Zn)	mg/kg	33.5
Total Beryllium (Be)	mg/kg	<1
Total Barium (Ba)	mg/kg	33.4
Total Vanadium (V)	mg/kg	10.2
Hot Water Soluble Boron (B)	mg/kg	0.8
Total Cyanide (CN ⁻)	mg/kg	<1
Elemental Sulphur (S)	mg/kg	<5
Easily Liberated Sulphide (S ²⁻)	mg/kg	<1
Water Soluble Sulphate (SO ₄ ²⁻)	mg/l	144
Total Phenols Index	mg/kg	<1
Asbestos Screen	-	N.D.

Client	Freeland Horticulture Ltd
Job Name	Topsoil Analysis
Site	Astley, Greater Manchester
Month/Year	May 21
Our Ref	0924-SA
Date	06 May 2021

Polyaromatic Hydrocarbons

Naphthalene	mg/kg	<0.05
Acenaphthylene	mg/kg	<0.05
Acenaphthene	mg/kg	<0.05
Fluorene	mg/kg	<0.05
Phenanthrene	mg/kg	0.2
Anthracene	mg/kg	<0.05
Fluoranthene	mg/kg	<0.1
Pyrene	mg/kg	<0.1
Benzo[a]anthracene	mg/kg	<0.1
Chrysene	mg/kg	<0.1
Benzo[b]fluoranthene	mg/kg	<0.1
Benzo[k]fluoranthene	mg/kg	<0.1
Benzo[a]pyrene	mg/kg	<0.1
Indeno[1,2,3-cd]pyrene	mg/kg	<0.1
Dibenzo[a,h]anthracene	mg/kg	<0.1
Benzo[g,h,i]perylene	mg/kg	<0.1
Total PAHs sum US EPA 16	mg/kg	<1

Banded Petroleum Hydrocarbons

Aliphatic TPH >C ₅ -C ₆	mg/kg	1.60
Aliphatic TPH >C ₆ -C ₈	mg/kg	0.25
Aliphatic TPH >C ₈ -C ₁₀	mg/kg	0.05
Aliphatic TPH >C ₁₀ -C ₁₂	mg/kg	<10
Aliphatic TPH >C ₁₂ -C ₁₆	mg/kg	<10
Aliphatic TPH >C ₁₆ -C ₂₁	mg/kg	<10
Aliphatic TPH >C ₂₁ -C ₃₅	mg/kg	14.0
Aliphatic TPH >C ₃₅ -C ₄₄	mg/kg	20.0

Aromatic TPH >C ₅ -C ₇	mg/kg	<0.05
Aromatic TPH >C ₇ -C ₈	mg/kg	<0.05
Aromatic TPH >C ₈ -C ₁₀	mg/kg	<0.05
Aromatic TPH >C ₁₀ -C ₁₂	mg/kg	<10
Aromatic TPH >C ₁₂ -C ₁₆	mg/kg	<10
Aromatic TPH >C ₁₆ -C ₂₁	mg/kg	<10
Aromatic TPH >C ₂₁ -C ₃₅	mg/kg	15.0
Aromatic TPH >C ₃₅ -C ₄₄	mg/kg	22.0

Total Petroleum Hydrocarbons (C ₅ -C ₄₄)	mg/kg	72.8
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BTEX

Benzene	mg/kg	<0.02
Toluene	mg/kg	<0.2
Ethyl Benzene	mg/kg	<0.04
m- & p- Xylene	mg/kg	<0.2
o-Xylene	mg/kg	<0.1

Concept Life Sciences

Certificate of Analysis

Hadfield House
Hadfield Street
Cornbrook
Manchester
M16 9FE
Tel : 0161 874 2400
Fax : 0161 874 2468

Report Number: 712587-1

Date of Report: 07-Feb-2018

Customer: PP O'Connor
Woodrow Way
Thames Trading Estate
Irlam
Manchester
M44 6NN

Customer Contact: Mr Nigel Hambleton

Customer Job Reference:

Customer Site Reference: Fletcher Bank Quarry, Ramsbottom

Date Job Received at Concept: 31-Jan-2018

Date Analysis Started: 01-Feb-2018

Date Analysis Completed: 07-Feb-2018

The results reported relate to samples received in the laboratory and may not be representative of a whole batch.

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

This report should not be reproduced except in full without the written approval of the laboratory

Tests covered by this certificate were conducted in accordance with Concept Life Sciences SOPs

All results have been reviewed in accordance with Section 25 of the Concept Life Sciences, Analytical Services Quality Manual



1549

Report checked
and authorised by :
Aleksandra Pacula
Customer Service Advisor

Issued by :
Aleksandra Pacula
Customer Service Advisor



Concept Reference: 712587 Project Site: Fletcher Bank Quarry, Ramsbottom Customer Reference: Soil Analysed as Soil Heavy Metals(9)					
Concept Reference					712587 001
Customer Sample Reference					Jar of Sand
Date Sampled					31-JAN-2018
Determinand	Method	Test Sample	LOD	Units	
Arsenic	T6	A40	1	mg/kg	6
Cadmium	T6	A40	1	mg/kg	<1
Chromium	T6	A40	1	mg/kg	14
Copper	T6	A40	1	mg/kg	110
Lead	T6	A40	1	mg/kg	34
Mercury	T6	A40	1	mg/kg	<1
Nickel	T6	A40	1	mg/kg	12
Selenium	T6	A40	3	mg/kg	<3
Zinc	T6	A40	1	mg/kg	180

Concept Reference: 712587 Project Site: Fletcher Bank Quarry, Ramsbottom Customer Reference: Soil Analysed as Soil Total and Speciated USEPA16 PAH					
Concept Reference					712587 001
Customer Sample Reference					Jar of Sand
Date Sampled					31-JAN-2018
Determinand	Method	Test Sample	LOD	Units	
Naphthalene	T16	AR	0.1	mg/kg	<0.1
Acenaphthylene	T16	AR	0.1	mg/kg	<0.1
Acenaphthene	T16	AR	0.1	mg/kg	<0.1
Fluorene	T16	AR	0.1	mg/kg	<0.1
Phenanthrene	T16	AR	0.1	mg/kg	<0.1
Anthracene	T16	AR	0.1	mg/kg	<0.1
Fluoranthene	T16	AR	0.1	mg/kg	<0.1
Pyrene	T16	AR	0.1	mg/kg	<0.1
Benzo(a)Anthracene	T16	AR	0.1	mg/kg	<0.1
Chrysene	T16	AR	0.1	mg/kg	<0.1
Benzo(b/k)Fluoranthene	T16	AR	0.1	mg/kg	<0.1
Benzo(a)Pyrene	T16	AR	0.1	mg/kg	<0.1
Indeno(123-cd)Pyrene	T16	AR	0.1	mg/kg	<0.1
Dibenzo(ah)Anthracene	T16	AR	0.1	mg/kg	<0.1
Benzo(ghi)Perylene	T16	AR	0.1	mg/kg	<0.1
PAH(total)	T16	AR	0.1	mg/kg	<0.1

Concept Reference: 712587 Project Site: Fletcher Bank Quarry, Ramsbottom Customer Reference: Soil Analysed as Soil Miscellaneous					
Concept Reference					712587 001
Customer Sample Reference					Jar of Sand
Date Sampled					31-JAN-2018
Determinand	Method	Test Sample	LOD	Units	
Total Petroleum Hydrocarbons	T8	AR	1	mg/kg	(13) g
Asbestos ID	T27	AR			N.D.

Index to symbols used in 712587-1

Value	Description
A40	Assisted dried < 40C
AR	As Received
N.D.	Not Detected
13	Results have been blank corrected.
S	Analysis was subcontracted
U	Analysis is UKAS accredited

Notes

Asbestos was subcontracted to REC Asbestos.

Method Index

Value	Description
T6	ICP/OES
T16	GC/MS
T8	GC/FID
T27	PLM

Accreditation Summary

Determinand	Method	Test Sample	LOD	Units	Symbol	Concept References
Total Petroleum Hydrocarbons	T8	AR	1	mg/kg	U	001
Asbestos ID	T27	AR			SU	001
Naphthalene	T16	AR	0.1	mg/kg	U	001
Acenaphthylene	T16	AR	0.1	mg/kg	U	001
Acenaphthene	T16	AR	0.1	mg/kg	U	001
Fluorene	T16	AR	0.1	mg/kg	U	001
Phenanthrene	T16	AR	0.1	mg/kg	U	001
Anthracene	T16	AR	0.1	mg/kg	U	001
Fluoranthene	T16	AR	0.1	mg/kg	U	001
Pyrene	T16	AR	0.1	mg/kg	U	001
Benzo(a)Anthracene	T16	AR	0.1	mg/kg	U	001
Chrysene	T16	AR	0.1	mg/kg	U	001
Benzo(b/k)Fluoranthene	T16	AR	0.1	mg/kg	U	001
Benzo(a)Pyrene	T16	AR	0.1	mg/kg	U	001
Indeno(123-cd)Pyrene	T16	AR	0.1	mg/kg	U	001
Dibenzo(ah)Anthracene	T16	AR	0.1	mg/kg	U	001
Benzo(ghi)Perylene	T16	AR	0.1	mg/kg	U	001
PAH(total)	T16	AR	0.1	mg/kg	U	001
Arsenic	T6	A40	1	mg/kg	U	001
Cadmium	T6	A40	1	mg/kg	U	001
Chromium	T6	A40	1	mg/kg	U	001
Copper	T6	A40	1	mg/kg	U	001
Lead	T6	A40	1	mg/kg	U	001
Mercury	T6	A40	1	mg/kg	U	001
Nickel	T6	A40	1	mg/kg	U	001
Selenium	T6	A40	3	mg/kg	U	001
Zinc	T6	A40	1	mg/kg	U	001



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Final Report

Report No.:	21-30525-1		
Initial Date of Issue:	10-Sep-2021		
Client	WML Consulting Ltd		
Client Address:	No. 8 Oak Green Stanley Green Business Park Earl Rd Cheadle SK8 6QL		
Contact(s):	Sam Seddon Tom Booth		
Project	8850G Blackrock Street		
Quotation No.:		Date Received:	03-Sep-2021
Order No.:	8850G	Date Instructed:	03-Sep-2021
No. of Samples:	8		
Turnaround (Wkdays):	5	Results Due:	09-Sep-2021
Date Approved:	10-Sep-2021		
Approved By:			
Details:	Glynn Harvey, Technical Manager		

Results - Soil

Project: 8850G Blackrock Street

Client: WML Consulting Ltd	Chemtest Job No.:				21-30525	21-30525	21-30525	21-30525	21-30525	21-30525	21-30525	21-30525
Quotation No.:	Chemtest Sample ID.:				1272180	1272181	1272182	1272183	1272184	1272185	1272186	1272187
Order No.: 8850G	Client Sample Ref.:				1	1	1	1	1	1	1	1
	Sample Location:				Plot 5C	Plot 8D	Plot 11F	Plot 16H	SS1	SS2	SS3	SS4
	Sample Type:				SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.15	0.10	0.10	0.10	1.10	2.10	3.10	4.10
	Asbestos Lab:				DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	Accred.	SOP	Units	LOD								
ACM Type	U	2192		N/A	-	-	-	-	-	-	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	11	7.7	11	14	4.2	5.2	5.7	19
pH	U	2010		4.0	[A] 8.2	[A] 8.1	[A] 8.3	[A] 8.5	[A] 9.1	[A] 9.1	[A] 9.2	[A] 9.0
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	[A] 0.73	[A] 1.8	[A] 1.4	[A] 0.84	[A] < 0.40	[A] < 0.40	[A] < 0.40	[A] < 0.40
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	[A] 0.033	[A] 0.12	[A] 0.11	[A] 0.016	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
Total Sulphur	U	2175	%	0.010	[A] 0.028	[A] 0.063	[A] 0.059	[A] 0.032	[A] < 0.010	[A] < 0.010	[A] < 0.010	[A] < 0.010
Cyanide (Total)	U	2300	mg/kg	0.50	[A] < 0.50	[A] 0.50	[A] < 0.50	[A] < 0.50	[A] < 0.50	[A] < 0.50	[A] < 0.50	[A] < 0.50
Sulphate (Total)	U	2430	mg/kg	100	[A] 530	[A] 910	[A] 930	[A] 600	[A] < 100	[A] < 100	[A] < 100	[A] < 100
Arsenic	U	2450	mg/kg	1.0	2.8	5.5	5.3	3.6	1.2	< 1.0	1.7	< 1.0
Cadmium	U	2450	mg/kg	0.10	0.11	0.18	0.17	0.15	< 0.10	< 0.10	< 0.10	< 0.10
Copper	U	2450	mg/kg	0.50	10	31	19	12	2.3	2.0	3.0	1.5
Mercury	U	2450	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Nickel	U	2450	mg/kg	0.50	12	13	14	12	9.1	9.2	11	7.5
Lead	U	2450	mg/kg	0.50	16	27	28	20	9.2	9.2	9.9	8.1
Selenium	U	2450	mg/kg	0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
Vanadium	U	2450	mg/kg	5.0	14	18	18	15	10	9.9	13	8.9
Zinc	U	2450	mg/kg	0.50	45	59	59	47	29	27	32	22
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Organic Matter	U	2625	%	0.40	[A] 3.1	[A] 4.5	[A] 4.7	[A] 3.9	[A] < 0.40	[A] < 0.40	[A] 0.45	[A] < 0.40
Naphthalene	U	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	U	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	U	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	U	2800	mg/kg	0.10	< 0.10	0.18	0.23	0.15	< 0.10	< 0.10	< 0.10	< 0.10
Anthracene	U	2800	mg/kg	0.10	< 0.10	0.11	0.10	0.13	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	U	2800	mg/kg	0.10	0.11	0.49	0.68	0.15	< 0.10	< 0.10	< 0.10	< 0.10
Pyrene	U	2800	mg/kg	0.10	0.12	0.48	0.63	0.29	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]anthracene	U	2800	mg/kg	0.10	0.14	0.49	0.38	0.14	< 0.10	< 0.10	< 0.10	< 0.10
Chrysene	U	2800	mg/kg	0.10	0.13	0.40	0.45	0.19	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	U	2800	mg/kg	0.10	0.16	0.42	0.52	0.30	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	U	2800	mg/kg	0.10	0.10	0.23	0.32	0.16	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene	U	2800	mg/kg	0.10	0.17	0.38	0.38	0.22	< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	U	2800	mg/kg	0.10	0.11	0.23	0.25	0.12	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10	0.11	< 0.10	0.13	0.11	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	U	2800	mg/kg	0.10	0.15	0.21	0.28	0.14	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 16 PAH's	N	2800	mg/kg	2.0	< 2.0	3.6	4.4	2.1	< 2.0	< 2.0	< 2.0	< 2.0
Total Phenols	U	2920	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request. The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
1272180	1		Plot 5C		A	Amber Glass 250ml
1272180	1		Plot 5C		A	Plastic Tub 500g
1272181	1		Plot 8D		A	Amber Glass 250ml
1272181	1		Plot 8D		A	Plastic Tub 500g
1272182	1		Plot 11F		A	Amber Glass 250ml
1272182	1		Plot 11F		A	Plastic Tub 500g
1272183	1		Plot 16H		A	Amber Glass 250ml
1272183	1		Plot 16H		A	Plastic Tub 500g
1272184	1		SS1		A	Amber Glass 250ml
1272184	1		SS1		A	Plastic Tub 500g
1272185	1		SS2		A	Amber Glass 250ml
1272185	1		SS2		A	Plastic Tub 500g
1272186	1		SS3		A	Amber Glass 250ml
1272186	1		SS3		A	Plastic Tub 500g
1272187	1		SS4		A	Amber Glass 250ml
1272187	1		SS4		A	Plastic Tub 500g

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Alkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenzo[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

Report Information

Key

U	UKAS accredited
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S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation

The results relate only to the items tested

Uncertainty of measurement for the determinands tested are available upon request

None of the results in this report have been recovery corrected

All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis

All Asbestos testing is performed at the indicated laboratory

Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

- A - Date of sampling not supplied
- B - Sample age exceeds stability time (sampling to extraction)
- C - Sample not received in appropriate containers
- D - Broken Container
- E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt

All water samples will be retained for 14 days from the date of receipt

Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:

customerservices@chemtest.com



2183

Final Report

Report No.:	21-30533-1		
Initial Date of Issue:	10-Sep-2021		
Client	WML Consulting Ltd		
Client Address:	No. 8 Oak Green Stanley Green Business Park Earl Rd Cheadle SK8 6QL		
Contact(s):	Sam Seddon Tom Booth		
Project	7539G Arbroath Street		
Quotation No.:		Date Received:	03-Sep-2021
Order No.:	7539G	Date Instructed:	03-Sep-2021
No. of Samples:	4		
Turnaround (Wkdays):	5	Results Due:	09-Sep-2021
Date Approved:	10-Sep-2021		
Approved By:			
Details:	Glynn Harvey, Technical Manager		

Results - Soil

Project: 7539G Arbroath Street

Client: WML Consulting Ltd	Chemtest Job No.:				21-30533	21-30533	21-30533	21-30533
Quotation No.:	Chemtest Sample ID.:				1272233	1272234	1272235	1272236
	Sample Location:				Plot 5	Plot 7	Plot 9	Plot 12
	Sample Type:				SOIL	SOIL	SOIL	SOIL
	Top Depth (m):				0.00	0.20	0.15	0.10
	Asbestos Lab:				DURHAM	DURHAM	DURHAM	DURHAM
Determinand	Accred.	SOP	Units	LOD				
ACM Type	U	2192		N/A	-	-	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	11	18	15	18
pH	U	2010		4.0	[A] 8.3	[A] 8.3	[A] 8.3	[A] 8.2
Boron (Hot Water Soluble)	U	2120	mg/kg	0.40	[A] 1.5	[A] 1.8	[A] 1.2	[A] 1.7
Sulphate (2:1 Water Soluble) as SO4	U	2120	g/l	0.010	[A] 0.087	[A] 0.10	[A] 0.10	[A] 0.12
Total Sulphur	U	2175	%	0.010	[A] 0.082	[A] 0.059	[A] 0.067	[A] 0.095
Cyanide (Total)	U	2300	mg/kg	0.50	[A] < 0.50	[A] < 0.50	[A] < 0.50	[A] < 0.50
Sulphate (Total)	U	2430	mg/kg	100	[A] 720	[A] 930	[A] 1100	[A] 920
Arsenic	U	2450	mg/kg	1.0	4.6	4.2	4.9	4.9
Cadmium	U	2450	mg/kg	0.10	0.16	0.16	0.25	0.17
Copper	U	2450	mg/kg	0.50	18	17	18	15
Mercury	U	2450	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Nickel	U	2450	mg/kg	0.50	12	12	13	12
Lead	U	2450	mg/kg	0.50	26	100	31	25
Selenium	U	2450	mg/kg	0.20	< 0.20	< 0.20	0.20	< 0.20
Vanadium	U	2450	mg/kg	5.0	15	14	16	16
Zinc	U	2450	mg/kg	0.50	59	50	65	50
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50
Organic Matter	U	2625	%	0.40	[A] 6.7	[A] 5.6	[A] 7.8	[A] 5.7
Naphthalene	U	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	U	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	U	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	U	2800	mg/kg	0.10	< 0.10	0.23	0.17	< 0.10
Anthracene	U	2800	mg/kg	0.10	< 0.10	0.13	0.12	< 0.10
Fluoranthene	U	2800	mg/kg	0.10	0.28	0.34	0.42	0.21
Pyrene	U	2800	mg/kg	0.10	0.18	0.27	0.31	0.21
Benzo[a]anthracene	U	2800	mg/kg	0.10	0.30	0.19	0.28	0.32
Chrysene	U	2800	mg/kg	0.10	0.40	0.20	0.35	0.35
Benzo[b]fluoranthene	U	2800	mg/kg	0.10	0.26	0.25	0.22	0.82
Benzo[k]fluoranthene	U	2800	mg/kg	0.10	0.15	0.17	0.16	0.37
Benzo[a]pyrene	U	2800	mg/kg	0.10	0.25	0.20	0.22	0.66
Indeno(1,2,3-c,d)Pyrene	U	2800	mg/kg	0.10	< 0.10	0.16	< 0.10	0.59
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10	< 0.10	0.13	< 0.10	0.20
Benzo[g,h,i]perylene	U	2800	mg/kg	0.10	< 0.10	0.13	< 0.10	0.44
Total Of 16 PAH's	N	2800	mg/kg	2.0	< 2.0	2.4	2.3	4.2
Total Phenols	U	2920	mg/kg	0.10	0.37	0.32	0.41	0.33

Deviations

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1272233			Plot 5		A	Amber Glass 250ml
1272233			Plot 5		A	Plastic Tub 500g
1272234			Plot 7		A	Amber Glass 250ml
1272234			Plot 7		A	Plastic Tub 500g
1272235			Plot 9		A	Amber Glass 250ml
1272235			Plot 9		A	Plastic Tub 500g
1272236			Plot 12		A	Amber Glass 250ml
1272236			Plot 12		A	Plastic Tub 500g

Test Methods

SOP	Title	Parameters included	Method summary
2010	pH Value of Soils	pH	pH Meter
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2175	Total Sulphur in Soils	Total Sulphur	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Alkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenzo[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.

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