

Rydon Construction Ltd

Phelim Donnelly
pdonnelly@rydon.co.uk

21 October 2022

Subject: Coppetts Wood, London: Clean Cover Validation Blocks A to F
Our ref: L-21948a-2.4.2-22-438-NTD Rev B

Dear Mr Donnelly,

IDOM Merebrook (Merebrook) has been commissioned by Rydon Construction Ltd to undertake the validation of clean cover at Blocks A to F, Coppetts Wood.

Merebrook produced a Remediation Strategy (RMS-21948a-20-234 dated June 2020), which outlined the contamination encountered (during previous site investigations) and proposed remedial measures to mitigate risks to future site users. Merebrook have also produced an Interim Validation Report (IVB-21948a-22-36 dated April 2022) which details the implementation of the remedial requirements. The only outstanding requirement was the provision of clean cover in landscaped areas, this has now been completed and is detailed in this letter report.

The remediation strategy included the provision for 600 mm of imported clean soil cover in private gardens and 300 mm in areas of communal landscaping. Validation of the chemical quality of clean cover was required at a rate of one sample per 250 cubic metres, with a minimum of three samples per batch of imported soil. Acceptance criteria for soil is presented in Table 2 of the IDOM Remediation Strategy.

The requirement for 600 mm of clean cover in private gardens and 300 mm in areas of communal landscaping was not possible in the rear gardens of Blocs A & C. This was due to the presence of trees protected under a protection order (TPO). In order to adhere to the requirements of the root protection zone, it was only permissible to remove up to 100 mm of in *situ* topsoil/made ground and replace it with 300 mm of imported clean topsoil to avoid damaging tree roots. As the full clean cover thickness was not possible, it was proposed to place a high visibility geotextile over the existing soils prior to the installation of the clean imported topsoil.

Appended is an email from Ireland Albrecht Landscape Architects detailing the agreed variation in Blocks A & C.

Source Data

Merebrook have been supplied with source data (British Sugar) for the proposed topsoil and subsoil which shows compliance with the applicable import criteria. The analytical testing certificates (Tim O'Hare Associates ref: TOHA/22/7262/SS & TOHA/21/7196/SS) are appended.

Clean cover validation

Merebrook attended site on 25 May 2022 to undertake the validation of Blocks A to F. This comprised the excavation of hand dug pits within each plot. The correct thickness of clean cover was generally encountered. Clean cover thicknesses were slightly less at Plot 77 (580 mm), Plot 49 (580 mm) and Plot 47 (570 mm). It was considered that once turf has been laid (which will include the placement of a bedding material) clean cover thickness will be in excess of 600 mm. It should be noted that turf thickness was subsequently measured with the combined thickness in excess of 600 mm. At Plot 48 the clean cover thickness was only 500 mm, therefore the placement of additional soil was required.

Topsoil comprised dark brown silty sand with rare flint gravel. The subsoil comprised light brown/orange brown sand.

Topsoil samples were recovered from Plot 60 (Block C), Plot 48 (Block B) and Plot 2 (Block F). Subsoil samples were recovered from Plot 75 (Block E), Block D (communal area) and Plot 48 (Block B).

Samples were submitted to a UKAS/MCERTS accredited laboratory for analysis of a broad spectrum of contaminants. None of the determinands were found at concentrations in excess of their respective screening levels. A copy of the laboratory analytical certificate (Reference 22-61128-2B) is appended to this letter report.

Merebrook returned to site on 1 July 2022 to check the clean cover thickness at Plot 48. The combined thickness of topsoil and subsoil was 600 mm.

Merebrook attended site again on the 21 July 2022 to verify the installation of the high visibility geotextile at Blocks A and C, beneath placed topsoil. Hand pits were dug in each plot/communal area, in general at least 300 mm of clean cover was encountered over a high visibility geotextile. The exception was Plot 160, where only 150 mm of topsoil was encountered over the high visibility geotextile. It is understood that the root protection zone extended further into Plot 60, with roots closer to the pre-existing ground level. It was therefore not possible to excavate the 100 mm of existing soil in this plot. It is noted that the plot will be topped up where possible and turf has yet to be laid (which will include the placement of a bedding material). It is considered that once this has taken place the clean cover thickness will be circa 200 mm, without the removal of 100 mm this is the maximum that could be placed over the protected tree roots

Following the placement of turf, the turf thickness was measured which was found to be 40 mm (photographs showing the turf thickness are appended).

Photographic evidence of clean cover is appended to this letter report.

In conclusion, the soils placed at Blocks A to F (all blocks) were found to be of suitable chemical quality and had been placed to an appropriate thickness.

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Our ref: L-21948a-2.4.2-22-438-NTD Rev B
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IDOM

I trust the above and attached are suitable for your current requirements. If you have any queries, please do not hesitate to contact me.

Yours Sincerely,

A handwritten signature in blue ink, appearing to read 'N/Dellow', with a long horizontal stroke extending to the right.

Nathan Dellow

Enc

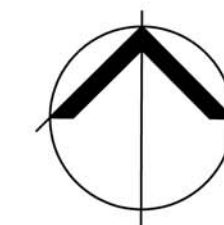
Drawing: Proposed development layout.

Source data: TOHA/22/7262/SS & TOHA/21/7196/SS

Laboratory Certificates: 22-61128-2B

email from Ireland Albrecht Landscape Architects

Validation photos



KEY:

- Site Boundary/ Phase line
- LEVELS:**
 - Existing levels
 - Proposed levels
- Arrows indicating surface falls.

SURFACE MATERIALS:

- Block paving - Laid Herringbone. Colour Grey parking bays delineated in contrasting Charcoal soldier course. Permeable paving block to be used to areas indicated in Suds strategy.
- Feature paving - Granite aggregate flag paving in 3 colours. light, granite, grey granite and red/brown granite
- Block E front garden entrances - Smooth concrete flag paving red-buff colour. Contemporary tile design to door recesses echoing local tradition monastic tiled paths
- Paving to Block A & B private entrances 450x450x50 Concrete flag paving, Buff. laid stack bond.
- Paving to Rear patios - 600x600x50 flag paving, Buff. laid stack bond.
- Feature paving to Pocket Green - 600x300mm granite/granite aggregate paving colour: blue grey
- Permeable Cellular gravel grid surface Block E car park
- Resin Bound Gravel, grey beige colour, to footpaths, over tarmac base.
- Granite Setts rumble strip.

BOUNDARIES:

- Site boundary fence: 1800mm high timber close boarded fence with 300 high trellis, capping rails & concrete posts & gravel boards.
- Block E side boundary: 1.8m high brick wall, brick match block E
- Rear garden fence: 1500mm high tongue and groove timber fence with 300 high timber Venetian trellis panel, timber capping rails & concrete posts & gravel boards.
- Rear garden fence to end of block C gardens: 1800mm high Venetian trellis panel, timber capping rails & concrete posts & gravel boards.
- Railings to Block D rear private terraces, Block F & Pocket Green: 1500mm high railing
- Railings to Block C & D front private terraces: 1200mm high railing
- Block E front gardens - 1.2m boundary Railings 750mm high over 450mm low brick wall with brick piers to front garden gates
- Pocket Green entrance from Osier Crescent - existing hospital gate and feature railing reconditioned and installed

FURNITURE:

- Benches: 1.8m long timber bench with back, metal frame. Ground fixed in concrete footing
- Benches: 1.8m long timber backless bench, Ground fixed in concrete footing
- Benches: Curved timber backless bench. Ground fixed in concrete footing
- Bollard
- Bin store

LIGHTING:

- Proposed lighting:
 - LC = Lighting column
 - WL = Wall light
 - UL = Up-lighter

PLANTING

- Existing trees to be retained. See Arborhelp Tree Survey and Report
- Root Protection Area - Refer to Arborhelp Tree survey and report.
- Proposed trees: 60-70cm, 45-50cm, 20-25, 16-18cm & 12-14cm girth all tree pits to have min 4m³ rootable area. CU structural soil to be used to extend tree pits below paved areas where required. U/G Guyed including watering ring or double staked with cross bar
- Proposed planting: All new planting beds to have 600mm depth imported topsoil. All planted areas to be mulched with 50mm depth amenity bark mulch.
- New native hedgerow
- Existing native shrub planting retained and enhanced
- Hedge Planting:
 - Grass: Amenity grade turf/seed over 150mm min imported topsoil over 450 subsoil.

0 5 10 15
Scale Bar in Metres

London: 6 David Mews
Greenwich South Street
London SE10 8NJ
T/F 020 8293 0799

Harrogate: 59 West End Avenue
Harrogate, Yorkshire HG2 9BX
T/F 020 8293 0799
www.Ireland-albrecht.co.uk
post@ireland-albrecht.co.uk

IRELAND ALBRECHT
LANDSCAPE ARCHITECTS

Coppetts Wood

Landscape Plan

For Planning

Scale	Drawn	Checked	Date
1:200 @ A1	LP	DA	15.09.16

Drawing No. IA-395-LGA-P-01

Revision: -

All dimensions to be checked on site. Do not Scale. This drawing is copyright.





TIM O'HARE ASSOCIATES
SOIL & LANDSCAPE CONSULTANCY

Mr Andy Spetch
British Sugar plc Co-Products
Oundle Road
Peterborough
PE2 9QU

28th October 2021
Our Ref: TOHA/21/7196/SS
Your Ref: PO 60168142

Dear Sirs

Subsoil Analysis Report: Wissington – General Purpose Subsoil

We have completed the analysis of the sample recently submitted, referenced *General Purpose Subsoil*, and have pleasure reporting our findings.

The purpose of the analysis was to determine the suitability of the subsoil sample for general landscape purposes. In addition, the sample has been assessed to determine its compliance with the requirements of the British Standard for Subsoil (*BS8601:2013 – Specification for subsoil and requirements for use – Table 1, Multipurpose Subsoil*).

This report presents the results of analysis for the sample submitted to our office, and it should be considered 'indicative' of the subsoil source. The report and results should therefore not be used by third parties as a means of verification or validation testing or waste designation purposes, especially after the subsoil has left the British Sugar factory.

SAMPLE EXAMINATION

The sample was described as a yellowish brown (Munsell Colour 10YR 5/4), moist, friable, slightly calcareous LOAMY SAND with a weakly developed, fine to medium granular structure*. The sample was virtually stone-free, and no unusual odours, deleterious materials, roots or rhizomes of pernicious weeds were observed.

*This appraisal of soil structure was made from examination of a disturbed sample. Structure is a key soil characteristic that may only be accurately assessed by examination in an in-situ state.

Tim O'Hare Associates LLP
Howbery Park Wallingford Oxfordshire OX10 8BA
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www.toha.co.uk

ANALYTICAL SCHEDULE

The sample was submitted to a UKAS and MCERTS accredited laboratory for a range of physical and chemical tests to confirm the composition and fertility of the soil, and the concentration of selected potential contaminants. The following parameters were determined:

- detailed particle size analysis (5 sands, silt, clay);
- stone content (2-20mm, 20-50mm, >50mm);
- pH and electrical conductivity values;
- exchangeable sodium percentage;
- organic matter content;
- heavy metals (As, B, Ba, Be, Cd, Cr, Cu, Pb, Hg, Ni, Se, V, Zn);
- total cyanide and total (mono) phenols;
- speciated PAHs (US EPA16 suite);
- aromatic and aliphatic TPH (C5-C35 banding);
- benzene, toluene, ethylbenzene, xylene (BTEX);
- asbestos screen.

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

RESULTS OF ANALYSIS

Detailed Particle Size Analysis and Stone Content

The sample fell into the *loamy sand* texture class. Further detailed particle size analysis revealed the sample to have a sufficiently narrow particle size distribution and a predominance of *medium sand* (0.25-0.50mm) and *coarse sand* (0.50-1.0mm). This is acceptable for subsoil in general landscape applications as porosity levels should be maintained in a consolidated state and the risk of particle interpacking is low.

The sample was virtually stone-free and, as such, stones should not restrict the use of the soil for general landscape purposes.

pH and Electrical Conductivity Values

The sample was strongly alkaline in reaction (pH 8.4). This pH value would be considered suitable for general landscape purposes providing species with a wide pH tolerance or those known to prefer alkaline soils are selected for planting, turfing and seeding.

The electrical conductivity (salinity) value was low, which indicates that soluble salts should not be present at levels that would be harmful to plants.

Organic Matter Content

The organic matter content of the sample was low (2%) and acceptable.

Potential Contaminants

With reference to *BS8601:2013 – Section 4.2*: Note 2, there is a requirement to confirm levels of potential contaminants in relation to the subsoil's proposed end use. This includes human health, environmental protection and metals considered toxic to plants. In the absence of 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 (S4ULs) presented in *The LQM/CIEH S4ULs for Human Health Risk Assessment* (2015) and the DEFRA SP1010: *Development of Category 4 Screening Levels (C4SLs) for Assessment of Land Affected by Contamination – Policy Companion Document* (2014).

Of the potential contaminants determined in the sample, none exceeded their respective guideline values.

Phytotoxic Contaminants

Of the phytotoxic (toxic to plants) contaminants determined (copper, nickel, zinc), none was found at levels that exceeded the maximum permissible levels specified in *BS8601:2013 – Table 1*.

CONCLUSION

The purpose of the analysis was to determine the suitability of the subsoil sample for general landscape purposes. In addition, the sample has been assessed to determine its compliance with the requirements of the British Standard for Subsoil (*BS8601:2013 – Specification for Subsoil - Table 1, Multipurpose Subsoil*).

From the soil examination and laboratory analysis, the sample was described as a strongly alkaline, non-saline, slightly calcareous, loamy sand with a weakly developed structure and very low stone content. The organic matter content was low and consistent with subsoil. Of the potential contaminants determined, none was found at levels that exceeded their guideline values.

To conclude, based on our findings, the subsoil represented by this sample would be considered suitable for general landscape purposes (trees, shrubs and amenity grass), provided species with a wide pH tolerance or those known to prefer alkaline soils are selected, and the physical condition of the soil is satisfactory.

The sample was also fully compliant with the requirements of the British Standard for Subsoil (*BS8601:2013 – Specification for subsoil and requirements for use – Table 1, Multipurpose Subsoil*).

Soil Handling Recommendations

Reference should be made to Section 6.0 of *BS8601:2013* with regard to the handling and management of the subsoil:

"Soils generally lose strength and become less resistant to damage as they become wetter; therefore, it is essential that they are stripped, handled and trafficked only in the appropriate conditions of weather and soil moisture, and with suitable machinery. If sustained heavy rainfall (e.g. >10 mm in 24 h) occurs during soil stripping operations, work should be suspended and not restarted until the ground has had at least one dry day or until a suitable moisture content has been reached. A soil can be considered to have a suitable moisture content for stripping and handling if the whole thickness of the subsoil layer being stripped and/or handled is at a moisture content below the plastic limit as determined in accordance with BS 1377-2:1990 (incorporating Amendment No. 1).

Machinery should be selected and routed to minimise soil compaction."

Further guidance is provided in Clauses 6.1–6.5.

We hope this report meets with your approval and provides the necessary information. Please do not hesitate to contact the undersigned if we can be of further assistance.

Yours sincerely



Tilly Kimble-Wilde
BSc MSc
Graduate Soil Scientist



Ceri Spears
BSc MSc MSoilSci
Senior Associate

For & on behalf of Tim O'Hare Associates LLP

Client:	British Sugar plc Co-Products
Client Ref:	Wissington
Job:	Subsoil Analysis
Date:	28/10/2021
Job Ref No:	TOHA/21/7196/SS



TIM O'HARE ASSOCIATES
SOIL & LANDSCAPE CONSULTANCY

Sample Reference		
Clay (<0.002mm)	%	U
Silt (0.002-0.05mm)	%	U
Very Fine Sand (0.05-0.15mm)	%	U
Fine Sand (0.15-0.25mm)	%	U
Medium Sand (0.25-0.50mm)	%	U
Coarse Sand (0.50-1.0mm)	%	U
Very Coarse Sand (1.0-2.0mm)	%	U
Sand (0.05-2.0mm)	%	U
Texture Class (UK Classification)	--	U
Stones (2-20mm)	% DW	G
Stones (20-75mm)	% DW	G
Stones (>75mm)	% DW	G

General Purpose Subsoil	
	7
	7
	10
	12
	28
	28
	8
	86
	LS
	2
	1
	0

pH Value (1:2.5 water extract)	units	U
Electrical Conductivity (1:2.5 water extract)	uS/cm	U
Moisture Content	%	U
Organic Matter (LOI)	%	U

	8.4
	413
	9
	2

Total Arsenic (As)	mg/kg	M
Total Barium (Ba)	mg/kg	M
Total Beryllium (Be)	mg/kg	M
Total Cadmium (Cd)	mg/kg	M
Total Chromium (Cr)	mg/kg	M
Hexavalent Chromium (Cr VI)	mg/kg	M
Total Copper (Cu)	mg/kg	M
Total Lead (Pb)	mg/kg	M
Total Mercury (Hg)	mg/kg	M
Total Nickel (Ni)	mg/kg	M
Total Selenium (Se)	mg/kg	M
Total Vanadium (V)	mg/kg	M
Total Zinc (Zn)	mg/kg	M
Water Soluble Boron (B)	mg/kg	M
Total Cyanide (CN)	mg/kg	M
Total (mono) Phenols	mg/kg	M

	11
	20
	0.37
	< 0.2
	12
	< 4.0
	5
	7.8
	< 0.3
	9.8
	< 1.0
	23
	28
	0.6
	< 1.0
	< 1.0

Naphthalene	mg/kg	M
Acenaphthylene	mg/kg	M
Acenaphthene	mg/kg	M
Fluorene	mg/kg	M
Phenanthrene	mg/kg	M
Anthracene	mg/kg	M
Fluoranthene	mg/kg	M
Pyrene	mg/kg	M
Benzo(a)anthracene	mg/kg	M
Chrysene	mg/kg	M
Benzo(b)fluoranthene	mg/kg	M
Benzo(k)fluoranthene	mg/kg	M
Benzo(a)pyrene	mg/kg	M
Indeno(1,2,3-cd)pyrene	mg/kg	M
Dibenzo(a,h)anthracene	mg/kg	M
Benzo(g,h,i)perylene	mg/kg	M
Total PAHs (sum USEPA16)	mg/kg	M

	< 0.05
	< 0.05
	< 0.05
	< 0.05
	< 0.05
	< 0.05
	< 0.05
	< 0.05
	< 0.05
	< 0.05
	< 0.05
	< 0.05
	< 0.05
	< 0.05
	< 0.05
	< 0.80

Aliphatic TPH (C5-C6)	mg/kg	M
Aliphatic TPH (C6-C8)	mg/kg	M
Aliphatic TPH (C8-C10)	mg/kg	M
Aliphatic TPH (C10-C12)	mg/kg	M
Aliphatic TPH (C12-C16)	mg/kg	M
Aliphatic TPH (C16-C21)	mg/kg	M
Aliphatic TPH (C21-C35)	mg/kg	M
Aliphatic TPH (C5-C35)	mg/kg	M
Aromatic TPH (C5-C7)	mg/kg	M
Aromatic TPH (C7-C8)	mg/kg	M
Aromatic TPH (C8-C10)	mg/kg	M
Aromatic TPH (C10-C12)	mg/kg	M
Aromatic TPH (C12-C16)	mg/kg	M
Aromatic TPH (C16-C21)	mg/kg	M
Aromatic TPH (C21-C35)	mg/kg	M
Aromatic TPH (C5-C35)	mg/kg	M

	< 0.001
	< 0.001
	< 0.001
	< 1.0
	< 2.0
	< 8.0
	< 8.0
	< 10
	< 0.001
	< 0.001
	< 0.001
	< 1.0
	< 2.0
	< 10
	< 10
	< 10

Benzene	mg/kg	M
Toluene	mg/kg	M
Ethylbenzene	mg/kg	M
p & m-xylene	mg/kg	M
o-xylene	mg/kg	M

	< 0.001
	< 0.001
	< 0.001
	< 0.001
	< 0.001

Asbestos	ND/D	I
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Not-detected

Visual Examination

The sample was described as a yellowish brown (Munsell Colour 10YR 5/4), moist, friable, slightly calcareous LOAMY SAND with a weakly developed, fine to medium granular structure. The sample was virtually stone-free, and no unusual odours, deleterious materials, roots or rhizomes of pernicious weeds were observed.

LS	LOAMY SAND Texture Class
M	MCERTS accredited method (& UKAS accredited method)
I	ISO 17025 accredited method
U	UKAS accredited method
G	GLP accredited method
A	A2LA accredited method

This report presents the results of analysis for the sample submitted to our office, and it should be considered 'indicative' of the subsoil source. The report and results should therefore not be used by third parties as a means of verification or validation testing or waste designation purposes, especially after the subsoil has left the British Sugar factory.

Results of analysis should be read in conjunction with the report they were issued with

The contents of this certificate shall not be reproduced without the express written permission of Tim O'Hare Associates LLP.

mfumble-wilde

Tilly Kimble-Wilde
BSc MSc
Graduate Soil Scientist



Declaration of Compliance BS3882:2015

Soil source: British Sugar TOPSOIL

This declaration confirms that the topsoil represented by the attached Topsoil Analysis Report conforms to the requirements of the British Standard for Topsoil (BS3882:2015).

The sample was sampled and tested in accordance with the requirements of BS3882:2015

- Samples are taken for analysis every 8000 tonnes (5000 m3) of product
- Samples are taken from all TOPSOIL products ready for despatch
- *Landscape 20* and *Sports 10* are sampled after screening
- Analysis certificates are retained for a period of 5 years

- Laboratory analysis is undertaken at a **UKAS** and **MCERTS** accredited laboratory
- All laboratory methods are in accordance with BS3882:2015
- All British Sugar TOPSOIL products are produced to a **Quality Management System** approved by Lloyd's Register Quality Assurance to **ISO 9001:2008** standard

Signed

A handwritten signature in black ink, appearing to read "A Spetch".

Andy Spetch
British Sugar TOPSOIL, National TOPSOIL Manager
Sugar Way, Peterborough, PE2 9AY
Telephone 0870 2402314



TIM O'HARE ASSOCIATES
SOIL & LANDSCAPE CONSULTANCY

Mr Andy Spetch
British Sugar plc Co-Products
Oundle Road
Peterborough
PE2 9QU

4th January 2022
Our Ref: TOHA/22/7262/SS
Your Ref: PO 60172719

Dear Sirs

Topsoil Analysis Report: Bury St Edmunds – Bury L20

We have completed the analysis of the LANDSCAPE 20 TOPSOIL sample recently submitted, referenced *L20-Bury-Aug 21* and have pleasure reporting our findings.

The purpose of the analysis was to determine the suitability of the LANDSCAPE 20 TOPSOIL sample for general landscape purposes. In addition, this sample has been assessed to determine its compliance with the requirements of the British Standard for Topsoil (*BS3882:2015 - Specification for topsoil – Table 1, Multipurpose Topsoil*).

This report presents the results of analysis for the sample submitted to our office, and it should be considered 'indicative' of the topsoil source. The report and results should therefore not be used by third parties as a means of verification or validation testing or waste designation purposes, especially after the topsoil has left the British Sugar factory.

SAMPLE EXAMINATION

The sample was described as a dark greyish brown (Munsell Colour 10YR 4/2), slightly moist, friable, very calcareous SANDY LOAM with a weakly developed, very fine to fine granular structure*. The sample was slightly stony and no unusual odours, deleterious materials, roots or rhizomes of pernicious weeds were observed.

*This appraisal of soil structure was made from examination of a disturbed sample. Structure is a key soil characteristic that may only be accurately assessed by examination in an in-situ state.

Tim O'Hare Associates LLP
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www.toha.co.uk

ANALYTICAL SCHEDULE

The sample was submitted to a UKAS and MCERTS accredited laboratory for a range of physical and chemical tests to confirm the composition and fertility of the soil, and the concentration of selected potential contaminants.

The following parameters were determined:

- particle size analysis (sand, silt, clay);
- stone content;
- pH and electrical conductivity values;
- exchangeable sodium percentage;
- major plant nutrients (N, P, K, Mg);
- organic matter content;
- C:N ratio;
- heavy metals (As, B, Ba, Be, Cd, Cr, Cu, Pb, Hg, Ni, Se, V, Zn);
- total cyanide and total (mono) phenols;
- aromatic and aliphatic TPH (C5-C35 banding);
- speciated PAHs (US EPA16 suite);
- benzene, toluene, ethylbenzene, xylene;
- asbestos screen.

The results are presented on the attached Certificate of Analysis and an interpretation of the results is given below. The interpretation considers the use of the LANDSCAPE 20 TOPSOIL for general landscape purposes and its compliance/non-compliance with our general landscape specification.

RESULTS OF ANALYSIS

Particle Size Analysis and Stone Content

The sample fell into the *sandy loam* texture class, which is usually considered suitable for general landscape applications provided the soil's physical condition is satisfactory.

The stone content of the sample was low and, as such, stones should not restrict the use of the soil for general landscape purposes.

pH and Electrical Conductivity Values

The sample was alkaline in reaction (pH 7.8). This pH result would be considered suitable for general landscape purposes provided species with a wide pH tolerance or those known to prefer alkaline soils are selected for planting, turfing and seeding.

The electrical conductivity (salinity) value (water extract) was moderate, which indicates that soluble salts should not be present at levels that would be harmful to plants.

The electrical conductivity value by CaSO₄ extract (BS3882 requirement) fell below the maximum specified value (3300 µS/cm) given in BS3882:2015 – Table 1.

Organic Matter and Fertility Status

The sample was adequate to well supplied with organic matter and all major plant nutrients.

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

Potential Contaminants

With reference to *BS3882:2015 - Table 1*: Notes 3 and 4, there is a recommendation to confirm levels of potential contaminants in relation to the topsoil's proposed end use. This includes human health, environmental protection and metals considered toxic to plants. In the absence of site-specific criteria, the concentrations that affect human health have been assessed for *residential with home grown produce* end-use against the Suitable For Use Levels (S4ULs) presented in the LQM/CIEH S4ULs for Human Health Risk Assessment (2015) and the DEFRA SP1010: Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination – Policy Companion Document (2014). The concentration of barium has been compared with the *residential* land use given in the document *EIC/AGS/CL:AIRE Soil Generic Assessment Criteria for Human Health Risk Assessment* (2010).

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

Phytotoxic Contaminants

Of the phytotoxic (toxic to plants) contaminants determined (copper, nickel, zinc), none was found at levels that exceeded the maximum permissible levels specified in *BS3882:2015 – Table 1*.

CONCLUSION

The purpose of the analysis was to determine the suitability of the LANDSCAPE 20 TOPSOIL sample for general landscape purposes.

From the soil examination and subsequent laboratory analysis, the sample was described as an alkaline, non-saline, very calcareous sandy loam, with a weakly developed structure and low stone content. The sample was adequate to well supplied with organic matter and all major plant nutrients. Of the potential contaminants determined, none was found at levels that exceeded their guideline values.

Based on our findings, the topsoil represented by this sample would be considered suitable for general landscape purposes (trees, shrubs and amenity grass), provided species with a wide pH tolerance or those known to prefer alkaline soils are selected for planting and the physical condition of the soil is satisfactory.

The topsoil was also fully compliant with the requirements of the British Standard for Topsoil (*BS3882:2015 – Specification for Topsoil - Table 1, Multipurpose Topsoil*).

RECOMMENDATIONS

Soil Handling Recommendations

It is important to maintain the physical condition of the soil and avoid structural damage during all phases of soil handling (e.g. stockpiling, resspreading, cultivating, planting). As a consequence, soil handling operations should be carried out when soil is reasonably dry and non-plastic (friable) in consistency.

It is important to ensure that the soil is not unnecessarily compacted by trampling or trafficking by site machinery, and soil handling should be stopped during and after heavy rainfall and not continued until the soil is friable in consistency. If the soil is structurally damaged and compacted at any stage during the course of soiling or landscaping works, it should be cultivated appropriately to relieve the compaction and to restore the soil's structure prior to any planting, turfing or seeding.

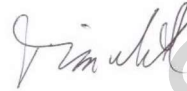
Further details on soil handling are provided in Annex A of *BS3882:2015*.

We hope this report meets with your approval and provides the necessary information. Please do not hesitate to contact the undersigned if we can be of further assistance.

Yours faithfully



Tilly Kimble-Wilde
BSc MSc
Graduate Soil Scientist



Tim White
BSc MSc MSoilSci CSci
Senior Associate

For & on behalf of Tim O'Hare Associates LLP



L20-Bury-Nov21

14	✓
21	✓
65	✓
SL	--
6	✓
0	✓
0	✓

7.8	✓
941	✓
2580	✓
3.8	✓
13	--
3.9	✓
0.20	✓
11	✓
42	✓
581	✓
78	✓

12	✓
51	✓
0.67	✓
0.5	✓
25	✓
< 4.0	✓
28	✓
26	✓
< 0.3	✓
17	✓
< 1.0	✓
35	✓
67	✓
< 0.2	✓
< 1.0	✓
< 1.0	✓

[illegible]

< 0.001	✓
< 0.001	✓
< 0.001	✓
< 1.0	✓
< 2.0	✓
< 8.0	✓
< 8.0	✓
< 10	✓
< 0.001	✓
< 0.001	✓
< 0.001	✓
< 1.0	✓
< 2.0	✓
< 10	✓
< 10	✓
< 10	✓

< 0.001	✓
< 0.001	✓
< 0.001	✓
< 0.001	✓
< 0.001	✓

Not-Detected	✓
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The sample was described as a dark greyish brown (Munsell Colour 10YR 4/2), slightly moist, friable, very calcareous SANDY LOAM with a weakly developed, very fine to fine granular structure. The sample was slightly stony and no unusual odours, deleterious materials, roots or rhizomes of pernicious weeds were observed.

mfumble-wild

This report presents the results of analysis for the sample submitted to our office, and it should be considered 'indicative' of the topsoil source. The report and results should therefore not be used by third parties as a means of verification or validation testing.

Results of analysis should be read in conjunction with the report they were issued with

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Analytical Report Number : 22-61128-2B

Replaces Analytical Report Number: 22-61128-2B, issue no. 1
Report format change.

Project / Site name:	Coppetts Wood	Samples received on:	26/05/2022
Your job number:	21948A	Samples instructed on/ Analysis started on:	26/05/2022
Your order number:	22 2 FDO LABS	Analysis completed by:	06/06/2022
Report Issue Number:	2B	Report issued on:	30/06/2022
Samples Analysed:	6 soil samples		

Martyna Langer

Signed:

Martyna Langer
Junior Reporting Specialist
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 22-61128-2B
 Project / Site name: Coppetts Wood
 Your Order No: 22 2 FDO LABS

Lab Sample Number				2291803	2291804	2291808	2291809	2291811
Sample Reference				Plot 75	Plot 60	Plot 48	Plot 48	Block D
Sample Number				SS	TS	TS	None Supplied	SS
Depth (m)				None Supplied	None Supplied	None Supplied	0.30-0.45	None Supplied
Date Sampled				25/05/2022	25/05/2022	25/05/2022	25/05/2022	25/05/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	8	13	9.9	7.5	6.9
Total mass of sample received	kg	0.001	NONE	0.8	0.8	0.8	0.8	0.8

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	PDO	PDO	PDO	PDO	PDO

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.3	8.5	8	8.1	8.2
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Water Soluble SO ₄ ²⁻ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.14	0.28	0.3	0.098	0.12
Sulphide	mg/kg	1	MCERTS	< 1.0	1.5	7.1	3.9	4.8
Organic Matter (automated)	%	0.1	MCERTS	1.8	3	2.3	1.6	1.5

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	0.48	< 0.05	< 0.05	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	0.45	< 0.05	< 0.05	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	0.27	< 0.05	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	0.29	< 0.05	< 0.05	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80	1.49	< 0.80	< 0.80	< 0.80
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Analytical Report Number: 22-61128-2B
Project / Site name: Coppetts Wood
Your Order No: 22 2 FDO LABS

Lab Sample Number				2291803	2291804	2291808	2291809	2291811
Sample Reference				Plot 75	Plot 60	Plot 48	Plot 48	Block D
Sample Number				SS	TS	TS	None Supplied	SS
Depth (m)				None Supplied	None Supplied	None Supplied	0.30-0.45	None Supplied
Date Sampled				25/05/2022	25/05/2022	25/05/2022	25/05/2022	25/05/2022
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status					

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	16	9.1	10	14	13
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8	< 1.8	< 1.8	< 1.8	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	16	20	14	9.7	11
Copper (aqua regia extractable)	mg/kg	1	MCERTS	8.8	15	8.5	8.3	6.8
Lead (aqua regia extractable)	mg/kg	1	MCERTS	9.8	21	13	8.8	11
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	13	13	12	10	11
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	31	44	34	29	30

Monoaromatics & Oxygenates

Benzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 _{HS,1D,AL}	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 _{HS,1D,AL}	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 _{HS,1D,AL}	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12 _{EH,CU,1D,AL}	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 _{EH,CU,1D,AL}	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 _{EH,CU,1D,AL}	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 _{EH,CU,1D,AL}	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35) _{EH,CU+HS,1D,AL}	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10

TPH-CWG - Aromatic >EC5 - EC7 _{HS,1D,AR}	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8 _{HS,1D,AR}	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10 _{HS,1D,AR}	mg/kg	0.001	MCERTS	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12 _{EH,CU,1D,AR}	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 _{EH,CU,1D,AR}	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 _{EH,CU,1D,AR}	mg/kg	10	MCERTS	< 10	< 10	< 10	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35 _{EH,CU,1D,AR}	mg/kg	10	MCERTS	< 10	20	< 10	< 10	< 10
TPH-CWG - Aromatic (EC5 - EC35) _{EH,CU+HS,1D,AR}	mg/kg	10	MCERTS	< 10	28	< 10	< 10	< 10

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number: 22-61128-2B
Project / Site name: Coppetts Wood
Your Order No: 22 2 FDO LABS

Lab Sample Number				2291812
Sample Reference				Plot 2
Sample Number				TS
Depth (m)				None Supplied
Date Sampled				25/05/2022
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	
Stone Content	%	0.1	NONE	< 0.1
Moisture Content	%	0.01	NONE	13
Total mass of sample received	kg	0.001	NONE	0.8

Asbestos in Soil	Type	N/A	ISO 17025	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	PDO

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	7.2
Total Cyanide	mg/kg	1	MCERTS	< 1.0
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.23
Sulphide	mg/kg	1	MCERTS	6
Organic Matter (automated)	%	0.1	MCERTS	2.8

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0
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Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05
Fluorene	mg/kg	0.05	MCERTS	< 0.05
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05
Anthracene	mg/kg	0.05	MCERTS	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	< 0.80
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Analytical Report Number: 22-61128-2B
Project / Site name: Coppetts Wood
Your Order No: 22 2 FDO LABS

Lab Sample Number				2291812
Sample Reference				Plot 2
Sample Number				TS
Depth (m)				None Supplied
Date Sampled				25/05/2022
Time Taken				None Supplied
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status	
Heavy Metals / Metalloids				
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	9.7
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2
Chromium (hexavalent)	mg/kg	1.8	MCERTS	< 1.8
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	19
Copper (aqua regia extractable)	mg/kg	1	MCERTS	12
Lead (aqua regia extractable)	mg/kg	1	MCERTS	18
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	13
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	44

Monoaromatics & Oxygenates

Benzene	µg/kg	1	MCERTS	< 1.0
Toluene	µg/kg	1	MCERTS	< 1.0
Ethylbenzene	µg/kg	1	MCERTS	< 1.0
p & m-xylene	µg/kg	1	MCERTS	< 1.0
o-xylene	µg/kg	1	MCERTS	< 1.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	1	MCERTS	< 1.0

Petroleum Hydrocarbons

TPH-CWG - Aliphatic >EC5 - EC6 HS_1D_AL	mg/kg	0.001	MCERTS	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 HS_1D_AL	mg/kg	0.001	MCERTS	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 HS_1D_AL	mg/kg	0.001	MCERTS	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12 EH_CU_1D_AL	mg/kg	1	MCERTS	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 EH_CU_1D_AL	mg/kg	2	MCERTS	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 EH_CU_1D_AL	mg/kg	8	MCERTS	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 EH_CU_1D_AL	mg/kg	8	MCERTS	< 8.0
TPH-CWG - Aliphatic (EC5 - EC35) EH_CU+HS_1D_AL	mg/kg	10	MCERTS	< 10

TPH-CWG - Aromatic >EC5 - EC7 HS_1D_AR	mg/kg	0.001	MCERTS	< 0.001
TPH-CWG - Aromatic >EC7 - EC8 HS_1D_AR	mg/kg	0.001	MCERTS	< 0.001
TPH-CWG - Aromatic >EC8 - EC10 HS_1D_AR	mg/kg	0.001	MCERTS	< 0.001
TPH-CWG - Aromatic >EC10 - EC12 EH_CU_1D_AR	mg/kg	1	MCERTS	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 EH_CU_1D_AR	mg/kg	2	MCERTS	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 EH_CU_1D_AR	mg/kg	10	MCERTS	< 10
TPH-CWG - Aromatic >EC21 - EC35 EH_CU_1D_AR	mg/kg	10	MCERTS	< 10
TPH-CWG - Aromatic (EC5 - EC35) EH_CU+HS_1D_AR	mg/kg	10	MCERTS	< 10

U/S = Unsuitable Sample I/S = Insufficient Sample

Analytical Report Number : 22-61128-2B

Project / Site name: Coppetts Wood

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2291803	Plot 75	SS	None Supplied	Brown sand with gravel.
2291804	Plot 60	TS	None Supplied	Brown clay and loam with gravel and vegetation.
2291808	Plot 48	TS	None Supplied	Brown loam and sand with gravel and vegetation.
2291809	Plot 48	None Supplied	0.30-0.45	Brown loam and sand with gravel.
2291811	Block D	SS	None Supplied	Brown sand with gravel.
2291812	Plot 2	TS	None Supplied	Brown loam and clay with gravel and vegetation.

Analytical Report Number : 22-61128-2B

Project / Site name: Coppetts Wood

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Sulphide in soil	Determination of sulphide in soil by acidification and heating to liberate hydrogen sulphide, trapped in an alkaline solution then assayed by ion selective electrode.	In-house method	L010-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS.	In-house method based on USEPA8260	L0738-PL	W	MCERTS
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L088/76-PL	W	MCERTS
Organic matter (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in NaOH and addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	MCERTS

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

Analytical Report Number : 22-61128-2B
Project / Site name: Coppetts Wood

Water matrix abbreviations:

Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
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List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
-	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total

Nathan Dellow

From: Lottie Parker <lottie@ireland-albrecht.co.uk>
Sent: 14 October 2022 13:24
To: Phelim Donnelly
Subject: FW: Coppetts Wood- landscape levels beneath retained trees

Hi Phelim

Following our earlier discussion please see the below.

The levels for the rear gardens Blocks A & C needed to be raised to accommodate the finished floor levels of the houses and ground floor flats. Following arboricultural advice, we agreed a strategy with Rydon of the final topsoil level not being more than 200mm above the existing levels with the RPA of retained existing trees. The levels grade down within the RPA so existing levels are retained by the trunk of the tree or rear garden boundary where trees are outside of the gardens. This means that the greatest increase in soil volume is to the outer areas of the RPA where it will cause less impact to the tree.

Due to the Arboriculturist no longer being appointed on the project he is unable to provide further written confirmation.

I trust this clarifies our understanding of the situation.

Kind regards

Lottie

Lottie Parker
Senior Landscape Architect
Ireland Albrecht Landscape Architects

www.ireland-albrecht.co.uk

Mobile: 07963533944

Please note that I currently work Tuesday to Friday. If your enquiry requires a response on a Monday please email don@ireland-albrecht.co.uk or david@ireland-albrecht.co.uk depending on the project.

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Plate 1: Plot 76 (Block E) general view.



Plate 2: Plot 76 (Block E) thickness.



Plate 3: Plot 48 (Block B) general view.



Plate 4: Plot 48 (Block B) thickness.



Plate 5: Block D communal area - general view.



Plate 6: Block D thickness.



Plate 7: Plot 1 (Block F) general view.



Plate 8: Plot 1 (Block F) thickness.



Plate 9: Plot 60 (Block C) general view.



Plate 10: Plot 60 (Block C) thickness.



Plate 11: Plot 52 (Block A) general view.



Plate 12: Plot 52 (Block A) thickness.



Plate 13: Turf thickness.



Plate 14: Turf thickness.