



TIM O'HARE ASSOCIATES
SOIL & LANDSCAPE CONSULTANCY

Mr John Coles
Bury Hill Landscape Supplies Ltd
The Estate Office
Old Bury Hill
Westcott
Nr Dorking
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26th August 2025
Our Ref: TOHA/25/1971/1/SS
Your Ref: see below

Dear Sirs

Topsoil Analysis Report: Bury Hill Horsham Yard – GP10 Lightweight Topsoil

We have completed the analysis of the soil sample recently collected, referenced *GP10 Lightweight Topsoil* and have pleasure reporting our findings.

The purpose of the analysis was to determine the suitability of the material for use as an intensive lightweight substrate in a rooftop or podium garden environment.

This report presents the results of analysis for the sample collected from the production site on 12/08/2025 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, waste designation purposes or for any project-specific application, especially after the topsoil has left the Bury Hill Landscape Supplies Ltd site.

SAMPLE EXAMINATION

The sample was described as a dark greyish brown (Munsell Colour, 10YR 4/2), dry, friable, slightly calcareous LOAMY SAND with a weakly developed, very fine to fine, granular structure. The sample was virtually stone-free except for lightweight expanded clay aggregate 'leca'. No unusual odours or deleterious materials were observed.

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Plate 1: GP10 Lightweight Topsoil Sample

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);
- bulk density (as received, field capacity);
- moisture content (as received, field capacity);
- saturated hydraulic conductivity;
- pH and electrical conductivity values;
- calcium carbonate;
- exchangeable sodium percentage;
- major plant nutrients (N, P, K, Mg);
- organic matter content;
- visible contaminants;
- heavy metals (Sb, 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

Particle Size Analysis and Stone Content

The sample fell into the *loamy sand* texture class with a predominance of *medium sand* (0.25-0.50mm), followed by *coarse sand* (0.50-1.0mm). This is usually acceptable for topsoil in landscape applications as reasonable porosity levels can be maintained in a consolidated state and the risk of particle interpacking is reduced. This type of grading therefore normally provides adequate water attenuation, drainage and aeration properties for landscape applications.

With the exception of 'leca' particles, the sample was virtually free of 'stone' sized material (>2mm).

Bulk Density and Saturated Hydraulic Conductivity

The sample displayed a bulk density at Field Capacity of 1.54 Mg/m³. The suitability of the bulk density result should be confirmed by the project engineer for the recipient site.

The saturated hydraulic conductivity result of the sample (95 mm/hour) indicates that the material would be described as highly permeable. As such, the substrate should demonstrate reasonable drainage performance for use in rooftop or podium garden environments. Soils used in these environments need to have satisfactory drainage performance to avoid stagnation (and therefore excess weight) and to enable efficient conveyance of water into the drainage system.

pH and Electrical Conductivity Values

The sample was strongly alkaline in reaction (pH 8.4), with a reasonably low calcium carbonate (lime) content (1.6%). This pH value would be considered suitable for landscape purposes, provided species with a wide pH tolerance of those known to prefer alkaline soils are selected for planting, turfing and seeding.

The electrical conductivity values were moderate, which indicates that soluble salts should not be present at levels that would be harmful to plants.

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

In the absence of site-specific assessment criteria, the concentrations that affect human health have been compared with the *residential with home grown 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, none exceeded their respective guideline values.

Note due to the dark colour of the sample, the colorimetry analysis of hexavalent chromium could not be performed in this instance (noted as U/S – “unsuitable sample” on the certificate).

Phytotoxic Contaminants

Of the phytotoxic (toxic to plants) contaminants determined (copper, nickel, zinc), none was found at levels that exceeded the maximum permissible levels.

CONCLUSION

The purpose of the analysis was to determine the suitability of the material for use as an intensive lightweight substrate in a roof garden or podium landscape environment.

From the soil examination and subsequent laboratory analysis, the sample was described as a strongly alkaline, non-saline, slightly calcareous loamy sand with an adequate structure and high proportion of 'leca' particles. The sample was adequately supplied with organic matter and all major plant nutrients. Of the potential contaminants determined, none exceeded their respective guideline values.

Based on our findings, the substrate represented by this sample would be suitable for use as a lightweight intensive substrate for landscaping purposes in a roof garden or podium environment. Plant species selected should be tolerant of alkaline soil conditions and the physical condition of the soil maintained.

The substrate should be underlain by a suitably graded subsoil product to interface with underlying structures and / or drainage infrastructure, as appropriate. The suitability of the bulk density and the drainage properties should be confirmed by the project engineer.

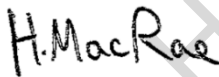
Soil Handling Recommendations

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, seeding or turfing). 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. If the soil is compacted at any stage during the course of soiling or landscaping works, it should be cultivated appropriately to relieve the compaction prior to any planting, turfing or seeding.

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



Harriet MacRae
BSc MSc
Soil Scientist



Ceri Spears
BSc MSc MSoilSci
Senior Associate

For & on behalf of Tim O'Hare Associates LLP



Client:	Bury Hill Landscape Supplies Ltd
Project:	Bury Hill Horsham Yard
Job:	Topsoil Analysis
Date:	26/08/2025
Job Ref No:	TOHA/25/1971/1/SS

Sample Reference		
		Accreditation
Clay (<0.002mm)	%	UKAS
Silt (0.002-0.05mm)	%	UKAS
Very Fine Sand (0.05-0.15mm)	%	UKAS
Fine Sand (0.15-0.25mm)	%	UKAS
Medium Sand (0.25-0.50mm)	%	UKAS
Coarse Sand (0.50-1.0mm)	%	UKAS
Very Coarse Sand (1.0-2.0mm)	%	UKAS
Total Sand (0.05-2.0mm)	%	UKAS
Texture Class (UK Classification)		UKAS
Stones (2-20mm)	% DW	GLP
Stones (20-50mm)	% DW	GLP
Stones (>50mm)	% DW	GLP

Bulk Density (As Received)	Mg/m ³	UKAS
Bulk Density (Field Capacity)	Mg/m ³	UKAS
Moisture Content (As Received)	%	UKAS
Moisture Content (Field Capacity)	%	UKAS
Saturated Hydraulic Conductivity (m)	mm/hr	A2LA

pH Value (1:2.5 water extract)	units	UKAS
Calcium Carbonate	%	UKAS
Electrical Conductivity (1:2.5 water extract)	uS/cm	UKAS
Electrical Conductivity (1:2 CaSO ₄ extract)	uS/cm	UKAS
Exchangeable Sodium Percentage	%	UKAS

Organic Matter (LOI)	%	UKAS
Total Nitrogen (Dumas)	%	UKAS
C : N Ratio	ratio	UKAS
Extractable Phosphorus	mg/l	UKAS
Extractable Potassium	mg/l	UKAS
Extractable Magnesium	mg/l	UKAS

Visible Contaminants: Plastics >2.00mm	%	UKAS
Visible Contaminants: Sharps >2.00mm	%	UKAS

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

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

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

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

Asbestos	ND/D	ISO17025
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LS = LOAMY SAND
U/S *U/S g = Unsuitable Sample

Visual Examination

The sample was described as a dark greyish brown (Munsell Colour, 10YR 4/2), dry, friable, slightly calcareous LOAMY SAND with a weakly developed, very fine to fine, granular structure. The sample was virtually stone free except for lightweight expanded clay aggregate 'leca'. No unusual odours or deleterious materials were observed.□

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

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GP10 Lightweight Topsoil

6
12
5
13
42
18
4
82
LS
1
0
0

1.25
1.54
14
42
95

8.4
1.6
1036
3015
3.9

7.4
0.22
19
63
1447
167

0.0
0.0

1.1
7
26
0.26
< 0.2
12
U/S *U/S g
18
17
< 0.3
9
< 1.0
22
44
1.5
< 1.0
< 1.0

< 0.05
< 0.05
< 0.05
< 0.05
0.09
< 0.05
0.2
0.18
0.10
0.11
0.12
0.06
0.09
< 0.05
< 0.05
0.06
1.00

< 0.010
< 0.010
< 0.010
< 1.0
3
< 8.0
28
31
< 0.010
< 0.010
< 0.020
< 1.0
< 2.0
< 10
18
18

< 0.005
< 0.005
< 0.005
< 0.008
< 0.005

Not-detected

H. MacRae

Harriet MacRae
BSc MSc
Soil Scientist