

Mr John Coles Bury Hill Landscape Supplies Ltd The Estate Office Old Bury Hill Westcott Nr Dorking Surrey, RH4 3JU

> 10th March 2025 Our Ref: TOHA/25/1750/SS Your Ref: see below

Dear Sirs

Topsoil Analysis Report: Bury Hill Horsham Yard – Low Fertility Topsoil (S)

We have completed the analysis of the soil sample recently submitted, referenced *Low Fertility Topsoil (S)* and have pleasure reporting our findings.

The purpose of the analysis was to determine the suitability of the sample for establishment of landscape applications that require a low fertility topsoil (e.g. species-rich wildflower grassland). 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, Specific Purpose Low Fertility).

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, 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 can be described as a dark yellowish brown (Munsell Colour 10YR 3/4), slightly moist, friable, noncalcareous SAND with a weakly developed, very fine to fine granular structure*. The sample was stone free and contained a moderate proportion of organic fines and occasional woody fragments. 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(s). Structure is a key soil characteristic that may only be accurately assessed by examination in an in-situ state.

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Plate 1: Low Fertility Topsoil (S) 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);
- pH and electrical conductivity values;
- calcium carbonate;
- exchangeable sodium percentage;
- major plant nutrients (N, P, K, Mg);
- organic matter content;
- C:N ratio;
- 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 *sand* texture class with a predominance of *medium sand* (0.25-0.50mm) followed by *coarse sand* (0.50-1.0mm). The total sand content was 95%, which exceeds the maximum recommended value of given in *BS3882:2015 – Figure 1*.

Such soils typically have good aeration and drainage properties but can possess poor water and nutrient retention capacities. As a consequence, they often have a greater risk of excessive leaching and drought particularly during dry periods. The soil would be suited to schemes where a free-draining soil is acceptable for the proposed habitat and species mixes. Indeed, the incidence of drought could introduce an extra environmental 'stressor' that could be beneficial to increased biodiversity in suitable receptor sites.

The sample was 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 slightly acid in reaction (pH 6.4), with a pH value that would be considered ideal for general landscape purposes.

The electrical conductivity (salinity) value (water extract) was low, which indicates that soluble salts were not 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 μ S/cm) given in *BS3882:2015 – Table 1*.

Organic Matter and Fertility Status

The levels of organic matter and major plant nutrients were all within the specified requirements of BS3882:2015 – Table 1, Specific Purpose Low Fertility.

The C:N ratio of the sample was acceptable for low fertility landscape applications.

Potential Contaminants

With reference to *BS3882:2015 - Table 1*: Notes 3 and 4, there is a requirement 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 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, 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 *BS3882:2015 – Table 1*.

CONCLUSION

The purpose of the analysis was to determine the suitability of the sample for establishment of landscape applications that require a low fertility topsoil (e.g. species-rich wildflower grassland). 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, Specific Purpose Low Fertility).

From the soil examination and subsequent laboratory analysis, the sample was described as a slightly acid, non-saline, non-calcareous, stone-free sand with a weakly developed structure. The organic matter and fertility levels of the sample were within the specific-use requirements for low fertility topsoil. Of the potential contaminants determined, none exceeded their respective guideline values.

To conclude, based on our findings, the topsoil represented by this sample would be considered suitable for establishment of landscape applications that require a low fertility topsoil (e.g. species-rich wildflower grassland), provided the selected species and habitat characteristics are suited to free-draining soil conditions, and the physical condition of the soil is satisfactory.

The topsoil was largely compliant with the requirements of the British Standard for Topsoil (BS3882:2015 – Specification for Topsoil – Table 1, Specific Purpose Low Fertility) with the exception of the high total sand content.

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, respreading, cultivating, planting, seeding or turfing). As a consequence, soil handling operations should be carried out when soil is sufficiently dry to be 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

E. sopeana.

Harriet MacRae BSc MSc Soil Scientist

Ceri Spears BSc MSc MISoilSci Senior Associate

For & on behalf of Tim O'Hare Associates LLP



Job:	Topsoil Analysis - BS3882:2015 - Low Fe	rtility	
Date:	10/03/2025		
Job Ref No:	TOHA/25/1750/SS		
Sample Refer	ence		
			Accreditation
Clay (<0.002m	m)	%	UKAS
Silt (0.002-0.05mm)		%	UKAS
Very Fine Sand (0.05-0.15mm)		%	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 (>50mr	m)	% DW	GLP
pH Value (1:2.	5 water extract)	units	UKAS
Calcium Carbonate		%	UKAS
Electrical Conductivity (1:2.5 water extract)		uS/cm	UKAS
Electrical Cond	Sedium Percentage	uS/cm	UKAS
Exchangeable	Sodium Percentage	70	UKAS
Organic Matter	r (I OI)	%	LIKAS
Total Nitrogen	(Dumas)	%	UKAS
C : N Ratio	\/	ratio	UKAS
Extractable Ph	osphorus	ma/l	UKAS
Extractable Po	tassium	mg/l	UKAS
Extractable Ma	agnesium	mg/l	UKAS
Visible Contarr	ninants: Plastics >2.00mm	%	UKAS
Visible Contarr	ninants: Sharps >2.00mm	%	UKAS
T + 1 A - ::			105555
I otal Antimony	/ (SD)	mg/kg	MOERTS
Total Arsenic (As)		mg/kg	MOERTS
I otal Barium (Ba) Total Bandlium (Ba)		mg/kg	MCEPTO
Iotal Beryllium (Be)		mg/kg	MCERTS
Total Chromiur	m (Cr)	mg/kg	MCERTS
Hexavalent Ch	romium (Cr VI)	ma/ka	MCERTS
Total Copper (Cu)	ma/ka	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) F	Phenols	mg/kg	MCERTS
			MOEDTO
Naphthalene		mg/kg	MCERTS
Acenaphthono	le	mg/kg	MCEPTS
Fluorene	luorene		MCERTS
Phenanthrene		ma/ka	MCERTS
Anthracene		mg/kg	MCERTS
Fluoranthene		mg/kg	MCERTS
Pyrene		mg/kg	MCERTS
Benzo(a)anthra	acene	mg/kg	MCERTS
Chrysene		mg/kg	MCERTS
Benzo(b)fluora	nthene	mg/kg	MCERTS
Benzo(k)fluora	nthene	mg/kg	MCERTS
Benzo(a)pyren	e	mg/kg	MCERTS
Indeno(1,2,3-c	d)pyrene	mg/kg	MCERTS
Dibenzo(a,h)ar	ntnracene	mg/kg	MOERTS
Denzo(g,h,i)pe	Im LISERA16)	mg/kg	MCEPTO
i Jiai FAITS (Sl		my/Ky	WOEN 13
Aliphatic TPH	(C5-C6)	ma/ka	MCERTS
Aliphatic TPH	(C6-C8)	ma/ka	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) Aromatic TPH (C16-C21)		mg/kg	MCERTS
Aromatic TPH (C16-C21)		mg/kg	MCEDIE
Aromatic TPH	(U21-U3D) (CE C2E)	mg/kg	MCEDTO
ATOMATIC TPH	(00-000)	під/КД	WUERIS
Benzero		ma/ka	MCEDTO
Toluene		ma/ka	MCERTS
Ethylbenzene		ma/ka	MCERTS
p & m-xvlene		ma/ka	MCERTS
o-xvlene		ma/ka	MCERTS
, Allono			
Asbestos		ND/D	ISO17025
		-	

Bury Hill Landscape Supplies Ltd

Bury Hill Horsham Yard

Client

Proiect

Low Fertility Topsoil	
(S)	
1	
4	
4	
11	
46	
28	
6	
95	
S	
0	
0	
0	
6.4	
< 1.0	
167	
2172	
2.2	
2.8	
0.14	
12	
15	A A K J
156	
57	
0	
0	
<1.0	
2	
14	
< 0.06	
< 0.2	
9	
< 1.8	
5	
11	
< 0.3	
3	
< 1.0	
6	
9	
0.6	
< 1.0	
< 1.0	
< 0.05	
< 0.05	
< 0.05	
< 0.05	
0.53	
0.10	
0.67	
0.54	
0.29	
0.26	
0.24	
0.13	
0.20	
0.09	
< 0.05	
0.09	
3.14	
.0.040	
< 0.010	
< 0.010	
< 0.010	
< 1.0	
< 2.0	
< 8.0	
< 8.0	
< 10	
< 0.010	
< 0.010	
< 0.020	
< 1.0	
< 2.0	
< 10	
< 10	
< 10	
< 0.005	
< 0.005	
< 0.005	
< 0.008	

Not-detected

S = SAND

Visual Examination The sample can be described as a dark yellowish brown (Munsell Colour 10YR 3/4), slightly moist, friable, non-calcareous proportion of organic fines and occasional woody fragments. No unusual odours, deleterious materials, roots or rhizomes of pernicious weeds were observed.

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

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Harriet MacRae BSc MSc Soil Scientist