



Declaration of Compliance BS3882:2007

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 (BS3882:2007).

The sample was sampled and tested in accordance with the requirements of BS3882:2007

- Samples are taken for analysis every 8000 tonnes (5000 m³) of product
- Samples are taken from all TOPSOIL products ready for despatch
- *Landscape 20* is 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 BS3882:2007
- All British Sugar TOPSOIL products are produced to a **Quality Management System** approved by Lloyd's Register Quality Assurance to **ISO 9001:2000** 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 9AY

13th February 2008

Our Ref: TOHA/08/2904/HC
Your Ref: as below

Dear Mr Spetch

RE: Topsoil Analysis Report: Bury St Edmunds – L20/0108

We have completed the analysis of the LANDSCAPE 20 TOPSOIL sample recently submitted and have pleasure reporting our findings.

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

SAMPLE EXAMINATION

The soil was described as a brown, dry, friable SANDY LOAM with a moderately developed fine to coarse granular structure. The sample was very slightly stony and no deleterious materials, roots or rhizomes of pernicious weeds were observed.

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 absence of potential contaminants. The following parameters were determined:

- particle size analysis and stone content;
- pH value;
- electrical conductivity values (CaSO₄ and water extracts);
- major plant nutrients (N, P, K, Mg);
- organic matter content;
- heavy metals (As, Ba, Br, Cd, Cr, Cu, Pb, Hg, Ni, Se, V, Zn, B);
- soluble sulphate, elemental sulphur, acid volatile sulphide;
- total cyanide and total (mono) phenols;
- total petroleum hydrocarbons (C10-C40);
- speciated PAHs (US EPA16 suite).

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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 landscaping purposes and its compliance/non-compliance with our general landscape specification.

In the absence of site-specific criteria, the concentrations of the potential contaminants determined have been assessed with reference to the Soil Guideline Values (SGVs) for residential end-use with plant uptake, which are presented in the Contaminated Land Exposure Assessment (CLEA) Model (EA/DEFRA:2002). The SGVs currently consider a limited range of parameters so where a potential contaminant is not covered by the CLEA Model other relevant schedules and guidelines for contamination assessment have been used, for example the New Dutch List, as well as professional judgment.

RESULTS OF ANALYSIS

Particle Size Analysis and Stone Content

The sample fell into the *sandy loam* texture class. This particle size distribution is considered suitable for general landscaping purposes, including tree and shrub planting, native transplants, amenity grass turfing and seeding.

The sample was stone free and, as such, stones will not restrict the use of the soil for any landscaping purposes.

pH and Electrical Conductivity Values

The sample was alkaline in reaction (pH 8.1) with a pH value that would be suitable for general landscaping purposes, including the majority of tree and shrub species and grass cultivars used in commercial and domestic landscaping.

The electrical conductivity (salinity) values were low, indicating that soluble salts were not present at levels that would be harmful to plants.

Organic Matter and Fertility Status

The sample was adequately supplied with organic matter and all major plant nutrients.

Potential Contaminants

Of the potential contaminants determined, none was found at levels that would indicate significant contamination.

CONCLUSION

The purpose of the analysis was to determine the suitability of the LANDSCAPE 20 TOPSOIL sample for general landscaping purposes. From the soil examination and laboratory analysis, the sample is described as an alkaline, non-saline, stone-free sandy loam with an adequate structure. The fertility status was moderate and no potential contamination was found with respect to the parameters determined.

To conclude, based on our findings, the LANDSCAPE 20 TOPSOIL sample is considered suitable for general landscaping purposes provided its physical condition is maintained and the organic matter and total nitrogen deficiencies are rectified by appropriate compost and fertiliser applications.

To conclude, based on our findings, the LANDSCAPE 20 TOPSOIL sample is considered suitable for a broad range of general landscaping applications, including tree and shrub planting and amenity grass, provided its physical condition is maintained.

The topsoil also met the requirements of the British Standard for Topsoil (BS3882:2007), Multipurpose Grade.

Soil Handling Recommendations

It is important to maintain the physical condition of the soil and avoid structural damage during all phases of soil handling (eg. topsoil stripping, 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 the 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.

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

Helen Cooper
BSc MSc MSoilSci CSci
Senior Associate

For and on behalf of Tim O'Hare Associates LLP



Client:	British Sugar plc Co-Products
Client Ref:	Bury St Edmonds
Date:	February 2008
Job Ref No:	TOHA/08/2904/HC

Sample Reference

BU/L20/0108

Clay (<0.002mm)	%	U
Silt (0.002-0.063mm)	%	U
Sand (0.063-2.0mm)	%	U
Texture Class (UK Classification)	--	U
Stones (2-20mm)	% DW	G
Stones (20-50mm)	% DW	G
Stones (>50mm)	% DW	G

11	✓
19	✓
70	✓
SL	✓
1	✓
0	✓
0	✓

pH Value (1:2.5 water extract)	units	G
Electrical Conductivity (1:2.5 water extract)	uS/cm	U
Electrical Conductivity (1:2 CaSO4 extract)	uS/cm	U
Moisture Content	%	G
Organic Matter (WB)	%	U
Total Nitrogen (Dumas)	%	U
Extractable Phosphorus	mg/l	U
Extractable Potassium	mg/l	U
Extractable Magnesium	mg/l	U

8.1	✓
670	✓
2380	✓
15	✓
3.0	✓
0.15	✓
46	✓
464	✓
93	✓

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
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	U
Elemental Sulphur (S)	mg/kg	M
Acid Volatile Sulphide (S)	mg/kg	U
Water Soluble Sulphate (SO4)	g/l	M
TPH by GC-FID (C10-C40)	mg/kg	M

6.1	✓
25	✓
0.2	✓
0.17	✓
15.2	✓
8.7	✓
13.6	✓
0.03	✓
10	✓
0.2	✓
19.3	✓
32.3	✓
2.1	✓
<1	✓
<1	✓
<20	✓
1	✓
0.29	✓
50	✓

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

0.2	✓
<0.1	✓
<0.1	✓
<0.1	✓
<0.2	✓
<0.1	✓
<0.2	✓
<0.2	✓
<0.1	✓
<0.1	✓
<0.1	✓
<0.1	✓
<0.1	✓
<0.1	✓
<0.1	✓
<0.1	✓
<2	✓

Visual Examination

Brown, dry, friable sandy loam with a moderately developed fine to coarse granular structure. Very slightly stony, no observable deleterious materials, including foreign matter (brick concrete glass metal plastic) and roots or rhizomes of pernicious weeds (including couch grass and Japanese knotweed)

✓	Meets General Landscape Specification
X	Fails General Landscape Specification
*	Refer to attached report for comment & recommendations
SL	Sandy Loam Texture Class
M	MCERTS accredited method (& UKAS accredited method)
U	UKAS accredited method
G	GLP accredited method