

Laboratory	DNR/115172 Rev1	Contract Sample	DN2139/14	Construction Testing Solutions Bootham Lane Industrial Estate Dunscroft Doncaster DN7 4JU T (01302) 352652 E enquiries@constructiontesting.co.uk W www.constructiontesting.co.uk
Report Report	28 /03/2025	Clients Reference	DN2139/14	
Date				
Vital Earth Sales LTD Unit 10 Hayfield Business Park Field Lane Finningley DN9 3FL		Material Description	Brown Slightly Gravelly Sandy Clay (Topsoil)	
		Source Supplier		
		Date Sampled	20/03/2025	
		Date Received	20/03/2025	
		Date Completed	28/03/2025	
Finningley		Sample Location	Not Stated	

BS3882 Topsoil

Please find enclosed test certificate (L22/04287/CTS - 22-28776) supplied by our approved Sub-contract Laboratory, CTS Group

Authorised Signatory



M O'Hara – Operations Manager



7 - 11 Harding Street
Leicester
LE1 4DH

Construction Testing Solutions
Bootham Lane Industrial Estate
Dunscro
Doncaster
DN7 4JU

Analytical Test Report: L22/04287/CTS - 22-28776-A

Your Project Reference: **23680 Vital Earth**

Your Order Number: 23680

Report Issue Number: 2

Samples Analysed: 1 soil sample

Signed

James Gane
Analytical Services Manager
CTS Group

Notes:

This report has been amended to added extra results.

General

Please refer to Methodologies page for details pertaining to the analytical methods undertaken.

Samples will be retained for 14 days after issue of this report unless otherwise requested.

Moisture Content was determined in accordance with CTS method statement MS - CL - Sample Prep, oven dried at <30°C.

Moisture Content is reported as a percentage of the dry mass of soil, this calculation is in accordance with BS1377, Part 2, 1990, Clause 3.2

Stone Content was determined in accordance with CTS method statement MS - CL - Sample Prep and refers to the percentage of stones retained on a 10mm BS test sieve.

Where specification limits are included these are for guidance only. Where a measured value has been highlighted this is not implying acceptance or failure and certainty of measurement values have not been taken into account.

Uncertainty of measurement values are available on request.

Samples were supplied by customer, results apply to the samples as received.

Deviating Samples

On receipt samples are compared against our sample holding and handling protocols, where any deviations have been noted these are reported on our deviating sample page (if present)

Accreditation Key

UKAS = UKAS Accreditation, MCERTS = MCERTS Accreditation, u = Unaccredited

MCERTS Accreditation only covers the SAND, CLAY and LOAM matrices

Date of Issue: 10.05.2024

Issued by: R. Jones

Issue No: 1

Rev No: 1



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L22/04287/CTS - 22-28776

Project Reference - 23680 Vital Earth

Analytical Test Results - Soil

Lab Reference	256377
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Client Sample ID DN2139/14

Determinant	Units	Accreditation	
Arsenic	(mg/kg)	MCERTS	< 10
Beryllium	(mg/kg)	MCERTS	0.8
Boron (w/s)	(mg/kg)	u	< 2.5
Cadmium	(mg/kg)	MCERTS	1.6
Chromium (Total)	(mg/kg)	UKAS	9.5
Copper	(mg/kg)	MCERTS	30
Lead	(mg/kg)	MCERTS	61
Mercury	(mg/kg)	UKAS	< 2.5
Nickel	(mg/kg)	MCERTS	14
Selenium	(mg/kg)	u	< 8.0
Vanadium	(mg/kg)	UKAS	22
Zinc	(mg/kg)	MCERTS	160
Total Phenols	(mg/kg)	MCERTS	< 1.0
Cyanide (Total)	(mg/kg)	MCERTS	< 1.0
Chromium (Hexavalent)	(mg/kg)	u	1.3
Acenaphthene	(mg/kg)	MCERTS	< 0.02
Acenaphthylene	(mg/kg)	UKAS	0.02
Anthracene	(mg/kg)	UKAS	0.04
Benzo (a) anthracene	(mg/kg)	MCERTS	0.19
Benzo (a) pyrene	(mg/kg)	MCERTS	0.23
Benzo (b) fluoranthene	(mg/kg)	MCERTS	0.28
Benzo (g, h, i) perylene	(mg/kg)	MCERTS	0.14
Benzo (k) fluoranthene	(mg/kg)	MCERTS	0.10
Chrysene	(mg/kg)	MCERTS	0.22
Dibenzo (a,h) anthracene	(mg/kg)	MCERTS	0.03
Fluoranthene	(mg/kg)	MCERTS	0.36
Fluorene	(mg/kg)	MCERTS	< 0.02
Indeno (1, 2, 3,-cd) pyrene	(mg/kg)	MCERTS	0.16
Naphthalene	(mg/kg)	MCERTS	0.05
Phenanthrene	(mg/kg)	MCERTS	0.11
Pyrene	(mg/kg)	MCERTS	0.32
Total PAH (Sum of USEPA 16)	pH Units	UKAS	2.3
Soil pH value (BS 3882)	(%)	u	7.8
Mass loss on ignition % (BS 3882)	(%)	u	7.9
Conductivity (BS 3882)	(µs/cm)	u	2640
Extractable Phosphorous (BS 3882)	(mg/l)	u	27
Carbonate (BS 3882) Nitrogen (BS 3882)	(%)	u	2.7
Carbon: Nitrogen Ratio	(%)	u	0.18
	-	u	26 : 1



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Analytical Test Results - Soil

Lab Reference	256377
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Client Sample ID DN2139/14

Determinant	Units	Accreditation	
Extractable Potassium (BS 3882)	(mg/l)	u	380
Extractable Magnesium (BS 3882)	(mg/l)	u	150
Zinc (BS 3882)	(mg/kg)	u	120
Copper (BS 3882)	(mg/kg)	u	17
Nickel (BS 3882)	(mg/kg)	u	7.7



L22/04287/CTS - 22-28776
Project Reference - 23680 Vital Earth
Analytical Test Results - TPH CWG
Lab Reference
256377

Determinant	Units	Accreditation	
Aliphatics			
>C5 to C6 [HS_MS_1D_AL]	(mg/kg)	u	< 0.06
>C6 to C8 [HS_MS_1D_AL]	(mg/kg)	u	0.06
>C8 to C10 [HS_MS_1D_AL]	(mg/kg)	u	< 0.06
>C10 to C12 [EH_CU_1D_AL]	(mg/kg)	u	< 10
>C12 to C16 [EH_CU_1D_AL]	(mg/kg)	u	< 10
>C16 to C21 [EH_CU_1D_AL]	(mg/kg)	u	< 10
>C21 to C35 [EH_CU_1D_AL]	(mg/kg)	u	30
>C35 to C44 [EH_CU_1D_AL]	(mg/kg)	u	< 15
Aroma tic s			
>C5 to C7 [HS_MS_1D_AR]	(mg/kg)	u	< 0.04
>C7 to C8 [HS_MS_1D_AR]	(mg/kg)	u	< 0.04
>C8 to C10 [HS_MS_1D_AR]	(mg/kg)	u	< 0.06
>C10 to C12 [EH_CU_1D_AR]	(mg/kg)	u	< 10
>C12 to C16 [EH_CU_1D_AR]	(mg/kg)	u	< 10
>C16 to C21 [EH_CU_1D_AR]	(mg/kg)	u	< 10
>C21 to C35 [EH_CU_1D_AR]	(mg/kg)	u	27
>C35 to C44 [EH_CU_1D_AR]	(mg/kg)	u	< 15
Total			
>C5 to C ₃₅ [EH_CU+HS_1D_Total]	(mg/kg)	u	57

L22/04287/CTS - 22-28776**Project Reference - 23680 Vital Earth****Analytical Test Results - Leachate**

Lab Reference	256377
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Determinant	Units	Accreditation	
Magnesium	(µg/l)	u	2900
Potassium	(µg/l)	u	22000



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Sample Descriptions

Lab Reference	Client Sample ID	Client Sample Location	Client Sample Type	Client Sample Number	De sc ription	Moisture Content (%)	Stone Content (%)	Passing 2mm test sieve (%)
256377	DN2139/14	-	-	-	Brown slightly clayey very gravelly coarse with occasional rootlets	3.6	11	60



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Sample Comments

Lab Reference	Client Sample ID	Client Sample Location	Client Sample Type	Client Sample Number	Comments
256377	DN2139/14	-	-	-	VPH - Sample taken from container with headspace.



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Analysis Methodologies

Test Code	Test Name / Reference	Sample condition for analysis	Sample Preparation	Test Details
388 2CARB	BS3882:2015 Carbonate Annex E	Oven Dried	In Accordance with BS3882	Determination of Carbonate Content in accordance with BS 3882
388 2CON	BS3882:2015 Conductivity Annex H	Oven Dried	In Accordance with BS3882	Determination of Conductivity in accordance with BS 3882
EPHS	MS - CL - EPH in Soil	As received	Passing 10mm test sieve	Determination of Extractable Petroleum Hydrocarbons in soils via GC-MS
388 2PHOS	BS3882:2015 Phosphate Annex F	Oven Dried	In Accordance with BS3882	Determination of Extractable Phosphate Content in accordance with BS 3882
3882LOI	BS3882:2015 LoI Annex D	Oven Dried	In Accordance with BS3882	Determination of LOI in accordance with BS 3882
3882PHYTO	BS3882:2015 Phytotoxic Elements	Oven Dried	In Accordance with BS3882	Determination of Phytotoxic metals in accordance with BS 3882
388 2PLANT	BS3882:2015 Plant Nutrient Annex G	Oven Dried	In Accordance with BS3882	Determination of Plant nutrients in accordance with BS 3882
PAHASRDS	MS - CL - PAH (As Received)	As received	Passing 10mm test sieve	Determination of Polyaromatic hydrocarbons in soil via GC-MS
CWGS	MS - CL - VPH & MS - CL - EPH	As received	Passing 10mm test sieve	Determination of TPH CWG (Volatile Petroleum Hydrocarbons and Extractable Petroleum Hydrocarbons) in soils via Headspace-GC-MS and GC-MS respectively
3882TN	BS3882:2015 Total Nitrogen	Oven Dried	In Accordance with BS3882	Determination of Total Nitrogen content in accordance with BS 3882
VPHS	MS - CL - VPH	As received	Passing 10mm test sieve	Determination of VPH in soils via Headspace-GC-MS
WSBORONS	MS - CL - WS Boron	Air dried	Passing 10mm test sieve	Determination of Water soluble Boron in soils via ICP
SKALARCNS	MS - CL - Cyanide by Skalar	As received	Passing 10mm test sieve	Determination of cyanide (total / free / complex) in soil using a Skalar segmented flow analyser
S KALAR H CS	MS - CL - Hexavalent Chromium by Skalar	As received	Passing 10mm test sieve	Determination of hexavalent chromium in soil using Skalar segmented flow analyser
ICPMETL	MS - CL - ICP Metals in Waters	As received	BSEN:12457 Leaching	Determination of metals in leachates via ICP
ICPMETS	MS - CL - ICP Metals	Air dried	Passing 10mm test sieve	Determination of metals in soils via ICP
3882PH	BS3882:2015 Soil pH	Oven Dried	In Accordance with BS3882	Determination of pH in accordance with BS 3882
SKALARPHS	MS - CL - Phenols by Skalar	As received	Passing 10mm test sieve	Determination of total phenols in soil using Skalar segmented flow analyser
SAMPLEPREP	MS - CL - Sample Preparation	-	-	Preparation of samples (including determination of moisture content) to allow for subsequent analysis
1377LOI	BS1377 LoI	Oven dried	Passing 2mm test sieve	Testing was in accordance with BS 1377: Part 3: 2018 + A1 :2021 Clause 6. Determination of the mass loss on ignition. Some information required by BS1377: 2016: Part 1 has not been reported. This information is available on request.



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Sample Deviations

Deviations are listed below against each sample and associated test method, where deviation(s) are noted it means data may not be representative of the sample at the time of sampling and it is possible that results provided may be compromised.

Observations on receipt

A - No date of sampling provided

C - Received in inappropriate container

H - Contains headspace

T - Temperature on receipt exceeds storage temperature

R - Date of sampling to receipt insufficient to allow analysis to be completed without deviation, Please note this is only a deviation if 'X' is also recorded against the sample

Observations whilst in laboratory

X - Exceeds sampling to extraction or analysis timescales

Lab Reference	Client Sample ID	Client Sample Location	Client Sample Type	Client Sample Number	Test	Deviations
256377	DN2139/14	-	-	-	BS1377 LoI	RX
256377	DN2139/14	-	-	-	MS - CL - Cyanide by Skalar	RX
256377	DN2139/14	-	-	-	MS - CL - EPH in Soil	RX
256377	DN2139/14	-	-	-	MS - CL - Hexavalent Chromium by Skalar	RX
256377	DN2139/14	-	-	-	MS - CL - ICP Metals	RX
256377	DN2139/14	-	-	-	MS - CL - PAH (As Received)	RX
256377	DN2139/14	-	-	-	MS - CL - Phenols by Skalar	RX
256377	DN2139/14	-	-	-	MS - CL - VPH	RX



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HWOL TPH Acronym Index

Acronym	Description
HS	Headspace Analysis
EH	Extractable Hydrocarbons - i.e. everything extracted by the solvent
CU	Clean-up e.g. by florisil, silica gel
1D	GC - Single coil gas chromatography
Total	Aliphatics and Aromatics
AL	Aliphatics Only
AR	Aromatics Only
2D	GC-GC - Double Coil Gas Chromatography
#1	EH_Total but with humics mathmatically subtracted
#2	EH_Total but with fatty acids mathmatically subtracted
_	Operator - underscore to separate acronyms (except for +)
+	Operator to indicate cumlative e.g. EH+HS_Total or EH_CU+HS_Total
MS	Mass Spectrometry