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Ref: 11-542-L4
Date: 3rd July 2017

Countryside Properties

Lakeside Drive
Centre Park
Warrington
WA1 1RW

BY Email

Dear Sirs,

Hinkshay Road, Telford Initial Topsoil Assessment

1.1 Background

E3P have completed a detailed Phase 1 & Phase 2 report (Ref 11-542-r1 Rev 1 May 2017) and subsequent Detailed Remediation and Enabling Works Strategy (Ref 11-542-r2 February 2017) for the future redevelopment of the land to the south of Hinkshay Road, Telford for residential end use.

1.2 Site Works

During the week commencing the 12th June 2017, McAuliffe commenced initial set up of site cabins and topsoil strip on-site before ceasing work during the week beginning the 19th June 2017.

E3P attended site on the 20th June in order to sample the initial topsoil stockpiles that were being produced during site strip that were located close to the site entrance. E3P collected 5No of topsoil samples, which were chemically tested by i2 Analytical Laboratory.

1.3 Assessment of Topsoil

The long term (chronic) human health toxicity of the soil has been assessed by comparing the on-site concentrations of organic and inorganic compounds with reference values published in LQM / CIEH S4UL for Topsoil with plant uptake (S4UL3267) presented in Appendix I of this report and the chemical testing results within Appendix II.

The assessment completed confirms that topsoil stockpiled within this sector is currently characterised as suitable for use. As the development progresses further sampling will be undertaken in accordance with the sample frequency outlined in the table below, which is presented within table 3.1 of the E3P Remediation and Enabling Works Strategy.



Table 3.1 Specification of Chemical Validation Laboratory Analysis

MATERIAL USE	TESTING FREQUENCY	SUITE OF ANALYSIS
Site Generated		
Site Generated 6F2	1 Sample Per 1000m ³	A / B / C / D
Site Won Made Ground General Backfill	1 Sample Per 250m ³	G
Site Won Made Ground General Backfill	1 Sample Per 1000m ³	A / B / C / D
Site Won Made Ground General Backfill	1 Sample Per 2000m ³	I
Site Won Natural Backfill	1 Sample Per 2000m ³	A / B / C / D
Site generated Sub-Soil (450mm garden cover)	1 Sample Per 250m ³	A / B / C / D
Site Generated Topsoil Cover (150mm garden cover)	1 Sample per 50m ³	A / B / C / D
Hotspot Validation Samples	1 Sample per 10m of linear excavation to base and sidewall.	E / G
Imported		
6F2	1 Sample Per 1000m ³	A / B / C / D
Subsoil Greenfield Source (450mm garden cover)	1 Sample per 200m ³	A / B / C / D
Subsoil Brownfield Source (450mm garden cover)	1 Sample per 50m ³	A / B / C / D
Topsoil Greenfield Source (150mm garden cover)	1 Sample per 200m ³	A / B / C / D
Topsoil Brownfield Source (150mm garden cover)	1 Sample per 50m ³	A / B / C / D
General Engineering Fill (Class 1 & 2 Soil)	1 Sample Per 1000m ³	A / B / C / D

Notes

Suites of Analysis

- A) Speciated PAH
- B) Speciated TPH (C5-C35)
- C) Asbestos (ID)
- D) CLEA Inorganic Heavy Metals
- E) Speciated PAH, Banded TPH and VOCs
- F) SVOC / Speciated TPH
- G) On-site screening for VOC using calibrated PID
- H) Lechate 2:1 Speciated PAH and Banded TPH
- I) Leachate analysis of Inorganic heavy metals, TPH, sulphate and PAH.

All analysis prescribed above to be completed by UKAS accredited laboratory.

I trust that the content of this letter is suitable for your requirements, however if any further information is required then please do not hesitate to contact E3P directly.

Yours sincerely,
For and on behalf of E3P Ltd



Stuart Ellis
Senior Geo-Environmental Consultant



Appendix I – Validation Target Criteria
Appendix II – Chemical Testing Results

APPENDIX I – Validation Testing Criteria

Human Health Remediation Targets – Low Rise Residential End Use

Determinand	Units	Within 600mm Cover System (Garden)	Hard Standing and >600mm of cover system	Public Open Space 300mm Cover	Public Open Space >300mm	Pathway
Arsenic	mg/kg	37 ⁽ⁱ⁾	40 ⁽ⁱⁱ⁾	79 ⁽ⁱⁱⁱ⁾	640 ^(iv)	1
Cadmium	mg/kg	11 ⁽ⁱ⁾	85 ⁽ⁱⁱ⁾	120 ⁽ⁱⁱⁱ⁾	532 ^(iv)	1
Chromium (Hexavalent)	mg/kg	6 ⁽ⁱ⁾	6 ⁽ⁱⁱ⁾	7.7 ⁽ⁱⁱⁱ⁾	220 ^(iv)	1
Lead	mg/kg	210 ^(vi)	330 ^(vii)	760 ^(viii)	760 ^(viii)	1
Elemental Mercury	mg/kg	1.2 ⁽ⁱ⁾	1.2 ⁽ⁱⁱ⁾	16 ⁽ⁱⁱⁱ⁾	30 ^(iv)	2
Nickel	mg/kg	180 ⁽ⁱ⁾	180 ⁽ⁱⁱ⁾	230 ⁽ⁱⁱⁱ⁾	3400 ^(iv)	1
Selenium	mg/kg	250 ⁽ⁱ⁾	430 ⁽ⁱⁱ⁾	1100 ⁽ⁱⁱⁱ⁾	1800 ^(iv)	1
Copper	mg/kg	2400 ⁽ⁱ⁾	7100 ⁽ⁱⁱ⁾	12000 ⁽ⁱⁱⁱ⁾	44000 ^(iv)	1
Zinc	mg/kg	3700 ⁽ⁱ⁾	40000 ⁽ⁱⁱ⁾	81000 ⁽ⁱⁱⁱ⁾	170000 ^(iv)	1
Phenol	mg/kg	280 ^{(i)(xi)}	280 ^{(xiv)(xi)}	760 ^{(iii)(xi)}	760 ^{(iv)(xi)}	2
Naphthalene	mg/kg	2.3 ^{(i)(xi)}	2.3 ^{(xiv)(xi)}	1200 ^{(iv)(xi)}	1200 ^{(iv)(xi)}	2
Acenaphthylene	mg/kg	170 ^{(i)(xi)}	500 ^(v)	15000 ^{(iii)(xi)}	29000 ^{(iv)(xi)}	3
Acenaphthene	mg/kg	210 ^{(i)(xi)}	500 ^(v)	15000 ^{(iii)(xi)}	29000 ^{(iv)(xi)}	1
Fluorene	mg/kg	170 ^{(i)(xi)}	500 ^(v)	9900 ^{(iii)(xi)}	20000 ^{(iv)(xi)}	1
Phenanthrene	mg/kg	95 ^{(i)(xi)}	500 ^(v)	3100 ^{(iii)(xi)}	6200 ^{(iv)(xi)}	3
Anthracene	mg/kg	500 ^{(i)(xi)}	500 ^(v)	74000 ^{(iii)(xi)}	150000 ^{(iv)(xi)}	3
Fluoranthene	mg/kg	280 ^{(i)(xi)}	500 ^(v)	3100 ^{(iii)(xi)}	6300 ^{(iv)(xi)}	3
Pyrene	mg/kg	500 ^{(i)(xi)}	500 ^(v)	7400 ^{(iii)(xi)}	15000 ^{(iv)(xi)}	3
Benzo(a)Anthracene ^(c)	mg/kg	7.2 ^{(i)(xi)}	11 ^{(ii)(xi)}	29 ^{(iii)(xi)}	49 ^{(iv)(xi)}	3
Chrysene	mg/kg	15 ^{(i)(xi)}	30 ^{(ii)(xi)}	57 ^{(iii)(xi)}	93 ^{(iv)(xi)}	3
Benzo(b)Fluoranthene ⁽ⁱⁱⁱ⁾	mg/kg	2.6 ^{(i)(xi)}	3.9 ^{(ii)(xi)}	7.1 ^{(iii)(xi)}	13 ^{(iv)(xi)}	3
Benzo(k)Fluoranthene ⁽ⁱⁱⁱ⁾	mg/kg	77 ^{(i)(xi)}	110 ^{(ii)(xi)}	190 ^{(iii)(xi)}	370 ^{(iv)(xi)}	3
Benzo(a)Pyrene ^(vii)	mg/kg	2.2 ^{(i)(xi)}	3.2 ^{(ii)(xi)}	5.7 ^{(iii)(xi)}	11 ^{(iv)(xi)}	3
Indeno(123-cd)Pyrene	mg/kg	27 ^{(i)(xi)}	45 ^{(ii)(xi)}	82 ^{(iii)(xi)}	150 ^{(iv)(xi)}	3
Dibenzo(a,h)Anthracene	mg/kg	0.24 ^{(i)(xi)}	0.31 ^{(ii)(xi)}	0.57 ^{(iii)(xi)}	1.1 ^{(iv)(xi)}	3
Benzo(ghi)Perylene	mg/kg	320 ^{(i)(xi)}	360 ^{(ii)(xi)}	640 ^{(iii)(xi)}	1400 ^{(iv)(xi)}	3
TPH C ₅ -C ₆ (aliphatic)	mg/kg	42 ^{(i)(xi)}	42 ^{(ii)(xi)}	42 ^{(ii)(xi)}	10000 ^{(xiv)(xi)}	2
TPH C ₆ -C ₈ (aliphatic)	mg/kg	100 ^{(i)(xi)}	100 ^{(ii)(xi)}	100 ^{(ii)(xi)}	10000 ^{(xiv)(xi)}	2
TPH C ₈ -C ₁₀ (aliphatic)	mg/kg	27 ^{(i)(xi)}	27 ^{(ii)(xi)}	27 ^{(ii)(xi)}	10000 ^{(xiv)(xi)}	2
TPH C ₁₀ -C ₁₂ (aliphatic)	mg/kg	130 ^{(i)(xi)}	130 ^{(ii)(xi)}	130 ^{(ii)(xi)}	10000 ^{(xiv)(xi)}	2
TPH C ₁₂ -C ₁₆ (aliphatic)	mg/kg	1000 ^{(xiv)(xi)}	1000 ^{(xiv)(xi)}	1000 ^{(xiv)(xi)}	10000 ^{(xiv)(xi)}	1
TPH C ₁₆ -C ₂₁ (aliphatic)	mg/kg	500 ^{(xiv)(xi)}	500 ^{(xiv)(xi)}	500 ^{(xiv)(xi)}	10000 ^{(xiv)(xi)}	1
TPH C ₂₁ -C ₃₅ (aliphatic)	mg/kg					1
TPH C ₅ -C ₇ (aromatic)	mg/kg	70 ^{(i)(xi)}	370 ^{(ii)(xi)}	370 ^{(ii)(xi)}	10000 ^{(xiv)(xi)}	2
TPH C ₇ -C ₈ (aromatic)	mg/kg	130 ^{(i)(xi)}	860 ^{(ii)(xi)}	860 ^{(ii)(xi)}	10000 ^{(xiv)(xi)}	2
TPH C ₈ -C ₁₀ (aromatic)	mg/kg	34 ^{(i)(xi)}	47 ^{(ii)(xi)}	47 ^{(ii)(xi)}	10000 ^{(xiv)(xi)}	2
TPH C ₁₀ -C ₁₂ (aromatic)	mg/kg	74 ^{(i)(xi)}	250 ^{(ii)(xi)}	250 ^{(ii)(xi)}	10000 ^{(xiv)(xi)}	2
TPH C ₁₂ -C ₁₆ (aromatic)	mg/kg	140 ^{(i)(xi)}	1800 ^{(ii)(xi)}	1800 ^{(ii)(xi)}	10000 ^{(xiv)(xi)}	1
TPH C ₁₆ -C ₂₁ (aromatic)	mg/kg	260 ^{(i)(xi)}	1900 ^{(ii)(xi)}	1900 ^{(ii)(xi)}	10000 ^{(xiv)(xi)}	1
TPH C ₂₁ -C ₃₅ (aromatic)	mg/kg	1000 ^{(xiv)(xi)}	1900 ^{(ii)(xi)}	1900 ^{(ii)(xi)}	10000 ^{(xiv)(xi)}	1

Notes 1

Asbestos will be screened visually on-site by a qualified environmental consultant and where potential ACM is identified representative samples will be subject to quantitative analysis of 5&volume by weight. Should any ACM be identified within the soil matrices, further detailed % assessment would be required when the reported laboratory result exceeds the limit of detection for the analytical method at 0.01% by volume (weight).

Notes 2

Excludes matrices where free product is observed;
Commercial Tier 1 GAC modelled to assume no exposure pathway; and,
No viable exposure pathway beneath hard standing and cover system.

Notes 3

Main Exposure Pathways: 1 = Soil Ingestion, 2 = Vapour Inhalation (indoor), 3 = Dermal Contact & Ingestion, 4 = Dust Inhalation.

Abbreviations: GAC = General Assessment Criteria, n = number of samples, MC = Maximum Concentration; NA – Not Applicable (no exceedance of assessment criteria); Loc of MC = Location of Exceedances

- (i) Value derived from LQM Suitable 4 Use Levels (S4ULs) for residential end use **with** plant uptake.
- (ii) Value derived from LQM Suitable 4 Use Levels (S4ULs) for residential end use **without** plant uptake – these levels used below 600mm cover system within residential gardens as soils will be present within a residential setting yet soils will not be disturbed and garden plants will not reach these soils.
- (iii) Value derived from LQM Suitable 4 Use Levels (S4ULs) for Public open Space (POS) residential.
- (iv) Value derived from LQM Suitable 4 Use Levels (S4ULs) for Public Open Space (POS) park – these levels used below 300mm POS cover system as soils will not be disturbed by any future site users and exposure to these soils will be similar to a park end use.
- (v) Value derived from LQM Suitable 4 Use Levels (S4ULs) alongside assessment with WM3 to ensure that materials remaining on site do not exceed the WM3 toxicity criteria for hazardous waste.
- (vi) Value derived from Category 4 Screening Levels (C4SL) for residential land use **with** homegrown produce.
- (vii) Value derived from Category 4 Screening Levels (C4SL) for residential land use **without** homegrown produce.
- (viii) Value derived from Category 4 Screening Levels (C4SL) for Public open Space (POS) residential.
- (ix) Value derived from Category 4 Screening Levels (C4SL) for Public Open Space (POS) park.
- (x) Mercury – Based on elemental Mercury.
- (xi) PAH and TPH levels used are for 1% SOM.
- (xii) Xylenes based on p-xylene (o-xylene 2600mg/kg, m-xylene 3500mg/kg) and is capped by its solubility.
- (xiii) Value derived from LQM Suitable 4 Use Levels (S4ULs) for residential end use **with** plant uptake due to the volatilisation risk.
- (xiv) BTEX is not SOM related due to inhalation pathway.

APPENDIX II – Chemical Testing Results





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Analytical Report Number : 17-52382

Project / Site name:	Telford	Samples received on:	22/06/2017
Your job number:	11-542	Samples instructed on:	22/06/2017
Your order number:	11-542-6261-SE	Analysis completed by:	29/06/2017
Report Issue Number:	1	Report issued on:	29/06/2017
Samples Analysed:	3 soil samples		

Signed:

Dr Irma Doyle
Senior Account Manager
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.

Analytical Report Number: 17-52382

Project / Site name: Telford

Your Order No: 11-542-6261-SE

Lab Sample Number				771304	771305	771306		
Sample Reference				TS101	TS102	TS103		
Sample Number				None Supplied	None Supplied	None Supplied		
Depth (m)				None Supplied	None Supplied	None Supplied		
Date Sampled				20/06/2017	20/06/2017	20/06/2017		
Time Taken				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		
Moisture Content	%	N/A	NONE	12	13	12		
Total mass of sample received	kg	0.001	NONE	0.44	0.45	0.43		

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

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	6.6	6.8	7.4		
Total Cyanide	mg/kg	1	MCERTS	< 1	< 1	< 1		
Total Sulphate as SO ₄	mg/kg	50	MCERTS	650	710	890		
Water Soluble Sulphate as SO ₄ 16hr extraction (2:1)	mg/kg	2.5	MCERTS	40	16	43		
Water Soluble SO ₄ 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	19.9	7.93	21.7		
Water Soluble SO ₄ as SO ₄ (2:1) Gallery 16h extraction	g/l	0.00125	MCERTS	0.0199	0.0079	0.0217		
Sulphide	mg/kg	1	MCERTS	< 1.0	< 1.0	7.5		
Total Sulphur	mg/kg	50	MCERTS	450	370	710		

Total Phenols

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

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05		
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05		
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05		
Fluorene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05		
Phenanthrene	mg/kg	0.05	MCERTS	0.32	0.20	0.49		
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	0.12		
Fluoranthene	mg/kg	0.05	MCERTS	0.64	0.54	1.4		
Pyrene	mg/kg	0.05	MCERTS	0.53	0.45	1.2		
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.39	0.35	0.86		
Chrysene	mg/kg	0.05	MCERTS	0.45	0.34	0.73		
Benzo(b)fluoranthene	mg/kg	0.05	MCERTS	0.53	0.46	1.2		
Benzo(k)fluoranthene	mg/kg	0.05	MCERTS	0.26	0.21	0.45		
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.39	0.34	0.83		
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	0.27	0.24	0.54		
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05		
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.32	0.29	0.64		

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	MCERTS	4.10	3.42	8.37		

Heavy Metals / Metalloids

Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	12	12	12		
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	4.7	4.1	4.8		
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0		
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	22	22	20		
Copper (aqua regia extractable)	mg/kg	1	MCERTS	30	32	34		
Lead (aqua regia extractable)	mg/kg	1	MCERTS	170	170	160		
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.6	0.5	0.7		
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	27	28	27		
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	600	550	640		



Analytical Report Number: 17-52382

Project / Site name: Telford

Your Order No: 11-542-6261-SE

Lab Sample Number				771304	771305	771306		
Sample Reference				TS101	TS102	TS103		
Sample Number				None Supplied	None Supplied	None Supplied		
Depth (m)				None Supplied	None Supplied	None Supplied		
Date Sampled				20/06/2017	20/06/2017	20/06/2017		
Time Taken				None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)				Units	Limit of detection	Accreditation Status		

Petroleum Hydrocarbons

TPH (C5 - C6)	mg/kg	1	NONE	< 1.0	< 1.0	< 1.0		
TPH (C6 - C8)	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1		
TPH (C8 - C10)	mg/kg	0.1	NONE	< 0.1	< 0.1	< 0.1		
TPH (C10 - C12)	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0		
TPH (C12 - C16)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0		
TPH (C16 - C21)	mg/kg	1	MCERTS	1.9	2.2	8.6		
TPH (C21 - C35)	mg/kg	1	MCERTS	8.2	4.2	30		



Analytical Report Number : 17-52382

Project / Site name: Telford

* 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 *
771304	TS101	None Supplied	None Supplied	Brown loam and clay with vegetation.
771305	TS102	None Supplied	None Supplied	Brown loam and clay with vegetation.
771306	TS103	None Supplied	None Supplied	Brown loam and sand with vegetation.

Analytical Report Number : 17-52382

Project / Site name: Telford

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Water (PrW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazine followed by colorimetry.	In-house method	L080-PL	W	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
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 2, 1990, Chemical and Electrochemical Tests	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
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L099-PL	D	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
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
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 based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests, 2:1 water:soil extraction, analysis by ICP-OES.	L038-PL	D	MCERTS
Sulphate, water soluble, in soil by Gallery 16hr	Determination of water soluble Sulphate by discrete analyser (precipitation method).	In house method based on BS1377-3: 1990.	L082B-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
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
Total sulphate (as SO4 in soil)	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L038-PL	D	MCERTS
Total Sulphur in soil	Determination of total sulphur in soil by extraction with aqua-regia, potassium bromide/bromate followed by ICP-OES.	In-house method based on BS1377 Part 3, 1990, and MEWAM 2006 Methods for the Determination of Metals in Soil	L038-PL	D	MCERTS
TPH in (Soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method, TPH with carbon banding.	L076-PL	D	NONE

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.