Schedule of Accreditation

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United Kingdom Accreditation Service

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Accredited to ISO/IEC 17025:2017

James Hutton Ltd – a commercial subsidiary of the James Hutton Institute

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Testing performed at the above address only

DETAIL OF ACCREDITATION

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
BIOLOGICAL MATERIALS	Chemical Tests	Documented In-House Methods
	Moisture Content and Loss of Material on Ignition	DM007 using Gravimetry
	Isotopes: ^{13}C, ^{15}N, Total Carbon, Total Nitrogen	AM002 using Continuous Flow Isotope Ratio Mass Spectrometry (CF-IRMS)
	Qualitative identification / composition	FM001 using Fourier Transform - Infra Red Spectroscopy (FTIR)
BOTANICAL MATERIAL AND ANIMAL FEEDINGSTUFFS	Chemical Tests	Documented In-House Methods
	Total Carbon and Total Nitrogen	DM001 using Elemental Analyser / Dumas Combustion
BOTANICAL MATERIAL AND ANIMAL FEEDINGSTUFFS	Isotopic Tests	Documented In-House Methods
	Isotopes: ^{13}C, ^{15}N, Total Carbon and Total Nitrogen	AM002 using Continuous Flow Isotope Ratio Mass Spectrometry (CF-IRMS)

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
CHEMICAL PRODUCTS, CHEMICALS: ORGANIC CHEMICALS: INORGANIC	<u>Chemical Tests</u>	Documented In-House Methods
	Qualitative identification / composition	EM001 using Scanning Electron Microscopy (SEM) FM001 using FTIR
	Qualitative identification / characterisation	GM001 and GM003 using XRD EM002 using EDS and SEM
	Quantitative estimation of phase composition	GM004 using X-ray Diffraction (XRD)
	<u>Isotopic Tests</u>	Documented In-House Methods
	Isotopes: ^{13}C, ^{15}N, Total Carbon and Total Nitrogen	AM002 using Continuous Flow Isotope Ratio Mass Spectrometry (CF-IRMS)
FIBRE PRODUCTS – NATURAL / ARTIFICIAL	<u>Chemical Tests</u>	Documented In-House Methods
	Qualitative identification / composition	EM001 using SEM FM001 using FT-IR EM002 using SEM and Energy Dispersing Spectroscopy (EDS)
PLASTICS AND PRODUCTS	<u>Chemical Tests</u>	Documented In-House Methods
	Qualitative identification / composition	FM001 using FTIR

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
ROCKS / GEOLOGICAL MATERIALS, SEDIMENTS AND SOILS, CLAY AND CLAY PRODUCTS	Geological Tests	Documented In-House Methods
	Semi-quantitative mineralogical composition	GM005 using XRD
	Qualitative identification / characterisation	GM001 and GM003 using XRD FM001 using FTIR EM001 using SEM EM002 using EDS and SEM
	Quantitative estimation of mineralogical composition	GM002 and GM004 using X-ray Diffraction (XRD)
	Cation Exchange Capacity using Cobalt Hexamine Trichloride	GM006 by colorimetry using a Discrete Analyser
ROCKS / GEOLOGICAL MATERIALS, SEDIMENTS AND SOILS	Isotopic Tests	Documented In-House Methods
	Isotopes: Sr	AM005 using Thermal Ionisation Mass Spectrometry (TIMS)
SEDIMENTS AND SOILS	Chemical Tests	Documented In-House Methods
	Exchangeable cations: Ca, Mg, Na, K	DM004 Extraction Procedure BM014 using ICP-OES
	Moisture Content and Loss of Material on Ignition	DM007 using Gravimetry
	Total Carbon and Total Nitrogen	DM001 using Elemental Analyser / Dumas Combustion
	pH	DM006 using Glass Electrode
SEDIMENTS AND SOILS	Isotopic Tests	Documented In-House Methods
	Isotopes: 13C and 15N Total Carbon Total Nitrogen	AM002 using Continuous Flow Isotope Ratio Mass Spectrometry (CF-IRMS)

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
WATER / WATERS	<u>Chemical Tests</u>	Documented In-House Methods
	Anions: chloride, nitrate and sulphate	BM002 using Ion Chromatography
	pH	DM006 using Glass Electrode
WATERS (and soil extracts)	<u>Chemical Tests</u>	Documented In-House Methods
	Conductivity	DM012 by Glass Electrode
	Total Organic Carbon (TOC) Total Nitrogen (TN)	BM019 using Non-dispersive Infra-Red Spectroscopy and Chemiluminescence
	<u>Isotopic Tests</u>	Documented In-House Methods
	Isotopes: Sr	AM005 using Thermal Ionisation Mass Spectrometry (TIMS)
	<u>Chemical Tests</u>	
FLEXIBLE SCOPE ENCOMPASSING: ROCKS / GEOLOGICAL MATERIALS, SEDIMENTS, SOILS, ANIMAL TISSUE, LEACHATES, WATERS, CHEMICAL PRODUCTS (Liquids, Solids, Organic, Inorganic) ANIMAL FEEDINGSTUFFS, BOTANICAL MATERIAL, CROPS	Inorganic elements ***The organisation holds a flexible scope of accreditation for these tests. Please contact the organisation for details of the further individual determinands they can analyse using this method.***	Documented In-House Method by acid digestion method DM009 and Inductively Coupled Plasma – Optical Emission Spectroscopy (ICP-OES), Developed and Validated according to Method BM014 (flexible scope) Documented In-House Method acid digestion method DM009 and by Inductively Coupled Plasma – Mass Spectrometry (ICP-MS), Developed and Validated according to Method BM015 (flexible scope)
FLEXIBLE SCOPE: NON-TURBID WATER AND WATER BASED SAMPLES	Inorganic analytes ***The organisation holds a flexible scope of accreditation for these tests. Please contact the organisation for details of the further individual determinands they can analyse using this method.***	Documented In-House Method by discrete colorimetric analyser, developed and validated according to Method BM023 (flexible scope)

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