


# Schedule of Accreditation

issued by

## United Kingdom Accreditation Service

21 - 47 High Street, Feltham, Middlesex, TW13 4UN, UK

 <p>Accredited to ISO/IEC 17025:2005</p>	<h3>Cefas Lowestoft Laboratory</h3> <p>Issue No: 014    Issue date: 08 June 2010</p>	
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<p><b>Testing performed at the above address only</b></p>		

### DETAIL OF ACCREDITATION

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
<p>BIOTA, BOTANICAL MATERIALS, FISH and SHELLFISH, FOODS and FOOD PRODUCTS, MOLLUSCS, SOILS and SEDIMENTS, WATERS and EFFLUENTS</p>	<p><u>Radiochemical Analysis</u> Sample preparation methods</p>	<p>Documented In-House Methods: RCT 1A, STO 1A, STO 2A, WPD 1A (marine fish) WPD 2A (freshwater fish) WPD 3A (shellfish - crustacea) WPD 4A (shellfish - molluscs) WPD 5A (marine and freshwater weeds) WPD 6A (soils and sediments) ODS 1A (oven drying) GHG 1A (dry biota) GHG 2A (soils and sediments) PSC 1A (liquids) PSC 2A (tub and disc geometries) MFA 1A (ashing) WPD 8A (terrestrial foods)</p> <p>covering methods for storage and preparation of sample types including: drying, grinding, ashing and homogenisation of samples</p>



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BIOTA, BOTANICAL MATERIALS, FISH and SHELLFISH, FOODS and FOOD PRODUCTS, MOLLUSCS, SOILS and SEDIMENTS, WATERS and EFFLUENTS	<p><u>Determination of alpha emitting radionuclides</u></p> <p><u>Non-Uranic Actinides</u></p> <p>Americium - <math>^{241}\text{Am}</math> Plutonium - <math>^{239+240}\text{Pu}</math>, <math>^{238}\text{Pu}</math> Curium - <math>^{242}\text{Cm}</math>, <math>^{243+244}\text{Cm}</math></p> <p><u>Determination of alpha emitting radionuclides</u></p> <p>Natural Uranium and Thorium Uranium - <math>^{238}\text{U}</math>, <math>^{235}\text{U}</math>, <math>^{234}\text{U}</math> Thorium - <math>^{232}\text{Th}</math>, <math>^{230}\text{Th}</math>, <math>^{228}\text{Th}</math></p> <p>Lead - <math>^{210}\text{Pb}</math>, and Polonium - <math>^{210}\text{Po}</math></p> <p>Radium - <math>^{226}\text{Ra}</math>,</p> <p><u>Determination of Beta emitting radionuclides</u></p> <p>Strontium - <math>^{90}\text{Sr}</math></p> <p>Technetium - <math>^{99}\text{Tc}</math>,</p> <p>Carbon - <math>^{14}\text{C}</math></p>	<p>Documented In-House Methods: for radiochemical separation and source preparation of alpha emitters. Alpha spectrometric counting - calibration and performance checking of alpha spectrometers and sample counting</p> <p>ARS 1A, ABP 1A, SSP 1A, SSP 2A SSP 3A, REP 1A, CIS 1A, QCS 1A PRS 1A, PYT 1A, ASU 1A</p> <p>Documented In-House Methods: for radiochemical separation and source preparation of natural alpha emitters. Alpha spectrometric counting - calibration and performance checking of alpha spectrometers and sample counting</p> <p>NAT 1A, NAT 2A, NAT 3A CIS 2A, CIS 3A</p> <p>NAT 5A</p> <p>NAT 6A</p> <p>Documented In-house methods using liquid scintillation</p> <p>SSP7A</p> <p>SSP 6A and CIS 3A</p> <p>SSP 9A and CIS 3A</p>
BIOTA, BOTANICAL MATERIALS, SOILS AND SEDIMENTS, EFFLUENTS AND WATERS INCLUDING POTABLE WATERS	<p>Tritium - <math>^3\text{H}</math></p>	<p>DTM 1A</p>



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FRESHWATER INCLUDING POTABLE WATER	Gross Alpha Screen - relative to Am-241 Gross Beta Screen - relative to Cs-137	Documented In-house method using proportional counting - AB1
BIOTA AND SEDIMENTS	Gross Alpha Activity - relative to Am-241 Gross Beta Activity - relative to K-40	Documented In-house method using proportional counting - TB1A
BIOTA, BOTANICAL MATERIALS, FISH and SHELLFISH, FOODS and FOOD PRODUCTS, MOLLUSCS, SOILS and SEDIMENTS, WATERS and EFFLUENTS	Quantitative analysis using gamma spectrometry (Energy Range: 60 keV - 2000 keV)	Documented In-House methods covering calibration and performance checking of gamma spectrometers, sample analysis, and data interpretation.  HPA 1A, SRD 1A, TRG 1A, SGC 1A, SGC 2A, SGC 3A ULS 1A, IRS 1A, ERA 1A SCS 1A, ECD 1A, SPC 1A ASU 1A, DSA 1A
Sediment	<u>Chemical Tests</u>  Polychlorinated Biphenyls: PCB 18 PCB 28 PCB 31 PCB 44 PCB 47 PCB 49 PCB 52 PCB 66 PCB 101 PCB 105 PCB 110 PCB 118 PCB 128 PCB 138 PCB 141 PCB 149 PCB 151 PCB 153 PCB 156 PCB 158 PCB 170 PCB 180 PCB 183	Documented In-House Method:  Using GC-ECD SOP's 1410, 1411, 1780, 1779, 1778 and 1415



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Sediment (cont'd)	<u>Chemical Tests</u> (cont'd)  Polychlorinated Biphenyls: (cont'd)  PCB 187 PCB 194 SUM OF 25 PCBs ICES 7 (PCB 28, 52, 101, 118, 138, 153, 180)  Total Solids  Trace Metals: (Range 0-10000 mg/kg) Mercury Copper Zinc Cadmium Lead Chromium Nickel Arsenic	Documented In-House Method:          Gravimetric determination, SOP 2025   Using ICP-MS and ICP AES SOP's 2037, 2043 and 2044
Biota and Sediment	Total Hydrocarbon concentration (0-20g/kg range)	Using spectrofluorimetry SOP's 1597 and 1598
Biota	Trace Metals: (range 0-10000 mg/kg): Mercury Copper Zinc Cadmium Lead Chromium Nickel Arsenic Selenium Iron Manganese	Using ICP-MS and ICP AES SOP's 1418, 1419, 1420 and 1592
MARINE WATERS	<u>Biological Analysis</u>  Identification and Enumeration of Marine Phytoplankton	Documented In-house methods SOP 1508, 1509 and 1510 by light microscopy



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FISH OTOLITHS	<u>Biological Analysis</u> (cont'd) Age determination	Documented In-house methods SOPs 2034, 2036, 2037 & 2050 using light microscopy to count rings on ear slides
	END	