

Schedule of Accreditation

issued by

United Kingdom Accreditation Service

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

 <p style="text-align: center;">Accredited to ISO/IEC 17025:2005</p>	<p>Euro Environmental Management Ltd (trading as Fitz Scientific)</p> <p>Issue No: 039 Issue date: 21 January 2014</p>	
	<p>Unit 35 Boyne Business Park Drogheda Co Louth Ireland</p>	<p>Contact: Mr G Fitzpatrick Tel: +00 353 41 984 5440 Fax: +00 353 41 941198 E-Mail: info@fitzsci.ie Website: www.fitzsci.ie</p>

Testing performed by the Organisation at the locations specified below

Locations covered by the organisation and their relevant activities

Laboratory locations:

Location details	Activity	Location code
<p>Address Unit 35 Boyne Business Park Drogheda Co Louth Ireland</p> <p>Local contact Damien O'Reilly Tel: +00 353 41 984 5440 Fax: +00 353 41 984 6171</p>	<p>Support Functions: Quality System Quality Audit Administration</p> <p>Sampling and Testing Environmental Analysis Stack Emissions Testing</p>	A

Site activities performed away from the locations listed above:

Location details	Activity	Location code
<p>Customer Sites requiring Stack Emissions Testing</p> <p>Local contact Geoff Fitzpatrick Tel: +00 353 41 984 5440 Fax: +00 353 41 984 6171</p>	Stack Emissions Testing	B



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DETAIL OF ACCREDITATION

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
Filter papers and rinse solutions	<u>Physical Testing</u> Weighing of Particulate Matter	BS EN 13284-1:2002 (EM 108)	A
SOILS	<u>Chemical Testing</u> Antimony Arsenic Barium Beryllium Cadmium Chromium Cobalt Copper Lead Manganese Nickel Selenium Silver Strontium Thallium Vanadium Zinc	SOP 224 using ICP-OES	A
	Available lime	SOP 304	A
	Available phosphorus	SOP 301 using Morgans P test and colorimetry (based on standard soil analysis for REPS, Dept of Agriculture, Nov 2004)	A
	Exchangeable magnesium and exchangeable potassium	SOP 303 using Morgans extractant and ICP-OES (based on standard soil analysis for REPS, Dept of Agriculture, Nov 2004)	A
	pH	SOP 300 using meter	A
	Organic matter (by loss on ignition at 500 °C)	SOP 333	A



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WATERS	<u>Chemical Tests</u>		
Potable water, surface water, groundwater, industrial effluent and sewage effluent	Elements: Antimony Arsenic Barium Beryllium Boron Cadmium Caesium Chromium Cobalt Copper Gallium Lead Lithium Manganese Nickel Rubidium Selenium Strontium Thallium Uranium Zinc	SOP 177 by ICP-MS	A
	Mercury	SOP 178 by ICP-MS	A
Potable water, surface water, groundwater and industrial effluent	Aluminium Iron Vanadium	SOP 177 by ICP-MS	A
Potable water only	Cobalt Silver Tin	SOP 177 by ICP-MS	A
	Total Organic Carbon (TOC)	SOP 316	A
Potable Water, surface water, groundwater, industrial effluent and sewage effluent	Alkalinity	SOP 102 by automated discrete analyser	A
	Ammonia-N Ammonia (by calculation) Ammonium (by calculation)	SOP 114 by automated discrete analyser	A
	Chloride	SOP 100 by automated discrete analyser	A

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WATERS (cont'd)	<u>Chemical Tests</u> (cont'd)		
Potable water, surface water, groundwater, industrial effluent and sewage effluent (cont'd)	Colour	SOP 108 by automated discrete analyser	A
	Fluoride	SOP 115 by automated discrete analyser	A
	Nitrite-N Nitrite (by calculation)	SOP 118 by automated discrete analyser	A
	Nitrate-N (by calculation) Nitrate (by calculation)	SOP 103 by automated colorimetry	A
	Orthophosphate	SOP 117 by automated discrete analyser	A
	Silica	SOP 152 by automated discrete analyser	A
	Total Oxidised Nitrogen (TON)	SOP 151 by automated discrete analyser	A
	Total Hardness	SOP 111 by automated discrete analyser	A
	Total phosphate-P Phosphate (by calculation) Phosphorus Pentoxide (by calculation)	SOP 166 by automated discrete analyser	A
	Biochemical Oxygen Demand	SOP113	A
	pH	SOP 110	A
	Conductivity	SOP 112	A
	Turbidity	SOP 109	A
	Sulphate	SOP 119 by automated colorimetry	A
	Elements: Calcium Magnesium Potassium Sodium	SOP 184 by ICP-MS	A



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WATERS (cont'd)	<u>Chemical Tests</u> (cont'd)		
Industrial effluent, surface and groundwater	Chemical Oxygen Demand	SOP 107	A
Industrial Effluent	Suspended solids	SOP 106 by gravimetry	A
Trade (industrial) effluent	Total Kjeldahl Nitrogen	SOP 104 by digestion / titration	A
Potable water, surface water and groundwater	Bromate	SOP 125 by ion chromatography	A
Potable water, surface water, groundwater and industrial effluent	Volatile Organic Compounds: Benzene Bromobenzene Bromochloromethane Bromodichloromethane Bromoform <i>n</i> -Butylbenzene <i>sec</i> -Butylbenzene <i>tert</i> -Butylbenzene Carbon tetrachloride Chlorobenzene Chloroform 2-Chlorotoluene 4-Chlorotoluene Dibromochloromethane 1,2-Dibromoethane Dibromomethane 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,1-Dichloroethane 1,2-Dichloroethane 1,1-Dichloroethene <i>cis</i> -1,2-Dichloroethene <i>trans</i> -1,2-Dichloroethene 1,2-Dichloropropane 1,3-Dichloropropane 1,1-Dichloropropene <i>cis</i> -1,3-Dichloropropene <i>trans</i> -1,3-Dichloropropene Ethylbenzene Hexachlorobutadiene Isopropylbenzene <i>p</i> -Isopropyltoluene	SOP 154 by headspace GC-MS	A



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<p>WATERS (cont'd)</p> <p>Potable water, surface water, groundwater and industrial effluent (cont'd)</p> <p>Potable water, surface water and groundwater</p> <p>ATMOSPHERIC POLLUTANTS AND EFFLUENTS - STACK GAS SAMPLES</p>	<p><u>Chemical Tests</u> (cont'd)</p> <p>Volatile Organic Compounds: (cont'd)</p> <p>Naphthalene n-Propylbenzene Styrene 1,1,1,2-Tetrachloroethane Tetrachloroethene Toluene 1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene 1,1,1-Trichloroethane 1,1,2-Trichloroethane 1,2,3-Trichloropropane 1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene m/p-Xylene o-Xylene Trichloroethene Vinyl chloride Trichlorofluoromethane 1,2-dibromo-3-chloropropane</p>	<p>SOP 154 by headspace GC-MS (cont'd)</p> <p>In-house procedure based on BS EN 14791:2005 using ion chromatography (IC) (SOP 190)</p> <p>In-house procedure based on BS EN 1911:2010 using ion chromatography (IC) (SOP 190)</p> <p>In-house procedure based on BS ISO 15713:2006 using ion chromatography (IC) (SOP 190)</p>	<p>A</p> <p>A</p> <p>A</p> <p>A</p>
Impinger solutions (hydrogen peroxide)	Sulphate	In-house procedure based on BS EN 14791:2005 using ion chromatography (IC) (SOP 190)	A
Impinger solutions (water)	Chloride	In-house procedure based on BS EN 1911:2010 using ion chromatography (IC) (SOP 190)	A
Impinger solutions (sodium hydroxide)	Fluoride	In-house procedure based on BS ISO 15713:2006 using ion chromatography (IC) (SOP 190)	A



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FOOD Food products, dairy products and environmental swabs	<u>Microbiological Tests</u>		
	Detection and confirmation of salmonella species	In-house procedure SOP 455 using RAYAL or Solus ELISA (Optima) with confirmation on selective Agars and biochemical identification	A
	Detection and confirmation of Listeria species	In-house procedure SOP 456 using RAYAL or Solus ELISA with confirmation on selective Agars and biochemical identification	A
	Enumeration of Listeria species	In-house procedure SOP 480 based on BS EN ISO 11290-2:1998 using spread plate	A
	Enumeration of coliform organisms (presumptive)	In-house procedure SOP 451 based on BS EN ISO 4832:2006 using pour plate	A
	Enumeration of Enterobacteriaceae (presumptive)	In-house procedure SOP 454 based on BS EN ISO 21528-2:2004 using pour plate	A
	Enumeration of microorganisms - aerobic colony count at 30°C	In-house procedure SOP 457 based on BS EN ISO 4833:2003 using single pour plate	A
	Enumeration of β-glucuronidase positive E. coli	In-house procedure SOP 453 based on BS EN ISO 16649-2:2001 using pour plate	A
	Enumeration of coagulase positive staphylococci (Staphylococcus aureus and other species)	In-house procedure SOP 465 based on BS EN ISO 6888-1:1999 using spread plate	A
Food and dairy products	Enumeration of yeasts and moulds in products with water activity > 0.95	In-house procedure SOP 466 based on BS ISO 21527-1:2008 using spread plate	A
	Enumeration of yeasts and moulds in products with water activity ≤ 0.95	In-house procedure SOP 479 based on BS ISO 21527-2:2008 using spread plate	A



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Testing of Stack emissions to Atmosphere	<u>Sampling and On-Line analysis</u>	National, International and other recognised standards using documented In-House work instructions to meet the requirements of DD CEN/TS 15675:2007/ BS EN 15259:2007	
	Carbon monoxide	ASTM D6348-03 (EM 227 - FTIR analyser)	B
	Nitric Oxide	ASTM D6348-03 (EM 227 - FTIR analyser)	B
	Sulphur Dioxide	ASTM D6348-03 (EM 227 - FTIR analyser)	B
	<u>Sampling with subsequent analysis by an ISO/IEC 17025 Accredited Laboratory</u>	National, European, International and Environment Agency specified standards including MIDs and Documented In-House work instructions to meet the requirements of the Environment Agency (MCERTS) Performance Standard and to meet the requirements of DD CEN/TS 15675:2007/ BS EN 15259:2007	
	Total Particulate Matter (0 to 50 mg/m ³)	BS EN 13284-1:2002 (EM 101)	B
	Total Particulate Matter (20 to 1000 mg/m ³)	BS ISO 9096:2003 (EM 101)	B
	Hydrogen Chloride	BS EN 1911:2010 (EM 148)	B
	Hydrogen Fluoride	BS ISO 15713:2006 (EM 129)	B
	Sulphur Dioxide	BS EN 14791:2005 (EM 167)	B



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Testing of Stack emissions to Atmosphere (cont'd)	<u>Sampling with subsequent analysis by an ISO/IEC 17025 Accredited Laboratory (cont'd)</u>	National, European, International and Environment Agency specified standards including MIDs and Documented In-House work instructions to meet the requirements of the Environment Agency (MCERTS) Performance Standard and to meet the requirements of DD CEN/TS 15675:2007/ BS EN 15259:2007 (cont'd)	
	Metals	BS EN 14385:2004 (EM 113)	B
	Mercury	BS EN 13211:2001 (EM 152)	B
	Dioxins and Furans	BS EN 1948-1:2006 (EM 147)	B
	Polycyclic Aromatic Hydrocarbons (PAHs)	BS ISO 11338-1:2003 (EM 149)	B
	Speciated VOCs (carbon and other suitable tubes) (Dry Stacks only): Amines and Amides Phenols Cresols Carboxylic Acids Aldehydes	BS EN 13649:2002 (EM 232)	B
	Formaldehyde (Dry stacks only)	BS EN 13649:2002 (EM 232)	B
	<u>Sampling and On-Site analysis</u>		
	Water Vapour	BS EN 14790:2005 (EM 122)	B
	Pressure, temperature and velocity	BS EN 13284-1:2002 (EM 101)	B
Carbon Monoxide*	BS EN 15058:2006 (EM 161 - NDIR analyser)	B	



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Testing of Stack emissions to Atmosphere (cont'd)	<u>Sampling and On-Line analysis</u>	National, European, International and Environment Agency specified standards including MIDs and Documented In-House work instructions to meet the requirements of the Environment Agency (MCERTS) Performance Standard and to meet the requirements of DD CEN/TS 15675:2007/ BS EN 15259:2007	
	Oxygen*	BS EN 14789:2005 (EM 161 and EM 227 - Validated Zirconium cell analyser)	B
	Nitrogen Monoxide (NO)	BS EN 14792:2005 (EM 161 - Chemiluminescence analyser)	B
	Nitrogen Dioxide (NO ₂)*	BS EN 14792:2005 (EM 161 - Chemiluminescence analyser)	B
	Carbon Monoxide (CO)*	EA TGN M22 (EM 227 - FTIR)	B
	Nitric Oxide (NO)*	EA TGN M22 (EM 227 - FTIR)	B
	Sulphur Dioxide (SO ₂)*	EA TGN M22 (EM 227 - FTIR)	B
	Carbon Dioxide (CO ₂)*	ISO 12039:2001 (EM 161 - NDIR analyser)	B
Total Gaseous Organic Carbon* (TOC/VOC) (0 - 1000 mg/m ³)	BS EN 12619:2013 (EM 155 - FID analyser)	B	

* - The scale range of the analyser used for this test must be that detailed on its current MCERTS certificate or a range validated by the organisation to meet MCERTS requirements.

END