Schedule to

CERTIFICATE OF ACCREDITATION



Eurofins ELS Client Number 1701

Wellington

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Programme

Chemical Testing Laboratory

Accreditation Number 414 Initial Accreditation Date 13 December 1990

Conformance Standard

ISO/IEC 17025:2017

General requirements for the competence of testing and calibration laboratories

Laboratory Services Summary

Water/Environmental

2.41 Waters

ICP-MS/OES

2.05	Clavs.	Ceramics and Related Materials

2.31 Foods

2.36 Agricultural Products and Agricultural Materials

2.41 Waters2.50 Gases

2.58 Environmental Monitoring2.61 Biological Specimens

2.81 Other Specified Inorganic Material

Organics

2.31 Foods

2.36 Agricultural Products and Agricultural Materials

2.41 Waters

2.58 Environmental Monitoring

Operations Manager Authorisation: Issue 94 Date:26/03/25 Page 1 of 15

Schedule to

CERTIFICATE OF ACCREDITATION



Sampling

2.41 Waters

2.58 **Environmental Monitoring**

Operations Manager Authorisation: 1 HOBERO

Issue 94

Date:26/03/25

Page 2 of 15

Schedule to

CERTIFICATE OF ACCREDITATION





Eurofins ELS

Chemical Testing Laboratory SCOPE OF ACCREDITATION Accreditation Number 414

Water/Environmental

2.41 Waters

Potable waters (a) (b) Non-potable waters

(c) Sewage

Effluents and trade wastes (d)

Absorbance at 254, 270 & 440 nm In-house 2310 B Acidity Alkalinity 2320 B Alkalinity to pH 4.5 2320 B Alkalinity to pH 8.3 2320 B Ammoniacal nitrogen (ammonium) 4500-NH₃ H

Ammoniacal nitrogen (ammonium) 4500-NH₃ H (modified) Ammoniacal nitrogen (ammonium) Discrete analyser

Ammoniacal nitrogen (ammonium) (acidified) Discrete analyser 5210 B

Biochemical Oxygen Demand (BOD) Calcium 3500-Ca B 3500-Ca B Calcium hardness Chemical Oxygen Demand (COD) 5220 D Chloride 4500-CIT B Chlorine 4500-CI F Chlorine 4500-CI G

Chlorine (Free Available Chlorine) (field test) 4500-CI G Chlorophyll 10200 H

Chromium (VI) In-house based on 3500-Cr B

Colour 2120 C (modified)

Colour @ 270 nm (calculation) In-house Conductivity 2510 B

4500-CN C & E Cyanides - total Cyanides - weak acid dissociable 4500-CN I & E

Dissolved Oxygen 4500-O G Free carbon dioxide 4500-CO₂ C Hydrogen sulphide 4500-S²⁻ H Ion balance 1030 E

Magnesium hardness 3500-Mg B Nitrogen – Inorganic By calculation Nitrogen - Nitrate By calculation 4500-NO₃⁻ I (FIA) Nitrogen - Nitrate Nitrite Nitrogen - Nitrate Nitrite Discrete analyser

Nitrogen - Nitrite 4500-NO₂⁻ B (automated FIA)

Nitrogen - Nitrite Discrete analyser Nitrogen - Organic By calculation Nitrogen – total 4500-NO₃⁻ I

Operations Manager

1/10/800-Issue 94 Date:26/03/25 Page 3 of 15 Authorisation:

Schedule to

CERTIFICATE OF ACCREDITATION





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Eurofins ELS Chemical Testing Lab	oratory		Accreditation Nu	mber 414		
SCOPE OF ACCRED			, , , , , , , , , , , , , , , , , , , ,			
Nitrogen – total		4500-N C				
Nitrogen – total		By calcula	ation			
Nitrogen – total orga	nic		By calculation			
Nitrogen – total oxidi			By calculation			
	nic Carbon – dissolved	5310 B				
Non-purgeable Orga		5310 B				
Oil and Grease		5520 B (n	nodified)			
Oil and Grease		5520 D	,			
pН		4500-H+ E	4500-H ⁺ B			
pH (field test)		4500-H+ E	4500-H ⁺ B			
Phosphorus – dissol	ved reactive	4500-P G				
Phosphorus – dissol	ved reactive	Discrete a	analyser			
Phosphorus – total		4500-P G				
Phosphorus – total		4500-P B				
Phosphorus – total		Discrete a				
Phosphorus – total o		4500-P B				
	Phosphorus – total dissolved			4500-P G		
	Phosphorus – total dissolved		Discrete analyser			
	Saturation Index		By calculation (2330 B)			
Solids – settleable			2540 F			
Solids – total	. 1		2540 B			
Solids – total dissolv			2540 C			
Solids – total susper			2540 D			
	Solids – total volatile		2540 G			
Solids – volatile susp	pended		2540 E 4500-S ²⁻ B			
Sulphide Sulphide			4500-S ² - C			
Sulphide			4500-S ² - F			
Sulphite			4500-SO ₃ ²⁻ B			
Temperature			2550 B			
Temperature Temperature (field test)			2550 B			
Total Hardness (calculation)			2340 B			
Total Hardness			2340 C			
Total Kjeldahl Nitrogen			4500-N _{org} C			
Total Kjeldahl Nitrogen		•	By calculation			
Total Sediment Concentration			ASTM D3977			
Turbidity		2130 B	2130 B			
Turbidity (field test)	Turbidity (field test)		2130 B			
Turbidity			ISO 7027:1999			
Unionised Ammonia By calculation						
The following elemen	nts by ion chromatography usir	ng 4110 B:				
Promido	Chloride	Eluorido	Nitroto			
Bromide Nitrite	Chloride Phosphate	Fluoride Sulphate	Nitrate			
Millie	ι πουμπαισ	Juipriale				
Operations Manager						
Authorisation:	AGOPPERO	Issue 94	Date:26/03/25	Page 4 of 15		

Schedule to

CERTIFICATE OF ACCREDITATION



Eurofins ELS

Chemical Testing Laboratory SCOPE OF ACCREDITATION **Accreditation Number 414**

The following elements by ion chromatography using 4110 D:

Chlorate Chlorite **Bromate**

(f) Swimming pools and spas

Alkalinity 2320 B Calcium Hardness 3500-Ca B Chloride 4500-CI B Chlorine 4500-Cl₂ F Conductivity 2510 B 4500-H+ B Hq

(h) **Boiler waters**

Alkalinity BS 1427:2009 Chloride 4110 B 4500-H B рΗ

Phosphorus (total reactive) Discrete analyser Sulphite 4500-SO₃²⁻ B

ICP-MS/OES

2.05 Clays, Ceramics and Related Materials

(a) Clays, ceramics and refractories

The performance of the following tests on leaching from ceramics and glazes, and on leachates as received by in-house ICP-MS and ICP-OES methods:

Cadmium **Antimony** Arsenic Lead

2.31 **Foods**

- Cereals and cereal products (a)
- Edible oils, fats and their products (b)
- (c) Nuts, fruits and vegetables and derived products
- Sauces, herbs, spice and condiments (d)
- Sugars and sugar confectionery (e)
- **Dairy products** (f)

Operations Manager Authorisation:	Issue 94	Date:26/03/25	Page 5 of 15	
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Schedule to

CERTIFICATE OF ACCREDITATION





Eurofins ELS
Chemical Testing Laboratory
SCOPE OF ACCREDITATION

(g) Meat, poultry and derived products
(h) Fish and fish products

(i) Eggs and egg products (j) Alcoholic beverages

(k) Non-alcoholic beverages

The following analytes in accordance with in-house ICP-OES methods following in-house digestion:

Aluminium Chromium Tin Zinc

The following analytes in accordance with in-house ICP-MS methods following in-house digestion:

Aluminium Arsenic Cadmium Antimony Calcium Chromium Copper Iron Lead Magnesium Manganese Mercury Nickel Potassium Selenium Silver Sodium Thallium Zinc Tin

(f) Dairy products

(butter and AMF - analysis of the extracted samples only)

The following analytes by ICP-MS in accordance with APHA 24th Edition 3125 (modified):

Copper Iron

(milk, milk powders, whey products, milk powder concentrates)

The following analytes by ICP-MS in accordance with BS/EN 15111(modified):

lodine

(o) Other specified foods

(pet foods)

The following analyte by ICP-MS in accordance with BS/EN 15111 (modified):

lodine

- 2.36 Agricultural Products and Agricultural Materials
- (c) Stockfoods and licks

Operations Manager Authorisation:		Issue 94	Date:26/03/25	Page 6 of 15
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Schedule to

CERTIFICATE OF ACCREDITATION





Eurofins ELS

Chemical Testing Laboratory

Accreditation Number 414

SCOPE OF ACCREDITATION

The performance of the following tests in accordance with in-house ICP-MS and ICP-OES methods following microwave digestion:

Aluminium

Arsenic

Cadmium

Chromium

Lead

Zinc

2.41 Waters

- (a) Potable waters
- Non-potable waters (b)
- (c) Sewage

Tungsten

- Effluents and trade wastes (d)
- Swimming pools and spas **(f)**
- (h) **Boiler waters**

The following metals using inductively coupled argon plasma optical emission spectroscopy (ICP-OES) in-house method based on APHA 3120 B using APHA 3030E (modified) digest:

Aluminium **Antimony** Arsenic Barium Beryllium Boron Caesium Calcium Chromium Cobalt Copper Gallium Gold Iron Lead Lithium Magnesium Manganese Mercury Molybdenum Nickel Palladium Platinum Phosphorus Potassium Selenium Silica Silicon Silver Sodium Strontium Sulphate (calculation) Titanium Sulphur Thallium Tin

Phosphate (ICP-OES) By calculation Potassium Adsorption Ratio (ICP-OES) By calculation Sodium Adsorption Ratio (ICP-OES) By calculation

Uranium

The following metals using inductively coupled plasma mass spectroscopy (ICP-MS) in-house method based on APHA 3125 B using APHA 3030E (modified) digest:

Vanadium

Aluminium Antimony Arsenic Barium Beryllium Bismuth Boron Cadmium Caesium Calcium Chromium Cobalt Copper Gallium Gold Iron Lead Lithium Magnesium Manganese

Mercurv Molvbdenum Nickel Palladium **Platinum** Selenium Potassium Silver

Operations Manager Authorisation: HOPETO-

Issue 94

Date:26/03/25

Zinc

Page **7** of **15**

Schedule to

CERTIFICATE OF ACCREDITATION



Accreditation Number 414



Eurofins ELS

Chemical Testing Laboratory SCOPE OF ACCREDITATION

Silicon Sodium Strontium Thallium
Tin Titanium Tungsten Uranium

Vanadium Zinc

Potassium Adsorption Ratio (ICP-MS)

Sodium Adsorption Ratio (ICP-MS)

By calculation

By calculation

Reactive Silica APHA 3120 B

2.50 Gases

- (c) Fumes and emissions
- (d) Atmospheric pollution

Performance of the following tests on filters or extracted filters and impinger solutions as received by the laboratory, in accordance with in-house methods by ICP-MS and ICP-OES:

Antimony Arsenic Boron Cadmium Chromium Cobalt Copper Iron

LeadManganeseMercuryMolybdenumNickelSeleniumSilverThalliumTinTitaniumTungstenVanadiumZinc

2.58 Environmental Monitoring

- (b) Air (filters, extracts or impinger solutions as received)
- (c) Soils and sludges

In accordance with in-house methods by ICP-MS and ICP-OES:

Aluminium **Antimony** Arsenic Barium Beryllium Boron Cadmium Caesium Calcium Chromium Cobalt Copper Gallium Gold Iron Lead Magnesium Manganese Lithium Mercury Molybdenum Nickel Palladium **Platinum** Potassium Selenium Silicon Silver Sodium Strontium **Thallium** Tin

Titanium Tungsten Uranium Vanadium

Zinc

Operations Manager Authorisation: Issue 94 Date:26/03/25 Page 8 of 15

Schedule to

CERTIFICATE OF ACCREDITATION



Eurofins ELS
Chemical Testing Laboratory
SCOPE OF ACCREDITATION

Accreditation Number 414

(b) Air (filters, extracts or impinger solutions as received)

Reactive Silica APHA 3120 B

2.61 Biological Specimens

(a) Biological fluids including urine

The performance of the following tests on pre-prepared samples as received by the laboratory in accordance with in-house methods by ICP-MS:

Aluminium Cadmium Cobalt Copper Lead Mercury Nickel Thallium Zinc

(b) Residues in specified veterinary specimens

The performance of the following tests on pre-prepared canine and equine urine screening and confirmation samples as received by the laboratory in accordance with in-house methods by ICP-MS:

Cobalt

2.81 Other Specified Inorganic Material

(a) Toys and playthings

Analysis of the following tests in graphic materials, in accordance with in-house ICP-MS and ICP-OES methods and to AS/NZS ISO 8124.3:2003:

Antimony Arsenic Barium Cadmium Chromium Lead Mercury Selenium

Organics

2.31 **Foods**

- (a) Cereals and cereal products
- (b) Edible oils, fats and their products
- (c) Nuts, fruits and vegetables and derived products
- (d) Sauces, herbs, spice and condiments

Operations Manager Authorisation: Issue 94 Date:26/03/25 Page **9** of **15**

Schedule to

CERTIFICATE OF ACCREDITATION



Eurofins ELS Chemical Testing Laboratory

Accreditation Number 414

SCOPE OF ACCREDITATION

- (e) Sugars and sugar confectionery
- (f) Dairy products
- (i) Eggs and egg products
- (k) Non-alcoholic beverages

GC-MS

Dithiocarbamates and Thiram Disulphide Pesticides as CS2 In-house method

GC-MS/MS

Pesticide residues by in-house method based on AOAC 2007.1 for the above sample types.

LC-MS/MS

Pesticide residues by in-house method based on AOAC 2007.1 for the above sample types.

(c) Fruits and derived products

LC-MS/MS

Paraquat and Diquat In-house method Maleic Hydrazide In-house method Fosetyl-aluminium and phosphorus acid In-house method

- (f) Dairy products
- (o) Other specified foods (pet food)

LC-MS/MS

Melamine, dicyandiamide (DCD) and cyanuric acid In-house method

2.36 Agricultural Products and Agricultural Materials

- (a) Wheat and other cereal grains and by-products
- (b) Oil seeds and by-products
- (h) Plants

GC-MS/MS

Pesticide residues by in-house method based on AOAC 2007.1 for the above types.

- (a) Wheat and other cereal grains and by-products
- (b) Oil seeds and by-products
- (h) Plants
- (j) Residues in agricultural products and related materials

Operations Manager Authorisation: Issue 94 Date:26/03/25 Page **10** of **15**

Schedule to

CERTIFICATE OF ACCREDITATION



Eurofins ELS
Chemical Testing Laboratory
SCOPE OF ACCREDITATION

Accreditation Number 414

LC-MS/MS

Pesticide residues by in-house method based on AOAC 2007.1 for the above sample types.

(h) Plants

GC-MS

Dithiocarbamates and Thiram Disulphide Pesticides as CS2 In-house method

2.41 Waters

(a) Potable waters

(b) Non-potable waters

(c) Sewage

(d) Effluents and trade wastes

GC-FID

USEPA

Total Petroleum Hydrocarbons (TPH)

Total Recoverable Petroleum Hydrocarbons (TRH)

In-house method
In-house method

GC-MS

Acrylamide In-house method based on USEPA 8032A

Dithiocarbamates and Thiram Disulphide Pesticides as CS2 In-house method

Semi-volatile organic compounds (SVOCs) compound classes in accordance with in–house methods based on those of the USEPA:

- Carbamate pesticides
- Organochlorine pesticides (OCs)
- Organonitrogen pesticides (ONs)
- Organophosphorus pesticides (OPs)
- Phenols and their derivatives
- Polychlorinated benzenes
- Polychlorinated biphenyls (PCBs)
- Polycyclic aromatic hydrocarbons (PAHs)
- Synthetic pyrethroids

Pesticide residues of the following compound classes by tandem mass spectrometry (GC-MS/MS) in accordance with in-house methods based on those of the USEPA:

Carbamate and dithiocarbamate pesticides

Operations Manager Authorisation: Issue 94 Date:26/03/25 Page 11 of 15

Schedule to

CERTIFICATE OF ACCREDITATION





Eurofins ELS

Chemical Testing Laboratory

Accreditation Number 414

SCOPE OF ACCREDITATION

- Organochlorine pesticides
- Organonitrogen pesticides
- Organophosphorus pesticides
- Phenoxyacetic acid herbicides
- Synthetic pyrethroids

Static Headspace (SHS) GC-MS

Volatile organic compounds (VOCs) by Static Headspace (SHS) GC-MS in the following compound classes in accordance with an in-house method:

- Hvdrocarbons
- Halogenated hydrocarbons and haloforms
- Aromatics and BTEX
- Halogenated aromatics
- Carbon disulphide

Solid Phase Microextraction (SPME) GC-MS

Taste and Odour Compounds In-house method based on APHA 6040D

LC-MS/MS

Pesticide Residues in water In-house method based on USEPA

Acid Herbicides In-house method

Bromochloroacetic acid In-house method Dibromoacetic acid In-house method Dichloroacetic acid In-house method 2,4-Dichlorophenol In-house method Fluoroacetate sodium / 1080 In-house method Glyphosate, AMPA, Glufosinate In-house method Maleic Hydrazide In-house method Monobromoacetic acid In-house method Monochloroacetic acid In-house method Paraguat and Diquat In-house method Phenols and Chlorinated Phenols In-house method Trichloroacetic acid In-house method 2, 4, 6-Trichlorophenol In-house method Perfluoroalkyl and polyfluoroalky substances (PFAS) In-house method

(a) Potable waters

(b) Non-potable waters

LC-MS/MS

Pesticide Residues in water In-house method based on USEPA 3510C, 3500, 5000, 8000D

Operations Manager Authorisation: Issue 94 Date:26/03/25 Page 12 of 15

Schedule to

CERTIFICATE OF ACCREDITATION





Eurofins ELS
Chemical Testing Laboratory

Accreditation Number 414

Acid Herbicides In-house method

Fluoroacetate sodium / 1080
Glyphosate, AMPA, Glufosinate
Maleic Hydrazide
Paraquat and Diquat
Phenols and Chlorinated Phenols
Perfluoroalkyl and polyfluoroalky substances (PFAS)
In-house method
In-house method
In-house Method
In-house Method

(a) Potable waters

SCOPE OF ACCREDITATION

LC-MS/MS

In-house method Bromochloroacetic acid Dibromoacetic acid In-house method Dichloroacetic acid In-house method 2,4-D In-house method 2,4-Dichlorophenol In-house method Monobromoacetic acid In-house method Monochloroacetic acid In-house method Trichloroacetic acid In-house method 2, 4, 6-Trichlorophenol In-house method

GC-MS/MS

Epichlorohydrin in water

In-house method based on the Journal of Chromatography 1201 (2008)

2.58 Environmental Monitoring

(c) Soils and sludges

GC-FID

Benzene, toluene, ethylbenzene and total xylenes (BTEX)
In-house method based on those of the

USEPA

Total Petroleum Hydrocarbons (TPH)

Total Recoverable Petroleum Hydrocarbons (TRH)

In-house method
In-house method

GC-MS

Semi-volatile organic compounds (SVOCs) in the following compound classes in accordance with in–house methods based on those of the USEPA:

- Carbamate pesticides
- Organochlorine pesticides (OCs)
- Organonitrogen pesticides (ONs)

Operations Manager Authorisation: Issue 94 Date:26/03/25 Page 13 of 15

Schedule to

CERTIFICATE OF ACCREDITATION



Eurofins ELS Chemical Testing Laboratory

Accreditation Number 414

- **SCOPE OF ACCREDITATION**
 - Organophosphorus pesticides (OPs)
 - Phenols and their derivatives
 - Polychlorinated benzenes
 - Polychlorinated biphenyls (PCBs)
 - Polycyclic aromatic hydrocarbons (PAHs)
 - Synthetic pyrethroids

Pesticide residues of the following compound classes by tandem mass spectroscopy (GC-MS/MS) in accordance with in-house methods based on those of the USEPA:

- Carbamate and dithiocarbamate pesticides
- Organochlorine pesticides
- Organonitrogen pesticides
- Organophosphorus pesticides
- Phenoxyacetic acid herbicides
- Synthetic pyrethroids

Static Headspace (SHS) GC-MS

Volatile organic compounds (VOCs) in the following compound classes in accordance with an in-house method:

- Hydrocarbons
- Halogenated hydrocarbons and haloforms
- Aromatics and BTEX
- Halogenated aromatics
- Carbon disulphide

(c) Soils and sludges

LC-MS/MS

Perfluoroalkyl and polyfluoroalkyl substances (PFAS) In-house method

Sampling

2.41 Waters

- Potable waters (a)
- Non-potable waters (e.g. receiving waters, ground waters) (b)
- Sewage (c)
- Effluents and trade wastes (d)
- Cooling tower and industrial waters (e)
- Swimming pools and spas (f)
- **Marine waters** (g)

Schedule to

CERTIFICATE OF ACCREDITATION



Eurofins ELS Chemical Testing Laboratory SCOPE OF ACCREDITATION

Accreditation Number 414

Sampling in accordance with in-house procedures based on AS/NZS 5667

2.58 **Environmental Monitoring**

Soils and sludges (c)

Sampling in accordance with in-house procedures based on AS/NZS 5667

References:

AOAC **AOAC International**

APHA American Public Health Association

American Society for Testing and Materials **ASTM**

AS/NZS Australian/New Zealand standards

BS **British Standards**

BS/EN British Standard implementation of English language versions of European standard

International Organization for Standardization ISO USEPA United States Environmental Protection Agency

Operations Manager Authorisation:

1/10/800-

Issue 94

Date:26/03/25

Page 15 of 15