CERTIFICATE OF ACCREDITATION

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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
2.58	Environmental Monitoring

ICP-MS/OES

2.31	Foods
2.36	Agricultural Products and Agricultural Materials
2.41	Waters
2.50	Gases
2.58	Environmental Monitoring
2.61	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

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Sampling	
2.41	Waters
2.58	Environmental Monitoring

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Water/Environmental

2.41 Waters

(a) Potable waters
(b) Non-potable waters
(c) Sewage
(d) Effluents and trade wastes

Absorbance at 254, 270 & 440 nm	In-house
Acidity	2310 B
Alkalinity	2320 B
Alkalinity to pH 4.5	2320 B
Alkalinity to pH 8.3	2320 B
Ammoniacal nitrogen (ammonium)	4500-NH_3 H
Ammoniacal nitrogen (ammonium)	4500-NH_3 H (modified)
Ammoniacal nitrogen (ammonium)	4500-NH_3 H (modified, Discrete analyser)
Ammoniacal nitrogen (ammonium) (acidified)	4500-NH_3 H (modified, Discrete analyser)
Biochemical Oxygen Demand (BOD)	5210 B
Calcium	3500-Ca B
Calcium hardness	3500-Ca B
Chemical Oxygen Demand (COD)	5220 D
Chloride	4500-Cl^- B
Chlorine	4500-Cl F
Chlorine	4500-Cl G
Chlorine (Free Available Chlorine) (field test)	4500-Cl G
Chlorophyll A	10150 B
Chromium (VI)	In-house based on 3500-Cr B (Discrete analyser)
Colour	2120 C (modified)
Colour @ 270 nm (calculation)	In-house
Conductivity	2510 B
Cyanides – total	4500-CN C & E
Cyanides – weak acid dissociable	4500-CN I & E
Dissolved Oxygen	4500-O G
Free carbon dioxide	4500-CO_2 C
Hydrogen sulphide	4500-S^{2-} H
Ion balance	1030 E
Magnesium hardness	3500-Mg B
Nitrogen – Inorganic	By calculation
Nitrogen – Nitrate	By calculation
Nitrogen – Nitrate Nitrite	4500-NO_3^- I (FIA)
Nitrogen – Nitrate Nitrite	Discrete analyser
Nitrogen – Nitrite	4500-NO_2^- B (automated FIA)

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Nitrogen – Nitrite	Discrete analyser
Nitrogen – Organic	By calculation
Nitrogen – total	4500-NO_3^- I
Nitrogen – total	4500-N C
Nitrogen – total	By calculation
Nitrogen – total organic	By calculation
Nitrogen – total oxidised	By calculation
Non-purgeable Organic Carbon – dissolved	5310 B
Non-purgeable Organic Carbon – total	5310 B
Oil and Grease	5520 B (modified)
Oil and Grease	5520 D
pH	4500-H^+ B
pH (field test)	4500-H^+ B
Phosphorus – dissolved reactive	4500-P G
Phosphorus – dissolved reactive	4500-P G (modified, Discrete analyser)
Phosphorus – total	4500-P G
Phosphorus – total	4500-P B
Phosphorus – total	4500-P B (modified, Discrete analyser)
Phosphorus – total dissolved	4500-P B
Phosphorus – total dissolved	4500-P G
Phosphorus – total dissolved	4500-P G (modified, Discrete analyser)
Saturation Index	By calculation (2330 B)
Solids – settleable	2540 F
Solids – total	2540 B
Solids – total dissolved	2540 C
Solids – total suspended	2540 D
Solids – total volatile	2540 G
Solids – volatile suspended	2540 E
Sulphide	4500-S^{2-} B
Sulphide	4500-S^{2-} C
Sulphide	4500-S^{2-} F
Sulphite	4500-SO_3^{2-} B
Temperature	2550 B
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
Turbidity (field test)	2130 B
Turbidity	ISO 7027:1999
Unionised Ammonia	By calculation

The following elements by ion chromatography using 4110 B:

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Bromide	Chloride	Fluoride	Nitrate
Nitrite	Phosphate	Sulphate	

The following elements by ion chromatography using 4110 D:

Bromate	Chlorate	Chlorite

(f) Swimming pools and spas

Alkalinity	2320 B
Calcium Hardness	3500-Ca B
Chloride	4500-Cl B
Chlorine	4500-Cl_2 F
Conductivity	2510 B
pH	4500-H^+ B

(h) Boiler waters

Alkalinity	BS 1427:2009
Chloride	4110 B
pH	4500-H B
Phosphorus (total reactive)	Discrete analyser
Sulphite	4500-SO_3^{2-} B

2.58 Environmental Monitoring

(c) Soils and sludges

Cyanides – total	4500-CN C & E (modified); USPEA 335.4 (modified)
Cyanides – weak acid dissociable	4500-CN C & E (modified); USEPA 335.4 (modified)
Moisture	2540 B
pH	Eurofins in-house method

ICP-MS/OES

2.31 Foods

(a) Cereals and cereal products
(b) Edible oils, fats and their products

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(c) Nuts, fruits and vegetables and derived products
(d) Sauces, herbs, spice and condiments
(e) Sugars and sugar confectionery
(f) Dairy products
(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-MS methods following in-house digestion:

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

(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):

Iodine

(o) Other specified foods

(pet foods)

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

Iodine

2.36 Agricultural Products and Agricultural Materials

(c) Stockfoods and licks

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

Aluminium	Arsenic	Cadmium	Chromium
Lead	Tin	Zinc	

2.41 Waters

(a) Potable waters
(b) Non-potable waters
(c) Sewage
(d) Effluents and trade wastes
(f) Swimming pools and spas
(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	Arsenic	Boron	Calcium
Chromium	Cobalt	Copper	Iron
Lead	Lithium	Magnesium	Manganese
Molybdenum	Nickel	Phosphorus	Potassium
Silica	Silicon	Sodium	Sulphate (calculation)
Sulphur	Tin	Zinc	

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

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

Aluminium	Antimony	Arsenic	Barium
Beryllium	Bismuth	Boron	Cadmium
Caesium	Calcium	Chromium	Cobalt
Copper	Iron	Lead	Lithium
Magnesium	Manganese	Mercury	Molybdenum
Nickel	Potassium	Selenium	Silver
Sodium	Strontium	Thallium	Tin
Titanium	Tungsten	Uranium	Vanadium
Zinc			

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Potassium Adsorption Ratio (ICP-MS)	By calculation
Sodium Adsorption Ratio (ICP-MS)	By calculation

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:

Antimony	Arsenic	Boron	Cadmium
Chromium	Cobalt	Copper	Iron
Lead	Manganese	Mercury	Molybdenum
Nickel	Selenium	Silver	Thallium
Tin	Titanium	Tungsten	Vanadium
Zinc			

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:

Aluminium	Antimony	Arsenic	Barium
Beryllium	Boron	Cadmium	Caesium
Calcium	Chromium	Cobalt	Copper
Iron	Lead	Lithium	Magnesium
Manganese	Mercury	Molybdenum	Nickel
Potassium	Selenium	Silicon	Silver
Sodium	Strontium	Thallium	Tin
Titanium	Tungsten	Uranium	Vanadium
Zinc			

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:

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Aluminium	Cadmium	Cobalt	Copper
Lead			

(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
(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.

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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

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

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2.41 Waters

(a) Potable waters
(b) Non-potable waters
(c) Sewage
(d) Effluents and trade wastes

GC-FID

Benzene, toluene, ethylbenzene and total xylenes (BTEX)	In-house method based on USEPA
Total Petroleum Hydrocarbons (TPH)	In-house method based on USEPA
Total Recoverable Petroleum Hydrocarbons (TRH)	In-house method based on USEPA

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
- 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:

- Hydrocarbons
- Halogenated hydrocarbons and haloforms

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- 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

2,4-Dichlorophenol	In-house method
2, 4, 6-Trichlorophenol	In-house method
Acid herbicides	In-house method
Bromochloroacetic acid	In-house method
Dibromoacetic acid	In-house method
Dichloroacetic acid	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
Paraquat and Diquat	In-house method
Perfluoroalkyl and polyfluoroalky substances (PFAS)	In-house method
Pesticide Residues in water	In-house method based on USEPA
Phenols and Chlorinated Phenols	In-house method
Trichloroacetic acid	In-house method

(a) Potable waters

LC-MS/MS

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

GC-MS/MS

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

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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)	In-house method
Total Recoverable Petroleum Hydrocarbons (TRH)	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)
- 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

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LC-MS/MS

Perfluoroalkyl and polyfluoroalkyl substances (PFAS) In-house method

(d) Other materials – environmental wipes

Analysis for the following compound in gauze swabs by LC-MS/MS in accordance with NIOSH 9111 (modified), in accordance with the requirements of NZS 8510:2017 Testing and decontamination of methamphetamine-contaminated properties:

- Methamphetamine

Analysis for the following compounds in gauze swabs by LC-MS/MS in accordance with NIOSH 9111 (modified):

- Methamphetamine
- Amphetamine
- MDMA (3, 4- methyleneioxymethamephetamine)
- MDA (3, 4- methylenedioxyamphetamine)
- Pseudoephedrine

Sampling

2.41 Waters

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

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

2.58 Environmental Monitoring

(c) Soils and sludges

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

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AOAC	AOAC International
APHA	American Public Health Association
ASTM	American Society for Testing and Materials
AS/NZS	Australian/New Zealand standards
BS	British Standards
BS/EN	British Standard implementation of English language versions of European standard
ISO	International Organization for Standardization
USEPA	United States Environmental Protection Agency

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