



Inorganic Chemistry Analysis

The Australian Water Quality Centre provides a comprehensive analytical service for inorganic constituents, including cations and anions, nutrients and heavy metals of many water types. Capabilities extend to sludges, soils, bio-solids and sediments.



CHOOSING THE RIGHT METHOD

With the ever increasing environmental pressures on today's business leaders, the AWQC recognises the importance of providing a service that can accurately and reliably detect the presence of contaminants in a variety of matrices. Water types analysed at the AWQC include environmental or source waters, drinking water, wastewater from all industrial and commercial sources, sewage and sewage effluent, rainwater, bore water and seawater. The AWQC applies its knowledge of the various water matrices to determine the right method for each parameter to ensure interference is mitigated.

LOW LEVEL NUTRIENT TESTING

Methods employed at the AWQC include the use of automatic flow analysers and rank well in national proficiency tests.

Detection limits are representative of those required by the Australian Drinking Water Guidelines and ANZECC environmental guidelines.

LOW LEVEL METAL ANALYSES

Metals are analysed with the aid of an inductively coupled plasma-mass spectrometer and can detect metals in some cases as low as parts per billion. The selection of preparation techniques and supporting methods ensures accuracy and reliability is consistently achieved.

SEAWATER CONSTITUENTS

Extensive experience supports a service that is comprehensive in delivering analysis of sea water. With methods employed to specifically counter the effect of salinity a keen focus is applied to getting it right for high saline waters.

BROMIDE IODIDE AND BROMATE

Ion chromatography allows the AWQC to achieve measurement levels and reliability for this collection of tests. Bromate is increasing in importance as it is a by-product of disinfection with Ozone, widely used in the bottled water industry.

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CERTIFIED QUALITY
MANAGEMENT SYSTEM
— ISO 9001 —



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Determinand	Analysis Method	Reporting Limit
ANIONS		
Chloride	Automated Colorimetric	4 mg/L
Fluoride	Automated Specific Ion Electrode	0.1 mg/L
Sulphate	ICP	1 mg/L
Orthophosphorous	Automated Colorimetric	0.005 mg/L
Phosphorous	Automated Colorimetric	0.005 mg/L
Carbonate/Bicarbonate	Titration	2 mg/L
Nitrogen-Nitrate	Automated Colorimetric	0.005 mg/L
Nitrogen-Nitrite	Automated Colorimetric	0.005 mg/L
Nitrogen-Ammonia	Automated Colorimetric	0.005 mg/L
Nitrogen-Kjeldahl	Automated Colorimetric	0.05 mg/L
Silica	Automated Colorimetric	1 mg/L
Bromide	Ion Chromatograph	0.1 mg/L
Iodide	Ion Chromatograph	0.1 mg/L
Bromate	Ion Chromatograph	0.01 mg/L
Cyanide	Distillation/Colorimetric	0.02 mg/L
METALS		
Aluminium	ICP	0.005 mg/L
Antimony	ICP-MS	0.0005 mg/L
Arsenic	ICP-MS	0.001 mg/L
Boron	ICP	0.05 mg/L
Calcium	ICP	0.5 mg/L
Cadmium	ICP-MS	0.0005 mg/L
Cobalt	ICP-MS	0.0005 mg/L
Chromium	ICP-MS	0.003 mg/L
Chromium VI	Colorimetric	0.01 mg/L
Copper	ICP-MS	0.001 mg/L
Iron	ICP	0.005 mg/L
Lead	ICP-MS	0.0005 mg/L
Lithium	ICP-MS	0.001 mg/L
Magnesium	ICP	0.5 mg/L
Manganese	ICP-MS	0.0005 mg/L
Mercury	ICP-MS	0.0001 mg/L
Molybdenum	ICP-MS	0.0005 mg/L
Nickel	ICP	0.0005 mg/L
Potassium	ICP	0.5 mg/L
Sodium	ICP	0.5 mg/L
Silver	ICP	0.0002 mg/L
Strontium	ICP-MS	0.0005 mg/L
Selenium	ICP-MS	0.003 mg/L
Tin	ICP-MS	0.001 mg/L
Zinc	ICP-MS	0.005 mg/L
OTHER		
pH	Electrometric Method	
Conductivity	Electrical Conductivity	1 μ S/cm
Colour	Spectrophotometric (456 nm)	1 HU
Turbidity	Nephelometric Method	0.1 NTU
Suspended Solids	Gravimetric (103 - 105°C)	2 mg/L
Total Solids	Dried at 103 - 105°C	0.01%
Volatile Solids	Solids lost at 550°C	0.01%
Biochemical Oxygen Demand	5 day BOD test	2 mg/L
Chemical Oxygen Demand	Reflux, titration	5 mg/L
Grease	Solvent extraction, gravimetric	1 mg/l
Phenols	Distillation, colorimetric	0.001 mg/L
Volatile Acids	Titration	2 mg/L
Detergent (MBAS)	Chloroform extraction, colorimetric	0.01 mg/L

Other metals available on request



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The AWQC is a business unit of SA Water,
a South Australian Government enterprise.

Delivering integrated water quality solutions