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# CERTIFICATE OF ACCREDITATION

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## **ALS LIFE SCIENCE CHILE S.A. – GERENCIA DE OPERACIONES**

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SANTIAGO, 9340000, CHILE

### **Inspection Agency AA-803 (Type A)**

has met the requirements of AC98, *IAS Accreditation Criteria for Inspection Agencies*, and has demonstrated compliance with ISO/IEC Standard 17020:2012, *Conformity assessment - Requirements for the operation of various types of bodies performing inspection*. This organization is accredited to provide the services specified in the scope of accreditation.

Expiry Date July 1, 2025

Effective Date September 20, 2024



A handwritten signature in black ink, reading 'Raj Nathan'.

**President**

# SCOPE OF ACCREDITATION

International Accreditation Service, Inc.

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## ALS LIFE SCIENCE CHILE S.A. – GERENCIA DE OPERACIONES

[www.alsglobal.com](http://www.alsglobal.com)

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*Accredited to ISO/IEC 17020:2012*

*Effective Date September 20, 2024*

Fields and Range of Inspections	Regulations, Inspection Methods, Standards and/or Specifications)
<b>Drinking water</b>	
Sampling	QWI-MM/01 Issue A, mod.2 Based on: NCh409 / 2: 2004 Drinking water - Part 2: Sampling ISO 5667-1:2023 Water quality — Sampling — Part 1: Guidance on the design of sampling programmes and sampling techniques NCh411 / 3. of 2014 Water quality - Samplin
Measurement - Free residual chlorine	Standards Methods for the Examination of Water and Wastewater, 24th Edition, 2023 4500-Cl-G
Measurement - Total chlorine	Standards Methods for the Examination of Water and Wastewater, 24th Edition, 2023 4500-Cl-G
Measurement - Conductivity	Standards Methods for the Examination of Water and Wastewater, 24th Edition, 2023 2510-B
Determination - Odor	ME-25-2024, Superintendence of Sanitary Services Manual of Test Methods for Drinking Water - Organoleptic method
Measurement - Dissolved oxygen	Standards Methods for the Examination of Water and Wastewater, 24th Edition, 2023 4500-O G
Measurement - pH	ME-29-2024 Superintendence of Sanitary Services Manual of Test Methods for Drinking Water - Electrometric method
Measurement - pH	Standards Methods for the Examination of Water and Wastewater, 24th Edition, 2023 4500 H + B
Measurement - Redox Potential (ORP)	Standards Methods for the Examination of Water and Wastewater, 24th Edition, 2023, 2580 B
Measurement - Salinity	Standards Methods for the Examination of Water and Wastewater, 24th Edition, 2023, 2520 B
Determination - Taste	ME-26-2024 Superintendence of Sanitary Services Manual of Test Methods for Drinking Water - Organoleptic method
Measurement - Temperature	Standards Methods for the Examination of Water and Wastewater, 24th Edition, 2023 2550 B
Measurement - Total Dissolved Solids (TDS)	QWI-MM/09 Issue A, mod.1 Based on: Manufacturer's Manual - YSI / Hanna / HACH Multiparameter Equipment

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Fields and Range of Inspections	Regulations, Inspection Methods, Standards and/or Specifications)
Measurement - Turbidity	ME-03-2024 Superintendence of Sanitary Services Manual of Test Methods for Drinking Water - Nephelometric Method
Measurement - Turbidity	Standards Methods for the Examination of Water and Wastewater, 24th Edition, 2023 2130-B
<b>Groundwater</b>	
Sampling	QWI-MM/03 Issue A, mod.2 Based on: NCh411 / 11: 2022 Water quality - Sampling - Part 11: Groundwater sampling guide ISO 5667-1:2023 Water quality — Sampling — Part 1: Guidance on the design of sampling programmes and sampling techniques NCh411 / 3.Of 2014 Water quality - Sampling - Part 3: Guidance on the preservation and handling of samples
Measurement - Conductivity	Standards Methods for the Examination of Water and Wastewater, 24th Edition, 2023 2510-B
Measurement - Phreatic Level measurement	ASTM D4750-2001 Standard Test Method for Determining Subsurface Liquid Levels in a Borehole or Monitoring Well
Measurement - Dissolved oxygen	Standards Methods for the Examination of Water and Wastewater, 24th Edition, 2023 4500-O G
Measurement - pH	Standards Methods for the Examination of Water and Wastewater, 24th Edition, 2023 4500 H + B
Measurement - Redox Potential (ORP)	Standards Methods for the Examination of Water and Wastewater, 24th Edition, 2023, 2580 B
Measurement - Salinity	Standards Methods for the Examination of Water and Wastewater, 24th Edition, 2023, 2520 B
Measurement - Temperature	Standards Methods for the Examination of Water and Wastewater, 24th Edition, 2023 2550 B
Measurement - Total Dissolved Solids (TDS)	QWI-MM/09 Issue A, mod.1 Based on: Manufacturer's Manual - YSI / Hanna / HACH Multiparameter Equipment
Measurement - Turbidity	Standards Methods for the Examination of Water and Wastewater, 24th Edition, 2023 2130-B
<b>Aquatic Sediment (From rivers and estuarine areas)</b>	
Sampling	QWI-MM/35 Issue A, mod.2 Based on:
Measurement – pH	ISO 5667-12:2017 Water quality -- Sampling-- Part 12: Guidance on sampling of bottom sediments from rivers, lakes and estuarine areas
Measurement – Redox Potential (ORP)	Standards Methods for the Examination of Water and Wastewater, 24 <sup>th</sup> Edition, 2023, 10500 B
Measurement - Temperature	R.E. 1917/2023 modifies resolution No. 3612 of 2009, which established the methodologies to prepare the CPS and the INFA, to be applied to small-scale aquaculture farmers, in accordance with article 21 of D.S. N°45 of

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Fields and Range of Inspections	Regulations, Inspection Methods, Standards and/or Specifications)
	2021, from the Ministry of Economy, Development and Tourism Manufacturers Manual of Multiparameter
<b>Marine Sediment</b>	
Sampling	QWI-MM/35 Issue A, mod.2 Based on:
Measurement - pH	NCh411 / 19: 2017 Water quality - Sampling - Part 19: Guide for sampling marine sediments
Measurement - Redox Potential (ORP)	Standard Methods for the Examination of Water and Wastewater, 24 <sup>th</sup> Edition, 2023, 10500 B
Measurement - Temperature	R.E 1917/2023 modifies resolution No. 3612 of 2009, which established the methodologies to prepare the CPS and the INFA, to be applied to small-scale aquaculture farmers, in accordance with article 21 of D.S. N°45 of 2021, from the Ministry of Economy, Development and Tourism Manufacturers Manual of Multiparameter
<b>Lacustrine Sediments (From lakes, natural land manmade)</b>	
Sampling	QWI-MM/35 Issue A, mod.2 Based on:
Measurement - pH	ISO 5667-12:2017 Water quality -- Sampling-- Part 12: Guidance on sampling of bottom sediments from rivers, lakes and estuarine areas
Measurement - Redox Potential (ORP)	Standard Methods for the Examination of Water and Wastewater, 24 <sup>th</sup> Edition, 2023, 10500 B
Measurement - Temperature	R.E.1917/2023 modifies resolution No. 3612 of 2009, which established the methodologies to prepare the CPS and the INFA, to be applied to small-scale aquaculture farmers, in accordance with article 21 of D.S. N°45 of 2021, from the Ministry of Economy, Development and Tourism Manufacturers Manual of Multiparameter
<b>Sea water</b>	
Sampling	QWI-MM/04 Issue A, mod.3 Based on: ISO 5667-9:1992 Water quality -- Sampling-- Part 9: Guidance on sampling from marine waters ISO 5667-1:2023 Water quality — Sampling — Part 1: Guidance on the design of sampling programmes and sampling techniques NCh411 / 3.Of 2014 Water quality - Sampling - Part 3: Guidance on the preservation and handling of samples
Measurement - Conductivity	Standards Methods for the Examination of Water and Wastewater, 24 <sup>th</sup> Edition, 2023 2510-B
Measurement - Dissolved oxygen	Standards Methods for the Examination of Water and Wastewater, 24 <sup>th</sup> Edition, 2023 4500-O G
Measurement - pH	Standards Methods for the Examination of Water and Wastewater, 24 <sup>th</sup> Edition, 2023 4500 H + B

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Fields and Range of Inspections	Regulations, Inspection Methods, Standards and/or Specifications)
Measurement - Redox Potential (ORP)	Standards Methods for the Examination of Water and Wastewater, 24th Edition, 2023, 2580 B
Measurement - Salinity	Standards Methods for the Examination of Water and Wastewater, 24th Edition, 2023, 2520 B
Measurement - Temperature	Standards Methods for the Examination of Water and Wastewater, 24th Edition, 2023 2550 B
Measurement - Total Dissolved Solids (TDS)	QWI-MM/09 Issue A, mod.1 Based on: Manufacturer's Manual - YSI / Hanna / HACH Multiparameter Equipment
Measurement - Transparency	QWI-MM/36 Issue A Mod.2 Based on: DGA-LGOCL20 / 2009: DGA-Transparency Internal Analysis Method
Measurement - Turbidity	Standards Methods for the Examination of Water and Wastewater, 24th Edition, 2023 2130-B
<b>Sources of uptake</b>	
Sampling	QWI-MM/01 Issue A, mod.2 Based on: NCh409 / 2: 2004 Drinking water - Part 2: Sampling ISO 5667-1:2023 Water quality — Sampling — Part 1: Guidance on the design of sampling programmes and sampling techniques NCh411 / 3.Of 2014 Water quality - Sampling - Part 3: Guidance on the preservation and handling of samples
Measurement - Free residual chlorine	Standards Methods for the Examination of Water and Wastewater, 24th Edition, 2023 4500-Cl-G
Measurement - Total chlorine	Standards Methods for the Examination of Water and Wastewater, 24th Edition, 2023 4500-Cl-G
Measurement - Conductivity	Standards Methods for the Examination of Water and Wastewater, 24th Edition, 2023 2510-B
Measurement - Phreatic Level measurement	ASTM D4750-2001 Standard Test Method for Determining Subsurface Liquid Levels in a Borehole or Monitoring Well
Determination - Odor	ME-25-2024 Superintendence of Sanitary Services Manual of Test Methods for Drinking Water - Organoleptic method
Measurement - Dissolved oxygen	Standards Methods for the Examination of Water and Wastewater, 24th Edition, 2023 4500-O G
Measurement - pH	ME-29-2024 Superintendence of Sanitary Services Manual of Test Methods for Drinking Water - Electrometric method
Measurement - pH	Standards Methods for the Examination of Water and Wastewater, 24th Edition, 2023 4500 H + B
Measurement - Redox Potential (ORP)	Standards Methods for the Examination of Water and Wastewater, 24th Edition, 2023, 2580 B
Measurement - Salinity	Standards Methods for the Examination of Water and Wastewater, 24th Edition, 2023, 2520 B



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Fields and Range of Inspections	Regulations, Inspection Methods, Standards and/or Specifications)
Determination - Taste	ME-26-2024 Superintendence of Sanitary Services Manual of Test Methods for Drinking Water - Organoleptic method
Measurement - Temperature	Standards Methods for the Examination of Water and Wastewater, 24th Edition, 2023 2550 B
Measurement - Total Dissolved Solids (TDS)	QWI-MM/09 Issue A, mod.1 Based on: Manufacturer's Manual - YSI / Hanna / HACH Multiparameter Equipment
Measurement - Turbidity	ME-04-2024 Superintendence of Sanitary Services Manual of Test Methods for Drinking Water - Nephelometric Method
Measurement - Turbidity	Standards Methods for the Examination of Water and Wastewater, 24th Edition, 2023 2130-B
<b>Surface water from lakes</b>	
Sampling	QWI-MM/04 Issue A, mod.3 Based on: ISO 5667-1:2023 Water quality — Sampling — Part 1: Guidance on the design of sampling programmes and sampling techniques NCh-ISO5667/6: 2015 Water quality - Sampling - Part 6: Guide for sampling rivers and waterways
<b>Surface water from rivers and streams</b>	
Sampling	QWI-MM/04 Issue A, mod.3 Based on: ISO 5667-1:2023 Water quality — Sampling — Part 1: Guidance on the design of sampling programmes and sampling techniques NCh-ISO5667/6: 2015 Water quality - Sampling - Part 6: Guide for sampling rivers and waterways
<b>Surface water (Rivers and Streams, Lakes)</b>	
Measurement - Flow	QWI-MM / 16 Issue A, mod.1 Based on: NCh411 / 10 Of.2005 Water quality - Sampling - Part 10: Wastewater sampling - Collection and handling of samples Superintendence of Sanitary Services Operational Manual -2010 NCh3205: 2011 Wastewater Flowmeters - Requirements
Measurement - Water Level	ASTM D5413 - 93(2013) Standard Test Methods for Measurement of Water Levels in Open-Water Bodies
Measurement - Conductivity	Standards Methods for the Examination of Water and Wastewater, 24th Edition, 2023 2510-B
Measurement - Dissolved oxygen	Standards Methods for the Examination of Water and Wastewater, 24th Edition, 2023 4500-O G
Measurement - pH	Standards Methods for the Examination of Water and Wastewater, 24th Edition, 2023 4500 H + B

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Fields and Range of Inspections	Regulations, Inspection Methods, Standards and/or Specifications)
Measurement - Redox Potential (ORP)	Standards Methods for the Examination of Water and Wastewater, 24th Edition, 2023, 2580 B
Measurement - Salinity	Standards Methods for the Examination of Water and Wastewater, 24th Edition, 2023, 2520 B
Measurement - Temperature	Standards Methods for the Examination of Water and Wastewater, 24th Edition, 2023 2550 B
Measurement - Total Dissolved Solids (TDS)	QWI-MM/09 Issue A, mod.1 Based on: Manufacturer's Manual - YSI / Hanna / HACH Multiparameter Equipment
Measurement - Transparency	QWI-MM/36 Issue A Mod.0 Based on: DGA-LGO TR1 / 2009: DGA-Transparency Internal Analysis Method
Measurement - Turbidity	Standards Methods for the Examination of Water and Wastewater, 24th Edition, 2023 2130-B
<b>Wastewater</b>	
Automatic and manual Sampling	QWI-MM/02 Issue A, mod.4 Based on: ISO 5667-1:2023 Water quality — Sampling — Part 1: Guidance on the design of sampling programmes and sampling techniques NCh411 / 3.Of 2014 Water quality - Sampling - Part 3: Guidance on the preservation and handling of samples NCh411 / 10.Of2005 Water quality - Sampling - Part 10: Wastewater sampling - Collection and handling of samples Superintendence of Sanitary Services Operational Manual-2010
Measurement - Free residual chlorine	Standards Methods for the Examination of Water and Wastewater, 24th Edition, 2023 4500-Cl-G
Measurement - Total chlorine	Standards Methods for the Examination of Water and Wastewater, 24th Edition, 2023 4500-Cl-G
Measurement - Conductivity	Standards Methods for the Examination of Water and Wastewater, 24th Edition, 2023 2510-B
Measurement - Flow measurement	QWI-MM / 16 Issue A, mod.1 Based on: NCh411 / 10 Of.2005 Water quality - Sampling - Part 10: Wastewater sampling - Collection and handling of samples Superintendence of Sanitary Services Operational Manual -2010 NCh3205: 2011 Wastewater Flowmeters - Requirements
Measurement - Dissolved oxygen	Standards Methods for the Examination of Water and Wastewater, 24th Edition, 2023 4500-O G
Measurement - pH	NCh2313/1:2021 Wastewater - Methods of Analysis - Part 1: Determination of pH
Measurement - pH	Standards Methods for the Examination of Water and Wastewater, 24th Edition, 2023 4500 H + B

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Fields and Range of Inspections	Regulations, Inspection Methods, Standards and/or Specifications)
Measurement - Redox Potential (ORP)	Standards Methods for the Examination of Water and Wastewater, 24th Edition, 2023, 2580 B
Measurement - Salinity	Standards Methods for the Examination of Water and Wastewater, 24th Edition, 2023, 2520 B
Measurement - Settling Solids	NCh2313 / 4.Of95 Waste water - Methods of analysis - Part 4: Determination of settleable solids - Volumetric method
Measurement - Settling Solids	Standards Methods for the Examination of Water and Wastewater, 24th Edition, 2023, 2540 F
Measurement - Temperature	NCh2313 / 2.Of95 Wastewater - Analysis Methods - Part 2: Temperature Determination
Measurement - Temperature	Standards Methods for the Examination of Water and Wastewater, 24th Edition, 2023 2550 B
Measurement - Total Dissolved Solids (TDS)	QWI-MM/09 Issue A, mod.1 Based on: Manufacturer's Manual - YSI / Hanna / HACH Multiparameter Equipment
Measurement - Turbidity	Standards Methods for the Examination of Water and Wastewater, 24th Edition, 2023 2130-B
<b>Water for industrial purposes</b>	
Automatic and manual Sampling	QWI-MM/02 Issue A, mod.4 Based on: ISO 5667-1:2023 Water quality — Sampling — Part 1: Guidance on the design of sampling programmes and sampling techniques NCh411 / 3.Of 2014 Water quality - Sampling - Part 3: Guidance on the preservation and handling of samples NCh411 / 10.Of2005 Water quality - Sampling - Part 10: Wastewater sampling - Collection and handling of samples Superintendence of Sanitary Services Operational Manual -2010
Measurement - Free residual chlorine	Standards Methods for the Examination of Water and Wastewater, 24th Edition, 2023 4500-Cl-G
Measurement - Total chlorine	Standards Methods for the Examination of Water and Wastewater, 24th Edition, 2023 4500-Cl-G
Measurement - Conductivity	Standards Methods for the Examination of Water and Wastewater, 24th Edition, 2023 2510-B
Measurement - Flow	QWI-MM / 16 Issue A, mod.1 Based on: NCh411 / 10 Of.2005 Water quality - Sampling - Part 10: Wastewater sampling - Collection and handling of samples Superintendence of Sanitary Services Operational Manual -2010 NCh3205: 2011 Wastewater Flowmeters - Requirements
Measurement - Phreatic Level	ASTM D4750-2001 Standard Test Method for Determining Subsurface Liquid Levels in a Borehole or Monitoring Well



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Measurement - Dissolved oxygen	Standards Methods for the Examination of Water and Wastewater, 24th Edition, 2023 4500-O G
Measurement - pH	Standards Methods for the Examination of Water and Wastewater, 24th Edition, 2023 4500 H + B
Measurement - Redox Potential (ORP)	Standards Methods for the Examination of Water and Wastewater, 24th Edition, 2023, 2580 B
Measurement - Salinity	Standards Methods for the Examination of Water and Wastewater, 24th Edition, 2023, 2520 B
Measurement - Temperature	Standards Methods for the Examination of Water and Wastewater, 24th Edition, 2023 2550 B
Total Dissolved Solids (TDS)	QWI-MM/09 Issue A, mod.1 Based on: Manufacturer's Manual - YSI / Hanna / HACH Multiparameter Equipment
Measurement - Turbidity	Standards Methods for the Examination of Water and Wastewater, 24th Edition, 2023 2130-B
<b>Sludge</b>	
Sampling	QWI-MM / 05 Issue A Mod.5 QWI-MM / 13 Issue A Mod.3 Based on: ISO 5667-13:2011 Water quality -- Sampling-- Part 13: Guidance on sampling of sludges
<b>Soils</b>	
Sampling	QWI-MM / 05 Issue A Mod.5 QWI-MM / 13 Issue A Mod.3 Based on: NCh3400 / 1: 2016 Soil quality - Sampling - Part 1: Guidelines for the design of sampling programs NCh3400 / 2: 2016 Soil quality - Sampling - Part 2: Guidelines on sampling techniques
<b>Solid Waste, Dangerous Solid Waste and Industrial Solid Waste</b>	
Sampling	QWI-MM/05 Issue A Mod.5 QWI-MM/13 Issue A Mod.3 QWI-MM/33 Issue A Mod.2 Based on: Technical guide for sampling of hazardous waste, MINSAL DS N ° 148/2004 MINSAL Health Regulations on Hazardous Waste Management EPA SW-846 Hazardous Waste Test Methods Compendium (On-line) ASTM D6009-2018 Standard Guide for Sampling Waste Piles EPA 530-D-02-002 RCRA Waste Sampling Draft Technical Guidance
<b>Breatheable Particulate Matter (PM10) on environmental and personal filters</b>	

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Fields and Range of Inspections	Regulations, Inspection Methods, Standards and/or Specifications)
Sampling (continuous and discrete)	QWI-MM/24 Issue A, mod.1 Based on: EPA/625/R-96/010a IO-2.1 Sampling of ambient air for total suspended Particulate matter (SPM) and PM10 using High volume (HV) sampler EPA/625/R-96/010a IO-2.3 Sampling of ambient air for PM10 concentration using the Rupprecht and Patashnick (R&P) low volume Partisol® sampler
<b>Breatheable Particulate Matter (PM2.5) on environmental and personal filters</b>	
Sampling (continuous and discrete)	QWI-MM/23 Issue A, mod.1 Based on: EPA/625/R-96/010a IO-2.1 Sampling of ambient air for total suspended Particulate matter (SPM) and PM10 using High volume (HV) sampler EPA/625/R-96/010a IO-2.3 Sampling of ambient air for PM10 concentration using the Rupprecht and Patashnick (R&P) low volume Partisol® sampler
<b>Settleable Particulate Matter on environmental filters</b>	
Sampling (continuous and discrete)	QWI-MM/25 Issue A, mod.1 Based on: ASTM D1739 - 98(2017) Standard Test Method for Collection and Measurement of Dustfall (Settleable Particulate Matter)