SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

ALGORITMOS Y MEDICIONES AMBIENTALES SPA
Seminario 180/184/188
Santiago, CHILE
Viviana Zúñiga Mosqueira Phone: (562) 23616618
Email:Viviana.zuniga@ALSGlobal.com

ENVIRONMENTAL

Valid To: March 31, 2027 Certificate Number: 4235.01

In recognition of the successful completion of the A2LA evaluation process, including an evaluation of the organization's compliance with The NELAC Institute's National Environmental Field Activities Program (NEFAP) Field Sampling and Measurement Organization Volume 1 Standard (TNI FSMO V1 2014 Rev 2.0), accreditation is granted to this organization to perform recognized methods using the following testing technologies and in the analyte categories identified below:

FSMO Type:
Commercial, Public and Private Water System, Public and Private Wastewater System, Industrial

Mobile Units: Trucks

Water Sampling:

Matrices	Technologies	Procedures(s)
Drinking Water, Drinking Fountains	Grab Sampling, Automatic Samplers, Flow Monitoring	NCh 409/2 2004 Drinking Water Part 2 – Sampling; NCh ISO 5667/1 2017 Water quality – Sampling Guidance on theDesign of Sampling Programmes and Sampling Techniques; NCh 411/3 2014 Guide on the Preservation and Handling of Samples
Water for Industrial Purposes	Grab Sampling	P-1001, Ed.01 Technical Procedure for Water Sampling
Superficial Water, Underground Water, Marine Waters	Grab Sampling, Automatic Samplers, Flow Monitoring	NCh ISO 5667/1 2017 Water quality – Sampling Guidance on the Design of Sampling Programmes and Sampling Techniques; NCh 411/3 2014 Guide on the Preservation and Handling of Samples; NCh 411/4 1997 Guide for the Sampling of Natural and Artificial Lakes; NCh 411/9 1997 Guide for the Sampling of Marine Waters; NCh 411/11 1998 Guide for the Sampling of Underground Water; NCh-ISO 5667/6 2015 Guide for the Sampling of Rivers and Water Courses

Matrices	Technologies	Procedures(s)
Wastewater	Grab Sampling, Automatic Samplers, Flow Monitoring, Temperature Monitoring,	NCh ISO 5667/1 2017 Water quality – Guidance on the Designof Sampling Programmes and Sampling Techniques; NCh 411/3 2014 Guide on the Preservation and Handling of Samples; NCh 411/10 2005 Guide for the Sampling of Wastewaters; NCh 3205 2011 Flowmeters of Wastewater Requirements

Solids and Sediments Sampling:

Matrices	Technologies	Procedures(s)
Soil	Grab Sampling	P-1002 Ed.00 Technical Procedure for Soil Sampling based on NCh 3400/1:2016 Soil Quality; Guidelines for the Design of Sampling Programs and NCh 3400/2:2016 Soil Quality: Guidelines on Sampling Techniques
Sludge	Grab Sampling	I-1021 Ed.00, Operational Instruction Sludge and Compost Sampling
Compost	Grab Sampling	I-1021 Ed.00, Operational Instruction Sludge and Compost Sampling
Aquatic Sediments,Marine Sediments, Lake Sediments	Grab Sampling	P-1007 Ed.00, Technical Procedure for Sediments Sampling and Measuring
Solid Industrial Waste, Solid Waste, Dangerous Waste	Grab Sampling	P-1009 Ed.00, Technical Procedure for Solid Waste, Solid Industrial Waste, and Dangerous Waste Sampling

Water Measurements: Drinking Water, Drinking Fountains, Seawater, Superficial Water, Wastewater, and Underground Water

Parameter/Analyte[1]	Technology	Procedure(s)
Alkalinity – Superficial Water, Underground Water, Wastewater, Drinking Water, Seawater	Photometry	I-1022 Ed.00, Operational Instruction Alkalinity Measurement
Dissolved Oxygen in Water Supply Sources, Wastewater,Superficial Water, Underground Water, Seawater, Drinking Water, Water for Industrial Purposes	Electrochemical	Standard Methods for Examination of Water and Wastewater, 4500-O G. Ed. 24, 2023
Dissolved Oxygen in Superficial Water, Underground Water, Seawater, Drinking Water, Water for Industrial Purposes, Water Supply Sources	Optical	Standard Methods for Examination of Water and Wastewater, 4500-O H. Ed. 24, 2023

Parameter/Analyte[1]	**Technology**	**Procedure(s)**
Electrical Conductivity in Drinking Water, Water Supply Sources, Wastewater, Superficial Water, Underground Water, Seawater, Water for Industrial Purposes	Electrode Cell Probe	Standard Methods for Examination of Water and Wastewater, 2510 B. Ed. 24, 2023
Floating Matter and Unnatural Foams – Superficial Water, Underground Water, Wastewater,Drinking Water, Seawater, Water for Industrial Purposes, Water Supply Sources	Visual Method	I-1017 Ed.00, Operational Instruction Sampling Fats and Oils, Determination of Floating Matter and unnatural foams
Floating fats and oils in Superficial water, underground water, wastewater, drinking water, seawater, water for industrial purposes and Drinking Fountains.	Visual Method	
Oxidation – Reduction Potential (ORP) – Superficial water, Underground Water, Wastewater,and drinking water	Electrode cell probe	Standard Methods for Examination of Water and Wastewater 2580. B. Ed. 24, 2023
Oxidation – Reduction Potential (ORP) – Aquatic sediments, Marine sediments, Lake sediments	Electrode cell probe	P-1007 Ed.00, Technical Procedure for SedimentsSampling and Measuring
Oxidation–Reduction Potential – Seawater	Electrode cell probe	I-1006 Ed.00, Operational Instruction Seawater sampling
pH in Drinking Water, Water Supply Sources, Wastewater,Superficial water, seawater, and Underground Water	Potentiometric	Standard Methods for Examination of Water and Wastewater 4500 H+B. Ed. 24, 2023
pH in seawater	Electrometric	I-1006 Ed.00, Operational Instruction for Seawatersampling
pH Online in Wastewater, Superficial Water, and Underground Water	Potentiometric	I-1004 Ed.00, Operational Instruction Residual Water Sampling
pH in Wastewater	Potentiometric	NCh2313/1 2021, pH Determination.
Residual Free Chlorine in Drinking Water, Drinking Fountains, Wastewater, Superficial Water, seawater, water for industrial purposes and Underground Water	Colorimetric	Standard Methods for Examination of Water andWastewater 4500 Cl G DPD. Ed. 24, 2023
Total Chlorine in Drinking Water, Drinking Fountains, Wastewater, Superficial Water, seawater, water for industrial purposes and Underground Water	Colorimetric	Standard Methods for Examination of Water and Wastewater, 4500 Cl G. Ed. 24, 2023

Parameter/Analyte[1]	**Technology**	**Procedure(s)**
Temperature in Superficial water, Underground water, Seawater, Wastewater, Drinking Fountains, drinking water, and Water for industrial purposes	Thermistor	Standard Methods for Examination of Water and Wastewater 2550 B. Ed. 24, 2023
Temperature Online in Wastewater, Superficial Water, and Underground Water	Thermistor	I-1004 Ed.00, Operational Instruction Residual Water Sampling
Temperature – Wastewater	Thermistor	NCh2313/2. Of95, Temperature Determination
Salinity – Superficial water, Underground water, drinking water, Wastewater, and Seawater	Electrode cell probe	I-1020 Ed.00, Operational Instruction Salinity Measuring
Settleable solids – Wastewater	Decanting	I-1019 Ed.00, Operational Instruction Settleable solids Measuring
Total dissolved solids – Superficial water, Underground water, Seawater, Wastewater, drinking water, Water for industrial purposes, and Water supply sources	Electrode cell probe	I-1018 Ed.00, Operational Instruction Total dissolved solids Measuring
Total Suspended Solids – Superficial water, Underground water, Wastewater, Seawater, drinkingwater, Water for industrial purposes, and Water supply sources	Optical	I-1010 Ed.00, Measurement of Total Suspended Solids
Total Suspended Solids – Seawater	Electrochemistry	I-1006 Ed.00, Operational Instruction Seawater sampling
Transparency – Superficial water, Underground water, Wastewater, drinking water,Seawater, Water for industrial purposes, and Water supply. sources	Secchi disk method	I-1016 Ed.00, Operational Instruction Use of Secchi disk
Turbidity - Superficial water, Underground water, Wastewater, drinking water, Seawater, water for industrial purposes, and Water supply sources	Nephelometric	I-1011 Ed.00, Measurement of Turbidity on Field
Water Flow - Superficial water, Underground water, Seawater, drinking water, Water for industrial purposes, Water supply sources, and wastewater	Velocity-Area method	ASTM D 3858 – 95(2014) Standard test method for Open-Channel flow measurement of Water by velocity-Area Method
Water flow – Wastewater	Ultrasonic	NCh 3205/2011, flow meters in wastewater
Water Table level – Underground water and Water for industrial purposes	Longitudinal	ASTM D 4750 – 87(2001) Standard test Method for determining subsurface liquid levels in borehole or monitoring well
Water level – Superficial water	Longitudinal	ASTM D5413 – 93(2013) Standard Test Methods for Measurement of Water Levels in Open-Water Bodies
Water level – Superficial water	Pressure	ASTM D5413 – 93(2013) Standard Test Methods for Measurement of Water Levels in Open-Water Bodies

Parameter/Analyte[1]	Technology	Procedure(s)
Water Table Level - Underground water and Water forindustrial purposes	Longitudinal	I-1003 Ed.01, Operational Instruction GroundwaterSampling

Solids and Sediments Measurements: Soils, sludges, sediments, composts

Parameter/Analyte[†]	Technology	Procedure(s)
pH – Aquatic sediments, Marine sediments, and Lake sediments	Potentiometric	P-1007 Ed.00, Technical Procedure for SedimentsSampling and Measuring
Temperature – Aquatic sediments, Marine sediments, and Lake sediments	Thermistor	P-1007 Ed.00, Technical Procedure for Sediments Sampling and Measuring

Air Emissions Sampling:

Matrices[1]	Parameter/Analyte	Methods
Particulate Matter	Particulate Material	CH-5 Method Rev.3, 2020 based on EPA 5
Particulate Matter	Particulate Matter	EPA 5:2020
Gases	Ammonia	EPA CTM 27, 1997
Gases	Determination of COV Emissions from Stationary Sources (Gas Chromatography)	CH-18 Method Rev.1, 1998 based on EPA 18
Gases	Determination of COV Emissions from Stationary Sources (Gas Chromatography)	EPA 18:2019
Particulate Matter	Determination of Particulate Matter in Stationary Sources (without heating)	EPA 17, 2017
Gases	Formaldehyde Sampling and Analysis in Mineral, Wool, and Fiberglass industries	EPA 316, 2020
Gases	Hydrogen Halide, Halogen Emissions: Total Bromine, Hydrogen Bromide, TotalChlorine, Hydrogen Chloride, Hydrogen Fluoride	CH-26A Method Rev.1, 2010 based on EPA26A
Gases	Hydrogen Halide, Halogen Emissions: Total Bromine, Hydrogen Bromide, Total Chlorine, Hydrogen Chloride, Hydrogen Fluoride	EPA 26A:2019
Gases – Particulate Matter	Metals: Al, Sb, As, Ba, Be, Cd, Zn, Co, Cu, Cr, P, Mn, Hg, Ni, Ag, Pb, Se, Tl, Te, V, Zr	CH-29 Method Rev.1, 2010 based on EPA29.
Gases – Particular Matter	Metals: Al, Sb, As, Ba, Be, Cd, Zn, Co, Cu, Cr, P, Mn, Hg, Ni, Ag, Pb, Se, Tl, Te, V, Zr	EPA 29:2017
Particulate Matter	PM10 and PM2.5	EPA 201A, 2020
Particulate Matter	Condensable Particulate Matter	EPA 202, 2017
Gases – Particulate Matter	Polychlorinated Dibenzene-p-dioxins, Polychlorinated Dibenzofurans	CH-23 Method Rev.1, 2010 based on EPA23

Matrices[1]	Parameter/Analyte	Methods
Gases – Particulate Matter	Polychlorinated Dibenzene-p-dioxins, Polychlorinated Dibenzofurans	EPA 23:2023
Gases	Sulfuric Acid, Sulfur Dioxide, SulfurTrioxide Acid	EPA 8, 2019
Gases	Total Reduced Sulfur Emissions (TRS) with Impinger: Sulfur Dioxide, Carbon Disulfide, Methyl Disulfide, Methyl Mercaptan, Carbonyl Sulfide, DimethylSulfide, Hydrogen Sulfide	EPA 16A, 2017
Gases – Particulate Matter	Total Sulfur	Method I-5039 Ed.00, Based on EPA 8 and EPA 16A
Gases	Total Reduced Sulfur Emissions (TRS): Sulfur Dioxide, Methyl Disulfide, Methylmercaptan, Dimethyl Sulfide, Hydrogen Sulfide	EPA 16B, 2020

Air Sampling:

Matrices[1]	Parameter	Methods
Air Quality	Air Quality – Odor	NCh 3386:2015, Static Sampling by Olfactometry, Based on VDI 3880-2011-10

Air Emissions Measurement:

Matrices[1]	Parameter/Analyte	Methods
Gases	Carbon Monoxide	CH-10 Method Rev.1, 1998 based on EPA 10
Gases	Carbon Monoxide	EPA 10:2017
Gases	Determination of COV Concentration (Flame Ionization)	CH-25A Method Rev.1, 1998 based on EPA 25A
Gases	Determination of COV Concentration (Flame Ionization)	EPA 25A:2017
Gases – Particulate Matter	Determination of Flow Velocity and Volumetric Flow in Chimney Gases	CH-2 Method Rev.1, 1996 based on EPA 2
Gases – Particulate Matter	Determination of Flow Velocity and Volumetric Flow in Chimney Gases	EPA 2:2017
Gases – Particulate Matter	Determination of Gas Velocity and Volumetric Flow Rate in Small Stacks or Ducts (Standard Pitot Tube)	CH-2C Method Rev.1, 1996 based on EPA 2C
Gases – Particulate Matter	Determination of Gas Velocity and Volumetric Flow Rate in Small Stacks or Ducts (Standard Pitot Tube)	EPA 2C:2017
Gases – Particulate Matter	Determination of Humidity Content in Chimney Gases	CH-4 Method Rev.1, 1996 based on EPA 4
Gases – Particulate Matter	Determination of Humidity Content in Chimney Gases	EPA 4:2020
Gases – Particulate Matter	Direct Measurement of Gas Volume through Pipes and Small Ducts	CH-2A Method Rev.1, 1996 based on EPA 2.

Matrices[1]	Parameter/Analyte	Methods
Gases – Particulate Matter	Direct Measurement of Gas Volume through Pipes and Small Ducts	EPA 2A:2017
Gases – Particulate Matter	Gas Analysis for Determining Correction Factor of Emission Velocity or Air Excess	CH-3B Method Rev.1, 1996 based on EPA 3B
Gases – Particulate Matter	Gas Analysis for Determining Correction Factor of Emission Velocity or Air Excess	EPA 3B:2017
Gases – Particulate Matter	Gas Analysis for Dry Molecular Weight Determination	CH-3 Method Rev.1, 1996 based on EPA 3
Gases – Particulate Matter	Gas Analysis for Dry Molecular Weight Determination	EPA 3:2017
Gases – Particulate Matter	Measurement of Gas Volume Flow Rates in Small Pipes and Ducts	CH-2D Method Rev.1, 1996 based on EPA 2D
Gases – Particulate Matter	Measurement of Gas Volume Flow Rates in Small Pipes and Ducts	EPA 2D:2017
Gases	Nitrogen Oxides with Instrument Analyzer	CH-7E Method Rev.1, 1998 based on EPA 7E
Gases	Nitrogen Oxides with Instrument Analyzer	EPA 7E:2020
Gases – Particulate Matter	Oxygen, Carbon Dioxide, Carbon Monoxide	CH-3A Method Rev.1, 1996 based on EPA3A
Gases – Particulate Matter	Oxygen, Carbon Dioxide, Carbon Monoxide	EPA 3A:2017
Gases – Particulate Matter	Sample and Velocity Traverses (Sampling Point Identification) for Stationary Sources	CH-1 Method Rev.1, 1996 based on EPA1
Gases – Particulate Matter	Sample and Velocity Traverses (Sampling Point Identification) for Stationary Sources	EPA 1:2020
Gases – Particulate Matter	Sample and Velocity Traverses (Sampling Point Identification) for Stationary Sources with Small Stacks or Ducts	CH-1A Method Rev.1, 1996 based on EPA1A
Gases – Particulate Matter	Sample and Velocity Traverses (Sampling Point Identification) for Stationary Sources with Small Stacks or Ducts	EPA 1A:2017
Gases	Sulfur Dioxide, with Instrument Analyzer	CH-6C Method Rev.1, 1996 based on EPA 6C
Gases	Sulfur Dioxide, with Instrument Analyzer	EPA 6C:2017

MECHANICAL

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this organization to perform recognized methods using the following test methods identified below:

Test[1]	Method
Noise Measurement, Sound Pressure Level Corrected (NPC)	DS N°38/11 MMA
Noise Measurement, Equivalent Sound Pressure Level (LEQ)	P-9011 Ed.00 (Technical Procedure for Measuring Noise Generated by Sources not Regulated by DS 38/11 MMA)

[1] This Laboratory performs field testing activities for these test methods.

Accredited Laboratory

A2LA has accredited

ALGORITMOS Y MEDICIONES AMBIENTALES SPA

Santiago, CHILE

for technical competence in the field of

Environmental Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories*. This laboratory also meets the requirements of A2LA *R219 – Specific Requirements – TNI Field Sampling and Measurement Organization Accreditation Program*. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (*refer to joint ISO-ILAC-IAF Communiqué dated April 2017*).

Presented this 1st day of September 2025.

Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 4235.01
Valid to March 31, 2027

For the tests to which this accreditation applies, please refer to the laboratory's Environmental Scope of Accreditation.