



CERTIFICATE OF ACCREDITATION

This is to attest that

NAKAMURA CONSULTORES S.A.C.

JR ARTURO CASTILLO 2425
LIMA 09001, PERU

Testing Laboratory TL-1221

has met the requirements of AC89, *IAS Accreditation Criteria for Testing Laboratories*, and has demonstrated compliance with ISO/IEC Standard 17025:2017, *General requirements for the competence of testing and calibration laboratories*. This organization is accredited to provide the services specified in the scope of accreditation.

Effective Date March 4, 2025



International Accreditation Service
Issued under the authority of IAS management

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Accredited to ISO/IEC 17025:2017

Effective Date March 4, 2025

FIELDS OF TESTING	MATERIAL/ MATRIX	DETERMINANT(S)/ ANALYTE(S)	METHOD REFERENCE
Environmental – Physical	Waste water	VOLUMETRIC FLOW RATE	NCh3205-2011 /Wastewater flow meters - First edition requirements /2011
	Natural water, surface water, process water, saline water	Volumetric Flow Rate	NCh3205-2011 validated (applied out of scope) /Wastewater flow meters - First edition requirements /2022
	Natural water, waste water, superficial Water	Flow (Field: Current Meter, Float)	UNE-EN ISO 748:2023 /Hydrometry. Measurement of liquid flow in open channels using flow meters or floats /2009
	Air / Indoor Air	Non-Ionizing Electromagnetic Radiation	IEEE STD. 644.2019 /IEEE Standard for Measurement of Power Frequency Electric and Magnetic Fields from AC Power Lines. /2019
	Environmental vibration	Ambient Vibration	DIN 4150-3; DIN 4150-2; DIN 4150-1 /Effects on structures, Part 2: Effects on persons in buildings, Part 1: Prediction of vibration parameters /2008
Environmental Chemistry – Air	Air	Meteorological Parameters (Atmospheric Pressure, Temperature, Relative Humidity, Precipitation, Solar Radiation)	EPA-454/B-08-002 March 2008 (VALIDATED) /Quality Assurance Handbook for Air Pollution Measurement Systems. Volume IV: Meteorological Measurements Version 2.0 (Final) /2008
		H ₂ S	COVENIN 3571:2000 (VALIDATED - Applied out of scope) /H ₂ S-Determination of the concentration of hydrogen sulfide (H ₂ S) in air quality. /2023

TL-1221

NAKAMURA CONSULTORES S.A.C.

Effective Date March 4, 2025

Page 2 of 8

IAS/TL-Food/101-3



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Environmental Chemistry – Air (cont'd.)	Air (cont'd.)	SO ₂	EPA CFR 40. Appendix A-2 to part 50 /SO ₂ -Reference method for the determination of sulfur dioxide in the atmosphere (pararosaniline method) /2023
		CO	Peter O. Warner. Analysis of Air Pollutants, Spanish Ed. 1981. Chap. 3, Pages 121-122. Validated (modified) /CO Determination of Carbon Monoxide in Air Quality (CO). /2023
		NO ₂	ASTM D1607-91 Revised 2005 /NO ₂ Standard Test Method for Nitrogen Dioxide Content of the Atmosphere (Griess-Saltzman Reaction) /2018
		O ₃	James P. Lodge JR Third Edition 1988, Part II 400 - Method 411, Pages 403, 404, 405 and 406. (VALIDATED) /O ₃ -Methods of Air Sampling and Analysis. Inorganic Nitrogen Compounds and Oxidants. Determination of Oxidizing Substances in the Atmosphere /2023
Environmental Chemistry - Electrometric	Natural water, waste water, water for human use and consumption, saline water	Ammoniacal Nitrogen	SMEWW-APHA-AWWA-WEF Part 4500-NH ₃ D 24th Ed. 2023 /Nitrogen (Ammonia). Ammonia-Selective Electrode Method /2023
	Natural water, waste water, water for human use and consumption, saline water	Sulfate	SMEWW-APHA-AWWA-WEF Part 4500-SO ₄ 2- E, 24th Ed. 2023 /Sulfate. Turbidimetric Method /2023
Environmental Chemistry – Emission	Emissions	Transverse Sampling Points for Velocity Measurement in Stationary Sources	NTP 900.001:2021 /Monitoring Of Atmospheric Emissions. Determination of transverse sampling points for velocity measurement in stationary sources. 2nd Edition /2021

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Environmental Chemistry – Emission (cont'd.)	Emissions (cont'd.)	Velocity and Volumetric Flow	NTP 900.002:2021 /Monitoring Of Atmospheric Emissions. Determination of velocity and volumetric flow in chimney gases (Pitot tube type S). 2nd Edition /2021
		CO ₂ and O ₂ Concentrations and Molecular Weight On a Dry Basis	NTP 900.003:2021 /Monitoring of Atmospheric Emissions. Gas analysis for the determination of molecular weight on a dry basis. 2nd Edition /2021
		Humidity	NTP 900.004:2021 /Monitoring of Atmospheric Emissions. Determination of moisture content in chimney gases. 2nd Edition /2021
		Carbon Monoxide (CO)	NTP 900.010:2021 /Monitoring of Atmospheric Emissions. Determination of carbon monoxide emissions in stationary sources. Instrumental analyzer procedure. 2nd Edition /2021
		Oxygen (O ₂) and Carbon Dioxide (CO ₂) In Emissions From Stationary Sources Using a Continuous Instrumental Analyzer	NTP 712.111:2021 /Monitoring of Atmospheric Emissions. Determination of oxygen and carbon dioxide concentrations in emissions from stationary sources. Instrumental analyzer procedure. 1st Edition /2021
		Hydrogen Sulfide, Total Hydrocarbons, Carbon Dioxide	CTM 034: 1999/ CTM 030:1997 (Validated Method out of scope) / Test Method - Determination of Oxygen, Carbon Monoxide and Oxides of Nitrogen For Periodic Monitoring. Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen Emissions from Natural Gas-Fired Engines, Boilers and Process Heaters Using Portable Analyzers /2023

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Environmental Chemistry – Emission (cont'd.)	Emissions (cont'd.)	Metal Sampling From Stationary Sources (Antimony, Arsenic, Barium, Beryllium, Cadmium, Cobalt, Copper, Chromium, Iron, Manganese, Mercury, Nickel, Lead, Silver, Phosphorus, Selenium, Tin, Titanium, Thallium, Aluminum, Vanadium y Zinc.)	NTP 712.110:2022 /Monitoring of Atmospheric Emissions. Determination of metal emissions in stationary sources. 1st Edition /2022
		Metals In Emissions by ICP-MS (Tin, Titanium, Vanadium)	NTP 712.110:2022 (Validated out of scope) /Monitoring of Atmospheric Emissions. Determination of metal emissions in stationary sources. 1st E /2022
		Metals in Emissions by ICP-MS (Antimony, Arsenic, Barium, Beryllium, Cadmium, Cobalt, Copper, Chromium, Iron, Manganese, Mercury, Nickel, Lead, Silver, Phosphorus, Selenium, Tin, Titanium, Thallium, Aluminum, Zinc)	EPA CFR Title 40, Appendix A-8 to Part 60, Method 29 /Determination of Metal Emissions from Stationary Sources /2017
		Metals In Emissions by ICP-MS (Vanadium)	EPA CFR Title 40, Appendix A-8 to Part 60, Method 29 (Validated) /Determination of Metal Emissions from Stationary Sources /2023
		Hydrogen Sulfide H ₂ S	EPA16A /Method 16A— Determination of Total Reduced Sulfur Emissions From Stationary Sources (Impinger Technique) /2022
		Volatile Organic Compounds	NTP 900.018 /Monitoring of Atmospheric Emissions. Measurement of emissions of gaseous organic compounds by gas chromatography. 2nd Edition /2021

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Environmental Chemistry – Emission (cont'd.)	Emissions (cont'd.)	Sulfuric Acid, Sulfur Trioxide, Sulfur Dioxide	EPA 8 /Method 8 Determination of Sulfuric Acid and Sulfur Dioxide Emissions From Stationary Sources /2019
		Total Organic Compound	EPA 25A /Method 25A - Determination of Total Organic Gases Concentration Using a Flame Ionization Analyzer /2017
		Hydrogen Chloride (HCL)	EPA 26A /Method 26A - Determination of Hydrogen Halide and Halogen Emissions From Stationary Sources Isokinetic Method /2019
		Hydrogen Fluoride (FCL)	EPA 26A /Method 26A - Determination of Hydrogen Halide and Halogen Emissions From Stationary Sources Isokinetic Method /2019
		Chlorine	EPA 26A /Method 26A - Determination of Hydrogen Halide and Halogen Emissions From Stationary Sources Isokinetic Method /2019
		Formaldehyde	EPA 323 /Method of formaldehyde emissions from natural gas stationary sources: acetyl acetone derivatization method /2023
		Ammonia	CTM-027 /Procedure For Collection and Analysis of Ammonia in Stationary Sources /1997
		Hydrogen Sulfide, Carbonyl Sulfide (COS), Carbon Disulfide (CS2)	NTP 900.015:2021 /Monitoring of Atmospheric Emissions. Determination of hydrogen sulfide, carbonyl sulfide and carbon disulfide in stationary sources. 2nd Edition /2021
		Total Gaseous Organic Compounds Other Than Methane (TGNMO)	EPA 25 /Method 25— Determination of Total Gaseous Nonmethane Organic Emissions as Carbon /2023
		Cems CO	Method Ch 10 /Determination of Carbon Monoxide Emissions From Stationary Sources. /1998

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Environmental Chemistry – Emission (cont'd.)	Emissions (cont'd.)	Cems NOX	NTP 712.120:2022 /Monitoring of Atmospheric Emissions. Determination of nitrogen oxide emissions in stationary sources. Instrumental analyzer procedure. 1st Edition /2022
		Cems SO ₂	NTP 712.117:2022 /Monitoring of Atmospheric Emissions. Determination of sulfur dioxide emissions from stationary sources. Instrumental analyzer procedure. 1st Edition /2022
		Cems Particulate Matter	NTP 900.005:2021 (Validated out of scope) /Environmental Management. Atmospheric emissions. Determination of particulate matter emissions from stationary sources /2023
		Determination of Gas Velocity and Volumetric Flow Rate In Chimneys or Small Ducts (Standard Pitot Tube)	NTP 712.112:2022 /Monitoring of Atmospheric Emissions. Determination of gas velocity and volumetric flow rate in chimneys or small ducts (Standard Pitot Tube). 1st Edition /2022
		Particles	VDI 4206 Blatt 2:2015-02. (Validated out of scope) /Performance criteria and test procedures for measuring devices for monitoring emissions in small combustion plants - Measuring devices for determining particulate emissions /2023
Environmental Chemistry - Spectrophotometry	Natural water, waste water, water for human use and consumption, saline water	Total Cyanide	SMEWW-APHA-AWWA-WEF Part 4500-CN-CE 24th Ed. 2023 / Cyanide Total Cyanide after Distillation Colorimetric Method /2023
		Hexavalent Chromium	SMEWW-APHA-AWWA-WEF Part 3500-Cr-B 24th Ed. 2023 /Chromium. Colorimetric Method /2023

TL-1221

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Page 7 of 8

IAS/TL-Food/101-3



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Environmental Chemistry - Spectrophotometry (cont'd.)	Natural water, waste water, water for human use and consumption, saline water (cont'd.)	Sulfide	SMEWW-APHA-AWWA-WEF Part 4500-S2-, D, 24th Ed. 2023 /Sulfide. Methylene Blue Method. /2023
Environmental Chemistry - Volumetry	Natural water, waste water, water for human use and consumption, saline water	Total Alkalinity	SMEWW-APHA-AWWA-WEF Part 2320-B 24th Ed. 2023 /Alkalinity - Titration method /2023
		Acidity	SMEWW-APHA-AWWA-WEF Part 2310-B. 24th Ed. 2023 /Acidity - Titration method /2023
		Total Hardness	SMEWW-APHA-AWWA-WEF Part 2340-EDTA-C. 24th Ed. 2023 /Hardness-EDTA Titrimetric Method /2023
Occupational - Physical	Occupational noise during working day	Occupational Noise	NTP-ISO 9612: 2010. (2020 Revision). /Acoustics. Determination of exposure to occupational noise. Engineering method. /2010