



CERTIFICATE OF ACCREDITATION

This is to attest that

METRICA ANALITICA

JIRON CLORINDA MATTO DE TURNER 2079
LIMA 07001, REPUBLIC OF PERU

Calibration Laboratory CL-247

has met the requirements of AC204, *IAS Accreditation Criteria for Calibration 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 November 10, 2021

Expiration Date December 1, 2022



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

President

IAS is an ILAC MRA Signatory

Visit www.iasonline.org for current accreditation information.

SCOPE OF ACCREDITATION

International Accreditation Service, Inc.

3060 Saturn Street, Suite 100, Brea, California 92821, U.S.A. | www.iasonline.org

METRICA ANALITICA

Contact Name Flor Mallma

Contact Phone +51-14256885

Accredited to ISO/IEC 17025:2017

Effective Date November 10, 2021

CALIBRATION AND MEASUREMENT CAPABILITY (CMC)*

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY ^{1,2} (±)	CALIBRATION PROCEDURE AND/OR STANDARD EQUIPMENT USED
Mechanical			
Particle Samplers: Mini Low Volume Low Volume (Low-Vol) Occupational Health	0.10 L/min to 22 L/min	0.032 L/min	PLV-004 Procedure for the calibration of low volume particulate matter sampling equipment and rotameters, version 00 of 2019
Rotameters	0.1 L/min to 22 L/min	0.0027 L/min	
High volume particulate matter samplers (HI-Vol)	0.9 m ³ /min to 1.8 m ³ /min	0.03 m ³ /min	PLV-002 Procedure for the calibration of high-volume particulate matter sampling equipment, version 00 of 2020
Thermal			
Thermometer Sensor/Probe	5.0 °C to 70.0 °C	0.08 °C	Procedure for the calibration of digital thermometers Ed. 2, Dec. 2012, PC-017 DM-INACAL
Chemical/Gas			
Potentiometric pH Meters	4 pH 7 pH 10 pH	0.02 pH 0.02 pH 0.04 pH	PC-020 Procedure for the calibration of pH meters, DM-INACAL 2nd edition, 2017
Conductivity Meters	100 µS/cm 147 µS/cm 1410 µS/cm 12.8 mS/cm	1.6 µS/cm 2 µS/cm 20 µS/cm 0.18 mS/cm	PC-022 Procedure for the calibration of conductivity meters, 1st edition, SNM – INACAL 2014
Turbidity Meter	20 NTU 100 NTU 500 NTU	0.21 NTU 0.9 NTU 2.7 NTU	PLV-008 Turbidimeter calibration procedure, version 00 of 2019
Colorimeter - Chlorine	0.20 mg/L to 2 mg/L 2.1 mg/L to 8 mg/L	0.06 mg/L 0.07 mg/L	PLV-007 Colorimeter calibration procedure, version 00 of 2019

* If information in this CMC is presented in non-SI units, the conversion factors stated in NIST Special Publication 811 "Guide for the Use of the International System of Units (SI)" apply.

SCOPE OF ACCREDITATION

International Accreditation Service, Inc.

3060 Saturn Street, Suite 100, Brea, California 92821, U.S.A. | www.iasonline.org

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY ^{1,2} (±)	CALIBRATION PROCEDURE AND/OR STANDARD EQUIPMENT USED
Dissolved oxygen	0 mg/L 8.3 mg/L	0.007 mg/L 0.007 mg/L	PLV-003 Procedure for the calibration of oximeters, version 00 of 2019
Gas Analyzer Equipment			PLV-001 Procedure for the calibration of gas analyzers, version 00 of 2020 (Dynamic dilution)
CO	0.15 to 50 parts in 10 ⁶	0.006 parts in 10 ⁶	
NO	0.050 to 50 parts in 10 ⁶	0.006 parts in 10 ⁶	
SO ₂	0.05 to 50 parts in 10 ⁶	0.006 parts in 10 ⁶	
NO ₂	0.05 to 12 parts in 10 ⁶	0.006 parts in 10 ⁶	
H ₂ S	0.08 to 12 parts in 10 ⁶	0.006 parts in 10 ⁶	
C ₃ H ₈	0.05 to 50 parts in 10 ⁶	0.006 parts in 10 ⁶	
CH ₄	0.005 % to 0.85 %	0.006 %	
Gas Analyzer Equipment			PLV-001 Procedure for the calibration of gas analyzers, version 00 of 2020 (Direct comparison)
CO	994.2 parts in 10 ⁶ 509.1 parts in 10 ⁶	6.7 parts in 10 ⁶ 4.4 parts in 10 ⁶	
O ₂	20.98 % 3.016 %	0.48 % 0.08 %	
CH ₄	10.05 %	0.29 %	
H ₂ S	301 parts in 10 ⁶	3.4 parts in 10 ⁶	
NO	1021 parts in 10 ⁶	8 parts in 10 ⁶	
SO ₂	1019 parts in 10 ⁶ 505.9 parts in 10 ⁶	8 parts in 10 ⁶ 5 parts in 10 ⁶	
NO ₂	198 parts in 10 ⁶	3.7 parts in 10 ⁶	
C ₃ H ₈	98.59 parts in 10 ⁶ 1013 parts in 10 ⁶	0.84 parts in 10 ⁶ 7.7 parts in 10 ⁶	
Ozone Analyzer Equipment	1.6 to 400 parts in 10 ⁹	0.18 parts in 10 ⁹	PLV-006 Procedure for the calibration of ozone analyzers

¹The uncertainty covered by the Calibration and Measurement Capability (CMC) is expressed as the expanded uncertainty having a coverage probability of approximately 95 %. It is the smallest measurement uncertainty that a laboratory can achieve within its scope of accreditation when performing calibrations of a best existing device. The

SCOPE OF ACCREDITATION

International Accreditation Service, Inc.

3060 Saturn Street, Suite 100, Brea, California 92821, U.S.A. | www.iasonline.org

measurement uncertainty reported on a calibration certificate may be greater than that provided in the CMC due to the behavior of the calibration item and other factors that may contribute to the uncertainty of a specific calibration.

²When uncertainty is stated in relative terms (such as percent, a multiplier expressed as a decimal fraction or in scientific notation), it is in relation to instrument reading or instrument output, as appropriate, unless otherwise indicated.

NTU = Nephelometric Turbidity Unit