



CERTIFICATE OF ACCREDITATION

This is to attest that

CERTIFICACIONES Y CALIDAD SAC – CERTIFICAL SAC

AV ANTONIO DE SUCRE 1361
LIMA 15086, PERU

Testing Laboratory TL-911

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.

Expiry Date April 1, 2025

Effective Date June 17, 2024



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CERTIFICACIONES Y CALIDAD SAC – CERTIFICAL SAC

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Accredited to ISO/IEC 17025:2017

Effective Date June 17, 2024

| FIELDS OF TESTING | MATERIAL/MATRIX | DETERMINANT(S)/ANALYTE(S) | METHOD REFERENCE |
|-------------------------------|---------------------------------|-----------------------------------|--|
| ENVIRONMENTAL – AIR | Weighing Filter-Analysis | Determination PM-2.5 - Low Volume | CERTIFICAL-LAB-01. EPA CFR 40 Appendix L to Part 50, 2006. Filter Weight, Determination PM-2.5 - Low Volume (Validated for Sample Weighing). Does not include sampling |
| | | Determination PM-10 - Low Volume | CERTIFICAL-LAB-02. EPA Compendium Method IO-2.3, 1999, Item 7. Filter Weight, Determination PM-10 - Low Volume. Compendium of Method for the Determination of Inorganic compounds in ambient air (Validated for Sample Weighing). Does not include sampling. |
| ENVIRONMENTAL – AIR EMISSIONS | Emissions (Sampling & Analysis) | CO | CTM 030 Research Institute Method GRI96/0008, Revision 7, October 13, 1997. CO, Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen Emissions from Natural Gas-Fired Engines, Boilers and Process Heaters Using Portable Analyzers. |
| | | NO | |
| | | NO ₂ | |
| | | O ₂ | |
| | | CO | CTM 034: Test Method. September 1999. CO, Determination of Oxygen, Carbon Monoxide and Oxides of Nitrogen from Stationary Sources For Periodic Monitoring (Portable Electrochemical Analyzer Procedure) |
| | | NO | |
| | | NO ₂ | |
| | | O ₂ | |
| | | NO | CTM-022 WPF Technical Support Division, OAQPS, EPA 5/ 1995. NO, Determination of Nitric Oxide, |
| | | NO ₂ | |
| NO _x | | | |

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|--|--|--|--|
| ENVIRONMENTAL – AIR EMISSIONS (cont'd) | Emissions (Sampling & Analysis) (cont'd) | | Nitrogen Dioxide and NOx Emissions From Stationary Combustion Sources by Electrochemical Analyzer. |
| | | H ₂ S | CERTIFICAL-LAB-09. H ₂ S in Gaseous Emission, Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen emissions from Natural Gas-Fired Engines, Boilers and Process Heaters Using Portable Analyzers (VALIDATED - Applied out of reach)- CTM 030 Research Institute Method GRI96/0008, Revision 7, October 13, 1997 |
| | | Particulate Material | NTP 900.005: 2021. ATMOSPHERIC EMISSIONS MONITORING. Determination of particulate matter emissions from stationary sources. 2° Ed. |
| | | SO ₂ | EPA CFR 40, Part 60, Appendix A. Method 6C Determination of Sulfur Dioxide Emissions From Stationary Sources (Instrumental Analyzer Procedure) |
| | | TRS (Dimethyl disulfide, Dimethyl sulfide, Hydrogen Sulfide, Methyl mercaptan, Carbonyl Sulfide) | EPA Method 16A (8/3/2017). TRS as Sulfur Dioxide (SO ₂), Determination of Total Reduced Sulfur (TRS) Emissions From Stationary Sources (Impinger Technique) |
| ENVIRONMENTAL AIR STATIONARY AND AMBIENT AIR MONITORING | Capture Solutions (Sampling & Analysis) | Carbon monoxide (CO) | CERTIFICAL-LAB-05. Determination of carbon monoxide (CO). Analysis of Air Pollutants -Peter O. Warner Validated (modified). |
| | | Hydrogen Sulfide (H ₂ S) | CERTIFICAL-LAB-04. Determination of the concentration of Hydrogen Sulfide (H ₂ S) in the atmosphere. Referenced in the COVENIN 3571: 2000 standard. Validated (out of scope) |

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|---|---|---|--|
| ENVIRONMENTAL AIR STATIONARY AND AMBIENT AIR MONITORING (cont'd) | Air (Sampling & Analysis) | Metals in Filter PM 10 High Volume (As) | CERTIFICAL-LAB-07. Metals Filter PM 10 High Volume As (VALIDATED) Determination Of Metals In Ambient Particulate Matter Using Atomic Absorption (Aa) Spectroscopy - Compendium Method IO-3.2. |
| | | Metals in Filter PM 10 High Volume (Cd, Cu, Ni, Pb, Zn) | Compendium Method IO-3.2. June 1999. Metals Filter PM 10 High Volume - Cd, Cu, Ni, Pb, Zn, Determination Of Metals In Ambient Particulate Matter Using Atomic Absorption (Aa) Spectroscopy |
| | | Metals in Filter PM 10 High Volume (Hg) | CERTIFICAL-LAB-08. Metals Filter PM 10 High Volume Hg (VALIDATED) Determination Of Metals In Ambient Particulate Matter Using Atomic Absorption (Aa) Spectroscopy - Compendium Method IO-3.2 |
| | | Meteorological parameters: Wind speed, wind direction environmental temperature, relative humidity, atmospheric pressure (wind rose), precipitation | ASTM D5741-96(2017). Standard Practice for Characterizing Surface Wind Using a Wind Vane and Rotating Anemometer; Meteorological Parameters: Environmental temperature, Relative humidity, Atmospheric pressure, Wind speed, Direction of the wind, Precipitation. |
| | | Hydrogen Sulfide (H ₂ S) | CYC OP 001-2021. Determination of Hydrogen Sulfide in Air using Automatic Equipment (UV Fluorescence Method). (Validated). |
| | Capture Solutions (Sampling & Analysis) | Nitrogen dioxide NO ₂ | ASTM D1607-91, (Reapproved 2018). Standard Test Method for Nitrogen Dioxide Content of the Atmosphere (Griess- Saltzman Reaction) |

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|--|---------------------------|---|---|
| ENVIRONMENTAL AIR STATIONARY AND AMBIENT AIR MONITORING (cont'd) | | Ozone (O ₃) | CERTIFICAL-LAB-06. Ozone determination (O ₃). Methods Of Air Sampling And Analysis-411 (validated). |
| | Air (Sampling & Analysis) | Non-Ionizing radiation (Magnetic Field Intensity, electric Field intensity and Magnetic Flux Density) | IEEE 644:2019. Standard Procedures for Measurement of Power Frequency Electric and Magnetic Fields from AC Power Lines; Non-ionizing Radiation (Magnetic Field Intensity, electric Field intensity and Magnetic Flux Density) |
| | Air (Sampling & Analysis) | Particulate Material - PM 2.5 (High Volume) | CERTIFICAL-LAB-03.EPA CFR 40. Appendix J to part 50, 7-1-11 Edition. Particulate Material - PM 2.5 (High Volume), Reference Method for the Determination of Particulate Matter as PM 10 in the Atmosphere (VALIDATED - applied out of reach). |
| | | Particulate Material - PM 2.5 (Low Volume) | EPA CFR 40 Appendix L to Part 50. Particulate Material - PM 2.5 (Low Volume), Reference Method for the Determination of Fine Particulate Matter as PM2.5 in the Atmosphere. |
| | | PM10 Particulate Material (High Volume) | EPA IO-2.1, 1999. PM10 Particulate Material (High Volume), Sampling of Ambient Air for Total Suspended Particulate Matter (SPM) and PM10 Using High Volume (HV) Sampler. |
| | | PM10 Particulate Material (Low Volume) | EPA IO-2.3, 1999. Sampling of Ambient Air for PM10 Concentration Using the Rupprecht and Patashnick (R&P) Low Volume Partisol® Sampler. |

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| ENVIRONMENTAL AIR STATIONARY AND AMBIENT AIR MONITORING (cont'd) | Capture Solutions (Sampling & Analysis) | Sulfur Dioxide | EPA 40 CFR Part 50, Appendix A-2; 2010. EPA 40 CFR Part 50, Appendix A-2; 2010 Method for the Determination of Sulfur Dioxide in the atmosphere (Pasarosanine Method). |
| | | Total gaseous Mercury | NTP 900.068: 2016/COR 1: 2017. Standard method for the determination of Total gaseous Mercury |
| ENVIRONMENTAL FIELD TESTING | Natural Water, Wastewater, Water for Use and Human Consumption, Saline Water (Sampling & Analysis) | Conductivity (Field) | SMEWW-APHA-AWWA-WEF Part 2510 B, 24th Ed. Conductivity. Laboratory Method. |
| | | Dissolved Oxygen (Field) | SMEWW-APHA-AWWA-WEF Part 4500-O H, 24th Ed. Oxygen (Dissolved). Optical - Probe Method. |
| | | Flow (Field) | UNE-EN ISO 748:2023 (Flow Meters). Measurement of liquid flow in open channels - Velocity area methods using point velocity measurements (ISO 748:2021) |
| | | Salinity (Field) | SMEWW-APHA-AWWA-WEF Part 2520 B, 24th Ed. Salinity. Electrical Conductivity Method. |
| | Natural Water, Water for Use and Human Consumption, Saline Water (Sampling & Analysis) | Floating Materials of Anthropogenic Origin (Field) | NMX – AA -006 -SCFI -2010. Floating Materials of Anthropogenic Origin |
| | Natural Water, Wastewater, Water for Use and Human Consumption. (Sampling & Analysis) | Flow (Field) | CYC OP 002. 2022 (EPA 841-B97-003) Volumetric flow rate determination for low and high flow rates. (Validated). |
| | Natural Water, Residual Water, Water for Use and Human Consumption, Process Water (Sampling & Analysis) | Free Residual Chlorine (Field) | SMEWW-APHA-AWWA-WEF Part 4500-CI G, 24th Ed. Chlorine (Residual). DPD Colorimetric Method. |
| Total Chlorine (Field) | | SMEWW-APHA-AWWA-WEF Part 4500-CI G, 24th Ed. Chlorine (Residual). DPD Colorimetric Method. | |

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|---|-------------------------------------|--|--|
| ENVIRONMENTAL FIELD TESTING (cont'd) | Wastewater (Sampling & Analysis) | Settling Solids (Field) | SMEWW-APHA-AWWA-WEF Part 2540 F, 24th Ed. Solids. Settleable Solids. |
| | Natural water (Sampling & Analysis) | Oils and grease (visible film) | CYC OP 005 (NMX-AA-006-SCFI-2010) Year 2023 (Validated) |
| | Saline Water (Sampling & Analysis) | | |
| | Air (Sampling & Analysis) | Hydrocarbons | EPA CTM 030. (Revision 7. 1997) Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen Emissions from Natural Gas-Fired Engines, Boilers and Process Heaters Using Portable Analyzers / EPA CTM 022(1995) Determination of Nitric Oxide, nitrogen dioxide and NOx emissions from stationary combustion sources by electrochemical analyzer – VALIDATED (applied out of scope) |
| | Environment (Sampling & Analysis) | Environmental temperature | ASTM D6176-97 (Validated) Year 2023 Standard Practice for Measuring Surface Atmospheric Temperature with Electrical Resistance Temperature Sensors |
| | Saline water (Sampling & Analysis) | Transparency | CYC OP 003 (EPA 841-B-97-003 Volunteer Stream Monitoring A Methods Manual) Year (Validated) |
| | Sediments (Sampling & Analysis) | Odor | CYC OP 004 (SM-2150-B, 24th, Ed. 2017) 2023 (Validated) |
| ENVIRONMENTAL HYDROBIOLOGY | Natural Water (Sampling & Analysis) | Free-living Organisms (Algae) | SMEWW-APHA-AWWA-WEF Part 10200 C 1.2, F.2, c.1, 24th Ed. Plankton. Concentration Techniques. Phytoplankton Counting Techniques. |
| | | Free-living Organisms (Protozoa, Copepods, Rotifers) | SMEWW-APHA-AWWA-WEF Part 10200 C 1.2, F.2, c.1, G, 24th Ed. Plankton. Concentration Techniques. Zooplankton Counting Techniques. |

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|--|---|--|---|
| ENVIRONMENTAL HYDROBIOLOGY (cont'd) | Natural Water (Sampling & Analysis) (cont'd) | Quantitative Analysis of Periphyton | SMEWW-APHA-AWWA-WEF Part 10300 C (1 y 2), 24th Ed. Periphyton. Sample Analysis. |
| | | Quantitative Analysis of Phytoplankton | SMEWW-APHA-AWWA-WEF Part 10200 C.2, F.2, c.1, 24th Ed. Plankton. Concentration Techniques. Phytoplankton Counting Techniques. |
| | | Quantitative Analysis of Zooplankton | SMEWW-APHA-AWWA-WEF Part 10200 C.2, G, 24th Ed. Plankton. Concentration Techniques. Zooplankton Counting Techniques. |
| | Natural water (Sampling & Analysis) | Helminth Eggs and Larvae | CYC HB 003.2023. (Validated method) |
| | Water for human use and consumption (Sampling & Analysis) | | |
| | Residual water (Sampling & Analysis) | | |
| | Natural water (Sampling & Analysis) | Cysts and Oocysts of Pathogenic Protozoa | CYC HB 001.2022. (Validated method) |
| | Water for human use and consumption (Sampling & Analysis) | | |
| | Natural water (Sampling & Analysis) | Free-living organisms (Nematodes in all their evolutionary states) | SMEWW-APHA-AWWA-WEF Part. 10200 C.1.2, F.2,c.1, G,24th Ed. 2023. Plankton. Concentration Techniques. Zooplankton Counting Techniques. |
| | Water for human use and consumption (Sampling & Analysis) | | |
| | Natural water (Sampling & Analysis) | Parasitic Forms (Cryptosporidium sp. and Cyclospora sp.) | CYC HB 002.2022. (Validated method) |
| | Water for human use and consumption (Sampling & Analysis) | | |
| ENVIRONMENTAL INORGANICS | Natural Water, Saline Water (Sampling & Analysis) | Chlorophyll A | SMEWW-APHA-AWWA-WEF Part 10150 A2. B, 24th Ed. Spectrophotometric Determination of Chlorophyll A. |
| | | Settling Solids | SMEWW-APHA-AWWA-WEF Part 2540 F, 24th Ed. Solids. Settleable Solids. |

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|--|---|----------------------------|---|
| ENVIRONMENTAL INORGANICS (cont'd) | Natural Water, Wastewater, Water for Use and Human Consumption, Saline Water (Sampling & Analysis) | Color | SMEWW-APHA-AWWA-WEF Part 2120 C, 24th Ed. Color. Spectrophotometric-Single-Wavelength Method (Proposed). |
| | Natural Water, Residual Water, Water for Use and Human Consumption, Process Water (Sampling & Analysis) | Cyanide Wad | SMEWW-APHA-AWWA-WEF Part 4500-CN-I, 24th Ed. Weak Acid Dissociable Cyanide. |
| | | Free Cyanide | CERTIFICAL-LAB-10 (SMEWW-APHA-AWWA-WEF Part 4500-CN-E, 24th Ed. / EPA 335.4 / ASTM D7237-15a) (Validated) |
| | | Phenols | EPA Method 9065. September 1986 |
| | | Total Cyanide Colorimetric | SMEWW-APHA-AWWA-WEF Part 4500-CN-C, E 24th Ed. Cyanide. Total Cyanide after Distillation |
| | Natural Water, Wastewater, Water for Use and Human Consumption, Saline Water (Sampling & Analysis) | Detergents | SMEWW-APHA-AWWA-WEF Part 5540 C, 24th Ed. Surfactants. Anionic Surfactants as MBAS. |
| | Water for Use and Human Consumption (Sampling & Analysis) | Flavor | SMEWW-APHA-AWWA-WEF Part 2160 C, 24th Ed. Flavor Rating Assessment (FRA). |
| | Natural Water, Water for Use and Human Consumption, Saline Water (Sampling & Analysis) | Fluoride | SMEWW-APHA-AWWA-WEF Part 4500-F - C, 24th Ed. Fluoride. Ion-Selective Electrode Method. |
| | Saline Water (Sampling & Analysis) | Nitrates | SMEWW-APHA-AWWA-WEF. Part 4500-NO3 - E. 24th Ed. Nitrogen (Nitrate). Cadmium Reduction Method. |
| | | Nitrites | SMEWW-APHA-AWWA-WEF. Part 4500-NO2 - B, 24th Ed., 2023. Nitrogen (Nitrite). Colorimetric Method |
| | | Total Hardness | SMEWW-APHA-AWWA-WEF. Part 2340 C, 24th Ed. Hardness. EDTA Titrimetric Method. |

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| ENVIRONMENTAL INORGANICS (cont'd) | | Total Phosphorus | SMEWW-APHA-AWWA-WEF. Part 4500-P E, 24th Ed. Phosphorus. Ascorbic Acid Method. |
| | Natural Water, Water for Use and Human Consumption (Sampling & Analysis) | Odor | ISO 4121:2003. Sensory analysis - Guidelines for the use of quantitative response scale. |
| | Soils, Sediments, Sludges (Sampling & Analysis) | Chromium VI | EPA Method 3060 A Rev. 1. 1996 // EPA Method 7196 A. Rev 1. 1992. Alkaline Digestion for Hexavalent Chromium // Chromium, Hexavalent (Colorimetric) |
| | Soils, Sediments (Sampling & Analysis) | Color | NOM-021-SEMARNAT-2000. Specifications of fertility, salinity and soil classification, study, sampling and analysis (2nd. Section) 7.3.5 (AS-22) (Validated) |
| | | Organic Material | UNE-EN 15935:2021 Soil, waste, treated biowaste and sludge - Determination of loss on ignition (September 2021) |
| | | Texture | UNE-EN ISO 17892-4. Part 4: Determination of particle size distribution. September 2019 |
| | Soils (Sampling & Analysis) | Free Cyanide | EPA Method 9013 A Rev. 2. 2014 // SMEWW-APHA-AWWA-WEF Part 4500-CN- F, 24th Ed. Cyanide extraction procedure for solids and oils // Cyanide. Cyanide-Selective Electrode Method. |
| | Sediments (Sampling & Analysis) | Granulometry | UNE-EN ISO 17892-4. Part 4: Determination of particle size distribution. September 2019 |
| | | Sulfides | EPA Method 9030 B Rev. 2. 1996 // EPA Method 9034 Rev.0 1996 . Acid-Soluble and Acid- Insoluble Sulfides: Distillation // Titrimetric Procedure for Acid- Soluble and Acid Insoluble Sulfides |

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| ENVIRONMENTAL INORGANICS (cont'd) | Natural water (Sampling & Analysis) | Metals: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cesium, Chromium, Cobalt, Copper, Tin, Strontium, Gallium, Germanium, Iron, Indium, Lithium, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Silver, Lead, Selenium, Silicon, Sodium, Thallium, Tellurium, Titanium, Thorium, Uranium, Vanadium, Zinc. | SMEWW-APHA-AWWA-WEF. Part 3030 K, 24th Ed 2023. Preliminary Treatment of Samples. Microwave-Assisted Digestion. // SMEWW-APHA-AWWA-WEF. Part 3125 B, 24th Ed. 2023. Metals by Inductively Coupled Plasma-Mass Spectrometry. Inductively Coupled Plasma-Mass Spectrometry (ICP-MS) Method. |
| | | VALIDATED: Cerium, Scandium, Phosphorus, Hafnium, Ytterbium, Yttrium, Lanthanum, Lutetium, Niobium, Terbium, Zirconium, Sulfur | |
| | Saline Water (Sampling & Analysis) | Metals: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cesium, Chromium, Cobalt, Copper, Tin, Strontium, Gallium, Germanium, Iron, Indium, Lithium, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Silver, Lead, Selenium, Silicon, Sodium, Thallium, Tellurium, Titanium, Thorium, Uranium, Vanadium, Zinc. | |
| | | VALIDATED: Phosphorus, Sulfur | |
| | Residual water (Sampling & Analysis) | Metals: Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lithium, Magnesium, Manganese, | |
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| ENVIRONMENTAL INORGANICS (cont'd) | | Mercury, Molybdenum, Nickel, Potassium, Silver, Lead, Selenium, Silicon, Sodium, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc. | SMEWW-APHA-AWWA-WEF. Part 3030 K, 24th Ed 2023. Preliminary Treatment of Samples. Microwave-Assisted Digestion. // SMEWW-APHA-AWWA-WEF. Part 3125 B, 24th Ed. 2023. Metals by Inductively Coupled Plasma-Mass Spectrometry. |
| | Water for Human Use and Consumption (Sampling & Analysis) | Metals: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cesium, Chromium, Cobalt, Copper, Tin, Strontium, Gallium, Germanium, Iron, Indium, Lithium, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Silver, Lead, Selenium, Silicon, Sodium, Thallium, Tellurium, Titanium, Thorium, Uranium, Vanadium, Zinc. | Inductively Coupled Plasma-Mass Spectrometry (ICP-MS) Method. (cont'd) |
| | | VALIDATED: Cerium, Scandium, Phosphorus, Hafnium, Ytterbium, Yttrium, Lanthanum, Lutetium, Niobium, Terbium, Zirconium, Sulfur | |
| | Natural water (Sampling & Analysis) | Metals: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cesium, Chromium, Cobalt, Copper, Tin, Strontium, Gallium, Germanium, Iron, Indium, Lithium, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Silver, Lead, Selenium, Silicon, Sodium, Thallium, Tellurium, Titanium, Thorium, Uranium, Vanadium, Zinc. | SMEWW-APHA-AWWA-WEF. Part 3030 B, K, 24th Ed 2023. Preliminary Treatment of Samples. Filtration for Dissolved and Suspended Metals. Microwave-Assisted Digestion. // SMEWW-APHA-AWWA-WEF. Part 3125 B, 24th Ed. 2023. Metals by Inductively Coupled Plasma-Mass Spectrometry. |
| | | VALIDATED: Cerium, Scandium, Phosphorus, Hafnium, Ytterbium, | Inductively Coupled Plasma-Mass Spectrometry (ICP-MS) Method. |

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| ENVIRONMENTAL INORGANICS (cont'd) | | Yttrium, Lanthanum, Lutetium, Niobium, Terbium, Zirconium, Sulfur | SMEWW-APHA-AWWA-WEF. Part 3030 B, K, 24th Ed 2023. Preliminary Treatment of Samples. Filtration for Dissolved and Suspended Metals. Microwave-Assisted Digestion. // SMEWW-APHA-AWWA-WEF. Part 3125 B, 24th Ed. 2023. Metals by Inductively Coupled Plasma-Mass Spectrometry. Inductively Coupled Plasma-Mass Spectrometry (ICP-MS) Method. (cont'd) |
| | Saline Water (Sampling & Analysis) | Metals: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cesium, Chromium, Cobalt, Copper, Tin, Strontium, Gallium, Germanium, Iron, Indium, Lithium, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Silver, Lead, Selenium, Silicon, Sodium, Thallium, Tellurium, Titanium, Thorium, Uranium, Vanadium, Zinc. VALIDATED: Phosphorus, Sulfur | |
| | Residual water (Sampling & Analysis) | Metals: Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lithium, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Silver, Lead, Selenium, Silicon, Sodium, Strontium, Thallium, Tin, Titanium, Uranium, Vanadium, Zinc. | |
| | Water for Human Use and Consumption (Sampling & Analysis) | Metals: Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Cesium, Chromium, Cobalt, Copper, Tin, Strontium, Gallium, Germanium, Iron, Indium, Lithium, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Silver, Lead, Selenium, Silicon, Sodium, Thallium, | |

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|-----------------------------------|---------------------------------|--|--|
| ENVIRONMENTAL INORGANICS (cont'd) | | Tellurium, Titanium, Thorium, Uranium, Vanadium, Zinc. VALIDATED: Cerium, Scandium, Phosphorus, Hafnium, Ytterbium, Yttrium, Lanthanum, Lutetium, Niobium, Terbium, Zirconium, Sulfur | |
| | Sludge (Sampling & Analysis) | Metals: Aluminum, Antimony, Arsenic, Boron, Barium, Beryllium, Calcium, Cadmium, Cobalt, Chromium, Copper, Strontium, Phosphorus, Iron, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Lead, Potassium, Sodium, Selenium, Thallium, Vanadium, Zinc. | EPA Method 3051 A. Revision 1. February 2007. Microwave Assisted Acid Digestion of Sediments, Sludges, Soils, and Oils // EPA Method 6020 B. Revision 2. July 2014. Inductively Coupled Plasma—Mass Spectrometry |
| | Soils (Sampling & Analysis) | Metals: Aluminum, Antimony, Arsenic, Boron, Barium, Beryllium, Calcium, Cadmium, Cobalt, Chromium, Copper, Strontium, Phosphorus, Iron, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Lead, Potassium, Sodium, Selenium, Thallium, Vanadium, Zinc. | |
| | Sediments (Sampling & Analysis) | Metals: Aluminum, Antimony, Arsenic, Boron, Barium, Beryllium, Calcium, Cadmium, Cobalt, Chromium, Copper, Strontium, Phosphorus, Iron, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Lead, Potassium, Sodium, Selenium, Thallium, Vanadium, Zinc. VALIDATED: Phosphorus | |

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| FIELDS OF TESTING | MATERIAL/MATRIX | DETERMINANT(S)/ANALYTE(S) | METHOD REFERENCE |
|---|------------------------------------|---|--|
| ENVIRONMENTAL INORGANICS (cont'd) | Air (Sampling & Analysis) | Metals in PM 2.5/ PM 10 High Volume Filters | EPA Compendium Method IO-3.1 Selection, Preparation and Extraction of Filter Material // EPA Compendium Method IO 3.5 Determination of Metals in Ambient Particulate Matter Using Inductively Coupled Plasma/Mass Spectrometry |
| | | Metals: Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Cobalt, Chromium, Copper, Manganese, Molybdenum, Nickel, Silver, Lead, Selenium, Thallium, Thorium, Uranium, Vanadium, Zinc. | |
| | Filters | Metals in PM 2.5 / PM 10 High Volume Filters | EPA Compendium Method IO-3.1 Selection, Preparation and Extraction of Filter Material // EPA Compendium Method IO 3.5 Determination of Metals in Ambient Particulate Matter Using Inductively Coupled Plasma/Mass Spectrometry |
| | | Metals: Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Cobalt, Chromium, Copper, Manganese, Molybdenum, Nickel, Silver, Lead, Selenium, Thallium, Thorium, Uranium, Vanadium, Zinc. | |
| | Saline Water (Sampling & Analysis) | Chlorides | SMEWW-APHA-AWWA-WEF. Part 4500-Cl-B, 24th Ed. 2023. Chloride. Argentometric Method. |
| | Saline water (Sampling & Analysis) | Sulfide | SMEWW-APHA-AWWA-WEF. Part 4500-S ²⁻ D, 24th Ed. 2023. Sulfide. Methylene Blue Method. |
| | Saline Water (Sampling & Analysis) | Sulfates | SMEWW-APHA-AWWA-WEF. Part 4500-SO ₄ ²⁻ E, 24th Ed. 2023. Sulfate. Turbidimetric Method. |
| Water for Human Use and Consumption (Sampling & Analysis) | Chemical Oxygen Demand | SMEWW-APHA-AWWA-WEF. Part 5220-D, 24th Ed. 2023. Chemical Oxygen Demand (COD). Closet Reflux, Colorimetric Method. | |
| Saline Water (Sampling & Analysis) | | | |

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| FIELDS OF TESTING | MATERIAL/MATRIX | DETERMINANT(S)/ANALYTE(S) | METHOD REFERENCE |
|--|--|---------------------------|--|
| ENVIRONMENTAL INORGANICS (cont'd) | Natural water (Sampling & Analysis) | Total Nitrogen | SMEWW-APHA-AWWA-WEF. Part 4500-NC, 24th Ed. 2023. Nitrogen. Persulfate Method |
| | Saline Water (Sampling & Analysis) | | |
| | Residual water (Sampling & Analysis) | | |
| | Water for Human Use and Consumption (Sampling & Analysis) | | |
| | Saline Water (Sampling & Analysis) | Phenols | EPA. Method 9065. Rev. 0. 1986 Phenolics (Spectrophotometric, Manual 4-AAP with distillation) |
| | Water for Human Use and Consumption (Sampling & Analysis) | Oil and grease | SMEWW-APHA-AWWA-WEF Part 5520 B, 24th Ed. 2023. Oil and Grease by Liquid-Liquid, Partition-Gravimetric Method |
| ENVIRONMENTAL MICROBIOLOGY | Sediments (Sampling & Analysis) | Thermotolerant Coliforms | SMEWW APHA AWWA WEF Part 9221 B (2) y 9221 E (1), 24th Ed. Multiple Tube Fermentation Technique for Members of the Coliform Group. Standard Total Coliform Fermentation Technique. Fecal Coliform Procedure. Thermotolerant Coliform Test (EC Medium). |
| | | Total Coliforms | SMEWW APHA AWWA WEF Part 9221 B (2-3), 24th Ed. Multiple Tube Fermentation Technique for Members of the Coliform Group. Standard Total Coliform Fermentation Technique. |
| | Natural Water (Sampling & Analysis) | Vibrio Cholerae | EPA 600/R-10/139. Standard Analytical Protocol for Vibrio cholerae O1 and O139 in Drinking Water and Surface Water. |
| | Natural Water, Water for Use and Human Consumption (Sampling & Analysis) | Viruses (Coliphages) | SMEWW APHA AWWA WEF Part 9224 B, 23th Ed., 2017. Detection of Coliphages. Somatic Coliphage Assay |
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| FIELDS OF TESTING | MATERIAL/MATRIX | DETERMINANT(S)/ANALYTE(S) | METHOD REFERENCE |
|--|---|--|---|
| ENVIRONMENTAL MICROBIOLOGY (cont'd) | Natural Water (Sampling & Analysis) | Salmonella | ISO 19250: 2010. Water quality -- Detection of Salmonella spp |
| | | Total Coliform (CFU) | SMEWW-APHA-AWWA-WEF Part 9222 B, 24th Ed. 2023. Membrane Filter Technique for Members of the Coliform Group. Standard Total Coliform Membrane Filter Procedure using Endo Media |
| | | Fecal Coliform (CFU) | SMEWW-APHA-AWWA-WEF Part 9222 D. 24th Edition. 2023. Membrane filter technique for members of the coliform group. Thermotolerant (Fecal) Coliform Membrane Filter Procedure |
| | Water for human use and consumption (Sampling & Analysis) | Escherichia coli (CFU) | SMEWW-APHA-AWWA-WEF Part 9222 H, 24th Ed. 2023. Membrane Filter Technique for Members of the Coliform Group. Partitioning E. coli from MF Total Coliform using EC-MUG Broth |
| ENVIRONMENTAL – ACOUSTIC | Environmental noise (Field measurement) | Environmental Noise | NTP-ISO 1996-1: 2020 Acoustics. Description, measurement and assessment of environmental noise. Part 1: Basic quantities and assessment procedures 2° Ed. / NTP-ISO 1996-2:2023 Acoustics. Description, measurement and assessment of environmental noise. Part 2: Determination of sound pressure levels. 3° Ed. |
| OCCUPATIONAL HEALTH | Ergonomics | Ergonomics of thermal stress in hot environments | ISO/TC 159/SC 5 Ergonomics of the physical environment / ISO 7243:2017 Thermal Stress, Ergonomic of the thermal environment – Assessment of heat stress using the WBGT (wet bulb globe temperature) index |
| | Interior Lighting | Lighting | UNE-EN 12464-1:2022. Lighting of workplaces. Part 1: Workplaces indoors |

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| FIELDS OF TESTING | MATERIAL/ MATRIX | DETERMINANT(S)/ ANALYTE(S) | METHOD REFERENCE |
|-------------------------------------|---------------------------|--|---|
| OCCUPATIONAL HEALTH (cont'd) | Noise | Occupational Noise | NTP ISO 9612:2010 (Reviewed in 2020). Acoustics. Determination of occupational noise exposure. Engineering method |
| | | Occupational Noise - Dosimetry (8 hours) | ISO 1999:2013. Acoustics. Estimation of noise-induced hearing loss. |
| | Indoor Air | Total gaseous Mercury | NIOSH Method 6009. Total Gaseous Mercury: METHOD 6009, Issue2, dated 15 August 1994 (Absorbent Tube Method (Hopcalite) -by Cold Vapor Atomic Absorption Spectrometry. |
| | Air (Sampling & Analysis) | Respirable Dust | NIOSH 0600, Issue 3: PARTICULATES NOT OTHERWISE REGULATED, BREATHABLE |
| | Air (Sampling & Analysis) | Inhalable Dust | NIOSH 0500, Issue 2: PARTICULATES NOT OTHERWISE REGULATED, TOTAL. |
| MICROBIOLOGY | Food | Commercial Sterility | NTC 4433:2015. Hermetically packaged foods; Commercial Sterility |