TESTING AND CALIBRATION LABORATORY ACCREDITATION PROGRAM (LAP)

Scope of Accreditation

La présente portée d'accréditation existe également en français et est publiée séparément.

Legal Name of Accredited Laboratory:	**Activation Laboratories Ltd.**
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SCC File Number:	15308
Accreditation Standard(s):	ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories
Fields of Testing:	Chemical/Physical Mechanical/Physical
Program Specialty Area:	Environmental Testing (ET) Forensic Mineral Analysis
Initial Accreditation:	1998-02-27
Most Recent Accreditation:	2025-11-20
Accreditation Valid to:	2030-02-27

SCC Group Accreditation:
This laboratory is a part of a Group Accreditation with the following facilities in accordance with SCC's policy on Group Accreditation documented in the Accreditation Services Accreditation Program Overview.

- File 15824 - Activation Laboratories Ltd., Thunder Bay, Ontario, Accredited Laboratory
- File 15974 - Activation Laboratories Ltd., Kamloops, British Columbia, Accredited Laboratory
- File 15986 - Activation Laboratories Ltd., Timmins, Ontario, Accredited Laboratory

ENVIRONMENTAL AND OCCUPATIONAL HEALTH AND SAFETY

Environmental:

(Mercury - Soil/Cold Vapour FIMS)

QOP Hg FIMS	Mercury Analysis by Aqua Regia Leach and Cold Vapour Atomic Absorption Spectrophotometry

(Metals - Soil/ICP - digestion)

QOP AquaGeo	Multi-Element Analysis Using Aqua Regia Extraction and Inductively Coupled Plasma Atomic Emission Spectrometry Silver Aluminum Arsenic Boron Beryllium Bismuth Calcium Cadmium Chromium Cobalt Copper Iron Gallium Mercury Potassium Lanthanum Magnesium Manganese Molybdenum Sodium Nickel Phosphorus Lead Sulfur

	Antimony Scandium Strontium Tellurium Thorium Titanium Thallium Uranium Vanadium Tungsten Yttrium Zinc Zirconium

(Metals - Soil/ICP-MS)

QOP Ultra Trace 1	Trace elements by aqua regia digestion and ICP/MS Antimony Arsenic Beryllium Cadmium Chromium Cobalt Copper Lead Nickel Zinc

Water (Inorganic)

(Alkalinity - Water/Titrimetric)

QOP Alkalinity	Titration method for the determination of alkalinity of water

(Ammonium - Water/pH/mV meter with ion selective electrode)

QOP Ammonia	Electrode method for the determination of ammonia in water

(Conductivity - Water/Conductivity meter)

QOP Conductivity	Electrode method for measuring the conductivity of water

(Hydride Metals - Water/ICP-MS)

QOP HydroGeo	Hydrogeochemistry Determination of trace elements in water by inductively Coupled Plasma Mass Spectroscopy Total Antimony Total Arsenic Total Selenium

(Ions - Water/Ion Chromatography)

QOP Anions	Determination of Inorganic anions in water by Ion Chromatography [EPA Method 300.1] Dissolved Orthophosphate Dissolved Bromide Dissolved Fluoride Dissolved Nitrate Dissolved Nitrite Dissolved Sulfate Dissolved Chloride

(Mercury - Water/Cold Vapour AA)

QOP Hg FIMS	Mercury Analysis by Aqua Regia Leach and Cold Vapour Atomic Absorption Spectrophotometry (Hg)

(Metals - Water/ICP-MS)

QOP HydroGeo	Hydrogeochemistry Determination of trace elements in water by inductively Coupled Plasma Mass Spectroscopy. Dissolved Aluminum Dissolved Barium Dissolved Beryllium Dissolved Boron Dissolved Cadmium Dissolved Calcium Dissolved Chromium Dissolved Cobalt Dissolved Copper Dissolved Iron Dissolved Lead Dissolved Magnesium Dissolved Manganese Dissolved Molybdenum Dissolved Nickel Dissolved Silver Dissolved Strontium Dissolved Thallium Dissolved Tin

	Dissolved Titanium Dissolved Uranium Dissolved Vanadium Dissolved Zinc Potassium Sodium

(Metals - Water/ICP-OES)

QOP Water	Determination of Multi-Elements in waters using inductively coupled plasma atomic emission spectrometry Dissolved Aluminum Dissolved Barium Dissolved Beryllium Dissolved Boron Dissolved Cadmium Dissolved Calcium Dissolved Chromium Dissolved Cobalt Dissolved Copper Dissolved Iron Dissolved Lead Dissolved Magnesium Dissolved Manganese Dissolved Molybdenum Dissolved Nickel Dissolved Phosphorus Dissolved Silica Dissolved Silver Dissolved Strontium Dissolved Thallium Dissolved Tin Dissolved Titanium Dissolved Uranium Dissolved Vanadium Dissolved Zinc

(pH - Water/pH meter)

QOP pH	pH Analysis of water

(Total Metals - Water/ICP-MS-digestion)

QOP HydroGeo	Hydrogeochemistry, Determination of trace elements in water by inductively Coupled Plasma Mass Spectroscopy Total Antimony Total Arsenic Total Cadmium Total Calcium Total Chromium Total Cobalt Total Copper Total Iron Total Lead Total Magnesium Total Manganese Total Nickel Total Phosphorus Total Selenium Total Vanadium Total Zinc

(Total Metals - Water/ICP-OES)

QOP Water	Determination of Multi Elements in water using inductively coupled plasma atomic emission spectrometry Total Antimony Total Arsenic Total Cadmium Total Calcium Total Chromium Total Cobalt Total Copper Total Iron Total Lead Total Magnesium Total Manganese Total Nickel Total Phosphorus Total Selenium Total Silica Total Vanadium Total Zinc

(TSS - Water/Gravimetric)

QOP TSS	Filter method for the measurement of total suspended solids in water

(Turbidity - Water/Nephelometric)

QOP Turbidity	Turbidimeter method for the measurement of turbidity of water

Occupational Health and Safety:

QOP Uranium Urine	Uranium concentration in urine by inductively coupled Plasma Mass Spectrometer

METALLIC ORES AND PRODUCTS

Articles of Metal:

(Chemical Tests)

QOP Carbon & Sulphur	Total Carbon and Sulphur Content in Metals by the Combustion Instrumental Method Only for Sulphur content
QOP ICP MET	Multi-Element Chemical Analysis of Metallic Material using (ICP-OES) for alloys of Steel, Stainless Steel, Copper, Aluminum, Nickel (Chemical analysis of metals for the following elements: Mn, P, Si, Cr, Ni, Mo, Cu, V, Al, Ti, Co, Zr, Pb, Nb, W, Mg, Fe, Sn, Sb, Cd)
QOP Carbon & Sulphur using Eltra CS 800	Analysis of Metals Bearing Ores and related materials by Combustion Infrared – Absorption Spectroscopy Carbon, sulphur

(Laboratory Corrosion Tests)

ASTM B117	Standard Practice for Operating Salt Spray (Fog) Apparatus

(Mechanical Tests)

ASTM E18	Standard Test Methods for Rockwell Hardness of Metallic Materials
ASTM E23	Standard Test Methods for Notched Bar Impact Testing of Metallic Materials
ASTM E517	Standard Test Methods for Plastic Strain Ratio r for Sheet Metal
ASTM E646	Standard Test Method for Tensile Strain-Hardening Exponents (n -Values) of Metallic Sheet Materials
ASTM E8	Standard Test Methods for Tension Testing of Metallic Materials

(Metallography)

ASTM E1077	Standard test method for estimating the depth of decarburization of steel specimens.

Metallic Ores:

Rocks and Ores
Refer to minor sub-heading: Sediments

Sediments

QOP H2O	Gravimetric Determination of H_2O- – and infrared Absorption Determination of H_2O of Soils and Rocks (Gravimetric Package 4F: H_2O+/H_2O-)
QOP Hg FIMS	Mercury Analysis by Aqua Regia Leach and Cold Vapour Atomic Absorption Spectrophotometry (Package 1G: Hg)

Mineral Analysis Testing

Contract Settlement Assaying
Refer to minor sub-heading: Geotechnical Testing

Geotechnical Testing
Refer to minor sub-heading: Mineral Assaying

Mineral Assaying

QOP 1B2 ICP-MS	Platinum Group Elements using Analysis NiS Fire Assay and ICP-MS (Ir, Ru, Rh, Pt, Pd, and by Fire Assay with ICP-MS finish)
QOP AA – Au	Procedure for analysis of Gold and/or Silver by Fire Assay with AA or Gravimetric finish
QOP AquaGeo	Multi-Element Analysis Using Aqua Regia Extraction and Inductively Coupled Plasma Atomic Emission Spectrometry for Ag, Co, Cu, Ni, Pb, Zn, Al, As, B, Be, Bi, Ca, Cd, Cr, Fe, Ga, Hg, K, La, Mg, Mn, Mo, Na, P, S, Sb, Sc, Sr, Te, Th,Ti, Tl, U, V, W, Y, Zr
QOP ASSAY	Assay Analysis Using Aqua Regia and Inductively Coupled Plasma Atomic Emission Spectrometry for Ag, Co, Cu, Ni, Pb, Zn
QOP INAAGEO	Procedures for Instrumental Neutron Activation Analysis (INAA) for Mineral Samples As, Au, Cr, Co, Sb, Sc, Sn, Ta, U (238), U (235 by DNC, Delayed Neutron Counting), W
QOP PGE ICP-MS	Platinum Group Elements Analysis using Fire Assay and Inductively Coupled Plasma Mass Spectrometry for Au, Pt, Pd
QOP Sodium Peroxide	Multi-Element Analysis using Sodium Peroxide Extraction and Inductively Couple Plasma Atomic Emission Spectrometry for Al, As, Ca, Cr, Co, Cu, Fe, K, Li, Mg, Mn, Ni, Pb, Si, S, Ti, Zn
QOP TOTAL	Multi-Element Analysis Using Hydrofluoric/HNO_3/Perchloric/HCl Acid Digestion and Inductively Coupled Plasma Atomic Emission Spectrometry for Ag, Co, Cu, Ni, Pb, Zn, Al, As, Ba, Be, Bi,Ca, Cd, Cr, Fe, Ga, Li, Mg, Mn, Mo, Na, P, S, Sb, Sc, Sr, Te, Ti, Tl, U, V, W, Y, Zr

QOP Total Assay	Total Assay Digestion using Hydrofluoric/HNO_3/Perchloric/HCl Acid and Inductively Coupled Plasma Atomic Emission Spectrometry for Ag, Co, Cu, Ni, Pb, Zn
QOP UltraTrace-1	Trace elements by aqua regia digestion and ICP/MS-for Li, Be, B, Na, Mg, Al, K, Ca V, Cr, Mn, Fe, Co, Ni, Cu, Zn, Ga, Ge, As, Se, Rb, Sr, Y, Zr, Nb, Mo, Ag, Cd, In, Sn, Sb, Te, Cs, Ba, La, Ce, Nd, Sm, Eu, Tb, Yb, Lu, Hf, Ta, W, Re, Au, Tl, Pb, Bi, Th, U
QOP WRA	Multi-Element Whole Rock Analysis - Using Multi-Element Fusion Inductively Coupled Plasma - Atomic Emission Spectrometer (Al_2O_3, CaO, Fe_2O_3, K_2O, LOI, MgO, MnO, Na_2O, $P2O_5$, SiO_2, TiO_2, Ba, Be, Sc, Sr, V, Y, Zr)
QOP WRA4B2	Whole Rock Analysis- by Fusion Method 4B2 and Inductively Coupled Plasma-Mass Spectrometer Ba, Hf, Nb, Rb, Sn, Ta, Th, U, V, Y, Zr, La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu
QOP XRF FUSION	Fusion using XRF spectrometer (Quantify analytes by X-ray Fluorescence which are fused with Lithium and reported in the oxide form - SiO_2, Al_2O_3, Fe_2O_3, MnO, MgO, CaO, Na2O, K_2O, TiO_2, P_2O_5, $Cr2O_3$, Co_3O_4, NiO, ZnO, SnO and CuO)
QOP Ultra Trace-4 Acid Digestion	Trace Element Analysis by 4-Acid Digestion and ICP/MS for Ag, Co, Cu, Ni, Pb, Zn

FORENSICS

Forensic Chemistry / Trace Evidence

Description of Technique:

QOP Ignitable Liquids	The analysis for the presence/absence of ignitable liquids in fire debris samples. By GC-MS

Number of Scope Listings: 44
Number of Forensic Techniques: 1

Notes:

RG - MINERAL: SCC Requirements and Guidance for the Accreditation of Mineral Analysis Testing Laboratories

RG - FORENSIC: SCC Requirements and Guidance for the Accreditation for Forensic Testing Laboratories

ASTM: ASTM International, formerly called American Society for Testing and Materials.

EPA: United States Environmental Protection Agency

QOP: Quality Operating Procedure (developed in-house)

This document forms part of the Certificate of Accreditation issued by the Standards Council of Canada (SCC). The original version is available in the Directory of Accredited Laboratories on the SCC website at scc-ccn.ca.

Elias Rafoul
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