



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

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CHEMICAL

Valid To: January 31, 2022

Certificate Number: 6206.04

In recognition of the successful completion of the A2LA evaluation process accreditation is granted to this laboratory to perform the following chemical tests identified on the analytes noted below:

Soil:

Analytes	Test Method(s)	Reference Method(s)
Barium in Soil by ICP-MS Extractable Barium	TM DW 007-93	Alberta Environment Soil Remediation Guidelines for Barite Modified
Boron, Hot Water Soluble (Prescriptive) Boron	TM MET 001-93	B.C. Environmental Lab Manual, Section C: Metals
BTEX/VPH in Soil & Water by GC FID/MSD Benzene Ethylbenzene m/p - Xylene Methyl tert butyl ether (MTBE) O - Xylene Styrene Toluene Volatile Hydrocarbons (C6-C10) Volatile Petroleum Hydrocarbons (C6-C10 - BTEX)	TM ORG 001-93	B.C. Environmental Lab Manual, Monocyclic Aromatic Hydrocarbons /Volatile Hydrocarbons in Solids Modified
Extractable Petroleum Hydrocarbons in Soil and Water by GC FID EPH 10-19 EPH 19-32	TM TEH 001-93	BC Environmental Lab Manual, Extractable Petroleum Hydrocarbons in Solids Modified

Analytes	Test Method(s)	Reference Method(s)
Polycyclic Aromatic Hydrocarbons in Soil and Water by GC MSD 1-Methylnaphthalene 2-Methylnaphthalene Acenaphthene Acenaphthylene Anthracene Benzo (a) anthracene Benzo (a) pyrene Benzo (b) fluoranthene Benzo (g,h,i) perylene Benzo (j) fluoranthene Benzo (b+j) fluoranthene Benzo (k) fluoranthene Chrysene Dibenzo (a,h) anthracene Fluoranthene Fluorene Indeno (1,2,3-cd) pyrene Napthalene Phenanthrene Pyrene Quinoline	TM ORG 002-93	B.C. Environmental Lab Manual, PAH Solids Modified
Soluble Barium by Calcium Chloride Extraction (Prescriptive) Extractable Barium	TM DW 007-93	B.C. Environmental Lab Manual, Section C: Metals
Strong Acid Leachable Metals (SALM) in Soil – Prescriptive Aluminum Antimony Arsenic Barium Beryllium Cadmium Chromium Cobalt Copper Iron Lead Lithium Manganese	TM MET 001-93	B.C. Environmental Lab Manual, Section C: Metals

Analytes	Test Method(s)	Reference Method(s)
Strong Acid Leachable Metals (SALM) in Soil – Prescriptive (cont.) Mercury Molybdenum Nickel Selenium Silver Strontium Thallium Tin Uranium Vanadium Zinc	TM MET 001-93	B.C. Environmental Lab Manual, Section C: Metals

Waste:

Analytes	Test Method(s)	Reference Method(s)
BTEX/VPH in Soil, Water and Solids by GC FID/MSD Benzene Ethylbenzene m/p-xylene o-xylene Toluene	TM ORG 001-93	EPA 1311, 5021A/8260C Modified
Bulk Density and Specific Gravity in Drilling Waste and Soil Bulk Density Specific Gravity	TM DW 001-93	American Society of Agronomy No.9. Method 13-2, AER Directive 050 and SSMA 57.1 Modified
Flash Point in Liquid and Soil by Pensky-Martens Closed Cup Tester Flash Point	TM LAND 007-93	ASTM D93 Modified
Fluoride in Soil and Solid Waste Extract Selective ion electrode analysis Fluoride	TM LAND 003-93	APHA 4500-F- C Ion-Selective Electrode Method Modified
Metals by ICP-MS as prepared by SWEP ICP analysis Arsenic Barium Boron Cadmium	TM LAND 012-93	Modified SWEP Hazardous Waste Regulation, Reg 63/88, Modified Leachate Extraction Procedure Modified, APHA 3120 B Modified

Analytes	Test Method(s)	Reference Method(s)
Metals by ICP-MS as prepared by SWEP ICP analysis (cont.) Chromium Copper Lead Mercury Selenium Silver Uranium Zinc		
Metals by ICP-MS as Prepared by TCLP in Liquid, Solid and Waste Samples, ICP analysis Antimony Arsenic Barium Beryllium Boron Cadmium Chromium Cobalt Copper Iron Lead Mercury Nickel Selenium Silver Thallium Uranium Vanadium Zinc Zirconium	TM LAND 013-93	EPA 1311 Toxicity Characteristic Leachate Procedure Modified
Non-metals in Water Soil and Solids by Colorimetric Discrete Analyzer Chloride Ammonia	TM INORG 002-93	APHA 4500-NH3 G, 4500-Cl E and B.C. Environmental Lab Manual, Chloride, Colorimetric, HgSCN
Non-metals in Water Soil and Solids by Spectrophotometer Chloride Ammonia	TM INORG 001-93	HACH Method 10031 and APHA 4500-Cl E

Analytes	Test Method(s)	Reference Method(s)
Non-metals in Water, Soil and Solids by Colorimetric Discrete Analyzer Cyanide Nitrate + Nitrite	TM INORG 002-93	EPA 335.4, 353.2
Non-metals in Water, Soil and Solids by Spectrophotometer Cyanide Nitrate + Nitrite	TM INORG 001-93	HACH Method 8027, 10020, 8153
Paint Filter Test Free Liquids - Waste	TM LAND 009-93	EPA 9095B Modified
pH, Electrical Conductivity, Total and Phenolphthalein Alkalinity in Water and Soil EC pH	TM INORG 003-93	MSS 4.12 and MSS 3.11 Modified
Salinity, pH and EC in Water and in Soil & Waste by Saturated Paste % Saturation Calcium EC Magnesium pH Potassium SAR Sodium Sulfate	TM DW 004-93	SSMA Ch 15, EPA 3005A Modified
Special Waste Oil Determination by Petroleum Ether Extraction Oil and Grease Dried Basis Oil as Received	TM LAND 011-93	Special Waste Regulations Act, BCMOE Determination of Waste Oil Content Modified
Toxicity Characteristic Leachate Procedure Benzene Ethylbenzene m/p-xylene o-xylene Toluene	TM ORG 001-93	EPA 1311

Analytes	Test Method(s)	Reference Method(s)
Toxicity Characteristic Leachate Procedure (cont) Antimony Arsenic Barium Beryllium Boron Cadmium Chromium Cobalt Copper Iron Lead Mercury Nickel Selenium Silver Thallium Uranium Vanadium Zinc Zirconium	TM LAND 013-93	EPA 1311

Water (Inorganic):

Analytes	Test Method(s)	Reference Method(s)
pH and Electrical Conductivity, Total and Phenolphthalein Alkalinity in Water and Soil Alkalinity EC pH	TM INORG 003-93	APHA 4500-H+ B, APHA 2510 B, BCMOE Alkalinity, Total, Titrimetric pH 4.5 Modified
Salinity, pH and EC in Water and in Soil & Waste by Saturated Paste % Saturation Calcium EC Magnesium pH Potassium SAR Sodium Sulfate	TM DW 004-93	SSMA Ch 15, EPA 3005A Modified

Water (Organic):

Analytes	Test Method(s)	Reference Method(s)
Extractable Petroleum Hydrocarbons in Soil and Water by GC FID EPH 10-19 EPH 19-32	TM TEH 001-93	BC Environmental Lab Manual, Extractable Petroleum Hydrocarbons in Water Modified
BTEX/VPH in Soil & Water by GC FID/MSD Benzene Ethylbenzene m/p - Xylene Methyl tert butyl Ether (MTBE) o - Xylene Styrene Toluene Volatile Hydrocarbons (C6-C10) Volatile Petroleum Hydrocarbons (C6-C10 - BTEX)	TM ORG 001-93	B.C. Environmental Lab Manual, Monocyclic Aromatic Hydrocarbons /Volatile Hydrocarbons in Water Modified
Polycyclic Aromatic Hydrocarbons in Soil and Water by GC MS 1-Methylnapthalene 2-Methylnapthalene Acenaphthalene Acenaphthylene Acridine Anthracene Benzo (a) anthracene Benzo (a) pyrene Benzo (b) fluoranthene Benzo(b+j) fluoranthene Benzo (g,h,i) perylene Benzo (j) fluoranthene Benzo (k) fluoranthene Chrysene Dibenzo (a,h) anthracene Fluoranthene Fluorene Indeno (1,2,3 - cd) pyrene Naphthalene Phenanthrene Pyrene Quinoline	TM ORG 002-93	B.C. Environmental Lab Manual, PAH in Water Modified



Key: **ASTM:** American Society for Testing and Materials
MSA: Methods of Soil Analysis, SSA Book Series no. 5 1996
MSS: Manual on Soil Sampling and Methods of Analysis – J.A. McKeague, 1978
SSMA: Soil Sampling and Methods of Analysis, Martin R. Carter, 2008
BCMOE: British Columbia Ministry of Environment
EPA: Environmental Protection Agency
APHA: American Public Health Association (Standard methods for the Examination of Water and Wastewater)
AER: Alberta Energy Regulator





Accredited Laboratory

A2LA has accredited

ELEMENT MATERIALS TECHNOLOGY CANADA INC.

Fort St. John, British Columbia, CANADA

for technical competence in the field of

Chemical 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 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 18th day of January 2021.

A blue ink signature of the Vice President of Accreditation Services, written over a horizontal line.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 6206.04
Valid to January 31, 2022

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