



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

ELEMENT MATERIALS TECHNOLOGY CANADA INC.  
#104, 19575-55A Ave  
Surrey, British Columbia Canada V3S 8P8  
Carol Nam Phone: 604-514-3322  
Email: Carol.nam@element.com

CHEMICAL

Valid To: January 31, 2022

Certificate Number: 6206.03

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:

**Air:**

<b><u>Analyte</u></b>	<b><u>Test Method(s)</u></b>	<b><u>Reference Method(s)</u></b>
Dustfall, Total and Fixed: Gravimetric  Fixed Dustfall Total Dustfall	TM AIR 001-60	Alberta Environment Method No. AEC 32020 modified
Mercury: Cold Vapour AA  Mercury	TM INS 002-60	EPA 7470A modified
Metals - ICP – OES  Cadmium Chromium Lead Zinc	TM INS 003-60	EPA Method 29 modified

**Tissue:**

<b><u>Analyte</u></b>	<b><u>Test Method(s)</u></b>	<b><u>Reference Method(s)</u></b>
Carbon, Nitrogen in Tissue by Combustion  Crude Protein (calculated) Total Carbon Total Nitrogen	TM TIS 003-60	AOAC 990.03 modified
Mercury: Cold Vapour AA  Mercury	TM INS 002-60	EPA 7470A modified

<b>Analyte</b>	<b>Test Method(s)</b>	<b>Reference Method(s)</b>
Metals by ICP-MS (6020A modified) and Metals in Biota Digestion  Arsenic Cadmium Lead	TM INS 005-60; WI DIG 022-60	BC Environmental Lab Manual modified
Metals - ICP-OES and Metals in Biota Digestion  Antimony Barium Beryllium Calcium Chromium Cobalt Copper Iron Molybdenum Nickel Phosphorus Potassium Selenium Silver Sodium Thallium Vanadium Zinc	TM INS 003-60; WI DIG 022-60	EPA 6010C/BC Environmental Lab Manual modified

**Soil:**

<b>Analyte</b>	<b>Test Method(s)</b>	<b>Reference Method(s)</b>
Anions by Ion Exchange Chromatography  Chloride Fluoride Nitrate-N Nitrate-N plus Nitrite-N Nitrite-N Sulfate	TM INS 001-60	APHA 4110 modified
BTEX/VPH in Soil and Water  Benzene Ethylbenzene m/p-Xylene Methyl Tert-Butyl Ether (MTBE) o-Xylene Styrene Toluene	TM ENV 002-60	B.C. Environmental Lab Manual, VH Solids modified



<b>Analyte</b>	<b>Test Method(s)</b>	<b>Reference Method(s)</b>
BTEX/VPH in Soil and Water (cont.) Volatile Petroleum Hydrocarbons (C6-10 – BTEX) Volatile Hydrocarbons (C6 - C10)	TM ENV 002-60	B.C. Environmental Lab Manual, VH Solids modified
Extractable Petroleum Hydrocarbons in Soil  EPH C10-C19 EPH C19-C32 Heavy Extractable Petroleum Hydrocarbons (HEPH) Light Extractable Petroleum Hydrocarbons (LEPH)	TM INS 012-60	BC Environmental Lab Manual, EPH in Solids modified
Mercury: Cold Vapour AA  Mercury	TM INS 002-60	EPA 7471B, BCSALM, modified
Metals - ICP-MS  Antimony Arsenic Barium Beryllium Cadmium Chromium Cobalt Copper Lead Lithium Manganese Molybdenum Nickel Selenium Silver Strontium Thallium Tin Tungsten Uranium Vanadium Zinc	TM INS 003-60; WI DIG 022-60	EPA 6020A, BCSALM modified
Metals - ICP-OES  Aluminum Boron Iron	TM INS 003-60	EPA 6010C, BCSALM modified

<b>Analyte</b>	<b>Test Method(s)</b>	<b>Reference Method(s)</b>
Metals by ICP-OES (EPA 6010C modified) and Soluble Barium by Calcium Chloride Extraction  Soluble Barium	TM INS 003-60; WI DIG 021-60	B.C. Environmental Lab Manual
Metals by ICP-OES (EPA 6010C modified) and Water-Soluble Extraction  Boron – hot water soluble	TM INS 003-60; WI DIG 006-60	B.C. Environmental Lab Manual
Organic Matter, Loss on Ignition, Volatile Solids  Organic Matter by LOI	TM SOIL 007-60	MSS Method 3.8, modified
pH and Conductivity in Soil  pH (1:2 Soil/Water) Conductivity (1:2 Soil/Water)	TM SOIL 003-60	SSMA Chapter 16.2, 15.3.1
Polycyclic Aromatic Hydrocarbons in Soil and Water  1-Methylnaphthalene 2-Methylnaphthalene Acenaphthene Acenaphthylene Anthracene Benzo (a) Anthracene Benzo (a) Pyrene Benzo (b) Fluoranthene Benzo (b+j) Fluoranthene Benzo (g,h,i) Perylene Benzo (k) Fluoranthene Chrysene Dibenzo (a,h) Anthracene Fluoranthene Fluorene Indeno (1,2,3 - cd) Pyrene Naphthalene Phenanthrene Pyrene Quinoline	TM ENV 004-60	B.C. Environmental Lab Manual, PAH Solids modified
Total Nitrogen, Total Carbon, Inorganic Carbon by Combustion  Total Carbon Total Inorganic Carbon Total Nitrogen	TM SOIL 008-60	SSSA Methods of Soil Analysis Part 3, Chapter 34, 37 modified

**Water:**

<b>Analyte</b>	<b>Test Method(s)</b>	<b>Reference Method(s)</b>
Anionic Surfactants as MBAS	TM WAT 013-60	APHA 5540-C modified
Anions by Ion Exchange Chromatography  Bromide Chloride Fluoride Nitrate-N Nitrate-N plus Nitrite-N Nitrite-N Orthophosphate-P Sulfate	TM INS 001-60	APHA 4110 modified
Biochemical Oxygen Demand BOD (5 day) CBOD	TM WAT 003-60	APHA 5210B modified
BTEX/VPH - Soil and Water  Benzene Ethylbenzene m/p-Xylene Methyl Tert-Butyl Ether o-Xylene Styrene Toluene Volatile Petroleum Hydrocarbons (C6-10 – BTEX) Volatile Hydrocarbons (C6 - C10)	TM ENV 002-60	BC Environmental Lab Manual, VH Water modified
Chemical Oxygen Demand  COD	TM WAT 005-60	APHA 5220D modified
Extractable Petroleum Hydrocarbons in Water  EPH C10-C19 EPH C19-C32 Heavy Extractable Petroleum Hydrocarbons (HEPH) Light Extractable Petroleum Hydrocarbons (LEPH) EPH C10-C19 – SG Cleaned EPH C19-C32 – SG Cleaned HEPH (SG) LEPH (SG)	TM ENV 001-60	BC Environmental Lab Manual, EPH in Water modified
Mercury Water: Cold Vapour AA  Mercury	TM WAT 021-60	EPA 245.7, APHA 3112B modified

<b>Analyte</b>	<b>Test Method(s)</b>	<b>Reference Method(s)</b>
Metals - ICP-OES Dissolved Calcium Dissolved Iron Dissolved Magnesium Dissolved Manganese Dissolved Potassium Dissolved Silicon Dissolved Sodium Hardness	TM INS 003-60	EPA 6010C modified
Metals - ICP-OES Extractable Calcium Extractable Iron Extractable Magnesium Extractable Manganese Extractable Potassium Extractable Silicon Extractable Sodium Hardness	TM INS 003-60	EPA 6010C modified
Metals - ICP-OES Total Calcium Total Iron Total Magnesium Total Manganese Total Phosphorus Total Potassium Total Silicon Total Sodium Total Titanium Hardness	TM INS 003-60	EPA 6010C modified
Metals by ICP-MS Dissolved Aluminum Dissolved Antimony Dissolved Arsenic Dissolved Barium Dissolved Beryllium Dissolved Bismuth Dissolved Boron Dissolved Cadmium	TM INS 003-60; WI DIG 022-60	EPA 200.8 modified

<b>Analyte</b>	<b>Test Method(s)</b>	<b>Reference Method(s)</b>
Metals by ICP-MS (cont.)  Dissolved Chromium Dissolved Cobalt Dissolved Copper Dissolved Iron Dissolved Lead Dissolved Lithium Dissolved Manganese Dissolved Molybdenum Dissolved Nickel Dissolved Selenium Dissolved Silver Dissolved Strontium Dissolved Thallium Dissolved Thorium Dissolved Tin Dissolved Titanium Dissolved Uranium Dissolved Vanadium Dissolved Zinc Dissolved Zirconium	TM INS 003-60; WI DIG 022-60	EPA 200.8 modified
Metals by ICP-MS  Extractable Aluminum Extractable Antimony Extractable Arsenic Extractable Barium Extractable Beryllium Extractable Boron Extractable Cadmium Extractable Chromium Extractable Cobalt Extractable Copper Extractable Iron Extractable Lead Extractable Manganese Extractable Molybdenum Extractable Nickel Extractable Selenium Extractable Strontium Extractable Thallium Extractable Uranium Extractable Vanadium Extractable Zinc	TM INS 003-60; WI DIG 022-60	EPA 200.8 modified



<b>Analyte</b>	<b>Test Method(s)</b>	<b>Reference Method(s)</b>
Metals by ICP-MS Total Aluminum Total Antimony Total Arsenic Total Barium Total Beryllium Total Bismuth Total Boron Total Cadmium Total Chromium Total Cobalt Total Copper Total Iron Total Lead Total Lithium Total Manganese Total Molybdenum Total Nickel Total Selenium Total Silver Total Strontium Total Thallium Total Thorium Total Tin Total Uranium Total Vanadium Total Zinc Total Zirconium	TM INS 003-60; WI DIG 022-60	EPA 200.8 modified
Nitrogen - Ammonia - Automated Ammonium Un-ionized Ammonia	TM WAT 027-60	APHA 4500 NH3-B, H modified
Oil and Grease in Water (Total and Mineral) Mineral Oil and Grease Total Oil and Grease	TM ENV 005-60	B.C. Environmental Lab Manual and APHA 5520B,F modified
pH (Potentiometric) pH at 15 °C pH at 25 °C	TM WAT 015-60	APHA 4500-H+B modified
pH, EC, Alkalinity, Acidity and Color Alkalinity (pH 4.5) Colour - True Conductivity (25 °C) pH	TM WAT 024-60	APHA 2320B, 2120C, 2510 B, 4500-H+ B modified



<b>Analyte</b>	<b>Test Method(s)</b>	<b>Reference Method(s)</b>
Polycyclic Aromatic Hydrocarbons in Soil and Water  1-Methylnaphthalene 2-Methylnaphthalene Acenaphthene Acenaphthylene Acridine Anthracene Benzo (a) Anthracene Benzo (a) Pyrene Benzo (b) Fluoranthene Benzo (b+j) Fluoranthene Benzo (g,h,i) Perylene Benzo (k) Fluoranthene Chrysene Dibenzo (a,h) Anthracene Fluoranthene Fluorene Indeno (1,2,3 - cd) Pyrene Naphthalene Phenanthrene Pyrene Quinoline	TM ENV 004-60	BC Environmental Lab Manual PAH Water modified
Residual and Total Chlorine  Free Chlorine Total Chlorine	TM WAT 023-60	APHA 4500 Cl - G modified
Solids - Dissolved, Suspended, Total  Fixed Dissolved Solids Fixed Suspended Solids Total Fixed Solids Total Dissolved Solids Total Solids Total Suspended Solids Volatile Dissolved Solids	TM WAT 017-60	APHA 2540 modified
Solids - Dissolved, Suspended, Total (cont.)  Volatile Suspended Solids	TM WAT 017-60	APHA 2540 modified
Turbidity in Water  Turbidity	TM WAT 019-60	APHA 2130 modified

**Key:** **APHA:** American Public Health Association (standard Methods for the Examination of Water and Wastewater)  
**AEC:** Methods Manual for Chemical Analysis of Atmospheric Pollutants, 4<sup>th</sup> Edition. 1993. Alberta Environmental Centre, Vegreville, AB  
**AOAC:** Association of Official Analytical Collaboration  
**EPA:** Environmental Protection Agency  
**BCSALM:** British Columbia Strong Acid Leachable Method  
**MSS:** Manual on Soil Sampling and Methods of Analysis – J.A. McKeague 1978  
**SSMA:** Soil Sampling and Methods of Analysis, Martin R. Carter, 2008  
**SSSA:** Soil Science Society of America





## Accredited Laboratory

A2LA has accredited

### ELEMENT MATERIALS TECHNOLOGY CANADA INC.

*Surrey, 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 18<sup>th</sup> 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 6206.03  
Valid to January 31, 2022

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