

# Lab Services in the **North** for the **North**

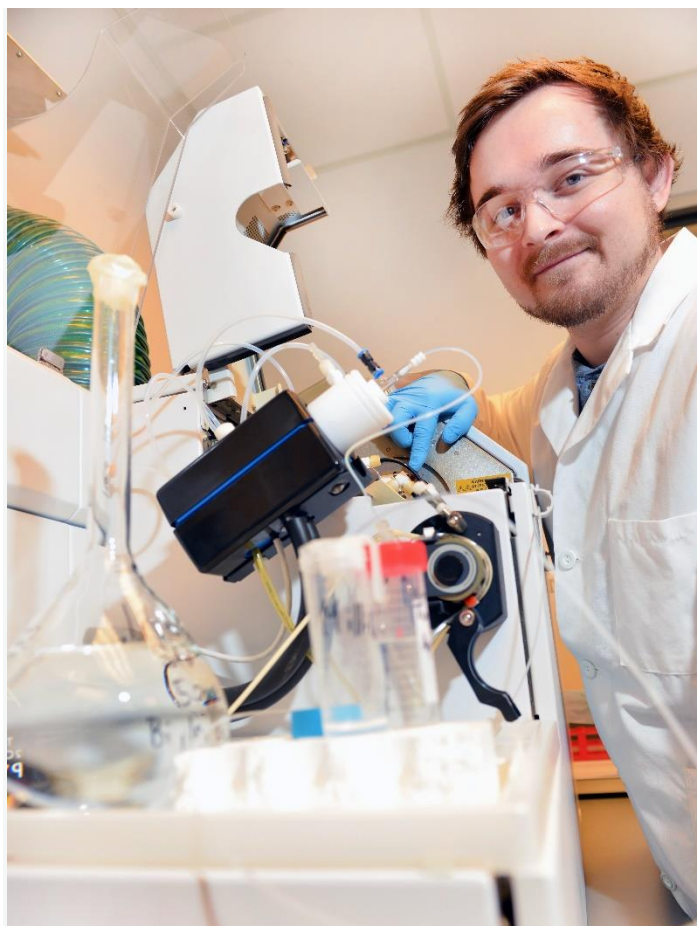
**UNBC** UNIVERSITY OF  
NORTHERN BRITISH COLUMBIA  
Northern Analytical Laboratory Services

## Northern Analytical Laboratory Services

Northern BC's Environment &  
Climate Solutions Innovation Hub

The University of Northern British Columbia is **home to an extensive suite of analytical science instrumentation** that enables a broad spectrum of chemical, physical, and biological analyses.

UNBC has made these services available to researchers as well as private, public, and non-profit sectors to help meet their research, development, and quality assurance needs through the **Northern Analytical Laboratory Service (NALS)**.



Standards Council of  
Canada Accredited Lab\*  
ISO/IEC 17025:2017  
\*Our scope of accreditation  
is listed on our website.

### Northern Analytical Lab Services

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University of Northern British Columbia  
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# Water and Wastewater

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## Elemental Analysis

Metals suite, including Phosphorous and Sulfur

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## Microbiological Examination

Total Coliforms & E-coli,  
Heterotrophic Plate Count (HPC)

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## Physical and Aggregate Properties

Color, Odor, Alkalinity, Turbidity, Hardness, EC,  
TDS, TSS, VSS, Suspended Fixed Solids,  
Total Solids, LSI, UV Transmittance, ORP

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## Inorganic Constituents

Anions (F, Cl, Br, SO<sub>4</sub>, PO<sub>4</sub>, NO<sub>2</sub>, NO<sub>3</sub>),  
Ammonium-N, Total-N, sTKN, Organic-N,  
Reactive Phosphate, TIC, DIC, pH, Cr (VI) in water,  
Total and Free Chlorine, Dissolved CO<sub>2</sub>

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## Aggregate Organic Parameters

COD, BOD<sub>5</sub>, CBOD<sub>5</sub>, TOC, DOC, Oil and Grease

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## Organic Compounds

Chlorophyll(a), Total C and N in Organic Liquids,  
SVOCs and VOCs, BTEX, PAHs, EPH,  
Solid Phase Micro Extraction (SPME); GC-MS/MS,  
Unknown Organics Analysis, Volatile Acids, Alcohols

# Soils, Minerals, Solids

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## Elemental Analysis

Metals suite, including Phosphorous and Sulfur

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## Inorganics and General Chemistry

Anions, Available Ammonium-N, pH, EC,  
Total C/N/S/H/O, Inorganic C, Carbon-13, Nitrogen-15,  
Ash, Sulphated Ash, Gravimetric Sulfate, CEC,  
Sodium Adsorption Ratio, Gravimetric Sulfate,  
Mehlich-3 Extractable Metals, %Saturation,  
Toxicity Characteristic Leaching Procedure (TCLP),  
Mechanical Sieving, Milling, Grinding, Moisture,  
Freeze Drying, High-speed Centrifugation

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## Organics

Non-volatile Organic Carbon,  
Organic Matter, Loss on Ignition,  
SVOCs and VOCs, BTEX, PAHs,  
Unknown Volatiles Analysis,  
Pyrolysis and Bio-char synthesis

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## Materials Characterization

Particle Size Distribution, Bulk Density,  
Specific Gravity, Water Holding Capacity,  
HHV, Proximate (Fixed C + Volatile Matter + Ash),  
Ultimate (CNHS + Ash, and Oxygen),  
Thermal Analysis (TGA, DSC, DMA)  
Surface Area, Physisorption, Chemisorption (BET)  
Mineral, Chemical, Morphological, and Molecular  
Analysis (FTIR, XRD, XRF, SEM/EDS)

# Industrial Hygiene & Gas Testing

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## Elemental Analysis

Metals Analysis (NIOSH 7303 or NIOSH 7304) on  
various media (e.g., MCE, Quartz fiber, PTFE)

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## Other Analyses

Gravimetric Analysis on Air Filters (Media: DIS,  
IOM, DRS, MCE, PVC),  
Hexavalent and Trivalent Chromium (Media: DIS),  
BTEX (Media: Sorbent Tubes)

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## Ambient Air and Gas Testing

SVOCs and VOCs,  
Unknowns Analysis, PAHs, BTEX,  
Syngas suite (H<sub>2</sub>, CO<sub>2</sub>, CO, CH<sub>4</sub>, Ethane,  
Propane, NO<sub>2</sub>, SO<sub>2</sub>, H<sub>2</sub>S, N<sub>2</sub>, O<sub>2</sub>/Ar)

# Analytical Equipment

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ICP-OES; ICP-MS; ICP-QQQ; LA-ICP-MS; IR-MS,  
Ion Chromatograph; Elemental Analyzer (C/N/H/O),  
Total Organic and Inorganic Carbon Analyzer,  
Colony Counter and Optical Microscope, Ball Mill,  
Particle Size Distribution Analyzer, Auto-analyzer,  
GC-FID; GC-MS/MS; Gas analyzer, Microbalance,  
Block and Microwave Digesters, Freeze Dryer,  
pH, EC, DO, CO<sub>2</sub>, and Ammonia Meters, Furnace,  
XRD, XRF, SEM/EDS, FTIR, BET, TGA, DSC, DMA,  
UV Vis, Grinder, High-speed Centrifuge