



Analytical Chemistry Laboratory

B.C. Ministry of Environment

Environmental Sustainability & Strategic Policy Division

PARTIAL PRICE LIST - Effective April 1, 2015*

Activity	Preparation Method	Analysis Method	Cost per Sample - Canadian \$			
			(1-10)	(11-50)	(51-100)	(> 100)
			Base	-5%	-10%	-15%
Basic handling charge (Receiving, reporting, invoicing, etc.)		n/a	\$2.75	\$2.60	\$2.50	\$2.35
Oven Dry	Dry at 70 Degrees C, 24 Hours	n/a	\$0.75	\$0.70	\$0.70	\$0.65
Freeze Dry (Temperature Sensitive Analyses)	Freeze at -80 Degrees C, Lyophilize	n/a	\$6.50	\$6.20	\$5.85	\$5.55
Mill (Cyclotec) *	Tecator Cyclotec Cyclone Mill	n/a	\$3.00	\$3.00	\$3.00	\$3.00
Mill (Wiley) *	Wiley Intermediate Cutting Mill	n/a	\$3.50	\$3.50	\$3.50	\$3.50
Extra handling charge (Sorting, listing, organizing, etc.)	(If not done by submitter)	n/a	Billed at hourly rate (\$30/hour)			
Difficult Mill (Very large samples, branches, trees, etc.)	Chipper, Saw, Various Mills	n/a	Billed at hourly rate (\$30/hour)			
CHEMICAL TESTS						
Total C and N	Combustion elemental analysis	Elemental analyzer	\$9.75	\$9.25	\$8.80	\$8.30
Al, B, Ca, Cu, Fe, Mg, Mn, P, K, S, Zn, total	VHP closed vessel microwave acid digestion	ICP spectrometer	\$13.75	\$13.05	\$12.40	\$11.70
Other and/or trace elements additional to above (up to 10)	with above	ICP spectrometer	\$5.50	\$5.25	\$4.95	\$4.70
Active Iron (Fe)	Hydrochloric acid extraction	ICP spectrometer	\$7.00	\$6.65	\$6.30	\$5.95
Sulphate-sulphur (SO4-S)	Weak hot hydrochloric acid extraction	Ion chromatography (HPLC)	\$15.25	\$14.50	\$13.75	\$12.95
Chloride (Cl)	Hot water extraction	Ion chromatography (HPLC)	\$15.25	\$14.50	\$13.75	\$12.95
Fluoride (Weak Acid Extractable)	Dilute perchloric acid extraction	Ion Selective Electrode	\$5.50	\$5.25	\$4.95	\$4.70
Fluoride (Microwave Acid Digestion)	Concentrated nitric acid / Ultrawave	Ion Selective Electrode	\$7.25	\$6.90	\$6.55	\$6.15
Oxalates (total of oxalic acid and oxalate salts)	Hot water or acid extraction	Liquid chromatography (HPLC)	\$15.75	\$14.95	\$14.20	\$13.40
Chlorophylls	N,N-dimethylformamide extraction	UV/visible spectrophotometer	\$7.75	\$7.35	\$7.00	\$6.60
Acid Detergent Fibre	Acid detergent method	Gravimetric	\$24.25	\$23.05	\$21.85	\$20.60
Non-structural carbohydrates (reducing sugars, starch)	Total non-structural carbohydrate method	UV/visible spectrophotometer	\$27.75	\$26.35	\$25.00	\$23.60
Sugars (fructose, galactose, glucose, etc. up to 5)	Extraction/derivitization if required	Liquid chromatography (HPLC)	\$19.50	\$18.55	\$17.55	\$16.60
Other sugars additional to above (up to 5)	with above	Liquid chromatography (HPLC)	\$7.75	\$7.35	\$7.00	\$6.60
Polyamines (agmatine, putrescine, spermine, etc.)	Extraction/derivitization if required	Liquid chromatography (HPLC)	\$28.00	\$26.60	\$25.20	\$23.80
Terpenes (camphor, borneol, bornyl acetate, etc)	Extraction/derivitization if required	Gas-liquid chromatography	\$19.25	\$18.30	\$17.35	\$16.35
Individual Phenolic Compounds (eg. Taxifolin, up to 5)	Extraction/derivitization if required	Liquid chromatography (HPLC)	\$26.50	\$25.20	\$23.85	\$22.55
Other phenolic compounds additional to above (up to 5)	with above	Liquid chromatography (HPLC)	\$10.50	\$10.00	\$9.45	\$8.95
Total Phenolic Compounds	Extraction/ Colourimetric Analysis	UV/visible spectrophotometer	\$16.00	\$15.20	\$14.40	\$13.60
Resin Acids - Diterpenes (eg. Abietic Acid, up to 5)	Extraction/derivitization if required	Liquid chromatography (HPLC)	\$17.00	\$16.15	\$15.30	\$14.45
Other diterpene compounds additional to above (up to 5)	with above	Liquid chromatography (HPLC)	\$6.75	\$6.40	\$6.10	\$5.75
Individual Amino Acids	Extraction/derivitization if required	Liquid chromatography (HPLC)	\$25.25	\$24.00	\$22.75	\$21.45
Total Amino Acids	Extraction/ Colourimetric Analysis	UV/visible spectrophotometer	\$11.50	\$10.95	\$10.35	\$9.80
Total Protein Content (Hydrolysis)	Acid Hydrolysis / Colourimetric Analysis	UV/visible spectrophotometer	\$11.25	\$10.70	\$10.15	\$9.55
Ergosterol	Extraction	Liquid chromatography (HPLC)	\$26.75	\$25.40	\$24.10	\$22.75
PHYSIOLOGY / DENDROCHRONOLOGY TESTS						
100 needle weights *	Direct measurement	Gravimetric	\$13.75	\$13.75	\$13.75	\$13.75
Pollen Testing - Conductivity	100mg:30 ml water	Conductivity Meter	\$8.25	\$7.85	\$7.45	\$7.00
Pollen Testing - Moisture Content	Direct measurement	Automated Moisture Analyzer	\$7.00	\$6.65	\$6.30	\$5.95
Pollen Testing - Germination	Incubation at 25 degrees C / 48 hours	Microscope	\$15.75	\$14.95	\$14.20	\$13.40

Seed Lots - Filled Seed Count	Direct measurement	Xray Photography	\$12.50	\$11.90	\$11.25	\$10.65
Core Sample Prep and Ring Count and Widths *	Mounting/Sanding	Microscope / Windendro	\$11.25	\$11.25	\$11.25	\$11.25
SOIL			Cost per Sample - Canadian \$			
Activity	Preparation Method	Analysis Method	(1-10)	(11-50)	(51-100)	(> 100)
			Base	-5%	-10%	-15%
Basic handling charge (Receiving, reporting, invoicing, etc.)		n/a	\$2.75	\$2.60	\$2.50	\$2.35
Air-drying & crushing/sieving (Mineral Soils) *	eg. Air-dry, crush, sieve to < 2mm	n/a	\$4.00	\$4.00	\$4.00	\$4.00
Air-drying & Milling (Forest Floor Soils) *	eg. Hammer mill to < 2mm	n/a	\$3.75	\$3.75	\$3.75	\$3.75
Extra handling charge (Sorting, listing, organizing, etc.)	(If not done by submitter)	n/a	Billed at hourly rate (\$30/hour)			
Difficult Prep (Very large, or tough samples)	Various Mills / Grinders / Splitters	n/a	Billed at hourly rate (\$30/hour)			
CHEMICAL TESTS						
Total C and N	Combustion elemental analysis	Elemental analyzer	\$11.25	\$10.70	\$10.15	\$9.55
Inorganic C (acid pre-treatment) requires Total C and N	Combustion elemental analysis	Elemental analyzer	\$13.00	\$12.35	\$11.70	\$11.05
pH (water)	1:1 for mineral soil or 1:2 for forest floor	pH/ion meter	\$4.00	\$3.80	\$3.60	\$3.40
pH (calcium chloride)	1:1 for mineral soil or 1:2 for forest floor	pH/ion meter	\$4.00	\$3.80	\$3.60	\$3.40
Phosphorus (PO4-P), available	Bray P-1	UV/visible spectrophotometer	\$7.25	\$6.90	\$6.55	\$6.15
Nitrogen (NH4-N), mineralizable	Anaerobic incubation , 1N KCl extraction	Colorimetric – Auto-analyzer	\$9.00	\$8.55	\$8.10	\$7.65
Cations Al, Ca, Fe, K, Mg, Mn, Na, and CEC, effective	0.1 N barium chloride extraction	ICP spectrometer	\$9.75	\$9.25	\$8.80	\$8.30
Cations Ca, K, Mg and CEC (pH 7.0)	Neutral Ammonium Acetate	ICP spectrometer/Auto-analyzer	\$25.00	\$23.75	\$22.50	\$21.25
Sulphur (S), total	Combustion elemental analysis	Elemental analyzer	\$7.25	\$6.90	\$6.55	\$6.15
Sulphate-Sulphur (SO4-S)	Water, dilute acid or weak salt extraction	Ion chromatography	\$14.25	\$13.55	\$12.85	\$12.10
Ammonium (NH4-N) Nitrate (NO3-N), available	Extraction with 2N KCl	Colorimetric – Auto-analyzer	\$7.50	\$7.15	\$6.75	\$6.40
Conductivity	Saturated paste	Conductivity meter	\$6.00	\$5.70	\$5.40	\$5.10
Conductivity	1:2 soil:water ratio	Conductivity meter	\$5.00	\$4.75	\$4.50	\$4.25
Al, B, Ca, Cu, Fe, K, Mg, Mn, Na, P, Zn, extractable	Mehlich III extraction	ICP spectrometer	\$12.25	\$11.65	\$11.05	\$10.40
Other and/or trace elements additional to above (up to 10)	with above	ICP spectrometer	\$5.00	\$4.75	\$4.50	\$4.25
Mehlich III extractable o-Phosphate (inorganic P)	Mehlich III extraction / colorimetry	UV/visible spectrophotometer	\$7.75	\$7.35	\$7.00	\$6.60
Al, B, Ca, Cu, Fe, Mg, Mn, P, K, S, Zn, total	VHP closed vessel microwave acid digestion	ICP spectrometer	\$13.75	\$13.05	\$12.40	\$11.70
Other and/or trace elements additional to above (up to 10)	with above	ICP spectrometer	\$5.50	\$5.25	\$4.95	\$4.70
Total Elemental Composition (up to 25 main elements)	High temperature fusion techniques	Fluxer / ICP spectrometer	\$31.25	\$29.70	\$28.15	\$26.55
DPTA extractable elements / trace elements	Extraction with DPTA	ICP spectrometer	\$11.00	\$10.45	\$9.90	\$9.35
Al, Fe, Mn, Si, extractable	Sodium pyrophosphate extraction	ICP spectrometer	\$10.25	\$9.75	\$9.25	\$8.70
Al, Fe, Mn, Si, extractable	Acid ammonium oxalate extraction	ICP spectrometer	\$10.25	\$9.75	\$9.25	\$8.70
Al, Fe, Mn, Si, extractable	Dithionite - citrate extraction	ICP spectrometer	\$10.25	\$9.75	\$9.25	\$8.70
Carbonate (CaCO3) Equivalent	Empirical - acid neutralization	Automatic Titrator	\$9.50	\$9.05	\$8.55	\$8.10
Ergosterol (Fungal Steroid)	Ethanol extraction	Liquid chromatography	\$25.50	\$24.25	\$22.95	\$21.70
Dissolved(soluble) organic carbon (DOC)	Salt Extraction (K2SO4 or KCl)	DOC Analyzer	\$10.50	\$10.00	\$9.45	\$8.95
Total dissolved(soluble) amino acids by ninhydrin method	Water or salt extraction / colorimetry	UV/visible spectrophotometer	\$7.25	\$6.90	\$6.55	\$6.15
Low molecular weight organic acids (oxalic, citric, etc up to 5)	Water, dilute acid or weak salt extraction	Liquid chromatography (HPLC)	\$28.75	\$27.30	\$25.90	\$24.45
Total carbohydrates / saccharides (phenol-sulphuric method)	Strong acid hydrolysis / colorimetry	UV/visible spectrophotometer	\$8.25	\$7.85	\$7.45	\$7.00
Extractable sugars (reducing) - anthrone method	Water extraction / colorimetry	UV/visible spectrophotometer	\$8.50	\$8.10	\$7.65	\$7.25
Extractable glucose - o-dianisidine, glucose oxidase assay	Water extraction / colorimetry	UV/visible spectrophotometer	\$8.25	\$7.85	\$7.45	\$7.00
PHYSICAL TESTS						
Soil Moisture Correction (to report results on Odry Basis)	Oven Dry 105 C	Gravimetric	\$2.75	\$2.60	\$2.50	\$2.35
Fresh / field moisture content determination	Wet weight / air dry weight (correct to Odry)	Gravimetric	\$3.00	\$2.85	\$2.70	\$2.55
Organic Matter (LOI)	Loss on ignition	Gravimetric	\$5.25	\$5.00	\$4.75	\$4.45
Water Retention Curve (6 point)	Pressure Plate Apparatus	Gravimetric	\$35.75	\$33.95	\$32.20	\$30.40

Aeration Porosity	Pressure Plate Apparatus	Gravimetric	\$16.25	\$15.45	\$14.65	\$13.80
Particle Density	Fluid Displacement	Gravimetric	\$11.25	\$10.70	\$10.15	\$9.55
Particle Size Analysis (% sand, silt, clay) *	Sedimentation Rate	Hydrometer	\$11.75	\$11.75	\$11.75	\$11.75
Particle Size Analysis (% fine sand, additional to above) *	Wet sieve / oven dry (with above)	Gravimetric	\$4.75	\$4.75	\$4.75	\$4.75
Bulk Density	Oven Dry	Gravimetric	\$6.00	\$5.70	\$5.40	\$5.10

WATER and SOLUTIONS

Activity	Preparation Method	Analysis Method	Cost per Sample - Canadian \$			
			(1-10)	(11-50)	(51-100)	(> 100)
CHEMICAL TESTS			Base	-5%	-10%	-15%
Basic handling charge (Receiving, reporting, invoicing, etc.)		n/a	\$2.75	\$2.60	\$2.50	\$2.35
Freeze Dry (for analysis of dissolved and suspended matter)	Freeze at -80 Degrees C, Lyophilize	Gravimetric	\$6.50	\$6.20	\$5.85	\$5.55
Al, B, Ca, Cu, Fe, Mg, Mn, P, K, Si, Na, S, Zn, element scan	Dilution to analytical range (if required)	ICP spectrometer	\$9.25	\$8.80	\$8.35	\$7.85
Trace (ppb) elements (up to 10) - additional to above	Direct measurement (with above)	ICP / Ultrasonic Nebulizer	\$3.75	\$3.55	\$3.40	\$3.20
Br, Cl, F, NO3, NO2, PO4, SO4, anion scan	Dilution to analytical range, microfiltration	Ion chromatography	\$15.50	\$14.75	\$13.95	\$13.20
Ammonium (NH4+) and Nitrate (NO3-)	Dilution to analytical range (if required)	Alpkem Flow Analyzer	\$6.25	\$5.95	\$5.65	\$5.30
Ammonium (low level) fluorescence assay	o-phthalaldehyde reaction / standard additions	Fluorescence Spectrophotometer	\$13.75	\$13.05	\$12.40	\$11.70
Nitrate and phosphate (low level)	Direct measurement	Alpkem Flow Analyzer	\$6.25	\$5.95	\$5.65	\$5.30
pH	Direct measurement	pH/ion meter	\$2.75	\$2.60	\$2.50	\$2.35
Conductivity	Direct measurement	Conductivity meter	\$2.75	\$2.60	\$2.50	\$2.35
Alkalinity	Dilution to analytical range (if required)	Automatic titrator	\$8.50	\$8.10	\$7.65	\$7.25
Acidity	Dilution to analytical range (if required)	Automatic titrator	\$8.50	\$8.10	\$7.65	\$7.25
Total Organic Carbon	UV-Persulphate or Combustion	Automated TOC Analyzer	\$9.75	\$9.25	\$8.80	\$8.30
Total Suspended Solids (TSS)	Filtration	Gravimetric	\$6.25	\$5.95	\$5.65	\$5.30
Total Dissolved Solids (in conjunction with TSS)	Evaporation	Gravimetric	\$4.50	\$4.30	\$4.05	\$3.85

*As of 2013/04/01 tasks that have strictly manual inputs and are not subject to economies of scale have been exempted from volume discount.

Contact Information

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