

# GEOCHEMISTRY

2021 SCHEDULE OF  
SERVICES & FEES  
\$ CAD



**BUREAU  
VERITAS**

## ORE & HIGH GRADE ANALYSIS

### MERCURY

CODE	DESCRIPTION	DETECTION LIMIT	UPPER LIMIT	CAD
AQ200-Hg	Hg – ICP-MS	0.01 ppm	50 ppm	\$13.80
CV400	Trace Hg – CVAA	0.01 ppm	100 ppm	\$10.90

### WATER AND GENERAL CHEMISTRY

CODE	DESCRIPTION	DETECTION LIMIT	UPPER LIMIT	CAD
GC002	pH and conductivity on solids			\$19.65
GC002-COND	Conductivity of solids	3 µS/cm		\$14.70
GC002-pH	pH of solids	0.1 units		\$11.65
GC901	Moisture (105°C)			\$15.00
GC902	Lattice water			\$31.60
TG001	LOI	0.1%	100 %	\$10.70

### OTHER TRACE AND ORE GRADE ANALYSES

CODE	DESCRIPTION	DETECTION LIMIT	UPPER LIMIT	CAD
BR405	Select elements by HBr digestion, AAS Additional Element		Please call to discuss	\$31.50 + \$5.25
GC204	Ge or Ga by ICP-MS Second element	1 ppm	2000 ppm	\$24.80 + \$4.50
GC304	Ge or Ga by ICP-ES Second element	0.01 %	100 %	\$20.35 + \$4.55
GC320	Ba by Na <sub>2</sub> CO <sub>3</sub> /K <sub>2</sub> CO <sub>3</sub> fusion, ICP-ES	0.01 %	30 %	\$31.90
GC410	NiS	0.001 %	100 %	\$31.60
GC519	SiO <sub>2</sub> gravimetric	0.1 %	100 %	\$30.40
GC520	Ba by Na <sub>2</sub> CO <sub>3</sub> /K <sub>2</sub> CO <sub>3</sub> fusion, gravity	0.1 %	100 %	\$31.90
GC806	FeO Titration	0.2 %	100 %	\$27.70
GC816	Zn Titration	1.00 %	100 %	\$34.65
GC817	Pb Titration	2.00 %	100 %	\$38.85
GC818	Fe Titration	1.00 %	100 %	\$40.70
GC819	Mn Titration	1.00 %	100 %	\$37.05
GC820	Cu Titration	1.00 %	100 %	\$54.80
GC840	F – Trace Level	10 ppm	1000 ppm	\$21.75
GC841	F – Ore Grade Surcharge samples > 15%	0.01 % 10 %	15% 50 %	\$22.84 \$20.95
GC923	Pb or Zn Oxide Additional element	0.01 %	10 %	\$28.95 + \$4.50
PF100-B	B	3 ppm	2000 ppm	\$21.05

### OTHER CHARGES

CODE	DESCRIPTION	CAD
EN004	Environmental fee charge	\$0.95

# EXPLORATION GEOCHEMISTRY

**Ultra-trace by ICP-MS** - ICP-MS analysis of a 0.5, 15 or 30 g sample after modified aqua regia digestion (1:1:1 HNO<sub>3</sub>:HCl:H<sub>2</sub>O) for low to ultra-low determination on soils, sediments and lean rocks. Larger splits (15 or 30 g) give a more representative analysis of elements subject to nugget effect (e.g., Au). Gold solubility can be limited in refractory and graphitic samples. The lead isotope method adds <sup>204</sup>Pb, <sup>206</sup>Pb, <sup>207</sup>Pb, <sup>208</sup>Pb. This data is suitable for geochemical exploration of U and other commodities where gross differences in non-radiogenic to radiogenic Pb ratios are of benefit.

CODE	ELEMENT	DETECTION LIMIT	UPPER LIMIT	CAD
AQ250	Aqua Regia ICP-ES/MS, 37 elements, 0.5 g			\$23.15
AQ251	Aqua Regia ICP-ES/MS, 37 elements, 15 g			\$28.15
AQ252	Aqua Regia ICP-ES/MS, 37 elements, 30 g			\$33.15
	Ag	2 ppb	100000 ppb	
	Al	0.01 %	10 %	
	As	0.1 ppm	10000 ppm	
	Au	0.2 ppb	100000 ppb	
	B *	20 ppm	2000 ppm	
	Ba	0.5 ppm	10000 ppm	
	Bi	0.02 ppm	2000 ppm	
	Ca	0.01 %	40 %	
	Cd	0.01 ppm	2000 ppm	
	Co	0.1 ppm	2000 ppm	
	Cr	0.5 ppm	10000 ppm	
	Cu	0.01 ppm	10000 ppm	
	Fe	0.01 %	40 %	
	Ga	0.1 ppm	1000 ppm	
	Hg	5 ppb	50000 ppm	
	K	0.01 %	10 %	
	La	0.5 ppm	10000 ppm	
	Mg	0.01 %	30 %	
	Mn	1 ppm	10000 ppm	
	Mo	0.01 ppm	2000 ppm	
	Na	0.001 %	5 %	
	Ni	0.1 ppm	10000 ppm	
	P	0.001 %	5 %	
	Pb	0.01 ppm	10000 ppm	
	S	0.02 %	10 %	
	Sb	0.02 ppm	2000 ppm	
	Sc	0.1 ppm	100 ppm	
	Se	0.1 ppm	100 ppm	
	Sr	0.5 ppm	2000 ppm	
	Te	0.02 ppm	1000 ppm	
	Th	0.1 ppm	2000 ppm	
	Ti	0.001 %	5 %	
	Tl	0.02 ppm	1000 ppm	
	U	0.1 ppm	2000 ppm	
	V	1 ppm	10000 ppm	
	W	0.1 ppm	100 ppm	
	Zn	0.1 ppm	10000 ppm	
AQ250	Pt Pd, Add on			\$2.55
	*Detection limit = 1 ppm for 15/30 g analysis			

  

CODE	ELEMENT	DETECTION LIMIT	UPPER LIMIT	CAD
AQ250-EXT	Extended Pkg, 53 elements, 0.5 g			\$27.10
AQ251-EXT	Extended Pkg, 53 elements, 15 g			\$32.10
AQ252-EXT	Extended Pkg, 53 elements, 30 g			\$37.10
	Be	0.1 ppm	1000 ppm	
	Ce	0.1 ppm	2000 ppm	
	Cs	0.02 ppm	2000 ppm	
	Ge	0.1 ppm	100 ppm	
	Hf	0.02 ppm	1000 ppm	
	Ln	0.02 ppm	1000 ppm	
	Li	0.1 ppm	2000 ppm	
	Nb	0.02 ppm	2000 ppm	
	Pd	10 ppb	100000 ppb	
	Pt	2 ppb	100000 ppb	
	Rb	0.1 ppm	2000 ppm	
	Re	1 ppb	100000 ppb	
	Sn	0.1 ppm	100 ppm	
	Ta	0.05 ppm	2000 ppm	
	Y	0.01 ppm	2000 ppm	
	Zr	0.1 ppm	2000 ppm	

  

CODE	ELEMENT	DETECTION LIMIT	UPPER LIMIT	CAD
+ REE	Rare Earth, Add on			\$7.60
	Dy	0.02 ppm	2000 ppm	
	Er	0.02 ppm	2000 ppm	
	Eu	0.02 ppm	2000 ppm	
	Gd	0.02 ppm	2000 ppm	
	Ho	0.02 ppm	2000 ppm	
	Lu	0.02 ppm	2000 ppm	
	Nd	0.02 ppm	2000 ppm	
	Pr	0.02 ppm	2000 ppm	
	Sm	0.02 ppm	2000 ppm	
	Tb	0.02 ppm	2000 ppm	
	Tm	0.02 ppm	2000 ppm	
	Yb	0.02 ppm	2000 ppm	

  

CODE	ELEMENT	DETECTION LIMIT	UPPER LIMIT	CAD
+ ISO	Lead Isotope, Add on			\$15.65

# LITHOGEOCHEMISTRY

## CARBON & SULPHUR ANALYSIS

CODE	DESCRIPTION	DETECTION LIMIT	UPPER LIMIT	CAD
TC000	Leco – C	0.02 %	50 %	\$21.85 + \$8.00
	Leco – S	0.02 %	20 %	
	Surcharge samples > 20% (S)	20 %	50 %	
TC000-C	Leco – Total C	0.02 %	100 %	\$18.60
TC005-GRA	Graphite C	0.02 %	20 %	\$39.45
TC006	Inorganic Carbon, (Direct CO <sub>2</sub> evolution Leco analysis)	0.08 %	100 %	\$21.85
TC005-ORG	Organic C (TC000-C, TC005-GRA, TC006)	0.02 %	100 %	\$39.60
TC000-S	Leco – Total S	0.02 %	20 %	\$18.60 + \$8.00
	Surcharge samples > 20% (S)	20 %	50 %	
TC008-SO4	Sulphate – Leco after ignition	0.05 %	100 %	\$27.30
TC008-S-	Sulphide – (TC000-S, TC008-SO4)	0.05 %	100 %	\$28.65
TC508	Sulphate – gravimetric	0.05 %	100 %	\$32.75
TC901	Elemental S	0.01 %	14 %	\$36.00

Requires at least 5 g per sample.

## XRF

X-ray fluorescence analysis on fused discs is an excellent method for the determination of whole rock major elements, as well as some minor elements. It is the preferred method for iron ore, bauxite, Nilaterites, and phosphate ores. Bureau Veritas also offers a specific XRF method for the determination of major elements, plus sub-percent to high-grade Cu, Pb, and Zn ore concentrations.

### WHOLE ROCK MAJOR OXIDES

CODE	ELEMENT	DETECTION LIMIT	UPPER LIMIT	CAD
XF700	Standard Package, 15 elements			\$38.20
	SiO <sub>2</sub>	0.01 %	100 %	
	Al <sub>2</sub> O <sub>3</sub>	0.01 %	100 %	
	Fe <sub>2</sub> O <sub>3</sub>	0.01 %	100 %	
	CaO	0.01 %	100 %	
	MgO	0.01 %	100 %	
	Na <sub>2</sub> O	0.01 %	15 %	
	K <sub>2</sub> O	0.01 %	15 %	
	MnO	0.01 %	50 %	
	TiO <sub>2</sub>	0.01 %	20 %	
	P <sub>2</sub> O <sub>5</sub>	0.01 %	40 %	
	Cr <sub>2</sub> O <sub>3</sub>	0.01 %	10 %	
	Ba	0.01 %	58.8 %	
	LOI	0.1 %	100 %	
	SO <sub>3</sub>	0.002 %	10 %	
	Sr	0.002 %	1.5 %	
XF702	Standard Package including TC000 (C & S)			\$47.85
	Requires at least 12 g per sample			

### BAUXITE

CODE	ELEMENT	DETECTION LIMIT	UPPER LIMIT	CAD
XF701	Bauxite Package, 17 elements			\$45.30
	SiO <sub>2</sub>	0.01 %	100 %	
	Al <sub>2</sub> O <sub>3</sub>	0.01 %	100 %	
	Fe <sub>2</sub> O <sub>3</sub>	0.01 %	100 %	
	CaO	0.01 %	50 %	
	MgO	0.01 %	40 %	
	Na <sub>2</sub> O	0.01 %	8.5 %	
	K <sub>2</sub> O	0.01 %	15 %	
	MnO	0.01 %	50 %	
	TiO <sub>2</sub>	0.01 %	10 %	
	P <sub>2</sub> O <sub>5</sub>	0.001 %	40 %	
	Cr <sub>2</sub> O <sub>3</sub>	0.004 %	10 %	
	BaO	0.01 %	10 %	
	ZnO	0.002 %	1 %	
	ZrO <sub>2</sub>	0.01 %	1.5 %	
	V <sub>2</sub> O <sub>5</sub>	0.002 %	10 %	
	SO <sub>3</sub>	0.01 %	3.5 %	
	LOI	0.1 %	100 %	