ACME
ANALYTICAL LABORATORIES LTD.

852 East Hastings Street • Vancouver, British Columbia • CANADA • V6A 1R6
Telephone: (604) 253-3158 • Fax: (604) 253-1716 • Toll free: 1-800-990-ACME (2263) • e-mail: info@acmelab.com

GROUP 1EX – 4-ACID DIGEST / ICP MS ANALYSIS

Beginning in 2002, Group 1EX will be analysed by ICP-MS. Digestion parameters will remain the same as will the suite of elements offered. However, detection limits for most elements will be reduced by 2 to 30X (shaded elements). This package will provide a cost-effective means for near total determination of a wide range of elements.

	Detection Limit	Upper Limit
Ag	0.1 ppm	200 ppm
Al	0.01 %	20 %
As	1 ppm	10000 ppm
Au	1 ppm	200 ppm
Ba	1 ppm	10000 ppm
Be	1 ppm	1000 ppm
Bi	0.1 ppm	4000 ppm
Ca	0.01 %	40 %
Ce	1 ppm	2000 ppm
Cd	0.1 ppm	4000 ppm
Co	1 ppm	4000 ppm
Cr	0.1 ppm	10000 ppm
Cu	0.1 ppm	10000 ppm
Fe	0.01 %	60 %

	Detection Limit	Upper Limit
Hf	0.1 ppm	1000 ppm
K	0.01 %	10 %
La	0.1 ppm	10000 ppm
Li	0.1 ppm	2000 ppm
Mg	0.01 %	30 %
Mn	1 ppm	10000 ppm
Mo	0.1 ppm	4000 ppm
Na	0.001 %	10 %
Nb	0.1 ppm	2000 ppm
Ni	0.1 ppm	10000 ppm
P	0.001 %	5 %
Pb	0.1 ppm	10000 ppm
Rb	0.1 ppm	2000 ppm
S	0.1 %	10 %

	Detection Limit	Upper Limit
Sb	0.1 ppm	4000 ppm
Sc	1 ppm	2000 ppm
Sn	0.1 ppm	2000 ppm
Sr	1 ppm	10000 ppm
Ta	0.1 ppm	2000 ppm
Th	0.1 ppm	4000 ppm
Ti	0.001 %	10 %
U	0.1 ppm	4000 ppm
V	1 ppm	10000 ppm
W	0.1 ppm	200 ppm
Y	0.1 ppm	2000 ppm
Zn	1 ppm	10000 ppm
Zr	0.1 ppm	2000 ppm

Group 1EX: A 0.25 g sample split is digested in a very strong acid solution (HF-HNO_3-$HClO_4$) and heated until dryness. The residue is taken up with dilute aqua regia and heated at 95°C. Once cool, the solution is analysed by a Perkin Elmer Elan 6000 ICP Mass Spectrometer for 41 elements listed above. The leach is total to near total for most elements excluding some minerals of Cr and Ba and some oxides of Al, Hf, Mn, Sn, Ta and Zr. Volatilization during the fuming stage may result in the partial loss of As, Sb and Au.

ACME Group 3B scheme	Au	Pt	Pd
	ppb	ppb	ppb
Laboratory:	Acme-Van	Acme-Van	Acme-Van
Method:	3BFG	3BFG	3BFG
Digestion:	FA Flux/AR	FA Flux/AR	FA Flux/AR
Acid / Strength:	2:02:02	2:02:02	2:02:02
Sample Wt (grams):	30	30	30
Units:	ppb	ppb	ppb
Det. Lim:	2	2	2
Upper Lim:	1000	1000	1000