GEOSTATS PTY LTD

Mining Industry Consultants
Reference Material Manufacture and Sales

Certified Geochem Base Metal Reference Material Product Code

GBM313-2

Certified Control Values

Total Digest

Element	Grade	Standard Deviation	Num of Analyses	Confidence Interval
Nickel (ppm)	42	6	59	+/- 1.6
Copper (ppm)	8049	236	59	+/- 62.1
Zinc (ppm)	10891	542	56	+/- 146.5
Lead (ppm)	8219	378	55	+/- 103.2
Arsenic (ppm)	157	12	47	+/- 3.7
Cobalt (ppm)	43	5	60	+/- 1.3
Silver (ppm)	205.5	10.1	49	+/- 2.94

Partial Digest

Element	Grade	Standard Deviation	Num of Analyses	Confidence Interval
Nickel (ppm)	26	3	39	+/- 1.1
Copper (ppm)	8186	318	62	+/- 81.4
Zinc (ppm)	11016	419	48	+/- 123.1
Lead (ppm)	8271	343	52	+/- 96.5
Arsenic (ppm)	162	23	55	+/- 6.2
Cobalt (ppm)	31	7	50	+/- 2
Silver (ppm)	207.3	10.8	53	+/- 3

CRM Details

Control Statistic Details
Control statistics were produced from results accumulated in the April-2013 round robin. The number of results used to certify each analyte is shown in the table above.

Material Description
This material is described as an Ag Ore.

Colour Designation (ISCC-NBS, SP440)
This material is medium light gray in colour.

Usage
This product is for use in the mining industry as a reference material for monitoring and testing the accuracy of laboratory assaying.

Preparation and Packaging
All CRMs are dried in an oven for a minimum of 12 hours at 110°C. The dry material is then pulverised to better than 75 micron (nominal mean of 45 micron) using an air classifier. The material is then homogenised and stored in a sealed, stable container ready for final packaging.

Materials are statistically sampled from stores, then packaged into either heat sealed, air tight, plastic pulp packets or screw top sealed plastic containers ready for distribution. All packaging has been chosen to ensure minimal contamination from outside sources during shipment, use and storage.

Assay Testwork
All standards are tested thoroughly in the Geostats bi-annual laboratory survey. This involves assaying by multiple laboratories from around the world. Results are compiled into a comprehensive report detailing statistics for each standard. Assay distributions are checked and processed statistically, producing monitoring statistics for these standards. Materials are tested regularly to ensure stability and homogeneity.

Stability
This product remains stable in its original packaging, away from direct sunlight.

Material Safety
This product is not hazardous and non-toxic.

Neutron Activation Analysis Results (ppm, unless otherwise noted)	
Antimony	94.1
Arsenic	172
Barium	313
Bromine	<1.25
Cadmium	27
Caesium	1.35
Calcium (%)	nr
Cerium	23.9
Chromium	112
Cobalt	46.7
Europium	1.53
Gold (ppb)	2050
Hafnium	3.09
Iridium (ppb)	<15.8
Iron (%)	7.66
Lanthanum	17.6
Lutetium	0.372
Mercury	nr
Molybdenum	14.7
Neodymium	nr
Nickel	53
Potassium (%)	nr
Rubidium	62.2
Samarium	4.5
Scandium	18.1
Selenium	<4.45
Silver	206
Sodium (%)	2.21
Strontium	nr
Tantalum	0.929
Tellurium	<6.56
Terbium	0.66
Thorium	8.21
Tin	<163
Tungsten	<11.6
Uranium	4.32
Ytterbium	<1.51
Zinc	12000
Zirconium	<220

Major Elements by Fusion / XRF (%)	
Fe	7.37
SiO_2	53.96
Al_2O_3	14.45
TiO_2	1.363
MnO	0.15
CaO	7.05
P	0.068
S	1.61
MgO	3.88
K_2O	1.24
Na_2O	2.938
LOI1000	1.1

Neutron Activation Analyses and Fusion / XRF Analyses are single results and are indicative only. These are provided for matrix identification purposes.

'nr': Not Reported

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Geostats Pty Ltd, Certified Geochem Base Metal Reference Material, Product Code: