

GEOSTATS PTY LTD

Mining Industry Consultants
Reference Material Manufacture and Sales

Certified Geochem Base Metal Reference Material Product Code

GBM919-10

Certified Control Values

Total Digest

Element	Grade	Standard Deviation	Num of Analyses	Confidence Interval
Nickel (ppm)	609	40	60	+/- 10.4
Copper (ppm)	114	6	57	+/- 1.6
Zinc (ppm)	66	5	55	+/- 1.3
Lead (ppm)	39	3	52	+/- 0.9
Arsenic (ppm)	583	28	56	+/- 7.7
Cobalt (ppm)	23	1	52	+/- 0.4
Silver (ppm)	0.6	0.1	32	+/- 0.03

Partial Digest

Element	Grade	Standard Deviation	Num of Analyses	Confidence Interval
Nickel (ppm)	585	37	53	+/- 10.3
Copper (ppm)	114	7	69	+/- 1.7
Zinc (ppm)	60	4	59	+/- 1.1
Lead (ppm)	35	3	51	+/- 0.8
Arsenic (ppm)	584	31	56	+/- 8.2
Cobalt (ppm)	21	2	50	+/- 0.4
Silver (ppm)	0.6	0.2	42	+/- 0.06

CRM Details

Control Statistic Details		Neutron Activation Analysis Results (ppm, unless otherwise noted)		Major Elements by Fusion / XRF (%)	
Control statistics were produced from results accumulated in the October-2019 round robin. The number of results used to certify each analyte is shown in the table above.		Antimony	11.4	Fe	3.45
		Arsenic	580	SiO ₂	66.63
		Barium	242	Al ₂ O ₃	11.64
		Bromine	<2	TiO ₂	0.61
		Cadmium	<10	MnO	0.19
		Caesium	5	CaO	4.05
		Calcium (%)	nr	P	0.032
		Cerium	56	S	0.24
		Chromium	307	MgO	2.82
		Cobalt	23	K ₂ O	1.54
		Europium	0.6	Na ₂ O	0.72
		Gold (ppb)	864	LOH1000	5.81
		Hafnium	<5	Neutron Activation Analyses and Fusion / XRF Analyses are single results and are indicative only. These are provided for matrix identification purposes. 'nr': Not Reported	
		Iridium (ppb)	<50		
		Iron (%)	3.7		
		Lanthanum	23		
		Lutetium	0.2		
		Mercury	nr		
		Molybdenum	<10		
		Neodymium	nr		
		Nickel	570		
		Potassium (%)	nr		
		Rubidium	80		
		Samarium	3.3		
		Scandium	11.4		
		Selenium	<10		
		Silver	<5		
		Sodium (%)	0.615		
		Strontium	nr		
		Tantalum	<2		
		Tellurium	<20		
		Terbium	<1		
		Thorium	7.9		
		Tin	<200		
		Tungsten	18		
		Uranium	2		
		Ytterbium	1.1		
		Zinc	<200		
		Zirconium	<500		

Material Description	
This material is described as a High Tail sample.	
Colour Designation (ISCC-NBS, SP440)	
This material is yellowish 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.	

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