

# CDN Resource Laboratories Ltd.

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## REFERENCE MATERIAL: CDN-CM-22

Recommended values and the “Between Lab” Two Standard Deviations

<i>Gold</i>	<i>0.718 g/t ± 0.072 g/t</i>	<i>Certified value</i>	<i>30g FA / ICP or AA</i>
<i>Copper</i>	<i>0.995 % ± 0.021 %</i>	<i>Certified value</i>	<i>4-acid / ICP or AA</i>
<i>Copper</i>	<i>0.995 % ± 0.026 %</i>	<i>Certified value</i>	<i>Aqua regia / ICP or AA</i>
<i>Molybdenum</i>	<i>0.020 % ± 0.002 %</i>	<i>Certified value</i>	<i>4-acid / ICP or AA</i>
<i>Molybdenum</i>	<i>0.020 % ± 0.002 %</i>	<i>Certified value</i>	<i>Aqua regia / ICP or AA</i>

**Note:** Standards with an RSD of near or less than 5% are certified; RSD's of between 5% and 15% are Provisional; RSD's over 15% are Indicated. Provisional and Indicated values cannot be used to monitor accuracy with a high degree of certainty.

**PREPARED BY:** CDN Resource Laboratories Ltd.  
**CERTIFIED BY:** Duncan Sanderson, B.Sc., Licensed Assayer of British Columbia  
**INDEPENDENT GEOCHEMIST:** Dr. Barry Smee., Ph.D., P. Geo.  
**DATE OF CERTIFICATION:** January 12, 2012

### **METHOD OF PREPARATION:**

Reject ore material was dried, crushed, pulverized and then passed through a 270 mesh screen. The +270 material was discarded. The -270 material was mixed for 5 days in a double-cone mixer. Splits were taken and sent to 14 laboratories for round robin assaying.

### **ORIGIN OF REFERENCE MATERIAL:**

Standard CDN-CM-22 was prepared using 767 kg of a granitic rock blended with 33 kg of a Cu-Au-Mo concentrate.

**Approximate chemical composition (from whole rock analysis) is as follows:**

	Percent		Percent
SiO <sub>2</sub>	65.5	MgO	1.9
Al <sub>2</sub> O <sub>3</sub>	13.0	K <sub>2</sub> O	2.2
Fe <sub>2</sub> O <sub>3</sub>	7.0	TiO <sub>2</sub>	0.5
CaO	3.1	LOI	2.3
Na <sub>2</sub> O	2.8	S	1.2
C	0.2		

### **Statistical Procedures:**

The final limits were calculated after first determining if all data was compatible within a spread normally expected for similar analytical methods done by reputable laboratories. Data from any one laboratory was removed from further calculations when the mean of all analyses from that laboratory failed a t test of the global means of the other laboratories. The means and standard deviations were calculated using all remaining data. Any analysis that fell outside of the mean  $\pm 2$  standard deviations was removed from the ensuing data base. The mean and standard deviations were again calculated using the remaining data. This method is different from that used by Government agencies in that the actual “between-laboratory” standard deviation is used in the calculations. This produces upper and lower limits that reflect actual individual analyses rather than a grouped set of analyses. The limits can therefore be used to monitor accuracy from individual analyses, unlike the Confidence Limits published on other standards.

## REFERENCE MATERIAL CDN-CM-22

### Results from round-robin assaying:

	Lab 1	Lab 2	Lab 3	Lab 4	Lab 5	Lab 6	Lab 7	Lab 8	Lab 9	Lab 10	Lab 11	Lab 12	Lab 13	Lab 14
	Au g/t	Au g/t	Au g/t	Au g/t	Au g/t	Au g/t	Au g/t	Au g/t	Au g/t	Au g/t	Au g/t	Au g/t	Au g/t	Au g/t
CM-22-1	0.788	0.678	0.611	0.696	0.797	0.77	0.721	0.731	0.76	0.681	0.710	0.721	0.720	0.660
CM-22-2	0.769	0.652	0.614	0.687	0.783	0.79	0.722	0.719	0.77	0.693	0.770	0.730	0.687	0.730
CM-22-3	0.770	0.659	0.612	0.710	0.741	0.71	0.704	0.716	0.83	0.718	0.760	0.728	0.687	0.680
CM-22-4	0.739	0.699	0.670	0.685	0.756	0.71	0.687	0.754	0.83	0.682	0.710	0.736	0.685	0.730
CM-22-5	0.686	0.668	0.620	0.679	0.803	0.76	0.693	0.711	0.74	0.708	0.740	0.754	0.698	0.670
CM-22-6	0.728	0.691	0.635	0.712	0.751	0.72	0.681	0.700	0.77	0.687	0.710	0.718	0.707	0.670
CM-22-7	0.794	0.671	0.683	0.683	0.741	0.76	0.682	0.710	0.84	0.731	0.720	0.723	0.710	0.670
CM-22-8	0.720	0.703	0.629	0.682	0.745	0.76	0.708	0.725	0.78	0.729	0.760	0.752	0.681	0.690
CM-22-9	0.772	0.657	0.653	0.689	0.777	0.76	0.725	0.712	0.79	0.704	0.730	0.723	0.721	0.670
CM-22-10	0.766	0.666	0.639	0.702	0.741	0.69	0.717	0.759	0.76	0.654	0.700	0.616	0.700	0.650
Mean	0.753	0.674	0.637	0.693	0.764	0.741	0.704	0.724	0.785	0.699	0.731	0.720	0.700	0.682
Std. Devn.	0.0340	0.0179	0.0251	0.0119	0.0242	0.0335	0.0172	0.0193	0.0355	0.0241	0.0251	0.0386	0.0146	0.0274
% RSD	4.51	2.65	3.94	1.72	3.17	4.52	2.44	2.67	4.52	3.44	3.44	5.37	2.09	4.02
4-acid	% Cu	% Cu	% Cu	% Cu	% Cu	% Cu	% Cu	% Cu	% Cu	% Cu	% Cu	% Cu	% Cu	% Cu
CM-22-1	1.021	0.940	0.957	0.999	1.005	0.991	1.02	0.96		0.99	1.050	1.00	1.03	0.990
CM-22-2	1.000	0.970	0.958	1.010	1.006	0.990	1.02	0.98		0.96	0.992	0.99	1.02	0.988
CM-22-3	0.985	0.940	0.995	1.010	1.004	0.998	1.03	0.99		0.97	0.992	0.99	1.01	0.967
CM-22-4	0.986	0.950	0.956	1.010	1.008	0.990	1.03	1.00		1.01	1.015	1.02	1.01	0.975
CM-22-5	0.989	0.970	0.976	0.993	1.009	1.035	1.03	1.01		0.98	1.017	1.00	1.00	0.965
CM-22-6	0.979	0.960	0.981	0.993	1.006	0.988	1.03	1.01		0.97	1.013	1.00	1.01	0.966
CM-22-7	0.987	0.960	0.969	0.991	1.005	0.997	1.02	0.99		0.97	0.992	0.98	1.04	0.990
CM-22-8	0.977	0.940	0.990	0.989	1.005	0.993	1.02	1.01		0.97	1.000	0.99	1.02	0.961
CM-22-9	0.983	0.930	0.956	1.010	1.005	0.993	1.02	0.99		0.97	1.011	1.02	1.03	0.965
CM-22-10	0.994	0.980	0.992	1.020	1.005	1.030	1.02	1.02		0.95	1.000	1.00	1.04	0.978
Mean	0.990	0.954	0.973	1.003	1.006	1.001	1.024	0.995		0.975	1.008	0.999	1.020	0.975
Std. Devn.	0.0128	0.0165	0.0159	0.0107	0.0015	0.0172	0.0052	0.0165		0.0172	0.0178	0.0129	0.0133	0.0114
% RSD	1.29	1.73	1.64	1.07	0.15	1.72	0.50	1.66		1.76	1.76	1.29	1.30	1.17
Aqua regia	% Cu	% Cu	% Cu	% Cu	% Cu	% Cu	% Cu	% Cu	% Cu	% Cu	% Cu	% Cu	% Cu	% Cu
CM-22-1	1.007	0.981	0.975	0.998	1.006	0.997	1.01	1.01	1.040	0.95	1.039	1.00	0.95	
CM-22-2	0.994	0.984	0.968	0.983	1.005	0.985	1.01	1.01	1.040	1.01	0.998	1.00	0.94	
CM-22-3	1.001	0.986	0.990	0.981	1.005	1.010	0.99	1.01	1.040	1.01	0.985	1.00	0.93	
CM-22-4	0.988	0.981	0.992	0.997	1.006	1.015	0.99	1.01	1.040	0.99	0.991	1.01	0.93	
CM-22-5	0.982	0.993	0.972	1.000	1.006	1.040	1.00	1.05	1.060	0.98	0.984	1.00	0.95	
CM-22-6	0.994	1.000	1.000	0.991	1.007	0.988	0.99	1.02	1.010	1.01	0.989	0.99	0.93	
CM-22-7	0.979	0.990	1.040	0.986	1.006	1.475	1.01	0.98	0.988	0.97	0.994	0.99	0.95	
CM-22-8	0.947	0.990	0.979	1.010	1.007	1.005	1.00	0.97	0.990	1.00	1.008	0.98	0.93	
CM-22-9	0.985	1.000	0.927	1.000	1.005	0.993	1.01	0.99	1.010	0.97	0.994	1.00	0.94	
CM-22-10	1.034	0.968	0.980	0.988	1.006	1.030	1.00	0.97	0.985	0.99	1.007	0.99	0.94	
Mean	0.991	0.987	0.982	0.993	1.006	1.054	1.001	1.001	1.020	0.988	0.999	0.996	0.939	
Std. Devn.	0.0222	0.0096	0.0284	0.0091	0.0007	0.1491	0.0088	0.0227	0.0270	0.0212	0.0164	0.0084	0.0070	
% RSD	2.24	0.98	2.89	0.92	0.07	14.14	0.87	2.26	2.64	2.15	1.64	0.85	0.74	

**Note:** Au data from Lab 3 was excluded for failing the t test.  
Aqua regia Cu data from Lab 13 was excluded for failing the t test.  
Lab 9 could not provide Cu data with a 4-acid digestion.

## REFERENCE MATERIAL CDN-CM-22

### Results from round-robin assaying:

	Lab 1	Lab 2	Lab 3	Lab 4	Lab 5	Lab 6	Lab 7	Lab 8	Lab 9	Lab 10	Lab 11	Lab 12	Lab 13	Lab 14
4-acid	% Mo	% Mo	% Mo	% Mo	% Mo	% Mo	% Mo	% Mo	% Mo	% Mo	% Mo	% Mo	% Mo	% Mo
CM-22-1	0.020	0.020	0.019	0.021	0.021	0.020	0.020	0.02		0.02	0.021	0.020	0.019	0.021
CM-22-2	0.020	0.020	0.02	0.022	0.021	0.019	0.020	0.02		0.02	0.021	0.020	0.020	0.021
CM-22-3	0.020	0.020	0.02	0.022	0.021	0.020	0.020	0.02		0.02	0.021	0.020	0.020	0.021
CM-22-4	0.020	0.020	0.02	0.022	0.021	0.019	0.020	0.02		0.02	0.020	0.020	0.019	0.021
CM-22-5	0.020	0.020	0.019	0.022	0.021	0.020	0.020	0.02		0.02	0.021	0.020	0.019	0.020
CM-22-6	0.020	0.020	0.02	0.021	0.021	0.020	0.020	0.02		0.02	0.021	0.020	0.020	0.021
CM-22-7	0.020	0.020	0.02	0.022	0.021	0.020	0.020	0.02		0.02	0.020	0.020	0.019	0.021
CM-22-8	0.020	0.020	0.019	0.022	0.021	0.019	0.020	0.02		0.02	0.021	0.020	0.019	0.020
CM-22-9	0.019	0.020	0.019	0.021	0.021	0.020	0.020	0.02		0.02	0.021	0.020	0.019	0.020
CM-22-10	0.020	0.020	0.019	0.021	0.021	0.019	0.020	0.02		0.02	0.021	0.020	0.019	0.021
Mean	0.020	0.020	0.020	0.022	0.021	0.020	0.020	0.018		0.020	0.021	0.020	0.019	0.020
Std. Devn.	0.0003	0.0000	0.0005	0.0005	0.0002	0.0005	0.0000	0.0003		0.0010	0.0003	0.0000	0.0004	0.0005
% RSD	1.59	0.00	2.70	2.39	0.97	2.63	0.00	1.75		4.66	1.41	0.00	1.84	2.67
Aqua regia	% Mo	% Mo	% Mo	% Mo	% Mo	% Mo	% Mo	% Mo	% Mo	% Mo	% Mo	% Mo	% Mo	% Mo
CM-22-1	0.019	0.019	0.02	0.019	0.020	0.020	0.020	0.02	0.020	0.02	0.020	0.020	0.019	0.019
CM-22-2	0.019	0.020	0.021	0.019	0.021	0.019	0.020	0.02	0.020	0.02	0.021	0.018	0.019	0.019
CM-22-3	0.019	0.020	0.021	0.018	0.020	0.020	0.020	0.02	0.020	0.02	0.020	0.019	0.019	0.020
CM-22-4	0.020	0.019	0.021	0.019	0.021	0.020	0.020	0.02	0.020	0.02	0.020	0.019	0.019	0.020
CM-22-5	0.019	0.019	0.02	0.019	0.021	0.020	0.020	0.02	0.020	0.02	0.020	0.018	0.019	0.020
CM-22-6	0.019	0.020	0.02	0.019	0.020	0.019	0.020	0.02	0.019	0.02	0.021	0.019	0.019	0.019
CM-22-7	0.019	0.020	0.021	0.019	0.020	0.022	0.020	0.02	0.019	0.02	0.020	0.019	0.019	0.019
CM-22-8	0.019	0.019	0.02	0.019	0.020	0.020	0.020	0.02	0.019	0.02	0.021	0.018	0.019	0.020
CM-22-9	0.019	0.020	0.019	0.019	0.020	0.020	0.020	0.02	0.019	0.02	0.020	0.019	0.019	0.019
CM-22-10	0.020	0.020	0.021	0.019	0.020	0.020	0.020	0.02	0.019	0.02	0.020	0.019	0.019	0.019
Mean	0.019	0.020	0.020	0.019	0.020	0.020	0.020	0.020	0.019	0.021	0.020	0.019	0.019	0.019
Std. Devn.	0.0004	0.0005	0.0007	0.0003	0.0003	0.0008	0.0000	0.0005	0.0004	0.0003	0.0004	0.0006	0.0001	0.0003
% RSD	2.20	2.63	3.43	1.67	1.61	4.08	0.00	2.70	1.82	1.61	2.01	3.36	0.62	1.76

**Note: Lab 9 could not provide Mo data with a 4-acid digestion.**

**REFERENCE MATERIAL CDN-CM-22**

**Participating Laboratories:**

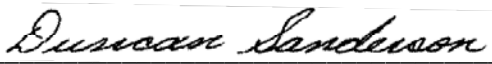
(not in same order as listed in table of results)

Acme Analytical Laboratories Ltd., Vancouver, B.C., Canada  
Actlabs, Ancaster, Ontario, Canada  
Actlabs, Thunder Bay, Ontario, Canada  
ALS Chemex Laboratories, North Vancouver, B.C., Canada  
ALS, Brisbane, Australia  
AGAT, Mississauga, Ontario  
Alex Stewart Argentina SA  
Labtium, Finland  
CIMM, Lima, Peru  
Genalysis, Perth, Australia  
SGS, Lima, Peru  
Skyline Assayers & Laboratories, Arizona, USA  
TSL Laboratories, Saskatoon, Canada  
Ultra Trace, Perth, Australia


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This certificate and the reference material described in it have been prepared with due care and attention. However CDN Resource Laboratories Ltd. or Barry Smee accept no liability for any decisions or actions taken following the use of the reference material. Our liability is limited solely to the cost of the reference material.

Certified by

  
\_\_\_\_\_  
Duncan Sanderson, Certified Assayer of B.C.

Geochemist

  
\_\_\_\_\_  
Dr. Barry Smee, Ph.D., P. Geo.