

# **CDN Resource Laboratories Ltd.**

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## **REFERENCE MATERIAL: CDN-CM-16**

Recommended values and the “Between Lab” Two Standard Deviations

<b>Gold</b>	<b>0.294 g/t</b> ± <b>0.046 g/t</b>	<b>**Provisional**</b>	<b>30g FA / instrumental</b>
<b>Copper</b>	<b>0.184 %</b> ± <b>0.014 %</b>	<b>Certified value</b>	<b>4-acid / ICP or AA</b>
<b>Copper</b>	<b>0.184 %</b> ± <b>0.016 %</b>	<b>Certified value</b>	<b>Aqua regia / ICP or AA</b>
<b>Molybdenum</b>	<b>0.016 %</b> ± <b>0.002 %</b>	<b>Certified value</b>	<b>4-acid / ICP or AA</b>
<b>Molybdenum</b>	<b>0.016 %</b> ± <b>0.003 %</b>	<b>**Provisional**</b>	<b>Aqua regia / ICP or AA</b>

**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:** October 31, 2011

### **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 15 laboratories for round robin assaying.

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

The ore was supplied by Capstone Mining Corp. from the Minto Mine in Yukon, Canada. Mineralization is primary chalcopyrite and bornite pervasively disseminated and as stringers within foliated granodiorite units rich in secondary biotite. Sulphide mineralization is typically accompanied by magnetite. Gold is associated with the sulphide mineralization, typically intimately associated with bornite and rarely observed as free gold. To 800 kg of the minto ore was added 1.2 kg of a high grade gold ore and 0.25 kg of a molybdenum concentrate.

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

	Percent		Percent
SiO <sub>2</sub>	63.2	MgO	1.3
Al <sub>2</sub> O <sub>3</sub>	15.5	K <sub>2</sub> O	3.0
Fe <sub>2</sub> O <sub>3</sub>	6.1	TiO <sub>2</sub>	0.4
CaO	3.4	LOI	2.4
Na <sub>2</sub> O	3.9	S	0.2
C	0.3		

### **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 ±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-16**

### **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	Lab 15
	Au g/t														
CM-16-1	0.255	0.276	0.285	0.316	0.28	0.315	0.267	0.285	0.330	0.314	0.302	0.311	0.298	0.280	0.318
CM-16-2	0.279	0.268	0.265	0.313	0.27	0.317	0.257	0.298	0.258	0.276	0.289	0.360	0.318	0.277	0.281
CM-16-3	0.308	0.260	0.278	0.285	0.29	0.320	0.260	0.277	0.332	0.268	0.300	0.294	0.315	0.276	0.315
CM-16-4	0.325	0.342	0.308	0.297	0.27	0.323	0.265	0.275	0.288	0.330	0.310	0.292	0.342	0.259	0.342
CM-16-5	0.296	0.307	0.303	0.313	0.28	0.305	0.253	0.277	0.289	0.277	0.298	0.300	0.359	0.270	0.359
CM-16-6	0.296	0.270	0.318	0.299	0.30	0.325	0.260	0.276	0.327	0.306	0.310	0.326	0.263	0.289	0.263
CM-16-7	0.285	0.291	0.264	0.286	0.30	0.300	0.258	0.276	0.289	0.306	0.286	0.305	0.334	0.272	0.334
CM-16-8	0.311	0.298	0.315	0.296	0.28	0.318	0.257	0.281	0.327	0.297	0.289	0.376	0.259	0.270	0.259
CM-16-9	0.325	0.243	0.314	0.284	0.26	0.322	0.255	0.276	0.316	0.286	0.287	0.322	0.306	0.293	0.306
CM-16-10	0.328	0.338	0.302	0.282	0.29	0.308	0.249	0.285	0.315	0.298	0.296	0.298	0.302	0.260	0.302
Mean	0.301	0.289	0.295	0.297	0.282	0.315	0.258	0.281	0.307	0.296	0.297	0.318	0.310	0.275	0.308
Std. Devn.	0.0234	0.0326	0.0206	0.0131	0.0132	0.0083	0.0053	0.0072	0.0247	0.0192	0.0090	0.0287	0.0318	0.0108	0.0330
% RSD	7.79	11.26	6.98	4.40	4.67	2.64	2.06	2.55	8.06	6.50	3.02	9.01	10.28	3.95	10.70
4-acid	% Cu														
CM-16-1	0.183	0.176	0.190	0.176	0.19	0.200	0.173	0.178	0.185	0.170	0.185	0.193	0.192	0.193	0.170
CM-16-2	0.183	0.183	0.190	0.176	0.19	0.194	0.182	0.184	0.182	0.180	0.179	0.196	0.197	0.190	0.170
CM-16-3	0.186	0.181	0.190	0.177	0.19	0.197	0.186	0.180	0.183	0.180	0.179	0.196	0.196	0.193	0.170
CM-16-4	0.184	0.183	0.190	0.176	0.18	0.198	0.188	0.181	0.179	0.180	0.173	0.193	0.190	0.191	0.180
CM-16-5	0.182	0.169	0.190	0.178	0.19	0.200	0.178	0.177	0.184	0.180	0.181	0.194	0.192	0.190	0.180
CM-16-6	0.183	0.177	0.180	0.176	0.18	0.194	0.183	0.180	0.185	0.170	0.181	0.199	0.188	0.192	0.170
CM-16-7	0.184	0.178	0.190	0.175	0.19	0.198	0.184	0.179	0.184	0.180	0.179	0.200	0.191	0.191	0.170
CM-16-8	0.185	0.176	0.190	0.175	0.18	0.196	0.180	0.183	0.177	0.180	0.183	0.191	0.194	0.192	0.170
CM-16-9	0.183	0.180	0.190	0.175	0.19	0.197	0.178	0.183	0.182	0.180	0.184	0.195	0.190	0.195	0.170
CM-16-10	0.181	0.181	0.180	0.179	0.18	0.196	0.184	0.179	0.184	0.180	0.182	0.198	0.191	0.192	0.170
Mean	0.183	0.178	0.188	0.176	0.186	0.197	0.182	0.180	0.183	0.178	0.181	0.195	0.192	0.192	0.172
Std. Devn.	0.0014	0.0042	0.0042	0.0013	0.0052	0.0021	0.0044	0.0023	0.0026	0.0042	0.0034	0.0029	0.0027	0.0013	0.0042
% RSD	0.78	2.35	2.24	0.76	2.78	1.07	2.44	1.29	1.44	2.37	1.89	1.48	1.42	0.67	2.45
Aqua regia	% Cu														
CM-16-1	0.186	0.183	0.200	0.175	0.19	0.201	0.184	0.184	0.175	0.190	0.187	0.192	0.191		0.170
CM-16-2	0.186	0.184	0.200	0.177	0.19	0.195	0.178	0.183	0.175	0.180	0.183	0.195	0.190		0.171
CM-16-3	0.185	0.183	0.200	0.178	0.19	0.193	0.186	0.180	0.172	0.180	0.181	0.196	0.193		0.173
CM-16-4	0.185	0.183	0.200	0.174	0.18	0.197	0.179	0.183	0.174	0.190	0.181	0.192	0.190		0.177
CM-16-5	0.184	0.182	0.200	0.177	0.18	0.195	0.178	0.178	0.177	0.190	0.178	0.193	0.192		0.177
CM-16-6	0.185	0.182	0.200	0.178	0.18	0.198	0.176	0.178	0.178	0.190	0.184	0.195	0.192		0.176
CM-16-7	0.181	0.177	0.200	0.177	0.18	0.202	0.180	0.175	0.176	0.190	0.178	0.196	0.193		0.176
CM-16-8	0.181	0.183	0.200	0.175	0.18	0.196	0.185	0.185	0.174	0.180	0.181	0.191	0.192		0.172
CM-16-9	0.181	0.179	0.200	0.173	0.18	0.192	0.181	0.182	0.179	0.190	0.176	0.191	0.190		0.169
CM-16-10	0.181	0.182	0.200	0.174	0.18	0.196	0.183	0.180	0.177	0.180	0.176	0.195	0.190		0.172
Mean	0.184	0.182	0.200	0.176	0.183	0.197	0.181	0.181	0.176	0.186	0.181	0.194	0.191		0.173
Std. Devn.	0.0022	0.0021	0.0000	0.0018	0.0048	0.0032	0.0034	0.0032	0.0021	0.0052	0.0036	0.0021	0.0013		0.0028
% RSD	1.21	1.16	0.00	1.03	2.64	1.61	1.86	1.75	1.20	2.78	1.98	1.09	0.68		1.63

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### **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	Lab 15
4-acid	% Mo														
CM-16-1	0.017	0.016	0.02	0.016	0.019	0.017	0.017	0.018	0.016	0.016	0.018	0.016	0.017	0.015	0.016
CM-16-2	0.017	0.017	0.02	0.017	0.019	0.018	0.017	0.018	0.016	0.016	0.019	0.016	0.018	0.015	0.016
CM-16-3	0.017	0.016	0.02	0.016	0.019	0.018	0.018	0.018	0.015	0.017	0.019	0.016	0.017	0.017	0.016
CM-16-4	0.016	0.017	0.02	0.016	0.020	0.017	0.017	0.019	0.016	0.016	0.018	0.016	0.017	0.016	0.016
CM-16-5	0.016	0.016	0.02	0.017	0.019	0.017	0.015	0.017	0.016	0.016	0.018	0.016	0.017	0.016	0.016
CM-16-6	0.016	0.016	0.02	0.016	0.019	0.017	0.016	0.021	0.015	0.016	0.019	0.016	0.017	0.016	0.016
CM-16-7	0.017	0.016	0.02	0.016	0.019	0.017	0.018	0.018	0.016	0.016	0.019	0.016	0.017	0.015	0.016
CM-16-8	0.016	0.016	0.02	0.016	0.019	0.016	0.017	0.017	0.016	0.016	0.018	0.016	0.017	0.015	0.016
CM-16-9	0.016	0.016	0.02	0.016	0.018	0.017	0.016	0.018	0.016	0.016	0.018	0.015	0.017	0.016	0.016
CM-16-10	0.016	0.016	0.02	0.016	0.019	0.016	0.017	0.018	0.016	0.016	0.019	0.016	0.017	0.015	0.015
Mean	0.016	0.016	0.020	0.016	0.019	0.017	0.017	0.018	0.016	0.016	0.019	0.016	0.017	0.016	0.016
Std. Devn.	0.0005	0.0003	0.0000	0.0004	0.0005	0.0007	0.0009	0.0011	0.0004	0.0003	0.0005	0.0003	0.0003	0.0006	0.0003
% RSD	3.15	1.68	0.00	2.60	2.48	3.92	5.47	6.24	2.67	1.96	2.85	2.02	1.81	3.73	1.99
Aqua regia	% Mo														
CM-16-1	0.016	0.012	0.02	0.017	0.019	0.014	0.018	0.016	0.015	0.020	0.016	0.015	0.017		0.015
CM-16-2	0.017	0.012	0.02	0.017	0.019	0.014	0.016	0.016	0.015	0.019	0.017	0.015	0.016		0.015
CM-16-3	0.017	0.013	0.01	0.017	0.019	0.014	0.017	0.017	0.014	0.019	0.016	0.015	0.017		0.015
CM-16-4	0.017	0.013	0.02	0.016	0.019	0.014	0.016	0.017	0.015	0.017	0.017	0.015	0.018		0.016
CM-16-5	0.017	0.012	0.02	0.017	0.019	0.014	0.017	0.016	0.015	0.019	0.017	0.016	0.017		0.016
CM-16-6	0.016	0.012	0.02	0.017	0.019	0.014	0.016	0.017	0.015	0.019	0.017	0.015	0.018		0.016
CM-16-7	0.017	0.012	0.02	0.017	0.020	0.014	0.017	0.017	0.015	0.019	0.017	0.016	0.019		0.016
CM-16-8	0.016	0.013	0.02	0.017	0.020	0.014	0.016	0.017	0.015	0.018	0.017	0.016	0.018		0.015
CM-16-9	0.018	0.012	0.02	0.017	0.018	0.014	0.017	0.016	0.015	0.018	0.016	0.015	0.017		0.015
CM-16-10	0.017	0.013	0.02	0.017	0.018	0.014	0.017	0.018	0.015	0.018	0.017	0.016	0.017		0.016
Mean	0.017	0.012	0.019	0.017	0.019	0.014	0.017	0.017	0.015	0.019	0.017	0.015	0.017		0.016
Std. Devn.	0.0006	0.0003	0.0032	0.0003	0.0007	0.0000	0.0007	0.0007	0.0003	0.0008	0.0005	0.0002	0.0008		0.0003
% RSD	3.76	2.68	16.64	1.87	3.51	0.00	4.04	4.04	2.12	4.53	2.89	1.34	4.78		2.04

**Note: 4-acid Mo data from Lab 3 was excluded for failing the t test.**

**Aqua regia Mo data from Lab 3 was excluded for failing the t test.**

## **REFERENCE MATERIAL CDN-CM-16**

### **Participating Laboratories:**

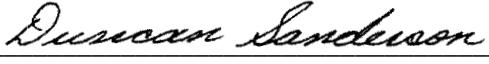
(not in same order as listed in table of results)

Acme Analytical Laboratories Ltd., Vancouver, B.C., Canada  
Actlabs, Ancaster, Ontario, Canada  
Actlabs, Thunder Bay, Ontario, Canada  
Actlabs, Stewart, B.C.  
ALS Chemex Laboratories, North Vancouver, B.C., Canada  
AGAT, Mississauga, Ontario  
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Alex Stewart Argentina SA  
Stewart Group, Kamloops, B.C., Canada  
CIMM, Lima, Peru  
Inspectorate, Richmond, B.C., Canada  
OMAC Laboratories Ltd., Ireland  
SGS, Lima, Peru  
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TSL Laboratories, Saskatoon, Canada

### **Legal Notice:**

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  
Duncan Sanderson, Certified Assayer of B.C.

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