

# CDN Resource Laboratories Ltd.

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## REFERENCE MATERIAL: CDN-ME-1204

Recommended values and the “Between Lab” Two Standard Deviations

<i>Gold</i>	<i>0.975 g/t ± 0.066 g/t</i>	<i>Certified value</i>
<i>Silver</i>	<i>58 g/t ± 6 g/t</i>	<i>Certified value</i>
<i>Copper</i>	<i>0.519 % ± 0.022 %</i>	<i>Certified value</i>
<i>Lead</i>	<i>0.443% ± 0.024 %</i>	<i>Certified value</i>
<i>Zinc</i>	<i>2.36 % ± 0.12 %</i>	<i>Certified value</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:** July 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 15 laboratories for round robin assaying.

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

The ore was supplied by Nyrstar from their Campo Morado property in Mexico. The Campo Morado precious-metal-bearing, volcanogenic massive sulphide deposits occur in a lower Cretaceous bimodal, calc-alkaline volcanic sequence. Most deposits occur in the upper part of a sequence of felsic flows and heterolithic volcanoclastic rocks or at its contact with overlying chert and argillite. Gold, silver, zinc, and lead are associated with pyrite, quartz, ankerite, sphalerite, chalcopyrite and galena, with minor tennantite-freibergite, arsenopyrite, and pyrrhotite.

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

	Percent		Percent
SiO <sub>2</sub>	37.1	MgO	2.6
Al <sub>2</sub> O <sub>3</sub>	4.4	K <sub>2</sub> O	0.5
Fe <sub>2</sub> O <sub>3</sub>	28.7	TiO <sub>2</sub>	0.1
CaO	2.9	LOI	19.3
Na <sub>2</sub> O	0.1	S	20.1
C	1.4		

### **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.

### **Assay Procedures:**

**Au:** Fire assay pre-concentration, AA or ICP finish (30g sub-sample).  
**Ag, Cu, Pb, Zn:** 4-acid digestion, AA or ICP finish.

**REFERENCE MATERIAL CDN-ME-1204**

**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	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
ME-1204-1	0.994	0.921	0.95	1.00	0.947	0.959	1.030	0.962	1.010	0.912	0.915	0.948	0.977	0.96	0.894
ME-1204-2	0.995	0.960	0.93	0.99	0.972	1.020	1.000	0.995	1.000	0.842	1.010	0.963	0.993	0.82	0.896
ME-1204-3	0.970	0.965	0.95	0.98	1.005	1.016	1.030	0.985	0.957	0.840	0.996	0.903	0.946	0.97	0.913
ME-1204-4	0.978	0.968	1.01	0.98	0.992	0.974	0.985	1.014	0.952	0.835	1.000	1.030	0.939	0.98	0.928
ME-1204-5	0.967	0.939	1.09	1.02	0.969	0.966	0.958	0.981	0.891	0.841	1.030	0.961	1.020	0.99	0.868
ME-1204-6	0.997	0.970	1.03	1.01	0.993	1.017	0.979	0.997	0.995	0.861	0.980	0.967	0.971	0.94	0.775
ME-1204-7	0.996	0.972	1.01	0.99	0.922	0.991	1.010	0.952	0.947	0.904	0.945	0.967	0.953	0.93	0.864
ME-1204-8	0.990	0.916	0.99	1.01	0.948	0.970	1.030	0.969	0.889	0.831	0.969	0.981	0.978	0.99	0.850
ME-1204-9	0.981	0.962	1.06	1.00	0.951	1.005	1.040	1.010	0.976	0.786	0.968	0.966	0.966	1.03	0.866
ME-1204-10	0.989	0.950	1.00	1.01	0.943	1.018	1.070	0.973	0.863	0.858	0.960	0.941	0.980	1.02	0.896
Mean	0.986	0.952	1.002	0.999	0.964	0.994	1.013	0.984	0.948	0.851	0.977	0.963	0.972	0.963	0.875
Std. Devn.	0.0110	0.0204	0.0503	0.0137	0.0265	0.0244	0.0333	0.0204	0.0512	0.0363	0.0335	0.0319	0.0236	0.0593	0.0427
% RSD	1.12	2.14	5.02	1.37	2.75	2.46	3.29	2.07	5.40	4.27	3.43	3.31	2.43	6.15	4.87
	Ag g/t	Ag g/t	Ag g/t	Ag g/t	Ag g/t	Ag g/t	Ag g/t	Ag g/t	Ag g/t	Ag g/t	Ag g/t	Ag g/t	Ag g/t	Ag g/t	Ag g/t
ME-1204-1	56.7	59	61	58.2	63.2	59	56.0	55.4	50.6	64.1	59	55	55	58	56
ME-1204-2	57.1	55	61	58.1	59.5	61	55.9	54.9	54.3	70.7	59	57	55	58	56
ME-1204-3	56.1	59	63	57.5	60.7	60	55.4	54.9	53.3	64.4	61	55	54	57	56
ME-1204-4	56.9	60	64	59.0	61.3	61	56.0	55.5	55.3	68.6	59	55	56	57	56
ME-1204-5	56.1	60	65	59.0	61.2	60	56.0	54.8	54.4	68.2	61	57	57	57	57
ME-1204-6	56.6	60	65	59.4	62.3	62	55.5	56.1	52.9	61.3	58	54	56	57	57
ME-1204-7	56.2	58	61	58.9	60.4	61	55.9	55.1	53.4	62.0	60	53	55	57	54
ME-1204-8	56.1	59	65	59.6	63.4	60	55.3	56.3	51.6	69.8	58	55	55	58	53
ME-1204-9	55.4	60	65	58.2	58.4	60	56.1	55.6	53.5	62.0	59	54	56	59	56
ME-1204-10	56.4	60	63	58.7	59.7	60	55.6	56.4	53.6	65.9	57	56	55	55	57
Mean	56.4	59.0	63.3	58.7	61.0	60.4	55.8	55.5	53.3	65.7	59.1	55.1	55.4	57.3	55.8
Std. Devn.	0.4904	1.5635	1.7670	0.6501	1.6183	0.8433	0.2908	0.5963	1.3617	3.4561	1.2867	1.2867	0.8433	1.0593	1.3166
% RSD	0.87	2.65	2.79	1.11	2.65	1.40	0.52	1.07	2.56	5.26	2.18	2.34	1.52	1.85	2.36

**Note:** Au data from Lab 10 was removed for failing the t test.

**REFERENCE MATERIAL CDN-ME-1204**

**Results from round-robin assaying:**

	% Cu	% Cu	% Cu	% Cu	% Cu	% Cu	% Cu	% Cu	% Cu	% Cu	% Cu	% Cu	% Cu	% Cu	% Cu
ME-1204-1	0.476	0.520	0.530	0.500	0.533	0.516	0.52	0.506	0.51	0.491	0.514	0.513	0.526	0.529	0.521
ME-1204-2	0.481	0.520	0.537	0.509	0.522	0.523	0.51	0.515	0.51	0.539	0.518	0.510	0.522	0.539	0.521
ME-1204-3	0.475	0.527	0.526	0.500	0.519	0.526	0.55	0.516	0.50	0.496	0.525	0.519	0.520	0.530	0.517
ME-1204-4	0.483	0.530	0.538	0.506	0.524	0.526	0.54	0.521	0.50	0.530	0.507	0.507	0.525	0.531	0.518
ME-1204-5	0.478	0.533	0.529	0.504	0.524	0.520	0.49	0.515	0.49	0.533	0.544	0.518	0.509	0.523	0.524
ME-1204-6	0.485	0.530	0.527	0.503	0.531	0.526	0.52	0.516	0.50	0.487	0.517	0.521	0.519	0.530	0.520
ME-1204-7	0.479	0.502	0.525	0.513	0.518	0.525	0.53	0.510	0.49	0.507	0.532	0.513	0.523	0.531	0.502
ME-1204-8	0.479	0.525	0.531	0.513	0.511	0.527	0.51	0.516	0.49	0.544	0.505	0.525	0.524	0.525	0.493
ME-1204-9	0.481	0.534	0.525	0.504	0.494	0.523	0.51	0.508	0.51	0.495	0.518	0.510	0.523	0.529	0.519
ME-1204-10	0.486	0.527	0.513	0.502	0.515	0.519	0.53	0.519	0.48	0.501	0.511	0.534	0.521	0.519	0.511
Mean	0.480	0.525	0.528	0.505	0.519	0.523	0.521	0.514	0.498	0.512	0.519	0.517	0.521	0.529	0.515
Std. Devn.	0.0036	0.0093	0.0070	0.0048	0.0111	0.0037	0.0173	0.0048	0.0103	0.0218	0.0119	0.0082	0.0048	0.0052	0.0099
% RSD	0.74	1.78	1.33	0.95	2.13	0.70	3.32	0.92	2.07	4.25	2.28	1.58	0.92	0.99	1.92
	% Pb	% Pb	% Pb	% Pb	% Pb	% Pb	% Pb	% Pb	% Pb	% Pb	% Pb	% Pb	% Pb	% Pb	% Pb
ME-1204-1	0.438	0.451	0.431	0.445	0.414	0.45	0.43	0.445	0.46	0.416	0.452	0.449	0.450	0.450	0.44
ME-1204-2	0.439	0.429	0.432	0.452	0.430	0.47	0.42	0.449	0.45	0.449	0.452	0.451	0.450	0.445	0.44
ME-1204-3	0.436	0.456	0.448	0.451	0.418	0.45	0.45	0.446	0.44	0.406	0.472	0.446	0.442	0.435	0.43
ME-1204-4	0.436	0.463	0.447	0.449	0.421	0.46	0.45	0.454	0.45	0.445	0.451	0.445	0.451	0.446	0.43
ME-1204-5	0.433	0.465	0.440	0.451	0.419	0.44	0.42	0.448	0.45	0.453	0.478	0.454	0.449	0.428	0.43
ME-1204-6	0.437	0.459	0.454	0.452	0.424	0.46	0.43	0.448	0.45	0.421	0.445	0.447	0.453	0.434	0.43
ME-1204-7	0.433	0.449	0.451	0.446	0.418	0.45	0.44	0.447	0.45	0.416	0.468	0.433	0.447	0.429	0.42
ME-1204-8	0.431	0.446	0.442	0.451	0.432	0.45	0.43	0.443	0.44	0.472	0.453	0.451	0.452	0.442	0.41
ME-1204-9	0.430	0.464	0.435	0.446	0.404	0.45	0.43	0.441	0.47	0.431	0.458	0.441	0.457	0.441	0.43
ME-1204-10	0.434	0.455	0.454	0.446	0.413	0.45	0.44	0.453	0.45	0.449	0.440	0.449	0.449	0.433	0.43
Mean	0.435	0.454	0.443	0.449	0.419	0.453	0.434	0.447	0.451	0.436	0.457	0.447	0.450	0.438	0.429
Std. Devn.	0.0029	0.0108	0.0087	0.0028	0.0082	0.0082	0.0107	0.0040	0.0088	0.0210	0.0121	0.0060	0.0039	0.0075	0.0088
% RSD	0.66	2.39	1.97	0.62	1.96	1.82	2.48	0.90	1.94	4.81	2.65	1.34	0.87	1.72	2.04
	% Zn	% Zn	% Zn	% Zn	% Zn	% Zn	% Zn	% Zn	% Zn	% Zn	% Zn	% Zn	% Zn	% Zn	% Zn
ME-1204-1	2.33	2.33	2.34	2.38	2.46	2.52	2.27	2.27	2.18	2.24	2.37	2.37	2.39	2.53	2.39
ME-1204-2	2.33	2.31	2.35	2.44	2.33	2.56	2.20	2.33	2.17	2.43	2.37	2.37	2.36	2.47	2.39
ME-1204-3	2.31	2.35	2.34	2.39	2.35	2.53	2.36	2.30	2.10	2.26	2.42	2.36	2.33	2.43	2.36
ME-1204-4	2.31	2.37	2.33	2.39	2.45	2.51	2.36	2.31	2.14	2.42	2.37	2.32	2.35	2.40	2.35
ME-1204-5	2.29	2.39	2.33	2.40	2.40	2.53	2.30	2.34	2.04	2.46	2.47	2.36	2.33	2.39	2.37
ME-1204-6	2.31	2.37	2.34	2.38	2.48	2.53	2.25	2.28	2.16	2.31	2.37	2.32	2.36	2.42	2.37
ME-1204-7	2.29	2.24	2.33	2.39	2.40	2.54	2.31	2.33	2.13	2.41	2.42	2.29	2.35	2.41	2.26
ME-1204-8	2.29	2.34	2.35	2.41	2.40	2.51	2.22	2.31	2.08	2.59	2.35	2.33	2.35	2.37	2.24
ME-1204-9	2.28	2.38	2.34	2.39	2.28	2.51	2.26	2.23	2.23	2.41	2.41	2.31	2.40	2.43	2.33
ME-1204-10	2.31	2.36	2.33	2.37	2.36	2.49	2.28	2.28	2.10	2.46	2.35	2.35	2.37	2.33	2.31
Mean	2.31	2.34	2.34	2.39	2.39	2.52	2.28	2.30	2.13	2.40	2.39	2.34	2.36	2.42	2.34
Std. Devn.	0.0162	0.0438	0.0079	0.0200	0.0628	0.0195	0.0532	0.0346	0.0552	0.1044	0.0386	0.0278	0.0228	0.0544	0.0523
% RSD	0.70	1.87	0.34	0.83	2.63	0.77	2.33	1.50	2.59	4.35	1.61	1.19	0.97	2.25	2.24

**Note: Cu data from Lab 1 was removed for failing the t test.  
Zn data from Lab 9 was removed for failing the t test.**

**REFERENCE MATERIAL CDN-ME-1204**

**Participating Laboratories:**

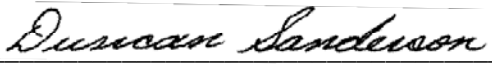
(not in same order as listed in table of results)

Acme Analytical Laboratories Ltd., Vancouver, B.C., Canada  
Acme Analytical Laboratories Ltd., Santiago, Chile  
Actlabs, Ancaster, Ontario, Canada  
Actlabs, Thunder Bay, Ontario, Canada  
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Genalysis, Perth, Australia  
SGS, Lima, Peru  
SGS, Toronto, Ontario, Canada  
SGS, Vancouver, B.C., Canada  
TSL Laboratories, Saskatoon, Canada  
Ultra Trace, Perth, Australia


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Certified by

  
Duncan Sanderson, Certified Assayer of B.C.

Geochemist

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