

# CDN Resource Laboratories Ltd.

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## REFERENCE MATERIAL: CDN-ME-1812

Recommended values and the “Between Lab” Two Standard Deviations

Gold	7.86 gpt	± 0.66 gpt	30 g FA, instrumental	Certified value
Gold	7.83 gpt	± 0.58 gpt	30 g FA, gravimetric	Certified value
Silver	96 ppm	± 15 ppm	30 g FA, gravimetric	Certified value
Silver	97 ppm	± 5 ppm	4 Acid / ICP	Certified value
Copper	0.989 %	± 0.042 %	4 Acid / ICP	Certified value
Lead	1.47 %	± 0.06 %	4 Acid / ICP	Certified value
Zinc	3.23 %	± 0.20 %	4 Acid / ICP	Certified value

**Note 1:** 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:** March 10, 2019

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

Standard CDN-ME-1812 was prepared by combining miscellaneous ores.

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

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

	Percent		Percent
SiO <sub>2</sub>	39.5	Na <sub>2</sub> O	0.6
Al <sub>2</sub> O <sub>3</sub>	6.2	MgO	3.1
Fe <sub>2</sub> O <sub>3</sub>	24.6	K <sub>2</sub> O	1.3
CaO	3.4	TiO <sub>2</sub>	0.2
MnO	0.2	LOI	14
S	15.8	C	1.2

### **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 ±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:** 30 gr. fire assay pre-concentration, AA or ICP finish.  
**Au and Ag:** 30 gr. fire assay pre-concentration, gravimetric finish.  
**Ag, Cu, Pb, Zn:** 4-acid digestion, AA or ICP finish

### Results from round-robin assaying:

Fire Assay Instrumental	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-1812-1	7.19	7.95	7.74	7.62	8.44	7.64	8.208	8.076	8.285	8.044	8.341	8.13	7.64	7.829	8.27
ME-1812-2	7.11	7.33	7.24	7.51	7.74	7.04	8.123	8.002	8.392	8.000	7.724	8.02	7.47	7.500	7.77
ME-1812-3	7.40	8.19	8.32	7.65	8.12	7.04	7.842	8.098	7.617	8.166	7.918	8.09	8.01	7.663	7.50
ME-1812-4	7.02	7.51	8.04	8.29	7.43	7.43	7.985	7.854	7.581	8.028	8.339	8.11	7.98	7.791	8.50
ME-1812-5	7.80	8.41	7.70	7.84	8.04	7.30	7.883	8.024	7.381	8.302	7.521	7.98	7.50	7.757	8.39
ME-1812-6	7.57	8.17	8.42	7.45	7.85	7.63	7.887	8.018	8.271	8.127	7.791	7.66	7.81	7.887	8.47
ME-1812-7	7.13	8.29	NSS	7.86	7.42	7.23	8.235	7.981	7.515	7.924	8.195	7.94	8.29	7.853	8.33
ME-1812-8	7.73	7.44	7.54	7.36	7.80	7.22	8.043	7.779	7.602	8.223	8.017	8.10	7.93	7.874	7.88
ME-1812-9	7.28	7.36	8.14	7.96	7.80	7.56	7.998	8.075	7.632	8.235	8.133	7.87	8.13	7.773	8.07
ME-1812-10	7.05	8.01	NSS		7.52	7.29	8.233	7.973	7.058	7.841	7.674	8.09	8.06	7.871	8.55
Mean	7.33	7.87	7.89	7.73	7.82	7.34	8.044	7.988	7.733	8.089	7.965	8.00	7.88	7.780	8.17
Std. Dev.	0.284	0.415	0.406	0.291	0.322	0.221	0.150	0.101	0.437	0.147	0.286	0.146	0.272	0.120	0.354
% RSD	3.88	5.28	5.15	3.77	4.12	3.02	1.86	1.26	5.65	1.82	3.59	1.83	3.45	1.54	4.34

Fire Assay Gravimetric	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-1812-1	7.26	8.66	8.46	7.44	8.04	7.77	7.63	8.02		7.86	8.34	8.23	8.25	7.713	7.96
ME-1812-2	7.32	7.79	7.35	7.29	7.72	7.76	7.52	7.81		8.01	7.93	7.95	7.87	7.772	7.59
ME-1812-3	7.18	7.26	8.39	8.03	8.16	7.47	8.15	8.04		7.79	7.45	7.92	7.74	7.943	NSS
ME-1812-4	7.79	7.40	8.11	7.59	5.12	7.98	7.72	7.84		8.21	7.93	8.31	7.86	7.721	8.03
ME-1812-5	7.44	8.13	8.68	6.55	7.65	7.92	7.93	7.80		7.96	7.74	8.06	8.23	7.758	8.63
ME-1812-6	7.87	7.71	8.32	7.29	7.66	7.86	8.09	7.88		8.21	7.32	7.58	7.91	7.952	7.97
ME-1812-7	7.44	7.72	8.88	7.44	7.57	7.24	7.66	7.98		7.99	8.46	7.62	7.71	7.592	9.16
ME-1812-8	7.73	7.46	8.25	7.31	7.49	7.43	7.54	7.89		8.13	7.68	7.53	7.46	7.887	NSS
ME-1812-9	6.92	7.97	8.19	7.51	7.86	7.97	8.14	7.83		8.02	8.02	8.12	7.85	7.694	8.27
ME-1812-10	7.39	7.93	7.89	7.40	7.59	7.57	7.60	7.99		8.21	7.51	8.47	7.65	7.525	8.57
Mean	7.43	7.80	8.25	7.39	7.49	7.70	7.80	7.91		8.04	7.84	7.98	7.85	7.756	8.27
Std. Dev.	0.294	0.405	0.423	0.365	0.858	0.256	0.254	0.091		0.149	0.373	0.322	0.243	0.141	0.495
% RSD	3.96	5.19	5.13	4.95	11.46	3.32	3.26	1.15		1.85	4.75	4.04	3.10	1.81	5.99

Instrumental 4 Acid	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
	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-1812-1	>100	92	99	99	99	95	104	95	98	97	95	97	96	95.3	99
ME-1812-2	>100	94	102	97	94	96	103	95	102	96	94	98	101	97.2	97
ME-1812-3	99	93	100	97	99	96	106	95	93	93	98	99	94	95.7	96
ME-1812-4	>100	97	99	97	97	99	104	98	101	95	97	98	104	100.1	98
ME-1812-5	>100	95	98	100	97	99	101	95	96	100	97	96	98	95.4	97
ME-1812-6	>100	99	100	98	95	95	98	96	105	98	93	103	99	98.5	98
ME-1812-7	96	95	99	101	99	95	103	96	106	95	96	101	100	99.7	96
ME-1812-8	>100	102	102	100	94	95	101	96	102	93	92	108	99	104.4	97
ME-1812-9	100	91	98	97	94	96	102	96	98	97	97	99	104	99.6	97
ME-1812-10	>100	94	99	106	94	99	97	96	100	92	97	99	97	96.9	99
Mean	98	95	100	99	96	96	102	96	100	96	96	100	99	98.3	97
Std. Dev.	1.692	3.327	1.430	2.821	2.251	1.780	2.767	0.919	3.985	2.503	2.011	3.490	3.225	2.818	1.075
% RSD	1.73	3.49	1.44	2.84	2.34	1.85	2.72	0.96	3.98	2.62	2.10	3.50	3.25	2.87	1.10

Gravimetric	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
	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-1812-1	104	88	109	82	90	92	85			97	98.4	97	98	99.0	103
ME-1812-2	101	88	101	98	93	92	88			93	98.2	96	102	101.9	118
ME-1812-3	99	82	123	NNS	91	93	88			93	100.6	99	99	97.3	93
ME-1812-4	112	165	145	103	95	94	87			101	98.2	100	98	97.3	104
ME-1812-5	101	93	76	86	96	IS	81			93	99.5	96	101	98.7	107
ME-1812-6	103	93	60	86	106	94	81			92	96.0	96	110	98.1	110
ME-1812-7	96	92	122	NNS	98	92	92			90	97.5	96	110	99.3	112
ME-1812-8	100	89	84	91	92	93	123			99	96.5	98	100	97.1	74
ME-1812-9	100	88	115	NNS	92	100	79			101	96.8	94	103	91.3	118
ME-1812-10	104	89	109	102	90	IS	74			97	97.1	96	101	99.4	102
Mean	102	97	104	93	94	94	88			96	97.9	97	102	97.9	104
Std. Dev.	4.269	24.212	25.087	8.443	4.877	2.659	13.440			3.921	1.412	1.751	4.417	2.729	13.025
% RSD	4.19	25.04	24.03	9.12	5.17	2.84	15.31			4.10	1.44	1.81	4.32	2.79	12.51
Instrumental 4 Acid	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
	% Cu	% Cu	% Cu	% Cu	% Cu	% Cu	% Cu	% Cu	% Cu	% Cu	% Cu	% Cu	% Cu	% Cu	% Cu
ME-1812-1	0.938	0.968	0.994	0.992	0.941	0.975	1.036	1.00	0.999	0.985	0.970	0.973	0.96	1.028	0.967
ME-1812-2	0.928	0.948	0.992	1.005	0.930	0.960	1.026	0.98	1.019	0.994	0.968	0.978	1.01	1.024	0.972
ME-1812-3	0.935	0.969	0.999	1.010	0.952	0.978	1.004	0.99	0.993	1.003	0.989	0.998	0.98	0.995	0.965
ME-1812-4	0.960	0.985	0.991	1.010	0.956	0.977	1.014	1.01	0.984	1.014	0.979	0.977	0.99	1.043	0.984
ME-1812-5	0.921	0.968	0.990	0.995	0.949	0.975	1.018	0.99	0.986	1.004	0.982	0.980	1.03	1.010	0.978
ME-1812-6	0.956	0.963	1.005	0.987	0.968	1.010	1.007	0.99	0.988	0.991	0.976	0.965	1.00	1.032	0.971
ME-1812-7	0.925	0.933	0.996	0.999	0.947	0.981	1.032	0.99	0.989	0.991	0.967	0.936	0.97	1.019	0.976
ME-1812-8	0.927	0.965	0.997	0.992	0.947	0.989	1.028	0.98	0.974	0.988	0.980	0.957	1.02	1.030	0.977
ME-1812-9	0.945	0.927	0.998	0.993	0.944	0.983	1.014	1.00	0.998	0.990	0.993	0.996	0.98	1.034	0.969
ME-1812-10	0.942	0.944	1.005	1.005	0.953	0.996	1.017	0.97	1.001	1.006	0.998	0.979	1.00	1.018	0.985
Mean	0.938	0.957	0.997	0.999	0.949	0.982	1.020	0.99	0.993	0.997	0.980	0.974	0.99	1.023	0.974
Std. Dev.	0.013	0.018	0.005	0.008	0.010	0.014	0.011	0.012	0.012	0.009	0.011	0.018	0.022	0.014	0.007
% RSD	1.40	1.91	0.53	0.82	1.05	1.38	1.04	1.17	1.24	0.95	1.08	1.86	2.23	1.34	0.70
Instrumental 4 Acid	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
	% Pb	% Pb	% Pb	% Pb	% Pb	% Pb	% Pb	% Pb	% Pb	% Pb	% Pb	% Pb	% Pb	% Pb	% Pb
ME-1812-1	1.49	1.470	1.495	1.465	1.41	1.46	1.56	1.48	1.512	1.43	1.49	1.44	1.50	1.451	1.460
ME-1812-2	1.42	1.455	1.495	1.480	1.39	1.48	1.56	1.51	1.529	1.44	1.47	1.43	1.53	1.467	1.455
ME-1812-3	1.41	1.475	1.505	1.485	1.42	1.48	1.54	1.50	1.491	1.45	1.50	1.48	1.50	1.437	1.455
ME-1812-4	1.45	1.500	1.490	1.475	1.41	1.50	1.53	1.48	1.499	1.45	1.49	1.46	1.53	1.491	1.455
ME-1812-5	1.43	1.490	1.490	1.460	1.44	1.49	1.53	1.51	1.488	1.47	1.48	1.46	1.53	1.443	1.460
ME-1812-6	1.45	1.510	1.505	1.450	1.43	1.51	1.54	1.50	1.474	1.43	1.48	1.44	1.52	1.489	1.450
ME-1812-7	1.43	1.425	1.500	1.480	1.44	1.48	1.57	1.48	1.460	1.45	1.45	1.38	1.43	1.485	1.490
ME-1812-8	1.40	1.465	1.505	1.470	1.42	1.51	1.54	1.48	1.480	1.44	1.45	1.43	1.48	1.512	1.455
ME-1812-9	1.42	1.400	1.495	1.495	1.43	1.52	1.55	1.46	1.496	1.45	1.51	1.51	1.51	1.492	1.465
ME-1812-10	1.43	1.425	1.515	1.510	1.42	1.51	1.55	1.48	1.490	1.45	1.53	1.46	1.49	1.489	1.495
Mean	1.43	1.462	1.500	1.477	1.42	1.49	1.55	1.49	1.492	1.45	1.49	1.45	1.50	1.476	1.464
Std. Dev.	0.025	0.036	0.008	0.017	0.014	0.019	0.013	0.016	0.019	0.012	0.025	0.034	0.031	0.025	0.016
% RSD	1.77	2.44	0.53	1.17	1.00	1.27	0.86	1.09	1.29	0.81	1.69	2.38	2.05	1.68	1.07

Instrumental 4 Acid	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
	% Zn	% Zn	% Zn	% Zn	% Zn	% Zn	% Zn	% Zn	% Zn	% Zn	% Zn	% Zn	% Zn	% Zn	% Zn
ME-1812-1	3.10	3.16	3.25	3.24	3.09	3.060	3.46	3.37	3.299	3.21	3.20	3.29	3.23	3.221	3.15
ME-1812-2	3.07	3.10	3.24	3.27	3.03	3.040	3.50	3.35	3.355	3.24	3.19	3.29	3.31	3.239	3.16
ME-1812-3	3.05	3.18	3.25	3.28	3.11	3.050	3.40	3.35	3.334	3.24	3.18	3.40	3.20	3.190	3.12
ME-1812-4	3.15	3.23	3.24	3.28	3.12	3.110	3.41	3.31	3.346	3.25	3.20	3.51	3.22	3.295	3.20
ME-1812-5	3.14	3.18	3.23	3.23	3.12	3.080	3.40	3.35	3.331	3.29	3.19	3.32	3.27	3.200	3.18
ME-1812-6	3.02	3.17	3.27	3.20	3.16	3.150	3.37	3.40	3.314	3.20	3.23	3.28	3.13	3.288	3.14
ME-1812-7	3.20	3.06	3.25	3.29	3.14	3.060	3.42	3.33	3.281	3.25	3.18	3.34	3.14	3.273	3.17
ME-1812-8	3.19	3.16	3.26	3.30	3.11	3.070	3.40	3.42	3.261	3.24	3.21	3.37	3.23	3.319	3.17
ME-1812-9	3.08	3.04	3.26	3.30	3.09	3.130	3.43	3.36	3.347	3.23	3.26	3.34	3.15	3.283	3.16
ME-1812-10	3.14	3.09	3.29	3.37	3.13	3.110	3.42	3.36	3.332	3.24	3.28	3.29	3.20	3.266	3.20
Mean	3.11	3.14	3.25	3.28	3.11	3.086	3.42	3.36	3.320	3.24	3.21	3.34	3.21	3.257	3.17
Std. Dev.	0.060	0.061	0.017	0.046	0.035	0.037	0.036	0.032	0.031	0.024	0.034	0.071	0.057	0.043	0.025
% RSD	1.92	1.94	0.53	1.42	1.13	1.20	1.06	0.94	0.93	0.75	1.07	2.11	1.79	1.32	0.79

**Notes:**

Lab 9 did not report Au assayed by fire assay with gravimetric finish  
Labs 8 and 9 did not report Ag assayed by fire assay with gravimetric finish.  
Cu results from Lab 1 were removed for failing the t test.

**Participating Laboratories:** (not in same order as table of assays)

AGAT Labs, ON, Canada	Certimin S.A., Lima, Peru
ALS Canada, North Vancouver, BC, Canada	Intertek, Genlysis, Western Australia
ALS, Loughrea, Ireland	MS Analytical, Langley, BC, Canada
ALS, Lima, Peru	SGS, Vancouver, BC, Canada
ALS, Perth Australia	SGS, Lima, Peru
ALS, Reno, USA	SGS, Lakefield, Ontario, Canada
Bureau Veritas, Perth, Australia	TSL Laboratories Ltd., Saskatoon, SK, Canada
Bureau Veritas, Vancouver, BC, 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, Certified Assayer of B.C.

Geochemist

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