

CDN Resource Laboratories Ltd.

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REFERENCE MATERIAL: CDN-ME-2002

Recommended values and the “Between Lab” Two Standard Deviations

Gold	0.289 gpt	± 0.036 gpt	30 g FA, instrumental	Provisional Mean
Silver	289 ppm	± 13 ppm	30 g FA, gravimetric	Certified value
Silver	298 ppm	± 18 ppm	4 Acid / ICP	Certified value
Lead	1.57%	± 0.07 %	4 Acid / ICP	Certified value
Zinc	2.91 %	± 0.11 %	4 Acid / ICP	Certified value
Manganese	0.53 %	± 0.04 %	4 Acid / ICP	Certified value
Iron-Total	3.53 %	± 0.15 %	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: November 6th, 2020

ORIGIN OF REFERENCE MATERIAL:

Standard CDN-ME-2002 was prepared using ore from the Panamerican silver from one of their South America's operations, supplied as coarse material from ore head.

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 ₂	54.4	Na ₂ O	0.1
Al ₂ O ₃	7.0	MgO	
Fe ₂ O ₃	5.5	K ₂ O	3.1
CaO	13	TiO ₂	0.3
P ₂ O ₅	0.1	LOI	9.4
Total S	4.6	Total C	3.02

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.
 Ag: 30 gr. fire assay pre-concentration, gravimetric finish.
 Ag, Pb, Zn, Mn, Ni, Fe: 4-acid digestion, AA or ICP finish.

Results from round-robin assaying:

Sample	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) by Fire Assay, 30g sample size and Instrumental finish															
ME-2002-1	0.282	0.340	0.298	0.277	0.282	0.269	0.306	0.26	0.305	0.300	0.264	0.298	0.320	0.34	0.269
ME-2002-2	0.298	0.295	0.291	0.258	0.263	0.291	0.306	0.26	0.278	0.304	0.257	0.283	0.305	0.32	0.338
ME-2002-3	0.269	0.296	0.310	0.260	0.324	0.296	0.261	0.25	0.270	0.294	0.256	0.289	0.314	0.30	0.323
ME-2002-4	0.271	0.275	0.274	0.311	0.276	0.267	0.294	0.26	0.395	0.291	0.279	0.299	0.276	0.30	0.422
ME-2002-5	0.280	0.289	0.292	0.278	0.298	0.277	0.384	0.28	0.297	0.291	0.284	0.292	0.278	0.30	0.324
ME-2002-6	0.315	0.301	0.294	0.263	0.416	0.267	0.283	0.28	0.294	0.302	0.257	0.275	0.275	0.31	0.277
ME-2002-7	0.298	0.302	0.290	0.276	0.296	0.309	0.289	0.26	0.305	0.301	0.275	0.260	0.274	0.34	0.309
ME-2002-8	0.342	0.279	0.311	0.297	0.290	0.302	0.272	0.27	0.304	0.292	0.275	0.280	0.305	0.40	0.293
ME-2002-9	0.294	0.292	0.274	0.278	0.301	0.319	0.309	0.29	0.298	0.294	0.270	0.274	0.293	0.33	0.331
ME-2002-10	0.282	0.328	0.306	0.284	0.282	0.304	0.275	0.28	0.318	0.303	0.270	0.284	0.280	0.34	0.415
Mean	0.293	0.300	0.294	0.278	0.303	0.290	0.298	0.27	0.306	0.297	0.269	0.283	0.292	0.33	0.330
Std. Devn.	0.02	0.02	0.01	0.02	0.04	0.02	0.03	0.01	0.03	0.01	0.01	0.01	0.02	0.03	0.05
% RSD	7.55	6.75	4.44	5.92	14.21	6.55	11.49	4.78	11.11	1.77	3.68	4.21	6.06	9.29	15.70
Ag (g/t) by 4 Acid digestion /Instrumental finish															
ME-2002-1	312	318	309	298	307	290	302	281	290	299	293	296.7	300	272	289
ME-2002-2	296	322	299	301	307	310	293	279	290	297	299	296.9	300	267	290
ME-2002-3	306	311	299	300	302	315	298	298	287	291	286	296.0	300	271	295
ME-2002-4	293	304	303	294	309	290	296	284	293	298	287	303.9	300	278	292
ME-2002-5	286	315	317	301	299	320	315	273	291	293	290	296.2	300	282	284
ME-2002-6	283	295	301	298	313	292	298	277	290	290	289	288.0	300	277	295
ME-2002-7	294	291	309	288	306	295	296	283	289	294	303	292.3	300	278	292
ME-2002-8	323	298	307	299	292	309	303	279	285	290	300	297.7	300	277	287
ME-2002-9	302	315	318	297	297	293	319	280	287	298	294	294.9	300	274	292
ME-2002-10	288	297	326	309	293	296	297	280	290	294	296	285.8	300	279	292
Mean	298	307	309	299	303	301	302	281	289	294	294	294.8	300	276	291
Std. Devn.	12.53	10.95	9.05	5.36	7.06	11.30	8.62	6.59	2.30	3.44	5.77	5.12	0.00	4.45	3.43
% RSD	4.20	3.57	2.93	1.80	2.33	3.76	2.86	2.34	0.80	1.17	1.97	1.74	0.00	1.62	1.18
Ag (g/t) Fire Assay, Gravimetric finish															
ME-2002-1	271	292	288	295	288	289	286	287	316	296	296	295.8	264	280	289
ME-2002-2	280	294	287	287	281	294	283	288	311	296	294	293.0	299	278	287
ME-2002-3	281	298	284	288	280	294	279	283	329	296	280	293.3	297	279	289
ME-2002-4	288	296	276	288	295	288	287	298	312	296	283	293.8	293	280	288
ME-2002-5	254	295	301	284	279	289	284	294	306	295	289	296.3	292	281	276
ME-2002-6	266	295	294	284	285	289	288	284	307	295	289	295.8	274	280	281
ME-2002-7	279	294	284	292	283	292	284	297	311	296	299	297.3	289	278	275
ME-2002-8	281	303	278	289	280	286	283	288	371	295	290	290.4	307	281	283
ME-2002-9	291	300	280	297	284	297	280	297	302	296	304	293.5	286	280	299
ME-2002-10	289	295	279	292	291	288	291	293	305	295	296	296.5	282	282	288
Mean	278	296	285	290	285	291	285	291	317	296	292	294.6	288	280	286
Std. Devn.	11.46	3.26	7.77	4.35	5.27	3.47	3.63	5.59	20.41	0.52	7.27	2.12	12.54	1.29	7.06
% RSD	4.12	1.10	2.72	1.50	1.85	1.19	1.28	1.92	6.44	0.17	2.49	0.72	4.35	0.46	2.47

Pb (%) by 4 Acid digestion Instrumental finish

ME-2002-1	1.66	1.60	1.62	1.575	1.645	1.515	1.605	1.56	1.62	1.58	1.52	1.569	1.48	1.48	1.550
ME-2002-2	1.52	1.57	1.65	1.565	1.610	1.540	1.550	1.54	1.61	1.58	1.50	1.581	1.49	1.47	1.555
ME-2002-3	1.56	1.57	1.61	1.570	1.610	1.605	1.590	1.60	1.63	1.58	1.52	1.581	1.50	1.47	1.535
ME-2002-4	1.54	1.56	1.62	1.570	1.640	1.535	1.600	1.61	1.62	1.60	1.51	1.586	1.51	1.45	1.535
ME-2002-5	1.49	1.57	1.60	1.565	1.580	1.615	1.600	1.53	1.62	1.60	1.51	1.573	1.52	1.50	1.565
ME-2002-6	1.50	1.55	1.60	1.585	1.620	1.535	1.600	1.56	1.57	1.58	1.51	1.558	1.52	1.47	1.545
ME-2002-7	1.51	1.56	1.62	1.570	1.585	1.520	1.580	1.57	1.66	1.57	1.52	1.542	1.50	1.45	1.555
ME-2002-8	1.56	1.58	1.61	1.580	1.580	1.635	1.550	1.59	1.59	1.59	1.51	1.583	1.50	1.45	1.535
ME-2002-9	1.51	1.57	1.60	1.555	1.610	1.520	1.600	1.58	1.57	1.59	1.51	1.561	1.45	1.47	1.565
ME-2002-10	1.53	1.58	1.63	1.590	1.600	1.595	1.580	1.60	1.61	1.59	1.50	1.554	1.52	1.46	1.540
Mean	1.54	1.57	1.62	1.573	1.608	1.562	1.586	1.57	1.61	1.59	1.51	1.569	1.50	1.47	1.548
Std. Devn.	0.049	0.01	0.016	0.010	0.023	0.046	0.021	0.027	0.027	0.010	0.007	0.015	0.022	0.016	0.012
% RSD	3.18	0.87	0.98	0.66	1.42	2.92	1.30	1.70	1.71	0.61	0.49	0.94	1.46	1.07	0.76

Zn (%) by 4 Acid digestion Instrumental finish

ME-2002-1	2.92	2.89	2.87	2.94	3.01	2.890	2.96	2.94	3.01	3.02	2.89	2.864	2.91	2.90	2.88
ME-2002-2	2.82	2.84	2.92	2.95	2.94	2.860	2.86	2.90	2.99	3.05	2.88	2.902	2.90	2.81	2.89
ME-2002-3	2.90	2.84	2.94	2.96	2.95	3.050	2.94	3.08	2.98	3.05	2.87	2.899	2.89	2.79	2.88
ME-2002-4	2.89	2.84	2.93	2.96	3.00	2.900	2.95	3.02	3.00	3.05	2.87	2.903	2.90	2.74	2.86
ME-2002-5	2.80	2.86	2.92	2.95	2.91	3.010	2.96	2.93	3.01	3.05	2.88	2.874	2.89	2.80	2.92
ME-2002-6	2.79	2.80	2.85	2.96	2.98	2.900	2.95	2.97	2.96	3.02	2.85	2.853	2.90	2.77	2.89
ME-2002-7	2.82	2.83	2.88	2.92	2.96	2.870	2.92	2.90	3.01	3.06	2.89	2.817	2.93	2.77	2.90
ME-2002-8	2.89	2.86	2.86	2.89	2.96	3.160	2.86	3.00	2.95	3.02	2.85	2.895	2.90	2.78	2.86
ME-2002-9	2.80	2.86	2.90	2.95	3.01	2.910	2.95	2.99	2.92	3.02	2.86	2.864	2.80	2.76	2.94
ME-2002-10	2.84	2.84	2.93	2.91	2.99	2.970	2.91	2.95	2.94	3.06	2.83	2.851	2.89	2.73	2.96
Mean	2.85	2.85	2.90	2.94	2.97	2.952	2.93	2.97	2.98	3.04	2.87	2.872	2.89	2.79	2.898
Std. Devn.	0.05	0.02	0.03	0.02	0.03	0.10	0.04	0.06	0.03	0.02	0.02	0.03	0.03	0.05	0.03
% RSD	1.70	0.83	1.13	0.82	1.10	3.25	1.31	1.90	1.10	0.58	0.68	0.98	1.18	1.70	1.14

Fe (%) by 4 Acid digestion Instrumental finish

ME-2002-1	3.83	3.72	3.50	3.50	3.66	3.44	3.60	3.71	3.54	3.62	3.70	3.441	3.5	3.53	3.49
ME-2002-2	3.59	3.63	3.59	3.46	3.58	3.52	3.47	3.69	3.53	3.65	3.82	3.469	3.5	3.43	3.50
ME-2002-3	3.71	3.66	3.56	3.48	3.59	3.67	3.57	3.91	3.51	3.62	3.72	3.471	3.5	3.41	3.45
ME-2002-4	3.69	3.64	3.64	3.47	3.65	3.51	3.59	3.74	3.54	3.66	3.70	3.466	3.6	3.39	3.47
ME-2002-5	3.57	3.63	3.52	3.47	3.52	3.67	3.60	3.72	3.54	3.66	3.82	3.432	3.5	3.41	3.54
ME-2002-6	3.55	3.60	3.52	3.50	3.60	3.49	3.59	3.75	3.47	3.65	3.80	3.415	3.5	3.44	3.50
ME-2002-7	3.60	3.61	3.57	3.43	3.56	3.47	3.54	3.72	3.56	3.66	3.79	3.359	3.6	3.42	3.54
ME-2002-8	3.62	3.68	3.54	3.45	3.57	3.62	3.46	3.76	3.46	3.66	3.80	3.458	3.6	3.46	3.45
ME-2002-9	3.55	3.66	3.53	3.45	3.60	3.48	3.61	3.79	3.43	3.64	3.81	3.413	3.6	3.41	3.56
ME-2002-10	3.60	3.63	3.52	3.44	3.59	3.64	3.53	3.79	3.47	3.67	3.74	3.408	3.5	3.40	3.52
Mean	3.63	3.65	3.55	3.47	3.59	3.55	3.56	3.76	3.51	3.65	3.77	3.433	3.5	3.43	3.50
Std. Devn.	0.09	0.04	0.04	0.02	0.04	0.09	0.05	0.06	0.04	0.02	0.05	0.04	0.05	0.04	0.04
% RSD	2.43	0.97	1.18	0.68	1.14	2.51	1.54	1.67	1.26	0.47	1.31	1.03	1.46	1.18	1.09

Mn (%) by 4 Acid digestion Instrumental finish

ME-2002-1	0.551	0.507	0.535	0.53	0.55	0.51	0.53	0.546	0.53	0.55	0.56	0.516	0.519	0.511	0.52
ME-2002-2	0.507	0.541	0.543	0.52	0.54	0.54	0.51	0.527	0.53	0.56	0.55	0.520	0.521	0.505	0.53
ME-2002-3	0.525	0.533	0.550	0.52	0.54	0.57	0.52	0.556	0.53	0.56	0.54	0.518	0.522	0.506	0.52
ME-2002-4	0.521	0.493	0.551	0.52	0.55	0.52	0.52	0.509	0.53	0.56	0.54	0.523	0.518	0.502	0.52
ME-2002-5	0.508	0.529	0.549	0.52	0.53	0.56	0.53	0.496	0.53	0.55	0.55	0.517	0.518	0.514	0.53
ME-2002-6	0.508	0.555	0.536	0.53	0.54	0.52	0.52	0.507	0.52	0.55	0.55	0.515	0.518	0.506	0.52
ME-2002-7	0.522	0.526	0.539	0.52	0.52	0.51	0.52	0.501	0.53	0.55	0.56	0.506	0.519	0.505	0.52
ME-2002-8	0.515	0.514	0.536	0.52	0.52	0.56	0.51	0.526	0.52	0.55	0.56	0.519	0.515	0.499	0.52
ME-2002-9	0.506	0.537	0.543	0.52	0.53	0.52	0.53	0.551	0.51	0.55	0.55	0.515	0.501	0.503	0.53
ME-2002-10	0.515	0.548	0.544	0.52	0.52	0.56	0.52	0.557	0.51	0.55	0.55	0.513	0.516	0.503	0.54
Mean	0.518	0.528	0.543	0.52	0.53	0.54	0.52	0.528	0.52	0.55	0.55	0.516	0.517	0.505	0.53
Std. Devn.	0.01	0.02	0.01	0.00	0.01	0.02	0.01	0.02	0.01	0.00	0.01	0.00	0.01	0.00	0.01
% RSD	2.61	3.61	1.11	0.81	2.20	4.39	1.42	4.48	1.61	0.87	1.34	0.91	1.14	0.86	1.35

Notes:

Ag results assayed by 4 Acid digestion with instrumental finish from Lab 14 were removed for failing the t test.

Pb results assayed by 4 Acid digestion with instrumental finish from Lab 14 were removed for failing the t test.

Zn results assayed by 4 Acid digestion with instrumental finish from Labs 10 and 14 were removed for failing the t test.

Pd results assayed by fire assay with gravimetric finish from Lab 10 were removed for failing the t test.

Fe results assayed by 4 Acid digestion with instrumental finish from Labs 8 and 11 were removed for failing the t test.

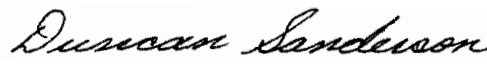
Participating Laboratories: (not in same order as table of assays)

Activation Labs, Ancaster, ON, Canada	Bureau Veritas, Reno, USA
Activation Labs, Thunder bay, ON, Canada	Bureau Veritas, Vancouver, BC, Canada
AGAT Labs, ON, Canada	Certimin S.A., Lima, Peru
ALS Canada, North Vancouver, BC, Canada	MS Analytical, Langley, BC, Canada
ALS, Loughrea, Ireland	SGS, Vancouver, BC, Canada
ALS, Perth Australia	SGS, Lakefield, ON, Canada
ALS, Reno, USA	TSL Laboratories Ltd., Saskatoon, SK, Canada
Bureau Veritas, Perth, Australia	

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Certified by



Duncan Sanderson, Certified Assayer of B.C.



Ali Alizadeh, MSc, MBA, P.Geo.

Geochemist



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