CDN Resource Laboratories Ltd.

#2, 20148 – 102nd Ave, Langley, B.C., Canada, V1M 4B4, 604-882-8422, Fax: 604-882-8466 (www.cdnlabs.com)

REFERENCE MATERIAL: CDN-ME-2305

Recommended values and the "Between Lab" Two Standard Deviations

Gold	**1.562 gpt**	**±**	**0.137 gpt**	**30 g FA, AA or ICP Finish**	**Certified value**
Silver	**129 ppm**	**±**	**9 ppm**	**FA, Gravimetric Finish**	**Certified value**
Silver	**133 ppm**	**±**	**7 ppm**	**4 Acid digestion / ICP Finish**	**Certified value**
Copper	**0.259 %**	**±**	**0.009 %**	**4 Acid digestion / ICP Finish**	**Certified value**
Lead	**2.11 %**	**±**	**0.06 %**	**4 Acid digestion / ICP Finish**	**Certified value**
Zinc	**5.66 %**	**±**	**0.20 %**	**4 Acid digestion / ICP Finish**	**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: Ali Alizadeh, MSc, MBA, P Geo
INDEPENDENT GEOCHEMIST: Dr. Barry Smee., Ph.D., P. Geo.
DATE OF CERTIFICATION: September 14th, 2023

ORIGIN OF REFERENCE MATERIAL:

Standard CDN-ME-2305 was prepared from the ore provided by Hecla Mining's Greens Creek deposit blended with granitic rock. The Greens Creek deposit is a polymetallic, stratiform, massive sulfide deposit. The host rock consists of predominantly marine sedimentary, and mafic to ultramafic volcanic and plutonic rocks, which have been subjected to multiple periods of deformation. Mineralization occurs discontinuously along the contact between a structural hanging wall of quartz mica carbonate phyllites, and a structural footwall of graphitic and calcareous argillite. Ore lithologies fall into two broad groups: massive ores with over 50% sulfides and white ores with less than 50% sulfides. The massive ores are further subdivided as either base-metal or pyrite dominant. Massive ores vary greatly in precious-metal grade from uneconomic to bonanza Au (>.5 opt) and Ag (>100 opt). White ores are subdivided into three groups by the dominant gangue mineralogy: white carbonate, white siliceous, and white baritic ore. These ores tend to be base-metal poor and precious-metal rich. Major sulfide minerals are pyrite, sphalerite, galena, and tetrahedrite/tennanite.

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.

Assay Procedures:

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

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 database. 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.

Quality Assurance and Quality Control Procedures:

Screening Test: After completion of homogenization, three samples, 300g each of homogenized material was randomly collected and was re-screened by a testing sieve. Over size material of this standard and based on CDN's screening test was ~%1.0.

Homogeneity Test:

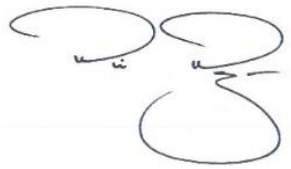
15 samples were selected selectively throughout the batch and were sent to an independent assay Laboratories for Homogeneity testing following directions of Annex B, Homogeneity and Stability of proficiency test items, ISO 13528:2015 Guidelines.

Assay results went through a statistical work-up by checking the mean, standard deviation, and %RSD. Based on performed statistical works outlined by ISO 13528; CDN-ME-2305 is statistically homogenized (Appendix III).

LEGAL NOTICE:

This certificate and the reference material described in it have been prepared with due care and attention. However, CDN Resource Laboratories Ltd. nor Barry Smee accept any 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



Ali Alizadeh, MSc, MBA, P.Geo.

Geochemist

Dr. Barry Smee, PhD, P. Geo.

APPENDIX I:
Whole rock analysis and 30 element ICP analysis (4-acid digestion) were also conducted on 3 samples.

APPROXIMATE CHEMICAL COMPOSITION (by whole rock analysis):

Analyte	Percent	Analyte	Percent
SiO_2	14.2	**Na_2O**	0.5
Al_2O_3	6.7	**MgO**	4.7
Fe_2O_3	13.8	**K2O**	0.9
CaO	6.8	**TiO_2**	0.2
MnO	0.2	**LOI**	13.9
Total S	12.5	**Total C**	1.9

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

Activation Labs, Ancaster, Ontario, Canada	Bureau Veritas, Perth, Australia
Activation Labs, Thunder Bay, Ontario, Canada	Bureau Veritas, Vancouver, BC, Canada
ALS, Brisbane, Australia	Certimin S.A., Lima, Peru
ALS, Perth, Australia	MS Analytical, Langley, BC, Canada
ALS Lima, Peru	SGS Lakefield, ON, Canada
ALS, Loughrea, Ireland	SGS, Vancouver, BC, Canada
ALS Reno, NV, USA	Skyline Asseyers, Tucson, Arizona, USA
ALS Canada, North Vancouver, BC, Canada	

APPENDIX II: 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-2305	1.47	1.53	1.610	1.440	1.660	1.620	1.40	1.645	1.40	1.590	1.578	1.650	1.584	1.65	1.65
	1.37	1.48	1.520	1.45	1.615	1.645	1.44	1.510	1.50	1.497	1.560	1.537	1.547	1.65	1.58
	1.61	1.45	1.685	1.63	1.520	1.555	1.43	1.590	1.44	1.661	1.580	1.567	1.489	1.73	1.77
	1.63	1.52	1.565	1.62	1.570	1.475	1.53	1.415	1.43	1.535	1.532	1.621	1.434	1.64	1.64
	1.63	1.45	1.565	1.52	1.600	1.630	1.68	1.560	1.47	1.584	1.560	1.602	1.509	1.61	1.65
	1.77	1.57	1.625	1.50	1.585	1.545	1.63	1.545	1.49	1.659	1.518	1.640	1.524	1.61	1.64
	1.52	1.63	1.630	1.56	1.615	1.465	1.61	1.460	1.49	1.589	1.559	1.610	1.463	1.70	1.68
	1.76	1.50	1.550	1.45	1.495	1.525	1.56	1.575	1.56	1.737	1.559	1.605	1.434	1.57	1.63
	1.72	1.36	1.625	1.59	1.555	1.550	1.57	1.555	1.49	1.728	1.560	1.560	1.564	1.51	1.58
	1.50	1.51	1.585	1.47	1.590	1.610	1.56	1.595	1.53	1.673	1.547	1.646	1.561	1.45	1.61
Mean	1.60	1.50	1.596	1.52	1.581	1.562	1.54	1.545	1.48	1.625	1.555	1.604	1.511	1.61	1.64
Std. Devn.	0.13	0.07	0.05	0.07	0.05	0.06	0.09	0.07	0.05	0.08	0.02	0.04	0.05	0.08	0.05
% RSD	8.26	4.88	3.02	4.77	3.05	4.05	5.97	4.37	3.20	4.88	1.22	2.40	3.61	5.22	3.32
	Ag (g/t) by Fire Assay, 30g sample size and Gravimetric finish														
ME-2305	133	136	129	124	121	124		128	124	127	135	148	119	144	136
	133	139	129	125	126	125		NSS	125	127	133	125	122	152	132
	132	152	130	123	123	124		128	123	129	134	124	131	156	130
	138	143	130	129	122	126		127	129	129	134	126	127	173	130
	135	140	129	125	125	127		127	125	129	131	128	132	158	131
	137	139	129	125	129	125		131	125	128	130	130	132	180	125
	135	136	128	126	150	125		130	126	127	132	127	128	171	131
	134	134	129	126	126	128		134	126	117	132	129	123	163	132
	134	140	130	125	126	128		127	125	129	129	121	123	173	133
	134	140	137	125	120	127		125	125	128	131	128	122	165	142
Mean	135	140	130	125	127	126		129	125	127	132	129	126	164	132
Std. Devn.	1.84	4.98	2.54	1.57	8.60	1.52		2.698	1.57	3.62	1.91	7.31	4.72	11.11	4.42
% RSD	1.37	3.56	1.95	1.25	6.78	1.21		2.098	1.25	2.85	1.45	5.68	3.75	6.79	3.34
	Ag (g/t) by 4 Acid digestion /Instrumental finish														
ME-2305	139	130	137	138	130		138	134	127	138	132	132	118.7	100	
	138	130	133	134	133		137	138	128	135	133	136	119.6	100	
	136	136	131	135	135		136	137	123	132	131	133	113.5	100	
	134	134	132	135	134		137	136	128	141	134	137	112.6	100	
	132	133	129	135	136		140	135	127	136	133	131	116.8	100	
	140	131	134	132	132		139	136	134	135	135	134	112.3	100	
	135	128	134	134	135		136	133	127	136	133	133	113.5	100	
	135	128	132	134	132		136	136	126	137	134	132	111.5	100	
	135	131	134	132	136		136	135	126	137	133	129	113.8	100	
	136	131	136	137	136		135	135	129	138	134	133	121.4	100	
Mean	136	131	133	135	134		137	136	128	137	133	133	115.4	100	
Std. Devn.	2.40	2.53	2.35	1.90	2.08		1.56	1.434	2.80	2.37	1.14	2.31	3.48	0.00	
% RSD	1.77	1.93	1.76	1.41	1.55		1.14	1.058	2.20	1.74	0.85	1.74	3.02	0.00	

Cu (%) by 4 Acid digestion Instrumental finish															
ME-2305	0.255	0.256	0.256	0.259	0.251	0.256	0.260	0.256	0.263	0.265	0.263	0.258	0.258	0.26	0.250
	0.263	0.254	0.257	0.257	0.252	0.257	0.261	0.253	0.269	0.261	0.268	0.260	0.265	0.26	0.249
	0.259	0.260	0.252	0.255	0.253	0.257	0.260	0.257	0.260	0.258	0.268	0.256	0.270	0.26	0.245
	0.257	0.259	0.254	0.257	0.258	0.257	0.259	0.254	0.264	0.266	0.264	0.263	0.261	0.26	0.243
	0.257	0.258	0.252	0.256	0.256	0.258	0.259	0.255	0.260	0.264	0.268	0.257	0.274	0.26	0.247
	0.267	0.253	0.255	0.255	0.261	0.256	0.261	0.254	0.265	0.260	0.266	0.252	0.267	0.25	0.245
	0.260	0.252	0.258	0.256	0.257	0.256	0.259	0.247	0.262	0.263	0.269	0.258	0.270	0.26	0.247
	0.257	0.253	0.257	0.260	0.252	0.257	0.258	0.254	0.262	0.261	0.266	0.257	0.274	0.25	0.245
	0.263	0.255	0.260	0.254	0.261	0.257	0.259	0.254	0.262	0.261	0.265	0.255	0.265	0.25	0.251
	0.259	0.255	0.263	0.255	0.262	0.257	0.261	0.254	0.264	0.266	0.266	0.258	0.275	0.26	0.236
Mean	0.260	0.256	0.256	0.256	0.256	0.257	0.260	0.254	0.263	0.263	0.266	0.257	0.268	0.26	0.246
Std. Devn.	0.004	0.003	0.003	0.002	0.004	0.001	0.001	0.003	0.003	0.003	0.002	0.003	0.006	0.005	0.004
% RSD	1.407	1.064	1.341	0.740	1.625	0.246	0.408	1.047	1.005	1.036	0.731	1.132	2.115	1.880	1.735
Pb (%) by 4 Acid digestion Instrumental finish															
ME-2305	2.08	2.11	2.08	2.13	2.08	2.09	2.11	2.09	2.17	2.15	2.14	2.09	>DTL	2.13	2.11
	2.12	2.10	2.05	2.12	2.09	2.07	2.12	2.10	2.19	2.15	2.16	2.11	>DTL	2.15	2.11
	2.11	2.14	2.05	2.10	2.09	2.09	2.11	2.10	2.12	2.09	2.15	2.06	>DTL	2.14	2.10
	2.10	2.14	2.04	2.11	2.13	2.08	2.11	2.10	2.17	2.17	2.16	2.13	>DTL	2.14	2.14
	2.08	2.12	2.04	2.09	2.13	2.10	2.10	2.09	2.15	2.13	2.15	2.06	>DTL	2.15	2.19
	2.16	2.11	2.05	2.11	2.11	2.09	2.12	2.10	2.17	2.08	2.16	2.04	>DTL	2.12	2.12
	2.08	2.08	2.07	2.11	2.12	2.09	2.11	2.08	2.12	2.12	2.14	2.09	>DTL	2.14	2.11
	2.08	2.10	2.08	2.13	2.05	2.09	2.11	2.09	2.17	2.14	2.16	2.08	>DTL	2.13	2.13
	2.11	2.09	2.09	2.11	2.15	2.09	2.12	2.09	2.15	2.13	2.15	2.07	>DTL	2.08	2.07
	2.10	2.07	2.10	2.11	2.14	2.08	2.12	2.09	2.13	2.14	2.17	2.09	>DTL	2.14	2.15
Mean	2.10	2.11	2.07	2.11	2.11	2.09	2.11	2.09	2.15	2.13	2.15	2.08		2.13	2.12
Std. Devn.	0.03	0.02	0.02	0.01	0.03	0.01	0.01	0.01	0.02	0.03	0.01	0.03		0.02	0.03
% RSD	1.20	1.10	1.05	0.58	1.47	0.39	0.32	0.32	1.12	1.29	0.45	1.26		0.96	1.52
Zn (%) by 4 Acid digestion Instrumental finish															
ME-2305	5.41	5.55	5.49	5.78	5.57	5.66	5.61	5.68	5.74	5.99	5.70	5.60	>DTL	5.78	5.72
	5.52	5.58	5.47	5.76	5.55	5.68	5.62	5.65	5.66	6.11	5.70	5.66	>DTL	5.84	5.76
	5.50	5.65	5.37	5.72	5.56	5.65	5.62	5.71	5.67	5.88	5.72	5.54	>DTL	5.79	5.75
	5.49	5.67	5.46	5.77	5.67	5.67	5.58	5.66	5.66	6.04	5.75	5.71	>DTL	5.81	5.82
	5.49	5.60	5.36	5.72	5.69	5.70	5.60	5.68	5.65	5.95	5.76	5.53	>DTL	5.85	5.89
	5.67	5.55	5.41	5.74	5.72	5.67	5.65	5.66	5.70	5.85	5.71	5.49	>DTL	5.77	5.77
	5.43	5.48	5.46	5.74	5.61	5.68	5.57	5.57	5.64	5.95	5.74	5.60	>DTL	5.84	5.74
	5.44	5.55	5.48	5.82	5.56	5.69	5.58	5.65	5.66	5.94	5.73	5.59	>DTL	5.81	5.84
	5.53	5.54	5.52	5.69	5.73	5.70	5.60	5.67	5.75	6.14	5.74	5.55	>DTL	5.64	5.68
	5.48	5.59	5.61	5.73	5.80	5.69	5.63	5.65	5.78	5.99	5.76	5.61	>DTL	5.83	5.85
Mean	5.50	5.58	5.46	5.75	5.65	5.68	5.61	5.66	5.69	5.98	5.73	5.59		5.80	5.78
Std. Devn.	0.07	0.06	0.07	0.04	0.09	0.02	0.03	0.04	0.05	0.09	0.02	0.06		0.06	0.07
% RSD	1.32	0.99	1.34	0.64	1.56	0.29	0.45	0.64	0.86	1.54	0.40	1.16		1.05	1.13

Notes:

Ag results assayed by fire assay, with gravimetric finish from Lab 14 were removed for failing the t test.
Ag results assayed by 4 Acid digestion with ICP finish from Labs 13 and 14 were removed for failing the t test.
Cu results assayed by 4 Acid digestion with ICP finish from Lab 15 were removed for failing the t test.
Pb results assayed by 4 Acid digestion with instrumental finish from Labs 2, 13 and 14 were removed for failing the t test.
Zn results assayed by 4 Acid digestion with instrumental finish from Lab 10 were removed for failing the t test.

APPENDIX III: QAQC

Table below illustrates percentages of over size (+275 mesh) material in CDN-ME-2305

Standard	Study Date	Total weight Screened (g)	Total weight Over size (g)	Percentage
ME-2305	May 26 2023	300	3	1.0%
	May 26 2023	300	2.5	0.8%
	May 26 2023	300	3.5	1.2%

Table below shows homogeneity test results of CDN-ME-2305

	Au Original	Au Repeat	Between Sample Variance Wt	Sample Avg. Xt	Stdev of Sample Avg	Within-Sample Std.
ME-2305	1.542	1.587	0.045	1.565	0.003	0.002
	1.636	1.611	0.025	1.624	0.000	0.001
	1.609	1.691	0.082	1.650	0.001	0.007
	1.513	1.600	0.087	1.557	0.003	0.008
	1.594	1.592	0.002	1.593	0.001	0.000
	1.655	1.627	0.028	1.641	0.001	0.001
	1.570	1.665	0.095	1.618	0.000	0.009
	1.557	1.613	0.056	1.585	0.001	0.003
	1.614	1.669	0.055	1.642	0.001	0.003
	1.639	1.551	0.088	1.595	0.000	0.008
	1.671	1.617	0.054	1.644	0.001	0.003
	1.681	1.586	0.095	1.634	0.000	0.009
	1.718	1.544	0.174	1.631	0.000	0.030
	1.632	1.644	0.012	1.638	0.001	0.000
	1.608	1.630	0.022	1.619	0.000	0.000
Statistics			**Gavg**	**SX**	**SS**	
Mean	1.616	1.615	**1.616**	**0.030**	**0.022**	
SD	0.0552	0.0414	**C**	**C SQRT**		
RSD	3.415	2.560	**0.0035**	**0.06**		
Proof of Homogeneity	Based on Statistical procedures outlined in Annex B, ISO 13528:2015 guidelines, If "SS is < square root of C" Standard is considered homogeneous. **ME-2305 is statistically homogenous**					

APPENDIX IV: General Notes

Intended Use

This Certified Reference Material, fit for use as a control sample in routine assay laboratory quality control when inserted within runs of test samples and measured in parallel to test samples. This material can also be used for method development, use as independent calibration verification check standard or for validation of accuracy in a method validation exercise.

This CRM can also be used to assess inter-laboratory or instrument bias and establish within-laboratory precision and within-laboratory reproducibility. The certified concentrations and expanded uncertainty for this material are property values based on an inter-laboratory measurement campaign and reflect consensus results from the laboratories that took part in the exercise.

Handling

Do not use if the seal is broken or there are any signs of contamination.

The material is packaged in either Tin Tie envelopes, foil envelopes or jars that must be shaken before use.

Storage information

The material should be stored in a dry place, in such a way that it does not compromise the integrity of the CRM. The material should be stored in conditions which will ensure it does not absorb moisture.

Certificate is not valid if re-packaged by a third party.

Metrological Traceability

The values quoted herein are based on the consensus values derived from statistical analysis of the data from an inter-laboratory measurement program. Traceability to SI units is via the standards used by the individual laboratories all of which are accredited to the ISO17025 general requirements for the competence of testing and calibration laboratories and who have maintained measurement traceability during the analytical process.

Period of Validity

The certified values are valid for this product, while still sealed in its original packaging, until notification to the contrary. The stability of the material will be subject to continuous testing for every five the duration of the inventory. Should product stability become an issue, all customers will be notified and notification to that effect will be placed on the http://www.cdnlabs.com/ website.

Minimum Sample Size

Most of the laboratory's reporting used a 0.5g sample size for the ICP and a 30g sample size for the fire assay. Our certified gold values are based on 30 g Fire Assay determinations. For optimal results, we strongly recommend you assay our standards with similar methods using "at least" 30 g of material. Using a smaller sample weight may result in erratic values. These are the recommended minimum sample sizes for the use of this material.