



BUREAU VERITAS MINERAL LABORATORIES
Canada

www.bureauveritas.com/um

Bureau Veritas Commodities Canada Ltd.
9050 Shaughnessy St Vancouver BC V6P 6E5 CANADA
PHONE (604) 253-3158

Client: Geological Survey of Canada (Van)
625 Robson Street
1st Floor, Rm 100
Vancouver BC V6B 5J3 CANADA

Submitted By: Jim Ryan
Receiving Lab: Canada-Vancouver
Received: October 26, 2015
Report Date: November 26, 2015
Page: 1 of 4

CERTIFICATE OF ANALYSIS

VAN15002850.1

CLIENT JOB INFORMATION

Project: GEM Cordillera
Shipment ID: NRCAN-07M052461W
P.O. Number: 3000590741
Number of Samples: 77

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP80-250	69	Crush, split and pulverize 250 g rock to 200 mesh			VAN
LF202	69	Total Whole Rock Characterization with AQ200	0.2	Completed	VAN

SAMPLE DISPOSAL

RTRN-PLP Return
RTRN-RJT Return

ADDITIONAL COMMENTS

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Geological Survey of Canada (Van)
625 Robson Street
1st Floor, Rm 100
Vancouver BC V6B 5J3
CANADA

CC: Wendy Chiu
Alex Zagorevski



This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only. All results are considered the confidential property of the client. Bureau Veritas assumes the liabilities for actual cost of analysis only. Results apply to samples as submitted. *** asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.



Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver BC V6P 6E5 CANADA

PHONE (604) 253-3158

Client: **Geological Survey of Canada (Van)**

625 Robson Street
1st Floor, Rm 100
Vancouver BC V6B 5J3 CANADA

Project: GEM Cordillera

Report Date: November 26, 2015

Page: 2 of 4

Part: 1 of 4

CERTIFICATE OF ANALYSIS

VAN15002850.1

Method	WGHT	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200
Analyte	Wgt	SiO2	Al2O3	Fe2O3	MgO	CaO	Na2O	K2O	TiO2	P2O5	MnO	Cr2O3	Ni	Sc	LOI	Sum	Ba	Be	Co	Cs	
Unit	kg	%	%	%	%	%	%	%	%	%	%	%	ppm	ppm	%	%	ppm	ppm	ppm	ppm	
MDL	0.01	0.01	0.01	0.04	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.002	20	1	-5.1	0.01	1	1	0.2	0.1	
15RAY-EW017A01	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
15RAY-EW017A2	Rock	1.01	48.24	16.04	9.50	8.68	11.71	2.05	0.87	0.92	0.08	0.20	0.052	64	34	1.4	99.75	130	<1	39.2	0.6
15RAY-EW061A02	Rock	1.09	48.32	14.21	13.68	6.70	10.88	2.76	0.28	1.72	0.16	0.21	0.011	41	41	0.8	99.76	116	<1	46.1	0.6
15RAY-EW073A01	Rock	0.53	43.03	15.23	15.22	7.85	11.00	2.08	0.79	2.99	0.39	0.26	0.041	122	45	0.8	99.68	169	1	51.8	1.1
15RAY-EW076B02	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
15RAY-EW076B1	Rock	1.06	55.46	1.51	6.81	32.40	0.12	<0.01	<0.01	0.03	0.01	0.11	0.274	1738	5	2.5	99.45	14	<1	68.8	0.5
15RAY-EW078A01	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
15RAY-EW078A	Rock	0.54	67.08	11.45	5.25	2.04	6.72	2.60	2.98	0.58	0.06	0.15	0.007	37	12	0.9	99.77	817	2	15.0	0.9
15RAY-EW089A01	Rock	0.43	58.38	16.73	6.37	2.24	5.21	4.12	2.53	0.81	0.52	0.09	0.003	<20	11	2.5	99.51	1872	4	12.0	6.9
15RAY-EW091A01	Rock	0.44	49.65	14.03	10.79	7.40	11.20	3.31	0.23	1.27	0.04	0.20	0.038	56	44	1.6	99.71	497	2	38.8	0.9
15RAY-EW100A01	Rock	0.64	48.17	17.53	11.55	5.86	10.02	2.40	0.78	1.21	0.54	0.20	0.007	23	30	1.2	99.46	2001	<1	31.4	1.8
15RAY-EW119A01	Rock	0.56	57.73	16.78	6.42	3.73	6.34	3.27	2.17	0.73	0.22	0.10	0.011	27	17	2.1	99.63	1540	<1	16.9	2.0
15RAY-EW128B01	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
15RAY-EW128B2	Rock	0.55	42.17	1.63	7.13	36.75	0.06	<0.01	<0.01	0.03	0.01	0.10	0.399	2100	9	11.4	99.93	30	<1	104.8	0.5
15RAY-EW128C01	Rock	0.49	55.35	15.97	10.98	3.58	7.46	4.01	0.66	0.81	0.14	0.18	<0.002	<20	31	0.7	99.81	161	1	28.0	0.1
15RAY-EW130A01	Rock	0.73	39.22	0.68	7.87	38.18	0.01	<0.01	<0.01	0.02	<0.01	0.06	0.445	2101	9	13.3	99.95	11	<1	97.7	<0.1
15RAY-EW183A01	Rock	0.60	53.88	13.42	7.67	7.77	6.94	2.81	4.50	0.83	0.41	0.13	0.060	103	26	1.0	99.42	2943	3	34.2	2.7
15RAY-EW185B01	Rock	0.69	52.67	10.25	8.72	11.27	9.76	1.44	3.40	0.71	0.32	0.17	0.154	135	30	0.6	99.46	2181	<1	45.7	1.0
15RAY-EW197A01	Rock	0.51	48.03	18.68	10.72	5.98	10.35	2.97	0.61	0.93	0.20	0.18	0.007	32	31	1.1	99.71	149	<1	38.9	0.7
15RAY-EW204A01	Rock	0.51	50.03	9.45	9.65	16.75	9.93	1.24	0.13	0.40	0.04	0.18	0.189	475	33	1.6	99.65	18	<1	58.7	0.1
15RAY-EW205B01	Rock	0.60	53.93	18.04	8.58	3.26	6.94	3.40	2.21	0.87	0.31	0.13	<0.002	<20	16	1.7	99.41	3138	3	22.1	1.1
15RAY-EW230B01	Rock	0.67	51.18	15.90	10.76	5.67	8.81	4.05	1.40	0.99	0.19	0.18	0.014	27	32	0.5	99.67	739	<1	32.9	0.2
15RAY-EW244A01	Rock	0.45	52.83	12.84	7.73	7.00	7.14	2.66	3.55	0.75	0.41	0.14	0.080	185	18	4.4	99.53	1709	2	34.1	2.1
15RAY-EW245A02	Rock	0.56	52.64	15.60	8.59	4.63	7.16	2.99	3.14	0.94	0.42	0.13	0.014	35	20	3.2	99.50	2134	1	25.1	0.7
15RAY-EW246A01	Rock	0.86	53.07	12.61	9.02	9.67	8.64	2.46	2.53	0.81	0.39	0.14	0.081	120	25	0.1	99.52	1522	2	36.7	1.0
15RAY-EW259A02	Rock	0.84	52.58	16.86	8.75	6.85	8.37	3.63	0.62	0.61	0.06	0.14	0.017	40	33	1.2	99.67	878	<1	29.5	1.4
15RAY-JC029A02	Rock	0.57	74.60	13.52	2.22	0.37	2.88	2.92	2.70	0.19	0.05	0.03	<0.002	<20	3	0.4	99.85	358	2	2.7	1.6
15RAY-JC030A02	Rock	1.06	71.78	13.66	3.48	0.85	2.01	2.97	3.86	0.32	0.06	0.06	<0.002	<20	8	0.7	99.76	1554	1	5.5	1.7
15RAY-JC030B02	Rock	0.73	61.05	10.85	12.09	4.50	7.07	1.69	0.95	0.49	0.07	0.17	0.006	29	16	0.9	99.81	306	<1	17.1	0.6
15RAY-JC030C02	Rock	0.76	60.71	15.65	6.92	4.17	4.42	2.73	3.06	0.61	0.11	0.12	0.007	<20	20	1.2	99.74	977	<1	18.7	2.2



Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver BC V6P 6E5 CANADA

PHONE (604) 253-3158

Client: Geological Survey of Canada (Van)

625 Robson Street
1st Floor, Rm 100
Vancouver BC V6B 5J3 CANADA

Project: GEM Cordillera

Report Date: November 26, 2015

Page: 2 of 4

Part: 2 of 4

CERTIFICATE OF ANALYSIS

VAN15002850.1

Method Analyte Unit MDL	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	
	Ga	Hf	Nb	Rb	Sn	Sr	Ta	Th	U	V	W	Zr	Y	La	Ce	Pr	Nd	Sm	Eu	Gd	
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	0.5	0.1	0.1	0.1	1	0.5	0.1	0.2	0.1	8	0.5	0.1	0.1	0.1	0.1	0.02	0.3	0.05	0.02	0.05	
15RAY-EW017A01	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	
15RAY-EW017A2	Rock	16.6	1.6	2.0	23.7	<1	325.4	0.1	0.8	0.2	223	0.6	56.0	20.6	4.9	11.6	1.72	8.7	2.63	1.04	3.30
15RAY-EW061A02	Rock	18.3	3.6	5.9	7.3	<1	161.4	0.4	0.9	0.4	363	<0.5	121.5	39.1	7.3	18.3	2.76	13.6	4.17	1.50	5.93
15RAY-EW073A01	Rock	22.1	6.4	15.2	17.5	3	198.0	1.0	1.3	1.0	408	1.5	260.0	52.5	16.4	41.9	6.16	29.1	7.91	2.66	9.74
15RAY-EW076B02	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
15RAY-EW076B1	Rock	2.1	0.1	2.0	0.6	<1	1.1	0.2	0.3	0.8	30	0.5	3.0	0.9	0.4	0.5	0.08	0.3	0.06	<0.02	0.08
15RAY-EW078A01	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
15RAY-EW078A	Rock	13.7	2.9	12.5	67.5	2	444.6	0.9	10.9	2.0	70	<0.5	103.5	18.8	31.9	69.8	7.27	26.0	4.79	0.95	4.07
15RAY-EW089A01	Rock	18.4	4.9	12.3	57.5	<1	1322.9	0.8	12.7	5.2	114	0.5	197.1	19.0	63.9	123.0	13.91	52.5	8.39	2.09	6.26
15RAY-EW091A01	Rock	15.4	2.1	1.3	6.9	<1	208.8	0.1	<0.2	0.2	306	0.8	75.3	26.6	3.7	9.5	1.62	9.1	3.07	1.18	4.07
15RAY-EW100A01	Rock	18.3	1.6	1.9	21.9	<1	952.3	0.2	5.8	2.1	356	0.5	56.6	23.9	27.6	55.0	6.92	29.5	6.19	1.60	5.96
15RAY-EW119A01	Rock	17.5	3.6	7.2	70.3	<1	686.3	0.4	5.3	2.1	152	<0.5	134.8	17.1	21.8	42.1	5.04	19.9	3.82	1.04	3.50
15RAY-EW128B01	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
15RAY-EW128B2	Rock	3.3	<0.1	0.4	0.6	<1	4.1	<0.1	<0.2	<0.1	39	<0.5	1.1	0.1	0.4	0.2	0.04	<0.3	<0.05	<0.02	<0.05
15RAY-EW128C01	Rock	16.8	2.3	1.3	12.8	<1	302.0	0.1	1.1	0.4	294	<0.5	77.5	19.8	5.9	14.7	2.10	10.0	2.96	0.96	3.40
15RAY-EW130A01	Rock	<0.5	<0.1	<0.1	0.4	<1	2.7	<0.1	<0.2	<0.1	34	<0.5	1.1	0.2	0.5	0.3	0.04	0.3	<0.05	<0.02	0.06
15RAY-EW183A01	Rock	14.6	5.5	13.4	114.0	2	316.4	0.8	15.6	3.5	152	<0.5	197.7	19.9	45.8	94.4	10.77	39.4	7.51	1.76	6.06
15RAY-EW185B01	Rock	14.1	2.8	9.8	102.1	2	356.7	0.5	9.6	3.4	184	0.7	105.8	15.5	28.3	54.4	7.29	28.6	6.19	1.49	4.81
15RAY-EW197A01	Rock	18.4	2.0	2.5	11.3	<1	580.6	0.2	1.4	0.5	305	<0.5	70.8	17.1	12.2	24.9	3.41	14.7	3.36	1.15	3.44
15RAY-EW204A01	Rock	9.8	0.6	0.2	2.5	<1	24.8	<0.1	0.2	0.2	198	<0.5	23.3	8.8	1.9	4.7	0.64	3.5	0.95	0.39	1.41
15RAY-EW205B01	Rock	21.2	4.3	10.9	63.1	1	797.0	0.6	10.3	3.8	200	1.5	165.7	22.3	40.3	82.5	9.68	37.3	6.63	1.95	5.95
15RAY-EW230B01	Rock	18.0	2.5	5.8	21.1	<1	564.5	0.3	2.3	1.3	286	<0.5	89.3	20.5	10.8	25.2	3.30	15.0	3.45	1.11	3.85
15RAY-EW244A01	Rock	14.5	3.7	9.9	106.6	<1	696.3	0.8	9.8	3.6	159	0.7	140.6	17.3	27.9	54.6	6.06	23.5	4.45	1.17	4.27
15RAY-EW245A02	Rock	17.5	3.9	8.9	69.8	<1	799.7	0.5	6.1	1.8	200	<0.5	149.4	21.6	28.6	58.0	6.90	27.6	5.51	1.42	5.13
15RAY-EW246A01	Rock	13.4	3.3	7.0	55.3	<1	599.8	0.5	4.8	1.5	188	<0.5	124.2	18.3	23.2	46.3	5.67	21.4	4.70	1.28	4.39
15RAY-EW259A02	Rock	13.9	1.7	1.5	16.8	<1	267.8	0.2	1.4	0.2	218	<0.5	59.7	16.3	6.0	13.4	1.71	7.7	1.97	0.67	2.37
15RAY-JC029A02	Rock	12.3	3.5	12.1	104.2	2	440.2	1.4	67.2	10.0	18	<0.5	113.9	25.3	56.5	117.4	10.15	31.5	5.15	0.74	4.24
15RAY-JC030A02	Rock	14.2	4.4	9.0	119.3	4	185.8	0.6	8.3	1.3	35	<0.5	158.2	8.0	3.6	30.9	0.83	2.8	0.74	0.28	0.99
15RAY-JC030B02	Rock	16.6	2.1	6.5	19.6	30	135.7	0.5	6.5	2.2	142	<0.5	76.5	22.0	33.4	62.0	8.12	29.4	6.08	1.79	5.36
15RAY-JC030C02	Rock	14.7	3.9	6.1	89.1	<1	250.2	0.5	7.5	1.5	146	0.6	142.5	18.4	15.5	40.0	4.02	15.7	3.33	0.82	3.38



Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver BC V6P 6E5 CANADA

PHONE (604) 253-3158

Client: Geological Survey of Canada (Van)

625 Robson Street
1st Floor, Rm 100
Vancouver BC V6B 5J3 CANADA

Project: GEM Cordillera

Report Date: November 26, 2015

Page: 2 of 4

Part: 3 of 4

CERTIFICATE OF ANALYSIS

VAN15002850.1

Method Analyte Unit MDL	LF200	LF200	LF200	LF200	LF200	LF200	LF200	TC000	TC000	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200
	Tb	Dy	Ho	Er	Tm	Yb	Lu	TOT/C	TOT/S	Mo	Cu	Pb	Zn	Ni	As	Cd	Sb	Bi	Ag	Au	
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb
	0.01	0.05	0.02	0.03	0.01	0.05	0.01	0.02	0.02	0.1	0.1	0.1	1	0.1	0.5	0.1	0.1	0.1	0.1	0.1	0.5
15RAY-EW017A01	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
15RAY-EW017A2	Rock	0.59	3.79	0.78	2.23	0.34	2.01	0.32	0.02	<0.02	0.1	1.2	6.4	17	11.4	<0.5	<0.1	0.2	<0.1	<0.1	<0.5
15RAY-EW061A02	Rock	1.05	6.44	1.44	4.38	0.64	4.09	0.65	0.08	<0.02	0.2	18.5	1.4	22	10.9	0.9	<0.1	0.1	<0.1	<0.1	<0.5
15RAY-EW073A01	Rock	1.67	9.83	1.97	5.61	0.78	4.80	0.71	0.03	0.03	0.2	22.2	3.2	41	58.1	2.2	<0.1	0.2	<0.1	<0.1	<0.5
15RAY-EW076B02	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
15RAY-EW076B1	Rock	0.02	0.10	0.02	0.12	0.02	0.16	0.03	0.03	0.10	0.1	12.8	1.2	11	1650.2	1236.0	<0.1	4.0	5.8	<0.1	50.8
15RAY-EW078A01	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
15RAY-EW078A	Rock	0.61	3.42	0.71	2.03	0.32	2.06	0.30	0.04	<0.02	0.2	18.8	4.5	20	25.9	5.3	<0.1	<0.1	0.2	<0.1	0.7
15RAY-EW089A01	Rock	0.75	3.57	0.64	1.58	0.24	1.39	0.21	0.21	<0.02	1.0	10.5	4.1	81	13.0	1.7	<0.1	0.2	<0.1	<0.1	0.6
15RAY-EW091A01	Rock	0.75	4.57	1.02	3.12	0.45	2.70	0.44	0.20	0.02	<0.1	43.2	2.1	22	22.5	3.9	<0.1	<0.1	<0.1	<0.1	<0.5
15RAY-EW100A01	Rock	0.84	4.44	0.89	2.40	0.35	2.19	0.30	0.04	<0.02	0.5	57.4	6.4	35	12.2	1.5	<0.1	0.2	<0.1	<0.1	1.8
15RAY-EW119A01	Rock	0.53	3.11	0.63	1.78	0.26	1.74	0.25	0.06	<0.02	0.9	21.5	2.7	56	20.2	1.1	<0.1	0.4	<0.1	<0.1	<0.5
15RAY-EW128B01	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
15RAY-EW128B2	Rock	<0.01	<0.05	<0.02	<0.03	<0.01	<0.05	<0.01	0.03	0.06	<0.1	12.4	1.2	29	2037.9	0.8	<0.1	<0.1	<0.1	<0.1	<0.5
15RAY-EW128C01	Rock	0.58	3.39	0.77	2.18	0.34	2.23	0.35	<0.02	<0.02	1.1	92.2	0.8	21	8.5	<0.5	<0.1	<0.1	<0.1	<0.1	0.9
15RAY-EW130A01	Rock	<0.01	0.09	<0.02	0.07	<0.01	<0.05	<0.01	0.03	<0.02	<0.1	5.5	0.6	30	2244.2	15.4	<0.1	<0.1	<0.1	<0.1	1.4
15RAY-EW183A01	Rock	0.78	4.00	0.68	1.87	0.26	1.65	0.24	<0.02	<0.02	<0.1	5.7	1.7	19	30.8	2.4	<0.1	0.2	<0.1	<0.1	<0.5
15RAY-EW185B01	Rock	0.67	3.43	0.60	1.50	0.22	1.45	0.21	<0.02	<0.02	<0.1	0.9	1.6	7	16.9	1.7	<0.1	0.1	<0.1	<0.1	<0.5
15RAY-EW197A01	Rock	0.51	3.02	0.62	1.85	0.26	1.65	0.25	<0.02	<0.02	<0.1	87.7	0.6	20	8.5	0.7	<0.1	<0.1	<0.1	<0.1	1.8
15RAY-EW204A01	Rock	0.25	1.61	0.33	1.00	0.15	0.93	0.14	<0.02	<0.02	<0.1	37.6	0.7	9	58.9	<0.5	<0.1	<0.1	<0.1	<0.1	1.6
15RAY-EW205B01	Rock	0.80	4.27	0.83	2.16	0.32	1.97	0.30	0.02	<0.02	<0.1	48.5	3.5	48	6.6	3.2	<0.1	0.2	<0.1	<0.1	1.8
15RAY-EW230B01	Rock	0.62	3.61	0.77	2.21	0.33	2.12	0.31	<0.02	<0.02	0.1	4.1	2.1	28	6.6	<0.5	<0.1	<0.1	<0.1	<0.1	2.0
15RAY-EW244A01	Rock	0.60	3.17	0.57	1.65	0.25	1.52	0.23	0.52	<0.02	1.0	48.3	3.7	58	153.4	1.5	<0.1	<0.1	<0.1	<0.1	0.8
15RAY-EW245A02	Rock	0.76	3.99	0.80	2.20	0.31	2.08	0.30	0.30	<0.02	0.8	30.3	2.6	66	21.0	1.0	<0.1	<0.1	<0.1	<0.1	0.9
15RAY-EW246A01	Rock	0.64	3.69	0.63	1.81	0.26	1.63	0.24	0.06	<0.02	0.6	67.5	2.1	53	93.2	1.1	<0.1	<0.1	<0.1	<0.1	1.7
15RAY-EW259A02	Rock	0.43	2.80	0.59	1.74	0.27	1.74	0.26	<0.02	<0.02	<0.1	57.9	1.1	20	11.1	0.8	<0.1	0.1	<0.1	<0.1	0.9
15RAY-JC029A02	Rock	0.70	3.96	0.78	2.53	0.38	2.70	0.41	<0.02	<0.02	0.2	7.8	2.8	13	1.7	0.6	<0.1	<0.1	<0.1	<0.1	1.0
15RAY-JC030A02	Rock	0.18	1.31	0.30	0.94	0.16	1.18	0.18	0.03	<0.02	0.5	10.4	3.0	73	1.7	<0.5	<0.1	<0.1	<0.1	<0.1	<0.5
15RAY-JC030B02	Rock	0.83	4.78	0.82	2.57	0.36	2.32	0.32	<0.02	<0.02	<0.1	6.6	1.7	40	9.6	0.5	0.2	<0.1	0.3	<0.1	1.2
15RAY-JC030C02	Rock	0.56	3.35	0.67	1.95	0.30	2.03	0.31	<0.02	<0.02	0.2	32.7	1.0	55	17.0	0.6	<0.1	<0.1	<0.1	<0.1	1.0



Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver BC V6P 6E5 CANADA

PHONE (604) 253-3158

Client: Geological Survey of Canada (Van)

625 Robson Street
1st Floor, Rm 100
Vancouver BC V6B 5J3 CANADA

Project: GEM Cordillera

Report Date: November 26, 2015

Page: 2 of 4

Part: 4 of 4

CERTIFICATE OF ANALYSIS

VAN15002850.1

Method	AQ200	AQ200	AQ200	
Analyte	Hg	Tl	Se	
Unit	ppm	ppm	ppm	
MDL	0.01	0.1	0.5	
15RAY-EW017A01	Rock	L.N.R.	L.N.R.	L.N.R.
15RAY-EW017A2	Rock	<0.01	<0.1	<0.5
15RAY-EW061A02	Rock	<0.01	<0.1	<0.5
15RAY-EW073A01	Rock	<0.01	<0.1	<0.5
15RAY-EW076B02	Rock	L.N.R.	L.N.R.	L.N.R.
15RAY-EW076B1	Rock	<0.01	<0.1	<0.5
15RAY-EW078A01	Rock	L.N.R.	L.N.R.	L.N.R.
15RAY-EW078A	Rock	<0.01	<0.1	<0.5
15RAY-EW089A01	Rock	<0.01	<0.1	<0.5
15RAY-EW091A01	Rock	<0.01	<0.1	<0.5
15RAY-EW100A01	Rock	<0.01	0.2	<0.5
15RAY-EW119A01	Rock	<0.01	<0.1	<0.5
15RAY-EW128B01	Rock	L.N.R.	L.N.R.	L.N.R.
15RAY-EW128B2	Rock	<0.01	<0.1	<0.5
15RAY-EW128C01	Rock	<0.01	<0.1	<0.5
15RAY-EW130A01	Rock	0.01	<0.1	<0.5
15RAY-EW183A01	Rock	<0.01	0.1	<0.5
15RAY-EW185B01	Rock	<0.01	<0.1	<0.5
15RAY-EW197A01	Rock	<0.01	<0.1	<0.5
15RAY-EW204A01	Rock	<0.01	<0.1	<0.5
15RAY-EW205B01	Rock	<0.01	<0.1	<0.5
15RAY-EW230B01	Rock	<0.01	<0.1	<0.5
15RAY-EW244A01	Rock	<0.01	<0.1	<0.5
15RAY-EW245A02	Rock	<0.01	<0.1	<0.5
15RAY-EW246A01	Rock	<0.01	<0.1	<0.5
15RAY-EW259A02	Rock	<0.01	<0.1	<0.5
15RAY-JC029A02	Rock	<0.01	0.1	<0.5
15RAY-JC030A02	Rock	<0.01	0.3	<0.5
15RAY-JC030B02	Rock	<0.01	<0.1	<0.5
15RAY-JC030C02	Rock	<0.01	0.4	<0.5



Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver BC V6P 6E5 CANADA

PHONE (604) 253-3158

Client: Geological Survey of Canada (Van)

625 Robson Street
1st Floor, Rm 100
Vancouver BC V6B 5J3 CANADA

Project: GEM Cordillera

Report Date: November 26, 2015

Page: 3 of 4

Part: 1 of 4

CERTIFICATE OF ANALYSIS

VAN15002850.1

Method	WGHT	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200
Analyte	Wgt	SiO2	Al2O3	Fe2O3	MgO	CaO	Na2O	K2O	TiO2	P2O5	MnO	Cr2O3	Ni	Sc	LOI	Sum	Ba	Be	Co	Cs	
Unit	kg	%	%	%	%	%	%	%	%	%	%	%	ppm	ppm	%	%	ppm	ppm	ppm	ppm	
MDL	0.01	0.01	0.01	0.04	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.002	20	1	-5.1	0.01	1	1	0.2	0.1	
15RAY-JC042B01	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
15RAY-JC042B2	Rock	0.55	66.97	15.06	4.12	1.69	3.79	2.97	3.67	0.43	0.14	0.09	<0.002	<20	9	0.7	99.61	2358	2	8.2	4.1
15RAY-JC070A01	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
15RAY-JC070A2	Rock	0.43	77.76	11.60	1.60	0.11	0.79	2.87	4.20	0.10	0.02	0.02	<0.002	<20	6	0.8	99.82	1108	2	1.4	1.1
15RAY-JC072B02	Rock	0.45	61.05	14.42	7.24	3.17	5.12	3.11	3.69	1.08	0.34	0.11	0.012	223	12	0.3	99.70	923	5	27.5	8.0
15RAY-JC080A02	Rock	0.90	64.73	15.04	5.14	2.18	4.20	2.85	3.66	0.53	0.14	0.09	0.003	<20	14	1.1	99.63	1945	2	11.5	3.7
15RAY-JC084A02	Rock	0.55	55.73	16.58	6.74	2.58	5.58	2.90	4.37	1.15	0.50	0.12	0.007	<20	13	3.4	99.61	1746	2	11.7	3.7
15RAY-JC085A02	Rock	0.74	50.22	11.68	9.22	10.18	9.46	1.72	2.60	0.88	0.42	0.15	0.102	102	27	2.9	99.58	956	2	38.7	48.0
15RAY-JC094A02	Rock	0.54	55.96	15.55	10.02	4.67	7.40	3.41	0.61	0.73	0.08	0.19	0.049	104	34	1.1	99.79	305	2	37.8	0.9
15RAY-JC095A02	Rock	0.54	73.83	12.97	2.59	0.22	0.58	3.85	5.15	0.20	0.04	0.04	<0.002	<20	2	0.4	99.85	330	10	1.8	5.4
15RAY-JC105A02	Rock	0.77	72.69	13.35	2.94	0.03	0.97	3.84	4.64	0.17	0.02	0.07	<0.002	<20	5	0.9	99.63	2317	3	0.6	4.9
15RAY-JR009A01	Rock	0.65	47.35	17.15	13.06	3.58	9.25	3.73	1.16	2.99	0.33	0.14	0.002	80	14	1.0	99.75	221	3	47.6	3.8
15RAY-JR015A01	Rock	0.73	61.07	15.51	4.98	2.32	3.90	2.90	4.07	0.45	0.21	0.11	0.003	<20	12	3.9	99.44	3443	2	11.2	6.5
15RAY-JR023A01	Rock	0.44	45.37	17.85	7.67	11.28	13.61	1.19	0.39	0.35	0.02	0.13	0.036	71	38	1.8	99.71	119	<1	51.5	0.4
15RAY-JR024A01	Rock	0.77	68.89	16.79	1.70	0.53	2.09	4.89	3.58	0.22	0.11	0.02	<0.002	<20	2	0.7	99.53	2325	2	2.3	0.6
15RAY-JR026A01	Rock	0.63	69.58	14.63	4.03	1.20	2.83	4.39	1.95	0.41	0.08	0.05	<0.002	<20	11	0.7	99.82	967	1	7.4	1.8
15RAY-JR043A02	Rock	0.73	39.65	0.68	7.37	38.69	0.57	<0.01	<0.01	<0.01	<0.01	0.10	0.357	2130	8	12.3	99.95	7	<1	98.0	0.1
15RAY-JR043B02	Rock	0.54	50.84	16.77	7.93	7.48	8.36	4.39	1.09	0.92	0.26	0.12	0.037	81	22	1.3	99.49	1588	<1	29.3	1.2
15RAY-JR044B02	Rock	0.51	42.85	13.46	15.13	7.79	14.45	1.82	0.53	2.06	0.16	0.25	0.030	85	54	1.2	99.70	149	<1	58.1	0.6
15RAY-JR044C02	Rock	0.48	72.82	15.15	0.42	0.09	0.88	4.21	5.39	0.02	0.01	<0.01	<0.002	<20	<1	0.4	99.41	4264	2	0.8	0.6
15RAY-JR052A02	Rock	0.78	43.79	8.50	14.63	11.20	12.83	1.32	0.55	4.68	0.60	0.18	0.125	206	44	1.1	99.50	553	2	60.0	0.5
15RAY-JR068A01	Rock	0.72	72.60	14.69	1.49	0.65	2.50	3.20	3.52	0.19	0.08	0.04	0.003	<20	4	0.7	99.66	2304	3	2.9	2.3
15RAY-JR084B01	Rock	0.91	45.30	10.50	13.08	12.29	12.38	1.01	0.76	1.84	0.55	0.25	0.092	389	26	1.5	99.60	85	2	67.8	2.4
15RAY-JR119B01	Rock	0.63	43.88	8.96	12.80	10.30	16.16	1.18	0.80	3.64	0.40	0.19	0.032	106	47	1.3	99.63	176	3	47.9	0.7
15RAY-JR125A01	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
15RAY-JR125A2	Rock	0.88	54.03	14.08	7.71	8.27	8.39	2.49	1.89	0.94	0.31	0.13	0.063	151	22	1.2	99.50	1850	1	32.8	0.9
15RAY-JR126A01	Rock	0.94	74.47	7.96	4.34	3.44	5.77	1.56	0.55	0.55	0.11	0.09	0.048	119	12	0.9	99.82	799	1	16.8	0.6
15RAY-JR141C01	Rock	0.64	47.39	16.49	9.12	9.88	9.45	3.05	1.46	0.91	0.24	0.14	0.070	145	27	1.3	99.54	1082	3	38.2	1.3
15RAY-JR167A01	Rock	0.56	46.45	15.02	12.94	6.93	9.82	2.99	0.87	2.49	0.32	0.21	0.029	105	34	1.6	99.67	246	3	41.3	1.3
15RAY-JR169A02	Rock	0.63	67.39	14.58	4.33	1.64	3.58	3.00	3.76	0.46	0.12	0.09	0.002	<20	10	0.7	99.68	1724	2	9.0	3.7



Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver BC V6P 6E5 CANADA

PHONE (604) 253-3158

Client: Geological Survey of Canada (Van)

625 Robson Street
1st Floor, Rm 100
Vancouver BC V6B 5J3 CANADA

Project: GEM Cordillera

Report Date: November 26, 2015

Page: 3 of 4

Part: 2 of 4

CERTIFICATE OF ANALYSIS

VAN15002850.1

Method Analyte Unit MDL	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200
	Ga	Hf	Nb	Rb	Sn	Sr	Ta	Th	U	V	W	Zr	Y	La	Ce	Pr	Nd	Sm	Eu	Gd	
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	0.5	0.1	0.1	0.1	1	0.5	0.1	0.2	0.1	8	0.5	0.1	0.1	0.1	0.1	0.02	0.3	0.05	0.02	0.05	
15RAY-JC042B01	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
15RAY-JC042B2	Rock	13.8	4.0	8.6	131.6	1	466.2	0.9	23.7	6.4	74	0.7	136.4	18.0	36.5	63.6	6.38	22.5	3.74	0.89	3.61
15RAY-JC070A01	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
15RAY-JC070A2	Rock	14.8	5.4	8.8	126.8	<1	125.9	0.4	21.8	5.5	<8	<0.5	152.0	25.0	32.5	78.0	8.88	32.6	6.46	0.37	5.26
15RAY-JC072B02	Rock	20.0	6.8	23.5	152.2	5	409.4	1.7	20.4	8.3	82	1.2	243.6	39.4	44.9	95.4	10.98	41.2	7.96	1.48	7.65
15RAY-JC080A02	Rock	15.1	4.1	7.8	118.7	2	471.8	0.9	17.6	5.0	104	<0.5	136.9	20.1	29.4	55.6	6.20	23.0	4.36	1.04	3.85
15RAY-JC084A02	Rock	19.3	4.9	16.1	111.9	2	627.1	1.0	8.5	3.8	164	1.3	190.4	24.0	31.9	64.0	7.53	28.5	5.56	1.50	5.23
15RAY-JC085A02	Rock	13.1	3.0	9.8	69.4	<1	523.7	0.7	4.0	1.5	213	<0.5	107.0	18.8	19.1	40.4	5.00	20.7	4.59	1.22	4.51
15RAY-JC094A02	Rock	15.0	1.8	0.7	14.2	<1	205.1	<0.1	0.4	0.2	277	0.5	58.5	19.0	3.4	8.3	1.26	6.5	1.87	0.67	2.72
15RAY-JC095A02	Rock	24.2	13.0	51.4	364.5	8	49.1	3.6	56.5	4.1	9	<0.5	384.4	55.7	75.1	157.1	15.94	52.8	9.79	0.36	8.70
15RAY-JC105A02	Rock	22.3	9.3	20.4	142.8	3	156.1	1.5	20.2	6.6	<8	2.6	324.6	52.7	56.8	117.4	14.33	55.2	11.00	1.70	10.11
15RAY-JR009A01	Rock	24.0	4.9	19.4	26.2	1	591.5	1.2	2.0	0.5	166	0.7	188.2	26.6	17.9	42.2	5.62	27.0	6.75	2.48	7.46
15RAY-JR015A01	Rock	14.5	3.7	7.4	124.0	<1	665.4	0.5	17.0	6.9	105	1.7	133.3	16.2	30.6	55.3	5.99	22.0	3.99	1.13	3.83
15RAY-JR023A01	Rock	12.1	0.5	0.4	6.2	<1	444.9	<0.1	<0.2	<0.1	147	<0.5	14.3	6.6	2.1	4.5	0.69	3.4	1.15	0.41	1.30
15RAY-JR024A01	Rock	26.7	3.0	3.3	68.6	<1	1594.1	0.2	2.0	1.2	32	<0.5	105.1	2.3	10.7	21.3	2.47	9.6	1.78	0.49	1.12
15RAY-JR026A01	Rock	13.7	4.1	3.3	37.7	<1	224.0	0.2	4.4	1.7	62	<0.5	136.3	28.7	12.7	30.7	3.50	14.0	3.59	0.70	3.88
15RAY-JR043A02	Rock	<0.5	<0.1	<0.1	0.3	<1	4.0	0.2	<0.2	<0.1	29	0.7	1.6	0.2	1.0	0.1	<0.02	<0.3	<0.05	<0.02	<0.05
15RAY-JR043B02	Rock	20.0	5.1	7.8	31.7	1	1052.9	0.4	11.3	0.7	158	<0.5	198.2	19.3	40.5	75.6	8.54	31.9	5.97	1.53	4.90
15RAY-JR044B02	Rock	19.4	3.0	4.4	10.2	<1	172.1	0.4	0.5	0.4	436	<0.5	105.4	40.7	6.1	17.3	2.80	14.7	4.68	1.75	6.57
15RAY-JR044C02	Rock	10.5	1.2	1.4	86.0	<1	1018.0	<0.1	<0.2	0.3	<8	<0.5	35.6	0.7	0.4	0.6	0.05	<0.3	<0.05	0.03	0.10
15RAY-JR052A02	Rock	19.1	10.6	71.6	12.7	3	506.1	4.5	6.1	1.6	373	0.5	381.7	28.5	59.1	133.5	16.86	70.2	13.27	3.85	10.93
15RAY-JR068A01	Rock	14.7	2.3	6.7	92.2	2	559.5	0.7	6.5	1.7	15	<0.5	78.8	9.3	16.9	28.4	3.53	13.4	2.48	0.89	2.10
15RAY-JR084B01	Rock	17.0	3.7	41.9	18.0	3	368.4	3.5	5.9	2.7	201	2.6	145.1	20.7	129.4	220.6	21.95	74.2	10.60	2.95	7.97
15RAY-JR119B01	Rock	17.2	6.9	32.7	14.1	2	320.6	2.1	2.6	0.7	364	1.3	227.1	21.1	29.4	72.5	9.36	41.3	8.83	2.95	8.33
15RAY-JR125A01	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
15RAY-JR125A2	Rock	16.1	4.6	13.1	55.9	1	712.0	0.9	13.7	3.9	144	<0.5	178.6	21.3	40.4	82.3	9.39	35.7	6.44	1.72	5.34
15RAY-JR126A01	Rock	7.9	1.9	4.4	11.9	<1	128.8	0.3	2.4	1.0	104	<0.5	67.3	14.8	9.8	19.8	2.50	10.3	2.24	0.70	2.52
15RAY-JR141C01	Rock	20.4	4.7	6.0	44.9	3	710.6	0.2	3.7	0.8	193	<0.5	189.4	23.0	23.8	54.3	7.04	29.1	6.16	1.60	5.38
15RAY-JR167A01	Rock	21.2	6.0	16.1	27.1	1	551.7	0.9	1.6	0.4	301	0.5	230.9	46.7	17.2	41.5	5.89	28.6	7.08	2.44	8.92
15RAY-JR169A02	Rock	15.3	4.2	9.1	147.8	2	392.6	1.2	25.7	5.2	82	<0.5	131.7	18.0	31.6	57.5	5.85	20.6	3.68	0.90	3.36



Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver BC V6P 6E5 CANADA

PHONE (604) 253-3158

Client: Geological Survey of Canada (Van)

625 Robson Street
1st Floor, Rm 100
Vancouver BC V6B 5J3 CANADA

Project: GEM Cordillera

Report Date: November 26, 2015

Page: 3 of 4

Part: 3 of 4

CERTIFICATE OF ANALYSIS

VAN15002850.1

Method Analyte Unit MDL	LF200	LF200	LF200	LF200	LF200	LF200	LF200	TC000	TC000	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	
	Tb	Dy	Ho	Er	Tm	Yb	Lu	TOT/C	TOT/S	Mo	Cu	Pb	Zn	Ni	As	Cd	Sb	Bi	Ag	Au	
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb
	0.01	0.05	0.02	0.03	0.01	0.05	0.01	0.02	0.02	0.1	0.1	0.1	1	0.1	0.5	0.1	0.1	0.1	0.1	0.1	0.5
15RAY-JC042B01	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
15RAY-JC042B2	Rock	0.54	2.82	0.60	1.87	0.29	1.99	0.30	<0.02	<0.02	0.4	5.6	6.5	34	4.3	1.8	<0.1	0.2	<0.1	<0.1	<0.5
15RAY-JC070A01	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
15RAY-JC070A2	Rock	0.83	4.71	0.89	2.87	0.44	3.08	0.49	<0.02	<0.02	0.2	6.3	6.1	22	3.4	0.9	<0.1	0.1	<0.1	<0.1	0.5
15RAY-JC072B02	Rock	1.22	6.62	1.29	3.94	0.58	4.17	0.60	0.03	0.23	1.8	104.0	4.1	36	198.4	2.7	0.1	0.1	<0.1	0.2	1.9
15RAY-JC080A02	Rock	0.61	3.39	0.66	2.12	0.30	2.05	0.33	<0.02	<0.02	0.2	11.9	4.7	34	3.6	1.2	<0.1	0.3	<0.1	<0.1	<0.5
15RAY-JC084A02	Rock	0.80	4.21	0.82	2.37	0.34	2.30	0.35	0.26	<0.02	1.8	29.5	4.1	67	5.0	0.7	<0.1	0.3	<0.1	<0.1	<0.5
15RAY-JC085A02	Rock	0.69	3.62	0.74	1.92	0.28	1.77	0.27	0.08	<0.02	0.7	37.2	2.7	51	47.5	2.6	<0.1	<0.1	<0.1	<0.1	1.1
15RAY-JC094A02	Rock	0.50	3.37	0.71	2.05	0.31	2.05	0.33	0.09	<0.02	0.2	86.8	0.9	35	34.6	0.5	<0.1	<0.1	<0.1	<0.1	2.3
15RAY-JC095A02	Rock	1.52	9.72	1.91	5.88	0.95	6.15	0.91	<0.02	<0.02	0.3	2.5	6.6	61	1.7	<0.5	0.2	<0.1	<0.1	0.4	<0.5
15RAY-JC105A02	Rock	1.61	9.73	1.79	5.74	0.81	5.57	0.83	<0.02	<0.02	3.2	2.6	8.9	106	0.4	7.2	0.4	0.5	0.2	0.1	<0.5
15RAY-JR009A01	Rock	1.12	5.90	1.00	2.57	0.33	1.77	0.24	<0.02	0.07	0.4	53.1	2.2	57	40.8	1.0	<0.1	0.2	<0.1	<0.1	<0.5
15RAY-JR015A01	Rock	0.53	2.89	0.60	1.71	0.25	1.87	0.28	0.66	<0.02	0.6	3.6	7.5	56	5.7	0.8	<0.1	0.5	<0.1	<0.1	0.9
15RAY-JR023A01	Rock	0.21	1.25	0.25	0.70	0.10	0.65	0.09	0.03	<0.02	<0.1	42.0	1.3	6	8.3	<0.5	<0.1	<0.1	<0.1	<0.1	0.6
15RAY-JR024A01	Rock	0.10	0.44	0.07	0.19	0.03	0.20	0.03	<0.02	<0.02	<0.1	0.7	1.9	75	1.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.5
15RAY-JR026A01	Rock	0.74	4.73	1.02	3.19	0.50	3.42	0.55	0.04	<0.02	0.3	3.1	0.7	24	2.2	<0.5	<0.1	<0.1	<0.1	<0.1	<0.5
15RAY-JR043A02	Rock	<0.01	<0.05	<0.02	<0.03	<0.01	<0.05	<0.01	0.17	0.02	<0.1	0.5	0.3	21	2231.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.5
15RAY-JR043B02	Rock	0.72	3.93	0.71	1.98	0.30	1.94	0.27	0.03	0.02	0.1	43.9	22.1	48	37.8	<0.5	0.2	<0.1	<0.1	<0.1	<0.5
15RAY-JR044B02	Rock	1.18	7.51	1.58	4.51	0.64	4.18	0.64	<0.02	<0.02	<0.1	103.4	5.0	36	36.1	<0.5	0.2	<0.1	<0.1	<0.1	<0.5
15RAY-JR044C02	Rock	<0.01	<0.05	<0.02	0.06	0.01	0.12	0.03	0.02	<0.02	0.2	7.4	12.2	6	2.9	0.6	<0.1	<0.1	<0.1	<0.1	<0.5
15RAY-JR052A02	Rock	1.42	6.77	1.09	2.54	0.33	1.93	0.24	0.02	<0.02	0.3	75.5	2.0	21	62.8	2.5	<0.1	0.1	<0.1	<0.1	1.0
15RAY-JR068A01	Rock	0.27	1.58	0.27	0.81	0.14	0.92	0.15	<0.02	<0.02	0.2	1.3	5.8	30	4.9	<0.5	<0.1	0.1	<0.1	<0.1	<0.5
15RAY-JR084B01	Rock	1.01	4.67	0.80	1.87	0.23	1.56	0.21	0.03	0.07	1.9	45.0	1.3	22	148.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.5
15RAY-JR119B01	Rock	1.12	5.40	0.82	1.87	0.22	1.21	0.17	0.13	<0.02	0.2	3.9	4.6	23	20.7	<0.5	<0.1	<0.1	<0.1	<0.1	<0.5
15RAY-JR125A01	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
15RAY-JR125A2	Rock	0.78	4.25	0.74	2.05	0.28	1.83	0.25	0.03	<0.02	<0.1	1.9	1.9	32	66.9	<0.5	<0.1	<0.1	<0.1	<0.1	<0.5
15RAY-JR126A01	Rock	0.41	2.59	0.55	1.54	0.25	1.52	0.23	<0.02	<0.02	1.4	20.2	1.1	9	64.7	0.8	<0.1	<0.1	<0.1	<0.1	1.2
15RAY-JR141C01	Rock	0.75	4.34	0.78	2.27	0.34	2.07	0.31	0.02	<0.02	<0.1	48.1	0.9	33	87.6	1.0	<0.1	0.6	<0.1	<0.1	0.9
15RAY-JR167A01	Rock	1.42	9.17	1.76	4.97	0.71	4.43	0.69	0.06	<0.02	0.4	25.8	1.2	27	42.6	6.0	<0.1	0.1	<0.1	<0.1	0.8
15RAY-JR169A02	Rock	0.53	3.05	0.60	1.76	0.29	2.21	0.35	<0.02	<0.02	0.1	8.1	7.3	38	2.6	1.4	<0.1	0.1	<0.1	<0.1	<0.5



BUREAU VERITAS MINERAL LABORATORIES
Canada

www.bureauveritas.com/um

Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver BC V6P 6E5 CANADA

PHONE (604) 253-3158

Client: Geological Survey of Canada (Van)

625 Robson Street
1st Floor, Rm 100
Vancouver BC V6B 5J3 CANADA

Project: GEM Cordillera

Report Date: November 26, 2015

Page: 3 of 4

Part: 4 of 4

CERTIFICATE OF ANALYSIS

VAN15002850.1

Method	AQ200	AQ200	AQ200	
Analyte	Hg	Tl	Se	
Unit	ppm	ppm	ppm	
MDL	0.01	0.1	0.5	
15RAY-JC042B01	Rock	L.N.R.	L.N.R.	L.N.R.
15RAY-JC042B2	Rock	<0.01	0.2	<0.5
15RAY-JC070A01	Rock	L.N.R.	L.N.R.	L.N.R.
15RAY-JC070A2	Rock	<0.01	<0.1	<0.5
15RAY-JC072B02	Rock	<0.01	0.3	<0.5
15RAY-JC080A02	Rock	<0.01	0.5	<0.5
15RAY-JC084A02	Rock	<0.01	<0.1	<0.5
15RAY-JC085A02	Rock	<0.01	0.2	<0.5
15RAY-JC094A02	Rock	<0.01	<0.1	<0.5
15RAY-JC095A02	Rock	<0.01	0.4	<0.5
15RAY-JC105A02	Rock	<0.01	0.1	<0.5
15RAY-JR009A01	Rock	<0.01	0.2	<0.5
15RAY-JR015A01	Rock	<0.01	<0.1	<0.5
15RAY-JR023A01	Rock	<0.01	<0.1	<0.5
15RAY-JR024A01	Rock	<0.01	<0.1	<0.5
15RAY-JR026A01	Rock	<0.01	0.2	<0.5
15RAY-JR043A02	Rock	<0.01	<0.1	<0.5
15RAY-JR043B02	Rock	<0.01	<0.1	<0.5
15RAY-JR044B02	Rock	<0.01	<0.1	<0.5
15RAY-JR044C02	Rock	<0.01	<0.1	<0.5
15RAY-JR052A02	Rock	<0.01	<0.1	<0.5
15RAY-JR068A01	Rock	0.04	0.2	<0.5
15RAY-JR084B01	Rock	<0.01	<0.1	<0.5
15RAY-JR119B01	Rock	<0.01	<0.1	<0.5
15RAY-JR125A01	Rock	L.N.R.	L.N.R.	L.N.R.
15RAY-JR125A2	Rock	<0.01	0.2	<0.5
15RAY-JR126A01	Rock	<0.01	<0.1	<0.5
15RAY-JR141C01	Rock	<0.01	0.2	<0.5
15RAY-JR167A01	Rock	<0.01	<0.1	<0.5
15RAY-JR169A02	Rock	<0.01	0.4	<0.5



BUREAU VERITAS MINERAL LABORATORIES
Canada

www.bureauveritas.com/um

Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver BC V6P 6E5 CANADA

PHONE (604) 253-3158

Client: Geological Survey of Canada (Van)

625 Robson Street
1st Floor, Rm 100
Vancouver BC V6B 5J3 CANADA

Project: GEM Cordillera

Report Date: November 26, 2015

Page: 4 of 4

Part: 1 of 4

CERTIFICATE OF ANALYSIS

VAN15002850.1

Method	WGHT	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200
Analyte	Wgt	SiO2	Al2O3	Fe2O3	MgO	CaO	Na2O	K2O	TiO2	P2O5	MnO	Cr2O3	Ni	Sc	LOI	Sum	Ba	Be	Co	Cs	
Unit	kg	%	%	%	%	%	%	%	%	%	%	%	ppm	ppm	%	%	ppm	ppm	ppm	ppm	
MDL	0.01	0.01	0.01	0.04	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.002	20	1	-5.1	0.01	1	1	0.2	0.1	
15RAY-JR175A02	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
15RAY-JR175A1	Rock	0.76	73.19	13.28	2.48	0.64	1.42	2.80	4.44	0.30	0.07	0.04	<0.002	<20	5	1.1	99.80	1221	3	3.4	6.4
15RAY-JR189A01	Rock	0.83	65.20	15.71	4.64	1.99	4.44	3.13	2.68	0.50	0.12	0.10	<0.002	<20	12	1.2	99.73	1332	2	10.0	2.5
15RAY-JR201A01	Rock	0.66	58.35	15.78	7.79	4.22	6.62	4.48	0.56	0.75	0.16	0.13	0.007	<20	31	1.0	99.81	161	<1	13.9	0.7
15RAY-JR209A02	Rock	0.89	67.38	15.76	2.44	1.12	2.72	5.00	3.80	0.25	0.10	0.04	0.003	<20	5	0.9	99.54	2379	3	3.8	0.9
15RAY-JR211A01	Rock	0.72	50.28	15.81	9.86	7.57	9.11	4.20	0.63	0.80	0.16	0.15	0.023	44	38	1.1	99.72	145	1	33.2	0.5
15RAY-JR229A01	Rock	1.00	50.65	18.22	9.03	6.62	9.02	3.35	0.83	0.53	0.03	0.18	0.013	26	35	1.3	99.75	293	<1	33.3	2.0
15RAY-MM019A01	Rock	0.87	48.11	16.99	9.40	8.26	10.49	2.93	0.50	1.45	0.16	0.15	0.036	109	29	1.2	99.72	212	<1	41.1	0.5
15RAY-MM032A01	Rock	0.33	59.16	15.39	5.70	3.29	4.39	1.89	2.87	0.62	0.14	0.10	0.009	28	16	6.1	99.72	1291	2	15.8	5.9
15RAY-MM050A03	Rock	0.67	65.37	17.49	3.43	0.81	4.99	4.76	0.95	0.32	0.17	0.05	<0.002	<20	4	1.4	99.73	1076	1	4.3	0.7
15RAY-YM019A01	Rock	0.56	63.01	15.93	4.97	0.92	2.79	3.18	4.75	0.68	0.26	0.11	<0.002	<20	6	2.9	99.47	3015	2	6.2	4.3
15RAY-YM025A01	Rock	0.68	64.88	15.50	4.80	2.07	4.26	3.10	2.61	0.51	0.12	0.09	<0.002	<20	12	1.8	99.73	1257	<1	10.0	3.9
15RAYEW192A1	Rock	1.01	48.26	14.11	10.84	9.25	9.65	2.79	1.21	0.90	0.55	0.20	0.049	118	32	1.8	99.58	689	3	43.8	0.5
15RAYJR152A1	Rock	0.89	64.17	16.11	5.69	1.93	5.34	3.02	1.58	0.53	0.10	0.10	<0.002	<20	15	1.3	99.84	651	<1	12.8	2.9
15RAYJR160A1	Rock	0.72	48.69	18.41	10.70	5.06	10.61	3.28	0.86	0.86	0.18	0.17	0.006	25	35	0.9	99.75	343	<1	34.9	0.3
15RAYJR210B1	Rock	0.97	71.48	13.67	3.61	0.72	2.47	2.98	3.62	0.32	0.07	0.06	<0.002	<20	8	0.8	99.75	1439	4	5.8	2.8
15RAYJR234B1	Rock	0.68	50.68	16.96	13.75	4.45	5.14	3.39	0.94	2.22	0.23	0.25	0.004	<20	34	1.5	99.55	2072	1	26.4	0.7



Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver BC V6P 6E5 CANADA

PHONE (604) 253-3158

Client: Geological Survey of Canada (Van)

625 Robson Street
1st Floor, Rm 100
Vancouver BC V6B 5J3 CANADA

Project: GEM Cordillera

Report Date: November 26, 2015

Page: 4 of 4

Part: 2 of 4

CERTIFICATE OF ANALYSIS

VAN15002850.1

Method	Analyte	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200
		Ga	Hf	Nb	Rb	Sn	Sr	Ta	Th	U	V	W	Zr	Y	La	Ce	Pr	Nd	Sm	Eu	Gd
Unit		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
MDL		0.5	0.1	0.1	0.1	1	0.5	0.1	0.2	0.1	8	0.5	0.1	0.1	0.1	0.02	0.3	0.05	0.02	0.05	
15RAY-JR175A02	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
15RAY-JR175A1	Rock	16.4	4.8	7.5	166.5	2	160.4	0.6	18.5	3.2	21	<0.5	159.6	14.5	22.9	55.2	4.80	16.0	2.66	0.50	2.37
15RAY-JR189A01	Rock	15.1	3.8	8.6	79.7	<1	415.7	0.7	12.1	1.9	101	0.9	126.5	17.7	30.8	54.4	5.82	19.9	3.49	0.89	3.25
15RAY-JR201A01	Rock	14.6	2.5	4.1	13.9	<1	421.5	0.2	3.1	1.2	210	<0.5	92.5	19.1	13.0	29.9	3.70	15.8	3.27	1.11	3.67
15RAY-JR209A02	Rock	17.1	3.0	6.4	74.2	<1	1318.9	0.4	3.4	1.6	41	<0.5	98.5	5.3	9.1	19.7	2.17	7.9	1.70	0.43	1.45
15RAY-JR211A01	Rock	14.6	1.4	0.7	8.7	<1	497.9	<0.1	0.9	0.5	303	<0.5	42.7	17.3	7.4	16.7	2.34	11.4	3.03	0.95	3.23
15RAY-JR229A01	Rock	14.3	0.8	1.2	16.5	<1	358.7	<0.1	0.8	0.2	310	<0.5	27.2	10.6	4.3	8.4	1.13	5.4	1.25	0.67	1.55
15RAY-MM019A01	Rock	15.6	3.1	2.3	11.4	<1	370.4	0.2	0.9	0.3	209	0.9	116.9	26.2	6.7	18.3	2.83	14.0	3.79	1.45	4.69
15RAY-MM032A01	Rock	14.7	4.7	7.1	112.6	<1	279.1	0.6	14.8	4.3	106	1.4	158.6	21.2	25.3	49.7	5.69	20.7	4.22	0.97	4.04
15RAY-MM050A03	Rock	19.1	2.2	1.4	22.5	<1	1095.3	<0.1	0.9	0.4	47	<0.5	70.0	4.2	6.9	14.0	1.91	8.5	1.96	0.63	1.61
15RAY-YM019A01	Rock	20.0	8.1	19.6	130.7	3	738.0	1.5	15.8	5.2	35	0.8	319.9	25.6	56.3	117.9	13.09	46.1	7.81	1.80	6.43
15RAY-YM025A01	Rock	15.4	3.7	7.3	82.7	<1	418.0	0.6	12.8	2.3	96	0.8	127.7	17.5	26.3	51.5	5.27	19.2	3.39	0.89	3.28
15RAYEW192A1	Rock	16.4	1.5	4.2	28.0	<1	824.5	0.2	1.7	1.1	309	<0.5	45.7	19.1	20.4	45.3	5.74	24.3	4.82	1.30	4.48
15RAYJR152A1	Rock	16.9	3.5	6.6	62.2	<1	205.7	0.4	6.3	1.4	66	<0.5	119.3	21.9	18.5	37.6	4.22	16.3	3.28	0.98	3.65
15RAYJR160A1	Rock	17.6	1.3	3.3	9.7	<1	294.9	0.1	1.3	0.6	368	<0.5	45.0	19.4	7.7	17.0	2.34	10.9	3.04	1.07	3.38
15RAYJR210B1	Rock	14.8	4.7	10.5	110.2	2	304.5	0.7	13.6	2.5	29	1.3	169.8	27.4	39.3	76.5	8.04	29.4	4.99	0.85	4.89
15RAYJR234B1	Rock	21.7	4.5	8.3	21.4	1	231.1	0.4	3.3	1.1	304	0.9	154.5	49.8	16.5	39.7	5.25	24.5	6.51	1.81	7.94



BUREAU VERITAS MINERAL LABORATORIES
Canada

www.bureauveritas.com/um

Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver BC V6P 6E5 CANADA

PHONE (604) 253-3158

Client: Geological Survey of Canada (Van)

625 Robson Street
1st Floor, Rm 100
Vancouver BC V6B 5J3 CANADA

Project: GEM Cordillera

Report Date: November 26, 2015

Page: 4 of 4

Part: 3 of 4

CERTIFICATE OF ANALYSIS

VAN15002850.1

Method	Analyte	LF200	LF200	LF200	LF200	LF200	LF200	LF200	TC000	TC000	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	
		Tb	Dy	Ho	Er	Tm	Yb	Lu	TOT/C	TOT/S	Mo	Cu	Pb	Zn	Ni	As	Cd	Sb	Bi	Ag	Au	
Unit		ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb
MDL		0.01	0.05	0.02	0.03	0.01	0.05	0.01	0.02	0.02	0.1	0.1	0.1	1	0.1	0.5	0.1	0.1	0.1	0.1	0.1	0.5
15RAY-JR175A02	Rock	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.	L.N.R.
15RAY-JR175A1	Rock	0.42	2.51	0.48	1.73	0.25	1.78	0.26	<0.02	<0.02	0.3	1.2	6.1	46	4.7	0.8	<0.1	<0.1	0.2	<0.1	<0.5	
15RAY-JR189A01	Rock	0.52	3.11	0.62	1.87	0.27	1.88	0.31	<0.02	<0.02	0.4	4.4	5.8	43	3.8	1.7	<0.1	<0.1	<0.1	<0.1	0.8	
15RAY-JR201A01	Rock	0.57	3.45	0.69	2.01	0.29	1.92	0.33	0.05	0.03	0.2	4.5	3.2	25	3.9	0.9	<0.1	<0.1	<0.1	<0.1	<0.5	
15RAY-JR209A02	Rock	0.20	1.11	0.18	0.56	0.09	0.56	0.08	0.03	<0.02	<0.1	2.0	9.0	25	1.1	1.1	<0.1	0.2	<0.1	<0.1	<0.5	
15RAY-JR211A01	Rock	0.50	3.02	0.66	1.94	0.29	1.76	0.26	<0.02	<0.02	<0.1	48.8	1.9	23	13.6	0.7	0.1	<0.1	<0.1	<0.1	0.7	
15RAY-JR229A01	Rock	0.27	1.78	0.37	1.13	0.18	1.22	0.18	<0.02	<0.02	0.1	31.3	0.7	19	8.3	0.9	<0.1	<0.1	<0.1	<0.1	<0.5	
15RAY-MM019A01	Rock	0.79	4.63	0.97	2.77	0.39	2.51	0.38	<0.02	0.02	0.1	45.2	3.9	18	48.3	2.2	<0.1	<0.1	<0.1	<0.1	<0.5	
15RAY-MM032A01	Rock	0.64	3.92	0.71	2.25	0.31	2.23	0.33	0.79	<0.02	0.2	2.5	7.2	53	18.4	2.0	0.1	0.2	<0.1	0.2	<0.5	
15RAY-MM050A03	Rock	0.20	0.99	0.16	0.37	0.06	0.31	0.04	<0.02	0.04	<0.1	25.3	0.9	65	1.0	0.8	<0.1	<0.1	<0.1	0.2	<0.5	
15RAY-YM019A01	Rock	0.89	4.94	0.86	2.46	0.37	2.39	0.40	0.22	<0.02	1.1	5.0	4.8	105	2.6	<0.5	0.5	<0.1	<0.1	0.2	<0.5	
15RAY-YM025A01	Rock	0.52	3.08	0.58	1.73	0.26	1.82	0.28	0.09	<0.02	0.1	6.0	2.8	46	4.1	7.9	<0.1	0.3	0.1	<0.1	<0.5	
15RAYEW192A1	Rock	0.62	3.56	0.67	1.87	0.29	1.75	0.27	0.05	<0.02	0.2	108.4	1.2	32	46.2	<0.5	0.1	<0.1	<0.1	<0.1	1.2	
15RAYJR152A1	Rock	0.62	3.77	0.75	2.47	0.35	2.24	0.36	0.09	<0.02	0.4	3.4	1.6	54	4.7	<0.5	<0.1	<0.1	<0.1	<0.1	1.8	
15RAYJR160A1	Rock	0.58	3.57	0.70	2.13	0.31	2.05	0.30	<0.02	<0.02	0.1	86.5	1.1	24	7.2	<0.5	<0.1	<0.1	<0.1	<0.1	1.7	
15RAYJR210B1	Rock	0.80	4.59	0.97	2.78	0.42	3.08	0.44	0.04	<0.02	0.2	0.9	1.9	32	1.1	0.7	<0.1	<0.1	<0.1	<0.1	0.6	
15RAYJR234B1	Rock	1.42	9.25	1.86	5.47	0.81	5.19	0.77	<0.02	0.07	0.3	40.0	12.0	65	8.9	0.6	<0.1	<0.1	<0.1	0.3	0.5	



BUREAU VERITAS MINERAL LABORATORIES
Canada

www.bureauveritas.com/um

Bureau Veritas Commodities Canada Ltd.

9050 Shaughnessy St Vancouver BC V6P 6E5 CANADA

PHONE (604) 253-3158

Client: Geological Survey of Canada (Van)

625 Robson Street
1st Floor, Rm 100
Vancouver BC V6B 5J3 CANADA

Project: GEM Cordillera

Report Date: November 26, 2015

Page: 4 of 4

Part: 4 of 4

CERTIFICATE OF ANALYSIS

VAN15002850.1

Method	Analyte	AQ200	AQ200	AQ200
		Hg	TI	Se
Unit		ppm	ppm	ppm
MDL		0.01	0.1	0.5
15RAY-JR175A02	Rock	L.N.R.	L.N.R.	L.N.R.
15RAY-JR175A1	Rock	<0.01	0.4	<0.5
15RAY-JR189A01	Rock	<0.01	<0.1	<0.5
15RAY-JR201A01	Rock	<0.01	<0.1	<0.5
15RAY-JR209A02	Rock	<0.01	<0.1	<0.5
15RAY-JR211A01	Rock	<0.01	<0.1	<0.5
15RAY-JR229A01	Rock	<0.01	<0.1	<0.5
15RAY-MM019A01	Rock	<0.01	<0.1	<0.5
15RAY-MM032A01	Rock	<0.01	<0.1	<0.5
15RAY-MM050A03	Rock	<0.01	<0.1	<0.5
15RAY-YM019A01	Rock	<0.01	<0.1	<0.5
15RAY-YM025A01	Rock	<0.01	<0.1	<0.5
15RAYEW192A1	Rock	<0.01	<0.1	<0.5
15RAYJR152A1	Rock	<0.01	0.2	<0.5
15RAYJR160A1	Rock	<0.01	<0.1	<0.5
15RAYJR210B1	Rock	<0.01	0.2	<0.5
15RAYJR234B1	Rock	<0.01	0.2	<0.5



Bureau Veritas Commodities Canada Ltd.
9050 Shaughnessy St Vancouver BC V6P 6E5 CANADA
PHONE (604) 253-3158

Client: Geological Survey of Canada (Van)
625 Robson Street
1st Floor, Rm 100
Vancouver BC V6B 5J3 CANADA

Project: GEM Cordillera
Report Date: November 26, 2015

Page: 1 of 3

Part: 1 of 4

QUALITY CONTROL REPORT

VAN15002850.1

Method	WGHT	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200
Analyte	Wgt	SiO2	Al2O3	Fe2O3	MgO	CaO	Na2O	K2O	TiO2	P2O5	MnO	Cr2O3	Ni	Sc	LOI	Sum	Ba	Be	Co	Cs	
Unit	kg	%	%	%	%	%	%	%	%	%	%	%	ppm	ppm	%	%	ppm	ppm	ppm	ppm	
MDL	0.01	0.01	0.01	0.04	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.002	20	1	-5.1	0.01	1	1	0.2	0.1	
15RAY-EW089A01	Rock	0.43	58.38	16.73	6.37	2.24	5.21	4.12	2.53	0.81	0.52	0.09	0.003	<20	11	2.5	99.51	1872	4	12.0	6.9
15RAY-JR043A02	Rock	0.73	39.65	0.68	7.37	38.69	0.57	<0.01	<0.01	<0.01	<0.01	0.10	0.357	2130	8	12.3	99.95	7	<1	98.0	0.1
Pulp Duplicates																					
15RAY-EW073A01	Rock	0.53	43.03	15.23	15.22	7.85	11.00	2.08	0.79	2.99	0.39	0.26	0.041	122	45	0.8	99.68	169	1	51.8	1.1
REP 15RAY-EW073A01	QC																				
15RAY-EW130A01	Rock	0.73	39.22	0.68	7.87	38.18	0.01	<0.01	<0.01	0.02	<0.01	0.06	0.445	2101	9	13.3	99.95	11	<1	97.7	<0.1
REP 15RAY-EW130A01	QC																				
15RAY-EW185B01	Rock	0.69	52.67	10.25	8.72	11.27	9.76	1.44	3.40	0.71	0.32	0.17	0.154	135	30	0.6	99.46	2181	<1	45.7	1.0
REP 15RAY-EW185B01	QC		52.99	10.13	8.70	11.14	9.75	1.41	3.36	0.70	0.32	0.17	0.156	133	30	0.6	99.44	2210	1	44.8	1.0
15RAY-JC030B02	Rock	0.73	61.05	10.85	12.09	4.50	7.07	1.69	0.95	0.49	0.07	0.17	0.006	29	16	0.9	99.81	306	<1	17.1	0.6
REP 15RAY-JC030B02	QC		61.06	10.83	12.16	4.48	7.02	1.68	0.96	0.49	0.08	0.17	0.007	36	16	0.9	99.81	311	2	16.6	0.3
15RAY-JR023A01	Rock	0.44	45.37	17.85	7.67	11.28	13.61	1.19	0.39	0.35	0.02	0.13	0.036	71	38	1.8	99.71	119	<1	51.5	0.4
REP 15RAY-JR023A01	QC																				
15RAY-JR084B01	Rock	0.91	45.30	10.50	13.08	12.29	12.38	1.01	0.76	1.84	0.55	0.25	0.092	389	26	1.5	99.60	85	2	67.8	2.4
REP 15RAY-JR084B01	QC																				
15RAY-JR125A2	Rock	0.88	54.03	14.08	7.71	8.27	8.39	2.49	1.89	0.94	0.31	0.13	0.063	151	22	1.2	99.50	1850	1	32.8	0.9
REP 15RAY-JR125A2	QC		54.26	14.09	7.69	8.26	8.19	2.49	1.88	0.94	0.30	0.13	0.064	148	21	1.2	99.49	1858	2	34.1	0.8
15RAYJR234B1	Rock	0.68	50.68	16.96	13.75	4.45	5.14	3.39	0.94	2.22	0.23	0.25	0.004	<20	34	1.5	99.55	2072	1	26.4	0.7
REP 15RAYJR234B1	QC		50.34	17.09	13.89	4.53	5.20	3.39	0.94	2.12	0.24	0.26	0.003	<20	34	1.5	99.53	2073	<1	28.4	0.8
Core Reject Duplicates																					
15RAY-JC030C02	Rock	0.76	60.71	15.65	6.92	4.17	4.42	2.73	3.06	0.61	0.11	0.12	0.007	<20	20	1.2	99.74	977	<1	18.7	2.2
DUP 15RAY-JC030C02	QC		60.80	15.60	6.87	4.13	4.39	2.78	3.10	0.61	0.11	0.12	0.008	21	20	1.2	99.74	956	<1	17.5	2.2
15RAY-JR201A01	Rock	0.66	58.35	15.78	7.79	4.22	6.62	4.48	0.56	0.75	0.16	0.13	0.007	<20	31	1.0	99.81	161	<1	13.9	0.7
DUP 15RAY-JR201A01	QC		58.47	15.66	7.75	4.18	6.64	4.54	0.57	0.74	0.16	0.13	0.007	<20	31	1.0	99.81	161	<1	14.9	0.7
Reference Materials																					
STD DS10	Standard																				
STD DS10	Standard																				
STD DS10	Standard																				
STD GS311-1	Standard																				



QUALITY CONTROL REPORT

VAN15002850.1

Method	Analyte	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200
		Ga	Hf	Nb	Rb	Sn	Sr	Ta	Th	U	V	W	Zr	Y	La	Ce	Pr	Nd	Sm	Eu	Gd
Unit		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
MDL		0.5	0.1	0.1	0.1	1	0.5	0.1	0.2	0.1	8	0.5	0.1	0.1	0.1	0.02	0.3	0.05	0.02	0.05	
15RAY-EW089A01	Rock	18.4	4.9	12.3	57.5	<1	1322.9	0.8	12.7	5.2	114	0.5	197.1	19.0	63.9	123.0	13.91	52.5	8.39	2.09	6.26
15RAY-JR043A02	Rock	<0.5	<0.1	<0.1	0.3	<1	4.0	0.2	<0.2	<0.1	29	0.7	1.6	0.2	1.0	0.1	<0.02	<0.3	<0.05	<0.02	<0.05
Pulp Duplicates																					
15RAY-EW073A01	Rock	22.1	6.4	15.2	17.5	3	198.0	1.0	1.3	1.0	408	1.5	260.0	52.5	16.4	41.9	6.16	29.1	7.91	2.66	9.74
REP 15RAY-EW073A01	QC																				
15RAY-EW130A01	Rock	<0.5	<0.1	<0.1	0.4	<1	2.7	<0.1	<0.2	<0.1	34	<0.5	1.1	0.2	0.5	0.3	0.04	0.3	<0.05	<0.02	0.06
REP 15RAY-EW130A01	QC																				
15RAY-EW185B01	Rock	14.1	2.8	9.8	102.1	2	356.7	0.5	9.6	3.4	184	0.7	105.8	15.5	28.3	54.4	7.29	28.6	6.19	1.49	4.81
REP 15RAY-EW185B01	QC	12.0	3.0	10.5	103.6	2	384.4	0.5	9.8	3.9	184	<0.5	114.4	17.5	30.4	63.0	7.66	29.8	5.83	1.55	4.95
15RAY-JC030B02	Rock	16.6	2.1	6.5	19.6	30	135.7	0.5	6.5	2.2	142	<0.5	76.5	22.0	33.4	62.0	8.12	29.4	6.08	1.79	5.36
REP 15RAY-JC030B02	QC	17.3	2.4	6.1	20.7	33	137.2	0.6	7.0	2.2	141	0.7	86.2	23.2	35.0	63.8	8.32	29.9	6.13	1.74	5.67
15RAY-JR023A01	Rock	12.1	0.5	0.4	6.2	<1	444.9	<0.1	<0.2	<0.1	147	<0.5	14.3	6.6	2.1	4.5	0.69	3.4	1.15	0.41	1.30
REP 15RAY-JR023A01	QC																				
15RAY-JR084B01	Rock	17.0	3.7	41.9	18.0	3	368.4	3.5	5.9	2.7	201	2.6	145.1	20.7	129.4	220.6	21.95	74.2	10.60	2.95	7.97
REP 15RAY-JR084B01	QC																				
15RAY-JR125A2	Rock	16.1	4.6	13.1	55.9	1	712.0	0.9	13.7	3.9	144	<0.5	178.6	21.3	40.4	82.3	9.39	35.7	6.44	1.72	5.34
REP 15RAY-JR125A2	QC	15.2	4.7	12.6	54.3	1	701.6	0.9	13.1	3.4	147	<0.5	173.8	19.7	43.6	84.1	9.46	35.9	6.25	1.68	5.35
15RAYJR234B1	Rock	21.7	4.5	8.3	21.4	1	231.1	0.4	3.3	1.1	304	0.9	154.5	49.8	16.5	39.7	5.25	24.5	6.51	1.81	7.94
REP 15RAYJR234B1	QC	21.7	4.7	7.8	21.4	1	232.5	0.5	3.3	1.1	305	1.0	156.7	51.2	16.2	39.6	5.27	24.1	6.41	1.91	7.97
Core Reject Duplicates																					
15RAY-JC030C02	Rock	14.7	3.9	6.1	89.1	<1	250.2	0.5	7.5	1.5	146	0.6	142.5	18.4	15.5	40.0	4.02	15.7	3.33	0.82	3.38
DUP 15RAY-JC030C02	QC	16.2	3.9	5.6	90.7	<1	248.4	0.4	7.3	1.6	144	0.6	139.8	19.2	15.7	39.0	4.12	16.2	3.37	0.83	3.39
15RAY-JR201A01	Rock	14.6	2.5	4.1	13.9	<1	421.5	0.2	3.1	1.2	210	<0.5	92.5	19.1	13.0	29.9	3.70	15.8	3.27	1.11	3.67
DUP 15RAY-JR201A01	QC	14.2	2.9	3.9	13.5	<1	428.4	0.2	3.3	1.1	207	<0.5	96.8	20.5	12.6	27.4	3.66	16.0	3.67	1.06	3.72
Reference Materials																					
STD DS10	Standard																				
STD DS10	Standard																				
STD DS10	Standard																				
STD GS311-1	Standard																				



QUALITY CONTROL REPORT

VAN15002850.1

Method	Analyte	Unit	LF200	LF200	LF200	LF200	LF200	LF200	TC000	TC000	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	
			Tb	Dy	Ho	Er	Tm	Yb	Lu	TOT/C	TOT/S	Mo	Cu	Pb	Zn	Ni	As	Cd	Sb	Bi	Ag	Au
MDL			ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	
			0.01	0.05	0.02	0.03	0.01	0.05	0.01	0.02	0.01	0.1	0.1	0.1	1	0.1	0.5	0.1	0.1	0.1	0.5	
15RAY-EW089A01	Rock		0.75	3.57	0.64	1.58	0.24	1.39	0.21	0.21	<0.02	1.0	10.5	4.1	81	13.0	1.7	<0.1	0.2	<0.1	<0.1	0.6
15RAY-JR043A02	Rock		<0.01	<0.05	<0.02	<0.03	<0.01	<0.05	<0.01	0.17	0.02	<0.1	0.5	0.3	21	2231.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.5
Pulp Duplicates																						
15RAY-EW073A01	Rock		1.67	9.83	1.97	5.61	0.78	4.80	0.71	0.03	0.03	0.2	22.2	3.2	41	58.1	2.2	<0.1	0.2	<0.1	<0.1	<0.5
REP 15RAY-EW073A01	QC									0.03	0.03											
15RAY-EW130A01	Rock		<0.01	0.09	<0.02	0.07	<0.01	<0.05	<0.01	0.03	<0.02	<0.1	5.5	0.6	30	2244.2	15.4	<0.1	<0.1	<0.1	<0.1	1.4
REP 15RAY-EW130A01	QC											<0.1	5.6	0.6	29	2243.8	15.9	<0.1	<0.1	<0.1	<0.1	1.8
15RAY-EW185B01	Rock		0.67	3.43	0.60	1.50	0.22	1.45	0.21	<0.02	<0.02	<0.1	0.9	1.6	7	16.9	1.7	<0.1	0.1	<0.1	<0.1	<0.5
REP 15RAY-EW185B01	QC		0.69	3.50	0.60	1.61	0.23	1.46	0.22													
15RAY-JC030B02	Rock		0.83	4.78	0.82	2.57	0.36	2.32	0.32	<0.02	<0.02	<0.1	6.6	1.7	40	9.6	0.5	0.2	<0.1	0.3	<0.1	1.2
REP 15RAY-JC030B02	QC		0.84	4.72	0.82	2.52	0.33	2.36	0.32													
15RAY-JR023A01	Rock		0.21	1.25	0.25	0.70	0.10	0.65	0.09	0.03	<0.02	<0.1	42.0	1.3	6	8.3	<0.5	<0.1	<0.1	<0.1	<0.1	0.6
REP 15RAY-JR023A01	QC									0.03	<0.02											
15RAY-JR084B01	Rock		1.01	4.67	0.80	1.87	0.23	1.56	0.21	0.03	0.07	1.9	45.0	1.3	22	148.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.5
REP 15RAY-JR084B01	QC											2.5	48.4	1.3	22	151.3	<0.5	<0.1	<0.1	<0.1	<0.1	0.6
15RAY-JR125A2	Rock		0.78	4.25	0.74	2.05	0.28	1.83	0.25	0.03	<0.02	<0.1	1.9	1.9	32	66.9	<0.5	<0.1	<0.1	<0.1	<0.1	<0.5
REP 15RAY-JR125A2	QC		0.74	4.09	0.69	2.00	0.30	1.85	0.26													
15RAYJR234B1	Rock		1.42	9.25	1.86	5.47	0.81	5.19	0.77	<0.02	0.07	0.3	40.0	12.0	65	8.9	0.6	<0.1	<0.1	<0.1	0.3	0.5
REP 15RAYJR234B1	QC		1.40	9.03	1.93	5.44	0.84	5.50	0.81			0.2	40.0	12.2	64	8.9	0.7	<0.1	<0.1	<0.1	0.3	<0.5
Core Reject Duplicates																						
15RAY-JC030C02	Rock		0.56	3.35	0.67	1.95	0.30	2.03	0.31	<0.02	<0.02	0.2	32.7	1.0	55	17.0	0.6	<0.1	<0.1	<0.1	<0.1	1.0
DUP 15RAY-JC030C02	QC		0.57	3.40	0.72	2.10	0.31	1.98	0.32	<0.02	<0.02	0.2	31.1	1.0	51	15.9	<0.5	<0.1	<0.1	<0.1	<0.1	0.8
15RAY-JR201A01	Rock		0.57	3.45	0.69	2.01	0.29	1.92	0.33	0.05	0.03	0.2	4.5	3.2	25	3.9	0.9	<0.1	<0.1	<0.1	<0.1	<0.5
DUP 15RAY-JR201A01	QC		0.58	3.35	0.69	2.11	0.30	2.03	0.32	0.05	0.03	0.2	4.9	3.2	23	3.9	0.7	<0.1	<0.1	<0.1	<0.1	1.0
Reference Materials																						
STD DS10	Standard											12.7	159.2	156.5	376	76.0	47.8	2.7	8.1	12.0	2.1	61.1
STD DS10	Standard											13.2	167.6	158.6	392	77.4	51.6	2.9	8.7	13.1	2.0	88.1
STD DS10	Standard											12.6	154.9	148.5	357	74.7	47.3	2.8	8.3	12.5	2.2	53.9
STD GS311-1	Standard								1.06	2.46												



Bureau Veritas Commodities Canada Ltd.
9050 Shaughnessy St Vancouver BC V6P 6E5 CANADA
PHONE (604) 253-3158

Client: Geological Survey of Canada (Van)
625 Robson Street
1st Floor, Rm 100
Vancouver BC V6B 5J3 CANADA

Project: GEM Cordillera
Report Date: November 26, 2015

Page: 1 of 3

Part: 4 of 4

QUALITY CONTROL REPORT

VAN15002850.1

Method	AQ200	AQ200	AQ200	
Analyte	Hg	Tl	Se	
Unit	ppm	ppm	ppm	
MDL	0.01	0.1	0.5	
15RAY-EW089A01	Rock	<0.01	<0.1	<0.5
15RAY-JR043A02	Rock	<0.01	<0.1	<0.5
Pulp Duplicates				
15RAY-EW073A01	Rock	<0.01	<0.1	<0.5
REP 15RAY-EW073A01	QC			
15RAY-EW130A01	Rock	0.01	<0.1	<0.5
REP 15RAY-EW130A01	QC	0.01	<0.1	<0.5
15RAY-EW185B01	Rock	<0.01	<0.1	<0.5
REP 15RAY-EW185B01	QC			
15RAY-JC030B02	Rock	<0.01	<0.1	<0.5
REP 15RAY-JC030B02	QC			
15RAY-JR023A01	Rock	<0.01	<0.1	<0.5
REP 15RAY-JR023A01	QC			
15RAY-JR084B01	Rock	<0.01	<0.1	<0.5
REP 15RAY-JR084B01	QC	<0.01	<0.1	<0.5
15RAY-JR125A2	Rock	<0.01	0.2	<0.5
REP 15RAY-JR125A2	QC			
15RAYJR234B1	Rock	<0.01	0.2	<0.5
REP 15RAYJR234B1	QC	<0.01	0.2	<0.5
Core Reject Duplicates				
15RAY-JC030C02	Rock	<0.01	0.4	<0.5
DUP 15RAY-JC030C02	QC	<0.01	0.4	<0.5
15RAY-JR201A01	Rock	<0.01	<0.1	<0.5
DUP 15RAY-JR201A01	QC	<0.01	<0.1	<0.5
Reference Materials				
STD DS10	Standard	0.30	5.3	2.0
STD DS10	Standard	0.31	5.4	2.2
STD DS10	Standard	0.29	5.2	1.9
STD GS311-1	Standard			



QUALITY CONTROL REPORT

VAN15002850.1

		WGHT	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200
		Wgt	SiO2	Al2O3	Fe2O3	MgO	CaO	Na2O	K2O	TiO2	P2O5	MnO	Cr2O3	Ni	Sc	LOI	Sum	Ba	Be	Co	Cs	
		kg	%	%	%	%	%	%	%	%	%	%	%	ppm	ppm	%	%	ppm	ppm	ppm	ppm	
		0.01	0.01	0.01	0.04	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.002	20	1	-5.1	0.01	1	1	0.2	0.1	
STD GS311-1	Standard																					
STD GS311-1	Standard																					
STD GS910-4	Standard																					
STD GS910-4	Standard																					
STD GS910-4	Standard																					
STD OREAS45EA	Standard																					
STD OREAS45EA	Standard																					
STD OREAS45EA	Standard																					
STD SO-18	Standard		58.00	14.10	7.69	3.39	6.34	3.68	2.15	0.70	0.81	0.39	0.554	46	25	1.9	99.72	531	3	26.9	7.3	
STD SO-18	Standard		58.28	14.08	7.54	3.39	6.37	3.64	2.12	0.69	0.77	0.39	0.553	42	24	1.9	99.73	530	<1	27.1	7.1	
STD SO-18	Standard		57.81	14.37	7.62	3.41	6.30	3.68	2.17	0.69	0.79	0.40	0.563	43	24	1.9	99.71	593	1	29.2	7.2	
STD SO-18	Standard		58.51	13.94	7.59	3.36	6.30	3.61	2.09	0.69	0.81	0.39	0.551	39	26	1.9	99.74	508	1	28.8	7.3	
STD SO-18	Standard		57.94	14.18	7.68	3.35	6.42	3.66	2.16	0.69	0.80	0.40	0.547	46	24	1.9	99.74	510	<1	28.0	6.2	
STD SO-19	Standard		60.63	13.86	7.50	2.91	5.87	4.03	1.29	0.70	0.32	0.13	0.498	472	27	1.9	99.72	502	21	24.2	4.6	
STD SO-19	Standard		60.40	14.00	7.48	2.93	5.94	4.04	1.29	0.70	0.32	0.13	0.502	464	27	1.9	99.74	482	15	23.0	4.1	
STD SO-19	Standard		60.39	14.01	7.42	2.92	5.97	4.09	1.29	0.70	0.32	0.13	0.500	463	26	1.9	99.73	502	19	25.5	4.6	
STD SO-19	Standard		60.55	13.81	7.59	2.93	5.94	3.94	1.27	0.71	0.33	0.13	0.513	495	28	1.9	99.72	530	19	24.5	4.4	
STD SO-19	Standard		60.54	13.93	7.45	2.89	5.96	4.04	1.28	0.70	0.32	0.13	0.491	475	27	1.9	99.74	492	15	22.6	4.6	
STD GS311-1 Expected																						
STD GS910-4 Expected																						
STD DS10 Expected																						
STD OREAS45EA Expected																						
STD SO-18 Expected			58.47	14.23	7.67	3.35	6.42	3.71	2.17	0.69	0.83	0.39	0.55	44	25			514		26.2	7.1	
STD SO-19 Expected			61.13	13.95	7.47	2.88	6	4.11	1.29	0.69	0.32	0.13	0.5	470	27			486	20	24	4.5	
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					



QUALITY CONTROL REPORT

VAN15002850.1

		LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200		
		Ga	Hf	Nb	Rb	Sn	Sr	Ta	Th	U	V	W	Zr	Y	La	Ce	Pr	Nd	Sm	Eu	Gd	
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	
		0.5	0.1	0.1	0.1	1	0.5	0.1	0.2	0.1	8	0.5	0.1	0.1	0.1	0.1	0.02	0.3	0.05	0.02	0.05	
STD GS311-1	Standard																					
STD GS311-1	Standard																					
STD GS910-4	Standard																					
STD GS910-4	Standard																					
STD GS910-4	Standard																					
STD OREAS45EA	Standard																					
STD OREAS45EA	Standard																					
STD OREAS45EA	Standard																					
STD SO-18	Standard	17.6	9.7	20.0	27.4	15	428.6	6.8	10.2	17.1	199	15.1	298.8	31.6	13.3	28.9	3.36	13.5	2.82	0.86	2.97	
STD SO-18	Standard	17.7	9.5	20.7	28.1	14	416.9	7.0	9.9	17.4	198	15.4	298.5	30.5	13.1	27.0	3.37	12.9	2.77	0.89	3.08	
STD SO-18	Standard	17.4	9.7	20.6	28.3	16	450.2	7.2	10.5	17.5	195	16.2	314.9	30.3	13.6	28.7	3.59	14.8	3.04	0.95	3.31	
STD SO-18	Standard	19.1	9.7	20.3	28.5	14	453.3	6.6	9.7	16.1	191	13.9	299.9	32.5	13.0	27.2	3.25	13.2	2.69	0.97	2.98	
STD SO-18	Standard	16.0	8.9	18.9	26.4	14	388.8	6.5	8.7	14.4	203	15.1	294.3	30.3	12.9	23.0	3.19	13.3	2.69	0.78	3.10	
STD SO-19	Standard	16.6	3.0	69.4	19.9	20	348.3	4.9	13.6	20.0	164	10.3	109.7	35.0	69.3	162.0	19.09	74.9	13.26	3.62	10.41	
STD SO-19	Standard	16.1	3.0	69.7	19.6	18	321.3	4.7	12.6	20.7	164	10.0	110.8	34.5	66.0	157.4	18.84	74.5	13.09	3.67	10.05	
STD SO-19	Standard	17.1	3.3	73.3	20.4	20	355.0	4.8	14.0	20.4	161	10.2	115.2	36.4	71.2	168.2	20.05	79.3	13.58	3.83	11.14	
STD SO-19	Standard	16.3	3.1	71.9	20.0	19	357.7	4.4	14.0	21.1	164	12.0	113.5	38.0	73.0	166.6	19.46	76.9	13.70	3.68	10.23	
STD SO-19	Standard	17.1	2.8	67.0	19.1	19	313.0	4.5	12.1	17.2	171	9.0	106.6	32.3	65.8	143.3	18.64	72.7	12.49	3.42	10.41	
STD GS311-1 Expected																						
STD GS910-4 Expected																						
STD DS10 Expected																						
STD OREAS45EA Expected																						
STD SO-18 Expected		17.6	9.8	19.3	28.7	15	407.4	7.4	9.9	16.4	200	14.8	290	29	12.3	27.1	3.45	14	3	0.89	2.93	
STD SO-19 Expected		17.5	3.1	68.5	19.5	19	317.1	4.9	13	19.4	165	9.8	112	35.5	71.3	161	19.4	75.7	13.7	3.81	10.53	
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					
BLK	Blank																					



QUALITY CONTROL REPORT

VAN15002850.1

		LF200	LF200	LF200	LF200	LF200	LF200	TC000	TC000	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200		
		Tb	Dy	Ho	Er	Tm	Yb	Lu	TOT/C	TOT/S	Mo	Cu	Pb	Zn	Ni	As	Cd	Sb	Bi	Ag	Au	
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb	
STD GS311-1	Standard	0.01	0.05	0.02	0.03	0.01	0.05	0.01	0.02	0.02	0.1	0.1	0.1	1	0.1	0.5	0.1	0.1	0.1	0.1	0.1	0.5
STD GS311-1	Standard								1.06	2.41												
STD GS910-4	Standard								1.03	2.44												
STD GS910-4	Standard								2.75	8.26												
STD GS910-4	Standard								2.78	8.22												
STD GS910-4	Standard								2.71	8.77												
STD OREAS45EA	Standard										1.5	667.7	15.0	32	369.3	10.3	<0.1	0.3	0.3	0.2	58.4	
STD OREAS45EA	Standard										1.6	698.3	17.0	32	374.2	11.1	<0.1	0.4	0.3	0.3	52.2	
STD OREAS45EA	Standard										1.6	657.0	15.2	31	357.3	9.5	<0.1	0.3	0.3	0.3	54.0	
STD SO-18	Standard	0.51	2.90	0.64	1.86	0.28	1.86	0.28														
STD SO-18	Standard	0.49	3.08	0.59	1.81	0.27	1.73	0.27														
STD SO-18	Standard	0.53	3.21	0.69	1.86	0.30	1.92	0.29														
STD SO-18	Standard	0.48	2.85	0.60	1.78	0.27	1.86	0.26														
STD SO-18	Standard	0.47	2.82	0.59	1.80	0.27	1.73	0.26														
STD SO-19	Standard	1.40	7.64	1.33	3.78	0.54	3.41	0.51														
STD SO-19	Standard	1.37	7.12	1.29	3.56	0.53	3.34	0.50														
STD SO-19	Standard	1.47	7.82	1.36	3.90	0.55	3.75	0.52														
STD SO-19	Standard	1.45	7.20	1.33	3.85	0.55	3.48	0.55														
STD SO-19	Standard	1.34	7.02	1.28	3.73	0.47	3.28	0.49														
STD GS311-1 Expected									1.02	2.35												
STD GS910-4 Expected									2.65	8.27												
STD DS10 Expected											13.6	154.61	150.55	370	74.6	46.2	2.62	9	11.65	2.02	91.9	
STD OREAS45EA Expected											1.6	709	14.3	31.4	381	10.3	0.03	0.32	0.26	0.26	53	
STD SO-18 Expected		0.53	3	0.62	1.84	0.27	1.79	0.27														
STD SO-19 Expected		1.41	7.5	1.39	3.78	0.55	3.55	0.53														
BLK	Blank								<0.02	<0.02												
BLK	Blank								<0.02	<0.02												
BLK	Blank										<0.1	<0.1	<0.1	<1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	
BLK	Blank								<0.02	<0.02												
BLK	Blank										<0.1	<0.1	<0.1	<1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	



Bureau Veritas Commodities Canada Ltd.
9050 Shaughnessy St Vancouver BC V6P 6E5 CANADA
PHONE (604) 253-3158

Client: Geological Survey of Canada (Van)
625 Robson Street
1st Floor, Rm 100
Vancouver BC V6B 5J3 CANADA

Project: GEM Cordillera
Report Date: November 26, 2015

Page: 2 of 3

Part: 4 of 4

QUALITY CONTROL REPORT

VAN15002850.1

		AQ200	AQ200	AQ200
		Hg	Tl	Se
		ppm	ppm	ppm
		0.01	0.1	0.5
STD GS311-1	Standard			
STD GS311-1	Standard			
STD GS910-4	Standard			
STD GS910-4	Standard			
STD GS910-4	Standard			
STD OREAS45EA	Standard	<0.01	<0.1	0.6
STD OREAS45EA	Standard	0.06	<0.1	0.5
STD OREAS45EA	Standard	0.01	<0.1	0.6
STD SO-18	Standard			
STD SO-18	Standard			
STD SO-18	Standard			
STD SO-18	Standard			
STD SO-18	Standard			
STD SO-19	Standard			
STD SO-19	Standard			
STD SO-19	Standard			
STD SO-19	Standard			
STD SO-19	Standard			
STD GS311-1 Expected				
STD GS910-4 Expected				
STD DS10 Expected		0.3	5.1	2.3
STD OREAS45EA Expected			0.072	0.78
STD SO-18 Expected				
STD SO-19 Expected				
BLK	Blank			
BLK	Blank			
BLK	Blank	<0.01	<0.1	<0.5
BLK	Blank			
BLK	Blank	<0.01	<0.1	<0.5



QUALITY CONTROL REPORT

VAN15002850.1

		WGHT	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200
		Wgt	SiO2	Al2O3	Fe2O3	MgO	CaO	Na2O	K2O	TiO2	P2O5	MnO	Cr2O3	Ni	Sc	LOI	Sum	Ba	Be	Co	Cs
		kg	%	%	%	%	%	%	%	%	%	%	%	ppm	ppm	%	%	ppm	ppm	ppm	ppm
		0.01	0.01	0.01	0.04	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.002	20	1	-5.1	0.01	1	1	0.2	0.1
BLK	Blank																				
BLK	Blank		<0.01	<0.01	<0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.002	<20	<1	0.0	0.01	<1	<1	<0.2	<0.1
BLK	Blank		<0.01	<0.01	<0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.002	<20	<1	0.0	0.01	<1	<1	<0.2	<0.1
BLK	Blank		<0.01	<0.01	<0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.002	<20	<1	0.0	<0.01	1	<1	0.4	<0.1
BLK	Blank		0.02	<0.01	<0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.002	<20	<1	0.0	<0.01	<1	<1	<0.2	<0.1
BLK	Blank		<0.01	<0.01	<0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.002	<20	<1	0.0	0.02	<1	<1	<0.2	<0.1
Prep Wash																					
ROCK-VAN	Prep Blank		71.03	13.99	3.14	0.86	2.51	4.38	2.00	0.36	0.08	0.09	<0.002	<20	7	1.4	99.84	841	1	4.1	0.2
ROCK-VAN	Prep Blank		70.97	14.01	3.14	0.87	2.55	4.41	2.01	0.36	0.10	0.09	<0.002	<20	7	1.3	99.84	844	<1	4.6	0.4



Bureau Veritas Commodities Canada Ltd.
9050 Shaughnessy St Vancouver BC V6P 6E5 CANADA
PHONE (604) 253-3158

Client: Geological Survey of Canada (Van)
625 Robson Street
1st Floor, Rm 100
Vancouver BC V6B 5J3 CANADA

Project: GEM Cordillera
Report Date: November 26, 2015

Page: 3 of 3

Part: 2 of 4

QUALITY CONTROL REPORT

VAN15002850.1

		LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200		
		Ga	Hf	Nb	Rb	Sn	Sr	Ta	Th	U	V	W	Zr	Y	La	Ce	Pr	Nd	Sm	Eu	Gd	
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	
		0.5	0.1	0.1	0.1	1	0.5	0.1	0.2	0.1	8	0.5	0.1	0.1	0.1	0.1	0.02	0.3	0.05	0.02	0.05	
BLK	Blank																					
BLK	Blank	<0.5	<0.1	<0.1	<0.1	<1	<0.5	<0.1	<0.2	<0.1	<8	<0.5	<0.1	<0.1	<0.1	<0.1	<0.02	<0.3	<0.05	<0.02	<0.05	
BLK	Blank	<0.5	<0.1	<0.1	<0.1	<1	<0.5	<0.1	<0.2	<0.1	<8	<0.5	<0.1	<0.1	<0.1	<0.1	<0.02	<0.3	<0.05	<0.02	<0.05	
BLK	Blank	<0.5	<0.1	<0.1	<0.1	<1	<0.5	<0.1	<0.2	<0.1	<8	<0.5	0.8	<0.1	<0.1	<0.1	<0.02	<0.3	<0.05	<0.02	<0.05	
BLK	Blank	<0.5	<0.1	<0.1	<0.1	<1	<0.5	<0.1	<0.2	<0.1	<8	<0.5	0.2	<0.1	0.1	<0.1	<0.02	<0.3	<0.05	<0.02	<0.05	
BLK	Blank	<0.5	<0.1	<0.1	<0.1	<1	<0.5	<0.1	<0.2	<0.1	<8	<0.5	<0.1	<0.1	<0.1	<0.1	<0.02	<0.3	<0.05	<0.02	<0.05	
Prep Wash																						
ROCK-VAN	Prep Blank	13.1	3.6	7.1	38.1	<1	232.1	0.5	2.7	1.3	37	<0.5	136.2	17.8	13.5	25.4	2.99	12.3	2.31	0.73	2.74	
ROCK-VAN	Prep Blank	12.8	3.7	6.1	37.1	<1	234.4	0.5	3.0	1.5	37	<0.5	139.2	17.2	15.5	28.9	3.37	12.9	2.60	0.78	2.88	



Bureau Veritas Commodities Canada Ltd.
9050 Shaughnessy St Vancouver BC V6P 6E5 CANADA
PHONE (604) 253-3158

Client: Geological Survey of Canada (Van)
625 Robson Street
1st Floor, Rm 100
Vancouver BC V6B 5J3 CANADA

Project: GEM Cordillera
Report Date: November 26, 2015

Page: 3 of 3

Part: 3 of 4

QUALITY CONTROL REPORT

VAN15002850.1

		LF200	LF200	LF200	LF200	LF200	LF200	LF200	TC000	TC000	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	
		Tb	Dy	Ho	Er	Tm	Yb	Lu	TOT/C	TOT/S	Mo	Cu	Pb	Zn	Ni	As	Cd	Sb	Bi	Ag	Au
		ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb
		0.01	0.05	0.02	0.03	0.01	0.05	0.01	0.02	0.02	0.1	0.1	0.1	1	0.1	0.5	0.1	0.1	0.1	0.1	0.1
BLK	Blank										<0.1	<0.1	<0.1	<1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.5
BLK	Blank	0.01	<0.05	<0.02	<0.03	<0.01	<0.05	<0.01													
BLK	Blank	<0.01	<0.05	<0.02	<0.03	<0.01	<0.05	<0.01													
BLK	Blank	<0.01	<0.05	<0.02	<0.03	<0.01	<0.05	<0.01													
BLK	Blank	<0.01	<0.05	<0.02	<0.03	<0.01	<0.05	<0.01													
BLK	Blank	<0.01	<0.05	<0.02	<0.03	<0.01	<0.05	<0.01													
Prep Wash																					
ROCK-VAN	Prep Blank	0.46	2.68	0.62	2.03	0.31	2.18	0.37	0.06	<0.02	1.2	3.7	2.8	37	1.4	1.4	<0.1	0.3	<0.1	<0.1	0.7
ROCK-VAN	Prep Blank	0.46	2.83	0.66	2.06	0.31	2.18	0.37	0.07	<0.02	1.1	4.2	1.8	34	0.8	0.9	<0.1	0.1	<0.1	<0.1	0.8



Bureau Veritas Commodities Canada Ltd.
9050 Shaughnessy St Vancouver BC V6P 6E5 CANADA
PHONE (604) 253-3158

Client: **Geological Survey of Canada (Van)**
625 Robson Street
1st Floor, Rm 100
Vancouver BC V6B 5J3 CANADA

Project: GEM Cordillera
Report Date: November 26, 2015

Page: 3 of 3

Part: 4 of 4

QUALITY CONTROL REPORT

VAN15002850.1

		AQ200	AQ200	AQ200
		Hg	Tl	Se
		ppm	ppm	ppm
		0.01	0.1	0.5
BLK	Blank	<0.01	<0.1	<0.5
BLK	Blank			
BLK	Blank			
BLK	Blank			
BLK	Blank			
BLK	Blank			
Prep Wash				
ROCK-VAN	Prep Blank	<0.01	<0.1	<0.5
ROCK-VAN	Prep Blank	<0.01	<0.1	<0.5