



BUREAU VERITAS MINERAL LABORATORIES
Canada

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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: January 22, 2015
Report Date: February 12, 2015
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CERTIFICATE OF ANALYSIS

VAN15000146.1

CLIENT JOB INFORMATION

Project: GEM Cordillera
Shipment ID: NRCan-07M052461W/001
P.O. Number: 3000560979
Number of Samples: 65

SAMPLE DISPOSAL

RTRN-PLP Return
RTRN-RJT Return

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

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
PRP80-250	65	Crush, split and pulverize 250 g rock to 200 mesh			VAN
PULSW	65	Extra Wash with Glass between each sample			VAN
LF202	65	Total Whole Rock Characterization with AQ200	0.2	Completed	VAN

ADDITIONAL COMMENTS



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.



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CERTIFICATE OF ANALYSIS

VAN15000146.1

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	
14RAY003B01	Rock	0.19	67.54	16.14	2.98	0.97	4.90	4.29	1.32	0.33	0.11	0.04	<0.002	<20	3	1.1	99.77	457	3	6.6	2.1
14RAY009A01	Rock	0.38	50.31	13.69	10.05	8.96	10.15	2.66	0.67	0.74	0.19	0.19	0.048	61	40	2.0	99.69	225	1	32.1	0.6
14RAY010A01	Rock	0.32	69.65	15.78	1.85	0.67	3.01	4.64	2.85	0.21	0.04	0.03	<0.002	<20	3	1.1	99.83	1049	3	3.1	0.5
14RAY018A01	Rock	0.20	67.54	17.29	2.57	0.92	4.11	4.82	1.14	0.29	0.10	0.04	<0.002	<20	8	1.0	99.80	839	2	3.8	0.6
14RAY019B01	Rock	0.27	63.11	16.12	6.49	2.14	2.30	2.79	3.33	0.73	0.11	0.09	0.012	36	14	2.4	99.67	1590	3	10.6	1.3
14RAY032A01	Rock	0.26	44.66	1.33	6.28	31.97	3.18	0.03	<0.01	0.04	<0.01	0.12	0.367	1711	9	11.3	99.46	6	<1	79.2	<0.1
14RAY034A01	Rock	0.37	40.94	1.57	6.52	35.78	2.60	0.01	<0.01	0.08	<0.01	0.12	0.396	1780	21	11.7	99.93	3	<1	81.8	<0.1
14RAY038A02	Rock	0.42	46.19	17.38	11.48	5.70	11.96	1.82	0.13	0.83	0.22	0.18	0.010	36	38	3.8	99.74	69	<1	30.2	0.1
14RAY039A01	Rock	0.45	39.70	1.54	7.71	38.53	2.22	0.01	<0.01	0.03	0.01	0.13	0.374	1940	14	9.5	99.94	2	<1	93.5	<0.1
14RAY040A01	Rock	0.44	49.21	14.52	11.33	6.07	8.51	4.86	0.03	1.80	0.16	0.18	0.020	48	36	3.1	99.80	53	1	29.7	<0.1
14RAY041C01	Rock	0.43	47.31	16.06	11.28	6.28	5.30	0.99	2.64	1.44	0.17	0.14	0.017	83	40	8.0	99.67	1036	1	18.2	4.6
14RAY042A01	Rock	0.27	53.15	15.96	10.01	2.20	4.77	5.83	0.17	2.53	0.99	0.17	<0.002	<20	23	4.0	99.82	245	6	13.9	0.5
14RAY043B01	Rock	0.24	40.32	0.52	12.48	35.47	0.02	<0.01	<0.01	0.02	0.01	0.18	0.052	712	13	10.8	99.95	6	<1	119.6	<0.1
14RAY044A01	Rock	0.44	48.79	3.00	8.22	19.08	16.75	0.06	<0.01	0.17	<0.01	0.14	0.105	150	77	3.4	99.66	4	<1	58.6	0.6
14RAY044B01	Rock	0.37	44.70	10.73	9.83	5.23	26.45	0.09	<0.01	1.34	0.13	0.19	0.015	43	28	1.2	99.83	14	2	28.6	<0.1
14RAY045B01	Rock	0.30	45.63	17.65	6.50	10.53	14.85	1.01	<0.01	0.13	<0.01	0.12	0.056	148	42	3.4	99.86	10	<1	41.1	<0.1
14RAY047A02	Rock	0.40	38.13	1.56	9.11	37.85	0.10	<0.01	<0.01	0.03	<0.01	0.12	0.434	2233	13	12.3	99.93	2	<1	117.3	<0.1
14RAY048A01	Rock	0.51	39.21	1.13	8.08	37.98	0.04	<0.01	<0.01	0.02	0.01	0.11	0.384	2115	11	12.7	99.94	<1	<1	103.2	<0.1
14RAY048C01	Rock	0.46	42.18	20.32	2.90	7.07	21.33	0.09	0.02	0.09	<0.01	0.05	0.095	243	8	5.7	99.88	13	<1	20.6	0.3
14RAY049A01	Rock	0.40	48.39	13.90	11.60	8.10	8.74	4.23	<0.01	1.79	0.17	0.20	0.025	68	36	2.6	99.76	22	<1	35.6	1.2
14RAY049B01	Rock	0.43	50.12	15.71	9.15	5.77	9.64	4.99	0.07	1.15	0.09	0.18	0.028	80	34	2.9	99.80	48	<1	34.7	<0.1
14RAY049C01	Rock	0.37	47.94	15.82	9.47	9.52	6.99	3.24	1.54	1.10	0.09	0.23	0.053	133	35	3.8	99.76	89	<1	35.4	0.4
14RAY060A02	Rock	0.44	61.93	14.87	6.31	2.64	4.34	2.51	4.43	0.56	0.15	0.12	0.006	<20	13	1.9	99.74	1016	4	14.9	1.7
14RAY061D01	Rock	0.51	55.05	10.17	9.69	12.49	9.19	1.33	0.15	0.20	<0.01	0.18	0.107	208	39	1.2	99.74	120	<1	43.4	<0.1
14RAY062A01	Rock	0.33	39.85	0.37	6.70	39.44	0.30	<0.01	<0.01	<0.01	0.01	0.11	0.361	1930	12	12.5	99.94	4	<1	102.8	<0.1
14RAY062B02	Rock	0.35	45.99	21.41	9.76	7.82	11.29	1.71	0.09	0.11	<0.01	0.15	0.004	74	44	1.6	99.89	70	<1	41.7	0.7
14RAY065A01	Rock	0.60	62.26	11.86	9.19	3.54	4.85	1.27	1.82	0.72	0.15	0.17	0.003	<20	23	3.8	99.64	497	<1	17.0	2.5
14RAY069A01	Rock	0.38	74.08	13.79	1.94	0.65	0.64	6.09	1.01	0.32	0.04	0.01	0.019	<20	6	1.2	99.82	697	4	0.5	1.3
14RAY074A01	Rock	0.67	71.19	14.37	2.69	0.50	0.67	2.06	6.83	0.33	0.13	0.04	0.036	<20	6	1.0	99.85	663	2	3.5	5.2
14RAY074C01	Rock	0.84	47.28	13.89	12.40	6.37	10.47	3.59	0.43	2.43	0.27	0.17	0.026	105	30	2.4	99.73	229	4	43.3	0.5



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VAN15000146.1

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
			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	
14RAY003B01	Rock		16.0	3.5	10.6	49.3	<1	879.5	0.8	18.4	2.4	29	<0.5	170.7	8.6	62.5	87.6	7.79	22.2	2.86	1.00	2.12
14RAY009A01	Rock		12.2	1.2	4.0	20.6	<1	627.8	0.2	1.4	0.5	259	<0.5	36.7	12.7	10.3	20.5	2.68	11.7	2.81	0.89	2.72
14RAY010A01	Rock		14.8	2.7	3.8	75.0	<1	287.7	0.3	5.6	1.3	18	<0.5	98.8	5.7	20.1	38.1	4.16	14.6	2.26	0.78	1.80
14RAY018A01	Rock		16.9	3.2	3.1	26.4	<1	662.9	0.2	4.5	2.2	28	<0.5	122.8	7.9	15.4	26.4	2.95	11.1	2.22	0.83	1.89
14RAY019B01	Rock		18.8	5.1	17.5	84.7	2	343.2	1.2	19.1	3.4	97	<0.5	179.1	27.3	57.8	110.1	12.77	45.9	8.06	1.39	6.29
14RAY032A01	Rock		1.2	<0.1	<0.1	<0.1	<1	11.1	<0.1	<0.2	<0.1	38	<0.5	1.8	0.7	0.4	0.3	0.04	<0.3	<0.05	0.06	0.12
14RAY034A01	Rock		1.3	<0.1	<0.1	<0.1	<1	3.0	<0.1	<0.2	<0.1	77	<0.5	0.6	1.4	0.4	0.3	0.02	<0.3	<0.05	0.03	0.17
14RAY038A02	Rock		17.5	0.4	<0.1	0.6	<1	564.9	<0.1	<0.2	<0.1	397	<0.5	9.3	11.4	2.6	6.9	1.01	5.3	1.59	0.85	2.02
14RAY039A01	Rock		0.8	<0.1	<0.1	<0.1	<1	3.6	<0.1	<0.2	<0.1	59	<0.5	0.5	0.8	0.3	0.2	<0.02	<0.3	<0.05	0.03	0.07
14RAY040A01	Rock		18.4	3.4	2.3	0.5	<1	88.5	0.2	<0.2	<0.1	340	<0.5	122.3	36.2	5.6	14.6	2.41	11.7	4.06	1.42	5.55
14RAY041C01	Rock		18.7	2.1	17.1	108.5	1	149.1	1.0	1.5	0.4	340	1.4	77.9	27.1	14.7	27.8	3.40	15.4	3.71	1.42	4.49
14RAY042A01	Rock		18.7	6.4	70.1	4.7	2	104.8	4.1	6.2	1.8	188	1.0	260.5	41.8	52.0	106.0	12.52	50.5	9.95	2.87	9.56
14RAY043B01	Rock		<0.5	<0.1	<0.1	<0.1	<1	0.7	<0.1	<0.2	<0.1	23	<0.5	0.9	0.4	0.4	0.3	<0.02	<0.3	<0.05	<0.02	0.07
14RAY044A01	Rock		2.7	<0.1	0.1	<0.1	<1	11.8	<0.1	<0.2	<0.1	174	<0.5	2.3	3.3	0.5	0.5	0.09	0.5	0.34	0.13	0.52
14RAY044B01	Rock		9.0	2.9	2.1	<0.1	<1	82.6	0.1	0.3	0.1	278	<0.5	107.3	27.6	4.8	13.7	2.03	10.5	3.31	1.13	4.48
14RAY045B01	Rock		9.6	<0.1	<0.1	<0.1	<1	577.9	<0.1	<0.2	<0.1	123	<0.5	1.9	2.4	0.3	0.5	0.09	0.5	0.19	0.16	0.45
14RAY047A02	Rock		1.5	<0.1	<0.1	<0.1	<1	1.5	<0.1	<0.2	<0.1	52	<0.5	0.4	0.7	0.1	0.1	<0.02	<0.3	<0.05	<0.02	0.10
14RAY048A01	Rock		0.9	<0.1	<0.1	<0.1	<1	2.0	<0.1	<0.2	<0.1	45	<0.5	0.1	0.6	0.4	0.1	<0.02	<0.3	<0.05	<0.02	<0.05
14RAY048C01	Rock		6.7	<0.1	<0.1	0.4	<1	48.8	<0.1	<0.2	<0.1	44	<0.5	2.4	2.0	0.7	0.8	0.11	0.7	0.15	0.21	0.28
14RAY049A01	Rock		16.4	3.5	2.4	0.4	<1	170.7	0.2	<0.2	<0.1	333	<0.5	129.3	36.9	5.3	13.3	2.43	13.1	4.35	1.48	5.70
14RAY049B01	Rock		13.4	1.8	1.2	1.1	<1	279.0	0.1	<0.2	<0.1	278	<0.5	68.8	21.3	3.0	7.7	1.27	6.7	2.38	0.90	3.29
14RAY049C01	Rock		14.0	1.8	2.3	15.9	<1	74.4	0.2	<0.2	<0.1	272	<0.5	59.6	22.6	2.8	7.1	1.15	6.0	2.44	0.75	3.34
14RAY060A02	Rock		16.2	3.8	13.9	149.4	3	339.4	1.0	19.9	3.3	95	1.0	153.7	18.4	42.2	80.2	8.67	29.9	5.53	1.09	4.39
14RAY061D01	Rock		9.5	0.3	0.1	2.7	<1	16.0	<0.1	<0.2	<0.1	255	<0.5	9.3	5.6	1.0	1.5	0.24	1.0	0.32	0.19	0.64
14RAY062A01	Rock		<0.5	<0.1	<0.1	<0.1	<1	<0.5	<0.1	<0.2	<0.1	34	1.8	0.4	0.2	0.3	0.1	<0.02	<0.3	<0.05	<0.02	<0.05
14RAY062B02	Rock		14.3	0.1	1.3	2.1	<1	83.2	<0.1	<0.2	<0.1	298	0.6	3.6	1.4	0.5	<0.1	<0.02	<0.3	<0.05	0.06	0.08
14RAY065A01	Rock		12.8	2.6	6.9	46.8	<1	1669.3	0.4	6.0	2.0	201	0.7	101.5	18.0	15.0	30.1	3.63	13.2	2.86	0.68	3.15
14RAY069A01	Rock		15.2	11.4	33.3	19.8	3	67.6	2.2	13.9	2.0	10	0.9	513.5	30.9	15.8	30.5	3.76	14.6	2.79	0.69	3.18
14RAY074A01	Rock		14.7	4.6	12.0	293.5	3	125.9	1.3	17.5	3.4	27	4.4	160.0	35.0	52.2	83.1	10.80	39.5	7.32	1.07	6.97
14RAY074C01	Rock		17.1	4.0	25.6	8.6	1	190.0	1.7	2.6	0.7	289	1.8	165.9	20.3	22.5	48.1	5.98	25.7	5.54	1.72	5.45



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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			0.1	0.1	0.1	1	0.1	0.5	0.1	0.1	0.1	0.1	0.1	0.5
14RAY003B01	Rock	0.29	1.59	0.25	0.92	0.14	0.92	0.15	0.03	0.02	0.3	138.3	8.5	18	6.5	1.3	<0.1	<0.1	<0.1	0.3	<0.5	
14RAY009A01	Rock	0.46	2.42	0.52	1.36	0.19	1.27	0.19	0.04	<0.02	<0.1	40.3	4.2	61	24.2	<0.5	0.1	<0.1	<0.1	<0.1	<0.5	
14RAY010A01	Rock	0.24	1.27	0.22	0.50	0.08	0.47	0.08	0.06	<0.02	0.2	2.7	16.6	29	6.3	<0.5	<0.1	<0.1	<0.1	<0.1	<0.5	
14RAY018A01	Rock	0.30	1.54	0.31	0.94	0.15	0.86	0.16	<0.02	<0.02	0.2	10.5	5.7	43	6.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.5	
14RAY019B01	Rock	0.97	5.31	0.98	2.84	0.41	2.64	0.41	0.35	0.06	1.1	10.3	8.4	47	32.1	0.8	<0.1	<0.1	0.2	<0.1	<0.5	
14RAY032A01	Rock	0.01	0.18	0.03	0.10	0.02	0.11	0.02	0.05	<0.02	<0.1	12.3	0.8	29	1991.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.5	
14RAY034A01	Rock	0.04	0.21	0.06	0.16	0.03	0.16	0.03	0.05	<0.02	<0.1	11.6	0.8	34	1978.0	<0.5	<0.1	<0.1	<0.1	<0.1	1.0	
14RAY038A02	Rock	0.35	2.18	0.47	1.43	0.19	1.30	0.19	0.11	0.04	0.3	203.5	3.1	85	35.4	0.8	<0.1	<0.1	<0.1	<0.1	2.8	
14RAY039A01	Rock	0.01	0.12	0.03	0.10	<0.01	0.11	0.02	0.04	<0.02	<0.1	18.6	0.5	33	2163.9	<0.5	<0.1	<0.1	<0.1	<0.1	1.1	
14RAY040A01	Rock	1.05	6.02	1.35	3.90	0.60	3.75	0.61	0.23	0.17	0.4	55.1	1.6	91	34.8	<0.5	0.2	<0.1	<0.1	<0.1	<0.5	
14RAY041C01	Rock	0.75	4.56	0.98	2.65	0.39	2.49	0.39	0.93	<0.02	<0.1	42.6	0.9	131	81.1	36.4	<0.1	<0.1	<0.1	0.1	<0.5	
14RAY042A01	Rock	1.47	8.33	1.70	4.72	0.68	3.96	0.66	0.45	<0.02	0.9	3.4	1.3	105	1.2	2.7	0.1	<0.1	<0.1	<0.1	<0.5	
14RAY043B01	Rock	<0.01	0.09	<0.02	<0.03	<0.01	<0.05	<0.01	<0.02	<0.02	<0.1	2.9	0.9	27	673.4	<0.5	<0.1	<0.1	<0.1	<0.1	<0.5	
14RAY044A01	Rock	0.09	0.56	0.15	0.41	0.05	0.28	0.05	<0.02	<0.02	<0.1	3.2	0.8	27	115.0	<0.5	<0.1	<0.1	<0.1	<0.1	<0.5	
14RAY044B01	Rock	0.82	4.96	1.08	3.15	0.45	2.92	0.50	0.02	<0.02	0.1	16.8	1.5	11	12.6	<0.5	<0.1	<0.1	<0.1	<0.1	<0.5	
14RAY045B01	Rock	0.08	0.48	0.12	0.33	0.04	0.25	0.05	<0.02	<0.02	<0.1	25.7	0.4	19	100.4	<0.5	<0.1	<0.1	<0.1	<0.1	2.0	
14RAY047A02	Rock	0.02	0.15	0.03	0.10	0.02	0.12	0.02	0.03	0.04	<0.1	13.8	0.4	28	2490.1	<0.5	<0.1	<0.1	<0.1	<0.1	1.4	
14RAY048A01	Rock	<0.01	<0.05	<0.02	0.08	<0.01	0.08	0.02	0.04	<0.02	<0.1	13.1	0.5	21	2345.6	<0.5	<0.1	<0.1	<0.1	<0.1	0.7	
14RAY048C01	Rock	0.05	0.27	0.07	0.19	0.02	0.18	0.02	<0.02	<0.02	<0.1	50.9	0.4	13	236.1	<0.5	<0.1	<0.1	<0.1	<0.1	0.7	
14RAY049A01	Rock	1.07	6.35	1.43	4.05	0.59	3.81	0.64	0.04	<0.02	0.3	60.0	0.7	73	59.6	<0.5	0.1	<0.1	<0.1	<0.1	<0.5	
14RAY049B01	Rock	0.64	3.73	0.88	2.46	0.38	2.28	0.35	0.14	<0.02	<0.1	79.3	1.5	58	58.8	<0.5	0.1	<0.1	<0.1	<0.1	<0.5	
14RAY049C01	Rock	0.62	4.03	0.91	2.51	0.37	2.22	0.36	0.03	<0.02	0.2	10.2	0.4	105	129.6	<0.5	<0.1	<0.1	<0.1	<0.1	<0.5	
14RAY060A02	Rock	0.65	3.36	0.67	1.99	0.29	1.89	0.29	0.03	<0.02	<0.1	9.7	25.5	33	6.2	1.5	<0.1	0.1	0.1	<0.1	<0.5	
14RAY061D01	Rock	0.13	0.88	0.22	0.72	0.13	0.79	0.15	0.02	<0.02	0.1	11.5	0.6	7	20.4	<0.5	<0.1	<0.1	<0.1	<0.1	0.8	
14RAY062A01	Rock	<0.01	<0.05	<0.02	<0.03	<0.01	<0.05	<0.01	0.16	0.03	<0.1	0.6	0.2	27	1884.3	1.1	<0.1	<0.1	<0.1	<0.1	7.6	
14RAY062B02	Rock	0.04	0.30	0.08	0.28	0.04	0.25	0.04	<0.02	<0.02	0.1	2.8	0.6	9	17.0	<0.5	<0.1	<0.1	<0.1	<0.1	0.7	
14RAY065A01	Rock	0.52	2.89	0.63	1.65	0.28	1.77	0.25	0.19	<0.02	0.1	9.2	2.7	85	6.2	1.1	<0.1	0.1	<0.1	<0.1	3.0	
14RAY069A01	Rock	0.65	4.58	1.09	3.63	0.64	4.76	0.77	<0.02	0.09	8.8	2.2	2.9	50	1.9	<0.5	<0.1	<0.1	<0.1	<0.1	0.7	
14RAY074A01	Rock	1.19	6.39	1.26	3.51	0.47	2.61	0.38	0.05	<0.02	0.4	11.5	6.6	35	4.5	<0.5	<0.1	<0.1	0.1	<0.1	<0.5	
14RAY074C01	Rock	0.83	4.43	0.86	2.24	0.31	1.69	0.25	0.11	0.10	0.3	159.4	6.2	56	69.3	4.4	0.4	<0.1	0.7	0.1	<0.5	



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Project: GEM Cordillera

Report Date: February 12, 2015

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Part: 4 of 4

CERTIFICATE OF ANALYSIS

VAN15000146.1

Method	Analyte	AQ200	AQ200	AQ200
		Hg	TI	Se
Unit		ppm	ppm	ppm
MDL		0.01	0.1	0.5
14RAY003B01	Rock	<0.01	<0.1	<0.5
14RAY009A01	Rock	<0.01	<0.1	<0.5
14RAY010A01	Rock	<0.01	<0.1	<0.5
14RAY018A01	Rock	<0.01	<0.1	<0.5
14RAY019B01	Rock	<0.01	<0.1	<0.5
14RAY032A01	Rock	<0.01	<0.1	<0.5
14RAY034A01	Rock	<0.01	<0.1	<0.5
14RAY038A02	Rock	<0.01	<0.1	<0.5
14RAY039A01	Rock	<0.01	<0.1	<0.5
14RAY040A01	Rock	<0.01	<0.1	<0.5
14RAY041C01	Rock	<0.01	<0.1	<0.5
14RAY042A01	Rock	<0.01	<0.1	<0.5
14RAY043B01	Rock	<0.01	<0.1	<0.5
14RAY044A01	Rock	<0.01	<0.1	<0.5
14RAY044B01	Rock	<0.01	<0.1	<0.5
14RAY045B01	Rock	<0.01	<0.1	<0.5
14RAY047A02	Rock	<0.01	<0.1	<0.5
14RAY048A01	Rock	<0.01	<0.1	<0.5
14RAY048C01	Rock	<0.01	<0.1	<0.5
14RAY049A01	Rock	<0.01	<0.1	<0.5
14RAY049B01	Rock	<0.01	<0.1	<0.5
14RAY049C01	Rock	<0.01	<0.1	<0.5
14RAY060A02	Rock	<0.01	0.1	<0.5
14RAY061D01	Rock	<0.01	<0.1	<0.5
14RAY062A01	Rock	<0.01	<0.1	<0.5
14RAY062B02	Rock	<0.01	<0.1	<0.5
14RAY065A01	Rock	<0.01	<0.1	<0.5
14RAY069A01	Rock	<0.01	0.1	<0.5
14RAY074A01	Rock	<0.01	0.1	<0.5
14RAY074C01	Rock	<0.01	<0.1	<0.5



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Project: GEM Cordillera

Report Date: February 12, 2015

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CERTIFICATE OF ANALYSIS

VAN15000146.1

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	
14RAY077A01	Rock	0.47	54.09	14.13	10.34	5.85	5.63	6.14	0.06	1.15	0.10	0.36	0.029	83	33	1.9	99.80	181	1	35.7	0.2
14RAY077B01	Rock	0.63	41.24	1.37	8.57	34.36	0.05	<0.01	<0.01	0.01	<0.01	0.11	0.451	2349	12	12.9	99.40	14	<1	119.2	1.0
14RAY077D01	Rock	0.52	57.26	14.24	10.00	4.54	3.22	7.16	0.10	0.88	0.09	0.14	<0.002	<20	27	2.1	99.72	1337	<1	25.2	0.6
14RAY082A01	Rock	0.48	72.46	13.63	2.54	0.42	1.10	3.13	4.76	0.33	0.16	0.03	<0.002	<20	5	1.2	99.81	1066	4	2.8	4.0
14RAY083A02	Rock	0.66	41.22	0.57	8.86	41.54	0.27	<0.01	<0.01	0.03	0.01	0.14	0.511	1626	5	5.9	99.28	4	<1	126.6	<0.1
14RAY087A01	Rock	0.53	69.15	13.88	3.57	1.99	2.17	4.01	2.88	0.39	0.10	0.08	<0.002	<20	8	1.6	99.80	1014	<1	5.9	1.1
14RAY088A01	Rock	0.39	54.66	15.57	9.19	7.29	7.52	2.19	<0.01	0.44	0.02	0.15	0.017	77	38	2.8	99.81	58	1	32.5	0.2
14RAY097A01	Rock	0.51	45.71	3.16	9.76	30.42	0.04	<0.01	<0.01	0.11	<0.01	0.08	0.490	2155	24	9.4	99.45	79	<1	106.5	<0.1
14RAY098A01	Rock	0.56	45.02	1.08	7.27	34.99	0.03	<0.01	<0.01	0.02	<0.01	0.07	0.347	2009	6	10.3	99.39	8	<1	101.8	<0.1
14RAY099A01	Rock	0.61	50.09	2.38	8.05	17.61	19.87	0.23	<0.01	0.28	<0.01	0.18	0.236	111	84	0.8	99.68	18	<1	49.0	<0.1
14RAY099B01	Rock	0.59	44.79	11.61	11.26	11.50	17.08	0.66	0.09	0.54	<0.01	0.24	0.055	53	64	1.9	99.70	55	1	50.1	<0.1
14RAY100A01	Rock	0.54	45.24	19.29	13.02	5.47	12.54	0.99	0.08	1.74	0.17	0.21	0.002	<20	45	1.0	99.79	64	<1	26.9	<0.1
14RAY101C01	Rock	0.64	41.65	15.69	12.88	8.51	15.60	1.32	0.52	1.75	0.13	0.25	0.042	374	48	1.3	99.63	208	1	49.0	1.3
14RAY102A01	Rock	0.70	74.04	13.52	2.01	0.22	0.80	2.62	5.62	0.17	0.16	0.02	<0.002	<20	3	0.7	99.93	289	3	1.6	10.9
14RAY106A01	Rock	0.44	74.82	13.14	1.96	0.12	0.47	2.58	5.43	0.12	0.15	0.02	<0.002	<20	4	1.1	99.95	176	<1	1.1	7.0
14RAY110A01	Rock	0.71	72.97	14.63	1.75	0.34	1.07	3.00	4.74	0.15	0.11	0.04	<0.002	<20	3	1.1	99.87	667	8	1.8	9.7
14RAY116A01	Rock	0.62	47.79	14.15	11.67	6.82	12.16	3.21	0.25	1.69	0.15	0.21	0.033	69	45	1.6	99.73	267	<1	36.4	<0.1
14RAY118B01	Rock	0.70	77.86	13.09	2.06	0.19	0.14	0.03	3.65	0.11	0.02	<0.01	<0.002	<20	3	2.7	99.88	800	2	1.2	3.5
14RAY119B01	Rock	0.72	88.71	5.39	1.37	0.49	0.02	0.06	1.48	0.28	0.03	<0.01	0.006	<20	5	1.4	99.27	6101	3	0.6	2.3
14RAY130A01	Rock	0.68	66.39	15.98	3.86	2.29	1.41	1.95	4.91	0.26	0.06	0.07	<0.002	<20	6	2.2	99.41	4090	<1	3.0	8.3
14RAY132A01	Rock	0.68	49.05	15.16	10.43	7.41	10.22	3.56	0.37	1.46	0.14	0.18	0.027	87	37	1.7	99.77	102	<1	38.3	0.7
14RAY133A01	Rock	0.55	70.89	14.00	3.11	0.58	1.03	2.72	5.35	0.38	0.18	0.04	<0.002	<20	5	1.5	99.77	1236	3	4.2	1.3
14RAY135B01	Rock	0.44	53.37	14.14	11.11	6.51	6.90	2.70	0.32	2.53	0.39	0.21	0.035	83	20	1.5	99.72	39	<1	30.2	0.7
14RAY136A01	Rock	0.34	66.47	12.89	5.85	3.29	4.09	2.43	2.91	0.40	0.06	0.11	0.019	28	19	1.2	99.76	1143	4	15.3	0.5
14RAY140A01	Rock	0.59	41.06	0.76	8.25	35.11	0.15	<0.01	<0.01	0.03	0.01	0.11	0.397	2032	7	13.3	99.39	6	<1	99.6	<0.1
14RAY144A01	Rock	0.34	42.92	2.26	8.22	33.60	0.04	<0.01	<0.01	0.02	<0.01	0.13	0.325	2003	13	11.7	99.40	242	<1	95.1	0.9
14RAY151A01	Rock	0.41	55.07	15.95	7.75	3.47	6.06	3.36	2.31	0.89	0.38	0.14	0.003	<20	20	4.3	99.65	1123	<1	14.4	1.2
14RAY157A01	Rock	0.60	45.15	0.44	6.92	34.82	0.07	<0.01	<0.01	<0.01	0.01	0.07	0.373	2075	5	11.4	99.42	3	<1	92.6	<0.1
14RAY157C02	Rock	0.48	46.66	14.99	14.49	6.25	8.88	2.18	1.49	3.19	0.45	0.21	0.012	47	24	0.9	99.68	743	2	27.0	0.7
14RAY158A01	Rock	0.63	47.53	16.17	10.44	8.78	10.78	2.35	1.00	0.81	0.04	0.16	0.085	195	41	1.6	99.73	433	1	53.3	0.8



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Project: GEM Cordillera

Report Date: February 12, 2015

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CERTIFICATE OF ANALYSIS

VAN15000146.1

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	
14RAY077A01	Rock	15.7	2.3	1.9	0.7	<1	78.9	0.1	0.5	0.2	273	<0.5	86.9	24.7	4.9	13.2	1.95	9.7	2.89	0.98	3.94
14RAY077B01	Rock	0.9	<0.1	0.2	1.1	<1	4.1	<0.1	<0.2	<0.1	56	<0.5	0.1	0.3	0.5	<0.1	<0.02	<0.3	<0.05	<0.02	<0.05
14RAY077D01	Rock	14.0	2.0	1.2	2.6	<1	92.2	<0.1	0.3	0.2	219	<0.5	62.1	23.0	2.7	8.0	1.23	6.2	2.23	0.68	3.28
14RAY082A01	Rock	17.3	5.1	12.7	197.4	4	142.4	1.0	19.6	3.6	22	1.2	180.7	30.2	45.1	91.4	9.94	36.6	6.83	1.02	6.21
14RAY083A02	Rock	<0.5	<0.1	<0.1	0.1	<1	<0.5	<0.1	<0.2	<0.1	36	<0.5	0.7	0.3	<0.1	<0.1	<0.02	<0.3	<0.05	<0.02	<0.05
14RAY087A01	Rock	14.4	3.1	6.7	59.2	<1	261.6	0.4	4.8	0.8	47	<0.5	112.5	13.8	14.2	29.0	3.11	11.1	2.27	0.66	2.41
14RAY088A01	Rock	14.6	0.8	0.4	0.1	<1	105.6	<0.1	<0.2	0.2	288	<0.5	20.6	11.9	1.0	2.4	0.34	2.1	0.90	0.29	1.36
14RAY097A01	Rock	3.4	<0.1	0.2	0.2	<1	1.3	<0.1	<0.2	<0.1	100	0.5	1.3	1.4	0.3	0.4	0.06	0.3	0.12	0.04	0.16
14RAY098A01	Rock	0.8	<0.1	<0.1	0.2	<1	<0.5	<0.1	<0.2	<0.1	40	<0.5	0.5	0.2	0.2	<0.1	<0.02	<0.3	<0.05	<0.02	<0.05
14RAY099A01	Rock	4.1	0.3	<0.1	0.4	<1	34.0	<0.1	<0.2	<0.1	148	<0.5	6.0	8.4	0.6	2.1	0.42	3.1	0.97	0.34	1.38
14RAY099B01	Rock	11.1	0.3	<0.1	1.4	<1	309.5	<0.1	<0.2	<0.1	421	<0.5	5.2	10.1	0.7	1.7	0.39	2.8	1.01	0.50	1.66
14RAY100A01	Rock	22.9	1.0	10.0	0.8	<1	337.0	0.6	0.3	<0.1	411	<0.5	43.5	13.7	7.4	18.1	2.30	10.4	2.57	1.09	2.76
14RAY101C01	Rock	19.8	2.8	7.0	12.1	1	951.1	0.3	0.4	0.6	360	<0.5	113.2	33.3	6.5	17.5	2.58	12.8	4.21	1.54	5.33
14RAY102A01	Rock	17.3	3.2	11.8	341.0	9	59.9	1.4	14.7	1.8	<8	3.4	109.1	33.7	22.2	48.6	5.16	18.6	4.19	0.47	4.35
14RAY106A01	Rock	18.3	2.0	13.0	380.1	12	44.4	1.7	13.0	6.3	<8	4.6	62.3	30.1	8.7	23.3	2.13	8.1	2.18	0.22	2.52
14RAY110A01	Rock	20.1	2.5	17.7	274.1	11	156.1	2.8	11.7	5.0	<8	2.1	74.6	12.5	25.7	51.5	5.03	17.4	3.55	0.56	2.91
14RAY116A01	Rock	19.6	3.4	3.1	5.0	1	285.3	0.2	0.3	0.1	343	0.5	127.4	41.2	5.7	17.0	2.52	13.2	4.14	1.57	6.11
14RAY118B01	Rock	16.8	4.8	11.9	134.4	2	27.1	1.0	21.5	3.9	<8	1.1	130.2	28.2	33.8	61.9	6.76	25.3	4.87	0.48	4.40
14RAY119B01	Rock	8.4	2.9	6.0	62.3	<1	30.7	0.4	4.4	1.2	97	1.6	117.4	7.2	16.0	27.9	2.77	10.4	1.62	0.38	1.50
14RAY130A01	Rock	23.1	5.9	13.9	199.4	3	239.8	1.0	21.3	5.6	21	1.4	228.5	27.7	57.5	104.9	11.09	37.3	6.66	1.34	5.47
14RAY132A01	Rock	15.5	2.4	7.0	10.3	<1	167.2	0.5	0.6	0.2	273	<0.5	98.1	25.1	7.6	16.7	2.40	12.6	3.34	1.35	4.35
14RAY133A01	Rock	17.4	5.7	13.5	165.5	3	177.0	1.1	21.4	3.1	24	0.9	205.0	28.9	42.2	90.8	9.69	35.5	6.84	1.06	6.06
14RAY135B01	Rock	20.7	5.6	20.5	9.3	3	636.2	1.2	2.7	0.5	186	1.2	208.8	27.9	22.0	47.6	6.19	28.0	7.60	2.63	7.57
14RAY136A01	Rock	11.9	3.2	8.0	76.3	1	164.5	0.6	7.8	2.1	112	0.6	110.8	15.5	18.8	42.0	4.39	15.4	2.79	0.51	2.53
14RAY140A01	Rock	<0.5	0.2	<0.1	0.2	<1	<0.5	<0.1	<0.2	<0.1	53	<0.5	9.1	1.2	1.8	<0.1	<0.02	<0.3	0.05	<0.02	<0.05
14RAY144A01	Rock	2.3	<0.1	1.0	0.5	<1	11.4	<0.1	<0.2	<0.1	52	<0.5	0.9	0.3	0.9	<0.1	<0.02	<0.3	<0.05	<0.02	<0.05
14RAY151A01	Rock	15.8	2.9	9.5	54.4	1	798.0	0.6	4.1	1.7	202	0.7	116.0	20.0	25.4	49.7	5.55	21.8	4.47	1.31	4.22
14RAY157A01	Rock	0.6	<0.1	<0.1	<0.1	<1	1.4	<0.1	<0.2	<0.1	24	<0.5	0.2	<0.1	0.3	0.1	<0.02	<0.3	<0.05	<0.02	<0.05
14RAY157C02	Rock	18.7	6.3	42.6	31.9	2	234.0	2.9	4.0	1.0	231	<0.5	260.6	39.8	30.1	59.5	7.04	30.8	7.31	2.30	8.11
14RAY158A01	Rock	13.5	1.1	0.3	28.1	<1	94.0	<0.1	<0.2	0.1	241	<0.5	42.8	19.2	1.6	4.0	0.75	4.9	1.67	0.69	2.57



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CERTIFICATE OF ANALYSIS

VAN15000146.1

Method Analyte	Unit	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	ppb
MDL		ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
14RAY077A01	Rock	0.75	4.53	0.95	2.80	0.40	2.79	0.43	<0.02	<0.02	0.2	87.9	1.7	71	65.4	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	0.5
14RAY077B01	Rock	<0.01	<0.05	<0.02	0.06	<0.01	<0.05	0.01	0.04	0.09	0.1	16.5	0.2	21	2698.9	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	4.6
14RAY077D01	Rock	0.60	3.89	0.91	2.71	0.41	2.83	0.42	0.05	0.04	1.0	7.5	0.3	24	8.6	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	1.7
14RAY082A01	Rock	1.03	5.71	1.11	3.28	0.44	2.82	0.41	<0.02	<0.02	0.3	1.9	3.7	43	5.0	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	1.5
14RAY083A02	Rock	<0.01	<0.05	<0.02	<0.03	<0.01	<0.05	<0.01	0.12	0.03	<0.1	4.8	0.2	27	1797.1	1.1	<0.1	<0.1	0.2	<0.1	<0.1	1.1
14RAY087A01	Rock	0.39	2.16	0.47	1.39	0.22	1.40	0.21	0.07	<0.02	<0.1	2.5	1.5	39	4.6	4.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5
14RAY088A01	Rock	0.28	1.82	0.45	1.29	0.20	1.47	0.23	0.06	<0.02	<0.1	114.3	0.2	53	62.3	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5
14RAY097A01	Rock	0.03	0.22	0.07	0.16	0.03	0.22	0.03	0.05	0.06	<0.1	40.2	0.1	58	1964.6	1.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5
14RAY098A01	Rock	<0.01	<0.05	0.02	0.04	<0.01	<0.05	<0.01	0.24	0.09	<0.1	13.3	0.7	24	2164.2	15.3	<0.1	<0.1	0.1	<0.1	<0.1	5.7
14RAY099A01	Rock	0.25	1.42	0.32	0.89	0.13	0.78	0.10	0.03	<0.02	<0.1	4.5	0.2	17	57.0	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	1.3
14RAY099B01	Rock	0.32	2.07	0.43	1.13	0.16	1.00	0.14	0.05	<0.02	0.1	38.1	1.1	23	15.3	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	2.1
14RAY100A01	Rock	0.44	2.59	0.50	1.47	0.22	1.37	0.20	0.04	<0.02	<0.1	5.5	0.4	28	1.5	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	0.7
14RAY101C01	Rock	0.92	6.06	1.29	3.65	0.54	3.38	0.50	0.02	<0.02	<0.1	2.4	9.3	34	114.4	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	1.1
14RAY102A01	Rock	0.92	5.54	1.15	3.64	0.54	3.45	0.48	<0.02	<0.02	<0.1	1.2	3.8	27	1.6	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5
14RAY106A01	Rock	0.68	4.56	1.00	3.11	0.46	2.95	0.39	0.02	<0.02	0.7	5.4	6.0	35	1.4	<0.5	<0.1	<0.1	0.3	<0.1	<0.1	0.7
14RAY110A01	Rock	0.49	2.61	0.40	1.18	0.16	0.95	0.12	0.03	<0.02	<0.1	1.5	8.4	47	1.8	0.6	<0.1	<0.1	1.8	<0.1	<0.1	<0.5
14RAY116A01	Rock	1.11	7.17	1.49	4.20	0.68	4.36	0.69	0.33	0.08	0.3	66.6	0.3	20	27.7	<0.5	<0.1	0.2	<0.1	<0.1	<0.1	<0.5
14RAY118B01	Rock	0.78	4.75	1.01	2.76	0.45	3.01	0.42	<0.02	<0.02	0.4	2.8	3.1	10	2.1	0.9	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5
14RAY119B01	Rock	0.22	1.13	0.28	0.82	0.12	1.01	0.16	<0.02	0.02	1.8	2.7	88.1	77	2.4	2.6	<0.1	0.7	0.2	0.6	2.0	2.0
14RAY130A01	Rock	0.84	4.80	1.01	2.90	0.46	2.93	0.42	0.03	<0.02	<0.1	2.1	16.7	65	2.1	<0.5	<0.1	<0.1	0.2	<0.1	<0.1	0.5
14RAY132A01	Rock	0.76	4.78	1.06	2.87	0.42	2.64	0.40	0.02	<0.02	0.1	87.9	1.0	24	35.6	<0.5	<0.1	<0.1	<0.1	<0.1	0.1	<0.5
14RAY133A01	Rock	0.98	5.38	1.09	2.98	0.42	2.65	0.36	0.02	<0.02	0.3	8.6	5.5	35	4.9	<0.5	<0.1	<0.1	0.1	<0.1	<0.1	0.8
14RAY135B01	Rock	1.16	5.96	1.10	2.59	0.36	2.21	0.28	0.04	0.04	1.0	23.6	2.6	48	48.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	0.9
14RAY136A01	Rock	0.45	2.79	0.52	1.59	0.27	1.72	0.27	<0.02	<0.02	0.1	1.6	4.3	38	19.2	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5
14RAY140A01	Rock	0.02	0.17	0.06	0.17	0.02	0.08	<0.01	0.07	<0.02	<0.1	3.7	0.2	33	2138.1	0.5	<0.1	<0.1	<0.1	<0.1	<0.1	1.5
14RAY144A01	Rock	<0.01	<0.05	0.03	<0.03	<0.01	0.08	0.02	0.03	0.05	<0.1	9.2	0.3	24	1712.9	2.5	<0.1	<0.1	<0.1	<0.1	<0.1	0.7
14RAY151A01	Rock	0.64	3.82	0.75	2.05	0.31	1.82	0.31	0.81	<0.02	1.3	8.7	1.9	80	10.5	<0.5	0.1	<0.1	<0.1	<0.1	<0.1	<0.5
14RAY157A01	Rock	<0.01	<0.05	<0.02	<0.03	<0.01	<0.05	<0.01	0.08	0.11	<0.1	8.3	0.2	5	1936.0	0.5	<0.1	<0.1	<0.1	<0.1	<0.1	1.0
14RAY157C02	Rock	1.33	7.53	1.43	3.86	0.54	3.69	0.53	0.03	<0.02	0.3	14.6	0.5	61	27.2	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5
14RAY158A01	Rock	0.49	3.19	0.74	2.30	0.34	2.17	0.32	0.04	<0.02	<0.1	91.1	0.3	50	80.3	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	1.5



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Project: GEM Cordillera

Report Date: February 12, 2015

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CERTIFICATE OF ANALYSIS

VAN15000146.1

Method	Analyte	AQ200	AQ200	AQ200
		Hg	Tl	Se
Unit		ppm	ppm	ppm
MDL		0.01	0.1	0.5
14RAY077A01	Rock	<0.01	<0.1	<0.5
14RAY077B01	Rock	<0.01	<0.1	<0.5
14RAY077D01	Rock	<0.01	<0.1	<0.5
14RAY082A01	Rock	<0.01	0.3	<0.5
14RAY083A02	Rock	<0.01	<0.1	<0.5
14RAY087A01	Rock	<0.01	<0.1	<0.5
14RAY088A01	Rock	<0.01	<0.1	<0.5
14RAY097A01	Rock	<0.01	<0.1	<0.5
14RAY098A01	Rock	<0.01	<0.1	0.5
14RAY099A01	Rock	<0.01	<0.1	<0.5
14RAY099B01	Rock	<0.01	<0.1	<0.5
14RAY100A01	Rock	<0.01	<0.1	<0.5
14RAY101C01	Rock	<0.01	<0.1	<0.5
14RAY102A01	Rock	<0.01	0.5	<0.5
14RAY106A01	Rock	<0.01	0.2	<0.5
14RAY110A01	Rock	<0.01	0.3	<0.5
14RAY116A01	Rock	<0.01	<0.1	<0.5
14RAY118B01	Rock	<0.01	0.2	<0.5
14RAY119B01	Rock	0.46	<0.1	0.8
14RAY130A01	Rock	<0.01	0.4	<0.5
14RAY132A01	Rock	<0.01	<0.1	<0.5
14RAY133A01	Rock	<0.01	0.3	<0.5
14RAY135B01	Rock	<0.01	<0.1	<0.5
14RAY136A01	Rock	<0.01	0.2	<0.5
14RAY140A01	Rock	<0.01	<0.1	<0.5
14RAY144A01	Rock	<0.01	<0.1	<0.5
14RAY151A01	Rock	<0.01	<0.1	<0.5
14RAY157A01	Rock	<0.01	<0.1	<0.5
14RAY157C02	Rock	<0.01	0.2	<0.5
14RAY158A01	Rock	<0.01	0.2	<0.5



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Project: GEM Cordillera

Report Date: February 12, 2015

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CERTIFICATE OF ANALYSIS

VAN15000146.1

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	
14RAY161A02	Rock	0.58	62.79	15.30	6.32	2.97	4.38	3.44	2.94	0.58	0.10	0.08	0.005	<20	17	0.9	99.77	868	3	15.3	0.7
14RAY163A01	Rock	0.50	50.90	15.62	9.91	6.93	10.46	3.30	0.70	0.69	0.11	0.17	0.015	48	41	1.0	99.76	215	<1	34.4	0.2
14RAY167A01	Rock	0.63	61.42	16.25	5.75	2.43	4.89	3.13	2.85	0.52	0.24	0.13	0.003	<20	17	1.9	99.52	2698	2	10.0	3.6
14RAY168A01	Rock	0.54	41.83	2.13	7.61	34.28	1.86	0.03	<0.01	0.04	<0.01	0.11	0.361	1924	12	10.9	99.41	7	<1	90.5	0.1
14RAY176A01	Rock	0.48	55.67	17.57	6.94	3.29	6.11	3.86	2.77	0.63	0.29	0.14	0.008	<20	17	2.2	99.50	2341	2	12.9	1.4



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CERTIFICATE OF ANALYSIS

VAN15000146.1

Method	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200	LF200
Analyte	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	0.1	0.02	0.3	0.05	0.02	0.05	
14RAY161A02	Rock	14.5	4.4	6.3	77.6	<1	303.0	0.5	7.5	1.9	131	<0.5	156.0	20.2	20.4	41.1	4.89	19.5	4.03	0.95	3.98
14RAY163A01	Rock	13.2	1.2	0.6	5.6	<1	319.3	<0.1	0.6	0.3	294	<0.5	35.9	16.4	5.1	10.6	1.51	6.9	2.14	0.75	2.45
14RAY167A01	Rock	15.9	5.3	10.5	106.3	<1	661.9	0.8	16.5	3.4	125	1.0	198.6	18.0	36.6	61.5	6.72	24.3	4.54	1.12	3.86
14RAY168A01	Rock	0.7	<0.1	<0.1	0.2	<1	1.6	<0.1	<0.2	<0.1	72	<0.5	0.6	1.5	0.9	<0.1	<0.02	<0.3	<0.05	<0.02	0.10
14RAY176A01	Rock	20.2	4.6	8.9	69.5	2	1022.6	0.5	3.8	0.8	133	1.0	179.4	27.6	25.5	53.0	6.58	28.1	6.25	1.66	6.03



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Project: GEM Cordillera

Report Date: February 12, 2015

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CERTIFICATE OF ANALYSIS

VAN15000146.1

Method	LF200	LF200	LF200	LF200	LF200	LF200	LF200	TC000	TC000	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	
Analyte	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	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	
14RAY161A02	Rock	0.63	3.50	0.75	2.07	0.35	2.14	0.35	<0.02	<0.02	0.2	1.8	1.4	24	11.3	<0.5	<0.1	<0.1	<0.1	<0.1	0.9
14RAY163A01	Rock	0.42	2.75	0.61	1.74	0.26	1.70	0.27	0.02	<0.02	<0.1	86.2	1.0	22	15.2	<0.5	<0.1	<0.1	<0.1	<0.1	0.5
14RAY167A01	Rock	0.60	3.25	0.62	1.76	0.30	2.09	0.33	0.04	<0.02	2.5	2.8	9.6	63	8.5	2.1	<0.1	0.1	0.4	<0.1	1.3
14RAY168A01	Rock	0.02	0.20	0.06	0.17	0.01	0.10	0.03	0.14	0.12	<0.1	11.1	1.6	19	2080.6	7.1	<0.1	1.4	0.3	<0.1	1.1
14RAY176A01	Rock	0.93	5.31	0.97	2.70	0.43	2.63	0.42	0.11	<0.02	<0.1	15.0	4.7	44	9.4	<0.5	<0.1	<0.1	<0.1	<0.1	<0.5



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CERTIFICATE OF ANALYSIS

VAN15000146.1

Method	Analyte	AQ200	AQ200	AQ200
		Hg	TI	Se
Unit		ppm	ppm	ppm
MDL		0.01	0.1	0.5
14RAY161A02	Rock	<0.01	0.3	<0.5
14RAY163A01	Rock	<0.01	<0.1	<0.5
14RAY167A01	Rock	<0.01	0.4	<0.5
14RAY168A01	Rock	<0.01	<0.1	<0.5
14RAY176A01	Rock	<0.01	<0.1	<0.5



QUALITY CONTROL REPORT

VAN15000146.1

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	
14RAY062A01	Rock	0.33	39.85	0.37	6.70	39.44	0.30	<0.01	<0.01	<0.01	0.01	0.11	0.361	1930	12	12.5	99.94	4	<1	102.8	<0.1
14RAY158A01	Rock	0.63	47.53	16.17	10.44	8.78	10.78	2.35	1.00	0.81	0.04	0.16	0.085	195	41	1.6	99.73	433	1	53.3	0.8
Pulp Duplicates																					
14RAY047A02	Rock	0.40	38.13	1.56	9.11	37.85	0.10	<0.01	<0.01	0.03	<0.01	0.12	0.434	2233	13	12.3	99.93	2	<1	117.3	<0.1
REP 14RAY047A02	QC		38.36	1.56	9.11	37.63	0.09	<0.01	<0.01	0.03	<0.01	0.12	0.443	2215	13	12.3	99.93	1	<1	111.1	<0.1
14RAY062B02	Rock	0.35	45.99	21.41	9.76	7.82	11.29	1.71	0.09	0.11	<0.01	0.15	0.004	74	44	1.6	99.89	70	<1	41.7	0.7
REP 14RAY062B02	QC		46.16	21.52	9.56	7.85	11.22	1.64	0.05	0.11	<0.01	0.14	<0.002	67	40	1.6	99.80	73	1	43.4	0.6
REP 14RAY065A01	QC																				
14RAY077D01	Rock	0.52	57.26	14.24	10.00	4.54	3.22	7.16	0.10	0.88	0.09	0.14	<0.002	<20	27	2.1	99.72	1337	<1	25.2	0.6
REP 14RAY077D01	QC																				
14RAY098A01	Rock	0.56	45.02	1.08	7.27	34.99	0.03	<0.01	<0.01	0.02	<0.01	0.07	0.347	2009	6	10.3	99.39	8	<1	101.8	<0.1
REP 14RAY098A01	QC		44.92	1.08	7.33	35.02	0.03	<0.01	<0.01	0.02	0.02	0.07	0.345	2037	7	10.3	99.40	7	<1	103.9	<0.1
14RAY133A01	Rock	0.55	70.89	14.00	3.11	0.58	1.03	2.72	5.35	0.38	0.18	0.04	<0.002	<20	5	1.5	99.77	1236	3	4.2	1.3
REP 14RAY133A01	QC		70.81	14.05	3.11	0.58	1.02	2.73	5.35	0.38	0.18	0.04	<0.002	<20	5	1.5	99.77	1260	4	3.9	1.4
14RAY167A01	Rock	0.63	61.42	16.25	5.75	2.43	4.89	3.13	2.85	0.52	0.24	0.13	0.003	<20	17	1.9	99.52	2698	2	10.0	3.6
REP 14RAY167A01	QC																				
Core Reject Duplicates																					
14RAY065A01	Rock	0.60	62.26	11.86	9.19	3.54	4.85	1.27	1.82	0.72	0.15	0.17	0.003	<20	23	3.8	99.64	497	<1	17.0	2.5
DUP 14RAY065A01	QC		62.37	11.86	9.13	3.52	4.83	1.28	1.85	0.70	0.14	0.16	0.004	<20	23	3.8	99.64	516	<1	17.0	2.7
14RAY176A01	Rock	0.48	55.67	17.57	6.94	3.29	6.11	3.86	2.77	0.63	0.29	0.14	0.008	<20	17	2.2	99.50	2341	2	12.9	1.4
DUP 14RAY176A01	QC		55.70	17.74	6.80	3.26	6.12	3.91	2.69	0.63	0.29	0.13	0.009	20	17	2.2	99.51	2281	2	12.8	1.2
Reference Materials																					
STD DS10	Standard																				
STD DS10	Standard																				
STD GS311-1	Standard																				
STD GS311-1	Standard																				
STD GS910-4	Standard																				
STD GS910-4	Standard																				
STD OREAS45EA	Standard																				



QUALITY CONTROL REPORT

VAN15000146.1

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	
14RAY062A01	Rock	<0.5	<0.1	<0.1	<0.1	<1	<0.5	<0.1	<0.2	<0.1	34	1.8	0.4	0.2	0.3	0.1	<0.02	<0.3	<0.05	<0.02	<0.05
14RAY158A01	Rock	13.5	1.1	0.3	28.1	<1	94.0	<0.1	<0.2	0.1	241	<0.5	42.8	19.2	1.6	4.0	0.75	4.9	1.67	0.69	2.57
Pulp Duplicates																					
14RAY047A02	Rock	1.5	<0.1	<0.1	<0.1	<1	1.5	<0.1	<0.2	<0.1	52	<0.5	0.4	0.7	0.1	0.1	<0.02	<0.3	<0.05	<0.02	0.10
REP 14RAY047A02	QC	1.5	<0.1	<0.1	<0.1	<1	1.6	<0.1	<0.2	<0.1	54	<0.5	0.4	0.6	0.3	<0.1	<0.02	<0.3	<0.05	<0.02	0.08
14RAY062B02	Rock	14.3	0.1	1.3	2.1	<1	83.2	<0.1	<0.2	<0.1	298	0.6	3.6	1.4	0.5	<0.1	<0.02	<0.3	<0.05	0.06	0.08
REP 14RAY062B02	QC	15.3	<0.1	1.1	2.1	<1	85.2	<0.1	<0.2	<0.1	291	<0.5	4.8	2.5	0.6	0.5	<0.02	<0.3	<0.05	<0.02	<0.05
REP 14RAY065A01	QC																				
14RAY077D01	Rock	14.0	2.0	1.2	2.6	<1	92.2	<0.1	0.3	0.2	219	<0.5	62.1	23.0	2.7	8.0	1.23	6.2	2.23	0.68	3.28
REP 14RAY077D01	QC																				
14RAY098A01	Rock	0.8	<0.1	<0.1	0.2	<1	<0.5	<0.1	<0.2	<0.1	40	<0.5	0.5	0.2	0.2	<0.1	<0.02	<0.3	<0.05	<0.02	<0.05
REP 14RAY098A01	QC	0.8	<0.1	<0.1	0.2	<1	<0.5	<0.1	<0.2	<0.1	44	<0.5	0.4	0.3	0.3	<0.1	<0.02	<0.3	<0.05	<0.02	<0.05
14RAY133A01	Rock	17.4	5.7	13.5	165.5	3	177.0	1.1	21.4	3.1	24	0.9	205.0	28.9	42.2	90.8	9.69	35.5	6.84	1.06	6.06
REP 14RAY133A01	QC	16.8	5.8	13.9	158.4	3	174.3	0.8	20.8	2.7	24	0.8	206.9	28.4	42.5	92.1	9.37	33.7	6.88	1.08	6.11
14RAY167A01	Rock	15.9	5.3	10.5	106.3	<1	661.9	0.8	16.5	3.4	125	1.0	198.6	18.0	36.6	61.5	6.72	24.3	4.54	1.12	3.86
REP 14RAY167A01	QC																				
Core Reject Duplicates																					
14RAY065A01	Rock	12.8	2.6	6.9	46.8	<1	1669.3	0.4	6.0	2.0	201	0.7	101.5	18.0	15.0	30.1	3.63	13.2	2.86	0.68	3.15
DUP 14RAY065A01	QC	12.5	2.5	6.8	45.9	<1	1645.3	0.5	5.3	2.1	202	<0.5	106.3	17.7	16.1	31.4	3.59	14.7	2.95	0.72	3.11
14RAY176A01	Rock	20.2	4.6	8.9	69.5	2	1022.6	0.5	3.8	0.8	133	1.0	179.4	27.6	25.5	53.0	6.58	28.1	6.25	1.66	6.03
DUP 14RAY176A01	QC	19.7	4.3	8.0	67.7	3	985.7	0.6	3.8	0.7	133	1.0	176.0	27.4	24.6	47.9	6.16	26.2	5.99	1.75	5.78
Reference Materials																					
STD DS10	Standard																				
STD DS10	Standard																				
STD GS311-1	Standard																				
STD GS311-1	Standard																				
STD GS910-4	Standard																				
STD GS910-4	Standard																				
STD OREAS45EA	Standard																				



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Project: GEM Cordillera
Report Date: February 12, 2015

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QUALITY CONTROL REPORT

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Method	Unit	LF200	LF200	LF200	LF200	LF200	LF200	LF200	TC000	TC000	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200	AQ200
Analyte	MDL	Tb	Dy	Ho	Er	Tm	Yb	Lu	TOT/C	TOT/S	Mo	Cu	Pb	Zn	Ni	As	Cd	Sb	Bi	Ag	Au
Unit	MDL	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
MDL	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	0.5
14RAY062A01	Rock	<0.01	<0.05	<0.02	<0.03	<0.01	<0.05	<0.01	0.16	0.03	<0.1	0.6	0.2	27	1884.3	1.1	<0.1	<0.1	<0.1	<0.1	7.6
14RAY158A01	Rock	0.49	3.19	0.74	2.30	0.34	2.17	0.32	0.04	<0.02	<0.1	91.1	0.3	50	80.3	<0.5	<0.1	<0.1	<0.1	<0.1	1.5
Pulp Duplicates																					
14RAY047A02	Rock	0.02	0.15	0.03	0.10	0.02	0.12	0.02	0.03	0.04	<0.1	13.8	0.4	28	2490.1	<0.5	<0.1	<0.1	<0.1	<0.1	1.4
REP 14RAY047A02	QC	0.02	0.11	0.03	0.11	0.01	0.11	0.02													
14RAY062B02	Rock	0.04	0.30	0.08	0.28	0.04	0.25	0.04	<0.02	<0.02	0.1	2.8	0.6	9	17.0	<0.5	<0.1	<0.1	<0.1	<0.1	0.7
REP 14RAY062B02	QC	0.03	0.24	0.08	0.16	0.04	0.23	0.04													
REP 14RAY065A01	QC								0.19	<0.02											
14RAY077D01	Rock	0.60	3.89	0.91	2.71	0.41	2.83	0.42	0.05	0.04	1.0	7.5	0.3	24	8.6	<0.5	<0.1	<0.1	<0.1	<0.1	1.7
REP 14RAY077D01	QC										1.0	7.2	0.3	24	7.8	0.5	<0.1	<0.1	<0.1	<0.1	1.1
14RAY098A01	Rock	<0.01	<0.05	0.02	0.04	<0.01	<0.05	<0.01	0.24	0.09	<0.1	13.3	0.7	24	2164.2	15.3	<0.1	<0.1	0.1	<0.1	5.7
REP 14RAY098A01	QC	<0.01	<0.05	0.03	<0.03	<0.01	0.05	<0.01													
14RAY133A01	Rock	0.98	5.38	1.09	2.98	0.42	2.65	0.36	0.02	<0.02	0.3	8.6	5.5	35	4.9	<0.5	<0.1	<0.1	0.1	<0.1	0.8
REP 14RAY133A01	QC	0.94	5.20	0.96	2.78	0.40	2.55	0.35													
14RAY167A01	Rock	0.60	3.25	0.62	1.76	0.30	2.09	0.33	0.04	<0.02	2.5	2.8	9.6	63	8.5	2.1	<0.1	0.1	0.4	<0.1	1.3
REP 14RAY167A01	QC								0.04	<0.02											
Core Reject Duplicates																					
14RAY065A01	Rock	0.52	2.89	0.63	1.65	0.28	1.77	0.25	0.19	<0.02	0.1	9.2	2.7	85	6.2	1.1	<0.1	0.1	<0.1	<0.1	3.0
DUP 14RAY065A01	QC	0.49	2.95	0.67	1.66	0.27	1.62	0.27	0.19	<0.02	<0.1	9.1	2.6	88	5.9	1.1	<0.1	0.2	<0.1	<0.1	1.7
14RAY176A01	Rock	0.93	5.31	0.97	2.70	0.43	2.63	0.42	0.11	<0.02	<0.1	15.0	4.7	44	9.4	<0.5	<0.1	<0.1	<0.1	<0.1	<0.5
DUP 14RAY176A01	QC	0.88	5.02	0.95	2.96	0.42	2.59	0.36	0.11	0.02	<0.1	15.0	4.7	46	10.4	<0.5	<0.1	<0.1	<0.1	<0.1	<0.5
Reference Materials																					
STD DS10	Standard										14.7	166.9	157.9	376	79.4	48.1	2.9	7.4	12.6	1.9	87.3
STD DS10	Standard										14.4	166.0	159.4	383	77.1	49.5	2.8	7.5	13.4	1.9	59.0
STD GS311-1	Standard								1.04	2.35											
STD GS311-1	Standard								1.06	2.33											
STD GS910-4	Standard								2.65	8.15											
STD GS910-4	Standard								2.66	8.18											
STD OREAS45EA	Standard										1.7	767.8	17.7	35	428.6	11.1	<0.1	0.2	0.3	0.3	62.1



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Project: GEM Cordillera
Report Date: February 12, 2015

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QUALITY CONTROL REPORT

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Method	AQ200	AQ200	AQ200	
Analyte	Hg	Tl	Se	
Unit	ppm	ppm	ppm	
MDL	0.01	0.1	0.5	
14RAY062A01	Rock	<0.01	<0.1	<0.5
14RAY158A01	Rock	<0.01	0.2	<0.5
Pulp Duplicates				
14RAY047A02	Rock	<0.01	<0.1	<0.5
REP 14RAY047A02	QC			
14RAY062B02	Rock	<0.01	<0.1	<0.5
REP 14RAY062B02	QC			
REP 14RAY065A01	QC			
14RAY077D01	Rock	<0.01	<0.1	<0.5
REP 14RAY077D01	QC	<0.01	<0.1	<0.5
14RAY098A01	Rock	<0.01	<0.1	0.5
REP 14RAY098A01	QC			
14RAY133A01	Rock	<0.01	0.3	<0.5
REP 14RAY133A01	QC			
14RAY167A01	Rock	<0.01	0.4	<0.5
REP 14RAY167A01	QC			
Core Reject Duplicates				
14RAY065A01	Rock	<0.01	<0.1	<0.5
DUP 14RAY065A01	QC	<0.01	<0.1	<0.5
14RAY176A01	Rock	<0.01	<0.1	<0.5
DUP 14RAY176A01	QC	<0.01	<0.1	<0.5
Reference Materials				
STD DS10	Standard	0.29	5.3	2.6
STD DS10	Standard	0.30	5.6	2.0
STD GS311-1	Standard			
STD GS311-1	Standard			
STD GS910-4	Standard			
STD GS910-4	Standard			
STD OREAS45EA	Standard	0.01	<0.1	0.8



QUALITY CONTROL REPORT

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	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 OREAS45EA	Standard																				
STD SO-18	Standard	57.56	14.30	7.68	3.44	6.50	3.71	2.17	0.70	0.81	0.40	0.561	46	24	1.9	99.74	505	2	26.1	7.2	
STD SO-18	Standard	57.94	14.26	7.62	3.41	6.36	3.67	2.12	0.69	0.79	0.40	0.557	45	24	1.9	99.73	529	2	26.6	7.2	
STD SO-18	Standard	57.94	14.18	7.68	3.42	6.39	3.63	2.18	0.68	0.79	0.39	0.552	41	24	1.9	99.74	478	1	26.1	6.4	
STD SO-18	Standard	57.76	14.18	7.70	3.43	6.41	3.73	2.18	0.70	0.80	0.40	0.555	43	24	1.9	99.74	493	2	24.3	6.2	
STD SO-18	Standard	58.30	14.07	7.62	3.37	6.40	3.58	2.07	0.69	0.78	0.39	0.539	49	24	1.9	99.72	521	<1	24.1	7.3	
STD SO-18	Standard	57.88	14.27	7.59	3.39	6.49	3.65	2.12	0.70	0.79	0.39	0.543	42	24	1.9	99.71	547	<1	27.5	7.3	
STD SO-18	Standard	57.95	14.09	7.71	3.36	6.43	3.69	2.14	0.70	0.80	0.40	0.551	54	26	1.9	99.73	521	<1	26.7	7.2	
STD SO-18	Standard	58.80	13.70	7.59	3.32	6.25	3.60	2.14	0.68	0.81	0.39	0.543	49	25	1.9	99.72	515	<1	28.0	7.0	
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	
BLK	Blank																				
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																				
BLK	Blank	<0.01	<0.01	<0.04	0.04	<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	0.02	<0.01	<0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.002	<20	<1	0.0	0.02	<1	<1	<0.2	<0.1	
Prep Wash																					
ROCK-VAN	Prep Blank	70.35	14.15	3.21	0.84	2.55	4.52	2.08	0.37	0.09	0.08	<0.002	<20	7	1.6	99.85	835	<1	3.2	0.3	
ROCK-VAN	Prep Blank	70.49	14.28	3.22	0.82	2.64	4.35	2.28	0.36	0.09	0.08	<0.002	<20	7	1.2	99.84	889	3	3.4	0.5	



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		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	
		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 OREAS45EA	Standard																					
STD SO-18	Standard	16.7	9.2	19.0	27.9	15	409.5	6.9	9.4	16.0	201	14.7	291.5	30.2	12.7	26.7	3.12	12.9	2.73	0.81	2.90	
STD SO-18	Standard	18.5	9.2	20.3	28.6	16	428.5	6.9	10.3	16.1	201	14.7	305.6	30.8	13.8	28.2	3.37	13.3	2.84	0.91	3.13	
STD SO-18	Standard	15.5	8.7	19.1	26.5	13	388.5	6.6	9.1	14.7	202	12.7	276.9	27.5	12.4	26.3	3.11	12.1	2.69	0.84	2.73	
STD SO-18	Standard	17.1	8.9	18.6	27.6	14	388.1	6.8	9.4	15.3	202	14.2	281.9	26.6	12.1	25.2	3.11	13.2	2.79	0.81	2.93	
STD SO-18	Standard	15.4	9.4	19.2	26.9	14	415.6	6.9	9.9	16.5	223	14.3	288.1	29.7	12.4	27.7	3.11	13.3	2.54	0.83	3.01	
STD SO-18	Standard	17.1	9.3	18.5	27.8	15	420.5	6.5	8.8	16.7	214	15.9	293.9	30.0	13.5	28.5	3.21	12.9	2.72	0.83	2.92	
STD SO-18	Standard	19.0	9.2	19.6	30.1	15	413.8	6.3	9.6	16.1	205	15.6	294.7	28.7	13.0	27.8	3.36	13.4	2.88	0.92	3.09	
STD SO-18	Standard	17.8	9.4	20.4	29.8	16	429.2	6.6	10.1	16.1	206	15.2	307.2	30.9	13.9	28.6	3.49	13.2	2.77	0.88	2.98	
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	
BLK	Blank																					
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	0.2	<0.1	0.3	<0.1	<0.02	<0.3	<0.05	<0.02	<0.05	
BLK	Blank																					
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	
Prep Wash																						
ROCK-VAN	Prep Blank	12.9	3.5	6.6	37.4	<1	206.7	0.3	2.8	1.6	36	<0.5	133.5	17.8	14.9	28.8	3.32	13.6	2.70	0.72	2.81	
ROCK-VAN	Prep Blank	12.5	3.3	5.8	39.3	<1	218.3	0.5	3.1	1.4	39	<0.5	138.0	16.3	15.2	29.5	3.38	14.4	2.67	0.72	2.60	



QUALITY CONTROL REPORT

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		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
		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	0.5
STD OREAS45EA	Standard										1.6	744.0	17.6	34	400.8	10.7	<0.1	0.3	0.3	0.3	59.7
STD SO-18	Standard	0.47	2.92	0.60	1.78	0.25	1.80	0.25													
STD SO-18	Standard	0.51	2.92	0.62	1.97	0.27	1.84	0.28													
STD SO-18	Standard	0.47	2.78	0.58	1.71	0.25	1.63	0.26													
STD SO-18	Standard	0.46	2.77	0.57	1.74	0.25	1.68	0.24													
STD SO-18	Standard	0.49	2.75	0.62	1.66	0.26	1.65	0.27													
STD SO-18	Standard	0.48	3.17	0.63	1.90	0.25	1.49	0.26													
STD SO-18	Standard	0.50	2.81	0.63	1.81	0.27	1.91	0.29													
STD SO-18	Standard	0.53	3.01	0.64	1.86	0.30	1.77	0.29													
STD GS311-1 Expected									1.02	2.35											
STD GS910-4 Expected									2.65	8.27											
STD DS10 Expected											14.69	154.61	150.55	370	74.6	43.7	2.49	8.23	11.65	2.02	91.9
STD OREAS45EA Expected											1.39	709	14.3	28.9	381	9.1	0.02	0.2	0.26	0.26	53
STD SO-18 Expected		0.53	3	0.62	1.84	0.27	1.79	0.27													
BLK	Blank								<0.02	<0.02											
BLK	Blank								<0.02	<0.02											
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										<0.1	<0.1	<0.1	<1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.5
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													
Prep Wash																					
ROCK-VAN	Prep Blank	0.47	2.75	0.59	1.83	0.29	2.19	0.36	0.04	<0.02	0.4	2.4	2.1	33	0.8	1.0	<0.1	<0.1	<0.1	<0.1	<0.5
ROCK-VAN	Prep Blank	0.46	2.73	0.62	1.69	0.28	1.96	0.35	0.03	<0.02	0.5	2.6	2.0	31	0.9	0.9	<0.1	<0.1	<0.1	<0.1	<0.5



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Project: GEM Cordillera
Report Date: February 12, 2015

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QUALITY CONTROL REPORT

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