



ALS USA Inc.
 4977 Energy Way
 Reno NV 89502
 Phone: +1 775 356 5395 Fax: +1 775 355 0179
 www.alsglobal.com/geochemistry

To: LIBERTY STAR URANIUM & METALS
 CORPORATION
 2 E CONGRESS STREET
 TUCSON AZ 85701

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 Plus Appendix Pages
 Finalized Date: 21-SEP-2021
 Account: LIBSTA

CERTIFICATE TU21234827

Project: Red Rock Canyon

This report is for 18 samples of Rock submitted to our lab in Tucson, AZ, USA on 3-SEP-2021.

The following have access to data associated with this certificate:

JAY CRAWFORD		
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SAMPLE PREPARATION	
ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LOG-22	Sample login - Rcd w/o BarCode
SND-ALS	Send samples to internal laboratory
CRU-QC	Crushing QC Test
PUL-QC	Pulverizing QC Test
CRU-31	Fine crushing - 70% <2mm
SPL-22Y	Split Sample - Boyd Rotary Splitter
PUL-31	Pulverize up to 250g 85% <75 um

ANALYTICAL PROCEDURES		
ALS CODE	DESCRIPTION	INSTRUMENT
Au-GRA21	Au 30g FA-GRAV finish	WST-SIM
ME-MS41	Ultra Trace Aqua Regia ICP-MS	

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.
 ***** See Appendix Page for comments regarding this certificate *****

Signature: 
 Saa Traxler, General Manager, North Vancouver



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CERTIFICATE OF ANALYSIS TU21234827

Sample Description	Method Analyte Units LOD	WEI-21	Au-GRA21	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
		Recvd Wt. kg	Au ppm	Ag ppm	Al %	As ppm	Au ppm	B ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Ce ppm	Co ppm	Cr ppm
		0.02	0.05	0.01	0.01	0.1	0.02	10	10	0.05	0.01	0.01	0.01	0.02	0.1	1
314153		2.08	1.06	0.53	0.02	85.9	0.95	<10	50	0.05	0.01	0.84	0.02	3.97	0.2	17
314154		1.74	1.27	0.40	0.77	249	0.91	10	40	2.11	0.05	1.19	0.07	7.93	1.8	14
314155		1.84	0.18	0.45	0.18	16.7	0.67	<10	20	0.26	0.07	0.31	0.05	6.83	0.7	17
314156		1.60	2.98	2.13	0.17	147.0	3.56	<10	40	0.46	0.05	2.60	0.11	3.23	2.1	23
314157		1.63	0.10	0.19	0.06	81.2	0.08	<10	10	0.15	0.02	>25.0	0.17	1.56	1.3	3
314158		1.24	<0.05	0.02	0.05	0.3	<0.02	<10	10	0.08	0.01	>25.0	0.07	3.76	0.7	2
314159		1.84	<0.05	0.83	0.09	14.9	0.02	<10	30	0.41	0.05	2.11	0.11	1.79	0.9	26
314160		1.66	0.13	0.36	0.08	3.5	0.02	<10	110	0.11	0.06	0.41	0.07	0.81	0.4	19
314161		1.79	0.16	0.92	0.28	60.6	0.12	<10	1750	2.04	0.03	5.07	0.08	1.83	0.9	21
314162		1.91	2.32	6.18	0.50	8.9	2.28	<10	60	0.17	0.05	4.34	0.08	4.58	0.5	18
314163		1.85	<0.05	0.07	0.28	7.7	0.02	<10	50	0.12	0.04	1.24	0.08	1.56	0.7	18
314164		1.64	0.80	0.97	0.17	113.5	1.03	<10	20	0.24	0.07	0.74	0.11	1.80	1.2	26
314165		1.72	0.53	7.34	0.25	11.4	0.28	<10	30	0.11	0.05	0.71	0.02	1.20	0.5	24
314166		1.69	<0.05	0.07	0.29	10.3	<0.02	<10	20	0.35	0.10	7.24	0.53	3.55	1.0	28
314167		2.26	<0.05	0.02	0.12	15.8	<0.02	<10	10	0.42	0.06	10.10	0.08	3.91	0.8	7
314168		1.91	0.76	1.66	0.04	91.4	0.83	<10	70	0.48	0.04	2.17	0.07	2.04	0.5	26
314169		2.36	0.91	0.02	0.11	135.0	0.17	<10	20	0.81	0.08	7.56	0.22	6.45	1.2	14
314170		2.62	11.65	0.50	0.11	489	11.25	<10	70	0.22	0.09	0.08	0.21	7.13	0.4	20

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CERTIFICATE OF ANALYSIS TU21234827

Sample Description	Method Analyte Units LOD	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	
		Cs	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na
		ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%
		0.05	0.2	0.01	0.05	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05	0.01
314153		0.10	2.0	0.41	0.11	<0.05	<0.02	0.09	<0.005	<0.01	3.2	1.3	0.02	41	174.5	<0.01
314154		8.21	2.0	1.02	4.12	<0.05	0.10	0.08	0.018	0.26	3.8	6.8	0.11	95	9.90	0.01
314155		0.36	2.4	0.53	0.77	<0.05	0.02	0.03	0.005	0.02	3.6	15.2	0.35	44	13.35	<0.01
314156		1.22	7.2	1.28	0.97	0.32	0.02	0.08	<0.005	0.13	1.5	178.5	0.06	78	41.4	<0.01
314157		0.33	4.3	0.58	0.66	<0.05	<0.02	0.05	<0.005	<0.01	0.9	12.1	0.24	235	22.4	<0.01
314158		0.49	5.2	0.09	0.15	<0.05	<0.02	0.05	<0.005	0.02	2.0	3.4	0.23	75	0.57	0.01
314159		1.22	4.7	0.53	0.48	<0.05	0.06	0.05	<0.005	0.05	1.0	45.5	0.11	50	9.99	<0.01
314160		0.79	2.6	0.47	0.38	<0.05	<0.02	0.04	<0.005	0.01	0.4	7.1	0.10	63	140.0	<0.01
314161		1.43	3.7	0.98	1.79	0.10	0.05	0.13	0.006	0.15	0.9	6.8	0.03	39	39.3	<0.01
314162		1.18	3.7	0.44	2.30	<0.05	0.05	0.01	<0.005	0.47	2.2	3.1	0.02	72	221	<0.01
314163		0.54	4.2	0.30	0.82	<0.05	0.04	0.01	<0.005	0.26	0.9	2.1	0.02	70	4.97	<0.01
314164		0.84	3.3	0.77	0.96	<0.05	0.04	0.01	<0.005	0.06	0.8	3.2	0.02	103	19.95	<0.01
314165		0.83	4.8	0.30	1.62	<0.05	0.03	0.01	<0.005	0.20	0.6	2.1	0.02	36	834	<0.01
314166		2.15	9.1	0.44	1.62	<0.05	0.08	0.04	0.006	0.10	1.8	40.6	0.27	227	4.30	<0.01
314167		3.42	2.9	0.35	0.56	<0.05	0.04	0.01	0.006	0.08	1.9	3.9	0.05	129	1.32	<0.01
314168		0.48	3.1	0.93	0.23	<0.05	<0.02	0.03	<0.005	0.02	1.0	1.1	0.03	64	35.2	<0.01
314169		2.28	3.7	0.66	0.55	<0.05	0.08	0.01	0.005	0.08	2.7	46.8	0.06	104	6.41	<0.01
314170		1.50	5.7	1.36	0.95	<0.05	0.02	0.02	<0.005	0.04	4.3	1.5	0.01	78	106.0	<0.01

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Sample Description	Method Analyte Units LOD	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	
		Nb	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th
		ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
		0.05	0.2	10	0.2	0.1	0.001	0.01	0.05	0.1	0.2	0.2	0.2	0.01	0.01	0.2
314153		<0.05	0.8	10	1.3	0.3	0.001	0.03	1.41	0.1	2.4	<0.2	53.0	<0.01	0.01	<0.2
314154		0.09	3.8	30	6.0	30.4	0.005	0.02	3.12	2.6	0.9	0.6	24.7	<0.01	0.01	0.9
314155		<0.05	2.8	50	4.2	1.7	0.005	0.01	0.28	0.3	2.1	<0.2	16.2	<0.01	0.02	0.4
314156		0.05	3.2	40	5.2	16.9	0.001	0.01	1.35	0.4	2.5	<0.2	43.7	<0.01	0.04	<0.2
314157		<0.05	1.8	30	1.8	0.5	0.001	0.02	0.68	0.2	1.5	<0.2	356	<0.01	0.01	<0.2
314158		<0.05	1.1	40	1.3	1.5	0.002	0.03	0.08	0.3	0.7	<0.2	264	<0.01	0.01	0.2
314159		0.12	3.6	70	4.7	6.4	0.002	0.01	0.55	0.3	0.8	<0.2	41.4	<0.01	0.01	0.4
314160		<0.05	1.5	30	3.1	1.5	0.001	<0.01	0.54	0.1	<0.2	<0.2	11.1	<0.01	0.01	<0.2
314161		0.07	4.5	60	5.9	12.6	0.010	0.04	5.11	0.9	10.9	<0.2	66.5	<0.01	0.02	0.3
314162		0.06	1.8	60	5.3	42.6	0.001	<0.01	1.52	1.1	0.6	<0.2	26.0	<0.01	0.03	0.3
314163		<0.05	1.9	80	5.5	20.0	<0.001	<0.01	0.25	0.4	<0.2	<0.2	11.7	<0.01	0.06	0.2
314164		0.07	3.6	190	7.1	6.6	0.001	<0.01	0.84	0.4	1.5	<0.2	6.5	<0.01	0.03	0.4
314165		<0.05	2.1	40	5.5	20.4	0.003	0.01	2.49	0.4	0.8	<0.2	8.5	<0.01	0.02	<0.2
314166		0.06	4.4	430	6.1	8.6	<0.001	0.01	0.63	0.7	<0.2	<0.2	51.3	<0.01	0.04	0.8
314167		0.05	5.6	80	2.7	11.0	<0.001	<0.01	0.64	0.7	0.3	0.2	177.5	<0.01	0.03	0.8
314168		<0.05	2.0	30	2.3	2.2	0.001	<0.01	1.01	0.1	2.9	<0.2	35.2	<0.01	0.02	<0.2
314169		0.20	6.9	130	4.4	12.4	<0.001	<0.01	2.45	0.8	0.5	0.2	113.0	<0.01	0.02	1.0
314170		0.07	1.4	120	43.2	2.5	0.001	0.03	3.66	0.3	7.6	<0.2	135.0	<0.01	0.01	0.4

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Sample Description	Method Analyte Units LOD	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	
		Ti %	Tl ppm	U ppm	V ppm	W ppm	Y ppm	Zn ppm	Zr ppm
		0.005	0.02	0.05	1	0.05	0.05	2	0.5
314153		<0.005	0.09	0.42	5	0.16	0.20	2	<0.5
314154		<0.005	0.71	0.52	165	0.75	1.52	21	2.4
314155		<0.005	0.02	0.70	17	0.14	0.48	4	0.6
314156		<0.005	0.10	0.45	36	4.40	0.87	14	0.6
314157		<0.005	0.26	0.49	40	3.02	0.97	4	<0.5
314158		<0.005	<0.02	0.78	2	0.13	1.33	3	<0.5
314159		0.005	0.07	0.70	17	0.20	0.68	6	1.8
314160		<0.005	0.04	0.20	14	0.08	0.14	10	<0.5
314161		<0.005	0.22	1.75	27	1.00	1.05	17	1.8
314162		<0.005	0.49	0.37	129	0.18	1.62	5	1.6
314163		<0.005	0.20	0.46	15	0.11	0.35	7	1.1
314164		<0.005	0.08	0.65	58	0.44	0.47	10	1.4
314165		<0.005	0.24	0.71	140	0.17	0.43	5	0.8
314166		<0.005	0.13	0.49	10	1.39	3.89	13	2.6
314167		<0.005	0.08	0.41	9	0.14	1.09	4	1.1
314168		<0.005	0.07	0.88	18	0.37	0.36	3	<0.5
314169		0.010	0.12	0.82	15	0.33	1.87	6	2.7
314170		<0.005	0.03	0.45	28	0.31	1.81	7	0.7

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CERTIFICATE COMMENTS

ANALYTICAL COMMENTS

Applies to Method: Gold determinations by this method are semi-quantitative due to the small sample weight used (0.5g).
 ME-MS41

LABORATORY ADDRESSES

Applies to Method: Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.
 Au-GRA21 ME-MS41

Applies to Method: Processed at ALS Tucson, Arizona, USA

CRU-31	CRU-QC	LOG-22	PUL-31
PUL-QC	SND-ALS	SPL-22Y	WEI-21