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To: ARCHER, CATHRO AND ASSOCIATES (1981)
 LIMITED
 1016-510 W HASTINGS ST
 VANCOUVER BC V6B 1L8

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 Plus Appendix Pages
 Finalized Date: 29-NOV-2018
 Account: F

CERTIFICATE WH18277253

Project: BLACKWATER

This report is for 22 Rock samples submitted to our lab in Whitehorse, YT, Canada on 2-NOV-2018.

The following have access to data associated with this certificate:

TRISH HUME		
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SAMPLE PREPARATION	
ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
CRU-31	Fine crushing - 70% <2mm
SPL-21	Split sample - riffle splitter
PUL-31	Pulverize split to 85% <75 um
CRU-QC	Crushing QC Test
PUL-QC	Pulverizing QC Test

ANALYTICAL PROCEDURES		
ALS CODE	DESCRIPTION	INSTRUMENT
Au-ICP21	Au 30g FA ICP-AES Finish	ICP-AES
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: 
 Colin Ramshaw, Vancouver Laboratory Manager



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CERTIFICATE OF ANALYSIS WH18277253

Sample Description	Method Analyte Units LOD	WEI-21	Au-ICP21	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	0.001	0.01	0.01	0.1	0.02	10	10	0.05	0.01	0.01	0.01	0.02	0.1	1
CC03301		1.41	<0.001	0.03	0.12	2.0	<0.02	<10	10	<0.05	0.03	0.02	0.01	0.78	0.8	16
CC03302		2.31	<0.001	0.04	0.79	1.8	<0.02	<10	10	<0.05	0.06	0.01	0.03	0.91	7.2	22
CC03303		0.07	0.004	0.02	2.75	6.6	<0.02	<10	170	0.27	0.16	0.11	0.06	24.1	14.4	82
CC03304		0.06	<0.001	<0.01	0.03	0.6	<0.02	<10	<10	<0.05	0.02	<0.01	0.01	0.23	0.4	7
CC03305		0.03	0.001	0.04	2.51	17.4	<0.02	<10	200	0.39	0.19	0.07	0.12	36.5	16.8	60
CC03306		0.02	NSS	0.04	2.27	6.9	<0.02	<10	230	0.34	0.13	0.07	0.10	31.9	15.6	57
CC03307		1.08	<0.001	0.12	2.57	1.9	<0.02	<10	350	0.14	0.18	0.24	0.05	22.2	9.9	83
CC03308		2.00	<0.001	0.01	0.05	1.0	<0.02	<10	<10	<0.05	0.02	0.01	0.01	0.42	0.4	9
CC03309		0.61	<0.001	0.01	0.02	0.3	<0.02	<10	<10	<0.05	0.01	<0.01	<0.01	0.23	0.2	9
CC03310		0.61	<0.001	0.06	2.97	7.2	<0.02	<10	400	0.17	0.15	0.30	0.05	23.6	19.7	89
CC03311		0.35	<0.001	0.01	0.04	3.2	<0.02	<10	<10	<0.05	0.02	0.02	0.01	0.85	0.4	6
CC03312		0.31	<0.001	<0.01	0.01	1.4	<0.02	<10	<10	<0.05	<0.01	<0.01	0.01	0.17	0.2	7
CC03313		0.67	<0.001	0.03	2.71	2.3	<0.02	<10	320	0.15	0.16	0.24	0.02	21.9	13.8	74
CC03314		0.92	<0.001	0.15	2.41	0.3	<0.02	<10	300	0.11	0.18	0.19	0.03	15.70	9.1	62
CC03315		0.67	<0.001	0.06	2.33	1.7	<0.02	<10	90	0.13	0.14	0.15	0.03	37.6	11.4	43
CC03316		0.35	<0.001	0.03	2.42	3.1	<0.02	<10	390	0.15	0.12	0.26	0.04	19.65	11.7	86
CC03317		0.12	0.005	0.14	0.39	1.7	<0.02	<10	10	0.05	0.22	0.02	0.01	0.98	1.9	10
CC03318		0.30	<0.001	0.01	0.02	0.3	<0.02	<10	<10	<0.05	0.01	<0.01	<0.01	0.33	0.2	9
CC03319		0.09	<0.001	0.01	0.13	3.1	<0.02	<10	10	<0.05	0.04	0.01	0.01	1.23	0.6	13
CC03320		0.21	<0.001	0.01	0.03	1.1	<0.02	<10	<10	<0.05	0.02	0.01	<0.01	0.16	0.2	7
CC03321		0.14	0.008	0.17	0.17	3.2	<0.02	<10	10	<0.05	0.72	0.10	0.03	2.37	1.4	8
CC03322		0.58	<0.001	0.02	0.02	1.0	<0.02	<10	<10	<0.05	0.01	<0.01	<0.01	0.14	0.2	9



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Project: BLACKWATER

CERTIFICATE OF ANALYSIS WH18277253

Sample Description	Method	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	
	Analyte	Cs	Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na
Units		ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%
LOD		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
CC03301		0.22	10.1	0.77	0.30	<0.05	<0.02	<0.01	<0.005	0.02	0.4	1.3	0.03	50	1.66	0.01
CC03302		0.20	32.7	1.62	2.21	<0.05	<0.02	<0.01	0.008	0.03	0.5	9.9	0.48	248	1.39	<0.01
CC03303		3.01	39.4	4.99	7.91	0.08	<0.02	<0.01	0.024	0.68	12.3	35.7	1.36	333	0.81	0.03
CC03304		0.05	3.8	0.84	0.14	<0.05	<0.02	<0.01	<0.005	0.01	<0.2	0.4	0.01	85	0.62	<0.01
CC03305		3.20	106.0	6.16	7.33	0.06	<0.02	<0.01	0.022	0.61	18.1	19.6	1.14	337	2.03	0.03
CC03306		2.69	82.9	5.27	6.40	0.08	0.02	<0.01	0.023	0.65	15.7	17.2	0.87	447	1.59	0.06
CC03307		4.24	26.9	4.04	6.44	0.07	<0.02	<0.01	0.040	1.28	10.9	14.7	1.31	229	1.06	0.05
CC03308		0.05	1.6	0.39	0.13	<0.05	<0.02	<0.01	<0.005	0.01	0.2	0.4	0.02	28	0.83	<0.01
CC03309		<0.05	1.2	0.28	0.11	<0.05	<0.02	<0.01	<0.005	0.01	<0.2	0.3	0.01	29	0.77	<0.01
CC03310		4.56	29.5	4.49	8.48	0.12	<0.02	0.01	0.042	1.40	11.7	33.4	1.59	280	1.39	0.02
CC03311		0.07	4.1	0.36	0.16	<0.05	<0.02	<0.01	<0.005	0.01	0.3	0.5	0.01	29	0.54	<0.01
CC03312		<0.05	0.9	0.39	0.07	<0.05	<0.02	<0.01	<0.005	<0.01	<0.2	0.3	<0.01	30	0.68	<0.01
CC03313		4.11	22.9	4.09	6.42	0.09	<0.02	<0.01	0.037	1.15	10.9	16.1	1.44	219	0.57	0.02
CC03314		4.21	50.7	3.95	6.24	0.08	<0.02	<0.01	0.035	1.21	7.8	17.4	1.28	182	1.01	0.02
CC03315		1.22	16.5	3.94	7.17	0.09	0.03	<0.01	0.017	0.28	19.5	36.6	1.24	362	0.78	0.02
CC03316		3.37	27.4	3.70	7.63	0.10	<0.02	<0.01	0.038	1.29	9.5	26.6	1.19	234	0.53	0.05
CC03317		0.07	16.7	0.99	0.86	<0.05	<0.02	0.01	<0.005	0.01	0.5	2.5	0.19	71	0.62	0.03
CC03318		<0.05	1.0	0.32	0.12	<0.05	<0.02	<0.01	<0.005	0.01	0.2	0.3	0.01	34	0.81	<0.01
CC03319		0.15	3.7	0.82	0.49	<0.05	<0.02	<0.01	<0.005	0.04	0.6	1.1	0.04	79	0.99	0.01
CC03320		<0.05	2.3	0.34	0.19	<0.05	<0.02	0.01	<0.005	0.01	<0.2	0.3	0.01	30	0.73	<0.01
CC03321		0.06	96.4	1.34	0.63	<0.05	<0.02	0.10	<0.005	0.02	1.0	0.9	0.02	87	1.07	<0.01
CC03322		<0.05	2.4	0.28	0.11	<0.05	<0.02	<0.01	<0.005	0.01	<0.2	0.2	<0.01	27	0.97	<0.01



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CERTIFICATE OF ANALYSIS WH18277253

Sample Description	Method	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	
	Analyte	Nb	Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th
Units		ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
LOD		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
CC03301		<0.05	5.2	30	1.1	1.3	<0.001	<0.01	0.08	0.2	<0.2	0.2	2.6	<0.01	0.01	<0.2
CC03302		<0.05	21.9	50	3.1	1.8	<0.001	0.03	<0.05	1.5	0.3	<0.2	8.8	<0.01	0.04	<0.2
CC03303		0.48	52.4	450	4.3	44.6	<0.001	0.02	0.11	9.5	0.3	0.4	9.8	<0.01	0.07	3.1
CC03304		<0.05	1.9	20	2.7	0.4	<0.001	0.01	0.09	0.1	<0.2	<0.2	0.3	<0.01	0.01	<0.2
CC03305		0.37	53.5	670	5.0	34.8	<0.001	0.03	0.13	4.2	0.5	0.4	11.9	<0.01	0.05	4.7
CC03306		0.39	41.6	400	5.1	33.4	<0.001	0.03	0.12	4.7	0.2	0.4	14.4	<0.01	0.05	4.1
CC03307		0.64	32.3	1080	3.2	69.4	<0.001	0.10	0.06	10.0	0.3	0.8	20.7	<0.01	0.06	2.7
CC03308		<0.05	1.6	50	1.6	0.6	<0.001	0.01	<0.05	0.1	<0.2	<0.2	0.5	<0.01	<0.01	<0.2
CC03309		<0.05	1.0	10	1.3	0.4	<0.001	0.01	<0.05	0.1	<0.2	<0.2	0.3	<0.01	<0.01	<0.2
CC03310		0.45	51.9	1350	6.0	73.0	<0.001	0.02	0.09	12.5	0.3	0.9	15.4	<0.01	0.05	3.3
CC03311		<0.05	1.7	90	2.1	0.5	<0.001	0.01	<0.05	0.3	<0.2	<0.2	0.9	<0.01	<0.01	<0.2
CC03312		<0.05	1.1	30	1.2	0.3	<0.001	0.01	0.05	0.1	<0.2	<0.2	0.3	<0.01	<0.01	<0.2
CC03313		0.60	51.8	1000	2.6	69.3	<0.001	0.02	<0.05	9.2	<0.2	0.7	15.0	<0.01	0.04	2.8
CC03314		0.46	21.9	910	2.9	66.1	0.001	0.12	<0.05	8.5	0.5	0.8	11.3	<0.01	0.06	2.1
CC03315		0.40	37.5	710	2.8	20.3	<0.001	0.03	0.05	3.8	0.3	0.2	12.3	<0.01	0.04	4.0
CC03316		0.62	30.4	1120	2.6	59.4	<0.001	0.02	0.06	11.5	0.2	0.8	13.0	<0.01	0.05	2.3
CC03317		0.07	5.8	40	2.2	0.5	<0.001	0.02	0.18	0.7	0.3	<0.2	3.5	<0.01	0.12	<0.2
CC03318		<0.05	1.1	10	2.9	0.3	<0.001	0.01	<0.05	0.1	<0.2	<0.2	0.2	<0.01	<0.01	<0.2
CC03319		<0.05	2.8	40	0.7	2.3	<0.001	<0.01	0.12	0.5	<0.2	<0.2	1.7	<0.01	<0.01	0.2
CC03320		<0.05	1.4	10	0.5	0.5	<0.001	<0.01	<0.05	0.1	<0.2	<0.2	0.5	<0.01	<0.01	<0.2
CC03321		0.05	7.5	550	0.9	1.2	<0.001	<0.01	0.29	0.6	1.6	<0.2	3.2	<0.01	0.18	0.2
CC03322		<0.05	1.3	10	0.2	0.2	<0.001	<0.01	<0.05	0.1	<0.2	<0.2	0.3	<0.01	0.01	<0.2



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CERTIFICATE OF ANALYSIS WH18277253

Sample Description	Method Analyte Units LOD	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	
		Ti %	Ti 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
CC03301		<0.005	<0.02	<0.05	3	<0.05	0.24	3	<0.5
CC03302		0.006	<0.02	<0.05	20	<0.05	0.30	21	<0.5
CC03303		0.133	0.32	0.63	110	0.07	3.86	45	<0.5
CC03304		<0.005	<0.02	<0.05	1	<0.05	0.07	5	<0.5
CC03305		0.112	0.23	1.12	77	0.09	5.57	22	0.5
CC03306		0.117	0.22	0.92	72	0.13	6.25	21	0.7
CC03307		0.187	0.42	0.64	121	0.09	5.86	12	<0.5
CC03308		<0.005	<0.02	<0.05	2	<0.05	0.15	3	<0.5
CC03309		<0.005	<0.02	<0.05	1	<0.05	0.05	4	<0.5
CC03310		0.203	0.46	0.75	129	0.08	6.85	20	<0.5
CC03311		<0.005	<0.02	<0.05	2	<0.05	0.38	2	<0.5
CC03312		<0.005	<0.02	<0.05	<1	<0.05	0.10	3	<0.5
CC03313		0.184	0.44	0.59	110	0.07	6.12	9	<0.5
CC03314		0.178	0.45	0.47	104	0.06	4.67	8	<0.5
CC03315		0.052	0.17	0.59	49	0.05	6.42	115	0.9
CC03316		0.194	0.36	0.58	124	0.11	5.70	16	<0.5
CC03317		0.007	<0.02	0.06	8	<0.05	0.30	4	<0.5
CC03318		<0.005	<0.02	<0.05	1	<0.05	0.06	3	<0.5
CC03319		<0.005	<0.02	<0.05	6	<0.05	0.37	2	<0.5
CC03320		<0.005	<0.02	<0.05	1	<0.05	0.05	<2	<0.5
CC03321		<0.005	0.03	0.22	6	<0.05	2.80	3	<0.5
CC03322		<0.005	<0.02	<0.05	1	<0.05	<0.05	<2	<0.5



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	CERTIFICATE COMMENTS								
	ANALYTICAL COMMENTS								
Applies to Method:	NSS is non-sufficient sample. ALL METHODS								
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 Whitehorse located at 78 Mt. Sima Rd, Whitehorse, YT, Canada. WEI-21								
Applies to Method:	Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada. <table style="width: 100%; border: none;"> <tr> <td style="width: 33%;">Au-ICP21</td> <td style="width: 33%;">CRU-31</td> <td style="width: 33%;">CRU-QC</td> <td style="width: 15%;"></td> </tr> <tr> <td>PUL-31</td> <td>PUL-QC</td> <td>SPL-21</td> <td>ME-MS41</td> </tr> </table>	Au-ICP21	CRU-31	CRU-QC		PUL-31	PUL-QC	SPL-21	ME-MS41
Au-ICP21	CRU-31	CRU-QC							
PUL-31	PUL-QC	SPL-21	ME-MS41						