



STRATAGOLD CORPORATION
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Date Received: 21-FEB-19
Report Date: 29-MAR-19 18:04 (MT)
Version: FINAL

Client Phone: 604-682-5122

Certificate of Analysis

Lab Work Order #: L2235637
Project P.O. #: NOT SUBMITTED
Job Reference: GEOCHEMICAL MONITORING
C of C Numbers:
Legal Site Desc:

Joanne Lee
Account Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

29-MAR-19 18:04 (MT)

Version: FINAL

Sample ID Description Sampled Date Sampled Time Client ID		L2235637-1 SOIL 25-JAN-19 16:40 VICEAG-GCM-33	L2235637-2 SOIL 25-JAN-19 16:50 VICEAG-GCM-34	L2235637-3 SOIL 25-JAN-19 10:00 VICEAG-GCM-35	L2235637-4 SOIL 25-JAN-19 10:15 VICEAG-GCM-36	L2235637-5 SOIL 25-JAN-19 10:30 VICEAG-GCM-37
Grouping	Analyte					
SOIL						
Physical Tests	Moisture (%)	0.68	0.48	<0.25	0.31	<0.25
Leachable Anions & Nutrients	Conductivity (uS/cm)	27.2	24.2	86.3	121	76.0
	pH (pH)	7.34	7.24	8.89	8.67	8.39
Total Metals	Aluminum (Al) (%)	1.60	1.66	1.97	2.79	1.98
	Antimony (Sb) (ppm)	0.66	0.56	0.20	0.43	0.45
	Arsenic (As) (ppm)	87.8	49.9	9.5	28.8	15.3
	Barium (Ba) (ppm)	110	100	560	1140	520
	Beryllium (Be) (ppm)	1.31	0.90	0.59	0.50	0.54
	Bismuth (Bi) (ppm)	1.07	0.37	0.06	0.07	0.03
	Boron (B) (ppm)	<10	<10	<10	<10	<10
	Cadmium (Cd) (ppm)	0.40	0.24	0.06	0.23	0.07
	Calcium (Ca) (%)	0.09	0.06	0.86	1.87	0.67
	Cerium (Ce) (ppm)	106.5	54.9	91.1	74.2	84.7
	Cesium (Cs) (ppm)	3.91	2.32	6.83	4.59	5.10
	Chromium (Cr) (ppm)	22	24	41	63	44
	Cobalt (Co) (ppm)	21.1	9.7	9.3	16.1	9.6
	Copper (Cu) (ppm)	48.8	33.6	3.6	48.3	4.3
	Gallium (Ga) (ppm)	5.31	5.62	9.28	9.96	9.09
	Germanium (Ge) (ppm)	0.12	0.08	0.18	0.23	0.15
	Gold (Au) (ppm)	<0.02	<0.02	<0.02	<0.02	<0.02
	Hafnium (Hf) (ppm)	0.49	0.28	0.21	0.22	0.18
	Indium (In) (ppm)	0.014	0.018	0.022	0.028	0.023
	Iron (Fe) (%)	4.17	3.47	2.54	3.41	2.39
	Lanthanum (La) (ppm)	53.9	27.2	48.4	38.7	44.2
	Lead (Pb) (ppm)	16.0	10.3	7.4	6.6	6.7
	Lithium (Li) (ppm)	9.3	17.0	39.1	44.0	42.6
	Magnesium (Mg) (%)	0.33	0.52	0.99	1.35	0.88
	Manganese (Mn) (ppm)	402	305	366	748	309
	Mercury (Hg) (ppm)	<0.01	<0.01	<0.01	<0.01	<0.01
	Molybdenum (Mo) (ppm)	0.98	0.73	1.58	0.58	0.41
Nickel (Ni) (ppm)	42.1	20.6	11.2	29.0	18.9	
Niobium (Nb) (ppm)	0.17	0.12	0.96	0.80	0.82	
Phosphorus (P) (ppm)	440	240	840	1200	670	
Potassium (K) (%)	0.60	0.48	0.97	0.71	0.86	
Rhenium (Re) (ppm)	<0.001	<0.001	0.001	<0.001	<0.001	
Rubidium (Rb) (ppm)	43.6	33.0	95.3	66.1	85.8	
Scandium (Sc) (ppm)	3.1	3.2	5.1	10.1	5.2	

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

		Sample ID	L2235637-6	L2235637-7		
		Description	SOIL	SOIL		
		Sampled Date	25-JAN-19	25-JAN-19		
		Sampled Time	10:45	11:00		
		Client ID	VICEAG-GCM-38	VICEAG-GCM-39		
Grouping	Analyte					
SOIL						
Physical Tests	Moisture (%)		<0.25	<0.25		
Leachable Anions & Nutrients	Conductivity (uS/cm)		85.5	305		
	pH (pH)		8.78	7.96		
Total Metals	Aluminum (Al) (%)		1.32	1.85		
	Antimony (Sb) (ppm)		0.85	0.45		
	Arsenic (As) (ppm)		47.4	198.5		
	Barium (Ba) (ppm)		300	140		
	Beryllium (Be) (ppm)		0.43	0.66		
	Bismuth (Bi) (ppm)		0.36	0.33		
	Boron (B) (ppm)		<10	<10		
	Cadmium (Cd) (ppm)		0.07	0.02		
	Calcium (Ca) (%)		0.44	0.20		
	Cerium (Ce) (ppm)		67.2	62.0		
	Cesium (Cs) (ppm)		3.75	7.17		
	Chromium (Cr) (ppm)		33	41		
	Cobalt (Co) (ppm)		6.4	10.7		
	Copper (Cu) (ppm)		5.9	24.8		
	Gallium (Ga) (ppm)		5.90	6.18		
	Germanium (Ge) (ppm)		0.09	0.08		
	Gold (Au) (ppm)		<0.02	<0.02		
	Hafnium (Hf) (ppm)		0.17	0.12		
	Indium (In) (ppm)		0.015	0.016		
	Iron (Fe) (%)		1.72	2.38		
	Lanthanum (La) (ppm)		35.1	31.7		
	Lead (Pb) (ppm)		8.0	3.5		
	Lithium (Li) (ppm)		32.3	45.9		
	Magnesium (Mg) (%)		0.52	0.57		
	Manganese (Mn) (ppm)		266	222		
	Mercury (Hg) (ppm)		0.02	<0.01		
	Molybdenum (Mo) (ppm)		1.20	0.30		
	Nickel (Ni) (ppm)		12.5	23.5		
	Niobium (Nb) (ppm)		1.06	0.29		
	Phosphorus (P) (ppm)		430	210		
	Potassium (K) (%)		0.59	0.91		
	Rhenium (Re) (ppm)		0.003	<0.001		
	Rubidium (Rb) (ppm)		57.2	76.2		
Scandium (Sc) (ppm)		3.8	4.0			

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ALS ENVIRONMENTAL ANALYTICAL REPORT

29-MAR-19 18:04 (MT)

Version: FINAL

Sample ID Description Sampled Date Sampled Time Client ID		L2235637-1 SOIL 25-JAN-19 16:40 VICEAG-GCM-33	L2235637-2 SOIL 25-JAN-19 16:50 VICEAG-GCM-34	L2235637-3 SOIL 25-JAN-19 10:00 VICEAG-GCM-35	L2235637-4 SOIL 25-JAN-19 10:15 VICEAG-GCM-36	L2235637-5 SOIL 25-JAN-19 10:30 VICEAG-GCM-37
Grouping	Analyte					
SOIL						
Total Metals	Selenium (Se) (ppm)	0.3	0.2	0.2	<0.2	<0.2
	Silver (Ag) (ppm)	0.08	0.11	0.02	0.06	0.02
	Sodium (Na) (%)	0.02	0.02	0.20	0.32	0.19
	Strontium (Sr) (ppm)	19.5	19.4	90.2	292	77.5
	Sulfur (S) (%)	0.03	0.03	0.01	0.02	0.01
	Tantalum (Ta) (ppm)	<0.01	<0.01	0.01	0.01	<0.01
	Tellurium (Te) (ppm)	0.04	0.02	<0.01	0.01	0.01
	Thallium (Tl) (ppm)	0.48	0.30	0.62	0.49	0.57
	Thorium (Th) (ppm)	18.5	11.5	22.3	15.2	21.0
	Tin (Sn) (ppm)	0.6	0.6	1.3	1.1	1.0
	Titanium (Ti) (%)	0.038	0.028	0.300	0.359	0.265
	Tungsten (W) (ppm)	0.06	0.05	23.1	6.58	1.84
	Uranium (U) (ppm)	3.00	1.98	3.30	2.00	2.96
	Vanadium (V) (ppm)	27	23	49	83	44
	Yttrium (Y) (ppm)	8.36	5.55	10.60	11.65	10.60
	Zinc (Zn) (ppm)	105	96	56	74	56
	Zirconium (Zr) (ppm)	20.8	13.0	5.2	6.5	4.1
Leachable Metals	Aluminum (Al)-Leachable (mg/L)	37.4	10.8	0.573	0.177	1.42
	Antimony (Sb)-Leachable (mg/L)	0.00166	0.00147	0.00122	0.00217	0.00303
	Arsenic (As)-Leachable (mg/L)	0.0662	0.0319	0.0471	0.0543	0.0671
	Barium (Ba)-Leachable (mg/L)	0.0653	0.0357	0.0463	0.134	0.0795
	Beryllium (Be)-Leachable (mg/L)	0.00189	<0.00050	<0.00050	<0.00050	<0.00050
	Bismuth (Bi)-Leachable (mg/L)	0.00079	<0.00050	<0.00050	<0.00050	<0.00050
	Boron (B)-Leachable (mg/L)	0.011	0.012	0.016	0.011	0.018
	Cadmium (Cd)-Leachable (mg/L)	0.000259	0.000107	<0.000050	<0.000050	<0.000050
	Calcium (Ca)-Leachable (mg/L)	2.44	1.12	5.96	9.31	3.87
	Chromium (Cr)-Leachable (mg/L)	0.0285	0.00792	<0.00050	<0.00050	0.00227
	Cobalt (Co)-Leachable (mg/L)	0.0124	0.00413	0.00013	<0.00010	0.00081
	Copper (Cu)-Leachable (mg/L)	0.0367	0.0151	<0.0010	0.0013	0.0013
	Iron (Fe)-Leachable (mg/L)	24.6	9.87	0.225	0.036	1.45
	Lead (Pb)-Leachable (mg/L)	0.0103	0.00366	0.00029	<0.00010	0.00191
	Lithium (Li)-Leachable (mg/L)	0.0462	0.0186	0.0248	0.0253	0.0212
	Magnesium (Mg)-Leachable (mg/L)	3.47	1.40	1.67	3.32	2.17
	Manganese (Mn)-Leachable (mg/L)	0.257	0.0853	0.00924	0.00618	0.0307
	Mercury (Hg)-Leachable (mg/L)	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
	Molybdenum (Mo)-Leachable (mg/L)	0.00384	0.00435	0.00978	0.00597	0.00668
	Nickel (Ni)-Leachable (mg/L)	0.0304	0.0116	<0.00050	<0.00050	0.00158

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

		Sample ID	L2235637-6	L2235637-7			
		Description	SOIL	SOIL			
		Sampled Date	25-JAN-19	25-JAN-19			
		Sampled Time	10:45	11:00			
		Client ID	VICEAG-GCM-38	VICEAG-GCM-39			
Grouping	Analyte						
SOIL							
Total Metals	Selenium (Se) (ppm)	<0.2	<0.2				
	Silver (Ag) (ppm)	0.04	0.02				
	Sodium (Na) (%)	0.13	0.04				
	Strontium (Sr) (ppm)	52.3	19.3				
	Sulfur (S) (%)	0.01	0.09				
	Tantalum (Ta) (ppm)	<0.01	<0.01				
	Tellurium (Te) (ppm)	0.04	0.02				
	Thallium (Tl) (ppm)	0.39	0.58				
	Thorium (Th) (ppm)	15.7	13.4				
	Tin (Sn) (ppm)	0.8	0.7				
	Titanium (Ti) (%)	0.173	0.129				
	Tungsten (W) (ppm)	125.5	0.34				
	Uranium (U) (ppm)	1.92	1.23				
	Vanadium (V) (ppm)	28	32				
	Yttrium (Y) (ppm)	6.89	4.38				
	Zinc (Zn) (ppm)	44	39				
	Zirconium (Zr) (ppm)	4.6	4.4				
Leachable Metals	Aluminum (Al)-Leachable (mg/L)	0.482	0.0715				
	Antimony (Sb)-Leachable (mg/L)	0.00346	0.00512				
	Arsenic (As)-Leachable (mg/L)	0.186	0.0792				
	Barium (Ba)-Leachable (mg/L)	0.0327	0.0121				
	Beryllium (Be)-Leachable (mg/L)	<0.00050	<0.00050				
	Bismuth (Bi)-Leachable (mg/L)	<0.00050	<0.00050				
	Boron (B)-Leachable (mg/L)	0.018	0.013				
	Cadmium (Cd)-Leachable (mg/L)	<0.000050	<0.000050				
	Calcium (Ca)-Leachable (mg/L)	6.12	39.8				
	Chromium (Cr)-Leachable (mg/L)	<0.00050	<0.00050				
	Cobalt (Co)-Leachable (mg/L)	0.00010	0.00068				
	Copper (Cu)-Leachable (mg/L)	<0.0010	<0.0010				
	Iron (Fe)-Leachable (mg/L)	0.172	<0.030				
	Lead (Pb)-Leachable (mg/L)	0.00026	<0.00010				
	Lithium (Li)-Leachable (mg/L)	0.0238	0.0241				
	Magnesium (Mg)-Leachable (mg/L)	1.77	3.35				
	Manganese (Mn)-Leachable (mg/L)	0.00786	0.0736				
	Mercury (Hg)-Leachable (mg/L)	<0.000050	<0.000050				
	Molybdenum (Mo)-Leachable (mg/L)	0.0124	0.00554				
	Nickel (Ni)-Leachable (mg/L)	<0.00050	0.00183				

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

		Sample ID	L2235637-1	L2235637-2	L2235637-3	L2235637-4	L2235637-5
		Description	SOIL	SOIL	SOIL	SOIL	SOIL
		Sampled Date	25-JAN-19	25-JAN-19	25-JAN-19	25-JAN-19	25-JAN-19
		Sampled Time	16:40	16:50	10:00	10:15	10:30
		Client ID	VICEAG-GCM-33	VICEAG-GCM-34	VICEAG-GCM-35	VICEAG-GCM-36	VICEAG-GCM-37
Grouping	Analyte						
SOIL							
Leachable Metals	Phosphorus (P)-Leachable (mg/L)		0.37	<0.30	<0.30	<0.30	<0.30
	Potassium (K)-Leachable (mg/L)		7.63	3.70	10.2	9.94	8.12
	Selenium (Se)-Leachable (mg/L)		<0.00050	<0.00050	<0.00050	0.00099	<0.00050
	Silicon (Si)-Leachable (mg/L)		69.1	22.9	5.08	6.07	6.69
	Silver (Ag)-Leachable (mg/L)		0.000238	0.000163	<0.000050	<0.000050	<0.000050
	Sodium (Na)-Leachable (mg/L)		1.81	2.60	4.39	5.51	5.11
	Strontium (Sr)-Leachable (mg/L)		0.0161	0.0131	0.0347	0.0817	0.0341
	Thallium (Tl)-Leachable (mg/L)		0.00016	<0.00010	<0.00010	<0.00010	<0.00010
	Tin (Sn)-Leachable (mg/L)		0.00055	<0.00050	<0.00050	<0.00050	<0.00050
	Titanium (Ti)-Leachable (mg/L)		0.239	0.122	0.019	<0.010	0.105
	Uranium (U)-Leachable (mg/L)		0.00127	0.000795	0.00265	0.00121	0.000795
	Vanadium (V)-Leachable (mg/L)		0.0225	0.0076	0.0090	0.0069	0.0067
	Zinc (Zn)-Leachable (mg/L)		0.055	0.032	<0.010	<0.010	<0.010

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

	Sample ID Description Sampled Date Sampled Time Client ID	L2235637-6 SOIL 25-JAN-19 10:45 VICEAG-GCM-38	L2235637-7 SOIL 25-JAN-19 11:00 VICEAG-GCM-39		
Grouping	Analyte				
SOIL					
Leachable Metals	Phosphorus (P)-Leachable (mg/L)	<0.30	<0.30		
	Potassium (K)-Leachable (mg/L)	8.03	28.8		
	Selenium (Se)-Leachable (mg/L)	<0.00050	0.00192		
	Silicon (Si)-Leachable (mg/L)	6.25	4.79		
	Silver (Ag)-Leachable (mg/L)	<0.000050	<0.000050		
	Sodium (Na)-Leachable (mg/L)	4.98	5.29		
	Strontium (Sr)-Leachable (mg/L)	0.0364	0.111		
	Thallium (Tl)-Leachable (mg/L)	<0.00010	<0.00010		
	Tin (Sn)-Leachable (mg/L)	<0.00050	<0.00050		
	Titanium (Ti)-Leachable (mg/L)	0.011	<0.010		
	Uranium (U)-Leachable (mg/L)	0.00191	0.00217		
	Vanadium (V)-Leachable (mg/L)	0.0054	<0.0010		
	Zinc (Zn)-Leachable (mg/L)	<0.010	<0.010		

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Matrix Spike	Calcium (Ca)-Leachable	MS-B	L2235637-1, -2, -3, -4, -5, -6, -7
Matrix Spike	Magnesium (Mg)-Leachable	MS-B	L2235637-1, -2, -3, -4, -5, -6, -7
Matrix Spike	Potassium (K)-Leachable	MS-B	L2235637-1, -2, -3, -4, -5, -6, -7
Matrix Spike	Silicon (Si)-Leachable	MS-B	L2235637-1, -2, -3, -4, -5, -6, -7

Qualifiers for Individual Parameters Listed:

Qualifier	Description
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
EC-SHKFLSK-PCT-VA	Soil	EC by PCT (SHAKEFLASK)	BC MINISTRY OF ENERGY AND MINES
<p>This analysis is based upon the extraction procedure outlined in "Prediction Manual for Drainage Chemistry from Sulphidic Geologic Materials (MEND Report 1.20.1)" (William A. Price, 2009). In summary, a sample is extracted with deionized water at a 3:1 liquid to solids ratio for 24 hours. The extract is then allowed to settle and subsequently filtered through a 0.45 micron membrane filter and analysed using procedures adapted from APHA Method 2510 "Conductivity".</p>			
HG-SHKFLSK-CVAFS-VA	Soil	Mercury by CVAAS (SHAKEFLASK)	BC MINISTRY OF ENERGY AND MINES
<p>This analysis is based upon the extraction procedure outlined in "Prediction Manual for Drainage Chemistry from Sulphidic Geologic Materials (MEND Report 1.20.1)" (William A. Price, 2009). In summary, a sample is extracted with deionized water at a 3:1 liquid to solids ratio for 24 hours. The extract is then allowed to settle and subsequently filtered through a 0.45 micron membrane filter and analysed using atomic absorption spectrophotometry (EPA Method 245.7). The Shakeflask extraction is an empirical procedure with pre-defined characteristics. Recovery of some elements (Ag, Bi, Hg, and Sn) by this method can be variable due to the neutral pH of the extraction fluid. LCS QC sample DQOs for these elements have been established at 50-130% for this reason</p>			
ME-MS41-AX	Soil	Aqua Regia ICPMS	Aqua Regia ICPMS
<p>A prepared sample (0.50 g) is digested with aqua regia in a graphite heating block. After cooling, the resulting solution is diluted to with deionized water, mixed and analyzed by inductively coupled plasma-atomic emission spectrometry. Following this analysis, the results are reviewed for high concentrations of bismuth, mercury, molybdenum, silver and tungsten and diluted accordingly. Samples are then analysed by ICP-MS for the remaining suite of elements. The analytical results are corrected for inter-element spectral interferences.</p>			
MET-SHKFLSK-MS-VA	Soil	Metals by ICPMS (SHAKEFLASK)	BC MINISTRY OF ENERGY AND MINES
<p>This analysis is based upon the extraction procedure outlined in "Prediction Manual for Drainage Chemistry from Sulphidic Geologic Materials (MEND Report 1.20.1)" (William A. Price, 2009). In summary, a sample is extracted with deionized water at a 3:1 liquid to solids ratio for 24 hours. The extract is then allowed to settle and subsequently filtered through a 0.45 micron membrane filter and analysed using inductively coupled plasma - mass spectrophotometry (EPA Method 6020A). The Shakeflask extraction is an empirical procedure with pre-defined characteristics. Recovery of some elements (Ag, Bi, Hg, and Sn) by this method can be variable due to the neutral pH of the extraction fluid. LCS QC sample DQOs for these elements have been established at 50-130% for this reason.</p>			
MOISTURE-VA	Soil	Moisture content	CCME PHC in Soil - Tier 1 (mod)
<p>This analysis is carried out gravimetrically by drying the sample at 105 C for a minimum of two hours.</p>			
PH-SHKFLSK-PCT-VA	Soil	pH by PCT (SHAKEFLASK)	BC MINISTRY OF ENERGY AND MINES
<p>This analysis is based upon the extraction procedure outlined in "Guidelines and Recommended Methods for the Prediction of Metal Leaching and Acid Rock Drainage at Minesites in British Columbia" BC Ministry of Energy and Mines, (Dr. William A. Price, 1997). In summary, the sample is extracted at a 3:1 liquid to solids ratio for 24 hours using deionized water. The extract is then allowed to settle and subsequently analysed using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode.</p>			

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
AX	ALS MINERALS - VANCOUVER, B.C., CANADA
VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, CANADA

Chain of Custody Numbers:

Reference Information

GLOSSARY OF REPORT TERMS

Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

mg/kg - milligrams per kilogram based on dry weight of sample.

mg/kg wwt - milligrams per kilogram based on wet weight of sample.

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight of sample.

mg/L - milligrams per litre.

< - Less than.

D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



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Page: 1
Total # Pages: 2 (A - E)
Plus Appendix Pages
Finalized Date: 18-MAR-2019
Account: APN

CERTIFICATE VA19035760

This report is for 7 Rock samples submitted to our lab in Vancouver, BC, Canada on 7-FEB-2019.
 The following have access to data associated with this certificate:

ALSE VANCOUVER WEBTRIEVE HEATHER MCKENZIE	ALSEV DATASUBLET SOFTWARE DEVELOPMENT GROUP	JOANNE LEE
--	--	------------

SAMPLE PREPARATION	
ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LOG-22	Sample login - Rcd w/o BarCode
SND-01	Send samples to external laboratory
CRU-31	Fine crushing - 70% <2mm
SPL-21	Split sample - riffle splitter
PUL-31	Pulverize split to 85% <75 um
SPL-21X	Addnl Crush Split w No Analysis

ANALYTICAL PROCEDURES		
ALS CODE	DESCRIPTION	INSTRUMENT
S-GRA06	Sulfate Sulfur-carbonate leach	WST-SEQ
S-GRA06a	Sulfate Sulfur (HCl leachable)	WST-SEQ
S-CAL06	Sulfide Sulfur (calculated)	LECO
C-GAS05	Inorganic Carbon (CO2)	
ME-MS41	Ultra Trace Aqua Regia ICP-MS	
OA-VOL08mn	NP MEND 1991	
S-IR08	Total Sulphur (Leco)	LECO
OA-ELE07	Paste pH	

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



ALS Canada Ltd.
 2103 Dollarton Hwy
 North Vancouver BC V7H 0A7
 Phone: +1 (604) 984 0221 Fax: +1 (604) 984 0218
 www.alsglobal.com/geochemistry

To: ALS ENVIRONMENTAL
 100 - 8081 LOUGHEED HWY.
 BURNABY BC V5A 1W9

Page: 2 - A
 Total # Pages: 2 (A - E)
 Plus Appendix Pages
 Finalized Date: 18-MAR-2019
 Account: APN

CERTIFICATE OF ANALYSIS VA19035760

Sample Description	Method Analyte Units LOD	WEI-21 Recvd Wt. kg	OA-VOL08mn MPA tCaCO3/1Kt	OA-VOL08mn FIZZ RAT Unity	OA-VOL08mn NNP tCaCO3/1Kt	OA-VOL08mn NP tCaCO3/1Kt	OA-ELE07 pH Unity	OA-VOL08mn Ratio (N) Unity	S-IR08 S %	S-GRA06 S %	S-GRA06a S %	S-CAL06 S %	C-GAS05 C %	C-GAS05 CO2 %	ME-MS41 Ag ppm	ME-MS41 Al %
		0.02	0.3	1	1	1	0.1	0.01	0.01	0.01	0.01	0.01	0.05	0.2	0.01	0.01
VICEAG-GCM-33		13.96	0.9	1	2	3	7.4	3.20	0.03	<0.01	<0.01	0.03	<0.05	<0.2	0.09	1.14
VICEAG-GCM-34		14.64	0.6	1	2	3	7.6	4.80	0.02	<0.01	<0.01	0.02	<0.05	<0.2	0.11	1.36
VICEAG-GCM-35		19.04	0.3	1	12	12	9.2	38.40	0.01	0.01	<0.01	<0.01	<0.05	<0.2	0.01	1.67
VICEAG-GCM-36		6.92	0.6	1	12	13	9.1	20.80	0.02	<0.01	<0.01	0.02	<0.05	<0.2	0.05	2.30
VICEAG-GCM-37		9.24	0.3	1	8	8	9.1	25.60	0.01	0.01	<0.01	<0.01	<0.05	<0.2	0.02	1.74
VICEAG-GCM-38		10.86	0.3	1	6	6	8.9	19.20	0.01	<0.01	<0.01	0.01	<0.05	<0.2	0.04	1.06
VICEAG-GCM-39		13.00	2.5	1	4	6	7.9	2.40	0.08	0.02	<0.01	0.06	<0.05	<0.2	0.02	1.69

***** See Appendix Page for comments regarding this certificate *****



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Page: 2 - B
 Total # Pages: 2 (A - E)
 Plus Appendix Pages
 Finalized Date: 18-MAR-2019
 Account: APN

CERTIFICATE OF ANALYSIS VA19035760

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	
		As	Au	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cs	Cu	Fe	Ga
		ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm
		0.1	0.02	10	10	0.05	0.01	0.01	0.01	0.02	0.1	1	0.05	0.2	0.01	0.05
VICEAG-GCM-33		74.9	<0.02	<10	80	1.45	0.89	0.08	0.41	95.2	21.0	20	3.80	50.3	4.15	4.06
VICEAG-GCM-34		51.1	<0.02	<10	80	0.90	0.39	0.06	0.25	39.0	9.3	23	2.24	35.8	3.50	4.72
VICEAG-GCM-35		10.5	<0.02	<10	530	0.51	0.03	0.69	0.07	90.9	8.3	40	6.63	2.8	2.49	8.15
VICEAG-GCM-36		27.4	<0.02	<10	1090	0.43	0.06	1.47	0.19	67.8	13.8	54	4.28	47.3	3.05	8.38
VICEAG-GCM-37		14.6	<0.02	<10	500	0.50	0.04	0.56	0.07	79.9	8.8	46	4.83	3.8	2.38	8.24
VICEAG-GCM-38		56.0	0.02	<10	280	0.33	0.38	0.33	0.06	63.0	5.5	31	3.32	4.5	1.63	4.89
VICEAG-GCM-39		192.5	<0.02	<10	120	0.55	0.31	0.18	0.02	51.8	10.9	45	7.27	24.2	2.48	5.53

***** See Appendix Page for comments regarding this certificate *****



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 Total # Pages: 2 (A - E)
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CERTIFICATE OF ANALYSIS VA19035760

Sample Description	Method Analyte Units LOD	ME-MS41 Ge ppm 0.05	ME-MS41 Hf ppm 0.02	ME-MS41 Hg ppm 0.01	ME-MS41 In ppm 0.005	ME-MS41 K % 0.01	ME-MS41 La ppm 0.2	ME-MS41 Li ppm 0.1	ME-MS41 Mg % 0.01	ME-MS41 Mn ppm 5	ME-MS41 Mo ppm 0.05	ME-MS41 Na % 0.01	ME-MS41 Nb ppm 0.05	ME-MS41 Ni ppm 0.2	ME-MS41 P ppm 10	ME-MS41 Pb ppm 0.2
VICEAG-GCM-33		0.10	0.56	0.01	0.011	0.50	46.6	8.8	0.31	404	0.99	0.02	0.21	39.5	430	15.4
VICEAG-GCM-34		0.05	0.33	0.01	0.016	0.40	19.1	18.4	0.51	310	0.69	0.02	0.11	19.1	240	9.3
VICEAG-GCM-35		0.18	0.17	0.01	0.021	0.94	47.3	43.8	0.96	355	1.40	0.13	0.72	10.1	850	5.7
VICEAG-GCM-36		0.21	0.17	0.01	0.026	0.68	34.2	48.0	1.16	692	0.49	0.23	0.58	23.4	1210	5.1
VICEAG-GCM-37		0.15	0.15	0.01	0.019	0.84	39.9	47.8	0.87	311	0.40	0.15	0.83	17.1	680	5.6
VICEAG-GCM-38		0.10	0.14	0.01	0.013	0.54	32.2	32.2	0.49	254	1.02	0.08	0.86	11.2	430	6.3
VICEAG-GCM-39		0.08	0.11	<0.01	0.012	0.88	25.6	46.6	0.58	232	0.31	0.04	0.31	22.4	210	3.0

***** See Appendix Page for comments regarding this certificate *****



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Page: 2 - D
 Total # Pages: 2 (A - E)
 Plus Appendix Pages
 Finalized Date: 18-MAR-2019
 Account: APN

CERTIFICATE OF ANALYSIS VA19035760

Sample Description	Method Analyte Units LOD	ME-MS41 Rb ppm 0.1	ME-MS41 Re ppm 0.001	ME-MS41 S % 0.01	ME-MS41 Sb ppm 0.05	ME-MS41 Sc ppm 0.1	ME-MS41 Se ppm 0.2	ME-MS41 Sn ppm 0.2	ME-MS41 Sr ppm 0.2	ME-MS41 Ta ppm 0.01	ME-MS41 Te ppm 0.01	ME-MS41 Th ppm 0.2	ME-MS41 Ti % 0.005	ME-MS41 Tl ppm 0.02	ME-MS41 U ppm 0.05	ME-MS41 V ppm 1
VICEAG-GCM-33		39.9	<0.001	0.02	0.69	2.7	0.3	0.5	15.9	<0.01	0.03	18.6	0.040	0.42	2.85	25
VICEAG-GCM-34		29.2	<0.001	0.02	0.59	2.9	0.2	0.5	17.9	<0.01	0.02	9.3	0.029	0.25	1.82	21
VICEAG-GCM-35		92.4	0.001	<0.01	0.20	4.5	0.2	1.0	62.7	<0.01	<0.01	22.0	0.292	0.57	2.80	48
VICEAG-GCM-36		62.0	<0.001	0.02	0.41	8.0	0.4	0.8	243	0.01	0.01	14.7	0.313	0.42	1.86	70
VICEAG-GCM-37		84.7	<0.001	<0.01	0.46	4.6	0.3	0.9	61.3	<0.01	0.01	20.3	0.269	0.53	2.73	44
VICEAG-GCM-38		52.9	0.001	<0.01	0.85	3.2	<0.2	0.6	35.2	<0.01	0.04	15.7	0.162	0.33	1.78	26
VICEAG-GCM-39		76.3	<0.001	0.08	0.47	3.7	0.2	0.6	15.8	<0.01	0.03	12.5	0.133	0.52	1.11	33



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Page: 2 - E
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 Finalized Date: 18-MAR-2019
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CERTIFICATE OF ANALYSIS VA19035760

Sample Description	Method Analyte Units LOD	ME-MS41	ME-MS41	ME-MS41	ME-MS41
		W	Y	Zn	Zr
		ppm	ppm	ppm	ppm
		0.05	0.05	2	0.5
VICEAG-GCM-33		0.07	7.81	103	24.4
VICEAG-GCM-34		0.05	5.33	98	14.8
VICEAG-GCM-35		31.7	9.60	55	4.6
VICEAG-GCM-36		5.90	10.50	67	4.9
VICEAG-GCM-37		2.03	9.83	55	3.7
VICEAG-GCM-38		49.9	6.24	42	3.8
VICEAG-GCM-39		0.41	3.79	40	4.0



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Page: Appendix 1
Total # Appendix Pages: 1
Finalized Date: 18-MAR-2019
Account: APN

CERTIFICATE OF ANALYSIS VA19035760

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.

C-GAS05	CRU-31	LOG-22	ME-MS41
OA-ELE07	OA-VOL08mn	PUL-31	S-CAL06
S-GRA06	S-GRA06a	S-IR08	SND-01
SPL-21	SPL-21X	WEI-21	



ALS Environmental

/ (COC) / Analytical
Form

1 800 668 9878



L2235637-COFC

COC Number:

Page of

Report Format / Distribution					Select Service Level Below - Contact your AM to confirm all E&P TATs (surcharges may apply)													
Company: Stratagold Corporation		Select Report Format: Quality Control (QC) Report with Report			Regular [R]													
Contact: Hugh Coyle		Select Distribution:			4 day [P4-20%]			1 Business day [E1 - 100%]										
Phone: 604-682-5122		Email 1 or Fax: clinta@jdsmining.ca; mikeb@jdsmining.ca			3 day [P3-25%]			Same Day, Weekend or Statutory holiday [E2 - 200%]										
Company address below will appear on the final report		Email 2: chris@jdsmining.ca; hcoyle@vitgoldcorp.com			2 day [P2-50%]			Laboratory opening fees may apply										
Street: Suite 1000 - 1050 W. Pender St.		Email 3: kbabin@vitgoldcorp.com			Date and Time Required for all E&P TATs:													
City/Province: Vancouver, B.C.		Complete Results by:			For tests that can not be performed according to service level selected, you will be contacted.													
Postal Code: V6E 3S7		Criteria on Report - provide details below if not checked																
Invoice To: Same as Report To		Indicate Filtered (E), Preserved (P) or Filtered and Preserved (FP) below																
Copy of Invoice with Report		<input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX																
Company: Stratagold Corporation		<input checked="" type="checkbox"/> EC and pH by PCT (SHAKEFLASK) <input type="checkbox"/> Aqua Regia (CPMS) <input type="checkbox"/> Metals by CCMS & CVAFS (SHAKEFLASK) <input checked="" type="checkbox"/> Moisture content <input type="checkbox"/> Shakeflask - Sample Preparation <input type="checkbox"/> Sample Handling and Disposal Fee <input type="checkbox"/> Special Request: ALS Minerals Vancouver <input type="checkbox"/> Modified ABA <input type="checkbox"/> Shake Flask Extraction 3:1 water to solid ratio																
Contact: Accounts Payable		<input type="checkbox"/> SAMPLES ON HOLD <input type="checkbox"/> Sample is hazardous (please provide further detail) <input type="checkbox"/> NUMBER OF CONTAINERS																
Project Information		Oil and Gas Required Fields (client use)																
ALS Account # / Quote #: Q67596		APE/Cost Center:		PO#														
Job #: Geochemical Monitoring		Major/Minor Code:		Routing Code:														
PO / AFE: <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Rel. Supplier:		Lot: <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO														
LSD: <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		ALS Contact: Heather McKenzie		Sampler: Mike Blusson / Russell Noksana														
ALS Lab Work Order # (lab use only):																		
ALS Sample # (lab use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	EC and pH by PCT (SHAKEFLASK)	Aqua Regia (CPMS)	Metals by CCMS & CVAFS (SHAKEFLASK)	Moisture content	Shakeflask - Sample Preparation	Sample Handling and Disposal Fee	Special Request: ALS Minerals Vancouver	Modified ABA	Shake Flask Extraction 3:1 water to solid ratio	SAMPLES ON HOLD	Sample is hazardous (please provide further detail)	NUMBER OF CONTAINERS		
	VICEAG-GCM-33	25-Jan-19	16:40	Soil	R	R	R	R	R	R	R	R	R			1		
	VICEAG-GCM-34	25-Jan-19	16:50	Soil	R	R	R	R	R	R	R	R	R			1		
	VICEAG-GCM-35	21-Jan-19	10:00	Soil	R	R	R	R	R	R	R	R	R			1		
	VICEAG-GCM-36	21-Jan-19	10:15	Soil	R	R	R	R	R	R	R	R	R			1		
	VICEAG-GCM-37	21-Jan-19	10:30	Soil	R	R	R	R	R	R	R	R	R			1		
	VICEAG-GCM-38	21-Jan-19	10:45	Soil	R	R	R	R	R	R	R	R	R			1		
	VICEAG-GCM-39	21-Jan-19	11:00	Soil	R	R	R	R	R	R	R	R	R			1		
Drinking Water (DW) Samples ¹ (client use)		Special Instructions / Specify Criteria to add on report by clicking on the drop-down list below (electronic COC only)					SAMPLE CONDITION AS RECEIVED (lab use only)											
Are samples taken from a Regulated DW System?							Frozen <input type="checkbox"/> SIF Observations Yes <input type="checkbox"/> No <input type="checkbox"/> Ice Packs <input type="checkbox"/> Ice Cubes <input type="checkbox"/> Custody seal intact Yes <input type="checkbox"/> No <input type="checkbox"/> Cooling Initiated <input type="checkbox"/>											
Are samples for human consumption/ use?							INITIAL COOLER TEMPERATURES °C: _____ FINAL COOLER TEMPERATURES °C: 17.2											
SHIPMENT RELEASE (client use)					INITIAL SHIPMENT RECEPTION (lab use only)					FINAL SHIPMENT RECEPTION (lab use only)								
Released by: Mike Blusson		28-Jan-19		Time: 18:00	Received by:		Date:			Time:		Received by: CW		Date: Feb 21		Time: 2015		

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

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SEPT 2017 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.



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ATTN: Hugh Coyle
Suite 1000 - 1050 W. Pender St
Vancouver BC V6E 3S7

Date Received: 26-JUL-19
Report Date: 29-AUG-19 12:52 (MT)
Version: FINAL

Client Phone: 604-682-5122

Certificate of Analysis

Lab Work Order #: L2318194
Project P.O. #: NOT SUBMITTED
Job Reference: PLATINUM WRSA UNDERDRAIN
C of C Numbers: 20190720
Legal Site Desc:

Hilary Woods
Account Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample ID Description Sampled Date Sampled Time Client ID		L2318194-1 Soil 20-JUL-19 10:00 VICEAG-GCM-40	L2318194-2 Soil 20-JUL-19 10:00 VICEAG-GCM-41	L2318194-3 Soil 20-JUL-19 10:00 VICEAG-GCM-42	L2318194-4 Soil 20-JUL-19 10:00 VICEAG-GCM-43	L2318194-5 Soil 20-JUL-19 10:00 VICEAG-GCM-44
Grouping	Analyte					
SOIL						
Physical Tests	Moisture (%)	<0.25	<0.25	<0.25	<0.25	<0.25
Leachable Anions & Nutrients	Conductivity (uS/cm)	86.5	74.0	86.3	84.4	87.1
	pH (pH)	8.71	8.73	8.55	8.74	8.76
Total Metals	Aluminum (Al) (%)	1.96	1.56	1.87	1.87	1.99
	Antimony (Sb) (ppm)	1.75	2.19	2.15	2.44	1.44
	Arsenic (As) (ppm)	65.6	68.2	76.6	72.3	109.5
	Barium (Ba) (ppm)	160	150	230	270	310
	Beryllium (Be) (ppm)	0.87	0.77	0.84	0.85	0.87
	Bismuth (Bi) (ppm)	1.47	0.57	8.73	2.05	1.76
	Boron (B) (ppm)	<10	<10	<10	<10	<10
	Cadmium (Cd) (ppm)	0.05	0.10	0.07	0.07	0.07
	Calcium (Ca) (%)	0.86	0.72	0.67	1.14	0.84
	Cerium (Ce) (ppm)	57.5	58.6	61.1	71.7	64.3
	Cesium (Cs) (ppm)	8.82	7.41	8.87	9.32	8.71
	Chromium (Cr) (ppm)	39	36	41	40	48
	Cobalt (Co) (ppm)	11.5	9.8	11.2	12.0	11.8
	Copper (Cu) (ppm)	34.1	21.0	23.8	22.8	20.8
	Gallium (Ga) (ppm)	7.88	7.09	7.96	8.55	8.98
	Germanium (Ge) (ppm)	0.09	0.09	0.11	0.11	0.12
	Gold (Au) (ppm)	0.44	0.05	0.11	0.03	<0.02
	Hafnium (Hf) (ppm)	0.11	0.09	0.12	0.14	0.13
	Indium (In) (ppm)	0.024	0.022	0.021	0.019	0.026
	Iron (Fe) (%)	2.71	2.55	2.84	2.87	2.88
	Lanthanum (La) (ppm)	29.7	29.9	31.8	37.3	33.2
	Lead (Pb) (ppm)	8.9	10.8	10.2	8.1	7.5
	Lithium (Li) (ppm)	36.4	33.9	40.9	43.1	44.3
	Magnesium (Mg) (%)	0.82	0.61	0.82	0.84	0.93
	Manganese (Mn) (ppm)	266	212	247	254	263
	Mercury (Hg) (ppm)	0.01	0.01	0.01	0.01	0.01
	Molybdenum (Mo) (ppm)	1.34	1.76	1.42	1.46	1.26
Nickel (Ni) (ppm)	27.5	24.6	27.6	28.9	27.9	
Niobium (Nb) (ppm)	0.23	0.26	0.33	0.34	0.35	
Phosphorus (P) (ppm)	370	400	420	500	490	
Potassium (K) (%)	0.81	0.65	0.83	0.81	0.89	
Rhenium (Re) (ppm)	<0.001	<0.001	<0.001	<0.001	<0.001	
Rubidium (Rb) (ppm)	75.8	62.2	78.7	80.9	83.7	
Scandium (Sc) (ppm)	6.0	5.8	6.4	7.0	7.6	

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

		Sample ID	L2318194-1	L2318194-2	L2318194-3	L2318194-4	L2318194-5
		Description	Soil	Soil	Soil	Soil	Soil
		Sampled Date	20-JUL-19	20-JUL-19	20-JUL-19	20-JUL-19	20-JUL-19
		Sampled Time	10:00	10:00	10:00	10:00	10:00
		Client ID	VICEAG-GCM-40	VICEAG-GCM-41	VICEAG-GCM-42	VICEAG-GCM-43	VICEAG-GCM-44
Grouping	Analyte						
SOIL							
Total Metals	Selenium (Se) (ppm)		0.3	0.4	0.3	0.3	0.3
	Silver (Ag) (ppm)		0.24	0.05	0.17	0.04	0.10
	Sodium (Na) (%)		0.04	0.03	0.04	0.04	0.06
	Strontium (Sr) (ppm)		38.1	29.7	31.3	48.4	42.0
	Sulfur (S) (%)		0.04	0.03	0.04	0.05	0.03
	Tantalum (Ta) (ppm)		<0.01	<0.01	<0.01	<0.01	<0.01
	Tellurium (Te) (ppm)		0.11	0.03	0.68	0.11	0.09
	Thallium (Tl) (ppm)		0.54	0.44	0.54	0.54	0.55
	Thorium (Th) (ppm)		12.8	13.0	13.3	15.6	15.0
	Tin (Sn) (ppm)		0.9	0.8	0.9	0.9	1.2
	Titanium (Ti) (%)		0.121	0.106	0.145	0.146	0.163
	Tungsten (W) (ppm)		0.49	1.65	4.04	8.10	3.22
	Uranium (U) (ppm)		1.64	2.03	2.17	2.61	2.51
	Vanadium (V) (ppm)		36	34	39	38	42
	Yttrium (Y) (ppm)		8.51	8.35	9.01	11.05	10.40
	Zinc (Zn) (ppm)		45	43	48	42	47
	Zirconium (Zr) (ppm)		3.7	3.1	3.7	4.0	3.6
Leachable Metals	Aluminum (Al)-Leachable (mg/L)		0.215	0.248	0.205	0.253	0.313
	Antimony (Sb)-Leachable (mg/L)		0.00156	0.00138	0.00207	0.00318	0.00183
	Arsenic (As)-Leachable (mg/L)		0.0423	0.0486	0.0299	0.0347	0.0447
	Barium (Ba)-Leachable (mg/L)		<0.0010	<0.0010	0.0011	0.0011	0.0016
	Beryllium (Be)-Leachable (mg/L)		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
	Bismuth (Bi)-Leachable (mg/L)		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
	Boron (B)-Leachable (mg/L)		<0.010	<0.010	<0.010	<0.010	<0.010
	Cadmium (Cd)-Leachable (mg/L)		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
	Calcium (Ca)-Leachable (mg/L)		12.6	10.6	12.4	12.0	10.6
	Chromium (Cr)-Leachable (mg/L)		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
	Cobalt (Co)-Leachable (mg/L)		0.00024	0.00040	0.00024	<0.00010	<0.00010
	Copper (Cu)-Leachable (mg/L)		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	Iron (Fe)-Leachable (mg/L)		<0.030	<0.030	<0.030	<0.030	<0.030
	Lead (Pb)-Leachable (mg/L)		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Lithium (Li)-Leachable (mg/L)		0.0105	0.0115	0.0104	0.0101	0.0084
	Magnesium (Mg)-Leachable (mg/L)		0.922	0.568	0.819	0.743	0.728
	Manganese (Mn)-Leachable (mg/L)		0.00157	0.00099	0.00134	0.00115	0.00100
	Mercury (Hg)-Leachable (mg/L)		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
	Molybdenum (Mo)-Leachable (mg/L)		0.00915	0.00966	0.00907	0.00858	0.00622
	Nickel (Ni)-Leachable (mg/L)		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

ALS ENVIRONMENTAL ANALYTICAL REPORT

		Sample ID	L2318194-1	L2318194-2	L2318194-3	L2318194-4	L2318194-5
		Description	Soil	Soil	Soil	Soil	Soil
		Sampled Date	20-JUL-19	20-JUL-19	20-JUL-19	20-JUL-19	20-JUL-19
		Sampled Time	10:00	10:00	10:00	10:00	10:00
		Client ID	VICEAG-GCM-40	VICEAG-GCM-41	VICEAG-GCM-42	VICEAG-GCM-43	VICEAG-GCM-44
Grouping	Analyte						
SOIL							
Leachable Metals	Phosphorus (P)-Leachable (mg/L)		<0.30	<0.30	<0.30	<0.30	<0.30
	Potassium (K)-Leachable (mg/L)		4.75	4.15	3.87	3.96	3.71
	Selenium (Se)-Leachable (mg/L)		0.00122	0.00084	0.00131	0.00153	0.00133
	Silicon (Si)-Leachable (mg/L)		3.53	3.09	3.11	2.99	2.94
	Silver (Ag)-Leachable (mg/L)		<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
	Sodium (Na)-Leachable (mg/L)		1.98	1.70	1.85	1.70	1.74
	Strontium (Sr)-Leachable (mg/L)		0.0439	0.0380	0.0457	0.0436	0.0403
	Thallium (Tl)-Leachable (mg/L)		<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
	Tin (Sn)-Leachable (mg/L)		<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
	Titanium (Ti)-Leachable (mg/L)		<0.010	<0.010	<0.010	<0.010	<0.010
	Uranium (U)-Leachable (mg/L)		0.00128	0.00138	0.00140	0.00144	0.00126
	Vanadium (V)-Leachable (mg/L)		0.0011	<0.0010	<0.0010	<0.0010	0.0014
	Zinc (Zn)-Leachable (mg/L)		<0.010	<0.010	<0.010	<0.010	<0.010

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Matrix Spike	Calcium (Ca)-Leachable	MS-B	L2318194-1, -2, -3, -4, -5
Matrix Spike	Magnesium (Mg)-Leachable	MS-B	L2318194-1, -2, -3, -4, -5
Matrix Spike	Silicon (Si)-Leachable	MS-B	L2318194-1, -2, -3, -4, -5

Qualifiers for Individual Parameters Listed:

Qualifier	Description
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
EC-SHKFLSK-PCT-VA	Soil	EC by PCT (SHAKEFLASK)	BC MINISTRY OF ENERGY AND MINES
<p>This analysis is based upon the extraction procedure outlined in "Prediction Manual for Drainage Chemistry from Sulphidic Geologic Materials (MEND Report 1.20.1)" (William A. Price, 2009). In summary, a sample is extracted with deionized water at a 3:1 liquid to solids ratio for 24 hours. The extract is then allowed to settle and subsequently filtered through a 0.45 micron membrane filter and analysed using procedures adapted from APHA Method 2510 "Conductivity".</p>			
HG-SHKFLSK-CVAFS-VA	Soil	Mercury by CVAAS (SHAKEFLASK)	BC MINISTRY OF ENERGY AND MINES
<p>This analysis is based upon the extraction procedure outlined in "Prediction Manual for Drainage Chemistry from Sulphidic Geologic Materials (MEND Report 1.20.1)" (William A. Price, 2009). In summary, a sample is extracted with deionized water at a 3:1 liquid to solids ratio for 24 hours. The extract is then allowed to settle and subsequently filtered through a 0.45 micron membrane filter and analysed using atomic absorption spectrophotometry (EPA Method 245.7). The Shakeflask extraction is an empirical procedure with pre-defined characteristics. Recovery of some elements (Ag, Bi, Hg, and Sn) by this method can be variable due to the neutral pH of the extraction fluid. LCS QC sample DQOs for these elements have been established at 50-130% for this reason</p>			
ME-MS41-AX	Soil	Aqua Regia ICPMS	Aqua Regia ICPMS
<p>A prepared sample (0.50 g) is digested with aqua regia in a graphite heating block. After cooling, the resulting solution is diluted to with deionized water, mixed and analyzed by inductively coupled plasma-atomic emission spectrometry. Following this analysis, the results are reviewed for high concentrations of bismuth, mercury, molybdenum, silver and tungsten and diluted accordingly. Samples are then analysed by ICP-MS for the remaining suite of elements. The analytical results are corrected for inter-element spectral interferences.</p>			
MET-SHKFLSK-MS-VA	Soil	Metals by ICPMS (SHAKEFLASK)	BC MINISTRY OF ENERGY AND MINES
<p>This analysis is based upon the extraction procedure outlined in "Prediction Manual for Drainage Chemistry from Sulphidic Geologic Materials (MEND Report 1.20.1)" (William A. Price, 2009). In summary, a sample is extracted with deionized water at a 3:1 liquid to solids ratio for 24 hours. The extract is then allowed to settle and subsequently filtered through a 0.45 micron membrane filter and analysed using inductively coupled plasma - mass spectrophotometry (EPA Method 6020A). The Shakeflask extraction is an empirical procedure with pre-defined characteristics. Recovery of some elements (Ag, Bi, Hg, and Sn) by this method can be variable due to the neutral pH of the extraction fluid. LCS QC sample DQOs for these elements have been established at 50-130% for this reason.</p>			
MOISTURE-VA	Soil	Moisture content	CCME PHC in Soil - Tier 1 (mod)
<p>This analysis is carried out gravimetrically by drying the sample at 105 C for a minimum of two hours.</p>			
PH-SHKFLSK-PCT-VA	Soil	pH by PCT (SHAKEFLASK)	BC MINISTRY OF ENERGY AND MINES
<p>This analysis is based upon the extraction procedure outlined in "Guidelines and Recommended Methods for the Prediction of Metal Leaching and Acid Rock Drainage at Minesites in British Columbia" BC Ministry of Energy and Mines, (Dr. William A. Price, 1997). In summary, the sample is extracted at a 3:1 liquid to solids ratio for 24 hours using deionized water. The extract is then allowed to settle and subsequently analysed using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode.</p>			

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
AX	ALS MINERALS - VANCOUVER, B.C., CANADA
VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, CANADA

Chain of Custody Numbers:

20190720

Reference Information

GLOSSARY OF REPORT TERMS

Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

mg/kg - milligrams per kilogram based on dry weight of sample.

mg/kg wwt - milligrams per kilogram based on wet weight of sample.

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight of sample.

mg/L - milligrams per litre.

< - Less than.

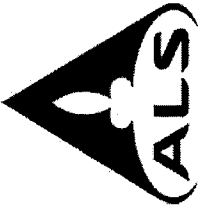
D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



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 100 - 8081 LOUGHEED HWY.
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Page: 1
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 Plus Appendix Pages
 Finalized Date: 23-AUG-2019
 This copy reported on
 28-AUG-2019
 Account: APN

CERTIFICATE VA19188254

Project: L2318194

This report is for 5 Other samples submitted to our lab in Vancouver, BC, Canada on 31-JUL-2019.

The following have access to data associated with this certificate:

ALSE VANCOUVER WEBTIEVE
 SOFTWARE DEVELOPMENT GROUP

ALSEV DATASUBLET
 HILARY WOODS

JOANNE LEE

SAMPLE PREPARATION


ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
DISP-01	Disposal of all sample fractions
SND-01	Send samples to external laboratory
LOG-22	Sample login - Rcd w/o BarCode
CRU-31	Fine crushing - 70% <2mm
SPL-21	Split sample - riffle splitter
PUL-31	Pulverize split to 85% <75 um
SPL-21X	Addl Crush Split w No Analysis

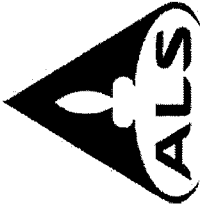
ANALYTICAL PROCEDURES

ALS CODE	DESCRIPTION	
OA-ELE07	Paste pH	
S-GRA06	Sulfate Sulfur-carbonate leach	WST-SEQ
S-GRA06a	Sulfate Sulfur (HCl leachable)	WST-SEQ
S-CAL06	Sulfide Sulfur (calculated)	LECO
C-GAS05	Inorganic Carbon (CO2)	
ME-MS41	Ultra Trace Aqua Regia ICP-MS	
OA-VOL08mn	NP MEND 1991	
S-IR08	Total Sulphur (IR Spectroscopy)	LECO

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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Project: L2318194

CERTIFICATE OF ANALYSIS VAI19188254

Method Analyte Units LOD	WEI-21 Recvd Wt. kg	OA-VOL08mn MPA tCaCO3/1Kt	OA-VOL08mn FIZZ RAT Unity	OA-VOL08mn NNP tCaCO3/1Kt	OA-VOL08mn NP tCaCO3/1Kt	OA-ELE07 pH Unity	OA-VOL08mn Ratio (N Unity)	S-IR08 S %	S-GRA06 S %	S-GRA06a S %	S-CAL06 S %	C-GAS05 C %	C-GAS05 CO2 %	ME-MS41 Ag ppm	ME-MS41 Al %
L2318194-1 VICEAG-GCM-40	14.40	0.9	1	17	18	8.4	19.20	0.03	0.01	0.02	0.02	0.18	0.7	0.24	1.96
L2318194-2 VICEAG-GCM-41	13.64	0.9	1	16	17	8.5	18.13	0.03	0.01	0.01	0.02	0.15	0.6	0.05	1.56
L2318194-3 VICEAG-GCM-42	14.26	0.9	1	14	15	8.4	16.00	0.03	0.01	0.01	0.02	0.12	0.4	0.17	1.87
L2318194-4 VICEAG-GCM-43	15.88	1.3	2	26	27	8.4	21.60	0.04	<0.01	0.01	0.04	0.25	0.9	0.04	1.87
L2318194-5 VICEAG-GCM-44	16.74	0.9	1	17	18	8.5	19.20	0.03	<0.01	0.01	0.03	0.15	0.6	0.10	1.99

Project: L2318194

CERTIFICATE OF ANALYSIS VAI9188254

Method Analyte Units LOD	ME-MS41 As ppm	ME-MS41 Au ppm	ME-MS41 B ppm	ME-MS41 Ba ppm	ME-MS41 Be ppm	ME-MS41 Bi ppm	ME-MS41 Ca %	ME-MS41 Cd ppm	ME-MS41 Ce ppm	ME-MS41 Co ppm	ME-MS41 Cr ppm	ME-MS41 Cs ppm	ME-MS41 Cu ppm	ME-MS41 Fe %	ME-MS41 Ga ppm
L2318194-1 VICEAG-GCM-40	65.6	0.44	<10	160	0.87	1.47	0.86	0.05	57.5	11.5	39	8.82	34.1	2.71	7.88
L2318194-2 VICEAG-GCM-41	68.2	0.06	<10	150	0.77	0.57	0.72	0.10	58.6	9.8	36	7.41	21.0	2.55	7.09
L2318194-3 VICEAG-GCM-42	76.6	0.11	<10	230	0.84	8.73	0.67	0.07	61.1	11.2	41	8.87	23.8	2.84	7.96
L2318194-4 VICEAG-GCM-43	72.3	0.03	<10	270	0.85	2.05	1.14	0.07	71.7	12.0	40	9.32	22.8	2.87	8.55
L2318194-5 VICEAG-GCM-44	109.5	<0.02	<10	310	0.87	1.76	0.84	0.07	64.3	11.8	48	8.71	20.8	2.88	8.98

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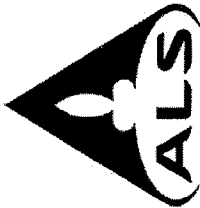
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Method Analyte Units	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41	ME-MS41
Sample Description	Ge ppm	Hf ppm	Hg ppm	In ppm	K %	La ppm	Li ppm	Mg %	Mn ppm	Mo ppm	Na %	Nb ppm	Ni ppm	P ppm	Pb ppm	As ppm	Br ppm	Ca ppm
LOD	0.05	0.02	0.01	0.005	0.01	0.2	0.1	0.01	5	0.05	0.01	0.05	0.2	1.0	0.2			
L2318194-1 VICEAG-GCM-40	0.09	0.11	0.01	0.024	0.81	29.7	36.4	0.82	266	1.34	0.04	0.23	27.5	370	8.9			
L2318194-2 VICEAG-GCM-41	0.09	0.09	0.01	0.022	0.65	29.9	33.9	0.61	212	1.76	0.03	0.26	24.6	400	10.8			
L2318194-3 VICEAG-GCM-42	0.11	0.12	0.01	0.021	0.83	31.8	40.9	0.82	247	1.42	0.04	0.33	27.6	420	10.2			
L2318194-4 VICEAG-GCM-43	0.11	0.14	0.01	0.019	0.81	37.3	43.1	0.84	254	1.46	0.04	0.34	28.9	500	8.1			
L2318194-5 VICEAG-GCM-44	0.12	0.13	0.01	0.026	0.89	33.2	44.3	0.93	263	1.26	0.06	0.35	27.9	490	7.5			



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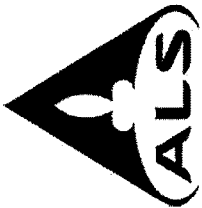
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CERTIFICATE OF ANALYSIS VAI9188254

Method Analyte Units LOD	ME-MS41 Rb ppm 0.1	ME-MS41 Re ppm 0.001	ME-MS41 S % 0.01	ME-MS41 Sb ppm 0.05	ME-MS41 Sc ppm 0.1	ME-MS41 Se ppm 0.2	ME-MS41 Sn ppm 0.2	ME-MS41 Sr ppm 0.2	ME-MS41 Ta ppm 0.01	ME-MS41 Te ppm 0.01	ME-MS41 Th ppm 0.2	ME-MS41 Ti % 0.005	ME-MS41 Tl ppm 0.02	ME-MS41 U ppm 0.05	ME-MS41 V ppm 1
L2318194-1 VICEAG-GCM-40	75.8	<0.001	0.04	1.75	6.0	0.3	0.9	38.1	<0.01	0.11	12.8	0.121	0.54	1.64	36
L2318194-2 VICEAG-GCM-41	62.2	<0.001	0.03	2.19	5.8	0.4	0.8	29.7	<0.01	0.03	13.0	0.106	0.44	2.03	34
L2318194-3 VICEAG-GCM-42	78.7	<0.001	0.04	2.15	6.4	0.3	0.9	31.3	<0.01	0.68	13.3	0.145	0.54	2.17	39
L2318194-4 VICEAG-GCM-43	80.9	<0.001	0.05	2.44	7.0	0.3	0.9	48.4	<0.01	0.11	15.6	0.146	0.54	2.61	38
L2318194-5 VICEAG-GCM-44	83.7	<0.001	0.03	1.44	7.6	0.3	1.2	42.0	<0.01	0.09	15.0	0.163	0.55	2.51	42



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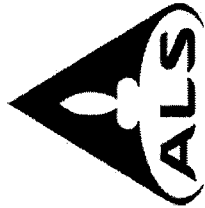
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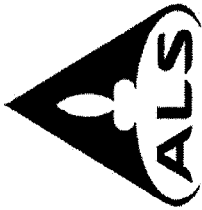
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CERTIFICATE OF ANALYSIS VAI9188254



Method Analyte Units LOD	ME-MS41 W ppm 0.05	ME-MS41 Y ppm 0.05	ME-MS41 Zn ppm 2	ME-MS41 Zr ppm 0.5
L2318194-1 VICEAG-GCM-40	0.49	8.51	45	3.7
L2318194-2 VICEAG-GCM-41	1.65	8.35	43	3.1
L2318194-3 VICEAG-GCM-42	4.04	9.01	48	3.7
L2318194-4 VICEAG-GCM-43	8.10	11.05	42	4.0
L2318194-5 VICEAG-GCM-44	3.22	10.40	47	3.6



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CERTIFICATE OF ANALYSIS VAI9188254

CERTIFICATE COMMENTS

ANALYTICAL COMMENTS

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

Applies to Method:

LABORATORY ADDRESSES

Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.

C-GAS05	CRU-31	DISP-01	LOG-22
ME-MS41	OA-ELE07	OA-VOL08mn	PUL-31
S-CAL06	S-GRA06	S-GRA06a	S-IR08
SND-01	SPL-21	SPL-21X	WEI-21

Applies to Method:



STRATAGOLD CORPORATION
ATTN: Hugh Coyle
Suite 1000 - 1050 W. Pender St
Vancouver BC V6E 3S7

Date Received: 27-DEC-19
Report Date: 17-JAN-20 17:22 (MT)
Version: FINAL

Client Phone: 604-682-5122

Certificate of Analysis

Lab Work Order #: L2400667
Project P.O. #: NOT SUBMITTED
Job Reference: HLF1B CONSTRUCTION MATERIAL
C of C Numbers: 20191218c
Legal Site Desc:

Hilary Woods
Account Manager

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ALS ENVIRONMENTAL ANALYTICAL REPORT

		Sample ID	L2400667-1	L2400667-2		
		Description	Soil	Soil		
		Sampled Date	15-DEC-19	15-DEC-19		
		Sampled Time	10:00	10:00		
		Client ID	VICEAG-GCM-47	VICEAG-GCM-48		
Grouping	Analyte					
SOIL						
Physical Tests	Moisture (%)		<0.25	<0.25		
Leachable Anions & Nutrients	Conductivity (uS/cm)		4.0	9.7		
	pH (pH)		5.58	5.04		
Leachable Metals	Aluminum (Al)-Leachable (mg/L)		0.0541	0.139		
	Antimony (Sb)-Leachable (mg/L)		0.00038	0.00048		
	Arsenic (As)-Leachable (mg/L)		0.0027	0.0016		
	Barium (Ba)-Leachable (mg/L)		0.0018	0.0155		
	Beryllium (Be)-Leachable (mg/L)		<0.00050	<0.00050		
	Bismuth (Bi)-Leachable (mg/L)		<0.00050	<0.00050		
	Boron (B)-Leachable (mg/L)		<0.010	<0.010		
	Cadmium (Cd)-Leachable (mg/L)		<0.000050	<0.000050		
	Calcium (Ca)-Leachable (mg/L)		<0.10	0.22		
	Chromium (Cr)-Leachable (mg/L)		<0.00050	<0.00050		
	Cobalt (Co)-Leachable (mg/L)		<0.00010	0.00011		
	Copper (Cu)-Leachable (mg/L)		<0.0010	<0.0010		
	Iron (Fe)-Leachable (mg/L)		<0.030	0.093		
	Lead (Pb)-Leachable (mg/L)		<0.00010	<0.00010		
	Lithium (Li)-Leachable (mg/L)		<0.0050	<0.0050		
	Magnesium (Mg)-Leachable (mg/L)		<0.050	0.104		
	Manganese (Mn)-Leachable (mg/L)		0.00232	0.00703		
	Mercury (Hg)-Leachable (mg/L)		<0.000050	<0.000050		
	Molybdenum (Mo)-Leachable (mg/L)		0.00062	0.00029		
	Nickel (Ni)-Leachable (mg/L)		<0.00050	<0.00050		
	Phosphorus (P)-Leachable (mg/L)		<0.30	<0.30		
	Potassium (K)-Leachable (mg/L)		0.873	1.01		
	Selenium (Se)-Leachable (mg/L)		<0.00050	<0.00050		
	Silicon (Si)-Leachable (mg/L)		1.91	3.67		
	Silver (Ag)-Leachable (mg/L)		<0.000050	<0.000050		
	Sodium (Na)-Leachable (mg/L)		0.189	0.283		
	Strontium (Sr)-Leachable (mg/L)		<0.00050	0.00271		
	Thallium (Tl)-Leachable (mg/L)		<0.00010	<0.00010		
	Tin (Sn)-Leachable (mg/L)		<0.00050	<0.00050		
	Titanium (Ti)-Leachable (mg/L)		<0.010	<0.010		
	Uranium (U)-Leachable (mg/L)		<0.000010	<0.000010		
	Vanadium (V)-Leachable (mg/L)		<0.0010	<0.0010		
	Zinc (Zn)-Leachable (mg/L)		<0.010	<0.010		

* Please refer to the Reference Information section for an explanation of any qualifiers detected.

Reference Information

QC Samples with Qualifiers & Comments:

QC Type Description	Parameter	Qualifier	Applies to Sample Number(s)
Method Blank	Conductivity	B	L2400667-1, -2
Matrix Spike	Aluminum (Al)-Leachable	MS-B	L2400667-1, -2
Matrix Spike	Calcium (Ca)-Leachable	MS-B	L2400667-1, -2
Matrix Spike	Sodium (Na)-Leachable	MS-B	L2400667-1, -2
Matrix Spike	Strontium (Sr)-Leachable	MS-B	L2400667-1, -2

Qualifiers for Individual Parameters Listed:

Qualifier	Description
B	Method Blank exceeds ALS DQO. Associated sample results which are < Limit of Reporting or > 5 times blank level are considered reliable.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**
EC-SHKFLSK-PCT-VA	Soil	EC by PCT (SHAKEFLASK)	BC MINISTRY OF ENERGY AND MINES
<p>This analysis is based upon the extraction procedure outlined in "Prediction Manual for Drainage Chemistry from Sulphidic Geologic Materials (MEND Report 1.20.1)" (William A. Price, 2009). In summary, a sample is extracted with deionized water at a 3:1 liquid to solids ratio for 24 hours. The extract is then allowed to settle and subsequently filtered through a 0.45 micron membrane filter and analysed using procedures adapted from APHA Method 2510 "Conductivity".</p>			
HG-SHKFLSK-CVAFS-VA	Soil	Mercury by CVAAS (SHAKEFLASK)	BC MINISTRY OF ENERGY AND MINES
<p>This analysis is based upon the extraction procedure outlined in "Prediction Manual for Drainage Chemistry from Sulphidic Geologic Materials (MEND Report 1.20.1)" (William A. Price, 2009). In summary, a sample is extracted with deionized water at a 3:1 liquid to solids ratio for 24 hours. The extract is then allowed to settle and subsequently filtered through a 0.45 micron membrane filter and analysed using atomic absorption spectrophotometry (EPA Method 245.7). The Shakeflask extraction is an empirical procedure with pre-defined characteristics. Recovery of some elements (Ag, Bi, Hg, and Sn) by this method can be variable due to the neutral pH of the extraction fluid. LCS QC sample DQOs for these elements have been established at 50-130% for this reason</p>			
MET-SHKFLSK-MS-VA	Soil	Metals by ICPMS (SHAKEFLASK)	BC MINISTRY OF ENERGY AND MINES
<p>This analysis is based upon the extraction procedure outlined in "Prediction Manual for Drainage Chemistry from Sulphidic Geologic Materials (MEND Report 1.20.1)" (William A. Price, 2009). In summary, a sample is extracted with deionized water at a 3:1 liquid to solids ratio for 24 hours. The extract is then allowed to settle and subsequently filtered through a 0.45 micron membrane filter and analysed using inductively coupled plasma - mass spectrophotometry (EPA Method 6020A). The Shakeflask extraction is an empirical procedure with pre-defined characteristics. Recovery of some elements (Ag, Bi, Hg, and Sn) by this method can be variable due to the neutral pH of the extraction fluid. LCS QC sample DQOs for these elements have been established at 50-130% for this reason.</p>			
MOISTURE-VA	Soil	Moisture content	CCME PHC in Soil - Tier 1 (mod)
<p>This analysis is carried out gravimetrically by drying the sample at 105 C for a minimum of two hours.</p>			
PH-SHKFLSK-PCT-VA	Soil	pH by PCT (SHAKEFLASK)	BC MINISTRY OF ENERGY AND MINES
<p>This analysis is based upon the extraction procedure outlined in "Guidelines and Recommended Methods for the Prediction of Metal Leaching and Acid Rock Drainage at Minesites in British Columbia" BC Ministry of Energy and Mines, (Dr. William A. Price, 1997). In summary, the sample is extracted at a 3:1 liquid to solids ratio for 24 hours using deionized water. The extract is then allowed to settle and subsequently analysed using procedures adapted from APHA Method 4500-H "pH Value". The pH is determined in the laboratory using a pH electrode.</p>			

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
VA	ALS ENVIRONMENTAL - VANCOUVER, BRITISH COLUMBIA, CANADA

Chain of Custody Numbers:

20191218c

Reference Information

GLOSSARY OF REPORT TERMS

Surrogate - A compound that is similar in behaviour to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

mg/kg - milligrams per kilogram based on dry weight of sample.

mg/kg wwt - milligrams per kilogram based on wet weight of sample.

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight of sample.

mg/L - milligrams per litre.

< - Less than.

D.L. - The reported Detection Limit, also known as the Limit of Reporting (LOR).

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



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To: **ALS ENVIRONMENTAL**
100 - 8081 LOUGHEED HWY.
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Page: 1
Total # Pages: 2 (A - E)
Plus Appendix Pages
Finalized Date: 17-JAN-2020
Account: APN

CERTIFICATE WH19322546

Project: L2400667

This report is for 2 Rock samples submitted to our lab in Whitehorse, YT, Canada on 19-DEC-2019.

The following have access to data associated with this certificate:

ALSE VANCOUVER WEBTRIEVE DEAN WATT	ALSEV DATASUBLET HILARY WOODS	SOFTWARE DEVELOPMENT GROUP
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SAMPLE PREPARATION	
ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LOG-22	Sample login - Rcd w/o BarCode
CRU-QC	Crushing QC Test
CRU-31	Fine crushing - 70% <2mm
PUL-QC	Pulverizing QC Test
SPL-21	Split sample - riffle splitter
PUL-31	Pulverize up to 250g 85% <75 um
SPL-21X	Addnl Crush Split w No Analysis
SND-01	Send samples to external laboratory

ANALYTICAL PROCEDURES		
ALS CODE	DESCRIPTION	
OA-VOL08mn	NP MEND 1991	
S-IR08	Total Sulphur (IR Spectroscopy)	LECO
OA-ELE07	Paste pH	
S-GRA06	Sulfate Sulfur-carbonate leach	WST-SEQ
S-GRA06a	Sulfate Sulfur (HCl leachable)	WST-SEQ
S-CAL06	Sufide Sulfur (calculated)	LECO
C-GAS05	Inorganic Carbon (CO2)	
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 WH19322546

Sample Description	Method	WEI-21 Recvd Wt.	ME-MS41 Ag	ME-MS41 Al	ME-MS41 As	ME-MS41 Au	ME-MS41 B	ME-MS41 Ba	ME-MS41 Be	ME-MS41 Bi	ME-MS41 Ca	ME-MS41 Cd	ME-MS41 Ce	ME-MS41 Co	ME-MS41 Cr	ME-MS41 Cs
	Analyte	kg	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
	Units															
	LOD	0.02	0.01	0.01	0.1	0.02	10	10	0.05	0.01	0.01	0.01	0.02	0.1	1	0.05
L2400667-1 VICEAG-GCM-47		11.11	0.01	0.28	38.8	<0.02	<10	90	0.14	0.13	0.02	0.02	16.55	0.6	9	0.42
L2400667-2 VICEAG-GCM-48		10.71	0.13	0.31	40.1	<0.02	<10	110	0.12	0.13	0.02	0.02	15.20	0.8	10	0.48



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CERTIFICATE OF ANALYSIS	WH19322546
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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			
					Cu	Fe	Ga	Ge	Hf	Hg	In	K	La	Li	Mg	Mn	Mo	Na	Nb
					ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm
					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	0.05
L2400667-1 VICEAG-GCM-47					7.6	0.42	0.84	<0.05	0.03	0.04	<0.005	0.09	8.4	1.7	0.02	32	1.96	0.01	<0.05
L2400667-2 VICEAG-GCM-48					14.6	0.61	0.94	<0.05	0.04	0.02	<0.005	0.08	7.5	2.0	0.03	36	1.15	0.01	<0.05

***** See Appendix Page for comments regarding this certificate *****



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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				
					Ni	P	Pb	Rb	Re	S	Sb	Sc	Se	Sn	Sr	Ta	Te	Th	Ti	
					ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%
					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	0.005	
L2400667-1 VICEAG-GCM-47					1.9	100	2.2	5.4	<0.001	0.02	0.92	0.7	<0.2	<0.2	31.9	<0.01	0.01	3.2	<0.005	
L2400667-2 VICEAG-GCM-48					2.6	110	2.0	5.3	0.001	0.02	1.00	0.9	<0.2	<0.2	37.9	<0.01	0.02	2.9	0.006	

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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	OA-VOL08mn	OA-VOL08mn	OA-VOL08mn	OA-VOL08mn	OA-ELE07	OA-VOL08mn	S-IR08	S-GRA06
					Tl	U	V	W	Y	Zn	Zr	MPA	FIZZ RAT	NNP	NP	pH	Ratio (N)	S	S	
					ppm	ppm	ppm	ppm	ppm	ppm	ppm	tCaCO3/1Kt	Unity	tCaCO3/1Kt	tCaCO3/1Kt	Unity	Unity	%	%	
					0.02	0.05	1	0.05	0.05	2	0.5	0.3	1	1	1	0.1	0.01	0.01	0.01	
L2400667-1 VICEAG-GCM-47					0.04	0.26	3	33.8	1.74	4	1.3	0.3	1	1	1	7.0	3.20	0.01	<0.01	
L2400667-2 VICEAG-GCM-48					0.05	0.22	5	48.4	1.43	6	1.6	0.3	1	1	1	6.6	3.20	0.01	<0.01	



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CERTIFICATE OF ANALYSIS WH19322546

Sample Description	Method Analyte Units LOD	S-GRA06a S %	S-CAL06 S %	C-GAS05 C %	C-GAS05 CO2 %
L2400667-1 VICEAG-GCM-47		<0.01	0.01	<0.05	<0.2
L2400667-2 VICEAG-GCM-48		<0.01	0.01	<0.05	<0.2



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CERTIFICATE OF ANALYSIS WH19322546

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 Whitehorse located at 78 Mt. Sima Rd, Whitehorse, YT, Canada.
 CRU-31 CRU-QC LOG-22 PUL-31
 PUL-QC SND-01 SPL-21 SPL-21X
 WEI-21

Applies to Method: Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.
 C-GAS05 ME-MS41 OA-ELE07 OA-VOL08mn
 S-CAL06 S-GRA06 S-GRA06a S-IR08

