



BUREAU MINERAL LABORATORIES
VERITAS Canada

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

Client: **Fireweed Zinc Ltd.**
Suite 1020, 800 Pender Street
Vancouver British Columbia V5C 2V6 Canada

Submitted By: Confirmation & Email Distribution List
Receiving Lab: Canada-Whitehorse
Received: July 10, 2019
Report Date: July 29, 2019
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CERTIFICATE OF ANALYSIS

WHI19000187.1

CLIENT JOB INFORMATION

Project: MacMillan Pass
Shipment ID: FWZ19-BV-007
P.O. Number
Number of Samples: 29

SAMPLE DISPOSAL

RTRN-PLP Return After 90 days
RTRN-RJT Return After 60 days

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: Fireweed Zinc Ltd.
Suite 1020, 800 Pender Street
Vancouver British Columbia V5C 2V6
Canada

CC: Gilles Dessureau
Maira Cruickshanks

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
SLBHP	29	Sort, label and box pulps			WHI
AQ250	29	1:1:1 Aqua Regia digestion Ultratrace ICP-MS analysis	0.5	Completed	VAN
SHP01	29	Per sample shipping charges for branch shipments			VAN
SVRJT	29	Save all or part of Soil Reject			WHI
DY060	29	Dry at 60C			WHI
SS80	29	Dry at 60C sieve 100g to -80 mesh			WHI

ADDITIONAL COMMENTS


CLAIRE HO
Special Projects Coordinator

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

WHI19000187.1

	Method	Analyte	Unit	MDL	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250			
					Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
					ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%
					0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	1	0.01	0.001
3202069	Soil				14.29	66.35	41.04	194.1	389	54.9	9.5	307	2.81	68.4	2.8	7.0	6.1	24.2	0.72	3.71	0.25	45	0.15	0.121
3202070	Soil				13.60	63.89	44.27	215.0	482	62.0	11.9	381	2.86	45.8	2.2	3.8	6.7	24.8	1.06	3.66	0.26	50	0.10	0.111
3202071	Soil				13.73	242.32	86.97	476.0	1016	126.4	10.9	884	3.36	64.0	9.8	4.7	8.6	139.4	7.61	13.63	0.30	97	2.02	0.960
3202072	Soil				34.78	357.20	77.87	324.6	2018	137.9	14.0	1692	4.77	58.5	8.5	1.9	7.9	75.4	7.48	12.42	0.18	117	1.31	0.640
3202073	Soil				23.93	436.77	77.86	245.5	1804	160.2	18.4	4489	6.12	56.4	7.1	1.3	8.2	96.8	9.29	11.53	0.19	99	1.84	0.515
3202081	Soil				13.78	179.71	43.83	189.8	470	87.2	17.2	1117	3.69	55.7	2.5	5.5	6.9	31.0	3.04	4.88	0.22	51	0.29	0.196
3202082	Soil				25.37	1089.74	76.99	275.4	1534	117.7	29.2	4244	7.83	61.8	11.5	5.3	16.1	18.8	5.92	11.81	0.27	58	0.20	0.304
3202096	Soil				6.53	49.76	33.82	159.6	291	60.9	20.3	288	3.76	34.3	2.2	1.9	14.0	21.0	0.75	2.26	0.39	16	0.23	0.078
3202097	Soil				6.81	46.98	28.56	191.4	283	71.8	30.9	343	3.58	35.7	1.9	2.1	12.4	21.4	0.55	2.16	0.34	20	0.24	0.088
3202112	Soil				6.10	40.32	24.31	201.8	399	46.6	11.1	257	2.93	29.0	2.8	2.6	6.3	11.2	1.66	4.22	0.26	22	0.19	0.092
3202113	Soil				9.99	53.87	29.02	235.4	600	60.9	15.0	354	3.82	40.0	3.4	2.5	9.1	20.6	2.21	4.50	0.32	29	0.43	0.101
3202114	Soil				12.04	70.25	32.10	312.6	226	53.6	23.3	187	4.48	85.0	2.8	0.7	12.1	8.4	0.50	4.48	0.55	20	0.11	0.053
3202120	Rock				1.34	94.98	1.78	33.1	52	3.7	8.6	341	2.54	0.9	1.2	0.4	4.7	60.0	0.03	<0.02	0.05	92	0.81	0.091
3202121	Soil				4.79	44.10	53.84	161.3	220	50.6	19.5	344	3.01	161.8	2.3	<0.2	11.1	86.9	0.26	1.48	0.41	11	1.69	0.046
3202122	Soil				2.82	32.52	56.04	115.3	83	33.0	10.6	478	4.92	23.4	2.2	0.6	20.9	9.3	0.09	0.51	0.64	16	0.05	0.088
3202123	Soil				2.89	34.80	56.93	121.7	104	32.6	10.8	476	4.96	25.0	2.3	0.3	21.0	10.8	0.15	0.59	0.67	17	0.08	0.096
3202124	Soil				4.07	43.25	152.77	143.2	242	36.8	11.0	410	4.87	22.0	2.3	1.3	19.2	15.1	0.12	1.21	0.96	24	0.09	0.122
3202125	Soil				0.58	13.26	29.53	72.6	19	27.0	7.2	371	3.62	10.0	1.5	0.3	22.3	10.0	0.06	0.25	0.26	11	0.10	0.077
3202137	Soil				3.18	25.59	25.98	114.4	90	30.9	12.7	360	4.74	15.7	1.6	0.8	15.9	10.8	0.11	0.68	0.44	20	0.08	0.075
3202152	Soil				10.59	66.38	88.46	319.7	456	54.3	9.1	261	2.84	62.4	2.2	3.8	8.1	27.9	2.38	5.27	0.25	41	0.26	0.194
3202153	Soil				10.24	85.12	167.72	451.4	803	62.9	9.9	291	3.03	76.6	1.8	4.8	8.0	33.1	3.22	5.13	0.29	53	0.28	0.184
3202154	Soil				9.34	99.56	251.18	581.8	935	54.7	8.7	308	2.96	80.6	1.7	1.3	7.5	47.6	4.87	4.61	0.27	47	0.70	0.166
3202165	Soil				8.84	70.48	154.91	513.1	1035	49.4	14.1	176	2.90	61.0	1.8	1.0	5.2	42.3	4.42	2.83	0.21	45	0.84	0.138
3202166	Soil				8.85	70.18	82.16	393.2	630	46.1	7.4	223	3.19	103.4	2.2	2.1	8.9	32.7	2.20	3.48	0.30	50	0.17	0.131
3202167	Soil				7.78	63.63	67.84	204.6	633	39.0	7.2	213	2.92	84.2	1.9	<0.2	8.2	36.6	1.22	3.32	0.27	50	0.24	0.129
3202181	Soil				16.83	68.10	37.02	326.9	583	47.3	7.4	135	2.24	49.0	3.8	3.9	5.9	37.5	1.77	6.59	0.17	45	0.83	0.449
3202182	Soil				15.25	75.52	65.32	457.3	728	59.7	9.5	204	2.66	58.8	3.3	4.2	7.4	39.8	2.86	6.43	0.23	50	0.64	0.376
3202183	Soil				10.15	80.30	74.88	397.0	1037	58.7	9.9	216	2.86	57.2	3.1	0.2	6.6	85.9	3.16	5.54	0.22	43	2.27	0.212
3202184	Soil				10.58	73.77	90.19	400.0	925	59.4	9.4	200	2.69	47.0	2.9	0.2	6.5	75.5	3.27	5.04	0.22	46	1.90	0.208



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	Method	Analyte	Unit	MDL	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250			
					La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga
					ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm
					0.5	0.5	0.01	0.5	0.001	20	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1
3202069	Soil				16.6	19.4	0.08	562.8	0.003	<20	0.57	0.002	0.13	2.8	2.7	0.42	0.12	196	2.5	0.09	1.8
3202070	Soil				16.0	18.2	0.06	1198.3	0.003	<20	0.63	0.002	0.18	1.6	3.0	0.51	0.09	225	2.3	0.10	2.0
3202071	Soil				21.5	32.5	0.05	807.9	0.006	<20	0.76	0.005	0.25	1.7	4.2	0.44	0.06	862	3.0	0.15	2.0
3202072	Soil				23.1	16.6	0.04	256.0	0.003	<20	0.53	0.003	0.20	0.8	5.0	0.51	0.02	421	4.3	0.10	1.2
3202073	Soil				16.7	13.8	0.31	268.1	0.002	<20	0.48	0.003	0.15	0.8	6.0	0.62	0.34	416	11.9	0.14	1.0
3202081	Soil				17.6	30.3	0.15	382.9	0.003	<20	0.71	<0.001	0.12	1.5	3.3	0.46	0.05	202	2.9	0.10	1.8
3202082	Soil				28.2	10.1	0.04	234.4	0.001	<20	0.48	0.002	0.11	0.6	14.7	0.71	0.03	376	5.7	0.12	0.6
3202096	Soil				36.7	15.9	0.26	87.9	0.004	<20	0.83	0.003	0.08	1.6	2.4	0.19	0.12	45	1.5	0.04	2.0
3202097	Soil				33.4	26.4	0.33	140.6	0.006	<20	1.12	0.006	0.12	2.8	2.3	0.16	0.07	38	1.2	0.04	2.8
3202112	Soil				18.8	16.0	0.21	86.3	0.019	<20	0.79	0.008	0.07	1.1	2.0	0.35	0.03	46	1.5	0.08	1.9
3202113	Soil				26.0	18.3	0.30	131.8	0.017	<20	0.78	0.009	0.11	1.7	3.2	0.55	<0.02	98	1.3	0.09	1.9
3202114	Soil				24.9	11.5	0.37	90.8	0.002	<20	0.90	0.001	0.12	0.3	3.1	0.09	0.73	25	6.6	0.03	2.1
3202120	Rock				9.2	7.1	0.73	107.0	0.124	<20	1.36	0.138	0.21	0.2	2.6	0.05	<0.02	<5	<0.1	<0.02	4.3
3202121	Soil				15.7	8.5	0.77	79.0	<0.001	<20	0.62	0.003	0.21	2.3	3.2	0.04	1.13	<5	0.6	<0.02	1.4
3202122	Soil				38.1	34.6	0.82	64.6	0.002	<20	2.29	0.004	0.08	0.7	2.4	0.04	0.13	<5	0.6	0.04	6.0
3202123	Soil				39.8	34.7	0.83	82.2	0.002	<20	2.29	0.005	0.10	0.5	2.5	0.05	0.12	10	0.7	0.03	6.0
3202124	Soil				29.5	32.5	0.82	132.1	0.004	<20	2.33	0.005	0.12	1.1	2.8	0.08	0.14	20	0.9	0.05	5.8
3202125	Soil				31.5	24.3	0.81	48.7	<0.001	<20	2.10	0.007	0.12	0.6	2.3	0.03	0.12	<5	<0.1	<0.02	5.0
3202137	Soil				27.0	34.1	0.84	89.6	0.002	<20	2.45	0.006	0.12	0.5	2.4	0.07	0.19	17	0.4	0.03	5.7
3202152	Soil				19.3	16.8	0.17	1071.9	0.004	<20	0.79	0.003	0.14	2.1	2.7	0.29	0.06	216	1.9	0.07	2.1
3202153	Soil				19.9	19.9	0.13	1426.9	0.005	<20	0.84	0.004	0.20	5.5	3.4	0.40	0.05	375	1.8	0.09	2.4
3202154	Soil				17.7	18.0	0.12	1777.0	0.003	<20	0.75	0.004	0.19	2.4	3.4	0.35	0.09	493	5.4	0.09	2.1
3202165	Soil				12.2	20.6	0.40	981.6	0.003	<20	0.78	0.005	0.22	40.9	2.6	0.27	0.30	379	3.9	0.08	2.5
3202166	Soil				20.4	19.7	0.14	1045.2	0.002	<20	0.95	0.004	0.23	2.0	3.3	0.35	0.06	306	2.8	0.08	2.5
3202167	Soil				16.8	18.4	0.16	870.7	0.003	<20	0.87	0.005	0.22	2.1	3.1	0.26	0.14	230	4.7	0.09	2.4
3202181	Soil				18.3	10.6	0.08	765.5	0.008	<20	0.48	0.005	0.13	1.5	2.1	0.18	0.04	66	2.2	0.07	1.3
3202182	Soil				19.3	15.9	0.12	1299.7	0.008	<20	0.68	0.005	0.14	2.1	2.9	0.29	0.03	155	2.0	0.08	1.7
3202183	Soil				10.9	15.9	0.94	725.7	0.006	<20	0.64	0.003	0.15	3.0	3.1	0.20	0.32	215	5.2	0.08	1.6
3202184	Soil				11.7	16.9	0.69	819.2	0.006	<20	0.68	0.004	0.15	4.0	2.9	0.23	0.24	237	4.9	0.07	1.7



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QUALITY CONTROL REPORT

WHI19000187.1

	Method Analyte Unit MDL	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250
		Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P
		ppm	ppm	ppm	ppm	ppb	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	ppm	ppm	%	%
		0.01	0.01	0.01	0.1	2	0.1	0.1	1	0.01	0.1	0.1	0.2	0.1	0.5	0.01	0.02	0.02	1	0.01	0.001
Pulp Duplicates																					
3202125	Soil	0.58	13.26	29.53	72.6	19	27.0	7.2	371	3.62	10.0	1.5	0.3	22.3	10.0	0.06	0.25	0.26	11	0.10	0.077
REP 3202125	QC	0.61	13.08	29.58	73.7	23	26.8	7.2	366	3.62	10.0	1.5	<0.2	22.3	10.1	0.06	0.24	0.25	11	0.10	0.075
Reference Materials																					
STD DS11	Standard	15.84	155.72	145.88	357.9	1624	82.0	14.2	1033	3.22	46.9	2.6	58.4	8.9	71.2	2.53	7.46	12.65	52	1.09	0.075
STD DS11	Standard	15.32	149.22	124.94	336.2	1554	84.3	13.4	1060	3.16	41.5	2.3	41.4	6.8	66.2	2.21	6.19	10.00	52	1.08	0.065
STD OREAS262	Standard	0.64	123.77	60.41	151.8	472	65.3	27.8	523	3.33	38.3	1.3	67.0	10.8	37.6	0.71	3.54	1.07	22	2.91	0.043
STD OREAS262	Standard	0.71	118.02	49.89	147.8	495	69.8	26.2	542	3.39	35.4	1.1	54.5	8.3	33.5	0.60	1.94	0.91	23	3.10	0.036
STD DS11 Expected		13.9	149	138	345	1710	77.7	14.2	1055	3.1	42.8	2.59	79	7.65	67.3	2.37	7.2	12.2	50	1.063	0.0701
STD OREAS262 Expected		0.68	118	56	154	450	62	26.9	530	3.284	35.8	1.22	65	9.33	36	0.61	3.39	1.03	22.5	2.98	0.04
BLK	Blank	<0.01	<0.01	<0.01	<0.1	<2	<0.1	<0.1	<1	<0.01	0.2	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<0.02	<1	<0.01	<0.001
BLK	Blank	<0.01	<0.01	0.04	<0.1	<2	<0.1	<0.1	<1	<0.01	<0.1	<0.1	<0.2	<0.1	<0.5	<0.01	<0.02	<0.02	<1	<0.01	<0.001



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QUALITY CONTROL REPORT

WHI19000187.1

	Method Analyte Unit MDL	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250	AQ250
		La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Sc	Tl	S	Hg	Se	Te	Ga
		ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	%	ppb	ppm	ppm	ppm
		0.5	0.5	0.01	0.5	0.001	20	0.01	0.001	0.01	0.1	0.1	0.02	0.02	5	0.1	0.02	0.1
Pulp Duplicates																		
3202125	Soil	31.5	24.3	0.81	48.7	<0.001	<20	2.10	0.007	0.12	0.6	2.3	0.03	0.12	<5	<0.1	<0.02	5.0
REP 3202125	QC	32.1	24.4	0.81	48.8	<0.001	<20	2.09	0.007	0.12	0.6	2.4	0.03	0.13	<5	<0.1	<0.02	5.1
Reference Materials																		
STD DS11	Standard	18.7	59.9	0.85	446.4	0.093	<20	1.17	0.074	0.40	2.9	3.4	5.17	0.29	268	2.0	4.72	5.0
STD DS11	Standard	15.9	60.5	0.85	385.1	0.099	<20	1.23	0.077	0.41	2.8	3.2	4.81	0.29	272	2.3	4.60	5.4
STD OREAS262	Standard	17.0	42.2	1.19	264.5	0.003	<20	1.31	0.071	0.31	0.1	3.5	0.48	0.25	165	0.3	0.23	3.7
STD OREAS262	Standard	15.4	46.5	1.21	220.2	0.003	<20	1.43	0.073	0.35	0.2	3.2	0.48	0.27	171	0.5	0.24	4.4
STD DS11 Expected		18.6	61.5	0.85	417	0.0976		1.129	0.0694	0.4	2.9	3.1	4.9	0.2835	260	2.2	4.56	4.7
STD OREAS262 Expected		15.9	41.7	1.17	248	0.003		1.204	0.071	0.312	0.13	3.24	0.47	0.253	170	0.4	0.23	3.73
BLK	Blank	<0.5	<0.5	<0.01	<0.5	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	<5	<0.1	<0.02	<0.1
BLK	Blank	<0.5	<0.5	<0.01	<0.5	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.1	<0.02	<0.02	6	<0.1	<0.02	<0.1