



Date Submitted: 30-Jun-15
Invoice No.: A15-04791
Invoice Date: 24-Jul-15
Your Reference:

Paul Adams
20 Colinayre
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Canada

ATTN: Paul Adams

CERTIFICATE OF ANALYSIS

1 Rock samples were submitted for analysis.

The following analytical package was requested:

Code 8-REE Assay Package Major Elements Fusion ICP(WRA)/Trace Elements Fusion ICP/MS(WRA4B2)

REPORT **A15-04791**

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Notes:

Total includes all elements in % oxide to the left of total.

CERTIFIED BY:

A handwritten signature in black ink, appearing to read "Emmanuel Esemé".

Emmanuel Esemé , Ph.D.
Quality Control



Results

Analyte Symbol	SiO2	Al2O3	Fe2O3(T)	MnO	MgO	CaO	Na2O	K2O	TiO2	P2O5	LOI	Total	Sc	Be	V	Cr	Co	Ni	Cu	Zn	Ga	Ge	As
Unit Symbol	%	%	%	%	%	%	%	%	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Lower Limit	0.01	0.01	0.01	0.001	0.01	0.01	0.01	0.01	0.001	0.01		0.01	1	1	5	20	1	20	10	30	1	1	5
Method Code	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS
rock sample	10.44	0.31	77.00	0.135	9.65	0.10	0.02	0.03	0.046	0.02	1.17	98.92	2	< 1	17	770	119	570	20	30	< 1	< 1	< 5

Results

Analyte Symbol	Rb	Sr	Y	Zr	Nb	Mo	Ag	In	Sn	Sb	Cs	Ba	Bi	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Lower Limit	2	2	2	4	1	2	0.5	0.2	1	0.5	0.5	3	0.4	0.1	0.1	0.05	0.1	0.1	0.05	0.1	0.1	0.1	0.1
Method Code	FUS-MS	FUS-ICP	FUS-ICP	FUS-ICP	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-ICP	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS
rock sample	< 2	< 2	< 2	9	< 1	< 2	< 0.5	< 0.2	< 1	< 0.5	< 0.5	< 3	< 0.4	0.4	0.6	0.08	0.3	< 0.1	< 0.05	0.2	< 0.1	0.1	< 0.1

Results

Analyte Symbol	Er	Tm	Yb	Lu	Hf	Ta	W	Tl	Pb	Th	U	Au
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppb
Lower Limit	0.1	0.05	0.1	0.04	0.2	0.1	1	0.1	5	0.1	0.1	5
Method Code	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FA-AA
rock sample	< 0.1	< 0.05	< 0.1	< 0.04	< 0.2	< 0.1	9	< 0.1	9	< 0.1	< 0.1	< 5

QC

Analyte Symbol	SiO2	Al2O3	Fe2O3(T)	MnO	MgO	CaO	Na2O	K2O	TiO2	P2O5	Sc	Be	V	Cr	Co	Ni	Cu	Zn	Ga	Ge	As	Rb	Sr	
Unit Symbol	%	%	%	%	%	%	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	
Lower Limit	0.01	0.01	0.01	0.001	0.01	0.01	0.01	0.01	0.001	0.01	1	1	5	20	1	20	10	30	1	1	5	2	2	
Method Code	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-ICP	
NIST 694 Meas	11.63	1.89	0.74	0.010	0.35	43.08	0.88	0.56	0.120	30.19			1648											
NIST 694 Cert	11.2	1.80	0.790	0.0116	0.330	43.6	0.860	0.510	0.110	30.2			1740											
DNC-1 Meas	47.52	18.28	9.75	0.150	9.93	11.39	1.91	0.22	0.490	0.08	31		148	290	61		100	70	15				142	
DNC-1 Cert	47.15	18.34	9.97	0.150	10.13	11.49	1.890	0.234	0.480	0.070	31		148	270	57		100	70	15				144.0	
GBW 07113 Meas	71.53	13.02	3.20	0.140	0.15	0.61	2.49	5.43	0.290	0.04	5	4	< 5										41	
GBW 07113 Cert	72.8	13.0	3.21	0.140	0.160	0.590	2.57	5.43	0.300	0.0500	5.00	4.00	5.00										43.0	
LKSD-3 Meas														80	32								80	
LKSD-3 Cert														87.0	30.0								78.0	
W-2a Meas	52.86	15.45	10.90	0.170	6.28	10.95	2.23	0.62	1.080	0.15	35	< 1	259	100	45	70	110	80	18	2		20	194	
W-2a Cert	52.4	15.4	10.7	0.163	6.37	10.9	2.14	0.626	1.06	0.130	36.0	1.30	262	92.0	43.0	70.0	110	80.0	17.0	1.00		21.0	190	
DTS-2b Meas														14700	132	3390								
DTS-2b Cert														15500	120	3780								
SY-4 Meas	50.18	20.52	6.10	0.110	0.51	8.07	7.00	1.68	0.290	0.13	< 1	3	7										1206	
SY-4 Cert	49.9	20.69	6.21	0.108	0.54	8.05	7.10	1.66	0.287	0.131	1.1	2.6	8.0										1191	
CTA-AC-1 Meas																	60							
CTA-AC-1 Cert																	54.0							
BIR-1a Meas	48.20	15.38	11.20	0.170	9.67	13.46	1.81	0.02	0.950	0.01	44	< 1	319	400	54	190	120	70	16				107	
BIR-1a Cert	47.96	15.50	11.30	0.175	9.700	13.30	1.82	0.030	0.96	0.021	44	0.58	310	370	52	170	125	70	16				110	
NCS DC86312 Meas																								
NCS DC86312 Cert																								
NCS DC70009 (GBW07241) Meas															3	< 20	1030	100	18	11	66			
NCS DC70009 (GBW07241) Cert															3.7	2.8	960	100	16.5	11.2	69.9			
OREAS 100a (Fusion) Meas															19		180							
OREAS 100a (Fusion) Cert															18.1		169							
OREAS 101a (Fusion) Meas															50		430							
OREAS 101a (Fusion) Cert															48.8		434							
JR-1 Meas																< 20	< 10		17		16	266		
JR-1 Cert																1.67	2.68		16.1		16.3	257		
NCS DC86318 Meas																							382	
NCS DC86318 Cert																							369.42	
OxD108 Meas																								
OxD108 Cert																								
SG66 Meas																								
SG66 Cert																								
rock sample Orig	10.39	0.31	76.57	0.133	9.63	0.10	0.02	0.04	0.046	0.01	2	< 1	18	780	119	570	20	40	< 1	< 1	< 5	< 2	< 2	
rock sample Dup	10.49	0.31	77.43	0.138	9.66	0.10	0.02	0.03	0.047	0.03	2	< 1	16	770	119	570	20	30	< 1	< 1	< 5	< 2	2	
Method Blank														< 20	< 1	< 20	< 10	< 30	< 1	< 1	< 5	< 2		
Method Blank														< 20	< 1	< 20	< 10	< 30	< 1	< 1	< 5	< 2		
Method Blank																								

QC

Analyte Symbol	Y	Zr	Nb	Mo	Ag	In	Sn	Sb	Cs	Ba	Bi	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Lower Limit	2	4	1	2	0.5	0.2	1	0.5	0.5	3	0.4	0.1	0.1	0.05	0.1	0.1	0.05	0.1	0.1	0.1	0.1	0.1	0.05
Method Code	FUS-ICP	FUS-ICP	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-ICP	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS
NIST 694 Meas																							
NIST 694 Cert																							
DNC-1 Meas	15	38								107					5.4		0.59						
DNC-1 Cert	18.0	38								118					5.20		0.59						
GBW 07113 Meas	47	408								501													
GBW 07113 Cert	43.0	403								506													
LKSD-3 Meas				< 2								48.9	91.7		44.1	7.8	1.50			4.9			
LKSD-3 Cert				2.00								52.0	90.0		44.0	8.00	1.50			4.90			
W-2a Meas	19	94		< 2	< 0.5			0.8		175	< 0.4		24.8		13.4	3.4			0.6		0.8	2.3	
W-2a Cert	24.0	94.0		0.600	0.0460			0.790		182	0.0300		23.0		13.0	3.30			0.630		0.760	2.50	
DTS-2b Meas																							
DTS-2b Cert																							
SY-4 Meas	117	537								348													
SY-4 Cert	119	517								340													
CTA-AC-1 Meas												2330	3540			174	48.0	136	15.0				
CTA-AC-1 Cert												2176	3326			162	46.7	124	13.9				
BIR-1a Meas	13	17								10		0.6	1.9		2.5	1.0	0.52	2.0					
BIR-1a Cert	16	18								6		0.63	1.9		2.5	1.1	0.55	2.0					
NCS DC86312 Meas												2440	182		1620			224	33.6	190	36.4	103	14.1
NCS DC86312 Cert												2360	190		1600			225.0	34.6	183	36	96.2	15.1
NCS DC70009 (GBW07241) Meas					1.7			2.8				24.8	61.7	8.10	33.1	12.4		15.8	3.2	21.7	4.4	14.3	2.30
NCS DC70009 (GBW07241) Cert					1.8			3.1				23.7	60.3	7.9	32.9	12.5		14.8	3.3	20.7	4.5	13.4	2.2
OREAS 100a (Fusion) Meas												271	491	48.8	160	25.9	3.81	22.4	3.8	24.5	5.1	15.9	2.38
OREAS 100a (Fusion) Cert												260	463	47.1	152	23.6	3.71	23.6	3.80	23.2	4.81	14.9	2.31
OREAS 101a (Fusion) Meas				22								813	1390	132	399	51.7	8.21		5.3	32.5	6.6	20.1	2.90
OREAS 101a (Fusion) Cert				21.9								816	1396	134	403	48.8	8.06		5.92	33.3	6.46	19.5	2.90
JR-1 Meas			15	3	< 0.5	< 0.2	3		20.9		0.5	19.7	46.8	5.90	23.2	5.9			0.9				0.68
JR-1 Cert			15.2	3.25	0.031	0.028	2.86		20.8		0.56	19.7	47.2	5.58	23.3	6.03			1.01				0.67
NCS DC86318 Meas									10.9			1990	425	722	3230	1680	19.4	2310	495	3170	590	1700	265
NCS DC86318 Cert									10.28			1960	430	740	3430	1720	18.91	2095	470	3220	560	1750	270
OxD108 Meas																							
OxD108 Cert																							
SG66 Meas																							
SG66 Cert																							
rock sample Orig	< 2	8	< 1	< 2	< 0.5	< 0.2	< 1	< 0.5	< 0.5	< 3	< 0.4	0.3	0.6	0.07	0.3	< 0.1	< 0.05	0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.05
rock sample Dup	< 2	10	< 1	< 2	< 0.5	< 0.2	< 1	< 0.5	< 0.5	< 3	< 0.4	0.4	0.6	0.08	0.3	0.2	< 0.05	0.2	< 0.1	0.1	< 0.1	< 0.1	< 0.05
Method Blank			< 1	< 2	< 0.5	< 0.2	< 1	< 0.5	< 0.5		< 0.4	< 0.1	< 0.1	< 0.05	< 0.1	< 0.1	< 0.05	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05
Method Blank			< 1	< 2	< 0.5	< 0.2	< 1	< 0.5	< 0.5		< 0.4	< 0.1	< 0.1	< 0.05	< 0.1	< 0.1	< 0.05	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.05
Method Blank																							

QC

Analyte Symbol	Yb	Lu	Hf	Ta	W	Tl	Pb	Th	U	LOI	Total	Au
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppb
Lower Limit	0.1	0.04	0.2	0.1	1	0.1	5	0.1	0.1		0.01	5
Method Code	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-ICP	FUS-ICP	FA-AA
NIST 694 Meas												
NIST 694 Cert												
DNC-1 Meas	2.0											
DNC-1 Cert	2.0											
GBW 07113 Meas												
GBW 07113 Cert												
LKSD-3 Meas	2.9	0.44	4.6	0.6				11.2	4.9			
LKSD-3 Cert	2.70	0.400	4.80	0.700				11.4	4.60			
W-2a Meas	2.1	0.33		0.5	1	< 0.1	8	2.3	0.5			
W-2a Cert	2.10	0.330		0.500	0.300	0.200	9.30	2.40	0.530			
DTS-2b Meas												
DTS-2b Cert												
SY-4 Meas												
SY-4 Cert												
CTA-AC-1 Meas	11.2								4.4			
CTA-AC-1 Cert	11.4								4.4			
BIR-1a Meas	1.7	0.28	0.6									
BIR-1a Cert	1.7	0.3	0.60									
NCS DC86312 Meas	89.3	12.6										
NCS DC86312 Cert	87.79	11.96										
NCS DC70009 (GBW07241) Meas		2.49			2180	2.0		31.0				
NCS DC70009 (GBW07241) Cert		2.4			2200	1.8		28.3				
OREAS 100a (Fusion) Meas	16.2	2.37						56.6				
OREAS 100a (Fusion) Cert	14.9	2.26						51.6				
OREAS 101a (Fusion) Meas	18.5	2.67						38.1	440			
OREAS 101a (Fusion) Cert	17.5	2.66						36.6	422			
JR-1 Meas	4.5	0.73	4.4	1.8		1.5	19	27.6	9.3			
JR-1 Cert	4.55	0.71	4.51	1.86		1.56	19.3	26.7	8.88			
NCS DC86318 Meas	1780	254						68.2				
NCS DC86318 Cert	1840	260.0						67.0				
OxD108 Meas												393
OxD108 Cert												414
SG66 Meas												1070
SG66 Cert												1090
rock sample Orig	< 0.1	< 0.04	< 0.2	< 0.1	9	< 0.1	9	< 0.1	< 0.1	1.17	98.40	
rock sample Dup	< 0.1	< 0.04	< 0.2	< 0.1	8	< 0.1	9	< 0.1	< 0.1	1.17	99.43	
Method Blank	< 0.1	< 0.04	< 0.2	< 0.1	< 1	< 0.1	< 5	< 0.1	< 0.1			
Method Blank	< 0.1	< 0.04	< 0.2	< 0.1	< 1	< 0.1	< 5	< 0.1	< 0.1			
Method Blank												< 5