



**Date Submitted:** 21-Jul-15  
**Invoice No.:** A15-05529  
**Invoice Date:** 05-Aug-15  
**Your Reference:** July 20, 2015

Paul Adams  
20 Colinayre  
Toronto ON M1T 3A9  
Canada

ATTN: Paul Adams

## CERTIFICATE OF ANALYSIS

1 Pulp samples were submitted for analysis.

The following analytical package was requested:

Code 1A2-Timmins Au - Fire Assay AA  
Code 1E3-Timmins Aqua Regia ICP(AQUAGEO)

REPORT      **A15-05529**

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Notes:

If value exceeds upper limit we recommend reassay by fire assay gravimetric-Code 1A3  
Total includes all elements in % oxide to the left of total.  
Values which exceed the upper limit should be assayed for accurate numbers.

CERTIFIED BY:

A handwritten signature in black ink, appearing to be "Emmanuel Esemé". The signature is written over a horizontal line.

Emmanuel Esemé , Ph.D.  
Quality Control

ACTIVATION LABORATORIES LTD.

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**Date Submitted:** 21-Jul-15  
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Paul Adams  
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ATTN: Paul Adams

## CERTIFICATE OF ANALYSIS

1 Pulp 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      **A15-05529**

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Notes:

If value exceeds upper limit we recommend reassay by fire assay gravimetric-Code 1A3

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

Values which exceed the upper limit should be assayed for accurate numbers.

CERTIFIED BY:

A handwritten signature in black ink, appearing to read "Emmanuel Esemé". The signature is written over a horizontal line.

Emmanuel Esemé , Ph.D.  
Quality Control

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Results

Analyte Symbol	Au	Ag	Cd	Cu	Mn	Mo	Ni	Pb	Zn	Al	As	B	Ba	Be	Bi	Ca	Co	Cr	Fe	Ga	Hg	K	La
Unit Symbol	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm
Lower Limit	5	0.2	0.5	1	5	1	1	2	2	0.01	2	10	10	0.5	2	0.01	1	1	0.01	10	1	0.01	10
Method Code	FA-AA	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP
2.b - Mag Concentrate	5	0.3	< 0.5	17	974	< 1	1160	< 2	49	0.36	< 2	< 10	12	< 0.5	6	0.14	139	894	23.7	< 10	< 1	0.02	< 10

Results

Analyte Symbol	Mg	Na	P	S	Sb	Sc	Sr	Ti	Te	Tl	U	V	W	Y	Zr	SiO2	Al2O3	Fe2O3(T)	MnO	MgO	CaO	Na2O	K2O
Unit Symbol	%	%	%	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	%	%	%	%	%	%
Lower Limit	0.01	0.001	0.001	0.01	2	1	1	0.01	1	2	10	1	10	1	1	0.01	0.01	0.01	0.001	0.01	0.01	0.01	0.01
Method Code	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP
2.b - Mag Concentrate	9.56	0.016	0.005	< 0.01	14	4	3	0.05	< 1	< 2	< 10	26	< 10	2	10	26.07	1.65	44.14	0.183	20.68	0.42	0.23	0.16

Results

Analyte Symbol	TiO2	P2O5	LOI	Total	Sc	Be	V	Cr	Co	Ni	Cu	Zn	Ga	Ge	As	Rb	Sr	Y	Zr	Nb	Mo	Ag	In
Unit Symbol	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Lower Limit	0.001	0.01		0.01	1	1	5	20	1	20	10	30	1	1	5	2	2	2	4	1	2	0.5	0.2
Method Code	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	FUS-ICP	FUS-ICP	FUS-MS	FUS-MS	FUS-MS	FUS-MS
2.b - Mag Concentrate	0.196	0.05	6.06	99.84	5	< 1	60	3650	181	1430	30	100	3	1	< 5	6	22	< 2	25	2	< 2	< 0.5	< 0.2

Results

Analyte Symbol	Sn	Sb	Cs	Ba	Bi	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta	W	Tl
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	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	0.1	0.04	0.2	0.1	1	0.1
Method Code	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	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS
2.b - Mag Concentrate	< 1	< 0.5	< 0.5	40	< 0.4	2.0	4.3	0.52	2.3	0.5	0.16	0.5	< 0.1	0.5	< 0.1	0.3	< 0.05	0.3	< 0.04	0.4	< 0.1	< 1	< 0.1

**Results**

Analyte Symbol	Pb	Th	U
Unit Symbol	ppm	ppm	ppm
Lower Limit	5	0.1	0.1
Method Code	FUS-MS	FUS-MS	FUS-MS
2.b - Mag Concentrate	< 5	< 0.1	< 0.1

QC

Analyte Symbol	Au	Ag	Cd	Cu	Mn	Mo	Ni	Pb	Zn	Al	As	B	Ba	Be	Bi	Ca	Co	Cr	Fe	Ga	Hg	K	La
Unit Symbol	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm
Lower Limit	5	0.2	0.5	1	5	1	1	2	2	0.01	2	10	10	0.5	2	0.01	1	1	0.01	10	1	0.01	10
Method Code	FA-AA	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP
GXR-1 Meas		28.6	2.2	1140	771	15	26	592	659	0.35	381	10	555	0.8	1440	0.75	4	6	21.6	< 10	3	0.03	< 10
GXR-1 Cert		31.0	3.30	1110	852	18.0	41.0	730	760	3.52	427	15.0	750	1.22	1380	0.960	8.20	12.0	23.6	13.8	3.90	0.050	7.50
NIST 694 Meas																							
NIST 694 Cert																							
DNC-1 Meas																							
DNC-1 Cert																							
GBW 07113 Meas																							
GBW 07113 Cert																							
GXR-4 Meas		3.6	< 0.5	6640	139	339	37	40	67	2.70	103	< 10	69	1.4	17	0.86	13	52	3.01	< 10	< 1	1.66	53
GXR-4 Cert		4.0	0.860	6520	155	310	42.0	52.0	73.0	7.20	98.0	4.50	1640	1.90	19.0	1.01	14.6	64.0	3.09	20.0	0.110	4.01	64.5
GXR-6 Meas		0.3	< 0.5	68	1000	2	18	86	120	6.91	248	< 10	1260	0.9	< 2	0.15	12	75	5.21	10	< 1	1.07	11
GXR-6 Cert		1.30	1.00	66.0	1010	2.40	27.0	101	118	17.7	330	9.80	1300	1.40	0.290	0.180	13.8	96.0	5.58	35.0	0.0680	1.87	13.9
LKSD-3 Meas																							
LKSD-3 Cert																							
W-2a Meas																							
W-2a Cert																							
DTS-2b Meas																							
DTS-2b Cert																							
SY-4 Meas																							
SY-4 Cert																							
CTA-AC-1 Meas																							
CTA-AC-1 Cert																							
BIR-1a Meas																							
BIR-1a Cert																							
NCS DC86312 Meas																							
NCS DC86312 Cert																							
NCS DC70009 (GBW07241) Meas																							
NCS DC70009 (GBW07241) Cert																							
OREAS 100a (Fusion) Meas																							
OREAS 100a (Fusion) Cert																							
OREAS 101a (Fusion) Meas																							
OREAS 101a (Fusion) Cert																							
JR-1 Meas																							
JR-1 Cert																							
NCS DC86318 Meas																							
NCS DC86318 Cert																							
SAR-M (U.S.G.S.) Meas		3.4	5.5	349	4400	13	40	984	992	1.04	36		255	1.0	< 2	0.30	10	84	2.76	< 10		0.25	51
SAR-M (U.S.G.S.) Cert		3.64	5.27	331.0000	5220	13.1	41.5	982	930.0	6.30	38.8		801	2.20	1.94	0.61	10.70	79.7	2.99	17		2.94	57.4
OxD108 Meas	412																						
OxD108 Cert	414																						
SF67 Meas	806																						
SF67 Cert	835.000																						
2.b - Mag	5	0.3	< 0.5	17	987	< 1	1170	< 2	50	0.37	< 2	< 10	12	< 0.5	7	0.15	140	899	24.1	< 10	< 1	0.02	< 10



Analyte Symbol	Au	Ag	Cd	Cu	Mn	Mo	Ni	Pb	Zn	Al	As	B	Ba	Be	Bi	Ca	Co	Cr	Fe	Ga	Hg	K	La
Unit Symbol	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	ppm	%	ppm
Lower Limit	5	0.2	0.5	1	5	1	1	2	2	0.01	2	10	10	0.5	2	0.01	1	1	0.01	10	1	0.01	10
Method Code	FA-AA	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP
Concentrate Orig																							
2.b - Mag Concentrate Dup	5	0.3	< 0.5	16	962	< 1	1150	2	49	0.36	< 2	< 10	12	< 0.5	5	0.14	137	888	23.3	< 10	< 1	0.02	< 10
Method Blank		< 0.2	< 0.5	< 1	< 5	< 1	< 1	< 2	< 2	< 0.01	< 2	< 10	< 10	< 0.5	< 2	< 0.01	< 1	< 1	< 0.01	< 10	< 1	< 0.01	< 10
Method Blank	< 5																						
Method Blank	< 5																						
Method Blank																							

QC

Analyte Symbol	Mg	Na	P	S	Sb	Sc	Sr	Ti	Te	Tl	U	V	W	Y	Zr	SiO2	Al2O3	Fe2O3(T)	MnO	MgO	CaO	Na2O	K2O
Unit Symbol	%	%	%	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	%	%	%	%	%	%
Lower Limit	0.01	0.001	0.001	0.01	2	1	1	0.01	1	2	10	1	10	1	1	0.01	0.01	0.01	0.001	0.01	0.01	0.01	0.01
Method Code	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP
GXR-1 Meas	0.13	0.050	0.041	0.18	85	1	164	< 0.01	5	< 2	28	77	157	22	15								
GXR-1 Cert	0.217	0.0520	0.0650	0.257	122	1.58	275	0.036	13.0	0.390	34.9	80.0	164	32.0	38.0								
NIST 694 Meas																11.30	1.86	0.73	0.012	0.36	43.33	0.89	0.55
NIST 694 Cert																11.2	1.80	0.790	0.0116	0.330	43.6	0.860	0.510
DNC-1 Meas																46.86	18.49	9.71	0.145	10.10	11.30	1.88	0.22
DNC-1 Cert																47.15	18.34	9.97	0.150	10.13	11.49	1.890	0.234
GBW 07113 Meas																72.59	12.87	3.26	0.144	0.15	0.60	2.48	5.45
GBW 07113 Cert																72.8	13.0	3.21	0.140	0.160	0.590	2.57	5.43
GXR-4 Meas	1.59	0.127	0.124	1.59	5	7	69	0.13	2	< 2	< 10	81	15	11	10								
GXR-4 Cert	1.66	0.564	0.120	1.77	4.80	7.70	221	0.29	0.970	3.20	6.20	87.0	30.8	14.0	186								
GXR-6 Meas	0.38	0.078	0.033	0.01	3	22	31		< 1	< 2	< 10	172	< 10	6	16								
GXR-6 Cert	0.609	0.104	0.0350	0.0160	3.60	27.6	35.0		0.0180	2.20	1.54	186	1.90	14.0	110								
LKSD-3 Meas																							
LKSD-3 Cert																							
W-2a Meas																52.26	15.41	10.80	0.166	6.48	10.98	2.17	0.63
W-2a Cert																52.4	15.4	10.7	0.163	6.37	10.9	2.14	0.626
DTS-2b Meas																							
DTS-2b Cert																							
SY-4 Meas																49.75	20.03	6.05	0.105	0.55	8.00	6.83	1.64
SY-4 Cert																49.9	20.69	6.21	0.108	0.54	8.05	7.10	1.66
CTA-AC-1 Meas																							
CTA-AC-1 Cert																							
BIR-1a Meas																48.00	15.62	11.41	0.171	9.75	13.40	1.82	0.02
BIR-1a Cert																47.96	15.50	11.30	0.175	9.700	13.30	1.82	0.030
NCS DC86312 Meas																							
NCS DC86312 Cert																							
NCS DC70009 (GBW07241) Meas																							
NCS DC70009 (GBW07241) Cert																							
OREAS 100a (Fusion) Meas																							
OREAS 100a (Fusion) Cert																							
OREAS 101a (Fusion) Meas																							
OREAS 101a (Fusion) Cert																							

Analyte Symbol	Mg	Na	P	S	Sb	Sc	Sr	Ti	Te	Tl	U	V	W	Y	Zr	SiO2	Al2O3	Fe2O3(T)	MnO	MgO	CaO	Na2O	K2O
Unit Symbol	%	%	%	%	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	%	%	%	%	%	%
Lower Limit	0.01	0.001	0.001	0.01	2	1	1	0.01	1	2	10	1	10	1	1	0.01	0.01	0.01	0.001	0.01	0.01	0.01	0.01
Method Code	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	AR-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP	FUS-ICP
JR-1 Meas																							
JR-1 Cert																							
NCS DC86318 Meas																							
NCS DC86318 Cert																							
SAR-M (U.S.G.S.) Meas	0.34	0.031	0.065		6	3	28	0.05	< 1	< 2	< 10	33	< 10	19									
SAR-M (U.S.G.S.) Cert	0.50	1.140	0.07		6.0	7.83	151	0.38	0.96	2.7	3.57	67.2	9.78	28.00									
OxD108 Meas																							
OxD108 Cert																							
SF67 Meas																							
SF67 Cert																							
2.b - Mag Concentrate Orig	9.67	0.016	0.006	< 0.01	14	4	3	0.05	< 1	< 2	< 10	26	< 10	2	10	26.12	1.65	44.37	0.184	20.51	0.43	0.23	0.16
2.b - Mag Concentrate Dup	9.45	0.016	0.005	< 0.01	13	4	3	0.05	< 1	< 2	< 10	26	< 10	2	10	26.01	1.65	43.91	0.181	20.85	0.41	0.23	0.16
Method Blank	< 0.01	0.011	< 0.001	< 0.01	< 2	< 1	< 1	< 0.01	< 1	< 2	< 10	< 1	< 10	< 1	< 1								
Method Blank																							
Method Blank																							
Method Blank																							

QC

Analyte Symbol	TiO2	P2O5	LOI	Total	Sc	Be	V	Cr	Co	Ni	Cu	Zn	Ga	Ge	As	Rb	Sr	Y	Zr	Nb	Mo	Ag	In
Unit Symbol	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Lower Limit	0.001	0.01		0.01	1	1	5	20	1	20	10	30	1	1	5	2	2	2	4	1	2	0.5	0.2
Method Code	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	FUS-ICP	FUS-ICP	FUS-MS	FUS-MS	FUS-MS	FUS-MS
GXR-1 Meas																							
GXR-1 Cert																							
NIST 694 Meas	0.119	30.18					1644																
NIST 694 Cert	0.110	30.2					1740																
DNC-1 Meas	0.488	0.07			31		149	280	56	250	90		14				143	18	38				
DNC-1 Cert	0.480	0.070			31		148	270	57	247	100		15				144.0	18.0	38				
GBW 07113 Meas	0.287	0.04			5	4	6										41	45	405				
GBW 07113 Cert	0.300	0.0500			5.00	4.00	5.00										43.0	43.0	403				
GXR-4 Meas																							
GXR-4 Cert																							
GXR-6 Meas																							
GXR-6 Cert																							
LKSD-3 Meas								90							25	84						< 2	
LKSD-3 Cert								87.0							27.0	78.0						2.00	
W-2a Meas	1.087	0.15			36	1	263	100	46	80	110	90	18	2			20	197	21	99	8	< 2	< 0.5
W-2a Cert	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	24.0	94.0	7.90	0.600	0.0460
DTS-2b Meas								15600	129	3890													
DTS-2b Cert								15500	120	3780													
SY-4 Meas	0.286	0.13			< 1	4	9										1206	117	533				
SY-4 Cert	0.287	0.131			1.1	2.6	8.0										1191	119	517				
CTA-AC-1 Meas											50												
CTA-AC-1 Cert											54.0												

Analyte Symbol	TiO2	P2O5	LOI	Total	Sc	Be	V	Cr	Co	Ni	Cu	Zn	Ga	Ge	As	Rb	Sr	Y	Zr	Nb	Mo	Ag	In
Unit Symbol	%	%	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Lower Limit	0.001	0.01		0.01	1	1	5	20	1	20	10	30	1	1	5	2	2	2	4	1	2	0.5	0.2
Method Code	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	FUS-ICP	FUS-ICP	FUS-MS	FUS-MS	FUS-MS	FUS-MS
BIR-1a Meas	0.982	0.02			44	< 1	319		54	170	120	70	16				109	16	17				
BIR-1a Cert	0.96	0.021			44	0.58	310		52	170	125	70	16				110	16	18				
NCS DC86312 Meas																							
NCS DC86312 Cert																							
NCS DC70009 (GBW07241) Meas											950	100	17	11	70	538							
NCS DC70009 (GBW07241) Cert											960	100	16.5	11.2	69.9	500							
OREAS 100a (Fusion) Meas									17		170											24	
OREAS 100a (Fusion) Cert									18.1		169											24.1	
OREAS 101a (Fusion) Meas									51		430											22	
OREAS 101a (Fusion) Cert									48.8		434											21.9	
JR-1 Meas										< 20			17		15	263				15		< 0.5	< 0.2
JR-1 Cert										1.67			16.1		16.3	257				15.2		0.031	0.028
NCS DC86318 Meas																							
NCS DC86318 Cert																							
SAR-M (U.S.G.S.) Meas																							
SAR-M (U.S.G.S.) Cert																							
OxD108 Meas																							
OxD108 Cert																							
SF67 Meas																							
SF67 Cert																							
2.b - Mag Concentrate Orig	0.198	0.06	6.06	99.98	5	< 1	60	3650	184	1440	30	110	3	1	< 5	6	23	< 2	30	3	< 2	< 0.5	< 0.2
2.b - Mag Concentrate Dup	0.193	0.03	6.06	99.69	5	< 1	60	3640	178	1410	30	100	3	1	< 5	5	22	< 2	20	1	< 2	< 0.5	< 0.2
Method Blank																							
Method Blank																							
Method Blank																							
Method Blank								< 20	< 1	< 20	< 10	< 30	< 1	< 1	< 5	< 2				< 1	< 2	< 0.5	< 0.2

QC

Analyte Symbol	Sn	Sb	Cs	Ba	Bi	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta	W	Tl
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	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	0.1	0.04	0.2	0.1	1	0.1
Method Code	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	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS
GXR-1 Meas																							
GXR-1 Cert																							
NIST 694 Meas																							
NIST 694 Cert																							
DNC-1 Meas		0.6		104					5.0		0.56							2.0					
DNC-1 Cert		0.96		118					5.20		0.59							2.0					
GBW 07113 Meas				501																			
GBW 07113 Cert				506																			

Analyte Symbol	Sn	Sb	Cs	Ba	Bi	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Hf	Ta	W	Tl	
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	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	0.1	0.04	0.2	0.1	1	0.1	
Method Code	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	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	FUS-MS	
GXR-4 Meas																								
GXR-4 Cert																								
GXR-6 Meas																								
GXR-6 Cert																								
LKSD-3 Meas	2	1.0	2.2			50.5	96.2		46.5	8.3	1.40			5.4						5.2	0.7			
LKSD-3 Cert	3.00	1.30	2.30			52.0	90.0		44.0	8.00	1.50			4.90						4.80	0.700			
W-2a Meas		0.8		178	< 0.4				14.1					0.6	3.9	0.8	2.3		2.1	0.33		0.5	1	< 0.1
W-2a Cert		0.790		182	0.0300				13.0					0.630	3.60	0.760	2.50		2.10	0.330		0.500	0.300	0.200
DTS-2b Meas																								
DTS-2b Cert																								
SY-4 Meas				346																				
SY-4 Cert				340																				
CTA-AC-1 Meas						2260	3540			176	48.9							11.5				2.8		
CTA-AC-1 Cert						2176	3326			162	46.7							11.4				2.65		
BIR-1a Meas		0.7		7			2.0		2.4	1.2		2.0						1.8			0.6			
BIR-1a Cert		0.58		6			1.9		2.5	1.1		2.0						1.7			0.60			
NCS DC86312 Meas						2520	197		1720					35.9										
NCS DC86312 Cert						2360	190		1600					34.6										
NCS DC70009 (GBW07241) Meas		1.8	42.9			23.1	58.4	7.80	31.4	12.2		15.1	3.1	21.2	4.3	13.9	2.30	16.1	2.32			2110	1.9	
NCS DC70009 (GBW07241) Cert		3.1	41			23.7	60.3	7.9	32.9	12.5		14.8	3.3	20.7	4.5	13.4	2.2	14.9	2.4			2200	1.8	
OREAS 100a (Fusion) Meas						266	479	46.8	152	23.8	3.60	21.5	3.7	24.3	5.1	15.9	2.37	15.9	2.32					
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	14.9	2.26					
OREAS 101a (Fusion) Meas						795	1390	131	392	50.6	7.87		5.5	32.8	6.7	20.3	3.00	18.7	2.73					
OREAS 101a (Fusion) Cert						816	1396	134	403	48.8	8.06		5.92	33.3	6.46	19.5	2.90	17.5	2.66					
JR-1 Meas	3	0.9	20.3		0.6	19.2	47.4	5.80	23.0	5.5				1.0			0.70	4.8			4.5	1.8		
JR-1 Cert	2.86	1.19	20.8		0.56	19.7	47.2	5.58	23.3	6.03				1.01			0.67	4.55			4.51	1.86		
NCS DC86318 Meas			11.4			2000	429	732	3300	1730	19.6	2260	478	3060	567	1660	265	1760	257					
NCS DC86318 Cert			10.28			1960	430	740	3430	1720	18.91	2095	470	3220	560	1750	270	1840	260.0					
SAR-M (U.S.G.S.) Meas																								
SAR-M (U.S.G.S.) Cert																								
OxD108 Meas																								
OxD108 Cert																								
SF67 Meas																								
SF67 Cert																								
2.b - Mag Concentrate Orig	< 1	< 0.5	< 0.5	40	< 0.4	2.0	4.3	0.53	2.2	0.5	0.15	0.5	< 0.1	0.5	< 0.1	0.3	< 0.05	0.3	0.04	0.5	0.1	< 1	< 0.1	
2.b - Mag Concentrate Dup	< 1	< 0.5	< 0.5	40	< 0.4	1.9	4.2	0.51	2.4	0.5	0.16	0.5	< 0.1	0.5	< 0.1	0.3	< 0.05	0.3	< 0.04	0.3	< 0.1	< 1	< 0.1	
Method Blank																								
Method Blank																								
Method Blank																								
Method Blank	< 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	< 0.1	< 0.04	< 0.2	< 0.1	< 1	< 0.1	

## QC

Analyte Symbol	Pb	Th	U
Unit Symbol	ppm	ppm	ppm
Lower Limit	5	0.1	0.1
Method Code	FUS-MS	FUS-MS	FUS-MS
GXR-1 Meas			
GXR-1 Cert			
NIST 694 Meas			
NIST 694 Cert			
DNC-1 Meas	6		
DNC-1 Cert	6.3		
GBW 07113 Meas			
GBW 07113 Cert			
GXR-4 Meas			
GXR-4 Cert			
GXR-6 Meas			
GXR-6 Cert			
LKSD-3 Meas		11.7	
LKSD-3 Cert		11.4	
W-2a Meas		2.2	0.5
W-2a Cert		2.40	0.530
DTS-2b Meas			
DTS-2b Cert			
SY-4 Meas			
SY-4 Cert			
CTA-AC-1 Meas			4.7
CTA-AC-1 Cert			4.4
BIR-1a Meas			
BIR-1a Cert			
NCS DC86312 Meas			
NCS DC86312 Cert			
NCS DC70009 (GBW07241) Meas		29.7	
NCS DC70009 (GBW07241) Cert		28.3	
OREAS 100a (Fusion) Meas		54.9	148
OREAS 100a (Fusion) Cert		51.6	135
OREAS 101a (Fusion) Meas		37.5	451
OREAS 101a (Fusion) Cert		36.6	422
JR-1 Meas	18	28.2	9.6
JR-1 Cert	19.3	26.7	8.88
NCS DC86318 Meas		66.4	
NCS DC86318 Cert		67.0	
SAR-M (U.S.G.S.) Meas			
SAR-M (U.S.G.S.) Cert			
OxD108 Meas			
OxD108 Cert			

Analyte Symbol	Pb	Th	U
Unit Symbol	ppm	ppm	ppm
Lower Limit	5	0.1	0.1
Method Code	FUS-MS	FUS-MS	FUS-MS
SF67 Meas			
SF67 Cert			
2.b - Mag Concentrate Orig	< 5	< 0.1	0.1
2.b - Mag Concentrate Dup	< 5	< 0.1	< 0.1
Method Blank			
Method Blank			
Method Blank			
Method Blank	< 5	< 0.1	< 0.1