APPENDIX B

ASSAY QUALITY VERIFICATION

2007 ASSAY QUALITY ASSURANCE & QUALITY CONTROL

6.1.1 DESCRIPTION

The 2007 data set consists of 337 analyses including duplicates, blanks and standards. Assay quality assurance and quality control measures implemented during the 2007 drill program included the following elements:

1. Quality assurance and control measures were restricted to the following elements: La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, Y, Zr, Nb, Th, and U. The acceptability of an analytical fusion was assessed from the total oxide sum where such analyses were available.

2. All electronic data was checked against the assay certificates.

3. Field QAQC measures were taken for 3 of the 9 holes drilled during the program. No QAQC measures were taken for the channel samples.

4. Blank material consisted of ornamental stone purchased from a local hardware store. There is no certainty that the same source was used throughout the program. A blank with a unique tag number in sequence with the other samples was inserted at random in the sample stream covering the three holes subject to QAQC.

5. Standards were inserted into the sample stream in Vancouver before the samples were delivered to the laboratory. Canmet standard BL-2a was used in the 2007 program. The standard certificate is in Appendix 5.

6. Duplicate samples were taken of the core samples. For duplicate intervals, the core was split lengthwise and half left in the core box. The remaining half was quartered and sent in as two separate samples.

7. Upon receipt of laboratory results, the following measures were taken before releasing results:

a. Electronic sample results were checked against the signed assay certificates.

b. Blank analyses were inspected for contamination. Field criteria for a pass was that no TREO analysis be greater than 0.05%.
c. Field standards were checked against nominal values

6.1.2 DATA

The 2007 QAQC data set is very limited and no statistical examination is warranted. The data is listed below:

Sample #	Sample material	From	To	Length	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho
					ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
	Core / channel chip / R-D-S	(m)	(m)	(m)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
439233	Core	7.62	8.23	0.61	121	218	23.6	74.4	13	1.64	17.85	4.62	39.6	9.87
439234	Dupe	7.62	8.23	0.61	248	443	47.2	145	23.7	2.55	28.5	6.08	46.2	11.05
439238	Blank	0.00	0.00	0.00	13.1	25.1	3.42	12.6	2.86	0.9	3.46	0.67	5.06	1.02
439242	STD - 2007	0.00	0.00	0.00	33.5	64.7	7.75	27.9	5.62	1.28	6.21	1.25	8.84	1.9
439259	Core	27.74	28.37	0.63	398	883	106.5	425	187	51.8	602	222	>1000	492
439260	Dupe	27.74	28.37	0.63	548	1230	156	617	268	74.3	883	334	>1000	743
439262	STD - 2007	0.00	0.00	0.00	37.5	78.1	8.82	33	6.65	1.31	7.07	1.38	9.46	1.99
439263	Blank	0.00	0.00	0.00	15.3	31.2	3.96	15.5	3.41	0.8	3.75	0.69	4.92	1
439276	Core	54.45	55.17	0.72	149.5	309	37.6	154	38.6	3.42	35.1	6.54	49	11.8
439277	Dupe	54.45	55.17	0.72	143.5	297	36.1	147.5	37.4	3.27	33.8	6.16	45.2	10.85
439283	STD - 2007	0.00	0.00	0.00	33.6	69.6	7.96	29.2	5.95	1.28	6.73	1.13	7.58	1.49
439284	Blank	0.00	0.00	0.00	11.4	23.7	3.16	13.4	3.26	0.94	3.58	0.56	3.84	0.75
439299	Core	2.82	3.73	0.91	549	1220	167.5	764	187.5	17.6	188.5	40.5	309	71.9
439300	Dupe	2.82	3.73	0.91	327	732	101	461	124	14.4	153.5	37.6	301	70.1
439301	Blank	0.00	0.00	0.00	17.8	36.6	4.51	19.1	4.52	0.85	5.09	1.02	6.92	1.58

Sample #	Er	Tm	Yb	Lu	Y	Zr	Nb	Th	U
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
439233	38.7	6.36	41.1	5.88	268	314	33.6	325	886
439234	42.7	6.95	44	6.53	300	315	34.8	338	957
439238	3.61	0.52	3.02	0.44	32.6	96	6.6	8.48	16.85
439242	6.28	0.91	5.48	0.8	60.1	211	20.7	27.7	4410
439259	>1000	277	>1000	230	>10000	1890	454	>1000	3610
439260	>1000	427	>1000	371	>10000	3330	450	>1000	3830
439262	6.39	0.96	6.43	0.9	61	210	11.9	27.6	4100
439263	3.34	0.51	3.23	0.46	27	119	11.2	6.01	120
439276	46.9	9.19	73	11	278	997	95.9	34	37.9
439277	40.9	7.52	58.5	8.59	256	725	93.7	31.4	32.1
439283	4.83	0.69	4.37	0.61	47.4	212	12.8	14.35	4110
439284	2.4	0.35	2.39	0.36	20.8	105	7.9	2.94	77.3
439299	232	34.5	218	27.9	1655	892	175	>1000	3940
439300	222	32.6	202	25.9	1625	778	114.5	>1000	3880
439301	4.89	0.73	4.7	0.65	43.3	79	7	64.7	27.7

2008 ASSAY QUALITY ASSURANCE & QUALITY CONTROL

6.2.1 DESCRIPTION

The 2008 data set consists of 385 analyses including duplicates, blanks and standards. Assay quality assurance and quality control measures implemented during the 2008 drill program included the following elements:

1. Quality assurance and control measures were restricted to the following elements: La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, ,Dy, Ho, Er, Tm, Yb, Lu, Y, Zr, Nb, Th, and U. The acceptability of an analytical fusion was assessed from the total oxide sum where such analyses were available.

2. All electronic data was checked against the assay certificates.

3. Blank material consisted of ornamental stone purchased from a local hardware store. There is no certainty that the same source was used throughout the program.

4. A blank with a unique tag number in sequence with the other samples was inserted at random in every group of 20 samples.

5. A standard sample was inserted into every run of 20 samples in a random position.

6. Duplicate samples were taken of the core samples. For duplicate intervals, the core was halved and half left in the core box. The remaining half was quartered and sent in as two separate samples. Duplicates were taken at random in each sequence of 20 samples. The original sample generally but not always immediately preceded the duplicate sample in sequence.

7. Upon receipt of laboratory results, the following measures were taken before releasing results:

    a. Electronic sample results were checked against the signed assay certificates.

b. Blank analyses were inspected for contamination. Field criteria for a pass was that no TREO analysis be greater than 0.05%.

c. Field standards were checked against nominal values. For a field pass, uranium analysis variance in excess of ± 20 ppm from the certified mean was permitted.

d. Laboratory standards analyses, duplicates and resplits were examined for reproducibility.

8. Upon completion of the program, formal analysis of all results was completed and is described in this appendix.

9. Failure criteria for any analysis is defined by a sequential pair of analyses greater than two standard deviations from an standard certified mean or a single analysis with an error greater than three standard deviations from a standard mean.

6.2.2 BLANKS

Blanks were inserted to check for contamination at the laboratory from the crushing through analytical stages. The following procedure was used in the analysis of blank sample results:

1. Means and standard deviations were calculated for the elements of interest, omitting four clear outliers from these calculations.

2. Time series of the blank results were prepared for each element.

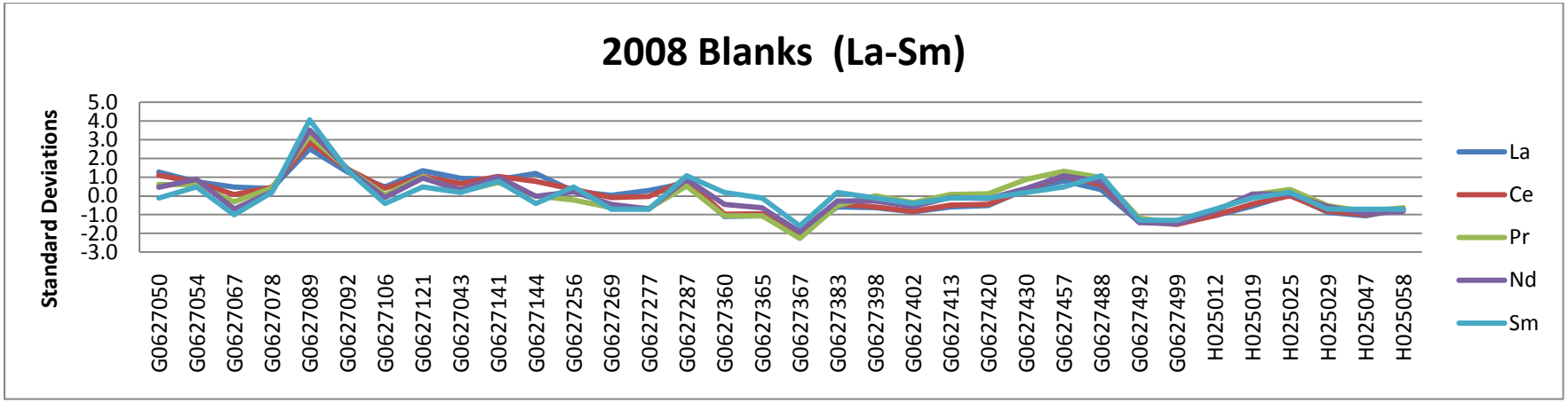
3. Outliers were examined to determine if sample substitution in error on site or some other cause may account for the results.

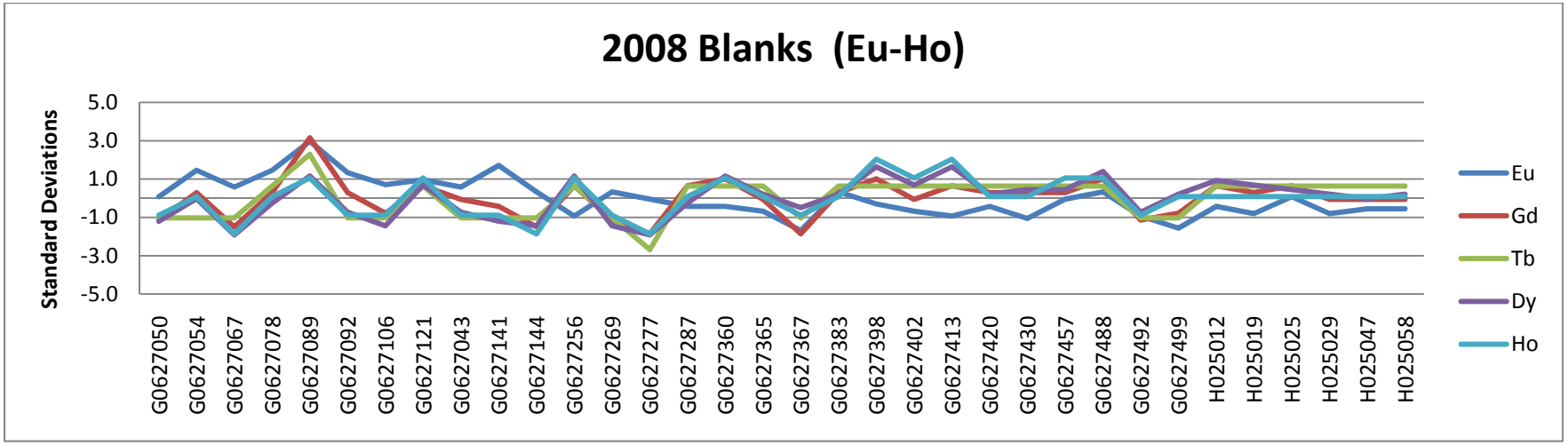
4. Outliers with no apparent cause were noted in the sample database QAQC log together with corrective action.

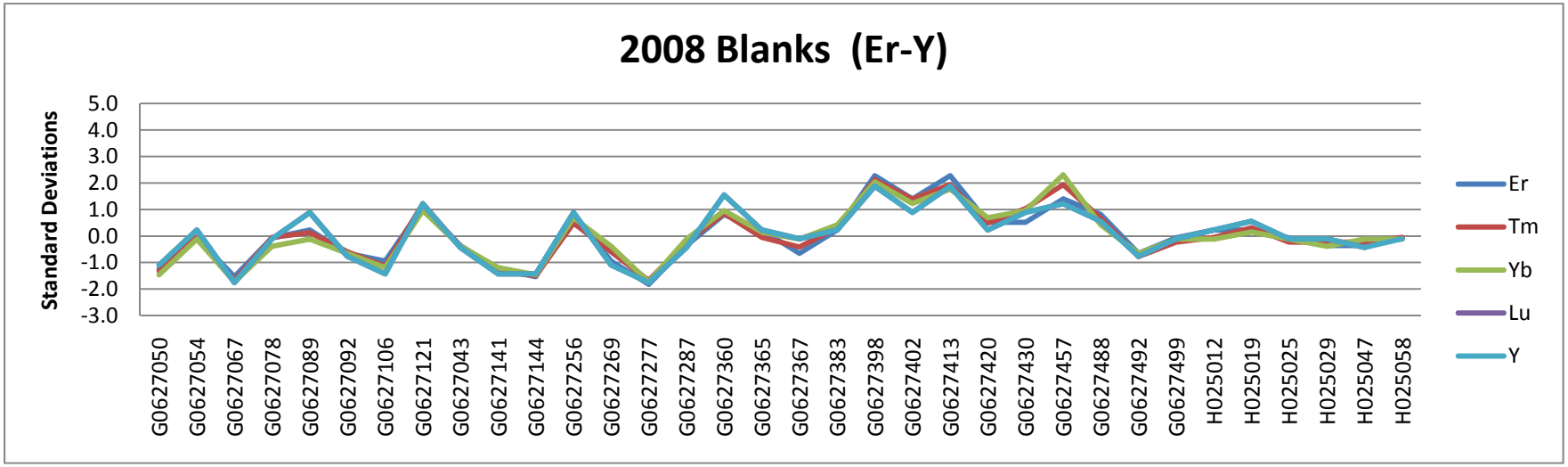
The table below summarizes the nominal means and standard deviations for the elements of interest in the blank sample material:

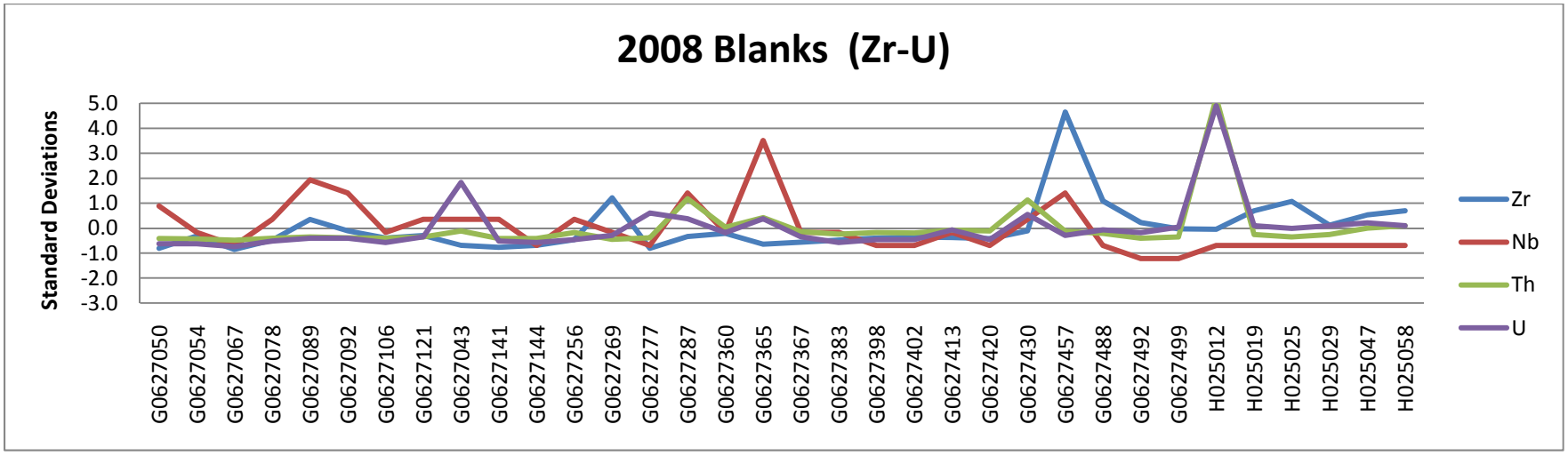
Element	Mean (ppm)	Standard deviation (ppm)
La	14.7	2.7
Ce	30.5	5.0
Pr	3.5	0.5
Nd	12.7	1.6
Sm	2.8	0.3
Eu	0.8	0.1
Gd	2.7	0.3
Tb	0.5	0.1
Dy	2.8	0.4
Ho	0.6	0.1
Er	1.8	0.3
Tm	0.3	0.1
Yb	1.8	0.4
Lu	0.3	0.1
Y	17.3	3.0
Zr	139.2	48.3
Nb	4.3	1.9
Th	5.2	6.2
U	2.7	1.8

The time series below show the blank analytical results throughout the drill program. The samples are ordered by submission date and sequence and show the progressive results during the program from left to right in each graph. The threshold for failure is two standard deviations for a sequential pair of analyses or three standard deviations in a single analysis.


2008 Blanks (La-Sm)
Standard Deviations
5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
G0627050
G0627054
G0627067
G0627078
G0627089
G0627092
G0627106
G0627121
G0627043
G0627141
G0627144
G0627256
G0627269
G0627277
G0627287
G0627360
G0627365
G0627367
G0627383
G0627398
G0627402
G0627413
G0627420
G0627430
G0627457
G0627488
G0627492
G0627499
H025012
H025019
H025025
H025029
H025047
H025058
La
Ce
Pr
Nd
Sm


2008 Blanks (Eu-Ho)
Standard Deviations
5.0
3.0
1.0
-1.0
-3.0
-5.0
G0627050
G0627054
G0627067
G0627078
G0627089
G0627092
G0627106
G0627121
G0627043
G0627141
G0627144
G0627256
G0627269
G0627277
G0627287
G0627360
G0627365
G0627367
G0627383
G0627398
G0627402
G0627413
G0627420
G0627430
G0627457
G0627488
G0627492
G0627499
H025012
H025019
H025025
H025029
H025047
H025058
Eu
Gd
Tb
Dy
Ho


2008 Blanks (Er-Y)
Standard Deviations
5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
G0627050
G0627054
G0627067
G0627078
G0627089
G0627092
G0627106
G0627121
G0627043
G0627141
G0627144
G0627256
G0627269
G0627277
G0627287
G0627360
G0627365
G0627367
G0627383
G0627398
G0627402
G0627413
G0627420
G0627430
G0627457
G0627488
G0627492
G0627499
H025012
H025019
H025025
H025029
H025047
H025058
Er
Tm
Yb
Lu
Y


2008 Blanks (Zr-U)
Standard Deviations
5.0
4.0
3.0
2.0
1.0
0.0
-1.0
-2.0
-3.0
G0627050
G0627054
G0627067
G0627078
G0627089
G0627092
G0627106
G0627121
G0627043
G0627141
G0627144
G0627256
G0627269
G0627277
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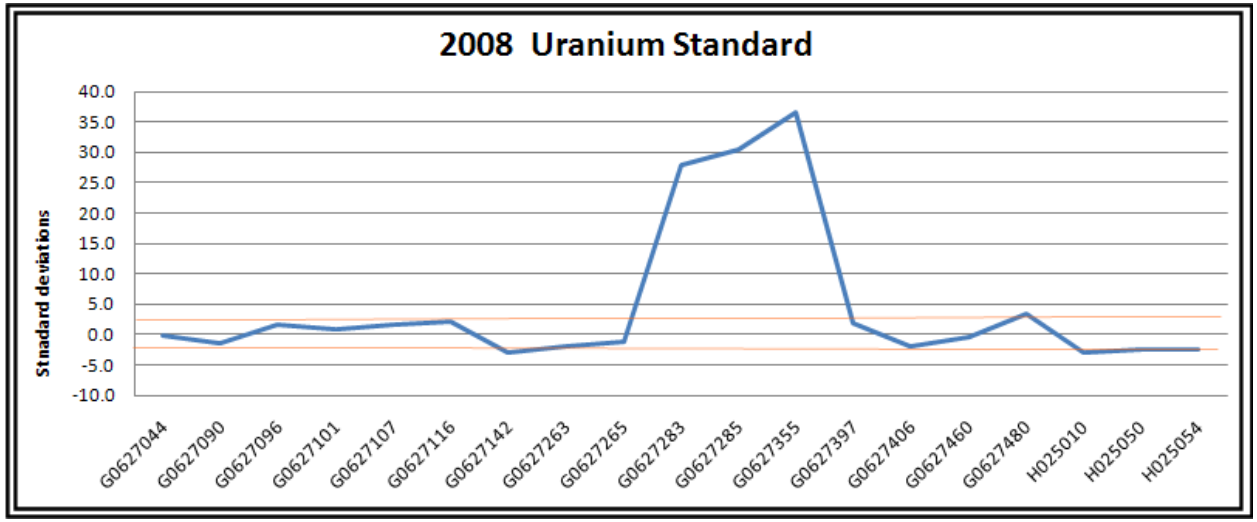
G0627367
G0627383
G0627398
G0627402
G0627413
G0627420
G0627430
G0627457
G0627488
G0627492
G0627499
H025012
H025019
H025025
H025029
H025047
H025058
Zr
Nb
Th
U

Sample H025012 failed in U and sample G0627365 failed in Nb. These were single element failures in the blanks with the following standard assays passing. No significant contamination was indicated and no action was taken. Sample G0627089 failed La, Ce, Pr, and Gd. The following standard assay passed and the preceding duplicate passed. Possible minor contamination is indicated but the extent of the contamination is minor and the batch was accepted.

6.2.3 FIELD STANDARDS

Certificates for the standard used in the 2009 drill program are appended to this report in Appendix 6. Uranium standard MEG-U-1 provided by Minerals and Environmental Geochemistry in Reno Nevada was used as the field standard. This standard is certified for uranium only with a mean of 192.9 ppm U and a standard deviation of 5.2 ppm U.



Samples G0627283, G0627285 and G0627355 failed dramatically in the ICP/MS U analysis. The values for all elements of interest were twice the average for all other reference samples. The DNC (delayed neutron count) U analysis did not show this effect so the problem is clearly with the ICP/MS analysis. Discussions with the lab failed to resolve the problem

but there was no evidence of contamination in the nearby blanks, the duplicate repeated within expected ranges and there was no systematic shift in the elements of interest in all of the samples in the batches affected relative to the other samples. As a result, the affected batches were accepted. There were no other problems with the standards.

6.2.4 LABORATORY STANDARDS

Summary of average discrepancies - Certificate & calibration analysis																				
Standard	**Cert.**	Y	Zr	Nb	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Th	U
DNC-1	3510	0	-2	-2	0.0	-2.2	-0.25	-0.2	0.02	0.01	0.0	-0.01	0.0	-0.02	0.0	-0.06	-0.1	-0.03	0.0	~0.0
DNC-1	4021	0	0	-2	0.2	-2.1	-0.24	0.0	0.12	0.04	0.0	-0.01	0.1	-0.02	0.0	-0.04	0.0	-0.01	0.1	~0.0
DNC-1	4229	0	-2	-2	0.0	-2.1	-0.26	-0.2	0.02	0.00	0.0	-0.01	0.0	-0.02	0.0	-0.06	0.0	-0.02	0.0	~0.0
DNC-1	5549	0	-2	-1	-0.1	-2.4	-0.22	-0.4	0.02	0.01	-0.1	-0.01	0.2	-0.02	0.0	-0.06	-0.1	-0.03	0.0	0.0
DNC-1	5805	-1	-8	-2.5	-0.2	-2.6	-0.23	-0.5	-0.08	-0.01	-0.1	-0.01	0.0	-0.02	-0.1	-0.08	-0.1	-0.03	0.0	0.1
MAG-1	3510	-1	-6	1	-1.1	-3.1	0.03	-3.4	-0.70	-0.20	0.1	0.04	-0.3	-0.12	-0.3	-0.01	-0.2	-0.04	-0.7	0.0
MAG-1	4021	-1	-5	0	-0.5	-3.7	0.03	-1.4	-0.30	-0.12	0.2	-0.06	-0.3	-0.12	-0.2	0.00	0.0	-0.03	-0.2	0.1
MAG-1	4229	-1	-3	1	-0.7	-1.8	0.04	-2.8	-0.60	-0.17	0.0	0.04	-0.2	-0.02	-0.2	-0.01	0.0	-0.03	-0.6	0.0
MAG-1	5549	-2	-6	1	-2.0	-4.6	0.32	-4.6	-0.90	-0.18	-0.3	0.04	-0.1	-0.02	-0.3	-0.01	-0.1	-0.04	-1.0	0.0
MAG-1	5805	0	-4	1	-0.2	-0.9	0.9	-2.9	-0.60	-0.14	0.0	-0.06	0.0	-0.12	-0.1	0.01	0.0	-0.02	-0.4	0.1
Lab Precision		1	5	1	0.1	0.1	0.05	0.1	0.10	0.05	0.1	0.10	0.1	0.1	0.1	0.05	0.1	0.04	0.1	0.1

The table shows the discrepancy between the reported lab standard analysis and the nominal value of the standard as provided by the laboratory. It is clear that cerium and neodymium analyses were slightly lower than the certified standards.

6.2.5 PRECISION

Precision of the 35 field duplicates was calculated using the method of Thompson and Howarth (1978). Summaries of the calculated precisions, ordered by element and concentration are listed below. The tables show the apparent error in the analyses for each concentration expressed as a percentage of the concentration. Some of the calculated intercepts were negative – an unrealistic outcome caused by a non-linear distribution of the medians resulting from sampling two populations (barren shoulder samples and mineralized intersections). Where negative intercepts were encountered, the intercept was corrected visually using the data near the origin. These estimates are indicated in red in the table below. The concentration at which the apparent error is equal to 100% is the apparent precision of the analysis. Field duplicate error is the sum of sampling, splitting and analytical error. The apparent errors in the elements determined from the field duplicates provide the best measures of the overall analytical errors for any element.

Field Duplicates																			
Element	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Y	Zr	Nb	Th	U
Intercept	5.000	7.000	1.000	2.000	2.000	0.200	2.000	0.300	3.000	0.500	2.000	0.461	2.795	0.376	8.000	95.701	5.000	12.700	5.000
Slope	0.216	0.196	0.196	0.196	0.197	0.226	0.186	0.117	0.129	0.135	0.131	0.059	0.061	0.072	0.126	0.087	0.156	0.053	0.176
Concentration																			
30000	43%	39%	39%	39%	40%	45%	37%	23%	26%	27%	26%	12%	12%	14%	25%	18%	31%	11%	35%
20000	43%	39%	39%	39%	40%	45%	37%	23%	26%	27%	26%	12%	12%	14%	25%	18%	31%	11%	35%
10000	43%	39%	39%	39%	40%	45%	37%	23%	26%	27%	26%	12%	12%	14%	25%	19%	31%	11%	35%
8000	43%	39%	39%	39%	40%	45%	37%	23%	26%	27%	26%	12%	12%	15%	25%	20%	31%	11%	35%
6000	43%	39%	39%	39%	40%	45%	37%	23%	26%	27%	26%	12%	12%	15%	26%	21%	31%	11%	35%
4000	43%	40%	39%	39%	40%	45%	37%	23%	26%	27%	26%	12%	12%	15%	26%	22%	31%	11%	35%
2000	44%	40%	39%	39%	40%	45%	37%	23%	26%	27%	26%	12%	13%	15%	26%	27%	32%	12%	36%
1000	44%	41%	39%	40%	40%	45%	38%	23%	26%	27%	27%	12%	13%	15%	27%	37%	32%	13%	36%
800	44%	41%	39%	40%	40%	45%	38%	23%	27%	27%	27%	12%	13%	15%	27%	41%	32%	14%	36%
600	45%	42%	40%	40%	40%	45%	38%	23%	27%	27%	27%	12%	13%	15%	28%	49%	33%	15%	37%
500	45%	42%	40%	40%	40%	45%	38%	23%	27%	27%	27%	12%	13%	15%	28%	56%	33%	16%	37%
400	46%	43%	40%	40%	40%	45%	38%	23%	27%	27%	27%	12%	14%	15%	29%	65%	34%	17%	38%
300	47%	44%	40%	41%	41%	45%	39%	24%	28%	27%	28%	12%	14%	15%	31%	81%	35%	19%	39%
200	48%	46%	40%	41%	41%	45%	39%	24%	29%	27%	28%	12%	15%	15%	33%	113%	36%	23%	40%
100	53%	53%	41%	43%	43%	46%	41%	24%	32%	28%	30%	13%	18%	15%	41%	209%	41%	36%	45%
50	63%	67%	43%	47%	47%	46%	45%	25%	38%	29%	34%	14%	23%	16%	57%	400%	51%	61%	55%
10	143%	179%	59%	n/a	79%	49%	n/a	29%	86%	37%	66%	21%	68%	22%	185%	1931%	131%	265%	135%

The results suggest that the assays are likely accurate to between $\pm$<50 ppm and $\pm$~300 ppm, varying by element. These estimates are likely conservative (ie. they overestimate the true sampling error) because the sample size is only half (quarter core) the size of the remainder of the core samples (half core).

6.2.6 DATA VERIFICATION

In 2011, a batch of 31 sample pulps were extracted from the ActLabs sample set and sent to ALS Laboratories in Vancouver, British Columbia for reanalysis. The samples were selected so as to span the full range of TREO values reported by EcoTech Laboratories and to be dominantly in the range from 0.30% to 2.50% TREO.

The results were analyzed by performing linear regressions of the ALS repeats (Y) against the ActLabs original assays (X). They are summarized in the table below:

Element	Intercept			Slope			Notes
	Mean	Lower	Upper	Mean	Lower	Upper	
La	6.5	-35.9	22.9	1.04	1.01	1.07	+4%
Ce	-14.8	-80.2	50.7	1.00	0.98	1.03	
Pr	2.5	-5.0	10.0	0.93	0.91	0.96	-7%
Nd	-16.5	-77.2	44.1	1.00	0.95	1.04	
Sm	-3.1	-9.9	3.7	1.04	1.02	1.06	+4%
Eu	0.8	-6.1	7.7	1.35	1.19	1.52	Significant difference (35%)
Gd	-5.2	-26.1	15.8	1.06	1.03	1.10	+6%
Tb	4.3	-9.1	17.7	1.00	0.93	1.07	
Dy	41.9	-63.2	147.1	1.04	0.96	1.12	
Ho	16.0	-10.3	42.3	0.94	0.88	1.00	
Er	44.7	-48.8	138.1	0.99	0.91	1.07	
Tm	4.9	-6.3	16.0	0.91	0.86	0.96	
Yb	3.3	-27.3	33.9	1.03	1.01	1.05	+1%
Lu	-2.7	-3.7	9.0	0.95	0.91	0.98	-5%
Y	492.7	-284.3	1269.6	0.97	0.90	1.03	
Zr	-162.1	-386.0	61.9	1.13	1.09	1.17	+13%
Nb	89.0	11.5	166.4	0.84	0.78	0.90	-14%
Th	8.8	-35.6	53.1	1.03	0.97	1.08	
U	1.8	-35.1	38.7	1.02	0.98	1.07	

ALS returned over limit analyses for Dy, Er, Th and U and the verification is consequently limited to concentrations less than 0.5% (5000 ppm). There is a very large variance of 35% in the europium response between the ALS and Activation Labs analyses. ALS Laboratories consistently returned high Eu analyses relative to the other laboratories for batches of check samples submitted from the 2008, 2009 and 2010 sample programs. This variance is attributed to ALS Laboratories and not to Activation

Laboratories. ALS under-reported Nb by 14% but the correlation is more complex. Below 2500 ppm Nb, ALS over reported Nb by 12% relative to Activation Laboratories but at concentrations above this, ALS significantly under reported Nb by 22%. ALS check assays for Nb were significantly over-limit at low concentrations while Activation Laboratories analyses agreed with the certified standards for Nb; this may account for the discrepancy at concentrations below 2500 ppm. The discrepancy above this concentration cannot be attributed to either laboratory. With respect to Zr, ALS Laboratories check assays were dramatically overlimit (average of 250 ppm Zr for a standard with a range of <10 to 20 ppm Zr). The discrepancy is attributed to problems with the ALS Laboratories analysis. The remaining elements show variations of 7% or less between the laboratories.

2009 ASSAY QUALITY ASSURANCE & QUALITY CONTROL

A6.3.1 DESCRIPTION

The 2009 data set consists of 862 analyses including duplicates, blanks and standards. Assay quality assurance and quality control measures implemented during the 2009 drill program included the following elements:

1. Quality assurance and control measures were restricted to the following elements: La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, ,Dy, Ho, Er, Tm, Yb, Lu, Y, Zr, Nb, Th, and U. The acceptability of an analytical fusion was assessed from the total oxide sum where such analyses were available.

2. All electronic data was checked against the assay certificates. An instance was found where two assay certificates with the same number but different results were delivered to the client. The correct set of results was determined and used in the sample database. A consistent x10 error in the value of a standard was also noted. EcoTech Laboratories confirmed that this was a transcription error and that the standards did pass.

3. Blank material consisted of ornamental stone purchased from a local hardware store. There is no certainty that the same source was used throughout the program.

4. A blank with a unique tag number in sequence with the other samples was inserted in every group of 20 samples.

5. The uranium standard used in the 2008 drill program was used in the 2009 program. This standard is certified for uranium only. Standards were inserted into every run of 20 samples but only commencing in the latter third of the sampling program; 612 of 862 samples were analyzed in runs without a standard.

6. When standards were used, they were inserted into every sequence of 20 samples immediately preceding the blank sample in every case.

7. Duplicate samples were taken of the core samples. For duplicate intervals, the core was halved and half left in the core box. The remaining half was quartered and sent in as two separate samples. Duplicates were always submitted

immediately after the blank sample in every sampling sequence. The original sample generally but not always immediately preceded the standard sample in sequence.

8. Upon receipt of laboratory results, the following measures were taken before releasing results:

    a. Electronic sample results were checked against the signed assay certificates.

    b. Blank analyses were inspected for contamination. Field criteria for a pass was that no TREO analysis be greater than 0.05%.

    c. Field standards were checked against nominal values. For a field pass, uranium analysis variance in excess of 20 ppm was permitted.

    d. Laboratory standards analyses, duplicates and resplits were examined for reproducibility.

9. Upon completion of the program, formal analysis of all results was completed and is described in this appendix.

10. Failure criteria for any analysis is defined by a sequential pair of analyses greater than two standard deviations from an standard certified mean or a single analysis with an error greater than three standard deviations from a standard mean.

A6.3.2 BLANKS

Blanks were inserted to check for contamination at the laboratory from the crushing through analytical stages. The following procedure was used in the analysis of blank sample results:

1. Means and standard deviations were calculated for the elements of interest, omitting three clear outliers from these calculations.

2. Time series of the blank results were prepared for each element.

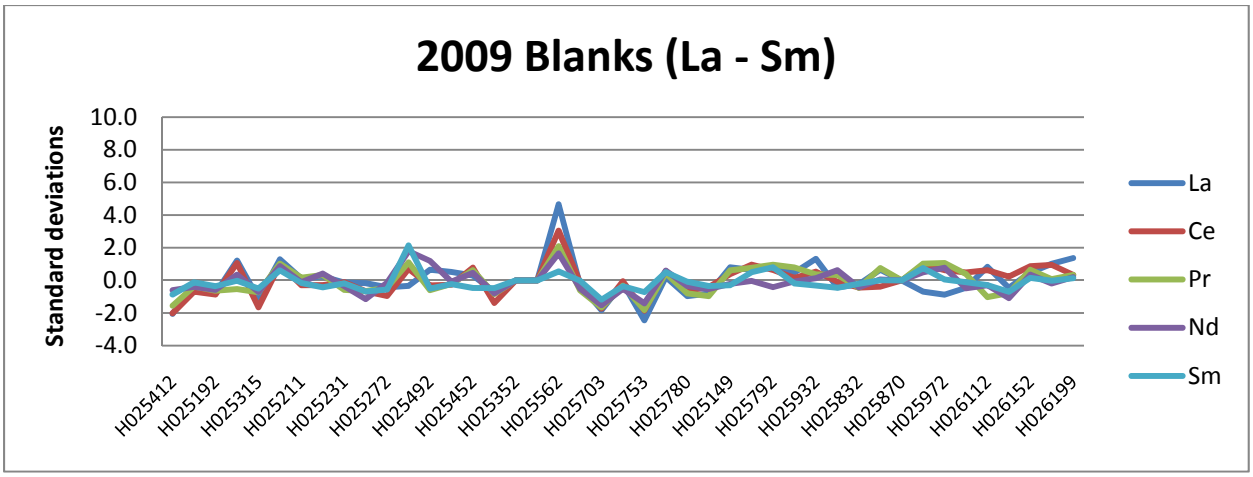
3. Outliers were examined to determine if sample substitution in error on site or some other cause may account for the results.

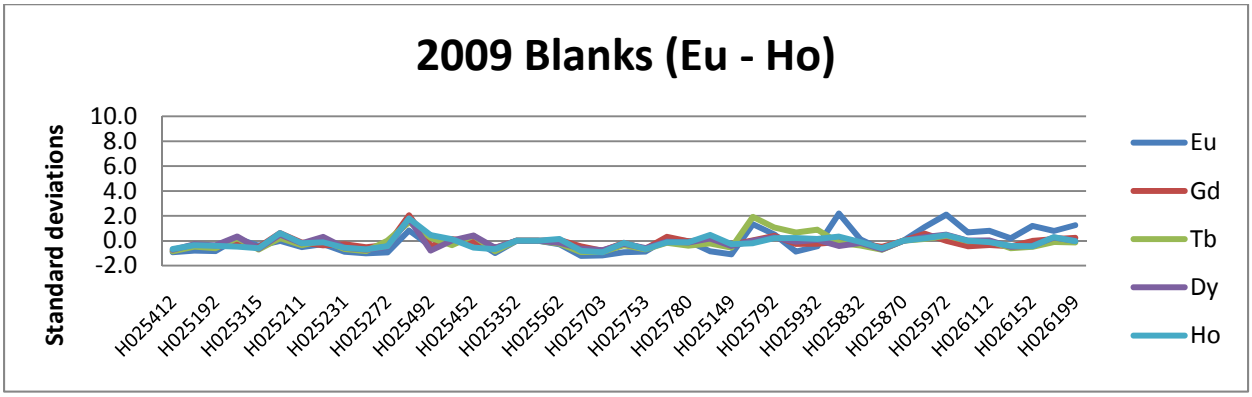
4. Outliers with no apparent cause were noted in the sample database QAQC log together with corrective action.

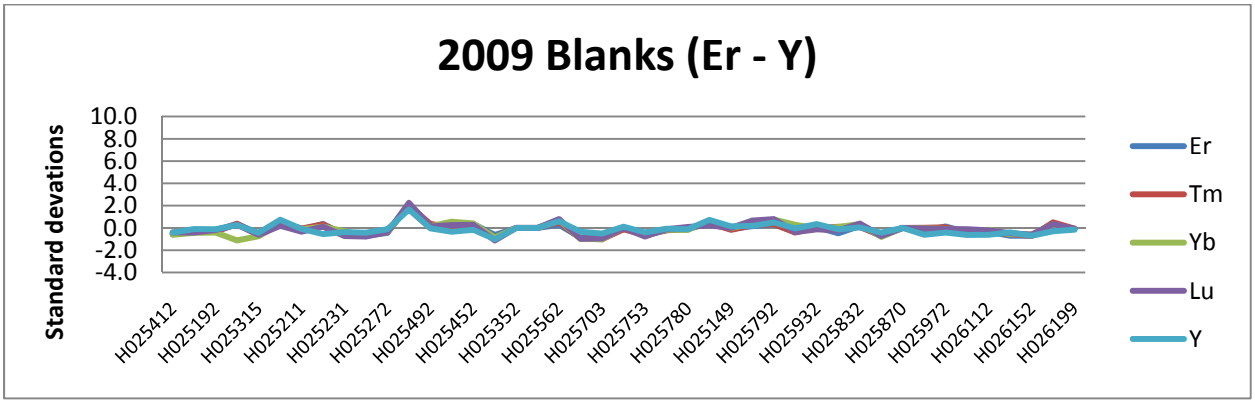
The table below summarizes the nominal means and standard deviations for the elements of interest in the blank sample material:

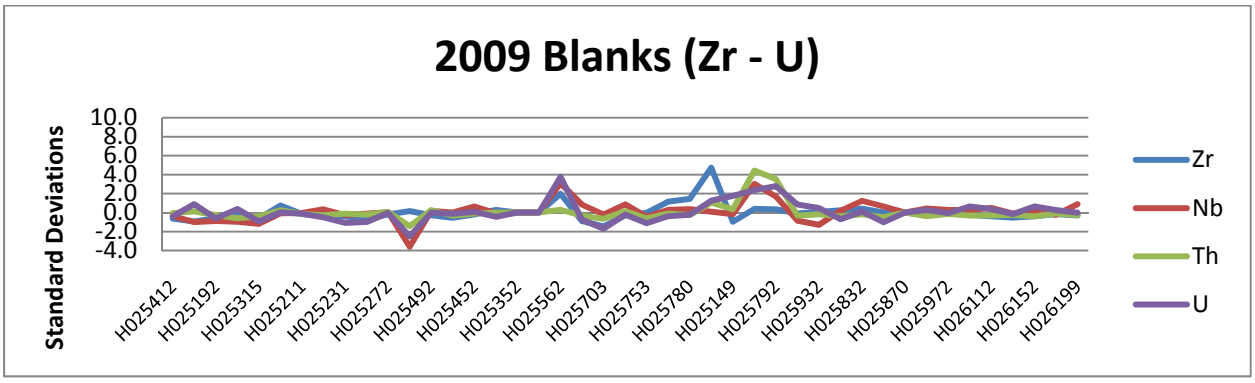
Element	Mean (ppm)	Standard deviation (ppm)
La	29.0	3.6
Ce	53.5	8.3
Pr	6.2	1.0
Nd	21.9	3.7
Sm	3.9	1.1
Eu	0.7	0.2
Gd	3.4	1.1
Tb	0.6	0.2
Dy	3.3	1.3
Ho	0.6	0.3
Er	1.9	0.8
Tm	0.3	0.1
Yb	2.0	0.7
Lu	0.3	0.1
Y	16.3	7.7
Zr	147.8	41.3
Nb	27.7	6.7
Th	15.9	6.3
U	3.9	0.8

The time series below show the blank analytical results throughout the drill program. The samples are ordered by submission date and sequence and show the progressive results during the program from left to right in each graph. The threshold for failure is two standard deviations for a sequential pair of analyses or three standard deviations in a single analysis.


2009 Blanks (La - Sm)
Standard deviations
10.0
8.0
6.0
4.0
2.0
0.0
-2.0
-4.0
H025412
H025192
H025315
H025211
H025231
H025272
H025492
H025452
H025352
H025562
H025703
H025753
H025780
H025149
H025792
H025932
H025832
H025870
H025972
H026112
H026152
H026199
La
Ce
Pr
Nd
Sm


2009 Blanks (Eu - Ho)
Standard deviations
10.0
8.0
6.0
4.0
2.0
0.0
-2.0
H025412
H025192
H025315
H025211
H025231
H025272
H025492
H025452
H025352
H025562
H025703
H025753
H025780
H025149
H025792
H025932
H025832
H025870
H025972
H026112
H026152
H026199
Eu
Gd
Tb
Dy
Ho

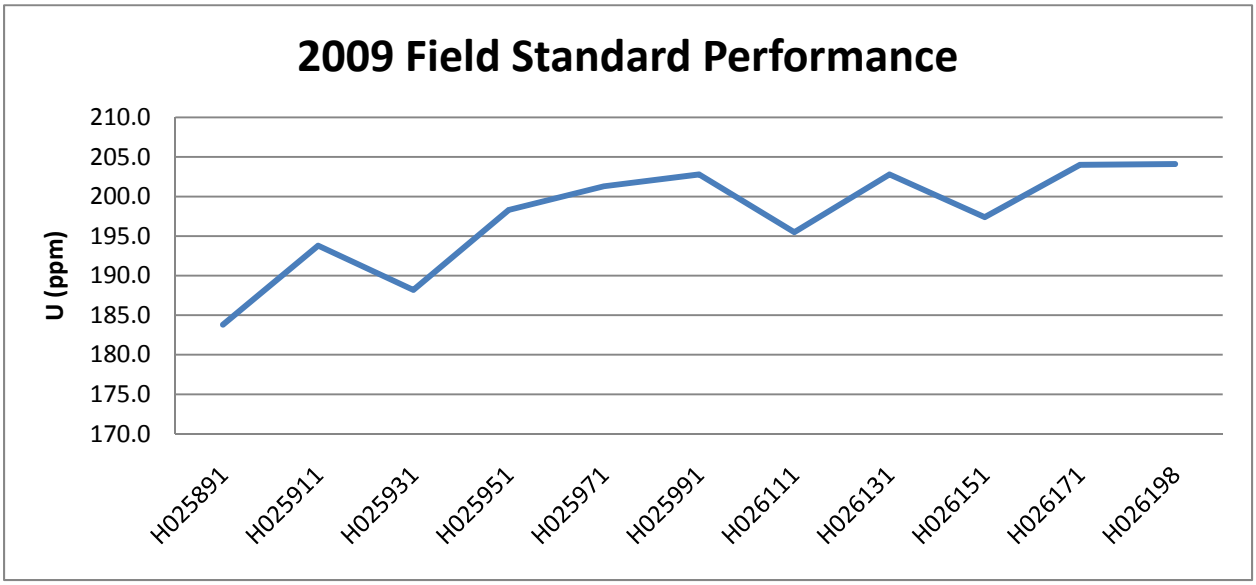

2009 Blanks (Er - Y)
Standard devations
10.0
8.0
6.0
4.0
2.0
0.0
-2.0
-4.0
H025412
H025192
H025315
H025211
H025231
H025272
H025492
H025452
H025352
H025562
H025703
H025753
H025780
H025149
H025792
H025932
H025832
H025870
H025972
H026112
H026152
H026199
Er
Tm
Yb
Lu
Y


2009 Blanks (Zr - U)
Standard Deviations
10.0
8.0
6.0
4.0
2.0
0.0
-2.0
-4.0
H025412
H025192
H025315
H025211
H025231
H025272
H025492
H025452
H025352
H025562
H025703
H025753
H025780
H025149
H025792
H025932
H025832
H025870
H025972
H026112
H026152
H026199
Zr
Nb
Th
U

Sample H025562 failed in lanthanum and cerium but in none of the other elements.. The overall blank results detected no significant contamination in the sample results.

A6.3.3 FIELD STANDARDS

Standard MEG-U-1 was used as the field standard for the 2009 program. Certificates for this standard are in Appendix 6. This standard was certified for uranium only with a mean of 192.9 ppm U and standard deviation of 5.2 ppm U. The performance of the standard is illustrated below.



The criteria for failure is two or more sequential samples showing variance greater than 2 standard deviations from the mean certified standard or a single sample showing greater than 3 standard deviations from the mean certified standard. There is clear drift in the uranium concentration of the standard analyses throughout the program and the last two samples failed.

A6.3.4 LABORATORY STANDARDS

As a quality assurance and control measure, EcoTech Laboratories analyzed a suite of from 1 to 3 standards for each batch of samples. Standard STSD3 was run in all but three of the batches and is tabulated below. The table shows the standard results in terms of standard deviations, ordered sequentially from earliest (top) to latest (bottom). Standard results which were more than 2 standard deviations from the published means are highlighted in red (above upper limit) and green (below lower limit).

ECOTECH STANDARD STSD3																			
Element	**La**	**Ce**	**Pr**	**Nd**	**Sm**	**Eu**	**Gd**	**Tb**	**Dy**	**Ho**	**Er**	**Tm**	**Yb**	**Lu**	**Y**	**Nb**	**Zr**	**Th**	**U**
Mean (ppm)	37.1	65.3	9.5	35.1	7.2	1.4	6.6	1.0	6.0	1.2	3.7	0.5	3.4	0.6	35.5	12.5	204.8	8.6	10.4
SD (ppm)	2.0	3.8	0.8	1.7	0.6	0.2	0.6	0.1	0.4	0.1	0.5	0.0	0.3	0.1	2.3	1.0	5.8	0.5	0.6
STANDARD DEVIATIONS																			
AS09-6147	0.31	-0.79	-0.54	-0.54	-0.58	0.39	-1.22	0.09	-1.72	0.04	-0.09	-0.07	0.14	1.50	0.54	-1.53	-0.66	0.20	-0.18
AS09-6191	-0.55	-0.10	-1.24	-0.80	-0.45	-0.72	-0.87	-0.47	-0.60	-1.05	-0.45	-0.16	0.46	0.66	1.04	0.96	-1.18	0.40	0.62
AS09-6216	-0.55	-0.10	-1.24	-0.80	-0.45	-0.72	-0.87	-0.47	-0.60	-1.05	-0.45	-0.16	0.46	0.66	1.04	0.96	-1.18	0.40	0.62
AS09-6217	-0.63	0.98	-1.14	-0.46	-0.73	-0.22	-1.23	0.07	-0.13	-0.29	-0.49	-0.16	-0.47	1.22	1.54	1.62	-1.53	-0.16	1.50
AS09-6217	-1.58	1.77	-1.39	-0.81	-0.42	-1.04	-1.06	-0.65	-0.49	0.41	-0.62	-1.02	0.21	1.97	2.42	0.57	-0.49	0.08	2.71
AS09-6231	0.21	-0.63	-0.48	-0.31	-0.43	0.01	-0.28	-0.43	-0.56	-0.43	-0.25	-0.53	-0.32	1.13	-0.67	-0.23	0.10	-0.61	-0.82
AS09-6232	0.50	-0.17	-0.17	-0.85	-0.16	-0.08	-1.64	0.02	-0.27	-1.51	4.23	-0.90	-1.75	1.08	-0.07	-0.11	0.72	0.60	-1.10
AS09-6232	1.32	-2.00	-1.09	-0.21	-1.59	0.28	-1.40	-0.74	-0.97	-0.60	-0.76	-0.30	-0.87	1.59	-1.11	0.18	0.10	1.22	-0.24
AS09-6232	0.40	-0.01	0.30	1.00	0.13	0.12	0.52	0.42	0.12	0.34	0.10	-0.19	0.07	0.59	-0.66	-1.04	-1.18	1.23	-1.51
AS09-6239	0.07	-1.60	-1.05	-1.09	-1.23	-1.00	-1.24	-1.14	-1.36	-1.01	-0.90	-1.22	-1.51	1.45	-1.33	-1.36	-0.51	0.13	1.40
AS09-6239	1.34	0.31	-0.25	0.39	0.02	0.15	0.05	0.78	0.83	0.79	0.87	-0.35	0.00	0.65	1.54	0.40	-1.32	0.47	0.27
AS09-6240	-1.12	-1.64	-0.81	-0.74	-0.33	-0.67	-0.03	-0.03	0.01	0.47	0.20	1.54	0.88	-0.27	0.25	-0.76	1.29	0.47	-0.65
AS09-6241	0.23	0.16	0.97	1.06	1.08	0.71	1.04	1.05	1.11	0.93	0.46	1.98	1.22	0.20	-0.55	-1.20	-1.51	0.33	0.22
AS09-6242	-1.22	-0.67	-1.04	0.40	-0.29	-0.09	0.53	0.22	1.20	0.84	-1.03	1.29	1.77	-0.49	-0.55	0.56	0.60	-0.12	0.84
AS09-6242	-2.32	-0.25	-0.91	-0.92	0.46	-0.68	1.83	1.10	0.08	1.65	-0.51	1.91	0.83	0.86	1.27	-0.48	0.22	-2.88	1.48

AS09-6248	-0.44	0.72	1.29	0.23	1.61	-0.02	0.35	-2.88	-0.02	1.32	0.90	0.14	0.45	0.06	-0.43	-0.60	-1.03	-0.04	-0.46
AS09-6248	-0.32	0.43	1.66	-0.31	1.43	-0.91	1.21	-1.56	1.94	-1.68	0.62	0.43	1.46	-0.72	0.38	-0.85	-0.13	0.95	0.20
AS09-6248	0.19	0.03	1.91	0.54	1.14	-0.64	-0.32	-0.83	1.28	-0.43	1.04	0.70	-0.72	-1.15	0.92	-0.54	-0.79	-0.02	-0.19
AS09-6249	0.46	0.74	2.04	-0.23	2.05	-1.33	-0.04	2.11	1.44	1.97	0.56	0.41	0.43	-0.21	-0.55	-0.56	-0.66	0.24	-0.27
AS09-6249	-0.04	0.05	1.11	0.58	1.51	-1.36	1.10	1.12	2.03	2.19	0.60	0.50	0.86	-0.49	0.52	-0.83	1.03	1.58	0.37
AS09-6254	-1.95	-0.51	-0.79	0.94	0.33	-0.03	2.42	1.54	1.00	0.48	0.33	0.73	0.28	-0.27	0.03	-0.05	1.12	-1.72	1.97
AS09-6267	0.45	-1.44	-0.98	-1.09	-0.62	-0.22	-1.10	0.31	0.07	0.04	-0.54	0.78	-0.59	-0.57	-0.52	-1.89	0.77	-0.10	-0.58
AS09-6267	-1.21	-1.66	-0.48	-2.34	-2.51	-1.66	-0.54	-0.55	-0.46	-1.61	-1.31	-2.40	-2.51	-0.84	-2.36	1.62	-0.59	-1.12	-0.92
AS09-6267	-0.53	0.54	0.08	0.93	-0.68	-0.57	0.07	1.46	-0.17	0.31	-0.65	-0.16	-0.89	-0.95	-0.67	-0.65	1.14	-1.89	-0.32
AS09-6270	1.29	0.19	0.46	1.52	0.57	-0.07	0.95	0.73	0.44	0.13	0.02	-0.07	0.80	-0.83	0.09	0.90	-0.45	-0.22	-0.56
AS09-6271	1.51	1.45	0.55	0.48	-0.02	2.73	0.89	0.67	0.82	0.85	0.11	0.76	0.88	0.18	-0.22	2.02	0.46	1.33	-0.67
AS09-6271	0.40	1.16	0.30	-1.32	-1.30	1.68	-0.76	-1.01	-1.44	-0.76	-1.13	-1.80	-1.04	-1.17	0.29	0.41	0.08	-1.57	-0.88
AS09-6271	1.65	0.44	0.80	-0.34	-0.21	1.84	0.04	-0.05	-0.84	-0.32	-0.75	-0.67	-0.13	-0.70	-0.52	1.82	2.00	-0.99	-1.50
AS09-6272	0.54	-0.19	-0.10	0.80	1.04	1.00	0.47	-0.63	-1.22	-0.90	0.44	0.32	-1.18	-1.57	-1.37	-0.03	0.15	0.77	-0.89
AS09-6272	0.99	-0.48	0.65	0.24	-0.46	1.28	-0.46	-0.66	-1.54	-0.89	0.47	-1.73	1.56	-1.46	0.56	0.71	1.08	0.12	0.22
AS09-6272	-0.26	1.66	0.78	1.71	0.29	0.64	0.74	0.23	0.26	0.01	-0.39	0.32	-0.24	-0.94	-1.06	0.29	0.24	0.95	0.18
AS09-6272	0.88	1.63	0.79	2.32	0.80	1.21	0.81	0.18	-0.23	-0.22	-0.63	0.11	-0.56	-1.19	0.21	-0.33	2.13	-0.01	-0.83

There were no systematically significant discrepancies between the standard measurements and the published standards.

Standards were also run for the over limit assays. A systematic error in the reporting of one standard (OKA2) was noted for the first 4 batches: AS09-0455, AS09-0456, AS09-6147 and AS09-6191 inclusive. In these batches, cerium values were reported which were one tenth the subsequent values and the standard. The laboratory attributed this to a reporting and transcription error and the results for the remaining elements analyzed showed no discrepancies with respect to subsequent and published values.

A6.3.5 PRECISION

Precision of the field duplicates, the laboratory re-splits and laboratory duplicates was calculated using the method of Thompson and Howarth (1978). The number of data points used in each calculation is summarized below:

Field duplicates	35
Re-splits	32
Pulp duplicates	90

Spreadsheets containing the calculations are appended to this report in the digital archive. Summaries of the calculated precisions, tabulated by class and ordered by element and concentration are listed below. The tables show the apparent error in the analyses for each concentration expressed as a percentage of the concentration. The concentration at which the apparent error is equal to 100% is the apparent precision of the analysis. The apparent errors in the elements determined from the field duplicates provide the best measures of the overall analytical errors for any element. Field duplicate error is the sum of sampling, splitting and analytical error.

Lab Duplicates																			
Element	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Y	Zr	Nb	Th	U
Intercept	0.994	4.441	0.850	1.566	0.132	0.556	0.574	0.079	0.561	0.145	0.384	-0.005	0.307	0.025	0.264	9.562	2.668	0.857	0.549
Slope	0.018	0.013	0.012	0.018	0.021	0.015	0.014	0.026	0.019	0.019	0.019	0.025	0.018	0.029	0.014	0.008	0.016	0.019	0.018
ppm																			
50	7.5%	20.4%	5.8%	9.8%	4.8%	5.3%	5.0%	5.5%	6.1%	4.3%	5.4%	5.0%	4.9%	6.0%	3.9%	39.8%	14.0%	7.3%	5.9%
100	5.5%	11.5%	4.1%	6.7%	4.5%	4.2%	3.9%	5.4%	4.9%	4.0%	4.6%	5.0%	4.2%	5.9%	3.4%	20.6%	8.6%	5.6%	4.8%
200	4.5%	7.1%	3.3%	5.1%	4.4%	3.6%	3.3%	5.3%	4.4%	3.9%	4.2%	5.0%	3.9%	5.9%	3.1%	11.1%	6.0%	4.7%	4.2%
300	4.2%	5.6%	3.0%	4.6%	4.4%	3.4%	3.1%	5.3%	4.2%	3.8%	4.1%	5.0%	3.8%	5.9%	3.0%	7.9%	5.1%	4.4%	4.0%
400	4.0%	4.8%	2.8%	4.3%	4.3%	3.3%	3.0%	5.3%	4.1%	3.8%	4.1%	5.0%	3.8%	5.9%	3.0%	6.3%	4.6%	4.3%	4.0%
500	3.9%	4.4%	2.7%	4.1%	4.3%	3.3%	3.0%	5.3%	4.1%	3.8%	4.0%	5.0%	3.8%	5.9%	3.0%	5.3%	4.4%	4.2%	3.9%
600	3.8%	4.1%	2.7%	4.0%	4.3%	3.2%	2.9%	5.3%	4.0%	3.8%	4.0%	5.0%	3.7%	5.9%	3.0%	4.7%	4.2%	4.1%	3.9%

800	3.8%	3.7%	2.6%	3.9%	4.3%	3.2%	2.9%	5.3%	4.0%	3.8%	4.0%	5.0%	3.7%	5.9%	2.9%	3.9%	4.0%	4.1%	3.8%
1000	3.7%	3.5%	2.6%	3.8%	4.3%	3.2%	2.9%	5.3%	3.9%	3.8%	3.9%	5.0%	3.7%	5.9%	2.9%	3.4%	3.8%	4.0%	3.8%
2000	3.6%	3.1%	2.5%	3.7%	4.3%	3.1%	2.8%	5.2%	3.9%	3.8%	3.9%	5.0%	3.7%	5.9%	2.9%	2.5%	3.6%	3.9%	3.7%
4000	3.6%	2.8%	2.4%	3.6%	4.3%	3.1%	2.8%	5.2%	3.9%	3.7%	3.9%	5.0%	3.6%	5.9%	2.9%	2.0%	3.4%	3.9%	3.7%
6000	3.6%	2.8%	2.4%	3.6%	4.3%	3.1%	2.8%	5.2%	3.8%	3.7%	3.9%	5.0%	3.6%	5.9%	2.9%	1.8%	3.4%	3.9%	3.7%
8000	3.5%	2.7%	2.4%	3.6%	4.3%	3.1%	2.7%	5.2%	3.8%	3.7%	3.9%	5.0%	3.6%	5.9%	2.9%	1.8%	3.4%	3.9%	3.7%
10000	3.5%	2.7%	2.4%	3.6%	4.3%	3.1%	2.7%	5.2%	3.8%	3.7%	3.9%	5.0%	3.6%	5.9%	2.9%	1.7%	3.4%	3.9%	3.7%
20000	3.5%	2.7%	2.4%	3.5%	4.3%	3.1%	2.7%	5.2%	3.8%	3.7%	3.9%	5.0%	3.6%	5.9%	2.9%	1.6%	3.3%	3.9%	3.7%
30000	3.5%	2.6%	2.4%	3.5%	4.3%	3.1%	2.7%	5.2%	3.8%	3.7%	3.9%	5.0%	3.6%	5.9%	2.9%	1.6%	3.3%	3.9%	3.7%

Resplits																			
Element	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Y	Zr	Nb	Th	U
Intercept	0.796	8.087	1.817	4.580	1.776	0.420	1.046	0.511	1.511	0.574	1.285	0.435	2.975	0.124	-0.587	22.376	4.517	2.428	2.553
Slope	0.041	0.031	0.032	0.024	0.029	0.042	0.035	0.058	0.033	0.035	0.030	0.023	0.020	0.035	0.035	0.022	0.031	0.057	0.038
ppm																			
50	11.4%	38.6%	13.7%	23.0%	12.9%	10.1%	11.1%	13.6%	12.6%	9.4%	11.1%	6.4%	15.9%	7.5%	4.7%	93.9%	24.3%	21.1%	17.7%
100	9.8%	22.4%	10.1%	13.9%	9.4%	9.3%	9.0%	12.6%	9.6%	8.2%	8.6%	5.5%	10.0%	7.2%	5.9%	49.1%	15.3%	16.3%	12.6%
200	9.0%	14.3%	8.3%	9.3%	7.6%	8.8%	8.0%	12.1%	8.1%	7.7%	7.3%	5.1%	7.0%	7.1%	6.5%	26.8%	10.7%	13.9%	10.1%
300	8.8%	11.7%	7.7%	7.8%	7.0%	8.7%	7.6%	11.9%	7.5%	7.5%	6.9%	4.9%	6.0%	7.1%	6.7%	19.3%	9.2%	13.0%	9.2%
400	8.6%	10.3%	7.4%	7.0%	6.7%	8.6%	7.5%	11.8%	7.3%	7.4%	6.6%	4.9%	5.5%	7.0%	6.8%	15.6%	8.5%	12.6%	8.8%
500	8.5%	9.5%	7.2%	6.5%	6.5%	8.6%	7.4%	11.8%	7.1%	7.3%	6.5%	4.8%	5.2%	7.0%	6.8%	13.3%	8.0%	12.4%	8.5%
600	8.5%	9.0%	7.1%	6.2%	6.4%	8.6%	7.3%	11.8%	7.0%	7.3%	6.4%	4.8%	5.0%	7.0%	6.9%	11.8%	7.7%	12.2%	8.4%
800	8.4%	8.3%	6.9%	5.9%	6.3%	8.5%	7.2%	11.7%	6.9%	7.2%	6.3%	4.7%	4.8%	7.0%	6.9%	10.0%	7.4%	12.0%	8.1%
1000	8.4%	7.9%	6.8%	5.6%	6.2%	8.5%	7.2%	11.7%	6.8%	7.2%	6.3%	4.7%	4.6%	7.0%	7.0%	8.9%	7.1%	11.9%	8.0%
2000	8.3%	7.1%	6.7%	5.2%	6.0%	8.5%	7.1%	11.6%	6.7%	7.2%	6.1%	4.7%	4.3%	7.0%	7.0%	6.6%	6.7%	11.7%	7.8%
4000	8.3%	6.7%	6.6%	4.9%	5.9%	8.4%	7.0%	11.6%	6.6%	7.1%	6.1%	4.7%	4.2%	7.0%	7.0%	5.5%	6.5%	11.6%	7.6%
6000	8.2%	6.5%	6.5%	4.9%	5.9%	8.4%	7.0%	11.6%	6.6%	7.1%	6.0%	4.7%	4.1%	7.0%	7.1%	5.1%	6.4%	11.5%	7.6%
8000	8.2%	6.5%	6.5%	4.8%	5.9%	8.4%	7.0%	11.6%	6.6%	7.1%	6.0%	4.6%	4.1%	7.0%	7.1%	4.9%	6.3%	11.5%	7.6%

10000	8.2%	6.4%	6.5%	4.8%	5.9%	8.4%	7.0%	11.6%	6.6%	7.1%	6.0%	4.6%	4.1%	7.0%	7.1%	4.8%	6.3%	11.5%	7.6%
20000	8.2%	6.3%	6.5%	4.8%	5.8%	8.4%	7.0%	11.6%	6.6%	7.1%	6.0%	4.6%	4.1%	7.0%	7.1%	4.6%	6.3%	11.5%	7.5%
30000	8.2%	6.3%	6.5%	4.7%	5.8%	8.4%	7.0%	11.6%	6.6%	7.1%	6.0%	4.6%	4.0%	7.0%	7.1%	4.5%	6.3%	11.4%	7.5%

Field Duplicates																			
Element	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Y	Zr	Nb	Th	U
Intercept	16.628	44.140	3.982	11.261	2.089	0.570	6.988	1.506	11.237	2.684	6.437	0.889	3.745	0.414	60.760	34.308	-1.473	18.504	-0.541
Slope	0.209	0.177	0.190	0.202	0.064	0.179	0.180	0.167	0.159	0.156	0.185	0.186	0.212	0.193	0.151	0.253	0.359	0.206	0.375
Concentration																			
30000	42%	36%	38%	40%	13%	36%	36%	33%	32%	31%	37%	37%	42%	39%	31%	51%	72%	41%	75%
20000	42%	36%	38%	41%	13%	36%	36%	33%	32%	31%	37%	37%	42%	39%	31%	51%	72%	41%	75%
10000	42%	36%	38%	41%	13%	36%	36%	33%	32%	31%	37%	37%	43%	39%	32%	51%	72%	42%	75%
8000	42%	37%	38%	41%	13%	36%	36%	33%	32%	31%	37%	37%	43%	39%	32%	52%	72%	42%	75%
6000	42%	37%	38%	41%	13%	36%	36%	33%	32%	31%	37%	37%	43%	39%	32%	52%	72%	42%	75%
4000	43%	38%	38%	41%	13%	36%	36%	33%	32%	31%	37%	37%	43%	39%	33%	52%	72%	42%	75%
2000	44%	40%	38%	42%	13%	36%	37%	34%	33%	31%	38%	37%	43%	39%	36%	54%	72%	43%	75%
1000	45%	44%	39%	43%	13%	36%	37%	34%	34%	32%	38%	37%	43%	39%	42%	58%	72%	45%	75%
800	46%	46%	39%	43%	13%	36%	38%	34%	35%	32%	39%	37%	43%	39%	45%	59%	71%	46%	75%
600	47%	50%	39%	44%	14%	36%	38%	34%	36%	32%	39%	37%	44%	39%	51%	62%	71%	47%	75%
500	49%	53%	40%	45%	14%	36%	39%	34%	36%	32%	39%	38%	44%	39%	55%	64%	71%	49%	75%
400	50%	58%	40%	46%	14%	36%	40%	34%	38%	32%	40%	38%	44%	39%	61%	68%	71%	50%	75%
300	53%	65%	41%	48%	14%	36%	41%	34%	39%	33%	41%	38%	45%	39%	71%	74%	71%	53%	75%
200	59%	80%	42%	52%	15%	36%	43%	35%	43%	34%	43%	38%	46%	39%	91%	85%	70%	60%	75%
100	75%	124%	46%	63%	17%	37%	50%	36%	54%	36%	50%	39%	50%	39%	152%	119%	69%	78%	74%
50	108%	212%	54%	85%	21%	38%	64%	39%	77%	42%	63%	41%	57%	40%	273%	188%	66%	115%	73%

The results suggest that the assays are likely accurate to between $\pm$<50 ppm and $\pm$~300 ppm, varying by element. This error estimate is based on the precision of the field duplicates. This estimate of error is conservative (ie. it may overestimate the true error) because the field duplicate samples were one half the size of the core samples.

A6.3.6 DATA VERIFICATION

Following the 2009 drill program, a batch of 27 sample pulps were extracted and sent to ALS Laboratories in Whitehorse, Yukon Territory for reanalysis. The samples were selected so as to span the full range of TREO values reported by EcoTech Laboratories and to be dominantly in the range from 0.30% to 2.50% TREO.

The results were analyzed by performing linear regressions of the ALS repeats (Y) against the EcoTech original assays (X). Unfortunately, ALS failed to re-analyze numerous overlimit values and instead reported these at the detection limit. As a consequence, there are less than a full 27 data pairs in some regressions and the data pairs do not span the full range of analyte concentrations in the original EcoTech analyses. Where the number of points analyzed was less than 27, the number of pairs used are indicated by the number in brackets in the notes section of the table below:

Element	Intercept			Slope			Notes
	Mean	Lower	Upper	Mean	Lower	Upper	
La	37.4	-341.4	416.2	1.00	0.85	1.14	
Ce	580.5	-370.6	1531.6	0.84	0.65	1.03	(23 – actual data pairs)
Pr	56.6	-56.8	170.1	0.85	0.63	1.08	(19)
Nd	10.1	-480.1	500.4	1.03	0.89	1.17	
Sm	55.6	-30.3	141.5	0.89	0.75	1.04	(21)
Eu	1.9	-10.1	13.8	1.18	1.06	1.31	+18%
Gd	115.9	-43.0	274.8	0.86	0.51	1.22	(18)
Tb	19.9	-1.2	41.0	0.97	0.85	1.09	
Dy	162.8	19.3	306.2	0.72	0.48	0.95	-28% (19)
Ho	34.3	3.1	65.6	0.88	0.73	1.03	
Er	143.4	32.0	254.9	0.70	0.41	1.00	(24)
Tm	14.8	2.1	27.5	0.82	0.63	1.01	
Yb	88.3	18.2	158.3	0.79	0.58	0.99	-21% variance
Lu	10.6	2.4	18.9	0.75	0.53	0.96	-25% variance
Y	874.3	-126.3	1875.0	0.80	0.54	1.06	(24)
Th	206.3	66.3	346.4	0.52	0.25	0.80	Significant variance, -48% (23)
U	30.8	-24.2	85.7	0.81	0.61	1.00	

The results for Ce, Pr, Sm, Gd, Dy, Er, Y and Th are suspect because of the over limit analyses and no significance can be attached any apparent discrepancy in the analyses. The over limit responses limit the correlation range to analyte concentrations less than 0.5% (5000 ppm). In general there are wide discrepancies between the ALS

Laboratories and the EcoTech Laboratories results for any element; these are reflected in the range between the upper and lower bounds of the slopes and intercepts in the regression analysis.

The results indicate that the two laboratories are in agreement within 6% for 6 analytes; that there are significant differences between the laboratories for 3 of the elements and that no conclusion can be made concerning the remaining 8 analytes because of over limit ALS analyses. There are significant discrepancies between Eu (+18% higher in the ALS Laboratories data), Yb (-21%) and Lu (-25%). These result suggest that EcoTech may have over reported Yb and Lu by around 20%. ALS Eu assays are elevated with respect to the other laboratories in all of the check samples and consequently the Eu discrepancy is not considered significant.

2010 ASSAY QUALITY ASSURANCE & QUALITY CONTROL

A6.4.1 DESCRIPTION

Assay quality assurance and quality control measures implemented during the 2010 drill program included the following elements:

1. Quality assurance and control measures were restricted to the following elements: La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, ,Dy, Ho, Er, Tm, Yb, Lu, Y, Zr, Nb, Th, and U. The acceptability of an analytical fusion was assessed from the total oxide sum.

2. Blank material was collected from a location on Whipple Creek in Ketchikan. The blank material consisted of medium hard quartz phyllite. Five samples of this material were analyzed by Stewart Group Laboratories in Stewart B.C. and the nominal results used as a check on contamination during the drill program.

3. A blank with a unique tag number in sequence with the other samples was inserted in every group of 20 samples.

4. Two standards were made by CDN Laboratories of Vancouver B.C. The standards were made from high grade (REO-A) and low grade (REO-B) REE-enriched sample rejects from the Dotson Zone. The standards were certified by Barry Smee & Associates Ltd. using round-robin assays at five different laboratories. All rare earth elements, thorium, niobium, uranium and zirconium were certified.

5. Alternating standards were inserted into every sequence of 20 samples immediately preceding the blank sample in every case.

6. Duplicate samples were taken of the core samples. For duplicate intervals, the core was halved and half left in the core box. The remaining half was quartered and sent in as two separate samples. Duplicates were always submitted immediately after the blank sample in every sampling sequence. The original sample generally but not always immediately preceded the standard sample in sequence.

7. Upon receipt of laboratory results, the following measures were taken before releasing results:

a. Electronic sample results were checked against the signed assay certificates.

b. Blank analyses were inspected for contamination. Field criteria for a pass was that no TREO analysis be greater than 0.05%.

c. Field standards were checked against nominal values. For a field pass, single element analysis variance in excess of 3.0 standard deviations was permitted provided no other elements exceeded this threshold.

d. Laboratory standards analyses, duplicates and resplits were examined for reproducibility.

8. Upon completion of the program, formal analysis of all results was completed and is described in this appendix.

9. Failure criteria for any analysis is defined by a sequential pair of analyses greater than two standard deviations from an standard certified mean or a single analysis with an error greater than three standard deviations from a standard mean.

A6.4.2 BLANKS

Blanks were inserted to check for contamination at the laboratory from the crushing through analytical stages. The following procedure was used in the analysis of blank sample results:

1. Means and standard deviations were calculated for the elements of interest, omitting three clear outliers from these calculations.

2. Time series of the blank results were prepared for each element.

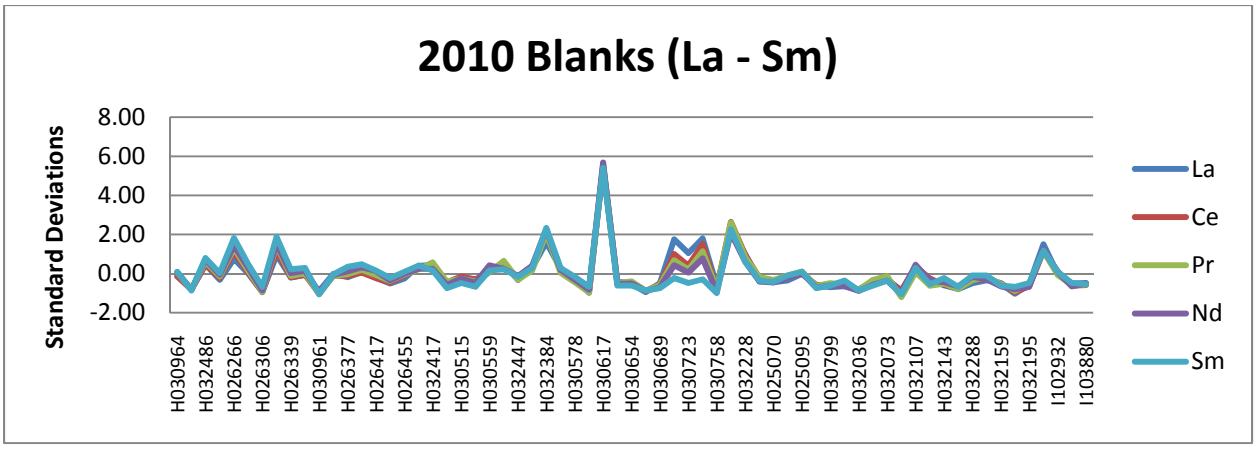
3. Outliers were examined to determine if sample substitution in error on site or some other cause may account for the results.

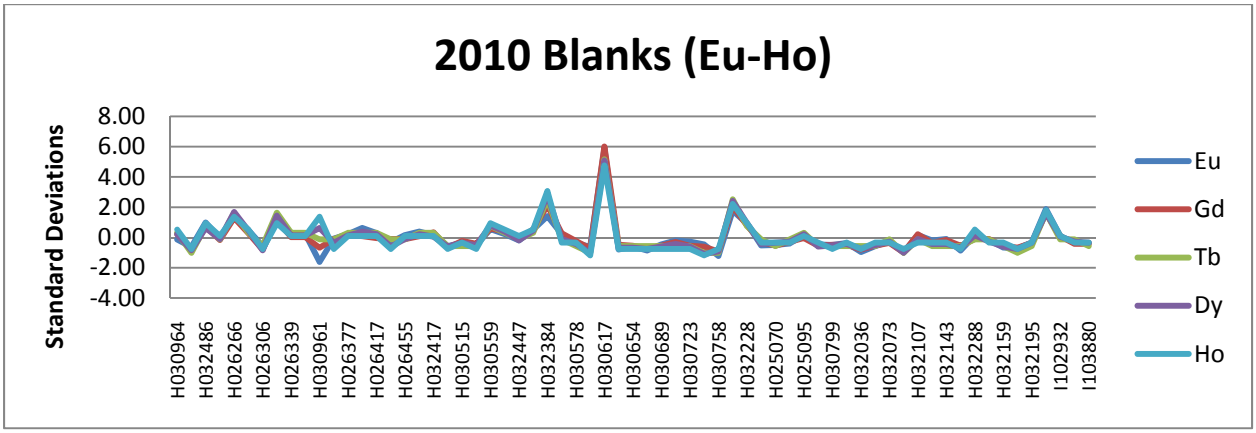
4. Outliers with no apparent cause were noted in the sample database QAQC log and corrective action taken if merited.

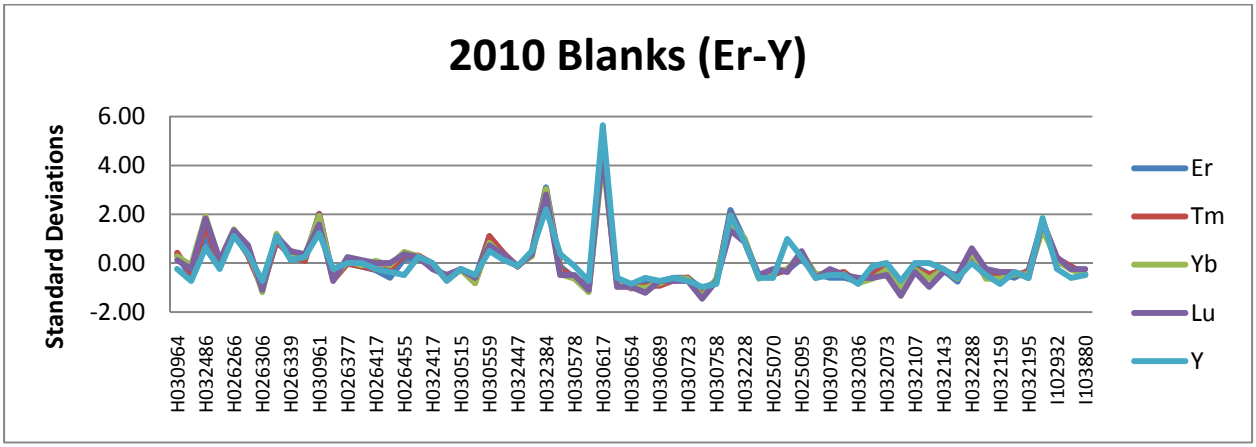
The table below summarizes the nominal means and standard deviations for the elements of interest in the blank sample material:

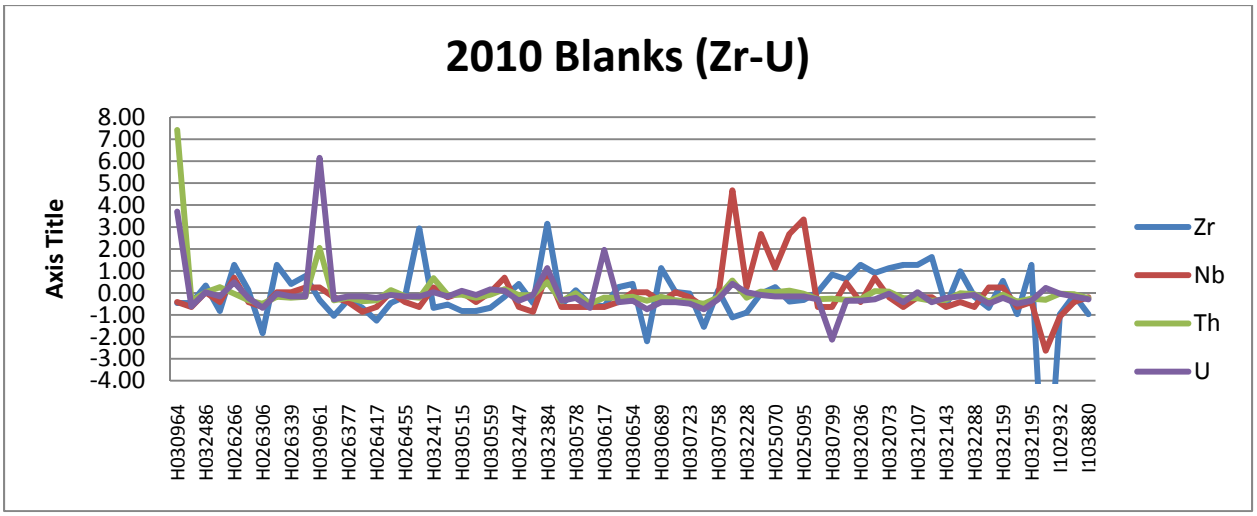
Element	Mean (ppm)	Standard deviation (ppm)
La	23.5	7.94
Ce	49.4	15.70
Pr	5.7	1.77
Nd	23.4	7.52
Sm	5.0	1.56
Eu	1.2	0.30
Gd	4.5	1.57
Tb	0.7	0.23
Dy	4.3	1.23
Ho	0.9	0.24
Er	2.6	0.65
Tm	0.4	0.09
Yb	2.6	0.55
Lu	0.4	0.08
Y	24.9	8.16
Zr	146.4	13.84
Nb	11.9	4.52
Th	6.8	4.37
U	3.3	1.59

The time series below show the blank analytical results throughout the drill program. The samples are ordered by submission date and sequence and show the progressive results during the program from left to right in each graph. The threshold for failure is two standard deviations for a sequential pair of analyses or three standard deviations in a single analysis.


2010 Blanks (La - Sm)
Standard Deviations
8.00
6.00
4.00
2.00
0.00
-2.00
H030964
H032486
H026266
H026306
H026339
H030961
H026377
H026417
H026455
H032417
H030515
H030559
H032447
H032384
H030578
H030617
H030654
H030689
H030723
H030758
H032228
H025070
H025095
H030799
H032036
H032073
H032107
H032143
H032288
H032159
H032195
I102932
I103880
La
Ce
Pr
Nd
Sm


2010 Blanks (Eu-Ho)
Standard Deviations
8.00
6.00
4.00
2.00
0.00
-2.00
-4.00
H030964
H032486
H026266
H026306
H026339
H030961
H026377
H026417
H026455
H032417
H030515
H030559
H032447
H032384
H030578
H030617
H030654
H030689
H030723
H030758
H032228
H025070
H025095
H030799
H032036
H032073
H032107
H032143
H032288
H032159
H032195
I102932
I103880
Eu
Gd
Tb
Dy
Ho

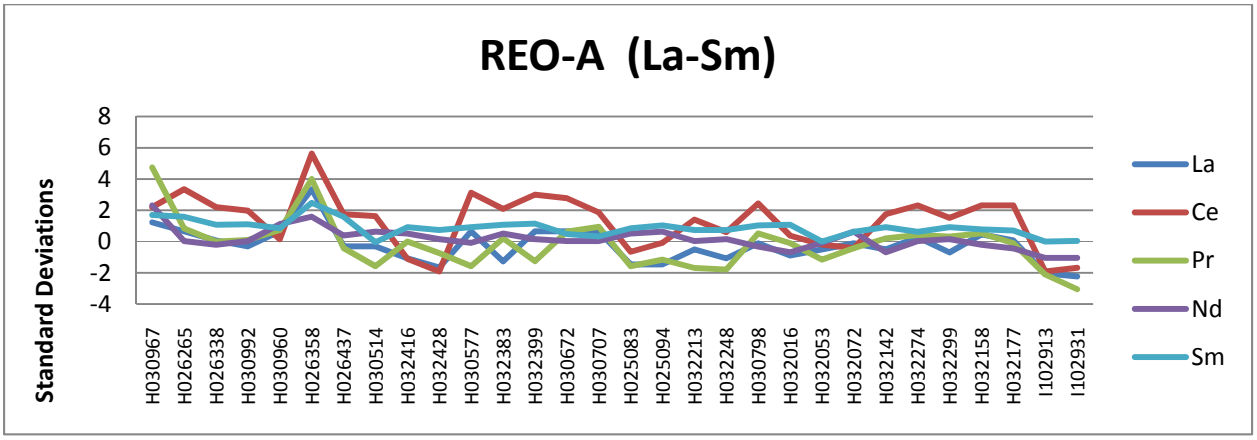

2010 Blanks (Er-Y)
Standard Deviations
6.00
4.00
2.00
0.00
-2.00
H030964
H032486
H026266
H026306
H026339
H030961
H026377
H026417
H026455
H032417
H030515
H030559
H032447
H032384
H030578
H030617
H030654
H030689
H030723
H030758
H032228
H025070
H025095
H030799
H032036
H032073
H032107
H032143
H032288
H032159
H032195
I102932
I103880
Er
Tm
Yb
Lu
Y

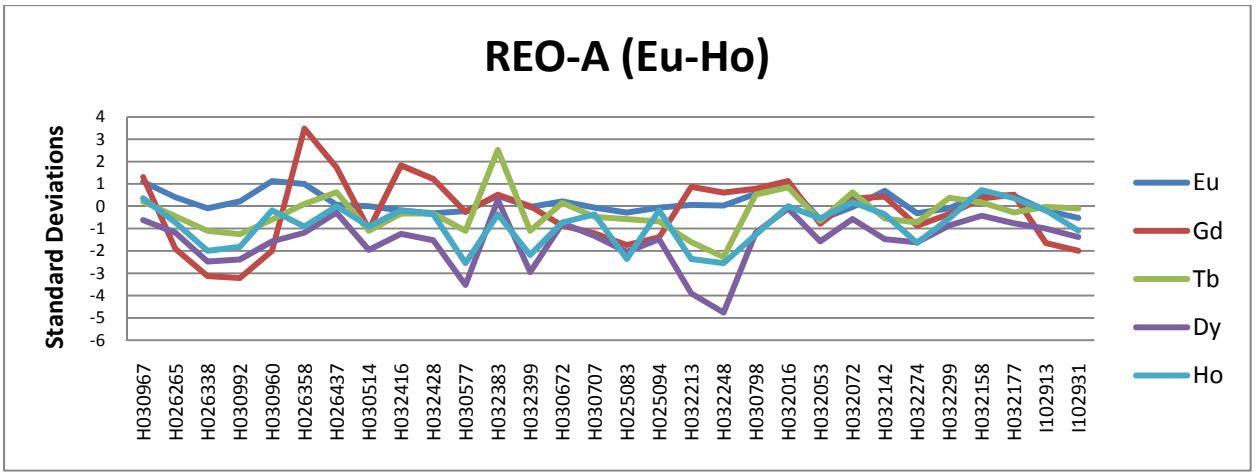


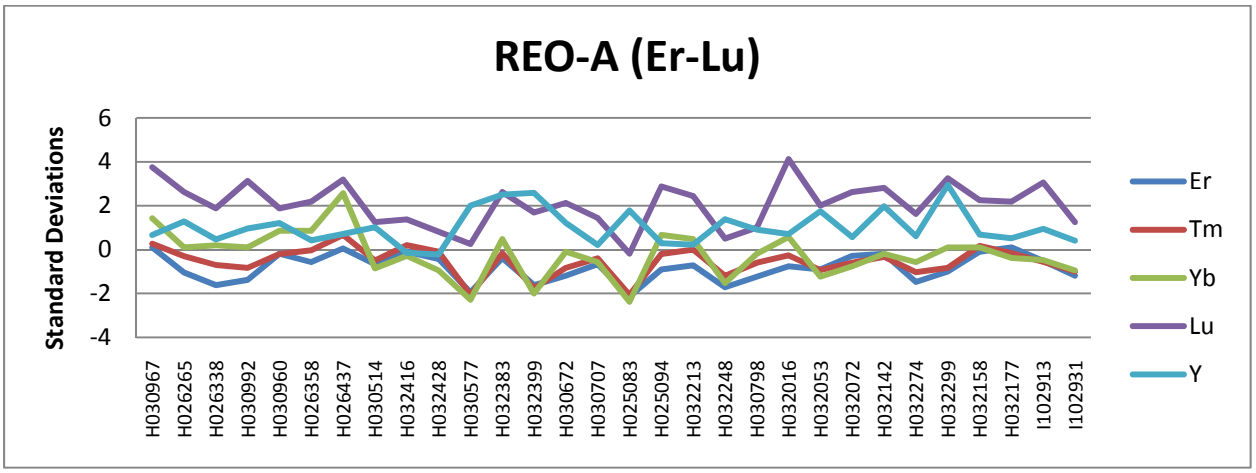
Sample H030617 was anomalously high in all elements except U, Th and Nb. The results for Zr and Nb are in the range of all other blank samples and the TREO analysis was 0.049%. The preceding standard (REO-B / low grade) passed. No action was taken in connection with this sample. Zr and Nb were erratic in the both the initial analyses and in the overall blank results. The overall blank results detected no significant contamination in the sample results.

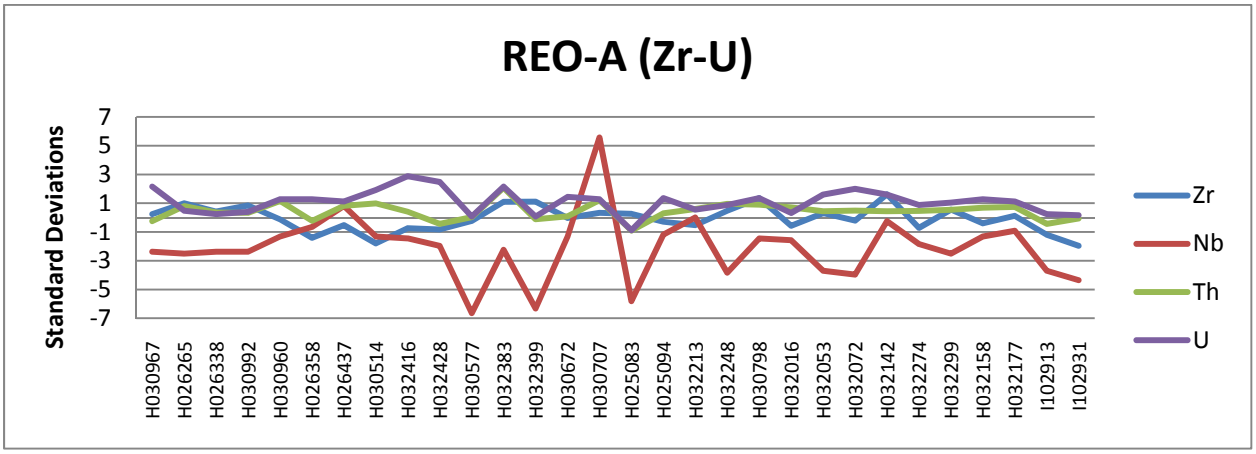
A6.4.3 FIELD STANDARDS

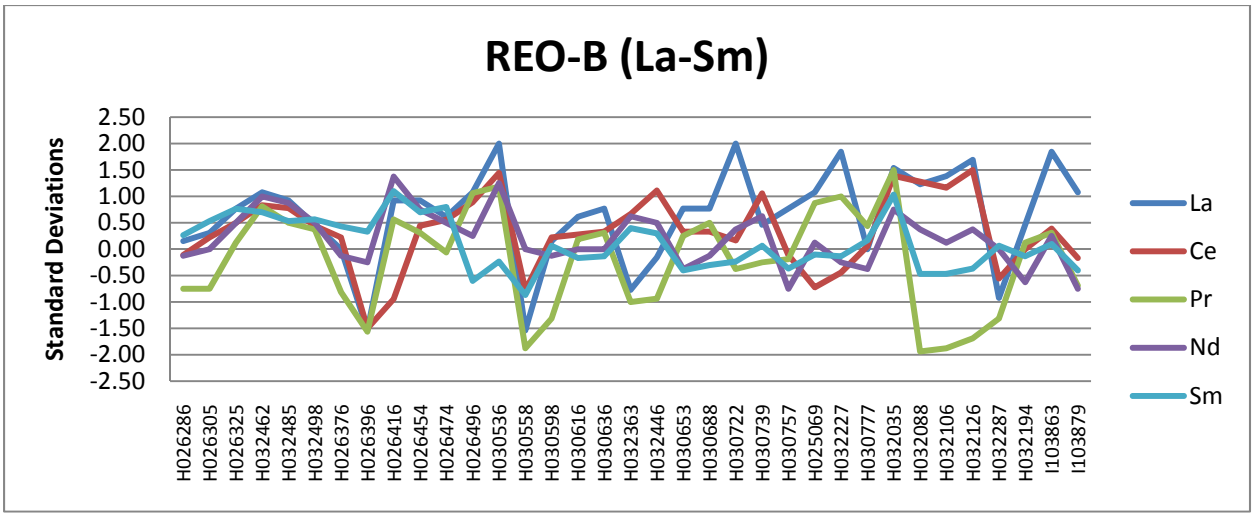
Certificates for the two standards used in the 2010 drill program are appended to this report in Appendix 6. The time series below show the field standards results throughout the drill program. The samples are ordered by submission date and sequence and show the progressive results during the program from left to right in each graph.




REO-A (Eu-Ho)
Standard Deviations
4
3
2
1
0
-1
-2
-3
-4
-5
-6
H030967
H026265
H026338
H030992
H030960
H026358
H026437
H030514
H032416
H032428
H030577
H032383
H032399
H030672
H030707
H025083
H025094
H032213
H032248
H030798
H032016
H032053
H032072
H032142
H032274
H032299
H032158
H032177
I102913
I102931
Eu
Gd
Tb
Dy
Ho


REO-A (Er-Lu)
Standard Deviations
6
4
2
0
-2
-4
H030967
H026265
H026338
H030992
H030960
H026358
H026437
H030514
H032416
H032428
H030577
H032383
H032399
H030672
H030707
H025083
H025094
H032213
H032248
H030798
H032016
H032053
H032072
H032142
H032274
H032299
H032158
H032177
I102913
I102931
Er
Tm
Yb
Lu
Y


REO-A (Zr-U)
Standard Deviations
7
5
3
1
-1
-3
-5
-7
H030967
H026265
H026338
H030992
H030960
H026358
H026437
H030514
H032416
H032428
H030577
H032383
H032399
H030672
H030707
H025083
H025094
H032213
H032248
H030798
H032016
H032053
H032072
H032142
H032274
H032299
H032158
H032177
I102913
I102931
Zr
Nb
Th
U


REO-B (La-Sm)
Standard Deviations
2.50
2.00
1.50
1.00
0.50
0.00
-0.50
-1.00
-1.50
-2.00
-2.50
H026286
H026305
H026325
H032462
H032485
H032498
H026376
H026396
H026416
H026454
H026474
H026496
H030536
H030558
H030598
H030616
H030636
H032363
H032446
H030653
H030688
H030722
H030739
H030757
H025069
H032227
H030777
H032035
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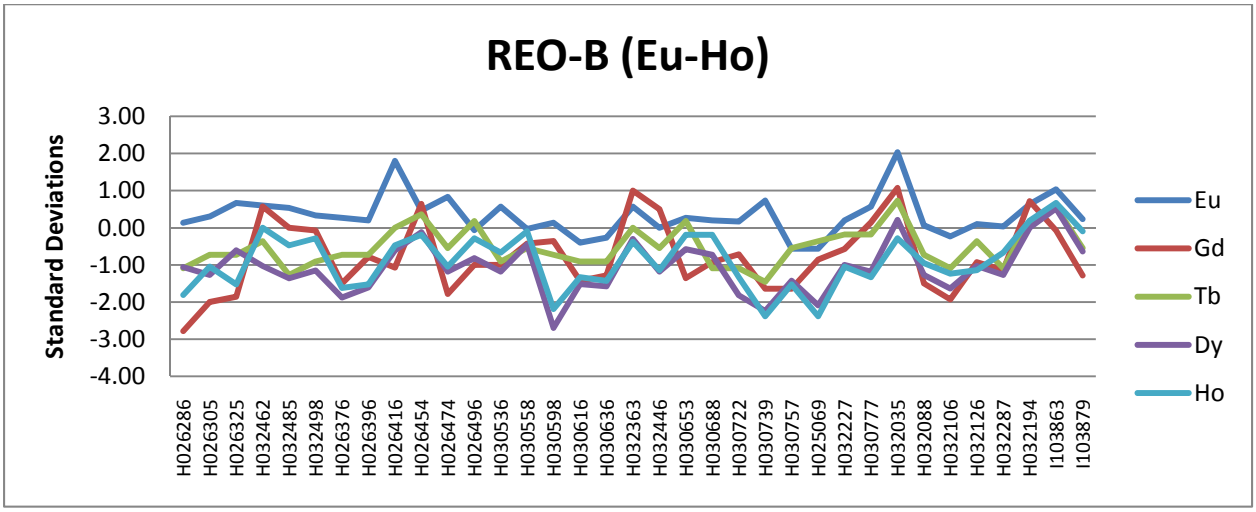
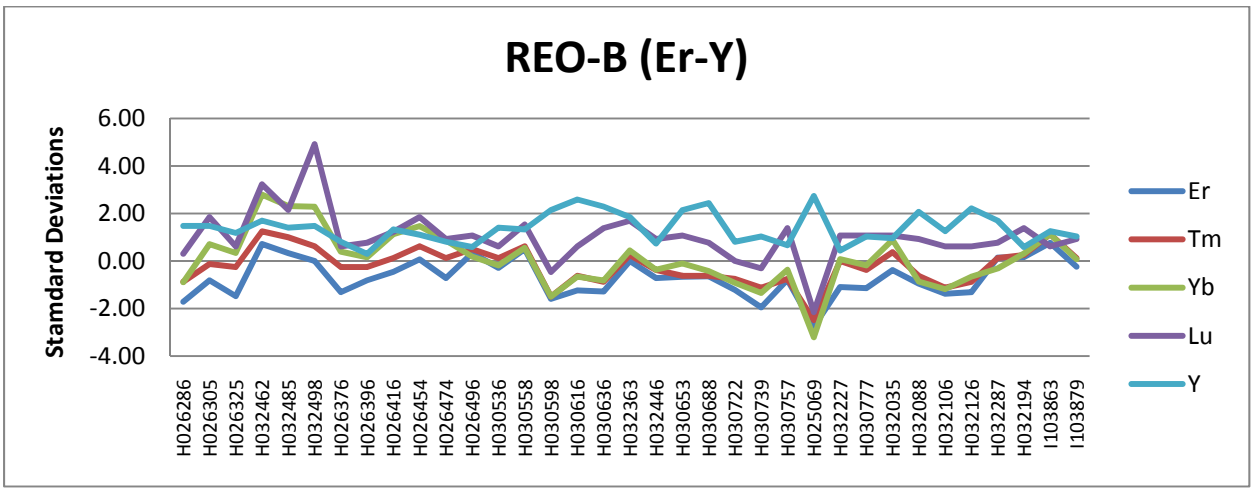
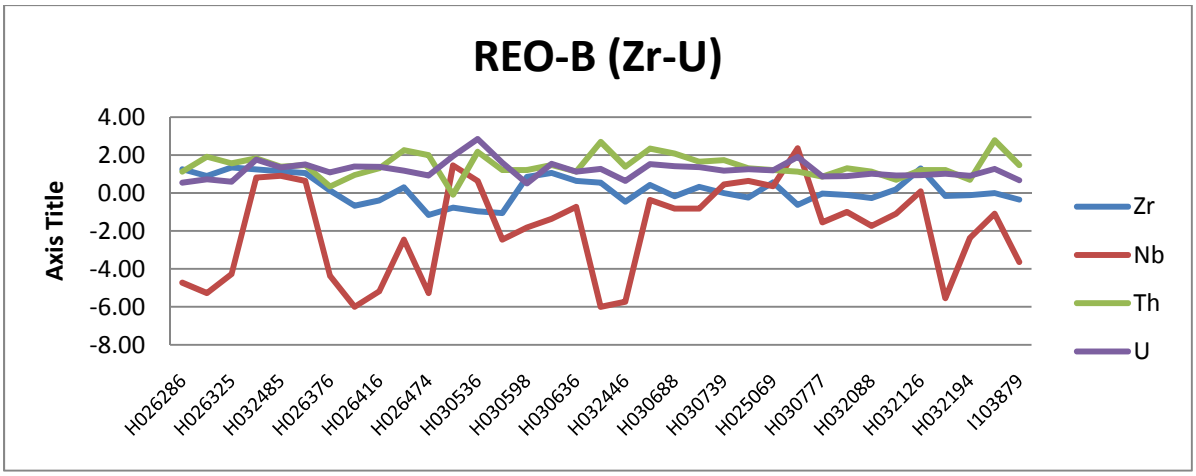
H032106
H032126
H032287
H032194
I103863
I103879
La
Ce
Pr
Nd
Sm


REO-B (Eu-Ho)
Standard Deviations
3.00
2.00
1.00
0.00
-1.00
-2.00
-3.00
-4.00
H026286
H026305
H026325
H032462
H032485
H032498
H026376
H026396
H026416
H026454
H026474
H026496
H030536
H030558
H030598
H030616
H030636
H032363
H032446
H030653
H030688
H030722
H030739
H030757
H025069
H032227
H030777
H032035
H032088
H032106
H032126
H032287
H032194
I103863
I103879
Eu
Gd
Tb
Dy
Ho


REO-B (Er-Y)
Stamdard Deviations
6.00
4.00
2.00
0.00
-2.00
-4.00
H026286
H026305
H026325
H032462
H032485
H032498
H026376
H026396
H026416
H026454
H026474
H026496
H030536
H030558
H030598
H030616
H030636
H032363
H032446
H030653
H030688
H030722
H030739
H030757
H025069
H032227
H030777
H032035
H032088
H032106
H032126
H032287
H032194
I103863
I103879
Er
Tm
Yb
Lu
Y



The results from both standards indicate that niobium is highly erratic and appears to be depressed by approximately 2 standard deviations from the standard means. In addition, results for REO-A show slightly elevated Ce and Lu, and slightly depressed Dy, Gd and Ho while the results for REO-B show slightly elevated Y and Er. No base level shifts indicative of a calibration error are present in the data.

The field standards analytical results indicate that the laboratory are accurate with the exception of niobium. The differences between the certified Nb standards and the measured value of these standards are summarized below:

	REO-A		REO-B	
	Mean	Std. dev.	Mean	Std. dev.
Certificate	1459.0	75.5	209.0	11.0
Measured	1301.0	173.3	187.9	27.1
Difference (%)	-10.8%		-10.1%	

The data indicate that, on the whole, reported Nb analyses agreed with certified standards within the bounds of precision. The variance in reported Nb values is larger than expected.

A6.4.4 LABORATORY STANDARDS

As a quality assurance and control measure, Activation Laboratories analyzed a suite of over 12 standards for each batch of samples. Standards W-2a, NCS DC70009, OREAS 100a (fusion) and JR-1 were tabulated and monitored as part of the company QAQC program. These laboratory standards spanned the REE series and included Th, U, Zr and Nb. The tables below show the laboratory standards results, ordered sequentially from earliest (top) to latest (bottom). Analytical results which were more than 2 standard deviations from the published means are highlighted in red.

W-2A	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Y	Zr	Nb	Th	U
Standard	10.0	23.0		13.0	3.3	1.00		0.6	3.6	0.8	2.5	0.38	2.1	0.33	23	100	8	2.4	0.53
Std dev	0.6	1.5		1.0	0.1	0.06		n/s	0.8	n/s	n/s	n/s	0.2	n/s	2	4	n/s	0.1	n/s
Certificate	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Y	Zr	Nb	Th	U
A10-4481	11.0	23.4		12.4	3.2	1.07		0.6	3.7	0.8	2.1	0.33	2.0	0.29	19	96	7	2.1	0.4
A10-4509	11.0	23.4		12.4	3.2	1.07		0.6	3.7	0.8	2.1	0.33	2.0	0.29	19	96	7	2.1	0.4
A10-4599	11.6	25.1		12.5	3.2	1.03		0.6	3.7	0.8	2.1	0.33	2.0	0.33			7	2.1	0.5
A10-4842	11.3	24.4		13.3	3.4	1.09		0.7	3.9	0.8	2.2	0.33	2.1	0.31	19	92	8	2.3	0.6
A10-4869	11.3	24.4		13.3	3.4	1.09		0.7	3.9	0.8	2.2	0.33	2.1	0.31	19	92	8	2.3	0.6
A10-5169	11.4	24.6		12.9	3.3	1.08		0.7	3.7	0.8	2.1	0.32	2.1	0.33	20	90	8	2.2	0.6
A10-5170	11.4	24.6		12.9	3.3	1.08		0.7	3.7	0.8	2.1	0.32	2.1	0.33	20	90	8	2.2	0.6
A10-5674	11.0	23.5		12.9	3.3	1.07			3.7	0.8	2.1	0.37	2.0	0.28	20	84	8	2.2	0.5
A10-5675	11.0	23.5		12.9	3.3	1.07			3.7	0.8	2.1	0.37	2.0	0.28	20	84	8	2.2	0.5
A10-5847	10.2	23.9		12.4	3.2	1.05		0.6	3.7	0.8	2.4	0.32	2.0	0.33	20	81	7	2.1	0.5
A10-5849	11.2	24.4		12.8	3.3	1.09		0.7	3.8	0.8	2.5	0.37	2.0	0.28	20	92	6	2.5	0.4
A10-6169	11.5	24.1		12.6	3.2	1.07		0.7	3.7	0.8	2.5	0.28	2.1	0.29	20	88	7	2.3	0.6
A10-6247	10.7	22.4		13.1	3.3	1.09		0.6	3.9	0.8	2.2	0.34	2.1	0.31	19	88	7	2.3	0.1
A10-6252	11.5	24.1		12.4	3.1	1.08		0.6	3.7	0.8	2.5	0.32	2.0	0.32	20	93	8	2.5	0.6
A10-6320	10.6	23.9		13.2	3.4	1.11		0.6	3.8	0.8	2.2	0.34	2.1	0.33	20	93	7	2.3	0.6

A10-6556	12.1	25.9		12.9	3.3	1.06		0.6	3.8	0.8	2.1	0.33	2.1	0.30	19	92	8	2.3	0.5
A10-6557	12.1	25.9		12.9	3.3	1.06		0.6	3.8	0.8	2.1	0.33	2.1	0.30	19	92	8	2.3	0.5
Standard dev's.	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Y	Zr	Nb	Th	U
A10-4481	1.7	0.3		-0.6	-0.8	1.2		0.0	0.1	0.0	-0.4	-0.1	-0.5	0.0	-2.5	-1.0	-0.9	-3.0	-0.1
A10-4509	1.7	0.3		-0.6	-0.8	1.2		0.0	0.1	0.0	-0.4	-0.1	-0.5	0.0	-2.5	-1.0	-0.9	-3.0	-0.1
A10-4599	2.7	1.4		-0.5	-0.8	0.5		0.0	0.1	0.0	-0.4	-0.1	-0.5	0.0			-0.9	-3.0	0.0
A10-4842	2.2	0.9		0.3	0.8	1.5		0.1	0.4	0.0	-0.3	-0.1	0.0	0.0	-2.5	-2.0	0.1	-1.0	0.1
A10-4869	2.2	0.9		0.3	0.8	1.5		0.1	0.4	0.0	-0.3	-0.1	0.0	0.0	-2.5	-2.0	0.1	-1.0	0.1
A10-5169	2.4	1.1		-0.1	0.0	1.3		0.1	0.1	0.0	-0.4	-0.1	0.0	0.0	-1.9	-2.5	0.1	-2.0	0.1
A10-5170	2.4	1.1		-0.1	0.0	1.3		0.1	0.1	0.0	-0.4	-0.1	0.0	0.0	-1.9	-2.5	0.1	-2.0	0.1
A10-5674	1.7	0.3		-0.1	0.0	1.2			0.1	0.0	-0.4	0.0	-0.5	-0.1	-1.9	-4.0	0.1	-2.0	0.0
A10-5675	1.7	0.3		-0.1	0.0	1.2			0.1	0.0	-0.4	0.0	-0.5	-0.1	-1.9	-4.0	0.1	-2.0	0.0
A10-5847	0.3	0.6		-0.6	-0.8	0.8		0.0	0.1	0.0	-0.1	-0.1	-0.5	0.0	-1.9	-4.8	-0.9	-3.0	0.0
A10-5849	2.0	0.9		-0.2	0.0	1.5		0.1	0.3	0.0	0.0	0.0	-0.5	-0.1	-1.9	-2.0	-1.9	1.0	-0.1
A10-6169	2.5	0.7		-0.4	-0.8	1.2		0.1	0.1	0.0	0.0	-0.1	0.0	0.0	-1.9	-3.0	-0.9	-1.0	0.1
A10-6247	1.2	-0.4		0.1	0.0	1.5		0.0	0.4	0.0	-0.3	0.0	0.0	0.0	-2.5	-3.0	-0.9	-1.0	-0.5
A10-6252	2.5	0.7		-0.6	-1.5	1.3		0.0	0.1	0.0	0.0	-0.1	-0.5	0.0	-1.9	-1.8	0.1	1.0	0.1
A10-6320	1.0	0.6		0.2	0.8	1.8		0.0	0.3	0.0	-0.3	0.0	0.0	0.0	-1.9	-1.8	-0.9	-1.0	0.1
A10-6556	3.6	1.9		-0.1	0.0	1.0		0.0	0.3	0.0	-0.4	-0.1	0.0	0.0	-2.5	-2.0	0.1	-1.0	0.0
A10-6557	3.6	1.9		-0.1	0.0	1.0		0.0	0.3	0.0	-0.4	-0.1	0.0	0.0	-2.5	-2.0	0.1	-1.0	0.0

NCS DC70009	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Y	Zr	Nb	Th	U
Standard	23.7	60.3	7.90	32.9	12.5	0.16	14.8	3.3	20.7	4.5	13.1	2.20	14.9	2.40	128			28.3	
Std Dev	0.3	2.4	0.80	3.2	1.2	0.04	0.3	0.3	1.3	0.2	1.1	0.20	1.4	0.20	27			0.8	
Certificate	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Y	Zr	Nb	Th	U
A10-4481	25.4	63.1	8.36	32.7	12.7	0.11	14.8	3.4	21.2	4.4	13.0	2.39	16.4	2.32				28.6	
A10-4509	25.4	63.1	8.36	32.7	12.7	0.11	14.8	3.4	21.2	4.4	13.0	2.39	16.4	2.32				28.6	
A10-4599	25.2	63.7	7.88	32.0	12.4	0.10	14.3	3.1	20.8	4.3	12.8	2.35	16.0	2.27				28.6	
A10-4842	23.0	58.0	7.50	31.6	12.4	0.11	15.2	3.3	20.6	4.3	12.8	2.34	16.0	2.23				29.8	
A10-4869	23.0	58.0	7.50	31.6	12.4	0.11	15.2	3.3	20.6	4.3	12.8	2.34	16.0	2.23				29.8	
A10-5169	23.5	59.4	8.57	31.5	12.3	0.11	14.7	3.4	20.5	4.3	12.7	2.32	15.9	2.24				29.6	
A10-5170	23.5	59.4	8.57	31.5	12.3	0.11	14.7	3.4	20.5	4.3	12.7	2.32	15.9	2.24				29.6	
A10-5674	22.3	62.2	7.90	31.4	12.5	0.10	14.9	3.4	20.4	4.3	12.9	2.31	15.9	2.24				28.6	
A10-5675	22.3	62.2	7.90	31.4	12.5	0.10	14.9	3.4	20.4	4.3	12.9	2.31	15.9	2.24				28.6	
A10-5847	25.5	64.4	7.81	31.7	12.4	0.11	14.1	3.2	20.5	4.3	12.7	2.31	15.9	2.24				28.6	
A10-5849	23.1	59.4	7.73	31.0	12.1		13.8	3.5	20.3	4.2	12.5	2.29	15.8	2.26				28.6	
A10-6169	23.9	60.5	8.15	31.4	12.5	0.11	14.5	3.5	20.6	4.3	12.8	2.35	16.1	2.25				28.8	
A10-6247	25.2	59.2	8.08	31.9	12.1	0.13	14.8	3.3	21.1	4.4	13.1	2.40	16.3	2.32				29.0	
A10-6252	24.2	60.8	8.03	30.8	12.0	0.10	14.3	3.3	20.7	4.3	12.8	2.36	14.5	2.24				29.2	
A10-6320	22.7	58.7	7.23	31.4	12.3		14.2	3.2	20.4	4.2	12.7	2.31	15.8	2.19				29.0	
A10-6556	27.0	67.8	8.67	32.9	12.8	0.11	14.5	3.3	20.6	4.3	12.6	2.33	15.9	2.25				28.8	
A10-6557	27.0	67.8	8.67	32.9	12.8	0.11	14.5	3.3	20.6	4.3	12.6	2.33	15.9	2.25				28.8	
Standard dev's.	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Y	Zr	Nb	Th	U
A10-4481	5.7	1.2	0.6	-0.1	0.2	-1.3	0.0	0.3	0.4	-0.5	-0.1	1.0	1.1	-0.4				0.4	
A10-4509	5.7	1.2	0.6	-0.1	0.2	-1.3	0.0	0.3	0.4	-0.5	-0.1	1.0	1.1	-0.4				0.4	
A10-4599	5.0	1.4	0.0	-0.3	-0.1	-1.5	-1.7	-0.7	0.1	-1.0	-0.3	0.8	0.8	-0.6				0.4	
A10-4842	-2.3	-1.0	-0.5	-0.4	-0.1	-1.3	1.3	0.0	-0.1	-1.0	-0.3	0.7	0.8	-0.9				1.9	

A10-4869	-2.3	-1.0	-0.5	-0.4	-0.1	-1.3	1.3	0.0	-0.1	-1.0	-0.3	0.7	0.8	-0.9				1.9	
A10-5169	-0.7	-0.4	0.8	-0.4	-0.2	-1.3	-0.3	0.3	-0.2	-1.0	-0.4	0.6	0.7	-0.8				1.6	
A10-5170	-0.7	-0.4	0.8	-0.4	-0.2	-1.3	-0.3	0.3	-0.2	-1.0	-0.4	0.6	0.7	-0.8				1.6	
A10-5674	-4.7	0.8	0.0	-0.5	0.0	-1.5	0.3	0.3	-0.2	-1.0	-0.2	0.5	0.7	-0.8				0.4	
A10-5675	-4.7	0.8	0.0	-0.5	0.0	-1.5	0.3	0.3	-0.2	-1.0	-0.2	0.5	0.7	-0.8				0.4	
A10-5847	6.0	1.7	-0.1	-0.4	-0.1	-1.3	-2.3	-0.3	-0.2	-1.0	-0.4	0.5	0.7	-0.8				0.4	
A10-5849	-2.0	-0.4	-0.2	-0.6	-0.3		-3.3	0.7	-0.3	-1.5	-0.5	0.4	0.6	-0.7				0.4	
A10-6169	0.7	0.1	0.3	-0.5	0.0	-1.3	-1.0	0.7	-0.1	-1.0	-0.3	0.8	0.9	-0.8				0.6	
A10-6247	5.0	-0.5	0.2	-0.3	-0.3	-0.8	0.0	0.0	0.3	-0.5	0.0	1.0	1.0	-0.4				0.9	
A10-6252	1.7	0.2	0.2	-0.7	-0.4	-1.5	-1.7	0.0	0.0	-1.0	-0.3	0.8	-0.3	-0.8				1.1	
A10-6320	-3.3	-0.7	-0.8	-0.5	-0.2		-2.0	-0.3	-0.2	-1.5	-0.4	0.5	0.6	-1.1				0.9	
A10-6556	11.0	3.1	1.0	0.0	0.3	-1.3	-1.0	0.0	-0.1	-1.0	-0.5	0.6	0.7	-0.8				0.6	
A10-6557	11.0	3.1	1.0	0.0	0.3	-1.3	-1.0	0.0	-0.1	-1.0	-0.5	0.6	0.7	-0.8				0.6	

OREAS 100a	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Y	Zr	Nb	Th	U
Standard	260.0	463.0	47.10	152.0	23.6	3.71	23.6	3.8	23.2	4.8	14.9	2.31	14.9	2.26	142			51.6	###
Std Dev	4.0	9.5	1.20	4.0	0.2	0.12	0.7	0.1	0.2	0.1	0.3	0.06	0.2	0.05	2			1.6	3.5
Certificate	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Y	Zr	Nb	Th	U
A10-4481	270.0	479.0	48.70	150.0	24.3	3.65	20.7	3.7	22.9	5.0	14.6	2.41	15.6	2.16				50.9	###
A10-4509	270.0	479.0	48.70	150.0	24.3	3.65	20.7	3.7	22.9	5.0	14.6	2.41	15.6	2.16				50.9	###
A10-4599	274.0	491.0	46.40	149.0	24.1	3.57	21.0	3.5	22.7	4.9	14.3	2.38	15.2	2.13				50.7	###
A10-4842	255.0	474.0	44.80	149.0	24.3	3.66	21.4	3.8	23.0	5.0	14.6	2.43	15.4	2.17				50.6	###
A10-4869	255.0	474.0	44.80	149.0	24.3	3.66	21.4	3.8	23.0	5.0	14.6	2.43	15.4	2.17				50.6	###
A10-5169	292.0	494.0	51.60	149.0	24.5	3.64	20.6	3.8	23.0	5.0	14.7	2.43	15.6	2.17				50.7	###
A10-5170	292.0	494.0	51.60	149.0	24.5	3.64	20.6	3.8	23.0	5.0	14.7	2.43	15.6	2.17				50.7	###
A10-5674	259.0	454.0	48.40	146.0	23.8	3.55	22.1	3.7	22.2	4.8	14.2	2.31	14.9	2.08				50.7	###
A10-5675	259.0	454.0	48.40	146.0	23.8	3.55	22.1	3.7	22.2	4.8	14.2	2.31	14.9	2.08				50.7	###
A10-5847	280.0	501.0	46.50	149.0	24.2	3.60	20.7	3.7	22.7	4.9	14.4	2.38	15.3	2.15				51.8	###
A10-5849	255.0	467.0	46.00	147.0	23.7	3.58	22.2	3.9	22.3	4.9	14.2	2.35	15.0	2.09				51.4	###
A10-6169	263.0	476.0	49.10	149.0	24.4	3.67	20.7	3.6	22.8	4.9	14.5	2.41	15.4	2.16				52.1	###
A10-6247	254.0	436.0	46.70	150.0	24.3	3.66	21.8	3.8	24.0	5.2	15.4	2.48	15.8	2.33				51.3	###
A10-6252	266.0	474.0	46.10	148.0	24.0	3.55	21.7	3.6	22.5	4.8	14.2	2.35	15.1	2.17				51.4	###
A10-6320	254.0	461.0	48.10	149.0	24.0	3.64	23.0	3.7	22.5	4.8	14.3	2.35	15.0	2.16				51.3	###
A10-6556	266.0	463.0	48.60	146.0	23.8	3.51	19.7	3.6	22.1	4.8	13.9	2.32	14.7	2.07				50.4	###
A10-6557	266.0	463.0	48.60	146.0	23.8	3.51	19.7	3.6	22.1	4.8	13.9	2.32	14.7	2.07				50.4	###
Standard dev's.	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Y	Zr	Nb	Th	U
A10-4481	2.5	1.7	1.3	-0.5	3.5	-0.5	-4.1	-0.9	-1.5	2.9	-1.2	1.7	4.7	-2.0				-0.4	0.0
A10-4509	2.5	1.7	1.3	-0.5	3.5	-0.5	-4.1	-0.9	-1.5	2.9	-1.2	1.7	4.7	-2.0				-0.4	0.0
A10-4599	3.5	2.9	-0.6	-0.8	2.5	-1.2	-3.7	-2.6	-2.5	1.4	-2.4	1.2	2.0	-2.6				-0.6	0.0
A10-4842	-1.3	1.2	-1.9	-0.8	3.5	-0.4	-3.1	0.0	-1.0	2.9	-1.2	2.0	3.3	-1.8				-0.6	0.0
A10-4869	-1.3	1.2	-1.9	-0.8	3.5	-0.4	-3.1	0.0	-1.0	2.9	-1.2	2.0	3.3	-1.8				-0.6	0.0

A10-5169	8.0	3.3	3.8	-0.8	4.5	-0.6	-4.3	0.0	-1.0	2.9	-0.8	2.0	4.7	-1.8				-0.6	0.0
A10-5170	8.0	3.3	3.8	-0.8	4.5	-0.6	-4.3	0.0	-1.0	2.9	-0.8	2.0	4.7	-1.8				-0.6	0.0
A10-5674	-0.3	-0.9	1.1	-1.5	1.0	-1.4	-2.1	-0.9	-5.0	-0.2	-2.8	0.0	0.0	-3.6				-0.6	0.3
A10-5675	-0.3	-0.9	1.1	-1.5	1.0	-1.4	-2.1	-0.9	-5.0	-0.2	-2.8	0.0	0.0	-3.6				-0.6	0.3
A10-5847	5.0	4.0	-0.5	-0.8	3.0	-1.0	-4.1	-0.9	-2.5	1.4	-2.0	1.2	2.7	-2.2				0.1	2.0
A10-5849	-1.3	0.4	-0.9	-1.3	0.5	-1.1	-2.0	0.9	-4.5	1.4	-2.8	0.7	0.7	-3.4				-0.1	2.3
A10-6169	0.8	1.4	1.7	-0.8	4.0	-0.3	-4.1	-1.7	-2.0	1.4	-1.6	1.7	3.3	-2.0				0.3	2.3
A10-6247	-1.5	-2.8	-0.3	-0.5	3.5	-0.4	-2.6	0.0	4.0	6.0	2.0	2.8	6.0	1.4				-0.2	2.3
A10-6252	1.5	1.2	-0.8	-1.0	2.0	-1.4	-2.7	-1.7	-3.5	-0.2	-2.8	0.7	1.3	-1.8				-0.1	5.7
A10-6320	-1.5	-0.2	0.8	-0.8	2.0	-0.6	-0.9	-0.9	-3.5	-0.2	-2.4	0.7	0.7	-2.0				-0.2	0.3
A10-6556	1.5	0.0	1.3	-1.5	1.0	-1.7	-5.6	-1.7	-5.5	-0.2	-4.0	0.2	-1.3	-3.8				-0.8	2.3
A10-6557	1.5	0.0	1.3	-1.5	1.0	-1.7	-5.6	-1.7	-5.5	-0.2	-4.0	0.2	-1.3	-3.8				-0.8	2.3

JR-1	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Y	Zr	Nb	Th	U
Standard	19.7	47.2	5.58	23.3	6.0	0.30	5.1	1.0	5.7	1.1	3.6	0.67	4.6	0.71	45	100	15	26.7	8.9
Std Dev	1.8	4.3	0.69	2.8	0.8	0.04	1.1	0.2	1.1	0.2	0.9	0.07	0.5	0.08	5	6	2	2.6	1.3
Certificate	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Y	Zr	Nb	Th	U
A10-4481	21.5	50.1	6.31	23.8	6.0	0.29	5.7	1.1	6.4	1.4	4.1	0.73	4.9				14	26.8	9.0
A10-4509	21.5	50.1	6.31	23.8	6.0	0.29	5.7	1.1	6.4	1.4	4.1	0.73	4.9				14	26.8	9.0
A10-4599	21.3	50.5	5.90	23.0	5.8	0.26	5.5	0.9	6.2	1.3	3.9	0.72	4.7	0.68			16	26.5	8.9
A10-4842	20.1	47.3	5.80	23.4	5.9	0.27	5.8	1.1	6.4	1.4	4.1	0.72	4.8	0.71			14	26.4	9.0
A10-4869	20.1	47.3	5.80	23.4	5.9	0.27	5.8	1.1	6.4	1.4	4.1	0.72	4.8	0.71			14	26.4	9.0
A10-5169	20.6	49.0	6.65	23.6	5.9	0.28	5.6	1.1	6.4	1.4	4.0	0.72	4.8	0.71			15	26.4	9.0
A10-5170	20.6	49.0	6.65	23.6	5.9	0.28	5.6	1.1	6.4	1.4	4.0	0.72	4.8	0.71			15	26.4	9.0
A10-5674	19.4	46.5	5.77	23.1	5.9	0.28	5.2	1.0	5.7	1.1	3.6	0.69	4.8	0.70			15	27.2	9.2
A10-5675	19.4	46.5	5.77	23.1	5.9	0.28	5.2	1.0	5.7	1.1	3.6	0.69	4.8	0.70			15	27.2	9.2
A10-5847	21.2	50.6	5.82	22.7	5.7	0.27	5.4	1.0	6.0	1.3	3.8	0.67	4.6	0.67			15	25.8	9.0
A10-5849	20.0	48.5	5.62	23.1	5.8	0.27	5.1	1.0	5.6	1.3	3.6	0.71	4.7	0.70			14	25.9	8.7
A10-6169	21.5	48.5	5.57	22.9	5.7	0.27	5.5	1.0	6.2	1.3	3.9	0.69	4.7	0.69			16	25.8	9.7
A10-6247	21.4	48.0	6.35	24.4	6.0	0.30	5.8	1.0	6.4	1.4	4.1	0.69	4.9	0.72			13	26.7	9.4
A10-6252					5.9	0.29	4.9	1.0	6.2	1.1	3.7	0.69	4.7	0.64			16	25.9	10.2
A10-6320	18.9	46.0	5.47	22.8	5.8	0.27	5.1	1.0	5.7	1.0	3.8	0.66	4.5	0.71			15	26.2	8.9
A10-6556	***No data***																		
A10-6557	***No data***																		
Standard dev's.	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Y	Zr	Nb	Th	U
A10-4481	1.0	0.7	1.1	0.2	0.0	-0.2	0.6	0.5	0.7	1.2	0.5	0.8	0.8				-0.7	0.0	0.1
A10-4509	1.0	0.7	1.1	0.2	0.0	-0.2	0.6	0.5	0.7	1.2	0.5	0.8	0.8				-0.7	0.0	0.1
A10-4599	0.9	0.8	0.5	-0.1	-0.3	-1.0	0.4	-0.6	0.5	0.8	0.3	0.7	0.3	-0.4			0.5	-0.1	0.0
A10-4842	0.2	0.0	0.3	0.0	-0.2	-0.7	0.7	0.5	0.7	1.2	0.5	0.7	0.5	0.0			-0.7	-0.1	0.1
A10-4869	0.2	0.0	0.3	0.0	-0.2	-0.7	0.7	0.5	0.7	1.2	0.5	0.7	0.5	0.0			-0.7	-0.1	0.1

A10-5169	0.5	0.4	1.6	0.1	-0.2	-0.5	0.5	0.5	0.7	1.2	0.4	0.7	0.5	0.0			-0.1	-0.1	0.1
A10-5170	0.5	0.4	1.6	0.1	-0.2	-0.5	0.5	0.5	0.7	1.2	0.4	0.7	0.5	0.0			-0.1	-0.1	0.1
A10-5674	-0.2	-0.2	0.3	-0.1	-0.2	-0.5	0.1	-0.1	0.0	0.0	0.0	0.3	0.5	-0.1			-0.1	0.2	0.2
A10-5675	-0.2	-0.2	0.3	-0.1	-0.2	-0.5	0.1	-0.1	0.0	0.0	0.0	0.3	0.5	-0.1			-0.1	0.2	0.2
A10-5847	0.8	0.8	0.3	-0.2	-0.4	-0.7	0.3	-0.1	0.3	0.8	0.2	0.0	0.1	-0.5			-0.1	-0.3	0.1
A10-5849	0.2	0.3	0.1	-0.1	-0.3	-0.7	0.0	-0.1	-0.1	0.8	0.0	0.6	0.3	-0.1			-0.7	-0.3	-0.1
A10-6169	1.0	0.3	0.0	-0.1	-0.4	-0.7	0.4	-0.1	0.5	0.8	0.3	0.3	0.3	-0.3			0.5	-0.3	0.6
A10-6247	1.0	0.2	1.1	0.4	0.0	0.0	0.7	-0.1	0.7	1.2	0.5	0.3	0.8	0.1			-1.3	0.0	0.4
A10-6252					-0.2	-0.2	-0.2	-0.1	0.5	0.0	0.1	0.3	0.3	-0.9			0.5	-0.3	1.0
A10-6320	-0.5	-0.3	-0.2	-0.2	-0.3	-0.7	0.0	-0.1	0.0	-0.5	0.2	-0.1	-0.1	0.0			-0.1	-0.2	0.0
A10-6556	***No data***																		
A10-6557	***No data***																		

Statistically significant responses greater than 2 standard deviations relative to the certified standard means are summarized in the table below:

Standard	***High***	***Low***
W2a	La	Y, Th
NCS DC70009	La	nil
OREAS 100a	La, Sm, Ho, Yb	Gd, Dy, Er, Lu
JR-1	nil	nil

A6.4.5 PRECISION

Precision of the field duplicates, the laboratory re-splits and laboratory duplicates was calculated using the method of Thompson and Howarth (1978). The number of data points used in each calculation is summarized below:

Field duplicates	23
Re-splits	38
Pulp duplicates	76

Spreadsheets containing the calculations are appended to this report in the digital archive. Summaries of the calculated precision for the field duplicates, ordered by element and concentration, are listed below. The table shows the apparent error in the analyses for each concentration expressed as a percentage of the concentration. The concentration at which the apparent error is equal to 100% is the apparent precision of the analysis. The apparent errors in the elements determined from the field duplicates provide the best measures of the overall analytical errors for any element. Field duplicate error is the sum of sampling, splitting and analytical error:

Field Duplicates 2010																			
Element	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	Y	Zr	Nb	Th	U
Intercept	52.004	67.344	13.926	28.067	9.663	1.612	23.291	4.779	24.493	3.919	9.555	0.636	3.000	-0.97	103.0	10.00	9.000	20.865	10.048
Slope	0.249	0.311	0.239	0.306	0.273	0.188	0.131	0.129	0.136	0.159	0.166	0.209	0.286	0.330	0.154	0.372	0.322	0.090	0.168
Concentration																			
30000	50%	63%	48%	61%	55%	38%	26%	26%	27%	32%	33%	42%	57%	66%	31%	75%	64%	18%	34%
20000	50%	63%	48%	62%	55%	38%	26%	26%	28%	32%	33%	42%	57%	66%	32%	75%	64%	18%	34%
10000	51%	64%	48%	62%	55%	38%	27%	26%	28%	32%	33%	42%	57%	66%	33%	75%	64%	18%	34%
8000	51%	64%	48%	62%	55%	38%	27%	26%	28%	32%	33%	42%	57%	66%	33%	75%	65%	18%	34%
6000	52%	65%	48%	62%	55%	38%	27%	26%	28%	32%	34%	42%	57%	66%	34%	75%	65%	19%	34%
4000	52%	66%	48%	63%	55%	38%	27%	26%	28%	32%	34%	42%	57%	66%	36%	75%	65%	19%	34%

2000	55%	69%	49%	64%	55%	38%	29%	26%	30%	32%	34%	42%	57%	66%	41%	75%	65%	20%	35%
1000	60%	76%	51%	67%	56%	38%	31%	27%	32%	33%	35%	42%	58%	66%	51%	76%	66%	22%	36%
800	63%	79%	51%	68%	57%	38%	32%	27%	33%	33%	36%	42%	58%	66%	57%	77%	67%	23%	36%
600	67%	85%	52%	71%	58%	38%	34%	27%	35%	33%	36%	42%	58%	66%	65%	78%	67%	25%	37%
500	71%	89%	53%	72%	58%	38%	36%	28%	37%	33%	37%	42%	58%	66%	72%	78%	68%	26%	38%
400	76%	96%	55%	75%	59%	38%	38%	28%	40%	34%	38%	42%	59%	65%	82%	79%	69%	28%	39%
300	85%	107%	57%	80%	61%	39%	42%	29%	44%	34%	40%	42%	59%	65%	99%	81%	70%	32%	40%
200	102%	130%	62%	89%	64%	39%	50%	31%	52%	36%	43%	42%	60%	65%	134%	84%	73%	39%	44%
100	154%	197%	76%	117%	74%	41%	73%	35%	76%	40%	52%	43%	63%	64%	237%	94%	82%	60%	54%
50	258%	332%	103%	174%	93%	44%	119%	45%	125%	47%	71%	44%	69%	62%	443%	114%	100%	101%	74%

The results suggest that the assays are likely accurate to between $\pm$<50 ppm and $\pm$~300 ppm, varying by element. This error estimate is based on the precision of the field duplicates. This estimate of error is conservative because the field duplicate samples were one half the size of the core samples.

A6.4.6 DATA VERIFICATION

Following the 2010 drill program, a batch of 58 sample pulps were extracted and sent to ALS Laboratories in Whitehorse, Yukon Territory for reanalysis. The samples were selected so as to span the full range of TREO values reported by Activation Laboratories and to be dominantly in the range from 0.30% to 2.50% TREO.

The results were analyzed by performing linear regressions of the ALS repeats (Y) against the Activation Labs original assays (X). Results are tabulated below:

	Intercept			Slope			
Element	Mean	Lower	Upper	Mean	Lower	Upper	Notes
La	8.3	-20.8	37.4	0.98	0.97	0.99	
Ce	19.1	-38.2	76.4	0.95	0.94	0.96	-5%
Pr	2.5	-3.0	7.9	1.00	0.99	1.01	
Nd	51.8	-28.2	131.7	0.96	0.93	0.98	-4%
Sm	21.7	13.2	30.3	0.90	0.89	0.91	-10%
Eu	1.2	0.1	2.4	1.09	1.07	1.10	+9%
Gd	37.9	24.3	51.5	0.89	0.88	0.91	-11%
Tb	0.9	-1.5	3.3	1.03	1.01	1.04	+3%
Dy	10.2	-0.7	21.1	1.01	0.98	1.03	
Ho	0.2	-2.1	2.5	1.02	1.01	1.03	
Er	11.1	6.3	15.8	0.96	0.95	0.97	-4%
Tm	0.5	-0.4	1.3	0.98	0.97	1.00	
Yb	-5.4	-10.3	-0.5	1.03	1.01	1.05	+3%
Lu	-0.6	-1.2	-0.1	0.98	0.96	0.99	
Y	-50.9	-101.4	-0.4	1.00	0.98	1.01	
Th	-2.6	-15.3	10.1	0.98	0.95	1.00	-2%
U	-5.1	-10.8	0.5	0.95	0.91	0.98	-5%

ALS returned over limit assays in Ce, Sm, Dy and Gd and the verification is consequently limited to concentrations less than 0.5% (5000 ppm). The overall results indicate that the two laboratories are in agreement within 5% on 15 of the 17 elements examined. There were significant discrepancies between the ALS Laboratories and the Activation Laboratories results in Sm, Gd and Eu. ALS europium assays in all of the check sample batches were elevated with respect to the other laboratories and the variance in Eu cannot serve as evidence that there is a problem with the Activation Laboratories data. ALS returned over limit assays for both Sm and Gd, thereby confining the range of the analysis. Consequently, it cannot be concluded that there is a real significant variance between the two laboratories. In summary there is no conclusive evidence that any significant variance exists between the ALS Laboratories and Activation Laboratories analyses for the suite of leveling samples.