GEOSCIENCE AND MINES BRANCH

Till Geochemical Data for the Eastern Cobequid Highlands, Nova Scotia

D. M. Brushett and C. G. Smith

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Introduction

This report accompanies the release of analytical and field data for till samples collected across the Carboniferous bimodal volcanic succession of the eastern Cobequid Highlands, Nova Scotia (NTS map area 11E/11; Fig. 1). The samples were collected as part of an ongoing till geochemistry and surficial mapping program that was initiated to evaluate the exploration potential of this region and complement concurrent and previous bedrock mapping (e.g. MacHattie, 2013, 2017; Baldwin, 2016, 2017) following the discovery of epithermal-style gold in silicified and sulphidized basalt and rhyolite of the Byers Brook and Diamond Brook formations. A total of 191 till samples were collected and analyzed for matrix geochemistry and pebble lithology analysis. The interpretation of geochemical data, till provenance and implications for mineral exploration will be presented separately.

Surficial Geology

The surficial geology of Nova Scotia underwent extensive glacial modifications throughout the last Wisconsinan glaciation when ice-flow centres shifted from external ice centres to multiple ice centres on the province itself (Stea et al., 2011; Stea and Mott, 1990). Previous mapping (e.g. Stea and Finck, 1988a, b) identified regions of complex ice-flow chronologies with four ice-flow phases over northern mainland Nova Scotia, and a multitude of surficial deposit types throughout the region. Understanding this glacial history—including past ice-flow phases, glacial sediment transport and deposition, and bedrock erosion—is necessary for successful drift prospecting in the region.

The oldest documented Wisconsinan ice-flow phase in the region was to the east-southeast, originating from a centre outside the province (Fig. 2). Evidence for this ice-flow phase is widespread over the province and includes striations, distinctive erratics, till fabrics, and striated boulder pavements.
The second ice-flow phase was southward and southwestward from the Escuminac Ice Centre in the Prince Edward Island region. This phase is recorded by southward-trending striations crossing earlier southeastward-trending striations at many sites on the upland regions of Nova Scotia and New Brunswick. This ice-flow phase was responsible for the deposition of a distinctive reddish-brown hybrid till (originating from the redbeds in northern mainland Nova Scotia and Carboniferous basins in the Prince Edward Island region) and is the dominant surface till over much of the study area. This second phase of ice-flow is also responsible for most of the depositional landforms (drumlins) and erosional indicators (striations) in the study area.

The third ice-flow phase was characterized by an ice divide (Scotian Ice Divide) situated over most of the province resulting in northerly ice-flow in northern mainland Nova Scotia and south to southeastward ice-flow in southern Nova Scotia. Within the study area, this ice-flow phase is associated with a mostly locally derived, stony, greyish-brown hybrid till. Erratics from the Cobequid Highlands have been found throughout the Carboniferous lowlands to the north. Northward-trending striations can be traced across the northern mainland of Nova Scotia.

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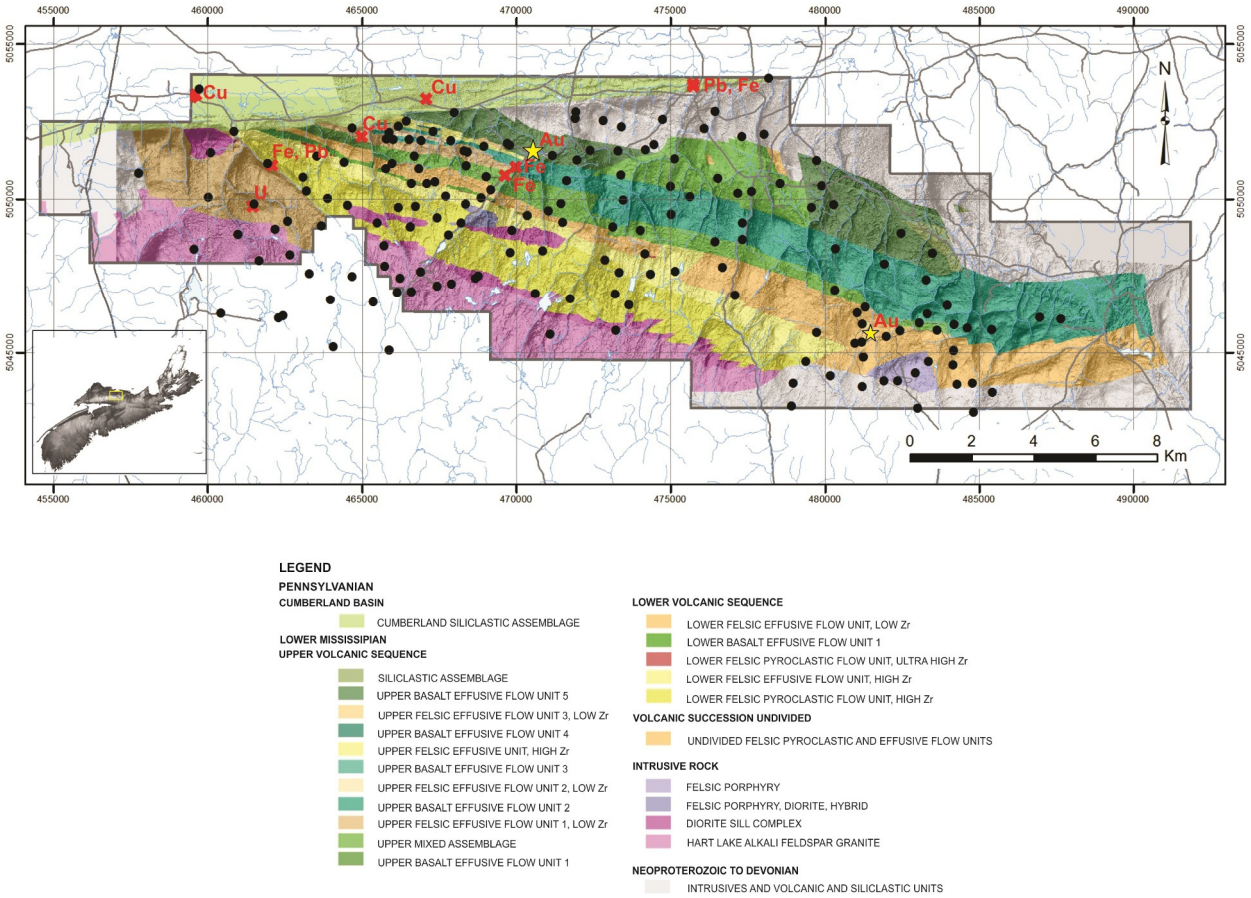

Figure 1. Till sample locations (black dots) and mineral occurrences (red Xs) shown on bedrock geology (MacHattie and MacMullen, 2018). in the eastern Cobequid Highlands. Epithermal-style gold occurrences identified by MacHattie (2013) are shown by yellow stars.

The last phase of ice flow included the readvance of remnant ice centres developed from the Scotian Divide in southern Nova Scotia. Ice flow during this phase was strongly funnelled westward into the marine basins. Erosional features and depositional landforms relating to these late-glacial ice centres are restricted to low-lying areas and are not present within the study area.

Methods

Field Methods

Field observations relating to surficial geology and outcrop-scale ice-flow indicators were made at 171 sites. Ice-flow indicators used for determining the ice-flow history include both small-scale features (mainly erosional) and large-scale features (depositional). Small-scale features observed include striations, grooves, chatter marks, and nail-head striations. Large-scale features were identified on lidar imagery data and 1:10 000-scale aerial photographs, and include flutes, drumlinoid features, and crag-and-tail landforms. The relative age of erosional ice-flow indicators was determined by crosscutting relationships, stoss and lee relationships, and comparing their azimuth relative to large-scale streamlined features.

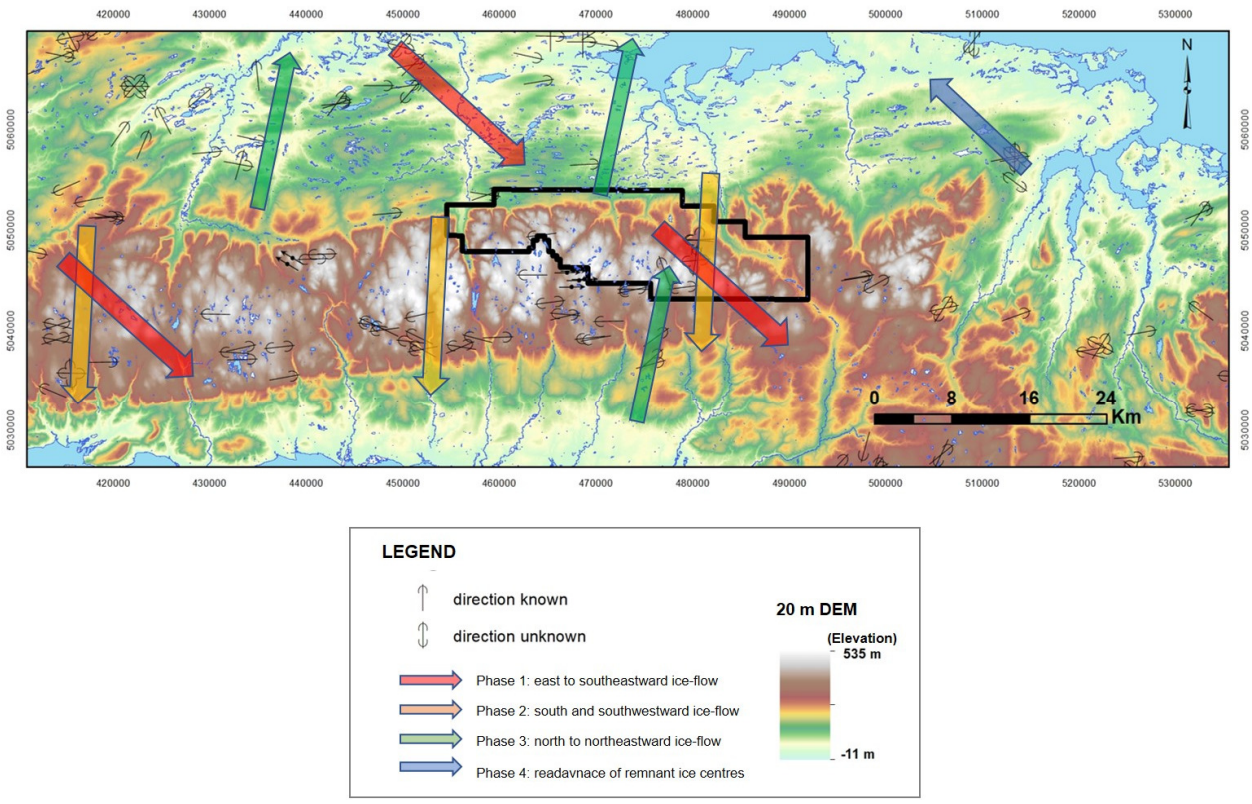

Figure 2. Generalized ice-flow chronology in northern mainland Nova Scotia. The study area is indicated by the solid black line. Four ice-flow phases affected the study area. The first (flow phase 1) was a regionally extensive east-southeastward flow originating from a centre outside the province. The second (flow phase 2) was a southward and southwestward flow sourced from the Escuminac Ice Centre in the Prince Edward Island region. The third (flow phase 3) was a northward ice flow originating from the Scotian Ice Divide in southern Nova Scotia, and the fourth (flow phase 4) included the readvance of small remnant ice centres; these late-glacial ice caps were restricted to low-lying areas.

Sampling methods

At each sample site, two till samples were collected: a < 1 kg sample was collected in a kraft paper bag for trace- and major-element geochemical analysis, and a larger ~3 kg till sample was collected for archiving and clast lithology analysis. Samples were primarily collected from the unoxidized C-horizon (~80 cm depth) of hand dug test pits and roadcuts following GSC till-sampling protocols outlined by Spirito et al. (2011) and McClenaghan et al. (2013). Where possible, samples were distributed on a roughly 1 km^2 grid; a more detailed sampling grid was used in more prospective areas where geochemical anomalies were detected by pXRF analysis of stream sediment samples collected in 2016 and early 2017 (Baldwin, 2017). The location and description of samples are presented in Brushett and MacMullen (2018).

Analysis

A total of 191 samples (171 till samples, 9 field duplicates, 11 standards) were submitted to Activation Laboratories Ltd. (Actlabs) where they were air-dried in ovens at 60°C and dry-sieved to < 0.063 mm

in stainless steel sieves. The < 0.063 mm fraction (till matrix) was analyzed for a suite of major, minor, and trace elements using a 'near total' 4-acid (hydrochloric, nitric, perchloric, and hydrofluoric) digestion followed by inductively coupled plasma-mass spectrometry (TD-ICP/MS), inductively coupled plasma-optical emission spectrometry (ICP-OES) and instrumental neutron activation analysis (INAA) determinations (Code UT3 on 0.5 g aliquot).

A subset of 53 samples (49 till samples, 2 field duplicates, 2 standards) were submitted to Bureau Veritas Minerals Canada Ltd. (BV) for fire assay/ ICP-MS analysis (Code FA130) on 30 g aliquots of till samples for Au, Pt, and Pd (samples were air-dried in an oven at 60°C and dry-sieved to <0.063 mm in stainless steel sieves).

Analyses of till samples, excluding field duplicates, are presented in Brushett and MacMullen (2018), where the analytical variables are labeled with a combination of the element name, a code denoting the analytical method, and the unit of measurement. A complete list of variables is shown in Table 1.

Reproducibility

Field and Laboratory Duplicates

Field duplicate samples were collected at 9 sites for an overall frequency of 1 in 21. The duplicate sample was dug within 5 m of the original site. A total of 10 laboratory duplicates were randomly selected by the lab. Values for the original samples and the field and laboratory duplicates correlate well and generally fall within acceptable limits. These data are presented as cross-plots in Appendices A and B. For all plots, the original sample is plotted on the x-axis and the duplicate sample is plotted on the y-axis.

Certified Reference Standards

CANMET certified reference standards TILL-1 and TILL-2 were inserted into sample batches prior to geochemical analysis to monitor analytical accuracy. Samples 16DB223, 17DB043, 17DB050, 17DB087, 17DB115, 17DB129, and 17DB192 are TILL-1. Samples 16DB224, 17DB044, 17DB057, 17DB088, 17DB125, 17DB130, and 17DB193 are TILL-2. Control charts are included as Appendix C. In each chart, a solid line represents the expected value (the mean of multiple analyses, carried out at several labs and reported by Lynch [1996]) and two dashed lines represent the upper and lower acceptable limits (determined by adding and subtracting two standard deviations, also reported by Lynch [1996]). Charts for certain elements were omitted because their values were either below detection or not included in the establishment of recommended values. Values for standards correlate well and generally fall within acceptable limits. The certificate of analysis for TILL-1 and TILL-2 reference materials is in Canadian Certified Reference Materials Project (1995).

Geochemical Results

The geochemical results received from Actlabs include three lab reports (A17-06904, A17-08634, and A17-10547) that are presented in Appendix D. The geochemical results received from Bureau Veritas includes one lab report (VAN17003090) presented in Appendix E. INAA values were reported for Au plus 16 other elements (As, Br, Ce, Eu, Fe, Ir, La, Lu, Na, Nd, Sb, Sc, Sm, Tb, W, and Yb). ICP-MS values were reported for Ga, Ge, Hg, In, Li, Nb, Re, Sn, Sr, Te, Tl, Y, Zr, La, Ce, Pr, Nd, Sm, Eu, Gd, Dy, Tb, Ho, Er, Tm, and Lu. ICP-OES values were reported for Mo, S, Al, Ca, K, Mg, Mn, P, Ti, V, Sm, Eu, Gd, Dy, Tb, Ho, Er, Tm, and Lu. Multi INAA/ICP-MS values were reported for Co, Cr, Cs, Hf, Rb, Se, Ta,

Table 1. Geochemical variables with analytical method, units, detection limit (D.L.) and number of analyses below detection limit.

Element	Unit Symbol	Analysis Method	Lower D.L.	Number of analyses < D.L.
Ag	ppm	MULT INAA/TD-ICP/TD-MS	0.05	139
Al	%	TD-ICP	0.01	0
As	ppm	INAA	0.5	0
Au	ppb	fire assay/ICP-MS	1	0
Au	ppb	INAA	2	147
Ba	ppm	MULT INAA/TD-ICP-MS	1	0
Be	ppm	MULT TD-ICP/TD-ICP-MS	0.1	0
Bi	ppm	MULT TD-ICP/TD-ICP-MS	0.1	13
Br	ppm	INAA	0.5	4
Ca	%	TD-ICP	0.01	0
Cd	ppm	MULT TD-ICP/TD-ICP-MS	0.1	19
Ce	ppm	INAA	3	0
Ce	ppm	TD-MS	0.1	0
Co	ppm	MULT INAA/TD-ICP-MS	0.1	0
Cr	ppm	MULT INAA/TD-ICP-MS	1	0
Cs	ppm	MULT INAA/TD-ICP-MS	0.05	0
Cu	ppm	MULT TD-ICP/TD-ICP-MS	0.2	0
Dy	ppm	TD-MS	0.1	0
Er	ppm	TD-MS	0.1	0
Eu	ppm	INAA	0.2	0
Eu	ppm	TD-MS	0.05	0
Fe	%	INAA	0.01	0
Ga	ppm	TD-MS	0.1	N/A
Gd	ppm	TD-MS	0.1	0
Ge	ppm	TD-MS	0.1	175
Hf	ppm	MULT INAA/TD-ICP-MS	0.1	1
Hg	ppb	TD-MS	10	4
Ho	ppm	TD-MS	0.1	0
In	ppm	TD-MS	0.1	146
Ir	ppb	INAA	5	181
K	%	TD-ICP	0.01	0
La	ppm	INAA	0.5	0
La	ppm	TD-MS	0.1	0
Li	ppm	TD-MS	0.5	0
Lu	ppm	INAA	0.05	0
Lu	ppm	TD-MS	0.1	0
Mg	%	TD-ICP	0.01	1
Lu	ppm	INAA	0.05	0
Lu	ppm	TD-MS	0.1	0

Table 1 concludes next page.

Table 1 *(concluded)*.

Element	Unit Symbol	Analysis Method	Lower D.L.	Number of analyses < D.L.
Mg	%	TD-ICP	0.01	1
Mn	ppm	TD-ICP	1	0
Mo	ppm	TD-ICP	1	166
Na	%	INAA	0.01	0
Nb	ppm	TD-MS	0.1	30
Nd	ppm	INAA	5	0
Nd	ppm	TD-MS	0.1	0
Ni	ppm	MULT INAA/TD-ICP/TD-MS	0.5	1
P	%	TD-ICP	0.001	0
Pb	ppm	MULT TD-ICP/TD-ICP-MS	0.5	0
Pr	ppm	TD-MS	0.1	0
Rb	ppm	MULT INAA/TD-ICP-MS	0.2	0
Re	ppm	TD-MS	0.001	174
S	%	TD-ICP	0.01	32
Sb	ppm	INAA	0.1	3
Sc	ppm	INAA	0.1	0
Se	ppm	MULT INAA/TD-ICP-MS	0.1	119
Sm	ppm	INAA	0.1	0
Sm	ppm	TD-MS	0.1	0
Sn	ppm	TD-MS	1	130
Sr	ppm	TD-MS	0.2	0
Ta	ppm	MULT INAA/TD-ICP-MS	0.1	152
Tb	ppm	INAA	0.5	66
Tb	ppm	TD-MS	0.1	0
Te	ppm	TD-MS	0.1	181
Th	ppm	MULT INAA/TD-ICP-MS	0.1	0
Ti	%	TD-ICP	0.01	0
Tl	ppm	TD-MS	0.05	0
Tm	ppm	TD-MS	0.1	0
U	ppm	MULT INAA/TD-ICP-MS	0.1	0
V	ppm	TD-ICP	2	0
W	ppm	INAA	1	180
Y	ppm	TD-MS	0.1	0
Yb	ppm	INAA	0.2	0
Yb	ppm	TD-MS	0.1	0
Zn	ppm	MULT INAA/TD-ICP/TD-MS	0.5	0
Zr	ppm	TD-MS	1	0

Th, and U. Multi INAA/ICP-OES/ICP-MS values were reported for Ag, Ni, and Zn. Multi ICP-OES/ ICP-MS values were reported for Cu, Cd, Pb, Be, and Bi.

Geochemical data for gold and associated pathfinder elements (Ag, As, Zn, Hg, Sb) are presented as proportional dot maps in Figures 3 to 8. Concentration ranges were determined using Jenks natural break optimization within ArcMap (v. 10.5.1) which identifies natural breaks in the frequency distribution resulting in four to six concentration ranges. The interpretation of geochemical data, till provenance and implications for mineral exploration will be presented separately.

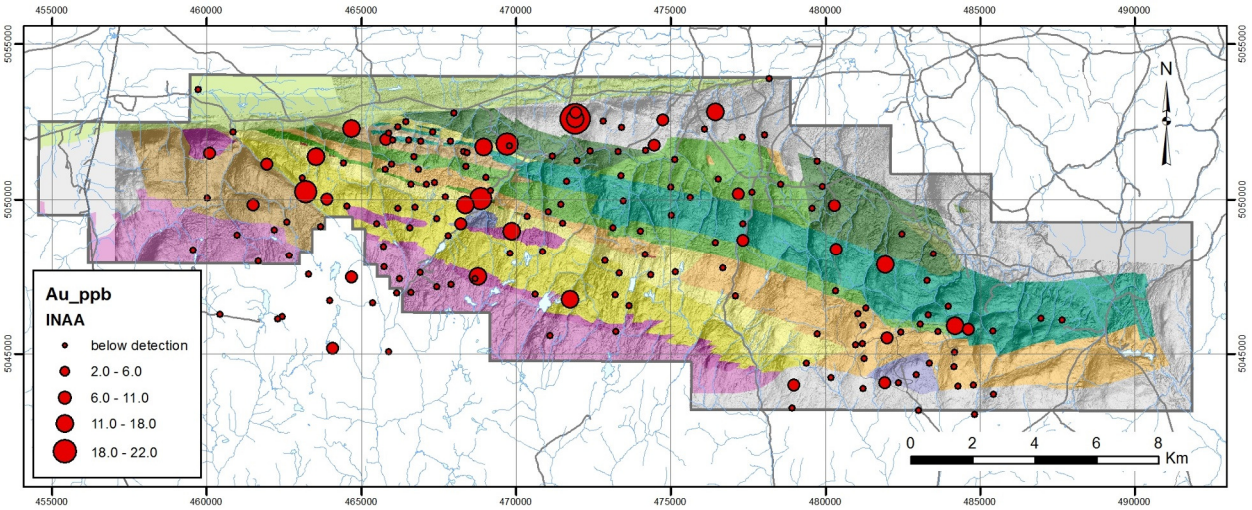

Figure 3. Gold (ppb) by INAA.

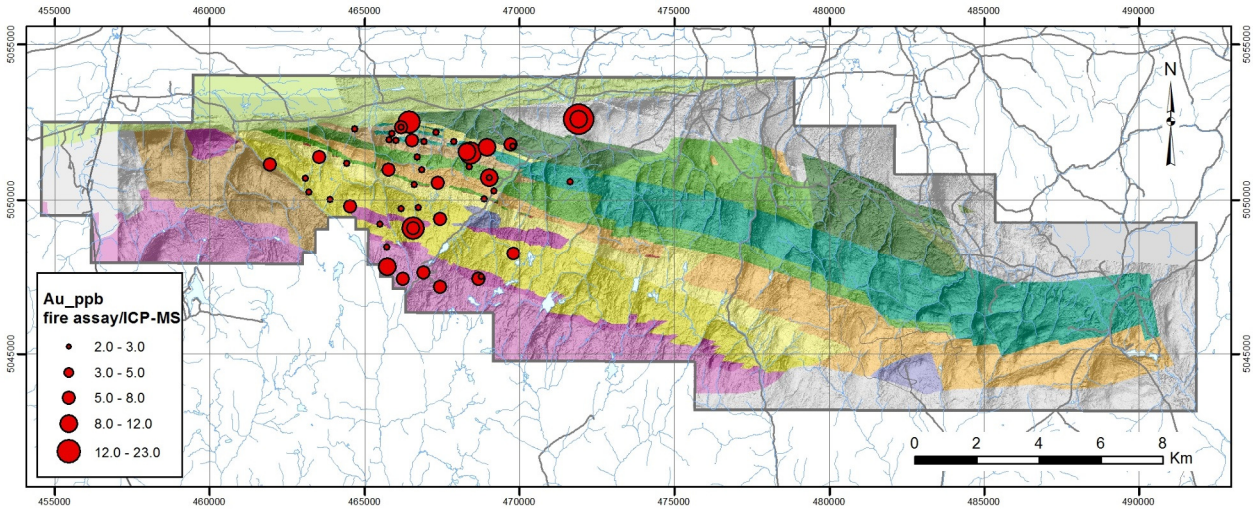

Figure 4. Gold (ppb) by fire assay/ICP-MS.

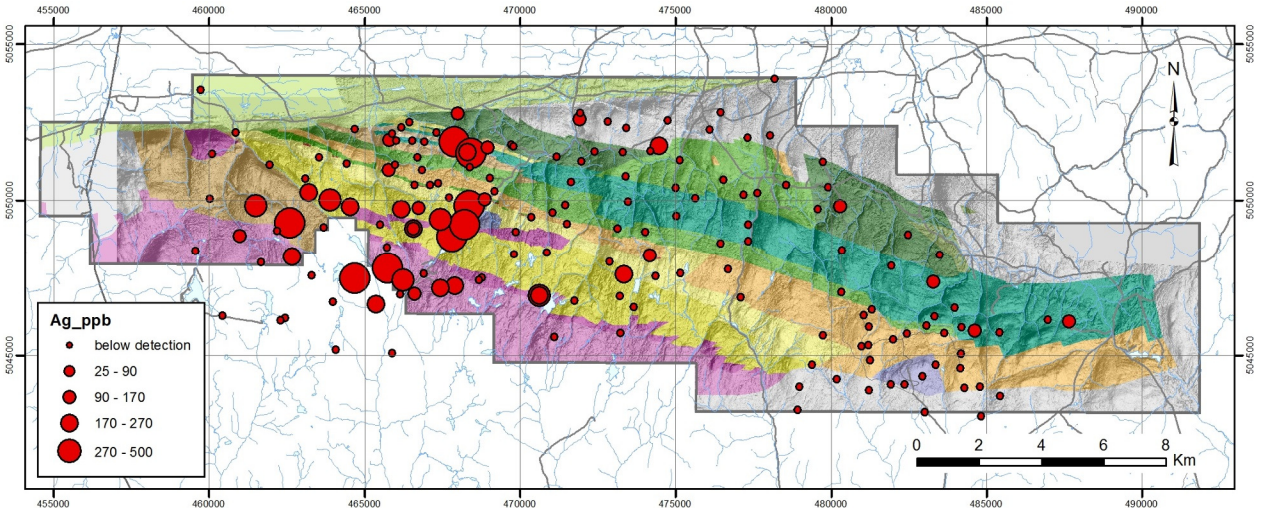

Figure 5. Silver (ppb) by INAA/TD-ICP/ICP-MS.

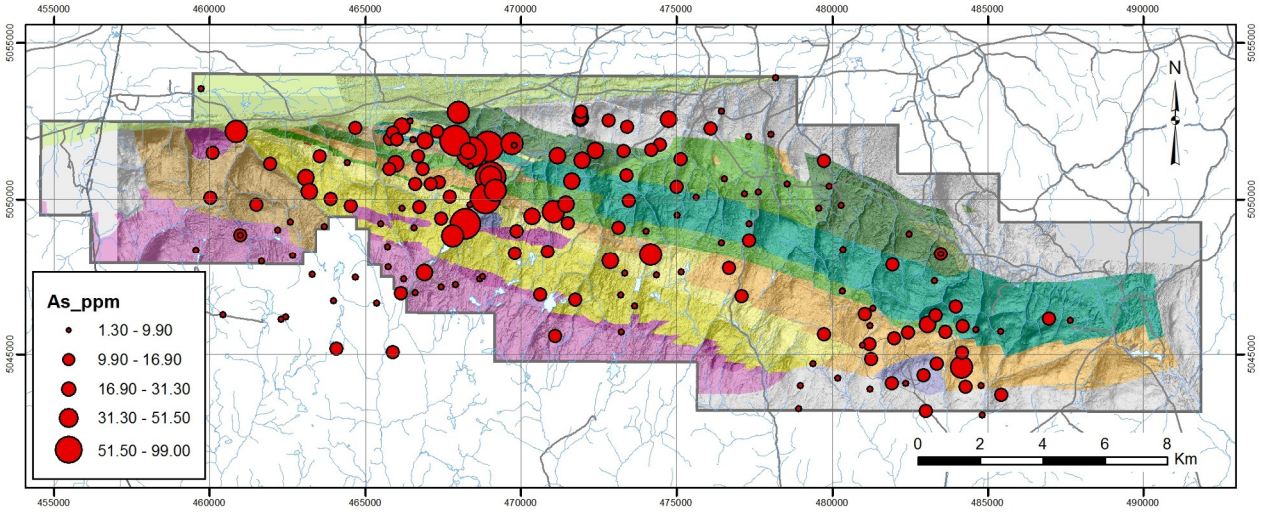

Figure 6. Arsenic (ppm) by INAA.

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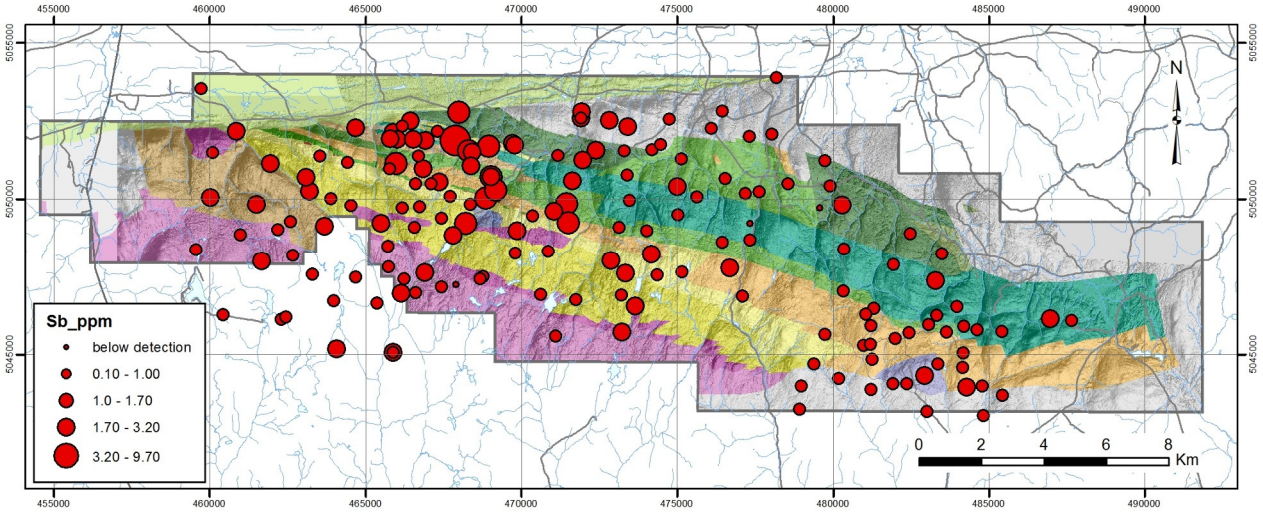

Figure 7. Antimony (ppm) by INAA.

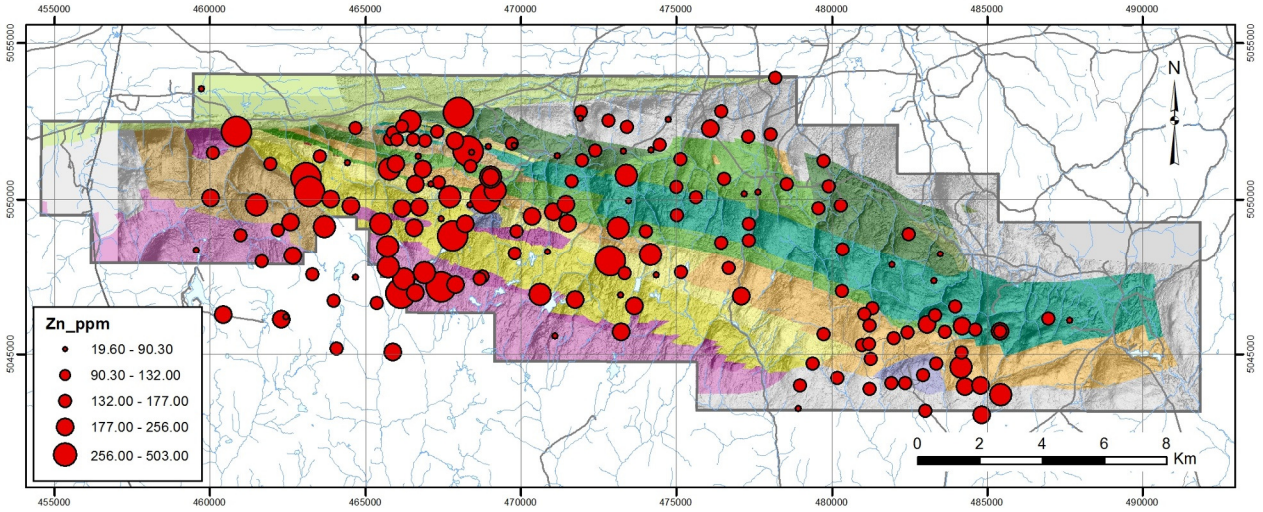

Figure 8. Zinc (ppm) by INAA/TD-ICP/ICP-MS.

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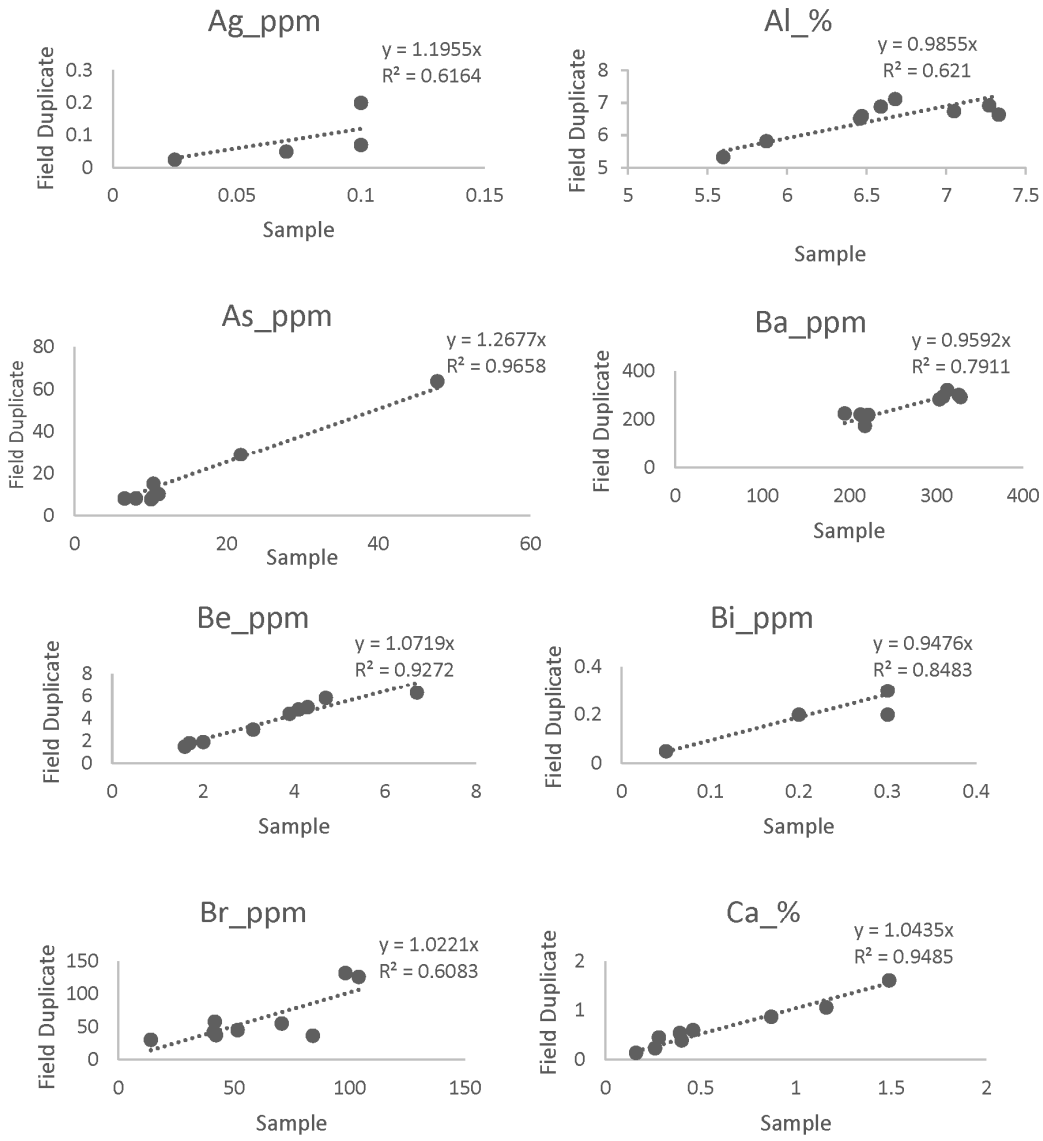
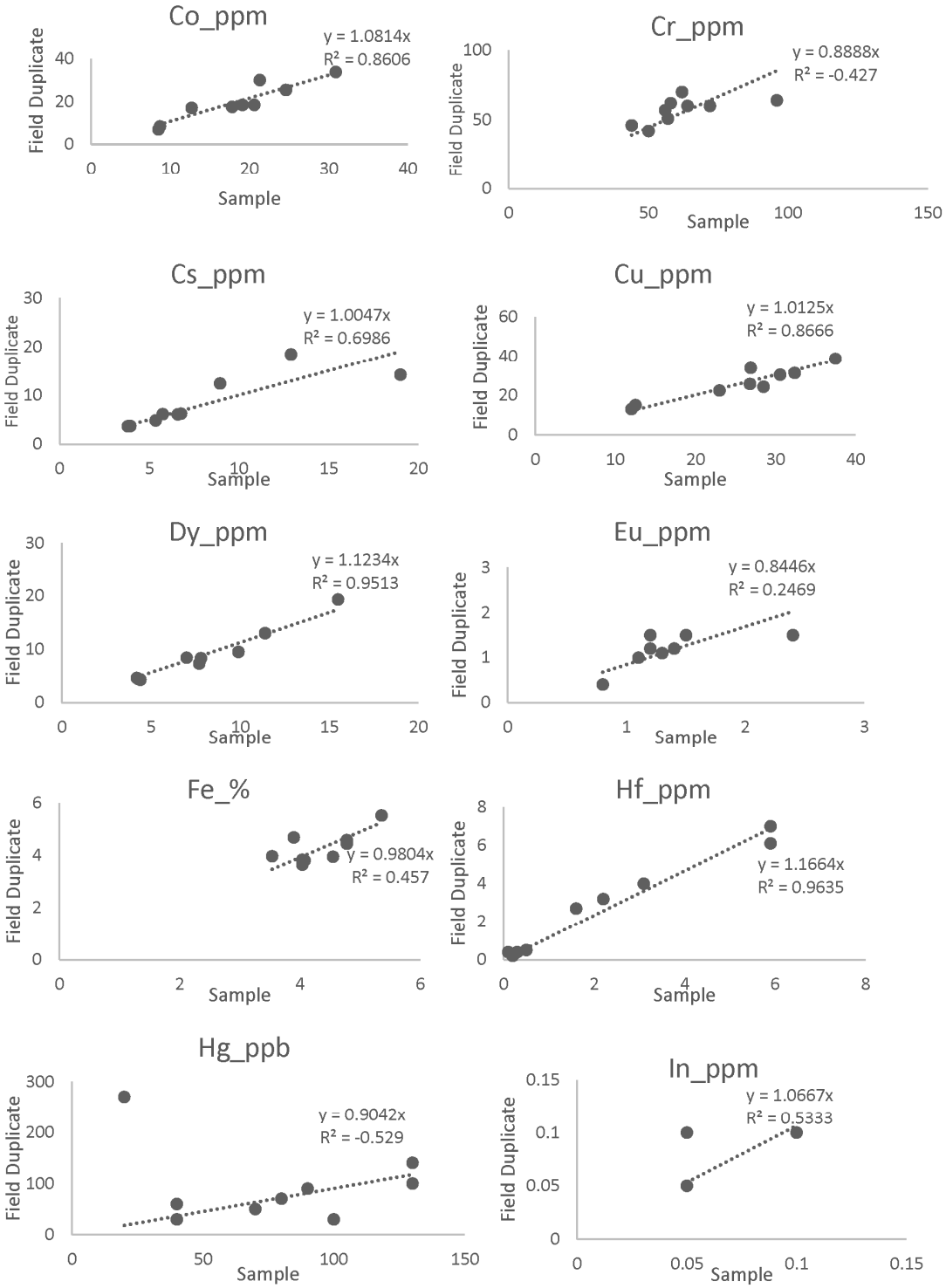
Appendix A. Field Duplicate Cross-Plots

In each plot, the original sample is plotted on the x axis, and the duplicate on the y-axis. Charts for certain elements were omitted because they had too many of their values below detection.

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R² = 0.8606
Field Duplicate
Sample
Cr_ppm
y = 0.8888x
R² = -0.427
Field Duplicate
Sample
Cs_ppm
y = 1.0047x
R² = 0.6986
Field Duplicate
Sample
Cu_ppm
y = 1.0125x
R² = 0.8666
Field Duplicate
Sample
Dy_ppm
y = 1.1234x
R² = 0.9513
Field Duplicate
Sample
Eu_ppm
y = 0.8446x
R² = 0.2469
Field Duplicate
Sample
Fe_%
y = 0.9804x
R² = 0.457
Field Duplicate
Sample
Hf_ppm
y = 1.1664x
R² = 0.9635
Field Duplicate
Sample
Hg_ppb
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Sample
In_ppm
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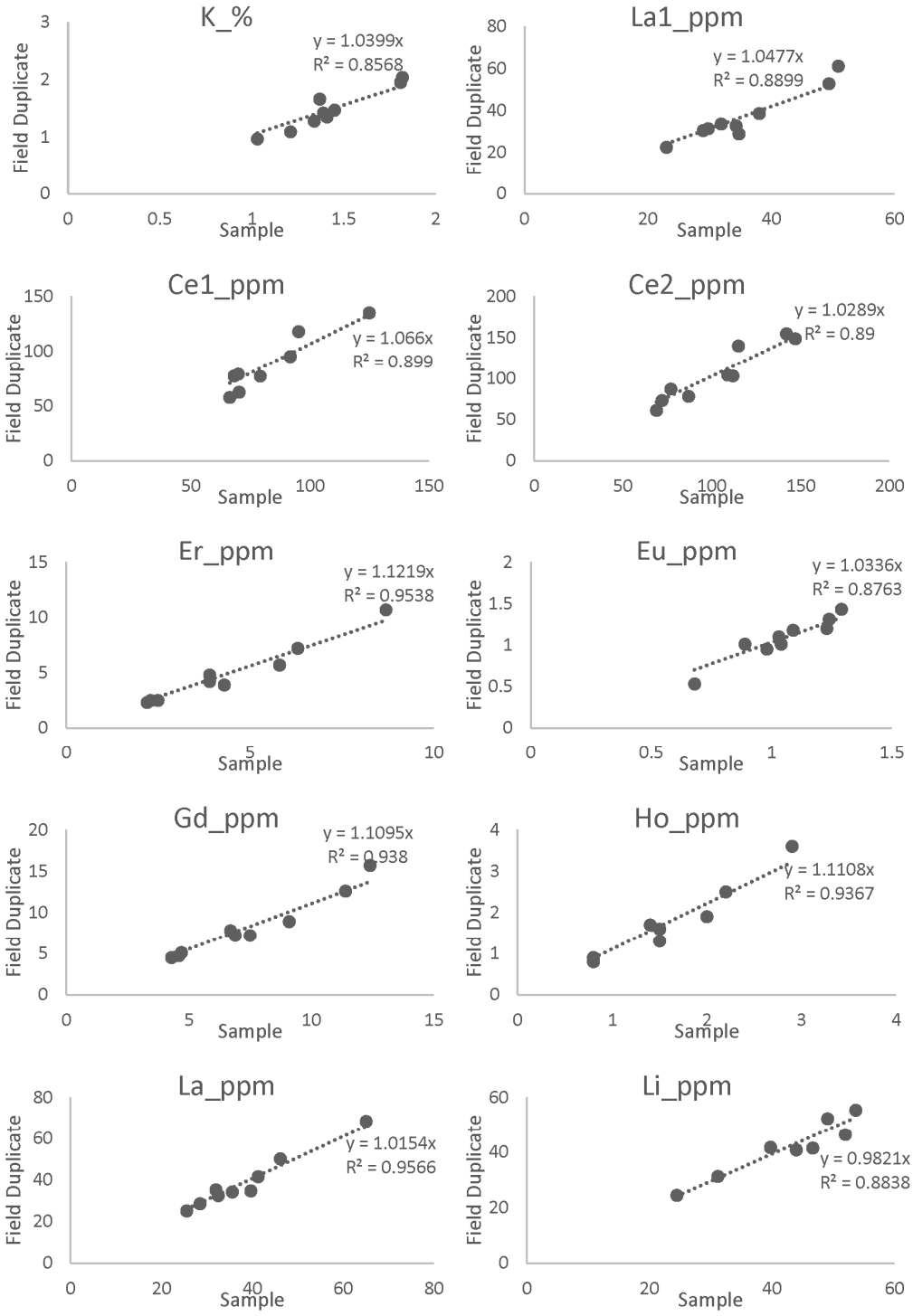
R² = 0.5333
Field Duplicate
Sample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Sample
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R² = 0.899
Ce2_ppm
y = 1.0289x
R² = 0.89
Er_ppm
y = 1.1219x
R² = 0.9538
Eu_ppm
y = 1.0336x
R² = 0.8763
Gd_ppm
y = 1.1095x
R² = 0.938
Ho_ppm
y = 1.1108x
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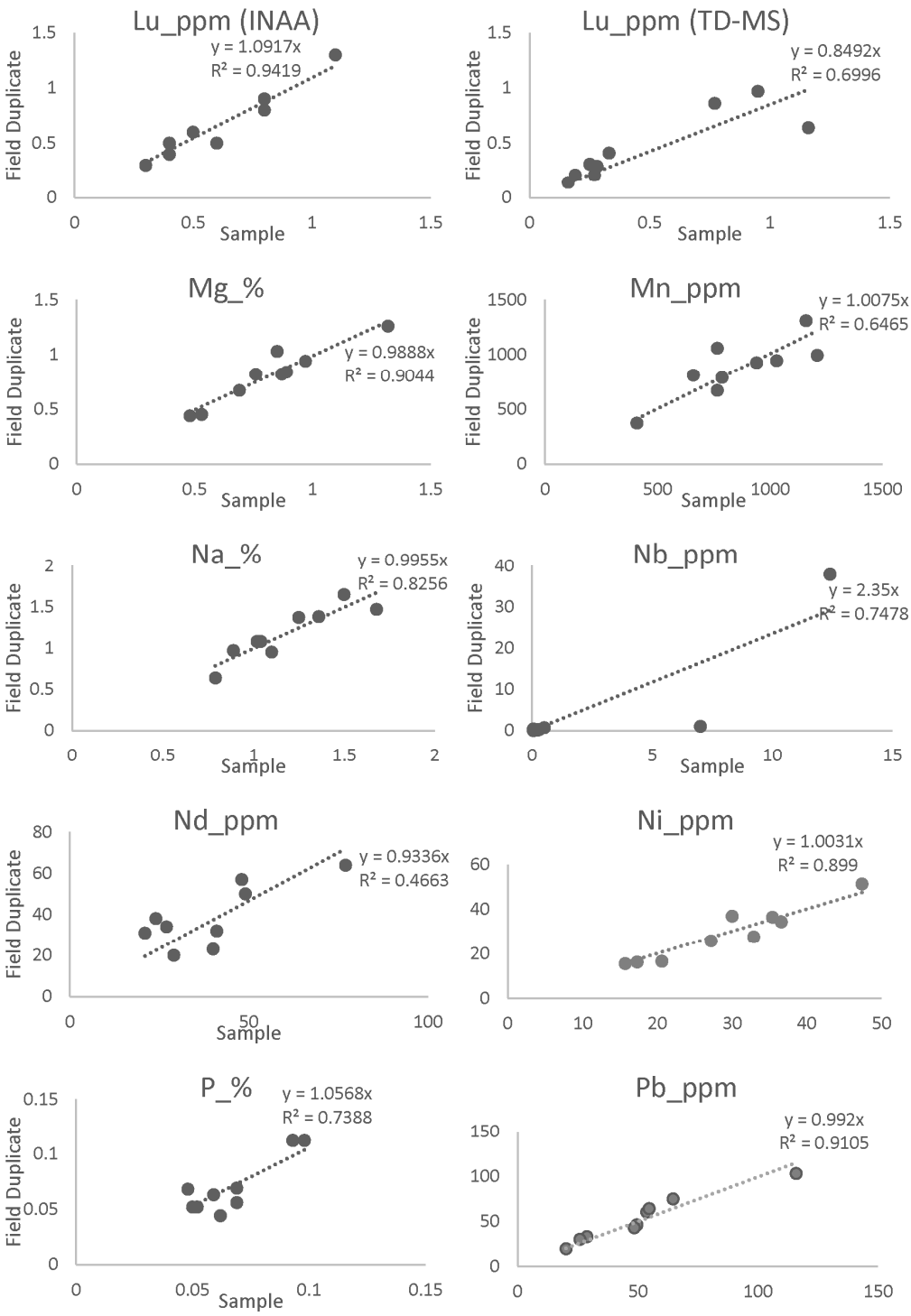
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Mg_%
y = 0.9888x
R² = 0.9044
Mn_ppm
y = 1.0075x
R² = 0.6465
Na_%
y = 0.9955x
R² = 0.8256
Nb_ppm
y = 2.35x
R² = 0.7478
Nd_ppm
y = 0.9336x
R² = 0.4663
Ni_ppm
y = 1.0031x
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Pb_ppm
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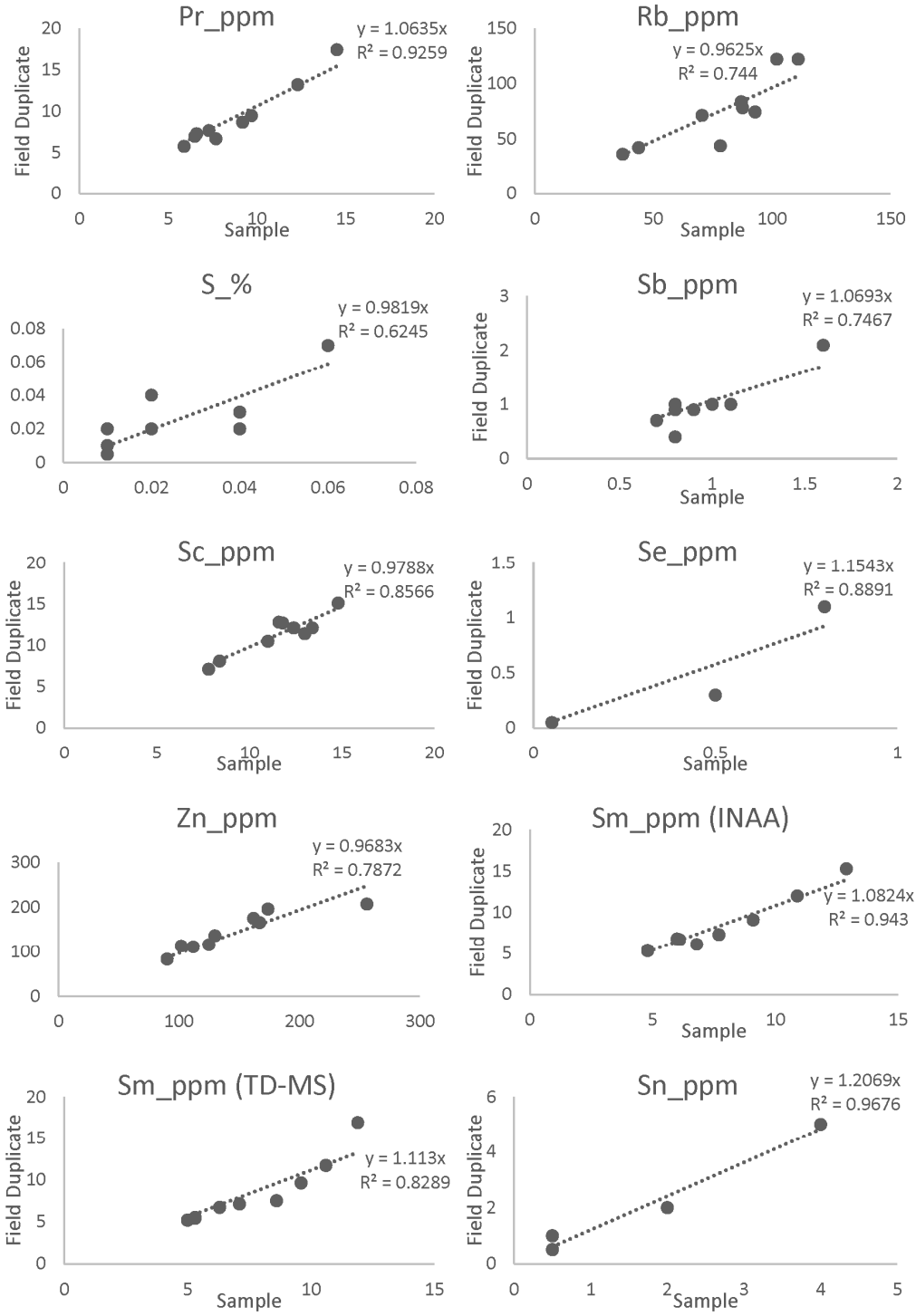
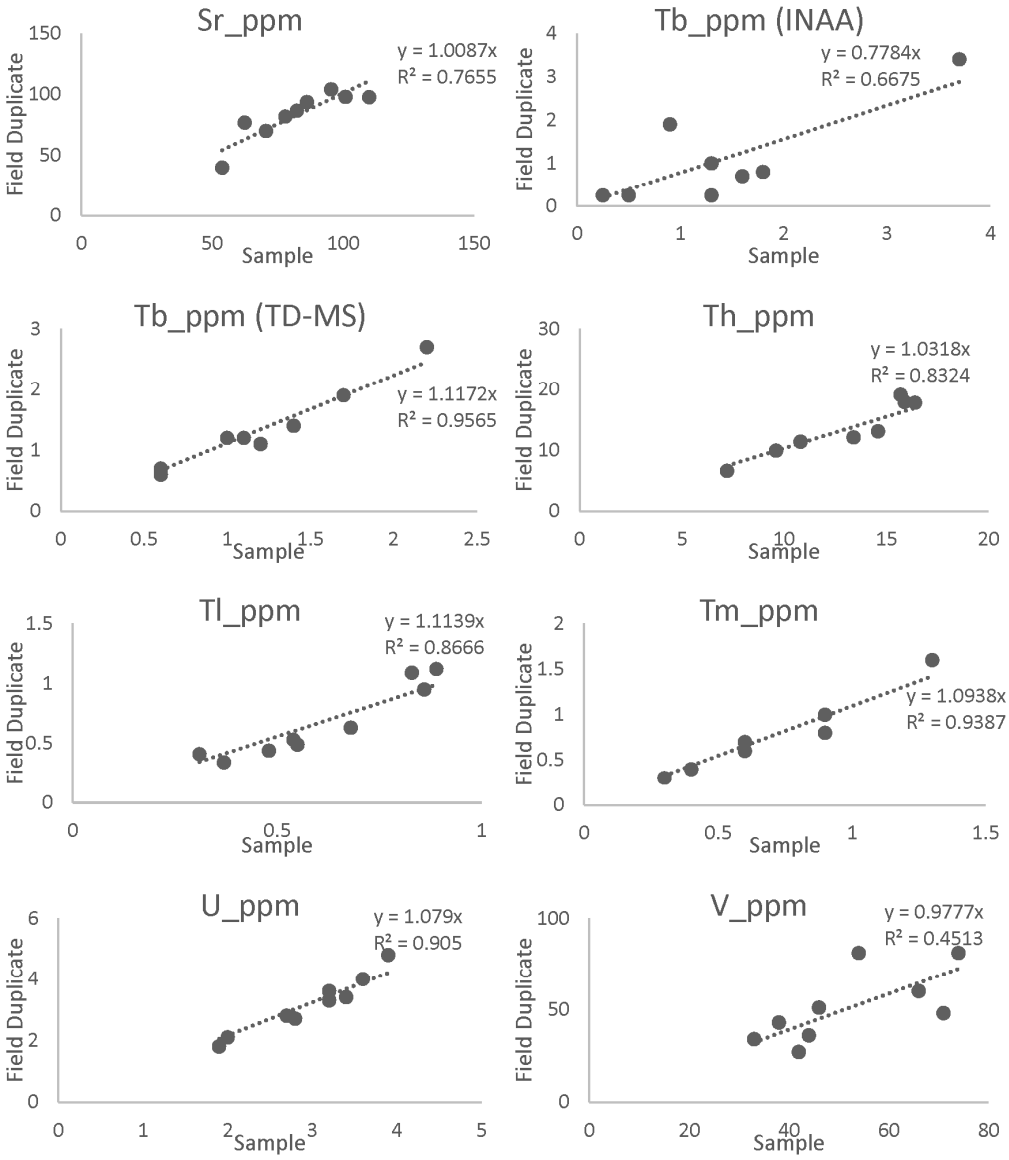
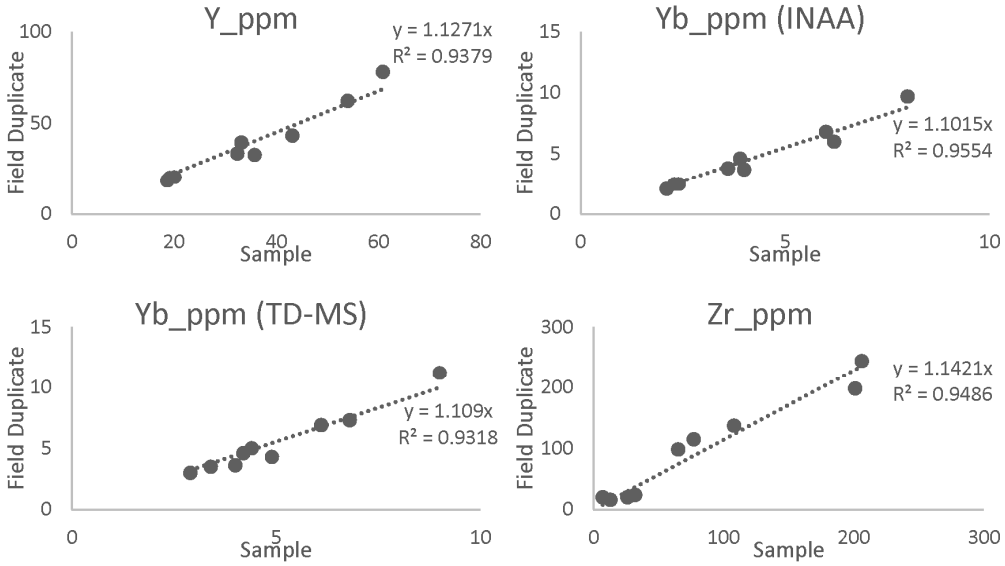
Field Duplicate
Sample

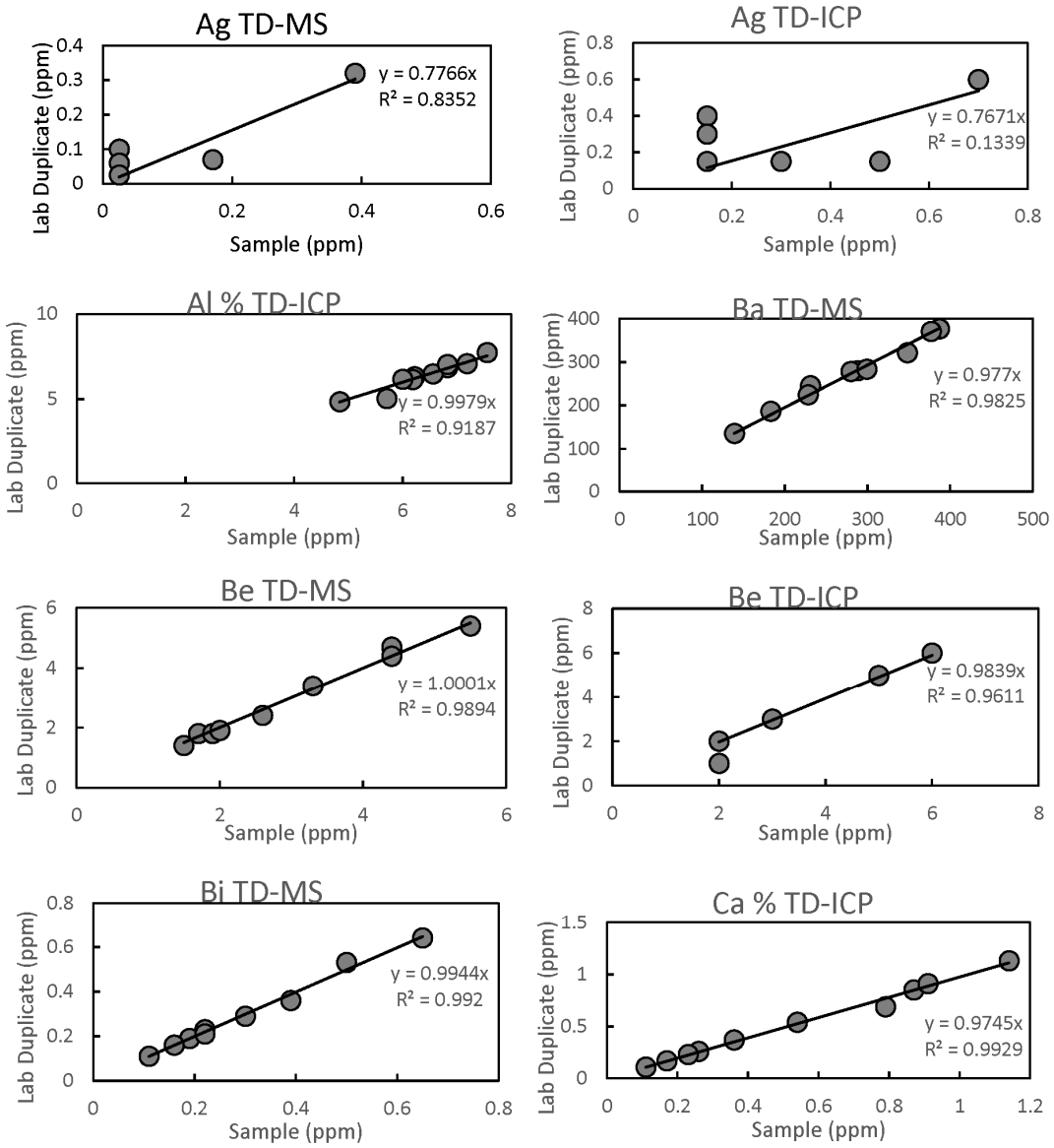

Pr_ppm
y = 1.0635x
R² = 0.9259
Field Duplicate
Sample
Rb_ppm
y = 0.9625x
R² = 0.744
Field Duplicate
Sample
S_%
y = 0.9819x
R² = 0.6245
Sb_ppm
y = 1.0693x
R² = 0.7467
Field Duplicate
Sample
Sc_ppm
y = 0.9788x
R² = 0.8566
Field Duplicate
Sample
Se_ppm
y = 1.1543x
R² = 0.8891
Field Duplicate
Sample
Zn_ppm
y = 0.9683x
R² = 0.7872
Sm_ppm (INAA)
y = 1.0824x
R² = 0.943
Field Duplicate
Sample
Sm_ppm (TD-MS)
y = 1.113x
R² = 0.8289
Field Duplicate
Sample
Sn_ppm
y = 1.2069x
R² = 0.9676
Field Duplicate
Sample

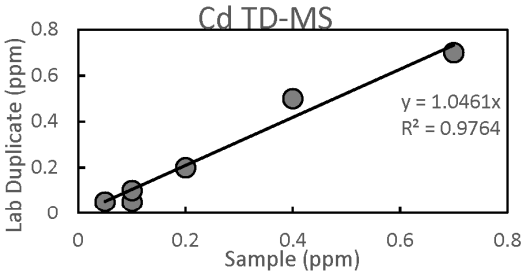

Sr_ppm
y = 1.0087x
R² = 0.7655
Field Duplicate
Sample
Tb_ppm (INAA)
y = 0.7784x
R² = 0.6675
Tb_ppm (TD-MS)
y = 1.1172x
R² = 0.9565
Th_ppm
y = 1.0318x
R² = 0.8324
Tl_ppm
y = 1.1139x
R² = 0.8666
Tm_ppm
y = 1.0938x
R² = 0.9387
U_ppm
y = 1.079x
R² = 0.905
V_ppm
y = 0.9777x
R² = 0.4513

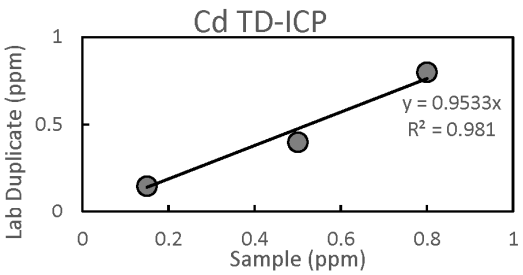

Y_ppm
y = 1.1271x
R² = 0.9379
Field Duplicate
Sample
Yb_ppm (INAA)
y = 1.1015x
R² = 0.9554
Field Duplicate
Sample
Yb_ppm (TD-MS)
y = 1.109x
R² = 0.9318
Field Duplicate
Sample
Zr_ppm
y = 1.1421x
R² = 0.9486
Field Duplicate
Sample

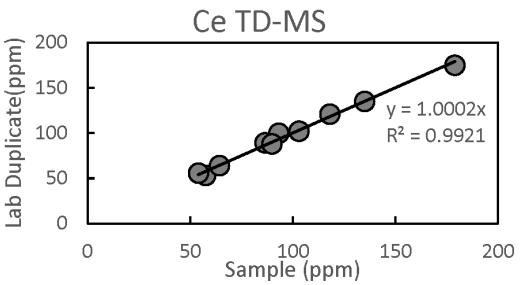
APPENDIX B. Laboratory Duplicate Cross-Plots

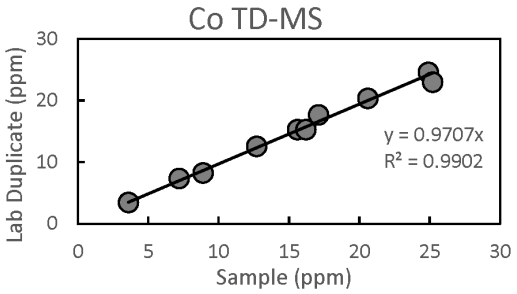
In each plot, the original sample is plotted on the x axis, and the duplicate on the y-axis. Charts for certain elements were omitted because they had too many of their values below detection.

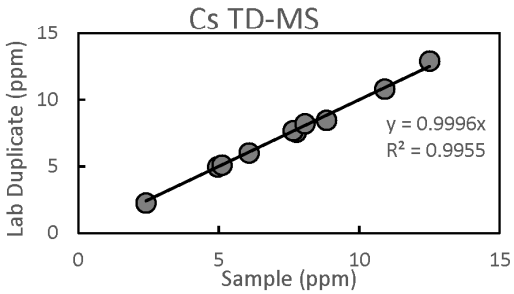


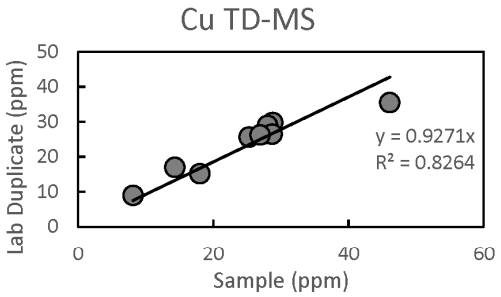

Cd TD-MS
Lab Duplicate (ppm)
Sample (ppm)
y = 1.0461x
R² = 0.9764

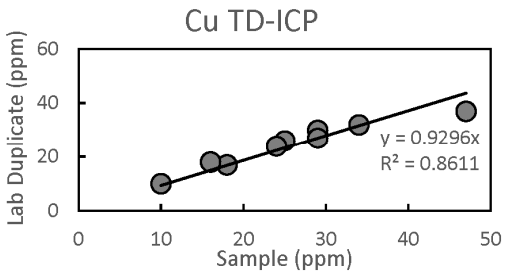

Cd TD-ICP
Lab Duplicate (ppm)
Sample (ppm)
y = 0.9533x
R² = 0.981

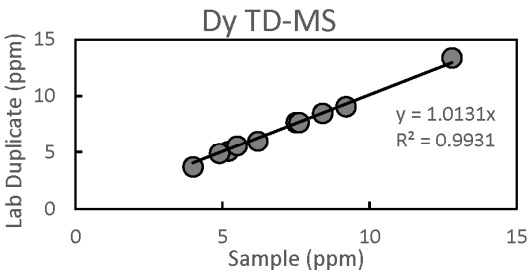

Ce TD-MS
Lab Duplicate(ppm)
Sample (ppm)
y = 1.0002x
R² = 0.9921

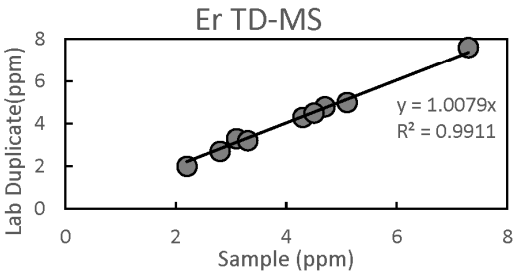

Co TD-MS
Lab Duplicate (ppm)
Sample (ppm)
y = 0.9707x
R² = 0.9902

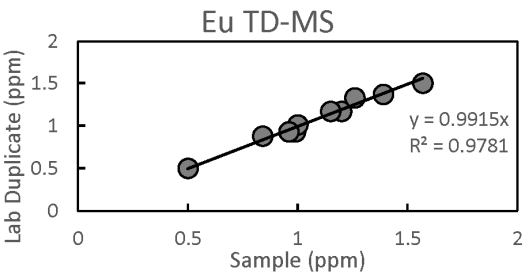

Cs TD-MS
Lab Duplicate (ppm)
Sample (ppm)
y = 0.9996x
R² = 0.9955

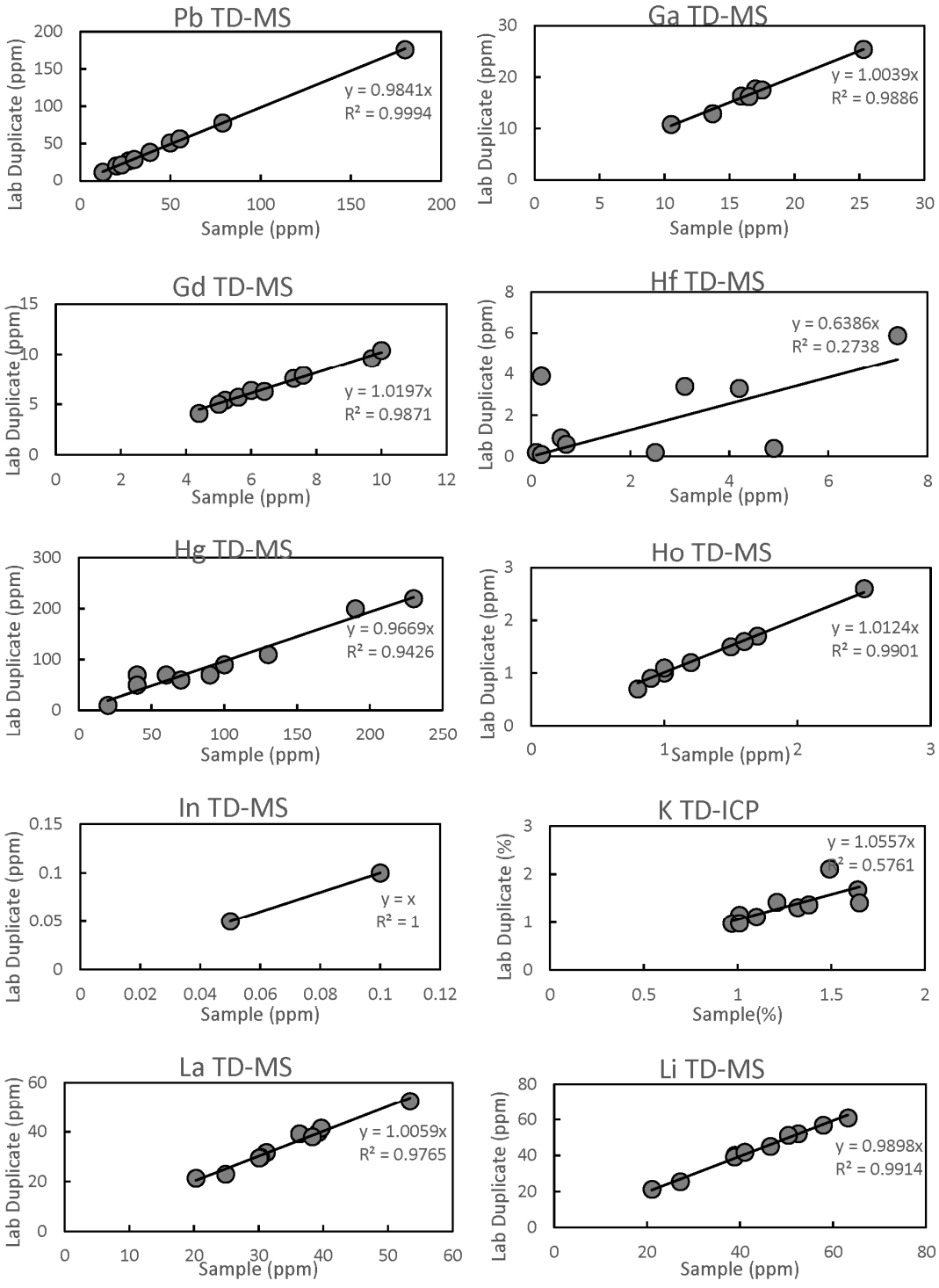

Cu TD-MS
Lab Duplicate (ppm)
Sample (ppm)
y = 0.9271x
R² = 0.8264

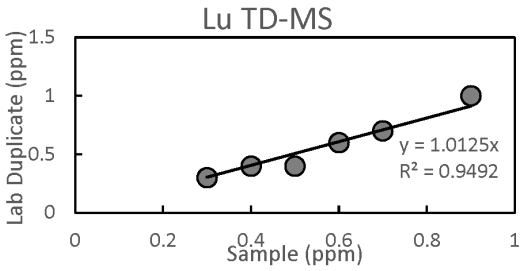

Cu TD-ICP
Lab Duplicate (ppm)
Sample (ppm)
y = 0.9296x
R² = 0.8611

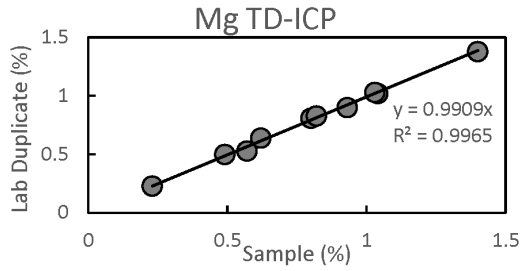

Dy TD-MS
Lab Duplicate (ppm)
Sample (ppm)
y = 1.0131x
R² = 0.9931

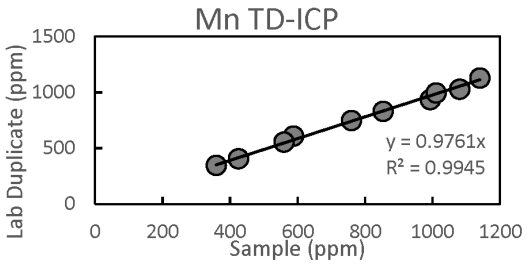

Er TD-MS
Lab Duplicate(ppm)
Sample (ppm)
y = 1.0079x
R² = 0.9911

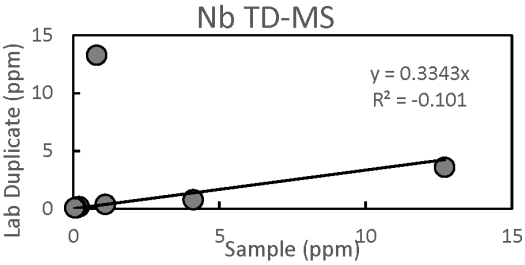

Eu TD-MS
Lab Duplicate (ppm)
Sample (ppm)
y = 0.9915x
R² = 0.9781

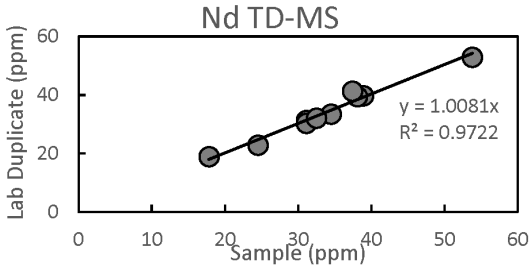

Pb TD-MS
Lab Duplicate (ppm)
Sample (ppm)
y = 0.9841x
R² = 0.9994
Ga TD-MS
y = 1.0039x
R² = 0.9886
Gd TD-MS
y = 1.0197x
R² = 0.9871
Hf TD-MS
y = 0.6386x
R² = 0.2738
Hg TD-MS
y = 0.9669x
R² = 0.9426
Ho TD-MS
y = 1.0124x
R² = 0.9901
In TD-MS
y = x
R² = 1
K TD-ICP
Lab Duplicate (%)
Sample(%)
y = 1.0557x
R² = 0.5761
La TD-MS
y = 1.0059x
R² = 0.9765
Li TD-MS
y = 0.9898x
R² = 0.9914

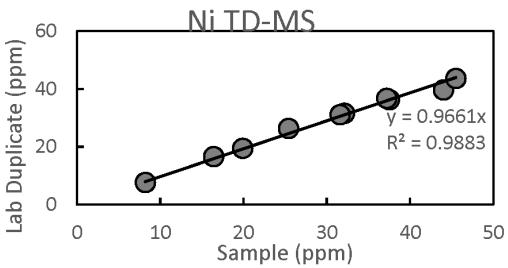

Lu TD-MS
Lab Duplicate (ppm)
Sample (ppm)
y = 1.0125x
R² = 0.9492

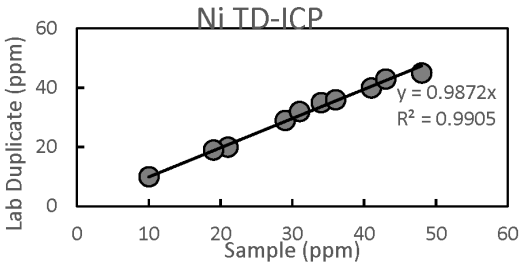

Mg TD-ICP
Lab Duplicate (%)
Sample (%)
y = 0.9909x
R² = 0.9965

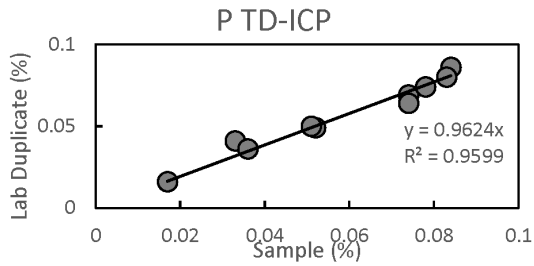

Mn TD-ICP
Lab Duplicate (ppm)
Sample (ppm)
y = 0.9761x
R² = 0.9945

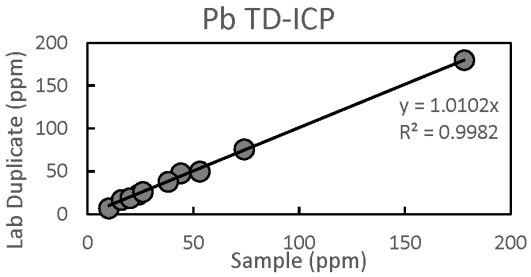

Nb TD-MS
Lab Duplicate (ppm)
Sample (ppm)
y = 0.3343x
R² = -0.101

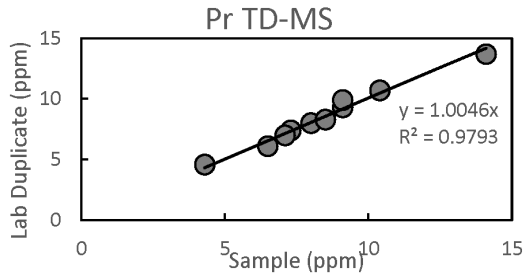

Nd TD-MS
Lab Duplicate (ppm)
Sample (ppm)
y = 1.0081x
R² = 0.9722

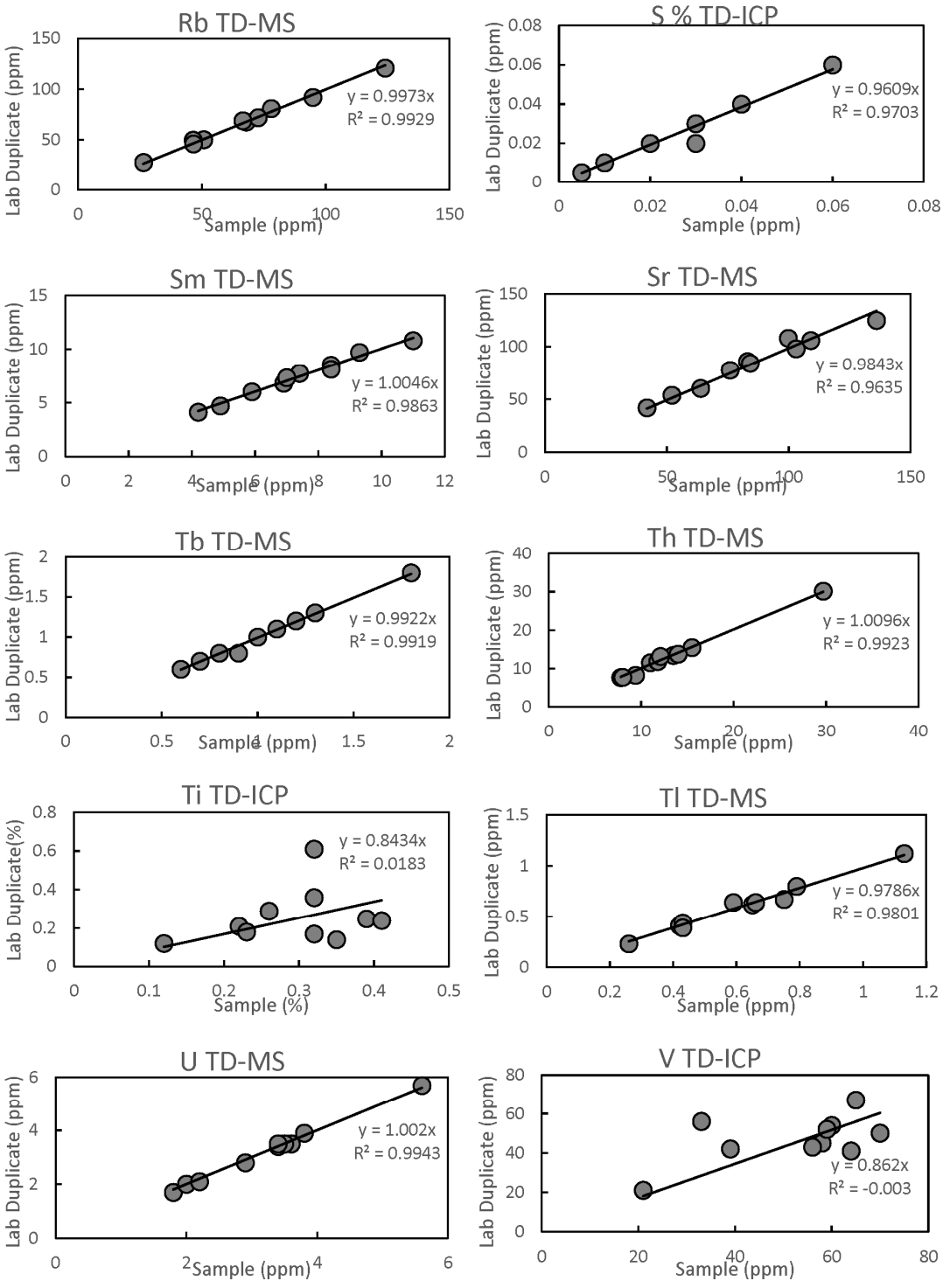

Ni TD-MS
Lab Duplicate (ppm)
Sample (ppm)
y = 0.9661x
R² = 0.9883

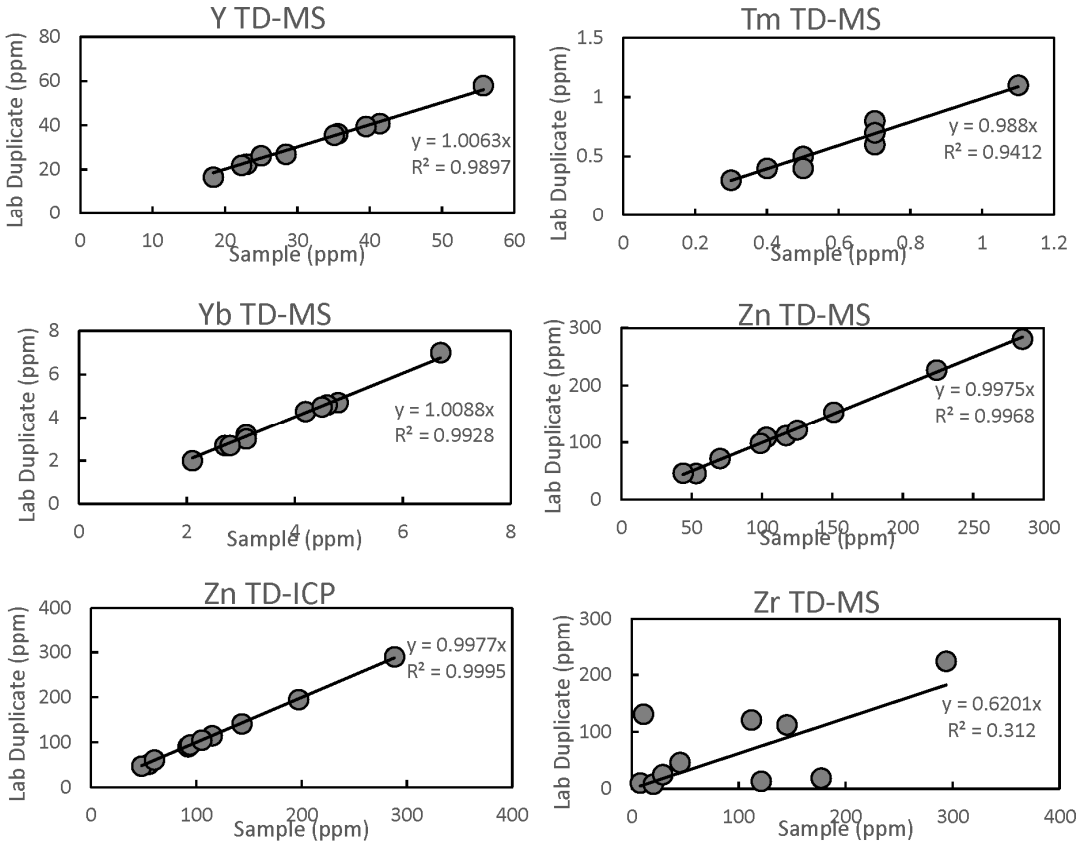

Ni TD-ICP
Lab Duplicate (ppm)
Sample (ppm)
y = 0.9872x
R² = 0.9905


P TD-ICP
Lab Duplicate (%)
Sample (%)
y = 0.9624x
R² = 0.9599


Pb TD-ICP
Lab Duplicate (ppm)
Sample (ppm)
y = 1.0102x
R² = 0.9982

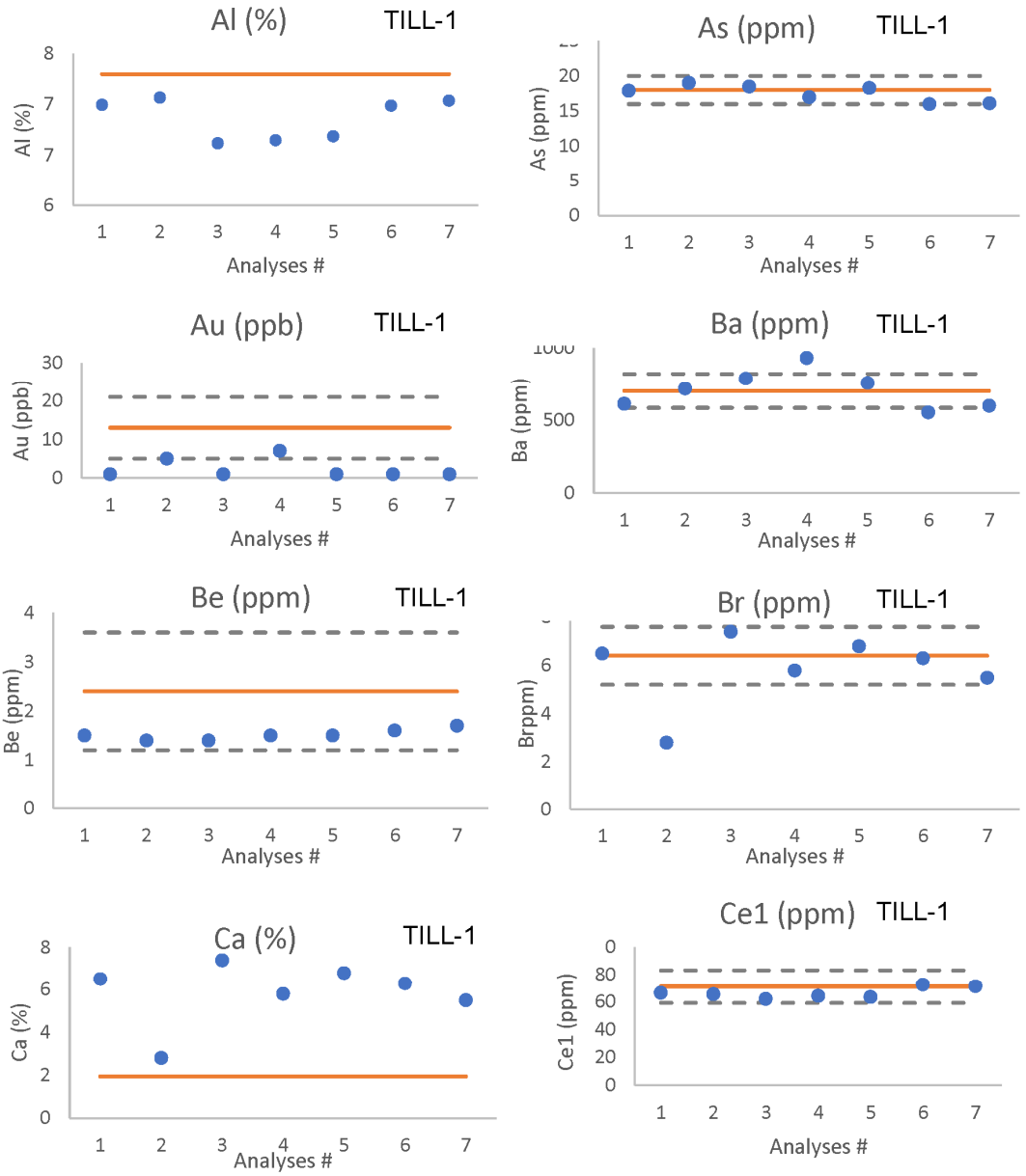

Pr TD-MS
Lab Duplicate (ppm)
Sample (ppm)
y = 1.0046x
R² = 0.9793

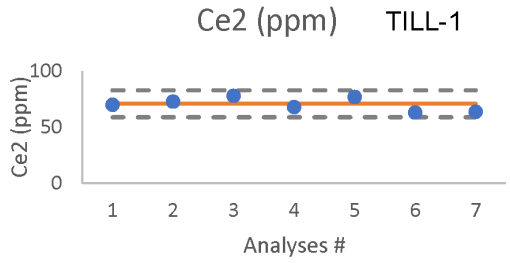

Rb TD-MS
Lab Duplicate (ppm)
Sample (ppm)
y = 0.9973x
R² = 0.9929
S % TD-ICP
Lab Duplicate (ppm)
Sample (ppm)
y = 0.9609x
R² = 0.9703
Sm TD-MS
Lab Duplicate (ppm)
Sample (ppm)
y = 1.0046x
R² = 0.9863
Sr TD-MS
Lab Duplicate (ppm)
Sample (ppm)
y = 0.9843x
R² = 0.9635
Tb TD-MS
Lab Duplicate (ppm)
Sample (ppm)
y = 0.9922x
R² = 0.9919
Th TD-MS
Lab Duplicate (ppm)
Sample (ppm)
y = 1.0096x
R² = 0.9923
Ti TD-ICP
Lab Duplicate(%)
Sample (%)
y = 0.8434x
R² = 0.0183
Tl TD-MS
Lab Duplicate (ppm)
Sample (ppm)
y = 0.9786x
R² = 0.9801
U TD-MS
Lab Duplicate (ppm)
Sample (ppm)
y = 1.002x
R² = 0.9943
V TD-ICP
Lab Duplicate (ppm)
Sample (ppm)
y = 0.862x
R² = -0.003

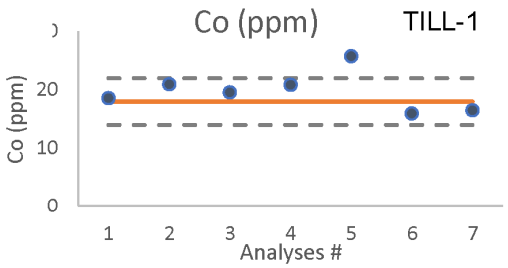

Y TD-MS
Lab Duplicate (ppm)
Sample (ppm)
y = 1.0063x
R² = 0.9897
Tm TD-MS
y = 0.988x
R² = 0.9412
Yb TD-MS
y = 1.0088x
R² = 0.9928
Zn TD-MS
y = 0.9975x
R² = 0.9968
Zn TD-ICP
y = 0.9977x
R² = 0.9995
Zr TD-MS
y = 0.6201x
R² = 0.312

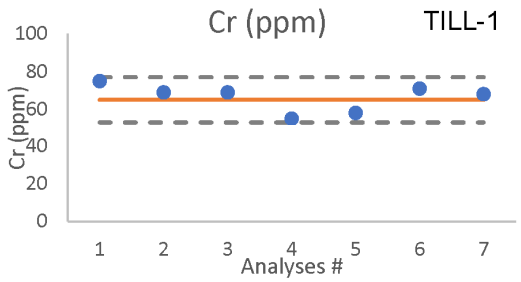
APPENDIX C. Control Charts for CANMET Certified Reference Standards TILL-1 and TILL-2

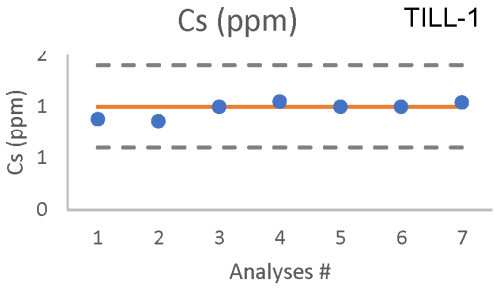
In each chart, the analyzed elements are shown as blue circles, a solid line represents the expected value (the mean of multiple analyses, carried out at several labs and reported by Lynch [1996]), and two dashed lines represent the upper and lower acceptable limits (determined by adding and subtracting two standard deviations, also reported by Lynch [1996]). Charts for certain elements were omitted because they lack certified 'expected' values or had too many of their values below detection.

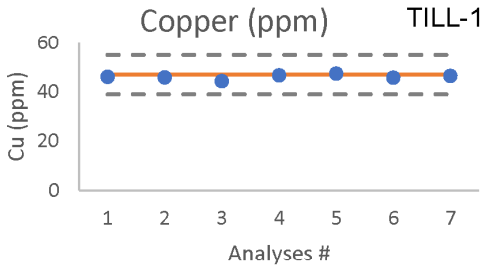


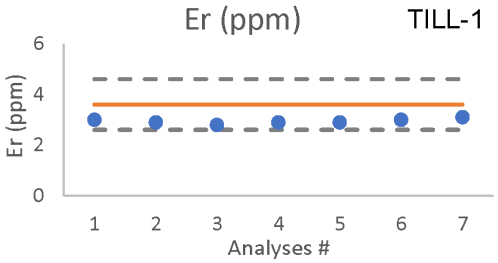

Ce2 (ppm) TILL-1
Ce2 (ppm)
100
50
0
1 2 3 4 5 6 7
Analyses #

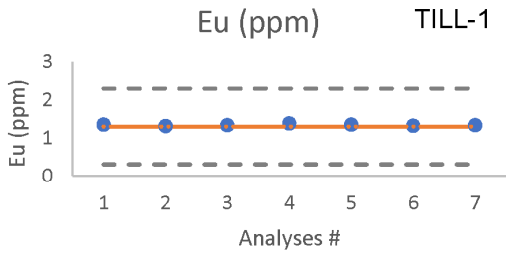

Co (ppm) TILL-1
Co (ppm)
20
10
0
1 2 3 4 5 6 7
Analyses #

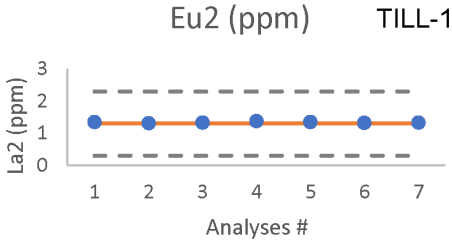

Cr (ppm) TILL-1
Cr (ppm)
100
80
60
40
20
0
1 2 3 4 5 6 7
Analyses #

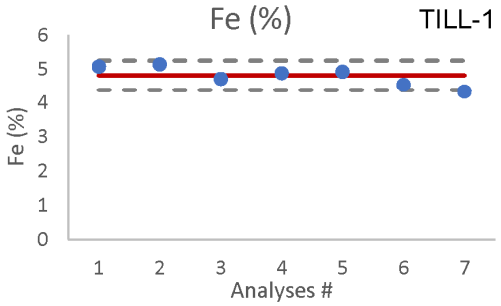

Cs (ppm) TILL-1
Cs (ppm)
1
1
0
1 2 3 4 5 6 7
Analyses #

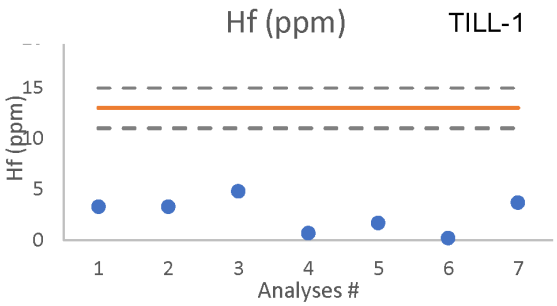

Copper (ppm) TILL-1
Cu (ppm)
60
40
20
0
1 2 3 4 5 6 7
Analyses #

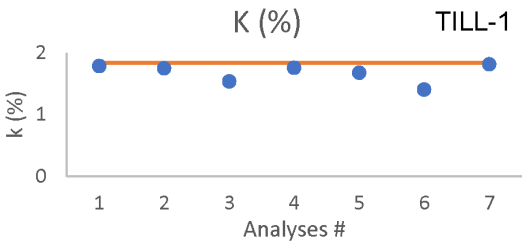

Er (ppm) TILL-1
Er (ppm)
6
4
2
0
1 2 3 4 5 6 7
Analyses #

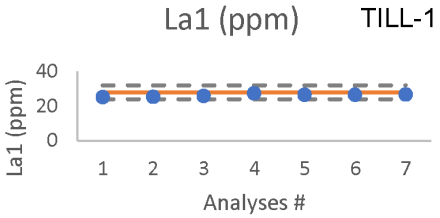

Eu (ppm) TILL-1
Eu (ppm)
3
2
1
0
1 2 3 4 5 6 7
Analyses #

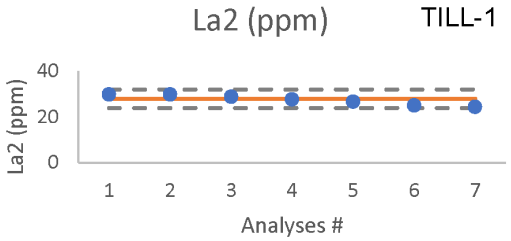

Eu2 (ppm) TILL-1
La2 (ppm)
3
2
1
0
1 2 3 4 5 6 7
Analyses #

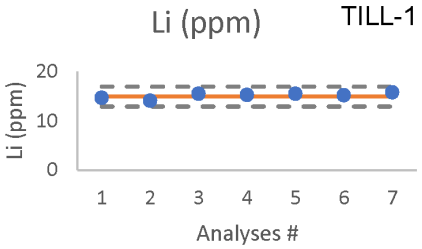

Fe (%) TILL-1
Fe (%)
6
5
4
3
2
1
0
1 2 3 4 5 6 7
Analyses #

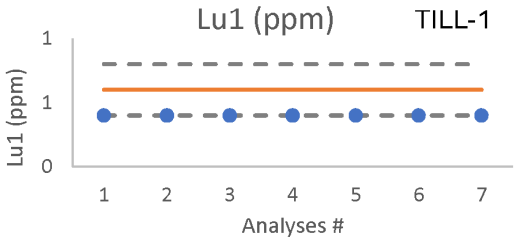

Hf (ppm) TILL-1
Hf (ppm)
15
10
5
0
1 2 3 4 5 6 7
Analyses #

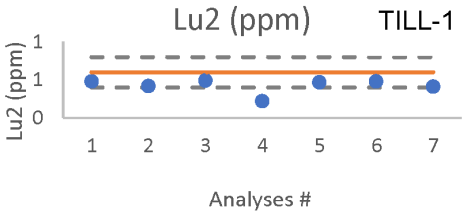

K (%)
TILL-1
k (%)
2
1
0
1 2 3 4 5 6 7
Analyses #

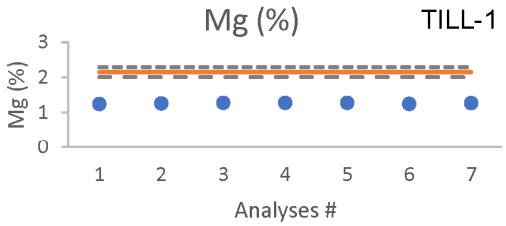

La1 (ppm)
TILL-1
La1 (ppm)
40
20
0
1 2 3 4 5 6 7
Analyses #

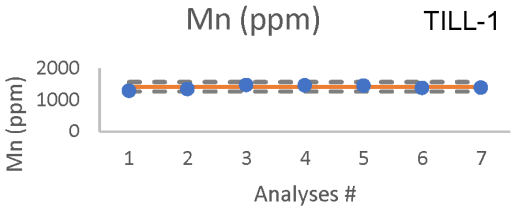

La2 (ppm)
TILL-1
La2 (ppm)
40
20
0
1 2 3 4 5 6 7
Analyses #

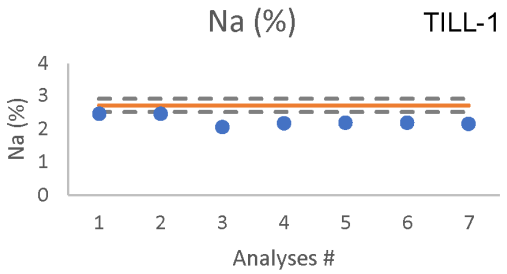

Li (ppm)
TILL-1
Li (ppm)
20
10
0
1 2 3 4 5 6 7
Analyses #

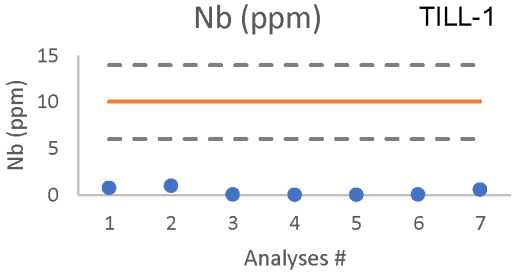

Lu1 (ppm)
TILL-1
Lu1 (ppm)
1
1
0
1 2 3 4 5 6 7
Analyses #

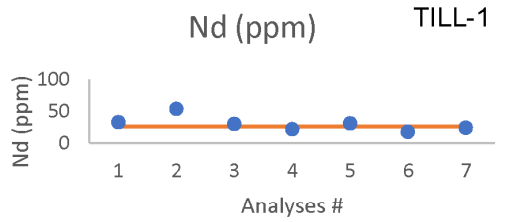

Lu2 (ppm)
TILL-1
Lu2 (ppm)
1
1
0
1 2 3 4 5 6 7
Analyses #

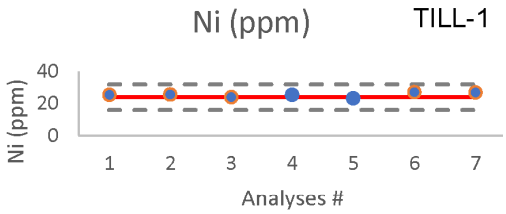

Mg (%)
TILL-1
Mg (%)
3
2
1
0
1 2 3 4 5 6 7
Analyses #

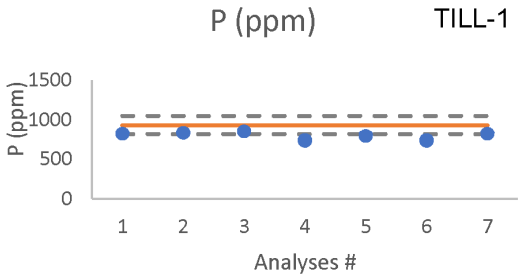

Mn (ppm)
TILL-1
Mn (ppm)
2000
1000
0
1 2 3 4 5 6 7
Analyses #

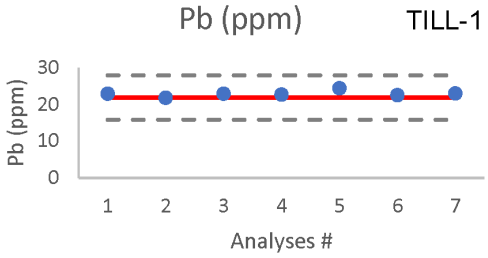

Na (%)
TILL-1
Na (%)
4
3
2
1
0
1 2 3 4 5 6 7
Analyses #

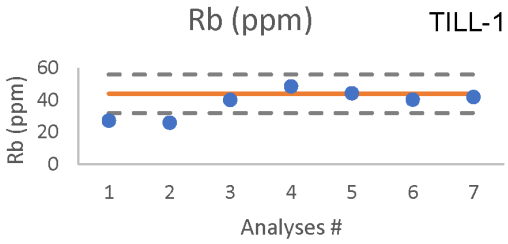

Nb (ppm)
TILL-1
Nb (ppm)
15
10
5
0
1 2 3 4 5 6 7
Analyses #

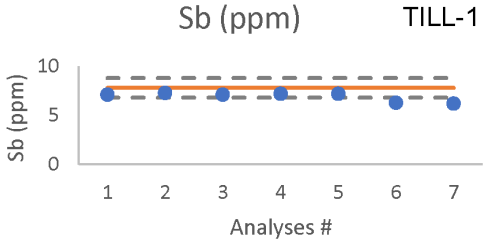

Nd (ppm)
TILL-1
Nd (ppm)
100
50
0
1 2 3 4 5 6 7
Analyses #

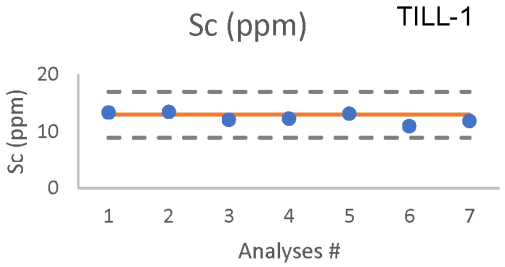

Ni (ppm)
TILL-1
Ni (ppm)
40
20
0
1 2 3 4 5 6 7
Analyses #

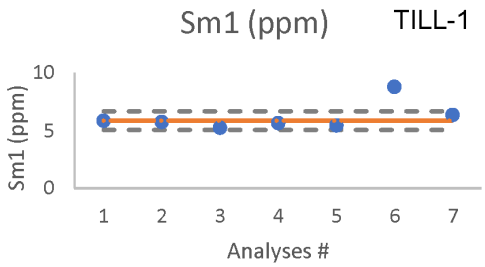

P (ppm)
TILL-1
P (ppm)
1500
1000
500
0
1 2 3 4 5 6 7
Analyses #

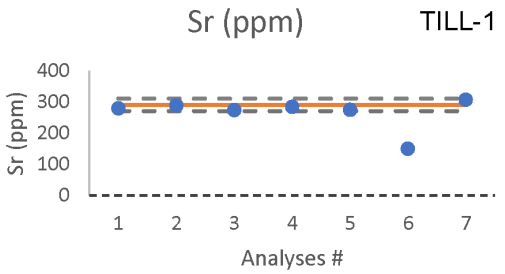

Pb (ppm)
TILL-1
Pb (ppm)
30
20
10
0
1 2 3 4 5 6 7
Analyses #

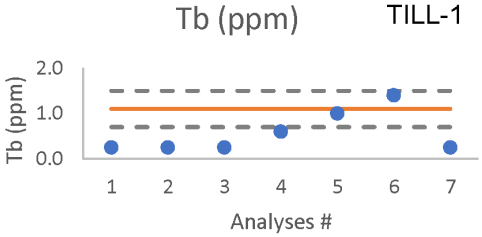

Rb (ppm)
TILL-1
Rb (ppm)
60
40
20
0
1 2 3 4 5 6 7
Analyses #

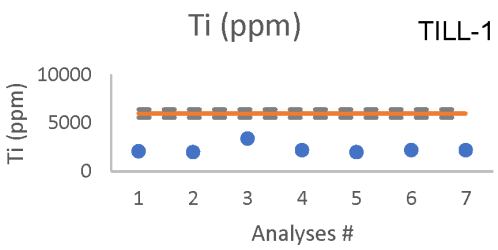

Sb (ppm)
TILL-1
Sb (ppm)
10
5
0
1 2 3 4 5 6 7
Analyses #

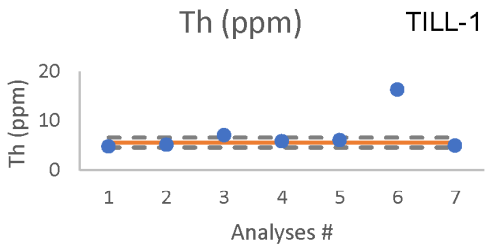

Sc (ppm)
TILL-1
Sc (ppm)
20
10
0
1 2 3 4 5 6 7
Analyses #

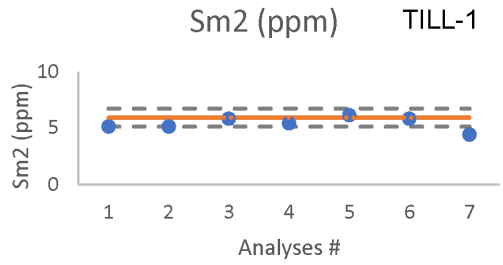

Sm1 (ppm)
TILL-1
Sm1 (ppm)
10
5
0
1 2 3 4 5 6 7
Analyses #

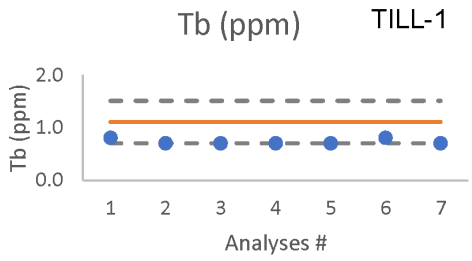

Sr (ppm)
TILL-1
Sr (ppm)
400
300
200
100
0
1 2 3 4 5 6 7
Analyses #

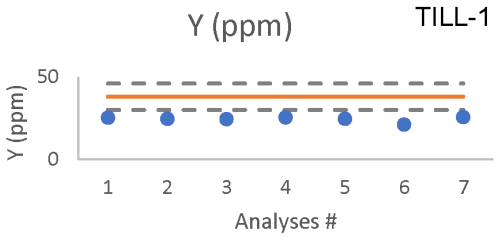

Tb (ppm)
TILL-1
Tb (ppm)
2.0
1.0
0.0
1 2 3 4 5 6 7
Analyses #

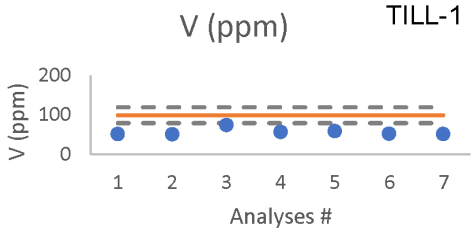

Ti (ppm)
TILL-1
Ti (ppm)
10000
5000
0
1 2 3 4 5 6 7
Analyses #

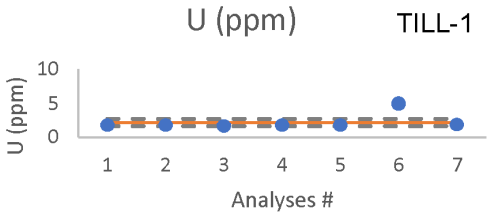

Th (ppm)
TILL-1
Th (ppm)
20
10
0
1 2 3 4 5 6 7
Analyses #

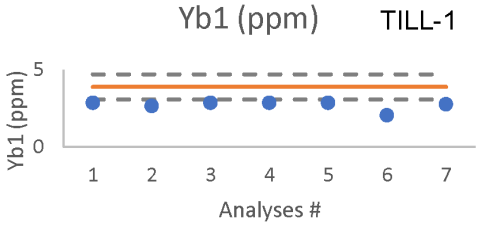

Sm2 (ppm)
TILL-1
Sm2 (ppm)
10
5
0
1 2 3 4 5 6 7
Analyses #

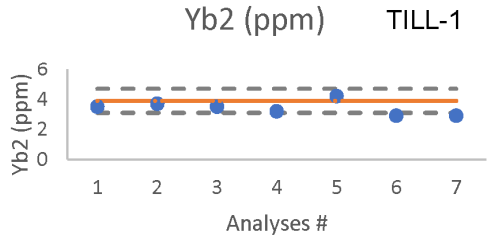

Tb (ppm)
TILL-1
Tb (ppm)
2.0
1.0
0.0
1 2 3 4 5 6 7
Analyses #

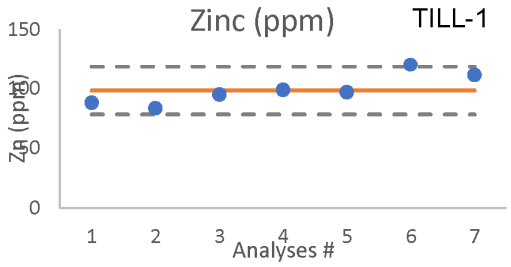

Y (ppm)
TILL-1
Y (ppm)
50
0
1 2 3 4 5 6 7
Analyses #

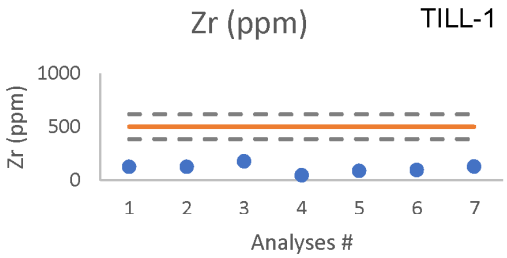

V (ppm)
TILL-1
V (ppm)
200
100
0
1 2 3 4 5 6 7
Analyses #

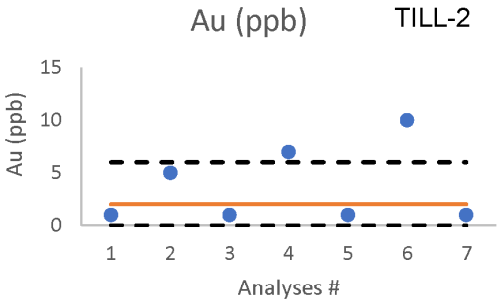

U (ppm)
TILL-1
U (ppm)
10
5
0
1 2 3 4 5 6 7
Analyses #

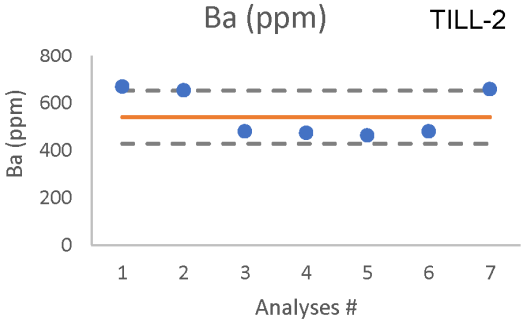

Yb1 (ppm)
TILL-1
Yb1 (ppm)
5
0
1 2 3 4 5 6 7
Analyses #

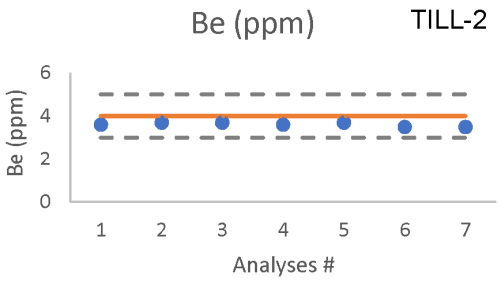

Yb2 (ppm)
TILL-1
Yb2 (ppm)
6
4
2
0
1 2 3 4 5 6 7
Analyses #

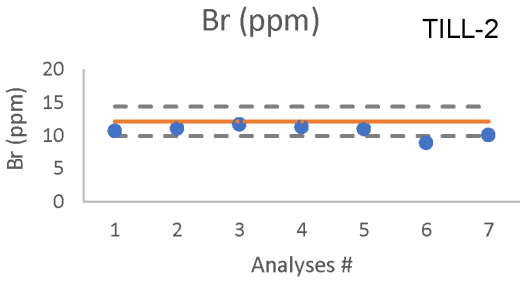

Zinc (ppm)
TILL-1
Zn (ppm)
150
100
50
0
1 2 3 4 5 6 7
Analyses #

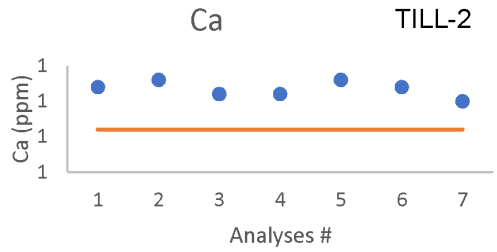

Zr (ppm)
TILL-1
Zr (ppm)
1000
500
0
1 2 3 4 5 6 7
Analyses #

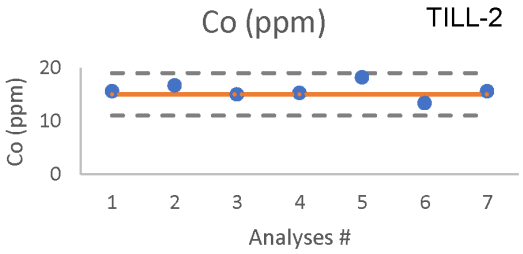

Au (ppb)
TILL-2
Au (ppb)
15
10
5
0
1 2 3 4 5 6 7
Analyses #

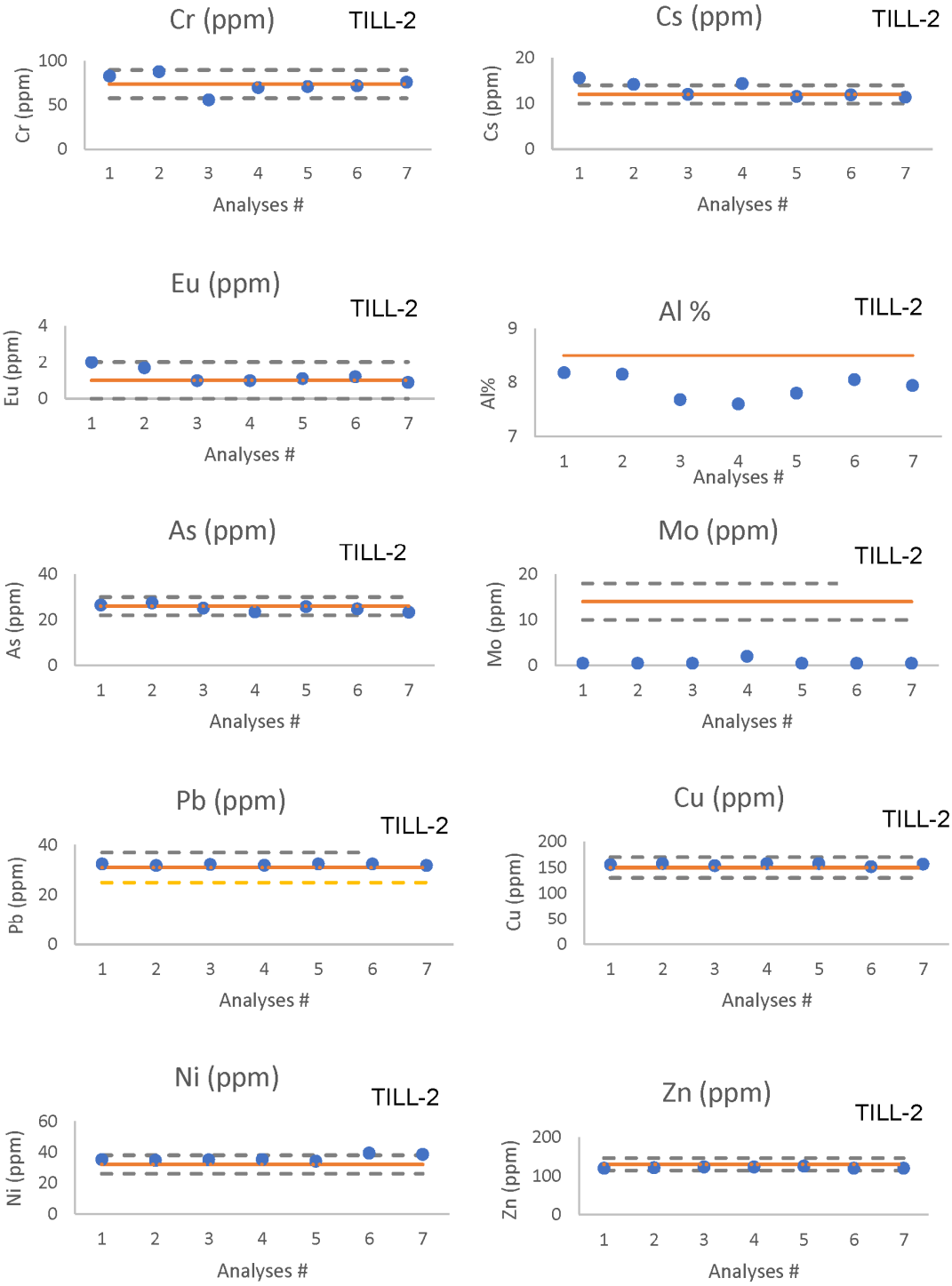

Ba (ppm)
TILL-2
Ba (ppm)
800
600
400
200
0
1 2 3 4 5 6 7
Analyses #

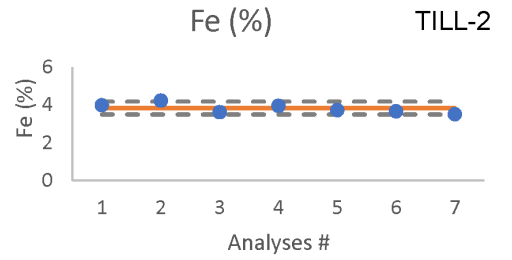

Be (ppm)
TILL-2
Be (ppm)
6
4
2
0
1 2 3 4 5 6 7
Analyses #

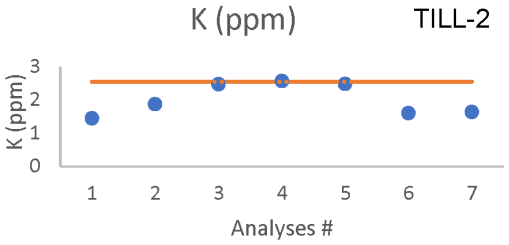

Br (ppm)
TILL-2
Br (ppm)
20
15
10
5
0
1 2 3 4 5 6 7
Analyses #

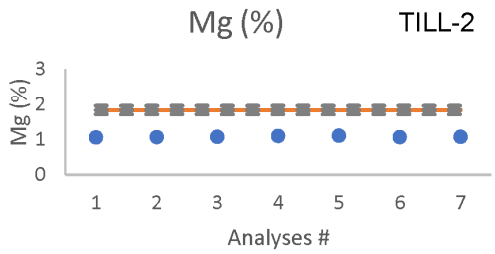

Ca
TILL-2
Ca (ppm)
1
1
1
1
1 2 3 4 5 6 7
Analyses #

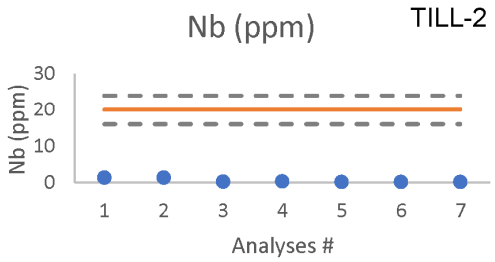

Co (ppm)
TILL-2
Co (ppm)
20
10
0
1 2 3 4 5 6 7
Analyses #

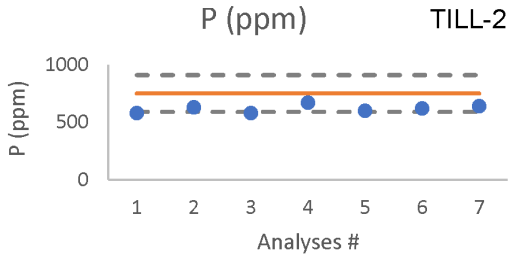

Cr (ppm)
TILL-2
Cr (ppm)
100
50
0
1 2 3 4 5 6 7
Analyses #
Cs (ppm)
TILL-2
Cs (ppm)
20
10
0
1 2 3 4 5 6 7
Analyses #
Eu (ppm)
TILL-2
Eu (ppm)
4
2
0
1 2 3 4 5 6 7
Analyses #
Al %
TILL-2
Al%
9
8
7
1 2 3 4 5 6 7
Analyses #
As (ppm)
TILL-2
As (ppm)
40
20
0
1 2 3 4 5 6 7
Analyses #
Mo (ppm)
TILL-2
Mo (ppm)
20
10
0
1 2 3 4 5 6 7
Analyses #
Pb (ppm)
TILL-2
Pb (ppm)
40
20
0
1 2 3 4 5 6 7
Analyses #
Cu (ppm)
TILL-2
Cu (ppm)
200
150
100
50
0
1 2 3 4 5 6 7
Analyses #
Ni (ppm)
TILL-2
Ni (ppm)
60
40
20
0
1 2 3 4 5 6 7
Analyses #
Zn (ppm)
TILL-2
Zn (ppm)
200
100
0
1 2 3 4 5 6 7
Analyses #

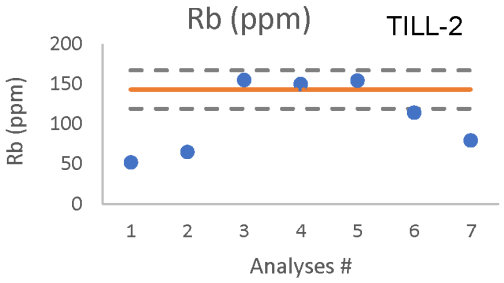

Fe (%)
TILL-2
Fe (%)
6
4
2
0
1 2 3 4 5 6 7
Analyses #

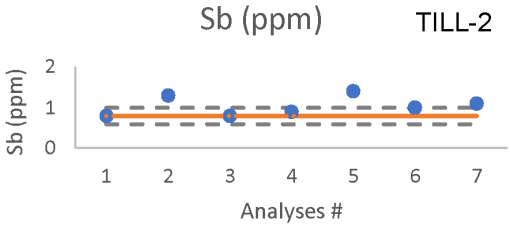

K (ppm)
TILL-2
K (ppm)
3
2
1
0
1 2 3 4 5 6 7
Analyses #

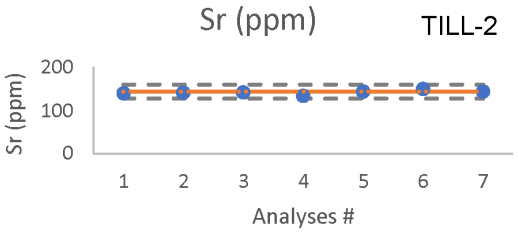

Mg (%)
TILL-2
Mg (%)
3
2
1
0
1 2 3 4 5 6 7
Analyses #

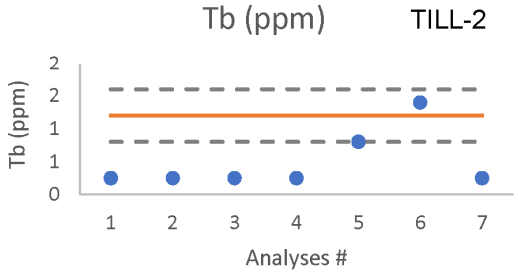

Nb (ppm)
TILL-2
Nb (ppm)
30
20
10
0
1 2 3 4 5 6 7
Analyses #

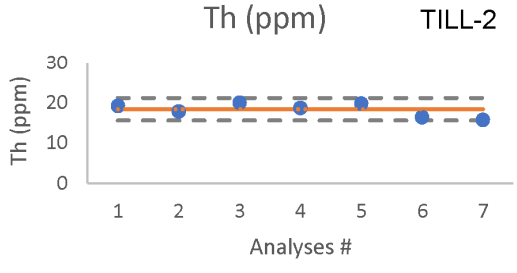

P (ppm)
TILL-2
P (ppm)
1000
500
0
1 2 3 4 5 6 7
Analyses #

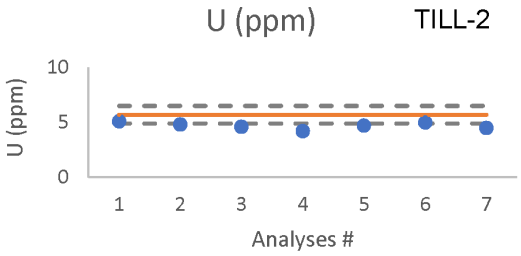

Rb (ppm)
TILL-2
Rb (ppm)
200
150
100
50
0
1 2 3 4 5 6 7
Analyses #

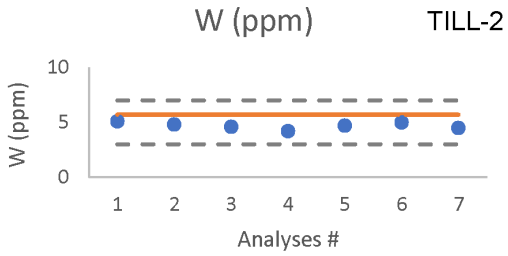

Sb (ppm)
TILL-2
Sb (ppm)
2
1
0
1 2 3 4 5 6 7
Analyses #

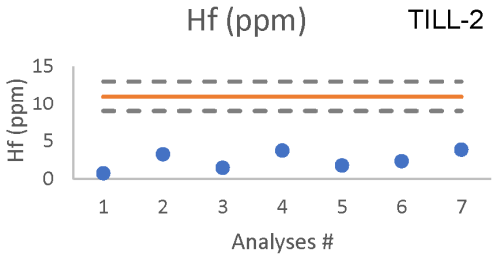

Sr (ppm)
TILL-2
Sr (ppm)
200
100
0
1 2 3 4 5 6 7
Analyses #

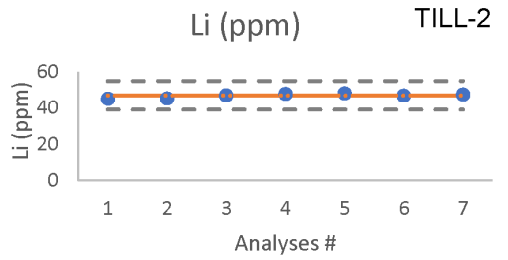

Tb (ppm)
TILL-2
Tb (ppm)
2
2
1
1
0
1 2 3 4 5 6 7
Analyses #

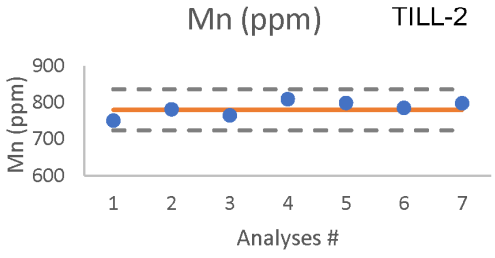

Th (ppm)
TILL-2
Th (ppm)
30
20
10
0
1 2 3 4 5 6 7
Analyses #

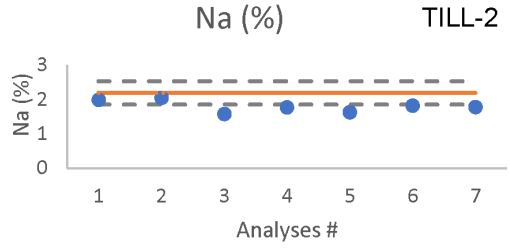

U (ppm)
TILL-2
U (ppm)
10
5
0
1 2 3 4 5 6 7
Analyses #

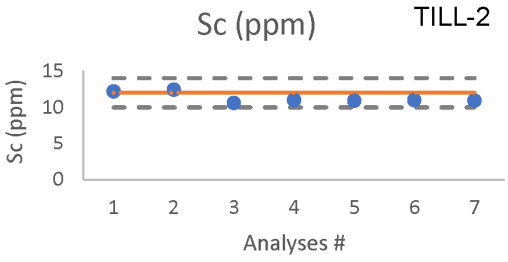

W (ppm)
TILL-2
W (ppm)
10
5
0
1 2 3 4 5 6 7
Analyses #

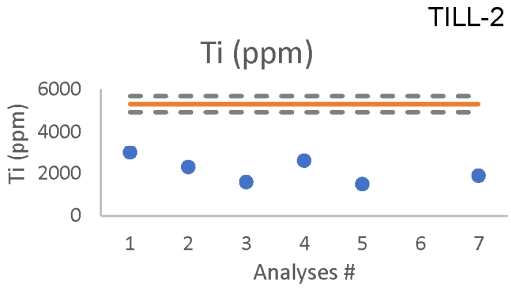

Hf (ppm)
TILL-2
Hf (ppm)
15
10
5
0
1 2 3 4 5 6 7
Analyses #

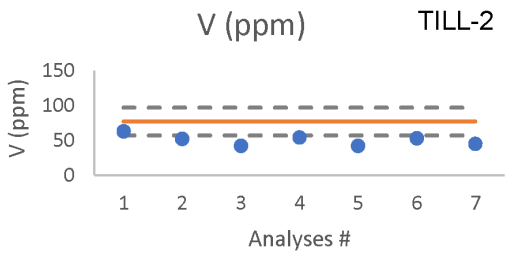

Li (ppm)
TILL-2
Li (ppm)
60
40
20
0
1 2 3 4 5 6 7
Analyses #


Mn (ppm)
TILL-2
Mn (ppm)
900
800
700
600
1 2 3 4 5 6 7
Analyses #


Na (%)
TILL-2
Na (%)
3
2
1
0
1 2 3 4 5 6 7
Analyses #


Sc (ppm)
TILL-2
Sc (ppm)
15
10
5
0
1 2 3 4 5 6 7
Analyses #


TILL-2
Ti (ppm)
Ti (ppm)
6000
4000
2000
0
1 2 3 4 5 6 7
Analyses #


V (ppm)
TILL-2
V (ppm)
150
100
50
0
1 2 3 4 5 6 7
Analyses #

Appendix D. Final Lab Reports Received from Actlabs (A17-06904, A17-08634, and A17-10547)

Quality Analysis ... *Innovative Technologies*

Date Submitted: 07-Jul-17
Invoice No.: A17-06904
Invoice Date: 21-Aug-17
Your Reference:

Nova Scotia Department of Natural Resources
1723 Hollis Street
5th Floor
Halifax NS B3J 2N3
Canada

ATTN: Denise Brushett

CERTIFICATE OF ANALYSIS

56 Soil samples were submitted for analysis.

The following analytical package(s) were requested: Code UT-3 INAA(INAAGEO)/Total digestion ICP(Total)Total Digestion ICP/MS

REPORT **A17-06904**

Notes:

Unaltered silicates and resistate minerals may not be dissolved. Values which exceed upper limit should be assayed.

CERTIFIED BY:

Emmanuel Eseme , Ph.D.
Quality Control

ACTIVATION LABORATORIES LTD.
41 Bittern Street, Ancaster, Ontario, Canada, L9G 4V5
TELEPHONE +905 648-9611 or +1.888.228.5227 FAX +1.905.648.9613
E-MAIL Ancaster@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com

Results **Activation Laboratories Ltd.** **Report: A17-06904**

Analyte Symbol	Au	Ag	Cu	Cd	Mo	Pb	Ni	Zn	S	Al	As	Ba	Be	Bi	Br	Ca	Co	Cr	Cs	Eu	Fe	Hf	Ga
Unit Symbol	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm
Lower Limit	2	0.05	0.2	0.1	1	0.5	0.5	0.5	0.01	0.01	0.5	1	0.1	0.1	0.5	0.01	0.1	1	0.05	0.2	0.01	0.1	
Method Code	INAA	MULT I NAA/TD-ICP/TD-MS	MULT TD-ICP/TD-ICP-MS	MULT TD-ICP/TD-ICP-MS	TD-ICP	MULT TD-ICP/TD-ICP-MS	MULT I NAA/TD-ICP/TD-MS	MULT I NAA/TD-ICP/TD-MS	TD-ICP	TD-ICP	INAA	MULT I NAA/TD-ICP-MS	MULT TD-ICP/TD-ICP-MS	MULT TD-ICP/TD-ICP-MS	INAA	TD-ICP	MULT I NAA/TD-ICP-MS	MULT I NAA/TD-ICP-MS	MULT I NAA/TD-ICP-MS	INAA	INAA	MULT I NAA/TD-ICP-MS	TD-MS
16DB005	< 2	< 0.05	16.6	< 0.1	< 1	12.1	19.7	49.5	< 0.01	5.37	17.8	335	1.4	0.4	27.2	0.74	8.6	49	2.34	1.0	2.31	2.1	
16DB007	5	< 0.05	13.7	< 0.1	< 1	19.1	19.8	48.4	< 0.01	6.20	14.8	370	1.6	0.6	23.0	0.79	6.4	58	2.90	1.1	2.54	2.9	
16DB135	< 2	< 0.05	23.3	< 0.1	< 1	21.0	24.6	73.0	< 0.01	6.83	26.3	447	1.8	0.2	< 0.5	0.97	12.8	64	2.42	1.1	3.17	0.4	
16DB153	10	< 0.05	13.1	< 0.1	< 1	15.7	19.6	41.3	< 0.01	5.56	22.1	304	1.3	0.2	16.8	0.77	9.5	49	2.02	0.8	2.35	0.2	
16DB155	< 2	< 0.05	12.3	< 0.1	< 1	16.5	22.6	52.0	< 0.01	6.71	9.2	434	1.7	0.1	17.3	0.85	9.0	58	2.36	1.1	2.67	0.3	
16DB160	15	< 0.05	19.6	< 0.1	< 1	14.4	20.3	43.5	< 0.01	5.96	19.6	375	1.4	0.1	5.6	0.98	8.5	44	1.88	1.0	2.33	0.4	
16DB206	< 2	0.12	24.8	0.4	< 1	97.2	26.7	274	0.02	6.81	24.7	241	4.3	0.2	79.3	0.35	13.8	56	24.0	1.1	2.85	1.2	
16DB212	7	< 0.05	33.1	0.2	< 1	49.5	25.7	159	0.01	6.12	12.6	292	2.3	0.2	41.7	0.69	15.9	56	6.14	1.6	3.84	1.9	
16DB218	7	< 0.05	23.2	0.6	< 1	45.4	28.5	132	< 0.01	6.52	13.3	350	3.0	0.2	8.4	0.25	16.4	65	16.5	1.6	3.58	2.2	
16DB223	36	< 0.05	46.1	0.3	< 1	23.0	25.6	88.0	0.02	7.00	17.9	613	1.5	1.8	6.5	1.96	18.6	75	0.88	2.0	5.07	3.3	
16DB224	< 2	0.19	156	0.4	< 1	32.4	35.2	120	0.03	8.18	26.5	670	3.6	4.8	10.8	0.97	15.6	83	15.6	2.0	3.99	0.8	
17DB001	< 2	< 0.05	29.7	0.2	< 1	29.7	44.5	105	< 0.01	8.61	18.4	378	2.9	0.3	< 0.5	0.32	20.5	108	6.84	1.9	5.13	4.7	
17DB002	< 2	< 0.05	30.1	0.3	< 1	29.5	32.0	89.2	< 0.01	6.84	13.6	381	2.1	0.2	21.3	0.58	22.9	70	4.02	1.5	4.34	3.3	
17DB003	3	< 0.05	43.7	0.2	< 1	35.9	31.4	89.6	< 0.01	6.86	18.6	450	2.3	0.2	2.5	0.61	15.4	71	4.84	1.3	3.60	1.4	
17DB004	15	< 0.05	93.5	0.2	< 1	49.3	48.1	117	0.01	7.96	39.5	502	2.4	0.1	25.7	1.21	26.5	104	24.5	2.2	5.44	0.5	
17DB005	< 2	< 0.05	24.4	0.2	< 1	53.9	25.1	88.8	0.03	7.69	25.9	245	1.7	0.1	111	0.43	19.1	75	5.61	1.9	5.73	1.1	
17DB006	< 2	0.10	33.9	0.4	< 1	116	27.2	256	0.01	6.47	11.1	326	3.1	0.3	41.7	1.16	19.1	57	3.80	1.5	4.04	0.3	
17DB007	< 2	0.20	26.9	0.2	< 1	103	25.7	207	0.02	6.59	10.2	302	3.0	0.2	57.8	1.06	18.5	51	3.69	1.5	3.65	0.4	
17DB008	< 2	< 0.05	18.1	0.2	< 1	62.5	24.4	151	0.02	6.37	14.3	275	2.2	0.2	99.0	0.43	15.1	61	5.50	1.0	3.51	0.9	
17DB009	< 2	< 0.05	10.3	0.1	< 1	58.5	14.2	83.0	0.06	6.62	13.8	190	1.9	0.2	202	0.31	7.4	48	4.58	1.3	4.51	3.2	
17DB010	< 2	< 0.05	20.4	0.3	< 1	43.3	36.3	153	0.03	6.41	33.2	243	2.0	0.1	84.7	0.53	21.3	55	8.05	1.1	4.53	1.8	
17DB011	< 2	0.11	24.0	0.4	< 1	51.1	22.5	275	0.03	6.75	9.1	233	4.8	0.6	89.9	0.74	16.9	52	5.76	1.0	3.30	0.2	
17DB012	5	0.40	41.6	0.5	< 1	96.3	23.6	136	0.07	8.62	71.2	171	8.2	0.2	219	0.43	25.7	65	16.4	3.2	6.11	0.8	
17DB013	< 2	< 0.05	43.7	0.7	< 1	94.9	33.8	238	< 0.01	6.62	33.5	277	6.4	0.2	12.6	0.52	23.5	66	7.99	1.3	4.56	0.7	
17DB014	< 2	< 0.05	26.8	< 0.1	< 1	19.3	36.9	85.7	< 0.01	6.84	9.8	339	3.2	0.2	4.3	0.41	19.7	71	56.8	1.4	4.59	0.6	
17DB015	< 2	0.09	28.9	1.9	< 1	101	35.2	315	0.03	7.01	45.7	341	9.5	0.2	52.3	0.63	20.4	75	36.3	1.7	4.54	1.5	
17DB016	< 2	< 0.05	45.1	1.3	< 1	63.0	44.8	112	0.03	8.53	18.7	399	2.8	0.3	51.1	1.04	30.5	109	9.80	2.3	5.56	2.7	
17DB017	< 2	< 0.05	15.7	0.2	< 1	53.2	14.8	158	0.01	5.36	14.0	278	3.7	0.2	51.0	0.69	12.0	45	2.21	1.1	3.36	2.8	
17DB018	< 2	< 0.05	22.5	0.2	< 1	22.3	33.2	119	0.02	6.80	11.7	280	2.3	0.2	90.6	0.67	21.6	52	6.43	1.3	4.38	4.7	
17DB019	4	< 0.05	84.9	0.2	< 1	27.4	29.0	111	0.03	6.54	14.1	286	3.1	0.2	56.6	0.70	19.3	75	6.18	1.6	4.28	4.0	
17DB020	< 2	< 0.05	70.6	0.3	< 1	15.2	53.4	69.5	0.02	6.87	9.3	256	1.6	0.1	39.4	2.04	32.1	78	6.37	2.0	6.12	5.7	
17DB021	< 2	< 0.05	39.5	0.4	< 1	78.2	30.1	155	< 0.01	7.94	16.4	499	2.8	0.4	9.4	0.27	19.0	68	5.85	1.3	4.13	1.3	
17DB022	< 2	< 0.05	43.9	0.1	< 1	35.1	42.1	106	< 0.01	7.46	12.0	400	2.0	0.2	24.1	0.49	23.1	66	4.75	1.5	4.31	1.0	
17DB023	6	0.16	74.0	0.2	< 1	24.1	24.1	95.5	0.02	7.26	12.2	445	2.0	0.2	57.1	1.55	22.7	58	2.41	1.6	5.11	0.3	
17DB024	< 2	< 0.05	45.9	0.2	< 1	28.4	26.7	82.1	0.01	6.73	11.3	371	2.0	0.2	41.0	0.70	18.0	59	3.54	1.1	4.05	1.2	
17DB025	< 2	< 0.05	20.4	0.6	< 1	66.8	17.1	74.4	0.03	5.82	14.2	258	2.0	0.2	107	0.41	17.5	68	15.6	1.3	8.05	2.4	
17DB026	< 2	< 0.05	40.8	0.4	< 1	141	39.5	203	0.02	7.67	11.4	335	2.0	0.1	49.9	0.80	33.4	60	7.77	1.8	6.01	3.9	
17DB027	3	< 0.05	104	0.4	< 1	47.4	26.8	108	< 0.01	6.24	10.3	381	2.1	0.2	2.1	0.26	15.2	59	4.42	1.5	3.69	4.6	
17DB028	< 2	< 0.05	27.1	0.7	< 1	179	31.8	289	< 0.01	6.27	44.0	284	5.5	0.6	8.1	0.26	18.6	57	7.67	1.4	4.53	6.7	

Results **Activation Laboratories Ltd.** **Report: A17-06904**

Analyte Symbol	Au	Ag	Cu	Cd	Mo	Pb	Ni	Zn	S	Al	As	Ba	Be	Bi	Br	Ca	Co	Cr	Cs	Eu	Fe	Hf	Ga
Unit Symbol	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm
Lower Limit	2	0.05	0.2	0.1	1	0.5	0.5	0.5	0.01	0.01	0.5	1	0.1	0.1	0.5	0.01	0.1	1	0.05	0.2	0.01	0.1	
Method Code	INAA	MULT I NAA/TD-ICP/TD-ICP-MS	MULT TD-ICP/TD-ICP-MS	MULT TD-ICP/TD-ICP-MS	TD-ICP	MULT TD-ICP/TD-ICP-MS	MULT I NAA/TD-ICP/TD-MS	MULT I NAA/TD-ICP/TD-MS	TD-ICP	TD-ICP	INAA	MULT I NAA/TD-ICP-MS	MULT TD-ICP/TD-ICP-MS	MULT TD-ICP/TD-ICP-MS	INAA	TD-ICP	MULT I NAA/TD-ICP-MS	MULT I NAA/TD-ICP-MS	MULT I NAA/TD-ICP-MS	INAA	INAA	MULT I NAA/TD-ICP-MS	TD-MS
17DB029	< 2	< 0.05	11.6	0.5	2	120	12.7	203	0.06	4.65	6.9	274	2.6	0.3	81.1	0.48	8.1	49	4.43	1.2	5.26	12.2	
17DB030	< 2	0.12	15.7	0.1	< 1	46.2	16.5	115	0.04	6.84	8.9	185	4.6	0.5	125	0.23	7.3	39	4.97	1.0	4.32	0.7	
17DB031	3	0.36	47.1	< 0.1	< 1	30.3	10.5	59.1	0.04	7.27	5.5	157	3.0	0.3	126	0.32	5.2	33	3.78	0.7	3.66	0.9	
17DB032	< 2	< 0.05	20.9	0.3	< 1	30.3	18.0	116	0.01	6.26	5.5	240	3.0	0.3	52.1	0.92	14.4	48	3.39	1.6	3.75	0.5	
17DB033	< 2	0.10	19.7	0.3	< 1	102	18.2	147	0.03	7.01	8.7	254	2.9	0.3	77.8	0.47	8.7	47	4.13	0.8	3.47	2.9	
17DB034	< 2	< 0.05	16.8	0.3	2	64.6	12.4	107	0.06	7.25	9.9	189	2.2	0.2	137	0.86	8.6	44	2.93	0.8	3.89	5.0	
17DB035	< 2	< 0.05	42.4	0.6	< 1	170	23.7	360	0.03	6.74	10.8	268	6.4	0.9	35.6	1.20	24.3	60	5.87	2.1	5.20	9.1	
17DB036	< 2	< 0.05	24.4	0.7	2	52.0	20.5	181	0.07	6.88	23.4	208	4.6	0.3	140	0.33	18.4	81	9.04	2.5	7.69	5.0	
17DB037	< 2	< 0.05	30.5	0.2	< 1	28.8	32.9	167	0.01	7.33	10.7	308	4.7	0.3	14.0	0.46	20.6	96	5.74	2.4	4.78	5.9	
17DB038	< 2	< 0.05	30.6	0.2	< 1	32.8	27.6	166	0.01	6.63	10.0	295	5.8	0.3	30.4	0.60	18.5	64	6.12	1.5	4.45	6.1	
17DB039	< 2	< 0.05	13.4	0.1	1	28.5	16.4	66.8	0.02	5.39	7.7	237	2.5	0.3	67.5	0.27	8.0	50	5.62	1.4	3.92	7.6	
17DB040	< 2	0.35	13.0	0.3	< 1	58.7	21.5	149	0.04	7.64	8.8	194	2.3	0.2	91.6	0.46	9.5	65	5.50	1.5	3.87	1.5	
17DB041	22	0.06	81.0	0.3	< 1	66.7	21.0	83.0	< 0.01	6.04	11.3	470	1.7	0.2	< 0.5	1.08	16.1	50	2.55	1.6	3.80	0.4	
17DB042	8	0.05	85.2	0.3	< 1	46.2	28.2	88.3	0.02	7.14	18.9	424	1.9	0.2	22.2	0.61	21.7	86	4.25	1.4	4.80	0.7	
17DB043	8	< 0.05	45.8	0.3	< 1	21.9	25.7	83.2	0.02	7.07	19.0	718	1.4	1.8	2.8	1.96	21.0	69	0.86	1.9	5.14	3.3	
17DB044	5	0.08	158	0.3	< 1	31.8	34.7	121	0.03	8.15	27.4	654	3.7	4.9	11.2	0.98	16.7	88	14.2	1.7	4.24	3.3	
17CS001	< 2	< 0.05	38.2	0.3	< 1	52.1	43.2	135	0.03	7.92	49.5	389	2.8	0.1	32.3	1.37	30.2	83	35.7	3.7	6.29	4.1	

Results **Activation Laboratories Ltd.** **Report: A17-06904**

Analyte Symbol	Ge	Hg	In	Ir	K	Li	Mg	Mn	Nb	Na	P	Rb	Re	Sb	Sc	Se	Sn	Sr	Ta	Te	Tb	Ti	Th
Unit Symbol	ppm	ppb	ppm	ppb	%	ppm	%	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm
Lower Limit	0.1	10	0.1	5	0.01	0.5	0.01	1	0.1	0.01	0.001	0.2	0.001	0.1	0.1	0.1	1	0.2	0.1	0.1	0.5	0.01	0.1
Method Code	TD-MS	TD-MS	TD-MS	INAA	TD-ICP	TD-MS	TD-ICP	TD-ICP	TD-MS	INAA	TD-ICP	MULTI NAA/TD-ICP-MS	TD-MS	INAA	INAA	MULTI NAA/TD-ICP-MS	TD-MS	TD-MS	MULTI NAA/TD-ICP-MS	TD-MS	INAA	TD-ICP	MULTI NAA/TD-ICP-MS
16DB005	< 0.1	120	0.1	< 5	1.08	26.3	0.55	754	7.0	1.67	0.037	27.1	< 0.001	0.4	8.6	< 0.1	4	130	0.5	< 0.1	< 0.5	0.47	9.4
16DB007	< 0.1	110	< 0.1	< 5	1.28	29.9	0.66	643	0.4	1.61	0.053	34.7	< 0.001	0.5	9.8	< 0.1	< 1	135	< 0.1	< 0.1	< 0.5	0.32	8.9
16DB135	< 0.1	70	< 0.1	< 5	1.41	27.5	0.80	851	0.4	1.54	0.050	33.2	< 0.001	0.9	13.4	< 0.1	< 1	132	< 0.1	< 0.1	< 0.5	0.25	8.8
16DB153	< 0.1	80	< 0.1	< 5	1.29	27.9	0.60	916	0.1	1.39	0.046	24.7	< 0.001	0.8	7.9	< 0.1	< 1	119	< 0.1	< 0.1	< 0.5	0.18	7.7
16DB155	< 0.1	150	< 0.1	< 5	1.48	29.6	0.81	662	0.2	1.56	0.047	33.4	< 0.001	0.6	11.4	< 0.1	< 1	138	< 0.1	< 0.1	< 0.5	0.16	8.6
16DB160	< 0.1	120	< 0.1	< 5	1.57	22.1	0.60	679	0.2	1.69	0.065	34.1	< 0.001	0.4	9.3	< 0.1	< 1	140	< 0.1	< 0.1	< 0.5	0.10	9.3
16DB206	< 0.1	210	< 0.1	< 5	1.40	50.1	0.70	549	1.2	1.04	0.053	45.9	< 0.001	1.8	10.4	< 0.1	< 1	68.7	< 0.1	< 0.1	2.0	0.10	15.0
16DB212	< 0.1	120	< 0.1	< 5	1.41	35.1	0.82	854	0.4	1.19	0.064	31.7	< 0.001	1.0	11.6	< 0.1	< 1	86.9	< 0.1	< 0.1	0.8	0.13	10.9
16DB218	< 0.1	120	< 0.1	< 5	1.49	66.5	0.70	614	0.7	1.27	0.020	51.8	< 0.001	1.3	11.0	< 0.1	< 1	81.0	< 0.1	< 0.1	1.3	0.15	13.3
16DB223	< 0.1	140	< 0.1	< 5	1.79	14.8	1.25	1300	0.8	2.45	0.082	27.3	< 0.001	7.1	13.4	< 0.1	< 1	280	< 0.1	< 0.1	< 0.5	0.21	4.8
16DB224	< 0.1	120	< 0.1	< 5	1.45	45.1	1.06	751	1.4	1.99	0.058	51.9	< 0.001	0.8	12.2	< 0.1	2	140	0.1	< 0.1	< 0.5	0.30	19.2
17DB001	0.3	130	< 0.1	< 5	1.79	74.4	0.95	957	15.5	1.13	0.047	61.6	< 0.001	1.6	16.6	< 0.1	3	100	1.0	< 0.1	1.2	0.58	12.8
17DB002	< 0.1	140	< 0.1	< 5	1.26	39.7	0.87	903	0.6	1.35	0.053	39.1	< 0.001	0.9	13.3	< 0.1	< 1	92.9	< 0.1	< 0.1	0.8	0.28	12.1
17DB003	< 0.1	150	< 0.1	< 5	1.30	39.2	0.82	931	0.7	1.29	0.048	41.2	< 0.001	0.6	12.3	< 0.1	< 1	90.6	< 0.1	< 0.1	0.5	0.32	10.1
17DB004	< 0.1	200	< 0.1	< 5	1.11	44.4	1.34	1690	0.4	1.22	0.078	32.8	0.002	1.7	20.3	< 0.1	< 1	111	< 0.1	< 0.1	0.7	0.20	8.0
17DB005	< 0.1	220	< 0.1	< 5	0.81	34.9	0.58	505	0.3	1.08	0.090	26.8	< 0.001	1.0	17.1	< 0.1	< 1	80.3	< 0.1	< 0.1	< 0.5	0.14	8.6
17DB006	< 0.1	130	< 0.1	< 5	1.39	31.2	0.87	1030	0.5	1.68	0.059	37.0	< 0.001	0.8	13.0	< 0.1	< 1	101	< 0.1	< 0.1	1.3	0.14	13.4
17DB007	< 0.1	140	< 0.1	< 5	1.42	31.2	0.82	946	0.7	1.47	0.063	36.4	< 0.001	1.0	11.4	< 0.1	< 1	97.8	< 0.1	< 0.1	1.0	0.14	12.1
17DB008	< 0.1	150	< 0.1	< 5	1.27	40.9	0.69	523	0.5	1.20	0.037	31.6	< 0.001	1.1	10.2	< 0.1	< 1	76.3	< 0.1	< 0.1	< 0.5	0.09	12.4
17DB009	< 0.1	160	< 0.1	< 5	0.94	31.0	0.42	501	0.7	0.82	0.077	28.1	< 0.001	0.8	9.8	0.3	< 1	52.8	< 0.1	< 0.1	< 0.5	0.22	10.8
17DB010	< 0.1	120	< 0.1	< 5	0.87	46.2	0.97	717	0.3	1.16	0.066	30.6	< 0.001	1.3	12.1	< 0.1	< 1	81.1	< 0.1	< 0.1	0.6	0.14	8.2
17DB011	< 0.1	150	< 0.1	< 5	1.09	38.2	0.70	764	1.6	1.17	0.076	36.9	< 0.001	0.7	10.2	< 0.1	< 1	74.7	0.1	< 0.1	< 0.5	0.27	22.1
17DB012	< 0.1	360	< 0.1	< 5	0.64	39.1	0.66	773	0.5	0.71	0.147	25.7	< 0.001	2.2	27.9	< 0.1	< 1	54.3	< 0.1	< 0.1	3.7	0.24	10.1
17DB013	< 0.1	140	< 0.1	< 5	1.39	45.3	1.11	1030	0.9	1.42	0.045	56.1	< 0.001	1.9	14.3	< 0.1	< 1	78.6	< 0.1	< 0.1	2.0	0.13	29.7
17DB014	< 0.1	100	< 0.1	< 5	1.64	36.9	1.06	523	0.4	0.69	0.032	66.6	< 0.001	1.7	13.6	< 0.1	< 1	62.7	< 0.1	< 0.1	1.2	0.13	12.3
17DB015	< 0.1	150	< 0.1	< 5	1.25	97.1	0.98	862	0.4	0.84	0.054	41.7	0.001	2.1	15.4	< 0.1	< 1	91.9	< 0.1	< 0.1	2.2	0.12	11.6
17DB016	< 0.1	130	< 0.1	< 5	1.22	54.8	1.03	1310	0.3	1.06	0.097	32.2	< 0.001	1.3	16.9	< 0.1	< 1	84.6	< 0.1	< 0.1	2.0	0.22	10.7
17DB017	< 0.1	150	< 0.1	< 5	1.73	20.8	0.53	793	0.4	1.32	0.036	37.5	< 0.001	0.9	7.4	< 0.1	< 1	78.4	< 0.1	< 0.1	0.8	0.14	10.6
17DB018	< 0.1	150	< 0.1	< 5	1.24	31.4	0.93	713	1.0	1.26	0.066	42.8	< 0.001	1.1	12.2	< 0.1	< 1	91.7	< 0.1	< 0.1	< 0.5	0.23	10.8
17DB019	< 0.1	120	< 0.1	< 5	0.73	42.4	0.80	1070	0.4	1.21	0.084	28.3	< 0.001	0.9	13.8	< 0.1	< 1	86.9	< 0.1	< 0.1	0.7	0.22	11.3
17DB020	0.2	130	< 0.1	< 5	0.91	40.7	1.89	1330	14.1	1.21	0.110	30.7	< 0.001	0.7	23.7	< 0.1	2	151	0.8	< 0.1	0.6	0.88	7.7
17DB021	< 0.1	120	< 0.1	< 5	1.45	44.8	0.90	1070	0.8	1.30	0.052	52.0	< 0.001	0.9	13.8	< 0.1	< 1	87.0	< 0.1	< 0.1	0.9	0.34	13.2
17DB022	< 0.1	120	< 0.1	< 5	1.40	44.7	1.09	789	0.5	1.10	0.043	46.6	< 0.001	0.9	12.7	< 0.1	< 1	86.3	< 0.1	< 0.1	0.9	0.10	11.8
17DB023	< 0.1	130	< 0.1	< 5	1.23	28.9	1.20	934	0.2	1.45	0.101	24.8	< 0.001	0.7	16.9	< 0.1	< 1	135	< 0.1	< 0.1	< 0.5	0.22	9.4
17DB024	< 0.1	150	< 0.1	< 5	1.49	35.2	0.90	736	0.2	1.31	0.056	30.8	< 0.001	0.8	12.2	< 0.1	< 1	100	< 0.1	< 0.1	0.7	0.14	11.2
17DB025	< 0.1	130	< 0.1	< 5	1.27	21.8	0.53	931	0.2	1.01	0.083	34.0	< 0.001	0.8	14.5	< 0.1	< 1	70.1	< 0.1	< 0.1	0.9	0.22	9.7
17DB026	< 0.1	120	< 0.1	< 5	1.11	37.0	1.30	1140	0.5	1.23	0.118	37.3	< 0.001	0.6	16.2	< 0.1	< 1	91.9	< 0.1	< 0.1	0.6	0.37	8.6
17DB027	< 0.1	80	< 0.1	< 5	1.19	43.1	0.75	910	1.1	1.23	0.040	44.5	< 0.001	1.1	11.2	< 0.1	< 1	75.3	< 0.1	< 0.1	1.3	0.21	11.8
17DB028	< 0.1	80	0.1	< 5	1.80	57.4	0.81	1130	2.5	1.15	0.050	50.6	< 0.001	1.3	10.3	< 0.1	3	62.1	< 0.1	< 0.1	1.6	0.32	16.0
17DB029	< 0.1	220	0.2	< 5	1.14	25.5	0.43	957	41.3	1.01	0.125	48.3	< 0.001	1.3	7.4	0.5	6	65.3	2.4	< 0.1	1.4	0.69	12.1

Results **Activation Laboratories Ltd.** **Report: A17-06904**

Analyte Symbol	Ge	Hg	In	Ir	K	Li	Mg	Mn	Nb	Na	P	Rb	Re	Sb	Sc	Se	Sn	Sr	Ta	Te	Tb	Ti	Th
Unit Symbol	ppm	ppb	ppm	ppb	%	ppm	%	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm
Lower Limit	0.1	10	0.1	5	0.01	0.5	0.01	1	0.1	0.01	0.001	0.2	0.001	0.1	0.1	0.1	1	0.2	0.1	0.1	0.5	0.01	0.1
Method Code	TD-MS	TD-MS	TD-MS	INAA	TD-ICP	TD-MS	TD-ICP	TD-ICP	TD-MS	INAA	TD-ICP	MULTI NAA/TD-ICP-MS	TD-MS	INAA	INAA	MULTI NAA/TD-ICP-MS	TD-MS	TD-MS	MULTI NAA/TD-ICP-MS	TD-MS	INAA	TD-ICP	MULTI NAA/TD-ICP-MS
17DB030	< 0.1	230	0.1	< 5	1.31	39.5	0.49	415	8.2	1.11	0.050	48.1	< 0.001	0.9	7.4	< 0.1	4	52.9	0.7	< 0.1	2.5	0.32	31.2
17DB031	< 0.1	230	0.1	< 5	1.46	19.4	0.31	423	2.3	1.07	0.075	49.4	< 0.001	0.4	6.2	< 0.1	2	49.8	0.2	< 0.1	0.5	0.22	26.7
17DB032	< 0.1	150	< 0.1	< 5	1.47	27.5	0.71	806	0.2	1.77	0.051	37.7	< 0.001	0.8	10.4	< 0.1	1	91.1	< 0.1	< 0.1	0.8	0.15	16.4
17DB033	< 0.1	150	< 0.1	< 5	1.63	32.0	0.53	552	1.0	1.27	0.048	43.2	< 0.001	0.7	8.4	< 0.1	1	73.2	< 0.1	< 0.1	< 0.5	0.17	19.1
17DB034	< 0.1	100	< 0.1	< 5	1.02	24.2	0.53	583	1.7	1.19	0.105	34.7	< 0.001	0.7	10.2	0.2	2	74.6	< 0.1	< 0.1	< 0.5	0.46	12.2
17DB035	< 0.1	100	0.1	< 5	1.89	34.5	0.93	1630	7.0	1.68	0.105	55.8	< 0.001	1.1	14.2	< 0.1	6	102	0.2	< 0.1	< 0.5	0.56	24.1
17DB036	< 0.1	80	0.1	< 5	0.95	44.5	0.60	806	8.8	0.87	0.157	44.0	< 0.001	1.5	15.6	< 0.1	3	59.0	0.2	< 0.1	2.0	0.67	12.5
17DB037	< 0.1	80	< 0.1	< 5	1.82	46.7	0.89	1210	7.0	1.36	0.050	78.2	< 0.001	1.1	13.4	< 0.1	2	82.3	0.2	< 0.1	3.7	0.43	15.7
17DB038	< 0.1	70	< 0.1	< 5	2.04	41.4	0.84	996	1.0	1.38	0.052	43.8	< 0.001	1.0	12.1	< 0.1	2	86.6	< 0.1	< 0.1	3.4	0.26	19.1
17DB039	< 0.1	130	< 0.1	< 5	1.25	32.0	0.51	587	19.6	1.12	0.045	46.0	< 0.001	0.8	9.1	< 0.1	3	58.4	1.2	< 0.1	1.2	0.64	15.9
17DB040	< 0.1	230	< 0.1	< 5	1.05	37.3	0.49	409	1.1	1.28	0.045	35.3	< 0.001	0.9	10.3	< 0.1	< 1	64.8	< 0.1	< 0.1	1.0	0.34	11.3
17DB041	< 0.1	110	< 0.1	< 5	1.17	28.4	0.99	893	0.4	1.65	0.051	29.7	< 0.001	0.9	14.3	< 0.1	< 1	116	< 0.1	< 0.1	1.2	0.35	10.0
17DB042	< 0.1	140	< 0.1	< 5	1.35	44.8	0.89	5700	0.6	1.26	0.076	38.9	< 0.001	1.2	15.3	< 0.1	1	89.1	< 0.1	< 0.1	< 0.5	0.17	11.1
17DB043	< 0.1	130	< 0.1	< 5	1.75	14.2	1.26	1350	1.0	2.45	0.083	26.0	< 0.001	7.3	13.5	< 0.1	< 1	289	< 0.1	< 0.1	< 0.5	0.20	5.2
17DB044	< 0.1	120	< 0.1	< 5	1.88	45.2	1.07	782	1.4	2.05	0.063	64.8	< 0.001	1.3	12.4	< 0.1	2	141	0.1	< 0.1	< 0.5	0.23	17.8
17CS001	< 0.1	100	< 0.1	< 5	1.35	74.6	1.31	1200	0.6	1.22	0.117	55.6	< 0.001	3.8	27.4	< 0.1	1	116	< 0.1	< 0.1	< 0.5	0.33	9.9

Results **Activation Laboratories Ltd.** **Report: A17-06904**

Analyte Symbol	Tl	V	U	W	Y	Zr	La	La	Ce	Ce	Pr	Nd	Nd	Sm	Sm	Eu	Gd	Dy	Tb	Ho	Er	Tm	Yb
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	0.05	2	0.1	1	0.1	1	0.1	0.5	0.1	3	0.1	0.1	5	0.1	0.1	0.05	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Method Code	TD-MS	TD-ICP	MULT I NAA/T D-ICP-MS	INAA	TD-MS	TD-MS	TD-MS	INAA	TD-MS	INAA	TD-MS	TD-MS	INAA	TD-MS	INAA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
16DB005	0.24	44	1.8	< 1	17.4	71	23.9	26.0	55.2	62	6.3	23.7	19	4.8	5.2	0.96	4.2	3.8	0.6	0.7	2.1	0.3	2.0
16DB007	0.24	37	1.8	< 1	20.1	105	24.4	27.5	50.6	59	6.2	23.4	21	4.8	5.1	0.95	4.2	4.1	0.6	0.8	2.4	0.4	2.3
16DB135	0.24	40	1.8	< 1	19.4	29	26.1	29.9	67.1	75	7.0	26.4	17	5.7	5.9	1.05	4.9	4.2	0.7	0.8	2.3	0.3	2.1
16DB153	0.15	21	1.6	< 1	16.4	12	26.1	27.4	56.4	60	6.7	24.8	18	4.9	5.1	0.94	4.4	3.6	0.6	0.7	1.9	0.3	1.9
16DB155	0.38	28	1.9	< 1	18.0	19	25.8	29.0	56.6	61	6.8	25.8	23	5.4	5.3	0.93	4.7	3.8	0.6	0.7	2.1	0.3	2.0
16DB160	0.21	18	1.7	< 1	16.7	29	29.3	32.0	64.7	71	7.6	28.8	26	5.9	5.9	1.02	5.0	3.9	0.6	0.7	2.0	0.3	1.9
16DB206	1.06	32	15.7	< 1	47.4	54	46.6	50.5	274	314	12.5	48.6	33	11.7	11.7	1.12	12.3	11.7	1.8	2.1	5.8	0.8	5.3
16DB212	0.42	34	2.6	< 1	27.1	74	33.1	35.5	108	121	8.5	31.8	30	7.2	7.0	1.16	6.7	6.1	0.9	1.1	3.3	0.5	3.1
16DB218	0.86	26	5.1	< 1	32.0	92	42.1	47.5	98.7	114	10.7	39.6	32	8.4	8.7	1.12	7.3	6.8	1.0	1.3	3.8	0.6	3.7
16DB223	0.17	52	1.8	< 1	25.3	126	25.3	30.0	66.3	70	6.9	27.3	33	5.9	5.1	1.35	5.5	5.1	0.8	1.0	3.0	0.4	2.9
16DB224	0.65	63	5.1	< 1	20.0	45	42.3	49.7	94.6	98	10.2	37.2	34	7.3	6.3	1.12	6.3	4.7	0.8	0.8	2.3	0.3	2.1
17DB001	0.58	115	2.4	< 1	20.1	155	30.7	48.7	66.0	93	7.8	29.7	42	6.1	6.5	1.17	5.2	4.4	0.7	0.8	2.4	0.4	2.3
17DB002	0.40	55	2.5	< 1	22.1	137	31.8	40.2	80.6	103	8.1	30.2	28	6.2	7.1	1.16	5.3	4.9	0.7	0.9	2.7	0.4	2.7
17DB003	0.57	59	6.3	< 1	24.9	87	35.6	40.2	80.2	87	9.1	34.4	24	7.0	7.2	1.30	6.2	5.4	0.8	1.0	3.0	0.5	2.9
17DB004	0.87	57	2.1	< 1	32.1	23	33.0	38.6	103	118	9.4	38.2	30	8.3	8.9	2.23	8.2	7.0	1.1	1.3	3.7	0.5	3.2
17DB005	0.49	52	2.0	< 1	28.9	54	28.7	34.4	72.4	88	8.1	31.9	49	7.2	8.0	1.64	6.6	6.3	0.9	1.2	3.4	0.5	3.0
17DB006	0.55	33	2.8	< 1	35.8	13	34.3	39.7	91.8	112	9.2	35.0	24	7.7	8.6	1.23	7.5	7.7	1.2	1.5	4.3	0.6	4.0
17DB007	0.49	34	2.7	< 1	32.8	16	32.7	34.6	95.3	103	8.7	33.1	38	7.3	7.5	1.20	7.2	7.3	1.1	1.3	3.9	0.6	3.7
17DB008	0.48	20	2.7	< 1	23.0	41	31.2	34.7	75.4	88	7.7	28.8	21	6.3	6.3	1.01	5.6	5.2	0.8	1.0	2.8	0.4	2.8
17DB009	0.40	47	2.5	< 1	21.9	120	28.4	33.0	64.6	81	7.2	26.9	33	6.0	6.5	0.97	5.3	5.3	0.8	1.0	2.7	0.4	2.6
17DB010	0.40	41	2.2	< 1	21.6	69	25.4	27.7	62.2	71	6.6	24.9	23	5.3	5.6	1.07	5.0	4.9	0.7	0.9	2.6	0.4	2.6
17DB011	0.56	49	4.5	< 1	46.4	11	39.8	43.2	134	136	9.9	37.4	26	8.8	8.5	1.10	8.8	10.1	1.4	1.9	5.8	0.9	5.5
17DB012	0.43	84	2.8	< 1	84.7	44	63.8	78.2	312	418	19.5	83.5	83	21.2	24.6	3.39	22.6	19.5	3.1	3.5	9.4	1.3	7.2
17DB013	0.78	32	4.2	< 1	56.8	40	74.6	86.5	695	847	18.9	68.8	53	14.4	15.6	1.24	16.3	14.1	2.1	2.5	7.1	1.1	6.3
17DB014	1.54	34	2.3	< 1	35.1	47	44.0	48.0	135	156	10.4	38.5	30	7.9	8.1	1.25	7.7	7.5	1.1	1.4	4.3	0.6	4.1
17DB015	1.01	43	3.7	< 1	51.8	66	42.1	49.0	125	153	13.9	56.2	59	13.3	14.5	1.47	12.7	11.6	1.8	2.1	6.2	0.9	5.5
17DB016	0.35	63	2.2	< 1	30.7	93	31.8	40.3	125	142	8.5	34.3	44	7.6	7.1	1.64	7.5	6.9	1.0	1.3	3.6	0.5	3.3
17DB017	0.50	28	2.4	< 1	37.6	128	38.2	41.0	105	118	10.2	39.2	25	8.8	8.8	0.94	8.1	8.2	1.2	1.6	4.6	0.7	4.4
17DB018	0.43	44	2.5	< 1	27.0	166	29.2	32.6	86.8	100	7.6	28.7	27	5.9	6.4	1.06	5.8	6.1	0.9	1.2	3.4	0.5	3.3
17DB019	0.34	54	2.7	< 1	30.0	140	32.7	37.1	99.6	118	9.0	34.7	30	7.6	8.1	1.45	7.2	6.9	1.0	1.3	3.7	0.5	3.4
17DB020	0.36	150	2.5	< 1	39.7	209	25.6	31.1	80.2	107	7.9	33.0	30	7.9	8.6	1.94	7.9	7.9	1.2	1.6	4.7	0.7	4.4
17DB021	0.58	58	2.8	< 1	26.7	82	37.2	41.0	91.8	104	9.3	34.9	32	7.1	7.5	1.33	6.3	5.9	0.9	1.1	3.2	0.5	3.2
17DB022	0.33	27	2.8	< 1	23.7	52	33.1	35.6	82.7	96	8.6	32.9	21	7.0	6.9	1.31	6.1	5.4	0.8	1.0	3.0	0.4	2.9
17DB023	0.19	71	1.9	< 1	21.6	17	23.9	27.3	59.3	69	6.3	25.1	23	5.3	5.8	1.22	5.2	4.8	0.7	0.9	2.6	0.4	2.4
17DB024	0.43	36	2.4	< 1	18.7	46	27.7	30.4	73.9	84	6.8	25.1	24	4.9	5.5	0.97	4.3	4.1	0.6	0.8	2.3	0.3	2.3
17DB025	0.61	74	2.3	< 1	25.7	88	24.9	27.9	62.0	76	6.5	24.7	27	5.3	5.9	1.20	5.0	5.2	0.7	1.0	3.1	0.5	3.2
17DB026	0.47	81	1.9	< 1	24.7	142	29.5	31.9	92.0	101	8.2	31.8	34	6.9	7.3	1.62	6.4	5.9	0.9	1.1	3.1	0.4	2.8
17DB027	0.44	37	2.7	< 1	27.6	159	39.7	42.5	93.2	97	10.3	38.4	28	7.4	7.8	1.35	6.7	5.7	0.9	1.1	3.1	0.5	3.0
17DB028	0.61	60	3.4	< 1	41.1	259	52.9	57.9	177	201	13.9	53.4	49	10.9	11.4	1.18	9.6	9.1	1.3	1.7	5.1	0.8	4.8
17DB029	1.16	85	3.0	< 1	40.8	508	34.3	42.2	85.2	103	9.4	35.7	35	7.9	7.1	0.84	7.7	8.6	1.2	1.7	5.2	0.8	5.4

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Analyte Symbol	Tl	V	U	W	Y	Zr	La	La	Ce	Ce	Pr	Nd	Nd	Sm	Sm	Eu	Gd	Dy	Tb	Ho	Er	Tm	Yb
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	0.05	2	0.1	1	0.1	1	0.1	0.5	0.1	3	0.1	0.1	5	0.1	0.1	0.05	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Method Code	TD-MS	TD-ICP	MULT INAA/TD-ICP-MS	INAA	TD-MS	TD-MS	TD-MS	INAA	TD-MS	INAA	TD-MS	TD-MS	INAA	TD-MS	INAA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
17DB030	0.71	51	5.7	< 1	56.9	46	39.4	45.8	119	144	10.6	39.3	37	9.5	10.9	0.86	10.2	13.1	1.8	2.5	7.4	1.1	6.9
17DB031	0.57	41	5.2	< 1	31.9	63	29.1	32.9	87.6	104	7.6	27.0	28	6.2	7.1	0.64	6.1	7.0	1.0	1.4	4.2	0.7	4.4
17DB032	0.45	24	3.6	< 1	35.4	22	36.7	42.2	103	118	10.0	37.4	43	8.1	9.0	1.22	7.8	7.7	1.1	1.4	4.3	0.7	4.2
17DB033	0.50	31	3.9	< 1	31.0	114	37.7	42.1	106	123	9.5	35.0	40	7.2	7.8	0.86	6.2	6.7	1.0	1.3	3.8	0.6	3.8
17DB034	0.54	79	3.7	< 1	24.3	166	27.5	30.3	69.7	78	7.2	26.5	31	5.8	6.1	0.84	5.5	5.6	0.8	1.0	3.0	0.4	2.9
17DB035	0.75	96	5.0	< 1	57.5	301	48.1	59.1	349	402	12.8	50.2	50	11.7	10.6	1.35	12.7	13.4	1.9	2.5	7.3	1.1	6.8
17DB036	0.36	132	2.8	< 1	45.5	174	50.4	63.6	168	196	13.3	51.2	49	11.5	10.6	1.68	11.2	11.1	1.7	1.9	5.3	0.7	4.3
17DB037	0.31	72	3.9	< 1	60.9	201	50.9	65.1	95.3	115	14.5	55.3	77	12.9	11.9	1.29	12.4	15.5	2.2	2.9	8.7	1.3	8.0
17DB038	0.41	48	4.8	< 1	78.1	198	61.1	68.4	118	140	17.4	66.3	64	15.3	16.9	1.43	15.7	19.3	2.7	3.6	10.7	1.6	9.7
17DB039	0.78	79	3.5	< 1	29.4	253	30.6	41.0	89.7	119	8.0	29.1	33	6.3	8.0	0.80	6.2	6.9	0.9	1.3	3.9	0.6	3.9
17DB040	0.55	54	2.4	< 1	23.5	96	28.6	35.1	90.2	99	7.4	27.3	35	5.8	5.4	0.84	5.3	5.5	0.8	1.0	2.9	0.4	2.8
17DB041	0.39	65	2.2	< 1	27.6	20	33.1	34.2	66.6	72	9.1	34.9	31	7.5	7.6	1.42	6.5	5.8	0.9	1.1	3.2	0.5	3.0
17DB042	0.46	53	2.5	< 1	20.6	34	29.3	35.8	89.0	102	7.5	27.3	25	5.5	5.0	1.05	4.7	4.5	0.6	0.8	2.5	0.4	2.5
17DB043	0.18	51	1.8	< 1	24.6	127	25.4	30.0	65.3	73	7.0	27.1	54	5.8	5.1	1.31	5.2	5.0	0.7	1.0	2.9	0.4	2.7
17DB044	0.64	52	4.8	< 1	20.2	113	42.5	49.9	94.0	104	10.2	37.2	44	7.2	6.6	1.11	5.8	4.8	0.8	0.8	2.3	0.3	2.1
17CS001	0.67	78	2.5	< 1	47.7	147	35.0	47.0	85.8	114	10.8	43.7	49	10.4	10.1	2.27	10.0	9.1	1.4	1.8	5.3	0.7	4.6

Analyte Symbol	Yb	Lu	Lu	Mass
Unit Symbol	ppm	ppm	ppm	g
Lower Limit	0.2	0.1	0.05	
Method Code	INAA	TD-MS	INAA	INAA
16DB005	2.9	0.3	0.17	30.8
16DB007	3.2	0.3	0.19	29.3
16DB135	3.2	0.3	0.17	27.0
16DB153	2.5	0.3	0.15	32.3
16DB155	3.0	0.3	0.16	30.2
16DB160	3.3	0.3	0.16	33.0
16DB206	5.6	0.7	0.36	23.2
16DB212	4.0	0.5	0.21	26.7
16DB218	4.7	0.5	0.27	27.3
16DB223	3.5	0.4	0.48	1.60
16DB224	3.3	0.3	0.43	1.27
17DB001	3.5	0.4	0.46	1.01
17DB002	4.1	0.4	0.21	23.4
17DB003	3.5	0.4	0.19	30.9
17DB004	3.9	0.5	0.20	22.5
17DB005	3.9	0.5	0.17	16.3
17DB006	4.9	0.6	0.27	22.6
17DB007	4.3	0.5	0.21	26.9
17DB008	3.7	0.4	0.19	24.2
17DB009	3.3	0.4	0.16	18.4
17DB010	3.0	0.4	0.16	22.5
17DB011	6.6	0.8	0.29	24.9
17DB012	8.0	0.9	0.42	17.6
17DB013	7.3	0.8	0.37	28.5
17DB014	4.3	0.6	0.23	28.1
17DB015	6.1	0.7	0.32	18.5
17DB016	3.6	0.5	0.48	1.03
17DB017	4.7	0.7	0.28	28.8
17DB018	4.3	0.5	0.21	24.3
17DB019	4.0	0.5	0.22	17.6
17DB020	4.9	0.7	0.27	25.0
17DB021	4.1	0.5	0.21	25.4
17DB022	3.8	0.4	0.21	24.6
17DB023	2.6	0.3	0.15	25.1
17DB024	3.1	0.4	0.17	25.6
17DB025	4.1	0.5	0.16	20.6
17DB026	3.7	0.4	0.20	22.9
17DB027	3.9	0.5	0.25	29.1
17DB028	5.7	0.7	0.32	26.6
17DB029	5.2	0.8	0.81	1.06
17DB030	8.2	1.0	0.53	17.0
17DB031	5.4	0.7	0.35	20.1

Analyte Symbol	Yb	Lu	Lu	Mass
Unit Symbol	ppm	ppm	ppm	g
Lower Limit	0.2	0.1	0.05	
Method Code	INAA	TD-MS	INAA	INAA
17DB032	5.6	0.7	0.35	24.9
17DB033	5.0	0.6	0.31	20.5
17DB034	3.7	0.4	0.22	19.6
17DB035	7.2	1.0	0.86	1.41
17DB036	4.5	0.6	0.59	1.11
17DB037	9.0	1.1	1.16	1.30
17DB038	11.2	1.3	0.64	24.0
17DB039	6.1	0.6	0.35	22.1
17DB040	3.7	0.4	0.44	1.25
17DB041	3.6	0.4	0.22	32.7
17DB042	3.1	0.4	0.43	1.19
17DB043	3.7	0.4	0.42	1.41
17DB044	3.5	0.3	0.59	1.24
17CS001	5.8	0.7	0.75	1.04

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Analyte Symbol	Au	Ag	Ag	Ag	Cu	Cu	Cd	Cd	Mo	Pb	Pb	Ni	Ni	Ni	Zn	Zn	Zn	S	Al	As	Ba	Ba	Be
Unit Symbol	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	ppm	ppm
Lower Limit	2	0.05	0.3	5	0.2	1	0.1	0.3	1	0.5	3	0.5	1	20	0.5	1	50	0.01	0.01	0.5	1	50	0.1
Method Code	INAA	TD-MS	TD-ICP	INAA	TD-MS	TD-ICP	TD-MS	TD-ICP	TD-ICP	TD-MS	TD-ICP	TD-MS	TD-ICP	INAA	TD-MS	TD-ICP	INAA	TD-ICP	TD-ICP	INAA	TD-MS	INAA	TD-MS
GXR-1 Meas		30.2	32.0		1050	1190	2.6	2.8	16	717	738	39.6	42		699	738		0.25	2.13		650		0.9
GXR-1 Cert		31.0	31.0		1110	1110	3.30	3.30	18.0	730	730	41.0	41.0		760	760		0.257	3.52		750		1.22
DH-1a Meas																							
DH-1a Cert																							
GXR-4 Meas		3.34	3.4		5880	6570	0.1	< 0.3	357	48.4	44	39.8	44		61.0	74		1.83	6.46		126		2.1
GXR-4 Cert		4.00	4.0		6520	6520	0.860	0.860	310	52.0	52.0	42.0	42.0		73.0	73.0		1.77	7.20		1640		1.90
SDC-1 Meas					28.6	30				23.4	21	33.4	35		94.0	99			6.16		609		2.9
SDC-1 Cert					30.000	30.000				25.00	25.00	38.0	38.0		103.00	103.00			6.34		630		3.00
GXR-6 Meas			0.4			75		< 0.3	< 1		95		26			130		0.02	13.2				
GXR-6 Cert			1.30			66.0		1.00	2.40		101		27.0			118		0.0160	17.7				
DNC-1a Meas					91.4	101				5.7	< 3	262	243		54.5	56					99		
DNC-1a Cert					100	100				6.3	6.3	247	247		70	70					118		
SBC-1 Meas					27.5	31	0.3	0.5	2	33.5	27	83.7	85		174	182					352		3.0
SBC-1 Cert					31.0000	31.0000	0.40	0.40	2	35.0	35.0	82.8	83		186	186					788.0		3.20
OREAS 45d (4-Acid) Meas					346	385			< 1	20.3	19	231	243		37.7	43		0.04	7.90		176		0.7
OREAS 45d (4-Acid) Cert					371	371			2.500	21.8	21.8	231.0	231.0		45.7	45.7		0.049	8.150		183.0		0.79
SdAR-M2 (U.S.G.S.) Meas					242	254	5.1	5.7	13	748	840	51.7	53		766	800					1000		6.8
SdAR-M2 (U.S.G.S.) Cert					236.00 00	236.00 00	5.1	5.1	13	808	808	48.8	49		760	760					990		6.6
DMMAS 120 Meas	768																			1780		1190	
DMMAS 120 Cert	727																			1790		1270	
DMMAS 120 Meas	695																			1820		1250	
DMMAS 120 Cert	727																			1790		1270	
DMMAS 120 Meas	730																			1740		850	
DMMAS 120 Cert	727																			1790		1270	
DMMAS 120 Meas	792																			1780		960	
DMMAS 120 Cert	727																			1790		1270	
DMMAS 120 Meas	748																			1790		800	
DMMAS 120 Cert	727																			1790		1270	
16DB005 Orig		< 0.05	< 0.3		18.0	18	< 0.1	< 0.3	< 1	12.5	10	19.9	21		53.2	55		< 0.01	5.71		348		1.5
16DB005 Dup		< 0.05	0.4		15.2	17	< 0.1	< 0.3	< 1	11.6	7	19.5	20		45.9	52		< 0.01	5.03		322		1.4
17DB028 Orig		< 0.05	0.7		27.5	29	0.7	0.8	< 1	180	178	32.1	34		285	288		< 0.01	6.22		288		5.5
17DB028 Dup		< 0.05	0.6		26.6	30	0.7	0.8	< 1	178	180	31.6	35		281	290		< 0.01	6.32		281		5.4
17DB030 Orig		0.17	< 0.3		14.3	16	0.1	< 0.3	1	49.8	44	16.4	19		103	115		0.04	6.83		183		4.4
17DB030 Dup		0.07	< 0.3		17.0	18	< 0.1	< 0.3	< 1	51.0	48	16.6	19		109	115		0.04	6.85		187		4.7

Analyte Symbol	Au	Ag	Ag	Ag	Cu	Cu	Cd	Cd	Mo	Pb	Pb	Ni	Ni	Ni	Zn	Zn	Zr	S	Al	As	Ba	Ba	Be
Unit Symbol	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	ppm	ppm
Lower Limit	2	0.05	0.3	5	0.2	1	0.1	0.3	1	0.5	3	0.5	1	20	0.5	1	50	0.01	0.01	0.5	1	50	0.1
Method Code	INAA	TD-MS	TD-ICP	INAA	TD-MS	TD-ICP	TD-MS	TD-ICP	TD-ICP	TD-MS	TD-ICP	TD-MS	TD-ICP	INAA	TD-MS	TD-ICP	INAA	TD-ICP	TD-ICP	INAA	TD-MS	INAA	TD-MS
Method Bank			< 0.3			< 1		< 0.3	< 1		< 3		< 1			< 1		< 0.01	< 0.01				
Method Bank			< 0.3			< 1		< 0.3	< 1		< 3		< 1			< 1		< 0.01	< 0.01				
Method Bank			< 0.3			3		< 0.3	< 1		< 3		< 1			< 1		< 0.01	< 0.01				
Method Bank		< 0.05	< 0.3		< 0.2	< 1	< 0.1	< 0.3	< 1	< 0.5	< 3	< 0.5	< 1		< 0.5	< 1		< 0.01	0.03		< 1		< 0.1
Method Bank	< 2			< 5										< 20			< 50			< 0.5		< 50	

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Analyte Symbol	Be	Bi	B	Br	Ca	Co	Co	Cr	Cr	Cs	Cs	Eu	Fe	Hf	Hf	Ga	Ge	Hg	In	Ir	K	Li	Mg
Unit Symbol	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppb	ppm	ppb	%	ppm	%
Lower Limit	1	0.02	2	0.5	0.01	0.1	1	1	2	0.05	1	0.2	0.01	0.1	1	0.1	0.1	10	0.1	5	0.01	0.5	0.01
Method Code	TD-ICP	TD-MS	TD-ICP	INAA	TD-ICP	TD-MS	INAA	TD-MS	INAA	TD-MS	INAA	INAA	INAA	TD-MS	INAA	TD-MS	TD-MS	TD-MS	TD-MS	INAA	TD-ICP	TD-MS	TD-ICP
GXR-1 Meas	1	1340	1410		0.89	7.4		> 10.0		2.52				< 0.1		6.0		3440	0.7		0.04	7.3	0.21
GXR-1 Cert	1.22	1380	1380		0.960	8.20		12.0		3.00				0.960		13.8		3900	0.770		0.050	8.20	0.217
DH-1a Meas																							
DH-1a Cert																							
GXR-4 Meas	2	17.9	12		1.08	14.2		> 10.0		2.33				1.2		18.5		210	0.2		3.25	10.3	1.72
GXR-4 Cert	1.90	19.0	19.0		1.01	14.6		64.0		2.80				6.30		20.0		110	0.270		4.01	11.1	1.66
SDC-1 Meas	3				1.10	17.0		> 10.0		3.42				0.9		19.1		100			1.67	33.8	1.00
SDC-1 Cert	3.00				1.00	18.0		64.00		4.00				8.30		21.00		200.00			2.72	34.0	1.02
GXR-6 Meas	1		< 2		0.19																1.83		0.62
GXR-6 Cert	1.40		0.290		0.180																1.87		0.609
DNC-1a Meas						54.6		> 10.0								14.1						4.2	
DNC-1a Cert						57		270								15						5.2	
SBC-1 Meas	3	0.63	4			21.3		> 10.0		7.16				3.0		26.1						154	
SBC-1 Cert	3.20	0.70	0.70			22.7		109		8.2				3.7		27.0						163	
OREAS 45d (4-Acid) Meas	< 1	0.33	< 2		0.20	27.9		> 10.0		3.31				1.1		21.8			< 0.1		0.42	19.4	0.24
OREAS 45d (4-Acid) Cert	0.79	0.31	0.31		0.185	29.50		549		3.910				3.830		21.20			0.096		0.412	21.5	0.245
SdAR-M2 (U.S.G.S.) Meas	8	0.99	< 2			13.4		> 10.0		1.57				1.4		11.8		1220				17.6	
SdAR-M2 (U.S.G.S.) Cert	6.6	1.05	1.05			12.4		49.6		1.82				7.29		17.6		1440.00				17.9	
DMMAS 120 Meas							44		155				3.49										
DMMAS 120 Cert							47.0		138				3.54										
DMMAS 120 Meas							51		135				3.85										
DMMAS 120 Cert							47.0		138				3.54										
DMMAS 120 Meas							46		145				3.54										
DMMAS 120 Cert							47.0		138				3.54										
DMMAS 120 Meas							45		142				3.49										
DMMAS 120 Cert							47.0		138				3.54										
DMMAS 120 Meas							46		138				3.42										
DMMAS 120 Cert							47.0		138				3.54										
16DB005 Orig	2	0.39	< 2		0.79	8.9		> 10.0		2.41				0.2			< 0.1	130	0.1		1.01	27.1	0.57
16DB005 Dup	1	0.36	4		0.69	8.3		> 10.0		2.27				3.9			< 0.1	110	0.1		1.15	25.4	0.53
17DB028 Orig	6	0.65	< 2		0.26	15.6		> 10.0		7.76				7.4			< 0.1	90	0.1		1.49	57.9	0.80
17DB028 Dup	6	0.64	< 2		0.26	15.3		> 10.0		7.57				5.9			< 0.1	70	0.1		2.11	56.8	0.81
17DB030 Orig	5	0.50	< 2		0.23	7.2		> 10.0		4.95				0.6			< 0.1	230	0.1		1.21	38.9	0.49
17DB030 Dup	5	0.53	< 2		0.23	7.4		> 10.0		4.97				0.9			< 0.1	220	0.1		1.42	40.1	0.50
Method Blank	< 1		< 2		< 0.01																< 0.01		< 0.01

Analyte Symbol	Be	Bi	B	Br	Ca	Co	Co	Cr	Cr	Cs	Cs	Eu	Fe	Hf	Hf	Ga	Ge	Hg	In	Ir	K	Li	Mg
Unit Symbol	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppb	ppm	ppb	%	ppm	%
Lower Limit	1	0.02	2	0.5	0.01	0.1	1	1	2	0.05	1	0.2	0.01	0.1	1	0.1	0.1	10	0.1	5	0.01	0.5	0.01
Method Code	TD-ICP	TD-MS	TD-ICP	INAA	TD-ICP	TD-MS	INAA	TD-MS	INAA	TD-MS	INAA	INAA	INAA	TD-MS	INAA	TD-MS	TD-MS	TD-MS	TD-MS	INAA	TD-ICP	TD-MS	TD-ICP
Method Blank	< 1		< 2		< 0.01																< 0.01		< 0.01
Method Blank	< 1		< 2		< 0.01																< 0.01		< 0.01
Method Blank	< 1	< 0.02	< 2		< 0.01	< 0.1		4		< 0.05				< 0.1		< 0.1	< 0.1	50	< 0.1		< 0.01	< 0.5	< 0.01
Method Blank				< 0.5			< 1		< 2		< 1	< 0.2	< 0.01		< 1					< 5			

QC **Activation Laboratories Ltd.** **Report: A17-06904**

Analyte Symbol	Mn	Nb	Na	P	Rb	Rb	Re	Sb	Sc	Se	Se	Sn	Sr	Ta	Ta	Te	Tb	Tl	Th	Th	Tl	U	U
Unit Symbol	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
Lower Limit	1	0.1	0.01	0.001	0.2	15	0.001	0.1	0.1	0.1	3	1	0.2	0.1	0.5	0.1	0.5	0.01	0.1	0.2	0.05	0.1	0.5
Method Code	TD-ICP	TD-MS	INAA	TD-ICP	TD-MS	INAA	TD-MS	INAA	INAA	TD-MS	INAA	TD-MS	TD-MS	TD-MS	INAA	TD-MS	INAA	TD-ICP	TD-MS	INAA	TD-MS	TD-MS	INAA
GXR-1 Meas	881	0.6		0.059	2.4					12.4		24	278	< 0.1		8.0		0.03	2.5		0.32	30.7	
GXR-1 Cert	852	0.800		0.0650	14.0					16.6		54.0	275	0.175		13.0		0.036	2.44		0.390	34.9	
DH-1a Meas																			> 500			2170	
DH-1a Cert																			910			2629	
GXR-4 Meas	161	9.4		0.135	104					4.2		7	196	0.6		0.8		0.29	19.2		2.85	5.6	
GXR-4 Cert	155	10.0		0.120	160					5.60		5.60	221	0.790		0.970		0.29	22.5		3.20	6.20	
SDC-1 Meas	840	0.2		0.055	51.3							< 1	162	< 0.1				0.19	11.5		0.78	2.5	
SDC-1 Cert	880.00	21.00		0.0690	127.00							3.00	180.00	1.20				0.606	12.00		0.70	3.10	
GXR-6 Meas	1100			0.035																			
GXR-6 Cert	1010			0.0350																			
DNC-1a Meas		1.4			0.8								132					0.28					
DNC-1a Cert		3			5								144					0.29					
SBC-1 Meas		11.8			92.3							3	164	0.8				0.51	15.3		0.87	5.3	
SBC-1 Cert		15.3			147							3.3	178.0	1.10				0.51	15.8		0.89	5.76	
CREAS 45d (4-Acid) Meas	498	0.3		0.033	33.2							< 1	26.0	< 0.1				0.12	14.3		0.09	2.5	
CREAS 45d (4-Acid) Cert	490.000	14.50		0.042	42.1							2.78	31.30	1.02				0.773	14.5		0.27	2.63	
ScAR-M2 (U.S.G.S.) Meas		7.1			59.9								134	0.3					14.1			2.6	
ScAR-M2 (U.S.G.S.) Cert		26.2			149								144	1.8					14.2			2.53	
DMMAS 120 Meas			2.31					8.0	6.2														12.4
DMMAS 120 Cert			2.16					7.30	6.50														11.7
DMMAS 120 Meas			2.18					6.3	6.4														12.3
DMMAS 120 Cert			2.16					7.30	6.50														11.7
DMMAS 120 Meas			2.01					4.9	6.4														13.7
DMMAS 120 Cert			2.16					7.30	6.50														11.7
DMMAS 120 Meas			2.01					8.0	6.3														9.7
DMMAS 120 Cert			2.16					7.30	6.50														11.7
DMMAS 120 Meas			2.01					8.1	6.3														11.6
DMMAS 120 Cert			2.16					7.30	6.50														11.7
16DB005 Orig	759	0.8		0.033	26.4		< 0.001			< 0.1		2	136	< 0.1		< 0.1		0.32	9.4		0.26	1.8	
16DB005 Dup	749	13.3		0.041	27.8		< 0.001			< 0.1		7	125	1.0		< 0.1		0.61	8.3		0.23	1.7	
17DB028 Orig	1140	4.1		0.052	50.8		< 0.001			< 0.1		3	63.8	0.1		< 0.1		0.39	15.5		0.59	3.4	
17DB028 Dup	1130	0.8		0.049	50.4		< 0.001			< 0.1		2	60.4	< 0.1		< 0.1		0.25	15.5		0.64	3.4	
17DB030 Orig	424	12.7		0.051	46.5		< 0.001			< 0.1		4	52.1	1.0		< 0.1		0.41	29.7		0.75	5.6	
17DB030 Dup	406	3.6		0.050	49.7		< 0.001			< 0.1		3	53.8	0.3		< 0.1		0.24	30.2		0.67	5.7	
Method Blank				< 0.001														< 0.01					

QC **Activation Laboratories Ltd.** **Report: A17-06904**

Analyte Symbol	Mn	Nb	Na	P	Rb	Rb	Re	Sb	Sc	Se	Se	Sn	Sr	Ta	Ta	Te	Tb	Tl	Th	Th	Tl	U	U
Unit Symbol	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
Lower Limit	1	0.1	0.01	0.001	0.2	15	0.001	0.1	0.1	0.1	3	1	0.2	0.1	0.5	0.1	0.5	0.01	0.1	0.2	0.05	0.1	0.5
Method Code	TD-ICP	TD-MS	INAA	TD-ICP	TD-MS	INAA	TD-MS	INAA	INAA	TD-MS	INAA	TD-MS	TD-MS	TD-MS	INAA	TD-MS	INAA	TD-ICP	TD-MS	INAA	TD-MS	TD-MS	INAA
Method Blank				< 0.001														< 0.01					
Method Blank				< 0.001														< 0.01					
Method Blank		< 0.1		< 0.001	< 0.2		< 0.001			< 0.1		< 1	< 0.2	< 0.1		< 0.1		< 0.01	< 0.1		< 0.05	< 0.1	
Method Blank			< 0.01			< 15		< 0.1	< 0.1		< 3				< 0.5		< 0.5			< 0.2			< 0.5

QC **Activation Laboratories Ltd.** **Report: A17-06904**

Analyte Symbol	V	W	Y	Zr	La	La	Ce	Ce	Pr	Nd	Nc	Sm	Sm	Eu	Gd	Dy	Tb	Ho	Er	Tm	Yb	Yb	Lu
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Lower Limit	2	1	0.1	1	0.1	0.5	0.1	3	0.1	0.1	5	0.1	0.1	0.05	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1
Method Code	TD-ICP	INAA	TD-MS	TD-MS	TD-MS	INAA	TD-MS	INAA	TD-MS	TD-MS	INAA	TD-MS	INAA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	INAA	TD-MS
GXR-1 Meas	88		26.3	6	6.8		13.6			7.7		2.7		0.53	3.7	4.6	0.7			0.4	2.1		0.3
GXR-1 Cert	80.0		32.0	38.0	7.50		17.0			18.0		2.70		0.690	4.20	4.30	0.830			0.430	1.90		0.280
DH-1a Meas																							
DH-1a Cert																							
GXR-4 Meas	91		12.2	38	53.3		100			38.5		6.4		1.27	4.5	2.7	0.5			0.2	1.0		0.1
GXR-4 Cert	87.0		14.0	186	64.5		102			45.0		6.60		1.63	5.25	2.60	0.360			0.210	1.60		0.170
SDC-1 Meas	52			33	37.2		60.9			36.7		7.3		1.35	6.4	5.9	0.9	1.2	3.4	0.5	3.1		
SDC-1 Cert	102.00			290.00	42.00		93.00			40.00		8.20		1.70	7.00	6.70	1.20	1.50	4.10	0.65	4.00		
GXR-6 Meas	125																						
GXR-6 Cert	186																						
DNC-1a Meas	138		12.6	34	2.8					4.0				0.45							1.7		
DNC-1a Cert	148		18.0	38.0	3.6					5.20				0.59							2.0		
SBC-1 Meas	214		27.8	114	45.5		96.4		12.1	43.9		9.1		1.64	7.9	6.2	1.0	1.1	3.3	0.5	3.2		0.5
SBC-1 Cert	220.0		36.5	134.0	52.5		108.0		12.6	49.2		9.6		1.98	8.5	7.10	1.20	1.40	3.80	0.56	3.64		0.54
OREAS 45d (4-Acid) Meas	92		9.9	40	15.4		33.2		3.6	12.7		2.7		0.52	2.4	2.2	0.3	0.4	1.3		1.3		0.2
OREAS 45d (4-Acid) Cert	235.0		9.53	141	16.9		37.20		3.70	13.4		2.80		0.57	2.42	2.26	0.400	0.46	1.38		1.33		0.18
SdAR-M2 (U.S.G.S.) Meas	27		22.6	65	42.6		91.3		10.4	35.7		6.4		1.20	5.4	4.8	0.7	0.9	2.7	0.4	2.6		0.4
SdAR-M2 (U.S.G.S.) Cert	25.2		32.7	259	46.6		98.8		11.0	39.4		7.18		1.44	6.28	5.88	0.97	1.21	3.58	0.54	3.63		0.54
DMMAS 120 Meas						16.0		32					2.2										
DMMAS 120 Cert						17.6		32.0					2.70										
DMMAS 120 Meas						17.0		34					2.5										
DMMAS 120 Cert						17.6		32.0					2.70										
DMMAS 120 Meas						17.3		34					2.3										
DMMAS 120 Cert						17.6		32.0					2.70										
DMMAS 120 Meas						17.4		31					2.6										
DMMAS 120 Cert						17.6		32.0					2.70										
DMMAS 120 Meas						17.7		34					2.5										
DMMAS 120 Cert						17.6		32.0					2.70										
16DB005 Orig	33		18.4	11	24.9		57.5		6.5	24.5		4.9		0.99	4.4	4.0	0.6	0.8	2.2	0.3	2.1		0.3
16DB005 Dup	56		16.5	131	22.9		53.0		6.1	22.9		4.7		0.93	4.1	3.7	0.6	0.7	2.0	0.3	2.0		0.3
17DB028 Orig	70		41.4	294	53.4		179		14.1	53.8		11.0		1.20	9.7	9.2	1.3	1.7	5.1	0.7	4.8		0.7
17DB028 Dup	50		40.8	224	52.4		175		13.7	52.9		10.8		1.17	9.6	9.1	1.3	1.7	5.0	0.8	4.7		0.7
17DB030 Orig	58		55.7	45	39.2		118		10.4	38.9		9.3		0.84	10.0	12.8	1.8	2.5	7.3	1.1	6.7		0.9
17DB030 Dup	45		58.0	46	39.7		121		10.7	39.8		9.7		0.88	10.4	13.4	1.8	2.6	7.6	1.1	7.0		1.0
Method Blank	< 2																						

Analyte Symbol	V	W	Y	Zr	La	La	Ce	Ce	Pr	Nd	Nd	Sm	Sm	Eu	Gd	Dy	Tb	Ho	Er	Tm	Yb	Yb	Lu
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Lower Limit	2	1	0.1	1	0.1	0.5	0.1	3	0.1	0.1	5	0.1	0.1	0.05	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1
Method Code	TD-ICP	INAA	TD-MS	TD-MS	TD-MS	INAA	TD-MS	INAA	TD-MS	TD-MS	INAA	TD-MS	INAA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	INAA	TD-MS
Method Blank	< 2																						
Method Blank	< 2																						
Method Blank	< 2		< 0.1	< 1	< 0.1		< 0.1		< 0.1	< 0.1		< 0.1		< 0.05	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1		< 0.1
Method Blank		< 1				< 0.5		< 3			< 5		< 0.1									< 0.2	

Analyte Symbol	Lu	Mass
Unit Symbol	ppm	g
Lower Limit	0.05	
Method Code	INAA	INAA
GXR-1 Meas		
GXR-1 Cert		
DH-1a Meas		
DH-1a Cert		
GXR-4 Meas		
GXR-4 Cert		
SDC-1 Meas		
SDC-1 Cert		
GXR-6 Meas		
GXR-6 Cert		
DNC-1a Meas		
DNC-1a Cert		
SBC-1 Meas		
SBC-1 Cert		
OREAS 45d (4-Acid) Meas		
OREAS 45d (4-Acid) Cert		
SdAR-M2 (U.S.G.S.) Meas		
SdAR-M2 (U.S.G.S.) Cert		
DMMAS 120 Meas		
DMMAS 120 Cert		
DMMAS 120 Meas		
DMMAS 120 Cert		
DMMAS 120 Meas		
DMMAS 120 Cert		
DMMAS 120 Meas		
DMMAS 120 Cert		
DMMAS 120 Meas		
DMMAS 120 Cert		
16DB005 Orig		
16DB005 Dup		
17DB028 Orig		
17DB028 Dup		
17DB030 Orig		
17DB030 Dup		
Method Blank		

Analyte Symbol	Lu	Mass
Unit Symbol	ppm	g
Lower Limit	0.05	
Method Code	INAA	INAA
Method Blank		
Method Blank		
Method Blank		
Method Blank	< 0.05	1.00

Quality Analysis ... *Innovative Technologies*

Date Submitted: 11-Aug-17
Invoice No.: A17-08634 (i)
Invoice Date: 05-Oct-17
Your Reference:

Nova Scotia Department of Natural Resources
1723 Hollis Street
5th Floor
Halifax NS B3J 2N3
Canada

ATTN: Denise Brushett

CERTIFICATE OF ANALYSIS

81 Soil samples were submitted for analysis.

The following analytical package(s) were requested: Code UT-3 INAA(INAAGEO)/Total digestion ICP(Total)Total Digestion ICP/MS

REPORT **A17-08634 (i)**

Notes:

Unaltered silicates and resistate minerals may not be dissolved. Values which exceed upper limit should be assayed.

CERTIFIED BY:

Emmanuel Eseme , Ph.D.
Quality Control

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Results **Activation Laboratories Ltd.** **Report: A17-08634**

Analyte Symbol	Au	Ag	Cu	Co	Mo	Pb	Ni	Zn	S	Al	As	Ba	Be	Bi	Br	Ca	Co	Cr	Cs	Eu	Fe	Hf	Ga
Unit Symbol	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm
Lower Limit	2	0.05	0.2	0.1	1	0.5	0.5	0.5	0.01	0.01	0.5	1	0.1	0.1	0.5	0.01	0.1	1	0.05	0.2	0.01	0.1	0.1
Method Code	INAA	MULT I NAA/TD-ICP/TD-MS	MULT TD-ICP/TD-ICP-MS	MULT TD-ICP/TD-ICP-MS	TD-ICP	MULT TD-ICP/TD-ICP-MS	MULT I NAA/TD-ICP/TD-MS	MULT I NAA/TD-ICP/TD-MS	TD-ICP	TD-ICP	INAA	MULT I NAA/TD-ICP-MS	MULT TD-ICP/TD-ICP-MS	MULT TD-ICP/TD-ICP-MS	INAA	TD-ICP	MULT I NAA/TD-ICP-MS	MULT I NAA/TD-ICP-MS	MULT I NAA/TD-ICP-MS	INAA	INAA	MULT I NAA/TD-ICP-MS	TD-MS
17DB045	< 2	< 0.05	29.3	0.2	< 1	51.3	25.9	142	0.03	6.17	7.3	239	3.4	0.2	44.2	0.86	22.8	68	7.66	1.5	4.37	1.4	17.4
17DB046	< 2	< 0.05	6.5	0.2	2	70.8	6.1	44.4	0.08	7.75	7.6	121	2.0	0.4	195	0.41	6.4	37	2.44	0.4	5.36	0.7	26.7
17DB047	< 2	0.07	13.0	0.3	< 1	49.6	17.3	125	0.04	5.60	10.1	222	6.7	0.3	51.6	0.40	8.7	64	6.77	1.3	4.08	0.2	16.4
17DB048	< 2	0.05	12.0	0.2	< 1	46.0	16.1	116	0.03	5.33	7.7	220	6.3	0.3	44.9	0.39	8.4	60	6.25	1.1	3.60	0.2	15.8
17DB049	< 2	< 0.05	14.8	0.2	< 1	53.9	14.5	112	0.03	5.35	9.1	184	1.8	0.3	66.2	0.51	8.8	64	5.71	1.1	3.81	3.2	15.5
17DB050	17	< 0.05	44.3	0.2	< 1	23.0	24.0	94.8	0.02	6.62	18.5	789	1.4	1.8	7.4	1.96	19.6	69	1.00	1.5	4.71	4.8	15.3
17DB051	< 2	< 0.05	14.3	0.6	1	35.5	12.7	103	0.06	6.09	5.3	134	3.9	0.3	130	0.45	7.5	47	3.72	1.2	4.38	7.2	20.8
17DB052	< 2	< 0.05	16.5	0.2	< 1	84.8	22.4	152	0.03	5.39	18.8	213	2.7	0.2	61.3	0.42	15.8	63	9.37	1.3	5.53	5.2	17.2
17DB053	9	< 0.05	15.7	0.2	1	48.7	23.5	111	0.06	5.68	14.6	160	1.8	0.2	171	0.23	9.1	83	7.07	1.3	4.68	5.4	16.2
17DB054	< 2	< 0.05	18.3	0.2	< 1	46.2	25.5	117	0.01	5.86	10.8	272	2.2	0.2	48.0	0.79	18.6	66	4.59	1.7	3.53	3.7	13.0
17DB055	8	< 0.05	23.0	0.3	< 1	45.9	20.8	122	0.03	6.00	6.7	218	2.5	0.2	104	0.92	15.4	68	4.53	1.3	3.79	0.2	14.4
17DB056	< 2	0.14	14.3	0.2	< 1	41.7	16.2	144	0.04	6.91	5.9	197	2.9	0.3	117	0.44	7.8	57	4.79	1.2	3.97	0.2	15.9
17DB057	< 2	0.13	154	0.3	< 1	32.2	35.0	123	0.03	7.68	25.1	480	3.7	4.8	11.8	0.96	15.0	56	12.0	1.0	3.62	1.5	18.4
17DB058	< 2	0.06	18.7	0.3	< 1	47.3	17.7	142	< 0.01	5.37	4.9	228	3.1	0.4	25.2	0.81	16.9	49	3.42	1.1	3.56	0.3	14.0
17DB059	< 2	0.27	15.6	0.4	< 1	52.6	16.0	200	0.06	7.22	6.1	160	2.8	0.4	129	0.60	9.9	47	5.82	0.9	4.65	0.3	16.1
17DB060	< 2	0.34	30.4	0.3	< 1	82.9	18.1	199	0.02	7.29	4.1	179	3.3	0.5	118	0.81	16.6	61	5.40	1.3	4.40	< 0.1	14.5
17DB061	< 2	< 0.05	30.9	0.5	< 1	67.4	24.7	188	0.02	6.82	5.0	273	3.6	0.4	52.7	2.26	21.2	69	4.43	1.5	5.36	5.2	18.3
17DB062	< 2	0.05	10.1	0.3	< 1	41.6	22.5	235	0.03	7.62	11.1	222	2.2	0.2	95.7	0.20	9.8	54	8.39	0.9	4.33	0.5	16.7
17DB063	< 2	< 0.05	52.7	0.3	< 1	38.1	20.8	152	0.01	6.33	26.7	242	6.9	0.2	13.2	2.16	30.1	39	9.52	1.8	5.66	0.6	19.7
17DB064	< 2	< 0.05	19.1	0.2	< 1	41.0	21.7	137	0.05	5.83	12.3	195	3.1	0.2	135	0.84	16.6	48	5.47	1.3	4.08	6.2	13.2
17DB065	< 2	0.09	15.8	0.2	< 1	52.5	17.9	155	0.01	5.94	11.1	208	4.6	0.3	38.1	1.06	15.1	39	6.57	1.2	3.42	0.2	18.3
17DB066	< 2	0.15	20.8	0.2	< 1	72.7	19.0	169	0.03	6.37	9.1	184	3.2	0.2	133	0.63	15.2	57	5.51	1.3	4.01	0.1	14.0
17DB067	< 2	0.10	22.5	0.4	< 1	53.7	15.7	162	0.01	5.87	6.6	213	4.1	0.3	41.3	1.49	12.7	44	3.93	1.2	3.54	0.1	16.9
17DB068	< 2	0.07	23.0	0.5	< 1	60.1	15.4	175	< 0.01	5.82	8.1	222	4.8	0.3	42.0	1.61	17.0	46	3.73	1.5	3.97	0.4	19.5
17DB069	< 2	< 0.05	29.8	0.3	< 1	60.8	21.1	186	< 0.01	5.49	5.8	251	3.4	0.2	23.9	1.30	16.9	49	4.54	1.2	3.73	0.8	15.7
17DB070	< 2	0.13	17.2	0.3	< 1	60.0	16.0	145	0.03	5.93	13.4	208	3.2	0.2	78.2	0.57	12.0	53	4.99	1.4	4.31	0.4	16.4
17DB071	4	0.20	15.9	0.4	< 1	95.4	15.6	163	0.04	5.67	10.8	190	2.8	0.3	78.7	0.84	16.3	60	4.81	0.9	4.33	0.4	16.1
17DB072	18	0.11	45.5	0.4	< 1	78.8	24.6	322	0.01	5.28	18.2	246	6.7	0.3	20.5	0.53	18.2	81	14.9	1.9	4.35	0.2	13.9
17DB073	< 2	< 0.05	7.8	< 0.1	< 1	29.1	6.7	56.5	0.02	4.76	8.6	186	1.6	0.2	62.8	0.24	4.2	43	5.20	1.1	2.95	0.6	14.9
17DB074	< 2	< 0.05	46.2	1.3	< 1	336	23.6	503	0.03	5.65	19.2	196	13.3	0.3	38.0	1.39	23.8	70	9.79	2.3	5.37	14.6	22.7
17DB075	3	< 0.05	26.5	< 0.1	< 1	33.2	44.9	119	< 0.01	8.02	13.7	832	3.1	0.3	< 0.5	0.70	21.0	75	8.83	1.4	4.41	4.0	21.3
17DB076	< 2	0.50	37.3	1.0	< 1	232	35.2	293	0.02	8.28	51.5	270	9.2	0.4	62.2	0.42	32.3	85	20.0	1.7	4.80	0.6	16.9
17DB077	< 2	0.22	7.0	0.1	1	39.6	9.1	86.5	0.06	6.03	10.9	158	2.2	0.2	142	0.36	5.4	36	4.50	0.9	4.00	0.1	17.2
17DB078	< 2	< 0.05	14.1	0.3	< 1	63.8	16.5	196	0.05	7.74	15.6	160	3.2	0.2	84.4	0.25	8.5	56	5.71	1.0	4.26	0.5	13.0
17DB079	8	0.50	9.6	0.2	< 1	22.1	5.0	61.1	0.10	5.28	8.9	101	3.0	0.5	126	0.19	4.0	27	2.30	0.4	6.81	0.1	26.3
17DB080	16	0.07	25.1	0.6	< 1	58.8	25.6	359	0.02	6.49	61.0	223	7.1	0.3	97.4	0.40	25.3	74	15.7	1.6	6.43	0.6	18.3
17DB081	< 2	< 0.05	11.1	0.1	< 1	19.7	12.7	109	0.03	5.66	9.6	116	2.7	0.3	59.0	0.23	7.1	51	19.0	0.3	5.79	1.9	24.2
17DB082	< 2	< 0.05	24.4	0.4	< 1	64.7	30.0	174	0.04	6.46	47.8	195	3.9	0.3	84.1	0.39	21.3	56	8.94	1.2	4.78	1.6	16.0
17DB083	< 2	< 0.05	28.5	0.4	< 1	74.9	36.9	196	0.02	6.52	63.8	227	4.4	0.3	36.5	0.54	30.1	57	12.4	1.2	4.58	2.7	17.5

Results **Activation Laboratories Ltd.** **Report: A17-08634**

Analyte Symbol	Au	Ag	Cu	Cd	Mo	Pb	Ni	Zn	S	Al	As	Ba	Be	Bi	Br	Ca	Co	Cr	Cs	Eu	Fe	Hf	Ga
Unit Symbol	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm
Lower Limit	2	0.05	0.2	0.1	1	0.5	0.5	0.5	0.01	0.01	0.5	1	0.1	0.1	0.5	0.01	0.1	1	0.05	0.2	0.01	0.1	0.1
Method Code	INAA	MULT I NAA/TD-ICP/TD-MS	MULT TD-ICP/TD-ICP-MS	MULT TD-ICP/TD-ICP-MS	TD-ICP	MULT TD-ICP/TD-ICP-MS	MULT I NAA/TD-ICP/TD-MS	MULT I NAA/TD-ICP/TD-MS	TD-ICP	TD-ICP	INAA	MULT I NAA/TD-ICP-MS	MULT TD-ICP/TD-ICP-MS	MULT TD-ICP/TD-ICP-MS	INAA	TD-ICP	MULT I NAA/TD-ICP-MS	MULT I NAA/TD-ICP-MS	MULT I NAA/TD-ICP-MS	INAA	INAA	MULT I NAA/TD-ICP-MS	TD-MS
17DB084	11	0.07	95.8	0.2	< 1	29.6	31.3	79.8	0.02	6.09	99.0	244	2.4	0.2	32.5	0.84	17.8	61	36.0	1.7	4.19	0.2	13.7
17DB085	< 2	0.35	8.5	0.2	< 1	38.6	8.0	45.3	0.06	4.84	76.3	138	1.7	0.2	105	0.17	3.6	48	5.11	0.6	5.19	0.2	25.4
17DB086	< 2	< 0.05	34.6	0.3	< 1	50.3	48.7	102	0.06	7.53	23.5	223	1.9	< 0.1	105	1.48	29.0	102	14.4	1.3	5.61	0.8	15.3
17DB087	2	0.11	46.7	0.2	< 1	22.8	25.5	98.7	0.02	6.65	17.0	932	1.5	2.1	5.8	1.97	20.9	55	1.05	1.2	4.88	0.7	16.2
17DB088	7	< 0.05	158	0.3	2	31.9	35.1	123	0.03	7.60	23.5	475	3.6	4.7	11.4	0.96	15.3	70	14.4	1.0	3.96	3.8	18.4
17DB089	< 2	< 0.05	19.2	< 0.1	< 1	37.1	29.2	171	0.02	6.44	9.1	249	1.7	0.2	58.1	0.24	14.8	56	7.46	0.9	3.72	3.8	13.5
17DB090	< 2	< 0.05	11.1	0.2	1	64.6	15.4	175	0.06	6.58	8.2	182	2.3	0.2	149	0.46	8.6	51	5.24	1.4	4.01	4.8	12.5
17DB091	< 2	< 0.05	10.3	0.1	< 1	20.5	12.0	83.8	0.05	6.05	5.8	189	1.6	0.2	135	0.24	6.4	58	6.20	1.2	5.08	0.9	15.7
17DB092	< 2	< 0.05	9.7	0.3	1	35.0	15.2	112	0.07	6.95	5.7	133	2.0	0.1	158	0.31	7.3	44	3.53	0.9	4.29	5.7	12.8
17DB093	< 2	< 0.05	10.0	< 0.1	< 1	42.0	15.7	72.6	0.02	4.77	6.3	213	1.6	0.2	36.6	0.52	7.2	57	6.66	0.9	3.16	0.1	16.6
17DB094	< 2	0.17	8.3	0.3	< 1	44.9	12.3	118	0.04	6.04	8.7	218	2.9	0.3	111	0.24	6.4	57	13.9	0.9	5.97	0.2	24.1
17DB095	4	< 0.05	31.7	0.1	< 1	24.3	31.6	109	< 0.01	6.42	11.2	348	2.1	0.2	5.0	0.28	15.6	64	5.55	1.2	3.92	2.5	16.1
17DB096	< 2	< 0.05	25.3	< 0.1	< 1	32.4	29.6	110	< 0.01	6.35	8.8	334	2.3	0.2	8.3	0.28	14.6	66	5.45	1.3	3.72	0.8	15.0
17DB097	< 2	< 0.05	36.0	0.2	< 1	27.5	29.3	106	< 0.01	5.80	8.8	296	1.9	0.2	10.1	0.42	18.0	63	4.50	1.4	3.76	1.7	13.2
17DB098	< 2	< 0.05	42.7	0.3	< 1	23.2	40.8	104	0.04	6.91	7.3	256	1.5	0.1	95.0	1.38	33.5	65	6.65	1.3	5.40	3.3	14.5
17DB099	< 2	< 0.05	30.5	0.2	< 1	27.5	42.0	105	0.02	6.13	7.3	270	2.7	0.1	46.9	1.10	26.9	60	6.53	1.5	5.35	3.4	14.7
17DB0100	5	< 0.05	46.0	0.2	< 1	17.4	53.8	102	0.01	7.41	5.8	301	1.6	< 0.1	26.9	2.85	38.2	80	6.91	1.7	7.14	4.1	17.6
17DB0101	< 2	< 0.05	15.1	0.5	2	54.7	20.6	102	0.06	6.59	21.9	218	4.3	0.2	104	0.16	8.5	50	12.9	0.8	3.90	5.9	31.4
17DB0102	< 2	< 0.05	12.5	0.5	2	64.1	16.5	113	0.07	6.88	28.9	176	5.0	0.2	126	0.14	7.0	42	18.5	0.4	4.89	7.0	40.0
17DB0103	< 2	< 0.05	29.1	0.6	< 1	67.4	22.5	128	< 0.01	5.55	14.5	287	4.9	0.2	3.1	0.25	13.6	65	16.5	1.6	3.39	5.5	13.3
17DB0104	< 2	< 0.05	15.4	0.2	< 1	28.0	25.6	119	0.01	6.34	10.7	286	5.2	0.2	20.3	0.19	14.5	65	18.5	1.4	3.31	0.4	15.7
17DB0105	6	0.07	32.3	0.6	1	68.6	21.7	130	0.01	5.31	15.2	204	2.9	0.2	38.5	0.44	16.4	47	11.8	1.1	3.30	0.2	11.5
17DB0106	< 2	< 0.05	34.6	0.4	< 1	55.9	27.5	189	< 0.01	6.29	8.3	254	2.4	0.2	12.1	0.30	17.1	63	8.99	1.2	3.85	0.9	15.1
17DB0107	< 2	< 0.05	27.5	0.3	< 1	40.8	24.9	109	< 0.01	5.66	14.6	267	3.1	0.2	14.4	0.61	17.3	70	23.1	1.3	3.84	3.2	13.9
17DB0108	< 2	< 0.05	15.1	0.4	1	42.7	19.7	132	0.06	6.59	31.3	148	3.7	0.2	106	0.41	16.3	51	14.4	1.2	3.80	4.8	12.7
17DB0109	< 2	< 0.05	8.8	0.2	< 1	25.1	7.6	61.0	0.04	5.14	12.9	138	2.0	0.2	95.9	0.19	4.2	45	5.57	0.6	3.87	4.7	17.5
17DB0110	< 2	< 0.05	33.3	0.1	< 1	46.0	37.6	165	0.01	7.15	10.9	303	4.6	0.3	23.8	1.12	31.4	58	21.6	1.3	5.77	7.3	21.0
17DB0111	< 2	< 0.05	14.5	0.2	< 1	33.5	17.7	76.8	0.06	6.39	15.4	147	2.3	0.1	167	0.59	9.0	48	6.10	1.2	4.38	4.3	13.6
17DB0112	< 2	< 0.05	11.9	0.3	< 1	52.1	14.3	95.5	0.10	6.22	16.9	101	1.7	0.2	153	0.23	6.6	47	5.27	0.8	5.28	3.4	13.9
17DB0113	< 2	< 0.05	14.4	0.4	< 1	40.1	27.8	118	0.02	5.91	9.3	256	3.2	0.3	14.0	0.28	15.5	58	32.9	1.1	3.03	7.2	17.5
17DB0114	< 2	0.37	8.8	0.9	< 1	54.3	12.4	177	0.04	6.16	68.4	208	9.0	0.2	75.7	0.18	6.4	46	49.5	1.2	4.06	0.3	32.2
17DB0115	28	< 0.05	47.4	0.3	< 1	24.5	23.2	96.7	0.03	6.69	18.3	758	1.5	1.8	6.8	1.96	25.8	58	1.00	1.7	4.92	1.7	15.2
17DB0116	< 2	< 0.05	21.8	0.2	< 1	52.6	30.4	140	0.02	5.52	20.4	262	2.1	0.2	24.5	0.89	21.9	73	17.9	1.4	5.91	0.2	14.9
17DB0117	< 2	< 0.05	14.3	0.2	< 1	48.1	18.2	149	0.05	5.97	16.3	191	2.8	0.2	128	0.43	9.5	70	6.20	1.5	4.92	0.7	13.9
17DB0118	< 2	< 0.05	31.3	0.2	< 1	20.1	36.6	90.3	0.02	7.05	10.3	304	2.0	0.2	42.2	0.28	24.6	72	19.0	1.2	4.55	2.2	15.6
17DB0119	< 2	< 0.05	32.4	0.1	< 1	19.5	34.4	83.1	0.02	6.74	8.6	284	1.9	0.2	37.6	0.45	25.4	60	14.2	1.2	3.95	3.2	14.4
17DB0120	< 2	0.05	18.6	0.2	< 1	20.0	18.1	86.7	0.08	5.27	8.4	193	1.1	0.2	109	0.56	17.8	59	6.47	0.9	7.63	0.5	19.6
17DB0121	< 2	< 0.05	40.8	< 0.1	< 1	27.1	41.8	98.7	0.01	7.13	6.1	382	2.0	0.2	14.7	1.14	25.4	67	8.13	1.4	5.20	3.2	16.1
17DB0122	4	0.08	26.7	0.2	< 1	27.3	33.8	95.5	0.04	6.48	8.4	264	1.6	0.2	69.3	0.76	23.6	64	5.44	1.2	5.11	0.2	14.5

Results **Activation Laboratories Ltd.** **Report: A17-08634**

Analyte Symbol	Au	Ag	Cu	Cd	Mo	Pb	Ni	Zn	S	Al	As	Ba	Be	Bi	Br	Ca	Co	Cr	Cs	Eu	Fe	Hf	Ga
Unit Symbol	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm
Lower Limit	2	0.05	0.2	0.1	1	0.5	0.5	0.5	0.01	0.01	0.5	1	0.1	0.1	0.5	0.01	0.1	1	0.05	0.2	0.01	0.1	0.1
Method Code	INAA	MULT I NAA/TD-ICP/TD-MS	MULT TD-ICP/TD-ICP-MS	MULT TD-ICP/TD-ICP-MS	TD-ICP	MULT TD-ICP/TD-ICP-MS	MULT I NAA/TD-ICP/TD-MS	MULT I NAA/TD-ICP/TD-MS	TD-ICP	TD-ICP	INAA	MULT I NAA/TD-ICP-MS	MULT TD-ICP/TD-ICP-MS	MULT TD-ICP/TD-ICP-MS	INAA	TD-ICP	MULT I NAA/TD-ICP-MS	MULT I NAA/TD-ICP-MS	MULT I NAA/TD-ICP-MS	INAA	INAA	MULT I NAA/TD-ICP-MS	TD-MS
17DB0123	< 2	< 0.05	29.1	0.2	< 1	28.8	31.7	113	0.01	7.15	11.3	332	2.1	0.3	35.2	0.20	17.7	73	7.01	1.6	4.52	0.5	16.5
17DB0124	< 2	< 0.05	21.3	0.1	< 1	29.2	29.0	135	0.01	5.92	9.7	322	1.9	0.2	11.2	0.37	14.7	57	6.70	1.3	3.37	0.4	13.9
17DB0125	< 2	0.10	158	0.3	< 1	32.4	34.1	125	0.03	7.80	25.8	464	3.7	4.8	11.1	0.98	18.2	71	11.6	1.1	3.73	1.8	18.3

Results **Activation Laboratories Ltd.** **Report: A17-08634**

Analyte Symbol	Ge	Hg	In	Ir	K	Li	Mg	Mn	Mo	Na	P	Rb	Re	Sb	Sc	Se	Sn	Sr	Ta	Te	Tb	Ti	Th
Unit Symbol	ppm	ppb	ppm	ppb	%	ppm	%	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm
Lower Limit	0.1	10	0.1	5	0.01	0.5	0.01	1	0.1	0.01	0.001	0.2	0.001	0.1	0.1	0.1	1	0.2	0.1	0.1	0.5	0.01	0.1
Method Code	TD-MS	TD-MS	TD-MS	INAA	TD-ICP	TD-MS	TD-ICP	TD-ICP	TD-MS	INAA	TD-ICP	MULTI NAA/TD-ICP-MS	TD-MS	INAA	INAA	MULTI NAA/TD-ICP-MS	TD-MS	TD-MS	MULTI NAA/TD-ICP-MS	TD-MS	INAA	TD-ICP	MULTI NAA/TD-ICP-MS
17DB045	< 0.1	100	< 0.1	< 5	1.32	39.0	0.92	965	0.2	1.21	0.071	79.6	< 0.001	0.9	11.5	< 0.1	< 1	104	< 0.1	< 0.1	< 0.5	0.34	13.9
17DB046	< 0.1	150	0.2	< 5	1.17	11.0	0.16	904	3.0	0.76	0.132	61.9	< 0.001	1.0	6.7	< 0.1	2	45.4	0.3	< 0.1	1.3	0.52	18.4
17DB047	< 0.1	90	< 0.1	< 5	1.34	44.0	0.48	766	0.3	1.04	0.069	87.0	< 0.001	0.9	8.4	< 0.1	< 1	70.6	< 0.1	< 0.1	1.6	0.42	14.6
17DB048	< 0.1	90	< 0.1	< 5	1.28	40.8	0.44	670	0.3	1.08	0.056	83.6	< 0.001	0.9	8.1	< 0.1	< 1	70.0	< 0.1	< 0.1	0.7	0.41	13.1
17DB049	< 0.1	90	< 0.1	< 5	1.23	30.7	0.45	809	0.2	1.00	0.071	67.2	< 0.001	1.3	8.4	< 0.1	1	64.0	< 0.1	< 0.1	< 0.5	0.37	15.4
17DB050	< 0.1	90	< 0.1	< 5	1.54	15.6	1.28	1480	0.1	2.05	0.085	40.3	< 0.001	7.1	12.1	< 0.1	< 1	274	< 0.1	< 0.1	< 0.5	0.34	7.1
17DB051	< 0.1	150	0.2	< 5	0.84	24.5	0.45	609	3.6	0.87	0.104	54.2	< 0.001	0.6	8.4	< 0.1	4	58.5	0.1	< 0.1	1.6	0.51	19.6
17DB052	< 0.1	130	0.1	< 5	1.07	44.4	0.86	650	0.1	0.97	0.055	68.6	< 0.001	1.0	9.3	< 0.1	< 1	71.3	< 0.1	< 0.1	1.4	0.40	10.9
17DB053	< 0.1	190	< 0.1	< 5	0.75	42.4	0.54	479	9.4	0.79	0.068	41.5	< 0.001	1.1	10.1	1.1	3	46.5	0.5	< 0.1	< 0.5	0.61	11.6
17DB054	< 0.1	50	< 0.1	< 5	1.46	34.6	0.81	965	< 0.1	1.49	0.056	74.2	< 0.001	1.0	10.6	< 0.1	< 1	94.4	< 0.1	< 0.1	0.7	0.28	12.2
17DB055	< 0.1	90	< 0.1	< 5	1.42	31.5	0.74	610	0.5	1.38	0.048	72.7	< 0.001	0.8	10.9	< 0.1	< 1	89.7	< 0.1	< 0.1	< 0.5	0.38	12.7
17DB056	< 0.1	100	< 0.1	< 5	1.14	37.7	0.50	568	0.5	0.98	0.075	67.4	< 0.001	< 0.1	9.1	< 0.1	< 1	65.8	< 0.1	< 0.1	0.8	0.27	17.0
17DB057	< 0.1	70	< 0.1	< 5	2.48	47.0	1.08	765	0.3	1.58	0.058	155	< 0.001	0.8	10.6	< 0.1	< 1	142	< 0.1	< 0.1	< 0.5	0.16	20.0
17DB058	< 0.1	30	< 0.1	< 5	1.60	26.8	0.64	875	0.2	1.82	0.033	89.7	< 0.001	0.8	9.3	< 0.1	< 1	85.7	< 0.1	< 0.1	0.9	0.23	17.6
17DB059	< 0.1	150	0.1	< 5	0.86	35.3	0.55	611	1.3	0.78	0.096	54.8	< 0.001	0.6	9.4	< 0.1	1	60.3	0.1	< 0.1	< 0.5	0.40	13.8
17DB060	< 0.1	160	0.1	< 5	1.26	37.8	0.69	675	1.4	1.15	0.092	72.0	< 0.001	0.7	11.2	< 0.1	< 1	77.8	0.1	< 0.1	< 0.5	0.41	18.0
17DB061	< 0.1	80	0.1	< 5	1.69	33.2	1.16	1190	0.1	1.93	0.077	102	< 0.001	1.0	18.0	< 0.1	< 1	152	< 0.1	< 0.1	1.0	0.23	12.9
17DB062	< 0.1	130	< 0.1	< 5	1.24	63.8	0.52	445	1.6	0.80	0.061	87.7	< 0.001	0.7	9.4	< 0.1	1	54.4	0.1	< 0.1	< 0.5	0.41	13.3
17DB063	< 0.1	30	0.1	< 5	1.60	52.8	1.01	1550	< 0.1	1.21	0.101	112	< 0.001	1.9	16.8	< 0.1	1	139	< 0.1	< 0.1	1.6	0.30	14.5
17DB064	< 0.1	100	< 0.1	< 5	0.79	28.9	0.76	934	2.1	1.15	0.113	45.6	< 0.001	0.9	13.0	2.7	2	67.2	< 0.1	< 0.1	0.8	0.60	9.1
17DB065	< 0.1	70	0.1	< 5	1.64	27.0	0.68	958	0.4	1.44	0.036	114	< 0.001	1.0	9.3	< 0.1	1	87.6	< 0.1	< 0.1	1.9	0.42	14.6
17DB066	< 0.1	150	0.1	< 5	1.35	37.1	0.57	710	4.5	1.28	0.086	78.3	< 0.001	1.0	10.4	< 0.1	< 1	73.6	0.4	< 0.1	< 0.5	0.34	14.5
17DB067	< 0.1	40	0.1	< 5	1.81	24.5	0.76	941	0.2	1.50	0.052	111	< 0.001	0.8	11.6	< 0.1	< 1	95.4	< 0.1	< 0.1	0.9	0.23	14.6
17DB068	< 0.1	60	0.1	< 5	1.95	24.4	0.82	926	0.1	1.65	0.052	122	< 0.001	0.9	12.8	< 0.1	1	104	< 0.1	< 0.1	1.9	0.15	13.1
17DB069	< 0.1	20	< 0.1	< 5	1.68	30.6	0.84	1070	0.1	1.60	0.053	109	< 0.001	1.1	11.9	< 0.1	< 1	107	< 0.1	< 0.1	0.6	0.12	11.1
17DB070	< 0.1	80	0.1	< 5	1.37	33.8	0.58	679	0.2	1.22	0.051	84.8	< 0.001	0.8	9.8	< 0.1	< 1	75.4	< 0.1	< 0.1	0.7	0.15	12.9
17DB071	< 0.1	80	0.1	< 5	1.14	32.5	0.63	801	0.2	1.06	0.068	73.8	< 0.001	1.0	9.8	< 0.1	< 1	85.0	< 0.1	< 0.1	1.6	0.18	11.6
17DB072	< 0.1	20	< 0.1	< 5	1.46	47.8	0.65	779	< 0.1	1.44	0.036	80.4	0.001	1.6	14.1	< 0.1	< 1	84.1	< 0.1	< 0.1	1.5	0.23	13.9
17DB073	< 0.1	90	< 0.1	< 5	1.05	27.8	0.23	521	0.2	0.95	0.029	65.2	< 0.001	0.8	6.7	< 0.1	< 1	59.8	< 0.1	< 0.1	< 0.5	0.20	11.4
17DB074	< 0.1	100	0.2	< 5	0.99	60.5	1.04	1640	16.3	1.17	0.104	55.0	< 0.001	1.5	16.8	< 0.1	4	106	0.7	< 0.1	4.4	0.69	14.4
17DB075	< 0.1	30	< 0.1	< 5	1.71	74.2	1.04	817	0.4	0.83	0.045	118	< 0.001	1.4	13.8	< 0.1	< 1	106	< 0.1	< 0.1	0.9	0.32	13.3
17DB076	< 0.1	180	0.2	< 5	1.35	50.9	0.90	1760	2.3	0.92	0.089	96.1	< 0.001	1.5	15.1	< 0.1	< 1	73.5	0.2	< 0.1	1.4	0.34	25.4
17DB077	< 0.1	140	< 0.1	< 5	1.02	23.0	0.31	562	0.8	0.79	0.088	69.5	< 0.001	1.0	8.4	< 0.1	1	50.3	< 0.1	< 0.1	0.6	0.32	14.0
17DB078	< 0.1	150	0.1	< 5	0.89	44.5	0.46	490	0.1	0.79	0.062	59.8	0.002	0.8	9.4	< 0.1	< 1	48.9	< 0.1	< 0.1	0.6	0.16	14.3
17DB079	< 0.1	120	0.1	< 5	0.50	13.9	0.12	361	0.1	0.61	0.094	30.5	< 0.001	0.9	8.9	< 0.1	2	30.7	< 0.1	< 0.1	0.9	0.19	12.9
17DB080	< 0.1	70	0.1	< 5	1.38	59.9	0.92	849	0.2	1.25	0.090	103	< 0.001	2.2	15.6	< 0.1	< 1	58.5	< 0.1	< 0.1	1.8	0.18	16.6
17DB081	< 0.1	50	0.1	< 5	0.86	54.3	0.46	358	0.2	0.69	0.041	85.9	< 0.001	1.2	9.4	< 0.1	2	46.7	< 0.1	< 0.1	< 0.5	0.13	14.3
17DB082	< 0.1	70	< 0.1	< 5	1.37	49.1	0.85	766	0.2	1.25	0.069	102	< 0.001	1.6	11.8	< 0.1	< 1	62.4	< 0.1	< 0.1	1.3	0.15	15.9
17DB083	< 0.1	50	0.1	< 5	1.66	52.2	1.03	1060	0.2	1.37	0.069	122	< 0.001	2.1	12.7	< 0.1	1	76.8	< 0.1	< 0.1	< 0.5	0.24	17.9
17DB084	< 0.1	90	< 0.1	< 5	1.23	125	0.78	1130	0.1	1.29	0.068	69.6	< 0.001	3.2	18.1	< 0.1	< 1	102	< 0.1	< 0.1	1.9	0.33	10.8

Results **Activation Laboratories Ltd.** **Report: A17-08634**

Analyte Symbol	Ge	Hg	In	Ir	K	Li	Mg	Mn	Nb	Na	P	Rb	Re	Sb	Sc	Se	Sn	Sr	Ta	Te	Tb	Ti	Th
Unit Symbol	ppm	ppb	ppm	ppb	%	ppm	%	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm
Lower Limit	0.1	10	0.1	5	0.01	0.5	0.01	1	0.1	0.01	0.001	0.2	0.001	0.1	0.1	0.1	1	0.2	0.1	0.1	0.5	0.01	0.1
Method Code	TD-MS	TD-MS	TD-MS	INAA	TD-ICP	TD-MS	TD-ICP	TD-ICP	TD-MS	INAA	TD-ICP	MULTI NAA/TD-ICP-MS	TD-MS	INAA	INAA	MULTI NAA/TD-ICP-MS	TD-MS	TD-MS	MULTI NAA/TD-ICP-MS	TD-MS	INAA	TD-ICP	MULTI NAA/TD-ICP-MS
17DB085	< 0.1	190	< 0.1	< 5	0.97	21.1	0.23	354	0.7	0.66	0.076	67.8	< 0.001	1.6	5.7	< 0.1	< 1	41.9	< 0.1	< 0.1	0.8	0.25	13.6
17DB086	< 0.1	150	< 0.1	< 5	0.75	34.4	1.26	782	0.2	1.11	0.136	49.4	< 0.001	1.3	17.6	< 0.1	1	111	< 0.1	< 0.1	< 0.5	0.45	6.3
17DB087	< 0.1	80	< 0.1	< 5	1.76	15.4	1.28	1470	< 0.1	2.17	0.073	48.7	< 0.001	7.2	12.3	< 0.1	< 1	284	< 0.1	< 0.1	0.6	0.22	5.9
17DB088	< 0.1	50	< 0.1	< 5	2.57	47.8	1.10	809	0.4	1.77	0.067	150	< 0.001	0.9	11.0	< 0.1	1	134	< 0.1	< 0.1	< 0.5	0.26	18.7
17DB089	< 0.1	30	< 0.1	< 5	1.34	50.8	0.67	482	0.3	1.02	0.041	82.7	< 0.001	1.1	9.4	< 0.1	< 1	71.8	< 0.1	< 0.1	< 0.5	0.15	13.2
17DB090	< 0.1	30	< 0.1	< 5	1.00	34.9	0.44	539	0.5	0.94	0.102	60.1	< 0.001	1.1	10.5	< 0.1	2	62.3	< 0.1	< 0.1	1.4	0.44	10.4
17DB091	< 0.1	70	< 0.1	< 5	0.88	38.4	0.35	550	0.2	0.78	0.093	54.7	< 0.001	0.5	10.2	< 0.1	< 1	55.2	< 0.1	< 0.1	< 0.5	0.26	10.3
17DB092	< 0.1	160	0.1	< 5	0.77	28.8	0.41	479	12.4	0.77	0.102	37.6	< 0.001	0.6	7.9	0.2	2	47.3	0.8	< 0.1	< 0.5	0.63	10.1
17DB093	< 0.1	60	< 0.1	< 5	1.29	28.1	0.58	592	0.1	1.08	0.026	65.5	< 0.001	0.6	8.1	< 0.1	< 1	78.2	< 0.1	< 0.1	1.2	0.30	11.8
17DB094	< 0.1	120	0.1	< 5	1.24	38.6	0.42	593	0.7	0.55	0.049	102	< 0.001	1.3	8.5	< 0.1	< 1	37.4	< 0.1	< 0.1	1.0	0.25	14.6
17DB095	< 0.1	20	< 0.1	< 5	1.45	53.3	0.74	648	< 0.1	1.13	0.027	84.5	< 0.001	0.8	12.4	< 0.1	< 1	98.7	< 0.1	< 0.1	< 0.5	0.14	12.1
17DB096	< 0.1	30	< 0.1	< 5	1.63	51.2	0.76	638	0.1	1.12	0.017	92.9	< 0.001	0.7	11.6	< 0.1	< 1	89.7	< 0.1	< 0.1	< 0.5	0.10	11.6
17DB097	< 0.1	20	< 0.1	< 5	1.52	40.0	0.71	1120	0.2	1.26	0.047	83.1	< 0.001	0.9	10.9	< 0.1	< 1	87.7	< 0.1	< 0.1	0.7	0.12	12.8
17DB098	< 0.1	50	< 0.1	< 5	0.90	30.8	1.39	1040	0.1	1.28	0.094	47.3	0.002	0.7	18.6	< 0.1	< 1	106	< 0.1	< 0.1	< 0.5	0.33	7.3
17DB099	< 0.1	10	< 0.1	< 5	1.17	43.1	1.45	1000	0.2	1.30	0.079	61.6	< 0.001	0.7	15.0	< 0.1	< 1	112	< 0.1	< 0.1	< 0.5	0.37	7.3
17DB0100	< 0.1	< 10	< 0.1	< 5	0.89	31.6	2.46	1520	3.7	1.35	0.148	44.0	< 0.001	0.2	25.3	< 0.1	< 1	141	< 0.1	< 0.1	< 0.5	0.75	4.7
17DB0101	< 0.1	20	0.1	< 5	1.21	39.8	0.53	408	12.4	0.79	0.098	92.9	< 0.001	1.0	7.8	< 0.1	4	53.8	0.6	< 0.1	1.8	0.52	16.4
17DB0102	< 0.1	270	0.1	< 5	1.09	41.6	0.45	373	37.9	0.64	0.112	74.5	< 0.001	1.0	7.1	< 0.1	5	40.0	2.7	< 0.1	0.8	0.51	17.8
17DB0103	< 0.1	30	< 0.1	< 5	1.39	56.7	0.63	688	0.2	1.46	0.023	91.9	< 0.001	1.4	9.6	< 0.1	< 1	78.0	< 0.1	< 0.1	1.9	0.28	14.1
17DB0104	< 0.1	70	< 0.1	< 5	1.68	55.0	0.71	684	0.2	1.28	0.031	120	< 0.001	1.2	9.9	< 0.1	< 1	75.9	< 0.1	< 0.1	1.1	0.27	13.5
17DB0105	< 0.1	50	< 0.1	< 5	1.12	40.3	0.58	726	0.1	1.54	0.052	72.1	< 0.001	1.2	8.5	< 0.1	< 1	70.5	< 0.1	< 0.1	1.2	0.23	12.6
17DB0106	< 0.1	30	< 0.1	< 5	1.39	53.5	0.80	806	0.1	1.27	0.021	89.6	< 0.001	1.2	10.5	< 0.1	< 1	75.6	< 0.1	< 0.1	0.8	0.11	11.5
17DB0107	< 0.1	30	< 0.1	< 5	1.45	61.7	0.79	953	< 0.1	1.41	0.051	90.8	< 0.001	1.0	10.0	< 0.1	< 1	89.5	< 0.1	< 0.1	1.4	0.13	13.3
17DB0108	< 0.1	40	< 0.1	< 5	0.86	34.4	0.52	637	0.4	0.97	0.112	56.2	< 0.001	1.5	10.1	< 0.1	2	52.9	< 0.1	< 0.1	0.7	0.44	14.8
17DB0109	< 0.1	< 10	< 0.1	< 5	0.86	28.1	0.23	448	0.2	0.85	0.060	55.7	< 0.001	1.0	6.8	< 0.1	1	46.7	< 0.1	< 0.1	< 0.5	0.25	12.6
17DB0110	< 0.1	20	0.1	< 5	1.79	46.0	1.44	1520	3.0	1.63	0.082	133	< 0.001	1.5	14.8	< 0.1	4	93.5	< 0.1	< 0.1	1.5	0.49	14.1
17DB0111	< 0.1	10	< 0.1	< 5	0.91	27.6	0.60	582	0.3	1.09	0.079	52.6	< 0.001	0.9	11.5	0.1	1	62.5	< 0.1	< 0.1	< 0.5	0.39	10.7
17DB0112	< 0.1	10	0.1	< 5	0.51	26.9	0.32	512	0.2	0.55	0.080	32.6	< 0.001	1.4	9.3	0.8	2	31.9	< 0.1	< 0.1	< 0.5	0.38	8.1
17DB0113	< 0.1	30	< 0.1	< 5	1.06	54.9	0.77	494	4.2	1.31	0.031	82.0	< 0.001	1.1	9.9	< 0.1	2	70.9	0.1	< 0.1	< 0.5	0.43	13.1
17DB0114	< 0.1	100	0.1	< 5	1.74	49.5	0.41	415	10.1	0.82	0.097	164	< 0.001	9.7	7.9	< 0.1	< 1	44.6	0.9	< 0.1	3.0	0.47	21.7
17DB0115	< 0.1	90	< 0.1	< 5	1.68	15.6	1.28	1460	< 0.1	2.18	0.079	44.4	< 0.001	7.2	13.2	< 0.1	< 1	275	< 0.1	< 0.1	1.0	0.20	6.1
17DB0116	< 0.1	50	< 0.1	< 5	1.16	43.7	1.08	1010	< 0.1	1.39	0.061	75.5	< 0.001	2.1	13.7	< 0.1	< 1	99.7	< 0.1	< 0.1	< 0.5	0.14	10.9
17DB0117	< 0.1	110	< 0.1	< 5	0.91	35.4	0.59	621	0.1	0.97	0.091	55.1	< 0.001	2.0	11.3	< 0.1	< 1	64.5	< 0.1	< 0.1	1.0	0.19	10.6
17DB0118	< 0.1	40	< 0.1	< 5	1.41	52.0	0.97	659	< 0.1	1.02	0.048	87.6	< 0.001	0.7	12.4	< 0.1	< 1	77.9	< 0.1	< 0.1	0.5	0.15	9.6
17DB0119	< 0.1	30	< 0.1	< 5	1.35	46.3	0.94	810	0.1	1.08	0.068	78.2	< 0.001	0.7	12.1	< 0.1	< 1	81.7	< 0.1	< 0.1	< 0.5	0.16	9.9
17DB0120	< 0.1	50	0.1	< 5	0.68	33.0	0.70	968	< 0.1	0.75	0.129	40.4	< 0.001	1.3	12.1	< 0.1	< 1	67.9	< 0.1	< 0.1	< 0.5	0.29	7.4
17DB0121	< 0.1	20	< 0.1	< 5	1.37	41.4	1.39	1010	< 0.1	1.22	0.085	72.4	< 0.001	1.0	17.2	< 0.1	< 1	108	< 0.1	< 0.1	1.5	0.21	8.5
17DB0122	< 0.1	110	< 0.1	< 5	1.06	36.6	1.08	795	0.3	1.06	0.107	58.8	< 0.001	1.1	13.6	< 0.1	< 1	80.4	< 0.1	< 0.1	< 0.5	0.27	9.4
17DB0123	< 0.1	50	< 0.1	< 5	1.69	61.3	0.72	761	< 0.1	0.96	0.035	102	< 0.001	0.8	12.5	< 0.1	< 1	83.6	< 0.1	< 0.1	< 0.5	0.17	15.6
17DB0124	< 0.1	20	< 0.1	< 5	1.64	57.5	0.75	643	0.1	1.06	0.023	94.0	< 0.001	0.9	9.8	< 0.1	< 1	88.8	< 0.1	< 0.1	< 0.5	0.16	12.2

Results **Activation Laboratories Ltd.** **Report: A17-08634**

Analyte Symbol	Ge	Hg	In	Ir	K	Li	Mg	Mn	Nb	Na	P	Rb	Re	Sb	Sc	Se	Sn	Sr	Ta	Te	Tb	Ti	Th
Unit Symbol	ppm	ppb	ppm	ppb	%	ppm	%	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm
Lower Limit	0.1	10	0.1	5	0.01	0.5	0.01	1	0.1	0.01	0.001	0.2	0.001	0.1	0.1	0.1	1	0.2	0.1	0.1	0.5	0.01	0.1
Method Code	TD-MS	TD-MS	TD-MS	INAA	TD-ICP	TD-MS	TD-ICP	TD-ICP	TD-MS	INAA	TD-ICP	MULTI NAA/TD-ICP-MS	TD-MS	INAA	INAA	MULTI NAA/TD-ICP-MS	TD-MS	TD-MS	MULTI NAA/TD-ICP-MS	TD-MS	INAA	TD-ICP	MULTI NAA/TD-ICP-MS
17DB0125	< 0.1	50	0.1	< 5	2.49	48.2	1.11	799	0.2	1.63	0.060	154	< 0.001	1.4	10.9	< 0.1	< 1	144	< 0.1	< 0.1	0.8	0.15	19.8

Results **Activation Laboratories Ltd.** **Report: A17-08634**

Analyte Symbol	Tl	V	U	W	Y	Zr	La	La	Ce	Ce	Pr	Nd	Nd	Sm	Sm	Eu	Gd	Dy	Tb	Ho	Er	Tm	Yb
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	0.05	2	0.1	1	0.1	1	0.1	0.5	0.1	3	0.1	0.1	5	0.1	0.1	0.05	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Method Code	TD-MS	TD-ICP	MULT I NAA/T D-ICP-MS	INAA	TD-MS	TD-MS	TD-MS	INAA	TD-MS	INAA	TD-MS	TD-MS	INAA	TD-MS	INAA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
17DB045	0.63	66	3.9	< 1	35.9	67	40.6	45.5	87.8	118	9.2	38.8	45	7.6	8.3	1.16	7.4	7.6	1.1	1.5	4.3	0.6	4.2
17DB046	0.66	92	3.7	< 1	30.4	83	25.8	27.7	55.0	70	6.2	26.9	41	5.8	6.1	0.66	6.4	6.6	0.9	1.3	3.9	0.6	4.2
17DB047	0.68	66	3.4	< 1	43.2	26	38.1	41.3	79.3	109	9.7	41.2	48	9.1	9.6	1.04	9.1	9.9	1.4	2.0	5.8	0.9	6.2
17DB048	0.63	60	3.4	< 1	43.4	20	38.6	41.5	77.1	104	9.5	41.4	57	9.1	9.6	1.01	8.9	9.5	1.4	1.9	5.7	0.8	6.0
17DB049	0.59	63	3.3	< 1	26.5	175	33.7	36.7	73.6	94	7.5	32.0	49	5.9	6.5	0.90	5.7	5.5	0.8	1.1	3.2	0.5	3.5
17DB050	0.34	75	1.7	< 1	24.4	179	26.0	29.0	62.0	78	6.3	28.4	30	5.3	5.8	1.33	5.3	4.9	0.7	1.0	2.8	0.4	2.9
17DB051	0.48	70	4.2	< 1	46.1	230	40.7	43.7	101	133	9.9	42.6	69	9.0	10.0	1.02	10.2	10.6	1.5	2.1	5.7	0.8	5.4
17DB052	0.87	83	2.5	< 1	25.6	208	40.3	42.5	94.4	125	9.1	37.2	46	7.6	7.6	0.93	6.8	6.2	1.0	1.1	3.1	0.5	3.0
17DB053	0.54	97	2.4	< 1	18.8	198	21.1	26.7	53.6	78	4.6	19.8	41	3.8	5.1	0.70	4.2	4.1	0.6	0.8	2.3	0.3	2.4
17DB054	0.62	53	2.6	< 1	27.3	156	32.8	36.3	75.4	97	7.8	32.8	24	6.4	6.9	1.13	6.3	5.8	0.9	1.1	3.2	0.5	3.2
17DB055	0.72	58	2.4	< 1	28.0	14	33.4	33.8	86.5	105	7.6	32.3	39	6.3	6.7	1.07	6.3	6.3	0.9	1.2	3.3	0.5	3.3
17DB056	0.62	52	4.5	< 1	31.8	13	35.6	34.8	93.8	107	7.5	36.0	57	6.9	7.3	1.07	7.2	7.4	1.1	1.4	3.9	0.6	3.8
17DB057	0.92	42	4.6	< 1	20.0	63	46.0	43.5	93.6	114	9.7	40.7	53	7.1	6.9	1.16	6.2	4.6	0.8	0.8	2.2	0.3	2.1
17DB058	0.67	33	3.8	< 1	35.6	17	37.5	42.3	94.8	106	8.8	37.1	40	7.2	7.6	1.09	7.3	7.0	1.0	1.4	4.2	0.7	4.6
17DB059	0.75	80	2.7	< 1	27.9	19	28.7	28.3	75.4	93	6.5	28.0	45	5.5	5.8	0.89	5.8	6.1	0.9	1.2	3.3	0.5	3.3
17DB060	0.73	82	3.1	< 1	38.4	7	34.1	35.5	90.2	109	8.2	35.3	63	7.7	7.9	1.16	8.0	8.6	1.2	1.6	4.6	0.7	4.3
17DB061	1.20	60	2.9	< 1	43.0	210	39.9	45.3	101	118	9.5	40.4	31	8.6	9.4	1.50	8.9	9.2	1.4	1.8	5.0	0.7	4.7
17DB062	0.85	62	2.7	< 1	25.9	33	34.6	37.3	75.1	100	7.7	32.3	49	5.9	6.7	0.99	5.9	5.7	0.9	1.1	3.2	0.5	3.2
17DB063	1.72	90	3.8	< 1	46.5	46	39.5	39.1	137	158	9.7	41.4	33	9.0	8.6	1.68	9.3	9.5	1.4	1.9	5.3	0.8	5.2
17DB064	1.25	106	2.1	< 1	25.0	238	25.5	29.9	63.3	89	6.1	26.8	39	5.9	6.8	0.97	5.9	5.9	0.8	1.1	3.0	0.4	3.0
17DB065	0.98	58	3.4	< 1	60.4	13	50.8	48.6	122	144	12.7	53.9	45	11.4	10.9	1.20	11.6	12.4	1.8	2.4	7.0	1.0	6.8
17DB066	0.72	52	3.2	< 1	38.8	11	45.7	53.9	114	141	10.7	46.1	51	9.3	11.3	1.12	9.7	9.0	1.4	1.6	4.5	0.6	4.2
17DB067	0.86	44	3.2	< 1	54.0	7	49.4	46.2	125	142	12.3	52.3	49	10.9	10.6	1.24	11.4	11.4	1.7	2.2	6.3	0.9	6.0
17DB068	0.95	36	3.3	< 1	62.2	20	52.8	50.0	135	155	13.2	57.0	50	12.0	11.7	1.31	12.6	13.0	1.9	2.5	7.2	1.0	6.8
17DB069	0.89	32	2.6	< 1	38.8	31	36.6	35.0	103	121	8.7	38.3	33	7.5	7.7	1.14	7.9	8.2	1.2	1.6	4.6	0.7	4.4
17DB070	0.72	40	2.8	< 1	40.5	20	43.2	43.0	107	137	10.1	42.2	44	8.8	9.1	1.01	8.5	8.4	1.2	1.7	4.8	0.7	4.8
17DB071	0.65	46	2.4	< 1	35.1	24	36.0	36.2	85.4	108	8.5	36.6	41	7.6	7.8	1.04	8.2	7.8	1.2	1.5	4.0	0.6	3.8
17DB072	0.63	37	3.4	< 1	54.0	10	48.6	60.7	125	160	12.6	56.6	63	11.9	15.6	1.54	12.6	12.3	1.8	2.3	6.2	0.9	5.6
17DB073	0.73	35	2.6	< 1	26.2	27	31.3	30.1	65.3	83	6.9	28.3	23	5.4	5.6	0.79	5.3	5.2	0.7	1.0	3.1	0.5	3.4
17DB074	0.88	126	2.8	< 1	88.6	418	50.0	77.9	179	321	15.0	70.1	93	18.0	22.8	1.90	20.8	24.2	3.5	4.2	10.7	1.5	9.0
17DB075	0.74	74	2.7	< 1	23.4	149	43.1	40.8	83.0	98	9.4	39.4	49	6.8	6.9	1.38	6.3	4.9	0.8	0.9	2.6	0.4	2.6
17DB076	1.12	91	3.4	< 1	53.3	40	61.7	62.9	836	1080	14.1	64.0	57	13.8	13.9	1.71	16.8	13.2	2.1	2.3	6.0	0.8	5.0
17DB077	0.72	59	2.7	< 1	30.3	14	29.4	30.4	62.4	87	6.7	28.0	55	5.7	6.0	0.88	6.2	6.2	0.9	1.3	3.7	0.6	3.9
17DB078	0.75	45	2.5	< 1	27.2	29	41.4	41.5	160	210	9.6	41.6	48	8.9	9.1	1.04	8.5	7.2	1.2	1.2	3.2	0.5	3.0
17DB079	0.46	79	3.1	< 1	35.7	11	25.1	25.4	49.5	70	5.8	24.9	23	5.5	5.8	0.70	6.3	7.1	1.0	1.5	4.5	0.7	4.5
17DB080	0.91	55	3.0	< 1	45.9	32	48.6	58.2	152	200	11.0	47.6	65	9.5	12.1	1.32	9.8	9.8	1.4	1.9	5.3	0.8	5.1
17DB081	0.62	45	3.3	< 1	42.5	47	19.2	18.5	57.5	80	4.3	17.7	7	4.1	4.3	0.58	5.0	7.8	1.0	1.7	5.4	0.8	5.8
17DB082	0.89	46	3.2	< 1	33.2	65	29.8	32.5	125	147	6.6	28.4	40	6.0	6.3	0.89	6.7	7.0	1.0	1.4	3.9	0.6	3.9
17DB083	1.12	52	3.6	< 1	39.5	98	31.4	32.3	135	149	7.3	31.2	23	6.8	6.7	1.01	7.8	8.4	1.2	1.7	4.8	0.7	4.6
17DB084	0.50	72	3.2	< 1	38.7	9	35.8	37.7	90.4	107	9.1	40.5	51	8.3	8.4	1.75	8.8	7.6	1.2	1.5	4.4	0.6	4.4

Results **Activation Laboratories Ltd.** **Report: A17-08634**

Analyte Symbol	Tl	V	U	W	Y	Zr	La	La	Ce	Ce	Pr	Nd	Nd	Sm	Sm	Eu	Gd	Dy	Tb	Ho	Er	Tm	Yb
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	0.05	2	0.1	1	0.1	1	0.1	0.5	0.1	3	0.1	0.1	5	0.1	0.1	0.05	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Method Code	TD-MS	TD-ICP	MULTI INAA/TD-ICP-MS	INAA	TD-MS	TD-MS	TD-MS	INAA	TD-MS	INAA	TD-MS	TD-MS	INAA	TD-MS	INAA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
17DB085	0.79	50	3.5	< 1	35.3	9	20.8	22.2	54.8	71	4.5	18.3	26	4.2	4.5	0.50	5.3	7.6	1.0	1.6	4.5	0.7	4.5
17DB086	0.55	98	1.6	< 1	21.6	44	22.3	24.5	47.9	59	5.3	23.8	38	5.2	5.3	1.32	5.4	4.9	0.8	0.9	2.5	0.4	2.3
17DB087	0.34	57	1.8	< 1	25.5	47	27.5	27.8	64.2	68	6.7	29.4	22	5.7	5.4	1.38	5.4	5.0	0.7	1.0	2.9	0.4	2.9
17DB088	0.91	54	4.2	3	19.1	135	43.2	45.6	88.4	99	9.1	37.8	31	6.9	6.6	1.07	5.9	4.4	0.7	0.8	2.1	0.3	2.1
17DB089	0.52	31	2.4	< 1	18.2	135	31.3	32.9	78.7	87	8.7	28.0	32	4.7	5.1	0.87	4.4	4.0	0.6	0.8	2.1	0.3	2.3
17DB090	0.57	67	2.0	< 1	26.1	166	31.5	33.3	67.7	78	7.1	30.6	34	6.3	6.4	1.11	6.2	5.8	0.9	1.1	3.0	0.4	2.9
17DB091	0.45	58	2.3	< 1	21.8	50	29.5	32.1	58.9	74	6.7	27.7	53	5.2	5.8	0.96	5.3	5.0	0.8	0.9	2.5	0.4	2.5
17DB092	0.43	77	1.8	< 1	20.3	212	30.3	35.1	65.0	84	7.3	29.8	37	5.8	6.7	0.77	5.6	4.9	0.8	0.9	2.4	0.4	2.3
17DB093	0.46	42	2.7	< 1	26.1	10	31.5	31.7	61.5	65	7.2	29.1	32	5.5	5.3	0.87	5.4	5.1	0.7	1.0	3.1	0.5	3.4
17DB094	0.77	56	2.9	< 1	55.2	14	42.7	45.1	94.9	117	10.5	44.9	55	10.0	10.1	0.86	10.6	11.5	1.7	2.3	6.8	1.0	6.8
17DB095	0.54	33	2.7	< 1	21.5	121	37.5	36.9	75.4	81	8.0	33.3	33	5.7	5.7	1.11	4.9	4.4	0.7	0.9	2.5	0.4	2.7
17DB096	0.53	20	2.5	< 1	22.9	42	37.0	38.2	73.0	81	8.4	33.7	41	6.0	6.0	1.10	5.2	4.8	0.7	0.9	2.8	0.4	2.8
17DB097	0.47	26	2.7	< 1	22.6	71	39.0	39.5	85.1	93	8.8	35.7	41	6.4	6.2	1.13	5.2	4.7	0.7	0.9	2.7	0.4	2.8
17DB098	0.31	82	1.6	< 1	22.0	118	23.9	23.5	61.1	67	5.9	26.1	36	5.2	5.2	1.41	5.4	5.1	0.8	1.0	2.7	0.4	2.5
17DB099	0.39	74	1.9	< 1	26.7	123	28.8	28.8	59.0	66	6.8	30.1	34	6.4	6.6	1.38	6.5	5.9	0.9	1.1	3.1	0.5	3.0
17DB0100	0.28	140	1.1	< 1	26.6	160	23.1	23.1	55.3	60	6.4	28.4	29	6.3	5.9	1.80	6.2	6.1	0.9	1.2	3.2	0.4	3.0
17DB0101	0.83	74	3.6	< 1	32.4	206	34.8	35.6	70.4	87	7.7	31.8	41	6.8	7.1	0.68	6.9	7.8	1.1	1.5	3.9	0.6	3.6
17DB0102	1.09	81	4.0	< 1	33.5	244	28.9	34.1	62.3	78	6.7	27.4	32	6.1	7.1	0.53	7.2	8.3	1.2	1.6	4.2	0.6	3.8
17DB0103	0.79	38	3.2	< 1	45.9	203	49.1	50.6	95.9	112	11.8	51.8	59	10.5	11.0	1.27	10.4	9.5	1.5	1.8	5.0	0.7	4.8
17DB0104	0.70	39	3.2	< 1	27.7	22	41.9	45.6	94.0	114	9.5	39.5	72	7.7	8.3	0.90	7.0	6.4	1.0	1.2	3.3	0.5	3.4
17DB0105	0.62	35	2.9	< 1	29.6	8	37.3	36.7	95.0	102	8.6	35.6	36	7.0	7.1	1.02	6.9	6.4	1.0	1.2	3.5	0.5	3.6
17DB0106	0.79	23	2.5	< 1	24.5	43	32.6	32.6	68.8	79	7.4	30.4	31	5.5	5.4	0.91	5.2	5.0	0.7	1.0	3.0	0.5	3.2
17DB0107	0.61	32	3.4	2	32.1	118	36.0	36.6	92.0	107	8.8	37.6	34	6.9	7.2	1.14	7.5	6.7	1.0	1.3	3.8	0.6	3.8
17DB0108	0.58	69	3.0	< 1	33.1	164	35.1	36.3	116	134	8.3	36.6	34	8.1	8.2	1.07	8.1	7.9	1.2	1.5	3.8	0.6	3.5
17DB0109	0.74	47	5.3	< 1	25.5	156	27.3	29.2	56.0	70	5.9	24.7	39	5.0	5.4	0.66	4.9	5.4	0.8	1.1	3.1	0.5	3.3
17DB0110	1.08	85	3.0	< 1	45.1	231	35.2	36.3	136	157	8.6	37.7	50	8.1	8.0	1.30	8.9	9.4	1.4	1.9	5.4	0.8	5.4
17DB0111	0.54	75	2.2	< 1	25.0	149	28.4	29.5	71.9	83	6.7	28.6	29	5.7	6.3	0.98	6.2	5.8	0.9	1.1	2.8	0.4	2.7
17DB0112	0.57	84	1.9	< 1	18.0	116	19.0	20.3	50.2	61	4.3	18.7	25	4.0	4.3	0.67	4.3	4.2	0.6	0.8	2.3	0.3	2.3
17DB0113	0.71	60	2.9	< 1	25.5	243	33.5	37.3	60.8	75	7.5	30.2	34	5.8	6.2	0.76	5.5	5.4	0.8	1.1	3.1	0.5	3.4
17DB0114	1.46	70	4.6	< 1	60.0	15	37.7	37.9	103	126	9.0	38.3	29	8.9	9.6	0.71	10.1	12.4	1.7	2.6	7.7	1.2	7.9
17DB0115	0.33	59	1.8	< 1	24.5	89	26.6	26.8	63.4	77	6.6	29.0	31	5.5	6.1	1.35	5.4	5.0	0.7	1.0	2.9	0.4	2.9
17DB0116	0.71	37	8.8	< 1	27.3	10	30.7	29.5	67.2	83	7.1	30.8	28	6.1	6.3	1.25	6.3	5.7	0.9	1.1	3.3	0.5	3.4
17DB0117	0.62	52	2.6	< 1	27.3	40	40.0	39.5	86.6	103	9.1	39.1	37	8.2	8.9	1.30	8.4	6.9	1.1	1.2	3.0	0.4	2.7
17DB0118	0.48	38	2.0	< 1	19.2	77	29.0	28.5	68.3	77	6.5	26.8	29	4.8	5.3	1.09	4.7	4.2	0.6	0.8	2.3	0.4	2.3
17DB0119	0.44	43	2.1	< 1	20.1	115	30.5	28.5	77.3	87	7.0	29.2	20	5.4	5.4	1.18	5.1	4.6	0.7	0.9	2.5	0.4	2.5
17DB0120	0.30	100	1.8	< 1	15.6	24	18.3	17.8	38.8	52	4.0	18.0	24	3.5	4.0	0.89	3.5	3.5	0.5	0.7	1.9	0.3	1.9
17DB0121	0.42	57	2.0	< 1	22.7	117	30.0	28.2	64.1	71	7.1	30.7	23	6.0	6.3	1.38	5.6	5.1	0.8	1.0	2.8	0.4	2.7
17DB0122	0.37	66	1.9	< 1	19.1	10	25.4	24.6	61.5	80	6.0	25.0	25	4.9	5.3	1.12	4.8	4.3	0.6	0.8	2.4	0.4	2.3
17DB0123	0.63	34	2.9	< 1	23.0	22	38.8	36.3	76.6	93	8.5	35.4	41	6.2	6.4	1.20	5.6	4.8	0.7	1.0	2.7	0.4	2.8
17DB0124	0.49	26	2.7	< 1	21.0	22	34.3	29.5	78.3	85	7.7	31.6	27	5.6	5.6	1.07	4.7	4.5	0.7	0.9	2.6	0.4	2.7

Analyte Symbol	Tl	V	U	W	Y	Zr	La	La	Ce	Ce	Pr	Nd	Nd	Sm	Sm	Eu	Gd	Dy	Tb	Ho	Er	Tm	Yb
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	0.05	2	0.1	1	0.1	1	0.1	0.5	0.1	3	0.1	0.1	5	0.1	0.1	0.05	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Method Code	TD-MS	TD-ICP	MULT INAA/TD-ICP-MS	INAA	TD-MS	TD-MS	TD-MS	INAA	TD-MS	INAA	TD-MS	TD-MS	INAA	TD-MS	INAA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
17DB0125	0.95	42	4.7	< 1	20.4	70	45.3	40.8	93.9	103	9.9	40.7	43	7.1	6.9	1.16	6.1	4.7	0.8	0.8	2.2	0.3	2.1

Analyte Symbol	Yb	Lu	Lu	Mass
Unit Symbol	ppm	ppm	ppm	g
Lower Limit	0.2	0.1	0.05	
Method Code	INAA	TD-MS	INAA	INAA
17DB045	5.4	0.6	0.78	5.26
17DB046	4.6	0.6	0.69	4.28
17DB047	6.8	0.8	0.95	5.37
17DB048	7.3	0.8	0.97	5.33
17DB049	4.7	0.5	0.57	6.16
17DB050	3.5	0.4	0.49	6.25
17DB051	6.4	0.7	0.91	5.29
17DB052	3.8	0.4	0.47	5.61
17DB053	3.5	0.3	0.47	4.39
17DB054	4.8	0.4	0.66	6.60
17DB055	3.7	0.4	0.52	5.64
17DB056	4.3	0.5	0.52	5.72
17DB057	3.5	0.3	0.46	6.49
17DB058	5.9	0.6	0.34	31.4
17DB059	3.8	0.4	0.55	5.01
17DB060	4.9	0.5	0.63	5.14
17DB061	5.2	0.6	0.28	27.2
17DB062	4.3	0.4	0.54	5.02
17DB063	5.2	0.7	0.66	7.97
17DB064	3.8	0.4	0.41	5.86
17DB065	6.8	0.9	0.96	6.87
17DB066	5.7	0.6	0.32	20.0
17DB067	6.1	0.8	0.77	7.07
17DB068	6.9	0.9	0.86	6.98
17DB069	4.8	0.6	0.59	8.14
17DB070	5.6	0.6	0.68	5.71
17DB071	4.3	0.5	0.53	5.24
17DB072	7.6	0.7	0.44	17.4
17DB073	4.2	0.5	0.59	5.82
17DB074	9.9	1.0	1.10	6.52
17DB075	3.6	0.4	0.40	6.05
17DB076	5.8	0.6	0.67	5.90
17DB077	4.9	0.5	0.63	4.87
17DB078	3.5	0.4	0.54	4.90
17DB079	5.4	0.7	0.64	3.98
17DB080	6.4	0.6	0.34	17.2
17DB081	6.1	0.8	0.78	4.94
17DB082	4.4	0.5	0.28	5.47
17DB083	5.0	0.6	0.29	6.89
17DB084	5.4	0.6	0.32	6.50
17DB085	5.4	0.6	0.36	4.60
17DB086	2.8	0.3	0.13	5.17

Analyte Symbol	Yb	Lu	Lu	Mass
Unit Symbol	ppm	ppm	ppm	g
Lower Limit	0.2	0.1	0.05	
Method Code	INAA	TD-MS	INAA	INAA
17DB087	3.2	0.4	0.22	5.98
17DB088	3.3	0.3	0.20	6.67
17DB089	3.5	0.3	0.23	6.49
17DB090	3.9	0.4	0.24	4.76
17DB091	3.5	0.3	0.20	4.73
17DB092	3.0	0.3	0.18	4.56
17DB093	4.5	0.5	0.28	6.65
17DB094	7.1	0.9	0.45	4.24
17DB095	3.7	0.4	0.23	7.16
17DB096	3.7	0.4	0.23	7.11
17DB097	4.1	0.4	0.25	7.95
17DB098	3.1	0.3	0.14	6.07
17DB099	3.6	0.4	0.17	6.16
17DB0100	3.5	0.4	0.13	6.93
17DB0101	4.2	0.4	0.25	5.02
17DB0102	4.6	0.5	0.31	4.09
17DB0103	5.8	0.6	0.38	7.28
17DB0104	4.6	0.4	0.32	6.07
17DB0105	4.6	0.4	0.28	7.00
17DB0106	3.8	0.4	0.23	6.90
17DB0107	4.7	0.5	0.31	7.28
17DB0108	4.2	0.4	0.27	5.36
17DB0109	4.5	0.5	0.26	5.37
17DB0110	5.8	0.7	0.36	6.47
17DB0111	3.5	0.4	0.18	5.27
17DB0112	3.1	0.3	0.18	4.54
17DB0113	4.5	0.5	0.28	6.36
17DB0114	9.7	1.0	0.97	4.81
17DB0115	4.2	0.4	0.47	7.42
17DB0116	4.6	0.5	0.42	6.19
17DB0117	4.0	0.4	0.39	5.18
17DB0118	4.0	0.3	0.33	5.51
17DB0119	3.6	0.3	0.41	6.19
17DB0120	2.4	0.3	0.32	4.59
17DB0121	3.6	0.4	0.37	6.73
17DB0122	3.6	0.3	0.38	4.93
17DB0123	3.8	0.4	0.48	6.05
17DB0124	4.1	0.4	0.45	6.53
17DB0125	3.7	0.3	0.43	6.44

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Analyte Symbol	Au	Ag	Ag	Ag	Cu	Cu	Cd	Cd	Mo	Pb	Pb	Ni	Ni	Ni	Zn	Zn	Zn	S	Al	As	Ba	Ba	Be
Unit Symbo	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	ppm	ppm
Lower L mit	2	0.05	0.3	5	0.2	1	0.1	0.3	1	0.5	3	0.5	1	20	0.5	1	50	0.01	0.01	0.5	1	50	0.1
Methoc Code	INAA	TD-MS	TD-ICP	INAA	TD-MS	TD-ICP	TD-MS	TD-ICP	TD-ICP	TD-MS	TD-ICP	TD-MS	TD-ICP	INAA	TD-MS	TD-ICP	INAA	TD-ICP	TD-ICP	INAA	TD-MS	INAA	TD-MS
GXR-1 Meas		31.5	31.5		1110	1150	2.7	3.6	14	747	740	37.8	45		819	730		0.25	2.08		601		0.9
GXR-1 Cert		31.0	31.0		1110	1110	3.30	3.30	18.0	730	730	41.0	41.0		760	760		0.257	3.52		750		1.22
GXR-1 Meas		32.1	31.5		1130	1140	2.7	3.0	15	734	724	37.6	42		842	734		0.25	1.86		597		0.9
GXR-1 Cert		31.0	31.0		1110	1110	3.30	3.30	18.0	730	730	41.0	41.0		760	760		0.257	3.52		750		1.22
GXR-1 Meas			31.1			1140		3.4	14		721		42			733		0.25	2.00				
GXR-1 Cert			31.0			1110		3.30	18.0		730		41.0			760		0.257	3.52				
DH-1a Meas																							
DH-1a Cert																							
DH-1a Meas																							
DH-1a Cert																							
GXR-4 Meas		3.51	3.5		5980	6560	< 0.1	0.4	334	50.2	49	37.4	42		65.2	73		1.84	6.19		80		2.1
GXR-4 Cert		4.00	4.0		6520	6520	0.860	0.860	310	52.0	52.0	42.0	42.0		73.0	73.0		1.77	7.20		1640		1.90
GXR-4 Meas		3.58	3.5		6100	6490	< 0.1	0.4	316	48.7	42	38.3	42		66.7	70		1.82	5.77		138		2.0
GXR-4 Cert		4.00	4.0		6520	6520	0.860	0.860	310	52.0	52.0	42.0	42.0		73.0	73.0		1.77	7.20		1640		1.90
GXR-4 Meas			3.5			6480		0.3	318		42		43			72		1.84	5.95				
GXR-4 Cert			4.0			6520		0.860	310		52.0		42.0			73.0		1.77	7.20				
SDC-1 Meas					27.4	31				24.7	21	32.1	38		103	98			7.59		580		2.9
SDC-1 Cert					30.000	30.000				25.00	25.00	36.0	38.0		103.00	103.00			8.34		630		3.00
SDC-1 Meas					28.8	30				23.9	23	31.2	36		104	99			7.51		545		3.0
SDC-1 Cert					30.000	30.000				25.00	25.00	36.0	38.0		103.00	103.00			8.34		630		3.00
SDC-1 Meas						32					22		37			99			7.62				
SDC-1 Cert						30.000					25.00		38.0			103.00			8.34				
GXR-6 Meas		0.09	< 0.3		63.6	67	0.1	< 0.3	1	104	96	24.8	27		128	130		0.02	11.4		1070		1.1
GXR-6 Cert		1.30	1.30		66.0	66.0	1.00	1.00	2.40	101	101	27.0	27.0		118	118		0.0160	17.7		1300		1.40
GXR-6 Meas		0.14	0.4		65.2	68	< 0.1	0.3	< 1	98.7	95	22.8	26		131	131		0.02	11.9		1070		1.0
GXR-6 Cert		1.30	1.30		66.0	66.0	1.00	1.00	2.40	101	101	27.0	27.0		118	118		0.0160	17.7		1300		1.40
DNC-1a Meas					90.3	96				6.0	3	239	251		54.8	53					89		
DNC-1a Cert					100	100				6.3	6.3	247	247		70	70					118		
DNC-1a Meas					95.4	94				6.3	< 3	243	252		63.2	53					90		
DNC-1a Cert					100	100				6.3	6.3	247	247		70	70					118		
DNC-1a Meas						94					< 3		252			56							
DNC-1a Cert						100					6.3		247			70							
SBC-1 Meas					29.8	36	0.4	0.4	3	35.9	28	79.5	87		180	169					592		3.2
SBC-1 Cert					31.0000	31.0000	0.40	0.40	2	35.0	35.0	82.8	83		186	186					788.0		3.20
SBC-1 Meas					25.6	32	0.4	0.5	1	35.8	28	80.3	90		187	183					530		3.5
SBC-1 Cert					31.0000	31.0000	0.40	0.40	2	35.0	35.0	82.8	83		186	186					788.0		3.20
SBC-1 Meas						29		0.4	1		27		87			170							
SBC-1 Cert						31.0000		0.40	2		35.0		83			186							
OREAS 45d (4-Acid) Meas					358	367			< 1	21.3	21	222	250		38.9	42		0.04	7.39		164		0.7

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Analyte Symbol	Au	Ag	Ag	Ag	Cu	Cu	Cd	Cd	Mo	Pb	Pb	Ni	Ni	Ni	Zn	Zn	Zn	S	Al	As	Ba	Ba	Be
Unit Symbol	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	ppm	ppm
Lower Limit	2	0.05	0.3	5	0.2	1	0.1	0.3	1	0.5	3	0.5	1	20	0.5	1	50	0.01	0.01	0.5	1	50	0.1
Method Code	INAA	TD-MS	TD-ICP	INAA	TD-MS	TD-ICP	TD-MS	TD-ICP	TD-ICP	TD-MS	TD-ICP	TD-MS	TD-ICP	INAA	TD-MS	TD-ICP	INAA	TD-ICP	TD-ICP	INAA	TD-MS	INAA	TD-MS
OREAS 45d (4-Acid) Cert					371	371			2.500	21.8	21.8	231.0	231.0		45.7	45.7		0.049	8.150		183.0		0.79
OREAS 45d (4-Acid) Meas					379	375			< 1	21.5	18	229	252		38.2	41		0.05	7.36		172		0.7
OREAS 45d (4-Acid) Cert					371	371			2.500	21.8	21.8	231.0	231.0		45.7	45.7		0.049	8.150		183.0		0.79
OREAS 45d (4-Acid) Meas						377			< 1		18		254			42		0.05	7.51				
OREAS 45d (4-Acid) Cert						371			2.500		21.8		231.0			45.7		0.049	8.150				
SdAR-M2 (U.S.G.S.) Meas					236	234	5.1	5.4	13	752	801	48.2	55		870	779					842		6.6
SdAR-M2 (U.S.G.S.) Cert					236.0000	236.0000	5.1	5.1	13	808	808	48.8	49		760	760					990		6.6
SdAR-M2 (U.S.G.S.) Meas					239	244	5.2	5.5	12	748	818	46.5	54		860	805					889		6.8
SdAR-M2 (U.S.G.S.) Cert					236.0000	236.0000	5.1	5.1	13	808	808	48.8	49		760	760					990		6.6
SdAR-M2 (U.S.G.S.) Meas						250		5.3	13		819		55			805							
SdAR-M2 (U.S.G.S.) Cert						236.0000		5.1	13		808		49			760							
DMMAS 120 Meas	781																			1680		1340	
DMMAS 120 Cert	727																			1790		1270	
DMMAS 120 Meas	684																			1680		1140	
DMMAS 120 Cert	727																			1790		1270	
DMMAS 120 Meas	721																			1740		1510	
DMMAS 120 Cert	727																			1790		1270	
DMMAS 120 Meas	753																			1810		1030	
DMMAS 120 Cert	727																			1790		1270	
17DB045 Orig		< 0.05	0.3		28.8	34	0.2	< 0.3	< 1	55.2	53	25.4	29		151	143		0.03	6.19		231		3.3
17DB045 Dup		0.10	< 0.3		29.8	32	0.2	< 0.3	< 1	56.4	50	26.4	29		154	141		0.02	6.15		246		3.4
17DB083 Orig		< 0.05	0.5		28.0	29	0.4	0.5	< 1	78.9	74	37.5	41		224	197		0.02	6.56		228		4.4
17DB083 Dup		< 0.05	< 0.3		29.0	27	0.5	0.4	< 1	77.6	76	36.3	40		227	195		0.02	6.49		225		4.4
17DB085 Orig		0.39	< 0.3		8.1	10	0.2	< 0.3	< 1	38.6	38	8.2	10		43.9	48		0.06	4.84		139		1.7
17DB085 Dup		0.32	< 0.3		9.0	10	0.2	< 0.3	< 1	38.5	38	7.7	10		46.6	47		0.06	4.84		136		1.8
17DB0121 Orig		< 0.05	< 0.3		46.1	47	< 0.1	< 0.3	< 1	27.0	24	44.0	48		98.8	92		0.01	7.19		387		2.0
17DB0121 Dup		< 0.05	0.3		35.5	37	< 0.1	< 0.3	< 1	27.2	23	39.7	45		98.6	90		0.01	7.08		377		1.9
Method Blank		< 0.05	< 0.3		< 0.2	< 1	< 0.1	< 0.3	< 1	< 0.5	< 3	< 0.5	< 1		< 0.5	< 1		< 0.01	< 0.01		< 1		< 0.1
Method Blank		< 0.05	< 0.3		< 0.2	< 1	< 0.1	< 0.3	< 1	< 0.5	< 3	< 0.5	< 1		< 0.5	< 1		< 0.01	< 0.01		< 1		< 0.1
Method Blank		< 0.05	< 0.3		< 0.2	< 1	< 0.1	< 0.3	< 1	< 0.5	< 3	< 0.5	< 1		< 0.5	< 1		< 0.01	0.02		< 1		< 0.1
Method Blank		< 0.05	< 0.3		< 0.2	< 1	< 0.1	< 0.3	< 1	< 0.5	< 3	< 0.5	< 1		< 0.5	< 1		< 0.01	< 0.01		< 1		< 0.1

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Analyte Symbol	Au	Ag	Ag	Ag	Cu	Cu	Cd	Cd	Mo	Pb	Pb	Ni	Ni	Ni	Zn	Zn	Zn	S	Al	As	Ba	Ba	Be
Unit Symbol	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	ppm	ppm
Lower Limit	2	0.05	0.3	5	0.2	1	0.1	0.3	1	0.5	3	0.5	1	20	0.5	1	50	0.01	0.01	0.5	1	50	0.1
Method Code	INAA	TD-MS	TD-ICP	INAA	TD-MS	TD-ICP	TD-MS	TD-ICP	TD-ICP	TD-MS	TD-ICP	TD-MS	TD-ICP	INAA	TD-MS	TD-ICP	INAA	TD-ICP	TD-ICP	INAA	TD-MS	INAA	TD-MS
Method Blank			< 0.3			< 1		< 0.3	< 1		< 3		< 1			1		< 0.01	< 0.01				
Method Blank			< 0.3			< 1		< 0.3	< 1		< 3		< 1			< 1		< 0.01	0.02				
Method Blank			< 0.3			< 1		< 0.3	< 1		< 3		< 1			< 1		< 0.01	0.02				
Method Blank			< 0.3			< 1		< 0.3	< 1		< 3		< 1			< 1		< 0.01	0.01				
Method Blank		< 0.05	< 0.3		< 0.2	2	< 0.1	< 0.3	< 1	< 0.5	< 3	< 0.5	< 1		< 0.5	< 1		< 0.01	< 0.01		< 1		< 0.1
Method Blank		< 0.05	< 0.3		< 0.2	< 1	< 0.1	< 0.3	< 1	< 0.5	< 3	< 0.5	< 1		< 0.5	< 1		< 0.01	< 0.01		< 1		< 0.1
Method Blank	< 2			< 5										< 20			< 50			< 0.5		< 50	
Method Blank	< 2			< 5										< 20			< 50			< 0.5		< 50	

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Analyte Symbol	Be	Bi	Bi	Br	Ca	Co	Cc	Cr	Cr	Cs	Cs	Eu	Fe	Hf	Hf	Ga	Ge	Hg	In	Ir	K	Li	Mg
Unit Symbol	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppb	ppm	ppb	%	ppm	%
Lower Limit	1	0.02	2	0.5	0.01	0.1	1	1	2	0.05	1	0.2	0.01	0.1	1	0.1	0.1	10	0.1	5	0.01	0.5	0.01
Methoc Code	TD-ICP	TD-MS	TD-ICP	INAA	TD-ICP	TD-MS	INAA	TD-MS	INAA	TD-MS	INAA	INAA	INAA	TD-MS	INAA	TD-MS	TD-MS	TD-MS	TD-MS	INAA	TD-ICP	TD-MS	TD-ICP
GXR-1 Meas	1	1340	1390		0.89	7.3		> 10.0		2.88				0.2		8.2		4110	0.7		0.04	7.4	0.21
GXR-1 Cert	1.22	1380	1380		0.960	8.20		12.0		3.00				0.960		13.8		3900	0.770		0.050	8.20	0.217
GXR-1 Meas	1	1340	1390		0.87	7.1		> 10.0		2.92				0.4		8.5		3310	0.8		0.04	7.4	0.21
GXR-1 Cert	1.22	1380	1380		0.960	8.20		12.0		3.00				0.960		13.8		3900	0.770		0.050	8.20	0.217
GXR-1 Meas	1		1390		0.87																0.04		0.21
GXR-1 Cert	1.22		1380		0.960																0.050		0.217
DH-1a Meas																							
DH-1a Cert																							
DH-1a Meas																							
DH-1a Cert																							
GXR-4 Meas	2	18.1	11		1.09	13.3		> 10.0		2.72				1.2		16.2		210	0.2		2.15	11.5	1.71
GXR-4 Cert	1.90	19.0	19.0		1.01	14.6		64.0		2.80				6.30		20.0		110	0.270		4.01	11.1	1.66
GXR-4 Meas	2	17.8	11		1.05	13.2		> 10.0		2.60				1.1		15.6		190	0.2		3.98	10.7	1.68
GXR-4 Cert	1.90	19.0	19.0		1.01	14.6		64.0		2.80				6.30		20.0		110	0.270		4.01	11.1	1.66
GXR-4 Meas	2		11		1.05																4.13		1.70
GXR-4 Cert	1.90		19.0		1.01																4.01		1.66
SDC-1 Meas	3				1.07	15.2		> 10.0		3.86				0.8		18.1		40			1.27	35.0	0.97
SDC-1 Cert	3.00				1.00	18.0		64.00		4.00				8.30		21.00		200.00			2.72	34.0	1.02
SDC-1 Meas	3				1.07	16.1		> 10.0		3.85				1.0		19.0		20			1.52	35.6	1.00
SDC-1 Cert	3.00				1.00	18.0		64.00		4.00				8.30		21.00		200.00			2.72	34.0	1.02
SDC-1 Meas	3				1.09																2.29		1.02
SDC-1 Cert	3.00				1.00																2.72		1.02
GXR-6 Meas	1	0.19	< 2		0.17	12.2		> 10.0		4.38				2.4		24.4		90	< 0.1		1.00	34.6	0.60
GXR-6 Cert	1.40	0.290	0.290		0.180	13.8		96.0		4.20				4.30		35.0		68.0	0.260		1.87	32.0	0.609
GXR-6 Meas	1	0.18	< 2		0.17	12.5		> 10.0		4.15				1.8		25.1		50	< 0.1		1.85	33.4	0.61
GXR-6 Cert	1.40	0.290	0.290		0.180	13.8		96.0		4.20				4.30		35.0		68.0	0.260		1.87	32.0	0.609
DNC-1a Meas						48.1		> 10.0								11.9						4.5	
DNC-1a Cert						57		270								15						5.2	
DNC-1a Meas						49.8		> 10.0								12.4						4.6	
DNC-1a Cert						57		270								15						5.2	
DNC-1a Meas																							
DNC-1a Cert																							
SBC-1 Meas	3	0.68	2			19.8		> 10.0		8.32				2.8		22.9						164	
SBC-1 Cert	3.20	0.70	0.70			22.7		109		8.2				3.7		27.0						163	
SBC-1 Meas	3	0.66	< 2			20.5		> 10.0		8.29				3.5		23.6						172	
SBC-1 Cert	3.20	0.70	0.70			22.7		109		8.2				3.7		27.0						163	
SBC-1 Meas	3		< 2																				
SBC-1 Cert	3.20		0.70																				
OREAS 45d (4-Acid) Meas	< 1	0.33	< 2		0.20	28.4		> 10.0		3.91				1.4		19.1			< 0.1		0.39	20.6	0.24
OREAS 45d (4-Acid) Cert	0.79	0.31	0.31		0.185	29.50		549		3.910				3.830		21.20			0.096		0.412	21.5	0.245
OREAS 45d	< 1	0.34	< 2		0.20	29.1		> 10.0		3.99				2.5		19.7			< 0.1		0.40	21.3	0.24

Analyte Symbol	Be	Bi	Bi	Br	Ca	Co	Co	Cr	Cr	Cs	Cs	Eu	Fe	Hf	Hf	Ga	Ge	Hg	In	Ir	K	Li	Mg
Unit Symbol	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppb	ppm	ppb	%	ppm	%
Lower Limit	1	0.02	2	0.5	0.01	0.1	1	1	2	0.05	1	0.2	0.01	0.1	1	0.1	0.1	10	0.1	5	0.01	0.5	0.01
Method Code	TD-ICP	TD-MS	TD-ICP	INAA	TD-ICP	TD-MS	INAA	TD-MS	INAA	TD-MS	INAA	INAA	INAA	TD-MS	INAA	TD-MS	TD-MS	TD-MS	TD-MS	INAA	TD-ICP	TD-MS	TD-ICP
(4-Acic) Meas																							
OREAS 45d (4-Acic) Cert	0.79	0.31	0.31		0.185	29.50		549		3.910				3.830		21.20			0.096		0.412	21.5	0.245
OREAS 45d (4-Acic) Meas	< 1		< 2		0.20																0.40		0.25
OREAS 45d (4-Acic) Cert	0.79		0.31		0.185																0.412		0.245
SdAR-M2 (U.S.G.S.) Meas	7	0.99	< 2			12.2		> 10.0		1.76				1.3		14.6		1140				18.1	
SdAR-M2 (U.S.G.S.) Cert	6.6	1.05	1.05			12.4		49.6		1.82				7.29		17.6		1440.00				17.9	
SdAR-M2 (U.S.G.S.) Meas	8	0.99	< 2			12.3		> 10.0		1.88				3.4		14.7		720				17.9	
SdAR-M2 (U.S.G.S.) Cert	6.6	1.05	1.05			12.4		49.6		1.82				7.29		17.6		1440.00				17.9	
SdAR-M2 (U.S.G.S.) Meas	8		< 2																				
SdAR-M2 (U.S.G.S.) Cert	6.6		1.05																				
DMMAS 120 Meas							50		129				3.45										
DMMAS 120 Cert							47.0		138				3.54										
DMMAS 120 Meas							50		137				3.72										
DMMAS 120 Cert							47.0		138				3.54										
DMMAS 120 Meas							49		133				3.46										
DMMAS 120 Cert							47.0		138				3.54										
DMMAS 120 Meas							52		125				3.48										
DMMAS 120 Cert							47.0		138				3.54										
17DB045 Orig	3	0.22	< 2		0.87	17.1		> 10.0		7.64				2.5		17.0	< 0.1	100	< 0.1		1.32	38.8	0.93
17DB045 Dup	3	0.23	< 2		0.85	17.7		> 10.0		7.68				0.2		17.7	< 0.1	90	< 0.1		1.31	39.2	0.90
17DB083 Orig	5	0.30	< 2		0.54	24.9		> 10.0		10.9				4.9		17.5	< 0.1	40	0.1		1.84	52.5	1.04
17DB083 Dup	5	0.29	< 2		0.54	24.6		> 10.0		10.8				0.4		17.5	< 0.1	70	0.1		1.88	52.0	1.02
17DB085 Orig	2	0.19	< 2		0.17	3.6		> 10.0		5.11				0.1		25.3	< 0.1	190	< 0.1		0.97	21.0	0.23
17DB085 Dup	2	0.19	< 2		0.17	3.5		> 10.0		5.10				0.2		25.4	< 0.1	200	< 0.1		0.97	21.2	0.23
17DB012' Orig	2	0.16	< 2		1.14	20.6		> 10.0		8.07				3.1		15.9	< 0.1	20	< 0.1		1.38	41.0	1.40
17DB012' Dup	2	0.16	< 2		1.13	20.4		> 10.0		8.19				3.4		16.3	< 0.1	10	< 0.1		1.37	41.8	1.38
Method Blank	< 1	< 0.02	< 2		< 0.01	< 0.1		1		< 0.05				< 0.1		0.1	< 0.1	10	< 0.1		< 0.01	< 0.5	< 0.01
Method Blank	< 1	< 0.02	< 2		< 0.01	< 0.1		< 1		< 0.05				< 0.1		0.1	< 0.1	< 10	< 0.1		< 0.01	< 0.5	< 0.01
Method Blank	< 1	< 0.02	< 2		< 0.01	< 0.1		2		< 0.05				< 0.1		0.2	0.1	< 10	< 0.1		< 0.01	< 0.5	< 0.01
Method Blank	< 1	< 0.02	< 2		< 0.01	< 0.1		2		< 0.05				< 0.1		0.1	< 0.1	< 10	< 0.1		< 0.01	< 0.5	< 0.01
Method Blank	< 1		< 2		< 0.01																< 0.01		< 0.01
Method Blank	< 1		< 2		< 0.01																< 0.01		< 0.01

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Analyte Symbol	Be	Bi	Bi	Br	Ca	Co	Co	Cr	Cr	Cs	Cs	Eu	Fe	Hf	Hf	Ga	Ge	Hg	In	Ir	K	Li	Mg
Unit Symbol	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppb	ppm	ppb	%	ppm	%
Lower Limit	1	0.02	2	0.5	0.01	0.1	1	1	2	0.05	1	0.2	0.01	0.1	1	0.1	0.1	10	0.1	5	0.01	0.5	0.01
Method Code	TD-ICP	TD-MS	TD-ICP	INAA	TD-ICP	TD-MS	INAA	TD-MS	INAA	TD-MS	INAA	INAA	INAA	TD-MS	INAA	TD-MS	TD-MS	TD-MS	TD-MS	INAA	TD-ICP	TD-MS	TD-ICP
Method Blank	< 1		< 2		< 0.01																< 0.01		< 0.01
Method Blank	< 1		< 2		< 0.01																< 0.01		< 0.01
Method Blank	< 1	< 0.02	< 2		< 0.01	< 0.1		< 1		< 0.05				< 0.1		0.2	< 0.1	< 10	< 0.1		< 0.01	< 0.5	< 0.01
Method Blank	< 1	< 0.02	< 2		< 0.01	< 0.1		2		< 0.05				< 0.1		0.1	< 0.1	< 10	< 0.1		< 0.01	< 0.5	< 0.01
Method Blank				< 0.5			< 1		< 2		< 1	< 0.2	< 0.01		< 1					< 5			
Method Blank				< 0.5			< 1		< 2		< 1	< 0.2	< 0.01		< 1					< 5			

Analyte Symbol	Mn	Nb	Na	P	Rb	Rb	Re	Sb	Sc	Se	Se	Sn	Sr	Ta	Ta	Te	Tb	Tl	Th	Th	Tl	U	U
Unit Symbol	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
Lower Limit	1	0.1	0.01	0.001	0.2	15	0.001	0.1	0.1	0.1	3	1	0.2	0.1	0.5	0.1	0.5	0.01	0.1	0.2	0.05	0.1	0.5
Method Code	TD-ICP	TD-MS	INAA	TD-ICP	TD-MS	INAA	TD-MS	INAA	INAA	TD-MS	INAA	TD-MS	TD-MS	TD-MS	INAA	TD-MS	INAA	TD-ICP	TD-MS	INAA	TD-MS	TD-MS	INAA
GXR-1 Meas	863	0.6		0.058	3.1					14.1		24	273	< 0.1		8.2		0.03	2.4		0.39	30.9	
GXR-1 Cert	852	0.800		0.0650	14.0					16.6		54.0	275	0.175		13.0		0.036	2.44		0.390	34.9	
GXR-1 Meas	900	0.7		0.059	2.9					14.0		27	268	< 0.1		9.9		0.02	2.4		0.39	31.6	
GXR-1 Cert	852	0.800		0.0650	14.0					16.6		54.0	275	0.175		13.0		0.036	2.44		0.390	34.9	
GXR-1 Meas	879			0.058														0.03					
GXR-1 Cert	852			0.0650														0.036					
DH-1a Meas																			> 500			2130	
DH-1a Cert																			910			2629	
DH-1a Meas																			> 500			2090	
DH-1a Cert																			910			2629	
GXR-4 Meas	154	8.8		0.133	112					4.7		7	192	0.7		1.0		0.29	18.3		3.27	5.4	
GXR-4 Cert	155	10.0		0.120	160					5.60		5.60	221	0.790		0.970		0.29	22.5		3.20	6.20	
GXR-4 Meas	151	8.2		0.132	157					4.9		7	195	0.6		0.9		0.29	17.3		3.19	5.2	
GXR-4 Cert	155	10.0		0.120	160					5.60		5.60	221	0.790		0.970		0.29	22.5		3.20	6.20	
GXR-4 Meas	147			0.131														0.30					
GXR-4 Cert	155			0.120														0.29					
SDC-1 Meas	858	0.1		0.053	60.9							< 1	153	< 0.1				0.17	10.8		0.60	2.9	
SDC-1 Cert	880.00	21.00		0.0690	127.00							3.00	180.00	1.20				0.606	12.00		0.70	3.10	
SDC-1 Meas	887	0.2		0.055	113							< 1	161	< 0.1				0.20	10.9		0.59	2.6	
SDC-1 Cert	880.00	21.00		0.0690	127.00							3.00	180.00	1.20				0.606	12.00		0.70	3.10	
SDC-1 Meas	886			0.054														0.20					
SDC-1 Cert	880.00			0.0690														0.606					
GXR-6 Meas	1070	0.2		0.035	56.5					< 0.1		< 1	33.3	< 0.1		< 0.1			5.0		2.23	1.4	
GXR-6 Cert	1010	7.50		0.0350	90.0					0.940		1.70	35.0	0.485		0.0180			5.30		2.20	1.54	
GXR-6 Meas	1080	0.1		0.034	85.8					< 0.1		< 1	33.5	< 0.1		< 0.1			4.9		2.15	1.3	
GXR-6 Cert	1010	7.50		0.0350	90.0					0.940		1.70	35.0	0.485		0.0180			5.30		2.20	1.54	
DNC-1a Meas		1.4			3.5								122					0.27					
DNC-1a Cert		3			5								144					0.29					
DNC-1a Meas		1.3			3.7								134					0.29					
DNC-1a Cert		3			5								144					0.29					
DNC-1a Meas																		0.29					
DNC-1a Cert																		0.29					
SBC-1 Meas		9.5			95.2							3	168	0.6				0.48	14.7		0.89	5.3	
SBC-1 Cert		15.3			147							3.3	178.0	1.10				0.51	15.8		0.89	5.76	
SBC-1 Meas		12.3			153							4	170	0.8				0.55	14.7		0.92	5.3	
SBC-1 Cert		15.3			147							3.3	178.0	1.10				0.51	15.8		0.89	5.76	
SBC-1 Meas																		0.52					
SBC-1 Cert																		0.51					
OREAS 45d (4-Acid) Meas	503	0.2		0.032	43.3							< 1	24.7	< 0.1				0.15	13.6		0.23	2.5	
OREAS 45d (4-Acid) Cert	490.000	14.50		0.042	42.1							2.78	31.30	1.02				0.773	14.5		0.27	2.63	
OREAS 45d	517	0.5		0.036	45.3							< 1	29.5	< 0.1				0.44	13.7		0.25	2.6	

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Analyte Symbol	Mn	Nb	Na	P	Rb	Rb	Re	Sb	Sc	Se	Se	Sn	Sr	Ta	Ta	Te	Tb	Ti	Th	Th	Tl	U	U
Unit Symbol	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
Lower Limit	1	0.1	0.01	0.001	0.2	15	0.001	0.1	0.1	0.1	3	1	0.2	0.1	0.5	0.1	0.5	0.01	0.1	0.2	0.05	0.1	0.5
Method Code	TD-ICP	TD-MS	INAA	TD-ICP	TD-MS	INAA	TD-MS	INAA	INAA	TD-MS	INAA	TD-MS	TD-MS	TD-MS	INAA	TD-MS	INAA	TD-ICP	TD-MS	INAA	TD-MS	TD-MS	INAA
(4-Acid) Meas																							
OREAS 45d (4-Acid) Cert	490.000	14.50		0.042	42.1							2.78	31.30	1.02				0.773	14.5		0.27	2.63	
OREAS 45d (4-Acid) Meas	522			0.035														0.39					
OREAS 45d (4-Acid) Cert	490.000			0.042														0.773					
SdAR-M2 (U.S.G.S.) Meas		6.6			55.9								130	0.3					13.2			2.2	
SdAR-M2 (U.S.G.S.) Cert		26.2			149								144	1.8					14.2			2.53	
SdAR-M2 (U.S.G.S.) Meas		5.5			112								132	0.3					13.5			2.3	
SdAR-M2 (U.S.G.S.) Cert		26.2			149								144	1.8					14.2			2.53	
SdAR-M2 (U.S.G.S.) Meas																							
SdAR-M2 (U.S.G.S.) Cert																							
DMMAS 120 Meas			2.02					6.8	6.0														10.9
DMMAS 120 Cert			2.16					7.30	6.50														11.7
DMMAS 120 Meas			2.18					6.5	6.2														12.7
DMMAS 120 Cert			2.16					7.30	6.50														11.7
DMMAS 120 Meas			2.05					6.9	6.2														11.6
DMMAS 120 Cert			2.16					7.30	6.50														11.7
DMMAS 120 Meas			2.14					6.2	6.3														14.0
DMMAS 120 Cert			2.16					7.30	6.50														11.7
17DB045 Orig	993	0.2		0.074	78.0		< 0.001			< 0.1		< 1	99.8	< 0.1		< 0.1		0.32	11.0		0.65	3.8	
17DB045 Dup	937	0.2		0.069	81.1		< 0.001			< 0.1		< 1	108	< 0.1		< 0.1		0.36	11.6		0.62	3.9	
17DB083 Orig	1080	0.2		0.074	124		< 0.001			< 0.1		1	75.9	< 0.1		< 0.1		0.35	13.5		1.13	3.6	
17DB083 Dup	1030	0.2		0.064	121		< 0.001			< 0.1		1	77.7	< 0.1		< 0.1		0.14	13.5		1.12	3.5	
17DB085 Orig	359	1.1		0.078	67.9		< 0.001			< 0.1		< 1	41.8	< 0.1		< 0.1		0.32	11.8		0.79	3.5	
17DB085 Dup	348	0.4		0.074	67.8		< 0.001			< 0.1		< 1	42.0	< 0.1		< 0.1		0.17	11.9		0.80	3.5	
17DB0121 Orig	1010	< 0.1		0.084	72.7		< 0.001			< 0.1		< 1	109	< 0.1		< 0.1		0.22	7.8		0.42	2.0	
17DB0121 Dup	996	0.1		0.086	72.0		< 0.001			< 0.1		< 1	106	< 0.1		< 0.1		0.21	7.7		0.41	2.0	
Method Blank		< 0.1		< 0.001	< 0.2		< 0.001			< 0.1		< 1	< 0.2	< 0.1		< 0.1		< 0.01	< 0.1		< 0.05	< 0.1	
Method Blank		< 0.1		< 0.001	< 0.2		< 0.001			< 0.1		< 1	< 0.2	< 0.1		< 0.1		< 0.01	< 0.1		< 0.05	< 0.1	
Method Blank		< 0.1		< 0.001	< 0.2		< 0.001			< 0.1		< 1	< 0.2	< 0.1		< 0.1		< 0.01	< 0.1		< 0.05	< 0.1	
Method Blank		< 0.1		< 0.001	< 0.2		< 0.001			< 0.1		< 1	< 0.2	< 0.1		< 0.1		< 0.01	< 0.1		< 0.05	< 0.1	
Method Blank				< 0.001														< 0.01					
Method Blank				< 0.001														< 0.01					

Analyte Symbol	Mn	Nb	Na	P	Rb	Rb	Re	Sb	Sc	Se	Se	Sn	Sr	Ta	Ta	Te	Tb	Tl	Th	Th	Tl	U	U
Unit Symbol	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
Lower Limit	1	0.1	0.01	0.001	0.2	15	0.001	0.1	0.1	0.1	3	1	0.2	0.1	0.5	0.1	0.5	0.01	0.1	0.2	0.05	0.1	0.5
Method Code	TD-ICP	TD-MS	INAA	TD-ICP	TD-MS	INAA	TD-MS	INAA	INAA	TD-MS	INAA	TD-MS	TD-MS	TD-MS	INAA	TD-MS	INAA	TD-ICP	TD-MS	INAA	TD-MS	TD-MS	INAA
Method Blank				< 0.001														< 0.01					
Method Blank				< 0.001														< 0.01					
Method Blank		< 0.1		< 0.001	< 0.2		< 0.001			< 0.1		< 1	< 0.2	< 0.1		< 0.1		< 0.01	< 0.1		< 0.05	< 0.1	
Method Blank		< 0.1		< 0.001	< 0.2		< 0.001			< 0.1		< 1	< 0.2	< 0.1		< 0.1		< 0.01	< 0.1		< 0.05	< 0.1	
Method Blank			< 0.01			< 15		< 0.1	< 0.1		< 3				< 0.5		< 0.5			< 0.2			< 0.5
Method Blank			< 0.01			< 15		< 0.1	< 0.1		< 3				< 0.5		< 0.5			< 0.2			< 0.5

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Analyte Symbol	V	W	Y	Zr	La	La	Ce	Ce	Pr	Nd	Nd	Sm	Sm	Eu	Gd	Dy	Tb	Ho	Er	Tm	Yb	Yb	Lu
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Lower Limit	2	1	0.1	1	0.1	0.5	0.1	3	0.1	0.1	5	0.1	0.1	0.05	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1
Method Code	TD-ICP	INAA	TD-MS	TD-MS	TD-MS	INAA	TD-MS	INAA	TD-MS	TD-MS	INAA	TD-MS	INAA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	INAA	TD-MS
GXR-1 Meas	87		24.6	10	7.3		13.3			8.4		2.6		0.55	3.6	4.4	0.6			0.3	2.1		0.3
GXR-1 Cert	80.0		32.0	38.0	7.50		17.0			18.0		2.70		0.690	4.20	4.30	0.830			0.430	1.90		0.280
GXR-1 Meas	88		25.0	18	7.3		13.4			8.7		2.6		0.57	3.9	4.4	0.6			0.3	2.1		0.3
GXR-1 Cert	80.0		32.0	38.0	7.50		17.0			18.0		2.70		0.690	4.20	4.30	0.830			0.430	1.90		0.280
GXR-1 Meas	88																						
GXR-1 Cert	80.0																						
DH-1a Meas																							
DH-1a Cert																							
DH-1a Meas																							
DH-1a Cert																							
GXR-4 Meas	90		11.6	43	55.2		96.0			40.8		6.5		1.30	4.3	2.7	0.5			0.2	1.0		0.1
GXR-4 Cert	87.0		14.0	186	64.5		102			45.0		6.60		1.63	5.25	2.60	0.360			0.210	1.60		0.170
GXR-4 Meas	89		12.0	38	54.8		97.1			41.6		6.0		1.30	4.5	2.6	0.4			0.2	0.9		0.1
GXR-4 Cert	87.0		14.0	186	64.5		102			45.0		6.60		1.63	5.25	2.60	0.360			0.210	1.60		0.170
GXR-4 Meas	89																						
GXR-4 Cert	87.0																						
SDC-1 Meas	44			27	37.9		76.1			37.7		6.9		1.35	6.4	5.7	0.9	1.2	3.2	0.4	3.0		
SDC-1 Cert	102.00			290.00	42.00		93.00			40.00		8.20		1.70	7.00	6.70	1.20	1.50	4.10	0.65	4.00		
SDC-1 Meas	55			35	38.7		77.4			39.6		7.1		1.40	6.3	5.7	0.9	1.2	3.3	0.5	3.0		
SDC-1 Cert	102.00			290.00	42.00		93.00			40.00		8.20		1.70	7.00	6.70	1.20	1.50	4.10	0.65	4.00		
SDC-1 Meas	58																						
SDC-1 Cert	102.00																						
GXR-6 Meas	130		10.7	83	12.6		31.4			12.6		2.6		0.59	2.4	2.3	0.3				1.6		0.3
GXR-6 Cert	186		14.0	110	13.9		36.0			13.0		2.67		0.760	2.97	2.80	0.415				2.40		0.330
GXR-6 Meas	120		10.9	61	12.1		31.1			12.3		2.5		0.59	2.2	2.3	0.3				1.6		0.3
GXR-6 Cert	186		14.0	110	13.9		36.0			13.0		2.67		0.760	2.97	2.80	0.415				2.40		0.330
DNC-1a Meas	139		13.2	36	3.5					4.6				0.50							1.7		
DNC-1a Cert	148		18.0	38.0	3.6					5.20				0.59							2.0		
DNC-1a Meas	138		14.2	35	3.5					4.7				0.51							1.8		
DNC-1a Cert	148		18.0	38.0	3.6					5.20				0.59							2.0		
DNC-1a Meas	140																						
DNC-1a Cert	148																						
SBC-1 Meas	212		26.8	103	48.1		92.6		11.1	46.9		9.0		1.70	7.2	6.2	1.0	1.2	3.3	0.5	3.2		0.4
SBC-1 Cert	220.0		36.5	134.0	52.5		108.0		12.6	49.2		9.6		1.98	8.5	7.10	1.20	1.40	3.80	0.56	3.64		0.54
SBC-1 Meas	223		28.2	119	49.3		95.7		11.2	48.3		9.2		1.75	7.9	6.3	0.9	1.2	3.4	0.5	3.2		0.4
SBC-1 Cert	220.0		36.5	134.0	52.5		108.0		12.6	49.2		9.6		1.98	8.5	7.10	1.20	1.40	3.80	0.56	3.64		0.54
SBC-1 Meas	213																						
SBC-1 Cert	220.0																						
OREAS 45d (4-Acid) Meas	101		9.1	52	16.3		32.2		3.5	13.8		2.7		0.54	2.3	2.2	0.3	0.4	1.2		1.3		0.2
OREAS 45d (4-Acid) Cert	235.0		9.53	141	16.9		37.20		3.70	13.4		2.80		0.57	2.42	2.26	0.400	0.46	1.38		1.33		0.18
OREAS 45d	170		10.0	92	16.7		33.5		3.5	14.2		2.7		0.55	2.3	2.2	0.3	0.4	1.3		1.4		0.2

QC **Activation Laboratories Ltd.** **Report: A17-08634**

Analyte Symbol	V	W	Y	Zr	La	La	Ce	Ce	Pr	Nd	Nd	Sm	Sm	Eu	Gd	Dy	Tb	Ho	Er	Tm	Yb	Yb	Lu
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Lower Limit	2	1	0.1	1	0.1	0.5	0.1	3	0.1	0.1	5	0.1	0.1	0.05	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1
Method Code	TD-ICP	INAA	TD-MS	TD-MS	TD-MS	INAA	TD-MS	INAA	TD-MS	TD-MS	INAA	TD-MS	INAA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	INAA	TD-MS
(4-Acid) Meas																							
OREAS 45d (4-Acid) Cert	235.0		9.53	141	16.9		37.20		3.70	13.4		2.80		0.57	2.42	2.26	0.400	0.46	1.38		1.33		0.18
OREAS 45d (4-Acid) Meas	151																						
OREAS 45d (4-Acid) Cert	235.0																						
SdAR-M2 (U.S.G.S.) Meas	26		21.4	59	44.3		86.5		9.5	37.5		6.1		1.21	5.3	4.6	0.7	0.9	2.6	0.4	2.5		0.3
SdAR-M2 (U.S.G.S.) Cert	25.2		32.7	259	46.6		98.8		11.0	39.4		7.18		1.44	6.28	5.88	0.97	1.21	3.58	0.54	3.63		0.54
SdAR-M2 (U.S.G.S.) Meas	26		22.0	98	43.0		85.4		9.4	37.2		6.4		1.22	5.0	4.6	0.7	0.9	2.7	0.4	2.6		0.4
SdAR-M2 (U.S.G.S.) Cert	25.2		32.7	259	46.6		98.8		11.0	39.4		7.18		1.44	6.28	5.88	0.97	1.21	3.58	0.54	3.63		0.54
SdAR-M2 (U.S.G.S.) Meas	27																						
SdAR-M2 (U.S.G.S.) Cert	25.2																						
DMMAS 120 Meas						17.6		38					2.3										
DMMAS 120 Cert						17.6		32.0					2.70										
DMMAS 120 Meas						16.7		38					2.3										
DMMAS 120 Cert						17.6		32.0					2.70										
DMMAS 120 Meas						16.9		34					2.5										
DMMAS 120 Cert						17.6		32.0					2.70										
DMMAS 120 Meas						18.0		26					2.4										
DMMAS 120 Cert						17.6		32.0					2.70										
17DB045 Orig	65		35.6	121	39.7		86.4		9.1	38.1		7.4		1.15	7.3	7.5	1.1	1.5	4.3	0.7	4.2		0.6
17DB045 Dup	67		36.2	13	41.5		89.1		9.3	39.5		7.7		1.17	7.6	7.7	1.1	1.5	4.3	0.6	4.3		0.6
17DB083 Orig	64		39.5	177	31.2		135		7.3	31.1		6.9		1.00	7.6	8.4	1.2	1.7	4.7	0.7	4.6		0.6
17DB083 Dup	41		39.5	19	31.7		135		7.4	31.3		6.8		1.01	7.9	8.5	1.2	1.7	4.8	0.7	4.6		0.6
17DB085 Orig	56		35.1	8	20.3		54.0		4.3	17.8		4.2		0.50	5.2	7.6	1.0	1.6	4.5	0.7	4.5		0.6
17DB085 Dup	43		35.5	10	21.3		55.6		4.6	18.9		4.1		0.50	5.4	7.7	1.0	1.6	4.5	0.7	4.5		0.6
17DB0121 Orig	60		23.0	112	30.3		64.2		7.1	31.1		5.9		1.39	5.6	5.2	0.8	1.0	2.8	0.4	2.7		0.4
17DB0121 Dup	54		22.4	121	29.7		63.9		7.0	30.3		6.0		1.37	5.7	5.1	0.8	1.0	2.7	0.4	2.7		0.4
Method Blank	< 2		< 0.1	< 1	< 0.1		< 0.1		< 0.1	< 0.1		< 0.1		< 0.05	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1		< 0.1
Method Blank	< 2		< 0.1	< 1	< 0.1		< 0.1		< 0.1	< 0.1		< 0.1		< 0.05	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1		< 0.1
Method Blank	< 2		< 0.1	< 1	< 0.1		< 0.1		< 0.1	< 0.1		< 0.1		< 0.05	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1		< 0.1
Method Blank	< 2		< 0.1	< 1	0.1		0.1		< 0.1	< 0.1		< 0.1		< 0.05	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1		< 0.1
Method Blank	< 2																						
Method Blank	< 2																						

Analyte Symbol	V	W	Y	Zr	La	La	Ce	Ce	Pr	Nd	Nd	Sm	Sm	Eu	Gd	Dy	Tb	Ho	Er	Tm	Yb	Yb	Lu
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Lower Limit	2	1	0.1	1	0.1	0.5	0.1	3	0.1	0.1	5	0.1	0.1	0.05	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1
Method Code	TD-ICP	INAA	TD-MS	TD-MS	TD-MS	INAA	TD-MS	INAA	TD-MS	TD-MS	INAA	TD-MS	INAA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	INAA	TD-MS
Method Blank	< 2																						
Method Blank	< 2																						
Method Blank	< 2		< 0.1	< 1	0.1		< 0.1		< 0.1	< 0.1		< 0.1		< 0.05	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1		< 0.1
Method Blank	< 2		< 0.1	< 1	0.1		< 0.1		< 0.1	< 0.1		< 0.1		< 0.05	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1		< 0.1
Method Blank		< 1				< 0.5		< 3			< 5		< 0.1									< 0.2	
Method Blank		< 1				< 0.5		< 3			< 5		< 0.1									< 0.2	

Analyte Symbol	Lu	Mass
Unit Symbol	ppm	g
Lower Limit	0.05	
Method Code	INAA	INAA
GXR-1 Meas		
GXR-1 Cert		
GXR-1 Meas		
GXR-1 Cert		
GXR-1 Meas		
GXR-1 Cert		
DH-1a Meas		
DH-1a Cert		
DH-1a Meas		
DH-1a Cert		
GXR-4 Meas		
GXR-4 Cert		
GXR-4 Meas		
GXR-4 Cert		
GXR-4 Meas		
GXR-4 Cert		
SDC-1 Meas		
SDC-1 Cert		
SDC-1 Meas		
SDC-1 Cert		
SDC-1 Meas		
SDC-1 Cert		
GXR-6 Meas		
GXR-6 Cert		
GXR-6 Meas		
GXR-6 Cert		
DNC-1a Meas		
DNC-1a Cert		
DNC-1a Meas		
DNC-1a Cert		
DNC-1a Meas		
DNC-1a Cert		
SBC-1 Meas		
SBC-1 Cert		
SBC-1 Meas		
SBC-1 Cert		
SBC-1 Meas		
SBC-1 Cert		
OREAS 45d (4-Acid) Meas		
OREAS 45d (4-Acid) Cert		
OREAS 45d		

Analyte Symbol	Lu	Mass
Unit Symbol	ppm	g
Lower Limit	0.05	
Method Code	INAA	INAA
(4-Acid) Meas		
OREAS 45d (4-Acid) Cert		
OREAS 45d (4-Acid) Meas		
OREAS 45d (4-Acid) Cert		
SdAR-M2 (U.S.G.S.) Meas		
SdAR-M2 (U.S.G.S.) Cert		
SdAR-M2 (U.S.G.S.) Meas		
SdAR-M2 (U.S.G.S.) Cert		
SdAR-M2 (U.S.G.S.) Meas		
SdAR-M2 (U.S.G.S.) Cert		
DMMAS 120 Meas		
DMMAS 120 Cert		
DMMAS 120 Meas		
DMMAS 120 Cert		
DMMAS 120 Meas		
DMMAS 120 Cert		
DMMAS 120 Meas		
DMMAS 120 Cert		
17DB045 Orig		
17DB045 Dup		
17DB083 Orig		
17DB083 Dup		
17DB085 Orig		
17DB085 Dup		
17DB0121 Orig		
17DB0121 Dup		
Method Blank		
Method Blank		
Method Blank		
Method Blank		
Method Blank		
Method Blank		

Analyte Symbol	Lu	Mass
Unit Symbol	ppm	g
Lower Limit	0.05	
Method Code	INAA	INAA
Method Blank		
Method Blank		
Method Blank		
Method Blank		
Method Blank	< 0.05	30.0
Method Blank	< 0.05	10.0

Quality Analysis ... *Innovative Technologies*

Date Submitted: 26-Sep-17
Invoice No.: A17-10547
Invoice Date: 16-Nov-17
Your Reference:

Nova Scotia Department of Natural Resources
1723 Hollis Street
5th Floor
Halifax NS B3J 2N3
Canada

ATTN: Denise Brushett

CERTIFICATE OF ANALYSIS

67 Soil samples were submitted for analysis.

The following analytical package(s) were requested: Code UT-3 INAA(INAAGEO)/Total digestion ICP(Total)Total Digestion ICP/MS

REPORT **A17-10547**

Notes:

Unaltered silicates and resistate minerals may not be dissolved. Values which exceed upper limit should be assayed.

CERTIFIED BY:

Emmanuel Eseme , Ph.D.
Quality Control

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E-MAIL Ancaster@actlabs.com ACTLABS GROUP WEBSITE www.actlabs.com

Results **Activation Laboratories Ltd.** **Report: A17-10547**

Analyte Symbol	Au	Ag	Cu	Cd	Mo	Pb	Ni	Zn	S	Al	As	Ba	Be	Bi	Br	Ca	Co	Cr	Cs	Eu	Fe	Hf	Ga
Unit Symbol	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm
Lower Limit	2	0.05	0.2	0.1	1	0.5	0.5	0.5	0.01	0.01	0.5	1	0.1	0.1	0.5	0.01	0.1	1	0.05	0.2	0.01	0.1	0.1
Method Code	INAA	MULT I NAA/TD-ICP/TD-MS	MULT TD-ICP/TD-ICP-MS	MULT TD-ICP/TD-ICP-MS	TD-ICP	MULT TD-ICP/TD-ICP-MS	MULT I NAA/TD-ICP/TD-MS	MULT I NAA/TD-ICP/TD-MS	TD-ICP	TD-ICP	INAA	MULT I NAA/TD-ICP-MS	MULT TD-ICP/TD-ICP-MS	MULT TD-ICP/TD-ICP-MS	INAA	TD-ICP	MULT I NAA/TD-ICP-MS	MULT I NAA/TD-ICP-MS	MULT I NAA/TD-ICP-MS	INAA	INAA	MULT I NAA/TD-ICP-MS	TD-MS
17DB127	< 2	0.05	25.5	< 0.1	< 1	20.2	31.4	71.0	0.01	6.08	8.4	279	1.8	0.2	26.9	0.37	16.4	62	16.5	1.8	3.63	0.2	10.7
17DB128	< 2	< 0.05	26.2	0.1	< 1	24.3	39.2	128	0.03	7.42	10.6	376	2.1	0.2	82.0	0.37	21.4	79	44.0	1.7	6.44	0.9	15.7
17DB129	5	0.18	45.7	0.3	< 1	22.6	27.2	112	0.02	6.99	16.0	554	1.6	1.8	6.3	1.96	16.0	71	1.00	1.4	4.53	0.2	12.0
17DB130	10	0.08	152	0.3	< 1	32.4	39.4	120	0.03	8.05	24.8	481	3.5	4.9	9.0	0.97	13.4	72	11.9	1.2	3.87	2.4	16.5
17DB131	< 2	< 0.05	47.7	< 0.1	< 1	23.5	36.5	102	< 0.01	6.90	9.6	346	2.1	0.2	15.1	0.25	20.5	66	6.76	1.4	3.72	0.3	13.3
17DB132	4	0.06	46.9	0.2	< 1	25.2	50.7	105	0.03	7.18	7.8	318	1.9	< 0.1	74.4	1.27	36.6	78	6.47	2.0	5.88	0.7	13.6
17DB134	< 2	< 0.05	26.9	0.1	< 1	27.4	35.8	118	< 0.01	6.77	9.0	378	2.0	0.2	10.8	0.39	18.8	63	5.09	1.4	3.89	0.3	13.3
17DB135	< 2	< 0.05	36.7	0.1	< 1	41.4	36.8	113	0.01	6.86	11.0	354	2.1	0.2	51.0	0.39	18.3	68	4.81	1.1	4.14	0.3	14.8
17DB136	< 2	< 0.05	11.4	< 0.1	< 1	42.2	20.9	125	0.04	5.61	11.4	248	2.1	0.2	98.7	0.21	8.2	51	5.25	0.9	4.30	6.8	15.1
17DB137	< 2	< 0.05	31.0	0.2	4	64.0	34.1	223	0.03	7.76	38.2	151	1.4	< 0.1	179	0.47	14.2	87	8.17	1.7	4.16	3.1	11.0
17DB138	< 2	< 0.05	23.3	0.2	< 1	44.1	26.3	156	0.03	7.27	14.0	342	2.2	0.2	114	0.26	21.0	66	5.61	1.1	5.02	0.8	15.3
17DB139	< 2	< 0.05	16.8	0.2	< 1	18.4	17.4	149	0.05	7.30	6.7	228	2.0	0.1	197	0.33	13.8	47	5.07	1.4	5.63	1.8	15.1
17DB141	< 2	< 0.05	34.5	0.4	< 1	70.1	28.3	189	0.02	6.66	10.4	407	1.4	0.1	40.6	1.12	19.9	66	3.53	1.1	4.13	1.4	11.3
17DB142	< 2	0.07	23.5	0.4	< 1	92.7	25.3	187	0.02	6.24	38.4	287	2.7	0.4	38.0	0.36	17.0	50	5.51	1.7	4.36	0.4	14.0
17DB143	< 2	< 0.05	34.7	< 0.1	< 1	32.7	40.7	129	0.04	7.14	7.8	282	1.9	0.1	94.3	0.57	21.0	56	17.2	1.1	4.42	3.6	13.8
17DB144	< 2	< 0.05	44.3	< 0.1	< 1	26.2	37.5	114	< 0.01	7.11	9.8	388	2.1	0.2	13.3	0.25	19.3	68	5.94	1.4	4.00	3.2	14.4
17DB145	< 2	< 0.05	20.6	0.2	< 1	26.9	27.0	101	0.03	6.17	9.6	303	2.0	0.1	74.1	0.33	17.7	50	5.86	1.1	4.12	3.2	12.9
17DB146	< 2	< 0.05	38.9	0.2	< 1	32.6	37.8	124	< 0.01	6.98	13.5	470	2.7	0.2	1.6	0.61	19.4	69	7.88	1.6	4.35	3.2	15.3
17DB147	< 2	< 0.05	33.0	0.1	< 1	22.7	32.7	108	0.01	6.55	7.9	291	2.2	0.2	61.7	0.70	20.6	55	5.69	1.1	4.08	0.4	13.4
17DB148	< 2	< 0.05	24.2	0.2	< 1	23.3	29.7	109	0.07	6.49	8.6	279	2.7	< 0.1	114	1.01	36.4	103	15.3	2.5	9.50	3.2	17.9
17DB149	6	< 0.05	48.8	0.2	< 1	14.9	47.2	86.9	0.02	6.86	5.7	270	1.6	< 0.1	48.4	2.02	26.5	98	4.14	1.4	5.06	3.8	12.3
17DB150	< 2	< 0.05	26.5	0.2	< 1	19.5	39.9	94.1	0.02	7.46	8.9	283	2.0	0.1	87.3	0.66	22.3	60	7.54	1.5	4.82	2.4	14.2
17DB151	< 2	< 0.05	30.5	0.2	< 1	29.6	26.8	107	0.01	6.77	9.7	433	2.0	0.2	49.0	0.55	20.7	50	4.03	1.3	4.21	0.6	12.8
17DB152	< 2	< 0.05	36.3	0.1	< 1	36.4	41.0	116	< 0.01	8.27	14.2	548	3.0	0.2	< 0.5	0.44	23.1	79	8.16	1.3	5.18	1.3	16.9
17DB153	< 2	< 0.05	41.4	0.2	< 1	34.1	19.1	103	0.04	6.43	11.1	324	1.5	0.2	47.5	0.34	13.1	61	4.01	1.3	4.36	4.2	14.5
17DB154	8	< 0.05	22.4	0.4	< 1	44.3	21.6	118	0.02	6.81	9.8	427	2.1	0.2	34.3	0.43	15.3	55	4.96	1.4	4.19	4.9	15.6
17DB155	< 2	< 0.05	37.6	0.3	< 1	40.8	33.3	126	0.05	6.18	6.0	401	1.6	0.2	72.2	0.93	17.2	63	3.87	1.5	5.64	4.9	16.4
17DB156	< 2	< 0.05	24.6	0.2	< 1	25.0	26.9	102	0.01	5.89	7.3	320	1.7	0.1	35.6	0.36	16.2	64	4.72	1.1	3.86	4.6	12.3
17DB157	< 2	< 0.05	24.0	0.8	< 1	93.1	26.5	190	0.07	6.12	16.8	262	2.0	0.1	110	0.57	20.0	58	9.62	1.0	6.05	3.2	15.3
17DB158	< 2	< 0.05	23.4	0.5	< 1	153	33.1	344	0.03	5.96	27.6	231	3.3	0.2	103	0.43	21.0	65	6.45	1.0	4.56	6.7	12.5
17DB159	< 2	< 0.05	13.1	< 0.1	< 1	49.6	14.9	75.1	0.04	5.47	10.3	319	2.7	0.4	37.4	0.47	7.6	48	5.93	1.0	4.78	0.7	32.2
17DB160	< 2	< 0.05	24.2	0.2	< 1	48.6	23.0	106	0.03	6.36	8.0	230	2.4	0.2	141	0.83	15.4	70	4.89	1.1	4.95	0.8	14.9
17DB161	4	< 0.05	23.2	0.4	< 1	43.8	17.0	115	< 0.01	5.09	11.4	204	2.8	0.2	35.9	1.21	14.0	55	3.56	1.6	3.99	0.4	13.1
17DB162	< 2	< 0.05	74.0	0.2	< 1	48.2	32.5	166	0.03	7.24	12.8	275	2.2	0.3	89.6	0.74	20.0	70	8.25	1.4	4.55	1.8	13.5
17DB163	3	0.27	34.9	0.6	< 1	73.0	35.9	191	0.02	6.51	12.0	270	3.1	0.3	34.2	1.61	30.1	56	7.35	1.2	5.54	1.0	15.2
17DB164	10	< 0.05	11.3	0.2	< 1	31.9	10.0	96.5	0.04	5.78	11.8	142	2.9	0.2	115	0.17	5.2	38	3.29	0.9	4.16	1.2	17.3
17DB166	< 2	< 0.05	38.7	0.1	< 1	48.5	47.4	130	0.02	6.68	8.1	328	1.6	< 0.1	98.3	0.87	30.9	58	6.58	1.4	5.36	3.1	13.2
17DB167	< 2	< 0.05	37.5	0.2	< 1	42.7	51.4	136	0.04	7.11	8.1	294	1.5	< 0.1	132	0.87	33.9	62	6.10	1.2	5.52	4.0	13.6
17DB168	< 2	< 0.05	27.6	0.1	< 1	22.3	44.6	114	0.03	6.93	10.3	291	2.0	0.1	81.4	0.91	28.4	79	8.65	1.8	5.32	3.8	13.3

Results **Activation Laboratories Ltd.** **Report: A17-10547**

Analyte Symbol	Au	Ag	Cu	Co	Mo	Pb	Ni	Zn	S	Al	As	Ba	Be	Bi	Br	Ca	Co	Cr	Cs	Eu	Fe	Hf	Ga
Unit Symbol	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm
Lower Limit	2	0.05	0.2	0.1	1	0.5	0.5	0.5	0.01	0.01	0.5	1	0.1	0.1	0.5	0.01	0.1	1	0.05	0.2	0.01	0.1	0.1
Method Code	INAA	MULT I NAA/T D-ICP/TD-MS	MULT TD-ICP/TD-ICP-MS	MULT TD-ICP/TD-ICP-MS	TD-ICP	MULT TD-ICP/TD-ICP-MS	MULT I NAA/T D-ICP/TD-MS	MULT I NAA/T D-ICP/TD-MS	TD-ICP	TD-ICP	INAA	MULT I NAA/T D-ICP-MS	MULT TD-ICP/TD-ICP-MS	MULT TD-ICP/TD-ICP-MS	INAA	TD-ICP	MULT I NAA/T D-ICP-MS	MULT I NAA/T D-ICP-MS	MULT I NAA/T D-ICP-MS	INAA	INAA	MULT I NAA/T D-ICP-MS	TD-MS
17DB169	10	< 0.05	36.1	0.2	< 1	14.5	35.3	87.3	0.04	8.21	11.2	204	1.8	< 0.1	115	0.93	29.6	52	4.65	1.7	5.08	1.5	14.1
17DB170	4	< 0.05	26.6	< 0.1	< 1	29.3	37.0	105	< 0.01	7.65	13.9	374	2.5	0.2	26.6	0.11	19.1	78	6.05	1.1	4.28	0.6	16.4
17DB171	9	< 0.05	35.2	0.2	< 1	23.4	51.4	134	0.03	7.36	10.1	303	1.6	< 0.1	127	0.81	33.5	76	6.68	1.0	5.66	2.8	14.2
17DB172	< 2	< 0.05	34.2	0.2	< 1	28.3	44.2	119	0.03	7.16	10.8	297	1.8	0.1	80.5	0.58	28.0	57	8.78	1.4	4.94	2.4	13.5
17DB173	< 2	< 0.05	47.1	0.3	< 1	46.1	56.2	144	0.02	6.96	17.5	345	1.9	0.1	63.2	0.99	36.6	57	9.59	1.3	5.46	3.1	13.8
17DB174	< 2	< 0.05	43.2	< 0.1	< 1	40.5	41.8	111	0.01	6.89	12.3	333	1.7	0.1	46.9	0.65	23.8	62	7.79	1.3	4.36	3.3	13.5
17DB175	< 2	< 0.05	49.0	0.2	< 1	27.1	45.0	114	0.02	6.92	10.8	308	1.8	0.1	74.7	0.45	20.6	61	6.65	1.3	4.25	3.1	12.7
17DB176	3	< 0.05	37.5	0.1	< 1	27.2	34.6	115	< 0.01	6.46	10.6	363	2.1	0.2	24.4	0.42	19.3	58	5.33	1.4	3.87	4.1	13.2
17DB177	< 2	< 0.05	34.8	< 0.1	< 1	25.8	42.3	101	< 0.01	7.08	12.1	410	2.1	0.2	8.1	0.21	21.9	75	6.53	1.2	4.54	5.7	17.0
17DB178	< 2	< 0.05	26.8	0.2	< 1	24.3	38.5	110	0.04	7.61	9.7	304	1.9	0.1	119	0.37	24.3	67	7.50	1.6	5.07	0.8	14.8
17DB179	< 2	< 0.05	41.5	0.1	< 1	23.3	44.0	101	0.02	7.39	11.2	349	1.9	0.1	45.2	0.75	26.0	61	7.19	1.2	4.74	1.6	14.9
17DB180	< 2	< 0.05	25.7	0.1	< 1	25.9	35.4	112	0.02	7.27	10.4	313	1.7	0.2	70.7	0.26	17.8	62	5.35	1.1	4.04	0.5	14.4
17DB181	< 2	< 0.05	26.8	0.1	< 1	30.0	36.4	111	0.02	6.92	15.1	322	1.8	0.2	55.3	0.23	17.5	70	4.87	1.0	3.83	0.5	13.9
17DB182	< 2	< 0.05	39.7	< 0.1	< 1	28.1	46.6	114	< 0.01	6.85	12.9	347	2.0	0.1	32.2	0.50	23.5	61	7.09	1.2	4.52	2.9	14.3
17DB183	< 2	< 0.05	27.0	0.4	< 1	31.7	36.3	132	0.03	7.15	10.8	318	1.8	0.1	85.5	0.54	21.8	54	7.57	1.2	5.19	3.3	14.7
17DB184	< 2	< 0.05	39.4	0.2	< 1	33.5	44.2	101	0.01	7.48	9.0	425	2.4	0.2	19.0	0.64	23.8	73	7.19	1.5	5.01	5.2	16.0
17DB185	< 2	< 0.05	51.3	0.4	< 1	15.5	65.1	94.7	0.05	8.26	4.2	324	1.4	< 0.1	100	1.54	48.3	39	5.70	1.5	7.97	3.8	15.3
17DB186	< 2	< 0.05	46.6	0.3	< 1	31.7	49.2	122	0.02	7.56	8.2	362	1.8	< 0.1	54.4	1.37	35.0	66	16.6	1.9	5.90	4.2	13.9
17DB187	< 2	< 0.05	37.2	0.3	< 1	26.7	30.6	115	0.02	5.31	6.3	366	1.8	0.1	46.7	0.35	17.2	55	4.30	1.1	3.76	4.9	11.8
17DB188	< 2	< 0.05	35.4	0.2	< 1	27.2	28.0	125	0.02	6.26	7.4	264	1.5	0.1	93.2	0.65	14.6	67	4.92	1.0	3.44	1.5	10.5
17DB189	3	< 0.05	83.9	0.1	< 1	24.1	31.6	111	0.01	6.55	7.3	354	1.9	0.2	9.7	0.31	17.7	64	4.66	1.1	3.64	0.5	14.1
17DB190	< 2	< 0.05	12.4	< 0.1	< 1	17.3	24.8	75.2	< 0.01	6.70	6.7	408	2.1	0.2	7.2	0.25	9.9	73	7.90	1.4	2.61	0.5	15.0
17DB191	< 2	< 0.05	22.7	0.2	< 1	40.0	27.6	114	0.03	6.83	10.4	277	2.4	0.2	84.2	0.38	15.9	50	4.64	1.3	3.94	1.4	12.6
17DB192	4	< 0.05	46.4	0.3	< 1	23.1	27.0	111	0.02	7.04	16.1	600	1.7	1.8	5.5	1.99	16.5	68	1.04	1.3	4.33	3.7	13.9
17DB193	< 2	< 0.05	157	0.3	< 1	31.8	38.6	120	0.03	7.94	23.3	659	3.5	4.7	10.2	0.95	15.6	76	11.4	0.9	3.51	3.9	16.3
17DB194	< 2	< 0.05	4.1	< 0.1	< 1	5.4	< 0.5	19.6	< 0.01	5.26	1.3	48	6.4	< 0.1	3.5	0.04	0.3	3	2.07	0.2	1.33	41.5	41.1
17DB195	< 2	< 0.05	23.5	0.1	< 1	30.2	33.1	103	0.02	7.12	12.1	325	2.1	0.2	58.9	0.19	16.9	84	5.68	1.1	4.52	5.1	16.0
17DB133	< 2	< 0.05	51.5	0.3	< 1	35.3	52.3	134	0.01	7.90	8.7	373	2.6	0.1	37.5	1.55	38.7	92	9.90	1.5	6.25	3.0	18.1

Results **Activation Laboratories Ltd.** **Report: A17-10547**

Analyte Symbol	Ge	Hg	In	Ir	K	Li	Mg	Mn	Nb	Na	P	Rb	Re	Sb	Sc	Se	Sn	Sr	Ta	Te	Tb	Ti	Th
Unit Symbol	ppm	ppb	ppm	ppb	%	ppm	%	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm
Lower Limit	0.1	10	0.1	5	0.01	0.5	0.01	1	0.1	0.01	0.001	0.2	0.001	0.1	0.1	0.1	1	0.2	0.1	0.1	0.5	0.01	0.1
Method Code	TD-MS	TD-MS	TD-MS	INAA	TD-ICP	TD-MS	TD-ICP	TD-ICP	TD-MS	INAA	TD-ICP	MULTI NAA/TD-ICP-MS	TD-MS	INAA	INAA	MULTI NAA/TD-ICP-MS	TD-MS	TD-MS	MULTI NAA/TD-ICP-MS	TD-MS	INAA	TD-ICP	MULTI NAA/TD-ICP-MS
17DB127	< 0.1	70	< 0.1	< 5	1.10	50.8	0.63	599	0.1	1.17	0.036	67.8	< 0.001	1.0	11.3	< 0.1	< 1	84.6	< 0.1	< 0.1	2.3	0.27	12.6
17DB128	< 0.1	140	< 0.1	< 5	1.58	67.6	1.06	660	< 0.1	0.87	0.061	81.4	< 0.001	1.5	15.1	0.3	< 1	86.9	< 0.1	< 0.1	0.6	0.11	12.6
17DB129	< 0.1	100	< 0.1	< 5	1.41	15.3	1.24	1390	0.1	2.18	0.073	40.5	< 0.001	6.3	12.0	0.4	< 1	302	< 0.1	< 0.1	< 0.5	0.24	5.2
17DB130	< 0.1	110	< 0.1	< 5	1.61	46.9	1.07	786	0.2	1.82	0.062	114	< 0.001	1.0	11.0	0.3	< 1	150	< 0.1	< 0.1	1.4	0.22	16.4
17DB131	< 0.1	50	< 0.1	< 5	1.34	53.0	0.77	749	< 0.1	1.07	0.036	76.9	< 0.001	1.0	12.0	< 0.1	< 1	92.4	< 0.1	< 0.1	< 0.5	0.18	11.1
17DB132	< 0.1	120	< 0.1	< 5	1.10	37.3	1.43	1030	0.1	1.28	0.093	43.2	0.001	0.7	19.4	0.4	< 1	132	< 0.1	< 0.1	1.0	0.13	7.5
17DB134	< 0.1	60	< 0.1	< 5	1.36	49.8	0.79	644	< 0.1	1.34	0.034	81.0	< 0.001	0.9	11.7	0.2	< 1	116	< 0.1	< 0.1	1.5	0.23	10.4
17DB135	< 0.1	90	< 0.1	< 5	1.28	53.3	0.86	881	0.1	1.17	0.038	75.3	< 0.001	1.2	11.7	0.2	< 1	101	< 0.1	< 0.1	0.6	0.29	11.5
17DB136	< 0.1	150	< 0.1	< 5	0.92	39.8	0.43	507	11.9	0.80	0.082	42.1	< 0.001	0.8	8.6	1.3	2	51.5	0.4	< 0.1	< 0.5	0.55	12.4
17DB137	< 0.1	180	< 0.1	< 5	0.84	31.4	0.98	453	0.2	0.73	0.089	43.6	< 0.001	0.8	14.5	0.6	< 1	56.2	< 0.1	< 0.1	< 0.5	0.30	7.3
17DB138	< 0.1	160	< 0.1	< 5	1.28	52.5	0.52	665	0.5	1.01	0.067	80.4	< 0.001	1.1	11.6	1.0	< 1	81.6	< 0.1	< 0.1	1.1	0.30	14.0
17DB139	< 0.1	170	< 0.1	< 5	1.01	38.3	0.44	815	0.1	0.73	0.141	40.1	< 0.001	0.8	12.8	1.4	< 1	67.3	< 0.1	< 0.1	0.6	0.28	7.8
17DB141	< 0.1	90	< 0.1	< 5	1.30	38.6	0.96	1030	0.1	1.38	0.051	54.5	< 0.001	0.8	13.3	0.3	< 1	149	< 0.1	< 0.1	< 0.5	0.12	8.5
17DB142	< 0.1	70	< 0.1	< 5	1.64	31.5	0.63	885	0.1	1.10	0.042	91.8	0.002	1.4	9.7	0.4	< 1	78.6	< 0.1	< 0.1	1.7	0.11	14.5
17DB143	< 0.1	120	< 0.1	< 5	1.35	43.3	0.84	645	0.1	1.03	0.095	53.1	< 0.001	0.8	12.4	0.9	< 1	84.6	< 0.1	< 0.1	0.8	0.18	8.6
17DB144	< 0.1	30	< 0.1	< 5	1.74	49.7	0.84	647	< 0.1	1.20	0.028	82.8	< 0.001	1.0	12.1	0.2	< 1	93.8	< 0.1	< 0.1	0.8	0.09	11.2
17DB145	< 0.1	90	< 0.1	< 5	1.56	39.6	0.65	617	0.1	1.17	0.063	60.7	< 0.001	0.7	10.4	0.4	< 1	86.5	< 0.1	< 0.1	< 0.5	0.13	10.2
17DB146	< 0.1	30	< 0.1	< 5	1.83	56.1	0.91	972	0.1	1.15	0.047	93.1	< 0.001	1.4	13.6	0.2	< 1	114	< 0.1	< 0.1	0.8	0.12	11.3
17DB147	< 0.1	90	< 0.1	< 5	1.55	35.3	0.87	851	< 0.1	1.26	0.057	61.7	< 0.001	0.5	11.8	0.3	< 1	99.7	< 0.1	< 0.1	0.5	0.13	10.8
17DB148	< 0.1	130	< 0.1	< 5	0.93	38.1	0.90	1710	0.2	1.08	0.230	28.2	< 0.001	< 0.1	22.1	0.9	< 1	122	< 0.1	< 0.1	0.7	0.47	6.0
17DB149	< 0.1	70	< 0.1	< 5	1.16	27.1	1.66	1010	< 0.1	1.58	0.076	44.6	< 0.001	0.3	21.0	0.4	< 1	133	< 0.1	< 0.1	< 0.5	0.25	6.7
17DB150	< 0.1	130	< 0.1	< 5	1.12	34.5	0.99	608	< 0.1	1.09	0.079	60.6	< 0.001	0.9	15.2	0.2	< 1	85.2	< 0.1	< 0.1	1.4	0.21	9.4
17DB151	< 0.1	80	< 0.1	< 5	1.42	32.4	0.79	638	0.1	1.56	0.041	79.7	< 0.001	0.8	12.8	< 0.1	< 1	108	< 0.1	< 0.1	0.7	0.14	10.4
17DB152	< 0.1	50	< 0.1	< 5	1.87	62.7	1.05	955	< 0.1	1.10	0.036	110	< 0.001	1.1	16.2	< 0.1	< 1	107	< 0.1	< 0.1	1.1	0.12	12.6
17DB153	< 0.1	50	< 0.1	< 5	1.37	37.6	0.56	642	0.1	1.15	0.076	55.2	< 0.001	1.1	11.0	0.6	< 1	82.2	< 0.1	< 0.1	< 0.5	0.20	10.9
17DB154	< 0.1	20	< 0.1	< 5	1.68	33.9	0.63	843	0.3	1.42	0.061	78.2	< 0.001	0.9	11.6	0.5	< 1	92.3	< 0.1	< 0.1	1.5	0.29	11.3
17DB155	0.2	20	< 0.1	< 5	1.09	29.7	0.79	848	2.6	1.15	0.132	44.9	< 0.001	0.6	10.4	1.0	1	180	< 0.1	< 0.1	< 0.5	0.52	10.1
17DB156	< 0.1	40	< 0.1	< 5	1.31	35.4	0.57	490	0.2	1.36	0.025	59.2	< 0.001	0.6	10.5	0.3	< 1	92.1	< 0.1	< 0.1	0.5	0.24	10.0
17DB157	< 0.1	50	< 0.1	< 5	0.96	29.7	0.74	1070	< 0.1	0.97	0.124	49.6	< 0.001	1.0	13.1	0.9	< 1	80.7	< 0.1	< 0.1	< 0.5	0.28	7.7
17DB158	< 0.1	140	< 0.1	< 5	0.81	46.2	0.76	620	8.9	1.09	0.081	43.2	< 0.001	1.1	11.1	1.2	2	75.2	0.3	< 0.1	1.3	0.55	9.9
17DB159	< 0.1	100	< 0.1	< 5	1.42	24.6	0.52	617	0.1	1.19	0.056	80.9	< 0.001	0.9	9.1	0.8	1	75.3	< 0.1	< 0.1	< 0.5	0.26	19.6
17DB160	< 0.1	140	< 0.1	< 5	1.14	32.8	0.76	641	0.1	1.33	0.061	62.1	< 0.001	0.6	12.4	0.7	< 1	81.7	< 0.1	< 0.1	1.0	0.21	10.8
17DB161	< 0.1	70	< 0.1	< 5	1.25	28.2	0.58	821	0.1	1.50	0.038	58.1	< 0.001	0.8	11.3	< 0.1	< 1	115	< 0.1	< 0.1	2.1	0.19	10.9
17DB162	< 0.1	130	< 0.1	< 5	1.36	58.0	0.85	696	< 0.1	1.00	0.079	77.7	< 0.001	1.4	12.9	0.5	< 1	97.4	< 0.1	< 0.1	1.7	0.18	10.2
17DB163	< 0.1	80	< 0.1	< 5	1.90	44.4	1.20	1110	0.2	1.38	0.083	80.2	< 0.001	1.4	13.2	0.4	< 1	135	< 0.1	< 0.1	0.9	0.14	10.4
17DB164	< 0.1	150	0.1	< 5	0.97	29.7	0.24	358	0.1	0.79	0.041	41.7	< 0.001	0.8	6.3	1.0	< 1	53.1	< 0.1	< 0.1	1.5	0.11	12.3
17DB166	< 0.1	100	< 0.1	< 5	1.03	39.8	1.32	1160	< 0.1	1.10	0.093	43.8	< 0.001	0.8	14.8	0.8	< 1	110	< 0.1	< 0.1	< 0.5	0.20	7.2
17DB167	< 0.1	30	< 0.1	< 5	0.97	41.7	1.26	1310	0.4	0.95	0.112	42.3	< 0.001	0.4	15.1	1.1	< 1	97.7	< 0.1	< 0.1	< 0.5	0.37	6.6
17DB168	< 0.1	50	< 0.1	< 5	0.99	45.8	1.03	842	0.1	1.10	0.081	46.3	< 0.001	1.0	16.9	0.6	< 1	100	< 0.1	< 0.1	1.3	0.20	8.3
17DB169	< 0.1	150	< 0.1	< 5	0.83	27.0	1.00	937	0.1	0.87	0.131	30.2	< 0.001	0.5	16.2	0.4	< 1	92.4	< 0.1	< 0.1	< 0.5	0.25	6.0

Results **Activation Laboratories Ltd.** **Report: A17-10547**

Analyte Symbol	Ge	Hg	In	Ir	K	Li	Mg	Mn	Nb	Na	P	Rb	Re	Sb	Sc	Se	Sn	Sr	Ta	Te	Tb	Ti	Th
Unit Symbol	ppm	ppb	ppm	ppb	%	ppm	%	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm
Lower Limit	0.1	10	0.1	5	0.01	0.5	0.01	1	0.1	0.01	0.001	0.2	0.001	0.1	0.1	0.1	1	0.2	0.1	0.1	0.5	0.01	0.1
Method Code	TD-MS	TD-MS	TD-MS	INAA	TD-ICP	TD-MS	TD-ICP	TD-ICP	TD-MS	INAA	TD-ICP	MULTI NAA/TD-ICP-MS	TD-MS	INAA	INAA	MULTI NAA/TD-ICP-MS	TD-MS	TD-MS	MULTI NAA/TD-ICP-MS	TD-MS	INAA	TD-ICP	MULTI NAA/TD-ICP-MS
17DB170	< 0.1	60	< 0.1	< 5	1.53	62.1	0.82	557	< 0.1	1.02	0.017	93.4	< 0.001	1.1	12.6	< 0.1	< 1	84.2	< 0.1	< 0.1	1.5	0.12	12.8
17DB171	< 0.1	110	< 0.1	< 5	1.00	44.4	1.31	838	< 0.1	1.06	0.083	43.5	< 0.001	0.7	15.1	0.6	< 1	101	< 0.1	< 0.1	< 0.5	0.14	7.4
17DB172	< 0.1	80	< 0.1	< 5	1.36	43.5	1.02	826	< 0.1	1.17	0.083	51.5	< 0.001	0.9	14.0	0.4	< 1	106	< 0.1	< 0.1	< 0.5	0.15	9.3
17DB173	< 0.1	70	< 0.1	< 5	1.33	51.0	1.71	1310	< 0.1	1.19	0.065	60.2	< 0.001	0.7	15.8	0.4	< 1	116	< 0.1	< 0.1	0.7	0.12	8.8
17DB174	< 0.1	30	< 0.1	< 5	1.44	43.8	1.01	970	< 0.1	1.16	0.066	60.0	< 0.001	0.9	13.2	0.3	< 1	104	< 0.1	< 0.1	0.9	0.15	9.7
17DB175	< 0.1	100	< 0.1	< 5	1.39	42.7	0.87	705	< 0.1	1.08	0.070	56.4	< 0.001	0.8	11.4	0.6	< 1	97.8	< 0.1	< 0.1	< 0.5	0.12	9.8
17DB176	< 0.1	20	< 0.1	< 5	1.91	44.7	0.83	910	0.1	1.17	0.051	60.3	< 0.001	0.7	11.0	0.2	< 1	107	< 0.1	< 0.1	< 0.5	0.15	10.0
17DB177	< 0.1	50	< 0.1	< 5	0.88	68.2	0.88	818	5.5	0.94	0.034	54.7	< 0.001	0.6	14.2	0.3	1	100	0.2	< 0.1	< 0.5	0.51	11.5
17DB178	< 0.1	140	< 0.1	< 5	1.26	52.9	0.79	829	0.2	0.92	0.092	62.0	< 0.001	0.6	14.1	0.7	< 1	91.2	< 0.1	< 0.1	< 0.5	0.32	9.4
17DB179	< 0.1	70	< 0.1	< 5	1.18	43.9	1.19	991	0.1	1.08	0.076	65.8	< 0.001	0.7	13.6	0.3	< 1	109	< 0.1	< 0.1	0.5	0.22	8.5
17DB180	< 0.1	130	< 0.1	< 5	1.45	53.7	0.69	787	< 0.1	0.89	0.062	70.5	< 0.001	0.9	11.0	0.5	< 1	86.2	< 0.1	< 0.1	< 0.5	0.16	10.8
17DB181	< 0.1	100	< 0.1	< 5	1.47	55.3	0.67	790	< 0.1	0.97	0.044	71.3	< 0.001	0.9	10.5	0.3	< 1	93.7	< 0.1	< 0.1	< 0.5	0.10	11.4
17DB182	< 0.1	50	< 0.1	< 5	1.20	50.0	1.07	859	< 0.1	1.14	0.056	53.1	< 0.001	0.9	12.6	0.3	< 1	101	< 0.1	< 0.1	0.9	0.11	9.4
17DB183	< 0.1	80	< 0.1	< 5	0.97	39.9	0.85	810	0.1	1.10	0.108	47.8	< 0.001	0.4	12.8	0.6	< 1	92.5	< 0.1	< 0.1	< 0.5	0.23	8.3
17DB184	0.1	10	< 0.1	< 5	1.73	50.9	1.07	944	6.2	1.19	0.063	76.1	< 0.001	0.9	16.0	0.6	1	110	0.1	< 0.1	0.6	0.50	10.8
17DB185	0.1	< 10	< 0.1	< 5	0.63	51.8	2.54	1170	2.1	1.21	0.137	18.5	< 0.001	< 0.1	19.2	0.9	< 1	144	< 0.1	< 0.1	< 0.5	0.53	3.8
17DB186	< 0.1	< 10	< 0.1	< 5	1.20	39.4	1.74	1180	0.8	1.31	0.089	44.3	< 0.001	0.9	20.3	0.5	< 1	119	< 0.1	< 0.1	1.1	0.34	6.2
17DB187	< 0.1	80	< 0.1	< 5	0.90	43.2	0.77	983	2.2	1.09	0.065	41.2	< 0.001	0.9	11.0	0.5	< 1	87.8	< 0.1	< 0.1	< 0.5	0.46	9.3
17DB188	< 0.1	110	< 0.1	< 5	1.17	39.3	0.76	693	0.1	1.11	0.057	54.3	< 0.001	0.8	10.1	0.6	< 1	95.6	< 0.1	< 0.1	0.6	0.26	8.6
17DB189	< 0.1	100	< 0.1	< 5	1.27	50.2	0.75	766	< 0.1	1.04	0.016	77.5	< 0.001	0.9	11.4	0.1	< 1	99.6	< 0.1	< 0.1	< 0.5	0.28	11.0
17DB190	< 0.1	40	< 0.1	< 5	1.49	42.9	0.63	655	0.1	0.92	0.013	96.8	< 0.001	0.6	11.5	< 0.1	< 1	71.2	< 0.1	< 0.1	0.6	0.20	14.3
17DB191	< 0.1	120	< 0.1	< 5	1.29	44.7	0.68	883	0.1	0.96	0.066	56.2	< 0.001	0.6	10.3	0.7	< 1	77.7	< 0.1	< 0.1	1.5	0.18	11.1
17DB192	< 0.1	100	< 0.1	< 5	1.82	15.9	1.27	1400	0.6	2.15	0.082	42.1	< 0.001	6.2	11.9	0.3	< 1	307	< 0.1	< 0.1	< 0.5	0.22	5.0
17DB193	< 0.1	70	< 0.1	< 5	1.64	47.5	1.08	798	0.2	1.78	0.064	79.2	< 0.001	1.1	10.9	0.3	< 1	144	< 0.1	< 0.1	< 0.5	0.19	15.7
17DB194	0.7	30	< 0.1	< 5	4.68	1.4	< 0.01	105	12.0	3.61	0.002	184	< 0.001	0.2	0.8	0.2	5	13.0	1.2	< 0.1	< 0.5	0.09	6.4
17DB195	0.2	< 10	< 0.1	< 5	1.65	54.7	0.74	646	4.4	0.99	0.033	80.0	< 0.001	1.0	12.1	0.8	1	83.5	< 0.1	< 0.1	< 0.5	0.35	13.5
17DB133	< 0.1	90	< 0.1	< 5	1.03	50.8	1.88	1610	< 0.1	1.30	0.098	49.2	< 0.001	0.8	20.8	< 0.1	< 1	126	< 0.1	< 0.1	< 0.5	0.21	8.9

Results **Activation Laboratories Ltd.** **Report: A17-10547**

Analyte Symbol	Tl	V	U	W	Y	Zr	La	La	Ce	Ce	Pr	Nd	Nd	Sm	Sm	Eu	Gd	Dy	Tb	Ho	Er	Tm	Yb
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	0.05	2	0.1	1	0.1	1	0.1	0.5	0.1	3	0.1	0.1	5	0.1	0.1	0.05	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Method Code	TD-MS	TD-ICP	MULT INAA/TD-ICP-MS	INAA	TD-MS	TD-MS	TD-MS	INAA	TD-MS	INAA	TD-MS	TD-MS	INAA	TD-MS	INAA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
17DB127	0.44	40	3.5	< 1	25.6	14	37.8	48.7	96.4	100	9.5	39.4	36	8.4	8.1	1.30	6.2	5.6	0.8	1.0	3.2	0.5	3.2
17DB128	0.61	46	3.1	< 1	25.0	42	29.2	36.4	67.8	75	7.6	32.3	27	7.3	7.2	1.26	5.9	6.1	0.8	1.1	3.2	0.5	3.1
17DB129	0.38	62	2.3	< 1	25.3	24	26.6	25.2	72.5	63	7.4	30.9	18	6.2	4.4	1.32	5.3	5.2	0.7	1.0	3.0	0.4	2.8
17DB130	1.01	53	5.0	< 1	21.0	96	43.9	42.6	108	95	10.5	41.4	38	8.8	5.8	1.08	6.0	5.0	0.8	0.8	2.3	0.3	2.1
17DB131	0.52	36	2.7	< 1	23.9	20	35.4	40.3	90.4	83	8.8	35.5	33	7.7	6.5	1.24	5.7	5.3	0.7	1.0	2.8	0.4	2.7
17DB132	0.35	50	2.0	< 1	33.9	38	31.8	36.9	109	112	8.9	39.0	32	8.6	8.3	1.88	7.7	7.3	1.1	1.4	3.9	0.6	3.5
17DB134	0.55	37	2.7	< 1	22.6	21	33.5	37.6	79.1	73	8.2	32.3	32	7.1	6.1	1.07	5.0	4.8	0.7	0.9	2.7	0.4	2.7
17DB135	0.61	52	3.0	< 1	24.3	24	37.0	40.0	91.1	84	9.0	35.6	27	7.6	6.3	1.13	5.7	5.5	0.8	1.1	2.9	0.4	2.8
17DB136	0.63	73	2.8	< 1	23.3	220	28.4	38.6	69.1	83	6.7	27.3	31	6.2	6.7	0.83	4.9	5.3	0.7	1.0	2.9	0.4	2.9
17DB137	0.72	78	2.9	< 1	23.0	122	23.4	27.4	71.3	75	6.3	27.1	43	7.1	6.8	1.37	6.0	5.9	0.8	1.0	2.9	0.4	2.3
17DB138	0.70	58	3.2	< 1	29.3	53	36.7	45.2	89.5	95	9.0	36.1	41	7.9	7.8	1.20	6.3	6.4	0.9	1.2	3.4	0.5	3.3
17DB139	0.38	74	2.2	< 1	27.3	86	29.3	35.3	69.8	72	8.0	33.1	29	7.0	7.3	1.30	6.4	6.5	0.9	1.2	3.3	0.5	2.9
17DB141	0.47	32	2.2	< 1	20.7	58	26.5	31.5	66.3	66	6.5	26.6	23	5.3	5.3	1.00	4.5	4.3	0.6	0.8	2.5	0.4	2.4
17DB142	0.66	27	3.7	< 1	40.2	19	45.2	51.0	119	114	11.4	46.3	51	11.0	9.3	1.23	8.4	8.6	1.2	1.7	4.9	0.7	4.6
17DB143	0.56	51	2.3	< 1	22.2	123	27.0	29.8	68.3	67	6.8	27.9	37	6.5	5.8	1.16	5.1	4.9	0.7	0.9	2.6	0.4	2.5
17DB144	0.63	19	2.7	< 1	21.6	105	35.4	40.8	87.4	89	8.4	33.5	32	6.2	6.2	1.01	4.8	4.5	0.7	0.9	2.7	0.4	2.6
17DB145	0.51	33	2.6	< 1	22.8	106	31.0	36.6	80.0	83	7.7	31.2	24	6.6	6.3	1.04	5.2	5.0	0.7	0.9	2.7	0.4	2.7
17DB146	0.69	29	3.4	< 1	31.9	109	43.7	46.5	102	91	11.2	46.5	37	8.2	8.1	1.47	7.5	6.6	1.0	1.3	3.8	0.6	3.4
17DB147	0.53	35	2.7	< 1	25.9	19	31.4	34.7	91.2	90	7.7	32.6	25	7.3	6.2	0.99	5.8	5.6	0.8	1.1	3.2	0.5	3.0
17DB148	0.35	116	3.1	< 1	40.9	125	23.5	30.8	61.6	73	7.4	34.7	36	9.0	9.1	2.12	8.4	8.7	1.2	1.7	5.2	0.8	4.8
17DB149	0.35	70	1.7	< 1	25.6	139	22.9	26.9	58.9	63	6.2	26.0	20	6.1	5.9	1.14	5.4	5.5	0.8	1.0	3.0	0.4	2.9
17DB150	0.54	54	2.3	< 1	27.2	103	30.0	32.6	81.1	83	7.7	32.8	44	8.2	6.9	1.35	6.2	6.3	0.9	1.2	3.2	0.5	3.0
17DB151	0.57	32	2.5	< 1	24.8	28	30.9	36.9	78.3	82	7.7	30.4	32	6.8	6.7	1.02	5.5	5.7	0.8	1.0	3.1	0.4	2.8
17DB152	0.79	31	2.7	< 1	27.7	65	41.4	47.8	94.1	98	10.3	41.7	33	9.0	8.1	1.37	6.5	5.9	0.8	1.1	3.1	0.5	3.1
17DB153	0.59	50	2.7	< 1	19.8	137	28.2	32.8	65.1	67	6.8	26.9	26	5.3	5.2	0.84	4.1	3.9	0.5	0.7	2.3	0.4	2.4
17DB154	0.68	55	2.5	< 1	29.0	165	30.2	35.4	80.8	87	7.6	31.3	45	7.6	6.8	1.12	5.9	6.0	0.8	1.1	3.3	0.5	3.3
17DB155	0.44	74	2.4	< 1	18.8	168	23.2	30.1	55.8	65	5.9	24.4	27	5.6	5.8	1.07	4.3	4.2	0.6	0.8	2.3	0.3	2.2
17DB156	0.54	39	2.5	< 1	20.0	152	28.5	33.1	85.3	88	7.0	27.6	26	6.6	5.8	0.90	4.7	4.5	0.6	0.8	2.4	0.4	2.5
17DB157	0.85	82	2.3	< 1	21.5	109	22.1	24.1	57.5	63	5.6	22.5	20	5.2	4.9	0.98	4.5	4.8	0.6	0.9	2.6	0.4	2.6
17DB158	0.68	91	2.5	< 1	23.3	219	31.9	40.5	111	124	8.2	34.0	43	7.8	8.1	0.89	6.4	5.8	0.8	1.0	2.8	0.4	2.6
17DB159	0.73	68	5.9	< 1	25.5	40	25.5	31.6	64.8	75	6.1	23.3	33	5.3	5.6	0.69	4.4	5.1	0.7	1.0	3.4	0.5	3.6
17DB160	0.78	53	2.7	< 1	28.4	43	29.5	36.5	84.1	94	7.4	30.9	44	6.0	7.3	0.95	5.8	6.1	0.9	1.2	3.4	0.5	3.1
17DB161	0.56	42	2.9	< 1	37.9	19	48.8	55.7	133	132	12.4	50.4	49	11.2	10.4	1.23	9.0	8.5	1.2	1.6	4.5	0.7	4.1
17DB162	0.87	55	2.4	< 1	28.8	79	35.4	39.3	86.7	86	8.6	35.4	32	8.2	7.5	1.19	6.6	6.2	0.9	1.1	3.4	0.5	2.9
17DB163	0.88	44	3.0	< 1	32.5	53	35.3	38.1	93.5	92	8.8	36.8	31	8.1	7.3	1.09	7.0	6.7	1.0	1.3	3.7	0.5	3.4
17DB164	0.61	31	2.8	< 1	42.1	71	51.1	54.8	180	175	12.7	52.8	50	12.8	10.5	0.85	9.4	9.8	1.3	1.8	5.5	0.8	5.0
17DB166	0.37	54	1.9	< 1	18.7	108	23.0	25.6	66.5	69	5.9	23.9	21	4.8	5.0	1.03	4.3	4.3	0.6	0.8	2.2	0.3	2.1
17DB167	0.34	81	1.8	< 1	18.5	137	22.5	25.0	57.7	61	5.8	24.0	31	5.3	5.2	1.10	4.5	4.4	0.6	0.8	2.3	0.3	2.1
17DB168	0.41	56	2.2	< 1	27.7	129	29.8	34.7	102	112	8.0	34.0	39	8.3	7.8	1.54	6.4	6.1	0.9	1.2	3.3	0.5	3.0
17DB169	0.30	86	1.7	< 1	23.1	69	22.6	23.8	71.3	70	5.9	25.8	24	5.9	5.8	1.40	5.7	5.7	0.8	1.0	2.9	0.4	2.5

Results **Activation Laboratories Ltd.** **Report: A17-10547**

Analyte Symbol	Tl	V	U	W	Y	Zr	La	La	Ce	Ce	Pr	Nd	Nd	Sm	Sm	Eu	Gd	Dy	Tb	Ho	Er	Tm	Yb
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	0.05	2	0.1	1	0.1	1	0.1	0.5	0.1	3	0.1	0.1	5	0.1	0.1	0.05	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Method Code	TD-MS	TD-ICP	MULTI INAA/TD-ICP-MS	INAA	TD-MS	TD-MS	TD-MS	INAA	TD-MS	INAA	TD-MS	TD-MS	INAA	TD-MS	INAA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS
17DB170	0.65	21	2.8	< 1	22.1	27	38.1	41.1	88.9	88	8.4	32.3	29	7.1	6.2	0.94	5.0	4.9	0.7	0.9	2.8	0.4	2.8
17DB171	0.40	50	1.9	< 1	19.7	103	24.7	26.5	65.5	65	6.0	24.7	39	6.7	5.3	1.07	4.6	4.5	0.6	0.9	2.3	0.4	2.2
17DB172	0.68	45	2.5	< 1	24.1	82	30.1	31.9	74.8	80	7.6	31.6	20	6.8	6.6	1.31	5.7	5.5	0.8	1.0	3.1	0.5	2.8
17DB173	0.55	39	2.2	< 1	23.4	107	26.4	27.5	66.9	67	6.5	27.1	29	6.8	5.7	1.19	5.3	5.5	0.8	1.0	2.9	0.4	2.6
17DB174	0.49	39	2.4	< 1	22.0	108	31.3	32.0	81.4	77	7.6	30.1	29	7.9	5.9	1.22	5.5	5.1	0.7	0.9	2.8	0.4	2.5
17DB175	0.47	37	2.4	< 1	20.3	110	29.0	30.4	84.0	84	6.9	28.1	28	6.2	5.6	1.01	5.0	4.7	0.6	0.9	2.5	0.4	2.4
17DB176	0.52	29	2.9	< 1	25.5	137	35.7	35.0	106	98	8.7	35.5	27	8.6	6.7	1.26	6.1	5.9	0.8	1.1	3.2	0.5	3.0
17DB177	0.67	90	2.8	< 1	20.1	185	32.4	39.8	77.1	82	7.8	31.5	28	6.4	6.5	1.08	4.7	4.6	0.6	0.8	2.6	0.4	2.5
17DB178	0.53	80	3.8	< 1	23.3	57	30.2	33.0	72.9	77	7.5	31.3	33	7.4	6.8	1.32	6.1	5.8	0.8	1.0	2.9	0.5	2.7
17DB179	0.50	67	2.2	< 1	20.3	86	28.3	28.4	73.7	71	7.0	28.2	21	6.1	5.5	1.11	5.0	4.9	0.7	0.9	2.6	0.4	2.5
17DB180	0.54	42	2.7	< 1	20.1	32	31.9	32.0	70.1	72	7.3	28.7	27	6.1	5.3	0.98	4.6	4.4	0.6	0.8	2.5	0.4	2.4
17DB181	0.53	27	2.8	< 1	20.5	24	33.6	35.2	78.9	73	7.7	30.0	34	6.7	5.5	0.95	4.7	4.3	0.6	0.8	2.5	0.4	2.5
17DB182	0.50	31	2.5	< 1	22.0	100	31.6	32.9	81.4	81	7.7	30.5	25	7.6	6.2	1.07	5.1	5.0	0.7	0.9	2.8	0.4	2.6
17DB183	0.49	57	2.1	< 1	19.3	115	25.0	26.5	66.6	67	6.2	24.6	32	5.5	5.0	0.98	4.5	4.4	0.6	0.9	2.4	0.4	2.2
17DB184	0.68	86	2.4	< 1	27.7	172	36.3	40.6	94.8	99	9.1	37.2	39	9.6	8.1	1.39	6.8	6.1	0.9	1.1	3.3	0.5	3.0
17DB185	0.26	102	1.1	< 1	21.5	134	17.4	18.9	61.3	70	5.1	22.3	23	6.5	5.7	1.40	5.3	5.5	0.7	0.9	2.6	0.4	2.3
17DB186	0.44	72	1.8	< 1	28.1	144	29.4	31.1	91.7	92	7.7	32.8	26	8.6	7.4	1.55	6.8	6.4	0.9	1.2	3.5	0.5	3.0
17DB187	0.45	77	2.4	< 1	16.8	162	24.4	29.5	57.8	73	5.8	23.1	25	4.9	5.2	0.78	3.8	3.4	0.5	0.6	2.0	0.3	2.0
17DB188	0.47	45	2.2	< 1	18.1	71	26.1	25.8	66.9	70	6.2	24.6	24	5.7	4.9	0.89	4.3	4.1	0.6	0.7	2.2	0.3	2.2
17DB189	0.55	43	2.7	< 1	18.9	25	32.5	34.1	72.6	73	7.5	28.9	32	6.1	5.4	0.90	4.1	4.1	0.6	0.8	2.4	0.4	2.4
17DB190	0.71	34	3.8	< 1	25.3	27	43.9	44.8	97.0	99	10.2	40.4	32	7.3	7.1	1.10	5.6	5.2	0.7	1.0	3.2	0.5	3.2
17DB191	0.55	40	2.7	< 1	28.4	65	36.0	36.7	121	117	8.8	36.0	34	8.6	7.7	1.11	7.0	7.0	1.0	1.2	3.6	0.5	3.0
17DB192	0.38	52	1.9	< 1	25.6	130	26.7	24.6	71.2	64	7.2	30.0	24	6.4	4.4	1.33	5.6	5.2	0.7	1.0	3.1	0.5	2.8
17DB193	0.99	45	4.5	< 1	19.3	127	40.0	42.8	97.0	87	9.4	37.4	35	7.6	5.6	1.01	6.0	4.6	0.7	0.8	2.3	0.3	2.0
17DB194	0.88	5	2.3	< 1	10.0	257	3.6	5.1	9.5	18	1.1	4.7	< 5	1.5	1.7	0.10	1.4	2.2	0.3	0.4	1.6	0.3	2.1
17DB195	0.61	58	3.0	< 1	20.1	167	34.7	38.0	80.4	90	7.6	29.3	26	5.8	6.0	0.83	4.4	4.3	0.6	0.8	2.5	0.4	2.5
17DB133	0.46	57	1.9	< 1	29.1	129	28.7	31.9	76.5	88	7.7	33.5	21	7.2	4.3	1.65	7.0	6.6	1.2	1.3	3.2	0.6	3.3

Analyte Symbol	Yb	Lu	Lu	Mass
Unit Symbol	ppm	ppm	ppm	g
Lower Limit	0.2	0.1	0.05	
Method Code	INAA	TD-MS	INAA	INAA
17DB127	5.0	0.4	0.29	27.1
17DB128	4.1	0.4	0.22	21.3
17DB129	3.3	0.4	0.48	1.38
17DB130	2.9	0.3	0.50	1.22
17DB131	4.1	0.4	0.23	28.1
17DB132	4.4	0.5	0.19	25.1
17DB134	4.0	0.4	0.19	26.6
17DB135	3.8	0.4	0.22	25.3
17DB136	4.6	0.4	0.26	21.9
17DB137	3.0	0.3	0.14	19.8
17DB138	4.4	0.5	0.24	21.6
17DB139	4.1	0.4	0.20	20.3
17DB141	3.8	0.4	0.17	25.8
17DB142	6.0	0.7	0.34	27.3
17DB143	2.9	0.4	0.15	21.5
17DB144	4.2	0.4	0.21	23.7
17DB145	3.9	0.4	0.18	21.3
17DB146	4.4	0.5	0.25	25.3
17DB147	3.7	0.5	0.21	26.1
17DB148	5.8	0.8	0.32	20.5
17DB149	3.8	0.4	0.17	27.9
17DB150	3.9	0.4	0.17	23.3
17DB151	3.8	0.4	0.22	23.2
17DB152	4.1	0.4	0.23	23.9
17DB153	3.5	0.4	0.18	18.9
17DB154	4.1	0.5	0.28	20.1
17DB155	3.5	0.3	0.18	19.2
17DB156	4.0	0.4	0.22	26.0
17DB157	3.4	0.4	0.15	17.9
17DB158	3.8	0.4	0.22	23.3
17DB159	4.9	0.5	0.29	19.8
17DB160	4.4	0.5	0.21	20.9
17DB161	5.1	0.6	0.29	26.9
17DB162	3.9	0.4	0.22	21.9
17DB163	4.1	0.5	0.23	26.9
17DB164	5.8	0.7	0.31	21.0
17DB166	2.9	0.3	0.16	23.4
17DB167	3.0	0.3	0.14	22.3
17DB168	4.1	0.4	0.22	22.3
17DB169	2.7	0.4	0.16	20.7
17DB170	3.9	0.4	0.22	20.7
17DB171	2.9	0.3	0.12	21.9

Analyte Symbol	Yb	Lu	Lu	Mass
Unit Symbol	ppm	ppm	ppm	g
Lower Limit	0.2	0.1	0.05	
Method Code	INAA	TD-MS	INAA	INAA
17DB172	3.7	0.4	0.20	23.3
17DB173	3.1	0.4	0.17	25.5
17DB174	3.6	0.4	0.17	28.0
17DB175	3.4	0.3	0.18	22.4
17DB176	3.8	0.4	0.23	26.7
17DB177	3.4	0.4	0.20	22.7
17DB178	3.3	0.4	0.16	20.0
17DB179	3.3	0.4	0.18	24.5
17DB180	3.4	0.4	0.19	21.4
17DB181	3.5	0.4	0.21	23.4
17DB182	3.8	0.4	0.19	26.4
17DB183	2.9	0.3	0.17	19.8
17DB184	3.8	0.4	0.23	23.9
17DB185	2.8	0.3	0.11	20.6
17DB186	3.9	0.4	0.17	23.8
17DB187	3.2	0.3	0.18	24.3
17DB188	3.0	0.3	0.18	26.1
17DB189	3.9	0.4	0.19	26.3
17DB190	4.9	0.5	0.29	24.5
17DB191	4.2	0.4	0.21	23.7
17DB192	2.9	0.4	0.41	1.52
17DB193	3.1	0.3	0.38	1.29
17DB194	4.0	0.4	0.31	19.0
17DB195	4.0	0.4	0.22	20.5
17DB133	3.5	0.5	0.38	27.7

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Analyte Symbol	Au	Ag	Ag	Ag	Cu	Cu	Cd	Cd	Mo	Pb	Pb	Ni	Ni	Ni	Zn	Zn	Zn	S	Al	As	Ba	Ba	Be
Unit Symbol	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	ppm	ppm
Lower Limit	2	0.05	0.3	5	0.2	1	0.1	0.3	1	0.5	3	0.5	1	20	0.5	1	50	0.01	0.01	0.5	1	50	0.1
Method Code	INAA	TD-MS	TD-ICP	INAA	TD-MS	TD-ICP	TD-MS	TD-ICP	TD-ICP	TD-MS	TD-ICP	TD-MS	TD-ICP	INAA	TD-MS	TD-ICP	INAA	TD-ICP	TD-ICP	INAA	TD-MS	INAA	TD-MS
GXR-1 Meas		33.2	31.7		1190	1150	2.9	2.6	15	800	738	44.9	42		836	735		0.25	1.84		700		1.0
GXR-1 Cert		31.0	31.0		1110	1110	3.30	3.30	18.0	730	730	41.0	41.0		760	760		0.257	3.52		750		1.22
GXR-1 Meas		29.5	31.6		1190	1130	2.3	2.4	15	747	740	41.2	42		830	745		0.25	2.31		689		0.9
GXR-1 Cert		31.0	31.0		1110	1110	3.30	3.30	18.0	730	730	41.0	41.0		760	760		0.257	3.52		750		1.22
GXR-1 Meas		29.0			1150		2.6			711		41.7			825						655		0.7
GXR-1 Cert		31.0			1110		3.30			730		41.0			760						750		1.22
GXR-1 Meas		30.1			1180		3.1			716		38.5			760						606		0.9
GXR-1 Cert		31.0			1110		3.30			730		41.0			760						750		1.22
DH-1a Meas																							
DH-1a Cert																							
DH-1a Meas																							
DH-1a Cert																							
DH-1a Meas																							
DH-1a Cert																							
DH-1a Meas																							
DH-1a Cert																							
GXR-4 Meas		3.50	3.3		6690	6480	0.2	< 0.3	325	51.7	42	42.9	42		75.3	69		1.78	6.45		79		2.0
GXR-4 Cert		4.00	4.0		6520	6520	0.860	0.860	310	52.0	52.0	42.0	42.0		73.0	73.0		1.77	7.20		1640		1.90
GXR-4 Meas		3.16	3.2		6330	6650	0.2	< 0.3	335	47.8	43	39.7	45		77.3	72		1.82	6.62		126		1.9
GXR-4 Cert		4.00	4.0		6520	6520	0.860	0.860	310	52.0	52.0	42.0	42.0		73.0	73.0		1.77	7.20		1640		1.90
GXR-4 Meas		3.14			6260		0.2			46.2		40.0			83.3						87		2.2
GXR-4 Cert		4.00			6520		0.860			52.0		42.0			73.0						1640		1.90
GXR-4 Meas		3.17			5920		0.3			45.7		39.2			63.7						75		2.1
GXR-4 Cert		4.00			6520		0.860			52.0		42.0			73.0						1640		1.90
SDC-1 Meas					28.9	29				25.6	21	36.2	35		104	98			8.05		684		3.2
SDC-1 Cert					30.000	30.000				25.00	25.00	38.0	38.0		103.00	103.00			8.34		630		3.00
SDC-1 Meas					31.2	32				24.0	22	35.8	37		115	98			8.16		635		3.1
SDC-1 Cert					30.000	30.000				25.00	25.00	38.0	38.0		103.00	103.00			8.34		630		3.00
SDC-1 Meas					33.5					23.4		35.9			116						617		2.8
SDC-1 Cert					30.000					25.00		38.0			103.00						630		3.00
SDC-1 Meas					26.8					22.7		33.6			94.9						596		2.7
SDC-1 Cert					30.000					25.00		38.0			103.00						630		3.00
GXR-6 Meas		0.19	0.3		71.3	74	< 0.1	< 0.3	< 1	94.0	89	25.4	26		144	124		0.02	13.2		1190		1.1
GXR-6 Cert		1.30	1.30		66.0	66.0	1.00	1.00	2.40	101	101	27.0	27.0		118	118		0.0160	17.7		1300		1.40
GXR-6 Meas		0.23	< 0.3		69.5	72	< 0.1	0.3	< 1	95.3	97	24.1	27		124	130		0.02	12.7		1160		1.1
GXR-6 Cert		1.30	1.30		66.0	66.0	1.00	1.00	2.40	101	101	27.0	27.0		118	118		0.0160	17.7		1300		1.40
DNC-1a Meas					96.1	94				6.7	< 3	285	251		63.3	57					104		
DNC-1a Cert					100	100				6.3	6.3	247	247		70	70					118		
DNC-1a Meas					93.1	96				5.7	< 3	254	251		64.7	56					97		
DNC-1a Cert					100	100				6.3	6.3	247	247		70	70					118		
DNC-1a Meas					101					5.3		283			73.0						106		
DNC-1a Cert					100					6.3		247			70						118		

Analyte Symbol	Au	Ag	Ag	Ag	Cu	Cu	Cd	Cd	Mo	Pb	Pb	Ni	Ni	Ni	Zn	Zn	Zn	S	Al	As	Ba	Ba	Be
Unit Symbol	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	ppm	ppm
Lower Limit	2	0.05	0.3	5	0.2	1	0.1	0.3	1	0.5	3	0.5	1	20	0.5	1	50	0.01	0.01	0.5	1	50	0.1
Method Code	INAA	TD-MS	TD-ICP	INAA	TD-MS	TD-ICP	TD-MS	TD-ICP	TD-ICP	TD-MS	TD-ICP	TD-MS	TD-ICP	INAA	TD-MS	TD-ICP	INAA	TD-ICP	TD-ICP	INAA	TD-MS	INAA	TD-MS
DNC-1a Meas					93.6					5.3		259			58.9						91		
DNC-1a Cert					100					6.3		247			70						118		
SBC-1 Meas					30.2	29	0.4	< 0.3	1	37.7	26	88.7	84		206	182					464		3.4
SBC-1 Cert					31.0000	31.0000	0.40	0.40	2	35.0	35.0	82.8	83		186	186					788.0		3.20
SBC-1 Meas					30.4	29	0.3	0.3	1	37.0	28	86.9	86		203	175					613		2.9
SBC-1 Cert					31.0000	31.0000	0.40	0.40	2	35.0	35.0	82.8	83		186	186					788.0		3.20
SBC-1 Meas					31.0		0.3			33.3		88.4			213						404		3.2
SBC-1 Cert					31.0000		0.40			35.0		82.8			186						788.0		3.20
SBC-1 Meas					29.8		0.5			33.1		84.7			180						548		3.5
SBC-1 Cert					31.0000		0.40			35.0		82.8			186						788.0		3.20
OREAS 45d (4-Acid) Meas					355	373			< 1	20.9	18	236	244		41.0	46		0.04	7.81		177		0.8
OREAS 45d (4-Acid) Cert					371	371			2.500	21.8	21.8	231.0	231.0		45.7	45.7		0.049	8.150		183.0		0.79
OREAS 45d (4-Acid) Meas					355	374			< 1	20.3	17	229	247		44.9	45		0.04	7.98		183		0.6
OREAS 45d (4-Acid) Cert					371	371			2.500	21.8	21.8	231.0	231.0		45.7	45.7		0.049	8.150		183.0		0.79
OREAS 45d (4-Acid) Meas					348	359			< 1	20.2	17	237	241		47.6	44		0.04	7.96		180		0.8
OREAS 45d (4-Acid) Cert					371	371			2.500	21.8	21.8	231.0	231.0		45.7	45.7		0.049	8.150		183.0		0.79
OREAS 45d (4-Acid) Meas					378					19.6		244			41.6						180		0.7
OREAS 45d (4-Acid) Cert					371					21.8		231.0			45.7						183.0		0.79
OREAS 45d (4-Acid) Meas					372					19.6		232			42.3						170		0.8
OREAS 45d (4-Acid) Cert					371					21.8		231.0			45.7						183.0		0.79
SdAR-M2 (U.S.G.S.) Meas					236	239	5.5	5.3	13	797	811	51.7	52		799	784					999		6.7
SdAR-M2 (U.S.G.S.) Cert					236.0000	236.0000	5.1	5.1	13	808	808	48.8	49		760	760					990		6.6
SdAR-M2 (U.S.G.S.) Meas					242	242	4.9	5.3	13	764	818	51.9	53		815	794					987		6.6
SdAR-M2 (U.S.G.S.) Cert					236.0000	236.0000	5.1	5.1	13	808	808	48.8	49		760	760					990		6.6
SdAR-M2 (U.S.G.S.) Meas					235	242	4.9	5.7	12	735	818	53.2	54		822	790					937		6.8
SdAR-M2 (U.S.G.S.) Cert					236.0000	236.0000	5.1	5.1	13	808	808	48.8	49		760	760					990		6.6
SdAR-M2					246		6.0			745		53.1			800						973		6.9

Analyte Symbol	Au	Ag	Ag	Ag	Cu	Cu	Cd	Cd	Mo	Pb	Pb	Ni	Ni	Ni	Zn	Zn	Zn	S	Al	As	Ba	Ba	Be
Unit Symbol	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	ppm	ppm
Lower Limit	2	0.05	0.3	5	0.2	1	0.1	0.3	1	0.5	3	0.5	1	20	0.5	1	50	0.01	0.01	0.5	1	50	0.1
Method Code	INAA	TD-MS	TD-ICP	INAA	TD-MS	TD-ICP	TD-MS	TD-ICP	TD-ICP	TD-MS	TD-ICP	TD-MS	TD-ICP	INAA	TD-MS	TD-ICP	INAA	TD-ICP	TD-ICP	INAA	TD-MS	INAA	TD-MS
(U.S.G.S.) Meas																							
ScAR-M2 (U.S.G.S.) Cert					236.00 00		5.1			808		48.8			760						980		6.6
ScAR-M2 (U.S.G.S.) Meas					251		6.2			744		50.1			783						979		6.7
ScAR-M2 (U.S.G.S.) Cert					236.00 00		5.1			808		48.8			760						980		6.6
DMMAS 120 Meas	632																			1710		1150	
DMMAS 120 Cert	727																			1790		1270	
DMMAS 120 Meas	798																			1680		1000	
DMMAS 120 Cert	727																			1790		1270	
DMMAS 120 Meas	731																			1750		870	
DMMAS 120 Cert	727																			1790		1270	
DMMAS 121 Meas	739																			1650		980	
DMMAS 121 Cert	726																			1670		1180	
17DB127 Orig		< 0.05	< 0.3		25.3	24	< 0.1	< 0.3	< 1	20.1	16	31.6	31		70.2	60		0.01	6.00		280		1.9
17DB127 Dup		0.06	< 0.3		25.7	24	< 0.1	< 0.3	< 1	20.3	17	31.1	32		71.8	61		0.01	6.17		279		1.8
17DB160 Orig	< 2			< 5										< 20			110			8.0		160	
17DB168 Orig		< 0.05	< 0.3		28.7	25	0.1	< 0.3	< 1	22.9	20	45.5	43		117	94		0.03	6.83		299		2.0
17DB168 Dup		< 0.05	< 0.3		26.5	26	0.1	< 0.3	< 1	21.6	19	43.7	43		112	94		0.03	7.04		284		1.9
17DB170 Orig		< 0.05	< 0.3		26.9	24	< 0.1	< 0.3	< 1	29.9	26	37.2	36		125	105		< 0.01	7.56		377		2.6
17DB170 Dup		< 0.05	< 0.3		26.3	24	< 0.1	< 0.3	< 1	28.7	26	36.8	36		122	105		< 0.01	7.73		371		2.4
Method Blank		< 0.05			< 0.2		< 0.1			< 0.5		< 0.5			< 0.5						< 1		< 0.1
Method Blank		< 0.05			< 0.2		< 0.1			< 0.5		< 0.5			< 0.5						< 1		< 0.1
Method Blank		< 0.05			< 0.2		< 0.1			< 0.5		< 0.5			< 0.5						< 1		< 0.1
Method Blank		< 0.05			< 0.2		< 0.1			< 0.5		< 0.5			< 0.5						1		< 0.1
Method Blank		< 0.05	< 0.3		< 0.2	< 1	< 0.1	< 0.3	< 1	< 0.5	< 3	< 0.5	< 1		< 0.5	< 1		< 0.01	< 0.01		< 1		< 0.1
Method Blank	< 2			< 5										< 20			< 50			< 0.5		< 50	
Method Blank	< 2			< 5										< 20			< 50			< 0.5		< 50	
Method Blank		< 0.05	< 0.3		< 0.2	< 1	< 0.1	< 0.3	< 1	< 0.5	< 3	< 0.5	< 1		< 0.5	< 1		< 0.01	< 0.01		< 1		< 0.1
Method Blank	< 2			< 5										< 20			< 50			< 0.5		< 50	
Method Blank		< 0.05	< 0.3		< 0.2	< 1	< 0.1	< 0.3	< 1	< 0.5	< 3	< 0.5	< 1		1.9	< 1		< 0.01	< 0.01		< 1		< 0.1
Method Blank		< 0.05	< 0.3		< 0.2	< 1	< 0.1	< 0.3	< 1	< 0.5	< 3	< 0.5	< 1		2.3	1		< 0.01	0.04		7		< 0.1
Method Blank		< 0.05			< 0.2		< 0.1			< 0.5		< 0.5			1.3						< 1		< 0.1
Method Blank		< 0.05	< 0.3		< 0.2	< 1	< 0.1	< 0.3	< 1	< 0.5	< 3	< 0.5	< 1		1.1	< 1		< 0.01	< 0.01		< 1		< 0.1
Method Blank		< 0.05			< 0.2		< 0.1			< 0.5		< 0.5			0.9						< 1		< 0.1
Method Blank		< 0.05			< 0.2		< 0.1			< 0.5		< 0.5			2.0						< 1		< 0.1
Method Blank		< 0.05			< 0.2		< 0.1			< 0.5		< 0.5			2.3						4		< 0.1
Method Blank		< 0.05			< 0.2		< 0.1			< 0.5		< 0.5			1.5						< 1		< 0.1
Method Blank		< 0.05			< 0.2		< 0.1			< 0.5		< 0.5			1.5						< 1		< 0.1

Analyte Symbol	Au	Ag	Ag	Ag	Cu	Cu	Cd	Cd	Mo	Pb	Pb	Ni	Ni	Ni	Zn	Zn	Zn	S	Al	As	Ba	Ba	Be
Unit Symbol	ppb	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	ppm	ppm
Lower Limit	2	0.05	0.3	5	0.2	1	0.1	0.3	1	0.5	3	0.5	1	20	0.5	1	50	0.01	0.01	0.5	1	50	0.1
Method Code	INAA	TD-MS	TD-ICP	INAA	TD-MS	TD-ICP	TD-MS	TD-ICP	TD-ICP	TD-MS	TD-ICP	TD-MS	TD-ICP	INAA	TD-MS	TD-ICP	INAA	TD-ICP	TD-ICP	INAA	TD-MS	INAA	TD-MS
Method Blank		< 0.05			< 0.2		< 0.1			< 0.5		< 0.5			1.3						< 1		< 0.1
Method Blank		< 0.05			< 0.2		< 0.1			< 0.5		< 0.5			1.8						< 1		< 0.1
Method Blank		< 0.05	< 0.3		< 0.2	< 1	< 0.1	< 0.3	< 1	< 0.5	< 3	< 0.5	1		< 0.5	< 1		< 0.01	0.02		< 1		< 0.1

Analyte Symbol	Be	Bi	Bi	Br	Ca	Co	Co	Cr	Cr	Cs	Cs	Eu	Fe	Hf	Hf	Ga	Ge	Hg	In	Ir	K	Li	Mg
Unit Symbol	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppb	ppm	ppb	%	ppm	%
Lower Limit	1	0.02	2	0.5	0.01	0.1	1	1	2	0.05	1	0.2	0.01	0.1	1	0.1	0.1	10	0.1	5	0.01	0.5	0.01
Method Code	TD-ICP	TD-MS	TD-ICP	INAA	TD-ICP	TD-MS	INAA	TD-MS	INAA	TD-MS	INAA	INAA	INAA	TD-MS	INAA	TD-MS	TD-MS	TD-MS	TD-MS	INAA	TD-ICP	TD-MS	TD-ICP
GXR-1 Meas	1	1440	1390		0.89	8.3		> 10.0		2.79				0.3		8.1		4290	0.8		0.05	7.1	0.21
GXR-1 Cert	1.22	1380	1380		0.960	8.20		12.0		3.00				0.960		13.8		3900	0.770		0.050	8.20	0.217
GXR-1 Meas	1	1400	1380		0.90	7.8		> 10.0		2.71				0.4		6.5		3190	0.7		0.05	7.5	0.21
GXR-1 Cert	1.22	1380	1380		0.960	8.20		12.0		3.00				0.960		13.8		3900	0.770		0.050	8.20	0.217
GXR-1 Meas		1330				7.2		> 10.0		2.85				0.1		7.2		2980	0.7			7.3	
GXR-1 Cert		1380				8.20		12.0		3.00				0.960		13.8		3900	0.770			8.20	
GXR-1 Meas		1340				7.6		> 10.0		3.07				< 0.1		8.7		2900	0.8			7.3	
GXR-1 Cert		1380				8.20		12.0		3.00				0.960		13.8		3900	0.770			8.20	
DH-1a Meas																							
DH-1a Cert																							
DH-1a Meas																							
DH-1a Cert																							
DH-1a Meas																							
DH-1a Cert																							
DH-1a Meas																							
DH-1a Cert																							
GXR-4 Meas	2	19.5	12		1.06	14.2		> 10.0		2.62				1.3		17.0		220	0.2		2.44	10.6	1.69
GXR-4 Cert	1.90	19.0	19.0		1.01	14.6		64.0		2.80				6.30		20.0		110	0.270		4.01	11.1	1.66
GXR-4 Meas	2	17.6	12		1.10	13.3		> 10.0		2.46				1.2		15.9		30	0.2		4.10	10.5	1.76
GXR-4 Cert	1.90	19.0	19.0		1.01	14.6		64.0		2.80				6.30		20.0		110	0.270		4.01	11.1	1.66
GXR-4 Meas		17.5				12.8		> 10.0		2.42				1.2		15.2		< 10	0.2			11.1	
GXR-4 Cert		19.0				14.6		64.0		2.80				6.30		20.0		110	0.270			11.1	
GXR-4 Meas		18.0				13.6		> 10.0		2.76				1.3		18.2		80	0.2			10.9	
GXR-4 Cert		19.0				14.6		64.0		2.80				6.30		20.0		110	0.270			11.1	
SDC-1 Meas	3				1.09	18.5		> 10.0		4.01				0.8		19.7		60			2.54	35.1	0.99
SDC-1 Cert	3.00				1.00	18.0		64.00		4.00				8.30		21.00		200.00			2.72	34.0	1.02
SDC-1 Meas	3				1.10	18.4		> 10.0		3.77				0.8		17.4		30			1.88	34.5	1.00
SDC-1 Cert	3.00				1.00	18.0		64.00		4.00				8.30		21.00		200.00			2.72	34.0	1.02
SDC-1 Meas						17.1		> 10.0		3.85				1.2		17.3		50				33.0	
SDC-1 Cert						18.0		64.00		4.00				8.30		21.00		200.00				34.0	
SDC-1 Meas						17.5		> 10.0		4.05				1.1		21.1		60				34.6	
SDC-1 Cert						18.0		64.00		4.00				8.30		21.00		200.00				34.0	
GXR-6 Meas	1	0.15	< 2		0.19	13.0		> 10.0		4.07				1.7		19.7		80	< 0.1		1.73	34.1	0.62
GXR-6 Cert	1.40	0.290	0.290		0.180	13.8		96.0		4.20				4.30		35.0		68.0	0.260		1.87	32.0	0.609
GXR-6 Meas	1	0.18	< 2		0.17	13.6		> 10.0		4.43				1.9		27.3		110	< 0.1		1.41	33.8	0.60
GXR-6 Cert	1.40	0.290	0.290		0.180	13.8		96.0		4.20				4.30		35.0		68.0	0.260		1.87	32.0	0.609
DNC-1a Meas						59.5		> 10.0								13.2						4.7	
DNC-1a Cert						57		270								15						5.2	
DNC-1a Meas						52.5		> 10.0								11.6						4.3	
DNC-1a Cert						57		270								15						5.2	
DNC-1a Meas						55.7		> 10.0								11.7						4.4	
DNC-1a Cert						57		270								15						5.2	

Analyte Symbol	Be	Bi	Bi	Br	Ca	Co	Co	Cr	Cr	Cs	Cs	Eu	Fe	Hf	Hf	Ga	Ge	Hg	In	Ir	K	Li	Mg
Unit Symbol	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppb	ppm	ppb	%	ppm	%
Lower Limit	1	0.02	2	0.5	0.01	0.1	1	1	2	0.05	1	0.2	0.01	0.1	1	0.1	0.1	10	0.1	5	0.01	0.5	0.01
Methoc Code	TD-ICP	TD-MS	TD-ICP	INAA	TD-ICP	TD-MS	INAA	TD-MS	INAA	TD-MS	INAA	INAA	INAA	TD-MS	INAA	TD-MS	TD-MS	TD-MS	TD-MS	INAA	TD-ICP	TD-MS	TD-ICP
DNC-1a Meas						52.5		> 10.0								13.7						4.4	
DNC-1a Cert						57		270								15						5.2	
SBC-1 Meas	3	0.72	2			22.9		> 10.0		8.39				3.4		24.3						166	
SBC-1 Cert	3.20	0.70	0.70			22.7		109		8.2				3.7		27.0						163	
SBC-1 Meas	3	0.69	< 2			22.6		> 10.0		7.77				3.4		19.8						159	
SBC-1 Cert	3.20	0.70	0.70			22.7		109		8.2				3.7		27.0						163	
SBC-1 Meas		0.66				21.7		> 10.0		7.92				3.5		23.5						160	
SBC-1 Cert		0.70				22.7		109		8.2				3.7		27.0						163	
SBC-1 Meas		0.65				21.6		> 10.0		8.36				3.0		25.5						161	
SBC-1 Cert		0.70				22.7		109		8.2				3.7		27.0						163	
OREAS 45d (4-Acid) Meas	< 1	0.79	3		0.20	29.3		> 10.0		3.57				3.0		19.1			< 0.1		0.45	20.3	0.24
OREAS 45d (4-Acid) Cert	0.79	0.31	0.31		0.185	29.50		549		3.910				3.830		21.20			0.096		0.412	21.5	0.245
OREAS 45d (4-Acid) Meas	< 1	0.28	2		0.20	28.7		> 10.0		3.42				2.2		19.3			< 0.1		0.45	20.2	0.24
OREAS 45d (4-Acid) Cert	0.79	0.31	0.31		0.185	29.50		549		3.910				3.830		21.20			0.096		0.412	21.5	0.245
OREAS 45d (4-Acid) Meas	< 1	0.27	< 2		0.20	27.7		> 10.0		3.61				2.0		18.2			< 0.1		0.40	21.1	0.23
OREAS 45d (4-Acid) Cert	0.79	0.31	0.31		0.185	29.50		549		3.910				3.830		21.20			0.096		0.412	21.5	0.245
OREAS 45d (4-Acid) Meas		0.33				28.9		> 10.0		4.11				2.5		22.5			0.1			21.0	
OREAS 45d (4-Acid) Cert		0.31				29.50		549		3.910				3.830		21.20			0.096			21.5	
OREAS 45d (4-Acid) Meas		0.34				27.5		> 10.0		3.77				2.1		22.1			0.1			19.8	
OREAS 45d (4-Acid) Cert		0.31				29.50		549		3.910				3.830		21.20			0.096			21.5	
SdAR-M2 (U.S.G.S.) Meas	7	1.04	< 2			13.4		> 10.0		1.78				0.9		13.1		1310				16.2	
SdAR-M2 (U.S.G.S.) Cert	6.6	1.05	1.05			12.4		49.6		1.82				7.29		17.6		1440.00				17.9	
SdAR-M2 (U.S.G.S.) Meas	7	0.99	< 2			12.8		> 10.0		1.64				3.4		9.6		1130				17.7	
SdAR-M2 (U.S.G.S.) Cert	6.6	1.05	1.05			12.4		49.6		1.82				7.29		17.6		1440.00				17.9	
SdAR-M2 (U.S.G.S.) Meas	8	0.99	< 2			12.4		> 10.0		1.66				1.8		13.7		1080				17.7	
SdAR-M2 (U.S.G.S.) Cert	6.6	1.05	1.05			12.4		49.6		1.82				7.29		17.6		1440.00				17.9	
SdAR-M2 (U.S.G.S.) Meas		1.00				14.4		> 10.0		1.89				0.4		16.9		1310				19.0	
SdAR-M2 (U.S.G.S.) Cert		1.05				12.4		49.6		1.82				7.29		17.6		1440.00				17.9	

Analyte Symbol	Be	Bi	Bi	Br	Ca	Co	Cc	Cr	Cr	Cs	Cs	Eu	Fe	Hf	Hf	Ga	Ge	Hg	In	Ir	K	Li	Mg
Unit Symbol	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppb	ppm	ppb	%	ppm	%
Lower Limit	1	0.02	2	0.5	0.01	0.1	1	1	2	0.05	1	0.2	0.01	0.1	1	0.1	0.1	10	0.1	5	0.01	0.5	0.01
Methoc Code	TD-ICP	TD-MS	TD-ICP	INAA	TD-ICP	TD-MS	INAA	TD-MS	INAA	TD-MS	INAA	INAA	INAA	TD-MS	INAA	TD-MS	TD-MS	TD-MS	TD-MS	INAA	TD-ICP	TD-MS	TD-ICP
SdAR-M2 (U.S.G.S.) Meas		1.00				13.3		> 10.0		1.79				2.7		17.5		1140				19.2	
SdAR-M2 (U.S.G.S.) Cert		1.05				12.4		49.6		1.82				7.29		17.6		1440.00				17.9	
DMMAS 120 Meas							44		148				3.46										
DMMAS 120 Cert							47.0		138				3.54										
DMMAS 120 Meas							47		133				3.53										
DMMAS 120 Cert							47.0		138				3.54										
DMMAS 120 Meas							49		140				3.65										
DMMAS 120 Cert							47.0		138				3.54										
DMMAS 121 Meas							51		138				3.60										
DMMAS 121 Cert							45.2		142				3.45										
17DB127 Orig	2	0.16	< 2		0.36	12.7		> 10.0		12.5				0.2		10.5	< 0.1	60	< 0.1		1.10	50.4	0.62
17DB127 Dup	2	0.16	< 2		0.37	12.6		> 10.0		12.9				0.1		10.8	< 0.1	70	< 0.1		1.11	51.2	0.64
17DB160 Orig				141			15		70		8	1.1	4.95		11					< 5			
17DB168 Orig	2	0.11	< 2		0.91	25.2		> 10.0		8.83				4.2		13.7	< 0.1	40	< 0.1		1.01	46.5	1.03
17DB168 Dup	2	0.11	< 2		0.91	23.0		> 10.0		8.47				3.3		12.9	< 0.1	50	< 0.1		0.98	45.0	1.03
17DB170 Orig	3	0.22	< 2		0.11	16.2		> 10.0		6.08				0.7		16.5	< 0.1	70	< 0.1		1.65	63.2	0.82
17DB170 Dup	3	0.21	< 2		0.11	15.3		> 10.0		6.01				0.6		16.2	< 0.1	60	< 0.1		1.41	60.9	0.83
Methoc Blank		< 0.02				< 0.1		2		< 0.05				< 0.1		< 0.1	< 0.1	40	< 0.1			< 0.5	
Methoc Blank		< 0.02				< 0.1		2		< 0.05				< 0.1		< 0.1	< 0.1	30	< 0.1			< 0.5	
Methoc Blank		< 0.02				< 0.1		2		< 0.05				< 0.1		< 0.1	< 0.1	40	< 0.1			< 0.5	
Methoc Blank		< 0.02				< 0.1		3		< 0.05				< 0.1		< 0.1	< 0.1	30	< 0.1			< 0.5	
Methoc Blank	< 1	< 0.02	< 2		< 0.01	< 0.1		2		< 0.05				< 0.1		< 0.1	< 0.1	30	< 0.1		< 0.01	< 0.5	< 0.01
Methoc Blank				< 0.5			< 1		< 2		< 1	< 0.2	< 0.01		< 1					< 5			
Methoc Blank				< 0.5			< 1		< 2		< 1	< 0.2	< 0.01		< 1					< 5			
Methoc Blank	< 1	< 0.02	< 2		< 0.01	< 0.1		2		< 0.05				< 0.1		< 0.1	< 0.1	30	< 0.1		< 0.01	< 0.5	< 0.01
Methoc Blank				< 0.5			< 1		< 2		< 1	< 0.2	< 0.01		< 1					< 5			
Methoc Blank	< 1	< 0.02	< 2		< 0.01	< 0.1		> 10.0		< 0.05				< 0.1		0.3	< 0.1	50	< 0.1		< 0.01	< 0.5	< 0.01
Methoc Blank	< 1	< 0.02	< 2		< 0.01	< 0.1		5		< 0.05				< 0.1		0.3	< 0.1	40	< 0.1		< 0.01	< 0.5	< 0.01
Methoc Blank		< 0.02				< 0.1		7		< 0.05				< 0.1		0.3	< 0.1	40	< 0.1			< 0.5	
Methoc Blank	< 1	< 0.02	< 2		< 0.01	< 0.1		> 10.0		< 0.05				< 0.1		0.2	< 0.1	30	< 0.1		< 0.01	< 0.5	< 0.01
Methoc Blank		< 0.02				< 0.1		4		< 0.05				< 0.1		0.3	0.1	30	< 0.1			< 0.5	
Methoc Blank		< 0.02				< 0.1		6		< 0.05				< 0.1		0.2	< 0.1	30	< 0.1			< 0.5	
Methoc Blank		< 0.02				< 0.1		8		< 0.05				< 0.1		0.3	< 0.1	30	< 0.1			< 0.5	
Methoc Blank		< 0.02				< 0.1		6		< 0.05				< 0.1		0.2	< 0.1	30	< 0.1			< 0.5	
Methoc Blank		< 0.02				< 0.1		5		< 0.05				< 0.1		0.2	0.1	40	< 0.1			< 0.5	
Methoc Blank		< 0.02				< 0.1		3		< 0.05				< 0.1		0.2	0.1	30	< 0.1			< 0.5	
Methoc Blank		< 0.02				< 0.1		4		< 0.05				< 0.1		0.2	0.3	20	< 0.1			< 0.5	
Methoc Blank	< 1	0.04	< 2		< 0.01	< 0.1		> 10.0		< 0.05				< 0.1		0.2	0.1	40	< 0.1		< 0.01	< 0.5	< 0.01

QC **Activation Laboratories Ltd.** **Report: A17-10547**

Analyte Symbol	Mn	Nb	Na	P	Rb	Rb	Re	Sb	Sc	Se	Se	Sn	Sr	Ta	Ta	Te	Tb	Ti	Th	Th	Tl	U	U
Unit Symbol	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
Lower Limit	1	0.1	0.01	0.001	0.2	15	0.001	0.1	0.1	0.1	3	1	0.2	0.1	0.5	0.1	0.5	0.01	0.1	0.2	0.05	0.1	0.5
Methoc Code	TD-ICP	TD-MS	INAA	TD-ICP	TD-MS	INAA	TD-MS	INAA	INAA	TD-MS	INAA	TD-MS	TD-MS	TD-MS	INAA	TD-MS	INAA	TD-ICP	TD-MS	INAA	TD-MS	TD-MS	INAA
GXR-1 Meas	889	0.5		0.060	2.7					14.3		32	297	< 0.1		9.6		0.03	2.6		0.43	35.4	
GXR-1 Cert	852	0.800		0.0650	14.0					16.6		54.0	275	0.175		13.0		0.036	2.44		0.390	34.9	
GXR-1 Meas	909	0.8		0.059	2.6					14.5		27	301	< 0.1		9.0		0.03	2.6		0.40	31.3	
GXR-1 Cert	852	0.800		0.0650	14.0					16.6		54.0	275	0.175		13.0		0.036	2.44		0.390	34.9	
GXR-1 Meas		0.5			2.5					13.6		26	282	< 0.1		8.4			2.5		0.38	30.2	
GXR-1 Cert		0.800			14.0					16.6		54.0	275	0.175		13.0			2.44		0.390	34.9	
GXR-1 Meas		0.5			2.8					16.1		30	297	< 0.1		9.1			2.4		0.38	33.7	
GXR-1 Cert		0.800			14.0					16.6		54.0	275	0.175		13.0			2.44		0.390	34.9	
DH-1a Meas																			> 500			2540	
DH-1a Cert																			910			2629	
DH-1a Meas																			> 500			2430	
DH-1a Cert																			910			2629	
DH-1a Meas																			> 500			2320	
DH-1a Cert																			910			2629	
DH-1a Meas																			> 500			2410	
DH-1a Cert																			910			2629	
GXR-4 Meas	151	10.4		0.131	122					5.4		8	203	0.6		1.0		0.29	20.7		3.22	6.0	
GXR-4 Cert	155	10.0		0.120	160					5.60		5.60	221	0.790		0.970		0.29	22.5		3.20	6.20	
GXR-4 Meas	171	9.2		0.136	133					5.4		6	198	0.5		0.8		0.29	18.8		3.20	5.6	
GXR-4 Cert	155	10.0		0.120	160					5.60		5.60	221	0.790		0.970		0.29	22.5		3.20	6.20	
GXR-4 Meas		8.8			132					5.5		7	195	0.6		0.8			18.3		3.20	5.5	
GXR-4 Cert		10.0			160					5.60		5.60	221	0.790		0.970			22.5		3.20	6.20	
GXR-4 Meas		10.6			143					5.4		8	211	0.5		0.9			17.9		3.20	5.8	
GXR-4 Cert		10.0			160					5.60		5.60	221	0.790		0.970			22.5		3.20	6.20	
SDC-1 Meas	870	0.2		0.053	114							< 1	162	< 0.1				0.12	12.6		0.68	3.0	
SDC-1 Cert	880.00	21.00		0.0690	127.00							3.00	180.00	1.20				0.606	12.00		0.70	3.10	
SDC-1 Meas	907	< 0.1		0.055	110							< 1	176	< 0.1				0.20	12.9		0.64	3.1	
SDC-1 Cert	880.00	21.00		0.0690	127.00							3.00	180.00	1.20				0.606	12.00		0.70	3.10	
SDC-1 Meas		0.1			87.9							< 1	173	< 0.1					11.9		0.62	2.7	
SDC-1 Cert		21.00			127.00							3.00	180.00	1.20					12.00		0.70	3.10	
SDC-1 Meas		< 0.1			102							< 1	171	< 0.1					11.6		0.64	2.8	
SDC-1 Cert		21.00			127.00							3.00	180.00	1.20					12.00		0.70	3.10	
GXR-6 Meas	1050	0.1		0.035	69.1					0.7		< 1	37.0	< 0.1		< 0.1			5.5		2.20	1.4	
GXR-6 Cert	1010	7.50		0.0350	90.0					0.940		1.70	35.0	0.485		0.0180			5.30		2.20	1.54	
GXR-6 Meas	1080	0.1		0.034	79.1					< 0.1		< 1	37.1	< 0.1		< 0.1			5.0		2.20	1.4	
GXR-6 Cert	1010	7.50		0.0350	90.0					0.940		1.70	35.0	0.485		0.0180			5.30		2.20	1.54	
DNC-1a Meas		1.5			3.3								134					0.29					
DNC-1a Cert		3			5								144					0.29					
DNC-1a Meas		1.5			3.1								141					0.28					
DNC-1a Cert		3			5								144					0.29					
DNC-1a Meas		1.5			3.4								146										
DNC-1a Cert		3			5								144										

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Analyte Symbol	Mn	Nb	Na	P	Rb	Rb	Re	Sb	Sc	Se	Se	Sn	Sr	Ta	Ta	Te	Tb	Tl	Th	Th	Tl	U	U
Unit Symbol	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
Lower Limit	1	0.1	0.01	0.001	0.2	15	0.001	0.1	0.1	0.1	3	1	0.2	0.1	0.5	0.1	0.5	0.01	0.1	0.2	0.05	0.1	0.5
Method Code	TD-ICP	TD-MS	INAA	TD-ICP	TD-MS	INAA	TD-MS	INAA	INAA	TD-MS	INAA	TD-MS	TD-MS	TD-MS	INAA	TD-MS	INAA	TD-ICP	TD-MS	INAA	TD-MS	TD-MS	INAA
DNC-1a Meas		1.5			3.0								143										
DNC-1a Cert		3			5								144										
SBC-1 Meas		10.8			139							4	163	0.6				0.49	17.2		0.86	6.2	
SBC-1 Cert		15.3			147							3.3	178.0	1.10				0.51	15.8		0.89	5.76	
SBC-1 Meas		13.5			132							3	179	0.8				0.51	16.4		0.93	5.8	
SBC-1 Cert		15.3			147							3.3	178.0	1.10				0.51	15.8		0.89	5.76	
SBC-1 Meas		11.7			123							3	173	0.6					15.7		0.90	5.5	
SBC-1 Cert		15.3			147							3.3	178.0	1.10					15.8		0.89	5.76	
SBC-1 Meas		8.8			134							3	171	0.3					15.3		0.92	5.8	
SBC-1 Cert		15.3			147							3.3	178.0	1.10					15.8		0.89	5.76	
OREAS 45d (4-Acid) Meas	512	0.1		0.036	36.3							< 1	27.3	< 0.1				0.39	14.9		0.27	2.8	
OREAS 45d (4-Acid) Cert	490.000	14.50		0.042	42.1							2.78	31.30	1.02				0.773	14.5		0.27	2.63	
OREAS 45d (4-Acid) Meas	512	0.3		0.036	36.2							< 1	33.1	< 0.1				0.34	14.6		0.25	2.6	
OREAS 45d (4-Acid) Cert	490.000	14.50		0.042	42.1							2.78	31.30	1.02				0.773	14.5		0.27	2.63	
OREAS 45d (4-Acid) Meas	512	0.3		0.033	34.1							< 1	31.1	< 0.1				0.27	14.4		0.25	2.5	
OREAS 45d (4-Acid) Cert	490.000	14.50		0.042	42.1							2.78	31.30	1.02				0.773	14.5		0.27	2.63	
OREAS 45d (4-Acid) Meas		< 0.1			40.7							< 1	31.8	< 0.1					14.4		0.25	2.7	
OREAS 45d (4-Acid) Cert		14.50			42.1							2.78	31.30	1.02					14.5		0.27	2.63	
OREAS 45d (4-Acid) Meas		0.2			39.4							< 1	29.4	< 0.1					14.0		0.24	2.8	
OREAS 45d (4-Acid) Cert		14.50			42.1							2.78	31.30	1.02					14.5		0.27	2.63	
SdAR-M2 (U.S.G.S.) Meas		1.9			113								130	< 0.1					14.4			2.5	
SdAR-M2 (U.S.G.S.) Cert		26.2			149								144	1.8					14.2			2.53	
SdAR-M2 (U.S.G.S.) Meas		3.0			128								140	< 0.1					14.7			2.4	
SdAR-M2 (U.S.G.S.) Cert		26.2			149								144	1.8					14.2			2.53	
SdAR-M2 (U.S.G.S.) Meas		3.8			90.8								136	0.2					14.5			2.4	
SdAR-M2 (U.S.G.S.) Cert		26.2			149								144	1.8					14.2			2.53	
SdAR-M2 (U.S.G.S.) Meas		2.1			88.4								151	< 0.1					13.7			2.5	
SdAR-M2 (U.S.G.S.) Cert		26.2			149								144	1.8					14.2			2.53	

Analyte Symbol	Mn	Nb	Na	P	Rb	Rb	Re	Sb	Sc	Se	Se	Sn	Sr	Ta	Ta	Te	Tb	Ti	Tl	Th	Tl	U	U
Unit Symbol	ppm	ppm	%	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
Lower Limit	1	0.1	0.01	0.001	0.2	15	0.001	0.1	0.1	0.1	3	1	0.2	0.1	0.5	0.1	0.5	0.01	0.1	0.2	0.05	0.1	0.5
Method Code	TD-ICP	TD-MS	INAA	TD-ICP	TD-MS	INAA	TD-MS	INAA	INAA	TD-MS	INAA	TD-MS	TD-MS	TD-MS	INAA	TD-MS	INAA	TD-ICP	TD-MS	INAA	TD-MS	TD-MS	INAA
SdAR-M2 (U.S.G.S.) Meas		5.5			109								145	0.2					14.3			2.5	
SdAR-M2 (U.S.G.S.) Cert		26.2			149								144	1.8					14.2			2.53	
DMMAS 120 Meas			2.15					6.0	6.1														8.2
DMMAS 120 Cert			2.16					7.30	6.50														11.7
DMMAS 120 Meas			2.08					6.4	6.3														11.4
DMMAS 120 Cert			2.16					7.30	6.50														11.7
DMMAS 120 Meas			2.15					6.4	6.4														10.4
DMMAS 120 Cert			2.16					7.30	6.50														11.7
DMMAS 121 Meas			2.33					3.5	6.4														11.6
DMMAS 121 Cert			2.16					7.60	6.10														11.5
17DB127 Orig	587	0.1		0.036	66.5		< 0.001			0.2		< 1	83.1	< 0.1		< 0.1		0.26	12.1		0.43	3.4	
17DB127 Dup	610	0.1		0.036	69.0		< 0.001			< 0.1		< 1	86.0	< 0.1		< 0.1		0.29	13.2		0.44	3.5	
17DB160 Orig			1.33			83		0.6	12.4		< 3				< 0.5		1.0			10.8			2.5
17DB168 Orig	853	0.1		0.083	46.6		< 0.001			0.7		< 1	103	< 0.1		< 0.1		0.23	8.0		0.43	2.2	
17DB168 Dup	831	0.1		0.080	46.0		< 0.001			0.6		< 1	98.2	< 0.1		< 0.1		0.18	7.8		0.39	2.1	
17DB170 Orig	559	< 0.1		0.017	94.8		< 0.001			< 0.1		< 1	84.2	< 0.1		< 0.1		0.12	14.0		0.66	2.9	
17DB170 Dup	556	0.1		0.016	92.1		< 0.001			< 0.1		< 1	84.2	< 0.1		< 0.1		0.12	13.8		0.64	2.8	
Method Blank		< 0.1			< 0.2		< 0.001			< 0.1		< 1	< 0.2	< 0.1		< 0.1			< 0.1		< 0.05	< 0.1	
Method Blank		< 0.1			< 0.2		< 0.001			< 0.1		< 1	< 0.2	< 0.1		0.1			< 0.1		< 0.05	< 0.1	
Method Blank		< 0.1			< 0.2		< 0.001			< 0.1		< 1	< 0.2	< 0.1		< 0.1			< 0.1		< 0.05	< 0.1	
Method Blank		< 0.1			< 0.2		< 0.001			< 0.1		< 1	< 0.2	< 0.1		< 0.1			< 0.1		< 0.05	< 0.1	
Method Blank		< 0.1		< 0.001	< 0.2		< 0.001			< 0.1		< 1	< 0.2	< 0.1		< 0.1		< 0.01	< 0.1		< 0.05	< 0.1	
Method Blank			< 0.01			< 15		< 0.1	< 0.1		< 3				< 0.5		< 0.5			< 0.2			< 0.5
Method Blank			< 0.01			< 15		< 0.1	< 0.1		< 3				< 0.5		< 0.5			< 0.2			< 0.5
Method Blank		< 0.1		< 0.001	< 0.2		< 0.001			< 0.1		< 1	< 0.2	< 0.1		< 0.1		< 0.01	< 0.1		< 0.05	< 0.1	
Method Blank			< 0.01			< 15		< 0.1	< 0.1		< 3				< 0.5		< 0.5			< 0.2			< 0.5
Method Blank		< 0.1		< 0.001	< 0.2		< 0.001			< 0.1		< 1	< 0.2	< 0.1		< 0.1		< 0.01	< 0.1		< 0.05	< 0.1	
Method Blank		< 0.1		0.002	0.2		< 0.001			0.1		< 1	< 0.2	< 0.1		< 0.1		< 0.01	< 0.1		< 0.05	< 0.1	
Method Blank		< 0.1			< 0.2		< 0.001			0.2		< 1	0.2	< 0.1		< 0.1			< 0.1		< 0.05	< 0.1	
Method Blank		< 0.1		< 0.001	< 0.2		< 0.001			0.2		< 1	0.6	< 0.1		< 0.1		< 0.01	< 0.1		< 0.05	< 0.1	
Method Blank		< 0.1			< 0.2		< 0.001			< 0.1		< 1	0.3	< 0.1		< 0.1			< 0.1		< 0.05	< 0.1	
Method Blank		< 0.1			< 0.2		< 0.001			0.1		< 1	< 0.2	< 0.1		< 0.1			< 0.1		< 0.05	< 0.1	
Method Blank		0.2			0.3		< 0.001			0.2		< 1	2.1	< 0.1		< 0.1			0.2		< 0.05	< 0.1	
Method Blank		< 0.1			< 0.2		< 0.001			0.5		< 1	< 0.2	< 0.1		< 0.1			< 0.1		< 0.05	< 0.1	
Method Blank		< 0.1			< 0.2		< 0.001			< 0.1		< 1	0.3	< 0.1		< 0.1			< 0.1		< 0.05	< 0.1	
Method Blank		< 0.1			< 0.2		< 0.001			< 0.1		< 1	< 0.2	< 0.1		< 0.1			< 0.1		< 0.05	< 0.1	
Method Blank		< 0.1			< 0.2		< 0.001			< 0.1		< 1	< 0.2	< 0.1		< 0.1			< 0.1		< 0.05	< 0.1	
Method Blank		< 0.1		< 0.001	< 0.2		0.001			0.2		< 1	0.4	< 0.1		< 0.1		< 0.01	< 0.1		< 0.05	< 0.1	

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Analyte Symbol	V	W	Y	Zr	La	La	Ce	Ce	Pr	Nd	Nd	Sm	Sm	Eu	Gd	Dy	Tb	Ho	Er	Tm	Yb	Yb	Lu
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Lower Limit	2	1	0.1	1	0.1	0.5	0.1	3	0.1	0.1	5	0.1	0.1	0.05	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1
Method Code	TD-ICP	INAA	TD-MS	TD-MS	TD-MS	INAA	TD-MS	INAA	TD-MS	TD-MS	INAA	TD-MS	INAA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	INAA	TD-MS
GXR-1 Meas	86		32.0	16	8.0		15.5			9.3		2.8		0.63	4.2	5.0	0.7			0.4	2.3		0.3
GXR-1 Cert	80.0		32.0	38.0	7.50		17.0			18.0		2.70		0.690	4.20	4.30	0.830			0.430	1.90		0.280
GXR-1 Meas	88		26.6	20	7.1		15.6			8.8		2.6		0.53	3.9	4.7	0.6			0.4	2.1		0.3
GXR-1 Cert	80.0		32.0	38.0	7.50		17.0			18.0		2.70		0.690	4.20	4.30	0.830			0.430	1.90		0.280
GXR-1 Meas			25.8	7	7.4		15.7			8.8		3.1		0.54	3.9	4.8	0.6			0.4	2.1		0.3
GXR-1 Cert			32.0	38.0	7.50		17.0			18.0		2.70		0.690	4.20	4.30	0.830			0.430	1.90		0.280
GXR-1 Meas			28.0	5	7.3		15.1			9.0		3.2		0.59	4.1	4.4	0.8			0.4	2.3		0.3
GXR-1 Cert			32.0	38.0	7.50		17.0			18.0		2.70		0.690	4.20	4.30	0.830			0.430	1.90		0.280
DH-1a Meas																							
DH-1a Cert																							
DH-1a Meas																							
DH-1a Cert																							
DH-1a Meas																							
DH-1a Cert																							
DH-1a Meas																							
DH-1a Cert																							
GXR-4 Meas	89		14.3	48	60.3		111			45.6		6.1		1.48	5.0	2.8	0.5			0.2	1.1		0.2
GXR-4 Cert	87.0		14.0	186	64.5		102			45.0		6.60		1.63	5.25	2.60	0.360			0.210	1.60		0.170
GXR-4 Meas	92		11.4	36	52.5		111			42.0		5.8		1.25	4.4	2.7	0.4			0.2	0.9		0.1
GXR-4 Cert	87.0		14.0	186	64.5		102			45.0		6.60		1.63	5.25	2.60	0.360			0.210	1.60		0.170
GXR-4 Meas			11.7	36	52.3		108			41.0		6.5		1.22	4.5	2.7	0.5			0.2	0.9		0.1
GXR-4 Cert			14.0	186	64.5		102			45.0		6.60		1.63	5.25	2.60	0.360			0.210	1.60		0.170
GXR-4 Meas			13.2	43	57.0		114			44.3		7.8		1.41	4.7	2.9	0.6			0.2	1.0		0.2
GXR-4 Cert			14.0	186	64.5		102			45.0		6.60		1.63	5.25	2.60	0.360			0.210	1.60		0.170
SDC-1 Meas	37			29	41.9		88.8			41.8		8.2		1.55	7.5	6.4	1.0	1.3	3.7	0.5	3.5		
SDC-1 Cert	102.00			290.00	42.00		93.00			40.00		8.20		1.70	7.00	6.70	1.20	1.50	4.10	0.65	4.00		
SDC-1 Meas	56			25	40.3		95.7			42.7		7.9		1.40	6.9	6.4	0.9	1.3	3.7	0.5	3.1		
SDC-1 Cert	102.00			290.00	42.00		93.00			40.00		8.20		1.70	7.00	6.70	1.20	1.50	4.10	0.65	4.00		
SDC-1 Meas				41	37.4		90.1			38.9		8.5		1.32	6.6	6.2	0.9	1.2	3.4	0.5	3.0		
SDC-1 Cert				290.00	42.00		93.00			40.00		8.20		1.70	7.00	6.70	1.20	1.50	4.10	0.65	4.00		
SDC-1 Meas				47	40.3		92.6			42.4		8.4		1.49	7.0	6.0	1.1	1.3	3.5	0.5	3.3		
SDC-1 Cert				290.00	42.00		93.00			40.00		8.20		1.70	7.00	6.70	1.20	1.50	4.10	0.65	4.00		
GXR-6 Meas	148		11.4	53	12.4		35.7			13.0		1.8		0.54	2.3	2.3	0.3				1.6		0.2
GXR-6 Cert	186		14.0	110	13.9		36.0			13.0		2.67		0.760	2.97	2.80	0.415				2.40		0.330
GXR-6 Meas	108		12.1	69	12.3		35.5			12.7		3.0		0.60	2.4	2.3	0.4				1.7		0.3
GXR-6 Cert	186		14.0	110	13.9		36.0			13.0		2.67		0.760	2.97	2.80	0.415				2.40		0.330
DNC-1a Meas	140		16.5	42	3.7					5.3				0.58							2.0		
DNC-1a Cert	148		18.0	38.0	3.6					5.20				0.59							2.0		
DNC-1a Meas	141		13.2	34	3.3					4.7				0.51							1.7		
DNC-1a Cert	148		18.0	38.0	3.6					5.20				0.59							2.0		
DNC-1a Meas			14.9	37	3.6					4.9				0.50							1.8		
DNC-1a Cert			18.0	38.0	3.6					5.20				0.59							2.0		

Analyte Symbol	V	W	Y	Zr	La	La	Ce	Ce	Pr	Nd	Nd	Sm	Sm	Eu	Gd	Dy	Tb	Ho	Er	Tm	Yb	Yb	Lu
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Lower Limit	2	1	0.1	1	0.1	0.5	0.1	3	0.1	0.1	5	0.1	0.1	0.05	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1
Method Code	TD-ICP	INAA	TD-MS	TD-MS	TD-MS	INAA	TD-MS	INAA	TD-MS	TD-MS	INAA	TD-MS	INAA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	INAA	TD-MS
DNC-1a Meas			14.8	38	3.4					5.0				0.57							1.9		
DNC-1a Cert			18.0	38.0	3.6					5.20				0.59							2.0		
SBC-1 Meas	219		33.0	132	53.9		110		13.6	52.8		10.3		1.98	9.2	6.9	1.2	1.3	3.7	0.5	3.7		0.5
SBC-1 Cert	220.0		36.5	134.0	52.5		108.0		12.6	49.2		9.6		1.98	8.5	7.10	1.20	1.40	3.80	0.56	3.84		0.54
SBC-1 Meas	218		27.5	112	47.5		110		11.8	48.8		10.4		1.70	8.0	6.5	1.0	1.2	3.4	0.5	3.1		0.5
SBC-1 Cert	220.0		36.5	134.0	52.5		108.0		12.6	49.2		9.6		1.98	8.5	7.10	1.20	1.40	3.80	0.56	3.84		0.54
SBC-1 Meas			28.1	113	47.3		110		11.9	48.3		9.5		1.67	7.8	6.3	1.0	1.2	3.5	0.5	3.2		0.5
SBC-1 Cert			36.5	134.0	52.5		108.0		12.6	49.2		9.6		1.98	8.5	7.10	1.20	1.40	3.80	0.56	3.84		0.54
SBC-1 Meas			30.1	123	50.2		112		12.2	51.9		9.0		1.85	7.9	6.6	1.2	1.4	3.7	0.5	3.4		0.5
SBC-1 Cert			36.5	134.0	52.5		108.0		12.6	49.2		9.6		1.98	8.5	7.10	1.20	1.40	3.80	0.56	3.84		0.54
OREAS 45d (4-Acid) Meas	167		11.0	124	16.7		35.8		3.9	14.7		2.3		0.56	2.5	2.4	0.4	0.5	1.3		1.5		0.2
OREAS 45d (4-Acid) Cert	235.0		9.53	141	16.9		37.20		3.70	13.4		2.80		0.57	2.42	2.26	0.400	0.46	1.38		1.33		0.18
OREAS 45d (4-Acid) Meas	149		9.7	81	15.6		36.4		3.6	14.2		2.7		0.51	2.3	2.2	0.3	0.4	1.3		1.3		0.2
OREAS 45d (4-Acid) Cert	235.0		9.53	141	16.9		37.20		3.70	13.4		2.80		0.57	2.42	2.26	0.400	0.46	1.38		1.33		0.18
OREAS 45d (4-Acid) Meas	143		9.8	73	15.4		34.9		3.5	13.5		2.7		0.51	2.4	2.3	0.3	0.4	1.3		1.3		0.2
OREAS 45d (4-Acid) Cert	235.0		9.53	141	16.9		37.20		3.70	13.4		2.80		0.57	2.42	2.26	0.400	0.46	1.38		1.33		0.18
OREAS 45d (4-Acid) Meas			11.0	109	16.9		38.8		3.8	15.7		2.6		0.61	2.7	2.4	0.4	0.5	1.4		1.5		0.2
OREAS 45d (4-Acid) Cert			9.53	141	16.9		37.20		3.70	13.4		2.80		0.57	2.42	2.26	0.400	0.46	1.38		1.33		0.18
OREAS 45d (4-Acid) Meas			10.2	86	16.2		36.2		3.6	14.9		2.8		0.57	2.4	2.4	0.4	0.6	1.5		1.5		0.2
OREAS 45d (4-Acid) Cert			9.53	141	16.9		37.20		3.70	13.4		2.80		0.57	2.42	2.26	0.400	0.46	1.38		1.33		0.18
SdAR-M2 (U.S.G.S.) Meas	27		25.5	58	45.9		96.3		10.9	40.3		7.0		1.37	5.7	4.9	0.8	1.0	2.8	0.4	2.8		0.4
SdAR-M2 (U.S.G.S.) Cert	25.2		32.7	259	46.6		98.8		11.0	39.4		7.18		1.44	6.28	5.88	0.97	1.21	3.58	0.54	3.63		0.54
SdAR-M2 (U.S.G.S.) Meas	27		21.5	102	41.2		100		9.7	38.9		6.8		1.16	5.4	4.7	0.7	0.9	2.8	0.4	2.5		0.4
SdAR-M2 (U.S.G.S.) Cert	25.2		32.7	259	46.6		98.8		11.0	39.4		7.18		1.44	6.28	5.88	0.97	1.21	3.58	0.54	3.63		0.54
SdAR-M2 (U.S.G.S.) Meas	26		21.8	71	41.4		97.1		9.6	37.3		7.0		1.14	5.1	4.7	0.7	0.9	2.7	0.4	2.5		0.4
SdAR-M2 (U.S.G.S.) Cert	25.2		32.7	259	46.6		98.8		11.0	39.4		7.18		1.44	6.28	5.88	0.97	1.21	3.58	0.54	3.63		0.54
SdAR-M2 (U.S.G.S.) Meas			25.5	32	46.6		106		10.5	42.7		7.4		1.31	5.8	5.0	0.9	1.1	3.0	0.4	2.9		0.4
SdAR-M2 (U.S.G.S.) Cert			32.7	259	46.6		98.8		11.0	39.4		7.18		1.44	6.28	5.88	0.97	1.21	3.58	0.54	3.63		0.54

QC **Activation Laboratories Ltd.** **Report: A17-10547**

Analyte Symbol	V	W	Y	Zr	La	La	Ce	Ce	Pr	Nd	Nd	Sm	Sm	Eu	Gd	Dy	Tb	Ho	Er	Tm	Yb	Yb	Lu
Unit Symbol	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Lower Limit	2	1	0.1	1	0.1	0.5	0.1	3	0.1	0.1	5	0.1	0.1	0.05	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1
Method Code	TD-ICP	INAA	TD-MS	TD-MS	TD-MS	INAA	TD-MS	INAA	TD-MS	TD-MS	INAA	TD-MS	INAA	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	TD-MS	INAA	TD-MS
SdAR-M2 (U.S.G.S.) Meas			25.4	114	47.0		107		10.7	42.8		6.0		1.31	5.9	5.1	0.9	1.1	3.2	0.4	3.0		0.4
SdAR-M2 (U.S.G.S.) Cert			32.7	259	46.6		98.8		11.0	39.4		7.18		1.44	6.28	5.88	0.97	1.21	3.58	0.54	3.63		0.54
DMMAS 120 Meas						16.3		30					2.2										
DMMAS 120 Cert						17.6		32.0					2.70										
DMMAS 120 Meas						17.3		32					2.5										
DMMAS 120 Cert						17.6		32.0					2.70										
DMMAS 120 Meas						18.2		27					2.6										
DMMAS 120 Cert						17.6		32.0					2.70										
DMMAS 121 Meas						18.0		30					2.5										
DMMAS 121 Cert						16.6		29.8					2.20										
17DB127 Orig	39		25.0	20	36.3		93.1		9.1	37.4		8.4		1.26	6.0	5.5	0.8	1.0	3.1	0.5	3.1		0.5
17DB127 Dup	42		26.3	8	39.2		99.7		9.9	41.3		8.5		1.33	6.4	5.6	0.8	1.1	3.3	0.5	3.2		0.4
17DB160 Orig		< 1				36.5		94			44		7.3									4.4	
17DB168 Orig	59		28.4	145	30.1		103		8.0	34.5		8.4		1.57	6.4	6.2	0.9	1.2	3.3	0.5	3.1		0.4
17DB168 Dup	52		26.9	112	29.4		102		8.0	33.5		8.1		1.50	6.3	6.0	0.8	1.2	3.2	0.5	3.0		0.4
17DB170 Orig	21		22.3	29	38.3		89.8		8.5	32.5		7.0		0.96	5.0	4.9	0.7	0.9	2.8	0.5	2.8		0.4
17DB170 Dup	21		22.0	25	37.9		87.9		8.3	32.1		7.3		0.93	5.0	4.9	0.7	0.9	2.7	0.4	2.7		0.4
Method Blank			< 0.1	< 1	< 0.1		< 0.1		< 0.1	< 0.1		< 0.1		< 0.05	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1		< 0.1
Method Blank			< 0.1	< 1	< 0.1		< 0.1		< 0.1	< 0.1		< 0.1		< 0.05	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1		< 0.1
Method Blank			< 0.1	< 1	< 0.1		< 0.1		< 0.1	< 0.1		< 0.1		< 0.05	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1		< 0.1
Method Blank			< 0.1	< 1	0.1		< 0.1		< 0.1	< 0.1		< 0.1		< 0.05	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1		< 0.1
Method Blank	< 2		< 0.1	< 1	< 0.1		< 0.1		< 0.1	< 0.1		< 0.1		< 0.05	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1		< 0.1
Method Blank		< 1				< 0.5		< 3			< 5		< 0.1									< 0.2	
Method Blank		< 1				< 0.5		< 3			< 5		< 0.1									< 0.2	
Method Blank	< 2		< 0.1	< 1	< 0.1		< 0.1		< 0.1	< 0.1		< 0.1		< 0.05	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1		< 0.1
Method Blank		< 1				< 0.5		< 3			< 5		< 0.1									< 0.2	
Method Blank	< 2		< 0.1	< 1	< 0.1		< 0.1		< 0.1	< 0.1		< 0.1		< 0.05	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1		< 0.1
Method Blank	< 2		0.2	< 1	< 0.1		0.4		< 0.1	< 0.1		< 0.1		< 0.05	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1		< 0.1
Method Blank			< 0.1	< 1	< 0.1		< 0.1		< 0.1	< 0.1		< 0.1		< 0.05	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1		< 0.1
Method Blank	< 2		< 0.1	< 1	< 0.1		< 0.1		< 0.1	< 0.1		< 0.1		< 0.05	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1		< 0.1
Method Blank			< 0.1	< 1	< 0.1		< 0.1		< 0.1	< 0.1		< 0.1		< 0.05	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1		< 0.1
Method Blank			< 0.1	< 1	< 0.1		< 0.1		< 0.1	< 0.1		< 0.1		< 0.05	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1		< 0.1
Method Blank			0.1	< 1	0.2		0.9		0.1	0.3		< 0.1		< 0.05	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1		< 0.1
Method Blank			< 0.1	< 1	< 0.1		< 0.1		< 0.1	< 0.1		< 0.1		< 0.05	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1		< 0.1
Method Blank			< 0.1	< 1	< 0.1		< 0.1		< 0.1	< 0.1		< 0.1		< 0.05	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1		< 0.1
Method Blank			< 0.1	< 1	< 0.1		< 0.1		< 0.1	< 0.1		< 0.1		< 0.05	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1		< 0.1
Method Blank			< 0.1	1	0.2		0.2		< 0.1	< 0.1		< 0.1		< 0.05	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1		< 0.1
Method Blank	< 2		< 0.1	< 1	< 0.1		< 0.1		< 0.1	< 0.1		< 0.1		< 0.05	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1		< 0.1

Analyte Symbol	Lu	Mass
Unit Symbol	ppm	g
Lower Limit	0.05	
Method Code	INAA	INAA
GXR-1 Meas		
GXR-1 Cert		
GXR-1 Meas		
GXR-1 Cert		
GXR-1 Meas		
GXR-1 Cert		
GXR-1 Meas		
GXR-1 Cert		
DH-1a Meas		
DH-1a Cert		
DH-1a Meas		
DH-1a Cert		
DH-1a Meas		
DH-1a Cert		
DH-1a Meas		
DH-1a Cert		
GXR-4 Meas		
GXR-4 Cert		
GXR-4 Meas		
GXR-4 Cert		
GXR-4 Meas		
GXR-4 Cert		
GXR-4 Meas		
GXR-4 Cert		
SDC-1 Meas		
SDC-1 Cert		
SDC-1 Meas		
SDC-1 Cert		
SDC-1 Meas		
SDC-1 Cert		
SDC-1 Meas		
SDC-1 Cert		
GXR-6 Meas		
GXR-6 Cert		
GXR-6 Meas		
GXR-6 Cert		
DNC-1a Meas		
DNC-1a Cert		
DNC-1a Meas		
DNC-1a Cert		
DNC-1a Meas		
DNC-1a Cert		

Analyte Symbol	Lu	Mass
Unit Symbol	ppm	g
Lower Limit	0.05	
Method Code	INAA	INAA
DNC-1a Meas		
DNC-1a Cert		
SBC-1 Meas		
SBC-1 Cert		
SBC-1 Meas		
SBC-1 Cert		
SBC-1 Meas		
SBC-1 Cert		
SBC-1 Meas		
SBC-1 Cert		
OREAS 45d (4-Acid) Meas		
OREAS 45d (4-Acid) Cert		
OREAS 45d (4-Acid) Meas		
OREAS 45d (4-Acid) Cert		
OREAS 45d (4-Acid) Meas		
OREAS 45d (4-Acid) Cert		
OREAS 45d (4-Acid) Meas		
OREAS 45d (4-Acid) Cert		
OREAS 45d (4-Acid) Meas		
OREAS 45d (4-Acid) Cert		
OREAS 45d (4-Acid) Meas		
OREAS 45d (4-Acid) Cert		
ScAR-M2 (U.S.G.S.) Meas		
ScAR-M2 (U.S.G.S.) Cert		
ScAR-M2 (U.S.G.S.) Meas		
ScAR-M2 (U.S.G.S.) Cert		
ScAR-M2 (U.S.G.S.) Meas		
ScAR-M2 (U.S.G.S.) Cert		
ScAR-M2 (U.S.G.S.) Meas		
ScAR-M2 (U.S.G.S.) Cert		

Analyte Symbol	Lu	Mass
Unit Symbol	ppm	g
Lower Limit	0.05	
Method Code	INAA	INAA
SdAR-M2 (U.S.G.S.) Meas		
SdAR-M2 (U.S.G.S.) Cert		
DMMAS 120 Meas		
DMMAS 120 Cert		
DMMAS 120 Meas		
DMMAS 120 Cert		
DMMAS 120 Meas		
DMMAS 120 Cert		
DMMAS 121 Meas		
DMMAS 121 Cert		
17DB127 Orig		
17DB127 Dup		
17DB160 Orig	0.21	20.9
17DB168 Orig		
17DB168 Dup		
17DB170 Orig		
17DB170 Dup		
Method Blank		
Method Blank		
Method Blank		
Method Blank		
Method Blank		
Method Blank	< 0.05	30.0
Method Blank	< 0.05	1.00
Method Blank		
Method Blank	< 0.05	30.0
Method Blank		
Method Blank		
Method Blank		
Method Blank		
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Method Blank		
Method Blank		

Appendix E. Final Lab Report Received From Bureau Veritas (VAN17003090)

BUREAU VERITAS MINERAL LABORATORIES Canada

www.bureauveritas.com/um

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

Client: **Nova Scotia Dept. of Natural Resources**
1701 Hollis St.
P.O. Box 698
Halifax Nova Scotia B3J 2T9 Canada

Submitted By: Denise Brushett
Receiving Lab: Canada-Vancouver
Received: December 28, 2017
Report Date: February 05, 2018
Page: 1 of 3

CERTIFICATE OF ANALYSIS VAN17003090.1

CLIENT JOB INFORMATION

Project: None Given
Shipment ID:
P.O. Number
Number of Samples: 53

SAMPLE DISPOSAL

RTRN-PLP Return After 90 days

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Procedure Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
SLBHP	52	Sorting, labeling and boxing samples received as pulps			VAN
FA130	52	Fire assay fusion Au Pt Pd by ICP-MS	30	Completed	VAN
EN002	52	Environmental disposal charge-Fire assay lead waste			VAN
DRPLP	52	Warehouse handling / disposition of pulps			VAN

ADDITIONAL COMMENTS

Bureau Veritas does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Nova Scotia Dept. of Natural Resources
1701 Hollis St.
P.O. Box 698
Halifax Nova Scotia B3J 2T9
Canada

CC:

BRITISH COLUMBIA CERTIFIED ASSAYER
MARCUS LAU
Production Manager

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.
All results are considered the confidential property of the client. Bureau Veritas assumes the liabilities for actual cost of analysis only. Results apply to samples as submitted.
"*" asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.

BUREAU VERITAS MINERAL LABORATORIES Canada

www.bureauveritas.com/um

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

Client: **Nova Scotia Dept. of Natural Resources**
1701 Hollis St.
P.O. Box 698
Halifax Nova Scotia B3J 2T9 Canada

Project: None Given
Report Date: February 05, 2018

CERTIFICATE OF ANALYSIS VAN17003090.1

	Method	FA130	FA130	FA130
	Analyte	Au	Pt	Pd
	Unit	ppb	ppb	ppb
	MDL	1	0.1	0.5
16DB206	Till Pulp	6	0.2	0.6
16DB218	Till Pulp	3	0.3	0.6
17DB004	Till Pulp	4	0.3	0.8
17DB011	Till Pulp	4	0.4	0.9
17DB013	Till Pulp	3	0.4	0.8
17DB014	Till Pulp	3	0.7	1.3
17DB036	Till Pulp	5	0.5	1.5
17DB041	Till Pulp	23	1.2	2.7
17DB042	Till Pulp	8	0.8	2.1
17DB053	Till Pulp	L.N.R.	L.N.R.	L.N.R.
17DB054	Till Pulp	4	0.4	0.8
17DB055	Till Pulp	3	0.3	0.8
17DB059	Till Pulp	4	0.3	0.8
17DB060	Till Pulp	6	0.2	0.6
17DB061	Till Pulp	3	0.3	0.6
17DB062	Till Pulp	4	0.4	0.7
17DB064	Till Pulp	3	0.3	0.8
17DB065	Till Pulp	2	0.2	0.7
17DB066	Till Pulp	3	0.4	1.0
17DB067	Till Pulp	12	0.7	1.5
17DB068	Till Pulp	4	0.4	0.8
17DB069	Till Pulp	3	0.3	0.7
17DB070	Till Pulp	4	0.2	0.7
17DB071	Till Pulp	3	0.2	0.7
17DB072	Till Pulp	3	0.3	0.6
17DB073	Till Pulp	3	0.2	0.6
17DB074	Till Pulp	2	0.2	0.7
17DB077	Till Pulp	5	0.3	1.2
17DB080	Till Pulp	3	0.2	0.5
17DB081	Till Pulp	2	0.1	<0.5

"This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.

BUREAU VERITAS MINERAL LABORATORIES Canada

www.bureauveritas.com/um

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

Client: **Nova Scotia Dept. of Natural Resources**
1701 Hollis St.
P.O. Box 698
Halifax Nova Scotia B3J 2T9 Canada

Project: None Given
Report Date: February 05, 2018

Page: 3 of 3 Part: 1 of 1

CERTIFICATE OF ANALYSIS VAN17003090.1

	Method	FA130	FA130	FA130
	Analyte	Au	Pt	Pd
	Unit	ppb	ppb	ppb
	MDL	1	0.1	0.5
17DB082	Till Pulp	6	0.2	1.2
17DB083	Till Pulp	3	0.2	0.6
17DB085	Till Pulp	11	0.3	0.5
17DB086	Till Pulp	3	0.3	0.6
17DB101	Till Pulp	3	<0.1	0.6
17DB102	Till Pulp	5	0.1	1.1
17DB103	Till Pulp	3	0.7	1.1
17DB104	Till Pulp	3	0.6	1.1
17DB105	Till Pulp	3	0.5	0.9
17DB106	Till Pulp	10	0.3	0.8
17DB107	Till Pulp	3	0.6	0.9
17DB108	Till Pulp	2	0.1	0.6
17DB109	Till Pulp	3	0.3	0.8
17DB110	Till Pulp	2	0.1	0.5
17DB112	Till Pulp	5	<0.1	1.2
17DB113	Till Pulp	4	0.2	1.0
17DB114	Till Pulp	2	<0.1	<0.5
17DB160	Till Pulp	4	<0.1	<0.5
17DB164	Till Pulp	4	<0.1	0.5
17DB165	Till Pulp	13	0.6	1.7
17DB166	Till Pulp	4	0.2	0.6
17DB075	Till Pulp	5	0.3	1.3
17DB084	Till Pulp	8	<0.1	0.8

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Project: None Given
Report Date: February 05, 2018

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QUALITY CONTROL REPORT VAN17003090.1

	Method	FA130	FA130	FA130
	Analyte	Au	Pt	Pd
	Unit	ppb	ppb	ppb
	MDL	1	0.1	0.5
Pulp Duplicates				
17DB067	Till Pulp	12	0.7	1.5
REP 17DB067	QC	16	0.6	1.9
17DB082	Till Pulp	6	0.2	1.2
REP 17DB082	QC	6	0.3	1.3
17DB165	Till Pulp	13	0.6	1.7
REP 17DB165	QC	16	0.4	1.3
Reference Materials				
STD PD05	Standard	542	454.2	615.3
STD PD05	Standard	534	455.9	630.3
STD PD05	Standard	533	454.8	607.9
STD PD05	Standard	527	445.8	613.4
STD PD05 Expected		519	430	596
BLK	Blank	3	0.3	0.8
BLK	Blank	2	0.3	0.8
BLK	Blank	2	<0.1	0.6
BLK	Blank	2	<0.1	<0.5