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CRB Analyse Service GmbH

RFA Ringversuch GeoPT 41, England - ORA-1, Andesite

Veranstalter des Ringversuchs: International Association of Geoanalysts and Geostandards Newsletter - GeoPT41

Ringversuchsmaterial: ORA-1, Andesite

RV geschlossen: 2017 – 7

Literatur: Report - GeoPT41 Proficiency Testing Round 41 (Laborcode CRB = Y66)

Hauptelemente [MA%]

	CRB	RV	1sRV	Z-Score
Na_2O	4,270	4,200	0,068	0,550
MgO	3,250	3,190	0,053	0,580
Al_2O_3	17,500	17,500	0,228	0,000
SiO_2	60,160	60,480	0,652	-0,250
P_2O5	0,172	0,173	0,005	-0,160
K_2O	1,240	1,239	0,024	0,030
CaO	6,120	6,000	0,092	0,650
TiO_2	0,860	0,850	0,017	0,890
Fe_2O_3tot	6,340	6,135	0,093	1,100
MnO	0,099	0,095	0,003	0,680
L.O.I. *	- 0,180	0,000	0,120	-0,780
TC * [µg/g]	272	221,000	72,000	0,350

Spurenelemente [µg/g]

	CRB	RV	1sRV	Z-Score
Ba	337,00	323,00	10,80	0,65
Ce	36,00	34,40	1,60	0,50
Cl *	95,00	102,00	46,00	-0,08
Co	19,00	19,00	1,00	0,03
Cr	35,00	40,00	1,80	-1,36
Cu	22,00	30,00	1,40	-2,77
Ga	20,00	20,50	1,00	-0,25
Hf	3,50	3,70	0,20	-0,41
La	10,00	16,30	0,90	-3,69
Nb	8,00	8,10	0,50	-0,06
Nd	18,00	17,50	0,90	0,29
Ni	32,00	33,40	1,60	-0,44
Pb	12,00	9,00	0,50	2,91
Pr	3,00	4,30	0,30	-2,32
Rb	19,00	18,60	1,00	0,24
Sm	4,00	3,60	0,20	0,76
Sr	559,00	543,00	16,80	0,48
V	114,00	108,00	4,30	0,70
Y	16,00	15,20	0,80	0,48
Zn	60,00	66,90	2,80	-1,21
Zr	143,00	146,00	5,50	-0,27

Legende

CRB: Ergebnisse CRB – **RV:** Ergebnisse Ringversuch -- **1s-RV:** Standardabweichung Ringversuch
Z-Score: Differenz des Messwertes vom Mittelwert des Ringversuchs -- * Wert nicht zertifiziert

GeoPT41 — AN INTERNATIONAL PROFICIENCY TEST FOR ANALYTICAL GEOCHEMISTRY LABORATORIES — REPORT ON ROUND 41 (Andesite, ORA-1) / July 2017

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*Keywords: proficiency testing, quality assurance, Geo*PT*, Geo*PT*41, Round 41, ORA-1, andesite*

Abstract

Results are presented for Round 41 of the International Association of Geoanalysts' Proficiency Testing programme for analytical geochemistry laboratories. The test material distributed in this round of Geo*PT* was an andesite, ORA-1, supplied by Dr Stephen Wilson of the U.S. Geological Survey. In this report, the data contributed by 93 laboratories are listed, together with an assessment of consensus values, consequent *z*-scores and charts to show the distribution of contributed results and the overall performance of participating laboratories.

Introduction

This forty-first round of the international proficiency testing programme, Geo*PT*, was conducted in a similar manner to earlier rounds. The programme is designed to be part of the routine quality assurance procedures employed by analytical geochemistry laboratories. The programme is organised by the International Association of Geoanalysts and is conducted in accordance with a published protocol available at (http://www.geoanalyst.org/documents/GeoPT-protocol.pdf). The overall aim of the programme is to provide participating laboratories with *z*-score information for reported elemental determinations from which the laboratory can decide whether the quality of their data is satisfactory in relation both to their chosen fitness-for-purpose criteria and to the results submitted by other laboratories contributing to the round. In circumstances where *z*-scores are unsatisfactory, a participating laboratory is encouraged to investigate for unsuspected analytical bias and to take corrective action if this appears justified.

Steering Committee for Round 41: P.C. Webb (results coordinator), M. Thompson (statistical advisor), P.J. Potts and C.J.B. Gowing (analytical advisors), S.A. Wilson (provision of ORA-1).

Timetable for Round 41:
Distribution of sample: March 2017
Results submission deadline: 14th June 2017
Release of report: July 2017

Test Material details

Geo*PT*40A: The andesite test material, ORA-1, was supplied by Dr Stephen Wilson. The test material was evaluated for homogeneity by the originator, and as a result, the sample was considered suitable for use in this proficiency test.

Submission of results

A total of 3088 results were submitted for Geo*PT*41 (ORA-1) by 93 laboratories as listed in Table 1. Results that were designated by the participating laboratory as data quality 1 (see ***Z*-score analysis** section below for explanation) are shown in bold and results of data quality 2 are shown underlined. Results from all laboratories submitting data were used to assess respective assigned values. Regrettably there were four laboratories reporting in total 12 values of '0' (i.e. zero), for this round, this excludes LOI, as zero is a valid result for LOI, as are negative values. We should emphasise that as stated in the ***Instructions to Analysts*,** values of zero for measurands other than LOI should not be reported. These 12 values were excluded from consideration in the data assessment process.

Assigned values

Following procedures described in earlier rounds, robust statistical procedures were used to derive assigned mass fraction values [X_a] for measurands in this test sample, these values being judged to be the best available estimates of the true composition. Values were assigned on the basis that: i) sufficient laboratories had contributed data for a measurand, and ii) visual assessment gave confidence that a substantial proportion of the results distribution was symmetrically disposed. Part of this assessment involved examining the distribution of results from bar charts of contributed data for each measurand (presented in Figures 1 and 2). For this round, it has also been possible to view data distributions according to analytical procedure and visually assess the comparative quality of data obtained using different procedures.

Many datasets were normally disposed and showed remarkable symmetry with relatively little dispersion of data. Consequently, in 18 cases, the robust mean was used to define an appropriate consensus value. However, many other datasets were slightly skewed and some, more severely skewed. In many of such cases medians provided a satisfactory estimator for defining consensus values: 16 cases in all. Where the median did not provide a symmetrical distribution of data about the consensus, the mode was preferred, and was used in 16 cases for defining a consensus.

In most cases, a mode was used as a consequence of an asymmetric distribution of results involving a high tail of highly variable data. Sometimes, but not always, the reason for the high tail was because XRF data had been reported for mass fractions close to the detection limit for the technique and measured values consequently had poor precision and accuracy. A significant proportion of XRF data was highly variable leading to high tails for Cs, Sb, Sn, Th and U. In a number of cases, in particular for Fe_2O_3T, Co, Cr, Ni, V and Zn, XRF powder pellet values were generally lower and more variable than data reported by other techniques. We do not have an explanation for this observed bias, but use of modes as location estimators helped to avoid bias in many of these datasets. In 10 cases, modes were sufficiently well defined by appropriate techniques to justify their designation as assigned values. In the other six cases provisional status was judged most appropriate (see Table 2). Procedures used to determine the mode included the estimation of the mass fraction corresponding to the maximum value of the kernel density distribution for the dataset and the Lientz mode (Lientz, 1969) as provided by the "modeest" package which runs in "R" (https://cran.r-project.org/web/packages/modeest/modeest.pdf). Modes are suitably robust location estimators that can provide consensus values to represent the most coherent part of a data distribution where data are often symmetrically disposed, whereas the dataset as a whole is asymmetric.

Table 2 lists assigned and provisional values for 10 major components and 40 trace elements in Geo*PT*41 (ORA-1). Bar charts for the 50 measurands of Geo*PT*41 that were judged to have satisfactory distributions for consensus values to be designated as assigned or provisional values are shown in Figure 1. These are: SiO_2, TiO_2, Al_2O_3, Fe_2O_3T, MnO, MgO, CaO, Na_2O, K_2O, P_2O_5, Ba, Be, Ce, Co, Cr*, Cs, Cu, Dy, Er, Eu, Ga, Gd, Hf, Ho, La, Li, Lu, Mo*, Nb, Nd, Ni*, Pb, Pr, Rb, Sb*, Sc, Sm, Sn*, Sr, Ta, Tb, Th, Tl*, Tm, U, V, Y, Yb, Zn and Zr. Of these, provisional values were given to the 6 measurands marked '*'. Instances of provisional status were recorded because either i) a relatively small number of results contributed to the consensus, or ii) the results were unduly dispersed in relation to the target value, or iii) the distribution of values was notably skewed.

Bar charts for the 13 measurands: Fe(II)O, H_2O^+, LOI, Ag, As, Bi, C(tot), Cd, Cl, F, Ge, In and W are plotted in Figure 2 for information only, as the data were either insufficient in number, or the distribution was too highly skewed or too variable for the reliable determination of a consensus for the estimation of *z*-scores.

Fewer LOI data were reported in this round compared with most other recent rounds. This may have reflected a reluctance by analysts to report negative numbers. Volatile loss was quite low in this sample and combined with a gain on ignition due to oxidation of FeO to Fe_2O_3, it may have resulted in a gain on ignition which would correspond to a negative loss on ignition. The main body of values reported ranged from about –0.2 to about +0.4 g/100g, with a median of 0.02 g/100g (see Figure 0.1). The consensus appears to be in the range 0.00 to 0.04 g/100g. Please also see **Addendum** with respect to LOI.

Z-score analysis

As in previous rounds, laboratories were invited to choose one of two performance standards against which their analytical results would be judged:

Data quality 1 for laboratories working to a 'pure geochemistry' standard of performance, where analytical results are designed for geochemical research and where care is taken to provide data of high precision and accuracy, sometimes at the expense of a reduced sample throughput rate. For Geo*PT*41, 1362 results of data quality 1 were submitted.

Data quality 2 for laboratories working to an 'applied geochemistry' standard of performance, where, although precision and accuracy are still important, the main objective is to provide results on large numbers of samples collected, for example, as part of geochemical mapping projects or geochemical exploration programmes. For Geo*PT*41, 1726 results of data quality 2 were submitted.

The target standard deviation (H_a) for each measurand assessed was calculated from a modified form of the Horwitz function as follows:

$$H_a = k.X_a^{0.8495}$$

Where X_a is the mass fraction of the element; the factor k = 0.01 for pure geochemistry laboratories and k = 0.02 for applied geochemistry laboratories.

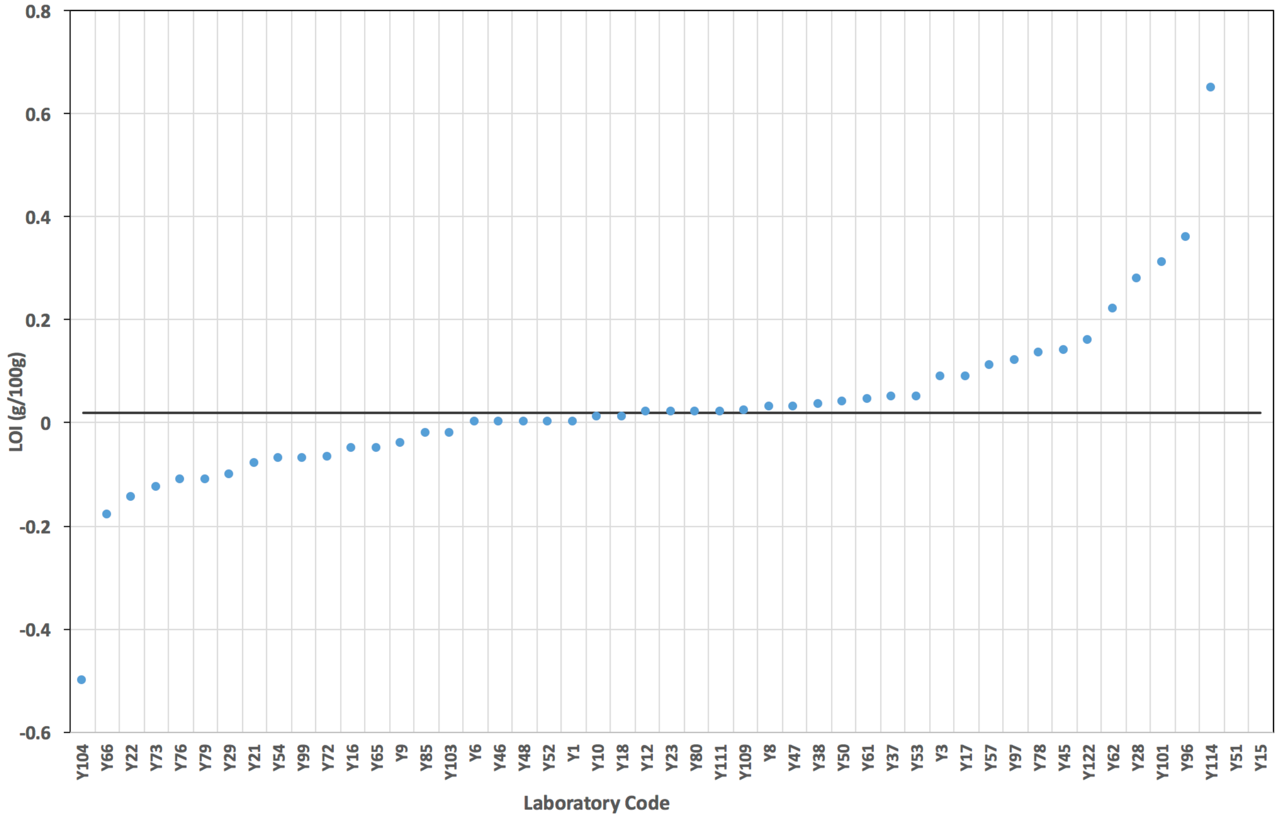


Figure 0.1. Distribution of loss on ignition results for ORA-1 (Geo*PT*41). The consensus appears to be within the range 0.00 to 0.04 g/100g. The horizontal line is drawn at the median value of 0.02 g/100g.

Z-scores were calculated for each elemental measurement submitted by each laboratory from:

$$z = [X - X_a] / H_a$$

Where X is the contributed measurement, X_a is the assigned value and H_a is the target standard deviation (all as mass fractions). *Z*-score values for results contributed to Geo*PT*41 are listed in Table 3. Results designated as data quality 1 are shown in bold: results of data quality 2 are shown underlined. *Z*-scores derived from provisional values are shown in italics.

Participating laboratories are invited to assess their performance using the following criteria:–

Z-score results in the range $-2<z<2$ are considered to be 'satisfactory' (in the sense that no action is called for by the participant). If the *z*-score for any element falls outside this range, especially if it is outside the range $-3<z<3$, contributing laboratories are advised to examine their procedures, and if necessary, take action to ensure that determinations are not subject to unsuspected analytical bias.

Overall performance

A summary of the overall performance of individual laboratories for this round is plotted in multiple *z*-score charts in Figure 3. In these charts, the *z*-score performance for each element is distinguished by symbols that make it simple to identify whether the results were satisfactory or gave *z*-scores that exceeded the action limits. This chart is designed to help individual laboratories to judge their overall performance in this proficiency testing round. Participants should always review their *z*-scores in accord with their own fitness-for-purpose criteria.

Participation in future rounds

The benefit from proficiency testing arises from regular participation and laboratories are invited to contribute to Round 42, the test sample for which will be distributed during September 2017.

Acknowledgements

The authors thank Cynthia Turner for much-valued assistance in distributing this sample and Thomas Meisel for development of software which has greatly assisted the investigation of data according to analytical procedure and facilitated analysis of datasets involving alternative modes as provided in the package “modeest”, which is available as an “R” package (*https://cran.r-project.org/web/packages/modeest/modeest.pdf*).

Reference

Lientz (1969) On estimating points of local maxima and minima of density functions. Nonparametric Techniques in Statistical Inference (ed. M.L. Puri, Cambridge University Press, p.275-282.

Addendum

Important note for analysts: In the **Instructions for Analysts** accompanying your samples for this round, there was a "***specific request*** *that if your* ***procedures involve ignition or fusion,*** *to ensure that you provide* ***additional details*** *where appropriate*" and further details were provided in the notes, viz. "***Procedures involving fusion, sintering or ignition, particularly LOI determinations: Please ensure*** *that you have specified the* ***temperature used*** *and where necessary, the* ***end-point criterion****, e.g. duration of ignition, as* ***Additional Details****, in your descriptions of all relevant procedures.*"

Our thanks to those who did comply with this request, but it appears that in many cases it was ignored. Please ensure that these details are provided for future rounds, as it will assist in assessing data variations. Also, please ensure that LOI is listed with a ***separate procedure*** and not subsumed with the procedure applied to major element components.

Appendix 1

Publication status of proficiency testing reports. Previous reports are available for download from the IAG website (http://www.geoanalyst.org/).

Geo*PT*1
Thompson M., Potts P.J., Kane J.S. and Webb P.C. (1996)
Geo*PT*1. International proficiency test for analytical geochemistry laboratories - Report on round 1. Geostandards Newsletter: The Journal of Geostandards and Geoanalysis, 20, 295-325.

Geo*PT*2
Thompson M., Potts P.J., Kane J.S., Webb P.C. and Watson, J.S. (1998)
Geo*PT*2. International proficiency test for analytical geochemistry laboratories - Report on round 2. Geostandards Newsletter: The Journal of Geostandards and Geoanalysis, 22 127-156.

Geo*PT*3
Thompson M., Potts P.J., Kane J.S. and Chappell B.W. (1999a)
Geo*PT*3. International proficiency test for analytical geochemistry laboratories - Report on round 3. Geostandards Newsletter: The Journal of Geostandards and Geoanalysis, 23, 87-121.

Geo*PT*4
Thompson M., Potts P.J., Kane J.S., Webb P.C. and Watson J.S. (1999b)
Geo*PT*4. International proficiency test for analytical geochemistry laboratories - Report on round 4. Published in the electronic version of Geostandards Newsletter: The Journal of Geostandards and Geoanalysis (Summer 2000).

Geo*PT*5
Thompson M., Potts P.J., Kane J.S., and Wilson S. (1999c)
Geo*PT*5. International proficiency test for analytical geochemistry laboratories - Report on round 5. Published in the electronic version of Geostandards Newsletter: The Journal of Geostandards and Geoanalysis (Summer 2000).

Geo*PT*6
Potts P.J., Thompson M., Kane J.S., Webb P.C. and Carignan J. (2000)
GEO*PT*6 - an international proficiency test for analytical geochemistry laboratories - report on round 6 (OU-3: Nanhoron microgranite) and 6A (CAL-S: CRPG limestone). International Association of Geoanalysts: Unpublished report.

Geo*PT*7
Potts P.J., Thompson M., Kane J.S., and Petrov L.L. (2000)
GEO*PT*7 - an international proficiency test for analytical geochemistry laboratories - report on round 7 (GBPG-1 Garnet-biotite plagiogneiss). International Association of Geoanalysts: Unpublished report.

Geo*PT*8
Potts P.J., Thompson M., Kane J.S., Webb, P.C. and Watson J.S. (2000)
GEO*PT*8 - an international proficiency test for analytical geochemistry laboratories - report on round 8 / February 2001 (OU-4 Penmaenmawr microdiorite). International Association of Geoanalysts: Unpublished report.

Geo*PT*9
Potts P.J., Thompson M., Webb, P.C. and Watson J.S. (2001)
GEO*PT*9 - an international proficiency test for analytical geochemistry laboratories - report on round 9 / July 2001 (OU-6 Penrhyn slate). International Association of Geoanalysts: Unpublished report.

Geo*PT*10
Potts P.J., Thompson M., Webb, P.C., Watson J.S. and Wang Yimin (2001)
GEO*PT*10 - an international proficiency test for analytical geochemistry laboratories - report on round 10 / December 2001 (CH-1 Marine sediment). International Association of Geoanalysts: Unpublished report.

Geo*PT*11
Potts P.J., Thompson M., Chenery S.R., Webb, P.C. and Watson J.S. (2002)
GEO*PT*11 - an international proficiency test for analytical geochemistry laboratories - report on round 11 / July 2002 (OU-5 Leaton dolerite). International Association of Geoanalysts: Unpublished report.

Geo*PT*12
Potts P.J., Thompson M., Chenery S.R., Webb, P.C. and Batjargal B. (2003)
GEO*PT*12 - an international proficiency test for analytical geochemistry laboratories - report on round 12 / January 2003 (GAS Serpentinite). International Association of Geoanalysts: Unpublished report.

Geo*PT*13
Potts P.J., Thompson M., Chenery S.R., Webb, P.C. and Kaspar H.U. (2003)
GEO*PT*13 - an international proficiency test for analytical geochemistry laboratories - report on round 13 / July 2003 (Köln Loess). International Association of Geoanalysts: Unpublished report.

Geo*PT*14
Potts P.J., Thompson M., Chenery S.R., Webb, P.C. and B. Batjargal (2004)
Geo*PT*14 - an international proficiency test for analytical geochemistry laboratories - report on round 14 / January 2004 (OShBO - alkaline granite). International Association of Geoanalysts: Unpublished report.

Geo*PT*15
Potts P.J., Thompson M., Chenery S.R., Webb, P.C. and Wang Yimin (2004)
Geo*PT*15 - an international proficiency test for analytical geochemistry laboratories - report on round 15 / June 2004 (Ocean floor sediment MSAN). International Association of Geoanalysts: Unpublished report.

Geo*PT*16
Potts P.J., Thompson M., Webb, P.C. and S.Wilson (2005)
Geo*PT*16 - an international proficiency test for analytical geochemistry laboratories - report on round 16 / February 2005 (Nevada basalt, BNV-1). International Association of Geoanalysts: Unpublished report.

Geo*PT*17
Potts P.J., Thompson M., Webb, P.C. and J. Nicholas Walsh (2005)
Geo*PT*17 - an international proficiency test for analytical geochemistry laboratories - report on round 17 / July 2005 (Calcareous sandstone, OU-8). International Association of Geoanalysts: Unpublished report.

Geo*PT*18
Webb, P.C., Thompson M., Potts P.J. and L. Paul Bedard (2006)
Geo*PT*18 - an international proficiency test for analytical geochemistry laboratories - report on round 18 / Jan 2006 (Quartz Diorite, KPT-1). International Association of Geoanalysts: Unpublished report.

Geo*PT*19
Webb, P.C., Thompson M., Potts P.J. and B. Batjargal (2006)
Geo*PT*19 - an international proficiency test for analytical geochemistry laboratories - report on round 19 / July 2006 (Gabbro, MGR-N). International Association of Geoanalysts: Unpublished report.

Geo*PT*20
Webb, P.C., Thompson M., Potts P.J. and M. Burnham (2007)
Geo*PT*20 - an international proficiency test for analytical geochemistry laboratories - report on round 20 / Jan 2007 (Ultramafic rock, OPY-1). International Association of Geoanalysts: Unpublished report.

Geo*PT*21
Webb, P.C., Thompson M., Potts P.J. and B. Batjargal (2007)
Geo*PT*21 - an international proficiency test for analytical geochemistry laboratories - report on round 21 / July 2007 (Granite, MGT-1). International Association of Geoanalysts: Unpublished report.

Geo*PT*22
Webb, P.C., Thompson, M., Potts, P.J. and Batjargal, B. (2008)
Geo*PT*22 - an international proficiency test for analytical geochemistry laboratories - report on round 22 / January 2008 (Basalt, MBL-1). International Association of Geoanalysts: Unpublished report.

Geo*PT*23
Webb, P.C., Thompson, M., Potts, P.J., Watson, J.S. and Kriete, C. (2008)
Geo*PT*23 - an international proficiency test for analytical geochemistry laboratories - report on round 23 / September 2008 (Separation Lake pegmatite, OU-9) and 23A (Manganese nodule, FeMn-1). International Association of Geoanalysts: Unpublished report.

Geo*PT*24
Webb, P.C., Thompson, M., Potts, P.J. and Watson, J.S. (2009)
Geo*PT*24 - an international proficiency test for analytical geochemistry laboratories - report on round 24 / January 2009 (Longmyndian greywacke, OU-10). International Association of Geoanalysts: Unpublished report.

Geo*PT*25
Webb, P.C., Thompson, M., Potts, P.J. and Enzweiler, J. (2009)
Geo*PT*25 - an international proficiency test for analytical geochemistry laboratories - report on round 25 / July 2009 (Basalt, HTP-1). International Association of Geoanalysts: Unpublished report.

Geo*PT*26
Webb, P.C., Thompson, M., Potts, P.J. and Loubser, M. (2010)
Geo*PT*26 - an international proficiency test for analytical geochemistry laboratories - report on round 26 / January 2010 (Ordinary Portland cement, OPC-1). International Association of Geoanalysts: Unpublished report.

Geo*PT*27
Webb, P.C., Thompson, M., Potts, P.J. and Batjargal, B. (2010)
Geo*PT*27 - an international proficiency test for analytical geochemistry laboratories - report on round 27 / July 2010 (Andesite, MGL-AND). International Association of Geoanalysts: Unpublished report.

Geo*PT*28
Webb, P.C., Thompson, M., Potts, P.J. and Wilson, S. (2011)
Geo*PT*28 - an international proficiency test for analytical geochemistry laboratories - report on round 28 / January 2011 (Shale, SBC-1). International Association of Geoanalysts: Unpublished report.

Geo*PT*29
Webb, P.C., Thompson, M., Potts, P.J. and Wilson, S. (2011)
Geo*PT*29 - an international proficiency test for analytical geochemistry laboratories - report on round 29 / July 2011 (Nephelinite, NKT-1). International Association of Geoanalysts: Unpublished report.

Geo*PT*30
Webb, P.C., Thompson, M., Potts, P.J., Long, D. and Batjargal, B. (2012)
Geo*PT*30 - an international proficiency test for analytical geochemistry laboratories - report on round 30 / January 2012 (Calcareous organic-rich shale, CG-2) and 30A (Limestone, ML-2). International Association of Geoanalysts: Unpublished report.

Geo*PT*31
Webb, P.C., Thompson, M., Potts, P.J and Wilson, S. (2012)
Geo*PT*31 - an international proficiency test for analytical geochemistry laboratories - report on round 31 / July 2012 (Modified river sediment, SdAR-1). International Association of Geoanalysts: Unpublished report.

Geo*PT*32
Webb, P.C., Thompson, M., Potts, P.J and Webber, E. (2013)
Geo*PT*32 - an international proficiency test for analytical geochemistry laboratories - report on round 32 / January 2013 (Woodstock Basalt, WG-1). International Association of Geoanalysts: Unpublished report.

Geo*PT*33
Webb, P.C., Thompson, M., Potts, P.J., Prusisz, B., and Young, K. (2013)
Geo*PT*33 - an international proficiency test for analytical geochemistry laboratories - report on round 33 / July-August 2013 (Ball Clay, DBC-1). International Association of Geoanalysts: Unpublished report.

Geo*PT*34
Webb, P.C., Thompson, M., Potts, P.J and Wilson, S. (2014)
Geo*PT*34 - an international proficiency test for analytical geochemistry laboratories - report on round 34 (Granite, GRI-1) / January 2014. International Association of Geoanalysts: Unpublished report.

Geo*PT*35
Webb, P.C., Thompson, M., Potts, P.J and Wilson, S. (2014)
Geo*PT*35 - an international proficiency test for analytical geochemistry laboratories - report on round 35 (Tonalite, TLM-1) / August 2014. International Association of Geoanalysts: Unpublished report.

Geo*PT*35A
Webb, P.C., Thompson, M., Potts, P.J and Wilson, S. (2014)
Geo*PT*35A - an international proficiency test for analytical geochemistry laboratories - report on round 35A (Metalliferous sediment, SdAR-H1) / August 2014. International Association of Geoanalysts: Unpublished report.

Geo*PT*36
Webb, P.C., Thompson, M., Potts, P.J and Wilson, S. (2015)
Geo*PT*36 - an international proficiency test for analytical geochemistry laboratories - report on round 36 (Gabbro, GSM-1) / January 2015. International Association of Geoanalysts: Unpublished report.

Geo*PT*36A
Webb, P.C., Thompson, M., Potts, P.J and Wilson, S. (2015)
Geo*PT*36A - an international proficiency test for analytical geochemistry laboratories - report on round 36A (Metal-rich sediment, SdAR-M2) / January 2015. International Association of Geoanalysts: Unpublished report.

Geo*PT*37
Webb, P.C., Thompson, M., Potts, P.J, Gowing, C.J.B. and Burnham, M. (2015)
Geo*PT*37 - an international proficiency test for analytical geochemistry laboratories - report on round 37 (Rhyolite, ORPT-1) / July 2015. International Association of Geoanalysts: Unpublished report.

Geo*PT*37A
Webb, P.C., Thompson, M., Potts, P.J, Gowing, C.J.B. and Wilson, S. (2015)
Geo*PT*37A - an international proficiency test for analytical geochemistry laboratories - report on round 37A (Blended sediment, SdAR-L2) / July 2015. International Association of Geoanalysts: Unpublished report.

Geo*PT*38
Webb, P.C., Thompson, M., Potts, P.J, Gowing, C.J.B. and Wilson, S.A. (2016)
Geo*PT*38 - an international proficiency test for analytical geochemistry laboratories - report on round 38 (Gabbro, OU-7) / January 2016. International Association of Geoanalysts: Unpublished report.

Geo*PT*38A
Webb, P.C., Thompson, M., Potts, P.J, Gowing, C.J.B. and Meisel, T. (2016)
Geo*PT*38A - an international proficiency test for analytical geochemistry laboratories – special report on round 38A (Modified harzburgite, HARZ01) / June 2016. International Association of Geoanalysts: Unpublished report.

Geo*PT*39
Webb, P.C., Thompson, M., Potts, P.J, Gowing, C.J.B. and Wilson, S.A. (2016)
Geo*PT*39 - an international proficiency test for analytical geochemistry laboratories - report on round 39 (Syenite, SyMP-1) / July 2016. International Association of Geoanalysts: Unpublished report.

Geo*PT*39A
Webb, P.C., Thompson, M., Potts, P.J, and Gowing, C.J.B. (2016)
Geo*PT*39A - an international proficiency test for analytical geochemistry laboratories - report on round 39A (Nepheline syenite, MNS-1) / July 2016. International Association of Geoanalysts: Unpublished report.

Geo*PT*40
Webb, P.C., Thompson, M., Potts, P.J, Gowing, C.J.B. and Wilson, S.A. (2017)
Geo*PT*40 - an international proficiency test for analytical geochemistry laboratories - report on round 40 (Silty marine shale, ShWYO-1) / January 2017. International Association of Geoanalysts: Unpublished report.

Geo*PT*40A
Webb, P.C., Thompson, M., Potts, P.J, Gowing, C.J.B. and Wilson, S.A. (2017)
Geo*PT*40A - an international proficiency test for analytical geochemistry laboratories - report on round 40A (Calcareous organic-rich shale, ShTX-1) / January 2017. International Association of Geoanalysts: Unpublished report.

Table 1 - GeoPT41 Contributed data for Andesite, ORA-1. 14/06/2017

Lab Code		Y1	Y2	Y3	Y6	Y8	Y9	Y10	Y11	Y12	Y13	Y15	Y16	Y17
SiO2	$g\ 100g^{-1}$	59.392	60.48	62.85	**59.68**	60.66	**60.34**	60.4		60.3		59.57	**59.43**	**60.695**
TiO2	$g\ 100g^{-1}$	0.874	0.795	0.49	**0.832**	0.86	**0.85**	0.86		0.83		0.68	**0.811**	**0.846**
Al2O3	$g\ 100g^{-1}$	17.45	17.02	17.05	**17.308**	17.5	**17.54**	17.3		17.55		12.6	**17.39**	**17.544**
Fe2O3T	$g\ 100g^{-1}$	6.09	5.64	5.53	**6.148**	6.14	**6.11**	6.08		6.08		5.28	**6.339**	**6.124**
Fe(II)O	$g\ 100g^{-1}$				**3.4**		**3.51**	2.01						
MnO	$g\ 100g^{-1}$		0.093	0.09	**0.095**	0.1	**0.094**	0.1		0.094		0.07	**0.092**	**0.096**
MgO	$g\ 100g^{-1}$	3.171	2.965	2.28	**3.185**	3.15	**3.17**	3.05		3.18		3.39	**3.323**	**3.227**
CaO	$g\ 100g^{-1}$	5.626	5.71	5.9	**5.976**	5.9	**6.09**	6.04		6.04		5.14	**5.905**	**6.045**
Na2O	$g\ 100g^{-1}$	4.093	4.16	4.26	**4.24**	4.07	**4.19**	4.26		4.28		4.48	**4.149**	**4.136**
K2O	$g\ 100g^{-1}$	1.249	1.17	1.32	**1.228**	1.26	**1.23**	1.24		1.27		1.3	**1.225**	**1.229**
P2O5	$g\ 100g^{-1}$	0.19	0.17	0.18	**0.18**	0.18	**0.18**	0.166		0.15		0.16	**0.193**	**0.178**
H2O+	$g\ 100g^{-1}$				**0.18**			8.48						
CO2	$g\ 100g^{-1}$													
LOI	$g\ 100g^{-1}$	0.000		0.09		0.03	**-0.04**	0.01		0.02		7.65	**-0.05**	**0.09**
Ag	$mg\ kg^{-1}$				**0.17**			0.3						
As	$mg\ kg^{-1}$				**0.506**			2				43	**4**	
Au	$mg\ kg^{-1}$													
B	$mg\ kg^{-1}$				**3.8**							41		
Ba	$mg\ kg^{-1}$	272.560	302	286	**306.330**	339	**325**	306	**312**	321.1		268	**326**	**301.4**
Be	$mg\ kg^{-1}$				**1.061**			1.4	**1.19**			0.2		
Bi	$mg\ kg^{-1}$							0.36						**0.047**
Br	$mg\ kg^{-1}$													
C(org)	$mg\ kg^{-1}$													
C(tot)	$mg\ kg^{-1}$		140		**142**			0.02						
Cd	$mg\ kg^{-1}$				**0.075**			0.13						
Ce	$mg\ kg^{-1}$	30.605		40.26	**32.583**			34.2	**34.3**	33.6	**35.1**	74	**40**	**31.69**
Cl	$mg\ kg^{-1}$				**76**								**63**	
Co	$mg\ kg^{-1}$	13.03		6	**18.059**	17	**11**	18.7	**19.1**	17.2		35	**18**	**17.53**
Cr	$mg\ kg^{-1}$	31.34		52	**41.718**	32	**40**	36	**41.6**	35.1		35	**32**	**36.53**
Cs	$mg\ kg^{-1}$			0.21	**0.232**			0.27	**0.23**	1.3			**5**	**0.257**
Cu	$mg\ kg^{-1}$	20.56	26	34	**29.28**	31	**31**	36.5	**29.6**	28.6		9	**30**	**27**
Dy	$mg\ kg^{-1}$	3.275		2.91	**2.737**			1.74	**2.97**		**3.15**	2.83		**2.81**
Er	$mg\ kg^{-1}$	1.693		1.57	**1.447**			1.45	**1.54**		**1.705**	1.62		**1.57**
Eu	$mg\ kg^{-1}$	1.073		1.25	**1.110**			0.88	**1.15**		**1.36**	0.89		**1.17**
F	$mg\ kg^{-1}$				**345**								**162**	
Ga	$mg\ kg^{-1}$	27.998		26.6	**20.717**	19	**18**	20.6	**20.6**	18.5			**21**	**19**
Gd	$mg\ kg^{-1}$	3.188		3.64	**3.121**			2.73	**3.39**		**4.5**	4.13		**3.41**
Ge	$mg\ kg^{-1}$			2.07	**1.151**					0.9				
Hf	$mg\ kg^{-1}$			23.97	**3.548**	6		3.56	**3.7**	3.7				**3.75**
Hg	$mg\ kg^{-1}$				**0.002**									
Ho	$mg\ kg^{-1}$	0.604		0.59	**0.546**			0.59	**0.57**			0.63		**0.52**
I	$mg\ kg^{-1}$													
In	$mg\ kg^{-1}$				**0.038**			0.05						
La	$mg\ kg^{-1}$	14.579	14	**16.05**	**15.859**			18.9	**16.3**	17	**17.2**	32.11	**10**	**15.15**
Li	$mg\ kg^{-1}$				**11.8**			12	**11.5**			19		**11.99**
Lu	$mg\ kg^{-1}$	0.069		0.22	**0.202**			0.27	**0.21**			0.21		**0.22**
Mo	$mg\ kg^{-1}$				**1.029**			2.44	**1.05**	1.1			**5**	**0.92**
Nb	$mg\ kg^{-1}$			8	**6.953**	8	**9**	9.2	**8.23**	6.7		46	**8**	**7.62**
Nd	$mg\ kg^{-1}$	16.038		17.84	**16.387**			17.5	**17.4**	18.7	**16.65**	23.57	**20**	**16.17**
Ni	$mg\ kg^{-1}$	23.21		33	**33.092**	29	**35**	43.5	**37.3**	27.7		36	**34**	**33.2**
Pb	$mg\ kg^{-1}$	8		9	**8.014**	9	**7**	15.5	**8.41**	8.8			**7**	**8.16**
Pr	$mg\ kg^{-1}$	3.999		4.4	**4.061**			3.53	**4.28**		**4.725**	6.2		**3.83**
Rb	$mg\ kg^{-1}$	16.971		18	**18.339**	18	**16**	18.6	**18.1**	16.8			**23**	**18.8**
Rh	$mg\ kg^{-1}$													
S	$mg\ kg^{-1}$		30											
Sb	$mg\ kg^{-1}$	0.94			**0.660**			2.04		1.15			**3**	**1.11**
Sc	$mg\ kg^{-1}$			12.93	**13.72**	15		15.9	**13.8**	15.1		4.95	**13**	**11.45**
Se	$mg\ kg^{-1}$							3						
Sm	$mg\ kg^{-1}$	3.583		3.85	**3.573**			3.1	**3.77**	5.5	**3.695**	4.17		**3.4**
Sn	$mg\ kg^{-1}$	1.51			**1.771**			2.1	**1.52**	1.69		26	**5**	**1.81**
Sr	$mg\ kg^{-1}$	366.620		570	**538.145**	542	**558**	559	**552**	530.2		578	**569**	**538.1**
Ta	$mg\ kg^{-1}$			1.59	**0.582**			1.48	**0.57**	0.9				**0.52**
Tb	$mg\ kg^{-1}$	0.551		0.53	**0.466**			0.59	**0.52**			0.6		**0.55**
Te	$mg\ kg^{-1}$							0.14						
Th	$mg\ kg^{-1}$	0.428		2.83	**2.505**			2.5	**2.63**	1.2	**2.8**		**6**	**2.51**
Tl	$mg\ kg^{-1}$								**0.098**	0.1			**1**	**0.09**
Tm	$mg\ kg^{-1}$	0.233		0.23	**0.196**			0.29	**0.23**			0.26		**0.23**
U	$mg\ kg^{-1}$	0.666		0.94	**0.859**			0.84	**0.9**	1.2	**0.92**		**3**	**1.24**
V	$mg\ kg^{-1}$	93.77	106	100	**101.894**	88	**100**	124	**110**	95.8			**104**	**94.05**
W	$mg\ kg^{-1}$							1.9		0.5				**0.26**
Y	$mg\ kg^{-1}$	17.132	13	14.8	**14.574**	16	**16**	15.8	**15.7**	14.5	**24.15**	16.91	**17**	**13.37**
Yb	$mg\ kg^{-1}$	1.416		1.45	**1.354**			1.4	**1.42**	0.3	**1.67**	1.59		**1.36**
Zn	$mg\ kg^{-1}$	42.56	70	60	**68.159**	60	**67**	73	**68.6**	61.3		54	**66**	**60.84**
Zr	$mg\ kg^{-1}$		110	165	**137.081**	158	**140**	143	**139**	144.2			**153**	**142.180**

Bold entries are Data Quality 1 - Underlined entries are Data Quality 2

Table 1 - GeoPT41 Contributed data for Andesite, ORA-1. 14/06/2017

Lab Code		Y18	Y19	Y20	Y21	Y22	Y23	Y24	Y25	Y27	Y28	Y29	Y30	Y33
SiO2	g 100g^{-1}	**60.7**		60.48	60.19	**60.73**	60.57		60.13	59.35	**60.2**	60.808	**60.57**	60.35
TiO2	g 100g^{-1}	**0.8**		0.84	0.85	**0.855**	0.86	**0.85**	0.84	0.888	**0.86**	0.851	**0.855**	0.856
Al2O3	g 100g^{-1}	**17.5**		17.57	17.51	**17.634**	17.25		17.48	17.95	**17.4**	17.737	**17.58**	17.53
Fe2O3T	g 100g^{-1}	**6.4**		6.11	6.07	**6.055**	6.12	**6.12**	6.15	6.38	**6.22**	6.141	**6.139**	6.1
Fe(II)O	g 100g^{-1}											3.795		3.59
MnO	g 100g^{-1}	**0.12**		0.093	0.1	**0.098**	0.1	**0.09**		0.099	**0.1**	0.097	**0.095**	0.094
MgO	g 100g^{-1}	**3.4**		3.19	3.23	**3.145**	3.15		3.27	3.3	**3.21**	3.176	**3.132**	3.16
CaO	g 100g^{-1}	**5.3**		5.93	5.95	**6.14**	5.98		6.02	6.06	**5.9**	6.036	**5.982**	6.1
Na2O	g 100g^{-1}	**3.1**		4.28	4.22	**4.155**	4.31		4.22	4.41	**4.13**	4.272	**4.128**	4.21
K2O	g 100g^{-1}	**1.1**		1.25	1.24	**1.22**	1.22		1.24	1.21	**1.24**	1.248	**1.224**	1.23
P2O5	g 100g^{-1}	**0.4**		0.17	0.17	**0.186**	0.17	**0.18**	0.174	0.184	**0.18**	0.175	**0.166**	0.179
H2O+	g 100g^{-1}											0.451		
CO2	g 100g^{-1}													
LOI	g 100g^{-1}	**0.01**			-0.08	**-0.145**	0.02				**0.28**	-0.102		
Ag	mg kg^{-1}													
As	mg kg^{-1}	**1.7**				2.27		**0.94**			**0.94**		**0.462**	
Au	mg kg^{-1}													
B	mg kg^{-1}													
Ba	mg kg^{-1}		**300**			**342.3**	321	**325**	325	327	**322**	321.370	**320**	318
Be	mg kg^{-1}							**1.16**	1.21		**1.29**	1.19		1.11
Bi	mg kg^{-1}													
Br	mg kg^{-1}									3				
C(org)	mg kg^{-1}													
C(tot)	mg kg^{-1}										**1490**			
Cd	mg kg^{-1}	**0.1**						**0.15**				0.07		
Ce	mg kg^{-1}		**33.11**			**38.3**		**33.8**	35	35.6	**27.8**	31.8	**33.03**	32.2
Cl	mg kg^{-1}	**69.3**												
Co	mg kg^{-1}	**3.2**				**15.8**	23	**19.7**	19.8	19	**18.9**	18.73		
Cr	mg kg^{-1}	**25**				**30.1**	40	**39.3**	34	43	**42.4**	42	**39.5**	42
Cs	mg kg^{-1}		**0.209**					**0.22**	0.23			0.236		
Cu	mg kg^{-1}	**24.2**				**30.4**	27	**28.5**	29.5	25	**29.5**	30.3	**23.83**	30
Dy	mg kg^{-1}		**2.863**					**2.82**	2.81	2.86	**2.52**	2.756		2.6
Er	mg kg^{-1}		**1.465**					**1.5**	1.47	1.58	**1.27**	1.448		1.37
Eu	mg kg^{-1}		**1.128**					**1.1**	1.15	1.21	**1**	1.082	**1.074**	1.1
F	mg kg^{-1}													
Ga	mg kg^{-1}					**22.1**	21	**20.5**	19.2	19	19.9	20.187		21.5
Gd	mg kg^{-1}		**3.428**					**3.26**	3.32	3.64	**3**	3.200		3.38
Ge	mg kg^{-1}													
Hf	mg kg^{-1}					**12**		**3.96**	3.7		5.6	3.67		3.9
Hg	mg kg^{-1}									0.006			**0.052**	
Ho	mg kg^{-1}		**0.536**					**0.55**	0.55	0.56	**0.48**	0.526		0.5
I	mg kg^{-1}													
In	mg kg^{-1}											0.037		
La	mg kg^{-1}		**15.8**			**24.3**		**15.8**	16.4	17	**13.3**	15.344	**16.2**	17.1
Li	mg kg^{-1}							**11.4**	12.7			10.59	**11.9**	11.7
Lu	mg kg^{-1}		**0.198**					**0.203**	0.2	0.19	**0.19**	0.196		0.19
Mo	mg kg^{-1}								1.05		**1.07**	1.266		
Nb	mg kg^{-1}		**8.795**			**6.9**		**7.95**	7.9	10	8.09	7.78		8
Nd	mg kg^{-1}		**16.4**			**16.2**		**16.9**	17.7	18	**14**	16.595	**15.03**	16.2
Ni	mg kg^{-1}	**11**				**25.3**	32	**33.4**	34.1	29	**34.5**	34.41	**33.4**	31
Pb	mg kg^{-1}	**5.2**	**8.22**			**9.32**			8.2	7	**8.99**	8.54		
Pr	mg kg^{-1}		**3.863**					**4.25**	4.27	4.5	**3.58**	3.962		3.94
Rb	mg kg^{-1}		**18.2**			**17.5**		**18.2**	18	20	18.4	18.47		18
Rh	mg kg^{-1}													
S	mg kg^{-1}													
Sb	mg kg^{-1}	**0.6**							0.76		**0.79**	0.754		
Sc	mg kg^{-1}					**10.6**	12	**12.2**	13.9	13.9	14.2	12.9	**14.87**	13.7
Se	mg kg^{-1}							**0.79**			**2.1**			
Sm	mg kg^{-1}		**3.407**					**3.6**	3.72	3.76	**3.03**	3.482		3.27
Sn	mg kg^{-1}					3.3		**1.48**				1.75		
Sr	mg kg^{-1}		**496.4**	545		**538.7**	524	**568**	554	497	530	542.390	**565**	542
Ta	mg kg^{-1}		**0.595**					**0.61**	0.52			0.538		
Tb	mg kg^{-1}		**0.492**					**0.52**	0.5	0.51	**0.4**	0.465		0.49
Te	mg kg^{-1}	**0.04**												
Th	mg kg^{-1}					3.4		**2.49**	2.58	2.51	**2.71**	2.524		
Tl	mg kg^{-1}	**0.1**						**0.06**				0.075		
Tm	mg kg^{-1}		**0.215**					**0.21**	0.22	0.22	**0.18**	0.203		0.19
U	mg kg^{-1}		**0.748**			2.51		**0.86**	0.87		**0.18**	0.863		
V	mg kg^{-1}	**56.9**				**90.6**	111	**114**	114	102	**118**	109.730	**105.3**	110
W	mg kg^{-1}											0.224		
Y	mg kg^{-1}		**14.29**			**14.9**		**15.3**	14.9	14.2	**12**	14.683		16
Yb	mg kg^{-1}		**1.292**					**1.34**	1.31	1.34	**1.24**	1.304		1.28
Zn	mg kg^{-1}	**21.6**				**60.75**	66	**60**	71	65	**72.3**	68.7		63
Zr	mg kg^{-1}					**151.8**	135	**143**	152	170	140	145.2		141

Bold entries are Data Quality 1 - Underlined entries are Data Quality 2

Table 1 - GeoPT41 Contributed data for Andesite, ORA-1. 14/06/2017

Lab Code		Y34	Y35	Y36	Y37	Y38	Y40	Y41	Y43	Y45	Y46	Y47	Y48	Y50
SiO_2	g $100g^{-1}$		59.6		58.18	**60.51**	60.7	**62.35**	60.2	**60.2**	**60.71**	60.895	60.28	62.38
TiO_2	g $100g^{-1}$	**0.85**	0.72	0.85	0.83	**0.84**	0.861	**0.89**	0.85	**0.86**	**0.85**	0.86	0.88	0.838
Al_2O_3	g $100g^{-1}$	**18.03**	18.9	16.5	16.86	**17.35**	17.66	**17.79**	17.45	**17.41**	**17.61**	17.362	17.17	16.88
Fe_2O_3T	g $100g^{-1}$	**6.16**	5.56	6.34	6.18	**6.25**	6.06	**6.27**	6.16	**6.2**	**6.13**	6.25	6.23	5.94
Fe(II)O	g $100g^{-1}$					**3.3**								
MnO	g $100g^{-1}$	**0.1**	0.919	0.89	0.11	**0.1**	0.095	**0.1**	0.097	**0.09**	**0.1**	0.104	0.089	0.092
MgO	g $100g^{-1}$	**3.47**	2.9	3.09	3.15	**3.21**	3.16	**3.33**	3.23	**3.27**	**3.08**	3.169	3.33	3
CaO	g $100g^{-1}$	**5.85**	5.94	5.86	5.97	**5.98**	6.03	**6.09**	6.1	**6.12**	**6.02**	5.757	6.3	5.79
Na_2O	g $100g^{-1}$	**4.272**	2.98	4.26	4.07	**4.04**	4.09	**4.28**	4.18	**4.24**	**4.12**	4.257	4.28	4.071
K_2O	g $100g^{-1}$	**1.241**	1.39	1.24	1.21	**1.24**	1.24	**1.25**	1.24	**1.22**	**1.23**	1.291	1.25	1.212
P_2O_5	g $100g^{-1}$			0.17	0.17	**0.176**	0.176	**0.18**	0.177	**0.18**	**0.17**	0.176	0.17	0.155
H_2O+	g $100g^{-1}$													
CO_2	g $100g^{-1}$													
LOI	g $100g^{-1}$				0.05	**0.036**				**0.14**		0.03		0.04
Ag	mg kg^{-1}												0.4	
As	mg kg^{-1}					**7.74**							0.3	1
Au	mg kg^{-1}		63.3											
B	mg kg^{-1}													
Ba	mg kg^{-1}	**350**	781	319	344	**311**		**325.3**			**320**	366	329.2	346
Be	mg kg^{-1}					**1.1**								
Bi	mg kg^{-1}					**0.04**							0.3	
Br	mg kg^{-1}		6											
C(org)	mg kg^{-1}													
C(tot)	mg kg^{-1}									**270**			210	
Cd	mg kg^{-1}					**0.06**		**3.6**					3.9	
Ce	mg kg^{-1}	**35.7**		37.3	29	**34.3**		**36.4**			**35.07**		30.8	26
Cl	mg kg^{-1}		177											137
Co	mg kg^{-1}	**19.3**		20.2	20	**18**		**14.9**				16	19.9	24
Cr	mg kg^{-1}	**41.7**	24	38.9	66	**34.4**		**33.1**			**41**	35	29.1	34
Cs	mg kg^{-1}			0.24		**0.25**					**0.23**		0.8	
Cu	mg kg^{-1}		51	30.5	11	**30.1**		**24.7**			**31**	33	29.6	34
Dy	mg kg^{-1}	**2.5**		3.28		**2.89**					**3.22**			
Er	mg kg^{-1}			1.82		**1.55**					**1.61**			
Eu	mg kg^{-1}	**1.21**		1.36		**1.19**					**1.27**			
F	mg kg^{-1}													
Ga	mg kg^{-1}	22	27		15	**19.9**		**19.9**			**19**		19.5	21
Gd	mg kg^{-1}			4.17		**3.34**					**3.64**			
Ge	mg kg^{-1}					**2.33**		**1.3**						
Hf	mg kg^{-1}	**3.67**				**4.47**		**2**			**3.83**		4	
Hg	mg kg^{-1}													
Ho	mg kg^{-1}			0.63		**0.57**					**0.62**			
I	mg kg^{-1}												1.9	
In	mg kg^{-1}					**0.03**								
La	mg kg^{-1}	**16.3**	4750	17.5	13	**16.2**		**16.5**			**16.91**		19.9	22
Li	mg kg^{-1}			10.1		**10.8**								
Lu	mg kg^{-1}	**0.211**		0.23		**0.21**					**0.21**			
Mo	mg kg^{-1}					**1.5**							1.1	1
Nb	mg kg^{-1}				3	**7.96**		**7.9**			**7.72**	6	7.4	7
Nd	mg kg^{-1}	**17.3**		19.6		**17.6**		**19.1**			**17.9**		21.2	
Ni	mg kg^{-1}		88		37	**32.4**		**30.3**			**36**	33	25.2	31
Pb	mg kg^{-1}		14	9.44	18	**9.52**		**10.7**			**8.53**	11	5.4	6
Pr	mg kg^{-1}			4.79		**4.29**					**4.45**			
Rb	mg kg^{-1}	**22**	19.4	19	26	**18.5**		**18.8**			**17.9**	18	17.9	15
Rh	mg kg^{-1}													
S	mg kg^{-1}												170	136
Sb	mg kg^{-1}					**1.21**							3.3	3
Sc	mg kg^{-1}	**13.44**				**13.2**		**11.7**			**13.3**		8.6	16
Se	mg kg^{-1}					**0.05**								
Sm	mg kg^{-1}	**3.65**		4.08		**3.72**					**3.98**			
Sn	mg kg^{-1}					**1.66**							3.6	2
Sr	mg kg^{-1}	**550**	554	561	488	**529**		**537.7**			**560**	547	522.4	542
Ta	mg kg^{-1}	0.43				**0.7**		**2.9**			**0.56**			
Tb	mg kg^{-1}	**0.47**		0.56		**0.55**					**0.57**			
Te	mg kg^{-1}					**0.04**							3.3	
Th	mg kg^{-1}	**2.62**		3.03		**2.58**					**2.67**	4	3.1	1
Tl	mg kg^{-1}					**0.1**								
Tm	mg kg^{-1}			0.25		**0.22**					**0.23**			
U	mg kg^{-1}			1.01	18	**0.89**		**3**			**0.89**		2.6	1
V	mg kg^{-1}	**120**		114	101	**110**		**90.4**			**112**	99	75.4	98
W	mg kg^{-1}					**0.17**							1.3	51
Y	mg kg^{-1}		14.4	15.3	16	**15.3**		**14.8**			**15.81**	13	14.9	17
Yb	mg kg^{-1}			1.59		**1.4**					**1.4**		0.9	
Zn	mg kg^{-1}	**73**	78.8	67.3	71	**69.3**		**81.7**			**68**	59	58.1	57
Zr	mg kg^{-1}	180	120		150	**140**		**148**			**145**	150	144.8	146

Bold entries are Data Quality 1 - Underlined entries are Data Quality 2

Table 1 - GeoPT41 Contributed data for Andesite, ORA-1. 14/06/2017

Lab Code		Y51	Y52	Y53	Y54	Y55	Y56	Y57	Y61	Y62	Y65	Y66	Y67	Y69
SiO2	$g\ 100g^{-1}$	56.95	60.63	**60.1**	60.71		68.7	57.37	60.699	**60.6**	**60.47**	60.16	**60.83**	**60.31**
TiO2	$g\ 100g^{-1}$	0.76	0.84	**0.8**	0.85		0.9	0.88	0.842	**0.82**	**0.89**	0.86	**0.84**	**0.86**
Al2O3	$g\ 100g^{-1}$	15.97	17.49	**17.26**	17.55		19	16.74	17.653	**17.15**	**17.5**	17.5	**17.53**	**17.81**
Fe2O3T	$g\ 100g^{-1}$	5.16	6.16	**6.07**	6.14	**6.22**	6.5	5.92	6.082	**5.92**	**6.3**	6.34	**6.11**	**6.37**
Fe(II)O	$g\ 100g^{-1}$													
MnO	$g\ 100g^{-1}$	0.08	0.09	**0.09**	0.09	**0.097**	0.09	0.092	0.105	**0.09**	**0.09**	0.099	**0.095**	**0.088**
MgO	$g\ 100g^{-1}$	1.87	3.22	**3.19**	3.25	**3.29**	3.58	2.989	3.05	**2.83**	**3.17**	3.25	**3.14**	**3.12**
CaO	$g\ 100g^{-1}$	5.26	6.03	**5.98**	5.96	**6.27**	8.1	5.24	6.01	**5.86**	**5.99**	6.12	**6**	**6.2**
Na2O	$g\ 100g^{-1}$	3.81	4.11	**4.07**	4.02		4.6	3.917	4.206	**4.17**	**4.25**	4.27	**4.15**	**4.32**
K2O	$g\ 100g^{-1}$	1.24	1.26	**1.23**	1.32		1.4	1.115	1.217	**1.15**	**1.24**	1.24	**1.22**	**1.16**
P2O5	$g\ 100g^{-1}$	0.13	0.2	**0.17**	0.181		0.21		0.176	**0.15**	**0.17**	0.172	**0.168**	
H2O+	$g\ 100g^{-1}$													
CO2	$g\ 100g^{-1}$													
LOI	$g\ 100g^{-1}$	2.23		**0.05**	-0.07			0.11	0.045	**0.22**	**-0.05**	-0.18		
Ag	$mg\ kg^{-1}$							0.04						
As	$mg\ kg^{-1}$		1	**3**		**1.81**		0.63						
Au	$mg\ kg^{-1}$													
B	$mg\ kg^{-1}$										**1.52**			
Ba	$mg\ kg^{-1}$	332	336	**339**		**330.3**	350	304	308.850	**307**	**323**	337		
Be	$mg\ kg^{-1}$						2				**1.15**			
Bi	$mg\ kg^{-1}$							0.025						
Br	$mg\ kg^{-1}$													
C(org)	$mg\ kg^{-1}$													
C(tot)	$mg\ kg^{-1}$											272		
Cd	$mg\ kg^{-1}$							0.03			**0.04**			
Ce	$mg\ kg^{-1}$	32	41	**48**		**34.42**	37.9	0.41		**34**	**34.6**	36		
Cl	$mg\ kg^{-1}$	39										95		
Co	$mg\ kg^{-1}$	12		**12**		**19.91**	17.4	18.02		**17**	**18.3**	19		
Cr	$mg\ kg^{-1}$	**33**	35	**31**		**46.87**	41	53.71	43.3	**46**	**41.6**	35		
Cs	$mg\ kg^{-1}$	2				**0.229**		0.16			**0.24**			
Cu	$mg\ kg^{-1}$	28	26	**24**		**30.78**	29.2	19		**35**	**29.8**	22		
Dy	$mg\ kg^{-1}$					**2.76**	3.8	2.57		**3**	**2.97**			
Er	$mg\ kg^{-1}$					**1.49**	2	1.501		**1.5**	**1.57**			
Eu	$mg\ kg^{-1}$					**1.107**	1.4	1.07		**1.1**	**1.16**			
F	$mg\ kg^{-1}$													
Ga	$mg\ kg^{-1}$	18	21	**19**		**20.61**	21.8	18	23.1	**18**	**20.9**	20		
Gd	$mg\ kg^{-1}$			**6**		**3.4**	4.5	3.48		**4**	**3.46**			
Ge	$mg\ kg^{-1}$						1.3	1.3				1.6		
Hf	$mg\ kg^{-1}$	4		**5**		**3.62**	5	3.48			**3.82**	3.5		
Hg	$mg\ kg^{-1}$													
Ho	$mg\ kg^{-1}$					**0.546**	0.7	0.498		**0.6**	**0.57**			
I	$mg\ kg^{-1}$													
In	$mg\ kg^{-1}$							0.04						
La	$mg\ kg^{-1}$	18	29	**23**		**16.41**	18.5	15.52		**18**	**15.9**	10		
Li	$mg\ kg^{-1}$									**13**	**11.2**			
Lu	$mg\ kg^{-1}$					**0.212**	0.3	0.212		**0.4**	**0.22**			
Mo	$mg\ kg^{-1}$						1.2	1.6			**1.04**			
Nb	$mg\ kg^{-1}$	11	7	**7**		**8.42**	8.5	7.5	6.85	**15**	**8.41**	8		
Nd	$mg\ kg^{-1}$	16		**24**		**16.87**	20.8	16.53		**16**	**18.1**	18		
Ni	$mg\ kg^{-1}$	29	30	**29**		**43.54**	33.4	42	27.7		**34.8**	32		
Pb	$mg\ kg^{-1}$	12	13	**8**		**8.14**	9.5	7.139	11	**12**	**9.23**	12		
Pr	$mg\ kg^{-1}$					**4.16**	5	4.04			**4.42**	3		
Rb	$mg\ kg^{-1}$	20	20	**21**		**18.06**		15.58	18.25	**19**	**17.5**	19		
Rh	$mg\ kg^{-1}$													
S	$mg\ kg^{-1}$													
Sb	$mg\ kg^{-1}$						1.2	1.27						
Sc	$mg\ kg^{-1}$	14	11	**13**		**15.23**	20	15.52		**11**	**13.4**			
Se	$mg\ kg^{-1}$													
Sm	$mg\ kg^{-1}$	16				**3.51**	4.5	3.42		**4**	**3.75**	4		
Sn	$mg\ kg^{-1}$	5					2	1.37						
Sr	$mg\ kg^{-1}$	473	554	**546**		**530**		534	1412	**496**	**549**	559		
Ta	$mg\ kg^{-1}$					**0.541**		0.443			**0.75**			
Tb	$mg\ kg^{-1}$					**0.504**	0.6	0.45		**0.5**	**0.53**			
Te	$mg\ kg^{-1}$													
Th	$mg\ kg^{-1}$	4	3			**2.24**	3.1	2.442	3.15		**2.61**			
Tl	$mg\ kg^{-1}$						0.1	0.004						
Tm	$mg\ kg^{-1}$					**0.226**	0.3	0.194		**0.2**	**0.24**			
U	$mg\ kg^{-1}$		1			**0.711**	1.2	0.878		**1.5**	**0.89**			
V	$mg\ kg^{-1}$	100	99	**99**		**123.5**	116	111.320	109.5	**109**	**112**	114		
W	$mg\ kg^{-1}$							0.297						
Y	$mg\ kg^{-1}$	14	14	**17**		**15.65**	15.5	13.98	14.45	**15**	**15.2**	16		
Yb	$mg\ kg^{-1}$					**1.354**	1.6	1.42		**1.4**	**1.45**			
Zn	$mg\ kg^{-1}$	52	60	**69**		**63.44**	66.9	69.89	64.95	**75**	**65.7**	60		
Zr	$mg\ kg^{-1}$	133	155	**133**		**136.7**	155.7	139.7	135.150	**205**	**148**	143		

Bold entries are Data Quality 1 - Underlined entries are Data Quality 2

Table 1 - GeoPT41 Contributed data for Andesite, ORA-1. 14/06/2017

Lab Code		Y70	Y71	Y72	Y73	Y76	Y77	Y78	Y79	Y80	Y84	Y85	Y86	Y87
SiO2	g 100g^{-1}	60.54	60.29	59.77	**60.258**	60.59		61.46	**60.01**	**60.52**	**60.72**	60.34	**60.76**	62.1
TiO2	g 100g^{-1}	0.86	0.863	0.849	**0.843**	0.85		0.631	**0.85**	**0.833**	**0.842**	0.82	**0.864**	0.85
Al2O3	g 100g^{-1}	17.9	17.57	17.3	**17.56**	17.48		16.59	**17.69**	**17.65**	**17.49**	17.51	**18.3**	17.9
Fe2O3T	g 100g^{-1}	6.09	6.191	6.05	**6.205**	6.12		5.73	**6.07**	**6.14**	**6.14**	6.27	**6.4**	6.18
Fe(II)O	g 100g^{-1}		3.32					4.313			**3.61**			
MnO	g 100g^{-1}	0.11	0.091	0.087	**0.097**	0.1		0.068	**0.09**	**0.08**	**0.097**	0.1	**0.1**	0.097
MgO	g 100g^{-1}	3.29	3.224	3.14	**3.215**	3.12		1.2	**3.23**	**3.33**	**3.23**	3.26	**3.318**	3.17
CaO	g 100g^{-1}	5.87	6.228	5.9	**6.022**	6.03		5.73	**5.74**	**6.12**	**6.03**	5.9	**6.09**	5.99
Na2O	g 100g^{-1}	3.83	4.202	4.18	**4.249**	4.24		4.08	**4.33**	**4.27**	**4.23**	4.2	**4.49**	4.02
K2O	g 100g^{-1}	1.23	1.281	1.23	**1.235**	1.23		1.31	**1.21**	**1.24**	**1.22**	1.25	**1.28**	1.24
P2O5	g 100g^{-1}	0.17	0.173	0.167	**0.174**	0.177		0.181	**0.16**	**0.18**	**0.175**	0.17	**0.177**	0.16
H2O+	g 100g^{-1}	0.22											**0.22**	
CO2	g 100g^{-1}						0.09							
LOI	g 100g^{-1}			-0.067	**-0.125**	-0.11		0.134	**-0.11**	**0.02**		-0.02		
Ag	mg kg^{-1}		0.072			0.07		729					**0.082**	
As	mg kg^{-1}				**5.3**	0.6			**3.8**				**0.48**	
Au	mg kg^{-1}													
B	mg kg^{-1}													
Ba	mg kg^{-1}		403		**311.3**	324		338	**330**	**332**	**338**	321	**308**	330
Be	mg kg^{-1}		0.72			1.24						1.22		
Bi	mg kg^{-1}		0.014			0.02								
Br	mg kg^{-1}													
C(org)	mg kg^{-1}												**130**	
C(tot)	mg kg^{-1}		401	215.6		200	250						**130**	
Cd	mg kg^{-1}		0.066			0.05		115					**0.264**	
Ce	mg kg^{-1}		35.4		**34**	33.4		68	**34**	**36.1**	**33.2**	35	**38.8**	
Cl	mg kg^{-1}							139						
Co	mg kg^{-1}		18.03			18.7			**17**	**17.9**	**17**	19.4	**18.8**	
Cr	mg kg^{-1}		41.23		**44**	39		29	**33**	**29.2**	**40**	41.8	**68**	
Cs	mg kg^{-1}		0.242			0.25			**2**		**0.27**	0.241		
Cu	mg kg^{-1}		28.61		**29.5**	26		39	**31**	**31.3**	**30**	30.4	**29.2**	
Dy	mg kg^{-1}		2.932		**2.6**	2.7					**2.67**	2.93	**2.56**	
Er	mg kg^{-1}		1.552			1.5					**1.45**	1.55	**1.46**	
Eu	mg kg^{-1}		1.319			1.2					**1.08**	1.17	**1.15**	
F	mg kg^{-1}										**321**			
Ga	mg kg^{-1}		19.68		**21.2**	20.41		27	**19**	**20.5**	**21**	20.2	**18.75**	
Gd	mg kg^{-1}		3.75			3.4					**3.25**	3.48	**3.21**	
Ge	mg kg^{-1}		1.072			1		9.8				1.15		
Hf	mg kg^{-1}		3.963		**2.76**	3.7					**3.46**	3.6	**4.67**	
Hg	mg kg^{-1}						0.004							
Ho	mg kg^{-1}		0.604			0.6					**0.53**	0.558	**0.468**	
I	mg kg^{-1}													
In	mg kg^{-1}		0.043			0.04							**0.07**	
La	mg kg^{-1}		16.72		**12.3**	15.7			**42**	**15.9**	**16.5**	16.2	**18.3**	
Li	mg kg^{-1}		12.26			12						13	**1.09**	
Lu	mg kg^{-1}		0.234			0.2					**0.19**	0.209	**0.18**	
Mo	mg kg^{-1}		0.88		**1.5**	1		338					**0.49**	
Nb	mg kg^{-1}		8.02		**8.47**	8			**7**	**8.2**	9	8.05		
Nd	mg kg^{-1}		18.73		**16.4**	17		29	**19**	**12.5**	**16.5**	17.4	**15.5**	
Ni	mg kg^{-1}		32.08		**33.5**	32		28	**26**	**30.9**	**28**	35.2	**28.3**	
Pb	mg kg^{-1}		8.879		**8.9**	8.2			**26**	**9**	**9.1**	9.04	6.29	
Pr	mg kg^{-1}		4.59			4.1					**4.83**	4.25	**4.01**	
Rb	mg kg^{-1}		19.55		**18**	17.83		21	**20**	**18.3**	**20**	20.7	**19.51**	
Rh	mg kg^{-1}												**0.04**	
S	mg kg^{-1}			16										
Sb	mg kg^{-1}		0.77			0.68							**0.78**	
Sc	mg kg^{-1}				**14.55**	13.3			**15**	**15**		14		
Se	mg kg^{-1}		0.801											
Sm	mg kg^{-1}		4		**2.81**	3.6			**5**		**3.43**	3.73	**3.21**	
Sn	mg kg^{-1}		1.96			1.6							**1.31**	
Sr	mg kg^{-1}		570.7		**561.8**	592		549	**533**	**554**	**538**	565	**590**	550
Ta	mg kg^{-1}		0.508			0.5						0.561	**0.506**	
Tb	mg kg^{-1}		0.548			0.5					**0.48**	0.511	**2.35**	
Te	mg kg^{-1}		0.015										**0.055**	
Th	mg kg^{-1}		2.64		**1.7**	2.6			**4**	**2.6**	**2.9**	2.54	**3.89**	
Tl	mg kg^{-1}		0.077			0.08							**0.079**	
Tm	mg kg^{-1}		0.246			0.2					**0.2**	0.221	**0.186**	
U	mg kg^{-1}		0.905		**1**	0.9			**3.7**		**0.89**	0.879	**0.517**	
V	mg kg^{-1}		110.5		**107**	114		150	**102**	**105**	**105**	109	**168**	
W	mg kg^{-1}		0.297			0.2		116	**14**	**1.5**			0.56	
Y	mg kg^{-1}		16.15		**15.2**	15.2		9.2	**15**	**15.5**	**16.6**	16.1	**14.06**	
Yb	mg kg^{-1}		1.51			1.37		28			**1.27**	1.41	**1.3**	
Zn	mg kg^{-1}		70.01		**68.7**	66		93	**60**	**64.7**	**66**	68.7	**50.8**	
Zr	mg kg^{-1}		143.6		**146.9**	149		62	**146**	**151**	**147**	140		140

Bold entries are Data Quality 1 - Underlined entries are Data Quality 2

Table 1 - GeoPT41 Contributed data for Andesite, ORA-1. 14/06/2017

Lab Code		Y90	Y91	Y92	Y93	Y95	Y96	Y97	Y98	Y99	Y101	Y102	Y103	Y104
SiO2	g 100g^{-1}	**61.4**	60.24		61.73	62.5	60.98	**59.8**	61.116	**60.5**	**60.65**	**60.77**	**60.22**	**60.02**
TiO2	g 100g^{-1}	**0.85**	0.84	**0.794**	0.81	0.830	0.85		0.895	**0.83**	**0.85**	**0.74**	**0.855**	**0.85**
Al2O3	g 100g^{-1}	**17.7**	17.78		17.6	17.863	17.51	**18.3**	17.87	**17.3**	**17.58**	**17.43**	**17.43**	**17.33**
Fe2O3T	g 100g^{-1}	**6.14**	6.05	**5.64**	5.55	6.015	6.13	**5.9**	6.269	**6.41**	**6.16**	**6.3**	**6.123**	**6.01**
Fe(II)O	g 100g^{-1}	**3.24**					4.1					**3.39**		
MnO	g 100g^{-1}	**0.1**		**0.073**	0.082	0.086	0.09		0.101		**0.1**	**0.1**	**0.096**	**0.09**
MgO	g 100g^{-1}	**3.25**	3.24		2.03	3.085	3.18	**3.1**	3.239	**3.19**	**3.19**	**4.13**	**3.17**	**3.16**
CaO	g 100g^{-1}	**6.11**	6		6.05	5.861	6.09	**5.7**	6.731	**5.37**	**6.13**	**6.14**	**5.966**	**6.05**
Na2O	g 100g^{-1}	**4.25**	4.35		4.53	4.134	4.17	**4.4**	4.276	**3.9**	**3.97**	**4.1**	**4.144**	**3.73**
K2O	g 100g^{-1}	**1.25**	1.28		1.25	1.214	1.24	**1.3**	1.264	**1.15**	**1.23**	**1.2**	**1.233**	**1.25**
P2O5	g 100g^{-1}	**0.19**	0.165		0.197	0.175	0.18		0.18	**0.15**	**0.17**	**0.17**	**0.176**	**0.17**
H2O+	g 100g^{-1}						0.3					**0.21**		
CO2	g 100g^{-1}											**0.18**		
LOI	g 100g^{-1}						0.36	0.12		**-0.07**	**0.31**		**-0.02**	**-0.5**
Ag	mg kg^{-1}	**0.29**					0.34							
As	mg kg^{-1}	**1.5**		**2.1**	0.894		1.2							
Au	mg kg^{-1}													
B	mg kg^{-1}													
Ba	mg kg^{-1}	**327**		**305**	303	311.545	326		320		**301**	**328**	339.4	343
Be	mg kg^{-1}	**1.15**			1.16				1.1					
Bi	mg kg^{-1}	**0.04**		**0.013**										
Br	mg kg^{-1}													
C(org)	mg kg^{-1}													
C(tot)	mg kg^{-1}						270							
Cd	mg kg^{-1}	**0.07**												
Ce	mg kg^{-1}	**33.5**		**31**	34.3	35.211	34.6		33.39			**26**	34.94	**36**
Cl	mg kg^{-1}	**35**			106		155					131		
Co	mg kg^{-1}	**18.7**		**9.4**	18.9	18.699	19.5		19.55		**17**	**10**	19.2	16
Cr	mg kg^{-1}	**44.3**		**33**	31.2	44.877	40		41.7		**34**	**39**	38.51	42
Cs	mg kg^{-1}	**0.22**		**0.196**			0.2					**4**		
Cu	mg kg^{-1}	**27.4**		**29.6**	30.7	29.918	30.11		31.1	**36**	**31**	**33**	33.3	**27**
Dy	mg kg^{-1}	**2.92**		**2.54**	2.92	3.201	3.09		2.93				2.868	
Er	mg kg^{-1}	**1.61**		**1.46**	1.66	1.601	1.63		1.54				1.525	
Eu	mg kg^{-1}	**1.14**		**1.09**	1.18	1.067	0.94		1.16				1.095	
F	mg kg^{-1}	**345**			272		368					146		
Ga	mg kg^{-1}	**20.8**		**19.4**		22.925	21.15		20.52	**23**	**16**	**21**	22.03	
Gd	mg kg^{-1}	**3.47**		**3.12**	3.57	3.735	3.84		3.19				3.314	
Ge	mg kg^{-1}	**1.31**												
Hf	mg kg^{-1}	**3.97**		**3.54**	5.57	4.268	4.04		3.58		**5**	**5**	3.97	
Hg	mg kg^{-1}													
Ho	mg kg^{-1}	**0.55**		**0.472**	0.563	0.534	0.64		0.58				0.525	
I	mg kg^{-1}													
In	mg kg^{-1}													
La	mg kg^{-1}	**10**		**13.7**	16.3	17.072	16.2		17.93			**12**	16.36	**16**
Li	mg kg^{-1}			**11.6**	13.97		12						20.46	
Lu	mg kg^{-1}	**0.2**		**0.177**	0.222		0.21		0.21				0.194	
Mo	mg kg^{-1}	**1.31**		**6.2**		1.309	1.28			**3**		**6**		
Nb	mg kg^{-1}	**7.79**		**13**	8.34	9.603	7.79		7.1	**9**	**9**	**8**	9.581	**9**
Nd	mg kg^{-1}	**17.4**		**16.6**	17.4	18.139	17.2		17.64			**16**	17.9	
Ni	mg kg^{-1}	**42.4**		**32.8**	37.1	37.397	34		36.8	**24**	**30**	**29**	29.3	**33**
Pb	mg kg^{-1}	**8.93**		**8.85**	8.55	9.723	11.61		8.66			**10**	10.1	
Pr	mg kg^{-1}	**4.32**		**4.1**	4.31	4.268	4.29		4.3				4.258	
Rb	mg kg^{-1}	**17.8**		**17.9**	18	19.74	19.5		18.12	**19**	**19**	**20**	21.33	
Rh	mg kg^{-1}													
S	mg kg^{-1}	**40**					15.4							
Sb	mg kg^{-1}	**0.79**		**2.5**	0.816	0.935	0.8							
Sc	mg kg^{-1}	**13.9**		**12.3**	12.6	18.139	12		13.3		**13**	**14**	15.51	
Se	mg kg^{-1}	**1**												
Sm	mg kg^{-1}	**4.08**		**3.41**	3.81	3.735	3.86		3.77				3.616	
Sn	mg kg^{-1}	**1.49**		**1.7**					1.35			**31**		
Sr	mg kg^{-1}	**560**		**527**	538	521.690	554		537.730	**543**	**561**	**539**	545.2	**542**
Ta	mg kg^{-1}	**0.51**		**0.494**	0.453				0.51				0.6	
Tb	mg kg^{-1}	**0.51**		**0.491**	0.531	0.534	0.55		0.46				0.475	
Te	mg kg^{-1}													
Th	mg kg^{-1}	**2.51**		**2.51**	2.66	2.134	2.7		2.63			**1**	2.71	
Tl	mg kg^{-1}			**0.046**										
Tm	mg kg^{-1}			**0.208**	0.229		0.22		0.22				0.212	
U	mg kg^{-1}	**0.91**		**0.771**	0.893	9.603	0.9		0.89			**1**	0.9	
V	mg kg^{-1}	**111**		**84**	107	114.060	114		121.8		**103**	**106**	101	**94**
W	mg kg^{-1}	**0.38**										**12**		
Y	mg kg^{-1}	**14.5**		**13.9**	15.3	17.072	14.8		14.5	**10**	15	**16**	14.94	**15**
Yb	mg kg^{-1}	**1.38**		**0.936**	1.45	1.601	1.52		1.39				1.388	
Zn	mg kg^{-1}	**64.4**		**57.8**	71.6	67.32	65		74	**64**	**58**	**50**	61.8	**65**
Zr	mg kg^{-1}	**146**		**136**	173		142		127.920	**169**	**149**	**148**	152.4	**154**

Bold entries are Data Quality 1 - Underlined entries are Data Quality 2

Table 1 - GeoPT41 Contributed data for Andesite, ORA-1. 14/06/2017

Lab Code		Y105	Y107	Y108	Y109	Y111	Y112	Y113	Y114	Y115	Y116	Y117	Y119	Y121
SiO2	g 100g^{-1}		59.7	60.58	**59.93**	60.43	**60.3**		60.36		60.6	**60.76**	59.48	60.3
TiO2	g 100g^{-1}			0.84	**0.82**	0.856	**0.82**		0.84		0.83	**0.854**	0.93	0.85
Al2O3	g 100g^{-1}		17.44	17.7	**17.34**	17.55	**17.33**		17.46		17.4	**17.72**	17.1	17.5
Fe2O3T	g 100g^{-1}		6.2	6	**6.16**	6.13	**6.381**		6.12		6.1	**6.28**	6.45	6.05
Fe(II)O	g 100g^{-1}						**3.3**		3.78					
MnO	g 100g^{-1}			0.099	**0.096**	0.098	**0.096**		0.094	0.091	0.09	**0.093**	0.103	0.09
MgO	g 100g^{-1}		3.1	3.2	**3.08**	3.23	**3.16**		3.2		3.22	**3.267**	3.36	3.21
CaO	g 100g^{-1}		6.05	5.9	**6.01**	6.066	**6.4**		6.02		5.82	**6.003**	6.2	5.9
Na2O	g 100g^{-1}			4.4	**4.18**	4.06	**4.21**		4.2		4.17	**4.161**	4.55	4.16
K2O	g 100g^{-1}			0.84	**1.24**	1.189	**1.27**		1.22		1.28	**1.136**	1.39	1.21
P2O5	g 100g^{-1}			0.173	**0.168**	0.17	**0.162**		0.17			**0.175**	0.17	0.16
H2O+	g 100g^{-1}						**0.29**		0.16			**0.259**		
CO2	g 100g^{-1}													
LOI	g 100g^{-1}				**0.024**	0.02			0.65					
Ag	mg kg^{-1}								0.069					
As	mg kg^{-1}			27					0.74					
Au	mg kg^{-1}													
B	mg kg^{-1}													
Ba	mg kg^{-1}	**317**		320	**325.7**	302	322	**323**	330	330.7		**313.4**	344	313
Be	mg kg^{-1}	**1.14**		1.2	**1.26**									
Bi	mg kg^{-1}													
Br	mg kg^{-1}													
C(org)	mg kg^{-1}													
C(tot)	mg kg^{-1}												172	
Cd	mg kg^{-1}													
Ce	mg kg^{-1}	**34.2**		**33.1**	**33.86**	33.2		**34.88**	43.1	36.2			31.3	34
Cl	mg kg^{-1}													
Co	mg kg^{-1}	**19**		18.6	**19.23**	17.5			19.2	17.6		**17.71**		19.3
Cr	mg kg^{-1}	**39.7**		51	**41.72**	38.3			41.4	37		**32.47**		43
Cs	mg kg^{-1}	**0.23**		0.25	**0.24**	1.8		**0.28**	0.63					0.2
Cu	mg kg^{-1}	**29.8**		29	**23.39**	38.8			33.5	29.3		**26.62**	26.4	32
Dy	mg kg^{-1}	**2.97**		**2.68**	**2.86**			**2.88**	3.17					2.89
Er	mg kg^{-1}	**1.52**		**1.45**	**1.5**			**1.59**	1.54					1.6
Eu	mg kg^{-1}	**1.14**		**1.08**	**1.16**			**1.19**	1.19					1.21
F	mg kg^{-1}						**500**							
Ga	mg kg^{-1}	**20.3**		21	**31.49**	20.5		**21.5**	20.8	20			20.9	19.9
Gd	mg kg^{-1}	**3.45**		**3.3**	**3.32**			**3.82**	3.8					3.75
Ge	mg kg^{-1}													1
Hf	mg kg^{-1}	**3.77**		3.7	**3.28**			**3.68**	3.79					4.1
Hg	mg kg^{-1}													
Ho	mg kg^{-1}	**0.57**		**0.52**	**0.55**			**0.559**	0.58					0.59
I	mg kg^{-1}													
In	mg kg^{-1}													
La	mg kg^{-1}	**16.5**		**15.4**	**16.02**	14.1		**16.56**	22.2	16.2		**15.43**	25.4	17
Li	mg kg^{-1}	**11.3**		12.4	**12.38**				7.96					
Lu	mg kg^{-1}	**0.21**		**0.2**	**0.2**			**0.21**	0.21					0.23
Mo	mg kg^{-1}			1.1	**1.45**									
Nb	mg kg^{-1}	**8.39**		8.9	**8.19**	6.8		**8.12**	8.92	7.41			7.1	8
Nd	mg kg^{-1}	**17**		**15.6**	**17.46**	18.3		**17.94**	21.4			**18.33**	17.8	17.2
Ni	mg kg^{-1}	**35.1**		34	**35.1**	33.5			37.6	29.53		**35.06**	27.7	38
Pb	mg kg^{-1}	**8.77**		8.7	**5.05**	9			10.8	8.19			9.35	10
Pr	mg kg^{-1}	**4.24**		**4.1**	**4.28**			**4.41**	5.42					4.72
Rb	mg kg^{-1}	**18.6**		18.4	**18.1**	22.3		**18.76**	69.4	18.72			19.6	19
Rh	mg kg^{-1}													
S	mg kg^{-1}													
Sb	mg kg^{-1}			0.66		0.6			0.9					
Sc	mg kg^{-1}	**13.8**		13.1	**13.1**			**11**	14.1	12.9		**12.09**		13
Se	mg kg^{-1}													
Sm	mg kg^{-1}	**3.62**		**3.49**	**3.6**	3.4		**3.75**	4.31				9	3.6
Sn	mg kg^{-1}	**1.55**		1.54		1.4		**2.16**						1.5
Sr	mg kg^{-1}	**552**		536	**542**	532	**512**	**562.7**	550	537.450		**550.2**	514.4	520
Ta	mg kg^{-1}	**0.54**		0.62	**0.24**			**0.603**	0.7					
Tb	mg kg^{-1}	**0.51**		**0.48**	**0.5**			**0.57**	0.58					0.61
Te	mg kg^{-1}													
Th	mg kg^{-1}	**2.52**		2.61	**2.75**			**2.55**	3.23	2.08				2.41
Tl	mg kg^{-1}	**0.092**		0.081										
Tm	mg kg^{-1}	**0.22**		**0.2**				**0.275**	0.23					0.27
U	mg kg^{-1}	**0.87**		0.87	**0.84**			**0.886**	0.78					0.92
V	mg kg^{-1}	**109**		107	**111.8**	111			108	96.35		**105.7**	118	115
W	mg kg^{-1}			0.31				**1.36**						
Y	mg kg^{-1}	**16.1**		15	**16.48**	16.8		**15.2**	17.7	15.68		**15.78**	14.6	15.6
Yb	mg kg^{-1}	**1.4**		**1.3**	**1.36**			**1.39**	1.46				3.9	1.47
Zn	mg kg^{-1}	**67.2**		65	**56.6**	67.5			68.9	62.25		**72.93**	57.9	67
Zr	mg kg^{-1}	**145**		151	**131.9**	145.8		**143.4**	147	152.050		**170.5**	143.5	152

Bold entries are Data Quality 1 - Underlined entries are Data Quality 2

Table 1 - GeoPT41 Contributed data for Andesite, ORA-1. 14/06/2017

Lab Code		Y122	Y124	-	-	-	-	-	-	-	-	-	-	-
SiO2	g 100g⁻¹	63.59	59.939											
TiO2	g 100g⁻¹	0.79	0.871											
Al2O3	g 100g⁻¹	16.79	17.021											
Fe2O3T	g 100g⁻¹	5.43	6.146											
Fe(II)O	g 100g⁻¹													
MnO	g 100g⁻¹	0.056	0.087											
MgO	g 100g⁻¹	1.67	3.018											
CaO	g 100g⁻¹	5.61	5.943											
Na2O	g 100g⁻¹	4.37	4.043											
K2O	g 100g⁻¹	1.26	1.263											
P2O5	g 100g⁻¹	0.164	0.171											
H2O+	g 100g⁻¹													
CO2	g 100g⁻¹													
LOI	g 100g⁻¹	0.16												
Ag	mg kg⁻¹													
As	mg kg⁻¹													
Au	mg kg⁻¹													
B	mg kg⁻¹													
Ba	mg kg⁻¹	297	361											
Be	mg kg⁻¹													
Bi	mg kg⁻¹													
Br	mg kg⁻¹													
C(org)	mg kg⁻¹													
C(tot)	mg kg⁻¹													
Cd	mg kg⁻¹													
Ce	mg kg⁻¹		33											
Cl	mg kg⁻¹													
Co	mg kg⁻¹	18.39	22											
Cr	mg kg⁻¹	51.2	36											
Cs	mg kg⁻¹													
Cu	mg kg⁻¹		44											
Dy	mg kg⁻¹		3											
Er	mg kg⁻¹													
Eu	mg kg⁻¹													
F	mg kg⁻¹		334											
Ga	mg kg⁻¹		24											
Gd	mg kg⁻¹													
Ge	mg kg⁻¹													
Hf	mg kg⁻¹													
Hg	mg kg⁻¹													
Ho	mg kg⁻¹													
I	mg kg⁻¹													
In	mg kg⁻¹													
La	mg kg⁻¹		17											
Li	mg kg⁻¹	12.29	13											
Lu	mg kg⁻¹													
Mo	mg kg⁻¹													
Nb	mg kg⁻¹		3											
Nd	mg kg⁻¹		19											
Ni	mg kg⁻¹	51.63	34											
Pb	mg kg⁻¹		32											
Pr	mg kg⁻¹													
Rb	mg kg⁻¹	15.58												
Rh	mg kg⁻¹													
S	mg kg⁻¹													
Sb	mg kg⁻¹													
Sc	mg kg⁻¹													
Se	mg kg⁻¹													
Sm	mg kg⁻¹													
Sn	mg kg⁻¹													
Sr	mg kg⁻¹	574.5	520											
Ta	mg kg⁻¹													
Tb	mg kg⁻¹													
Te	mg kg⁻¹													
Th	mg kg⁻¹													
Tl	mg kg⁻¹													
Tm	mg kg⁻¹													
U	mg kg⁻¹													
V	mg kg⁻¹		108											
W	mg kg⁻¹													
Y	mg kg⁻¹		14											
Yb	mg kg⁻¹													
Zn	mg kg⁻¹	64.78	63											
Zr	mg kg⁻¹	74.27	127											

Bold entries are Data Quality 1 - Underlined entries are Data Quality 2

Table 2 - GeoPT41 Assigned values and statistical summary for Andesite, ORA-1.

	Assigned Value	Uncertainty of assigned value	Horwitz Target Value	Uncertainty/ Target	Number of reported results	Robust Mean of results	Robust SD of results	Median of results	Status of consensus value	Type of consensus value
	X_a	sdm	H_a	sdm/H_a	n					
	g 100g⁻¹	g 100g⁻¹	g 100g⁻¹			g 100g⁻¹	g 100g⁻¹	g 100g⁻¹		
SiO2	60.48	0.04613	0.6524	0.0707	81	60.44	0.5274	60.48	Assigned	Median
TiO2	0.85	0.001627	0.01742	0.09341	83	0.8444	0.02372	0.85	Assigned	Median
Al2O3	17.5	0.02604	0.2275	0.1144	83	17.48	0.2839	17.5	Assigned	Median
Fe2O3T	6.135	0.01589	0.09338	0.1702	86	6.135	0.1474	6.135	Assigned	Robust Mean
MnO	0.0953	0.0007742	0.002715	0.2852	81	0.09482	0.006364	0.0953	Assigned	Median
MgO	3.188	0.009544	0.05354	0.1782	84	3.184	0.1084	3.188	Assigned	Median
CaO	6	0.01618	0.09164	0.1765	84	5.982	0.1517	6	Assigned	Median
Na2O	4.195	0.01261	0.06761	0.1865	82	4.189	0.1294	4.195	Assigned	Median
K2O	1.239	0.003426	0.02399	0.1428	82	1.239	0.03102	1.24	Assigned	Robust Mean
P2O5	0.1734	0.0009466	0.004515	0.2097	77	0.1734	0.008307	0.173	Assigned	Robust Mean
	mg kg⁻¹	mg kg⁻¹	mg kg⁻¹			mg kg⁻¹	mg kg⁻¹	mg kg⁻¹		
Ba	323	1.961	10.83	0.1811	75	323.1	16.67	323	Assigned	Median
Be	1.172	0.01977	0.09156	0.216	21	1.172	0.09061	1.16	Assigned	Robust Mean
Ce	34.38	0.3369	1.615	0.2087	64	34.38	2.696	34.25	Assigned	Robust Mean
Co	18.95	0.315	0.9735	0.3236	62	18.12	1.804	18.5	Assigned	Mode
Cr	40	1.5	1.836	0.8168	70	38.49	6.054	39.4	Provisional	Mode
Cs	0.235	0.007505	0.02337	0.3211	35	0.2611	0.0654	0.24	Assigned	Mode
Cu	29.96	0.198	1.437	0.1378	70	29.42	3.676	29.7	Assigned	Mode
Dy	2.874	0.02728	0.1961	0.1391	44	2.864	0.2327	2.874	Assigned	Median
Er	1.539	0.01306	0.1154	0.1132	41	1.539	0.08363	1.54	Assigned	Robust Mean
Eu	1.143	0.0122	0.08959	0.1362	43	1.143	0.07999	1.15	Assigned	Robust Mean
Ga	20.51	0.2012	1.041	0.1933	64	20.51	1.61	20.56	Assigned	Robust Mean
Gd	3.37	0.0447	0.2245	0.1991	42	3.501	0.3262	3.439	Assigned	Mode
Hf	3.7	0.105	0.243	0.432	46	3.977	0.5925	3.805	Assigned	Mode
Ho	0.5614	0.007076	0.04898	0.1445	40	0.5614	0.04475	0.5595	Assigned	Robust Mean
La	16.33	0.1533	0.8579	0.1787	66	16.55	2.102	16.33	Assigned	Median
Li	11.95	0.1998	0.6578	0.3038	28	11.95	1.057	12	Assigned	Robust Mean
Lu	0.2076	0.002474	0.02104	0.1176	40	0.2076	0.01565	0.21	Assigned	Robust Mean
Mo	1.07	0.0449	0.08472	0.53	28	1.357	0.4997	1.233	Provisional	Mode
Nb	8.058	0.1204	0.4708	0.2556	63	8.058	0.9553	8	Assigned	Robust Mean
Nd	17.47	0.1827	0.9086	0.2011	60	17.47	1.415	17.4	Assigned	Robust Mean
Ni	33.4	0.899	1.576	0.5706	69	32.68	4.257	33.09	Provisional	Mode
Pb	8.99	0.1576	0.5167	0.3049	61	9.171	1.802	8.99	Assigned	Median
Pr	4.273	0.05249	0.2746	0.1911	41	4.273	0.3361	4.27	Assigned	Robust Mean
Rb	18.55	0.1186	0.956	0.1241	66	18.77	1.259	18.55	Assigned	Median
Sb	0.775	0.0226	0.06441	0.3509	26	0.9979	0.3707	0.858	Provisional	Mode
Sc	13.44	0.2104	0.7271	0.2894	54	13.44	1.546	13.35	Assigned	Robust Mean
Sm	3.634	0.06	0.2394	0.2507	49	3.716	0.3446	3.72	Assigned	Mode
Sn	1.51	0.06	0.1135	0.5286	29	1.854	0.4921	1.7	Provisional	Mode
Sr	543	2.191	16.83	0.1302	75	544.3	19.48	543	Assigned	Median
Ta	0.5465	0.0173	0.04787	0.3614	31	0.5751	0.1107	0.56	Assigned	Mode
Tb	0.511	0.008336	0.04522	0.1843	41	0.5212	0.04795	0.511	Assigned	Median
Th	2.61	0.02673	0.1807	0.1479	52	2.659	0.398	2.61	Assigned	Median
Tl	0.09	0.0075	0.01034	0.7252	16	0.08488	0.01885	0.0855	Provisional	Mode
Tm	0.2217	0.00392	0.02224	0.1762	37	0.2217	0.02385	0.22	Assigned	Robust Mean
U	0.89	0.015	0.07244	0.2071	49	0.9519	0.194	0.9	Assigned	Mode
V	108	1.071	4.27	0.2508	69	106.8	9.235	108	Assigned	Median
Y	15.23	0.1337	0.8087	0.1653	71	15.23	1.126	15.2	Assigned	Robust Mean
Yb	1.4	0.01715	0.1064	0.1611	45	1.4	0.115	1.4	Assigned	Robust Mean
Zn	66.9	1.35	2.842	0.4749	72	65.03	6.164	65.35	Assigned	Mode
Zr	146	2.48	5.516	0.4496	68	145.2	9.39	145.1	Assigned	Mode

Table 3 - GeoPT41 Z-scores for Andesite, ORA-1. 14/06/2017

Lab Code	Y1	Y2	Y3	Y6	Y8	Y9	Y10	Y11	Y12	Y13	Y15	Y16	Y17
SiO2	-0.83	0.00	1.82	**-1.23**	0.14	**-0.21**	-0.06	*	-0.14	*	-0.70	**-1.61**	**0.33**
TiO2	0.69	-1.58	-10.33	**-1.03**	0.29	**0.00**	0.29	*	-0.57	*	-4.88	**-2.24**	**-0.22**
Al2O3	-0.11	-1.05	-0.99	**-0.84**	0.00	**0.18**	-0.44	*	0.11	*	-10.77	**-0.48**	**0.19**
Fe2O3T	-0.24	-2.65	-3.24	**0.14**	0.03	**-0.27**	-0.29	*	-0.29	*	-4.58	**2.18**	**-0.12**
MnO	*	-0.42	-0.98	**0.00**	0.87	**-0.48**	0.87	*	-0.24	*	-4.66	**-1.29**	**0.22**
MgO	-0.15	-2.08	-8.47	**-0.05**	-0.35	**-0.33**	-1.28	*	-0.07	*	1.89	**2.53**	**0.74**
CaO	-2.04	-1.58	-0.55	**-0.26**	-0.55	**0.98**	0.22	*	0.22	*	-4.69	**-1.04**	**0.49**
Na2O	-0.75	-0.26	0.48	**0.67**	-0.92	**-0.07**	0.48	*	0.63	*	2.11	**-0.68**	**-0.87**
K2O	0.22	-1.43	1.70	**-0.44**	0.45	**-0.36**	0.03	*	0.65	*	1.28	**-0.57**	**-0.40**
P2O5	1.84	-0.38	0.73	**1.46**	0.73	**1.46**	-0.82	*	-2.59	*	-1.49	**4.34**	**0.97**
Ba	-2.33	-0.97	-1.71	**-1.54**	0.74	**0.18**	-0.78	**-1.02**	-0.09	*	-2.54	**0.28**	**-1.99**
Be	*	*	*	**-1.21**	*	*	1.24	**0.19**	*	*	-5.31	*	*
Ce	-1.17	*	1.82	**-1.11**	*	*	-0.06	**-0.05**	-0.24	**0.45**	12.27	**3.48**	**-1.67**
Co	-3.04	*	-6.65	**-0.92**	-1.00	**-8.17**	-0.13	**0.15**	-0.90	*	8.24	**-0.98**	**-1.46**
Cr	*-2.36*	*	*3.27*	***0.93***	*-2.18*	***-0.00***	*-1.09*	***0.87***	*-1.33*	*	*-1.36*	***-4.36***	***-1.89***
Cs	*	*	-0.53	**-0.12**	*	*	0.75	**-0.21**	22.78	*	*	**203.86**	**0.94**
Cu	-3.27	-1.38	1.41	**-0.47**	0.36	**0.72**	2.28	**-0.25**	-0.47	*	-7.30	**0.03**	**-2.06**
Dy	1.02	*	0.09	**-0.70**	*	*	-2.89	**0.49**	*	**1.41**	-0.11	*	**-0.33**
Er	0.67	*	0.13	**-0.80**	*	*	-0.39	**0.01**	*	**1.44**	0.35	*	**0.27**
Eu	-0.39	*	0.60	**-0.37**	*	*	-1.47	**0.08**	*	**2.42**	-1.41	*	**0.30**
Ga	3.59	*	2.92	**0.19**	-0.73	**-2.41**	0.04	**0.08**	-0.97	*	*	**0.47**	**-1.45**
Gd	-0.41	*	0.60	**-1.11**	*	*	-1.43	**0.09**	*	**5.03**	1.69	*	**0.18**
Hf	*	*	41.70	**-0.63**	4.73	*	-0.29	**0.00**	0.00	*	*	*	**0.21**
Ho	0.44	*	0.29	**-0.32**	*	*	0.29	**0.18**	*	*	0.70	*	**-0.84**
La	-1.02	-1.36	**-0.33**	**-0.55**	*	*	1.50	**-0.03**	0.39	**1.01**	9.20	**-7.38**	**-1.38**
Li	*	*	*	**-0.22**	*	*	0.04	**-0.68**	*	*	5.36	*	**0.07**
Lu	-3.29	*	0.29	**-0.29**	*	*	1.48	**0.11**	*	*	0.06	*	**0.59**
Mo	*	*	*	***-0.49***	*	*	*8.09*	***-0.24***	*0.18*	*	*	***46.39***	***-1.77***
Nb	*	*	-0.06	**-2.35**	-0.06	**2.00**	1.21	**0.36**	-1.44	*	40.29	**-0.12**	**-0.93**
Nd	-0.79	*	0.20	**-1.19**	*	*	0.02	**-0.08**	0.68	**-0.90**	3.36	**2.78**	**-1.43**
Ni	*-3.23*	*	*-0.13*	***-0.20***	*-1.40*	***1.02***	*3.21*	***2.48***	*-1.81*	*	*0.83*	***0.38***	***-0.13***
Pb	-0.96	*	0.01	**-1.89**	0.01	**-3.85**	6.30	**-1.12**	-0.18	*	*	**-3.85**	**-1.61**
Pr	-0.50	*	0.23	**-0.77**	*	*	-1.35	**0.03**	*	**1.65**	3.51	*	**-1.61**
Rb	-0.83	*	-0.29	**-0.22**	-0.29	**-2.67**	0.03	**-0.47**	-0.92	*	*	**4.65**	**0.26**
Sb	*1.28*	*	*	***-1.78***	*	*	*9.82*	*	*2.91*	*	*	***34.54***	***5.20***
Sc	*	*	-0.35	**0.38**	1.07	*	1.69	**0.49**	1.14	*	-5.84	**-0.61**	**-2.74**
Sm	-0.11	*	0.45	**-0.25**	*	*	-1.12	**0.57**	3.90	**0.26**	1.12	*	**-0.98**
Sn	*0.00*	*	*	***2.30***	*	*	*2.60*	***0.09***	*0.79*	*	*107.88*	***30.75***	***2.64***
Sr	-5.24	*	0.80	**-0.29**	-0.03	**0.89**	0.48	**0.53**	-0.38	*	1.04	**1.54**	**-0.29**
Ta	*	*	10.90	**0.74**	*	*	9.75	**0.49**	3.69	*	*	*	**-0.55**
Tb	0.44	*	0.21	**-1.00**	*	*	0.87	**0.20**	*	*	0.98	*	**0.86**
Th	-6.04	*	0.61	**-0.58**	*	*	-0.30	**0.11**	-3.90	**1.05**	*	**18.76**	**-0.55**
Tl	*	*	*	*	*	*	*	***0.77***	*0.48*	*	*	***87.99***	***0.00***
Tm	0.25	*	0.19	**-1.14**	*	*	1.54	**0.37**	*	*	0.86	*	**0.37**
U	-1.55	*	0.35	**-0.42**	*	*	-0.35	**0.14**	2.14	**0.41**	*	**29.13**	**4.83**
V	-1.67	-0.23	-0.94	**-1.43**	-2.34	**-1.87**	1.87	**0.47**	-1.43	*	*	**-0.94**	**-3.27**
Y	1.17	-1.38	-0.27	**-0.82**	0.47	**0.95**	0.35	**0.58**	-0.45	**11.03**	1.04	**2.18**	**-2.30**
Yb	0.08	*	0.24	**-0.43**	*	*	0.00	**0.19**	-5.17	**2.54**	0.89	*	**-0.37**
Zn	-4.28	0.55	-1.21	**0.44**	-1.21	**0.04**	1.07	**0.60**	-0.99	*	-2.27	**-0.32**	**-2.13**
Zr	*	-3.26	1.72	**-1.62**	1.09	**-1.09**	-0.27	**-1.27**	-0.16	*	*	**1.27**	**-0.69**

Bold entries are Data Quality 1 - Underlined entries are Data Quality 2 - *Entries in italics* are derived from Provisional Values.

Table 3 - GeoPT41 Z-scores for Andesite, ORA-1. 14/06/2017

Lab Code	Y18	Y19	Y20	Y21	Y22	Y23	Y24	Y25	Y27	Y28	Y29	Y30	Y33
SiO2	**0.34**	*	0.00	-0.22	**0.38**	0.07	*	-0.27	-0.87	**-0.43**	0.25	**0.14**	-0.10
TiO2	**-2.87**	*	-0.29	0.00	**0.29**	0.29	**0.00**	-0.29	1.09	**0.57**	0.03	**0.30**	0.17
Al2O3	**0.00**	*	0.15	0.02	**0.59**	-0.55	*	-0.04	0.99	**-0.44**	0.52	**0.35**	0.07
Fe2O3T	**2.84**	*	-0.13	-0.35	**-0.85**	-0.08	**-0.16**	0.08	1.31	**0.91**	0.03	**0.05**	-0.19
MnO	**9.10**	*	-0.42	0.87	**0.99**	0.87	**-1.95**	*	0.68	**1.73**	0.33	**0.00**	-0.24
MgO	**3.97**	*	0.02	0.40	**-0.79**	-0.35	*	0.77	1.05	**0.42**	-0.11	**-1.04**	-0.26
CaO	**-7.64**	*	-0.38	-0.27	**1.53**	-0.11	*	0.11	0.33	**-1.09**	0.19	**-0.20**	0.55
Na2O	**-16.19**	*	0.63	0.18	**-0.59**	0.85	*	0.18	1.59	**-0.96**	0.57	**-0.99**	0.11
K2O	**-5.78**	*	0.24	0.03	**-0.78**	-0.39	*	0.03	-0.60	**0.06**	0.20	**-0.61**	-0.18
P2O5	**50.18**	*	-0.38	-0.38	**2.79**	-0.38	**1.46**	0.06	1.17	**1.46**	0.19	**-1.58**	0.62
Ba	*	**-2.12**	*	*	**1.78**	-0.09	**0.18**	0.09	0.18	**-0.09**	-0.08	**-0.28**	-0.23
Be	*	*	*	*	*	*	**-0.14**	0.21	*	**1.28**	0.10	*	-0.34
Ce	*	**-0.79**	*	*	**2.43**	*	**-0.36**	0.19	0.38	**-4.07**	-0.80	**-0.84**	-0.67
Co	**-16.18**	*	*	*	**-3.24**	2.08	**0.77**	0.44	0.03	**-0.05**	-0.11	*	*
Cr	***-8.17***	*	*	*	***-5.39***	*-0.00*	***-0.38***	*-1.63*	*0.82*	***1.31***	*0.54*	***-0.27***	*0.54*
Cs	*	**-1.12**	*	*	*	*	**-0.64**	-0.11	*	*	0.02	*	*
Cu	**-4.01**	*	*	*	**0.31**	-1.03	**-1.02**	-0.16	-1.73	**-0.32**	0.12	**-4.27**	0.01
Dy	*	**-0.06**	*	*	*	*	**-0.28**	-0.16	-0.04	**-1.81**	-0.30	*	-0.70
Er	*	**-0.64**	*	*	*	*	**-0.34**	-0.30	0.18	**-2.33**	-0.39	*	-0.73
Eu	*	**-0.17**	*	*	*	*	**-0.48**	0.04	0.37	**-1.59**	-0.34	**-0.77**	-0.24
Ga	*	*	*	*	**1.52**	0.23	**-0.01**	-0.63	-0.73	-0.29	-0.16	*	0.47
Gd	*	**0.26**	*	*	*	*	**-0.49**	-0.11	0.60	**-1.65**	-0.38	*	0.02
Hf	*	*	*	*	**34.15**	*	**1.07**	0.00	*	3.91	-0.06	*	0.41
Ho	*	**-0.53**	*	*	*	*	**-0.23**	-0.12	-0.01	**-1.66**	-0.37	*	-0.63
La	*	**-0.62**	*	*	**9.29**	*	**-0.62**	0.04	0.39	**-3.53**	-0.57	**-0.15**	0.45
Li	*	*	*	*	*	*	**-0.83**	0.57	*	*	-1.03	**-0.07**	-0.19
Lu	*	**-0.46**	*	*	*	*	**-0.22**	-0.18	-0.42	**-0.84**	-0.27	*	-0.42
Mo	*	*	*	*	*	*	*	*-0.12*	*	***0.00***	*1.16*	*	*
Nb	*	**1.56**	*	*	**-2.46**	*	**-0.23**	-0.17	2.06	0.03	-0.30	*	-0.06
Nd	*	**-1.18**	*	*	**-1.40**	*	**-0.63**	0.13	0.29	**-3.82**	-0.48	**-2.69**	-0.70
Ni	***-14.22***	*	*	*	***-5.14***	*-0.44*	***0.00***	*0.22*	*-1.40*	***0.70***	*0.32*	***0.00***	*-0.76*
Pb	**-7.34**	**-1.49**	*	*	**0.64**	*	*	-0.76	-1.93	**0.00**	-0.44	*	*
Pr	*	**-1.49**	*	*	*	*	**-0.08**	-0.00	0.41	**-2.52**	-0.57	*	-0.61
Rb	*	**-0.37**	*	*	**-1.10**	*	**-0.37**	-0.29	0.76	-0.08	-0.04	*	-0.29
Sb	***-2.72***	*	*	*	*	*	*	*-0.12*	*	***0.23***	*-0.16*	*	*
Sc	*	*	*	*	**-3.91**	-0.99	**-1.71**	0.32	0.32	0.52	-0.37	**1.97**	0.18
Sm	*	**-0.95**	*	*	*	*	**-0.14**	0.18	0.26	**-2.52**	-0.32	*	-0.76
Sn	*	*	*	*	*7.89*	*	***-0.26***	*	*	*	*1.06*	*	*
Sr	*	**-2.77**	0.06	*	**-0.26**	-0.56	**1.49**	0.33	-1.37	-0.39	-0.02	**1.31**	-0.03
Ta	*	**1.00**	*	*	*	*	**1.33**	-0.28	*	*	-0.09	*	*
Tb	*	**-0.42**	*	*	*	*	**0.20**	-0.12	-0.01	**-2.45**	-0.50	*	-0.23
Th	*	*	*	*	2.19	*	**-0.66**	-0.08	-0.28	**0.55**	-0.24	*	*
Tl	***0.97***	*	*	*	*	*	***-2.90***	*	*	*	*-0.74*	*	*
Tm	*	**-0.30**	*	*	*	*	**-0.52**	-0.04	-0.04	**-1.87**	-0.43	*	-0.71
U	*	**-1.97**	*	*	11.18	*	**-0.41**	-0.14	*	**-9.80**	-0.19	*	*
V	**-11.97**	*	*	*	**-4.08**	0.35	**1.41**	0.70	-0.70	**2.34**	0.20	**-0.63**	0.23
Y	*	**-1.17**	*	*	**-0.41**	*	**0.08**	-0.21	-0.64	**-4.00**	-0.34	*	0.47
Yb	*	**-1.01**	*	*	*	*	**-0.56**	-0.42	-0.28	**-1.50**	-0.45	*	-0.56
Zn	**-15.94**	*	*	*	**-2.16**	-0.16	**-2.43**	0.72	-0.33	**1.90**	0.32	*	-0.69
Zr	*	*	*	*	**1.05**	-1.00	**-0.54**	0.54	2.18	-0.54	-0.07	*	-0.45

Bold entries are Data Quality 1 - Underlined entries are Data Quality 2 - *Entries in italics* are derived from Provisional Values.

Table 3 - GeoPT41 Z-scores for Andesite, ORA-1. 14/06/2017

Lab Code	Y34	Y35	Y36	Y37	Y38	Y40	Y41	Y43	Y45	Y46	Y47	Y48	Y50
SiO2	*	-0.67	*	-1.76	0.05	0.17	2.87	-0.21	-0.43	0.35	0.32	-0.15	1.46
TiO2	0.00	-3.73	0.00	-0.57	-0.57	0.32	2.30	0.00	0.57	0.00	0.29	0.86	-0.34
Al2O3	2.33	3.08	-2.20	-1.41	-0.66	0.35	1.27	-0.11	-0.40	0.48	-0.30	-0.73	-1.36
Fe2O3T	0.27	-3.08	1.10	0.24	1.23	-0.40	1.45	0.14	0.70	-0.05	0.62	0.51	-1.04
MnO	1.73	151.69	146.35	2.71	1.73	-0.06	1.73	0.31	-1.95	1.73	1.60	-1.16	-0.61
MgO	5.28	-2.68	-0.91	-0.35	0.42	-0.26	2.66	0.40	1.54	-2.01	-0.17	1.33	-1.75
CaO	-1.64	-0.33	-0.76	-0.16	-0.22	0.16	0.98	0.55	1.31	0.22	-1.33	1.64	-1.15
Na2O	1.14	-8.98	0.48	-0.92	-2.29	-0.78	1.26	-0.11	0.67	-1.11	0.46	0.63	-0.92
K2O	0.10	3.15	0.03	-0.60	0.06	0.03	0.47	0.03	-0.78	-0.36	1.09	0.24	-0.56
P2O5	*	*	-0.38	-0.38	0.57	0.29	1.46	0.40	1.46	-0.76	0.29	-0.38	-2.04
Ba	2.49	21.15	-0.18	0.97	-1.11	*	0.21	*	*	-0.28	1.99	0.29	1.06
Be	*	*	*	*	-0.79	*	*	*	*	*	*	*	*
Ce	0.82	*	0.90	-1.67	-0.05	*	1.25	*	*	0.43	*	-1.11	-2.59
Co	0.36	*	0.64	0.54	-0.98	*	-4.16	*	*	*	-1.52	0.49	2.59
Cr	0.92	-4.36	-0.30	7.08	-3.05	*	-3.76	*	*	0.54	-1.36	-2.97	-1.63
Cs	*	*	0.11	*	0.64	*	*	*	*	-0.21	*	12.09	*
Cu	*	7.32	0.19	-6.60	0.10	*	-3.66	*	*	0.72	1.06	-0.12	1.41
Dy	-1.91	*	1.04	*	0.08	*	*	*	*	1.76	*	*	*
Er	*	*	1.22	*	0.09	*	*	*	*	0.61	*	*	*
Eu	0.75	*	1.21	*	0.53	*	*	*	*	1.42	*	*	*
Ga	0.71	3.11	*	-2.65	-0.59	*	-0.59	*	*	-1.45	*	-0.49	0.23
Gd	*	*	1.78	*	-0.13	*	*	*	*	1.20	*	*	*
Hf	-0.12	*	*	*	3.17	*	-6.99	*	*	0.53	*	0.62	*
Ho	*	*	0.70	*	0.18	*	*	*	*	1.20	*	*	*
La	-0.03	2758.90	0.68	-1.94	-0.15	*	0.20	*	*	0.68	*	2.08	3.30
Li	*	*	-1.40	*	-1.74	*	*	*	*	*	*	*	*
Lu	0.16	*	0.53	*	0.11	*	*	*	*	0.11	*	*	*
Mo	*	*	*	*	5.08	*	*	*	*	*	*	0.18	-0.41
Nb	*	*	*	-5.37	-0.21	*	-0.34	*	*	-0.72	-2.19	-0.70	-1.12
Nd	-0.19	*	1.17	*	0.14	*	1.79	*	*	0.47	*	2.05	*
Ni	*	17.33	*	1.14	-0.63	*	-1.97	*	*	1.65	-0.13	-2.60	-0.76
Pb	*	4.85	0.44	8.72	1.03	*	3.31	*	*	-0.89	1.95	-3.47	-2.89
Pr	*	*	0.94	*	0.06	*	*	*	*	0.65	*	*	*
Rb	3.61	0.44	0.24	3.90	-0.05	*	0.26	*	*	-0.68	-0.29	-0.34	-1.86
Sb	*	*	*	*	6.75	*	*	*	*	*	*	19.60	17.27
Sc	-0.00	*	*	*	-0.33	*	-2.39	*	*	-0.19	*	-3.33	1.76
Sm	0.07	*	0.93	*	0.36	*	*	*	*	1.45	*	*	*
Sn	*	*	*	*	1.32	*	*	*	*	*	*	9.21	2.16
Sr	0.42	0.33	0.53	-1.63	-0.83	*	-0.31	*	*	1.01	0.12	-0.61	-0.03
Ta	-1.22	*	*	*	3.21	*	49.16	*	*	0.28	*	*	*
Tb	-0.91	*	0.54	*	0.86	*	*	*	*	1.30	*	*	*
Th	0.06	*	1.16	*	-0.17	*	*	*	*	0.33	3.85	1.36	-4.46
Tl	*	*	*	*	0.97	*	*	*	*	*	*	*	*
Tm	*	*	0.64	*	-0.08	*	*	*	*	0.37	*	*	*
U	*	*	0.83	118.09	0.00	*	29.13	*	*	0.00	*	11.80	0.76
V	2.81	*	0.70	-0.82	0.47	*	-4.12	*	*	0.94	-1.05	-3.82	-1.17
Y	*	-0.52	0.04	0.47	0.08	*	-0.54	*	*	0.71	-1.38	-0.21	1.09
Yb	*	*	0.89	*	0.00	*	*	*	*	0.00	*	-2.35	*
Zn	2.15	2.09	0.07	0.72	0.84	*	5.21	*	*	0.39	-1.39	-1.55	-1.74
Zr	3.08	-2.36	*	0.36	-1.09	*	0.36	*	*	-0.18	0.36	-0.11	0.00

Bold entries are Data Quality 1 - Underlined entries are Data Quality 2 - *Entries in italics* are derived from Provisional Values.

Table 3 - GeoPT41 Z-scores for Andesite, ORA-1. 14/06/2017

Lab Code	Y51	Y52	Y53	Y54	Y55	Y56	Y57	Y61	Y62	Y65	Y66	Y67	Y69
SiO2	-2.71	0.11	**-0.58**	0.18	*	6.30	-2.38	0.17	**0.18**	**-0.02**	-0.25	**0.54**	**-0.26**
TiO2	-2.58	-0.29	**-2.87**	0.00	*	1.44	0.86	-0.23	**-1.72**	**2.30**	0.29	**-0.57**	**0.57**
Al2O3	-3.36	-0.02	**-1.05**	0.11	*	3.30	-1.67	0.34	**-1.54**	**0.00**	0.00	**0.13**	**1.36**
Fe2O3T	-5.22	0.14	**-0.69**	0.03	**0.91**	1.96	-1.15	-0.28	**-2.30**	**1.77**	1.10	**-0.27**	**2.52**
MnO	-2.82	-0.98	**-1.95**	-0.98	**0.63**	-0.98	-0.61	1.80	**-1.95**	**-1.95**	0.68	**-0.11**	**-2.69**
MgO	-12.30	0.30	**0.05**	0.58	**1.91**	3.67	-1.85	-1.28	**-6.68**	**-0.33**	0.58	**-0.89**	**-1.26**
CaO	-4.04	0.16	**-0.22**	-0.22	**2.95**	11.46	-4.15	0.05	**-1.53**	**-0.11**	0.65	**0.00**	**2.18**
Na2O	-2.85	-0.63	**-1.85**	-1.29	*	2.99	-2.06	0.08	**-0.37**	**0.81**	0.55	**-0.67**	**1.85**
K2O	0.03	0.45	**-0.36**	1.70	*	3.36	-2.58	-0.45	**-3.70**	**0.06**	0.03	**-0.78**	**-3.28**
P2O5	-4.81	2.94	**-0.76**	0.84	*	4.05	*	0.29	**-5.19**	**-0.76**	-0.16	**-1.20**	*
Ba	0.42	0.60	**1.48**	*	**0.67**	1.25	-0.88	-0.65	**-1.48**	**0.00**	0.65	*	*
Be	*	*	*	*	*	4.52	*	*	*	**-0.24**	*	*	*
Ce	-0.74	2.05	**8.44**	*	**0.03**	1.09	-10.52	*	**-0.23**	**0.14**	0.50	*	*
Co	-3.57	*	**-7.14**	*	**0.99**	-0.80	-0.48	*	**-2.00**	**-0.67**	0.03	*	*
Cr	***-3.81***	*-1.36*	***-4.90***	*	***3.74***	*0.27*	*3.73*	*0.90*	***3.27***	***0.87***	*-1.36*	*	*
Cs	37.76	*	*	*	**-0.26**	*	-1.60	*	*	**0.21**	*	*	*
Cu	-0.68	-1.38	**-4.15**	*	**0.57**	-0.26	-3.81	*	**3.51**	**-0.11**	-2.77	*	*
Dy	*	*	*	*	**-0.58**	2.36	-0.78	*	**0.64**	**0.49**	*	*	*
Er	*	*	*	*	**-0.43**	2.00	-0.17	*	**-0.34**	**0.27**	*	*	*
Eu	*	*	*	*	**-0.40**	1.44	-0.41	*	**-0.48**	**0.19**	*	*	*
Ga	-1.21	0.23	**-1.45**	*	**0.09**	0.62	-1.21	1.24	**-2.41**	**0.37**	-0.25	*	*
Gd	*	*	**11.71**	*	**0.13**	2.52	0.24	*	**2.81**	**0.40**	*	*	*
Hf	0.62	*	**5.35**	*	**-0.33**	2.67	-0.45	*	*	**0.49**	-0.41	*	*
Ho	*	*	*	*	**-0.31**	1.42	-0.65	*	**0.79**	**0.18**	*	*	*
La	0.97	7.38	**7.77**	*	**0.09**	1.26	-0.47	*	**1.95**	**-0.50**	-3.69	*	*
Li	*	*	*	*	*	*	*	*	**1.60**	**-1.13**	*	*	*
Lu	*	*	*	*	**0.21**	2.19	0.10	*	**9.14**	**0.59**	*	*	*
Mo	*	*	*	*	*	*0.77*	*3.13*	*	*	***-0.35***	*	*	*
Nb	3.12	-1.12	**-2.25**	*	**0.77**	0.47	-0.59	-1.28	**14.74**	**0.75**	-0.06	*	*
Nd	-0.81	*	**7.18**	*	**-0.66**	1.83	-0.52	*	**-1.62**	**0.69**	0.29	*	*
Ni	*-1.40*	*-1.08*	***-2.79***	*	***6.44***	*0.00*	*2.73*	*-1.81*	*	***0.89***	*-0.44*	*	*
Pb	2.91	3.88	**-1.92**	*	**-1.65**	0.49	-1.79	1.95	**5.83**	**0.46**	2.91	*	*
Pr	*	*	*	*	**-0.41**	1.32	-0.42	*	*	**0.54**	-2.32	*	*
Rb	0.76	0.76	**2.56**	*	**-0.51**	*	-1.55	-0.16	**0.47**	**-1.10**	0.24	*	*
Sb	*	*	*	*	*	*3.30*	*3.84*	*	*	*	*	*	*
Sc	0.38	-1.68	**-0.61**	*	**2.46**	4.51	1.43	*	**-3.36**	**-0.06**	*	*	*
Sm	25.83	*	*	*	**-0.52**	1.81	-0.45	*	**1.53**	**0.49**	0.76	*	*
Sn	*15.37*	*	*	*	*	*2.16*	*-0.62*	*	*	*	*	*	*
Sr	-2.08	0.33	**0.18**	*	**-0.77**	*	-0.27	25.81	**-2.79**	**0.36**	0.48	*	*
Ta	*	*	*	*	**-0.11**	*	-1.08	*	*	**4.25**	*	*	*
Tb	*	*	*	*	**-0.15**	0.98	-0.67	*	**-0.24**	**0.42**	*	*	*
Th	3.85	1.08	*	*	**-2.05**	1.36	-0.46	1.49	*	**0.00**	*	*	*
Tl	*	*	*	*	*	*0.48*	*-4.16*	*	*	*	*	*	*
Tm	*	*	*	*	**0.19**	1.76	-0.62	*	**-0.97**	**0.82**	*	*	*
U	*	0.76	*	*	**-2.47**	2.14	-0.08	*	**8.42**	**0.00**	*	*	*
V	-0.94	-1.05	**-2.11**	*	**3.63**	0.94	0.39	0.18	**0.23**	**0.94**	0.70	*	*
Y	-0.76	-0.76	**2.18**	*	**0.52**	0.16	-0.77	-0.48	**-0.29**	**-0.04**	0.47	*	*
Yb	*	*	*	*	**-0.43**	0.94	0.10	*	**0.00**	**0.47**	*	*	*
Zn	-2.62	-1.21	**0.74**	*	**-1.22**	0.00	0.53	-0.34	**2.85**	**-0.42**	-1.21	*	*
Zr	-1.18	0.82	**-2.36**	*	**-1.69**	0.88	-0.57	-0.98	**10.70**	**0.36**	-0.27	*	*

Bold entries are Data Quality 1 - Underlined entries are Data Quality 2 - *Entries in italics* are derived from Provisional Values.

Table 3 - GeoPT41 Z-scores for Andesite, ORA-1. 14/06/2017

Lab Code	Y70	Y71	Y72	Y73	Y76	Y78	Y79	Y80	Y84	Y85	Y86	Y87	Y90
SiO2	0.05	-0.15	-0.54	-0.34	0.08	0.75	-0.72	0.06	0.37	-0.11	0.43	1.24	1.41
TiO2	0.29	0.37	-0.03	-0.39	0.00	-6.29	0.00	-0.98	-0.46	-0.86	0.80	0.00	0.00
Al2O3	0.88	0.15	-0.44	0.26	-0.04	-2.00	0.84	0.66	-0.04	0.02	3.52	0.88	0.88
Fe2O3T	-0.24	0.30	-0.45	0.75	-0.08	-2.17	-0.69	0.06	0.06	0.72	2.84	0.24	0.06
MnO	2.71	-0.87	-1.53	0.63	0.87	-4.95	-1.95	-5.64	0.63	0.87	1.73	0.31	1.73
MgO	0.96	0.34	-0.44	0.51	-0.63	-18.56	0.79	2.66	0.79	0.68	2.44	-0.16	1.17
CaO	-0.71	1.24	-0.55	0.24	0.16	-1.47	-2.84	1.31	0.33	-0.55	0.98	-0.05	1.20
Na2O	-2.70	0.05	-0.11	0.80	0.33	-0.85	2.00	1.11	0.52	0.04	4.36	-1.29	0.81
K2O	-0.18	0.88	-0.18	-0.15	-0.18	1.49	-1.19	0.06	-0.78	0.24	1.72	0.03	0.47
P2O5	-0.38	-0.05	-0.71	0.22	0.40	0.84	-2.97	1.46	0.35	-0.38	0.79	-1.49	3.67
Ba	*	3.69	*	-1.08	0.05	0.69	0.65	0.83	1.39	-0.09	-1.39	0.32	0.37
Be	*	-2.47	*	*	0.37	*	*	*	*	0.26	*	*	-0.24
Ce	*	0.32	*	-0.23	-0.30	10.41	-0.23	1.07	-0.73	0.19	2.74	*	-0.54
Co	*	-0.47	*	*	-0.13	*	-2.00	-1.08	-2.00	0.23	-0.15	*	-0.26
Cr	*	0.33	*	2.18	-0.27	-3.00	-3.81	-5.88	-0.00	0.49	15.25	*	2.34
Cs	*	0.15	*	*	0.32	*	75.51	*	1.50	0.13	*	*	-0.64
Cu	*	-0.47	*	-0.32	-1.38	3.15	0.72	0.93	0.03	0.15	-0.53	*	-1.78
Dy	*	0.15	*	-1.40	-0.44	*	*	*	-1.04	0.14	-1.60	*	0.23
Er	*	0.06	*	*	-0.17	*	*	*	-0.77	0.05	-0.69	*	0.61
Eu	*	0.98	*	*	0.32	*	*	*	-0.70	0.15	0.08	*	-0.03
Ga	*	-0.40	*	0.66	-0.05	3.11	-1.45	-0.01	0.47	-0.15	-1.69	*	0.27
Gd	*	0.85	*	*	0.07	*	*	*	-0.53	0.24	-0.71	*	0.44
Hf	*	0.54	*	-3.87	0.00	*	*	*	-0.99	-0.21	3.99	*	1.11
Ho	*	0.44	*	*	0.39	*	*	*	-0.64	-0.03	-1.91	*	-0.23
La	*	0.23	*	-4.70	-0.37	*	29.92	-0.50	0.20	-0.08	2.30	*	-7.38
Li	*	0.24	*	*	0.04	*	*	*	*	0.80	-16.50	*	*
Lu	*	0.63	*	*	-0.18	*	*	*	-0.84	0.03	-1.31	*	-0.36
Mo	*	-1.12	*	5.08	-0.41	1988.60	*	*	*	*	-6.85	*	2.83
Nb	*	-0.04	*	0.87	-0.06	*	-2.25	0.30	1.00	-0.01	*	*	-0.57
Nd	*	0.69	*	-1.18	-0.26	6.34	1.68	-5.47	-1.07	-0.04	-2.17	*	-0.08
Ni	*	-0.42	*	0.06	-0.44	-1.71	-4.70	-1.59	-3.43	0.57	-3.24	*	5.71
Pb	*	-0.11	*	-0.17	-0.76	*	32.92	0.02	0.21	0.05	-2.61	*	-0.12
Pr	*	0.58	*	*	-0.31	*	*	*	2.03	-0.04	-0.96	*	0.17
Rb	*	0.52	*	-0.58	-0.38	1.28	1.52	-0.26	1.52	1.12	1.00	*	-0.78
Sb	*	-0.04	*	*	-0.74	*	*	*	*	*	0.08	*	0.23
Sc	*	*	*	1.53	-0.10	*	2.15	2.15	*	0.38	*	*	0.63
Sm	*	0.76	*	-3.44	-0.07	*	5.71	*	-0.85	0.20	-1.77	*	1.86
Sn	*	1.98	*	*	0.40	*	*	*	*	*	-1.76	*	-0.18
Sr	*	0.82	*	1.12	1.46	0.18	-0.59	0.65	-0.30	0.65	2.79	0.21	1.01
Ta	*	-0.40	*	*	-0.49	*	*	*	*	0.15	-0.85	*	-0.76
Tb	*	0.41	*	*	-0.12	*	*	*	-0.69	0.00	40.67	*	-0.02
Th	*	0.08	*	-5.04	-0.03	*	7.69	-0.06	1.60	-0.19	7.08	*	-0.55
Tl	*	-0.63	*	*	-0.48	*	*	*	*	*	-1.06	*	*
Tm	*	0.55	*	*	-0.49	*	*	*	-0.97	-0.02	-1.60	*	*
U	*	0.10	*	1.52	0.07	*	38.79	*	0.00	-0.08	-5.15	*	0.28
V	*	0.29	*	-0.23	0.70	4.92	-1.41	-0.70	-0.70	0.12	14.05	*	0.70
Y	*	0.57	*	-0.04	-0.02	-3.73	-0.29	0.33	1.69	0.54	-1.45	*	-0.91
Yb	*	0.52	*	*	-0.14	124.97	*	*	-1.22	0.05	-0.94	*	-0.18
Zn	*	0.55	*	0.63	-0.16	4.59	-2.43	-0.77	-0.32	0.32	-5.66	*	-0.88
Zr	*	-0.22	*	0.16	0.27	-7.61	0.00	0.91	0.18	-0.54	*	-0.54	0.00

Bold entries are Data Quality 1 - Underlined entries are Data Quality 2 - *Entries in italics* are derived from Provisional Values.

Table 3 - GeoPT41 Z-scores for Andesite, ORA-1. 14/06/2017

Lab Code	Y91	Y92	Y93	Y95	Y96	Y97	Y98	Y99	Y101	Y102	Y103	Y104	Y105
SiO2	-0.18	*	0.96	1.55	0.38	-1.04	0.49	0.03	0.26	0.44	-0.40	-0.71	*
TiO2	-0.29	-3.21	-1.15	-0.59	0.00	*	1.29	-1.15	0.00	-6.31	0.29	0.00	*
Al2O3	0.62	*	0.22	0.80	0.02	3.52	0.81	-0.88	0.35	-0.31	-0.31	-0.75	*
Fe2O3T	-0.45	-5.30	-3.13	-0.64	-0.03	-2.51	0.72	2.95	0.27	1.77	-0.13	-1.34	*
MnO	*	-8.21	-2.45	-1.64	-0.98	*	1.05	*	1.73	1.73	0.26	-1.95	*
MgO	0.49	*	-10.81	-0.96	-0.07	-1.63	0.48	0.05	0.05	17.60	-0.33	-0.51	*
CaO	0.00	*	0.27	-0.76	0.49	-3.27	3.99	-6.87	1.42	1.53	-0.37	0.55	*
Na2O	1.15	*	2.48	-0.45	-0.18	3.03	0.60	-4.36	-3.33	-1.41	-0.75	-6.88	*
K2O	0.86	*	0.24	-0.51	0.03	2.56	0.53	-3.70	-0.36	-1.61	-0.24	0.47	*
P2O5	-0.93	*	2.61	0.20	0.73	*	0.73	-5.19	-0.76	-0.76	0.57	-0.76	*
Ba	*	-1.66	-0.92	-0.53	0.14	*	-0.14	*	-2.03	0.46	0.76	0.92	-0.55
Be	*	*	-0.07	*	*	*	-0.40	*	*	*	*	*	-0.35
Ce	*	-2.09	-0.02	0.26	0.07	*	-0.31	*	*	-5.19	0.17	1.00	-0.11
Co	*	-9.81	-0.03	-0.13	0.28	*	0.31	*	-2.00	-9.19	0.13	-1.52	0.05
Cr	*	-3.81	-2.40	1.33	-0.00	*	0.46	*	-3.27	-0.55	-0.41	0.54	-0.16
Cs	*	-1.67	*	*	-0.75	*	*	*	*	161.08	*	*	-0.21
Cu	*	-0.25	0.26	-0.01	0.05	*	0.40	4.21	0.72	2.12	1.16	-2.06	-0.11
Dy	*	-1.70	0.12	0.83	0.55	*	0.14	*	*	*	-0.02	*	0.49
Er	*	-0.69	0.52	0.27	0.39	*	0.00	*	*	*	-0.06	*	-0.17
Eu	*	-0.59	0.21	-0.42	-1.13	*	0.10	*	*	*	-0.27	*	-0.03
Ga	*	-1.07	*	1.16	0.31	*	0.00	2.39	-4.33	0.47	0.73	*	-0.21
Gd	*	-1.11	0.45	0.81	1.05	*	-0.40	*	*	*	-0.12	*	0.36
Hf	*	-0.66	3.85	1.17	0.70	*	-0.25	*	5.35	5.35	0.56	*	0.29
Ho	*	-1.82	0.02	-0.28	0.80	*	0.19	*	*	*	-0.37	*	0.18
La	*	-3.07	-0.02	0.43	-0.08	*	0.93	*	*	-5.05	0.02	-0.38	0.20
Li	*	-0.53	1.54	*	0.04	*	*	*	*	*	6.47	*	-0.98
Lu	*	-1.46	0.34	*	0.06	*	0.06	*	*	*	-0.32	*	0.11
Mo	*	60.56	*	1.41	1.24	*	*	22.78	*	58.19	*	*	*
Nb	*	10.50	0.30	1.64	-0.29	*	-1.02	2.00	2.00	-0.12	1.62	2.00	0.70
Nd	*	-0.96	-0.04	0.37	-0.15	*	0.09	*	*	-1.62	0.24	*	-0.52
Ni	*	-0.38	1.17	1.27	0.19	*	1.08	-5.97	-2.16	-2.79	-1.30	-0.25	1.08
Pb	*	-0.27	-0.43	0.71	2.54	*	-0.32	*	*	1.95	1.07	*	-0.43
Pr	*	-0.63	0.07	-0.01	0.03	*	0.05	*	*	*	-0.03	*	-0.12
Rb	*	-0.68	-0.29	0.62	0.50	*	-0.22	0.47	0.47	1.52	1.45	*	0.05
Sb	*	26.78	0.32	1.24	0.19	*	*	*	*	*	*	*	*
Sc	*	-1.57	-0.58	3.23	-0.99	*	-0.10	*	-0.61	0.77	1.42	*	0.49
Sm	*	-0.94	0.37	0.21	0.47	*	0.28	*	*	*	-0.04	*	-0.06
Sn	*	1.67	*	*	*	*	-0.70	*	*	259.81	*	*	0.35
Sr	*	-0.95	-0.15	-0.63	0.33	*	-0.16	0.00	1.07	-0.24	0.07	-0.06	0.53
Ta	*	-1.10	-0.98	*	*	*	-0.38	*	*	*	0.56	*	-0.14
Tb	*	-0.44	0.22	0.25	0.43	*	-0.56	*	*	*	-0.40	*	-0.02
Th	*	-0.55	0.14	-1.32	0.25	*	0.06	*	*	-8.91	0.28	*	-0.50
Tl	*	-4.26	*	*	*	*	*	*	*	*	*	*	0.19
Tm	*	-0.61	0.16	*	-0.04	*	-0.04	*	*	*	-0.22	*	-0.08
U	*	-1.64	0.02	60.14	0.07	*	0.00	*	*	1.52	0.07	*	-0.28
V	*	-5.62	-0.12	0.71	0.70	*	1.62	*	-1.17	-0.47	-0.82	-3.28	0.23
Y	*	-1.65	0.04	1.14	-0.27	*	-0.45	-6.47	-0.14	0.95	-0.18	-0.29	1.07
Yb	*	-4.36	0.24	0.95	0.57	*	-0.05	*	*	*	-0.05	*	0.00
Zn	*	-3.20	0.83	0.07	-0.33	*	1.25	-1.02	-3.13	-5.95	-0.90	-0.67	0.11
Zr	*	-1.81	2.45	*	-0.36	*	-1.64	4.17	0.54	0.36	0.58	1.45	-0.18

Bold entries are Data Quality 1 - Underlined entries are Data Quality 2 - *Entries in italics* are derived from Provisional Values.

Table 3 - GeoPT41 Z-scores for Andesite, ORA-1. 14/06/2017

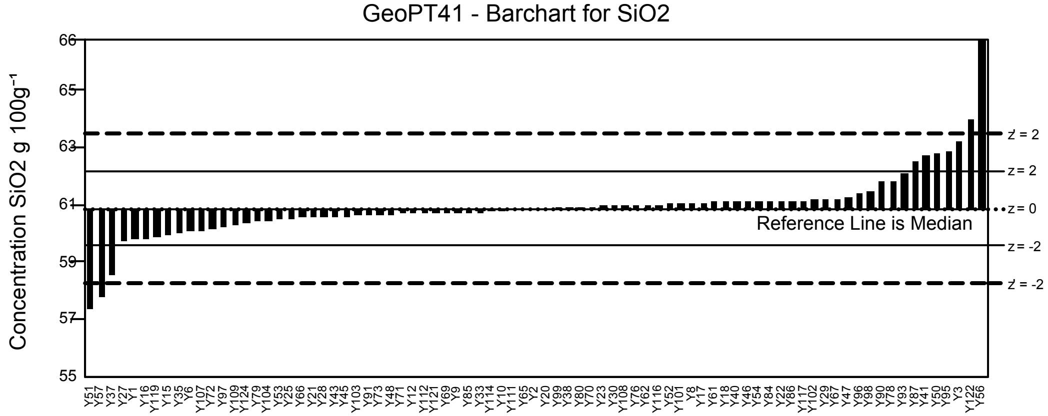
Lab Code	Y107	Y108	Y109	Y111	Y112	Y113	Y114	Y115	Y116	Y117	Y119	Y121	Y122
SiO2	-0.60	0.08	**-0.84**	-0.04	**-0.28**	*	-0.09	*	0.09	**0.43**	-0.77	-0.14	2.38
TiO2	*	-0.29	**-1.72**	0.17	**-1.72**	*	-0.29	*	-0.57	**0.25**	2.30	0.00	-1.72
Al2O3	-0.13	0.44	**-0.70**	0.11	**-0.75**	*	-0.09	*	-0.22	**0.97**	-0.88	0.00	-1.56
Fe2O3T	0.35	-0.72	**0.27**	-0.03	**2.64**	*	-0.08	*	-0.19	**1.56**	1.69	-0.45	-3.77
MnO	*	0.68	**0.26**	0.50	**0.26**	*	-0.24	-0.72	-0.98	**-0.92**	1.42	-0.98	-7.24
MgO	-0.82	0.12	**-2.01**	0.40	**-0.51**	*	0.12	*	0.30	**1.48**	1.61	0.21	-14.17
CaO	0.27	-0.55	**0.11**	0.36	**4.37**	*	0.11	*	-0.98	**0.03**	1.09	-0.55	-2.13
Na2O	*	1.52	**-0.22**	-1.00	**0.22**	*	0.04	*	-0.18	**-0.50**	2.63	-0.26	1.29
K2O	*	-8.31	**0.06**	-1.03	**1.31**	*	-0.39	*	0.86	**-4.28**	3.15	-0.60	0.45
P2O5	*	-0.05	**-1.20**	-0.38	**-2.53**	*	-0.38	*	*	**0.31**	-0.38	-1.49	-1.04
Ba	*	-0.14	**0.25**	-0.97	-0.05	**0.00**	0.32	0.36	*	**-0.89**	0.97	-0.46	-1.20
Be	*	0.15	**0.96**	*	*	*	*	*	*	*	*	*	*
Ce	*	**-0.79**	**-0.32**	-0.37	*	**0.31**	2.70	0.56	*	*	-0.95	-0.12	*
Co	*	-0.18	**0.29**	-0.74	*	*	0.13	-0.69	*	**-1.27**	*	0.18	-0.29
Cr	*	*2.99*	***0.94***	*-0.46*	*	*	*0.38*	*-0.82*	*	***-4.10***	*	*0.82*	*3.05*
Cs	*	0.32	**0.21**	33.48	*	**1.93**	8.45	*	*	*	*	-0.75	*
Cu	*	-0.33	**-4.57**	3.08	*	*	1.23	-0.23	*	**-2.32**	-1.24	0.71	*
Dy	*	**-0.99**	**-0.07**	*	*	**0.03**	0.75	*	*	*	*	0.04	*
Er	*	**-0.77**	**-0.34**	*	*	**0.44**	0.00	*	*	*	*	0.26	*
Eu	*	**-0.70**	**0.19**	*	*	**0.53**	0.26	*	*	*	*	0.37	*
Ga	*	0.23	**10.54**	-0.01	*	**0.95**	0.14	-0.25	*	*	0.19	-0.29	*
Gd	*	**-0.31**	**-0.22**	*	*	**2.00**	0.96	*	*	*	*	0.85	*
Hf	*	0.00	**-1.73**	*	*	**-0.08**	0.19	*	*	*	*	0.82	*
Ho	*	**-0.84**	**-0.23**	*	*	**-0.05**	0.19	*	*	*	*	0.29	*
La	*	**-1.08**	**-0.36**	-1.30	*	**0.27**	3.42	-0.08	*	**-1.05**	5.29	0.39	*
Li	*	0.35	**0.66**	*	*	*	-3.03	*	*	*	*	*	0.26
Lu	*	**-0.36**	**-0.36**	*	*	**0.11**	0.06	*	*	*	*	0.53	*
Mo	*	*0.18*	***4.49***	*	*	*	*	*	*	*	*	*	*
Nb	*	0.89	**0.28**	-1.34	*	**0.13**	0.91	-0.69	*	*	-1.02	-0.06	*
Nd	*	**-2.06**	**-0.01**	0.46	*	**0.52**	2.16	*	*	**0.94**	0.18	-0.15	*
Ni	*	*0.19*	***1.08***	*0.03*	*	*	*1.33*	*-1.23*	*	***1.05***	*-1.81*	*1.46*	*5.79*
Pb	*	-0.28	**-7.63**	0.01	*	*	1.75	-0.77	*	*	0.35	0.98	*
Pr	*	**-0.63**	**0.03**	*	*	**0.50**	2.09	*	*	*	*	0.81	*
Rb	*	-0.08	**-0.47**	1.96	*	**0.22**	26.60	0.09	*	*	0.55	0.24	-1.55
Sb	*	*-0.89*	*	*-1.36*	*	*	*0.97*	*	*	*	*	*	*
Sc	*	-0.23	**-0.47**	*	*	**-3.36**	0.45	-0.37	*	**-1.86**	*	-0.30	*
Sm	*	**-0.60**	**-0.14**	-0.49	*	**0.49**	1.41	*	*	*	11.21	-0.07	*
Sn	*	*0.13*	*	*-0.48*	*	***5.73***	*	*	*	*	*	*-0.04*	*
Sr	*	-0.21	**-0.06**	-0.33	**-1.84**	**1.17**	0.21	-0.16	*	**0.43**	-0.85	-0.68	0.94
Ta	*	0.77	**-6.40**	*	*	**1.18**	1.60	*	*	*	*	*	*
Tb	*	**-0.69**	**-0.24**	*	*	**1.30**	0.76	*	*	*	*	1.09	*
Th	*	0.00	**0.77**	*	*	**-0.33**	1.72	-1.47	*	*	*	-0.55	*
Tl	*	*-0.44*	*	*	*	*	*	*	*	*	*	*	*
Tm	*	**-0.97**	*	*	*	**2.40**	0.19	*	*	*	*	1.09	*
U	*	-0.14	**-0.69**	*	*	**-0.06**	-0.76	*	*	*	*	0.21	*
V	*	-0.12	**0.89**	0.35	*	*	0.00	-1.36	*	**-0.54**	1.17	0.82	*
Y	*	-0.14	**1.54**	0.97	*	**-0.04**	1.53	0.28	*	**0.68**	-0.39	0.23	*
Yb	*	**-0.94**	**-0.37**	*	*	**-0.09**	0.28	*	*	*	11.75	0.33	*
Zn	*	-0.33	**-3.62**	0.11	*	*	0.35	-0.82	*	**2.12**	-1.58	0.02	-0.37
Zr	*	0.45	**-2.56**	-0.02	*	**-0.47**	0.09	0.55	*	**4.44**	-0.23	0.54	-6.50

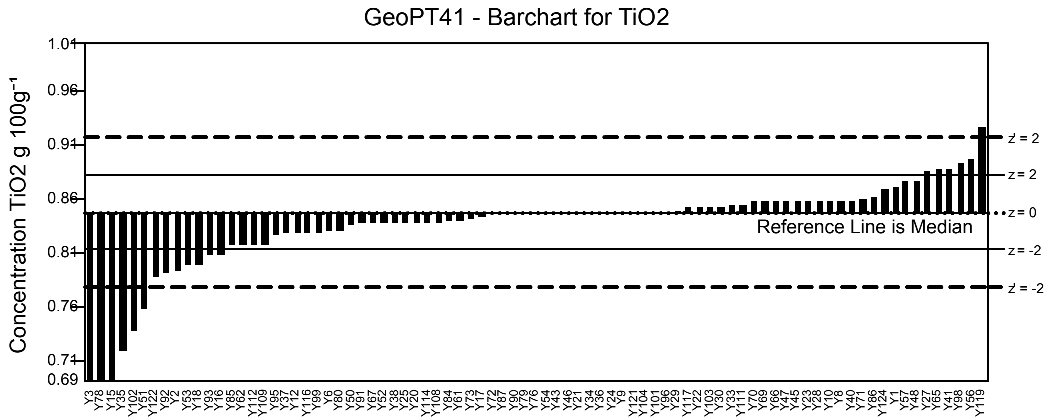
Bold entries are Data Quality 1 - Underlined entries are Data Quality 2 - *Entries in italics* are derived from Provisional Values.

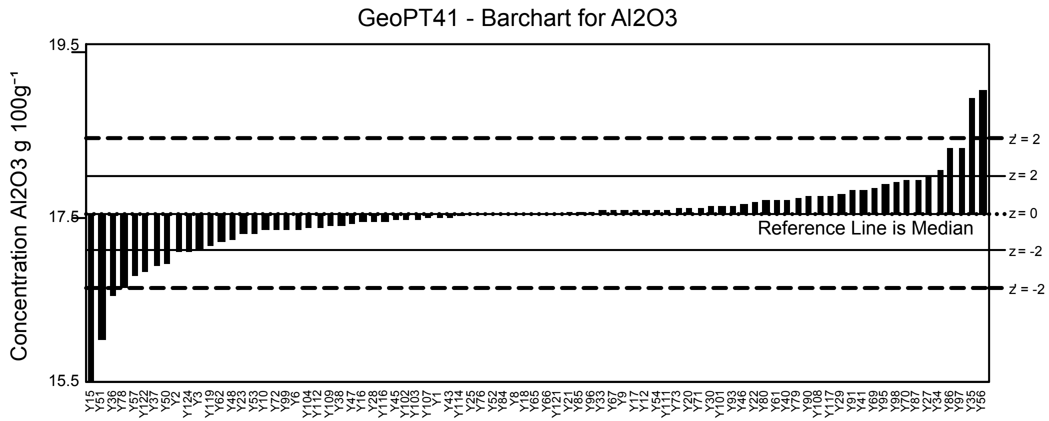
Table 3 - GeoPT41 Z-scores for Andesite, ORA-1. 14/06/2017

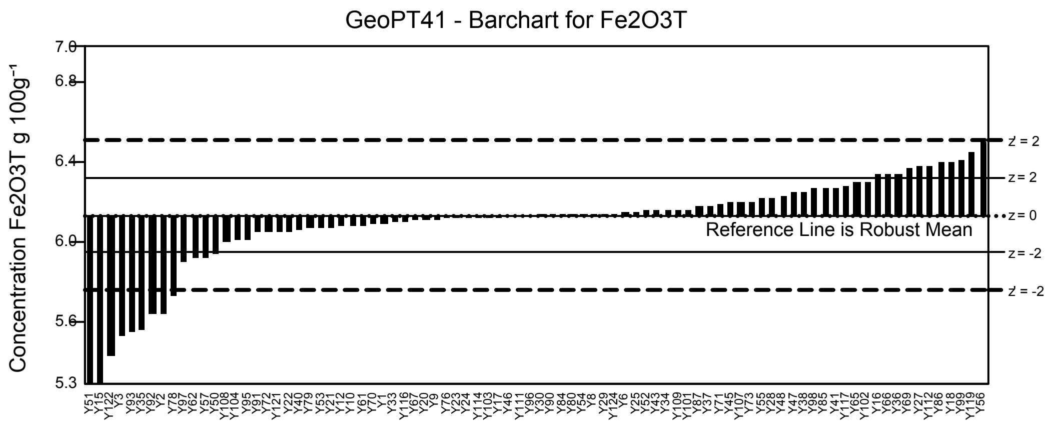
Lab Code	Y124
SiO2	-0.41
TiO2	0.60
Al2O3	-1.05
Fe2O3T	0.06
MnO	-1.53
MgO	-1.58
CaO	-0.31
Na2O	-1.12
K2O	0.51
P2O5	-0.27
Ba	1.75
Be	*
Ce	-0.43
Co	1.57
Cr	*-1.09*
Cs	*
Cu	4.89
Dy	0.32
Er	*
Eu	*
Ga	1.67
Gd	*
Hf	*
Ho	*
La	0.39
Li	0.80
Lu	*
Mo	*
Nb	-5.37
Nd	0.84
Ni	*0.19*
Pb	22.27
Pr	*
Rb	*
Sb	*
Sc	*
Sm	*
Sn	*
Sr	-0.68
Ta	*
Tb	*
Th	*
Tl	*
Tm	*
U	*
V	0.00
Y	-0.76
Yb	*
Zn	-0.69
Zr	-1.72

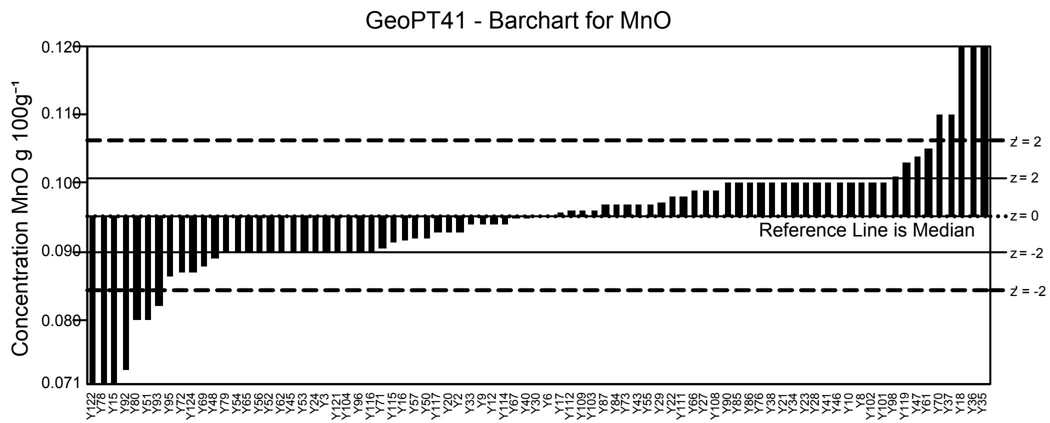
Bold entries are Data Quality 1 - Underlined entries are Data Quality 2 - *Entries in italics* are derived from Provisional Values.

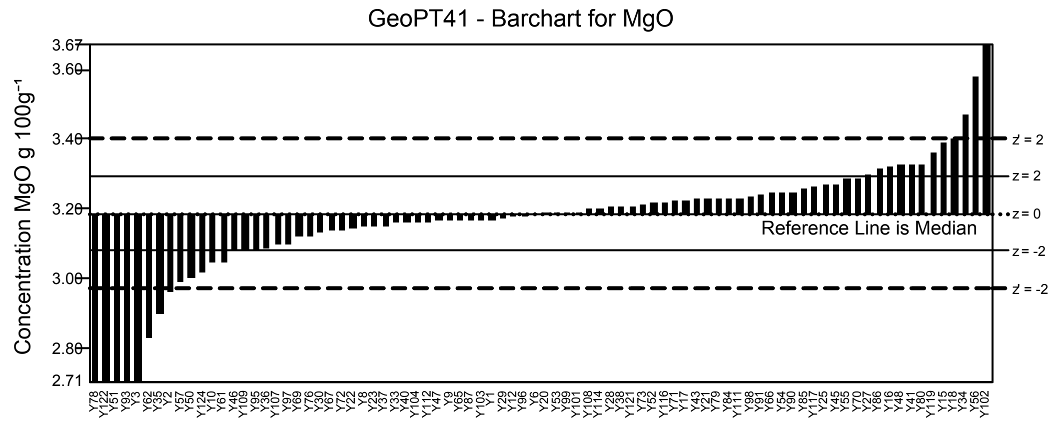

GeoPT41 - Barchart for SiO2
Concentration SiO2 g 100g⁻¹
66
65
63
61
59
57
55
z' = 2
z = 2
z = 0
z = -2
z' = -2
Reference Line is Median


GeoPT41 - Barchart for TiO2
Concentration TiO2 g 100g⁻¹
1.01
0.96
0.91
0.86
0.81
0.76
0.71
0.69
z' = 2
z = 2
z = 0
z = -2
z' = -2
Reference Line is Median

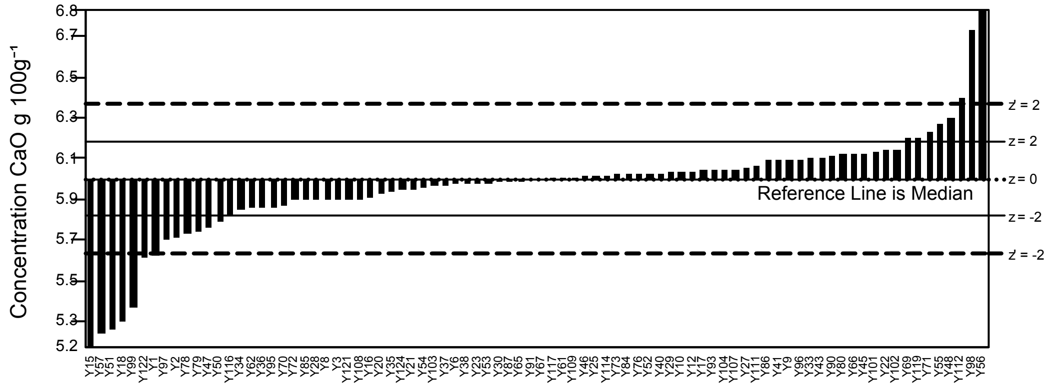

GeoPT41 - Barchart for Al2O3
Concentration Al2O3 g 100g⁻¹
19.5
17.5
15.5
z' = 2
z = 2
z = 0
z = -2
z' = -2
Reference Line is Median


GeoPT41 - Barchart for Fe2O3T
Concentration Fe2O3T g 100g⁻¹
7.0
6.8
6.4
6.0
5.6
5.3
z' = 2
z = 2
z = 0
z = -2
z' = -2
Reference Line is Robust Mean

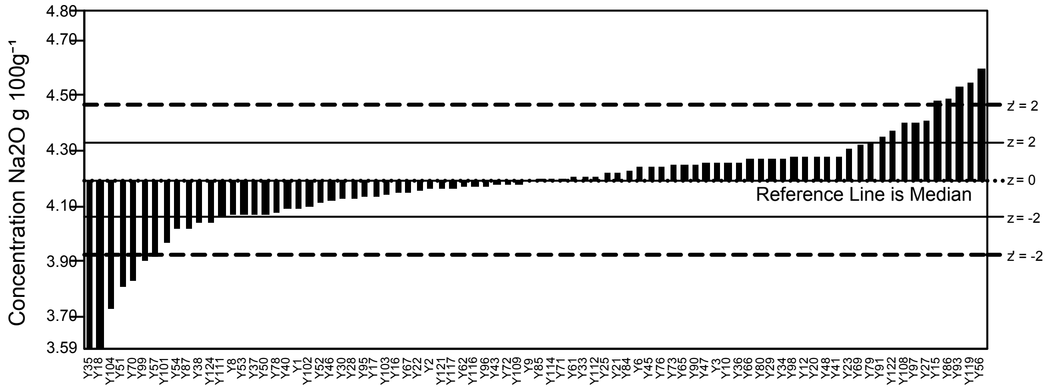

GeoPT41 - Barchart for MnO
Concentration MnO g 100g⁻¹
0.120
0.110
0.100
0.090
0.080
0.071
z' = 2
z = 2
z = 0
z = -2
z' = -2
Reference Line is Median


GeoPT41 - Barchart for MgO
Concentration MgO g 100g⁻¹
3.67
3.60
3.40
3.20
3.00
2.80
2.71
z' = 2
z = 2
z = 0
z = -2
z' = -2
Reference Line is Median

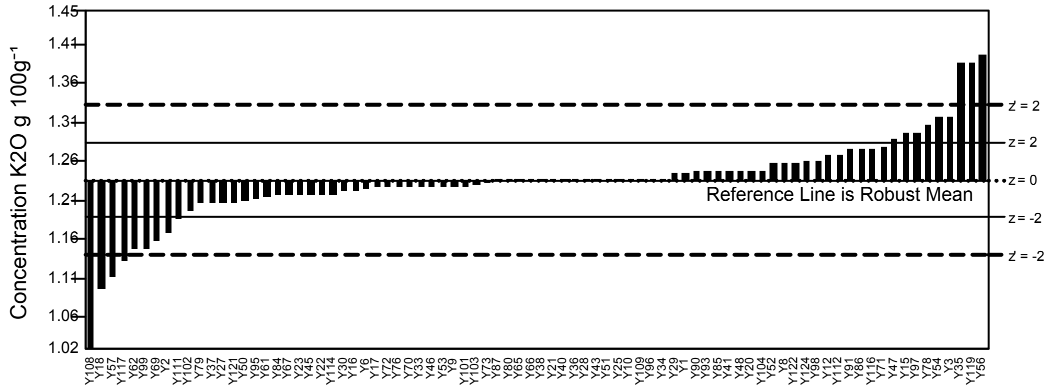
GeoPT41 - Barchart for CaO



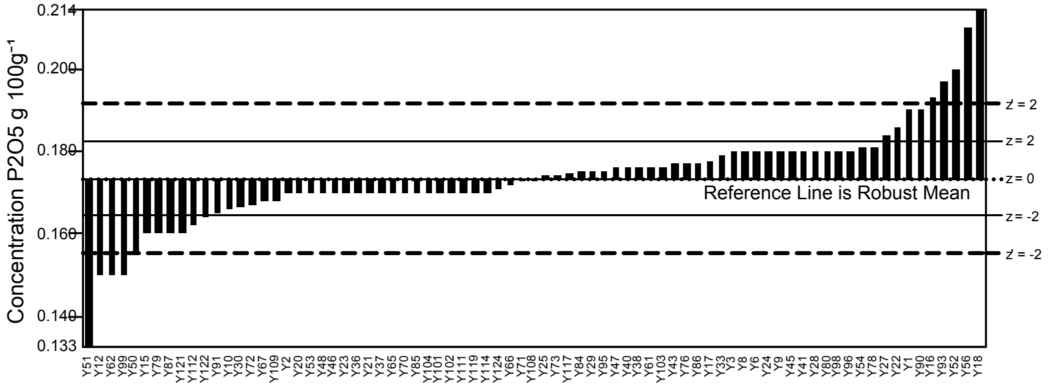
GeoPT41 - Barchart for Na2O



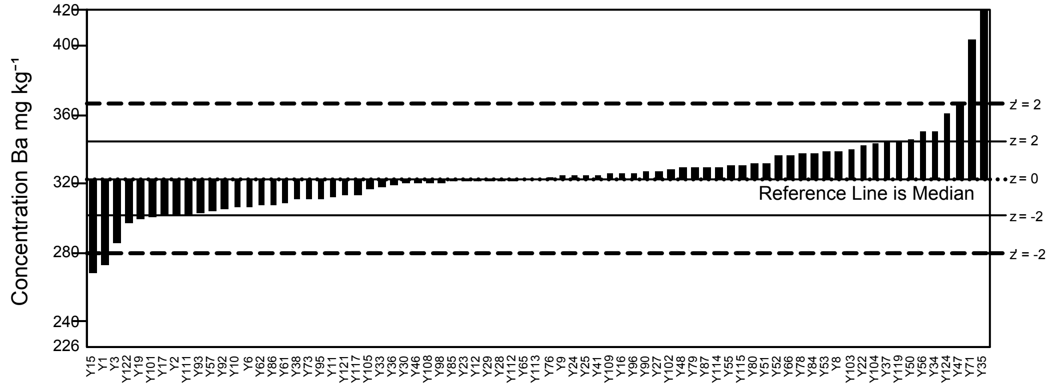
GeoPT41 - Barchart for K2O



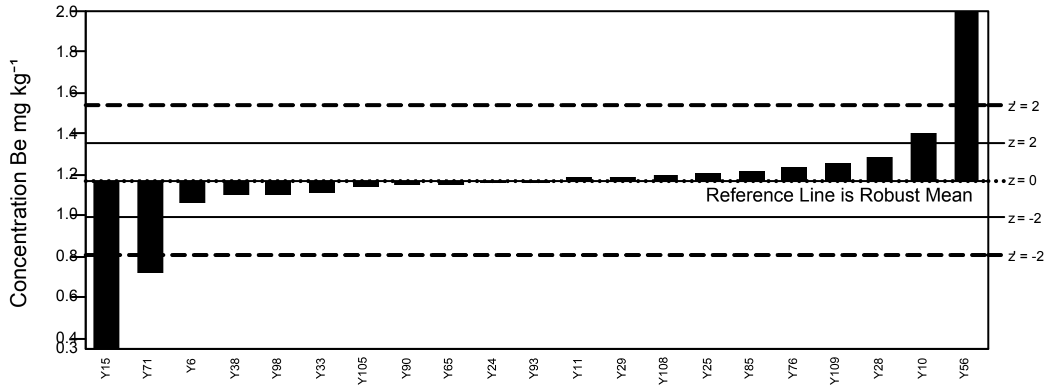
GeoPT41 - Barchart for P2O5



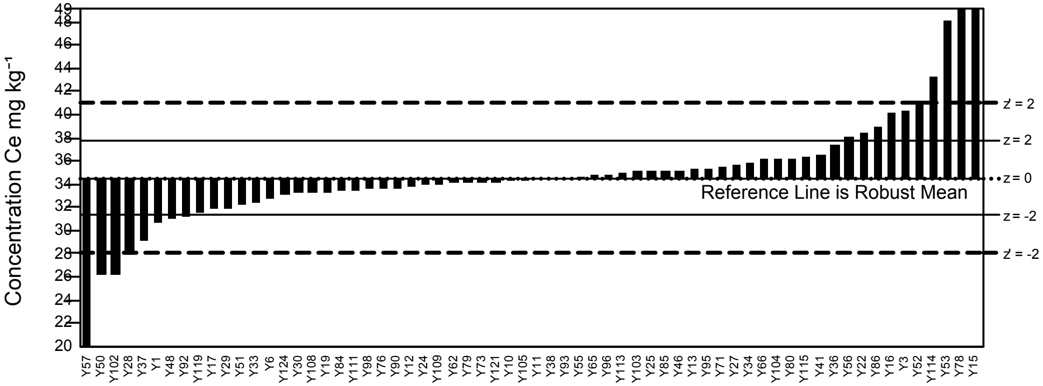
GeoPT41 - Barchart for Ba



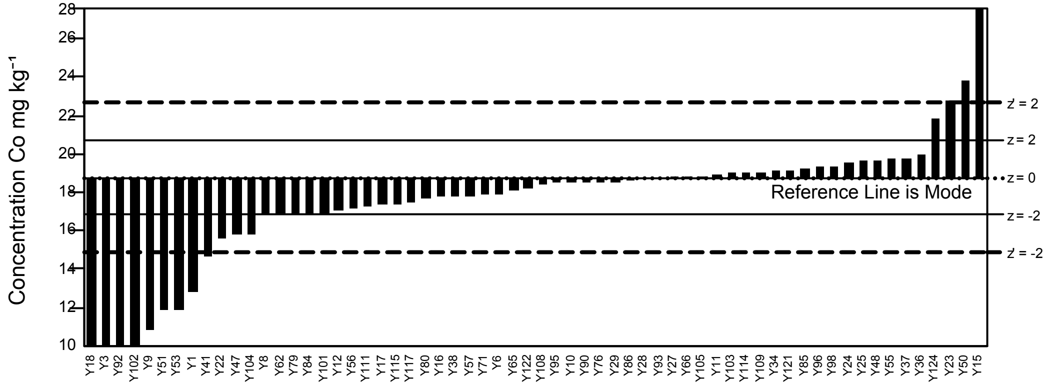
GeoPT41 - Barchart for Be



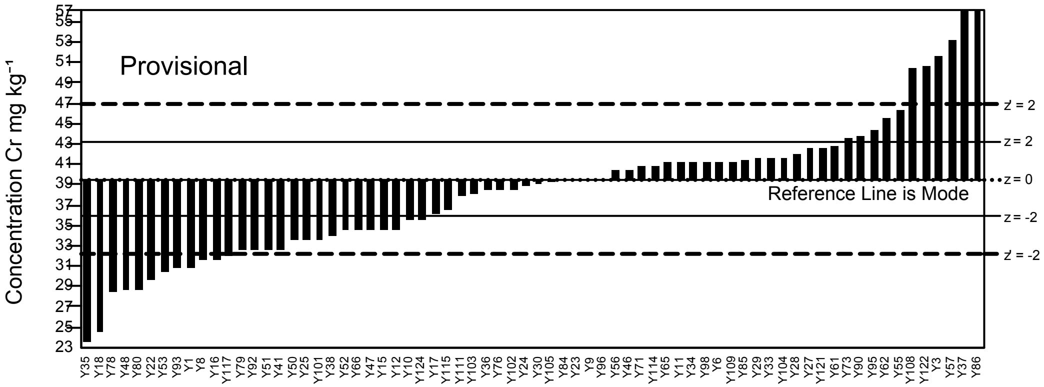
GeoPT41 - Barchart for Ce



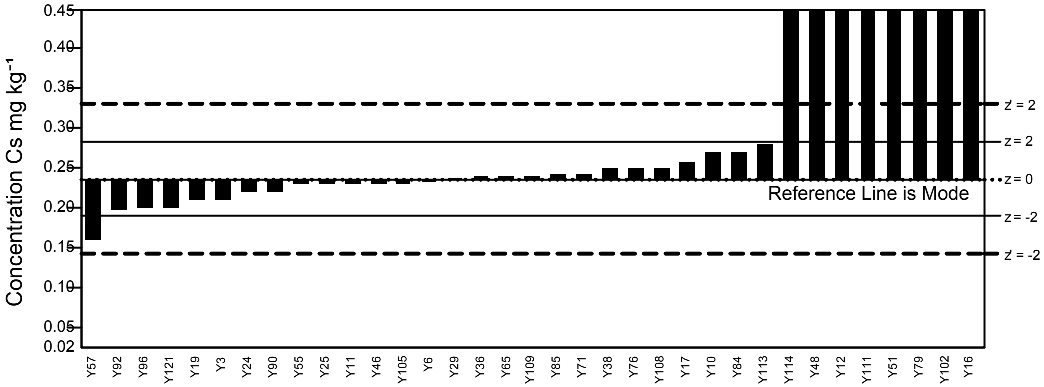
GeoPT41 - Barchart for Co



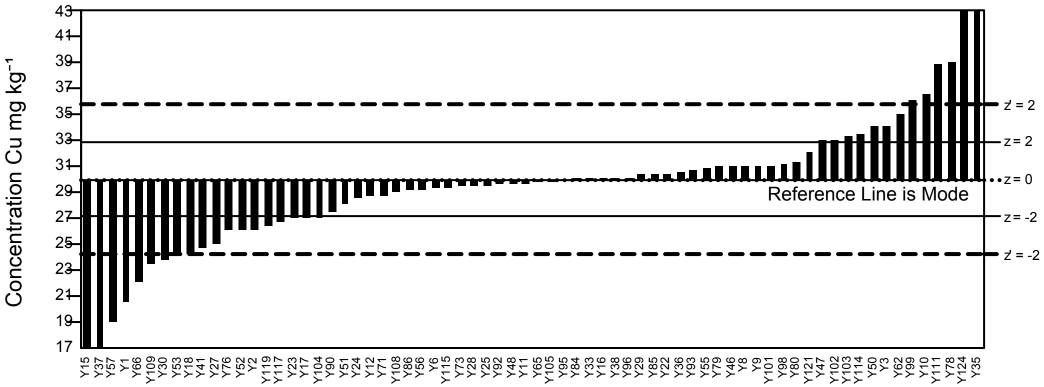
GeoPT41 - Barchart for Cr



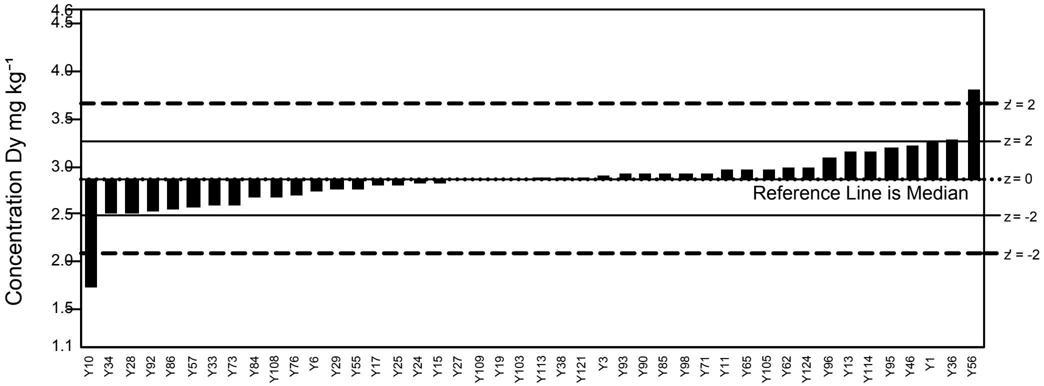
GeoPT41 - Barchart for Cs



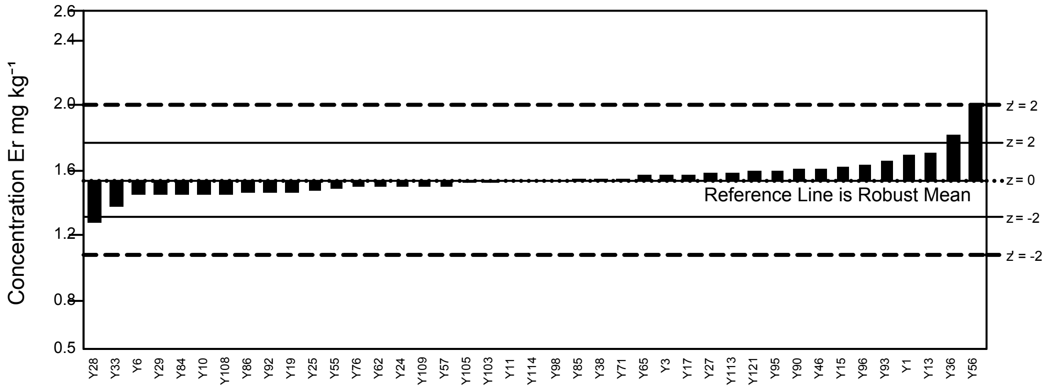
GeoPT41 - Barchart for Cu



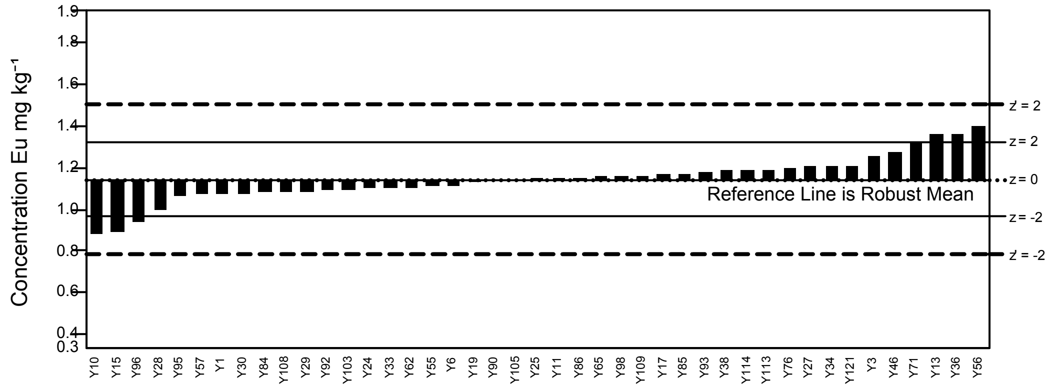
GeoPT41 - Barchart for Dy



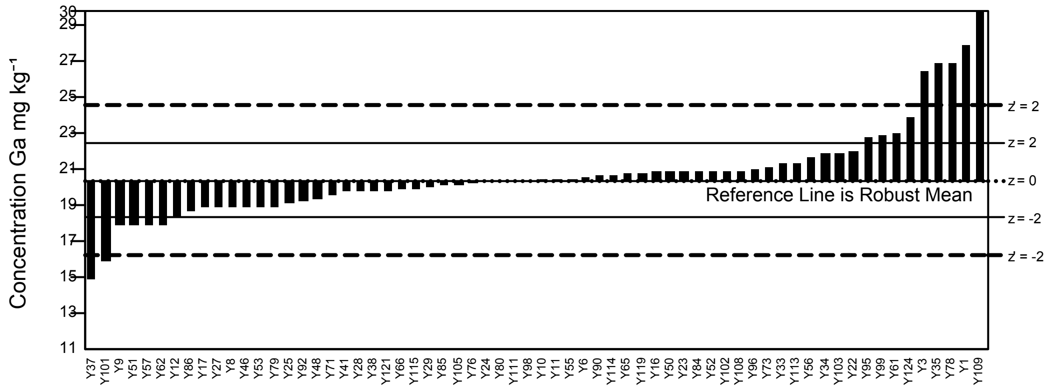
GeoPT41 - Barchart for Er



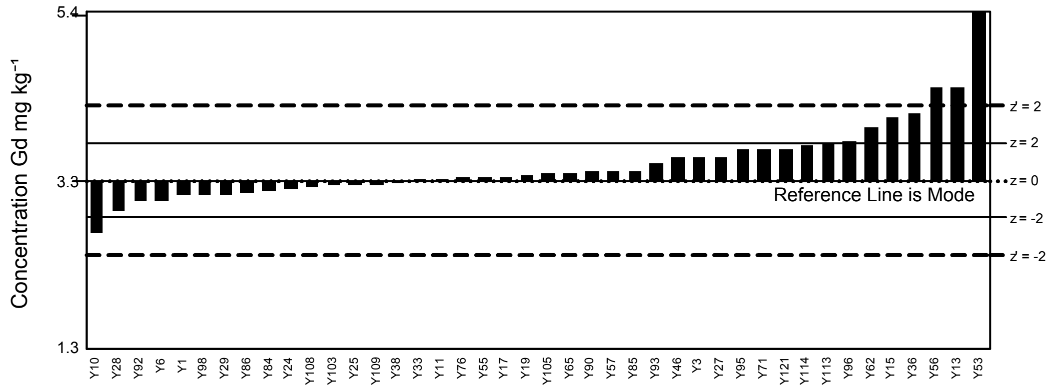
GeoPT41 - Barchart for Eu



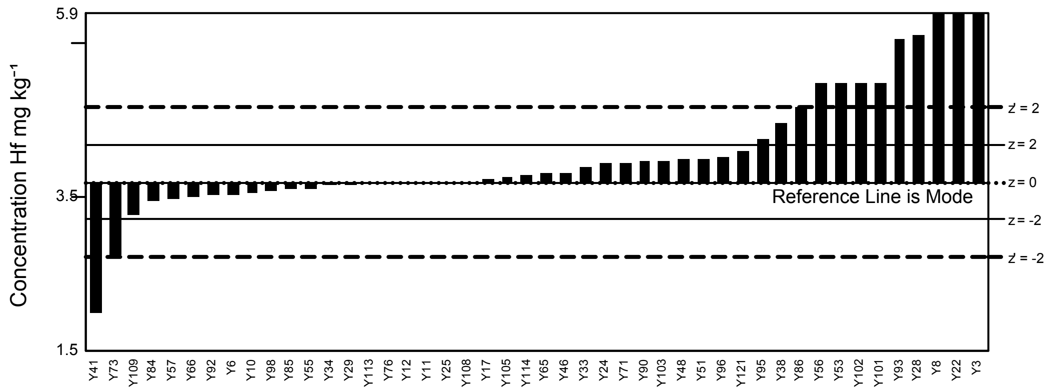
GeoPT41 - Barchart for Ga



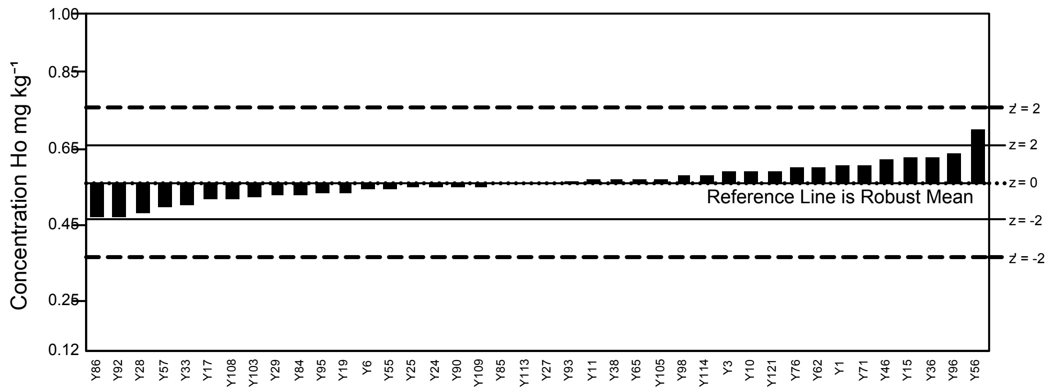
GeoPT41 - Barchart for Gd



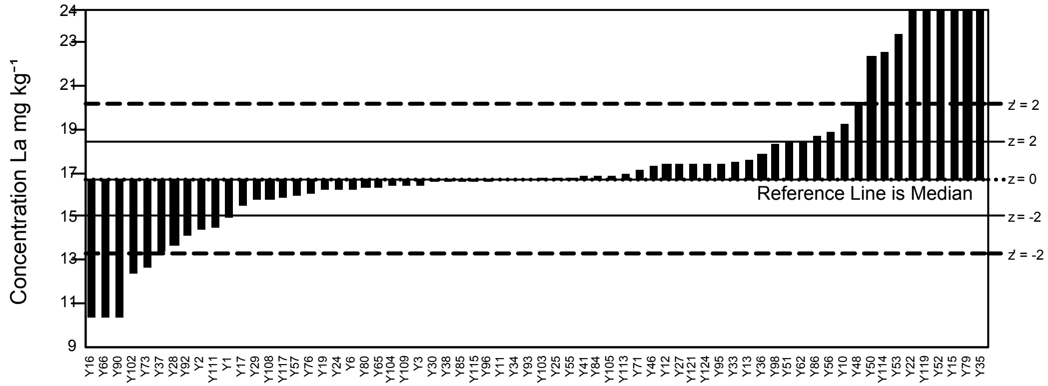
GeoPT41 - Barchart for Hf



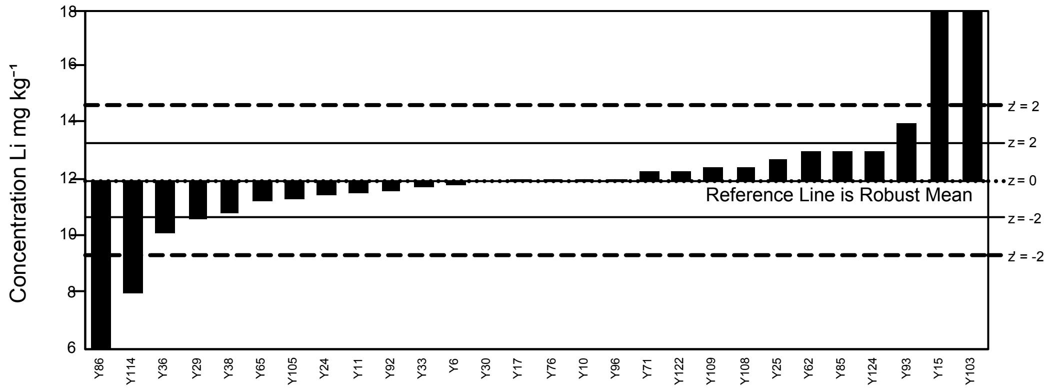
GeoPT41 - Barchart for Ho



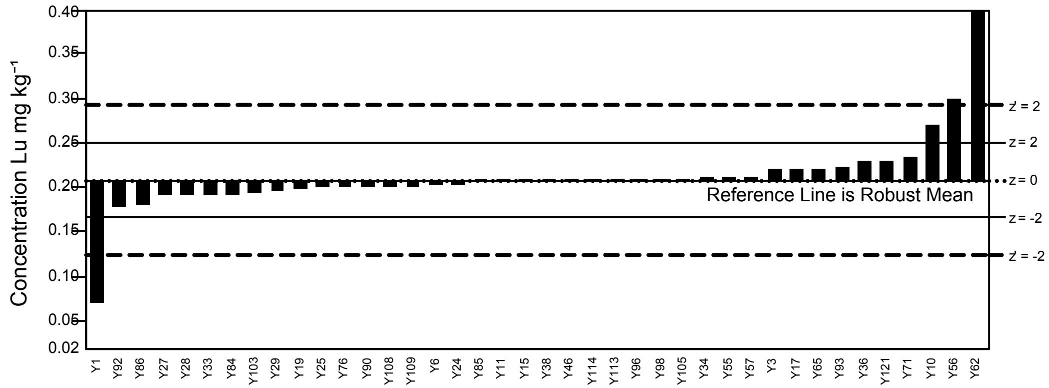
GeoPT41 - Barchart for La



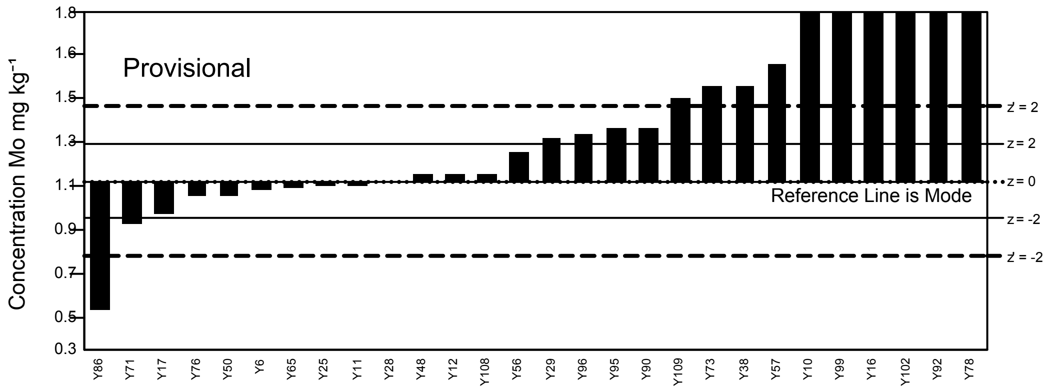
GeoPT41 - Barchart for Li



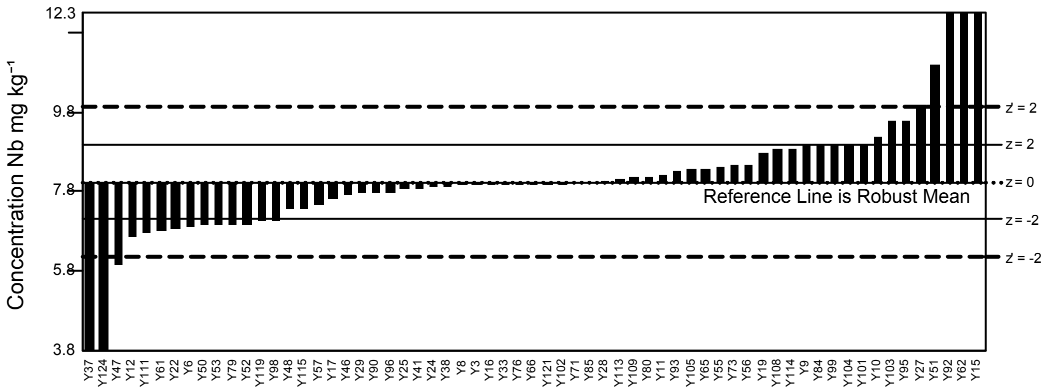
GeoPT41 - Barchart for Lu



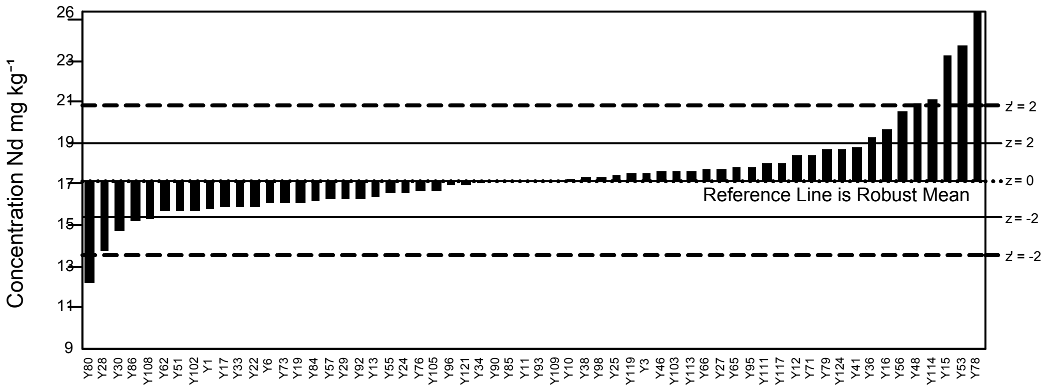
GeoPT41 - Barchart for Mo



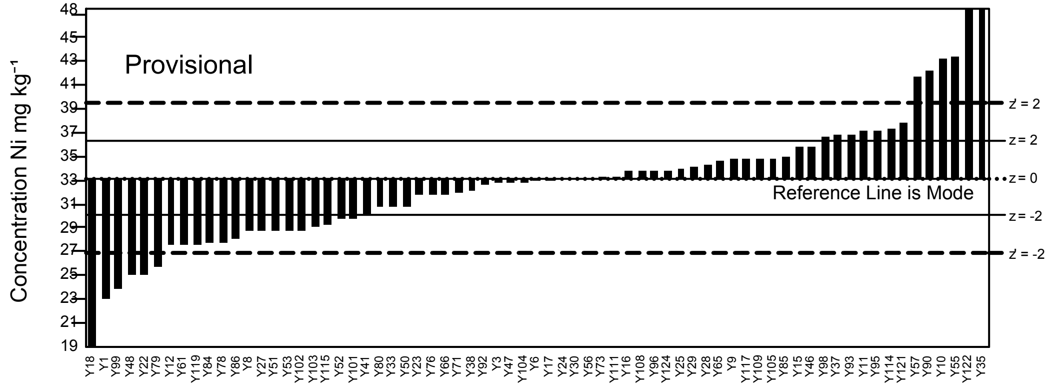
GeoPT41 - Barchart for Nb



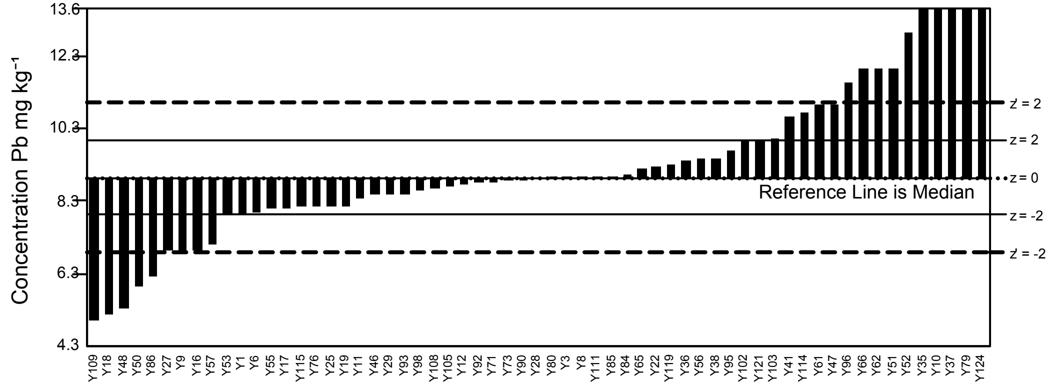
GeoPT41 - Barchart for Nd



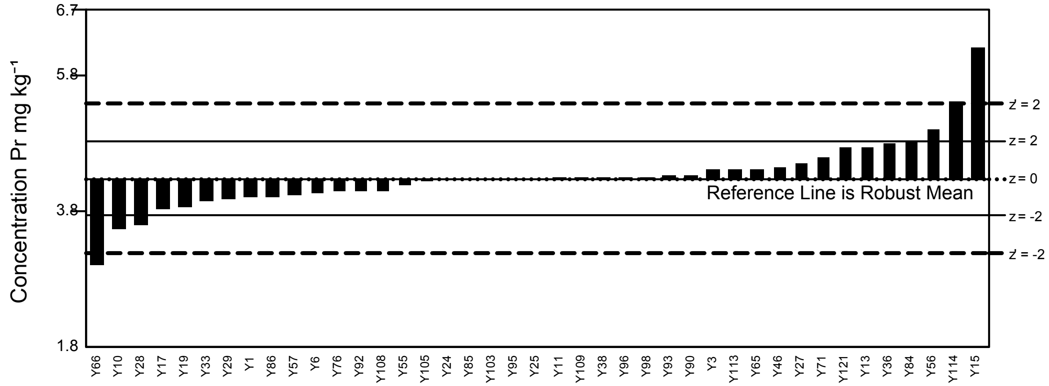
GeoPT41 - Barchart for Ni



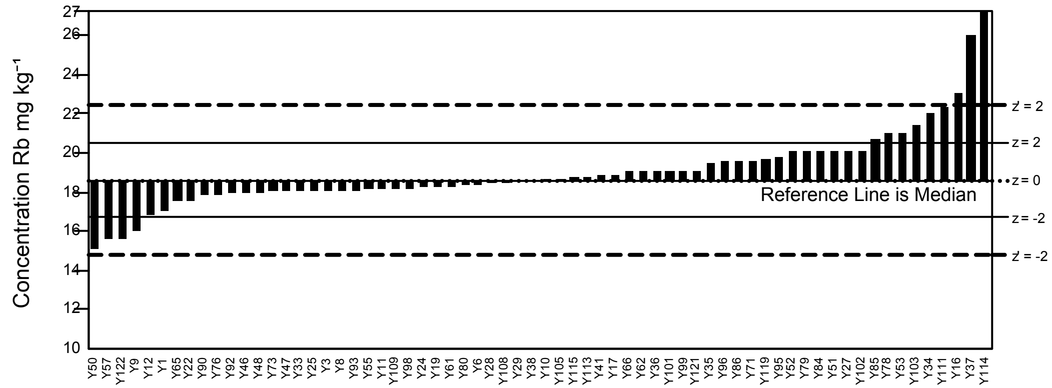
GeoPT41 - Barchart for Pb



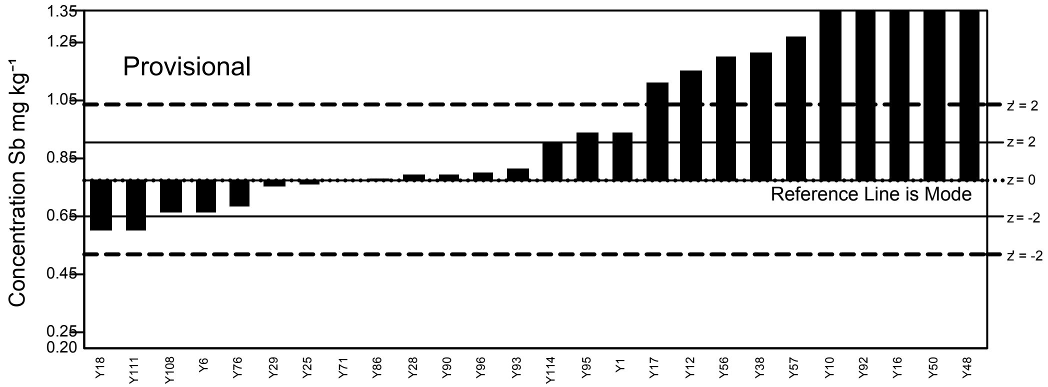
GeoPT41 - Barchart for Pr



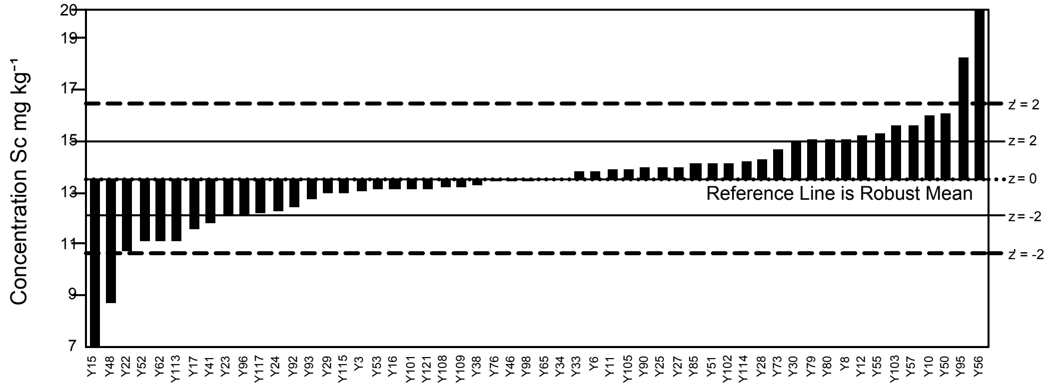
GeoPT41 - Barchart for Rb



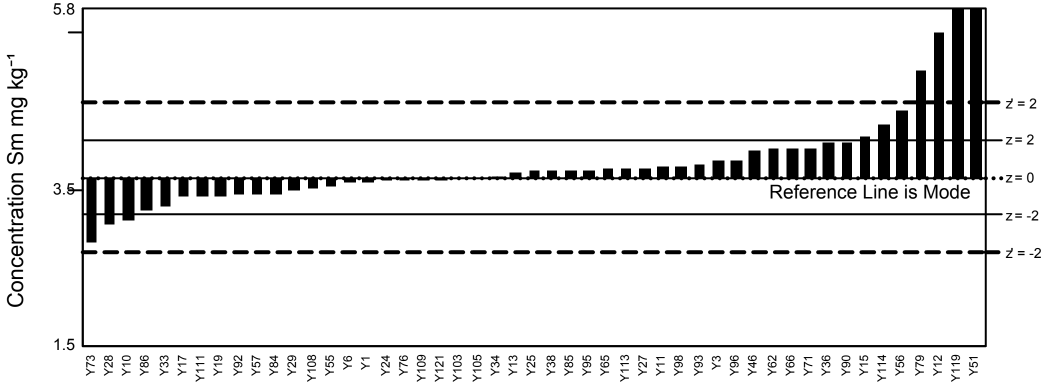
GeoPT41 - Barchart for Sb



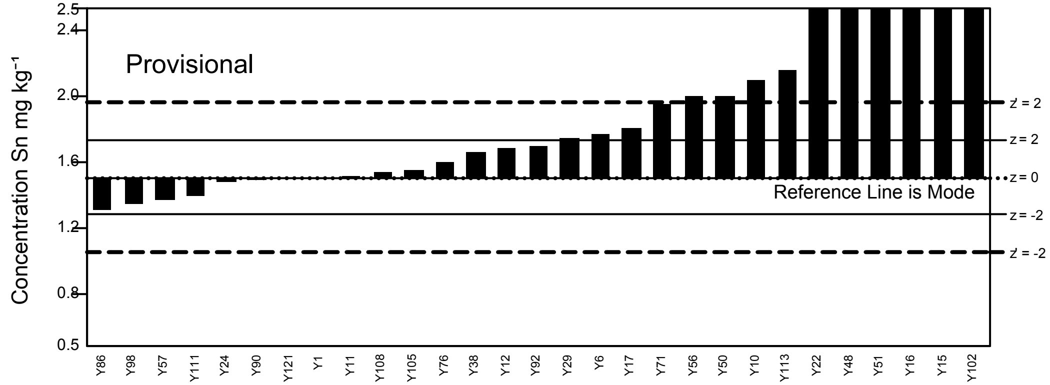
GeoPT41 - Barchart for Sc



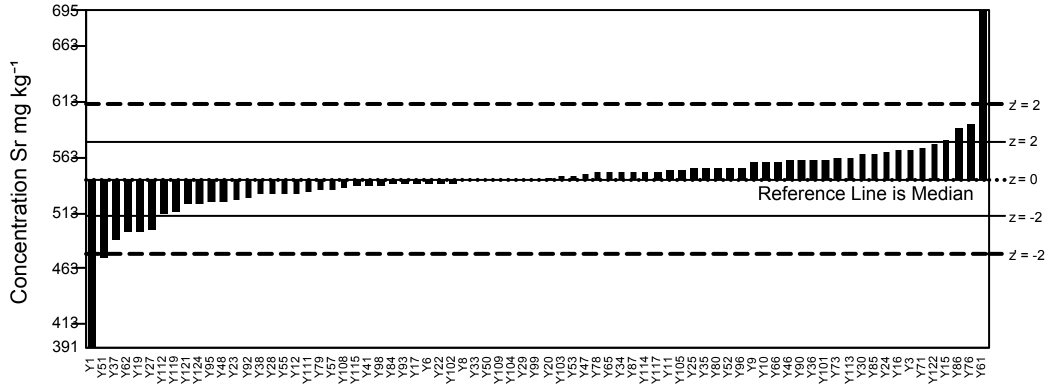
GeoPT41 - Barchart for Sm



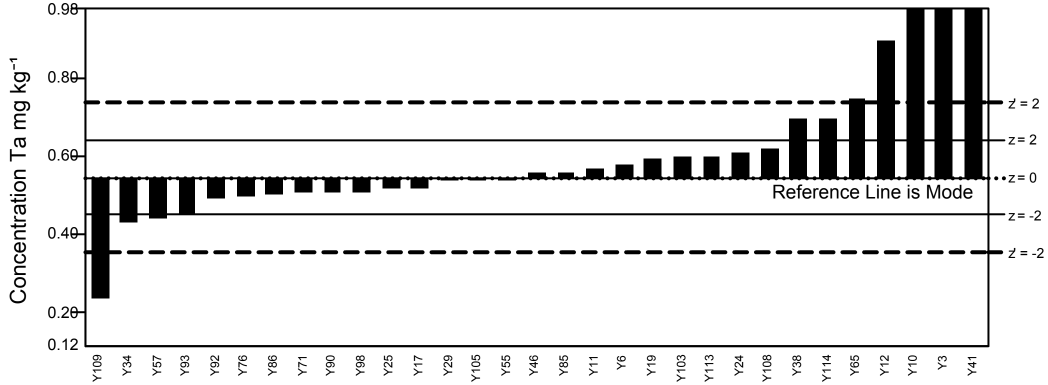
GeoPT41 - Barchart for Sn



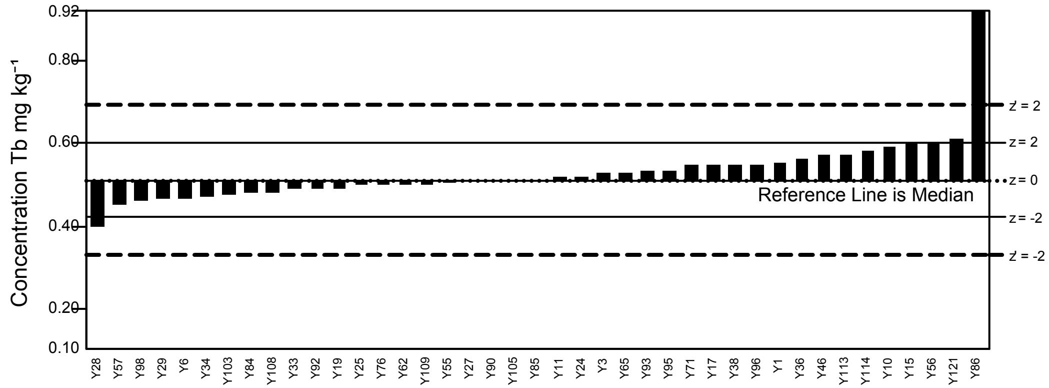
GeoPT41 - Barchart for Sr



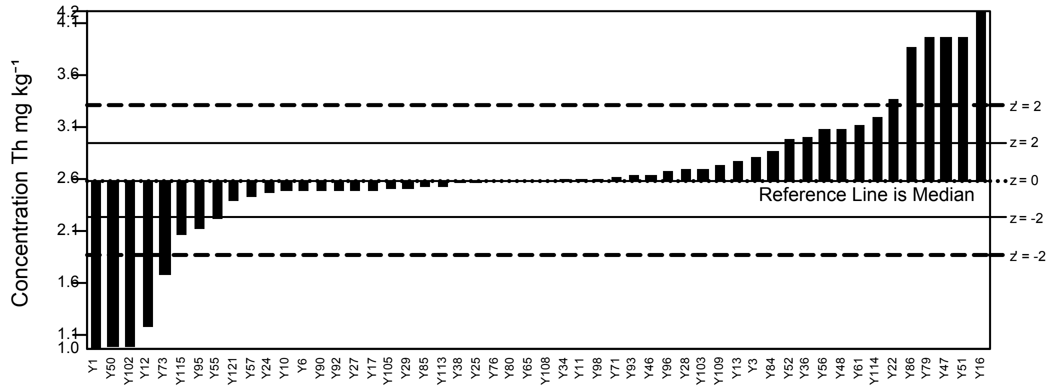
GeoPT41 - Barchart for Ta



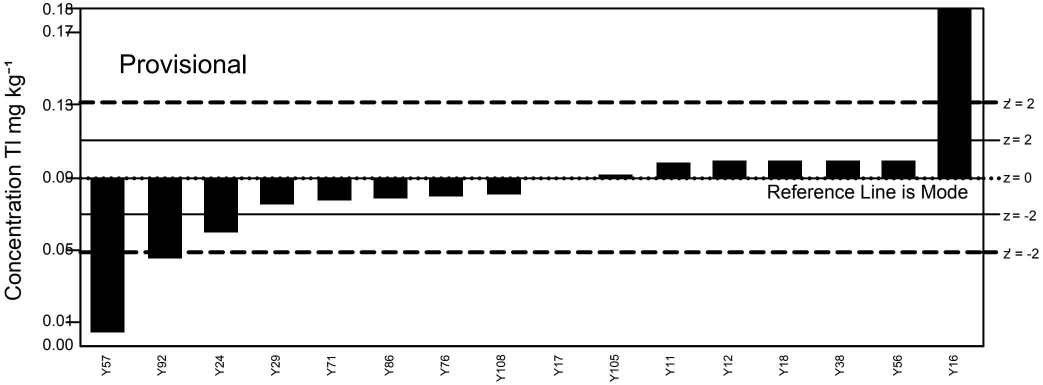
GeoPT41 - Barchart for Tb



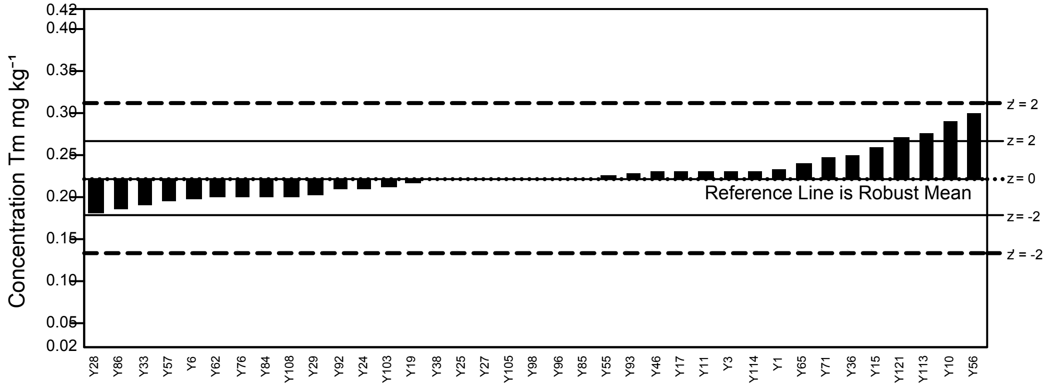
GeoPT41 - Barchart for Th



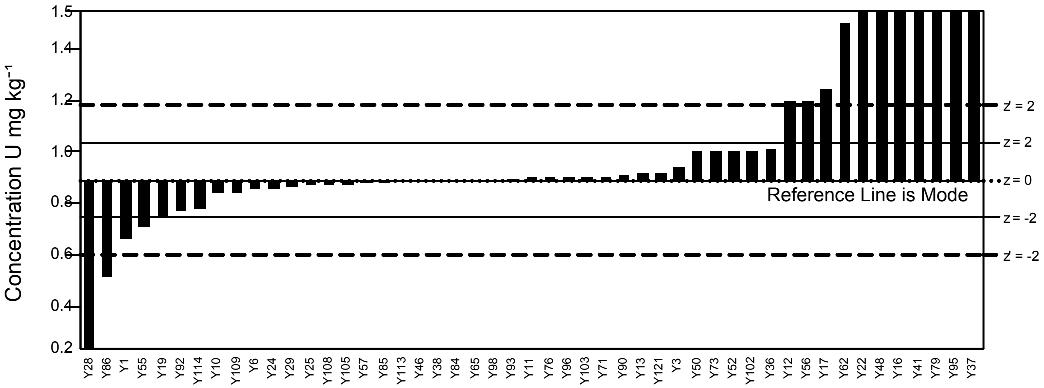
GeoPT41 - Barchart for Tl



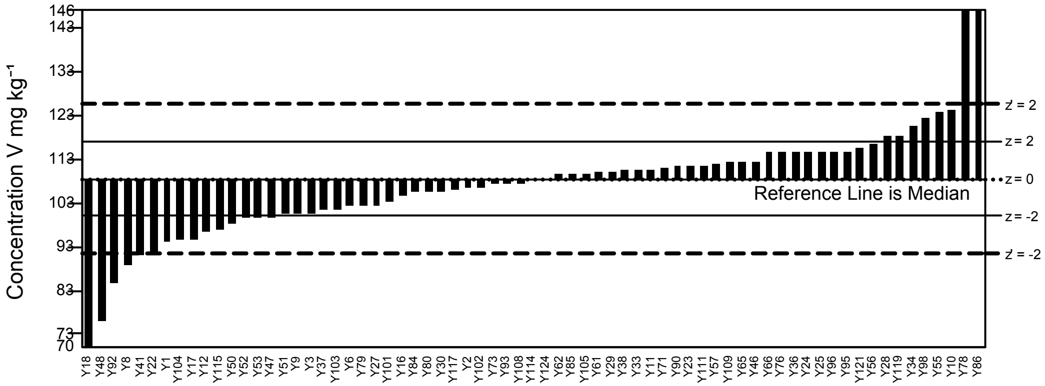
GeoPT41 - Barchart for Tm



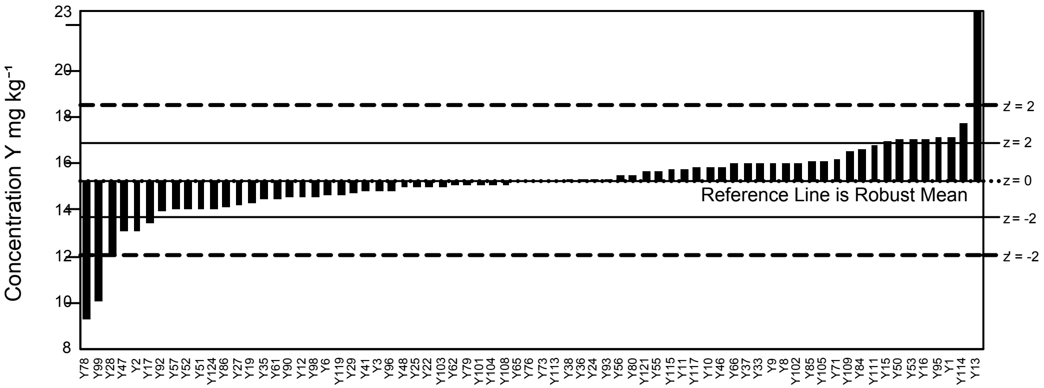
GeoPT41 - Barchart for U



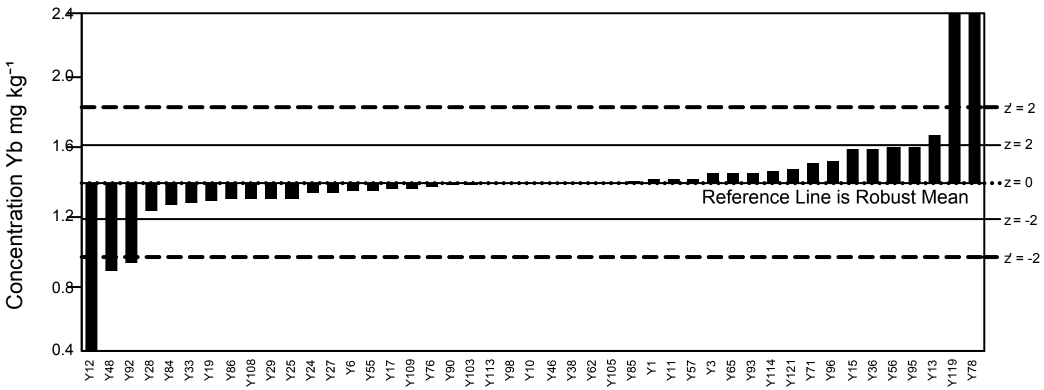
GeoPT41 - Barchart for V

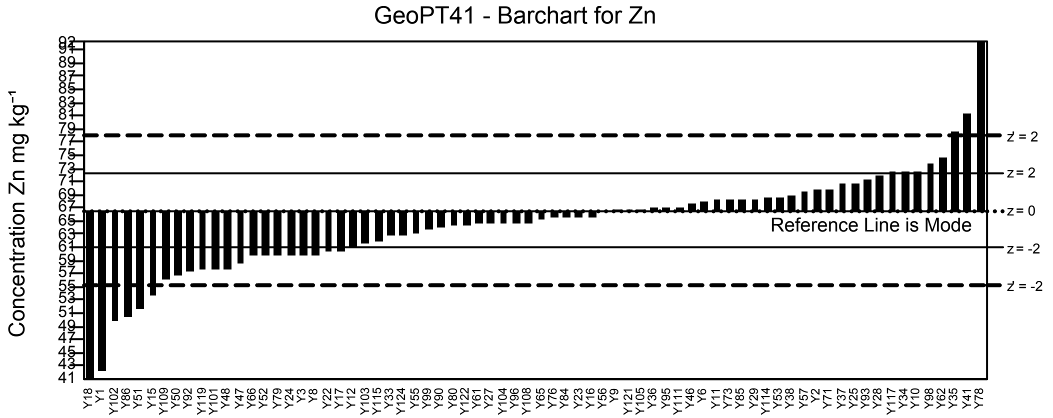


GeoPT41 - Barchart for Y



GeoPT41 - Barchart for Yb





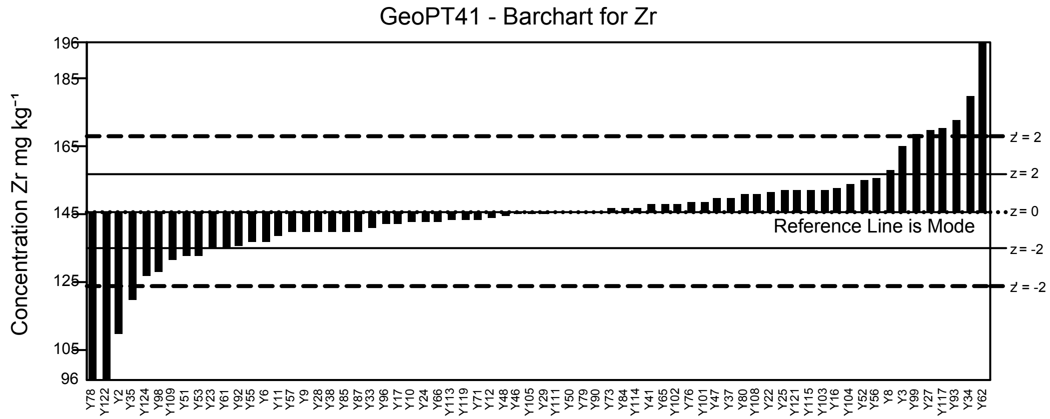
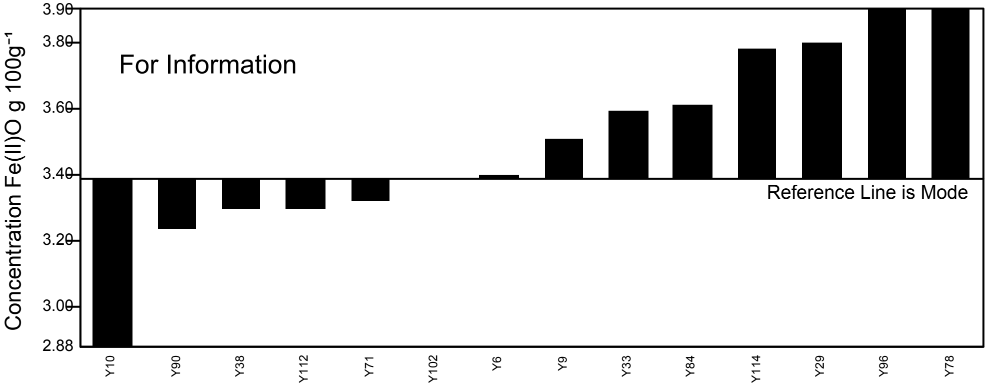
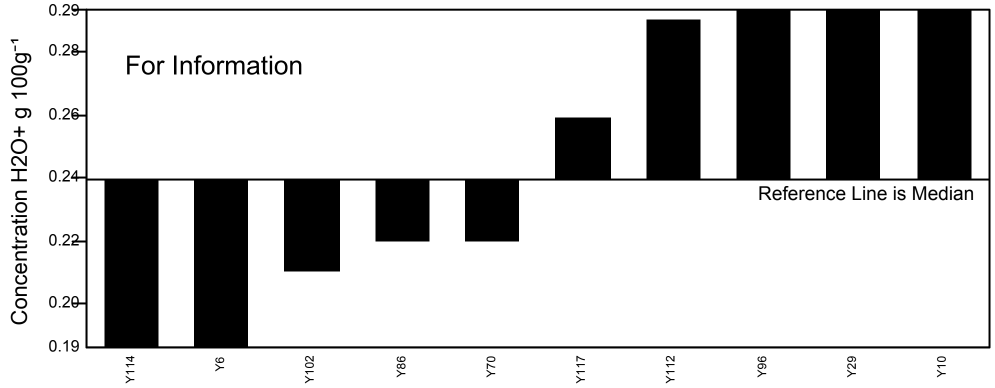


Figure 1: GeoPT41 - Andesite, ORA-1. Data distribution charts for elements for which values were assigned or provisional values given for guidance. Horizontal lines show the limits for -2<z<2 for pure geochemistry labs (solid lines) and -2<z'<2 for applied geochemistry labs (pecked lines).

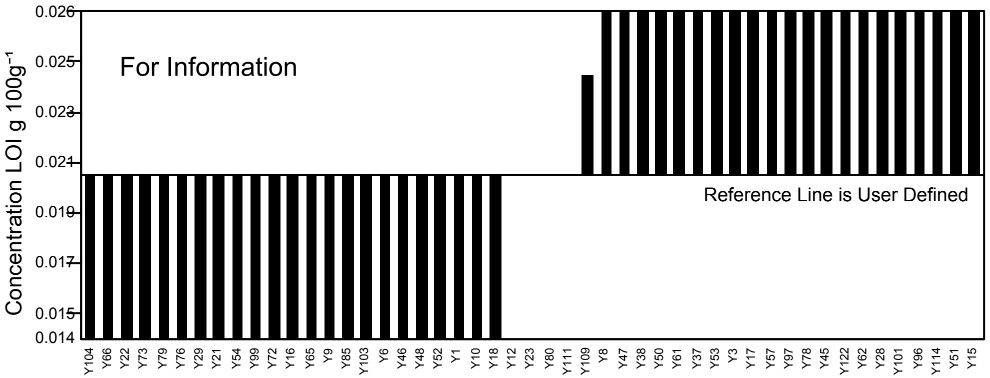
GeoPT41 - Barchart for Fe(II)O



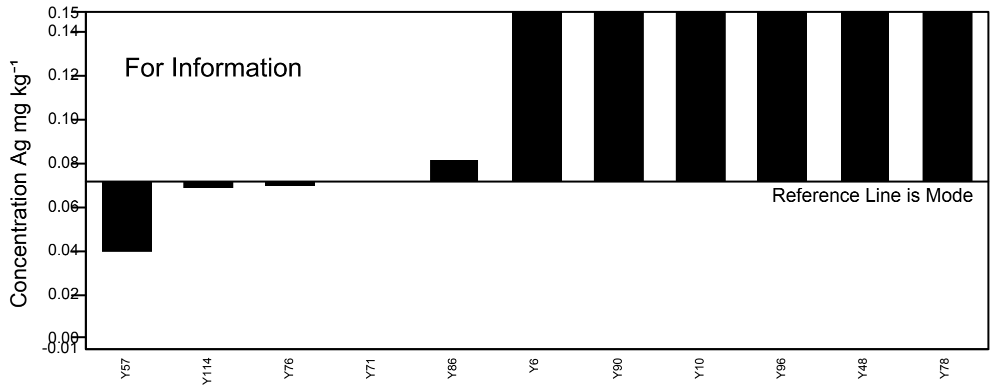
GeoPT41 - Barchart for H2O+



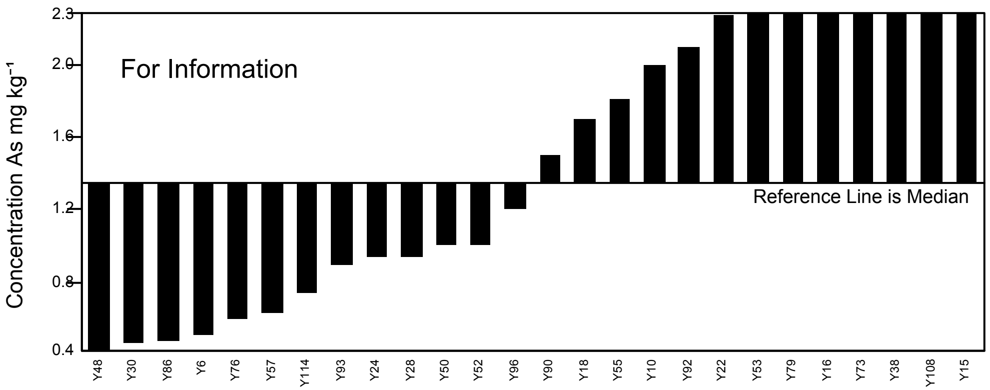
GeoPT41 - Barchart for LOI



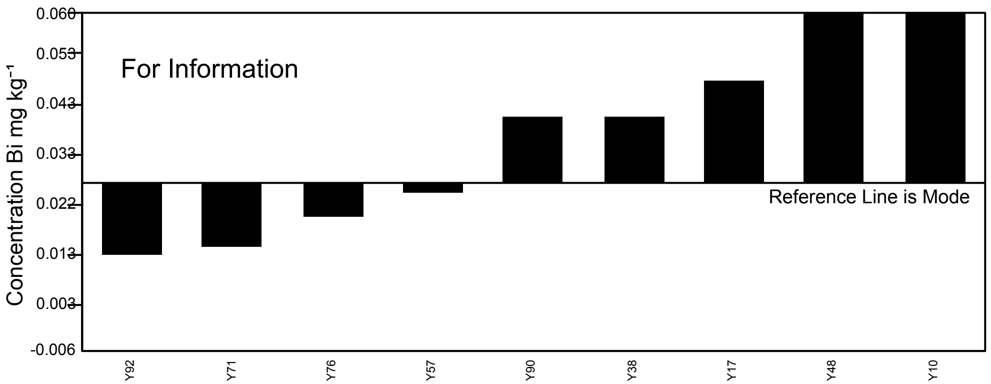
GeoPT41 - Barchart for Ag

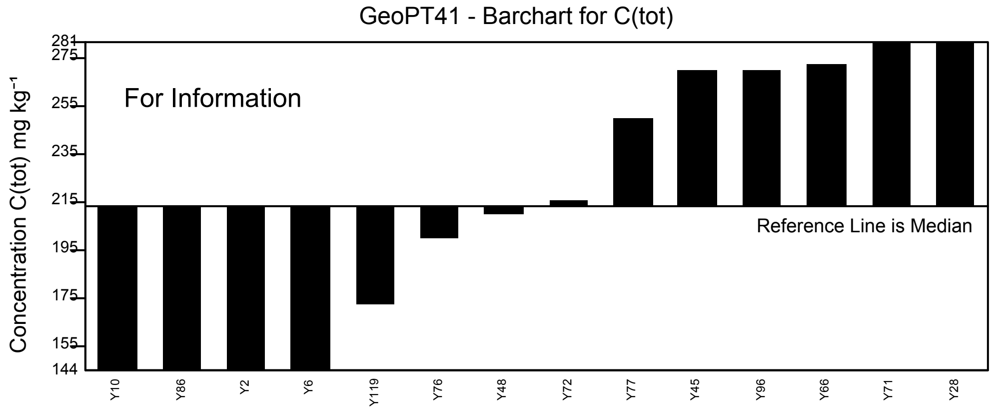


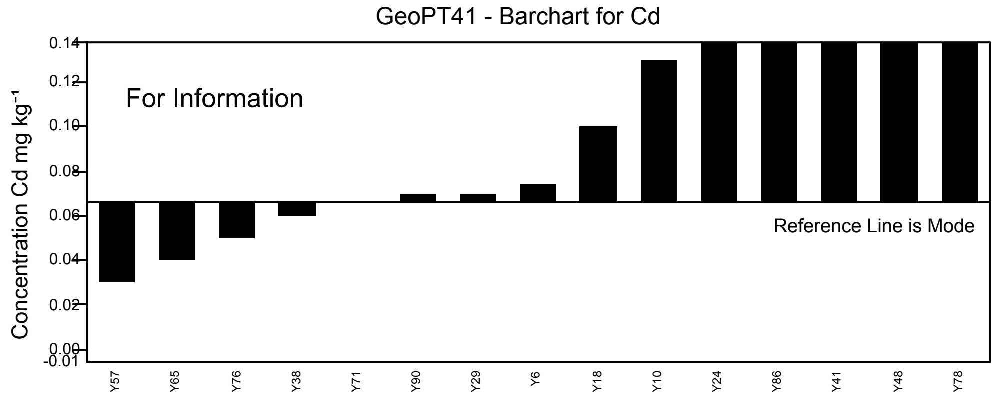
GeoPT41 - Barchart for As

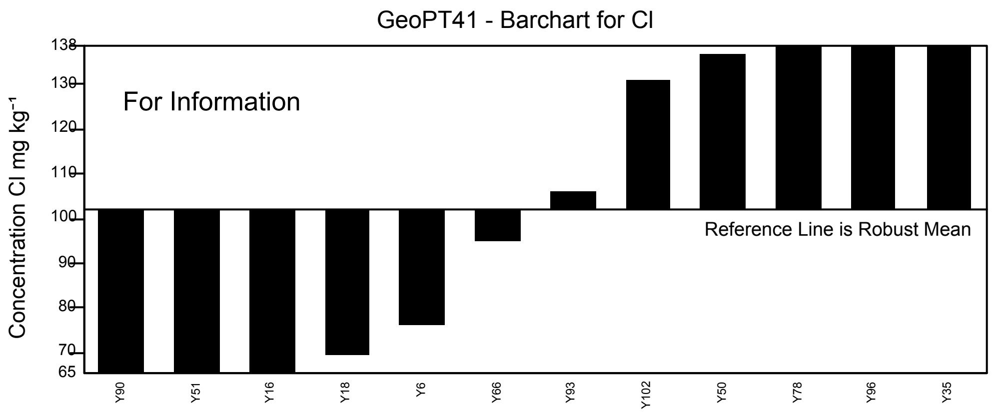


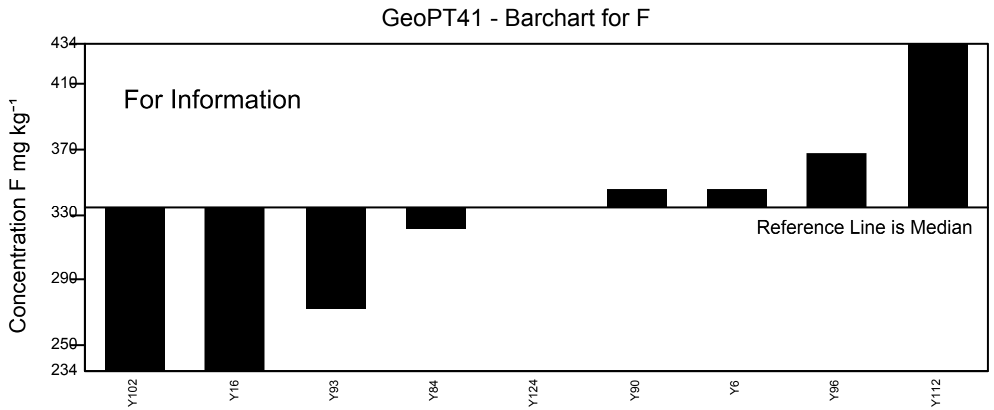
GeoPT41 - Barchart for Bi

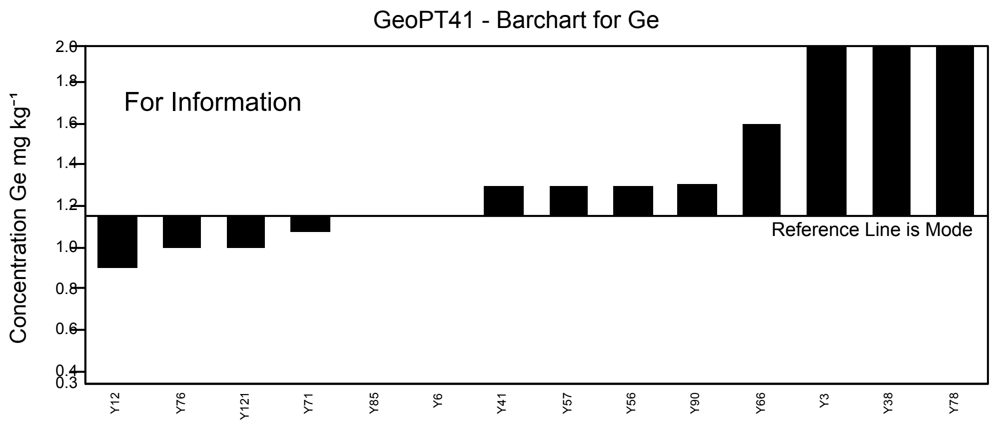


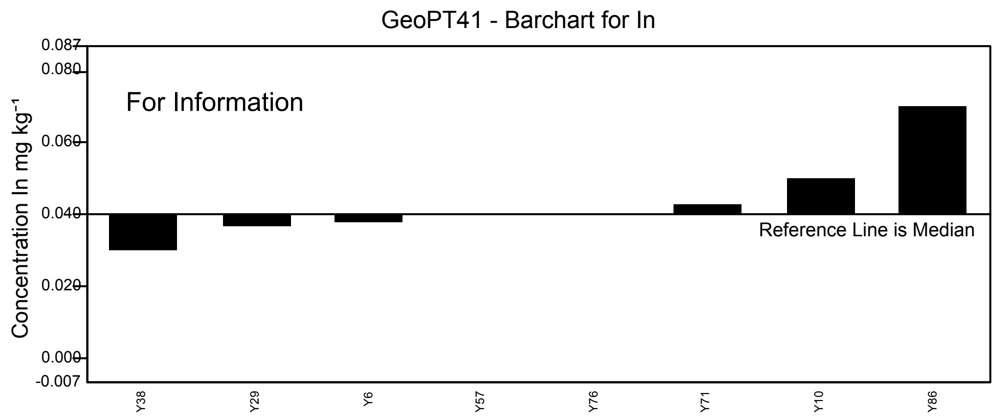

GeoPT41 - Barchart for C(tot)
Concentration C(tot) mg kg⁻¹
For Information
Reference Line is Median
281
275
255
235
215
195
175
155
144
Y10 Y86 Y2 Y6 Y119 Y76 Y48 Y72 Y77 Y45 Y96 Y66 Y71 Y28


GeoPT41 - Barchart for Cd
Concentration Cd mg kg⁻¹
For Information
Reference Line is Mode
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
-0.01
Y57 Y65 Y76 Y38 Y71 Y90 Y29 Y6 Y18 Y10 Y24 Y86 Y41 Y48 Y78


GeoPT41 - Barchart for Cl
Concentration Cl mg kg⁻¹
For Information
Reference Line is Robust Mean
138
130
120
110
100
90
80
70
65
Y90 Y51 Y16 Y18 Y6 Y66 Y93 Y102 Y50 Y78 Y96 Y35


GeoPT41 - Barchart for F
Concentration F mg kg⁻¹
For Information
Reference Line is Median
434
410
370
330
290
250
234
Y102 Y16 Y93 Y84 Y124 Y90 Y6 Y96 Y112


GeoPT41 - Barchart for Ge
Concentration Ge mg kg⁻¹
For Information
Reference Line is Mode
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.3
Y12 Y76 Y121 Y71 Y85 Y6 Y41 Y57 Y56 Y90 Y66 Y3 Y38 Y78


GeoPT41 - Barchart for In
Concentration In mg kg⁻¹
For Information
Reference Line is Median
0.087
0.080
0.060
0.040
0.020
0.000
-0.007
Y38 Y29 Y6 Y57 Y76 Y71 Y10 Y86

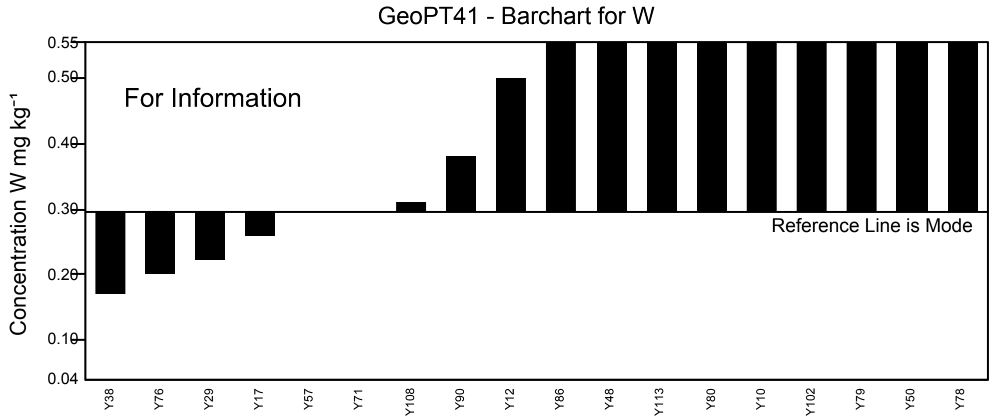


Figure 2: GeoPT41 - Andesite, ORA-1. Data distribution charts provided for information only for elements for which values could not be assigned.

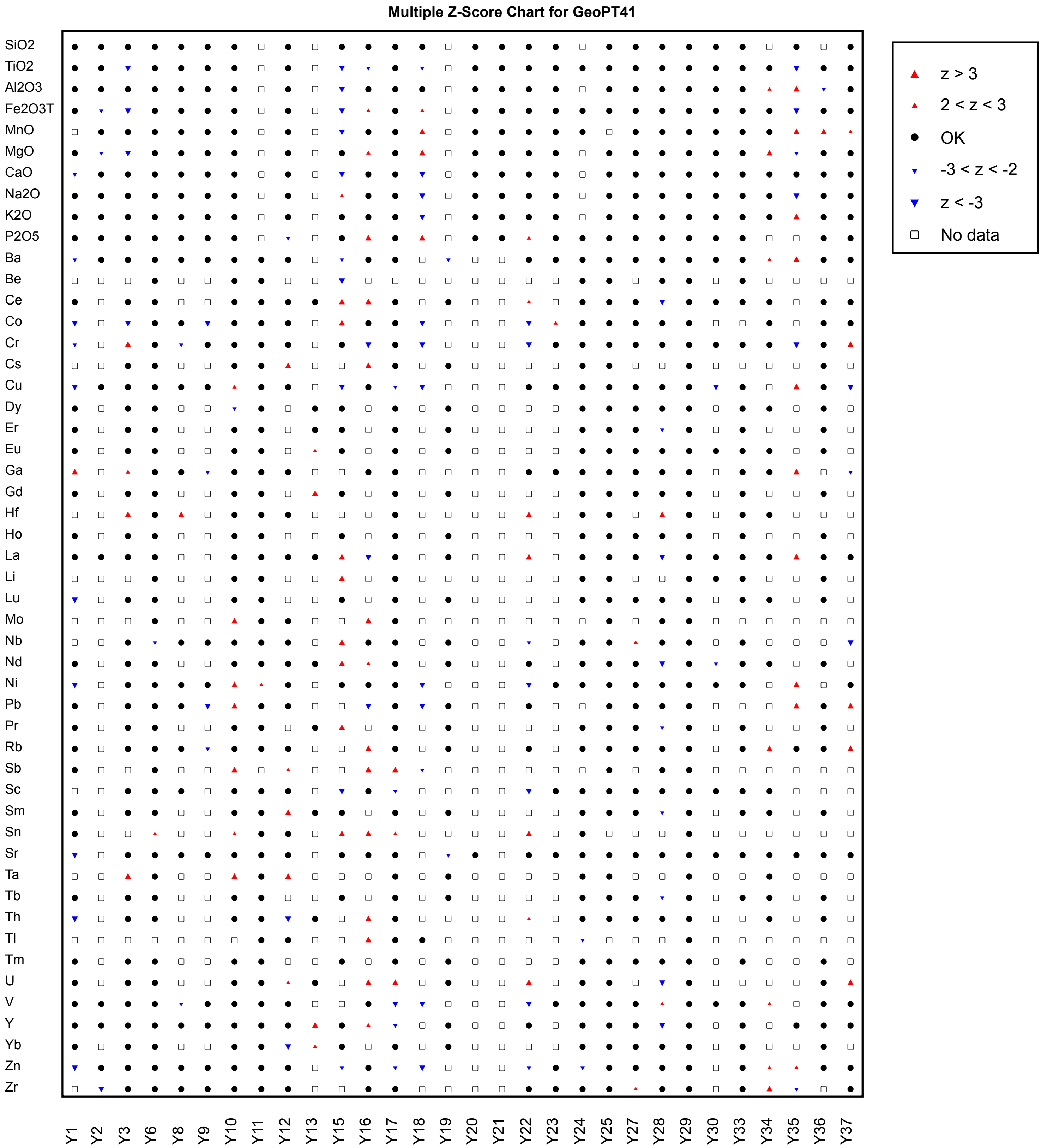


Figure 3: GeoPT41 - Andesite, ORA-1. Multiple z-score charts for laboratories participating in the GeoPT41 round. Symbols indicate whether or not an elemental result complies with the -2<z<+2 criteria (see key).

Multiple Z-Score Chart for GeoPT41

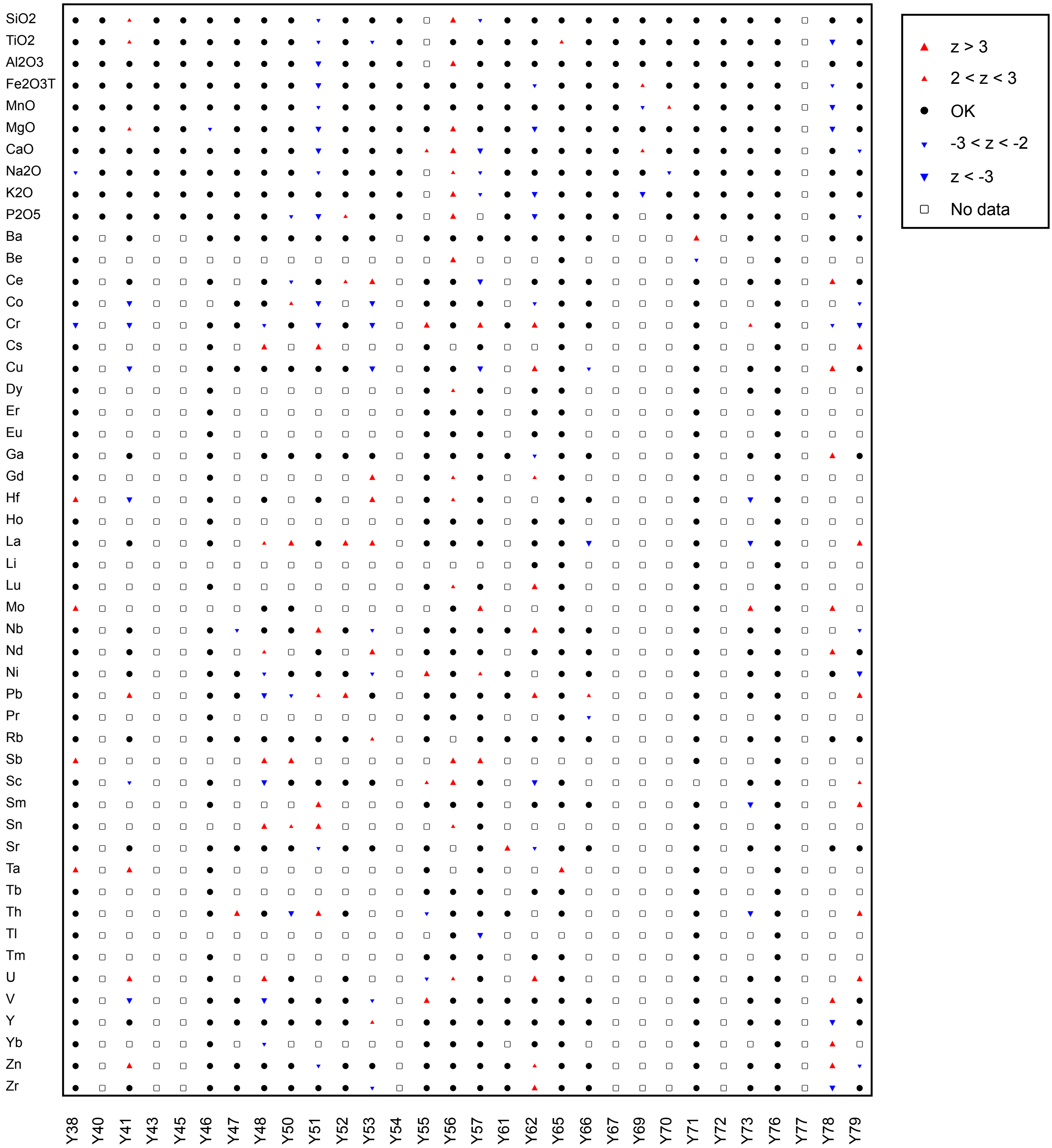


Figure 3: GeoPT41 - Andesite, ORA-1. Multiple z-score charts for laboratories participating in the GeoPT41 round. Symbols indicate whether or not an elemental result complies with the -2<z<+2 criteria (see key).

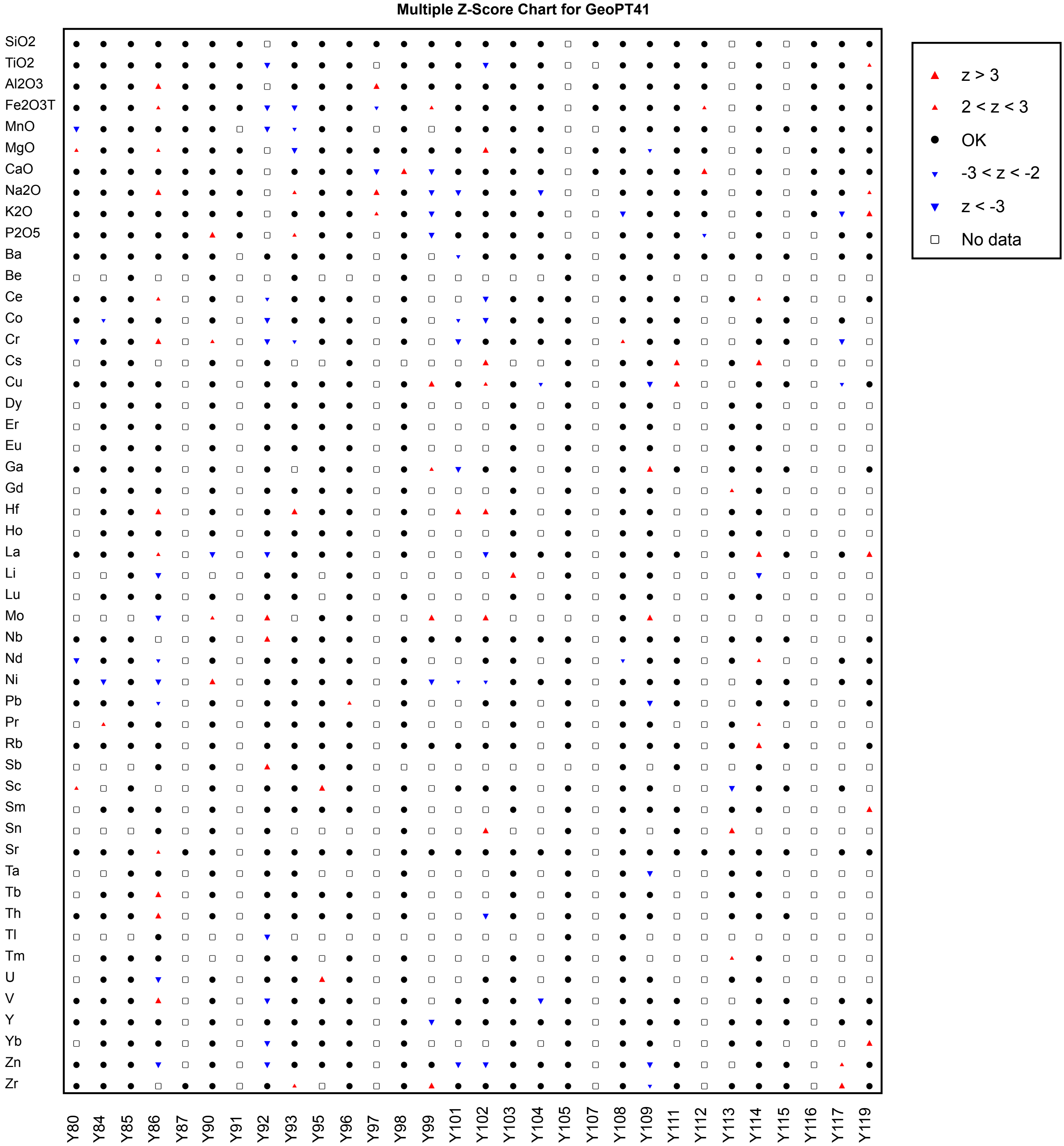


Figure 3: GeoPT41 - Andesite, ORA-1. Multiple z-score charts for laboratories participating in the GeoPT41 round. Symbols indicate whether or not an elemental result complies with the -2<z<+2 criteria (see key).

Multiple Z-Score Chart for GeoPT41

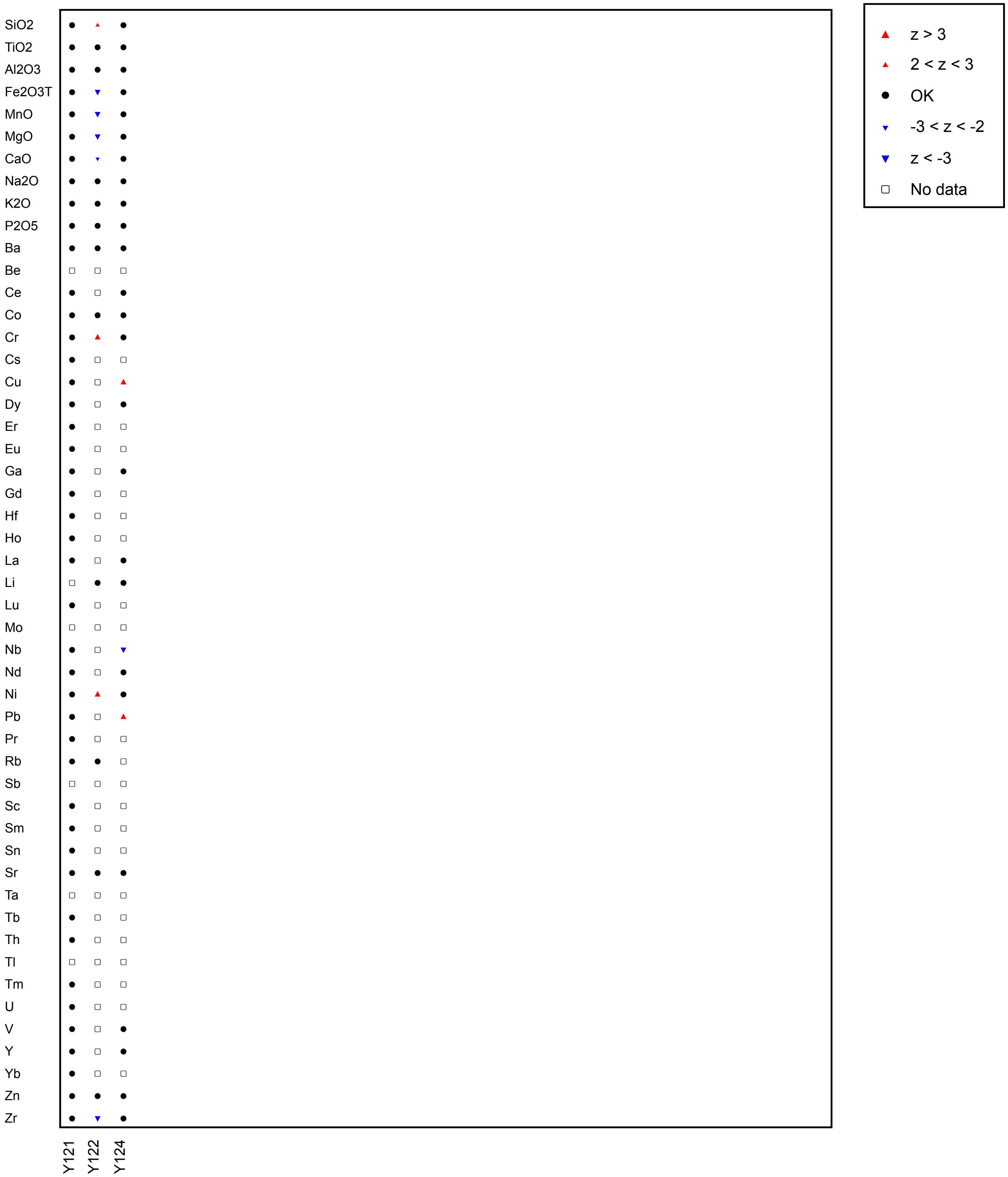


Figure 3: GeoPT41 - Andesite, ORA-1. Multiple z-score charts for laboratories participating in the GeoPT41 round. Symbols indicate whether or not an elemental result complies with the -2<z<+2 criteria (see key).