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CRB Analyse Service GmbH

GeoPT 38, England - OU-7, Gabbro

Veranstalter: International Association of Geoanalysts and Geostandards Newsletter - GeoPT38
Ringversuchsmaterial: OU-7, (Gabbro)
RV geschlossen: 2015 - 11
Literatur: Report - GeoPT38 Proficiency Testing Round 38

Hauptelemente [MA%]

	CRB	RV	1sRV	Z-Score
Na_2O	3,24	3,23	0,050	0,09
MgO	5,00	5,10	0,080	-0,61
Al_2O_3	17,07	17,02	0,222	0,12
SiO_2	51,62	51,15	0,566	0,42
P_2O5	0,203	0,201	0,005	0,20
K_2O	1,150	1,162	0,023	-0,26
CaO	9,15	9,270	0,133	-0,45
TiO_2	1,327	1,329	0,025	-0,03
Fe_2O_3 tot	10,26	10,450	0,147	-0,65
MnO	0,154	0,150	0,004	0,50
L.O.I. *	0,70	0,78	0,19	---

Spurenelemente [µg/g]

	CRB	RV	1sRV	Z-Score
Ba	431	405,0	13,1	0,99
Ce	26	37,8	1,8	-3,37
Co	38	35,6	1,7	0,72
Cr	170	175,8	6,5	-0,45
Cu	104	98,2	3,9	0,74
Ga	20	20,1	1,0	-0,05
Hf	3,8	3,17	0,2	1,47
La	15	17,4	0,9	-1,35
Nb	5	6,4	0,4	-1,76
Nd	18	20,7	1,0	-1,27
Ni	63	63,6	2,7	-0,11
Pb	3	6,3	0,4	-4,28
Pr	4	4,8	0,3	-1,38
Rb	26	27,6	1,3	-0,60
Sc	32	29,5	1,4	0,88
Sm	4	4,7	0,3	-1,11
Sr	374	367	12,1	0,28
V	273	262,0	9,1	0,61
Y	25	24,5	1,2	0,21
Zn	68	76,6	3,2	-1,35
Zr	148	133,6	5,1	1,41

Legende

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

Geo*PT*38 — AN INTERNATIONAL PROFICIENCY TEST FOR ANALYTICAL GEOCHEMISTRY LABORATORIES — REPORT ON ROUND 38 (Ardnamurchan gabbro, OU-7) / January 2016

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*Keywords: proficiency testing, quality assurance, Geo*PT*, Geo*PT*38, round 38, OU-7, gabbro*

Abstract

Results are presented for Geo*PT*38, the routine subject of round thirty-eight of the International Association of Geoanalysts' Proficiency Testing programme for analytical geochemistry laboratories. The test sample distributed in this round was a gabbro, OU-7, originally supplied by Dr J. Nicholas Walsh when at the Department of Geology, Royal Holloway, University of London and processed at The Open University. In this report, the data contributed from 104 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 thirty-eighth 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 and can choose to take corrective action if this appears justified.

Steering Committee for Round 38: P.C. Webb (results coordinator), M. Thompson (statistical advisor), P.J. Potts and C.J.B. Gowing (analytical advisors), J. Nicholas Walsh (provision of OU-7).

Timetable for Round 38:

Distribution of sample: September 2015.
Results submission deadline: 11th December 2015.
Release of report: January 2016

Test Material details

Geo*PT*38: The gabbro test material, OU-7, was originally supplied by J. Nicholas Walsh and was subsequently prepared for use as a proficiency testing material by John S. Watson at The Open University. The test material was evaluated for homogeneity by XRF analysis at The Open University, and as a result, the sample was considered suitable for use in this proficiency test.

Submission of results

3553 results were submitted for Geo*PT*38 (OU-7) by 104 laboratories as listed in Table 1. Data were submitted using the online system. In Table 1 results

designated as data quality 1 are shown in bold: results of data quality 2 are shown underlined. Results from all laboratories submitting data were used to assess respective assigned values. Again, there were 2 laboratories reporting (16) values of '0' i.e. zero, for this round. We should emphasise that as stated in the **Instructions to Analysts,** such values should not be reported. These 16 values were excluded from consideration.

Assigned values

Following procedures described in earlier rounds, a robust statistical procedure was used to derive assigned concentration values [X_a], these being judged to be the best available estimates of the true composition of this sample. Values were assigned on the basis that: (i) sufficient laboratories had contributed data for an element, and (ii) the statistical assessment gave confidence that the results distribution showed a central portion approximating to a normal distribution. Part of this assessment involved examining a bar chart of contributed data for each element to judge the distribution of results.

Table 2 lists assigned and provisional values for 10 major components and 41 trace elements in Geo*PT*38 (OU-7). Bar charts for the 51 elements/components of Geo*PT*38 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, Cd*, Ce, Co, Cr, Cs, Cu, Dy, Er, Eu, Ga, Gd, Ge*, Hf*, Ho, La, Li, Lu, Mo, Nb, Nd, Ni, Pb, Pr, Rb, Sc, Sm, Sn, Sr, Ta, Tb, Th, Tl, Tm, U, V, Y, Yb, Zn and Zr*. Of these, only provisional values were given to the 4 marked '*'. Instances of provisional status were recorded because either i) a relatively small number of measurements contributed to the consensus, or ii) the results were significantly dispersed in relation to the target value or the distribution was in part non-symmetrical.
In 20 cases the robust mean was used to define the consensus value, but in 28 cases the median value was preferred. In 3 cases a mode provided the most satisfactory consensus value, two of which were suitable for the value to be assigned, the other was given provisional status (see Table 2). The procedure used to determine the mode was based on the analysis of mixed populations detailed in Thompson (2006) and used in several rounds of Geo*PT* since round Geo*PT*23.

Bar charts for the 14 elements/components: Fe(II)O, H_2O^+, LOI, Ag, As, Bi, C(tot), Cl, F, Hg, S, Sb, Se and W are plotted in Figure 2 for information only, as the data were insufficient, highly skewed or too variable for the reliable determination of a consensus.

***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*38, 1473 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*38, 2080 results of data quality 2 were submitted.

The target standard deviation (H_a) for each element 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 concentration of the element expressed as a *fraction*; the factor k = 0.01 for pure geochemistry labs and k = 0.02 for applied geochemistry labs.
Z-scores were calculated for each elemental result submitted by each laboratory from:
$z = [X - X_a] / H_a$

where: X is the contributed result, X_a is the assigned value and H_a is the target standard deviation.

Z-score results for contributors to Geo*PT*38 are listed in Table 3. Results designated as data quality 1 are shown in bold: results of data quality 2 are shown underlined. Where *z*-scores are derived from provisional values, they are shown in italics.

Participating laboratories are invited to assess their performance using the following criterion:– *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 $-3<z<3$, it would be advisable for the contributing laboratory to examine its 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 the Geo*PT*39 round, the test sample for which will be distributed during March 2016.

Acknowledgements

The authors thank Liz Lomas for much-valued assistance in distributing this sample.

Reference

Thompson, M. (2006). Using mixture models for bump-hunting in the results of proficiency tests. Accred. Qual. Assur., 10, 501-505.

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 (Syenite, 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 / January 2014 (Granite, GRI-1). 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 / August 2014 (Tonalite, TLM-1). 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 / August 2014 (Metalliferous sediment, SdAR-H1). 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 / January 2015 (Gabbro, GSM-1). 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 / January 2015 (Metal-rich sediment, SdAR-M2). International Association of Geoanalysts: Unpublished report.

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

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

Table 1 - GeoPT38 Contributed data for Ardnamurchan Gabbro, OU-7. 11/12/2015

Lab Code		S2	S3	S4	S5	S6	S7	S8	S10	S11	S13	S15	S16	S17
SiO2	g 100g-1	**51.81**	51.68	51.318	51.2	51.47		51.27	50.97	**51.11**	**50.57**	51.02	50.45	**51.34**
TiO2	g 100g-1	**1.34**	1.3	1.304	1.33	1.28	**1.2**	1.32	1.35	**1.33**	**1.18**	1.334	1.31	**1.33**
Al2O3	g 100g-1	**17.26**	17.28	16.727	16.91	16.81		17.44	16.96	**16.81**	**18.31**	17.065	16.87	**17.12**
Fe2O3T	g 100g-1	**10.61**	9.7	10.776	10.41	10.58	**9.72**	10.35	10.55	**10.44**	**9.23**	10.33	10.38	**10.57**
Fe(II)O	g 100g-1					6.01								**5.67**
MnO	g 100g-1	**0.15**	0.13	0.143	0.15	0.14	**0.145**	0.143	0.156	**0.15**	**0.13**	0.147	0.15	**0.15**
MgO	g 100g-1	**5.23**	5.28	5.069	5.01	5.08		5.04	5.13	**5.13**	**4.65**	5.138	4.85	**5.07**
CaO	g 100g-1	**9.53**	9.87	9.228	9.32	9.3		9.11	9.338	**9.4**	**9.59**	9.337	9.18	**9.46**
Na2O	g 100g-1	**3.03**	2.52	3.162	3.22	3.18		3.02	3.13	**3.23**	**3.45**	3.239	3.32	**3.22**
K2O	g 100g-1	**1.15**	1.08	1.226	1.15	1.18	**1.03**	1.13	1.108	**1.17**	**1.37**	1.157	1.16	**1.17**
P2O5	g 100g-1	**0.2**	0.16	0.197	0.2	0.2	**0.16**	0.201	0.197	**0.21**	**0.31**	0.205	0.2	**0.21**
H2O+	g 100g-1					1.01								
CO2	g 100g-1													
LOI	g 100g-1	**0.77**	0.85	0.863	0.66	0.72		0.7	0.85	**0.71**	**1.025**		0.88	**0.85**
Ag	mg kg-1					0.091								
As	mg kg-1													
Au	mg kg-1													
B	mg kg-1		15			5								
Ba	mg kg-1	**389**	404	382	375	416	**394**	378	384	**457**		389.7		**390**
Be	mg kg-1					0.96		1.02				1.06		
Bi	mg kg-1													
Br	mg kg-1													
C(org)	mg kg-1													
C(tot)	mg kg-1													
Cd	mg kg-1					0.11	**0.113**							
Ce	mg kg-1		36.62			36.6	**37.5**	45.79	34			38.3		
Cl	mg kg-1													
Co	mg kg-1	**31**	10	41		35.8	**33.13**	30	33			37.2		**30**
Cr	mg kg-1	**190**	24.3	168	156	176	**169.4**	197	181			201		**172**
Cs	mg kg-1					0.34	**0.328**		2			0.88		
Cu	mg kg-1	**123**	21.79	101	90	113	**97.9**	84	107	**104**	**130**	110.8		**99**
Dy	mg kg-1		4.4			4.35	**4.45**	4.71				4.87		
Er	mg kg-1		2.52			2.5	**2.43**	3.16				2.66		
Eu	mg kg-1		1.51			1.54	**1.43**	1.83				1.52		
F	mg kg-1			329										
Ga	mg kg-1	**15**		15	22	20.3		17	20			21		**22**
Gd	mg kg-1		5.24			4.42	**5.92**	5.34				4.61		
Ge	mg kg-1		1			1.61		1.22						
Hf	mg kg-1			3		3		1.7				4		
Hg	mg kg-1					0.014								
Ho	mg kg-1		0.87			0.84	**0.855**					0.98		
I	mg kg-1													
In	mg kg-1													
Ir	mg kg-1													
La	mg kg-1					16.4	**17**	19.93	14			18		**20**
Li	mg kg-1		7	8		6.94		9.5						
Lu	mg kg-1		0.32			0.34	**0.31**					0.38		
Mo	mg kg-1					0.44	**0.38**	0.72				0.56		
Nb	mg kg-1	**7**	8			6.12						7.77		**5**
Nd	mg kg-1		20.43			20.5	**19.8**	21.35	21			21.6		**17**
Ni	mg kg-1	**63**	90	71	59	68	**65.7**	61	66	62		63.6		**67**
Os	mg kg-1													
Pb	mg kg-1	**7**	28	6		6.05	**5.66**	2.72			**85**	4.14		
Pd	mg kg-1													
Pr	mg kg-1		4.75			4.84						5.22		
Pt	mg kg-1													
Rb	mg kg-1	**28**				28.7	**26.1**	21	30			27.8		**25**
Re	mg kg-1													
Rh	mg kg-1													
Ru	mg kg-1													
S	mg kg-1													
Sb	mg kg-1		0.928				**0.03**							
Sc	mg kg-1	**27**	30.1		27	30.3	**26.1**	29				30.24		
Se	mg kg-1													
Sm	mg kg-1		4.57			4.44	**4.52**	4.78	4			4.94		
Sn	mg kg-1					1.45		1.55	1			1.13		
Sr	mg kg-1	**371**		362	325	364	**358.7**	349	362	**361**		360.7		**385**
Ta	mg kg-1		16.57			0.43	**2.89**					0.51		
Tb	mg kg-1		0.75			0.76	**0.74**					0.8		
Te	mg kg-1													
Th	mg kg-1		1.82			1.72	**1.51**					1.78		
Tl	mg kg-1						**0.136**					0.13		
Tm	mg kg-1		0.34			0.35	**0.344**					0.4		
U	mg kg-1					0.43	**0.35**	0.56				0.44		
V	mg kg-1	**260**			245	255	**236**	261	267	**250**		262.3		**260**
W	mg kg-1					0.71	**0.72**					1.44		
Y	mg kg-1	**24**	21.86	22		23.2		27.65	25	25		25		**24**
Yb	mg kg-1		2.22			2.27	**2.18**	2.56				2.52		
Zn	mg kg-1	**78**	110	84	72	76.1	**77.7**	84	85	72		65.3		**81**
Zr	mg kg-1	**136**		98		110	**57.8**	137	141	**136**		124.2		**144**

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

Table 1 - GeoPT38 Contributed data for Ardnamurchan Gabbro, OU-7. 11/12/2015

Lab Code		S19	S20	S21	S22	S23	S24	S25	S26	S27	S28	S29	S30	S31
SiO2	g 100g-1	51.63	51	51.11	50.89	50.04		51.26	51.84	45.2		51.44	50.672	51.31
TiO2	g 100g-1	1.4	1.33	1.414	0.14	1.349		1.326	1.35	1.01		1.31	1.269	1.33
Al2O3	g 100g-1	17.3	16.9	16.216	12.12	17.61		17.08	17.23	16		17.92	17.615	17.13
Fe2O3T	g 100g-1	10.05	10.4	10	6.27	10.57		10.48	10.36	9.55		9.94	10.448	10.45
Fe(II)O	g 100g-1													
MnO	g 100g-1	0.15	0.15	0.147	0.28	0.149		0.148	0.15	1.15	0.158	0.137	0.145	0.15
MgO	g 100g-1	4.88	5.25	4.763	2.67	5.26		5.14	5.24	7.24		4.78	6.123	5.05
CaO	g 100g-1	9.58	9.19	8.791	7.98	9.25		9.27	9.44	7.78		9.26	9.102	9.38
Na2O	g 100g-1	3.18	3.18	3.195	4.34	3.43		3.29	3.3	5.83		3.56	3.057	3.22
K2O	g 100g-1	1.22	1.11	1.104	4.43	1.17		1.17	1.17	1.08		1.1	1.358	1.16
P2O5	g 100g-1	0.21	0.19	0.192	0.41	0.208		0.206	0.21			0.215	0.208	0.2
H2O+	g 100g-1			1.32										
CO2	g 100g-1			0.229										
LOI	g 100g-1	0.4	1.13		0.89			0.8	0.855			0.67	0.752	0.92
Ag	mg kg-1								0.89					
As	mg kg-1	0.86							0.9					
Au	mg kg-1													
B	mg kg-1													
Ba	mg kg-1	389.4	392	427.3				452	424	464	413	401		405
Be	mg kg-1	0.87							0.8		1.06	0.95		
Bi	mg kg-1													
Br	mg kg-1													
C(org)	mg kg-1													
C(tot)	mg kg-1		800											
Cd	mg kg-1			0.144					0.25		0.11			0.4
Ce	mg kg-1	37.98	40.7	40.27		40.7	38.93	35	65.53	39.3	37.4	38.38		
Cl	mg kg-1								114			177		
Co	mg kg-1	34	37.8	38.54		29		35			38	32.13		32
Cr	mg kg-1	171	178	194.3		114		171	175.360	468		177		162
Cs	mg kg-1	0.327	4.46	0.364					0.41		0.34			
Cu	mg kg-1	89.87	112	104.7				93	96.43	125	98	103.5		102
Dy	mg kg-1	4.985	4.34	5.181		4.77	4.56		4.35		4.42	4.56		
Er	mg kg-1	2.695	2.61	2.922		2.67	2.53		2.45		2.49	2.66		
Eu	mg kg-1	1.513	1.42	1.644		1.65	1.46		2.05		1.54	1.5		
F	mg kg-1		353									295		
Ga	mg kg-1		20.9	21.86				20	20.69	15.5	22			
Gd	mg kg-1	5.058	4.99	5.378		5.05	4.37		5.37		4.9	4.96		
Ge	mg kg-1								1.42					
Hf	mg kg-1	1.993	4	1.989					3.42		1.6	3.6		
Hg	mg kg-1													
Ho	mg kg-1	0.955	0.87	1.015		0.95	0.88		0.85		0.89	0.91		
I	mg kg-1													
In	mg kg-1													
Ir	mg kg-1													
La	mg kg-1	17.06	19.6	18.62		18.8	17.89	14	28.59	15.7	17.7	17.05		17
Li	mg kg-1	7.3										8.7		
Lu	mg kg-1	0.337	0.36	0.359		0.31	0.37		0.26		0.32	0.36		
Mo	mg kg-1										0.45			
Nb	mg kg-1	6.009	6.2	6.69				7	6.11	4.5	6.2	6.56		
Nd	mg kg-1	20.43	20.4	22.67		22	20.99	22	40.37	28.4	20.7	20.28		
Ni	mg kg-1	59	73	70.76		60		62	76.08		70	63.56		57
Os	mg kg-1													
Pb	mg kg-1	5.772	7	7.026		7		7	6.05	18.3	6.4			6.2
Pd	mg kg-1													
Pr	mg kg-1	4.787	4.86	5.215		5.3	4.88		8.49		4.89	4.74		
Pt	mg kg-1													
Rb	mg kg-1	25.24	28.2	27.93				30	27.32	27.4	28	27.42		28
Re	mg kg-1													
Rh	mg kg-1													
Ru	mg kg-1													
S	mg kg-1		200						120	568				
Sb	mg kg-1													
Sc	mg kg-1	27.1		32.76		33.5		29	33.91	131	31	28.36		
Se	mg kg-1													
Sm	mg kg-1	4.402	4.57	5.141		4.86	4.88				4.64	4.62		
Sn	mg kg-1		1	1.371							1.2			
Sr	mg kg-1	350.3	382	368.7				381	371	387	363	370		
Ta	mg kg-1	0.375	0.3	0.532					0.32		0.37	0.42		
Tb	mg kg-1	0.774	0.76	0.828		0.78	0.78		0.83		0.77	0.76		
Te	mg kg-1									1.4				
Th	mg kg-1	1.789	5.91	1.944		1.85			1.28			1.73		
Tl	mg kg-1			0.189							0.16			
Tm	mg kg-1	0.367	0.35	0.394		0.35	0.38				0.35	0.37		
U	mg kg-1	0.385	0.52	0.378					0.41		0.37	0.4		
V	mg kg-1	227	256	301.2		181		263	242	190	277	257		222
W	mg kg-1										0.6			
Y	mg kg-1	22.4	25	24.27		25	25.11	25	16.69	21.2	23	22.78		
Yb	mg kg-1	2.284	2.28	2.581		2.16	2.51	5	1.96		2.21	2.38		
Zn	mg kg-1	66	93	89.09		69		69	86.68	69.7	85	79.38		67
Zr	mg kg-1	66.09	151	206.9				137	137.180	136		119		

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

Table 1 - GeoPT38 Contributed data for Ardnamurchan Gabbro, OU-7. 11/12/2015

Lab Code		S33	S34	S35	S37	S40	S41	S44	S46	S47	S48	S49	S50	S51
SiO2	g 100g-1	51.15	51.19	50.97	50.39	51.24	51.62	51.461		51.39	50.77	51.19		49.889
TiO2	g 100g-1	1.251	1.32	1.36	1.188	1.33	1.327	1.343	1.266	1.33	1.34	1.326	1.33	1.414
Al2O3	g 100g-1	16.78	17.07	17.21	16.84	17.1	17.07	17.068	15.76	17	16.87	17		17.603
Fe2O3T	g 100g-1	10.45	10.61	10.39	9.654	10.44	10.26	10.567	10.519	10.58	10.4	10.45		10.672
Fe(II)O	g 100g-1													
MnO	g 100g-1	0.148	0.14	0.15	0.091	0.153	0.154	0.154	0.147	0.16	0.148	0.147	0.149	0.166
MgO	g 100g-1	5.024	5.14	5.17	5.13	5.13	5	5.198	4.989	5.13	4.99	5.067		5.068
CaO	g 100g-1	9.21	9.31	8.84	9.07	9.405	9.15	9.085	8.915	9.48	9.26	9.34		9.153
Na2O	g 100g-1	3.24	3.23	3.3	3.24	3.266	3.24	3.02	3.193	2.64	3.1	3.303		3.254
K2O	g 100g-1	1.146	1.18	1.14	1.2	1.166	1.15	1.188	1.152	1.21	1.15	1.159		1.071
P2O5	g 100g-1	0.195	0.23	0.19	0.2	2.13	0.203	0.197	0.216	0.17	0.199	0.201		0.139
H2O+	g 100g-1									0.23				
CO2	g 100g-1													0.22
LOI	g 100g-1		0.79	0.68	0.8	0.667	0.7	0.7		0.68		0.678		1.05
Ag	mg kg-1								0.075					0.042
As	mg kg-1			3.4				22	0.299					0.683
Au	mg kg-1													0.001
B	mg kg-1													
Ba	mg kg-1	403	468	446	387	402	431		399.423	358		404	394	420.967
Be	mg kg-1					1.04			1.078				0.92	
Bi	mg kg-1					0.011			0.014					
Br	mg kg-1													
C(org)	mg kg-1													
C(tot)	mg kg-1	660												1647.770
Cd	mg kg-1			1		0.156			0.151					0.155
Ce	mg kg-1		34	42	22.7	35.8	26		41.36				38.2	37.547
Cl	mg kg-1													
Co	mg kg-1	35		33	16.2	36.9	38		34.583	44		205	36.3	35.7
Cr	mg kg-1	189	179	157	157	178	170		182.940	164		168	177	194.870
Cs	mg kg-1				11.2	0.331			0.352				0.34	0.376
Cu	mg kg-1	94	110	95	97.6	104	104	97	91.69	100		92.7	94.2	77.733
Dy	mg kg-1					4.62			4.785				4.58	4.747
Er	mg kg-1					2.64			2.588				2.61	2.763
Eu	mg kg-1					1.53			1.532				1.51	1.473
F	mg kg-1													
Ga	mg kg-1		20	19	18.7	20.9	20	26	20.238				20.3	93.4
Gd	mg kg-1					4.72			4.936				4.82	5.227
Ge	mg kg-1													5.013
Hf	mg kg-1			3		2.93	3.8		1.584				3.25	3.88
Hg	mg kg-1													
Ho	mg kg-1					0.94			0.942				0.92	0.936
I	mg kg-1			2										
In	mg kg-1													0.079
Ir	mg kg-1													0.000
La	mg kg-1	16	22	54	12.5	14.5	15		18.953				17.6	17.223
Li	mg kg-1					6.59			8.17				7.3	
Lu	mg kg-1					0.357			0.318				0.35	0.366
Mo	mg kg-1					0.45		1	0.477					1.063
Nb	mg kg-1		6	5	7.2	5.87	5	13	6.49				6.6	5.893
Nd	mg kg-1			18		20.4	18		23.107				20.7	21.92
Ni	mg kg-1	70	63	55	51.5	62.2	63	60	64.06	61		69.7	63.2	87.7
Os	mg kg-1													0.000
Pb	mg kg-1		10	15	7.8	5.7	3		6.13			17.7	6.25	6.167
Pd	mg kg-1													0.001
Pr	mg kg-1					4.8	4		5.212				4.84	4.573
Pt	mg kg-1													0.005
Rb	mg kg-1		31	29	29.7	28	26	30	28.829				27.7	24.263
Re	mg kg-1													0.018
Rh	mg kg-1													0.000
Ru	mg kg-1													0.000
S	mg kg-1	200				0.018								439
Sb	mg kg-1			2		0.031			0.036					0.803
Sc	mg kg-1		27	26	25.4	29.7	32			23			31.1	39.313
Se	mg kg-1								0.133					
Sm	mg kg-1			8		4.76	4		5.078				4.63	4.897
Sn	mg kg-1			7		1.16			1.175				1.2	1.743
Sr	mg kg-1		386	369	362.6	384	374	377	348.095	327		340	372	366
Ta	mg kg-1					0.381			0.454				0.4	0.310
Tb	mg kg-1					0.785			0.763				0.75	0.733
Te	mg kg-1			6		0.017								
Th	mg kg-1		2	2		1.77		2	2.02				1.73	1.808
Tl	mg kg-1					0.136			0.158					
Tm	mg kg-1					0.386			0.37				0.37	0.354
U	mg kg-1		2	2.6	7.5	0.428			0.298				0.44	0.482
V	mg kg-1	263	231	239	186	257	273		286.760	230			269	281
W	mg kg-1			25		0.809		1	0.572					2.4
Y	mg kg-1	22	26	24	24.3	26	25	22	24.474	22			25.8	23.837
Yb	mg kg-1					2.44			2.22				2.38	2.543
Zn	mg kg-1	84	67	69	65.9	71.1	68	73	83.8			91.7	77.6	72.267
Zr	mg kg-1	122	141	130	126.4	137	148	148	41.85	117		218	121	148.3

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

Table 1 - GeoPT38 Contributed data for Ardnamurchan Gabbro, OU-7. 11/12/2015

Lab Code		S52	S53	S54	S56	S57	S58	S59	S60	S61	S62	S63	S64	S65
SiO2	g 100g^{-1}		51.5	51.26	**50.65**		50.93	50.9	**51.19**	51.09	50.97	52.004	51.4	
TiO2	g 100g^{-1}	1.3	1.3	1.472	**1.3**	**1.33**	1.38	1.3	**1.34**	1.34	1.32	1.375	1.22	
Al2O3	g 100g^{-1}	16.63	16.9	17.61	**16.89**		16.54	16.92	**17.07**	16.93	17.1	17.256	16.7	
Fe2O3T	g 100g^{-1}	10.73	10.2	10.61	**10.27**		10.83	10.75	**10.45**	10.47	10.43	10.565	9.89	
Fe(II)O	g 100g^{-1}			5.51	**5.93**				**5.26**	6.21	5.8			
MnO	g 100g^{-1}	0.21	0.14	0.149	**0.151**	**0.512**	0.14	0.14	**0.148**	0.15	0.14	0.155	0.149	
MgO	g 100g^{-1}	5.12	5.01	5.129	**5.06**		5.24	5.22	**5.12**	5.08	5.13	5.088	5.41	
CaO	g 100g^{-1}	9.51	9.32	9.403	**9.26**		9.86	9.33	**9.12**	9.44	9.36	9.433	9.14	
Na2O	g 100g^{-1}	3.24	3.25	3.121	**3.29**		3.25	3.2	**3.09**	3.19	3.21	3.309	3.61	
K2O	g 100g^{-1}	1.08	1.18	1.164	**1.18**		1.17	1.16	**1.154**	1.16	1.15	1.18	1.24	
P2O5	g 100g^{-1}	0.22	0.2	0.215			0.209	0.2	**0.213**	0.21	0.2	0.204	2.61	
H2O+	g 100g^{-1}				**1.03**					1.2				
CO2	g 100g^{-1}									0.13				
LOI	g 100g^{-1}		0.78		**0.77**		0.62	0.8	**0.81**	0.86	0.66	0.75	0.84	
Ag	mg kg^{-1}			0.05	**0.11**		4.3							
As	mg kg^{-1}			0.48	**0.42**		0.7			0.9				
Au	mg kg^{-1}													
B	mg kg^{-1}				**4**									
Ba	mg kg^{-1}	391		431	**408**	**394**	441.3	410	**408**	415.1	430	406.2	456	458.5
Be	mg kg^{-1}			1.04	**0.93**			0.99			0.9	0.8		
Bi	mg kg^{-1}			0.01			0.1							
Br	mg kg^{-1}						0.4							
C(org)	mg kg^{-1}													
C(tot)	mg kg^{-1}			889	**530**		0.03			710				
Cd	mg kg^{-1}			0.11	**0.13**		8.2							
Ce	mg kg^{-1}	38.7		38	**38**	**37.9**	33.2	38.1	**45.5**	36.6	39	35.19		30
Cl	mg kg^{-1}				**130**								183	
Co	mg kg^{-1}	37.5		37.3	**35.4**	**35.6**	38.5	37	**41.6**	35.6	32	34.76		34.7
Cr	mg kg^{-1}	152		198	**197**	**183**	156.8	175	**159**	167	152	184.3	205	179.7
Cs	mg kg^{-1}			0.37	**0.39**	**0.339**		0.344		0.3				
Cu	mg kg^{-1}	93.9		85.5	**101**	**103**	92.3	100	**108**	102.2	97	100.9	85	99.2
Dy	mg kg^{-1}	4.61		4.6	**4.6**	**4.35**		4.57	**4.94**	4.38	4.25	4.58		
Er	mg kg^{-1}	2.53		2.68	**2.59**	**2.48**		2.61	**2.77**	2.42	2.49	2.61		
Eu	mg kg^{-1}	1.52		1.52	**1.54**	**1.52**		1.49	**1.78**	1.56	1.67	1.47		
F	mg kg^{-1}				**281**									
Ga	mg kg^{-1}			20.7	**20.8**		19.7	20.1	**2205**	21	20	19.37		20.4
Gd	mg kg^{-1}	4.69		4.51	**4.57**	**4.61**		4.78	**5.52**	4.83	4.85	4.21		
Ge	mg kg^{-1}			1.23	**1.38**			1.39		1				
Hf	mg kg^{-1}			3.49	**3.53**	**1.72**	2.1	3.13		3	3.6	3.38		
Hg	mg kg^{-1}				**0.01**					0.01				
Ho	mg kg^{-1}			0.91	**0.971**	**0.915**		0.923	**0.98**	0.9	0.85	0.92		
I	mg kg^{-1}													
In	mg kg^{-1}			0.05	**0.07**									
Ir	mg kg^{-1}													
La	mg kg^{-1}	17.6		17.6	**17.9**	**17.5**	28.8	17.3	**21**	16.9	17.5	16.86		14
Li	mg kg^{-1}			7.16	**7.5**	**7.84**		7.9	**10.5**		7			
Lu	mg kg^{-1}	0.31		0.34	**0.371**	**0.323**		0.349	**0.38**	0.36	0.31	0.35		
Mo	mg kg^{-1}			0.85	**0.54**		0.5							
Nb	mg kg^{-1}			5.75	**5.53**	**6.49**	5.2	6.43		7		5.43		4.94
Nd	mg kg^{-1}	21		21.1	**20.6**	**20.4**	27	20.8	**25**	19.2	22.1	20.06		
Ni	mg kg^{-1}	64.5		61.4	**65**	**64.6**	54.8	65.5	**64.7**	67	60	64.7	68	63.1
Os	mg kg^{-1}													
Pb	mg kg^{-1}	5.21		5.82	**6.25**	**6.29**	4.6	6.27		6.1		5.73		5.7
Pd	mg kg^{-1}													
Pr	mg kg^{-1}	4.86		5.23	**4.88**	**4.95**		4.79	**5.85**	4.73	4.5	4.6		
Pt	mg kg^{-1}													
Rb	mg kg^{-1}			27.7	**29.1**	**28.3**	27	27	**30.7**	28.3	27	25.98	33	28.99
Re	mg kg^{-1}			0.002										
Rh	mg kg^{-1}													
Ru	mg kg^{-1}													
S	mg kg^{-1}			164	**218**		0.006			200			221	
Sb	mg kg^{-1}			0.02		**0.031**								
Sc	mg kg^{-1}			23.6	**31.89**	**30.2**	26.4	30.4		29	31.1	29.5		27.1
Se	mg kg^{-1}			1.6	**0.09**									
Sm	mg kg^{-1}	4.67		4.37	**4.77**	**4.63**		4.68	**5.57**	4.3	4.41	4.52		
Sn	mg kg^{-1}			1.43	**1.42**	**1.29**	0.8			1				
Sr	mg kg^{-1}	367		408	**385**	**370**	357.9	374	**350**	372.2	364	365.450	383	372.320
Ta	mg kg^{-1}			0.4	**0.41**	**0.351**	0.6	0.375			1.2	0.33		
Tb	mg kg^{-1}	0.72		0.75	**0.734**	**0.744**		0.754	**0.86**	0.77	0.76	0.75		
Te	mg kg^{-1}						0.8							
Th	mg kg^{-1}	2.73		1.94	**1.76**	**1.72**	3.7	1.7	**1.88**	1.7	1.9	1.71		
Tl	mg kg^{-1}			0.14							0.17			
Tm	mg kg^{-1}	0.35		0.37	**0.366**			0.373	**0.41**	0.37	0.33	0.37		
U	mg kg^{-1}	0.37		0.48	**0.42**	**0.36**	1.8	0.424	**0.45**	0.43	0.29			
V	mg kg^{-1}	264		271	**246**	**268**	205.4	265	**250**	253	255	264.3		250.9
W	mg kg^{-1}			0.52	**0.89**		1.9							
Y	mg kg^{-1}	26.8		25.1	**24.6**	**26**	23.3	25.6	**25.7**	24.4	24.5	21.84		25.31
Yb	mg kg^{-1}	2.2		2.41	**2.47**	**2.22**	0.3	2.35	**2.5**	2.3	1.96	2.39		
Zn	mg kg^{-1}	75.3		76.6	**91.5**	**81.4**	65.3	80.1	**76.7**	77	71	83.3	72	73.76
Zr	mg kg^{-1}			128	**139**	**61**	118.3	122	**116**	127	139	124.410	217	134.2

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

Table 1 - GeoPT38 Contributed data for Ardnamurchan Gabbro, OU-7. 11/12/2015

Lab Code		S66	S68	S69	S70	S71	S72	S73	S74	S75	S77	S78	S79	S80
SiO2	g 100g-1	51.392	50.8	51.35	51.6	51.15	50.582	51.469	50.8	51.078	50.01	51.359		50.97
TiO2	g 100g-1	1.321	1.32	1.33	1.34	1.33		1.338	1.34	1.346	1.35	1.441		1.3
Al2O3	g 100g-1	17.225	18.4	16.83	16.96	17.13		17.28	16.87	16.909	16.98	17.83		16.93
Fe2O3T	g 100g-1	10.37	10.5	10.46	10.14	10.71		10.516	10.46	10.562	10.71	1.492	23.212	10.64
Fe(II)O	g 100g-1													
MnO	g 100g-1	0.150	0.15	0.151	0.15	0.16		0.157	0.15	0.156	0.157	0.143	0.055	0.145
MgO	g 100g-1	5.177	5.15	5.18	5.25	4.84		5.251	5.1	5.089	5.24	5.771		5.14
CaO	g 100g-1	9.178	9.3	9.36	9.13	9.28		9.336	9.23	9.328	9.76	9.417	3.650	9.47
Na2O	g 100g-1	3.301	2.97	3.15	3.02	2.99		3.253	3.16	3.217	3.32	3.228	1.72	3.26
K2O	g 100g-1	1.172	1.13	1.17	1.14	1.21		1.161	1.16	1.148	1.21	1.165		1.09
P2O5	g 100g-1	0.217	0.2	0.201	0.19	0.21		0.209	0.2		0.21	0.235		0.2
H2O+	g 100g-1													
CO2	g 100g-1													
LOI	g 100g-1	0.72	0.76	0.82	0.75	0.87	0.667	0.735	1.34	0.846	0.62	0.47		0.54
Ag	mg kg-1													
As	mg kg-1												10.2	
Au	mg kg-1													
B	mg kg-1													
Ba	mg kg-1	424.1	420		396	405		457	429.2	444.6	419	423	70	425
Be	mg kg-1	0.892			0.86							1.2		1.23
Bi	mg kg-1	0.030												
Br	mg kg-1													
C(org)	mg kg-1													
C(tot)	mg kg-1													
Cd	mg kg-1	0.116			0.04							0.22	0.082	
Ce	mg kg-1	39.5			37.2			42.65	40.8		42	36.71		37.1
Cl	mg kg-1													
Co	mg kg-1	36.28			34.7	32			30.5		31	33.5	23.7	37.6
Cr	mg kg-1	156.250			167	158		219	157.1	195	157	185.2	47.8	180
Cs	mg kg-1	0.369			0.34							0.335		0.34
Cu	mg kg-1	103.450			101	96		127	97.2		98	79	74.9	102
Dy	mg kg-1	4.771			4.65							4.632		4.31
Er	mg kg-1	2.483			2.61							2.565		2.51
Eu	mg kg-1	1.522			1.47							1.474		1.41
F	mg kg-1													
Ga	mg kg-1	20.726			20			20.95	19		20	18.6		20.5
Gd	mg kg-1	4.548			4.63							4.59		4.68
Ge	mg kg-1								1.9					
Hf	mg kg-1	2.931			3.07				4.3		4.4	3.34		2.95
Hg	mg kg-1													0.012
Ho	mg kg-1	0.997			0.92							0.915		0.89
I	mg kg-1													
In	mg kg-1													
Ir	mg kg-1													
La	mg kg-1	19.435			17.4			23.7	21.3		15	17.13		17.7
Li	mg kg-1	7.824			7.42							6.86		7.4
Lu	mg kg-1	0.359			0.36							0.36		0.33
Mo	mg kg-1	0.526											0.37	0.55
Nb	mg kg-1	6.702			6.3			5.45	5.7			5.65		7.5
Nd	mg kg-1	21.45			21.5				22.3		21	19.347		20.2
Ni	mg kg-1	70.57			59.5	58		59.55	55.8		58	63.72	48.6	64
Os	mg kg-1													
Pb	mg kg-1	5.737			6.67			8.3	6.6			3.829	4.3	6.5
Pd	mg kg-1													
Pr	mg kg-1	5.248			4.93							4.802		4.95
Pt	mg kg-1													
Rb	mg kg-1	27			26.4	27		27.9	25.5		29	27.2		28
Re	mg kg-1													
Rh	mg kg-1													
Ru	mg kg-1													
S	mg kg-1													
Sb	mg kg-1	0.035										0.403	0.079	
Sc	mg kg-1	30.462			30.2	27			26.2		26	28		36.7
Se	mg kg-1													
Sm	mg kg-1	4.677			4.62							4.536		4.54
Sn	mg kg-1	1.21											0.88	1.3
Sr	mg kg-1	360.7	350		355	366		1049	354		343	366		388
Ta	mg kg-1	0.371			0.43				2.8			0.296		1.1
Tb	mg kg-1	0.749			0.79							0.699		0.73
Te	mg kg-1													
Th	mg kg-1	2.19			1.67							1.64		1.87
Tl	mg kg-1											0.133		0.14
Tm	mg kg-1	0.365			0.38							0.365		0.34
U	mg kg-1	0.473			0.41							0.13		0.38
V	mg kg-1	269.760			265	227		466.6	235.2		229	256	238.3	250
W	mg kg-1													
Y	mg kg-1	29.46			25	24		24.65	23.8			24.5		25
Yb	mg kg-1	2.354			2.41							2.404		2.22
Zn	mg kg-1	76.53			77.1	66		72.1	61.7		59	79.7	57.2	74
Zr	mg kg-1	128.7	140		110	143		140.9	132.7		127	134.5		120

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

Table 1 - GeoPT38 Contributed data for Ardnamurchan Gabbro, OU-7. 11/12/2015

Lab Code		S81	S82	S83	S84	S85	S86	S87	S88	S89	S90	S91	S92	S93
SiO2	g 100g-1	51.21	48.6	50.2	49.561	51.54	50.7	50.55	50.98			57.07	51.66	50.76
TiO2	g 100g-1	1.33	1.35	1.29	1.235	1.32	1.32	1.32	1.32	0.186		1.33	1.327	1.3
Al2O3	g 100g-1	16.88	17.4	16.57	16.01	16.91	16.8	17.11	16.9	5.379	18.6	16.62	17.28	17.11
Fe2O3T	g 100g-1	10.4	9.74	10.45	9.808	10.45	10.3	9.53	10.42	4.49	10.47	10.6	10.4	10.49
Fe(II)O	g 100g-1									4.041				5.89
MnO	g 100g-1	0.15	0.14	0.15	0.13	0.15	0.152	0.14	0.15	0.043	0.16	0.15	0.146	0.15
MgO	g 100g-1	5.01	4.7	4.86	0.427	4.99	4.96	6.59	5.05	2.275	10.12	5.08	5.095	5.09
CaO	g 100g-1	9.14	9.44	8.69	8.626	9.21	9.05	9.11	9.28	2.498	9.51	8.91	9.365	9.22
Na2O	g 100g-1	3.3	3.48	3.15	2.771	3.17	3.19	3.45	3.28	0.613	3.59	3.21	3.203	3.39
K2O	g 100g-1	1.16	1.32	1.11		1.15	1.15	1.19	1.16	0.19	1.14	1.13	1.162	1.14
P2O5	g 100g-1	0.2	0.3	0.19		0.21	0.196	0.21	0.201				0.200	0.18
H2O+	g 100g-1													1.09
CO2	g 100g-1										0.23			0.29
LOI	g 100g-1	0.75		0.79		0.63	0.715		0.69					
Ag	mg kg-1									0.08				
As	mg kg-1			0.74	0.566					0.21			0.237	
Au	mg kg-1												0.003	
B	mg kg-1									0.49				
Ba	mg kg-1		495	389			395	352	398	65.74	421.229	440	400.5	391
Be	mg kg-1			0.9						0.12	1.07		0.86	
Bi	mg kg-1			2.1						0.01				
Br	mg kg-1											0.6		
C(org)	mg kg-1													
C(tot)	mg kg-1					713					0.06			
Cd	mg kg-1				0.176					0.06	0.298		0.13	
Ce	mg kg-1			36.5	11.831		31.5	33	35.7	22		36.23	38.35	43
Cl	mg kg-1		183									113		77
Co	mg kg-1			37.6	31.88		34.1	29		18.9	37.931	36.3	35.65	33
Cr	mg kg-1		125	186	71.314		154	136	180	18	175.678	182	178	172
Cs	mg kg-1								0.37			0.5	0.413	
Cu	mg kg-1		160	98.3	208.305		97	92		89.67	115.959		104	75
Dy	mg kg-1			4.61				4	4.2	1.9		5.22	3.877	
Er	mg kg-1			2.77				2.5	2.42	1.05			2.213	
Eu	mg kg-1			1.48				1.4	1.5	0.44		1.54	1.435	
F	mg kg-1													386
Ga	mg kg-1			20.8			17.6		19.7		22.205	13.1	19.7	20
Gd	mg kg-1			4.92				4.5	4.76	2.81			3.847	
Ge	mg kg-1			2						0.08				
Hf	mg kg-1			6.1					3.9			3.382	3.515	6
Hg	mg kg-1										0.012		0.01	
Ho	mg kg-1			0.95					0.88	0.37			0.969	
I	mg kg-1													
In	mg kg-1													
Ir	mg kg-1													
La	mg kg-1			16.7			15.8	16	15.8	9		16.73	17.15	16
Li	mg kg-1			6				19		2.67	9.676			
Lu	mg kg-1			0.36				0.4	0.37	0.1		0.368	0.364	
Mo	mg kg-1				0.442					0.26	0.473			
Nb	mg kg-1			6.1			7.41	16	5.9	0.06				80
Nd	mg kg-1			20			22.3	20	19.7	13.1		17.5	20.3	26
Ni	mg kg-1		52.3	73			61.7	50		44.11	70.969		57.45	59
Os	mg kg-1													
Pb	mg kg-1			3.9			5.49			3.46	6.65		6.507	7
Pd	mg kg-1													
Pr	mg kg-1			4.76				4.5	4.83	3.08			4.423	
Pt	mg kg-1													
Rb	mg kg-1		34.9	27.5	23.934		24.6	26	25.5	5	29.303	33.8	26.95	26
Re	mg kg-1													
Rh	mg kg-1													
Ru	mg kg-1													
S	mg kg-1		244								0.02			95
Sb	mg kg-1			0.24	0.716								0.048	8
Sc	mg kg-1			32.4	10.176		20.7	19		2.29		30.53	30.4	331
Se	mg kg-1			2.31						0.04			0.173	
Sm	mg kg-1			4.57	0.973			6	4.49	2.63		4.552	4.93	
Sn	mg kg-1				1.759					0.19				3
Sr	mg kg-1	370	408	355.5	365.211		340	330	367	84	401.245	424	361.5	347
Ta	mg kg-1											0.35	0.393	
Tb	mg kg-1			0.78					0.7	0.37		0.667	0.728	
Te	mg kg-1										0.03			
Th	mg kg-1			2.5	0.447				1.82	1.36		1.723	1.825	5
Tl	mg kg-1									0.06	0.13			
Tm	mg kg-1			0.4					0.34	0.13			0.313	
U	mg kg-1			0.48	0.17					0.12	0.394		0.438	
V	mg kg-1		312	268	309.769		223		279	58	301.058	271	263.7	273
W	mg kg-1				2.387					0.11			1.001	
Y	mg kg-1			22.4	7.563		23.9	20	22.9	10			21.4	21
Yb	mg kg-1			2.5				2.2	2.23	0.77		2.485	2.445	
Zn	mg kg-1		75.8	71.9	60.574		62.3	84		25.28	15.418	86.1	88.5	71
Zr	mg kg-1		120	124.8	156.064		124	105	150	4.73			128	124

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

Table 1 - GeoPT38 Contributed data for Ardnamurchan Gabbro, OU-7. 11/12/2015

Lab Code		S94	S96	S97	S98	S99	S100	S101	S102	S103	S104	S105	S108	S109
SiO2	g 100g-1	52.82	51.4	53.26	51.103	50.298	51.28	51.25	51.011	52.7	51.81	51.25	51.05	51.16
TiO2	g 100g-1	1.39	1.39	1.272	1.321	1.278	1.3	1.31	1.301	1.24	1.35	1.29	1.34	1.345
Al2O3	g 100g-1	16.5	16.4	16.691	17.12	17.336	17	17.12	16.941	16.26	16.77	16.81	17.06	16.99
Fe2O3T	g 100g-1	9.34	10.8	10.469	10.406	10.531	10.22	10.36	10.509	9.31	10.31	10.54	10.51	10.63
Fe(II)O	g 100g-1								5.837		5.98			
MnO	g 100g-1	0.13	0.083	0.153	0.16	0.153	0.15	0.148	0.154	0.14	0.146	0.15	0.15	0.152
MgO	g 100g-1	4.88	4.74	4.945	5.123	6.015	5.11	5.06	5.077	5.39	5.17	5.1	5.05	5.09
CaO	g 100g-1	8.72	8.95	8.872	9.32	9.031	9.31	9.26	9.150	9.2	9.28	9.36	9.31	9.32
Na2O	g 100g-1	3.06	3.55	3.153	3.258	3.235	3.15	3.23	3.184	3.28	3.01	3.15	3.19	3.13
K2O	g 100g-1	1.12	1.32	1.183	1.171	1.182	1.16	1.16	1.151	1.21	1.17	1.15	1.16	1.16
P2O5	g 100g-1	0.23	0.23	0.198	0.206	0.214	0.2	0.202	0.201	0.24	0.195	0.2	0.211	0.199
H2O+	g 100g-1								1.033					
CO2	g 100g-1													
LOI	g 100g-1	1.8	0.9	0.821	0.67	0.911	0.89	0.706	0.658	0.68	0.66	0.55	0.61	0.39
Ag	mg kg-1													
As	mg kg-1	0.7	0.401							3.28				
Au	mg kg-1													
B	mg kg-1													
Ba	mg kg-1	421.220		366.4	429		291		408.680	260	421	453	404	393
Be	mg kg-1	1.06							1.013				1	
Bi	mg kg-1													
Br	mg kg-1											5		
C(org)	mg kg-1													
C(tot)	mg kg-1								516				700	
Cd	mg kg-1		0.11						0.124		0.138		0.12	
Ce	mg kg-1	38.14		38.79	39		20		40.03	37.71	42.6	56	40.7	38.1
Cl	mg kg-1											54		
Co	mg kg-1	30.81	19	36.5	40.6				36.42	15.3	43.7	42	34.8	
Cr	mg kg-1	179.2	17	133.6	167.1		114		186.5	241	152	190	215	183
Cs	mg kg-1	0.29							0.345	0.01	0.368		0.4	
Cu	mg kg-1	96.72	97	90.54	95.9		42		105.7	84	94	92	98	101
Dy	mg kg-1	4.31		4.47					4.565	4.45	4.82		4.2	4.89
Er	mg kg-1	2.25		2.64					2.612	2.69	2.64		2.8	2.69
Eu	mg kg-1	1.68		1.56					1.507	1.56	1.83		1.6	1.56
F	mg kg-1											218		
Ga	mg kg-1	22.09		18.19	19.4		7		20.208		22.8	19	20.6	20
Gd	mg kg-1	4.62		4.97					4.693	4.98	5.07	5	5	
Ge	mg kg-1	1.01										1	1	
Hf	mg kg-1	2.83		4.87	2.6				2.78	2.72		4	3.8	3.59
Hg	mg kg-1													
Ho	mg kg-1	0.74		0.8					0.915	0.98	0.945		1	0.99
I	mg kg-1													
In	mg kg-1								0.063		0.061		0.07	
Ir	mg kg-1													
La	mg kg-1	17.79		18.67	19		11		17.581	17.77	19.8	17	18.2	17.68
Li	mg kg-1	8.44		16.59					7.62				7.9	
Lu	mg kg-1	0.37		0.31					0.347	0.301	0.325		0.4	0.36
Mo	mg kg-1								0.521	0.72			0.4	
Nb	mg kg-1	11.93		5.04	5				6.122	9.7	4.9	5	6.6	6.09
Nd	mg kg-1	22.85		21.59	26.5				20.439	20.64	24.1	24	20.4	20.52
Ni	mg kg-1	57.14	47	44.71	59.7		45		66.89	99.3	80.1	70	65.2	69
Os	mg kg-1													
Pb	mg kg-1	5.86	4		7.5		7		5.82	7.8	6.39	2	7	6.63
Pd	mg kg-1													
Pr	mg kg-1	5.45		4.04					4.799	4.7	5.63		5.2	4.91
Pt	mg kg-1													
Rb	mg kg-1	26.14		21.03	27.2		17		27.85	25.88	28.3	33	28.6	26.8
Re	mg kg-1													
Rh	mg kg-1													
Ru	mg kg-1													
S	mg kg-1								218			105	214	
Sb	mg kg-1	0.05	0.15	17.59					0.04					
Sc	mg kg-1	32.79		28.92	28.3				31.2	10.9	31.2	27	30	29.9
Se	mg kg-1		0.127							15				
Sm	mg kg-1	4.9		4.75					4.74	4.711	5.51		5.3	4.68
Sn	mg kg-1	1.25			1.45				1.43				1.2	
Sr	mg kg-1	367.380		387.5	370		174		366.650	318	403	354	380	362
Ta	mg kg-1	1.5		0.41					0.327	0.55			0.38	0.55
Tb	mg kg-1	0.69		0.76					0.721	0.81	0.815		0.8	0.81
Te	mg kg-1		0.047											
Th	mg kg-1	1.89		1.89	2.2				1.813	1.79	1.59		1.8	1.94
Tl	mg kg-1		0.044						0.146		0.157		0.16	
Tm	mg kg-1	0.37		0.35					0.369	0.37	0.361			0.38
U	mg kg-1	0.32		0.45					0.42	0.397	0.31		0.35	0.45
V	mg kg-1	262.090	75	229.2	231.2		151		268.770	232	224	283	266	269
W	mg kg-1				8.5				0.521				0.6	
Y	mg kg-1	24.47		23.02	22.8		9		25.092	33	24.7	25	23.5	24.55
Yb	mg kg-1	2.44		1.75	1.2				2.341	2.38	2.24		2.9	2.35
Zn	mg kg-1	75.38	91	56.82	71.1		96		78.2	65	98.6	81	82.7	83
Zr	mg kg-1	91.4		71.56	134.5		91		103.3	159	128	106	147	138

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

Table 1 - GeoPT38 Contributed data for Ardnamurchan Gabbro, OU-7. 11/12/2015

Lab Code		S110	S111	S114	S115	S116	S117	S118	S119	S120	S121	S122	S123	S124
SiO2	g 100g-1	51.59	51.4	49.562	50.49	50.968	51.1	51.35			51.14			50.74
TiO2	g 100g-1	1.37	1.36	1.273	1.32	1.377	1.35	1.33			1.35			1.23
Al2O3	g 100g-1	17.15	17.18	17.257	16.92	16.917	17.6	17.1			17.26			17.5
Fe2O3T	g 100g-1	10.55	10.54	10.046	10.24	10.707	10.5	10.2			10.55			9.92
Fe(II)O	g 100g-1						5.65							
MnO	g 100g-1	0.16	0.49	0.145	0.15	0.153	0.14	0.15			0.15			0.13
MgO	g 100g-1	5.14	5.18	4.68	5.37	5.169	4.97	5.04			5.07			5.56
CaO	g 100g-1	9.39	9.33	8.294	9.28	9.382	8.98	8.93			9.11			8.88
Na2O	g 100g-1	3.3	3.25	3.517	3.32	3.242	2.73	3.23			3.26			3.33
K2O	g 100g-1	1.17	1.17	1.224	1.15	1.169	1.1	1.16			1.22			1.3
P2O5	g 100g-1	0.206	0.2	0.179	0.2	0.206	0.18	0.2			0.2			0.23
H2O+	g 100g-1													
CO2	g 100g-1													
LOI	g 100g-1	0.7	0.66	0.843		0.71	1.18	0.85			0.69			0.98
Ag	mg kg-1		0.11				0.29							
As	mg kg-1		1.2											
Au	mg kg-1						0.008							
B	mg kg-1		3.2											
Ba	mg kg-1	402	436	408.4	380	408.4	341	434		396.360	380		395.581	407
Be	mg kg-1		0.9	1.006	0.4		0.82	0.96			0.95			0.989
Bi	mg kg-1		0.01											
Br	mg kg-1													
C(org)	mg kg-1		0.08											
C(tot)	mg kg-1	0.000												
Cd	mg kg-1						0.21							
Ce	mg kg-1	41.6	45.92	37.53	36.27		37.76	37.5	38.83	38.75	37.9	5.48	0.402	34.653
Cl	mg kg-1													
Co	mg kg-1		36	31.34	52	35.9	44.7	35.8		34.95	35.9			54
Cr	mg kg-1	190	170	173	180	184.7	147	176.6		178.7	176			177
Cs	mg kg-1	0.34	0.38	0.406				0.4		0.327	0.33			
Cu	mg kg-1		96	93.16	103	103.6	95.6	84.3		94.26	101			102
Dy	mg kg-1	4.47	4.93	4.486	3.98		3.29	4.4	4.47	4.56	4.57		4.413	4.279
Er	mg kg-1	2.65	2.86	2.534	2.58		2.79	2.5	2.7	2.47	2.66		2.618	2.616
Eu	mg kg-1	1.4	1.58	1.476	1.49		1.29	1.5	1.5	1.427	1.5		1.593	1.526
F	mg kg-1		200											
Ga	mg kg-1	17.6	21.19	19.245	20			18.3		20	20.4		20.954	20
Gd	mg kg-1	4.93	5.36	4.74	4.54		5.11	4.5	4.95	4.98	4.85		3.751	5.093
Ge	mg kg-1		1.44		1.18									1.076
Hf	mg kg-1	4.1	1.67	1.554	2.49			3.3		1.76	3.1		3.869	3.679
Hg	mg kg-1		0.02											
Ho	mg kg-1	0.92	0.99	0.925	0.84		1.63	0.9	0.87	0.908	0.93		0.855	0.836
I	mg kg-1													
In	mg kg-1													
Ir	mg kg-1													
La	mg kg-1	18.7	20.76	16.929	16.49		15.7	17.7	17.94	17.91	17.4	2.57	18.094	15.813
Li	mg kg-1		6	7.769							7.27			
Lu	mg kg-1	0.37	0.33	0.317	0.36		1.01	0.35	0.35	0.343	0.35		0.383	0.367
Mo	mg kg-1		0.54	0.556	0.68			0.5						
Nb	mg kg-1	6.3	6.93	6.759	7	6.4		6.5		6.62	6.74		7.954	8
Nd	mg kg-1	20.6	23	20.45	18.1		21.8	20.2	20.32	21.14	20.7	3.83	19.974	20.185
Ni	mg kg-1		68	63.647	70	66.1	59.4	63.6		67.61	66			65
Os	mg kg-1													
Pb	mg kg-1		9.3	6.158	15	13.9	5.19	10.3		6.19	6.03			15
Pd	mg kg-1													
Pr	mg kg-1	5.15	5.48	4.824	4.48			4.8	4.92	5	4.82	2.78	5.012	4.298
Pt	mg kg-1						0.003							
Rb	mg kg-1	28.6	23	27.321	37	27.9		27.3		27.12	26.9		30.207	35
Re	mg kg-1													
Rh	mg kg-1													
Ru	mg kg-1													
S	mg kg-1						214							
Sb	mg kg-1		0.06				0.1							
Sc	mg kg-1		28	30.15	28		29.7	29.9		29.46	30.6		22.169	28
Se	mg kg-1													
Sm	mg kg-1	4.41	5.07	4.586	4.74		4.66	4.5	4.38	4.5	4.63	3	4.768	4.704
Sn	mg kg-1	1	1.26		1.24			1.1			1.21		4.171	1.153
Sr	mg kg-1	409	368	371.9	405	377.1	363	353.8		369.020	374		349.936	395
Ta	mg kg-1	0.4	0.4	0.371	0.38			0.3		0.349	0.38		0.671	0.277
Tb	mg kg-1	0.79	0.8	0.748	0.79		1.27	0.7	0.77	0.77	0.76		0.716	0.785
Te	mg kg-1													
Th	mg kg-1		1.87	1.622	15	0.5		1.7	1.8	1.83	1.76		1.841	17
Tl	mg kg-1		0.15					0.2						
Tm	mg kg-1	0.36	0.39		0.39		0.51	0.3	0.38	0.365	0.39		0.405	0.397
U	mg kg-1	0.53	0.33	0.322	0.39			0.4	0.4	0.396	0.45		1.01	0.39
V	mg kg-1	272	250	260.420	233	256.4	252	264.2		260.280	267			241
W	mg kg-1		0.69		0.18			0.7					1.905	
Y	mg kg-1		25	26.05	38	25.9	22.2	25.1	23.2	25.19	25.9		25.157	40
Yb	mg kg-1		2.44	2.22	2.22		2.26	2.3	2.42	2.25	2.39		2.261	2.317
Zn	mg kg-1		83	79.292	85	72.6	78.7	76.7		74.74	79.3			85
Zr	mg kg-1		143	55.24	137	139.7	64	127.7		58.75	117		146.759	134

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

Table 2 - GeoPT38 Assigned values and statistical summary for Ardnamurchan Gabbro, OU-7.

	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	51.15	0.03929	0.5658	0.06943	89	51.12	0.4727	51.15	Assigned	Median
TiO2	1.329	0.003288	0.02546	0.1291	94	1.322	0.03809	1.329	Assigned	Median
Al2O3	17.02	0.03402	0.2221	0.1531	92	17.02	0.3263	17	Assigned	Robust Mean
Fe2O3T	10.45	0.01835	0.1468	0.125	94	10.39	0.2734	10.45	Assigned	Median
MnO	0.15	0.0006021	0.003991	0.1509	97	0.1488	0.00741	0.15	Assigned	Median
MgO	5.097	0.01627	0.07978	0.204	92	5.097	0.1561	5.098	Assigned	Robust Mean
CaO	9.27	0.01999	0.1326	0.1507	93	9.232	0.222	9.27	Assigned	Median
Na2O	3.23	0.01076	0.05415	0.1987	93	3.217	0.1281	3.23	Assigned	Median
K2O	1.162	0.003767	0.02272	0.1658	92	1.162	0.03613	1.16	Assigned	Robust Mean
P2O5	0.201	0.001119	0.005118	0.2187	86	0.2041	0.01111	0.201	Assigned	Median
	mg kg^{-1}	mg kg^{-1}	mg kg^{-1}			mg kg^{-1}	mg kg^{-1}	mg kg^{-1}		
Ba	405	2.573	13.12	0.1961	85	408.3	27.45	405	Assigned	Median
Be	0.9551	0.01893	0.07692	0.2461	33	0.9551	0.1087	0.96	Assigned	Robust Mean
Cd	0.134	0.006978	0.0145	0.4811	26	0.1541	0.07143	0.134	Provisional	Median
Ce	37.77	0.414	1.749	0.2367	73	37.77	3.537	37.98	Assigned	Robust Mean
Co	35.6	0.4165	1.663	0.2504	73	35.05	4.222	35.6	Assigned	Median
Cr	175.8	1.82	6.46	0.2817	84	172.6	19.43	175.8	Assigned	Median
Cs	0.352	0.00585	0.03294	0.1776	37	0.3638	0.04485	0.352	Assigned	Median
Cu	98.21	0.9794	3.938	0.2487	83	98.21	8.923	98	Assigned	Robust Mean
Dy	4.522	0.03584	0.2882	0.1243	54	4.522	0.2634	4.56	Assigned	Robust Mean
Er	2.61	0.01731	0.1807	0.0958	53	2.596	0.13	2.61	Assigned	Median
Eu	1.518	0.01046	0.114	0.09171	54	1.518	0.07686	1.517	Assigned	Robust Mean
Ga	20.1	0.1811	1.023	0.1769	64	20.1	1.448	20	Assigned	Robust Mean
Gd	4.833	0.0461	0.3049	0.1512	53	4.833	0.3356	4.85	Assigned	Robust Mean
Ge	1.225	0.07688	0.09503	0.809	18	1.288	0.3567	1.225	Provisional	Median
Hf	3.173	0.1261	0.2133	0.5913	52	3.173	0.9096	3.275	Provisional	Robust Mean
Ho	0.9154	0.008272	0.0742	0.1115	50	0.9154	0.05849	0.9175	Assigned	Robust Mean
La	17.44	0.2196	0.9073	0.2421	74	17.44	1.889	17.5	Assigned	Robust Mean
Li	7.56	0.1516	0.446	0.3399	30	7.691	1.098	7.56	Assigned	Median
Lu	0.35	0.004073	0.03279	0.1242	53	0.3479	0.02773	0.35	Assigned	Median
Mo	0.521	0.02105	0.04597	0.458	25	0.5339	0.1389	0.521	Assigned	Median
Nb	6.351	0.1383	0.3846	0.3597	61	6.351	1.08	6.3	Assigned	Robust Mean
Nd	20.67	0.1327	1.048	0.1266	68	20.96	1.517	20.67	Assigned	Median
Ni	63.6	0.6754	2.723	0.248	81	63.47	6.359	63.6	Assigned	Median
Pb	6.25	0.1358	0.3794	0.3581	67	6.469	1.708	6.25	Assigned	Median
Pr	4.84	0.03084	0.3053	0.101	52	4.869	0.3302	4.84	Assigned	Median
Rb	27.61	0.2337	1.34	0.1744	75	27.61	2.024	27.7	Assigned	Robust Mean
Sc	29.5	0.3126	1.418	0.2205	65	29.01	3.137	29.5	Assigned	Median
Sm	4.659	0.03542	0.2956	0.1198	58	4.659	0.2698	4.635	Assigned	Robust Mean
Sn	1.225	0.05085	0.09503	0.5351	34	1.269	0.2696	1.225	Assigned	Median
Sr	367.2	1.912	12.07	0.1584	83	367.2	17.42	367	Assigned	Robust Mean
Ta	0.3798	0.009241	0.03514	0.263	43	0.4282	0.1176	0.4	Assigned	Mode
Tb	0.7617	0.005464	0.06347	0.08609	52	0.7617	0.0394	0.76	Assigned	Robust Mean
Th	1.817	0.02209	0.1328	0.1663	56	1.838	0.2036	1.817	Assigned	Median
Tl	0.1462	0.004938	0.01562	0.3162	18	0.1462	0.02095	0.1432	Assigned	Robust Mean
Tm	0.37	0.004325	0.03437	0.1258	47	0.3675	0.02323	0.37	Assigned	Median
U	0.41	0.008224	0.0375	0.2193	52	0.414	0.08151	0.41	Assigned	Median
V	262	2.449	9.065	0.2702	80	253.8	22.75	257	Assigned	Mode
Y	24.5	0.2027	1.211	0.1674	77	24.16	1.814	24.5	Assigned	Median
Yb	2.327	0.0211	0.1639	0.1288	56	2.327	0.1579	2.329	Assigned	Robust Mean
Zn	76.6	1.09	3.189	0.3419	83	76.17	9.57	76.6	Assigned	Median
Zr	133.6	2.469	5.115	0.4828	77	127.3	20.21	128	Provisional	Mode

Table 3 - GeoPT38 Z-scores for Ardnamurchan Gabbro, OU-7. 11/12/2015

Lab Code	S2	S3	S4	S5	S6	S7	S8	S10	S11	S13	S15	S16	S17
SiO2	**1.17**	0.47	0.15	0.04	0.28	*	0.11	-0.16	**-0.07**	**-1.03**	-0.11	-0.62	**0.34**
TiO2	**0.45**	-0.56	-0.48	0.03	-0.95	**-5.05**	-0.17	0.42	**0.06**	**-5.83**	0.11	-0.36	**0.06**
Al2O3	**1.10**	0.60	-0.65	-0.24	-0.46	*	0.96	-0.13	**-0.93**	**5.83**	0.11	-0.33	**0.47**
Fe2O3T	**1.09**	-2.55	1.11	-0.14	0.44	**-4.97**	-0.34	0.34	**-0.07**	**-8.31**	-0.41	-0.24	**0.82**
MnO	**0.00**	-2.51	-0.88	0.00	-1.25	**-1.25**	-0.88	0.75	**0.00**	**-5.01**	-0.38	0.00	**0.00**
MgO	**1.67**	1.15	-0.18	-0.55	-0.11	*	-0.36	0.21	**0.41**	**-5.60**	0.26	-1.55	**-0.34**
CaO	**1.96**	2.26	-0.16	0.19	0.11	*	-0.60	0.26	**0.98**	**2.41**	0.25	-0.34	**1.43**
Na2O	**-3.69**	-6.56	-0.63	-0.09	-0.46	*	-1.94	-0.92	**0.00**	**4.06**	0.08	0.83	**-0.18**
K2O	**-0.53**	-1.80	1.41	-0.26	0.40	**-5.81**	-0.70	-1.19	**0.35**	**9.15**	-0.11	-0.04	**0.35**
P2O5	**-0.20**	-4.01	-0.39	-0.10	-0.10	**-8.01**	0.00	-0.39	**1.76**	**21.30**	0.39	-0.10	**1.76**
Ba	**-1.22**	-0.04	-0.88	-1.14	0.42	**-0.84**	-1.03	-0.80	**3.96**	*	-0.58	*	**-1.14**
Be	*	*	*	*	0.03	*	0.42	*	*	*	0.68	*	*
Cd	*	*	*	*	*-0.83*	***-1.45***	*	*	*	*	*	*	*
Ce	*	-0.33	*	*	-0.34	**-0.16**	2.29	-1.08	*	*	0.15	*	*
Co	**-2.77**	-7.70	1.62	*	0.06	**-1.49**	-1.68	-0.78	*	*	0.48	*	**-3.37**
Cr	**2.19**	-11.73	-0.61	-1.54	0.01	**-1.00**	1.64	0.40	*	*	1.95	*	**-0.59**
Cs	*	*	*	*	-0.18	**-0.73**	*	25.01	*	*	8.01	*	*
Cu	**6.29**	-9.70	0.35	-1.04	1.88	**-0.08**	-1.80	1.12	**1.47**	**8.07**	1.60	*	**0.20**
Dy	*	-0.21	*	*	-0.30	**-0.25**	0.33	*	*	*	0.60	*	*
Er	*	-0.25	*	*	-0.30	**-1.00**	1.52	*	*	*	0.14	*	*
Eu	*	-0.04	*	*	0.10	**-0.77**	1.37	*	*	*	0.01	*	*
Ga	**-4.98**	*	-2.49	0.93	0.10	*	-1.51	-0.05	*	*	0.44	*	**1.86**
Gd	*	0.67	*	*	-0.68	**3.57**	0.83	*	*	*	-0.36	*	*
Ge	*	*-1.18*	*	*	*2.03*	*	*-0.03*	*	*	*	*	*	*
Hf	*	*	*-0.41*	*	*-0.41*	*	*-3.45*	*	*	*	*1.94*	*	*
Ho	*	-0.31	*	*	-0.51	**-0.81**	*	*	*	*	0.44	*	*
La	*	*	*	*	-0.57	**-0.49**	1.37	-1.90	*	*	0.31	*	**2.82**
Li	*	-0.63	0.49	*	-0.70	*	2.18	*	*	*	*	*	*
Lu	*	-0.46	*	*	-0.15	**-1.22**	*	*	*	*	0.46	*	*
Mo	*	*	*	*	-0.88	**-3.07**	2.16	*	*	*	0.42	*	*
Nb	**1.69**	2.14	*	*	-0.30	*	*	*	*	*	1.84	*	**-3.51**
Nd	*	-0.11	*	*	-0.08	**-0.83**	0.32	0.16	*	*	0.44	*	**-3.50**
Ni	**-0.22**	4.85	1.36	-0.84	0.81	**0.77**	-0.48	0.44	-0.29	*	0.00	*	**1.25**
Pb	**1.98**	28.66	-0.33	*	-0.26	**-1.56**	-4.65	*	*	**207.56**	-2.78	*	*
Pr	*	-0.15	*	*	0.00	*	*	*	*	*	0.62	*	*
Rb	**0.29**	*	*	*	0.41	**-1.13**	-2.47	0.89	*	*	0.07	*	**-1.95**
Sc	**-1.76**	0.21	*	-0.88	0.28	**-2.40**	-0.18	*	*	*	0.26	*	*
Sm	*	-0.15	*	*	-0.37	**-0.47**	0.20	-1.11	*	*	0.48	*	*
Sn	*	*	*	*	1.18	*	1.71	-1.18	*	*	-0.50	*	*
Sr	**0.31**	*	-0.22	-1.75	-0.13	**-0.70**	-0.75	-0.22	**-0.51**	*	-0.27	*	**1.47**
Ta	*	230.35	*	*	0.71	**71.43**	*	*	*	*	1.85	*	*
Tb	*	-0.09	*	*	-0.01	**-0.34**	*	*	*	*	0.30	*	*
Th	*	0.01	*	*	-0.36	**-2.31**	*	*	*	*	-0.14	*	*
Tl	*	*	*	*	*	**-0.65**	*	*	*	*	-0.52	*	*
Tm	*	-0.44	*	*	-0.29	**-0.76**	*	*	*	*	0.44	*	*
U	*	*	*	*	0.27	**-1.60**	2.00	*	*	*	0.40	*	*
V	**-0.22**	*	*	-0.94	-0.39	**-2.87**	-0.06	0.28	**-1.32**	*	0.02	*	**-0.22**
Y	**-0.41**	-1.09	-1.03	*	-0.54	*	1.30	0.21	0.21	*	0.21	*	**-0.41**
Yb	*	-0.33	*	*	-0.17	**-0.90**	0.71	*	*	*	0.59	*	*
Zn	**0.44**	5.24	1.16	-0.72	-0.08	**0.34**	1.16	1.32	-0.72	*	-1.77	*	**1.38**
Zr	***0.47***	*	*-3.48*	*	*-2.31*	***-14.82***	*0.33*	*0.73*	***0.47***	*	*-0.92*	*	***2.04***

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

Table 3 - GeoPT38 Z-scores for Ardnamurchan Gabbro, OU-7. 11/12/2015

Lab Code	S19	S20	S21	S22	S23	S24	S25	S26	S27	S28	S29	S30	S31
SiO2	0.85	-0.13	-0.07	-0.46	-0.98	*	0.19	1.22	-5.26	*	0.26	-0.42	0.14
TiO2	2.81	0.03	3.36	-46.68	0.40	*	-0.10	0.84	-6.26	*	-0.36	-1.17	0.03
Al2O3	1.28	-0.26	-3.60	-22.04	1.34	*	0.29	0.97	-2.29	*	2.04	1.35	0.26
Fe2O3T	-2.72	-0.17	-3.07	-28.47	0.41	*	0.20	-0.61	-3.07	*	-1.74	-0.01	0.00
MnO	0.00	0.00	-0.68	32.57	-0.13	*	-0.50	0.00	125.27	1.00	-1.63	-0.63	0.00
MgO	-2.72	0.96	-4.19	-30.42	1.02	*	0.54	1.79	13.43	*	-1.99	6.43	-0.29
CaO	2.34	-0.30	-3.61	-9.73	-0.08	*	0.00	1.28	-5.62	*	-0.04	-0.63	0.41
Na2O	-0.92	-0.46	-0.65	20.50	1.85	*	1.11	1.29	24.01	*	3.05	-1.60	-0.09
K2O	2.55	-1.14	-2.55	143.83	0.18	*	0.35	0.35	-1.80	*	-1.36	4.31	-0.04
P2O5	1.76	-1.07	-1.84	40.84	0.68	*	0.98	1.76	*	*	1.37	0.68	-0.10
Ba	-1.19	-0.50	1.70	*	*	*	3.58	1.45	2.25	0.30	-0.15	*	0.00
Be	-1.11	*	*	*	*	*	*	-2.02	*	0.68	-0.03	*	*
Cd	*	*	*0.72*	*	*	*	*	*8.00*	*	*-0.83*	*	*	*9.17*
Ce	0.12	0.84	1.43	*	0.84	0.66	-1.59	15.87	0.44	-0.11	0.17	*	*
Co	-0.96	0.66	1.77	*	-1.98	*	-0.36	*	*	0.72	-1.04	*	-1.08
Cr	-0.75	0.17	2.86	*	-4.79	*	-0.75	-0.07	22.61	*	0.09	*	-1.07
Cs	-0.76	62.35	0.36	*	*	*	*	1.76	*	-0.18	*	*	*
Cu	-2.12	1.75	1.65	*	*	*	-1.32	-0.45	3.40	-0.03	0.67	*	0.48
Dy	1.61	-0.32	2.29	*	0.43	0.13	*	-0.60	*	-0.18	0.07	*	*
Er	0.47	0.00	1.73	*	0.17	-0.44	*	-0.89	*	-0.33	0.14	*	*
Eu	-0.05	-0.43	1.10	*	0.58	-0.51	*	4.66	*	0.10	-0.08	*	*
Ga	*	0.39	1.72	*	*	*	-0.09	0.58	-2.25	0.93	*	*	*
Gd	0.74	0.26	1.79	*	0.36	-1.52	*	1.76	*	0.11	0.21	*	*
Ge	*	*	*	*	*	*	*	*2.05*	*	*	*	*	*
Hf	*-5.53*	*1.94*	*-5.55*	*	*	*	*	*1.16*	*	*-3.69*	*1.00*	*	*
Ho	0.53	-0.31	1.34	*	0.23	-0.48	*	-0.88	*	-0.17	-0.04	*	*
La	-0.42	1.19	1.30	*	0.75	0.49	-3.79	12.29	-0.96	0.14	-0.22	*	-0.24
Li	-0.58	*	*	*	*	*	*	*	*	*	1.28	*	*
Lu	-0.40	0.15	0.29	*	-0.61	0.61	*	-2.75	*	-0.46	0.15	*	*
Mo	*	*	*	*	*	*	*	*	*	-0.77	*	*	*
Nb	-0.89	-0.20	0.88	*	*	*	1.69	-0.63	-2.41	-0.20	0.27	*	*
Nd	-0.23	-0.13	1.91	*	0.63	0.31	1.27	18.80	3.69	0.01	-0.19	*	*
Ni	-1.69	1.73	2.63	*	-0.66	*	-0.59	4.58	*	1.18	-0.01	*	-1.21
Pb	-1.26	0.99	2.05	*	0.99	*	1.98	-0.53	15.88	0.20	*	*	-0.07
Pr	-0.17	0.03	1.23	*	0.75	0.13	*	11.95	*	0.08	-0.16	*	*
Rb	-1.77	0.22	0.24	*	*	*	1.78	-0.22	-0.08	0.14	-0.07	*	0.14
Sc	-1.69	*	2.30	*	1.41	*	-0.35	3.11	35.79	0.53	-0.40	*	*
Sm	-0.87	-0.15	1.63	*	0.34	0.75	*	*	*	-0.03	-0.07	*	*
Sn	*	-1.18	1.54	*	*	*	*	*	*	-0.13	*	*	*
Sr	-1.40	0.61	0.12	*	*	*	1.14	0.31	0.82	-0.17	0.12	*	*
Ta	-0.14	-1.14	4.33	*	*	*	*	-1.70	*	-0.14	0.57	*	*
Tb	0.19	-0.01	1.04	*	0.14	0.29	*	1.08	*	0.07	-0.01	*	*
Th	-0.21	15.41	0.96	*	0.13	*	*	-4.04	*	*	-0.33	*	*
Tl	*	*	2.74	*	*	*	*	*	*	0.44	*	*	*
Tm	-0.09	-0.29	0.71	*	-0.29	0.29	*	*	*	-0.29	0.00	*	*
U	-0.67	1.47	-0.85	*	*	*	*	0.00	*	-0.53	-0.13	*	*
V	-3.86	-0.33	4.32	*	-4.47	*	0.11	-2.21	-3.97	0.83	-0.28	*	-2.21
Y	-1.73	0.21	-0.19	*	0.21	0.50	0.41	-6.45	-1.36	-0.62	-0.71	*	*
Yb	-0.26	-0.14	1.55	*	-0.51	1.12	16.31	-2.24	*	-0.36	0.16	*	*
Zn	-3.32	2.57	3.92	*	-1.19	*	-2.38	3.16	-1.08	1.32	0.44	*	-1.51
Zr	*-13.20*	*1.70*	*14.34*	*	*	*	*0.67*	*0.70*	*0.24*	*	*-1.43*	*	*

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

Table 3 - GeoPT38 Z-scores for Ardnamurchan Gabbro, OU-7. 11/12/2015

Lab Code	S33	S34	S35	S37	S40	S41	S44	S46	S47	S48	S49	S50	S51
SiO2	0.00	0.04	-0.32	-1.34	0.16	0.42	0.55	*	0.21	-0.34	0.04	*	-1.11
TiO2	-1.52	-0.17	1.24	-5.52	0.06	-0.03	0.57	-1.23	0.03	0.23	-0.05	0.06	1.68
Al2O3	-0.53	0.12	0.88	-0.79	0.38	0.12	0.24	-2.83	-0.04	-0.33	-0.04	*	1.32
Fe2O3T	0.00	0.54	-0.41	-5.42	-0.07	-0.65	0.80	0.23	0.44	-0.17	0.00	*	0.76
MnO	-0.25	-1.25	0.00	-14.78	0.75	0.50	1.00	-0.38	1.25	-0.25	-0.41	-0.25	2.05
MgO	-0.46	0.27	0.92	0.41	0.41	-0.61	1.27	-0.68	0.21	-0.67	-0.19	*	-0.18
CaO	-0.23	0.15	-3.24	-1.51	1.02	-0.45	-1.40	-1.34	0.79	-0.04	0.26	*	-0.44
Na2O	0.09	0.00	1.29	0.18	0.66	0.09	-3.88	-0.34	-5.45	-1.20	0.67	*	0.22
K2O	-0.35	0.40	-0.97	1.67	0.18	-0.26	1.14	-0.22	1.06	-0.26	-0.07	*	-2.01
P2O5	-0.59	2.83	-2.15	-0.20	376.91	0.20	-0.78	1.47	-3.03	-0.20	0.03	*	-6.06
Ba	-0.08	2.40	3.12	-1.37	-0.23	0.99	*	-0.21	-1.79	*	-0.04	-0.84	0.61
Be	*	*	*	*	1.10	*	*	0.80	*	*	*	-0.46	*
Cd	*	*	*59.71*	*	*1.52*	*	*	*0.59*	*	*	*	*	*0.72*
Ce	*	-1.08	2.42	-8.62	-1.13	-3.37	*	1.03	*	*	*	0.24	-0.06
Co	-0.18	*	-1.56	-11.66	0.78	0.72	*	-0.31	2.53	*	50.92	0.42	0.03
Cr	1.02	0.24	-2.92	-2.92	0.33	-0.45	*	0.55	-0.92	*	-0.61	0.18	1.47
Cs	*	*	*	329.28	-0.64	*	*	0.00	*	*	*	-0.36	0.36
Cu	-0.53	1.50	-0.81	-0.15	1.47	0.74	-0.31	-0.83	0.23	*	-0.70	-1.02	-2.60
Dy	*	*	*	*	0.34	*	*	0.46	*	*	*	0.20	0.39
Er	*	*	*	*	0.17	*	*	-0.06	*	*	*	0.00	0.42
Eu	*	*	*	*	0.10	*	*	0.06	*	*	*	-0.07	-0.20
Ga	*	-0.05	-1.07	-1.36	0.79	-0.05	5.77	0.07	*	*	*	0.20	35.82
Gd	*	*	*	*	-0.37	*	*	0.17	*	*	*	-0.04	0.65
Ge	*	*	*	*	*	*	*	*	*	*	*	*	*19.93*
Hf	*	*	*-0.81*	*	*-1.14*	*1.47*	*	*-3.73*	*	*	*	*0.36*	*1.66*
Ho	*	*	*	*	0.33	*	*	0.18	*	*	*	0.06	0.14
La	-0.80	2.51	40.29	-5.45	-3.24	-1.35	*	0.83	*	*	*	0.17	-0.12
Li	*	*	*	*	-2.18	*	*	0.68	*	*	*	-0.58	*
Lu	*	*	*	*	0.21	*	*	-0.49	*	*	*	0.00	0.24
Mo	*	*	*	*	-1.54	*	10.42	-0.48	*	*	*	*	5.90
Nb	*	-0.46	-3.51	2.21	-1.25	-1.76	17.29	0.18	*	*	*	0.65	-0.60
Nd	*	*	-2.55	*	-0.26	-1.27	*	1.16	*	*	*	0.03	0.60
Ni	1.18	-0.11	-3.16	-4.44	-0.51	-0.11	-1.32	0.08	-0.48	*	1.12	-0.15	4.43
Pb	*	4.94	23.06	4.09	-1.45	-4.28	*	-0.16	*	*	15.09	0.00	-0.11
Pr	*	*	*	*	-0.13	-1.38	*	0.61	*	*	*	0.00	-0.44
Rb	*	1.26	1.04	1.56	0.29	-0.60	1.78	0.45	*	*	*	0.07	-1.25
Sc	*	-0.88	-2.47	-2.89	0.14	0.88	*	*	-2.29	*	*	1.13	3.46
Sm	*	*	11.30	*	0.34	-1.11	*	0.71	*	*	*	-0.10	0.40
Sn	*	*	60.77	*	-0.68	*	*	-0.26	*	*	*	-0.26	2.73
Sr	*	0.78	0.15	-0.38	1.39	0.28	0.81	-0.79	-1.66	*	-1.13	0.40	-0.05
Ta	*	*	*	*	0.03	*	*	1.06	*	*	*	0.57	-0.99
Tb	*	*	*	*	0.37	*	*	0.01	*	*	*	-0.18	-0.23
Th	*	0.69	1.38	*	-0.35	*	1.38	0.77	*	*	*	-0.65	-0.03
Tl	*	*	*	*	-0.65	*	*	0.38	*	*	*	*	*
Tm	*	*	*	*	0.47	*	*	0.00	*	*	*	0.00	-0.23
U	*	21.20	58.40	189.05	0.48	*	*	-1.49	*	*	*	0.80	0.96
V	0.06	-1.71	-2.54	-8.38	-0.55	0.61	*	1.37	-1.77	*	*	0.77	1.05
Y	-1.03	0.62	-0.41	-0.17	1.24	0.21	-2.06	-0.01	-1.03	*	*	1.07	-0.27
Yb	*	*	*	*	0.69	*	*	-0.33	*	*	*	0.32	0.66
Zn	1.16	-1.51	-2.38	-3.36	-1.72	-1.35	-1.13	1.13	*	*	2.37	0.31	-0.68
Zr	*-1.13*	*0.73*	*-0.70*	*-1.40*	*0.67*	*1.41*	*2.82*	*-8.97*	*-1.62*	*	*8.25*	*-2.46*	*1.44*

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

Table 3 - GeoPT38 Z-scores for Ardnamurchan Gabbro, OU-7. 11/12/2015

Lab Code	S52	S53	S54	S56	S57	S58	S59	S60	S61	S62	S63	S64	S65
SiO2	*	0.31	0.10	**-0.88**	*	-0.19	-0.22	**0.07**	-0.05	-0.16	0.75	0.22	*
TiO2	-0.56	-0.56	2.82	**-1.12**	**0.06**	1.01	-0.56	**0.45**	0.23	-0.17	0.91	-2.13	*
Al2O3	-0.87	-0.26	1.34	**-0.57**	*	-1.07	-0.22	**0.24**	-0.19	0.19	0.54	-0.71	*
Fe2O3T	0.95	-0.85	0.54	**-1.23**	*	1.29	1.02	**0.00**	0.07	-0.07	0.39	-1.91	*
MnO	7.52	-1.25	-0.13	**0.25**	**90.70**	-1.25	-1.25	**-0.50**	0.00	-1.25	0.63	-0.13	*
MgO	0.14	-0.55	0.20	**-0.46**	*	0.90	0.77	**0.29**	-0.11	0.21	-0.06	1.96	*
CaO	0.90	0.19	0.50	**-0.08**	*	2.22	0.23	**-1.13**	0.64	0.34	0.61	-0.49	*
Na2O	0.09	0.18	-1.01	**1.11**	*	0.18	-0.28	**-2.59**	-0.37	-0.18	0.73	3.51	*
K2O	-1.80	0.40	0.04	**0.79**	*	0.18	-0.04	**-0.35**	-0.04	-0.26	0.40	1.72	*
P2O5	1.86	-0.10	1.37	*	*	0.78	-0.10	**2.34**	0.88	-0.10	0.29	235.35	*
Ba	-0.53	*	0.99	**0.23**	**-0.84**	1.38	0.19	**0.23**	0.38	0.95	0.05	1.94	2.04
Be	*	*	0.55	**-0.33**	*	*	0.23	*	*	-0.36	-1.01	*	*
Cd	*	*	*-0.83*	***-0.28***	*	*278.07*	*	*	*	*	*	*	*
Ce	0.26	*	0.06	**0.13**	**0.07**	-1.31	0.09	**4.42**	-0.34	0.35	-0.74	*	-2.22
Co	0.57	*	0.51	**-0.12**	**0.00**	0.87	0.42	**3.61**	0.00	-1.08	-0.25	*	-0.27
Cr	-1.85	*	1.72	**3.28**	**1.11**	-1.47	-0.06	**-2.61**	-0.68	-1.85	0.65	2.26	0.30
Cs	*	*	0.27	**1.15**	**-0.39**	*	-0.12	*	-0.79	*	*	*	*
Cu	-0.55	*	-1.61	**0.71**	**1.22**	-0.75	0.23	**2.49**	0.51	-0.15	0.34	-1.68	0.13
Dy	0.15	*	0.13	**0.27**	**-0.60**	*	0.08	**1.45**	-0.25	-0.47	0.10	*	*
Er	-0.22	*	0.19	**-0.11**	**-0.72**	*	0.00	**0.89**	-0.53	-0.33	0.00	*	*
Eu	0.01	*	0.01	**0.19**	**0.01**	*	-0.12	**2.29**	0.18	0.67	-0.21	*	*
Ga	*	*	0.29	**0.69**	*	-0.19	0.00	**2135.15**	0.44	-0.05	-0.36	*	0.15
Gd	-0.23	*	-0.53	**-0.86**	**-0.73**	*	-0.09	**2.25**	-0.00	0.03	-1.02	*	*
Ge	*	*	*0.03*	***1.63***	*	*	*0.87*	*	*-1.18*	*	*	*	*
Hf	*	*	*0.74*	***1.67***	***-6.81***	*-2.52*	*-0.10*	*	*-0.41*	*1.00*	*0.48*	*	*
Ho	*	*	-0.04	**0.75**	**-0.01**	*	0.05	**0.87**	-0.10	-0.44	0.03	*	*
La	0.09	*	0.09	**0.50**	**0.06**	6.26	-0.08	**3.92**	-0.30	0.03	-0.32	*	-1.90
Li	*	*	-0.45	**-0.13**	**0.63**	*	0.38	**6.59**	*	-0.63	*	*	*
Lu	-0.61	*	-0.15	**0.64**	**-0.82**	*	-0.02	**0.92**	0.15	-0.61	0.00	*	*
Mo	*	*	3.58	**0.41**	*	-0.23	*	*	*	*	*	*	*
Nb	*	*	-0.78	**-2.13**	**0.36**	-1.50	0.10	*	0.84	*	-1.20	*	-1.83
Nd	0.16	*	0.21	**-0.07**	**-0.26**	3.02	0.06	**4.13**	-0.70	0.68	-0.29	*	*
Ni	0.17	*	-0.40	**0.51**	**0.37**	-1.62	0.35	**0.40**	0.62	-0.66	0.20	0.81	-0.09
Pb	-1.37	*	-0.57	**0.00**	**0.11**	-2.17	0.03	*	-0.20	*	-0.69	*	-0.72
Pr	0.03	*	0.64	**0.13**	**0.36**	*	-0.08	**3.31**	-0.18	-0.56	-0.39	*	*
Rb	*	*	0.03	**1.11**	**0.51**	-0.23	-0.23	**2.30**	0.26	-0.23	-0.61	2.01	0.51
Sc	*	*	-2.08	**1.69**	**0.49**	-1.09	0.32	*	-0.18	0.56	0.00	*	-0.85
Sm	0.02	*	-0.49	**0.38**	**-0.10**	*	0.04	**3.08**	-0.61	-0.42	-0.23	*	*
Sn	*	*	1.08	**2.05**	**0.68**	-2.24	*	*	-1.18	*	*	*	*
Sr	-0.01	*	1.69	**1.47**	**0.23**	-0.39	0.28	**-1.42**	0.21	-0.13	-0.07	0.65	0.21
Ta	*	*	0.29	**0.86**	**-0.82**	3.13	-0.07	*	*	11.67	-0.71	*	*
Tb	-0.33	*	-0.09	**-0.44**	**-0.28**	*	-0.06	**1.55**	0.07	-0.01	-0.09	*	*
Th	3.44	*	0.46	**-0.43**	**-0.73**	7.09	-0.44	**0.48**	-0.44	0.31	-0.40	*	*
Tl	*	*	-0.20	*	*	*	*	*	*	0.76	*	*	*
Tm	-0.29	*	0.00	**-0.12**	*	*	0.04	**1.16**	0.00	-0.58	0.00	*	*
U	-0.53	*	0.93	**0.27**	**-1.33**	18.53	0.19	**1.07**	0.27	-1.60	*	*	*
V	0.11	*	0.50	**-1.77**	**0.66**	-3.12	0.17	**-1.32**	-0.50	-0.39	0.13	*	-0.61
Y	0.95	*	0.25	**0.08**	**1.24**	-0.50	0.45	**0.99**	-0.04	0.00	-1.10	*	0.33
Yb	-0.39	*	0.25	**0.87**	**-0.65**	-6.18	0.07	**1.06**	-0.08	-1.12	0.19	*	*
Zn	-0.20	*	0.00	**4.67**	**1.51**	-1.77	0.55	**0.03**	0.06	-0.88	1.05	-0.72	-0.45
Zr	*	*	*-0.55*	***1.06***	***-14.19***	*-1.49*	*-1.13*	***-3.44***	*-0.64*	*0.53*	*-0.90*	*8.15*	*0.06*

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

Table 3 - GeoPT38 Z-scores for Ardnamurchan Gabbro, OU-7. 11/12/2015

Lab Code	S66	S68	S69	S70	S71	S72	S73	S74	S75	S77	S78	S79	S80
SiO2	0.43	-0.31	0.18	0.80	0.00	-0.50	0.28	-0.62	-0.06	-2.01	0.37	*	-0.16
TiO2	-0.30	-0.17	0.03	0.45	0.03	*	0.19	0.45	0.34	0.84	4.42	*	-0.56
Al2O3	0.94	3.12	-0.42	-0.25	0.26	*	0.60	-0.66	-0.24	-0.16	3.67	*	-0.19
Fe2O3T	-0.54	0.17	0.03	-2.11	0.89	*	0.22	0.07	0.38	1.77	-61.02	86.93	0.65
MnO	0.10	0.00	0.13	0.00	1.25	*	0.88	0.00	0.75	1.75	-1.75	-23.75	-0.63
MgO	1.00	0.33	0.52	1.92	-1.61	*	0.97	0.04	-0.05	1.79	8.45	*	0.27
CaO	-0.69	0.11	0.34	-1.06	0.04	*	0.25	-0.30	0.22	3.70	1.11	-42.38	0.75
Na2O	1.31	-2.40	-0.74	-3.88	-2.22	*	0.21	-1.29	-0.12	1.66	-0.04	-27.89	0.28
K2O	0.44	-0.70	0.18	-0.97	1.06	*	-0.02	-0.09	-0.31	2.11	0.13	*	-1.58
P2O5	3.20	-0.10	0.00	-2.15	0.88	*	0.78	-0.20	*	1.76	6.64	*	-0.10
Ba	1.46	0.57	*	-0.69	0.00	*	1.98	1.84	1.51	1.07	1.37	-25.53	0.76
Be	-0.82	*	*	-1.24	*	*	*	*	*	*	3.18	*	1.79
Cd	*-1.28*	*	*	*-6.48*	*	*	*	*	*	*	*5.93*	*-3.59*	*
Ce	0.99	*	*	-0.33	*	*	1.39	1.73	*	2.42	-0.61	*	-0.39
Co	0.41	*	*	-0.54	-1.08	*	*	-3.07	*	-2.77	-1.26	-7.15	0.60
Cr	-3.03	*	*	-1.37	-1.38	*	3.34	-2.90	1.48	-2.92	1.45	-19.82	0.32
Cs	0.50	*	*	-0.36	*	*	*	*	*	*	-0.52	*	-0.18
Cu	1.33	*	*	0.71	-0.28	*	3.66	-0.26	*	-0.05	-4.88	-5.92	0.48
Dy	0.86	*	*	0.44	*	*	*	*	*	*	0.38	*	-0.74
Er	-0.70	*	*	0.00	*	*	*	*	*	*	-0.25	*	-0.55
Eu	0.03	*	*	-0.42	*	*	*	*	*	*	-0.39	*	-0.95
Ga	0.61	*	*	-0.09	*	*	0.42	-1.07	*	-0.09	-1.46	*	0.20
Gd	-0.93	*	*	-0.66	*	*	*	*	*	*	-0.80	*	-0.50
Ge	*	*	*	*	*	*	*	*7.10*	*	*	*	*	*
Hf	*-1.14*	*	*	*-0.48*	*	*	*	*5.28*	*	*5.75*	*0.78*	*	*-0.52*
Ho	1.10	*	*	0.06	*	*	*	*	*	*	-0.01	*	-0.34
La	2.20	*	*	-0.05	*	*	3.45	4.25	*	-2.69	-0.35	*	0.28
Li	0.59	*	*	-0.31	*	*	*	*	*	*	-1.57	*	-0.18
Lu	0.27	*	*	0.31	*	*	*	*	*	*	0.31	*	-0.61
Mo	0.11	*	*	*	*	*	*	*	*	*	*	-3.28	0.32
Nb	0.91	*	*	-0.13	*	*	-1.17	-1.69	*	*	-1.82	*	1.49
Nd	0.74	*	*	0.79	*	*	*	1.56	*	0.31	-1.26	*	-0.45
Ni	2.56	*	*	-1.51	-1.03	*	-0.74	-2.86	*	-2.06	0.04	-5.51	0.07
Pb	-1.35	*	*	1.11	*	*	2.70	0.92	*	*	-6.38	-5.14	0.33
Pr	1.34	*	*	0.29	*	*	*	*	*	*	-0.12	*	0.36
Rb	-0.46	*	*	-0.90	-0.23	*	0.11	-1.58	*	1.04	-0.31	*	0.14
Sc	0.68	*	*	0.49	-0.88	*	*	-2.33	*	-2.47	-1.06	*	2.54
Sm	0.06	*	*	-0.13	*	*	*	*	*	*	-0.42	*	-0.40
Sn	-0.16	*	*	*	*	*	*	*	*	*	*	-3.63	0.39
Sr	-0.54	-0.71	*	-1.01	-0.05	*	28.23	-1.09	*	-2.00	-0.10	*	0.86
Ta	-0.25	*	*	1.43	*	*	*	68.87	*	*	-2.38	*	10.25
Tb	-0.20	*	*	0.45	*	*	*	*	*	*	-0.99	*	-0.50
Th	2.81	*	*	-1.10	*	*	*	*	*	*	-1.33	*	0.20
Tl	*	*	*	*	*	*	*	*	*	*	-0.84	*	-0.20
Tm	-0.15	*	*	0.29	*	*	*	*	*	*	-0.15	*	-0.87
U	1.68	*	*	0.00	*	*	*	*	*	*	-7.47	*	-0.40
V	0.86	*	*	0.33	-1.93	*	11.29	-2.96	*	-3.64	-0.66	-2.61	-0.66
Y	4.10	*	*	0.41	-0.21	*	0.06	-0.58	*	*	0.00	*	0.21
Yb	0.17	*	*	0.51	*	*	*	*	*	*	0.47	*	-0.65
Zn	-0.02	*	*	0.16	-1.66	*	-0.71	-4.67	*	-5.52	0.97	-6.08	-0.41
Zr	*-0.95*	*0.63*	*	*-4.61*	*0.92*	*	*0.72*	*-0.17*	*	*-1.29*	*0.18*	*	*-1.33*

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

Table 3 - GeoPT38 Z-scores for Ardnamurchan Gabbro, OU-7. 11/12/2015

Lab Code	S81	S82	S83	S84	S85	S86	S87	S88	S89	S90	S91	S92	S93
SiO2	0.05	-2.25	**-1.68**	-1.40	**0.69**	-0.40	**-1.06**	-0.15	*	*	5.23	**0.90**	**-0.69**
TiO2	0.03	0.42	**-1.51**	-1.84	**-0.33**	-0.17	**-0.33**	-0.17	-22.44	*	**0.06**	**-0.06**	**-1.12**
Al2O3	-0.31	0.87	**-2.01**	-2.26	**-0.48**	-0.49	**0.42**	-0.26	-26.19	3.57	**-1.78**	**1.19**	**0.42**
Fe2O3T	-0.17	-2.42	**0.00**	-2.19	**0.00**	-0.51	**-6.27**	-0.10	-20.30	0.07	**1.02**	**-0.34**	**0.27**
MnO	0.00	-1.25	**0.00**	-2.51	**0.00**	0.25	**-2.51**	0.00	-13.40	1.25	**0.00**	**-1.13**	**0.00**
MgO	-0.55	-2.49	**-2.97**	-29.27	**-1.34**	-0.86	**18.71**	-0.29	-17.69	31.48	**-0.21**	**-0.02**	**-0.09**
CaO	-0.49	0.64	**-4.37**	-2.43	**-0.45**	-0.83	**-1.21**	0.04	-25.53	0.90	**-2.71**	**0.72**	**-0.38**
Na2O	0.65	2.31	**-1.48**	-4.24	**-1.11**	-0.37	**4.06**	0.46	-24.16	3.32	**-0.37**	**-0.50**	**2.95**
K2O	-0.04	3.48	**-2.29**	*	**-0.53**	-0.26	**1.23**	-0.04	-21.39	-0.48	**-1.41**	**-0.00**	**-0.97**
P2O5	-0.10	9.67	**-2.15**	*	**1.76**	-0.49	**1.76**	0.00	*	*	*	**-0.29**	**-4.10**
Ba	*	3.43	**-1.22**	*	*	-0.38	**-4.04**	-0.27	-12.93	0.62	**2.67**	**-0.34**	**-1.07**
Be	*	*	**-0.72**	*	*	*	*	*	-5.43	0.75	*	**-1.24**	*
Cd	*	*	*	*1.45*	*	*	*	*	*-2.55*	*5.65*	*	***-0.28***	*
Ce	*	*	**-0.73**	-7.42	*	-1.79	**-2.73**	-0.59	-4.51	*	**-0.88**	**0.33**	**2.99**
Co	*	*	0.60	-1.12	*	-0.45	**-3.97**	*	-5.02	0.70	**0.42**	**0.03**	**-1.56**
Cr	*	-3.93	**1.57**	-8.09	*	-1.69	**-6.17**	0.32	-12.22	-0.01	**0.95**	**0.33**	**-0.59**
Cs	*	*	*	*	*	*	*	0.27	*	*	2.25	**1.85**	*
Cu	*	7.84	0.01	13.98	*	-0.15	**-1.58**	*	-1.08	2.25	*	**1.47**	**-5.89**
Dy	*	*	**0.30**	*	*	*	**-1.81**	-0.56	-4.55	*	**2.42**	**-2.24**	*
Er	*	*	**0.89**	*	*	*	**-0.61**	-0.53	-4.32	*	*	**-2.20**	*
Eu	*	*	**-0.34**	*	*	*	**-1.04**	-0.08	-4.73	*	**0.19**	**-0.73**	*
Ga	*	*	0.34	*	*	-1.22	*	-0.19	*	1.03	**-6.84**	**-0.39**	**-0.09**
Gd	*	*	**0.29**	*	*	*	**-1.09**	-0.12	-3.32	*	*	**-3.23**	*
Ge	*	*	*4.08*	*	*	*	*	*	*-6.02*	*	*	*	*
Hf	*	*	*6.86*	*	*	*	*	*1.70*	*	*	***0.98***	***1.60***	***13.25***
Ho	*	*	**0.47**	*	*	*	*	-0.24	-3.68	*	*	**0.72**	*
La	*	*	**-0.82**	*	*	-0.91	**-1.59**	-0.91	-4.65	*	**-0.79**	**-0.32**	**-1.59**
Li	*	*	-1.75	*	*	*	**25.65**	*	-5.48	2.37	*	*	*
Lu	*	*	**0.31**	*	*	*	**1.53**	0.31	-3.81	*	**0.55**	**0.43**	*
Mo	*	*	*	-0.86	*	*	*	*	-2.84	-0.52	*	*	*
Nb	*	*	-0.33	*	*	1.38	**25.09**	-0.59	-8.18	*	*	*	**191.49**
Nd	*	*	**-0.64**	*	*	0.78	**-0.64**	-0.46	-3.61	*	**-3.02**	**-0.35**	**5.09**
Ni	*	-2.07	1.73	*	*	-0.35	**-4.99**	*	-3.58	1.35	*	**-2.26**	**-1.69**
Pb	*	*	-3.10	*	*	-1.00	*	*	-3.68	0.53	*	**0.68**	**1.98**
Pr	*	*	**-0.26**	*	*	*	**-1.11**	-0.02	-2.88	*	*	**-1.37**	*
Rb	*	2.72	-0.04	-1.37	*	-1.12	**-1.20**	-0.79	-8.44	0.63	**4.62**	**-0.49**	**-1.20**
Sc	*	*	1.02	-6.81	*	-3.10	**-7.41**	*	-9.60	*	**0.73**	**0.63**	**212.65**
Sm	*	*	**-0.30**	-6.23	*	*	**4.54**	-0.29	-3.43	*	**-0.36**	**0.92**	*
Sn	*	*	*	2.81	*	*	*	*	-5.45	*	*	*	**18.68**
Sr	0.12	1.69	-0.48	-0.08	*	-1.13	**-3.08**	-0.01	-11.73	1.41	**4.70**	**-0.47**	**-1.67**
Ta	*	*	*	*	*	*	*	*	*	*	-0.42	**0.36**	*
Tb	*	*	**0.29**	*	*	*	*	-0.49	-3.09	*	**-1.49**	**-0.53**	*
Th	*	*	**5.15**	-5.16	*	*	*	0.01	-1.72	*	**-0.70**	**0.06**	**23.97**
Tl	*	*	*	*	*	*	*	*	-2.76	-0.52	*	*	*
Tm	*	*	**0.87**	*	*	*	*	-0.44	-3.49	*	*	**-1.65**	*
U	*	*	**1.87**	-3.20	*	*	*	*	-3.87	-0.21	*	**0.75**	*
V	*	2.76	**0.66**	2.63	*	-2.15	*	0.94	-11.25	2.15	**0.99**	**0.19**	**1.21**
Y	*	*	-0.87	-6.99	*	-0.25	**-3.72**	-0.66	-5.99	*	*	**-2.56**	**-2.89**
Yb	*	*	**1.06**	*	*	*	**-0.77**	-0.30	-4.75	*	**0.96**	**0.72**	*
Zn	*	-0.13	**-1.47**	-2.51	*	-2.24	**2.32**	*	-8.05	-9.59	**2.98**	**3.73**	**-1.76**
Zr	*	*-1.33*	*-0.86*	*2.20*	*	*-0.94*	***-5.59***	*1.61*	*-12.60*	*	*	***-1.09***	***-1.87***

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

Table 3 - GeoPT38 Z-scores for Ardnamurchan Gabbro, OU-7. 11/12/2015

Lab Code	S94	S96	S97	S98	S99	S100	S101	S102	S103	S104	S105	S108	S109
SiO2	**2.95**	**0.44**	1.86	-0.04	-0.75	0.11	0.09	-0.12	**2.74**	0.58	**0.18**	-0.09	**0.02**
TiO2	**2.42**	**2.42**	-1.11	-0.15	-0.99	-0.56	-0.36	-0.54	**-3.48**	0.42	**-1.51**	0.23	**0.65**
Al2O3	**-2.32**	**-2.77**	-0.73	0.23	0.72	-0.04	0.23	-0.17	**-3.40**	-0.55	**-0.93**	0.10	**-0.12**
Fe2O3T	**-7.56**	**2.38**	0.06	-0.15	0.28	-0.78	-0.31	0.20	**-7.76**	-0.48	**0.61**	0.20	**1.23**
MnO	**-5.01**	**-16.79**	0.38	1.25	0.38	0.00	-0.25	0.54	**-2.51**	-0.50	**0.00**	0.00	**0.50**
MgO	**-2.72**	**-4.47**	-0.95	0.16	5.75	0.08	-0.23	-0.13	**3.67**	0.46	**0.04**	-0.29	**-0.09**
CaO	**-4.15**	**-2.41**	-1.50	0.19	-0.90	0.15	-0.04	-0.45	**-0.53**	0.04	**0.68**	0.15	**0.38**
Na2O	**-3.14**	**5.91**	-0.71	0.26	0.05	-0.74	0.00	-0.42	**0.92**	-2.03	**-1.48**	-0.37	**-1.85**
K2O	**-1.85**	**6.95**	0.46	0.20	0.44	-0.04	-0.04	-0.24	**2.11**	0.18	**-0.53**	-0.04	**-0.09**
P2O5	**5.67**	**5.67**	-0.29	0.49	1.27	-0.10	0.10	0.01	**7.62**	-0.59	**-0.20**	0.98	**-0.39**
Ba	**1.24**	*	-1.47	0.91	*	-4.34	*	0.14	**-11.05**	0.61	**3.66**	-0.04	**-0.91**
Be	**1.36**	*	*	*	*	*	*	0.38	*	*	*	0.29	*
Cd	*	***-1.65***	*	*	*	*	*	*-0.34*	*	*0.14*	*	*-0.48*	*
Ce	**0.21**	*	0.29	0.35	*	-5.08	*	0.64	**-0.04**	1.38	**10.42**	0.84	**0.19**
Co	**-2.88**	**-9.98**	0.27	1.50	*	*	*	0.25	**-12.21**	2.43	**3.85**	-0.24	*
Cr	**0.52**	**-24.59**	-3.27	-0.68	*	-4.79	*	0.83	**10.09**	-1.85	**2.19**	3.03	**1.11**
Cs	**-1.88**	*	*	*	*	*	*	-0.11	**-10.38**	0.24	*	0.73	*
Cu	**-0.38**	**-0.31**	-0.97	-0.29	*	-7.14	*	0.95	**-3.61**	-0.53	**-1.58**	-0.03	**0.71**
Dy	**-0.74**	*	-0.09	*	*	*	*	0.07	**-0.25**	0.52	*	-0.56	**1.28**
Er	**-1.99**	*	0.08	*	*	*	*	0.00	**0.44**	0.08	*	0.53	**0.44**
Eu	**1.42**	*	0.18	*	*	*	*	-0.05	**0.37**	1.37	*	0.36	**0.37**
Ga	**1.95**	*	-0.93	-0.34	*	-6.40	*	0.05	*	1.32	**-1.07**	0.25	**-0.09**
Gd	**-0.70**	*	0.23	*	*	*	*	-0.23	**0.48**	0.39	**0.55**	0.27	*
Ge	***-2.26***	*	*	*	*	*	*	*	*	*	***-2.37***	*-1.18*	*
Hf	***-1.61***	*	*3.98*	*-1.34*	*	*	*	*-0.92*	***-2.13***	*	***3.88***	*1.47*	***1.95***
Ho	**-2.36**	*	-0.78	*	*	*	*	-0.01	**0.87**	0.20	*	0.57	**1.01**
La	**0.38**	*	0.68	0.86	*	-3.55	*	0.08	**0.36**	1.30	**-0.49**	0.42	**0.26**
Li	**1.97**	*	10.12	*	*	*	*	0.07	*	*	*	0.38	*
Lu	**0.61**	*	-0.61	*	*	*	*	-0.05	**-1.49**	-0.38	*	0.76	**0.31**
Mo	*	*	*	*	*	*	*	0.00	**4.33**	*	*	-1.32	*
Nb	**14.51**	*	-1.70	-1.76	*	*	*	-0.30	**8.71**	-1.89	**-3.51**	0.32	**-0.68**
Nd	**2.08**	*	0.44	2.78	*	*	*	-0.11	**-0.03**	1.64	**3.18**	-0.13	**-0.14**
Ni	**-2.37**	**-6.10**	-3.47	-0.72	*	-3.42	*	0.60	**13.11**	3.03	**2.35**	0.29	**1.98**
Pb	**-1.03**	**-5.93**	*	1.65	*	0.99	*	-0.57	**4.09**	0.18	**-11.20**	0.99	**1.00**
Pr	**2.00**	*	-1.31	*	*	*	*	-0.07	**-0.46**	1.29	*	0.59	**0.23**
Rb	**-1.10**	*	-2.46	-0.15	*	-3.96	*	0.09	**-1.29**	0.26	**4.02**	0.37	**-0.61**
Sc	**2.32**	*	-0.20	-0.42	*	*	*	0.60	**-13.12**	0.60	**-1.76**	0.18	**0.28**
Sm	**0.82**	*	0.15	*	*	*	*	0.14	**0.18**	1.44	*	1.08	**0.07**
Sn	**0.26**	*	*	1.18	*	*	*	1.08	*	*	*	-0.13	*
Sr	**0.01**	*	0.84	0.12	*	-8.00	*	-0.02	**-4.07**	1.48	**-1.09**	0.53	**-0.43**
Ta	**31.88**	*	0.43	*	*	*	*	-0.75	**4.84**	*	*	0.00	**4.84**
Tb	**-1.13**	*	-0.01	*	*	*	*	-0.32	**0.76**	0.42	*	0.30	**0.76**
Th	**0.55**	*	0.28	1.44	*	*	*	-0.01	**-0.20**	-0.85	*	-0.06	**0.93**
Tl	*	**-6.54**	*	*	*	*	*	0.01	*	0.35	*	0.44	*
Tm	**0.00**	*	-0.29	*	*	*	*	-0.01	**0.00**	-0.13	*	*	**0.29**
U	**-2.40**	*	0.53	*	*	*	*	0.13	**-0.35**	-1.33	*	-0.80	**1.07**
V	**0.01**	**-20.63**	-1.81	-1.70	*	-6.12	*	0.37	**-3.31**	-2.10	**2.32**	0.22	**0.77**
Y	**-0.02**	*	-0.61	-0.70	*	-6.40	*	0.24	**7.02**	0.08	**0.41**	-0.41	**0.04**
Yb	**0.69**	*	-1.76	-3.44	*	*	*	0.04	**0.32**	-0.27	*	1.75	**0.14**
Zn	**-0.38**	**4.52**	-3.10	-0.86	*	3.04	*	0.25	**-3.64**	3.45	**1.38**	0.96	**2.01**
Zr	***-8.25***	*	*-6.06*	*0.09*	*	*-4.16*	*	*-2.96*	***4.97***	*-0.55*	***-5.39***	*1.31*	***0.86***

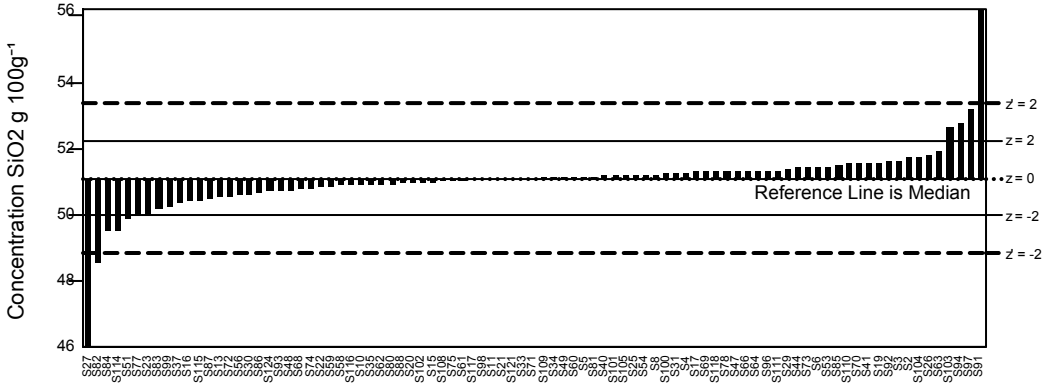
Bold entries are Data Quality 1 - Underlined entries are Data Quality 2 - *Entries in italics* are derived from Provisional Values.

Table 3 - GeoPT38 Z-scores for Ardnamurchan Gabbro, OU-7. 11/12/2015

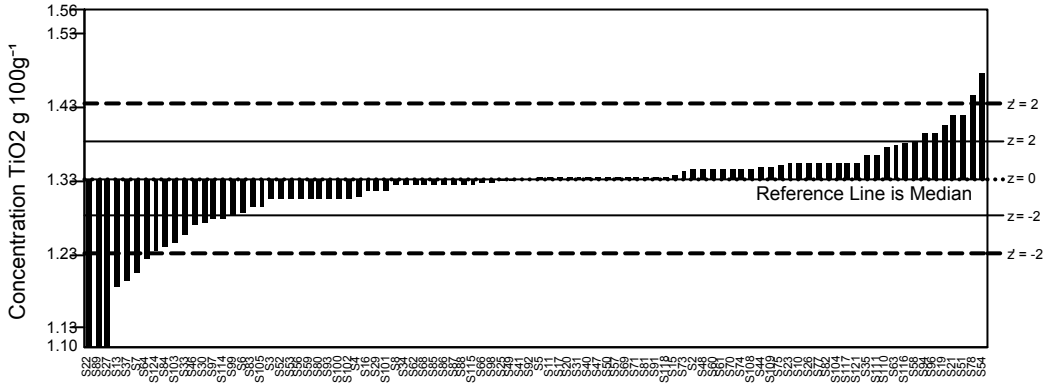
Lab Code	S110	S111	S114	S115	S116	S117	S118	S119	S120	S121	S122	S123	S124
SiO2	0.39	**0.44**	**-2.81**	-0.58	-0.16	**-0.09**	0.18	*	*	**-0.02**	*	*	-0.36
TiO2	0.82	**1.24**	**-2.18**	-0.17	0.95	**0.84**	0.03	*	*	**0.84**	*	*	-1.93
Al2O3	0.30	**0.74**	**1.09**	-0.22	-0.22	**2.63**	0.19	*	*	**1.10**	*	*	1.09
Fe2O3T	0.34	**0.61**	**-2.75**	-0.72	0.88	**0.34**	-0.85	*	*	**0.68**	*	*	-1.80
MnO	1.25	42.59	**-1.25**	0.00	0.38	**-2.51**	0.00	*	*	**0.00**	*	*	-2.51
MgO	0.27	0.52	**-5.23**	1.71	0.45	**-1.59**	-0.36	*	*	**-0.34**	*	*	2.90
CaO	0.45	0.23	**-7.36**	0.04	0.42	**-2.19**	-1.28	*	*	**-1.21**	*	*	-1.47
Na2O	0.65	**0.37**	**5.30**	0.83	0.11	**-9.23**	0.00	*	*	**0.55**	*	*	0.92
K2O	0.18	**0.35**	**2.73**	-0.26	0.15	**-2.73**	-0.04	*	*	**2.55**	*	*	3.04
P2O5	0.49	**-0.20**	**-4.30**	-0.10	0.49	**-4.10**	-0.10	*	*	**-0.20**	*	*	2.83
Ba	-0.11	1.18	**0.26**	-0.95	0.13	**-4.88**	1.10	*	**-0.66**	**-1.91**	*	-0.36	0.08
Be	*	-0.36	**0.66**	-3.61	*	**-1.76**	0.03	*	*	**-0.07**	*	*	0.22
Cd	*	*	*	*	*	***5.24***	*	*	*	*	*	*	*
Ce	1.09	2.33	**-0.14**	-0.43	*	**-0.01**	-0.08	0.30	**0.56**	**0.07**	**-18.46**	-10.68	-0.89
Co	*	0.12	**-2.56**	4.93	0.09	**5.47**	0.06	*	**-0.39**	**0.18**	*	*	5.53
Cr	1.10	-0.45	**-0.44**	0.32	0.69	**-4.46**	0.06	*	**0.44**	**0.02**	*	*	0.09
Cs	-0.18	0.42	**1.64**	*	*	*	0.73	*	**-0.76**	**-0.67**	*	*	*
Cu	*	-0.28	**-1.28**	0.61	0.68	**-0.66**	-1.77	*	**-1.00**	**0.71**	*	*	0.48
Dy	-0.09	0.71	**-0.13**	-0.94	*	**-4.28**	-0.21	-0.09	**0.13**	**0.17**	*	-0.19	-0.42
Er	0.11	0.69	**-0.42**	-0.08	*	**1.00**	-0.30	0.25	**-0.77**	**0.28**	*	0.02	0.02
Eu	-0.52	0.27	**-0.37**	-0.12	*	**-2.00**	-0.08	-0.08	**-0.80**	**-0.16**	*	0.33	0.03
Ga	-1.22	0.53	**-0.83**	-0.05	*	*	-0.88	*	**-0.09**	**0.30**	*	0.42	-0.05
Gd	0.16	0.86	**-0.30**	-0.48	*	**0.91**	-0.55	0.19	**0.48**	**0.06**	*	-1.77	0.43
Ge	*	*1.13*	*	*-0.24*	*	*	*	*	*	*	*	*	*-0.78*
Hf	*2.17*	*-3.52*	***-7.59***	*-1.60*	*	*	*0.30*	*	***-6.63***	***-0.34***	*	*1.63*	*1.19*
Ho	0.03	0.50	**0.13**	-0.51	*	**9.63**	-0.10	-0.31	**-0.10**	**0.20**	*	-0.41	-0.54
La	0.69	1.83	**-0.57**	-0.53	*	**-1.92**	0.14	0.27	**0.51**	**-0.05**	**-16.39**	0.36	-0.90
Li	*	**-3.50**	**0.47**	*	*	*	*	*	*	**-0.65**	*	*	*
Lu	0.31	-0.31	**-1.01**	0.15	*	**20.13**	0.00	0.00	**-0.21**	**0.00**	*	0.50	0.26
Mo	*	0.21	**0.76**	1.73	*	*	-0.23	*	*	*	*	*	*
Nb	-0.07	0.75	**1.06**	0.84	0.06	*	0.19	*	**0.70**	**1.01**	*	2.08	2.14
Nd	-0.03	1.11	**-0.21**	-1.23	*	**1.08**	-0.22	-0.17	**0.45**	**0.03**	**-16.07**	-0.33	-0.23
Ni	*	0.81	**0.02**	1.18	0.46	**-1.54**	0.00	*	**1.47**	**0.88**	*	*	0.26
Pb	*	4.02	**-0.24**	11.53	10.08	**-2.79**	5.34	*	**-0.16**	**-0.58**	*	*	11.53
Pr	0.51	1.05	**-0.05**	-0.59	*	*	-0.07	0.13	**0.52**	**-0.07**	**-6.75**	0.28	-0.89
Rb	0.37	**-3.44**	**-0.22**	3.50	0.11	*	-0.12	*	**-0.37**	**-0.53**	*	0.97	2.76
Sc	*	-0.53	**0.46**	-0.53	*	**0.14**	0.14	*	**-0.03**	**0.78**	*	-2.59	-0.53
Sm	-0.42	0.70	**-0.25**	0.14	*	**0.00**	-0.27	-0.47	**-0.54**	**-0.10**	**-5.61**	0.18	0.08
Sn	-1.18	0.18	*	0.08	*	*	-0.66	*	*	**-0.16**	*	15.50	-0.38
Sr	1.73	0.03	**0.39**	1.57	0.41	**-0.35**	-0.55	*	**0.15**	**0.56**	*	-0.71	1.15
Ta	0.29	0.29	**-0.25**	0.00	*	*	-1.14	*	**-0.88**	**0.01**	*	4.14	-1.46
Tb	0.22	0.30	**-0.22**	0.22	*	**8.01**	-0.49	0.07	**0.13**	**-0.03**	*	-0.36	0.18
Th	*	0.20	**-1.46**	49.63	-4.96	*	-0.44	-0.06	**0.10**	**-0.43**	*	0.09	57.16
Tl	*	0.12	*	*	*	*	1.72	*	*	*	*	*	*
Tm	-0.15	0.29	*	0.29	*	**4.07**	-1.02	0.15	**-0.15**	**0.58**	*	0.51	0.39
U	1.60	-1.07	**-2.35**	-0.27	*	*	-0.13	-0.13	**-0.37**	**1.07**	*	8.00	-0.27
V	0.55	-0.66	**-0.17**	-1.60	-0.31	**-1.10**	0.12	*	**-0.19**	**0.55**	*	*	-1.16
Y	*	0.21	**1.28**	5.57	0.58	**-1.90**	0.25	-0.54	**0.57**	**1.16**	*	0.27	6.40
Yb	*	0.35	**-0.65**	-0.33	*	**-0.41**	-0.08	0.28	**-0.47**	**0.39**	*	-0.20	-0.03
Zn	*	1.00	**0.84**	1.32	-0.63	**0.66**	0.02	*	**-0.58**	**0.85**	*	*	1.32
Zr	*	*0.92*	***-15.32***	*0.33*	*0.60*	***-13.60***	*-0.57*	*	***-14.63***	***-3.24***	*	*1.29*	*0.04*

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

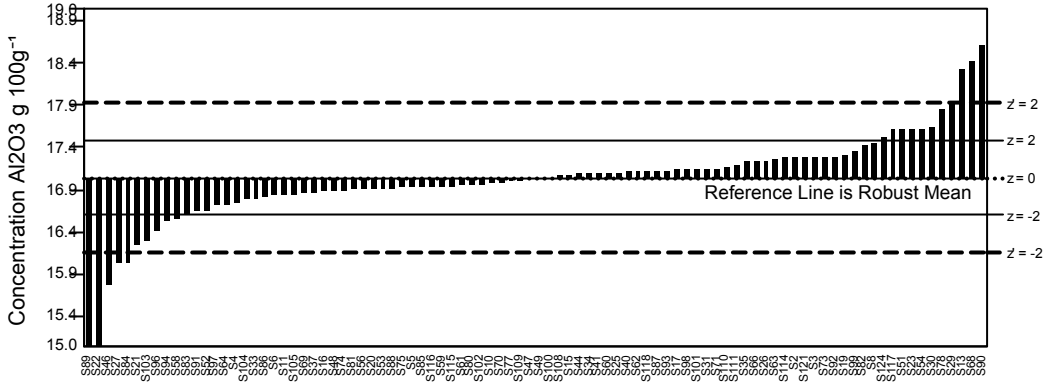
GeoPT38 - Barchart for SiO2



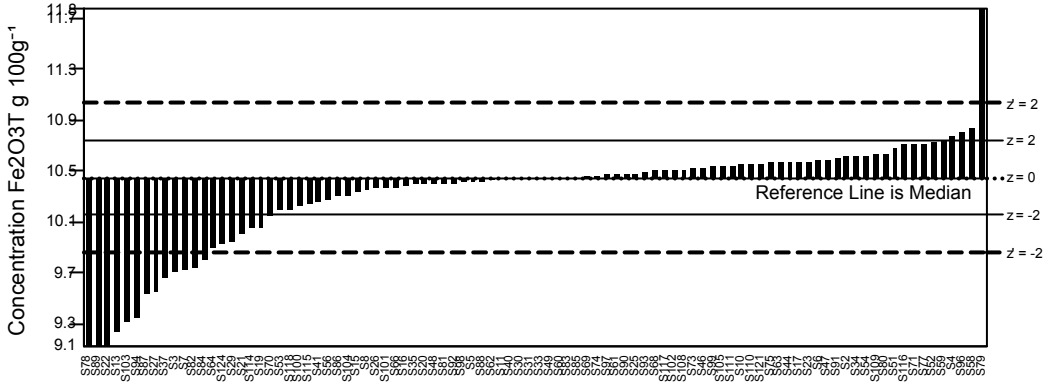
GeoPT38 - Barchart for TiO2



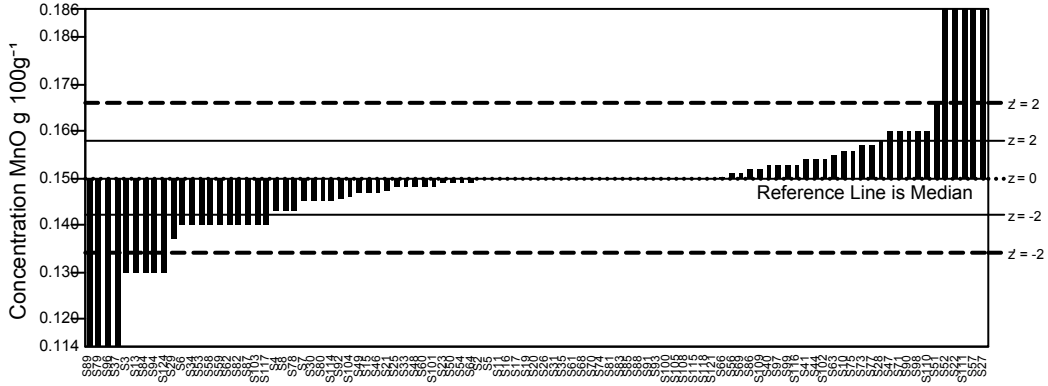
GeoPT38 - Barchart for Al2O3



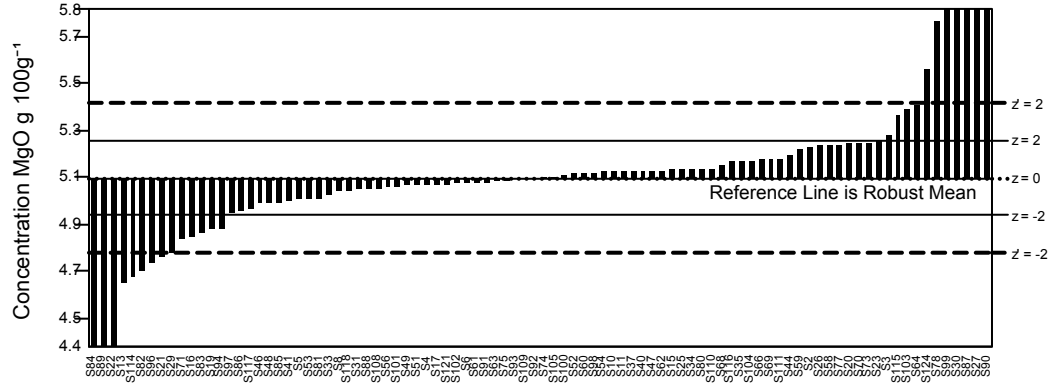
GeoPT38 - Barchart for Fe2O3T



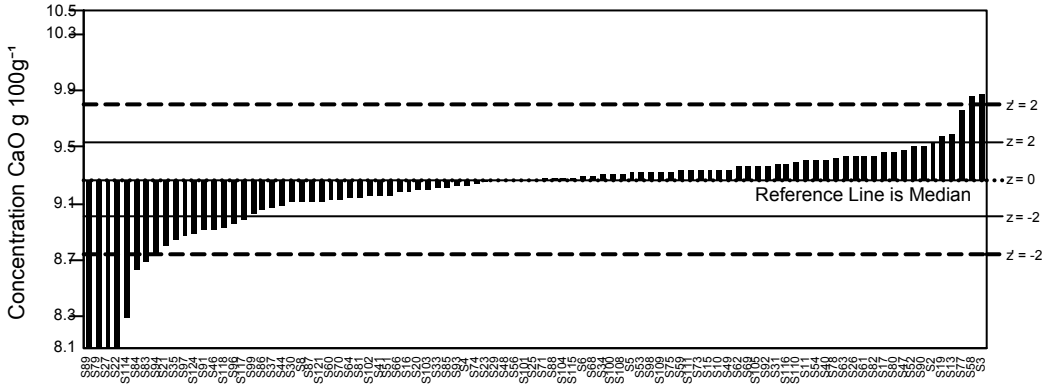
GeoPT38 - Barchart for MnO



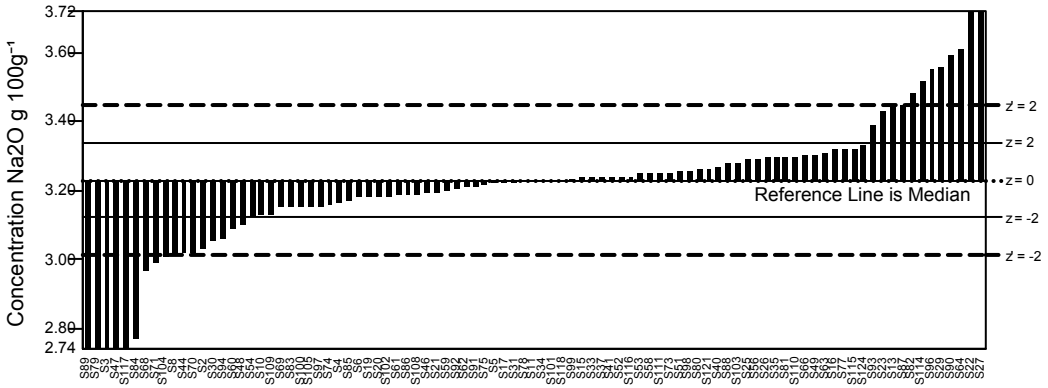
GeoPT38 - Barchart for MgO



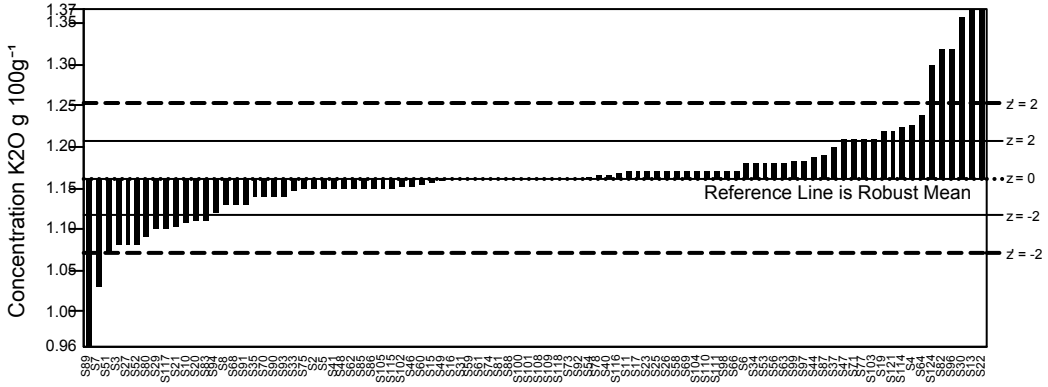
GeoPT38 - Barchart for CaO



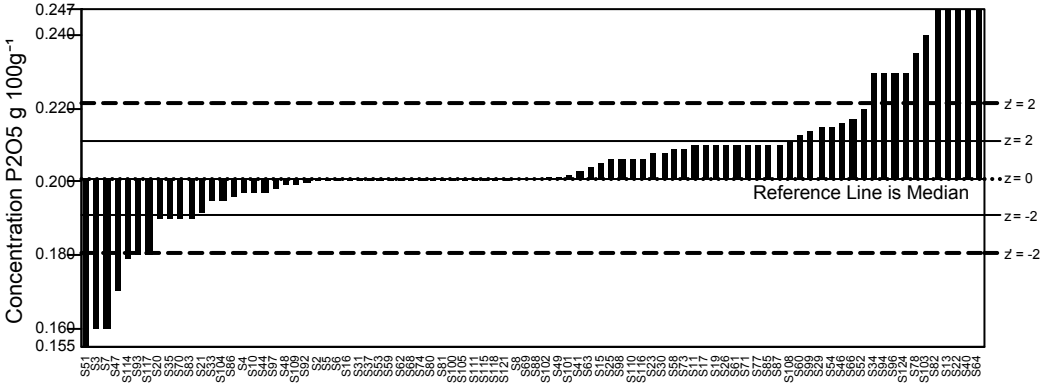
GeoPT38 - Barchart for Na2O



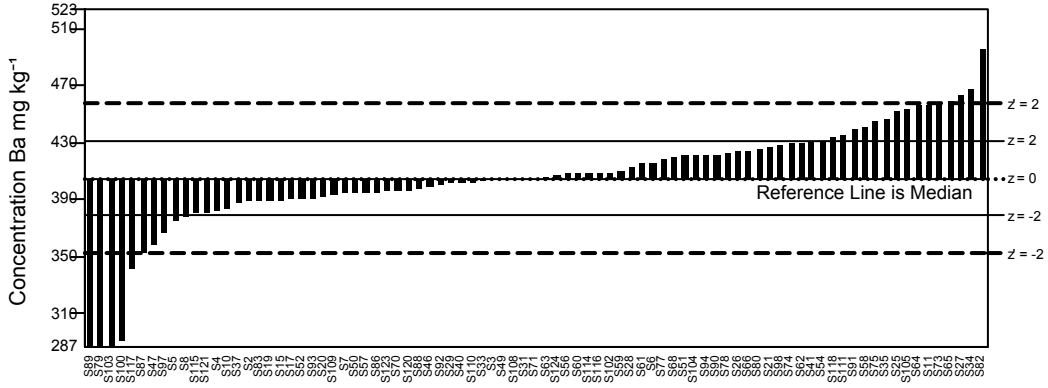
GeoPT38 - Barchart for K2O



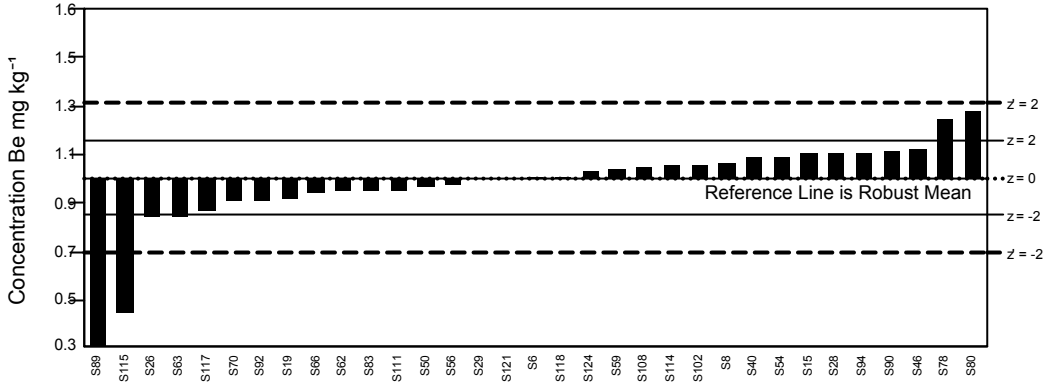
GeoPT38 - Barchart for P2O5



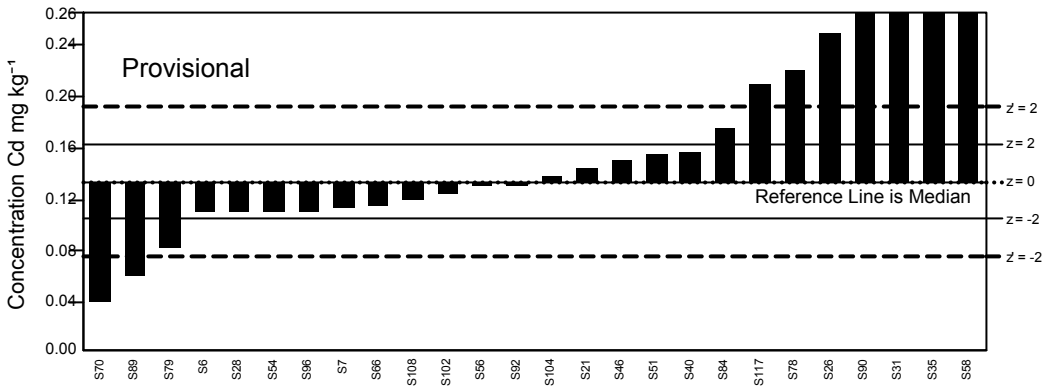
GeoPT38 - Barchart for Ba



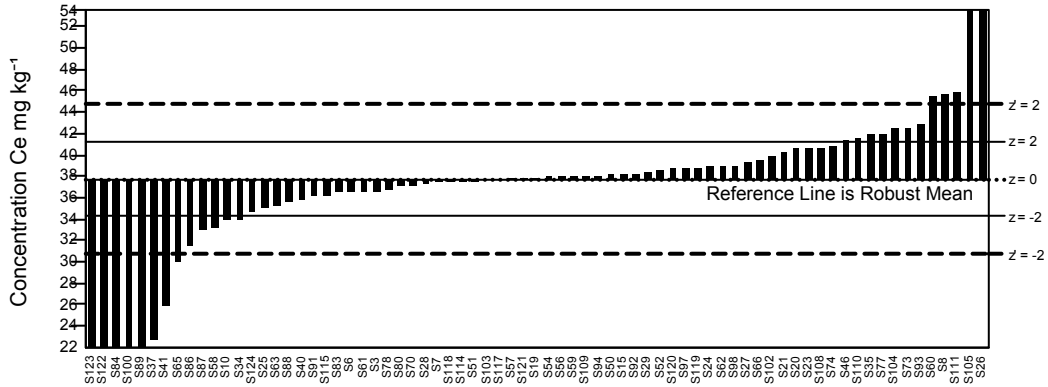
GeoPT38 - Barchart for Be



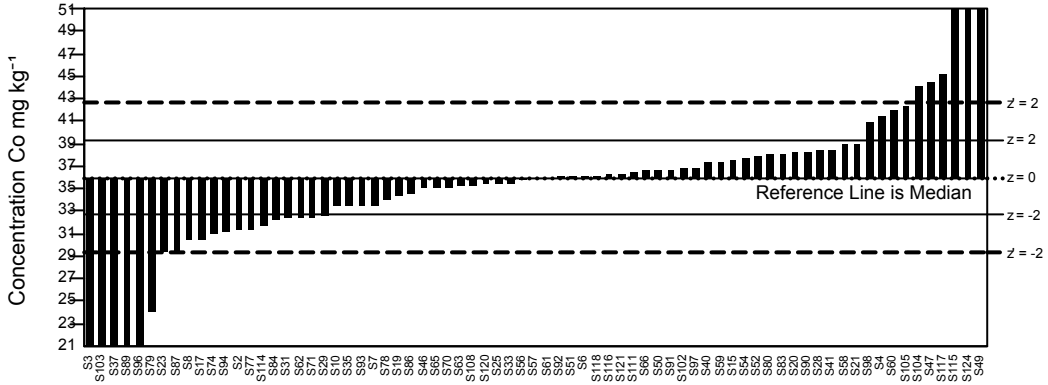
GeoPT38 - Barchart for Cd



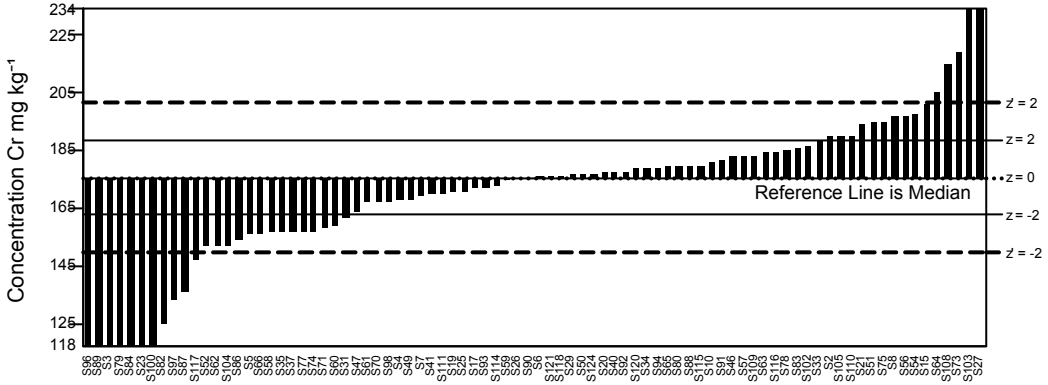
GeoPT38 - Barchart for Ce



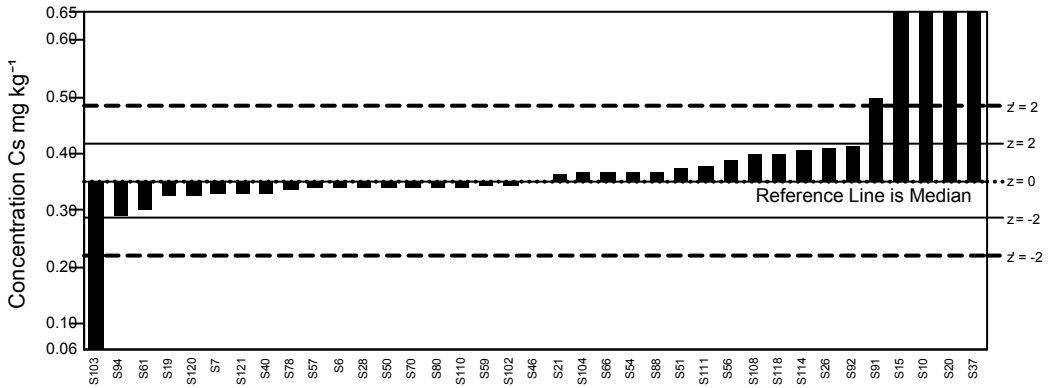
GeoPT38 - Barchart for Co



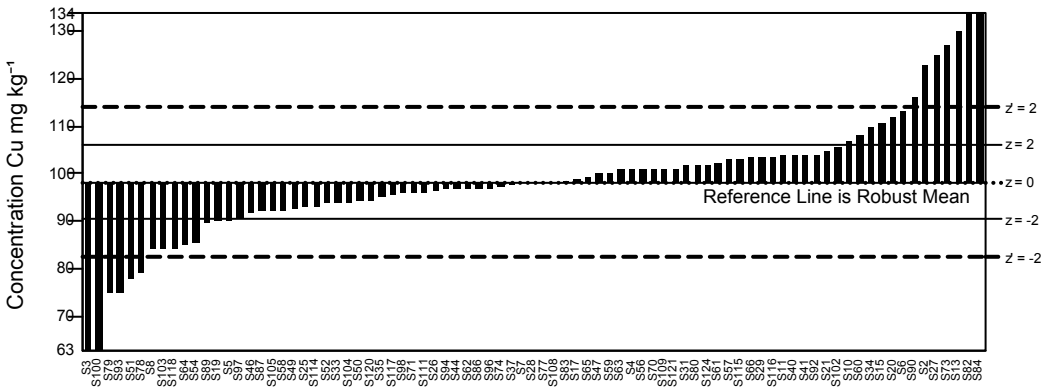
GeoPT38 - Barchart for Cr

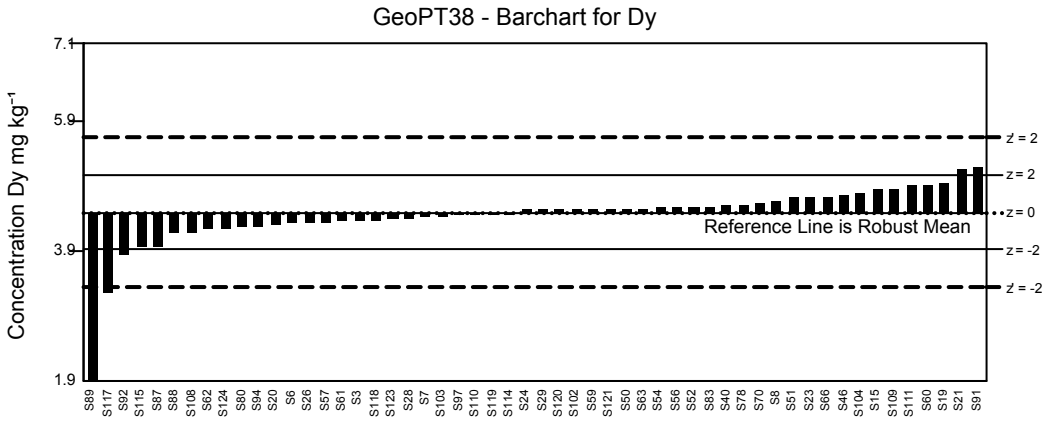


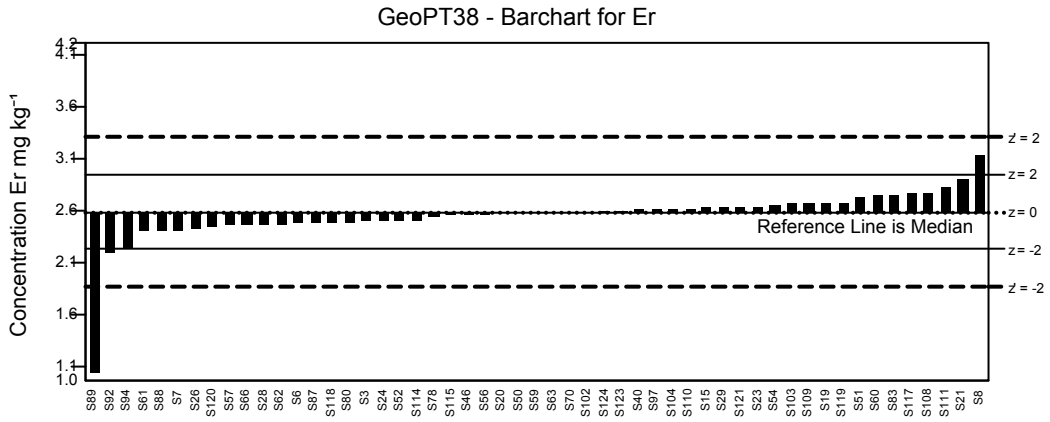
GeoPT38 - Barchart for Cs

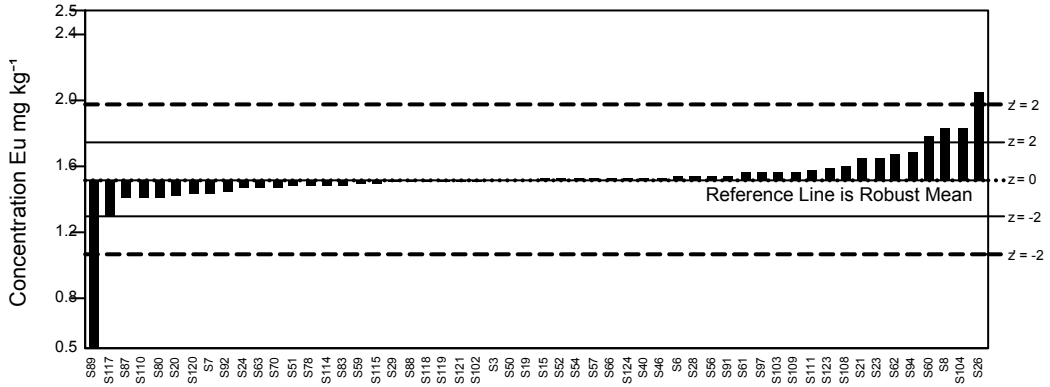


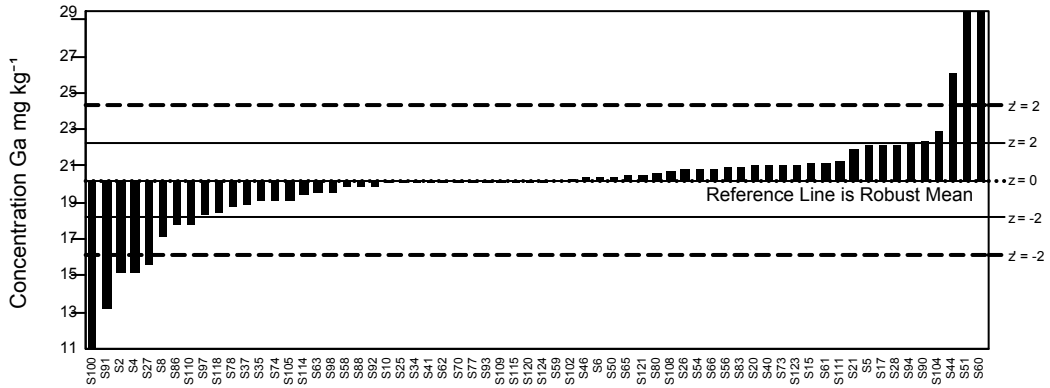
GeoPT38 - Barchart for Cu

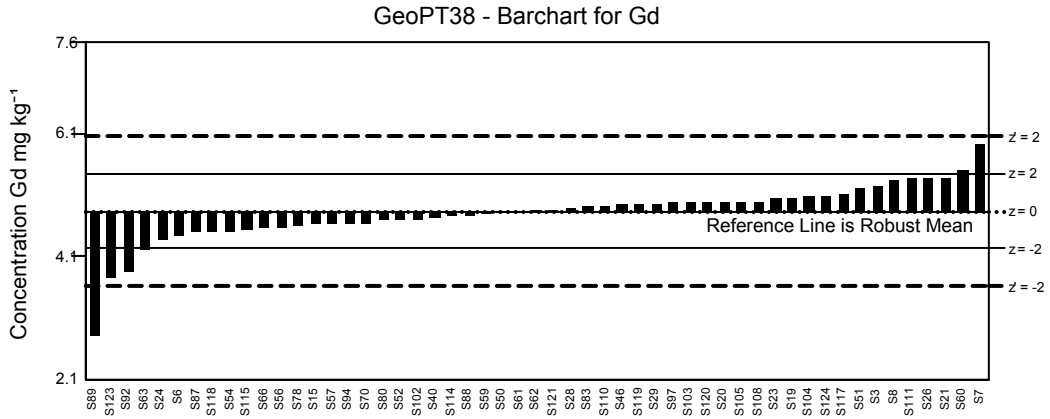


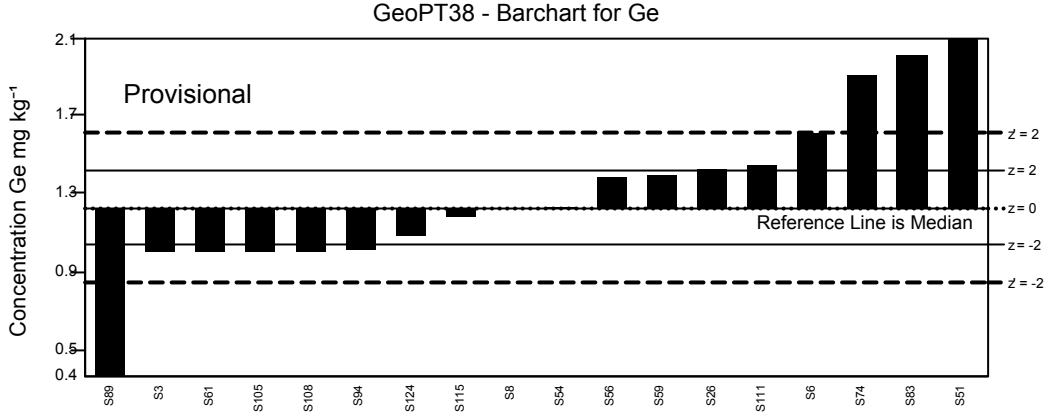

GeoPT38 - Barchart for Dy
Concentration Dy mg kg⁻¹
7.1
5.9
3.9
1.9
Reference Line is Robust Mean
z' = 2
z = 2
z = 0
z = -2
z' = -2


GeoPT38 - Barchart for Er
Concentration Er mg kg⁻¹
4.2
4.1
3.6
3.1
2.6
2.1
1.6
1.1
1.0
Reference Line is Median
z' = 2
z = 2
z = 0
z = -2
z' = -2

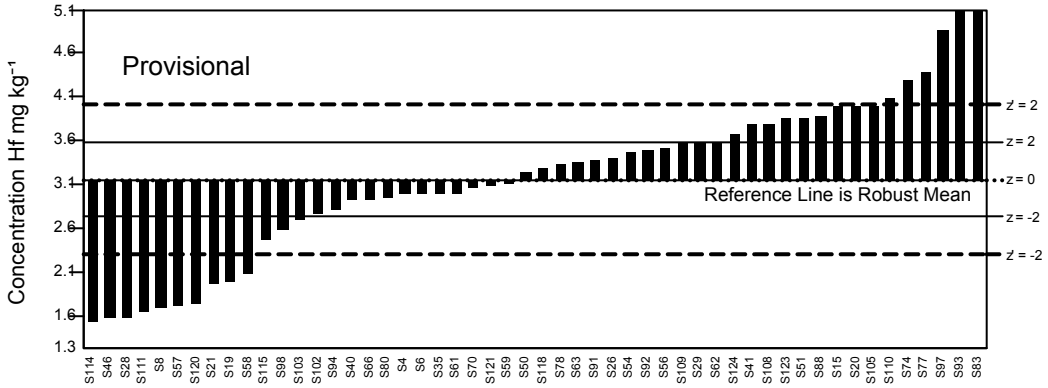

GeoPT38 - Barchart for Eu
Concentration Eu mg kg⁻¹
2.5
2.4
2.0
1.6
1.2
0.8
0.5
Reference Line is Robust Mean
z' = 2
z = 2
z = 0
z = -2
z' = -2


GeoPT38 - Barchart for Ga
Concentration Ga mg kg⁻¹
29
27
25
23
21
19
17
15
13
11
Reference Line is Robust Mean
z' = 2
z = 2
z = 0
z = -2
z' = -2

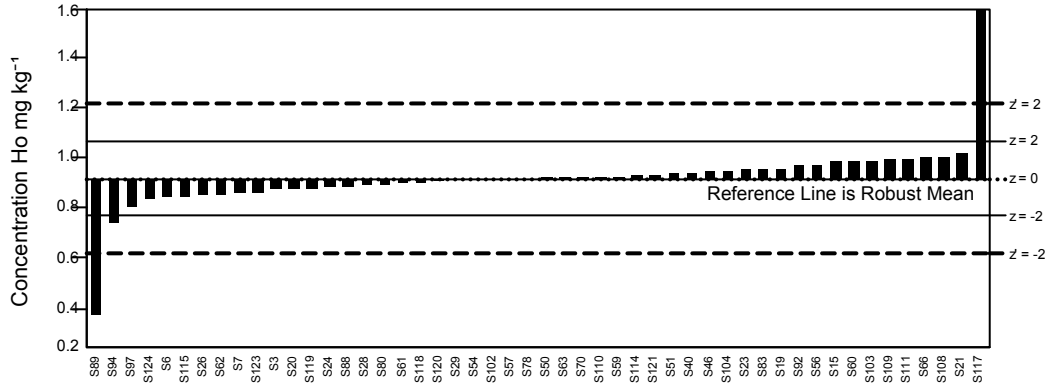

GeoPT38 - Barchart for Gd
Concentration Gd mg kg⁻¹
7.6
6.1
4.1
2.1
Reference Line is Robust Mean
z' = 2
z = 2
z = 0
z = -2
z' = -2


GeoPT38 - Barchart for Ge
Concentration Ge mg kg⁻¹
2.1
1.7
1.3
0.9
0.5
0.4
Provisional
Reference Line is Median
z' = 2
z = 2
z = 0
z = -2
z' = -2

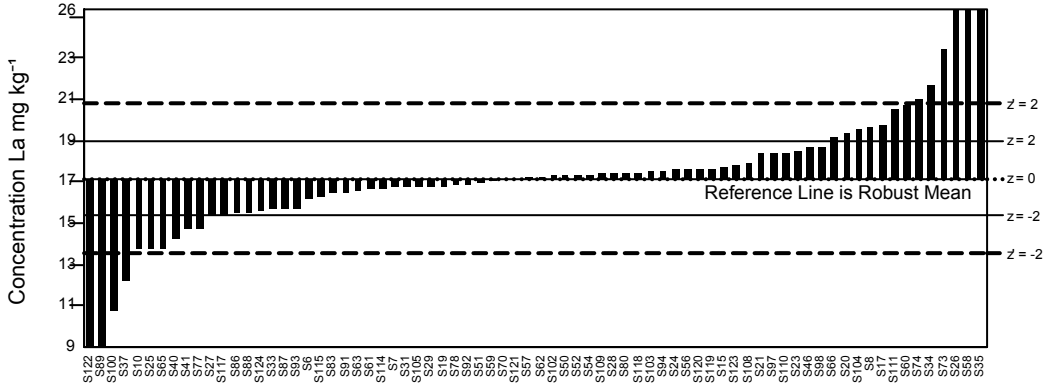
GeoPT38 - Barchart for Hf



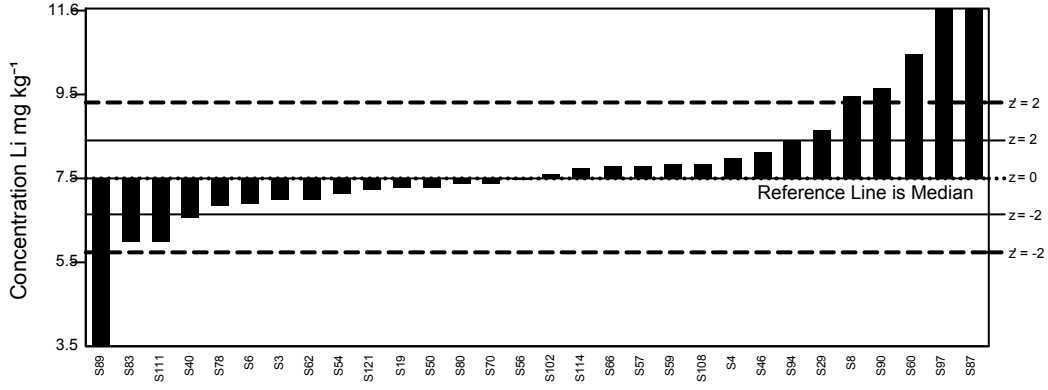
GeoPT38 - Barchart for Ho



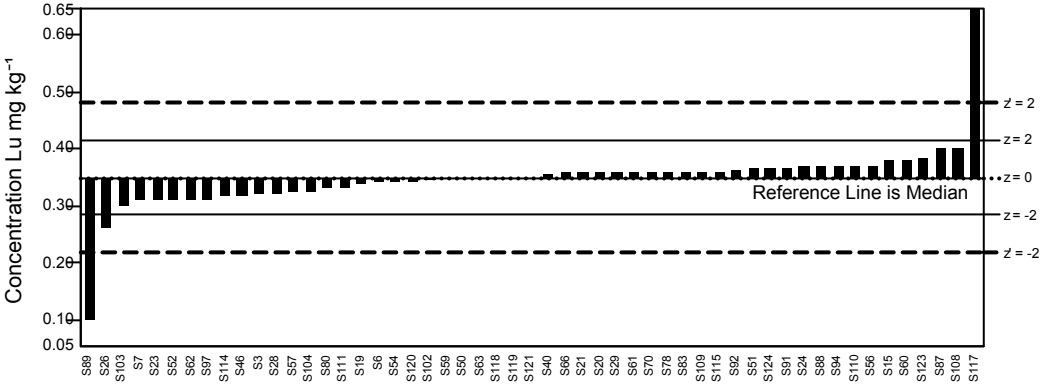
GeoPT38 - Barchart for La



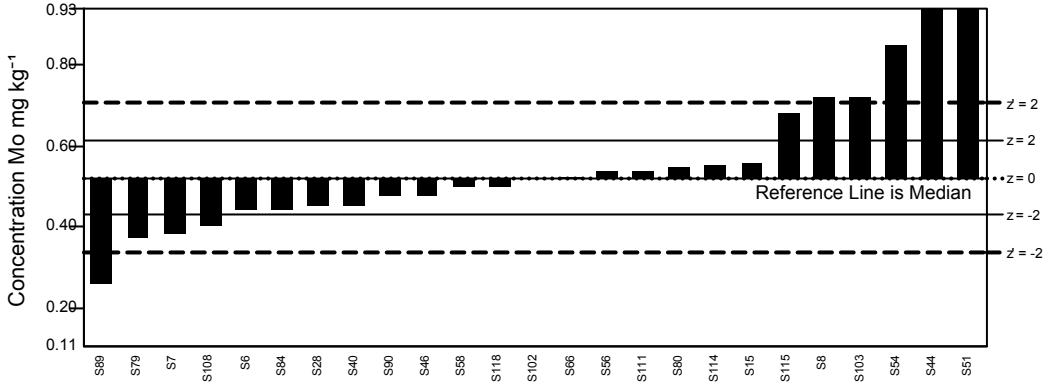
GeoPT38 - Barchart for Li



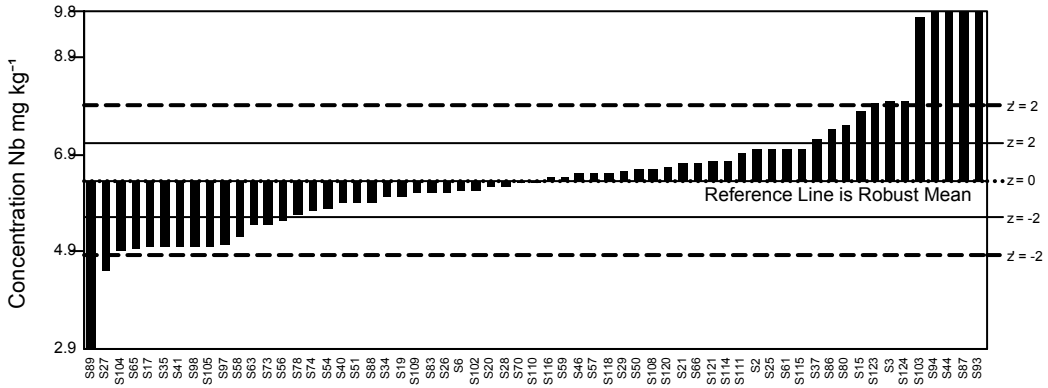
GeoPT38 - Barchart for Lu



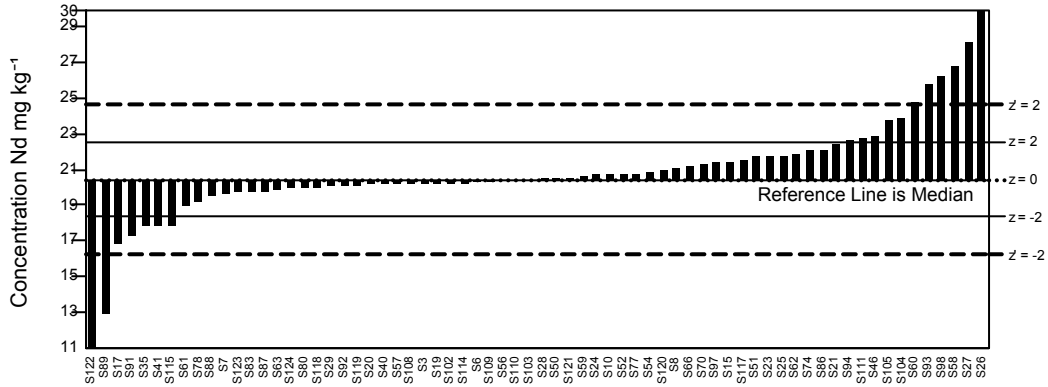
GeoPT38 - Barchart for Mo



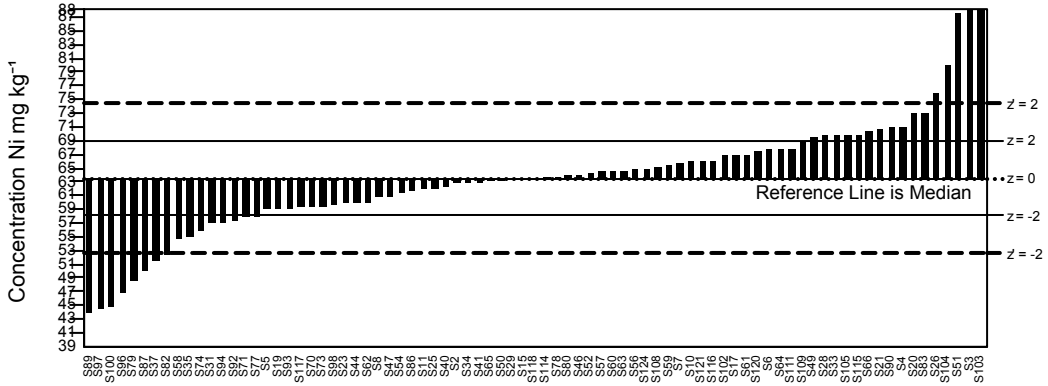
GeoPT38 - Barchart for Nb



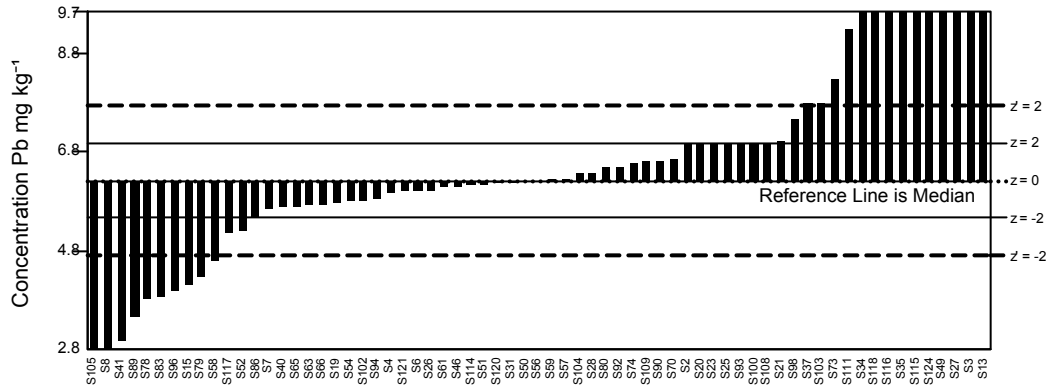
GeoPT38 - Barchart for Nd



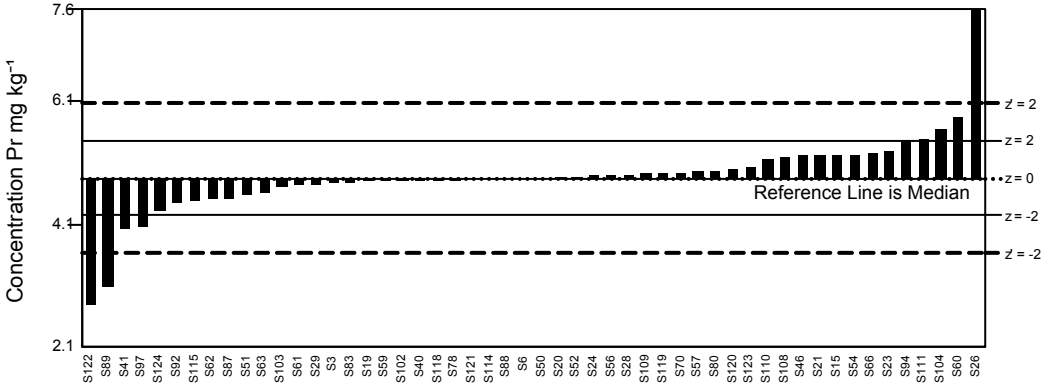
GeoPT38 - Barchart for Ni



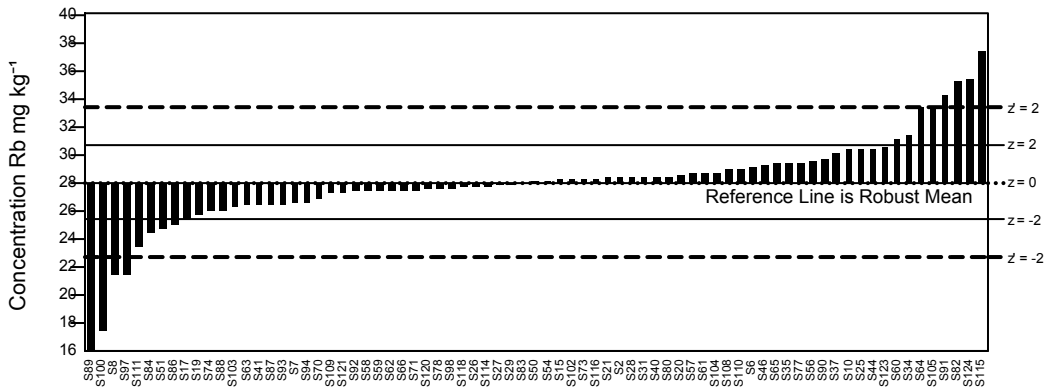
GeoPT38 - Barchart for Pb



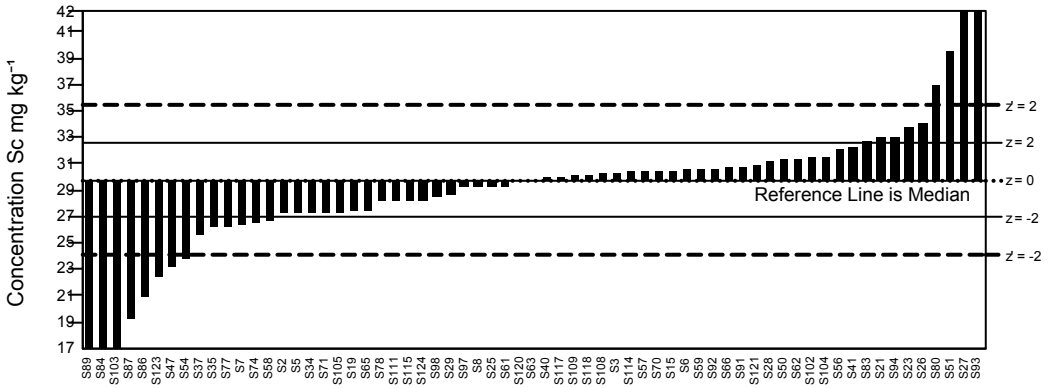
GeoPT38 - Barchart for Pr



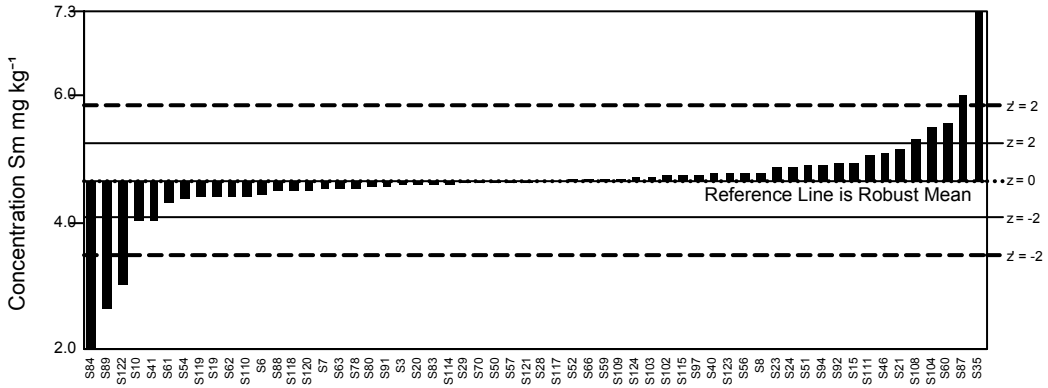
GeoPT38 - Barchart for Rb



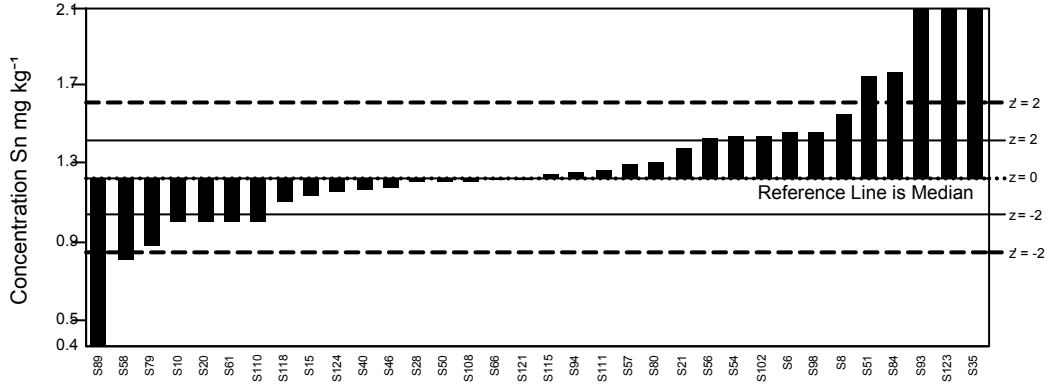
GeoPT38 - Barchart for Sc



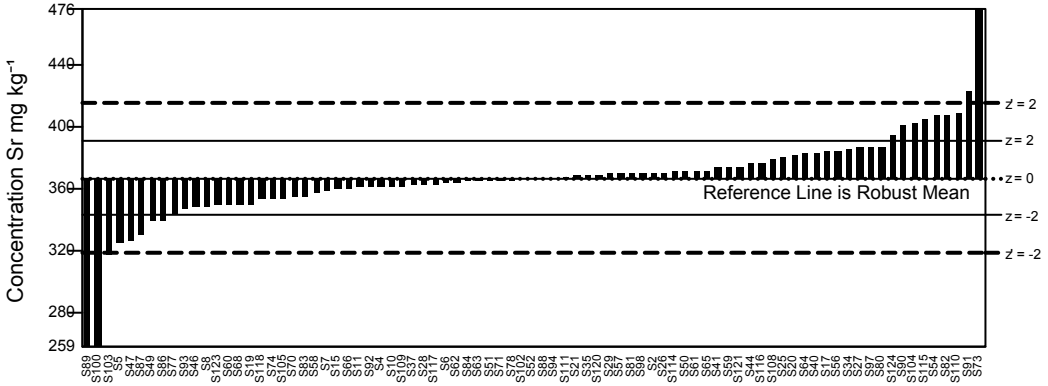
GeoPT38 - Barchart for Sm



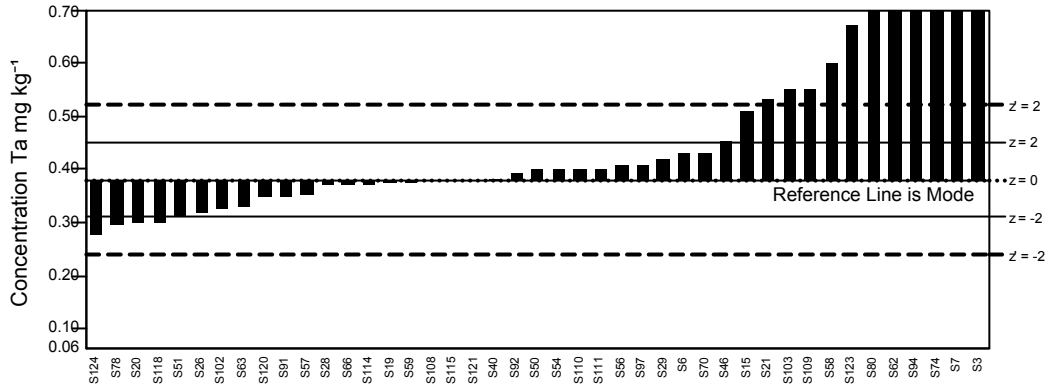
GeoPT38 - Barchart for Sn



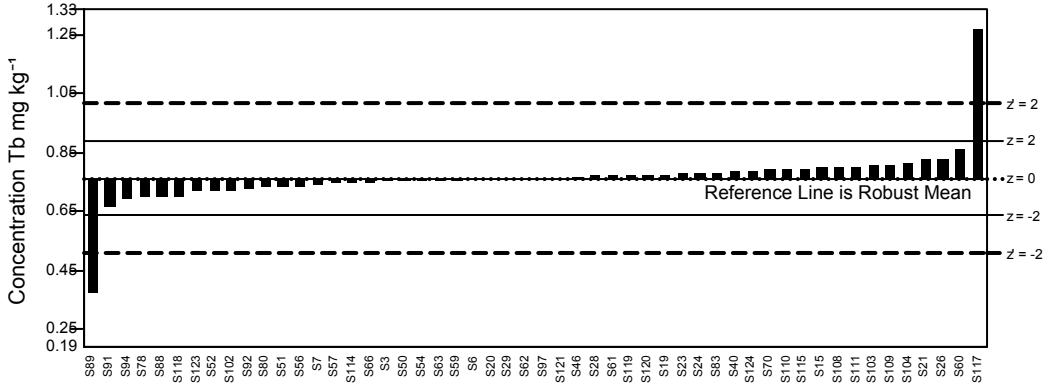
GeoPT38 - Barchart for Sr



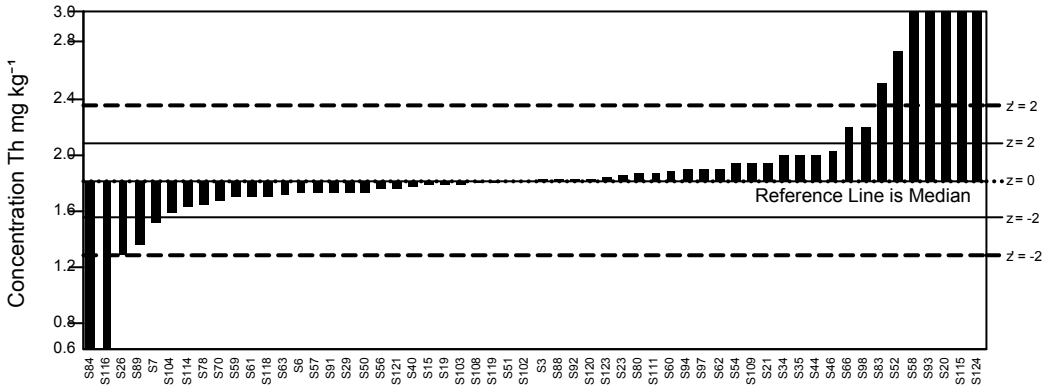
GeoPT38 - Barchart for Ta



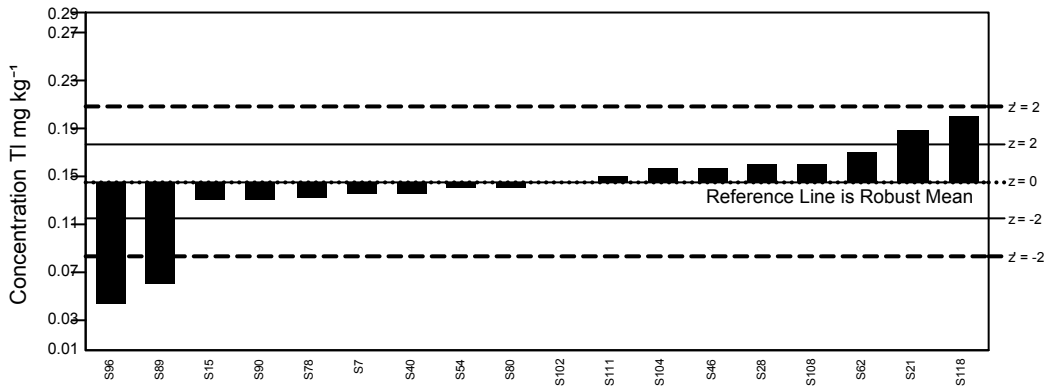
GeoPT38 - Barchart for Tb



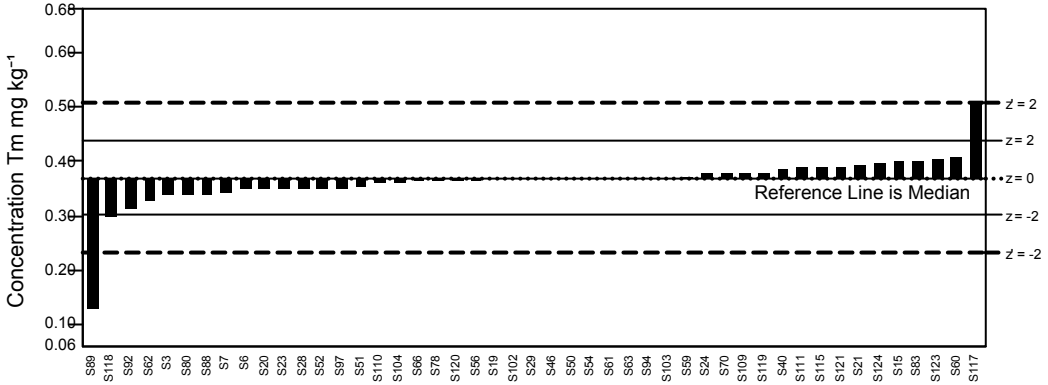
GeoPT38 - Barchart for Th



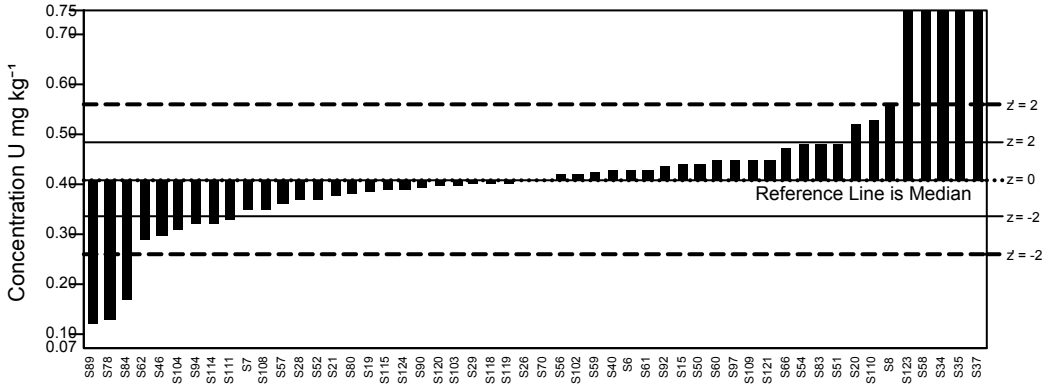
GeoPT38 - Barchart for Tl



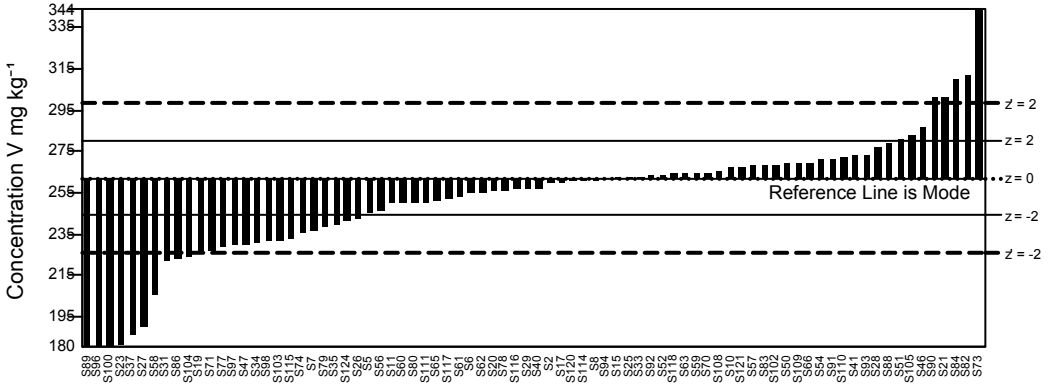
GeoPT38 - Barchart for Tm



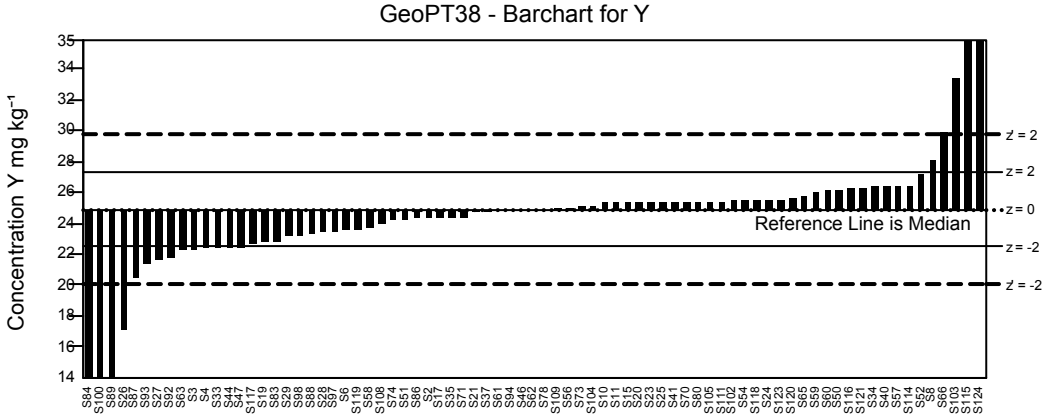
GeoPT38 - Barchart for U

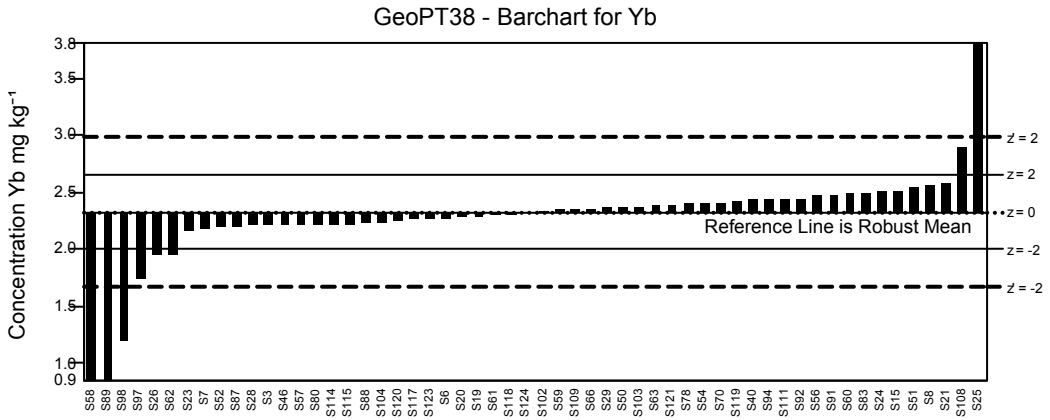


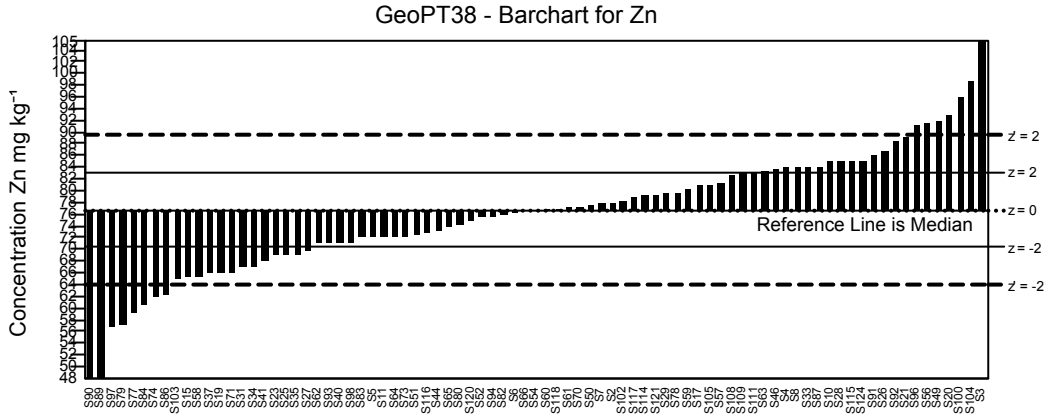
GeoPT38 - Barchart for V



GeoPT38 - Barchart for Y







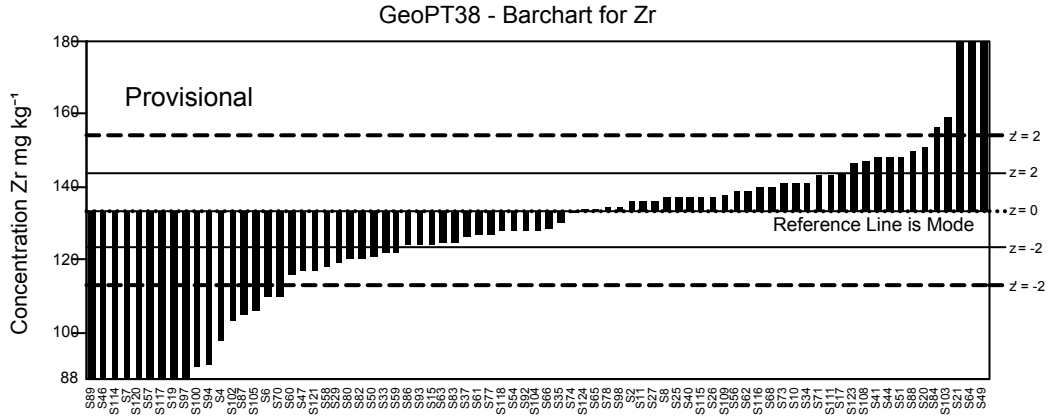
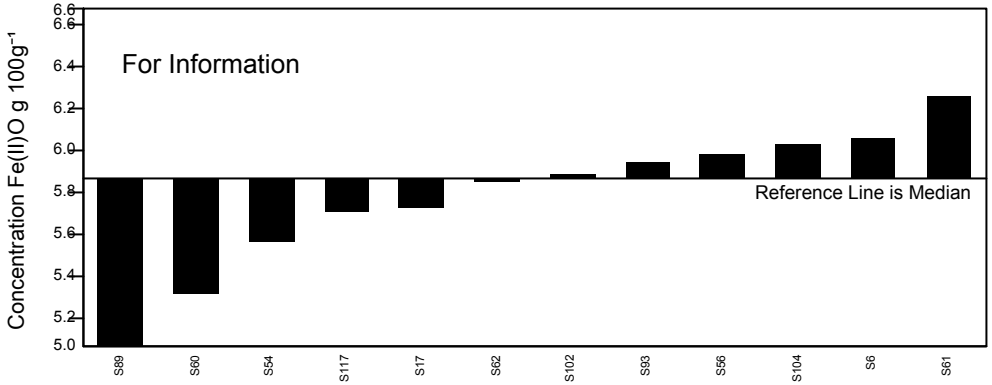
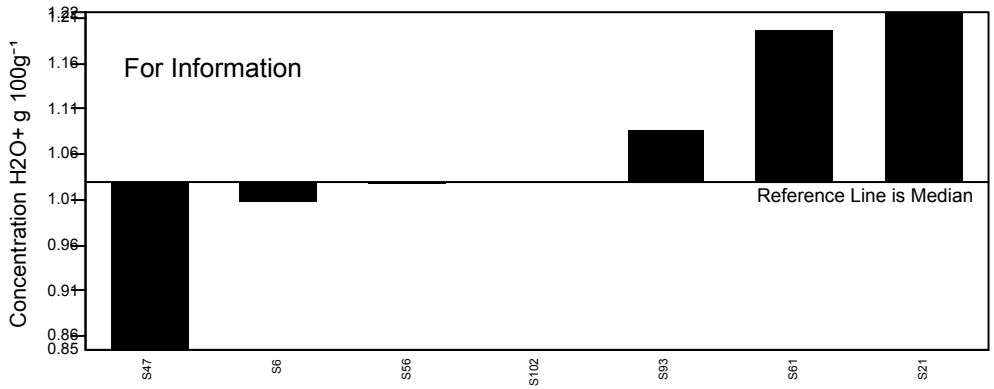


Figure 1: GeoPT38 - Ardnamurchan Gabbro, OU-7. Data distribution charts for elements for which values were assigned or provisional values given for guidance. Horizontal lines show the limits for -2<z<2 for pure geochemistry labs (solid lines) and -2<z'<2 for applied geochemistry labs (pecked lines).

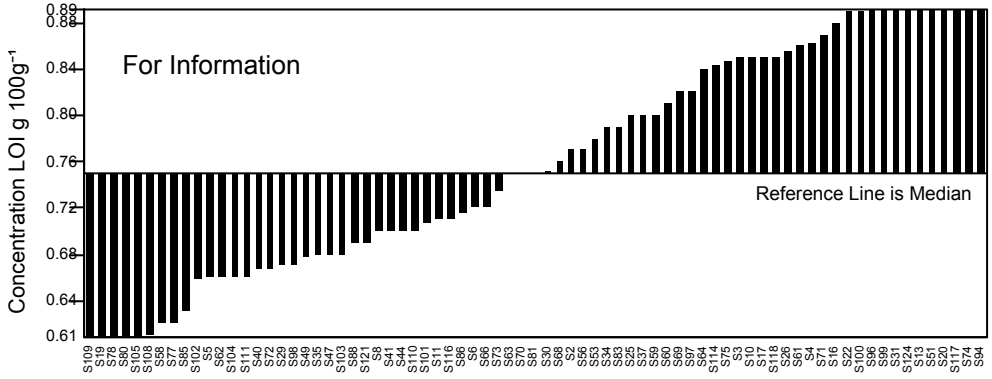
GeoPT38 - Barchart for Fe(II)O



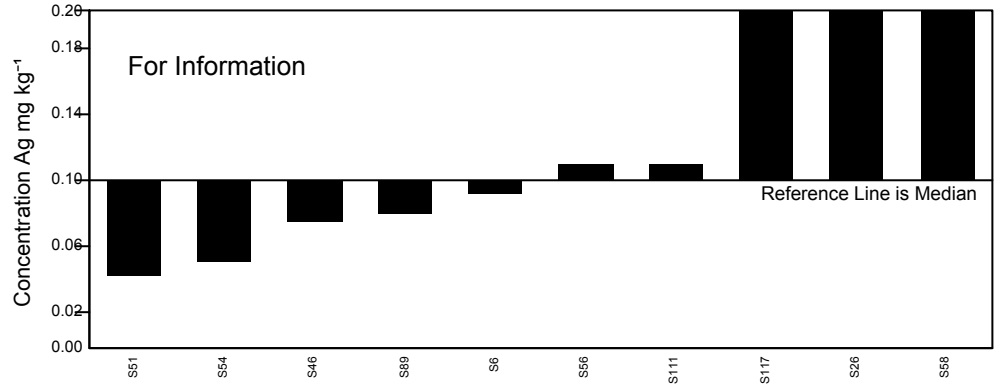
GeoPT38 - Barchart for H2O+



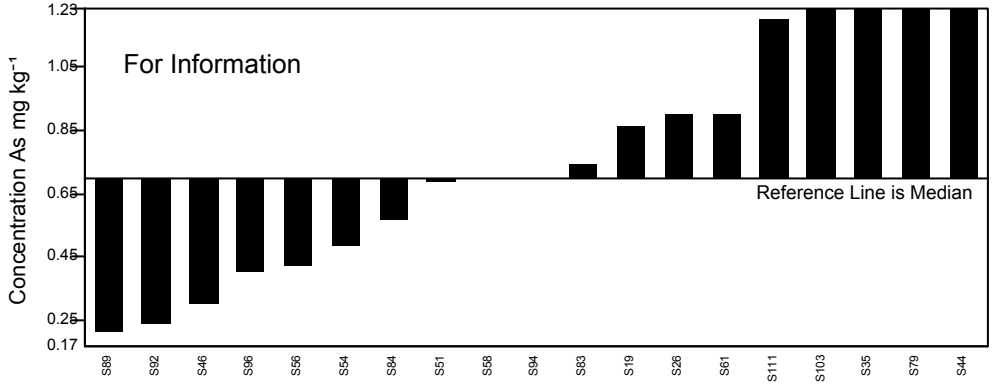
GeoPT38 - Barchart for LOI



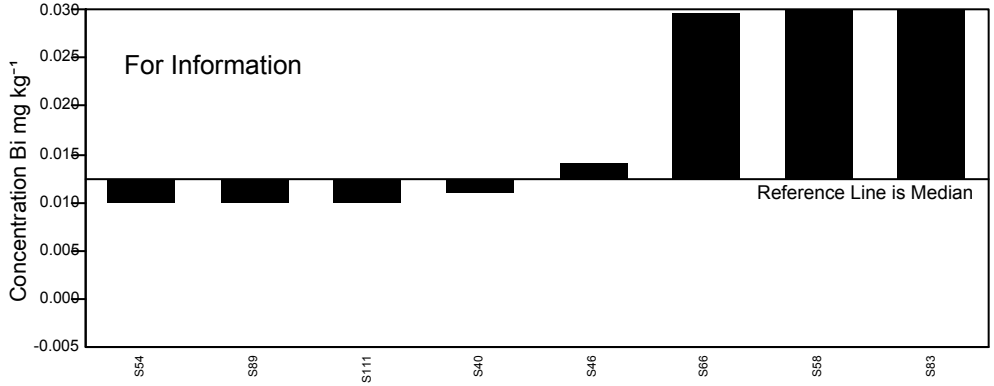
GeoPT38 - Barchart for Ag

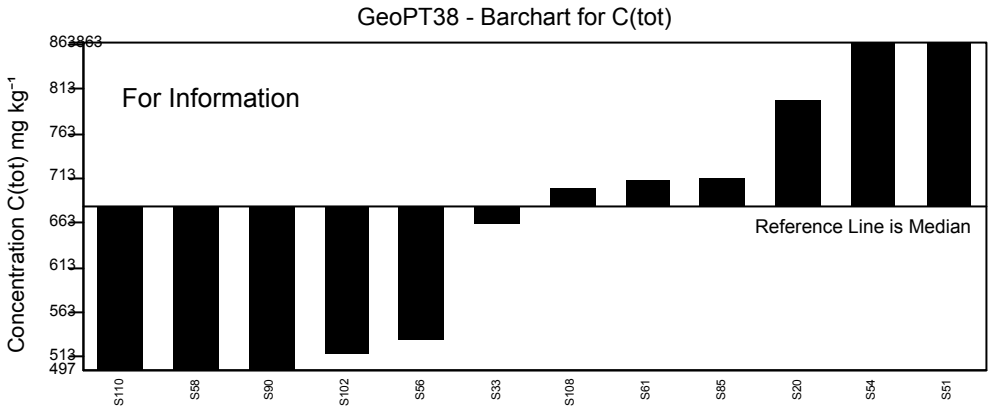


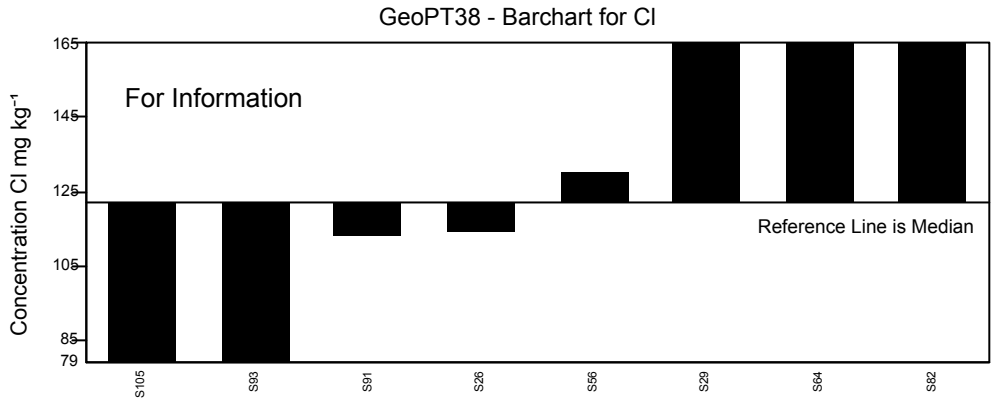
GeoPT38 - Barchart for As

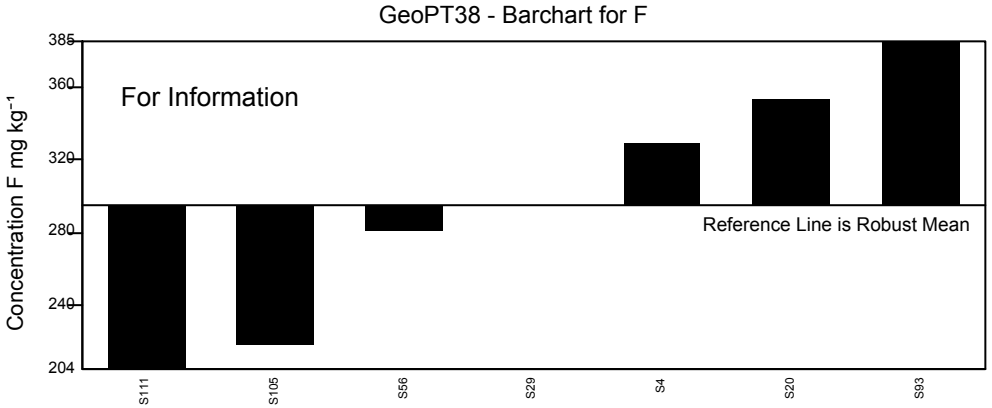


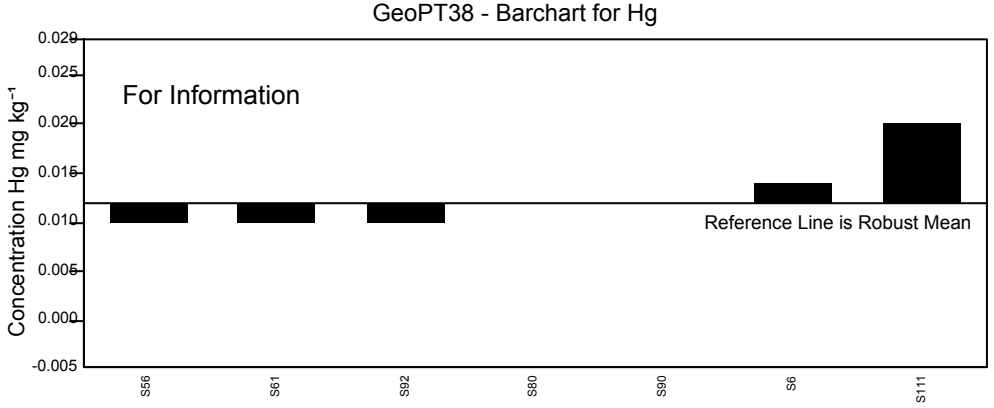
GeoPT38 - Barchart for Bi

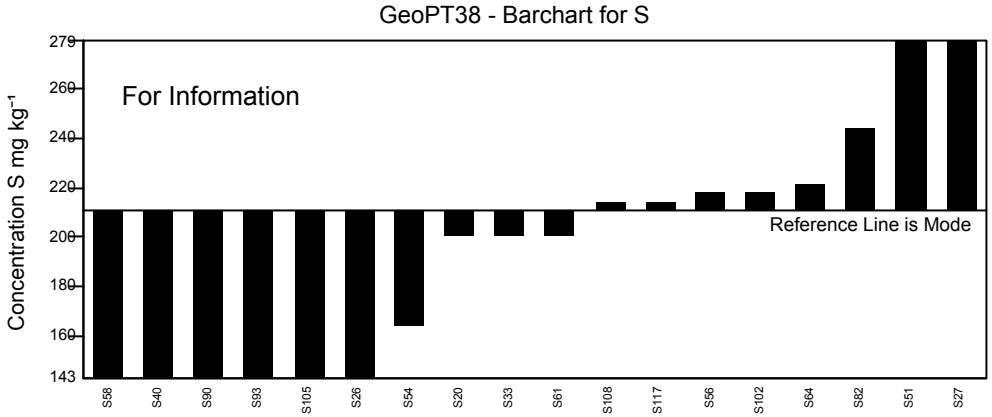


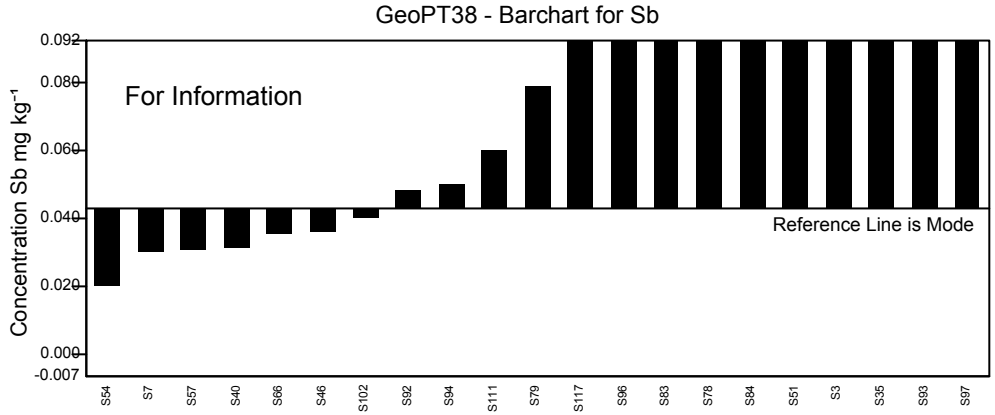

GeoPT38 - Barchart for C(tot)
Concentration C(tot) mg kg⁻¹
For Information
Reference Line is Median
S110
S58
S90
S102
S56
S33
S108
S61
S85
S20
S54
S51

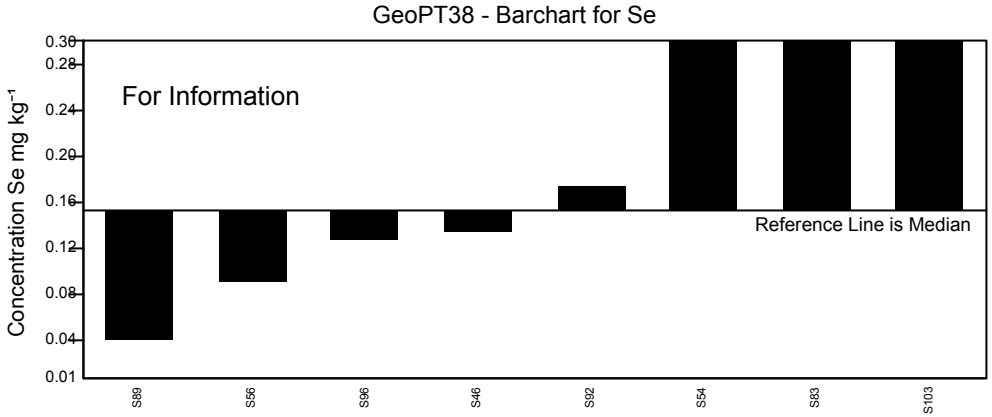

GeoPT38 - Barchart for Cl
Concentration Cl mg kg⁻¹
For Information
Reference Line is Median
S105
S93
S91
S26
S56
S29
S64
S82


GeoPT38 - Barchart for F
Concentration F mg kg⁻¹
For Information
Reference Line is Robust Mean
S111
S105
S56
S29
S4
S20
S93


GeoPT38 - Barchart for Hg
Concentration Hg mg kg⁻¹
For Information
Reference Line is Robust Mean
S56
S61
S92
S80
S90
S6
S111


GeoPT38 - Barchart for S
Concentration S mg kg⁻¹
For Information
Reference Line is Mode
S58
S40
S90
S93
S105
S26
S54
S20
S33
S61
S108
S117
S56
S102
S64
S82
S51
S27


GeoPT38 - Barchart for Sb
Concentration Sb mg kg⁻¹
For Information
Reference Line is Mode
S54
S7
S57
S40
S66
S46
S102
S92
S94
S111
S79
S117
S96
S83
S78
S84
S51
S3
S35
S93
S97



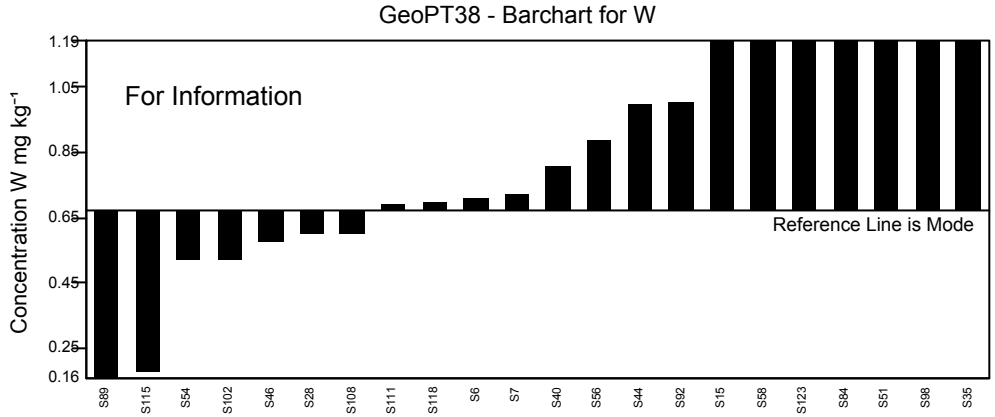


Figure 2: GeoPT38 - Ardnamurchan Gabbro, OU-7. Data distribution charts provided for information only for elements for which values could not be assigned.

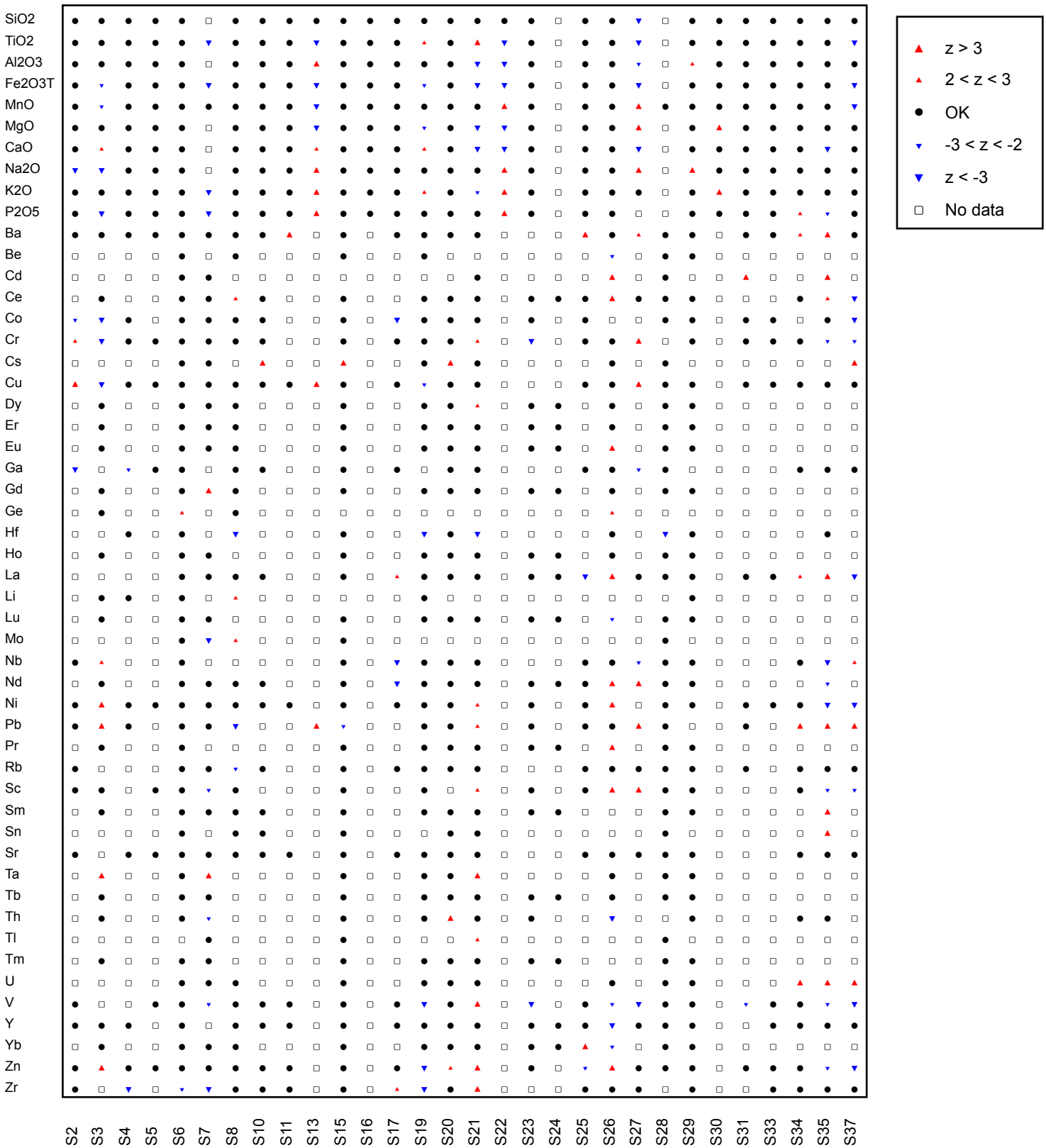


Figure 3: GeoPT38 - Ardnamurchan Gabbro, OU-7. Multiple z-score charts for laboratories participating in the GeoPT38 round. Symbols indicate whether or not an elemental result complies with the -2<z<+2 criteria (see key).

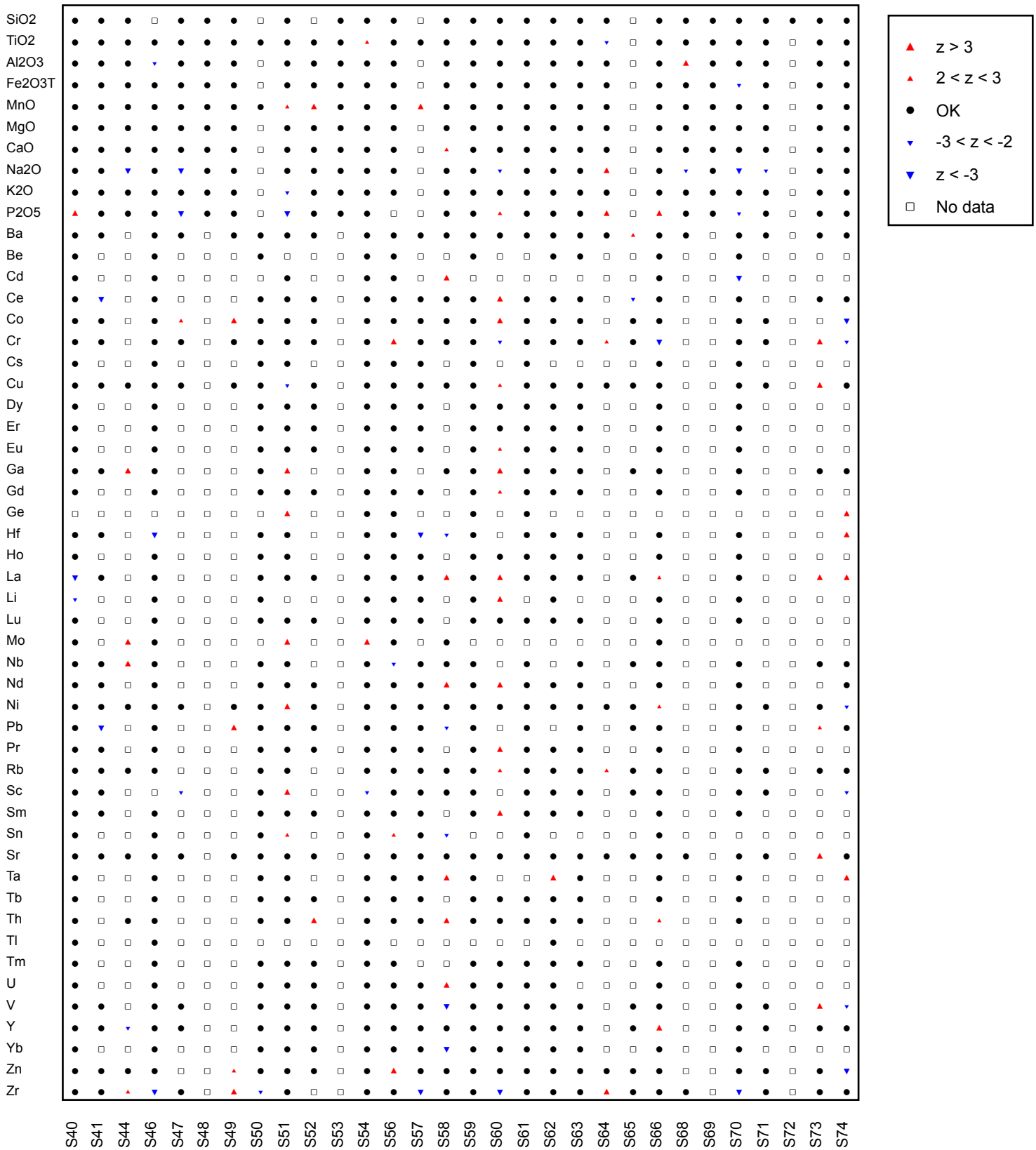


Figure 3: GeoPT38 - Ardnamurchan Gabbro, OU-7. Multiple z-score charts for laboratories participating in the GeoPT38 round. Symbols indicate whether or not an elemental result complies with the -2<z<+2 criteria (see key).

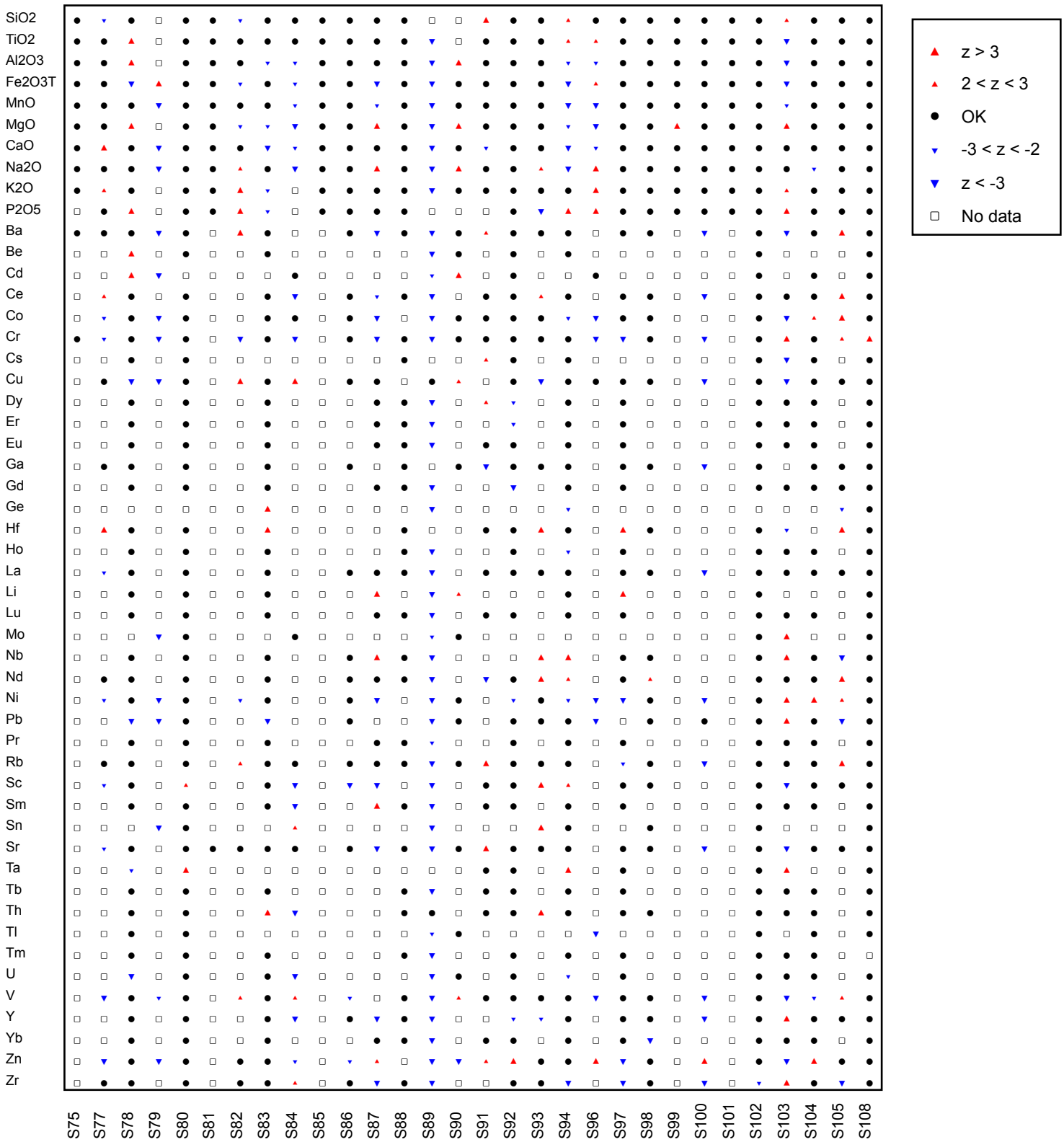


Figure 3: GeoPT38 - Ardnamurchan Gabbro, OU-7. Multiple z-score charts for laboratories participating in the GeoPT38 round. Symbols indicate whether or not an elemental result complies with the -2<z<+2 criteria (see key).

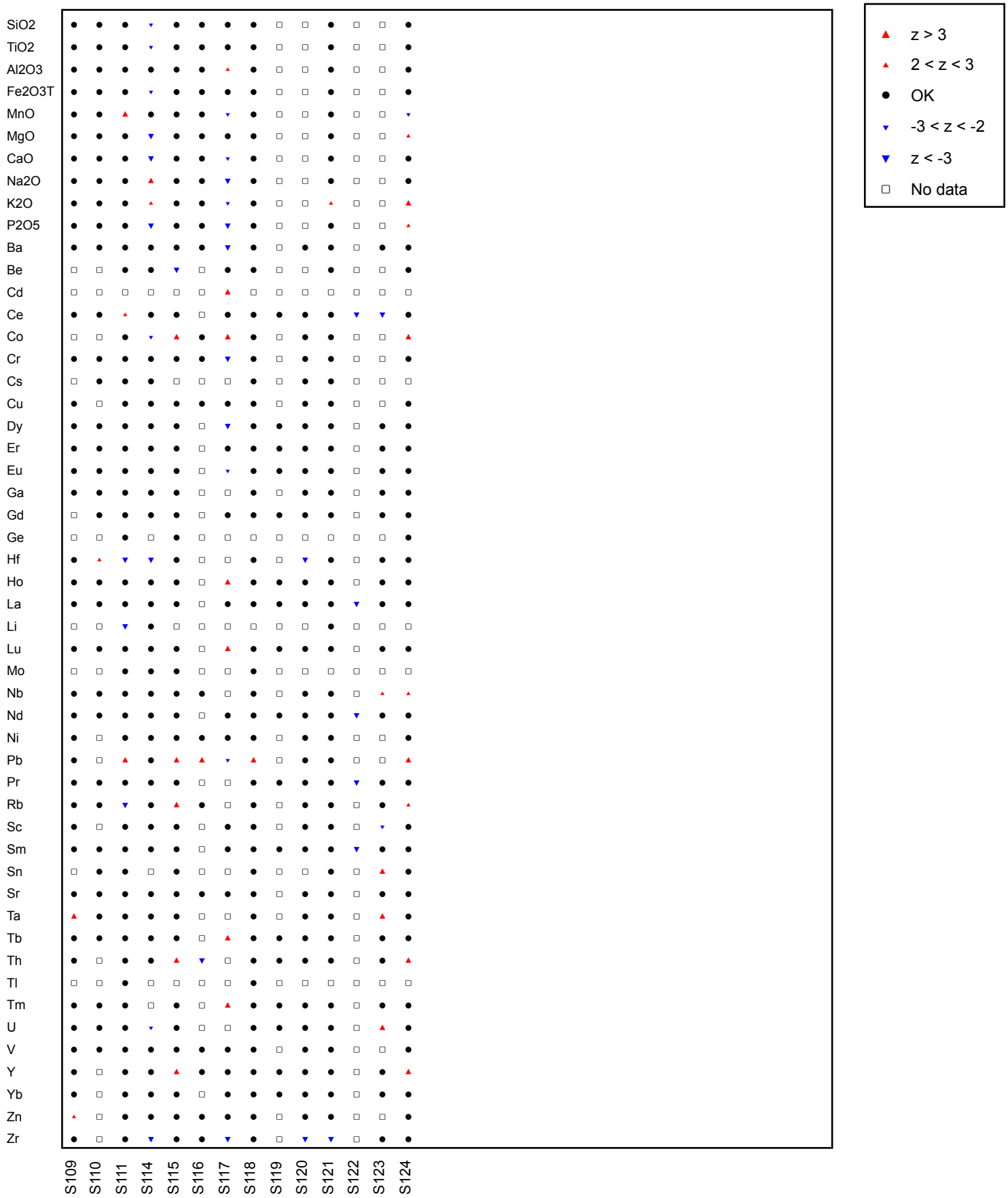


Figure 3: GeoPT38 - Ardnamurchan Gabbro, OU-7. Multiple z-score charts for laboratories participating in the GeoPT38 round. Symbols indicate whether or not an elemental result complies with the -2<z<+2 criteria (see key).