

GeoPT16 - BNV-1, Basalt

Veranstalter: International Association of Geoanalysts and Geostandards Newsletter - GeoPT16

Ringversuchsmaterial: BNV-1, Basalt

RV geschlossen: 2005 – 2

Literatur: roficiency Testing Report GeoPT16 (Laborcode CRB = Q40)

Hauptelemente [MA%]

	CRB	RV	1sRV	Z-Score
Na ₂ O	2,07	2,087	0,034	
MgO	8,48	8,514	0,123	
Al ₂ O ₃	17,22	17,41	0,227	
SiO ₂	47,84	47,99	0,536	
P ₂ O ₅	0,136	0,138	0,004	
SO ₃	0,096			
K ₂ O	0,183	0,188	0,005	
CaO	12,28	12,149	0,167	
TiO ₂	1,207	1,167	0,023	
Fe ₂ O ₃ tot	10,51	10,33	0,145	
MnO	0,162	0,162	0,0043	

Spurenelemente [µg/g]

	CRB	RV	1sRV	Z-Score
Ba	173	196	6,4	
Co	45	46,9	2,1	
Cr	274	302	10,2	
Cu	85	89,5	3,6	
Ga	17	16,02	0,84	
Nb	3,5	4,16	0,38	
Ni	165	145,7	5,4	
Sr	381	361,4	11,9	
V	218	238	8,4	
Zn	70	70,8	3	
Zr	56	56,1	2,4	

Legende

CRB: Ergebnisse CRB – **RV:** Ergebnisse Ringversuch -- **1s-RV:** Standardabweichung Ringversuch

Z-Score: Differenz des Messwertes vom Mittelwert des Ringversuchs -- * Wert nicht zertifiziert

GEOPT16 - AN INTERNATIONAL PROFICIENCY TEST FOR ANALYTICAL GEOCHEMISTRY LABORATORIES - REPORT ON ROUND 16 / February 2005 (Nevada basalt, BNV-1)

**Philip J. Potts^{1*}, Michael Thompson², Peter C. Webb¹
and Stephen Wilson³**

¹Department of Earth Sciences, The Open University, Walton Hall, Milton Keynes, MK7 6AA, UK.

²Department of Chemistry, Birkbeck College, Gordon House, London, WC1H 0PP, UK.

³ US Geological Survey, Denver Federal Center, Denver, CO-80225, USA.

*Corresponding author: e-mail p.j.potts@open.ac.uk

Keywords: Proficiency testing, quality assurance, GeoPT, GeoPT16 round, BNV-1, Nevada basalt

Abstract

Results are presented for GeoPT16, round sixteen of the GeoPT international proficiency testing programme for analytical geochemistry laboratories. The sample distributed for this round was BNV-1, a basalt from Nevada, USA, supplied by the National Institute for Science and Technology from stock reserved for NIST SRM688 (basalt rock). Bulk material for this SRM was split and bottled, prior to distribution to participating laboratories. In this report, contributed data are listed, together with an assessment of assigned values, z-scores and charts showing both the distribution of contributed results and the overall performance of participating laboratories.

Introduction

This sixteenth round of the international proficiency testing programme, GeoPT16, was conducted in a similar manner to earlier rounds. The programme is designed to be part of the routine quality assurance scheme of analytical geochemistry laboratories. The trial involves distributing a sample of established homogeneity to participating laboratories, which are required to analyse the sample using a well-

characterised technique or techniques operated under routine analytical conditions. Results are then tabulated by the organisers and z-scores calculated by comparing each analysed result submitted with the value assigned to be the best estimate of the true composition. These assigned values were estimated by robust statistical analysis of all the contributed data. By examining the magnitude of the z-score, participating laboratories can decide whether the quality of their data is satisfactory in relation to both their chosen fitness-for-purpose criterion and results submitted by all the other laboratories contributing to the round, and choose to take corrective action if this appears justified.

Full details of the programme have been included in reports of previous rounds, the current publication status of which is listed in Appendix 1. More specifically, the procedures followed in this round comply with the protocol published for conducting the GeoPT series of proficiency tests (see www.geoanalyst.org). In this report, therefore, only the features of the present round are included and readers interested in further details are invited to

review the GeoPT protocol and previously published reports.

Steering Committee for Round 14: M. Thompson (Chair), P.J. Potts (Secretary), P.C. Webb and S.Wilson.

Sample: Nevada basalt BNV-1, prepared from material held in reserve by the National Institute for Science and Technology for the certified reference material NIST SRM 688 (basalt rock). Stock material prepared at the same time as SRM688 that is currently in circulation was split and bottled before being distributed to participating laboratories.

As the sample has already been characterised as a certified reference material, no further tests for homogeneity were undertaken. A summary and statement of the original homogeneity testing test results can be found on the SRM 688 Certificate of Analysis.

Timetable for GeoPT16:

Distribution of sample: September 2004.

Deadline for submission of analytical results: 15th December 2004.

Distribution of draft report: February-March 2005

Submission of results

Results submitted by the seventy-one laboratories that participated in this round are listed in Table 1. All these data were used for the assessment of assigned values.

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 estimates of the true composition of this sample. Data in Table 2 lists assigned values for 10 major and 33 trace elements. Values were assigned on the basis that: (i) sufficient laboratories had contributed data for an element, (ii) the statistical

assessment gave confidence that the results showed a central portion approximating to a normal distribution. Part of this assessment involved examining a bar chart for each element to judge the distribution of results. Bar charts for elements/species shown in Figure 1 were judged to have satisfactory distributions, namely:

SiO₂, TiO₂, Al₂O₃, Fe₂O₃(T), Fe(II)O, MnO, MgO, CaO, Na₂O, K₂O, P₂O₅, As, Ba, Be, Ce, Co, Cr, Cs, Cu, Dy, Er, Eu, Ga, Gd, Ge, Hf, Ho, La, Li, Lu, Nb, Nd, Ni, Pb, Pr, Sb, Sc, Sm, Sn, Sr, Ta, Tb, Th, Tm, U, V, Y, Yb, Zn and Zr.

Of these, the elements Fe(II)O, As, Ge, Pb, Sb and Sn were assigned provisional values, principally because data distributions plotted in Figure 1 possess some degree of asymmetry.

Charts in Figure 2 show distribution data for elements that were not judged to be sufficiently satisfactory in the statistical analysis to assign values. In the present round, values could not be assigned to the following elements/species, despite the availability of a sufficient number of analytical results: CO₂, H₂O⁺, Ag, Cd, F, Mo, Rb, S, W.

For other elements that are not included in either of these two lists, insufficient data were reported to allow any assessment to be made.

The most common reasons for elements failing the assessment of assigned values were as follows:

- (i) Insufficient number of contributed results.
- (ii) Results showing a strong positive skew in the frequency distribution diagram, sometimes with an indication of multi-modality.
- (iii) A robust mean clearly different from the mode, which makes the determination of a consensus impracticable.
- (iv) A very wide distribution of results as judged by the robust standard deviation value so that no matter where the consensus was placed, most of the

participants would receive an 'unsatisfactory' classification if z-scores were calculated.

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 intended 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.

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.

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

$$H_a = k \cdot X_a^{0.8495}$$

Where X_a is the concentration of the element expressed as a *fraction*, and 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 are listed in Table 3 and 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, contributing laboratories are advised to examine their procedures to ensure that

determinations are not subject to unsuspected analytical bias.

Overall performance

A summary of the overall performance of individual laboratories in this round is plotted in Figure 3 as a multiple z-score chart. In this chart, 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 judge their overall performance in this proficiency testing round.

It is noticeable that for some elements plotted in Figure 1, bar charts show a pixellated pattern caused by over-rounding of analytical results such that a number of laboratories have reported exactly the same value. This trend is particularly noticeable in the bar chart graphs for K_2O , MnO , P_2O_5 and Y.

Although the data analysis to assess assigned values was undertaken in exactly the same way as in previous rounds – by robust statistical analysis of the contributed results, it is appropriate to view these in relation to the certified values published by NIST. A comparison between certified and assigned values is shown in Table 4. When account is taken of the 95% confidence limits in certified values and the standard error of the mean in assigned values, good agreement is observed in results for TiO_2 , Al_2O_3 , Fe_2O_3 , K_2O , P_2O_5 , Pb and Th. Conversely, a small systematic bias is observed in results for SiO_2 , FeO, MnO , Na_2O , Cr and Sr. More work is required to elucidate the reason for this bias. An evaluation cannot be made for remaining elements for which either only information values (or no data at all) are listed on the certificate of analysis.

Participation in future rounds

The benefit from proficiency testing arises from regular participation and laboratories are invited to contribute to the GeoPT17 round, the sample for which will be distributed during March 2005.

Acknowledgments

The authors thank Jann Matela and Liz Lomas (OU) for valued assistance with the production of this report. The GeoPT programme is organised on behalf of the International Association of Geoanalysts.

Appendix 1

Publication status of proficiency testing reports

GeoPT1

Thompson M., Potts P.J., Kane J.S. and Webb P.C. (1996)
GeoPT1. International proficiency test for analytical geochemistry laboratories - Report on round 1. Geostandards Newsletter: The Journal of Geostandards and Geoanalysis, 20, 295-325.

GeoPT2

Thompson M., Potts P.J., Kane J.S., Webb P.C. and Watson, J.S. (1998)
GeoPT2. International proficiency test for analytical geochemistry laboratories - Report on round 2. Geostandards Newsletter: The Journal of Geostandards and Geoanalysis, 22 127-156.

GeoPT3

Thompson M., Potts P.J., Kane J.S. and Chappell B.W. (1999a)
GeoPT3. International proficiency test for analytical geochemistry laboratories - Report on round 3. Geostandards Newsletter: The Journal of Geostandards and Geoanalysis, 23, 87-121.

GeoPT4

Thompson M., Potts P.J., Kane J.S., Webb P.C. and Watson J.S. (1999b)
GeoPT4. 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).

GeoPT5

Thompson M., Potts P.J., Kane J.S., and Wilson S. (1999c)
GeoPT5. 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).

GeoPT6

Potts P.J., Thompson M., Kane J.S., Webb P.C. and Carignan J. (2000)
GEOPT6 - an international proficiency test for analytical geochemistry laboratories - report on round 6 (OU-3: Nanhon microgranite) and 6A (CAL-S: CRPG limestone). International Association of Geoanalysts: Unpublished report.

GeoPT7

Potts P.J., Thompson M., Kane J.S., and Petrov L.L. (2000)
GEOPT7 - an international proficiency test for analytical geochemistry laboratories - report on round 7 (GBPG-1 Garnet-biotite plagiogneiss). International Association of Geoanalysts: Unpublished report.

GeoPT8

Potts P.J., Thompson M., Kane J.S., Webb, P.C. and Watson J.S. (2000)
GEOPT8 - an international proficiency test for analytical geochemistry laboratories - report on round 8 / February 2001 (OU-

4 Penmaenmawr microdiorite). International Association of Geoanalysts: Unpublished report.

GeoPT9

Potts P.J., Thompson M., Webb, P.C. and Watson J.S. (2001)
GEOPT9 - an international proficiency test for analytical geochemistry laboratories - report on round 9 / July 2001 (OU-6 Penrhyn slate). International Association of Geoanalysts: Unpublished report.

GeoPT10

Potts P.J., Thompson M., Webb, P.C., Watson J.S. and Wang Yimin (2001)
GEOPT10 - an international proficiency test for analytical geochemistry laboratories - report on round 10 / December 2001 (CH-1 Marine sediment). International Association of Geoanalysts: Unpublished report.

GeoPT11

Potts P.J., Thompson M., Chenery S.R., Webb, P.C. and Watson J.S. (2002)
GEOPT11 - an international proficiency test for analytical geochemistry laboratories - report on round 11 / July 2002 (OU-5 Leaton dolerite). International Association of Geoanalysts: Unpublished report.

GeoPT12

Potts P.J., Thompson M., Chenery S.R., Webb, P.C. and Batjargal B. (2003)
GEOPT12 - an international proficiency test for analytical geochemistry laboratories - report on round 12 / January 2003 (GAS Serpentine). International Association of Geoanalysts: Unpublished report.

GeoPT13

Potts P.J., Thompson M., Chenery S.R., Webb, P.C. and Kaspar H.U. (2003)
GEOPT13 - an international proficiency test for analytical geochemistry laboratories - report on round 13 / July 2003 (Köln Loess). International Association of Geoanalysts: Unpublished report.

GeoPT14

Potts P.J., Thompson M., Chenery S.R., Webb, P.C. and B. Batjarga (2004)
GeoPT14 - an international proficiency test for analytical geochemistry laboratories - report on round 14 / January 2004 (OShBO - alkaline granite). International Association of Geoanalysts: Unpublished report.

GeoPT15

Potts P.J., Thompson M., Chenery S.R., Webb, P.C. and WANG Yimin (2004)
GeoPT15 - an international proficiency test for analytical geochemistry laboratories - report on round 15 / June 2004 (Ocean floor sediment MSAN). International Association of Geoanalysts: Unpublished report.

Appendix 2 - GeoPT16 Homogeneity Report

As the sample was prepared as part of the batch that is currently being distributed as SRM 688, no further homogeneity testing was undertaken.

Table 1		GeoPT16 Analytical results submitted for Nevada basalt BNV-1 (Dec. 2004)															
Round identifier		Q1	Q1	Q2	Q2	Q3	Q4	Q5	Q6	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13
Sample		BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1
Data quality		1	2	1	2	2	1	2	1	2	2	2	1	2	2	1	2
SiO2	% m/m			48.23		47.9	48.458	48.065	48.349			47.95	47.58	48.31	47.57		
TiO2	% m/m			1.179		1.19	1.176	1.151	1.164			1.21	1.15	1.14	1.18		
Al2O3	% m/m			17.437		17.48	17.491	17.604	17.43			17.66	17.4	17.37	17.54		
Fe2O3	% m/m			10.392		10.44	10.453	10.244	10.247			10.37	10.55	10.3	10.52		
Fe(II)O	% m/m			7.72		7.54	7.824	7.13				7.23		7.24			
MnO	% m/m			0.166		0.166	0.174	0.156	0.165			0.16	0.15	0.16	0.17		
MgO	% m/m			8.529		8.58	8.584	8.452	8.573			8.42	8.43	8.52	8.42		
CaO	% m/m			12.148		12.3	12.145	12.31	12.153			11.54	11.85	11.57	12.32		
Na2O	% m/m			2.144		2.09	2.076	1.818	2.081			2.29	1.97	2.21	2.14		
K2O	% m/m			0.186		0.19	0.187	0.186	0.183			0.2	0.21	0.2	0.19		
P2O5	% m/m			0.14		0.14	0.141	0.14	0.146			0.14	0.14	0.14	0.13		
H2O+	% m/m													0.5	0.05		
CO2	% m/m					0.2									0.114		
LOI	% m/m			-0.26		-0.28		-0.14	-0.2			0.17	-0.16				
Ag	mg kg-1						0.04										
As	mg kg-1						1.6			2.1							2.37
Au	mg kg-1																
B	mg kg-1													22			
Ba	mg kg-1	157.42		191.4		175	171	161		161	150		168	171	180.74	153	
Be	mg kg-1						0.4						0.36	0.5	0.44		0.39
Bi	mg kg-1		0.0057														
Br	mg kg-1																
Cd	mg kg-1		0.1202				0.1							0.1	0.05		0.05
Ce	mg kg-1	11.105			22		10.68				11		33.9	10.7	12.88	11.1	13.3
Cl	mg kg-1																
Co	mg kg-1	48.052				48.4		57		45.9	46		47.3	43.8	49.4	43.4	45.4
Cr	mg kg-1	291.69		326.9		315.2	306	295		295.3	220		312	293	278.58		
Cs	mg kg-1	0.0328					0.05						0.04		0.033	31.6	
Cu	mg kg-1	85.566		88		83.6	96	96	90.4		82	68.92	87	91	93.33	74.6	
Dy	mg kg-1	3.5161					3.24				4		3.29	3.08	3.472	3.23	3.08
Er	mg kg-1	2.1033					2.1				2.3		2.11	2.26	2.259	2.06	1.87
Eu	mg kg-1	0.9095					0.97						1.05	0.88	1.028	0.918	0.98
F	mg kg-1						150										
Ga	mg kg-1	16.646				16.4	16.7			17.1			15.9	14	17.14	14.8	15.3
Gd	mg kg-1	3.3503					2.67				3		2.81	2.74	3.228	2.81	2.72
Ge	mg kg-1	1.4467					1.4							1.1			1.11
Hf	mg kg-1	1.4862					1.3						1.48		1.6	1.29	1.53
Hg	mg kg-1																
Ho	mg kg-1	0.697					0.66						0.75	0.65	0.748	0.74	0.69
I	mg kg-1																
In	mg kg-1													0.04			
Ir	mg kg-1																
La	mg kg-1	4.8409			12		4.8				5.1		5.09	5.1	5.44	4.82	5.83
Li	mg kg-1													6	6.94		
Lu	mg kg-1	0.3031					0.31						0.29	0.28	0.332	0.313	0.3
Mo	mg kg-1						0.9							0.29	0.9		
N	mg kg-1																
Nb	mg kg-1	3.9491		4.3			3.9	4	5.8				3.8	4	4	3.62	4.23
Nd	mg kg-1	7.9822					8.22				8.6		8.45	7.7	8.83	8.02	8.42
Ni	mg kg-1	143.69		144.6		158	129	125	139.5		150	103.46	154	131.5	157.86		
Os	mg kg-1																
Pb	mg kg-1	3.2825		3.9			2		1.5				3.3	2.8	3.2		
Pd	mg kg-1																
Pr	mg kg-1	1.6235					1.59				1.7		1.73	1.67	1.833	1.62	1.79
Pt	mg kg-1																
Rb	mg kg-1	1.9012		3.2			2.5	4	2.3				1.84	2	1.99	4.42	
Re	mg kg-1																
Rh	mg kg-1																
Ru	mg kg-1																
S	mg kg-1						158			108.3							
Sb	mg kg-1	0.3225													0.13		0.12
Sc	mg kg-1	39.325					28			32			35.4	35	40.01		
Se	mg kg-1																
Sm	mg kg-1	2.2088					2.55				2.4		2.37	2.2	2.47	2.12	2.33
Sn	mg kg-1						1.7							0.8	1.2		
Sr	mg kg-1	167.31		167.9		165	169	168	170.1		140		165	176	169.1	155	
Ta	mg kg-1	0.3371					0.2						0.27		0.27	0.247	0.28
Tb	mg kg-1	0.4979					0.48						0.5	0.51	0.551	0.479	0.49
Te	mg kg-1																
Th	mg kg-1	0.3117			1		0.3						0.31	0.5	0.35	0.308	0.68
Tl	mg kg-1	0.0117											0.02		0.02		
Tm	mg kg-1	0.2903											0.31	0.28	0.335	0.305	0.32
U	mg kg-1	0.3243			3		0.28						0.33	0.29	0.473	0.317	0.29
V	mg kg-1	241.46		231.2		254	227	225		227.2	210	180	250	237	263.33	237	
W	mg kg-1	0.2009													0.27		1.24
Y	mg kg-1	17.85		22		15.6	20.7	13	20.9		17		20.5	18	19.69	17.2	17.7
Yb	mg kg-1	2.1148					1.98				2.2		1.98	1.9	2.17	1.97	1.96
Zn	mg kg-1	84.041		70.6		76.6	68	69	70.4		5.7			60	72.22		
Zr	mg kg-1	50.243		55.5		53.5	53	60	57.7				51.6	50	59.8	44.6	57.5

Table 1		GeoPT16 Analytical results submitted for Nevada basalt BNV-1 (Dec. 2004)															
Round identifier		Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q26	Q27	Q28
Sample		BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1
Data quality		2	2	1	2	2	2	1	2	2	2	1	2	1	2	1	2
SiO2	% m/m	47.5	48.41	48.276	48.06	48.2	48	48.061	47.8	48.429	45.84	47.9	48.027	48.5		48.35	43.6
TiO2	% m/m	1.14	1.12	1.185	1.18	1.14	1.32	1.174	1.177	1.163	1.17	1.16	1.172	1.16		1.143	0.88
Al2O3	% m/m	17.4	17.33	17.438	17.49	17.6	17.41	17.178	18.4	17.423	19.49	17.34	17.454	17.3		17.11	21.45
Fe2O3	% m/m	10.3	10.27	10.122	10.37	10.3	10.36	10.375	10.07	10.263	10.2	10.22	10.327	10.2		10.11	9.2
Fe(II)O	% m/m			7.84			6.18										
MnO	% m/m	0.16	0.14	0.164	0.17	0.17	0.16	0.164	0.1574	0.165	0.15	0.147	0.163	0.156		0.153	0.15
MgO	% m/m	8.49	8.71	8.512	8.74	8.55	7.52	8.491	8.33	8.471	8.51	8.46	8.451	8.69		8.43	
CaO	% m/m	12.2	11.67	12.061	12.13	12.1	12.65	12.115	11.82	12.189	12.15	12.14	12.093	12.3		12.37	10.7
Na2O	% m/m	2.24	2.07	2.07	2.1	1.98	1.97	2.088	2.22	2.118	2.16	2.15	2.033	1.93		2.062	
K2O	% m/m		0.19	0.176	0.18	0.18	0.18	0.182	0.1803	0.18	0.2	0.2	0.202	0.177		0.128	0.154
P2O5	% m/m		0.14	0.129	0.13	0.14	0.13	0.135	0.1443	0.129	0.13	0.13	0.137	0.137		0.116	
H2O+	% m/m						0.42										
CO2	% m/m						0		0.151								
LOI	% m/m		-0.2	-0.26		0.12	0.34	-0.32					-0.177	-0.01			
Ag	mg kg-1														0.1		
As	mg kg-1						2			1.48			2.3	2.67			
Au	mg kg-1																
B	mg kg-1																
Ba	mg kg-1		176.1	177.74		170	159		159	140			179.3	177		181	190
Be	mg kg-1		0.4				0								0.3		
Bi	mg kg-1																
Br	mg kg-1																
Cd	mg kg-1					0.08	0								0.1		4
Ce	mg kg-1		11.4	11.52		12.3	36		13		9		12	10.46		13	13
Cl	mg kg-1						61										
Co	mg kg-1		47.96	45.68		49.3	52		47					48		57	
Cr	mg kg-1		328.2	300.94		208	398	360	304	255			319	317		298	280
Cs	mg kg-1		0.03	0.035		0.1	0										
Cu	mg kg-1		90.14	84.88		85	106		93.6	70	85		95.5	101		87	93
Dy	mg kg-1		3.27	3.346		3.44	3		3.09					3		2.8	
Er	mg kg-1		2.02	2.066		3.04	2		2.18					1.9		1.9	
Eu	mg kg-1		0.96	0.949		1.02	1		0.94					0.9		1	
F	mg kg-1						119										
Ga	mg kg-1		16.03	16.01			17		15.6				14.8	14		18	15
Gd	mg kg-1		2.78	3.08		3.14	2		2.7					2.6		2.2	
Ge	mg kg-1		1.47													1.1	
Hf	mg kg-1		1.53	1.451		1.58	7		1.23					2			
Hg	mg kg-1																
Ho	mg kg-1		0.74	0.722		0.75	0		0.68					0.6		0.6	
I	mg kg-1																
In	mg kg-1																
Ir	mg kg-1																
La	mg kg-1		5.21	5.146		5.23	4		5.18				0	4.5		6	7
Li	mg kg-1		6.81			5.79									3.2		
Lu	mg kg-1		0.36	0.334		0.33			0.32					0.26		0.12	
Mo	mg kg-1						5										
N	mg kg-1																
Nb	mg kg-1		4.26	4.413			8		3.88		6		0	3.17		4	2
Nd	mg kg-1		8.57	8.615		8.59	12		8.88		4			7.51		9.1	10
Ni	mg kg-1		156.4	146.44		163	168		153	50	141		145	146		132	126
Os	mg kg-1																
Pb	mg kg-1		3.27	3.243		2.99	10		3.75				1.8	2.94		3.5	2
Pd	mg kg-1																
Pr	mg kg-1		1.66	1.771		1.77	2		1.63					1.56		2	
Pt	mg kg-1																
Rb	mg kg-1		2.38	1.905		2.41	4		2.03		3		3	5		2	
Re	mg kg-1																
Rh	mg kg-1																
Ru	mg kg-1																
S	mg kg-1						126										820
Sb	mg kg-1					0.11	7										
Sc	mg kg-1		38.01	36.478		32.7	53		33.5				23.5	47		39	
Se	mg kg-1													4.67			
Sm	mg kg-1		2.4	2.41		2.52	12		2.26					2.13		2.2	
Sn	mg kg-1						0		1.66								
Sr	mg kg-1		171.5	169.38		166	168		161		165		174	166		169	148
Ta	mg kg-1		0.3	0.274			0		0.16								
Tb	mg kg-1		0.52	0.489		0.52	2		0.49					0.45		0.33	
Te	mg kg-1																
Th	mg kg-1		0.33	0.325		0.39	0						0	0.24	0.24		
Tl	mg kg-1																
Tm	mg kg-1		0.31	0.33		0.33			0.29					0.26		0.08	
U	mg kg-1		0.28	0.363		0.28	0				1		0	0.25	0.25		
V	mg kg-1		248	237.94		258	241		253	215			213.8	242		225	
W	mg kg-1						2							8			
Y	mg kg-1		20.76	20.799		19.2	17		19		21		20	18		19.5	17
Yb	mg kg-1		2.11	2.058		2.09	3		2.06					1.82		1.6	
Zn	mg kg-1		75.37	70.826		76.2	89		75	55	68		74.5	74		63	60
Zr	mg kg-1		55.78	56.107		74.6	68		51.7		60		66	46		55	50

Table 1		GeoPT16 Analytical results submitted for Nevada basalt BNV-1 (Dec. 2004)														
Round identifier	Q29	Q30	Q31	Q32	Q33	Q34	Q35	Q36	Q37	Q38	Q39	Q39	Q40	Q41	Q42	Q43
Sample	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1
Data quality	2	2	1	1	2	2	2	2	2	2	1	2	2	2	1	1
SiO2 % m/m		47.717	47.89	47.8	47.5	48.17	48.54	50.13	48.38	47.09	47.68		47.84	48	47.77	48.29
TiO2 % m/m	1.2	1.177	1.05	1.16	1.17	1.18	1.16	1.205	1.267	1.119	1.09		1.207	1.05	1.18	1.159
Al2O3 % m/m		17.178	17.23	17.3	17.3	17.37	17.25	17.96	17.85	17.23	17.12		17.218	17.4	17.12	17.39
Fe2O3 % m/m	10.25	10.437	9.98	10.31	10.4	10.36	10.11	10.86	10.4	10.504	9.71		10.51	10.45	10.23	10.26
Fe(II)O % m/m			7.19	7.31					4.82						7.55	
MnO % m/m	0.162	0.165	0.171	0.16	0.17	0.17	0.161	0.168	0.17		0.15		0.162	0.14	0.163	0.158
MgO % m/m		8.776	8.8	8.4	8.4	8.38	8.19	8.504	8.67	8.65	7.94		8.48	8.43	8.29	8.56
CaO % m/m	11.9	12.084	12.34	12.15	12.3	12.1	12.47	12.41	11.89	12.344	11.54		12.28	12.4	12.1	12.07
Na2O % m/m		1.934	2.03	2.05	1.6	2.15	2.06	2.138	2.19	2.823	2.28		2.07	2.2	1.96	2.16
K2O % m/m	0.2	0.179	0.19	0.18	0.18	0.19	0.195	0.459	0.24	0.177	0.14		0.183	0.21	0.17	0.18
P2O5 % m/m		0.139	0.122	0.14	0.12	0.13	0.142	0.152	0.165		0.11		0.136	0.18	0.139	0.142
H2O+ % m/m			0.4	0.34												
CO2 % m/m			0.135	0.13	0.08											
LOI % m/m			-0.34	-0.338		-0.15	-0.28		3.72				-0.27			-0.24
Ag mg kg-1					0.2				0.97							
As mg kg-1			1.5		8											
Au mg kg-1																
B mg kg-1																
Ba mg kg-1			161	173	148			188.5	195		153		196	193	178	169.7
Be mg kg-1			0.95					0.7	0.43							
Bi mg kg-1			3.5		0.4				10.8							
Br mg kg-1	3															
Cd mg kg-1					0.2				0.58					0.08		
Ce mg kg-1			11.8		11			11.82	19.2						11.6	
Cl mg kg-1																
Co mg kg-1			40.5	42	28	44		47.01	48		52		45	52.3	46	
Cr mg kg-1	275		352	319	241	201		321.62	165		230		274	297	325	288.1
Cs mg kg-1															0.05	
Cu mg kg-1	102		91.9	76	80	92		83.4	116		52		85	87.5	90	89.1
Dy mg kg-1			3.36		3			3.37	3.7						3.19	
Er mg kg-1			1.77		2			2.26	2.33						2.02	
Eu mg kg-1			0.85		0.8			1.01	1.07						1.03	
F mg kg-1			290		130										174	
Ga mg kg-1	13			12				15.4	23.7			13	17	12.9	18	18.7
Gd mg kg-1			3.41		2.6			2.85	2.58						2.98	
Ge mg kg-1																
Hf mg kg-1				3	1.6			1.44			4				1.52	
Hg mg kg-1																
Ho mg kg-1					0.7			0.78	0.78						0.72	
I mg kg-1																
In mg kg-1																
Ir mg kg-1																
La mg kg-1			4.5		5			4.65	5.51						5.15	
Li mg kg-1					5				8.1							
Lu mg kg-1			0.35		0.3			0.32	0.35						0.31	
Mo mg kg-1					1.4			0.5								
N mg kg-1																
Nb mg kg-1			5	4	10			3.56	8.5				3.5	5	3.96	4.8
Nd mg kg-1			8.1		7.7			8.37	8.52				9		8.37	14.2
Ni mg kg-1	117		142	148	117	146		162.9	149		147		165	140	144	127.9
Os mg kg-1																
Pb mg kg-1				4	1.8	6			9.4						3.21	4.5
Pd mg kg-1																
Pr mg kg-1			1.35		1.5			1.71	1.95						1.6	
Pt mg kg-1																
Rb mg kg-1	3		5.5	2	1.8			2.06					10		1.97	1.7
Re mg kg-1																
Rh mg kg-1																
Ru mg kg-1																
S mg kg-1			90		170								210	160	122	
Sb mg kg-1					0.2											
Sc mg kg-1			31	25	23			38.4			36				35.2	
Se mg kg-1					2											
Sm mg kg-1			1.9		2.2			2.31	2.74						2.4	
Sn mg kg-1					2.1			0.78								
Sr mg kg-1	167		161	162	118	182		201.5	180		162		173	169	168	165.2
Ta mg kg-1				2	1.2			0.27	2						0.28	
Tb mg kg-1					0.5			0.5	0.54						0.5	
Te mg kg-1					13.5											
Th mg kg-1			4		0.6	4		0.4					6		0.35	
Tl mg kg-1					0.3											
Tm mg kg-1			0.41		0.3			0.32	0.36						0.31	
U mg kg-1					0.3			0.26							0.36	
V mg kg-1	235		245	252	282			243.8	247		232		218	236	232	224.7
W mg kg-1					1											
Y mg kg-1	20		19	17	17			21.1	20.4			16	18	21.8	21.1	19.6
Yb mg kg-1			2.37		1.8			2.1	2.42						2.12	
Zn mg kg-1	71		89	74	64	73		81.3	68		59		70	75	78	71.4
Zr mg kg-1	50		51.5	62	49			50.19	56		52		56	60.6	60	56.4

Table 1		GeoPT16 Analytical results submitted for Nevada basalt BNV-1 (Dec. 2004)															
Round identifier		Q44	Q45	Q45	Q46	Q47	Q48	Q48	Q49	Q50	Q51	Q52	Q53	Q54	Q55	Q57	Q58
Sample		BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1
Data quality		2	1	2	2	2	1	2	2	1	1	2	1	1	1	2	2
SiO2	% m/m	48.66	47.99		48.4	47			47.61	48	47.929	48.11		47.98	47.58		47.8
TiO2	% m/m	1.22	1.16		1.22	1.2			1.15	1.16	1.1682	1.206		1.12	1.15		1.273
Al2O3	% m/m	17.75	17.57		17.1	17.5			17.6	17.4	17.281	17.31	17.64	17.23	17.4		17.331
Fe2O3	% m/m	10.46	10.21		10.4	10.8			10.34	10.64	10.272	10.44	9.97	10.08	10.55	10.53	19.38
Fe(II)O	% m/m				7.62												7.863
MnO	% m/m	0.179	0.16		0.165	0.18			0.17	0.17	0.1625	0.157	0.177	0.154	0.15		0.171
MgO	% m/m	8.46	8.53		8.5	9.1			8.45	8.6	8.4904	8.338	8.9	8.65	8.43		8.434
CaO	% m/m	12.41	12.17		12.1	11.6			12.26	11.8	12.152	12.25		12.19	11.85		12.13
Na2O	% m/m	2.051	2.17		2.14	2.15			2	1.8	2.0848	2.098	2.07	2.26	1.97	2.13	1.952
K2O	% m/m	0.171	0.19		0.19	0.21			0.17	0.19	0.1838	0.233		0.19	0.21		0.172
P2O5	% m/m	0.15	0.16		0.13	0.13			0.15	0.12	0.1402	0.1355		0.19	0.14		0.135
H2O+	% m/m										0.12						
CO2	% m/m				0.15								0.1107				
LOI	% m/m	-0.23	-0.26		-0.22	-0.39			0.12	-0.27				0.23	-0.16		0.122
Ag	mg kg-1				0.1												
As	mg kg-1				3								2.1			1.98	
Au	mg kg-1												0.0111				
B	mg kg-1																
Ba	mg kg-1		169		180	169	155.5		203		167.02	279.4	145	179	168	172	192
Be	mg kg-1		0.39		0.3										0.36		0.33
Bi	mg kg-1		0.006														
Br	mg kg-1																
Cd	mg kg-1		0.1														
Ce	mg kg-1		11.64		12	11.5	12.15				11.304	11.95	12.9		33.9	10.4	16
Cl	mg kg-1																15
Co	mg kg-1		49.5		50	44.5			48			48.68	44	44	47.3	49.4	44.5
Cr	mg kg-1		302		350	290			276		316.41	320	306	300	312	320	308
Cs	mg kg-1		0.037		0.04	0.2	0.0343				0.0273	0.049			0.04		
Cu	mg kg-1		86.8		92	87			95		83.577	68.96			87		130
Dy	mg kg-1		3.33		3.8	3.05	3.4				3.71	3.189	3.1		3.29		
Er	mg kg-1		2.12		2.3	1.8	2.2				2.2074	1.999			2.11		
Eu	mg kg-1		1.004		1.1	0.9	0.975				1.0592	0.946	0.97		1.05	0.989	
F	mg kg-1				137												
Ga	mg kg-1		16.21		16.6				15		15.821			20	15.9		
Gd	mg kg-1		2.93		3.1	2.4	3.06				3.0694	2.674			2.81		
Ge	mg kg-1				1												
Hf	mg kg-1		1.47		1.8	1.3		1.474			1.4842	1.563	1.34		1.48	1.48	
Hg	mg kg-1																
Ho	mg kg-1		0.717		0.72	0.67	0.734				0.8001	0.615			0.75		
I	mg kg-1																
In	mg kg-1				0.05												
Ir	mg kg-1																
La	mg kg-1		5.26		5.3	5.05	5.35		6		5.3002	4.056	5.04		5.09	5.22	
Li	mg kg-1		6.22		6												
Lu	mg kg-1		0.307		0.33	0.27	0.322				0.3268	0.273	0.311		0.29	0.351	
Mo	mg kg-1		0.34		0.3	0.9						0.86					2.2
N	mg kg-1																
Nb	mg kg-1		4.16		4.8	3.9		4.36	3		3.9694	6.81		5	3.8		4.4
Nd	mg kg-1		8.27		8.5	7.85	8.56		3		7.8219	7.63	6.8		8.45	9.14	71
Ni	mg kg-1		138.8		158	146			136		149.46	123.47		145	154		151
Os	mg kg-1																
Pb	mg kg-1		3.6		5		2.71		4		2.8376	4.78			3.3		3.3
Pd	mg kg-1																
Pr	mg kg-1		1.71		1.8	1.6	1.739				1.5551	1.67			1.73		
Pt	mg kg-1																
Rb	mg kg-1		1.99		2.05	2.2	1.93				1.9566	1.473		44	1.84		
Re	mg kg-1																
Rh	mg kg-1																
Ru	mg kg-1																
S	mg kg-1				90								155				63
Sb	mg kg-1		0.11		0.12	0.6							0.09				
Sc	mg kg-1		36.5		37	36			41		42.509	38.18	37.33	37	35.4	37.5	44
Se	mg kg-1																
Sm	mg kg-1		2.38		2.5	2.2	2.46				2.4785	2.184	2.18		2.37	2.48	
Sn	mg kg-1			1.67	1.3	1.3											
Sr	mg kg-1		171		170	167	166.6		155		166.45	162.3		168	165		158
Ta	mg kg-1		0.278		0.45	0.25		0.282			0.2797	0.267	0.2		0.27	0.28	
Tb	mg kg-1		0.527		0.53	0.45	0.51				0.5699	0.462	0.53		0.5	0.54	
Te	mg kg-1																
Th	mg kg-1		0.328		0.4	0.3	0.321				0.3732	0.307	0.18		0.31	0.3	
Tl	mg kg-1		0.013												0.02		
Tm	mg kg-1		0.311		0.35	0.3	0.313				0.3278	0.259			0.31		
U	mg kg-1		0.274		0.34	0.2	0.253				0.4183	0.266	0.22		0.33		
V	mg kg-1		226		270	258			214		244.54	202	275	237	250		226
W	mg kg-1		0.263		0.4	0.2						0.285					
Y	mg kg-1		19.22		19	18	19.3		18		21.003	18.23		20	20.5		24
Yb	mg kg-1		2.038		2.1	1.85	2.09				2.0044	1.91	2.02		1.98	2.05	
Zn	mg kg-1		68.7		75	94			59		70.308						64
Zr	mg kg-1		53.6		58	54	55.6		47		51.511	52.43		53	51.6		72

Q56 does not exist.

Table 1		GeoPT16 Analytical results submitted for Nevada basalt BNV-1 (Dec. 2004)														
Round identifier		Q59	Q60	Q61	Q62	Q62	Q63	Q64	Q65	Q66	Q67	Q68	Q69	Q69	Q70	Q71
Sample		BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1
Data quality		1	2	2	1	2	2	1	1	1	1	1	1	2	1	1
SiO2	% m/m	47.92	47.616	47.91	47.74			47.51				48.3			48.15	48.41
TiO2	% m/m	1.16	1.149	1.16	1.184			1.19			1.12		1.11		1.171	1.17
Al2O3	% m/m	17.36	17.187	17.35	17.345			17.54			16.5	17.72	18.27		17.38	17.28
Fe2O3	% m/m	10.4	10.23	10.32	10.484			10.54		10.34	10.3	10.44	10.19		10.32	10.23
Fe(II)O	% m/m			7.64				7.47								
MnO	% m/m	0.16	0.163	0.17		0.162		0.15			0.155	0.165	0.16		0.166	0.164
MgO	% m/m	8.65	8.398	8.7	8.71			8.15			8.53		8.69		8.61	8.43
CaO	% m/m	12.27	12.105	12.4	12.052			12.3			12	11.8	12.27		12.21	12.19
Na2O	% m/m	2.2	2.067	2.13	2.07			2.17			1.85	1.95	2.09		2.01	2.2
K2O	% m/m	0.2	0.18	0.17	0.19			0.189			0.17	0.21		0.24	0.18	0.18
P2O5	% m/m	0.15	0.131	0.15		0.139		0.133							0.142	0.146
H2O+	% m/m			0.26												
CO2	% m/m			0.1												0.194
LOI	% m/m	-0.13	-0.206	-0.26		0.13									0	
Ag	mg kg-1			0.03		0.049										
As	mg kg-1		2.82	2.57		6.3							2.16			2.38
Au	mg kg-1															
B	mg kg-1			2.5		1.9										
Ba	mg kg-1		197.5	175		175	154.59	163	170.35	182	170	183			178	188
Be	mg kg-1		0.458			0.48		0.4								0.403
Bi	mg kg-1															
Br	mg kg-1															
Cd	mg kg-1		0.096			0.075										0.087
Ce	mg kg-1		11.9	11.6	13.7		12.14	10	11.982	12.4			13.3		12.2	12.67
Cl	mg kg-1			84												
Co	mg kg-1		46	48		44		45		48	43	43	47.5		52	48.73
Cr	mg kg-1		296.7	347		286						226	359		291	323
Cs	mg kg-1		0.048		0.04		0.035		0.0448	3.14						
Cu	mg kg-1		91.2	87.4		88		103			100	105			91.4	92.67
Dy	mg kg-1		3.5	3.21	4.1		3.288		3.528					3.32		3.137
Er	mg kg-1		2.1	1.97	2.56		2.059		2.117							1.847
Eu	mg kg-1		0.954	0.981	1.05		0.96		0.99	0.96			1.1			0.985
F	mg kg-1			130		160										
Ga	mg kg-1		16.1	17.6	14.8			17							17.1	16
Gd	mg kg-1		3.05	2.83	3.75		2.922		3.009							2.877
Ge	mg kg-1		2.4	1.43		1.1										
Hf	mg kg-1		1.4	1.45	1.62		1.65		1.629	1.5			1.6			1.48
Hg	mg kg-1					0.004										0.01
Ho	mg kg-1		0.733	0.677	0.89		0.719		0.736							0.8
I	mg kg-1															
In	mg kg-1															
Ir	mg kg-1															
La	mg kg-1		5.07	5.06	5.8		5.278	5.7	5.099	5.3			5.26		7	5.39
Li	mg kg-1		5.82	5.6	5			5.9			48					6.05
Lu	mg kg-1		0.309	0.327	0.38		0.312		0.336	0.32			0.327			0.345
Mo	mg kg-1		0.329			0.46										
N	mg kg-1															
Nb	mg kg-1		4.2	3.59		8	4.13	4.7	4.481			4			5.1	5
Nd	mg kg-1		8.56	8.18	9.59		8.406		8.402	6.8						8.75
Ni	mg kg-1		145.4	152	154			114			140	111		147	175	150.7
Os	mg kg-1															
Pb	mg kg-1		2.85	3.1		4.3	3.5		2.761						5	2.87
Pd	mg kg-1															
Pr	mg kg-1		1.69	1.69	2.13		1.758		1.678							1.487
Pt	mg kg-1															
Rb	mg kg-1		1.9	1.95	2.07		2.33		1.898	92		5			3.1	1.93
Re	mg kg-1															
Rh	mg kg-1															
Ru	mg kg-1															
S	mg kg-1			110								0.08				
Sb	mg kg-1		0.141	0.1	0.13											0.148
Sc	mg kg-1		31.4		36.5		37.54	38.5		37		30	37.4		32.1	38.73
Se	mg kg-1			0.03												
Sm	mg kg-1		2.46	2.36	2.73		2.33		2.291	2.5			2.26			2.46
Sn	mg kg-1		1.4	1.16		1.65										
Sr	mg kg-1		167.6	164		184	169.2	164	164.66		160	147			171	171.3
Ta	mg kg-1			0.29	0.34				0.266	0.22						0.293
Tb	mg kg-1		0.492	0.497	0.65		0.513		0.512	0.56				0.54		0.491
Te	mg kg-1															
Th	mg kg-1		0.337	0.3	0.47		0.412		0.329	0.31				0.34	2	0.259
Tl	mg kg-1															
Tm	mg kg-1		0.301	0.301	0.39		0.306		0.313							0.343
U	mg kg-1		0.299	0.24	0.33		0.297		0.243	11					1.6	0.294
V	mg kg-1		229.7	252		276		238			240	186	253		222	251.3
W	mg kg-1		0.246	0.24	0.36											
Y	mg kg-1		20.5	19.3		23	18.98	20	21.267			17			20.8	21.6
Yb	mg kg-1		2.13	2.04	2.55		2.032		2	2.1			2.2			2.28
Zn	mg kg-1		73.3	81.2		70		66		71	50	68			68.7	77.8
Zr	mg kg-1		52.8	51.2		56	57.2	52	65.032		65	55			55.3	55.33

Table 2 GeoPT 16 (Nevada basalt BNV-1)

Assigned values and robust statistical analysis of contributed data

	X_a	H_a	sdm	sdm/ H_a	status		X_a	H_a	sdm	sdm/ H_a	status
	% m/m	% m/m	% m/m				mg/kg	mg/kg	mg/kg		
SiO2	47.986	0.536	0.051	0.095	assigned	Hf	1.52	0.11	0.03	0.23	assigned
TiO2	1.167	0.023	0.004	0.190	assigned	Ho	0.72	0.06	0.01	0.18	assigned
Al2O3	17.411	0.227	0.027	0.118	assigned	La	5.20	0.32	0.07	0.22	assigned
Fe2O3	10.333	0.145	0.021	0.145	assigned	Li	6.00	0.37	0.15	0.42	assigned
Fe(II)O	7.435	0.110	0.090	0.819	provisional	Lu	0.32	0.03	0.00	0.15	assigned
MnO	0.1621	0.0043	0.0011	0.252	assigned	Nb	4.16	0.27	0.08	0.29	assigned
MgO	8.514	0.123	0.020	0.160	assigned	Nd	8.40	0.49	0.11	0.22	assigned
CaO	12.149	0.167	0.024	0.145	assigned	Ni	145.7	5.5	1.6	0.29	assigned
Na2O	2.087	0.037	0.014	0.380	assigned	Pb	3.28	0.22	0.12	0.54	provisional
K2O	0.1877	0.0048	0.0020	0.406	assigned	Pr	1.69	0.13	0.02	0.17	assigned
P2O5	0.1381	0.0037	0.0013	0.350	assigned	Sb	0.13	0.01	0.01	0.56	provisional
						Sc	36.75	1.71	0.44	0.26	assigned
As	2.33	0.16	0.15	0.934	provisional	Sm	2.36	0.17	0.03	0.16	assigned
Ba	173.0	6.4	2.1	0.332	assigned	Sn	1.33	0.10	0.13	1.30	provisional
Be	0.40	0.04	0.02	0.521	assigned	Sr	166.6	6.2	0.8	0.13	assigned
Ce	12.0	0.7	0.2	0.301	assigned	Ta	0.28	0.03	0.01	0.39	assigned
Co	46.9	2.1	0.5	0.226	assigned	Tb	0.51	0.05	0.01	0.13	assigned
Cr	300.2	10.2	4.7	0.463	assigned	Th	0.33	0.03	0.01	0.34	assigned
Cs	0.040	0.005	0.002	0.462	assigned	Tm	0.31	0.03	0.00	0.16	assigned
Cu	89.5	3.6	1.2	0.328	assigned	U	0.29	0.03	0.01	0.36	assigned
Dy	3.30	0.22	0.04	0.191	assigned	V	238.0	8.4	2.6	0.31	assigned
Er	2.10	0.15	0.03	0.206	assigned	Y	19.33	0.99	0.27	0.27	assigned
Eu	0.98	0.08	0.01	0.135	assigned	Yb	2.06	0.15	0.02	0.16	assigned
Ga	16.02	0.84	0.26	0.311	assigned	Zn	70.8	3.0	1.1	0.38	assigned
Gd	2.87	0.20	0.05	0.244	assigned	Zr	55.1	2.4	0.7	0.29	assigned
Ge	1.26	0.10	0.08	0.797	provisional						

X_a =assigned value calculated as the robust mean of submitted data.

H_a =target precision calculated using a modified version of the Horwitz equation

for Data quality 1 ($H_a=0.01X_a^{0.8495}$).

sdm=standard deviation of the mean calculated from submitted data using robust statistics.

Table 3		GeoPT16 Z-score data for Nevada basalt BNV-1											
Round identifier		Q1	Q1	Q2	Q2	Q3	Q4	Q5	Q6	Q6	Q7	Q8	Q9
Sample		BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1
Data quality		1	2	1	2	2	1	2	1	2	2	2	1
SiO2	% m/m	*	*	0.5	*	-0.1	0.9	0.1	0.7	*	*	0.0	-0.8
TiO2	% m/m	*	*	0.5	*	0.5	0.4	-0.3	-0.1	*	*	1.0	-0.7
Al2O3	% m/m	*	*	0.1	*	0.2	0.4	0.4	0.1	*	*	0.5	0.0
Fe2O3	% m/m	*	*	0.4	*	0.4	0.8	-0.3	-0.6	*	*	0.1	1.5
Fe(II)O	% m/m	*	*	2.6	*	0.5	3.5	-1.4	*	*	*	-0.9	*
MnO	% m/m	*	*	0.9	*	0.5	2.8	-0.7	0.7	*	*	-0.2	-2.8
MgO	% m/m	*	*	0.1	*	0.3	0.6	-0.3	0.5	*	*	-0.4	-0.7
CaO	% m/m	*	*	0.0	*	0.5	0.0	0.5	0.0	*	*	-1.8	-1.8
Na2O	% m/m	*	*	1.5	*	0.0	-0.3	-3.6	-0.2	*	*	2.7	-3.1
K2O	% m/m	*	*	-0.4	*	0.2	-0.2	-0.2	-1.0	*	*	1.3	4.6
P2O5	% m/m	*	*	0.5	*	0.3	0.8	0.3	2.1	*	*	0.3	0.5
As	mg/kg	*	*	*	*	*	-4.4	*	*	-0.7	*	*	*
Ba	mg/kg	-2.5	*	2.9	*	0.2	-0.3	-0.9	*	-0.9	-1.8	*	-0.8
Be	mg/kg	*	*	*	*	*	-0.1	*	*	*	*	*	-1.2
Ce	mg/kg	-1.3	*	*	7.6	*	-2.0	*	*	*	-0.8	*	33.2
Co	mg/kg	0.5	*	*	*	0.3	*	2.4	*	-0.2	-0.2	*	0.2
Cr	mg/kg	-0.8	*	2.6	*	0.7	0.6	-0.3	*	-0.2	-3.9	*	1.2
Cs	mg/kg	-1.4	*	*	*	*	1.9	*	*	*	*	*	0.0
Cu	mg/kg	-1.1	*	-0.4	*	-0.8	1.8	0.9	0.3	*	-1.0	-2.8	-0.7
Dy	mg/kg	1.0	*	*	*	*	-0.3	*	*	*	1.6	*	-0.1
Er	mg/kg	0.1	*	*	*	*	0.0	*	*	*	0.7	*	0.1
Eu	mg/kg	-0.9	*	*	*	*	-0.1	*	*	*	*	*	0.9
F	mg/kg	*	*	*	*	*	1.2	*	*	*	*	*	*
Ga	mg/kg	0.7	*	*	*	0.2	0.8	*	*	0.6	*	*	-0.1
Gd	mg/kg	2.4	*	*	*	*	-1.0	*	*	*	0.3	*	-0.3
Ge	mg/kg	2.0	*	*	*	*	1.5	*	*	*	*	*	*
Hf	mg/kg	-0.3	*	*	*	*	-2.0	*	*	*	*	*	-0.4
Ho	mg/kg	-0.3	*	*	*	*	-0.9	*	*	*	*	*	0.6
La	mg/kg	-1.1	*	*	10.5	*	-1.2	*	*	*	-0.2	*	-0.3
Li	mg/kg	*	*	*	*	*	*	*	*	*	*	*	*
Lu	mg/kg	-0.4	*	*	*	*	-0.2	*	*	*	*	*	-0.9
Nb	mg/kg	-0.8	*	0.5	*	*	-1.0	-0.3	6.1	*	*	*	-1.3
Nd	mg/kg	-0.9	*	*	*	*	-0.4	*	*	*	0.2	*	0.1
Ni	mg/kg	-0.4	*	-0.2	*	1.1	-3.0	-1.9	-1.1	*	0.4	-3.8	1.5
Pb	mg/kg	0.0	*	2.8	*	*	-5.8	*	-8.1	*	*	*	0.1
Pr	mg/kg	-0.6	*	*	*	*	-0.8	*	*	*	0.0	*	0.3
Sb	mg/kg	13.6	*	*	*	*	*	*	*	*	*	*	*
Sc	mg/kg	1.5	*	*	*	*	-5.1	*	*	-1.4	*	*	-0.8
Sm	mg/kg	-0.9	*	*	*	*	1.1	*	*	*	0.1	*	0.1
Sn	mg/kg	*	*	*	*	*	3.6	*	*	*	*	*	*
Sr	mg/kg	0.1	*	0.2	*	-0.1	0.4	0.1	0.6	*	-2.2	*	-0.3
Ta	mg/kg	2.2	*	*	*	*	-2.9	*	*	*	*	*	-0.3
Tb	mg/kg	-0.3	*	*	*	*	-0.7	*	*	*	*	*	-0.2
Th	mg/kg	-0.6	*	*	10.8	*	-0.9	*	*	*	*	*	-0.6
Tm	mg/kg	-0.8	*	*	*	*	*	*	*	*	*	*	-0.1
U	mg/kg	1.1	*	*	47.9	*	-0.5	*	*	*	*	*	1.3
V	mg/kg	0.4	*	-0.8	*	1.0	-1.3	-0.8	*	-0.6	-1.7	-3.5	1.4
Y	mg/kg	-1.5	*	2.7	*	-1.9	1.4	-3.2	1.6	*	-1.2	*	1.2
Yb	mg/kg	0.4	*	*	*	*	-0.6	*	*	*	0.5	*	-0.6
Zn	mg/kg	4.4	*	-0.1	*	1.0	-0.9	-0.3	-0.1	*	-10.9	*	*
Zr	mg/kg	-2.0	*	0.2	*	-0.3	-0.9	1.0	1.1	*	*	*	-1.4

Table 3		GeoPT16 Z-score data for Nevada basalt BNV-1											
Round identifier		Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21
Sample		BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1
Data quality		2	2	1	2	2	2	1	2	2	2	1	2
SiO2	% m/m	0.3	-0.4	*	*	-0.5	0.4	0.5	0.1	0.2	0.0	0.1	-0.2
TiO2	% m/m	-0.6	0.3	*	*	-0.6	-1.0	0.8	0.3	-0.6	3.4	0.3	0.2
Al2O3	% m/m	-0.1	0.3	*	*	0.0	-0.2	0.1	0.2	0.4	0.0	-1.0	2.2
Fe2O3	% m/m	-0.1	0.6	*	*	-0.1	-0.2	-1.5	0.1	-0.1	0.1	0.3	-0.9
Fe(II)O	% m/m	-0.9	*	*	*	*	*	3.7	*	*	-5.7	*	*
MnO	% m/m	-0.2	0.9	*	*	-0.2	-2.6	0.4	0.9	0.9	-0.2	0.4	-0.6
MgO	% m/m	0.0	-0.4	*	*	-0.1	0.8	0.0	0.9	0.1	-4.0	-0.2	-0.7
CaO	% m/m	-1.7	0.5	*	*	0.2	-1.4	-0.5	-0.1	-0.1	1.5	-0.2	-1.0
Na2O	% m/m	1.6	0.7	*	*	2.0	-0.2	-0.5	0.2	-1.4	-1.6	0.0	1.8
K2O	% m/m	1.3	0.2	*	*	*	0.2	-2.4	-0.8	-0.8	-0.8	-1.2	-0.8
P2O5	% m/m	0.3	-1.1	*	*	*	0.3	-2.4	-1.1	0.3	-1.1	-0.8	0.8
As	mg/kg	*	*	*	0.1	*	*	*	*	*	-1.0	*	*
Ba	mg/kg	-0.2	0.6	-3.1	*	*	0.2	0.7	*	-0.2	-1.1	*	-1.1
Be	mg/kg	1.3	0.5	*	-0.2	*	-0.1	*	*	*	-5.5	*	*
Ce	mg/kg	-1.0	0.7	-1.4	1.0	*	-0.4	-0.7	*	0.2	18.2	*	0.8
Co	mg/kg	-0.7	0.6	-1.7	-0.4	*	0.2	-0.6	*	0.6	1.2	*	0.0
Cr	mg/kg	-0.4	-1.1	*	*	*	1.4	0.1	*	-4.5	4.8	5.9	0.2
Cs	mg/kg	*	-0.7	6077.0	*	*	-1.0	-1.0	*	5.8	-3.9	*	*
Cu	mg/kg	0.2	0.5	-4.1	*	*	0.1	-1.3	*	-0.6	2.3	*	0.6
Dy	mg/kg	-0.5	0.4	-0.3	-0.5	*	-0.1	0.2	*	0.3	-0.7	*	-0.5
Er	mg/kg	0.5	0.5	-0.2	-0.8	*	-0.3	-0.2	*	3.1	-0.3	*	0.3
Eu	mg/kg	-0.6	0.3	-0.8	0.0	*	-0.1	-0.4	*	0.2	0.1	*	-0.3
F	mg/kg	*	*	*	*	*	*	*	*	*	-2.3	*	*
Ga	mg/kg	-1.2	0.7	-1.4	-0.4	*	0.0	0.0	*	*	0.6	*	-0.2
Gd	mg/kg	-0.3	0.9	-0.3	-0.4	*	-0.2	1.0	*	0.7	-2.2	*	-0.4
Ge	mg/kg	-0.8	*	*	-0.7	*	1.1	*	*	*	*	*	*
Hf	mg/kg	*	0.3	-2.0	0.0	*	0.0	-0.6	*	0.2	23.9	*	-1.3
Ho	mg/kg	-0.5	0.3	0.4	-0.2	*	0.2	0.1	*	0.3	-5.9	*	-0.3
La	mg/kg	-0.2	0.4	-1.2	1.0	*	0.0	-0.2	*	0.0	-1.9	*	0.0
Li	mg/kg	0.0	1.3	*	*	*	1.1	*	*	-0.3	*	*	*
Lu	mg/kg	-0.6	0.3	-0.1	-0.3	*	0.7	0.6	*	0.2	*	*	0.1
Nb	mg/kg	-0.3	-0.3	-2.0	0.1	*	0.2	0.9	*	*	7.2	*	-0.5
Nd	mg/kg	-0.7	0.4	-0.8	0.0	*	0.2	0.4	*	0.2	3.7	*	0.5
Ni	mg/kg	-1.3	1.1	*	*	*	1.0	0.1	*	1.6	2.0	*	0.7
Pb	mg/kg	-1.1	-0.2	*	*	*	0.0	-0.2	*	-0.7	15.3	*	1.1
Pr	mg/kg	-0.1	0.6	-0.6	0.4	*	-0.1	0.6	*	0.3	1.2	*	-0.3
Sb	mg/kg	*	0.0	*	-0.4	*	*	*	*	-0.7	243.0	*	*
Sc	mg/kg	-0.5	1.0	*	*	*	0.4	-0.2	*	-1.2	4.8	*	-1.0
Sm	mg/kg	-0.5	0.3	-1.4	-0.1	*	0.1	0.3	*	0.5	29.1	*	-0.3
Sn	mg/kg	-2.6	-0.6	*	*	*	*	*	*	*	-6.5	*	1.6
Sr	mg/kg	0.8	0.2	-1.9	*	*	0.4	0.5	*	0.0	0.1	*	-0.5
Ta	mg/kg	*	-0.2	-1.2	0.0	*	0.4	-0.2	*	*	-5.2	*	-2.2
Tb	mg/kg	0.0	0.5	-0.7	-0.2	*	0.1	-0.5	*	0.1	16.5	*	-0.2
Th	mg/kg	2.7	0.3	-0.7	5.6	*	0.0	-0.1	*	1.0	-5.3	*	*
Tm	mg/kg	-0.5	0.4	-0.3	0.1	*	0.0	0.6	*	0.3	*	*	-0.4
U	mg/kg	-0.1	3.2	0.8	-0.1	*	-0.2	2.4	*	-0.2	-5.2	*	*
V	mg/kg	-0.1	1.5	-0.1	*	*	0.6	0.0	*	1.2	0.2	*	0.9
Y	mg/kg	-0.7	0.2	-2.2	-0.8	*	0.7	1.5	*	-0.1	-1.2	*	-0.2
Yb	mg/kg	-0.5	0.4	-0.6	-0.3	*	0.2	0.0	*	0.1	3.2	*	0.0
Zn	mg/kg	-1.8	0.2	*	*	*	0.8	0.0	*	0.9	3.0	*	0.7
Zr	mg/kg	-1.1	1.0	-4.3	0.5	*	0.1	0.4	*	4.1	2.7	*	-0.7

Table 3		GeoPT16 Z-score data for Nevada basalt BNV-1											
Round identifier		Q22	Q23	Q24	Q25	Q26	Q26	Q27	Q28	Q29	Q30	Q31	Q32
Sample		BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1
Data quality		2	2	1	2	1	2	1	2	2	2	1	1
SiO2	% m/m	0.4	-2.0	-0.2	0.0	1.0	*	0.7	-4.1	*	-0.3	-0.2	-0.3
TiO2	% m/m	-0.1	0.1	-0.3	0.1	-0.3	*	-1.0	-6.3	0.7	0.2	-5.1	-0.3
Al2O3	% m/m	0.0	4.6	-0.3	0.1	-0.5	*	-1.3	8.9	*	-0.5	-0.8	-0.5
Fe2O3	% m/m	-0.2	-0.5	-0.8	0.0	-0.9	*	-1.5	-3.9	-0.3	0.4	-2.4	-0.2
Fe(II)O	% m/m	*	*	*	*	*	*	*	*	*	*	-2.2	-1.1
MnO	% m/m	0.3	-1.4	-3.5	0.1	-1.4	*	-2.1	-1.4	0.0	0.3	2.1	-0.5
MgO	% m/m	-0.2	0.0	-0.4	-0.3	1.4	*	-0.7	*	*	1.1	2.3	-0.9
CaO	% m/m	0.1	0.0	-0.1	-0.2	0.9	*	1.3	-4.3	-0.7	-0.2	1.1	0.0
Na2O	% m/m	0.4	1.0	1.7	-0.7	-4.2	*	-0.7	*	*	-2.1	-1.5	-1.0
K2O	% m/m	-0.8	1.3	2.5	1.5	-2.2	*	-12.4	-3.5	1.3	-0.9	0.5	-1.6
P2O5	% m/m	-1.2	-1.1	-2.2	-0.1	-0.3	*	-5.9	*	*	0.1	-4.3	0.5
As	mg/kg	-2.6	*	*	-0.1	2.1	*	*	*	*	*	-5.1	*
Ba	mg/kg	-2.6	*	*	0.5	0.6	*	1.2	1.3	*	*	-1.9	0.0
Be	mg/kg	*	*	*	*	*	-1.4	*	*	*	*	14.7	*
Ce	mg/kg	*	-2.3	*	0.0	-2.3	*	1.5	0.8	*	*	-0.3	*
Co	mg/kg	*	*	*	*	0.5	*	4.8	*	*	*	-3.1	-2.3
Cr	mg/kg	-2.2	*	*	0.9	1.7	*	-0.2	-1.0	-1.2	*	5.1	1.8
Cs	mg/kg	*	*	*	*	*	*	*	*	*	*	*	*
Cu	mg/kg	-2.7	-0.6	*	0.8	3.2	*	-0.7	0.5	1.7	*	0.7	-3.7
Dy	mg/kg	*	*	*	*	-1.4	*	-2.3	*	*	*	0.3	*
Er	mg/kg	*	*	*	*	-1.3	*	-1.3	*	*	*	-2.2	*
Eu	mg/kg	*	*	*	*	-1.0	*	0.2	*	*	*	-1.7	*
F	mg/kg	*	*	*	*	*	*	*	*	*	*	27.0	*
Ga	mg/kg	*	*	*	-0.7	-2.4	*	2.3	-0.6	-1.8	*	*	-4.8
Gd	mg/kg	*	*	*	*	-1.4	*	-3.4	*	*	*	2.7	*
Ge	mg/kg	*	*	*	*	*	*	-1.6	*	*	*	*	*
Hf	mg/kg	*	*	*	*	4.2	*	*	*	*	*	*	12.9
Ho	mg/kg	*	*	*	*	-1.9	*	-1.9	*	*	*	*	*
La	mg/kg	*	*	*	-8.0	-2.2	*	2.5	2.8	*	*	-2.2	*
Li	mg/kg	*	*	*	*	*	-3.8	*	*	*	*	*	*
Lu	mg/kg	*	*	*	*	-1.9	*	-6.5	*	*	*	1.1	*
Nb	mg/kg	*	3.4	*	-7.7	-3.7	*	-0.6	-4.0	*	*	3.1	-0.6
Nd	mg/kg	*	-4.5	*	*	-1.8	*	1.4	1.6	*	*	-0.6	*
Ni	mg/kg	-8.7	-0.4	*	-0.1	0.1	*	-2.5	-1.8	-2.6	*	-0.7	0.4
Pb	mg/kg	*	*	*	-3.4	-1.6	*	1.0	-2.9	*	*	*	3.3
Pr	mg/kg	*	*	*	*	-1.1	*	2.4	*	*	*	-2.8	*
Sb	mg/kg	*	*	*	*	*	*	*	*	*	*	*	*
Sc	mg/kg	*	*	*	-3.9	6.0	*	1.3	*	*	*	-3.4	-6.9
Sm	mg/kg	*	*	*	*	-1.4	*	-1.0	*	*	*	-2.8	*
Sn	mg/kg	*	*	*	*	*	*	*	*	*	*	*	*
Sr	mg/kg	*	-0.1	*	0.6	-0.1	*	0.4	-1.5	0.0	*	-0.9	-0.7
Ta	mg/kg	*	*	*	*	*	*	*	*	*	*	*	63.7
Tb	mg/kg	*	*	*	*	-1.3	*	-4.0	*	*	*	*	*
Th	mg/kg	*	*	*	-5.3	-2.9	-1.4	*	*	*	*	118.0	*
Tm	mg/kg	*	*	*	*	-1.8	*	-7.8	*	*	*	3.3	*
U	mg/kg	*	12.5	*	-5.2	-1.6	-0.8	*	*	*	*	*	*
V	mg/kg	-1.4	*	*	-1.4	0.5	*	-1.6	*	-0.2	*	0.8	1.7
Y	mg/kg	*	0.8	*	0.3	-1.3	*	0.2	-1.2	0.3	*	-0.3	-2.4
Yb	mg/kg	*	*	*	*	-1.6	*	-3.1	*	*	*	2.1	*
Zn	mg/kg	-2.7	-0.5	*	0.6	1.1	*	-2.6	-1.8	0.0	*	6.1	1.1
Zr	mg/kg	*	1.0	*	2.3	-3.8	*	0.0	-1.1	-1.1	*	-1.5	2.9

Table 3		GeoPT16 Z-score data for Nevada basalt BNV-1											
Round identifier		Q33	Q34	Q35	Q36	Q37	Q38	Q39	Q39	Q40	Q41	Q42	Q43
Sample		BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1
Data quality		2	2	2	2	2	2	1	2	2	2	1	1
SiO2	% m/m	-0.5	0.2	0.5	2.0	0.4	-0.8	-0.6	*	-0.1	0.0	-0.4	0.6
TiO2	% m/m	0.1	0.3	-0.1	0.8	2.2	-1.0	-3.4	*	0.9	-2.6	0.6	-0.3
Al2O3	% m/m	-0.2	-0.1	-0.4	1.2	1.0	-0.4	-1.3	*	-0.4	0.0	-1.3	-0.1
Fe2O3	% m/m	0.2	0.1	-0.8	1.8	0.2	0.6	-4.3	*	0.6	0.4	-0.7	-0.5
Fe(II)O	% m/m	*	*	*	*	-11.9	*	*	*	*	*	1.0	*
MnO	% m/m	0.9	0.9	-0.1	0.7	0.9	*	-2.8	*	0.0	-2.6	0.2	-1.0
MgO	% m/m	-0.5	-0.5	-1.3	0.0	0.6	0.6	-4.7	*	-0.1	-0.3	-1.8	0.4
CaO	% m/m	0.5	-0.1	1.0	0.8	-0.8	0.6	-3.7	*	0.4	0.8	-0.3	-0.5
Na2O	% m/m	-6.5	0.8	-0.4	0.7	1.4	9.8	5.2	*	-0.2	1.5	-3.4	1.9
K2O	% m/m	-0.8	0.2	0.8	28.1	5.4	-1.1	-9.9	*	-0.5	2.3	-3.7	-1.6
P2O5	% m/m	-2.4	-1.1	0.5	1.9	3.6	*	-7.5	*	-0.3	5.6	0.2	1.1
As	mg/kg	17.3	*	*	*	*	*	*	*	*	*	*	*
Ba	mg/kg	-2.0	*	*	1.2	1.7	*	-3.1	*	1.8	1.6	0.8	-0.5
Be	mg/kg	*	*	*	4.0	0.3	*	*	*	*	*	*	*
Ce	mg/kg	-0.8	*	*	-0.1	5.5	*	*	*	*	*	-0.6	*
Co	mg/kg	-4.5	-0.7	*	0.0	0.3	*	2.4	*	-0.5	1.3	-0.4	*
Cr	mg/kg	-2.9	-4.9	*	1.1	-6.6	*	-6.9	*	-1.3	-0.2	2.4	-1.2
Cs	mg/kg	*	*	*	*	*	*	*	*	*	*	1.9	*
Cu	mg/kg	-1.3	0.3	*	-0.8	3.6	*	-10.3	*	-0.6	-0.3	0.2	-0.1
Dy	mg/kg	-0.7	*	*	0.1	0.9	*	*	*	*	*	-0.5	*
Er	mg/kg	-0.3	*	*	0.5	0.8	*	*	*	*	*	-0.5	*
Eu	mg/kg	-1.2	*	*	0.2	0.6	*	*	*	*	*	0.6	*
F	mg/kg	-1.2	*	*	*	*	*	*	*	*	2.8	*	*
Ga	mg/kg	*	*	*	-0.4	4.6	*	*	-1.8	0.6	-1.8	2.3	3.2
Gd	mg/kg	-0.7	*	*	-0.1	-0.8	*	*	*	*	*	0.5	*
Ge	mg/kg	*	*	*	*	*	*	*	*	*	*	*	*
Hf	mg/kg	0.3	*	*	-0.4	*	*	*	10.8	*	*	0.0	*
Ho	mg/kg	-0.1	*	*	0.5	0.5	*	*	*	*	*	0.1	*
La	mg/kg	-0.3	*	*	-0.9	0.5	*	*	*	*	*	-0.2	*
Li	mg/kg	-1.4	*	*	*	2.9	*	*	*	*	*	*	*
Lu	mg/kg	-0.3	*	*	0.1	0.6	*	*	*	*	*	-0.2	*
Nb	mg/kg	10.9	*	*	-1.1	8.1	*	*	*	-1.2	1.6	-0.7	2.4
Nd	mg/kg	-0.7	*	*	0.0	0.1	*	*	*	0.6	*	-0.1	11.9
Ni	mg/kg	-2.6	0.0	*	1.6	0.3	*	0.2	*	1.8	-0.5	-0.3	-3.2
Pb	mg/kg	-3.4	6.2	*	*	13.9	*	*	*	*	*	-0.3	5.5
Pr	mg/kg	-0.8	*	*	0.1	1.0	*	*	*	*	*	-0.8	*
Sb	mg/kg	2.5	*	*	*	*	*	*	*	*	*	*	*
Sc	mg/kg	-4.0	*	*	0.5	*	*	*	-0.2	*	*	-0.9	*
Sm	mg/kg	-0.5	*	*	-0.1	1.1	*	*	*	*	*	0.2	*
Sn	mg/kg	3.8	*	*	-2.7	*	*	*	*	*	*	*	*
Sr	mg/kg	-3.9	1.3	*	2.8	1.1	*	-0.7	*	0.5	0.2	0.2	-0.2
Ta	mg/kg	17.0	*	*	-0.2	31.8	*	*	*	*	*	0.0	*
Tb	mg/kg	-0.1	*	*	-0.1	0.3	*	*	*	*	*	-0.2	*
Th	mg/kg	4.4	59.0	*	1.1	*	*	*	*	91.2	*	0.7	*
Tm	mg/kg	-0.2	*	*	0.1	0.8	*	*	*	*	*	-0.1	*
U	mg/kg	0.1	*	*	-0.6	*	*	*	*	*	*	2.3	*
V	mg/kg	2.6	*	*	0.3	0.5	*	-0.7	*	-1.2	-0.1	-0.7	-1.6
Y	mg/kg	-1.2	*	*	0.9	0.5	*	*	-1.7	-0.7	1.2	1.8	0.3
Yb	mg/kg	-0.9	*	*	0.1	1.2	*	*	*	*	*	0.4	*
Zn	mg/kg	-1.1	0.4	*	1.8	-0.5	*	-4.0	*	-0.1	0.7	2.4	0.2
Zr	mg/kg	-1.3	*	*	-1.0	0.2	*	-1.3	*	0.2	1.1	2.0	0.5

Table 3		GeoPT16 Z-score data for Nevada basalt BNV-1											
Round identifier		Q44	Q45	Q45	Q46	Q47	Q48	Q48	Q49	Q50	Q51	Q52	Q53
Sample		BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1
Data quality		2	1	2	2	2	1	2	2	1	1	2	1
SiO2	% m/m	0.6	0.0	*	0.4	-0.9	*	*	-0.4	0.0	-0.1	0.1	*
TiO2	% m/m	1.2	-0.3	*	1.2	0.7	*	*	-0.4	-0.3	0.1	0.9	*
Al2O3	% m/m	0.7	0.7	*	-0.7	0.2	*	*	0.4	0.0	-0.6	-0.2	1.0
Fe2O3	% m/m	0.4	-0.8	*	0.2	1.6	*	*	0.0	2.1	-0.4	0.4	-2.5
Fe(II)O	% m/m	*	*	*	0.8	*	*	*	*	*	*	*	*
MnO	% m/m	2.0	-0.5	*	0.3	2.1	*	*	0.9	1.9	0.1	-0.6	3.5
MgO	% m/m	-0.2	0.1	*	-0.1	2.4	*	*	-0.3	0.7	-0.2	-0.7	3.1
CaO	% m/m	0.8	0.1	*	-0.1	-1.6	*	*	0.3	-2.1	0.0	0.3	*
Na2O	% m/m	-0.5	2.2	*	0.7	0.8	*	*	-1.2	-7.7	-0.1	0.1	-0.5
K2O	% m/m	-1.7	0.5	*	0.2	2.3	*	*	-1.8	0.5	-0.8	4.7	*
P2O5	% m/m	1.6	5.9	*	-1.1	-1.1	*	*	1.6	-4.9	0.6	-0.3	*
As	mg/kg	*	*	*	2.0	*	*	*	*	*	*	*	-1.4
Ba	mg/kg	*	-0.6	*	0.5	-0.3	-2.8	*	2.3	*	-0.9	8.3	-4.4
Be	mg/kg	*	-0.4	*	-1.4	*	*	*	*	*	*	*	*
Ce	mg/kg	*	-0.5	*	0.0	-0.4	0.2	*	*	*	-1.0	0.0	1.4
Co	mg/kg	*	1.2	*	0.7	-0.6	*	*	0.3	*	*	0.4	-1.4
Cr	mg/kg	*	0.2	*	2.4	-0.5	*	*	-1.2	*	1.6	1.0	0.6
Cs	mg/kg	*	-0.6	*	0.0	15.4	-1.1	*	*	*	-2.4	0.9	*
Cu	mg/kg	*	-0.7	*	0.3	-0.3	*	*	0.8	*	-1.6	-2.8	*
Dy	mg/kg	*	0.1	*	1.1	-0.6	0.4	*	*	*	1.8	-0.3	-0.9
Er	mg/kg	*	0.2	*	0.7	-1.0	0.7	*	*	*	0.7	-0.3	*
Eu	mg/kg	*	0.3	*	0.8	-0.5	-0.1	*	*	*	1.0	-0.2	-0.1
F	mg/kg	*	*	*	-0.6	*	*	*	*	*	*	*	*
Ga	mg/kg	*	0.2	*	0.3	*	*	*	-0.6	*	-0.2	*	*
Gd	mg/kg	*	0.3	*	0.6	-1.2	0.9	*	*	*	1.0	-0.5	*
Ge	mg/kg	*	*	*	-1.3	*	*	*	*	*	*	*	*
Hf	mg/kg	*	-0.5	*	1.2	-1.0	*	-0.2	*	*	-0.3	0.2	-1.6
Ho	mg/kg	*	0.0	*	0.0	-0.4	0.3	*	*	*	1.4	-0.8	*
La	mg/kg	*	0.2	*	0.2	-0.2	0.5	*	1.2	*	0.3	-1.8	-0.5
Li	mg/kg	*	0.6	*	0.0	*	*	*	*	*	*	*	*
Lu	mg/kg	*	-0.3	*	0.2	-0.8	0.2	*	*	*	0.3	-0.7	-0.2
Nb	mg/kg	*	0.0	*	1.2	-0.5	*	0.4	-2.2	*	-0.7	4.9	*
Nd	mg/kg	*	-0.3	*	0.1	-0.6	0.3	*	-5.5	*	-1.2	-0.8	-3.3
Ni	mg/kg	*	-1.3	*	1.1	0.0	*	*	-0.9	*	0.7	-2.0	*
Pb	mg/kg	*	1.4	*	3.9	*	-2.6	*	1.6	*	-2.0	3.4	*
Pr	mg/kg	*	0.1	*	0.4	-0.4	0.4	*	*	*	-1.1	-0.1	*
Sb	mg/kg	*	-1.4	*	-0.4	16.6	*	*	*	*	*	*	-2.8
Sc	mg/kg	*	-0.1	*	0.1	-0.2	*	*	1.2	*	3.4	0.4	0.3
Sm	mg/kg	*	0.1	*	0.4	-0.5	0.6	*	*	*	0.7	-0.5	-1.1
Sn	mg/kg	*	*	1.7	-0.1	-0.1	*	*	*	*	*	*	*
Sr	mg/kg	*	0.7	*	0.3	0.0	0.0	*	-0.9	*	0.0	-0.3	*
Ta	mg/kg	*	0.0	*	3.2	-0.5	*	0.1	*	*	0.0	-0.2	-2.9
Tb	mg/kg	*	0.4	*	0.2	-0.7	0.0	*	*	*	1.3	-0.5	0.5
Th	mg/kg	*	0.0	*	1.1	-0.5	-0.3	*	*	*	1.4	-0.4	-4.8
Tm	mg/kg	*	-0.1	*	0.6	-0.2	0.0	*	*	*	0.5	-0.9	*
U	mg/kg	*	-0.7	*	0.8	-1.7	-1.5	*	*	*	4.4	-0.5	-2.6
V	mg/kg	*	-1.4	*	1.9	1.2	*	*	-1.4	*	0.8	-2.2	4.4
Y	mg/kg	*	-0.1	*	-0.2	-0.7	0.0	*	-0.7	*	1.7	-0.6	*
Yb	mg/kg	*	-0.2	*	0.1	-0.7	0.2	*	*	*	-0.4	-0.5	-0.3
Zn	mg/kg	*	-0.7	*	0.7	3.9	*	*	-2.0	*	-0.2	*	*
Zr	mg/kg	*	-0.6	*	0.6	-0.2	0.2	*	-1.7	*	-1.5	-0.5	*

Table 3		GeoPT16 Z-score data for Nevada basalt BNV-1											
Round identifier		Q54	Q55	Q57	Q58	Q59	Q60	Q61	Q62	Q62	Q63	Q64	Q65
Sample		BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1
Data quality		1	1	2	2	1	2	2	1	2	2	2	1
SiO2	% m/m	0.0	-0.8	*	-0.2	-0.1	-0.3	-0.1	-0.5	*	*	-0.4	*
TiO2	% m/m	-2.0	-0.7	*	2.3	-0.3	-0.4	-0.1	0.8	*	*	0.5	*
Al2O3	% m/m	-0.8	0.0	*	-0.2	-0.2	-0.5	-0.1	-0.3	*	*	0.3	*
Fe2O3	% m/m	-1.7	1.5	0.7	31.1	0.5	-0.4	0.0	1.0	*	*	0.7	*
Fe(II)O	% m/m	*	*	*	1.9	*	*	0.9	*	*	*	0.2	*
MnO	% m/m	-1.9	-2.8	*	1.0	-0.5	0.1	0.9	*	0.0	*	-1.4	*
MgO	% m/m	1.1	-0.7	*	-0.3	1.1	-0.5	0.8	1.6	*	*	-1.5	*
CaO	% m/m	0.2	-1.8	*	-0.1	0.7	-0.1	0.8	-0.6	*	*	0.5	*
Na2O	% m/m	4.6	-3.1	0.6	-1.8	3.0	-0.3	0.6	-0.5	*	*	1.1	*
K2O	% m/m	0.5	4.6	*	-1.6	2.5	-0.8	-1.8	0.5	*	*	0.1	*
P2O5	% m/m	14.0	0.5	*	-0.4	3.2	-1.0	1.6	*	0.1	*	-0.7	*
As	mg/kg	*	*	-1.1	*	*	1.5	0.7	*	12.1	*	*	*
Ba	mg/kg	0.9	-0.8	-0.1	1.5	*	1.9	0.2	*	0.2	-1.4	-0.8	-0.4
Be	mg/kg	*	-1.2	*	-1.0	*	0.7	*	*	1.0	*	-0.1	*
Ce	mg/kg	*	33.2	-1.2	3.0	*	-0.1	-0.3	2.6	*	0.1	-1.5	0.0
Co	mg/kg	-1.4	0.2	0.6	-0.6	*	-0.2	0.3	*	-0.7	*	-0.5	*
Cr	mg/kg	0.0	1.2	1.0	0.4	*	-0.2	2.3	*	-0.7	*	*	*
Cs	mg/kg	*	0.0	*	*	*	0.8	*	0.0	*	-0.5	*	0.9
Cu	mg/kg	*	-0.7	*	5.6	*	0.2	-0.3	*	-0.2	*	1.9	*
Dy	mg/kg	*	-0.1	*	*	*	0.4	-0.2	3.6	*	0.0	*	1.0
Er	mg/kg	*	0.1	*	*	*	0.0	-0.4	3.1	*	-0.1	*	0.1
Eu	mg/kg	*	0.9	0.1	*	*	-0.2	0.0	0.9	*	-0.1	*	0.1
F	mg/kg	*	*	*	*	*	*	-1.2	*	1.5	*	*	*
Ga	mg/kg	4.7	-0.1	*	*	*	0.0	0.9	-1.4	*	*	0.6	*
Gd	mg/kg	*	-0.3	*	*	*	0.4	-0.1	4.5	*	0.1	*	0.7
Ge	mg/kg	*	*	*	*	*	5.9	0.9	*	-0.8	*	*	*
Hf	mg/kg	*	-0.4	-0.2	*	*	-0.5	-0.3	0.8	*	0.6	*	0.9
Ho	mg/kg	*	0.6	*	*	*	0.1	-0.3	2.9	*	0.0	*	0.3
La	mg/kg	*	-0.3	0.0	*	*	-0.2	-0.2	1.8	*	0.1	0.8	-0.3
Li	mg/kg	*	*	*	*	*	-0.2	-0.5	-2.7	*	*	-0.1	*
Lu	mg/kg	*	-0.9	0.6	*	*	-0.1	0.2	2.1	*	-0.1	*	0.7
Nb	mg/kg	3.1	-1.3	*	0.4	*	0.1	-1.1	*	7.2	-0.1	1.0	1.2
Nd	mg/kg	*	0.1	0.8	64.2	*	0.2	-0.2	2.4	*	0.0	*	0.0
Ni	mg/kg	-0.1	1.5	*	0.5	*	0.0	0.6	1.5	*	*	-2.9	*
Pb	mg/kg	*	0.1	*	0.0	*	-1.0	-0.4	*	2.3	0.5	*	-2.4
Pr	mg/kg	*	0.3	*	*	*	0.0	0.0	3.5	*	0.3	*	-0.1
Sb	mg/kg	*	*	*	*	*	0.4	-1.1	0.0	*	*	*	*
Sc	mg/kg	0.1	-0.8	0.2	2.1	*	-1.6	*	-0.1	*	0.2	0.5	*
Sm	mg/kg	*	0.1	0.4	*	*	0.3	0.0	2.2	*	-0.1	*	-0.4
Sn	mg/kg	*	*	*	*	*	0.3	-0.8	*	1.6	*	*	*
Sr	mg/kg	0.2	-0.3	*	-0.7	*	0.1	-0.2	*	1.4	0.2	-0.2	-0.3
Ta	mg/kg	*	-0.3	0.0	*	*	*	0.2	2.3	*	*	*	-0.5
Tb	mg/kg	*	-0.2	0.3	*	*	-0.2	-0.1	3.1	*	0.0	*	0.1
Th	mg/kg	*	-0.6	-0.5	*	*	0.1	-0.5	4.5	*	1.3	*	0.0
Tm	mg/kg	*	-0.1	*	*	*	-0.2	-0.2	2.6	*	-0.1	*	0.0
U	mg/kg	*	1.3	*	*	*	0.1	-1.0	1.3	*	0.1	*	-1.8
V	mg/kg	-0.1	1.4	*	-0.7	*	-0.5	0.8	*	2.3	*	0.0	*
Y	mg/kg	0.7	1.2	*	2.4	*	0.6	0.0	*	1.9	-0.2	0.3	2.0
Yb	mg/kg	*	-0.6	0.0	*	*	0.2	-0.1	3.3	*	-0.1	*	-0.4
Zn	mg/kg	*	*	*	-1.1	*	0.4	1.7	*	-0.1	*	-0.8	*
Zr	mg/kg	-0.9	-1.4	*	3.5	*	-0.5	-0.8	*	0.2	0.4	-0.6	4.1

Table 3		GeoPT16 Z-score data for Nevada basalt BNV-1						
Round identifier		Q66	Q67	Q68	Q69	Q69	Q70	Q71
Sample		BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1	BNV-1
Data quality		1	1	1	1	2	1	1
SiO2	% m/m	*	*	0.6	*	*	0.3	0.8
TiO2	% m/m	*	-2.0	*	-2.5	*	0.2	0.2
Al2O3	% m/m	*	-4.0	1.4	3.8	*	-0.1	-0.6
Fe2O3	% m/m	0.0	-0.2	0.7	-1.0	*	-0.1	-0.7
Fe(II)O	% m/m	*	*	*	*	*	*	*
MnO	% m/m	*	-1.7	0.7	-0.5	*	0.9	0.4
MgO	% m/m	*	0.1	*	1.4	*	0.8	-0.7
CaO	% m/m	*	-0.9	-2.1	0.7	*	0.4	0.2
Na2O	% m/m	*	-6.4	-3.7	0.1	*	-2.1	3.0
K2O	% m/m	*	-3.7	4.6	*	5.4	-1.6	-1.6
P2O5	% m/m	*	*	*	*	*	1.1	2.1
As	mg/kg	*	*	*	-1.0	*	*	0.3
Ba	mg/kg	1.4	-0.5	1.6	*	*	0.8	2.3
Be	mg/kg	*	*	*	*	*	*	0.0
Ce	mg/kg	0.6	*	*	2.0	*	0.3	1.0
Co	mg/kg	0.5	-1.9	-1.9	0.3	*	2.4	0.9
Cr	mg/kg	*	*	-7.3	5.8	*	-0.9	2.2
Cs	mg/kg	596.9	*	*	*	*	*	*
Cu	mg/kg	*	2.9	4.3	*	*	0.5	0.9
Dy	mg/kg	*	*	*	*	0.0	*	-0.8
Er	mg/kg	*	*	*	*	*	*	-1.7
Eu	mg/kg	-0.3	*	*	1.5	*	*	0.1
F	mg/kg	*	*	*	*	*	*	*
Ga	mg/kg	*	*	*	*	*	1.3	0.0
Gd	mg/kg	*	*	*	*	*	*	0.0
Ge	mg/kg	*	*	*	*	*	*	*
Hf	mg/kg	-0.2	*	*	0.7	*	*	-0.4
Ho	mg/kg	*	*	*	*	*	*	1.4
La	mg/kg	0.3	*	*	0.2	*	5.5	0.6
Li	mg/kg	*	114.6	*	*	*	*	0.1
Lu	mg/kg	0.1	*	*	0.4	*	*	1.0
Nb	mg/kg	*	*	-0.6	*	*	3.5	3.1
Nd	mg/kg	-3.3	*	*	*	*	*	0.7
Ni	mg/kg	*	-1.0	-6.3	*	0.1	5.3	0.9
Pb	mg/kg	*	*	*	*	*	7.8	-1.9
Pr	mg/kg	*	*	*	*	*	*	-1.7
Sb	mg/kg	*	*	*	*	*	*	1.3
Sc	mg/kg	0.1	*	-4.0	0.4	*	-2.7	1.2
Sm	mg/kg	0.8	*	*	-0.6	*	*	0.6
Sn	mg/kg	*	*	*	*	*	*	*
Sr	mg/kg	*	-1.1	-3.2	*	*	0.7	0.8
Ta	mg/kg	-2.2	*	*	*	*	*	0.5
Tb	mg/kg	1.1	*	*	*	0.3	*	-0.4
Th	mg/kg	-0.6	*	*	*	0.2	53.7	-2.3
Tm	mg/kg	*	*	*	*	*	*	1.0
U	mg/kg	378.7	*	*	*	*	46.2	0.0
V	mg/kg	*	0.2	-6.2	1.8	*	-1.9	1.6
Y	mg/kg	*	*	-2.4	*	*	1.5	2.3
Yb	mg/kg	0.3	*	*	0.9	*	*	1.5
Zn	mg/kg	0.1	-7.0	-0.9	*	*	-0.7	2.3
Zr	mg/kg	*	4.1	0.0	*	*	0.1	0.1

Table 4 GeoPT 16 (Nevada basalt BNV-1)

Comparison between certified values for NIST SRM688 and assigned values for BNV-1.

	SRM 695 CV	95% confidence limit	GeoPT16 X _a	GeoPT16 - sdm	GeoPT16 status		SRM 695 CV	95% confidence limit	GeoPT16 X _a	GeoPT16sd m	GeoPT16 status
	% m/m	% m/m	% m/m	% m/m			mg/kg	mg/kg	mg/kg	mg/kg	
SiO ₂	48.4	0.1	47.986	0.051	assigned	Hf	1.6	*	1.52	0.03	assigned
TiO ₂	1.17	0.01	1.167	0.004	assigned	Ho			0.72	0.01	assigned
Al ₂ O ₃	17.36	0.09	17.411	0.027	assigned	La			5.20	0.07	assigned
Fe ₂ O ₃	10.35	0.04	10.333	0.021	assigned	Li			6.00	0.15	assigned
Fe(II)O	7.64	0.03	7.435	0.090	provisional	Lu	0.34	*	0.32	0.00	assigned
MnO	0.167	0.002	0.1621	0.0011	assigned	Nb			4.16	0.08	assigned
MgO	8.4	*	8.514	0.020	assigned	Nd			8.40	0.11	assigned
CaO	12.17	*	12.149	0.024	assigned	Ni	150	*	145.7	1.6	assigned
Na ₂ O	2.15	0.03	2.087	0.014	assigned	Pb	3.3	0.2	3.28	0.12	provisional
K ₂ O	0.187	0.008	0.1877	0.0020	assigned	Pr			1.69	0.02	assigned
P ₂ O ₅	0.134	0.003	0.1381	0.0013	assigned	Rb	1.91	0.01			
	mg/kg	mg/kg	mg/kg	mg/kg		Sb			0.13	0.01	provisional
As			2.33	0.15	provisional	Sc	38.1	*	36.75	0.44	assigned
Ba	200	*	173.0	2.1	assigned	Sm	2.79	*	2.36	0.03	assigned
Be			0.40	0.02	assigned	Sn			1.33	0.13	provisional
Ce	13.3	*	12.0	0.2	assigned	Sr	169.2	0.7	166.6	0.8	assigned
Co	49.7	*	46.9	0.5	assigned	Ta			0.28	0.01	assigned
Cr	322	9	300.2	4.7	assigned	Tb	0.448	*	0.51	0.01	assigned
Cs			0.040	0.002	assigned	Th	0.33	0.02	0.33	0.01	assigned
Cu	96	*	89.5	1.2	assigned	Tm			0.31	0.00	assigned
Dy			3.30	0.04	assigned	U	0.37	*	0.29	0.01	assigned
Er			2.10	0.03	assigned	V	250	*	238.0	2.6	assigned
Eu	1.07	*	0.98	0.01	assigned	Y			19.33	0.27	assigned
Ga			16.02	0.26	assigned	Yb	2.09	*	2.06	0.02	assigned
Gd			2.87	0.05	assigned	Zn	58.0	*	70.8	1.1	assigned
Ge			1.26	0.08	provisional	Zr			55.1	0.7	assigned

X_a=assigned value calculated as the robust mean of submitted data.

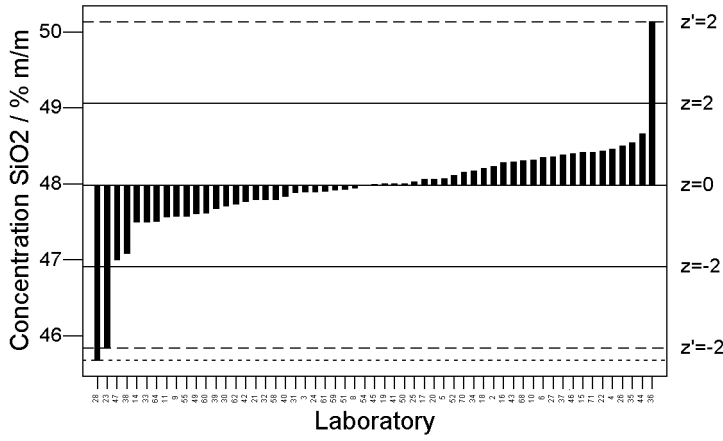
H_a=target precision calculated using a modified version of the Horwitz equation

for Data quality 1 (H_a=0.01X_a^{0.8495}).

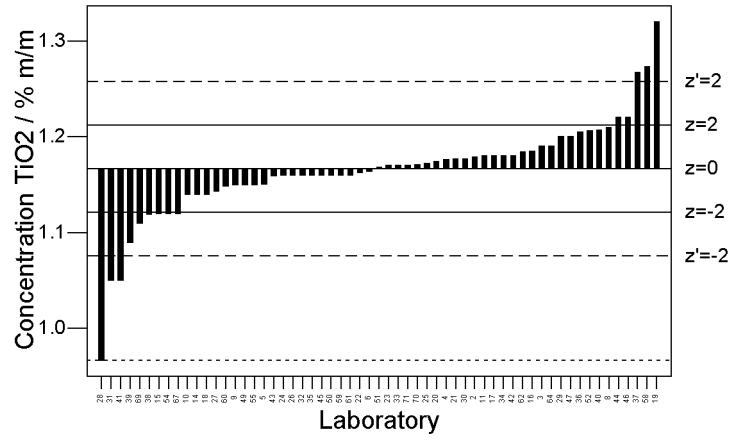
sdm=standard deviation of the mean calculated from submitted data using robust statistics.

* = information values

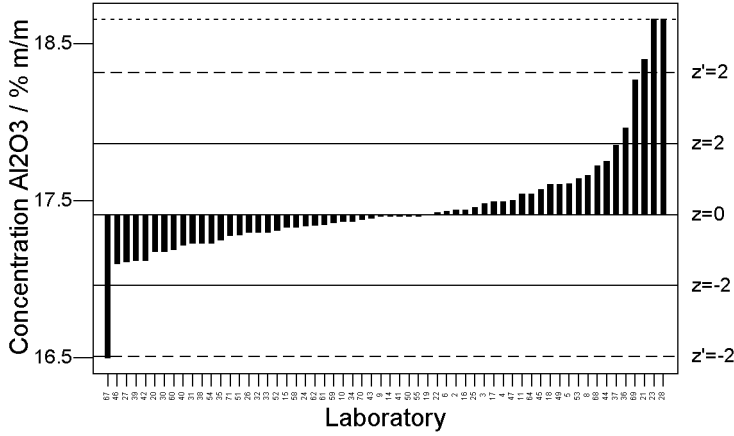
GeoPT16 - Barchart for SiO₂



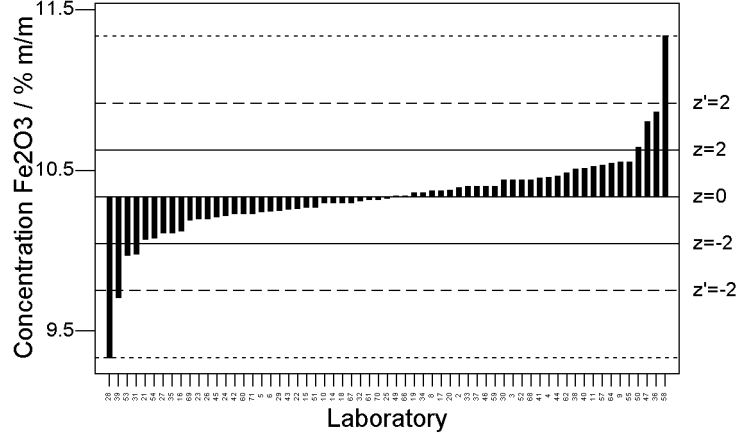
GeoPT16 - Barchart for TiO₂



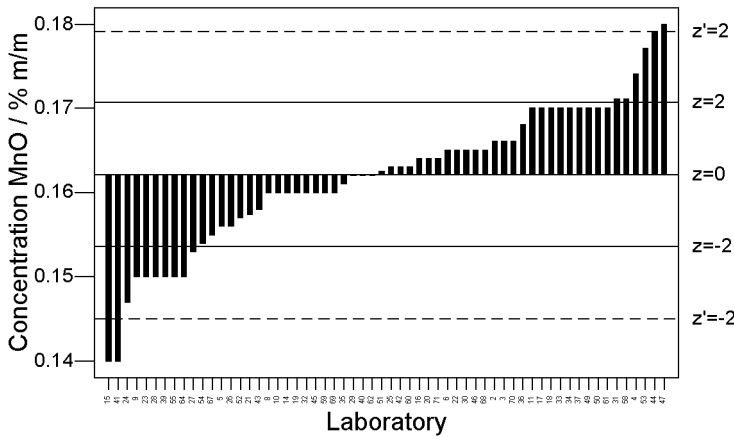
GeoPT16 - Barchart for Al₂O₃



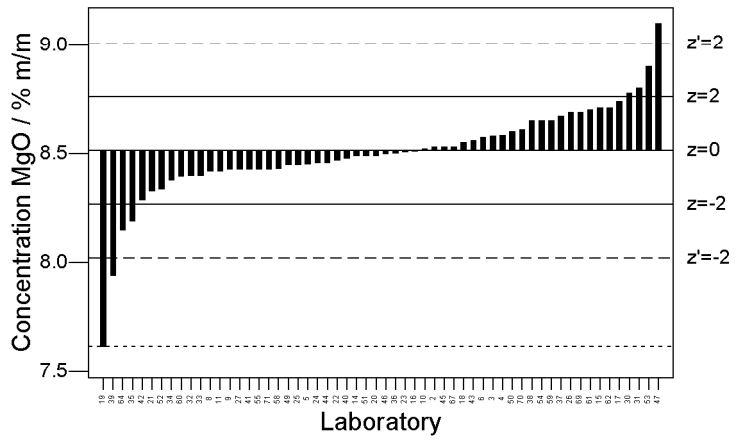
GeoPT16 - Barchart for Fe₂O₃



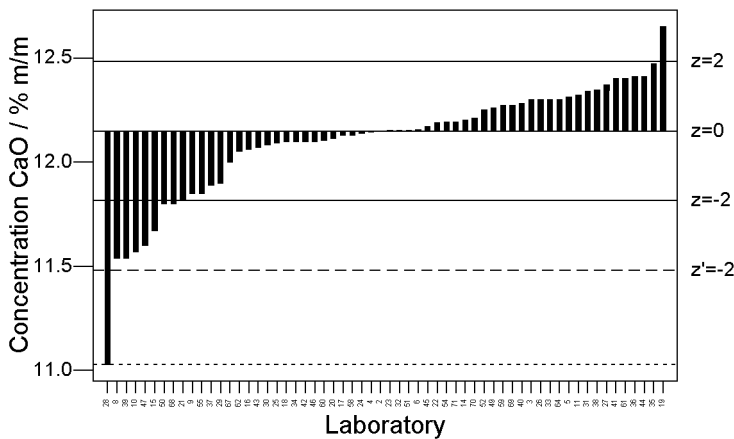
GeoPT16 - Barchart for MnO



GeoPT16 - Barchart for MgO



GeoPT16 - Barchart for CaO



GeoPT16 - Barchart for Na₂O

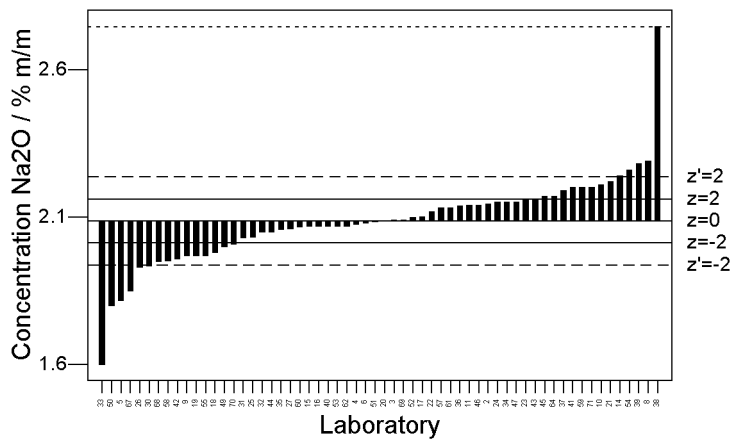
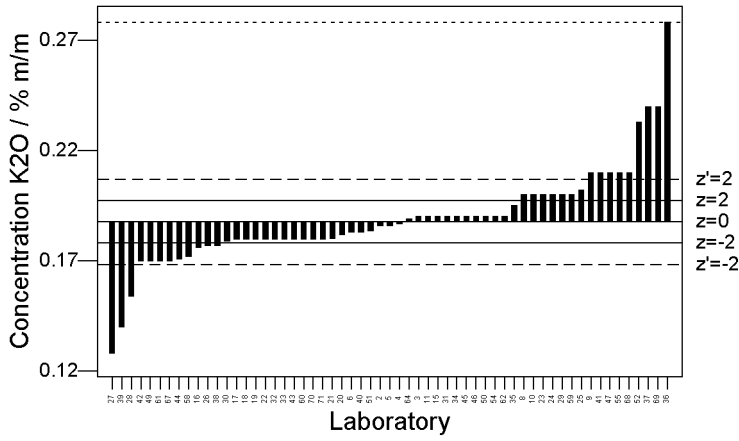
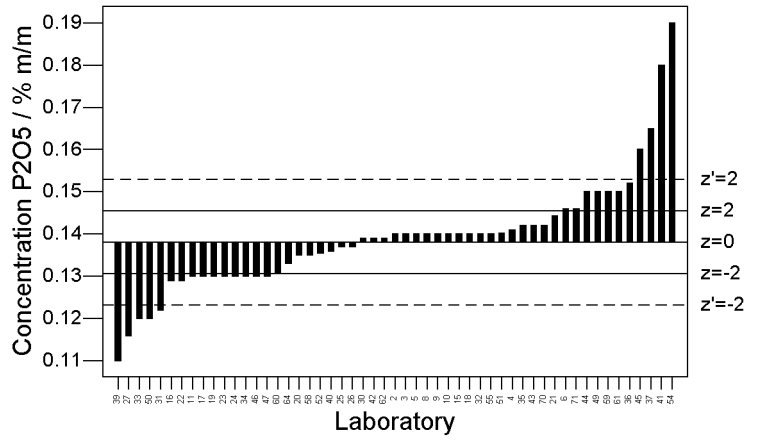


Figure 1: GeoPT16 Nevada basalt BNV-1. Data distribution charts for elements for which values were assigned. Horizontal lines show the limits for $-2 < z < 2$ for pure geochemistry labs (solid lines) and $-2 < z' < 2$ for applied geochemistry labs (pecked lines).

GeoPT16 - Barchart for K2O



GeoPT16 - Barchart for P2O5



GeoPT16 - Barchart for Fe(II)O

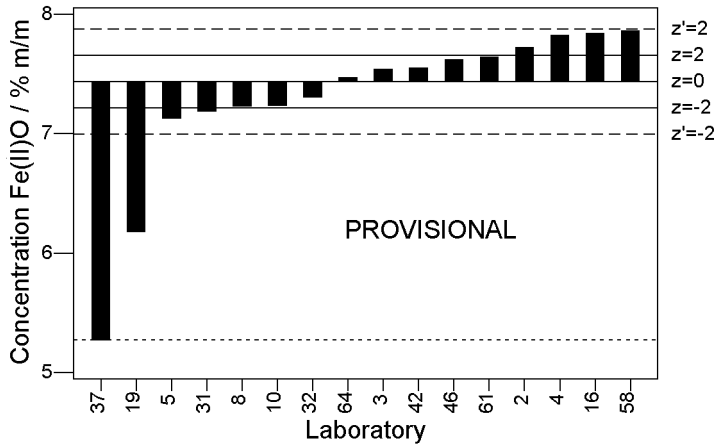
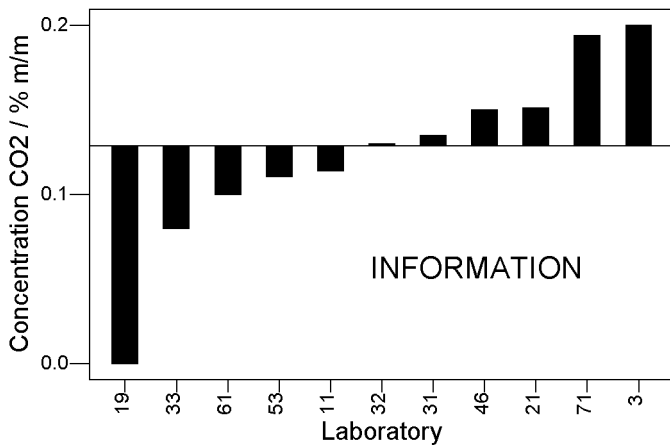


Figure 1: GeoPT16 Nevada basalt BNV-1. Data distribution charts for elements for which values were assigned. Horizontal lines show the limits for $-2 < z < 2$ for pure geochemistry labs (solid lines) and $-2 < z' < 2$ for applied geochemistry labs (pecked lines).

GeoPT16 - Barchart for CO2



GeoPT16 - Barchart for H2O+

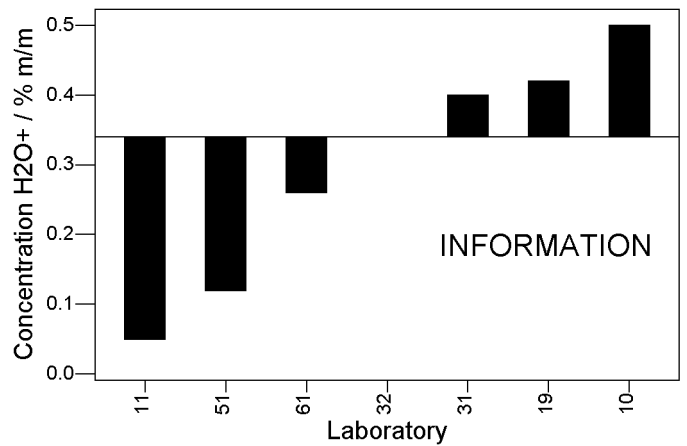
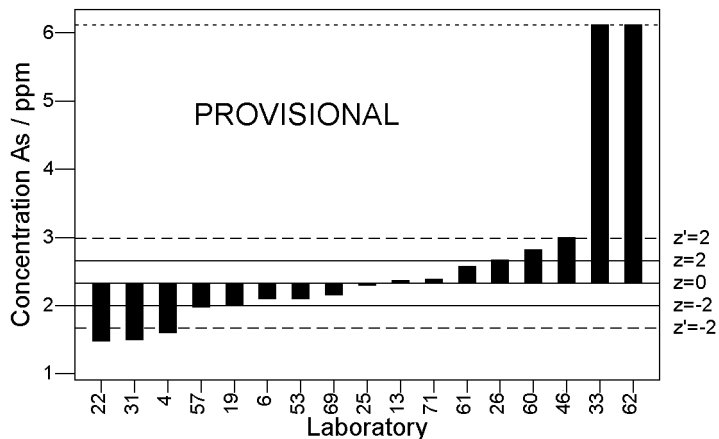
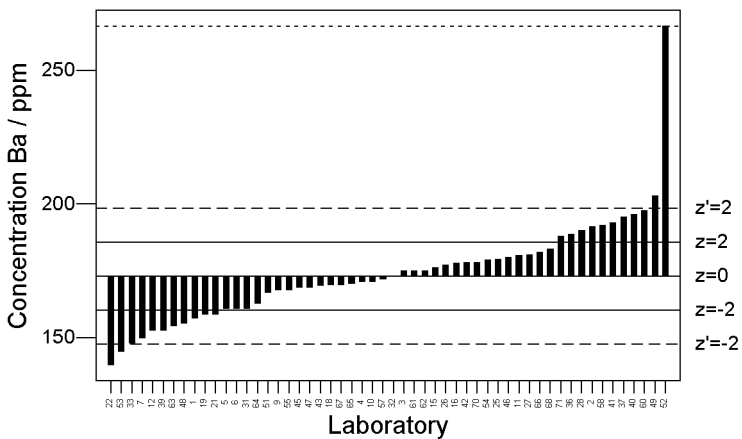


Figure 2: GeoPT16 Nevada basalt BNV-1: Data distribution charts for elements for which only information values or where no value could be assigned.

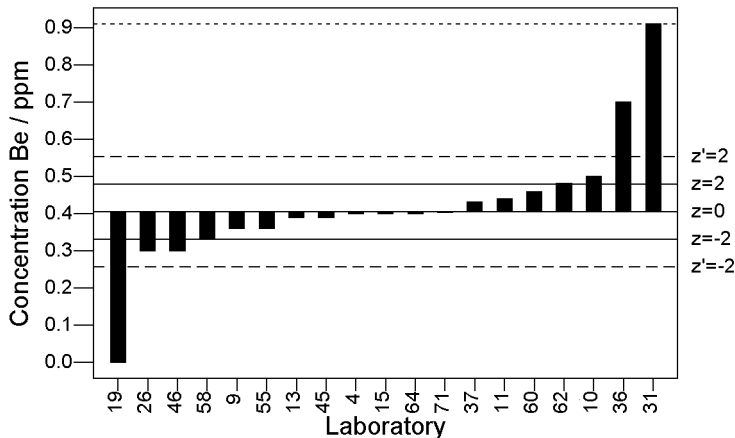
GeoPT16 - Barchart for As



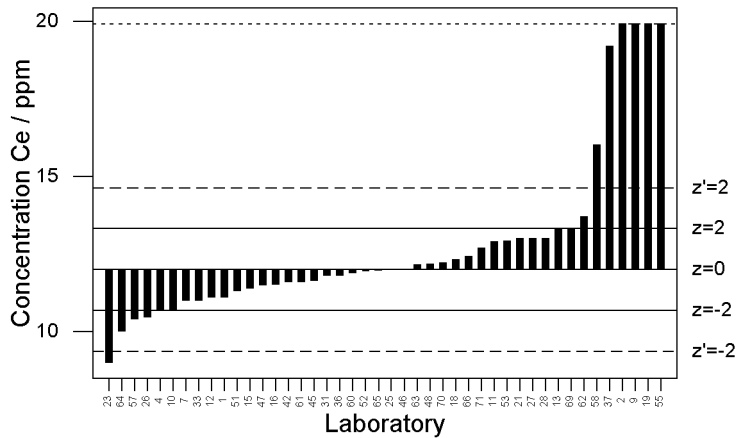
GeoPT16 - Barchart for Ba



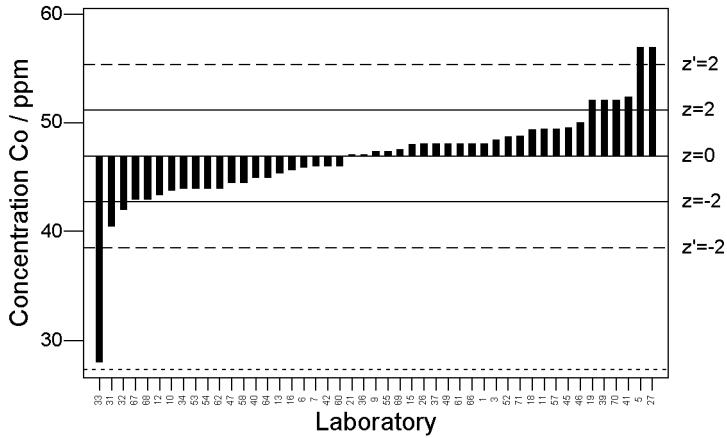
GeoPT16 - Barchart for Be



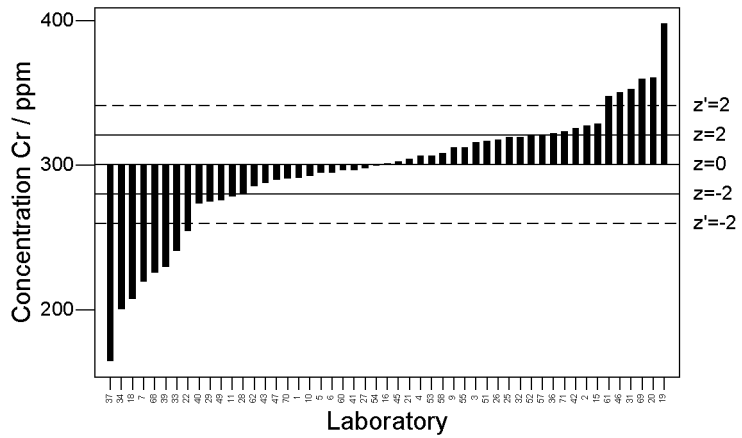
GeoPT16 - Barchart for Ce



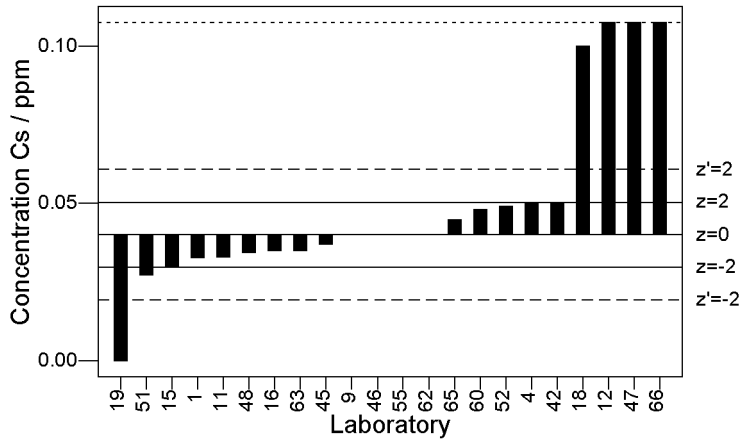
GeoPT16 - Barchart for Co



GeoPT16 - Barchart for Cr



GeoPT16 - Barchart for Cs



GeoPT16 - Barchart for Cu

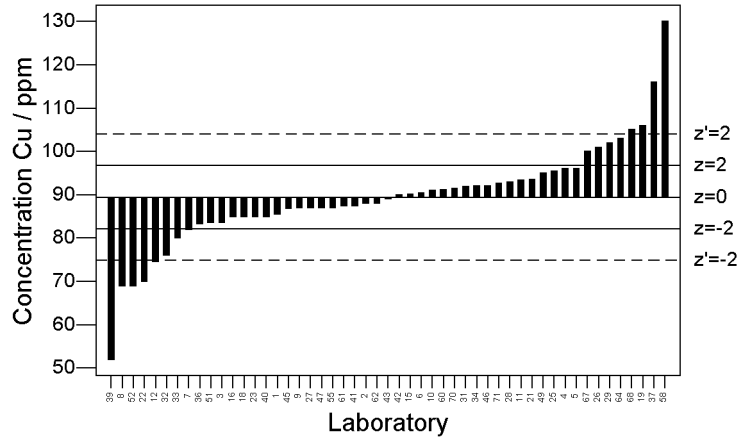


Figure 1: GeoPT16 Nevada basalt BNV-1. Data distribution charts for elements for which values were assigned. Horizontal lines show the limits for $-2 < z < 2$ for pure geochemistry labs (solid lines) and $-2 < z' < 2$ for applied geochemistry labs (pecked lines).

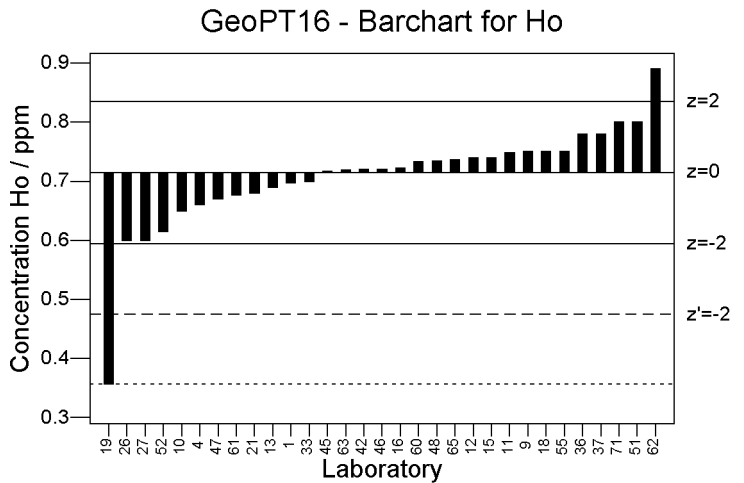
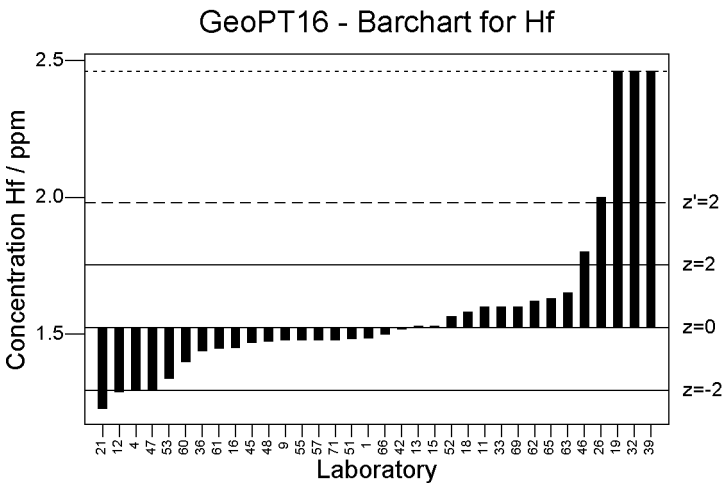
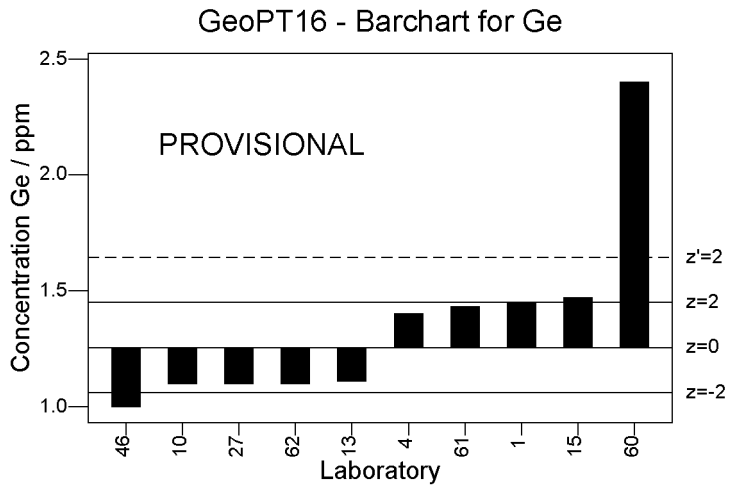
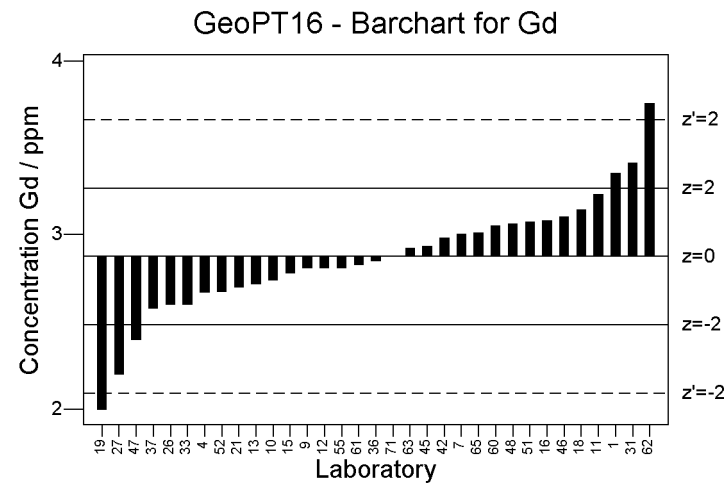
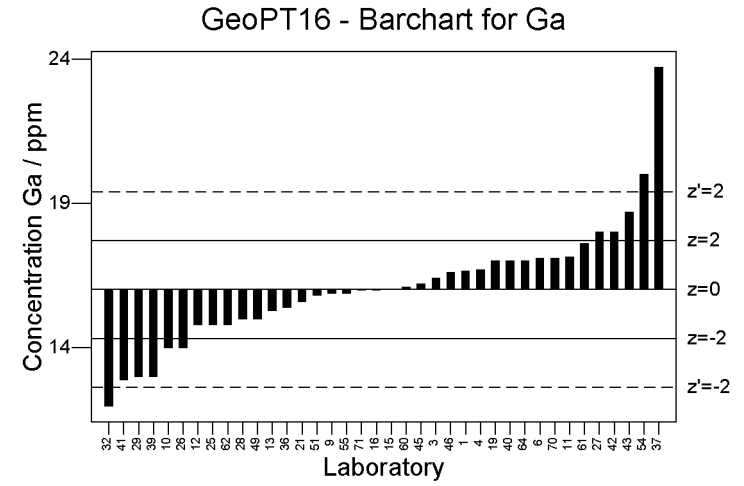
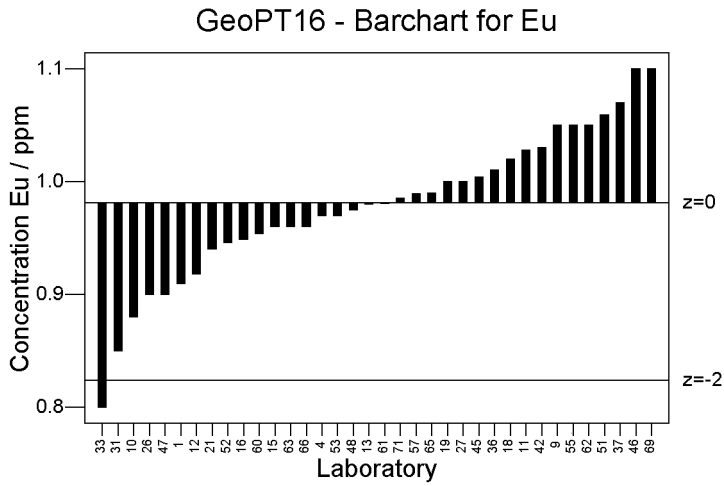
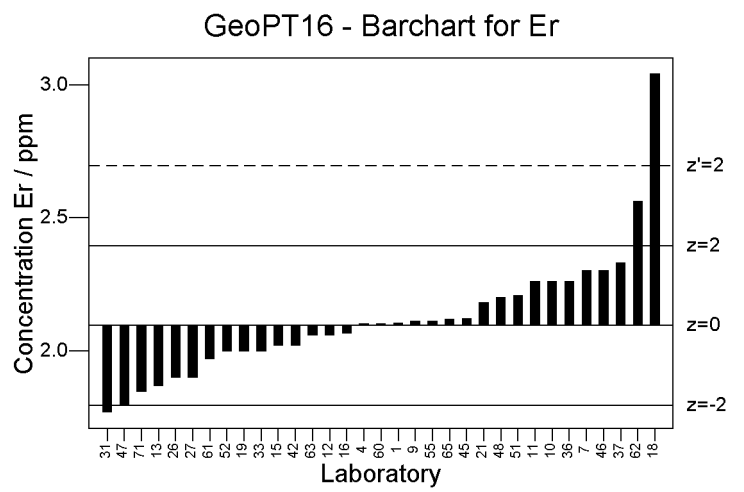
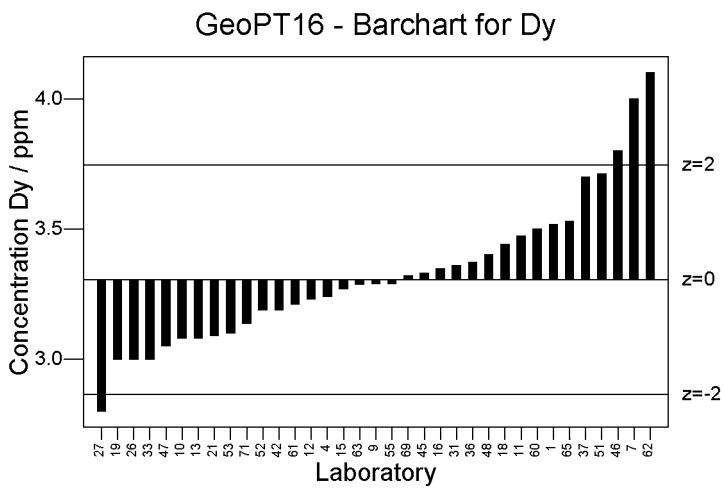
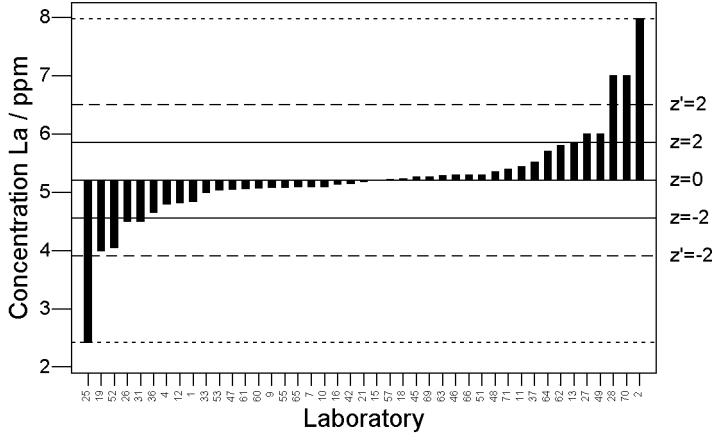
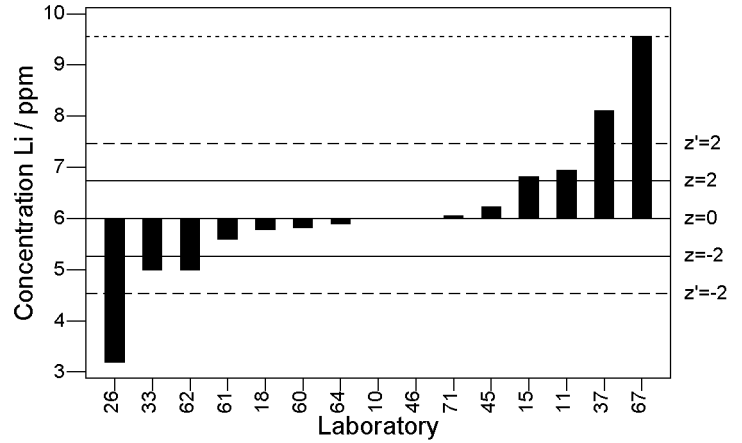


Figure 1: GeoPT16 Nevada basalt BNV-1. Data distribution charts for elements for which values were assigned. Horizontal lines show the limits for $-2 < z < 2$ for pure geochemistry labs (solid lines) and $-2 < z' < 2$ for applied geochemistry labs (pecked lines).

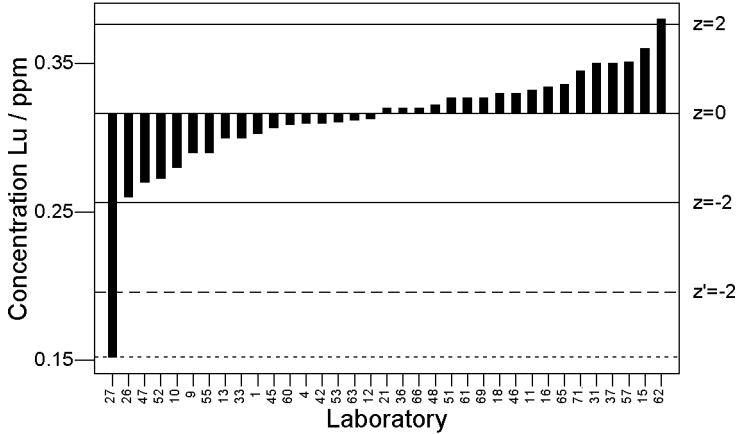
GeoPT16 - Barchart for La



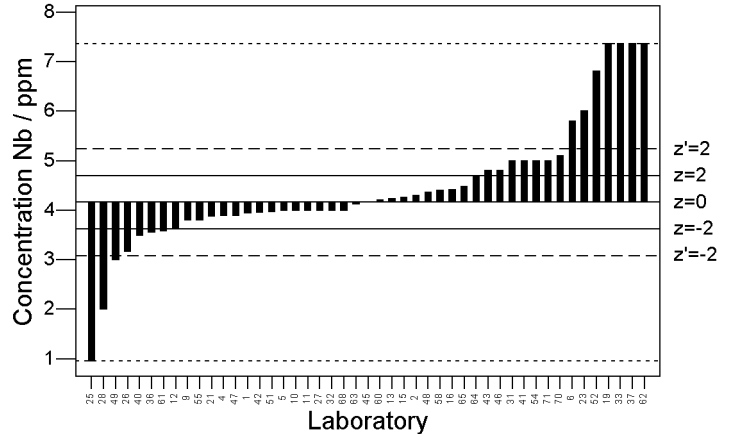
GeoPT16 - Barchart for Li



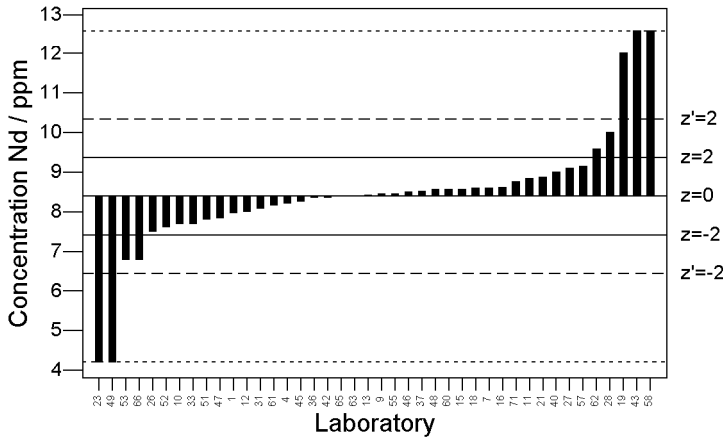
GeoPT16 - Barchart for Lu



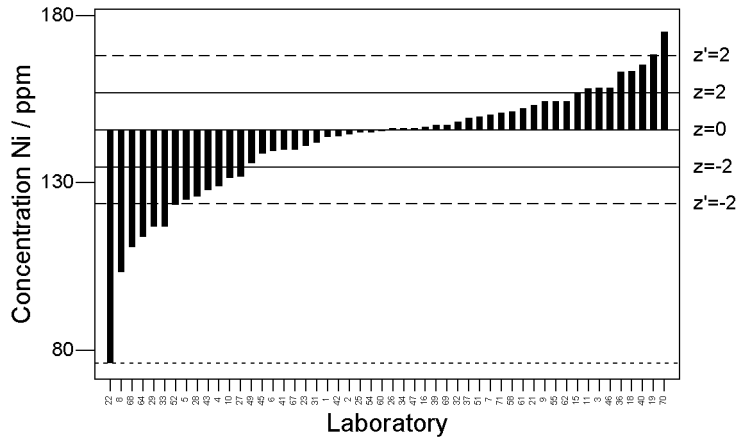
GeoPT16 - Barchart for Nb



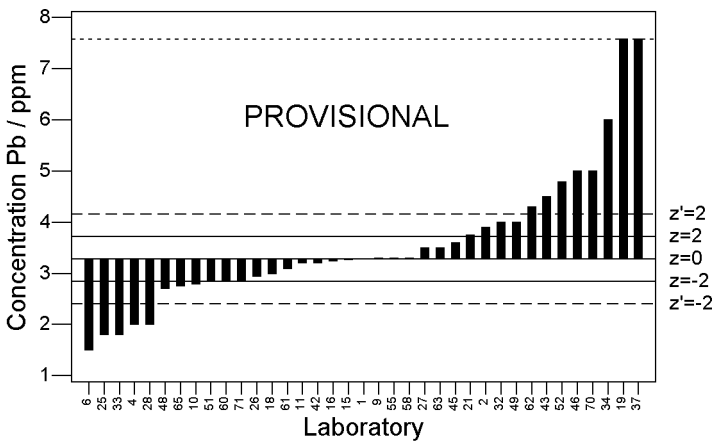
GeoPT16 - Barchart for Nd



GeoPT16 - Barchart for Ni



GeoPT16 - Barchart for Pb



GeoPT16 - Barchart for Pr

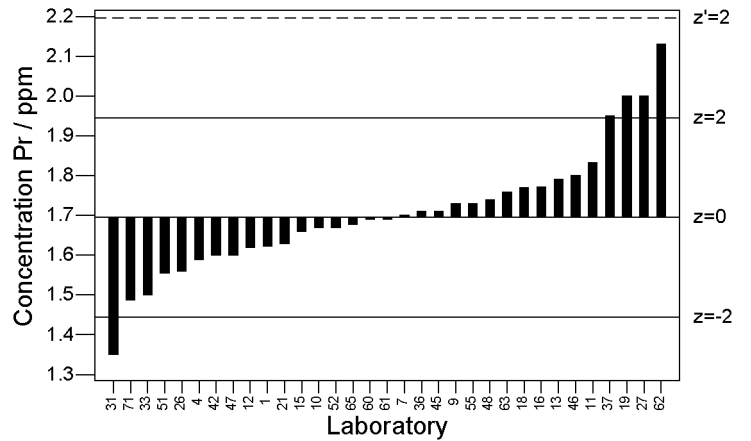
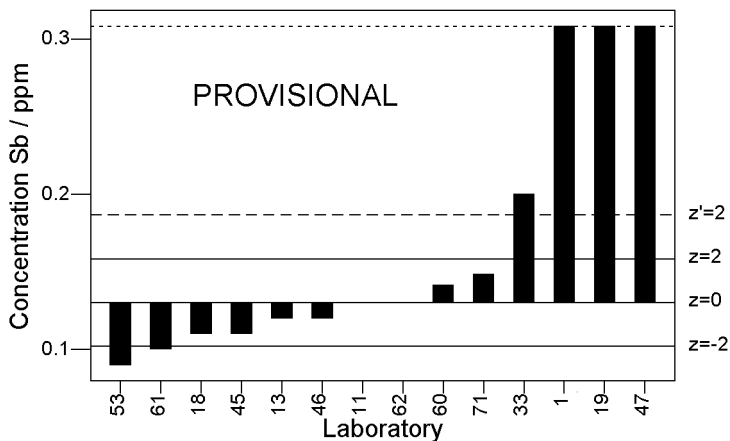
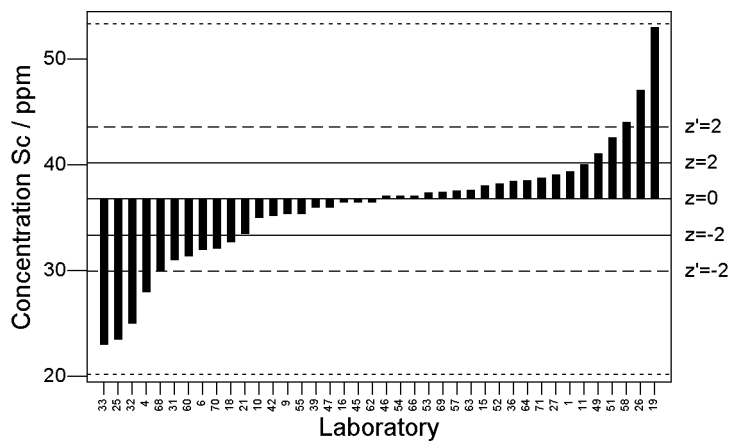


Figure 1: GeoPT16 Nevada basalt BNV-1. Data distribution charts for elements for which values were assigned. Horizontal lines show the limits for $-2 < z < 2$ for pure geochemistry labs (solid lines) and $-2 < z' < 2$ for applied geochemistry labs (pecked lines).

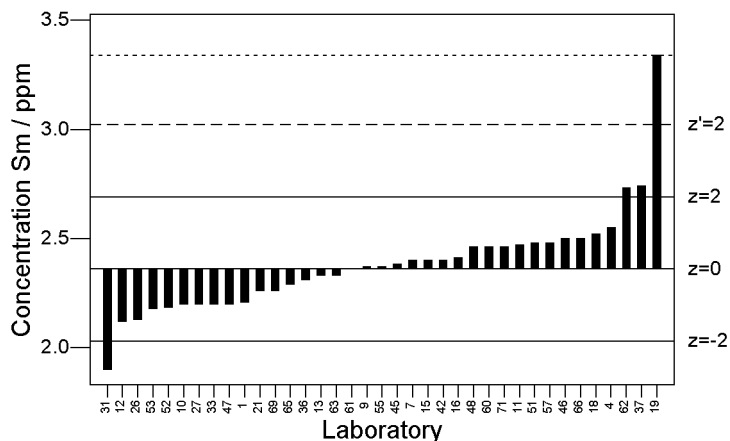
GeoPT16 - Barchart for Sb



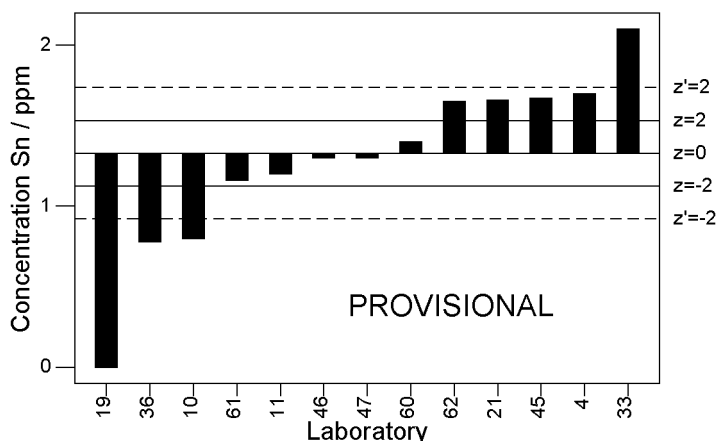
GeoPT16 - Barchart for Sc



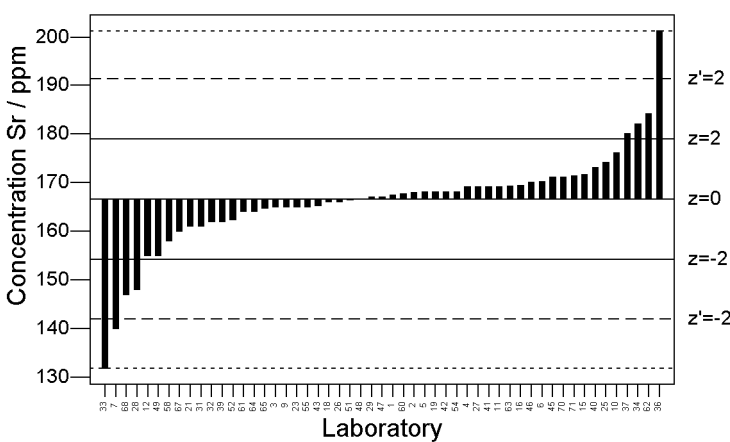
GeoPT16 - Barchart for Sm



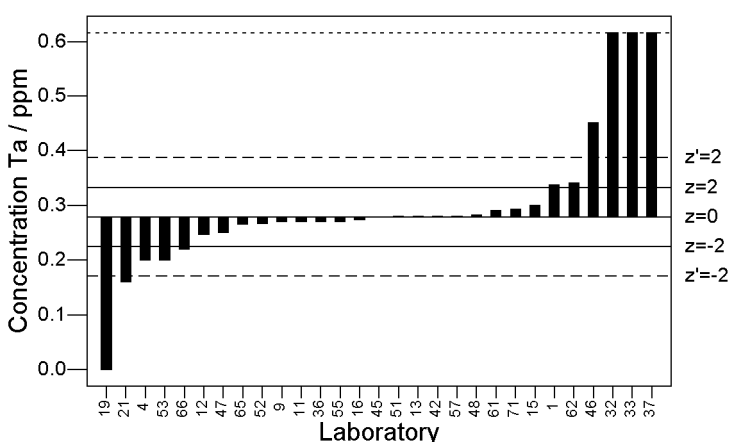
GeoPT16 - Barchart for Sn



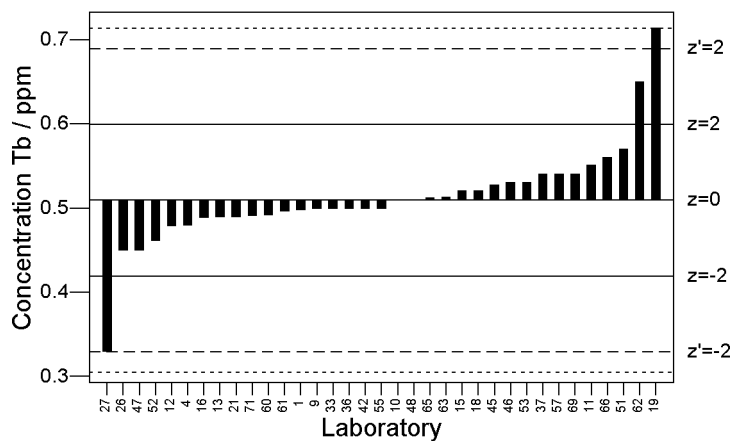
GeoPT16 - Barchart for Sr



GeoPT16 - Barchart for Ta



GeoPT16 - Barchart for Tb



GeoPT16 - Barchart for Th

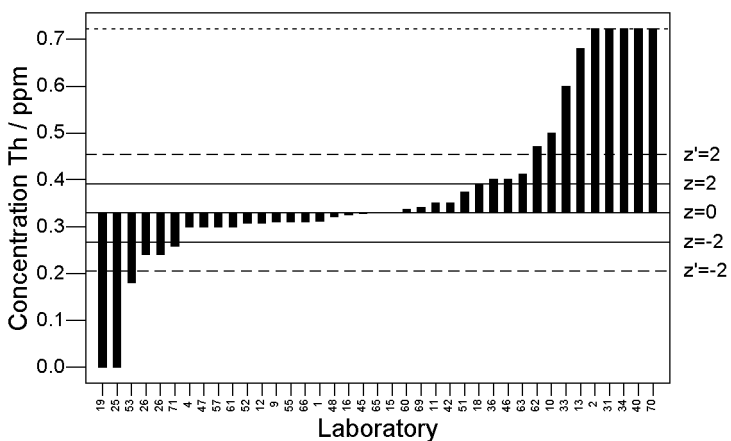
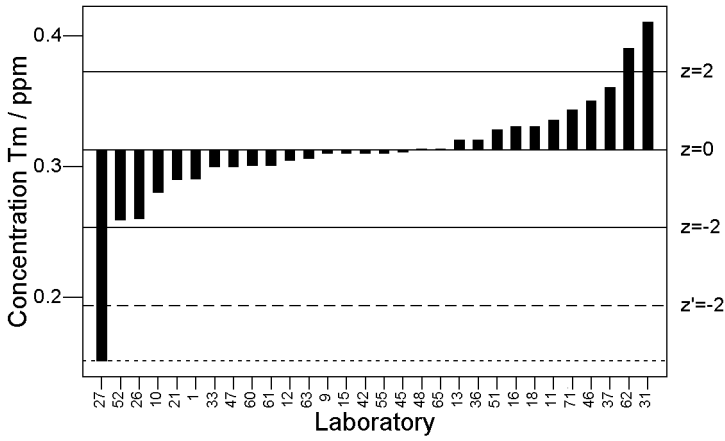
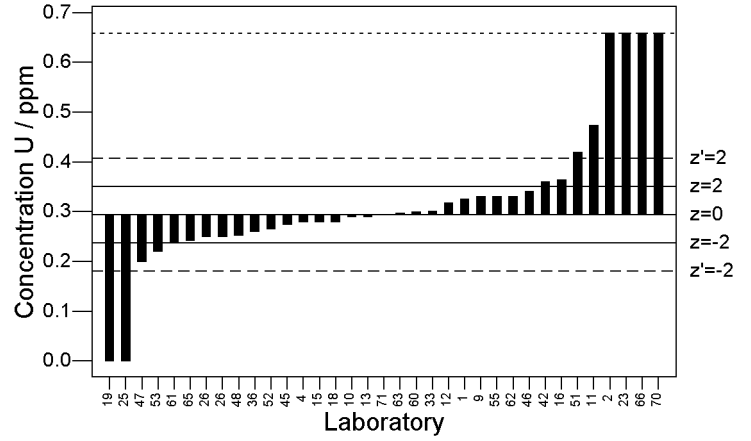


Figure 1: GeoPT16 Nevada basalt BNV-1. Data distribution charts for elements for which values were assigned. Horizontal lines show the limits for $-2 < z < 2$ for pure geochemistry labs (solid lines) and $-2 < z' < 2$ for applied geochemistry labs (pecked lines).

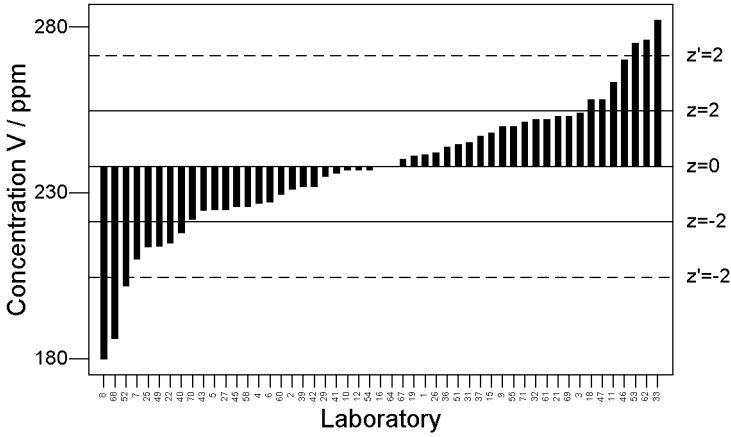
GeoPT16 - Barchart for Tm



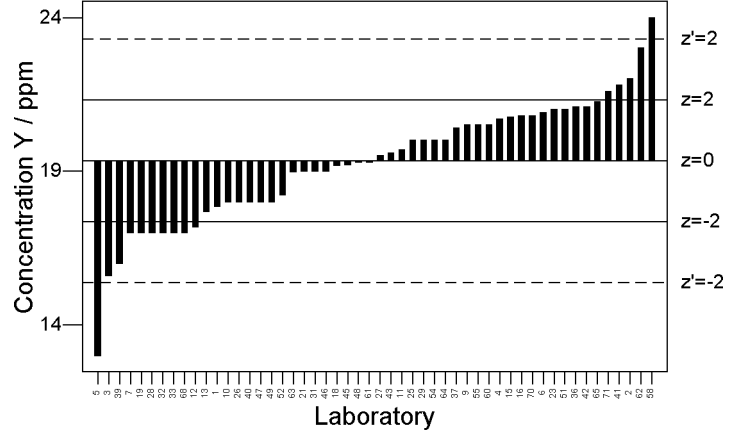
GeoPT16 - Barchart for U



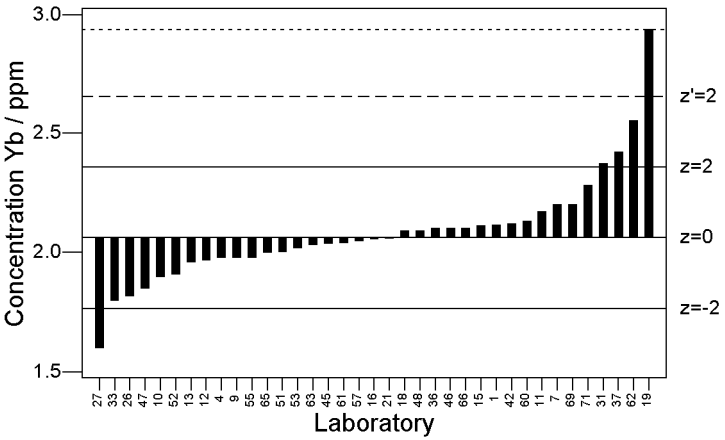
GeoPT16 - Barchart for V



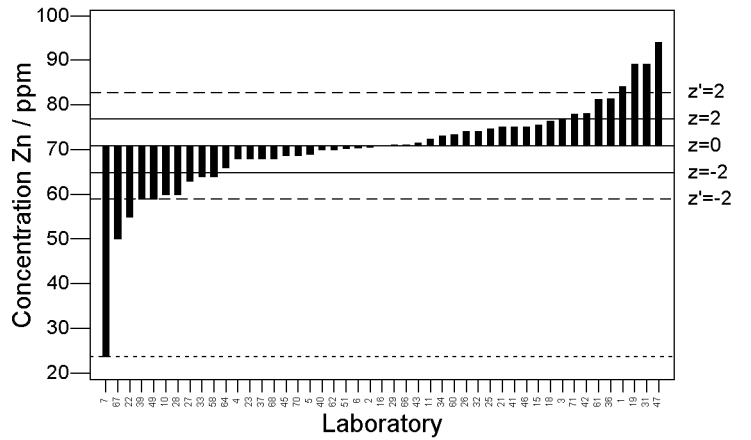
GeoPT16 - Barchart for Y



GeoPT16 - Barchart for Yb



GeoPT16 - Barchart for Zn



GeoPT16 - Barchart for Zr

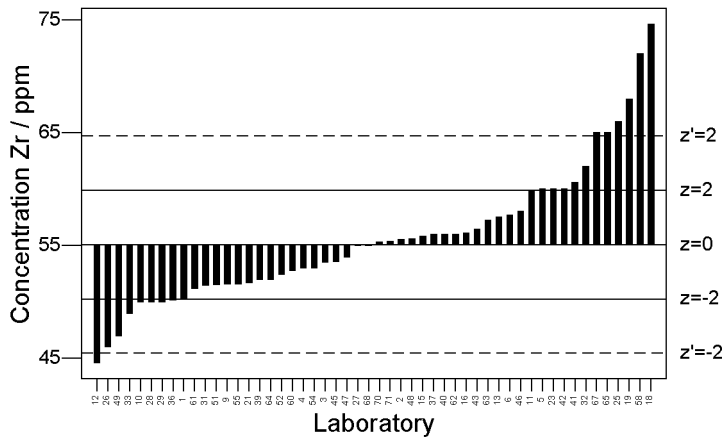
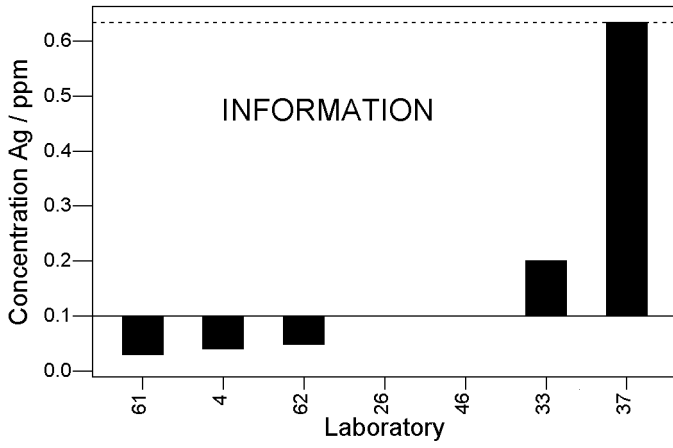
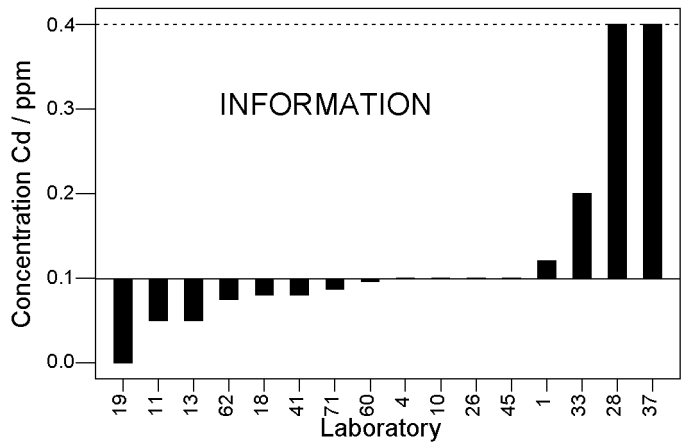


Figure 1: GeoPT16 Nevada basalt BNV-1. Data distribution charts for elements for which values were assigned. Horizontal lines show the limits for $-2 < z < 2$ for pure geochemistry labs (solid lines) and $-2 < z' < 2$ for applied geochemistry labs (pecked lines).

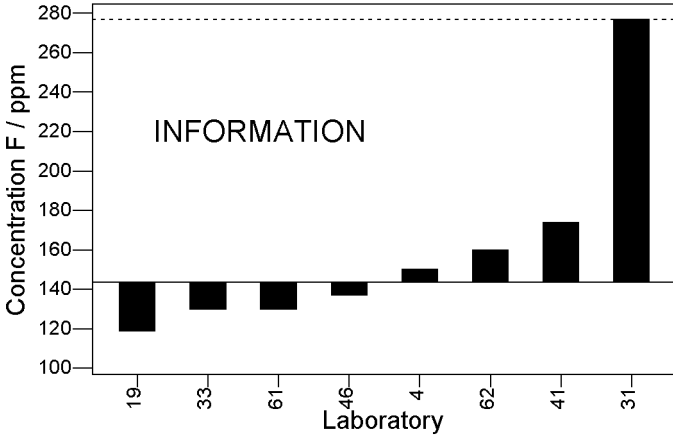
GeoPT16 - Barchart for Ag



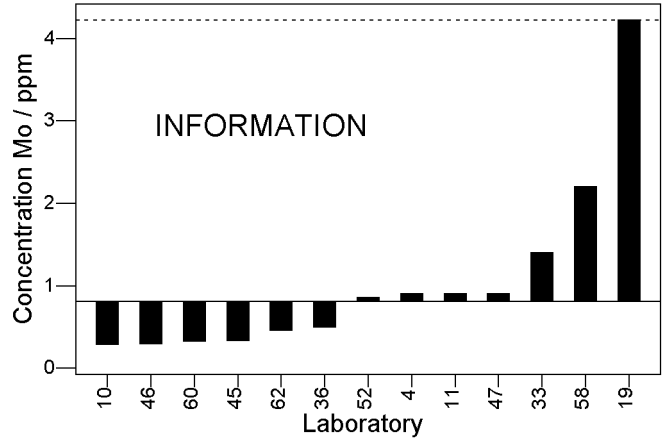
GeoPT16 - Barchart for Cd



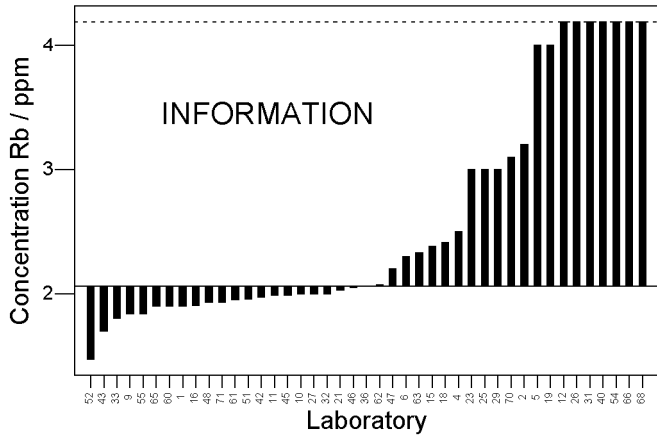
GeoPT16 - Barchart for F



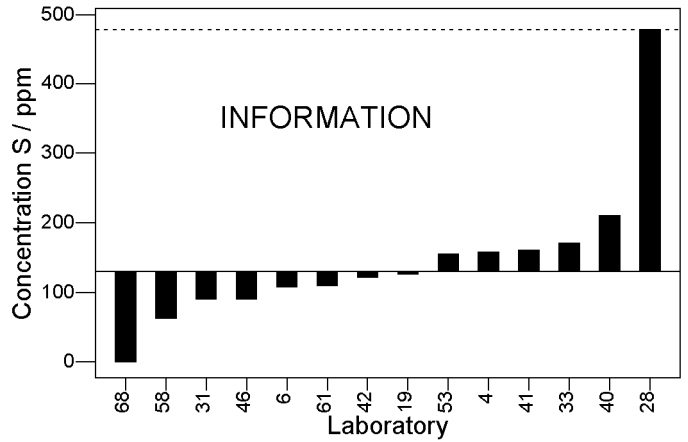
GeoPT16 - Barchart for Mo



GeoPT16 - Barchart for Rb



GeoPT16 - Barchart for S



GeoPT16 - Barchart for W

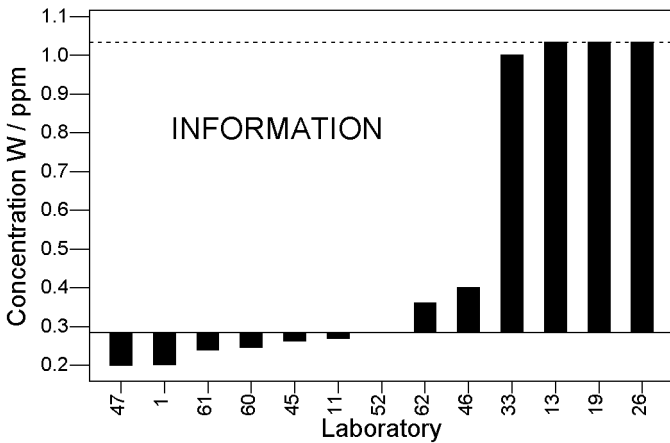


Figure 2: GeoPT16 Nevada basalt BNV-1: Data distribution charts for elements for which information values or where no value could be assigned.

Multiple z-score chart – GeoPT16

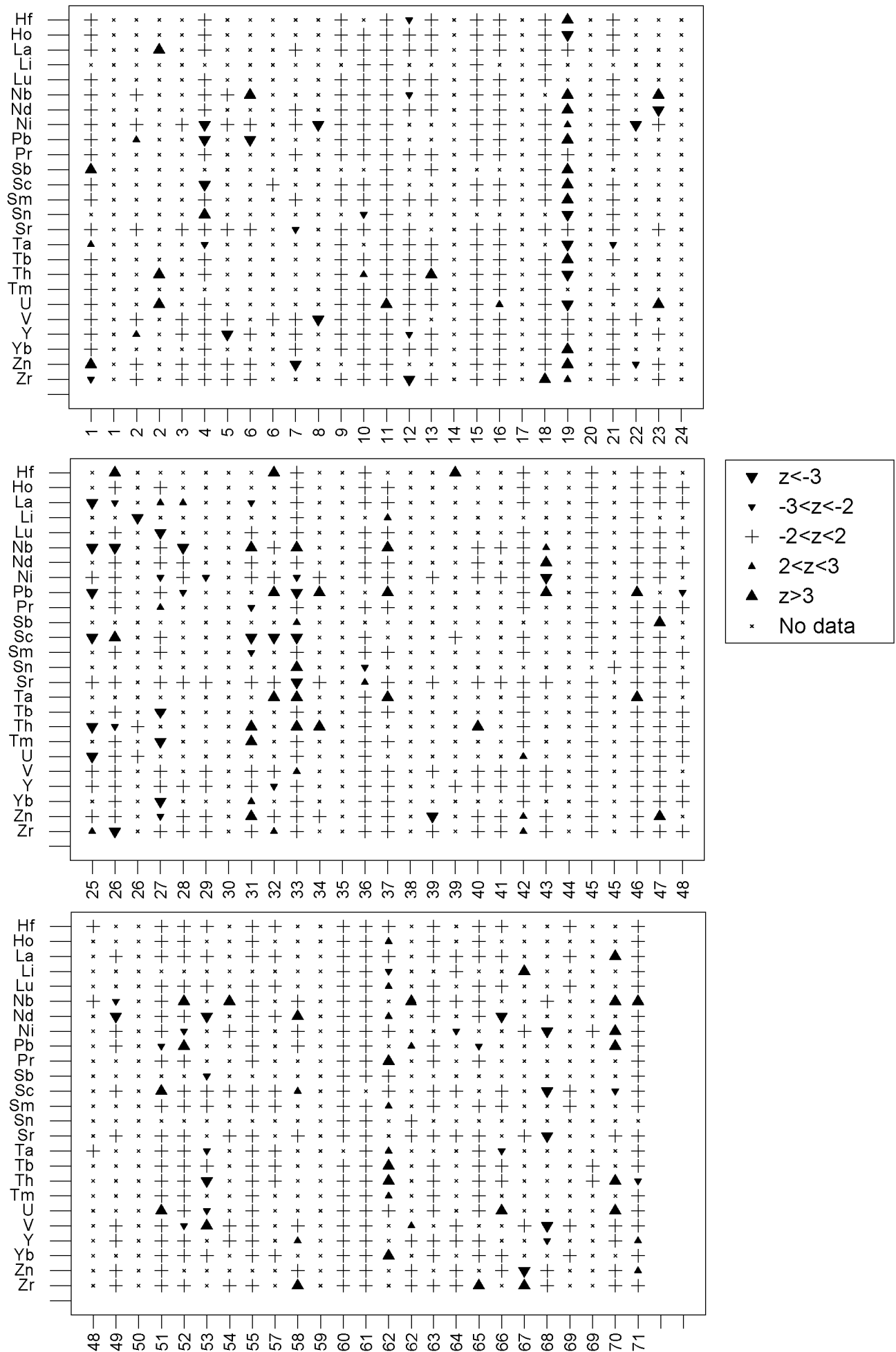


Figure 3. GeoPT16 Nevada basalt BNV-1: Multiple z-score charts for laboratories participating in the GeoPT16 round. Symbols indicate whether or not an elemental result complies with the $-2 < z < +2$ criteria. Satisfactory data are plotted as '+'. Data for other categories are plotted as follows: $z < -3$ (▼), $-3 < z < -2$ (▽), $+2 < z < +3$ (▲), $z > +3$ (▲)

Multiple z-score chart – GeoPT16

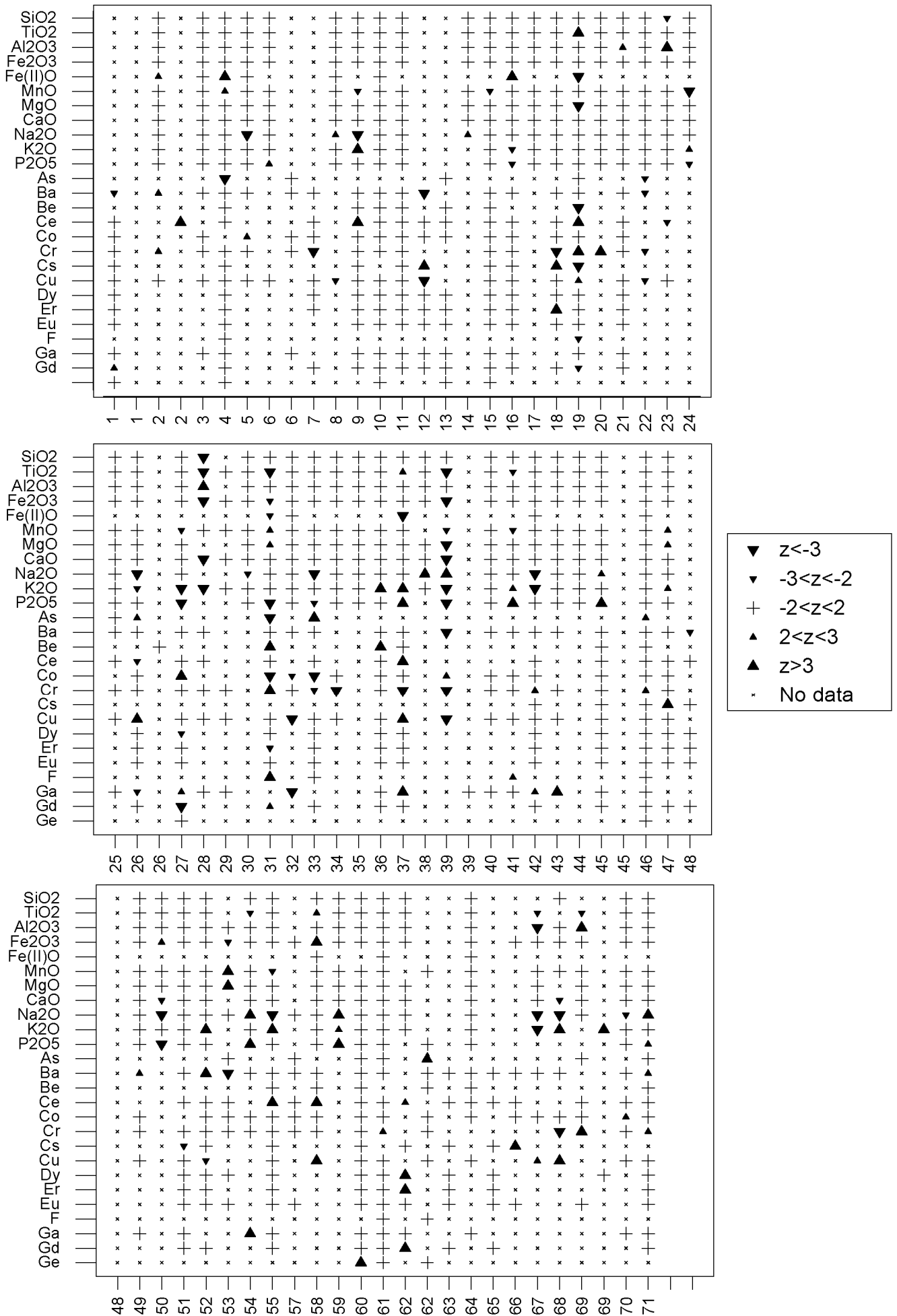


Figure 3. GeoPT16 Nevada basalt BNV-1: Multiple z-score charts for laboratories participating in the GeoPT16 round. Symbols indicate whether or not an elemental result complies with the $-2 < z < 2$ criteria. Satisfactory data are plotted as '+'. Data for other categories are plotted as follows: $z < -3$ (▼), $-3 < z < -2$ (▽), $+2 < z < +3$ (▲), $z > +3$ (▲)