G-Probe 24 — an International Proficiency Test for Microanalytical Laboratories — Report on Round 24 (Basanite glass, BKWE-1G) / February 2021

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Abstract

Results are presented for Round 24 of the International Association of Geoanalysts' (IAG's) Proficiency Testing programme for microanalytical geochemistry laboratories. The test material distributed in this round of G-Probe was the Basanite glass, BKWE-1G, prepared at the United States Geological Survey (USGS). In this report, the data contributed by 38 laboratories are listed, together with an assessment of consensus values as composition location estimators, consequent z-scores and a series of charts that show the distribution of contributed results and the overall performance of participating laboratories. Assigned values were designated for 34 elements, and provisional values for a further 14, out of 60 elements reported.

Introduction

This twenty-fourth round of the international proficiency testing programme, G-Probe, for microanalytical laboratories was conducted in a similar manner to recent rounds, whereby participants were required to report their data online through the G-Probe website (*www.gprobe.info*). The programme is organised by the IAG and is conducted in a manner that in the main conforms with the newly published G-Probe Protocol (IAG, 2020).

To accommodate difficulties encountered with shipments and delays in laboratory readiness due to the Coronavirus pandemic, the deadline for submission of results for this round was extended by almost two months with the benefit that 38 laboratories reported their results – which is the fourth highest number of reporting participants since the inception of the programme in 2001. All data submitted were processed using the online system, as were the automated sections of this report.

The overall aim of the programme is to provide participating laboratories with *z*-score information for their reported measurement results so that each laboratory can decide whether the quality of their data is satisfactory in relation both to the G-Probe fitness-for-purpose criterion and to the results submitted by other laboratories contributing to the round. In circumstances where *z*-scores are unsatisfactory, a participating laboratory is encouraged to investigate its procedures for unsuspected analytical bias and to take corrective action if it appears justified. The programme is designed to be part of the routine quality assurance procedures employed by microanalytical geochemistry laboratories.

G-Probe Steering Committee:

D. Garbe-Schönberg (principal organiser), P.C. Webb (results coordinator and website administrator), R. Mertz-Kraus (provider of BKWE original rock powder) S.A. Wilson (producer of BKWE-1G glass), P.J. Potts (results reviewer), M.Thompson (statistical advisor), C.J.B. Gowing (distribution coordinator), L. Danyushevsky and A. Kronz (analytical advisors).

Timetable for Round 24 of G-Probe:

Distribution of test material: September 2020
Results submission deadline: 25th January 2021
Release of report: February 2021

G-Probe 24 Test Material details

The basanite starting material for this test sample was collected from the Eifel volcanic field as sample “Ka” (Mertz et al., 2015) and was supplied as powder by Dr R. Mertz-Kraus. The material was subsequently converted to glass by Dr S. Wilson at the USGS by fusion in a platinum bowl at 1500°C for six hours and quenching in water. Two fragments of the test material were evaluated for homogeneity at University of Mainz with 2 x 15 line scans using EPMA; 2 x 10 line scans and 4 x 5 single spot analyses using LA-ICP-MS; and at Kiel University with 2 x 20 single point analyses using LA-ICP-MS. Following an assessment of these homogeneity data, the basanite glass fragments were considered suitable for use in this proficiency test. The bulk composition of the original material can be found in Mertz et al., 2015 (Sample #Ka). It should be noted that the pre-characterisation of the test material was not yet fully compliant with the new G-Probe protocol (IAG, 2020) as time and available test material were limited due to the Coronavirus pandemic. Participants were provided with two randomly selected glass fragments, either mounted in a polished, colour-coded, half-inch epoxy plug or as loose fragments.

Submission of results

For G-Probe 24, participants were instructed to apply their routine measurement procedure to each fragment of the Basanite glass (BKWE-1G) and provide a separate measurement result, Result A and Result B, for each, representing the average composition of the fragment. A total of 2354 measurement results submitted by 38 laboratories are listed in Table 1. Note that values listed as C4 and C40 are partial datasets from the same participant, both accepted on account of a possible malfunction in the system during data input. Where both A and B results were provided, the average was used for the data assessment. Of the 1452 individual values available for evaluation, 1257 values were by LA-ICP-MS from 29 laboratories, 103 by EPMA from 10 laboratories, 28 by SEM from three laboratories, 14 by μ-XRF from one laboratory and one laboratory provided 48 values by another, undefined method.

Target values and results summary

Robust statistical procedures were used to derive a consensus value from the contributed data for each elemental component in the test material. These procedures included the evaluation of the Huber robust mean, the median for the dataset or a mode derived from a kernel density distribution as detailed by Thompson (2017). These evaluations involved a critical assessment of distributions of results from ordered sequential charts for each analyte. Data distributions for those analytes given 'assigned' or 'provisional' status are presented in Figure 1, and those for which no status could be conferred are shown in Figure 2, 'for information'.

Consensus values were credited with assigned status on the basis that:

(i) sufficient laboratories had contributed data for estimating a measurand (usually a minimum of 15);
(ii) visual assessment gave confidence that a substantial proportion of the results distribution was symmetrically disposed about the consensus;
(iii) the ratio of the uncertainty in the location estimate to the target precision (as defined below) was an acceptably small value; and
(iv) where possible, an evaluation of measurement results by procedure was judged to provide no clear evidence of procedural bias among the measurement results from which the consensus was derived.

Where these criteria were nearly, but not fully met, measurands were credited with 'provisional' rather than ‘assigned’ status. Instances of provisional status were identified because either:

(i) a smaller number of results (less than 15 but more than 8) contributed to the consensus, or
(ii) the results were unduly dispersed in relation to the target precision (H_a, see below), or
(iii) the distribution of results was significantly skewed (but not sufficiently to preclude the recognition of a clear consensus).
(iv) procedural bias was identified but a target value could nevertheless be recognised based on the most

coherent part of the overall data distribution conforming approximately to a normal distribution.

Where data were either insufficient in number, or the distribution was too variable or too highly skewed for the confident estimation of a consensus to provide *z*-scores, data distributions are presented for information only.

The resulting consensus values were those judged to be the best available estimates of the true composition of the test material and therefore suitable for use as target values for proficiency testing. It should be noted, however, that in many cases, these estimates are derived from a single analytical method.

The data distributions in Figures 1 and 2 are sigmoidal plots where measurement results are presented in order of increasing magnitude and identified according to laboratory code. Data symbols are coded by colour and shape according to the method of measurement. For major elements, where results were obtained principally by EPMA and LA-ICP-MS, there are strong indications that the LA-ICP-MS data are more highly variable, especially for TiO_2, Al_2O_3, Fe_2O_3T, MgO, CaO, Na_2O and P_2O_5. Consensus values considered most appropriate for the major elements were judged to be largely in accord with the combined distributions of EPMA and LA-ICP-MS results, but there was a deliberate tendency to select values corresponding to the focus of the EPMA data due not only because of the greater coherence of the EPMA data but also because EPMA could be regarded as the more mature and possibly the more reliable of the two methods. However, as there was evidence of excessive dispersion of data, usually reflected in the uncertainty/target ratio provided in Table 2, consensus values for Al_2O_3, Fe_2O_3T, Na_2O, K_2O and P_2O_5 were credited only with provisional status.

On account of operational difficulties during the Coronavirus pandemic more laboratories in this round required values of a major element oxide for internal standardisation of LA-ICP-MS data. A CaO value of 15.44 g/100g was provided for laboratories coded C4, C6, C8, C9, C11, C25, C28, C33, C38, C40, C43, C44, C46 and C50, which is very close to the consensus value of 15.48 g/100g. The SiO2 value of 40.12 g/100g provided for laboratories coded C4, C6, C38, C40, C43 and C50 was also very close to the consensus value of 39.98 g/100g. Inspection of the results provided by these participants showed no detectable evidence that the use of these values had been responsible for any significant bias in datasets.

For most trace elements there is no option other than to make assessments based on LA-ICP-MS data, and therefore concerns about the possibility of single method bias, noted above, must be kept in mind and the outcomes should be regarded with caution in the reflection of true values. Nevertheless, the derived consensus values represent the best that currently can be obtained and therefore are considered appropriate for proficiency testing purposes.

Table 2 lists assigned and provisional values for 9 major components and 39 trace elements in G-Probe 24 (BKWE-1G). Sequential charts for the 48 measurands 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*, MgO, CaO, Na_2O*, K_2O*, P_2O_5*, Ba, Be*, Ce, Co, Cr*, Cs, Cu*, Dy, Er, Eu, Ga, Gd, Hf, Ho, In*, La, Li, Lu, Mn*, Mo*, Nb, Nd, Ni, Pb, Pr, Rb, Sc, Sm, Sr*, Ta, Tb, Th, Tm, U, V*, W*, Y, Yb and Zr. Of these, values of the 14 analytes marked '*' were credited with provisional status.

Sigmoidal plots for the 12 analytes: Ag, As, B, Bi, Cd, Ge, Pt, S, Sb, Sn, Tl and Zn are plotted in Figure 2 for information only, as the data were either insufficient in number, or the distribution was too variable or too highly skewed for the confident estimation of a consensus to provide *z*-scores.

Z-score analysis

Assessment of submitted results followed the strategy adopted for G-Probe 22 and G-Probe 23 (Wilson et al. 2019; Wilson et al. 2020) and detailed in the G-Probe protocol (IAG, 2020). Based on an assessment of the variation of measurement results in earlier rounds, and in order to provide sufficient discrimination for the proficiency test to be helpful to participating laboratories, the fitness for purpose criterion applied throughout was provided by the modified Horwitz function:

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

where H_a is the standard deviation for proficiency, also referred to as the target precision, for each measurand; X_a, represented as a mass fraction, is the best estimate of the true composition, also known as the 'target value' (and may be credited with assigned or provisional status). The factor k = 0.01, which is regarded as appropriate 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.

Z-scores were calculated for the average measurement result submitted by each laboratory from:

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

where X is the (average) measurement result submitted, X_a is the target value (assigned and provisional) and H_a is the target precision (all as mass fractions).

Z-score values for results submitted to G-Probe 24 are listed in Table 3. *Z*-scores derived from provisional values of measurands are shown in italics.

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

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

Should a participating laboratory decide that this performance standard is not appropriate for assessment of their measurement results, they are invited to recalculate their *z*-scores by substituting the appropriate value of the standard deviation for proficiency testing, H_a, into the equation for the calculation of *z*-scores (i.e. $z = [X - X_a] / H_a$). Adoption of such an approach should include a justification as to why an amended value of H_a is more appropriate for assessment of their data.

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 easy to identify whether the measurements 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 test. Note, however, that participants should always review their *z*-scores in accordance with their own fitness-for-purpose criteria.

Participation in future rounds

The benefit from proficiency testing arises from regular participation and laboratories are invited to contribute to Round 24 of G-Probe, the test samples for which will be distributed during April 2021.

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ADDENDUM

— IMPORTANT NOTICE TO ANALYSTS

Change in uncertainty estimation for medians:

Note that a change has been made to the algorithm for estimating the uncertainty of median values compared to that used in previous rounds of G-Probe. The revised procedure has been implemented for the first time in this round (G-Probe 24). As described in the new G-Probe protocol (IAG, 2020), median uncertainties are now increased by a factor of 1.2533. Therefore, when comparing uncertainties from this and future rounds with those from past rounds those uncertainty values previously reported for medians should be increased by this factor.

Table 1 - G-Probe 24 Contributed data for Basanite, BKWE-1G Glass. 25/01/2021

Lab Code		C2A	C2B	C3A	C3B	C4A	C4B	C5A	C5B	C6A	C6B	C8A	C8B
SiO2	g 100g^{-1}	39.85		40.085	40.019			40.52	40.36			39.81	38.42
TiO2	g 100g^{-1}	3.12		3.115	3.149			3.09	3.01			2.974	2.972
Al2O3	g 100g^{-1}	11.87		11.984	12.001							11.3	11.31
Fe2O3T	g 100g^{-1}	12.09		12.413	12.549							12.63	11.83
MgO	g 100g^{-1}	9.4		9.36	9.381							9.555	9.271
CaO	g 100g^{-1}	15.59		15.788	15.81								
Na2O	g 100g^{-1}	3.47		3.532	3.465							3.673	3.451
K2O	g 100g^{-1}	2.59		2.726	2.766							2.816	2.646
P2O5	g 100g^{-1}	0.944		1.03	1.002							0.97	0.947
Ag	mg kg^{-1}												
As	mg kg^{-1}											0.883	0.839
Au	mg kg^{-1}												
B	mg kg^{-1}							5.43	5.65				
Ba	mg kg^{-1}	1187				1259	1291	1306	1235	1216.690		1280	1228
Be	mg kg^{-1}					1.98	2.21	2.38	2.19				
Bi	mg kg^{-1}												
Cd	mg kg^{-1}												
Ce	mg kg^{-1}	155.2				174.310	177.440	174	166	168.574		181.6	175
Cl	mg kg^{-1}												
Co	mg kg^{-1}	35.88				42.5	43.86	46	48.1	43.071		42.78	41.16
Cr	mg kg^{-1}	144.3				173.550	178.740	177	201	165.144		188.8	182.4
Cs	mg kg^{-1}	0.909				1.1	1.15	1.3	1.25			1.233	1.182
Cu	mg kg^{-1}	107.4						139	120	144.680		138.2	127.1
Dy	mg kg^{-1}	5.35						5.42	5.02	5.739		5.423	5.609
Er	mg kg^{-1}	2.35						2.34	2.18	2.591		2.317	2.393
Eu	mg kg^{-1}	3.46						3.43	3.27	3.415		3.233	3.245
Ga	mg kg^{-1}							21.3	21.1	19.492		21.22	20.36
Gd	mg kg^{-1}	8.43						8.54	7.93	9.179		8.2	8.406
Ge	mg kg^{-1}												
Hf	mg kg^{-1}	6.7						6.89	6.34	7.015		6.643	6.838
Ho	mg kg^{-1}	0.938						0.93	0.86	0.999		0.944	0.971
In	mg kg^{-1}												
Ir	mg kg^{-1}												
La	mg kg^{-1}	82.95						83.2	77.1	85.419		81.41	82.73
Li	mg kg^{-1}					8.06	8.95	9.12	9.09	8.348		8.182	7.74
Lu	mg kg^{-1}	0.257				0.49	0.48	0.25	0.23	0.274		0.259	0.269
Mn	mg kg^{-1}	1714		1969	1829			1820	1830	1846.392		1816	1716
Mo	mg kg^{-1}	0.391								0.542			
Nb	mg kg^{-1}	123.9						130	123	123.187		130.6	130.8
Nd	mg kg^{-1}	72.96						72.5	68.4	74.286		70.48	71.17
Ni	mg kg^{-1}	76.58						99.4	113.9	89.237		92.92	90.85
Pb	mg kg^{-1}	5.24						7.19	7.08	7.163		7.565	7.046
Pd	mg kg^{-1}												
Pr	mg kg^{-1}	19.13						19.6	18.5	19.277		19.2	19.17
Pt	mg kg^{-1}												
Rb	mg kg^{-1}	61.98						91.9	89.3	80.677		88.82	84.66
Re	mg kg^{-1}												
Rh	mg kg^{-1}												
S	mg kg^{-1}	314		419	381								
Sb	mg kg^{-1}												
Sc	mg kg^{-1}	32.74						34.3	33.3	35.231		32.19	33.5
Se	mg kg^{-1}												
Sm	mg kg^{-1}	11.9						11.8	11.1	12.133		11.24	11.46
Sn	mg kg^{-1}	1.77						2.38	2.36	3.695			
Sr	mg kg^{-1}	1270						1305	1237	1273.230		1276	1257
Ta	mg kg^{-1}	7.3						7.19	6.68	7.089		7.326	7.496
Tb	mg kg^{-1}	1.05						1.02	0.95	1.088		1.059	1.099
Te	mg kg^{-1}												
Th	mg kg^{-1}	8.88						8.81	8.09	6.719		8.624	8.892
Tl	mg kg^{-1}												
Tm	mg kg^{-1}	0.292						0.29	0.27	0.315		0.312	0.323
U	mg kg^{-1}	1.92						2.42	2.32	2.347		2.336	2.29
V	mg kg^{-1}	336						448	442	432.410		414.5	396.480
W	mg kg^{-1}												
Y	mg kg^{-1}	23.33						23.8	22	26.618		24.79	25.71
Yb	mg kg^{-1}	1.91						1.86	1.7	1.963		1.847	1.916
Zn	mg kg^{-1}	87.09						118	118	98.473		106.8	102
Zr	mg kg^{-1}	270.3						276	257	298.970		284.6	292.6

Table 1 - G-Probe 24 Contributed data for Basanite, BKWE-1G Glass. 25/01/2021

Lab Code		C9A	C9B	C10A	C10B	C11A	C11B	C12A	C12B	C13A	C13B	C15A	C15B
SiO2	g 100g^{-1}			40.06	40.05	38.19	36.63	39.77		40.52	40.42	18.956	17.401
TiO2	g 100g^{-1}			3.22	3.19	2.81	2.84	3.11		3.18	3.17	1.835	2.343
Al2O3	g 100g^{-1}			12.48	12.45			11.98		12.47	12.46	6.004	6.296
Fe2O3T	g 100g^{-1}			11.3	11.3	11.49	11.17	12.31		12.03	12.1	12.012	11.949
MgO	g 100g^{-1}			9.33	9.21	9.66	9.65	9.47		9.87	9.84	6.017	5.747
CaO	g 100g^{-1}			15.67	15.6			15.55		15.59	15.52	11.532	12.734
Na2O	g 100g^{-1}			3.34	3.28	3.28	3.1	3.4		3.27	3.29	2.482	2.400
K2O	g 100g^{-1}			2.57	2.58	2.62	2.54	2.75		2.94	2.92	2.129	2.002
P2O5	g 100g^{-1}			1.98	1.88	0.91	0.88	0.903		1.03	1.05	0.533	0.615
Ag	mg kg^{-1}			0.48	0.23							0.578	0.593
As	mg kg^{-1}			1	0.87							1.069	1.108
Au	mg kg^{-1}											0.021	0.016
B	mg kg^{-1}			33.39	28.63							29.213	42.064
Ba	mg kg^{-1}	1103.059		1221.230	1218.210	1213.600	1168.900					1199.453	1234.953
Be	mg kg^{-1}			2.79	2.45	2.21	2.16					2.55	2.299
Bi	mg kg^{-1}	0.275		0.05	0.05							0.051	0.044
Cd	mg kg^{-1}											0.128	0.301
Ce	mg kg^{-1}	143.278		172.340	172.440	172.510	169.110					174.401	165.586
Cl	mg kg^{-1}												
Co	mg kg^{-1}			43.75	44.22	40.65	38.52					43.587	40.291
Cr	mg kg^{-1}			179.420	190.430	159.270	146.570					213.475	208.932
Cs	mg kg^{-1}	1.053		1.11	1.03	1.18	1.13					1.189	1.104
Cu	mg kg^{-1}			139.520	137.490	131.270	123.740					116.599	105.447
Dy	mg kg^{-1}	5.778		5.66	5.73	5.61	5.81					6.197	5.585
Er	mg kg^{-1}	2.553		2.76	2.76	2.4	2.45					2.59	2.326
Eu	mg kg^{-1}	3.389		3.37	3.44	3.5	3.44					3.832	3.453
Ga	mg kg^{-1}	16.473		20.58	20.1							20.48	20.169
Gd	mg kg^{-1}	8.941		9.02	8.87	9.2	9.24					9.459	8.839
Ge	mg kg^{-1}	3.171		1.51	1.43							2.211	2.237
Hf	mg kg^{-1}	6.996		7.25	7.36	6.71	6.93					7.215	6.495
Ho	mg kg^{-1}	0.979		0.97	0.98	0.98	1.01					1.065	0.908
In	mg kg^{-1}	0.119		0.09	0.09							0.105	0.089
Ir	mg kg^{-1}			0.91	0.89								
La	mg kg^{-1}	82.830		85.03	83.95	87.66	88.67					90.711	82.292
Li	mg kg^{-1}			3.39	5.52	8.97	8.52					8.68	8.117
Lu	mg kg^{-1}	0.358		0.27	0.29	0.27	0.27					0.29	0.253
Mn	mg kg^{-1}			1828.490	1811.610	1737.050	1654.480	1789		1858.700	1858.710	1754.800	1734.800
Mo	mg kg^{-1}	0.509		0.64	0.35	0.56	0.48					0.838	0.996
Nb	mg kg^{-1}	113.000		126.160	125.390	109.710	110.740					141.316	126.663
Nd	mg kg^{-1}	69.745		74.82	75.61	75.79	73.81					82.071	76.907
Ni	mg kg^{-1}			95.14	96.62	95.82	91.63					101.019	96.008
Pb	mg kg^{-1}			7.36	7.72	7.14	6.53					7.341	7.521
Pd	mg kg^{-1}											0.265	0.278
Pr	mg kg^{-1}	15.882		19.22	19.5	20.76	20.27					21.238	19.227
Pt	mg kg^{-1}			14.75	1.85							1.169	1.019
Rb	mg kg^{-1}			78.97	78.36	82.99	78.77					76.461	76.852
Re	mg kg^{-1}											0.001	0.005
Rh	mg kg^{-1}											0.007	0.008
S	mg kg^{-1}											420.190	497.387
Sb	mg kg^{-1}			0.22	0.15							0.319	0.283
Sc	mg kg^{-1}			36.11	36.13	29.92	31.83					37.065	31.777
Se	mg kg^{-1}												
Sm	mg kg^{-1}	11.289		12.04	12.4	12.07	11.96					13.838	12.379
Sn	mg kg^{-1}			1.79	1.98							2.339	2.151
Sr	mg kg^{-1}			1292.580	1270.430	1254.690	1252.760					1478.402	1397.963
Ta	mg kg^{-1}	8.070		7.02	6.97	7.38	7.38					8.614	7.358
Tb	mg kg^{-1}	1.075		1.08	1.04	1.14	1.15					1.137	0.994
Te	mg kg^{-1}												
Th	mg kg^{-1}			8.89	8.73	8.96	9.16					9.773	8.261
Tl	mg kg^{-1}											0.019	0.021
Tm	mg kg^{-1}	0.343		0.31	0.3	0.31	0.31					0.341	0.279
U	mg kg^{-1}			2.54	2.54	2.34	2.23					2.244	2.079
V	mg kg^{-1}			449.010	449.680	389.070	377.640					395.324	381.838
W	mg kg^{-1}	0.418		0.07	0.07							0.096	0.105
Y	mg kg^{-1}	28.026		25.61	25.32	25.35	26.49					26.27	23.306
Yb	mg kg^{-1}	1.945		1.88	1.88	1.91	1.91					2.095	1.884
Zn	mg kg^{-1}			112.760	110.560	92.79	87.28					109.895	127.029
Zr	mg kg^{-1}	287.569		305.680	302.530	282.210	288.980					297.341	261.606

Table 1 - G-Probe 24 Contributed data for Basanite, BKWE-1G Glass. 25/01/2021

Lab Code		C17A	C17B	C18A	C18B	C19A	C19B	C20A	C20B	C21A	C21B	C22A	C22B
SiO2	g 100g^{-1}			39.98		40.6	39.2	39.2		38.624	38.035	39.78	
TiO2	g 100g^{-1}			3.2		4.57	4.37	3.3		3.063	3.16	3.078	
Al2O3	g 100g^{-1}	147.540		12.19		10.96	10.3	12.3		12.875	13.579	11.89	
Fe2O3T	g 100g^{-1}			12.05		21.47	20.55	12.5		12.416	12.08	12.06	
MgO	g 100g^{-1}	76.77		9.46		8.13	7.86	9.6		9.777	9.718	9.168	
CaO	g 100g^{-1}	164.650		15.48		19.23	18.34	16.1		15.553	15.929	15.02	
Na2O	g 100g^{-1}			3.46				3.6		3.223	3.15	3.553	
K2O	g 100g^{-1}			2.71		3.67	3.39	2.7		2.522	2.425	2.773	
P2O5	g 100g^{-1}			0.94		0.6	0.73	1		1.125	1.108	1.254	
Ag	mg kg^{-1}												
As	mg kg^{-1}									1.24	1.16		
Au	mg kg^{-1}												
B	mg kg^{-1}									6	5.9	3.828	
Ba	mg kg^{-1}	1802		1250				1287		1247	1225	1413.900	
Be	mg kg^{-1}											2.235	
Bi	mg kg^{-1}												
Cd	mg kg^{-1}												
Ce	mg kg^{-1}							180		166.6	164.2	175.5	
Cl	mg kg^{-1}			60									
Co	mg kg^{-1}	65.41						44.7		42.05	40.64	48.49	
Cr	mg kg^{-1}			160		300	300	185		161.3	159.5	171.3	
Cs	mg kg^{-1}							1.1		1.154	1.147	1.326	
Cu	mg kg^{-1}	171.770				200	200	139		127.3	124	164.7	
Dy	mg kg^{-1}							6.3		5.03	5.64	5.379	
Er	mg kg^{-1}							2.7		2.2	2.49	2.654	
Eu	mg kg^{-1}							3.8		3.36	3.43	3.81	
Ga	mg kg^{-1}							20.8				22.19	
Gd	mg kg^{-1}							9.7		8.45	9.49	9.39	
Ge	mg kg^{-1}												
Hf	mg kg^{-1}							7.6		6.21	6.99	6.845	
Ho	mg kg^{-1}							1.1		0.834	0.944	0.976	
In	mg kg^{-1}												
Ir	mg kg^{-1}												
La	mg kg^{-1}							87.2		80.47	85.61	92.83	
Li	mg kg^{-1}	12.25						11.9		7.98	7.78	8.289	
Lu	mg kg^{-1}							0.3		0.234	0.264	0.258	
Mn	mg kg^{-1}			1790		2900	2800	1904		1739	1671	1648	
Mo	mg kg^{-1}									0.528	0.435		
Nb	mg kg^{-1}							134		126	131.7	127.5	
Nd	mg kg^{-1}							80.4		69.2	74.7	71.07	
Ni	mg kg^{-1}	133.9		86		100	100	94.6		88.2	85.9	116.8	
Pb	mg kg^{-1}							8.7		6.81	6.56	8.465	
Pd	mg kg^{-1}												
Pr	mg kg^{-1}							20.5		18.88	19.45	18.66	
Pt	mg kg^{-1}												
Rb	mg kg^{-1}			130				85.3		80.87	77.82	87.01	
Re	mg kg^{-1}												
Rh	mg kg^{-1}												
S	mg kg^{-1}			450									
Sb	mg kg^{-1}									0.117	0.098		
Sc	mg kg^{-1}							35.8				36.43	
Se	mg kg^{-1}												
Sm	mg kg^{-1}							12.7		11.16	12.25	12.52	
Sn	mg kg^{-1}									2.765	2.88	2.37	
Sr	mg kg^{-1}	738		1350		2800	2700	1337		1242	1275	1379	
Ta	mg kg^{-1}							8.3		6.969	7.528	7.416	
Tb	mg kg^{-1}							1.1		0.955	1.103	1.076	
Te	mg kg^{-1}												
Th	mg kg^{-1}	11.9						9.4		8.368	9.136	9.908	
Tl	mg kg^{-1}												
Tm	mg kg^{-1}							0.3		0.264	0.321	0.336	
U	mg kg^{-1}	3.75						2.4		2.289	2.245	2.431	
V	mg kg^{-1}			410				428		410.4	395.4	443.1	
W	mg kg^{-1}												
Y	mg kg^{-1}							27.5		21.66	24.78	27.49	
Yb	mg kg^{-1}							2.1		1.71	1.88	2.081	
Zn	mg kg^{-1}					200	100	97.1		125.3	118	132.7	
Zr	mg kg^{-1}			310				306		256.2	289.4	301.7	

Table 1 - G-Probe 24 Contributed data for Basanite, BKWE-1G Glass. 25/01/2021

Lab Code		C25A	C25B	C26A	C26B	C27A	C27B	C28A	C28B	C30A	C30B	C31A	C31B
SiO2	g 100g^{-1}	39.92	39.93	40.33		40.59				40.01	40.13	39.73	39.77
TiO2	g 100g^{-1}	3.07	3.06	3.12		3.14				3.076	3.076	3.1	3.12
Al2O3	g 100g^{-1}	12.04	12.04	11.75		11.75				11.97	11.88	11.73	11.74
Fe2O3T	g 100g^{-1}	12.28	12.12	11.93		12.35				12.24	12.25	12.12	12.1
MgO	g 100g^{-1}	9.53	9.58	9.5		9.75				9.272	9.361	9.4	9.39
CaO	g 100g^{-1}			15.34		15.59		15.44	15.44	15.57	15.56	15.26	15.24
Na2O	g 100g^{-1}	3.55	3.51	3.57		3.48				3.465	3.494	3.54	3.55
K2O	g 100g^{-1}	2.78	2.74	2.79		2.79				2.658	2.665	2.75	2.77
P2O5	g 100g^{-1}	0.91	0.9			0.95				0.974	0.942	0.93	0.93
Ag	mg kg^{-1}												
As	mg kg^{-1}	1.09	1										
Au	mg kg^{-1}												
B	mg kg^{-1}									3.462	3.705		
Ba	mg kg^{-1}	1258	1242	1758.070		1282.080	1234.260	1241.200	1245.500	1231	1254		
Be	mg kg^{-1}	3.02	2.76			4.27	2.48						
Bi	mg kg^{-1}												
Cd	mg kg^{-1}	0.22	0.21										
Ce	mg kg^{-1}	174	174	236.980		172.220	164.1	181.670	183.8	167.8	169.8		
Cl	mg kg^{-1}												
Co	mg kg^{-1}	45.1	44.7	63.66		46.6	43.85			44.86	45.35		
Cr	mg kg^{-1}	164	168	249.970		183.680	177.430			181.8	203.2		
Cs	mg kg^{-1}	1.29	1.26			1.34	1.28	1.298	1.314	1.249	1.29		
Cu	mg kg^{-1}	140	140	190.830		140.750	137.590			144.2	135.9		
Dy	mg kg^{-1}	6.33	6.43	8.16		5.84	6.14	5.83	5.901	5.628	5.707		
Er	mg kg^{-1}	2.71	2.74	3.61		2.54	2.56	2.478	2.556	2.367	2.541		
Eu	mg kg^{-1}	3.52	3.55	4.81		3.41	3.39	3.229	3.284	3.33	3.361		
Ga	mg kg^{-1}	19.2	19			23.96	21.98			20.99	20.91		
Gd	mg kg^{-1}	9.74	9.87	12.7		8.9	9.2	8.674	8.782	8.881	9.02		
Ge	mg kg^{-1}									1.555	1.583		
Hf	mg kg^{-1}	7.27	7.42	10.52		7.44	8.16	7.017	7.096	6.956	7.173		
Ho	mg kg^{-1}	1.13	1.15	1.43		1.02	1.1	1.006	1.037	0.972	0.971		
In	mg kg^{-1}	0.09	0.09										
Ir	mg kg^{-1}												
La	mg kg^{-1}	85.2	85.1	119.110		87.13	85.66	82.853	83.978	83.19	84.56		
Li	mg kg^{-1}	8.65	8.45			8.09	8.6			8.227	8.31		
Lu	mg kg^{-1}	0.32	0.33	0.38		0.27	0.31	0.288	0.295	0.256	0.281		
Mn	mg kg^{-1}	1811	1797			1570.090	1762.710			1865	1905		
Mo	mg kg^{-1}	0.82	0.82			0.52	0.66						
Nb	mg kg^{-1}	128	128	179.150		128.720	121.830	125.080	123.316	124	125.1		
Nd	mg kg^{-1}	75.7	76	102.660		76.69	73.8	71.856	73.224	73.71	74.59		
Ni	mg kg^{-1}	95.8	96.2	139.130		99.94	96.74			98.57	99.37		
Pb	mg kg^{-1}	7.11	6.92			7.46	6.96	7.917	7.912	8.295	8.171		
Pd	mg kg^{-1}												
Pr	mg kg^{-1}	19.8	19.8	26.94		20.32	18.83	18.947	19.197	18.82	19.08		
Pt	mg kg^{-1}												
Rb	mg kg^{-1}	85.5	83.9	123.630		88.74	86.57	86.789	88.819	87.37	88.51		
Re	mg kg^{-1}												
Rh	mg kg^{-1}												
S	mg kg^{-1}												
Sb	mg kg^{-1}	0.16	0.13										
Sc	mg kg^{-1}	33.9	34.6	49.96		32.95	35.83			34.52	34.48		
Se	mg kg^{-1}												
Sm	mg kg^{-1}	12.2	12.3	16.98		12.59	12.29	11.74	11.908	11.68	12.24		
Sn	mg kg^{-1}	2.49	2.36										
Sr	mg kg^{-1}	1306	1298	1798.330		1291.580	1282.830	1247.320	1280.010	1255	1298		
Ta	mg kg^{-1}	7.66	7.7	10.35		7.47	7.52	7.959	8.083	7.121	7.301		
Tb	mg kg^{-1}	1.24	1.24			1.1	1.13	1.081	1.093	1.031	1.054		
Te	mg kg^{-1}												
Th	mg kg^{-1}	9.38	9.47	12.86		9.13	9.55	9.172	9.263	8.837	9.121		
Tl	mg kg^{-1}	0.03	0.03										
Tm	mg kg^{-1}	0.36	0.36			0.31	0.34	0.328	0.334	0.314	0.296		
U	mg kg^{-1}	2.45	2.44	3.36		2.4	2.27	2.323	2.361	2.257	2.343		
V	mg kg^{-1}	409	405	607.730		428.050	418.020			428.7	428.3		
W	mg kg^{-1}	0.11	0.1										
Y	mg kg^{-1}	26	26.2	36.17		25.44	27.85	26.202	26.61	25.41	25.95		
Yb	mg kg^{-1}	2.23	2.24	2.67		1.97	2.01	2.04	2.076	2.008	1.879		
Zn	mg kg^{-1}	110	108			116.480	105.990			113.1	114.5		
Zr	mg kg^{-1}	297	301	422.070		290.080	316.8	278.732	283.139	294.2	299.1		

Table 1 - G-Probe 24 Contributed data for Basanite, BKWE-1G Glass. 25/01/2021

Lab Code		C33A	C33B	C34A	C34B	C37A	C37B	C38A	C38B	C39A	C39B	C40A	C40B
SiO2	g 100g^{-1}	39.083	39.105	39.149	39.417	39.888				39.4	39.46		
TiO2	g 100g^{-1}	2.992	2.949	2.867	2.865	3.028		3.587		3.15	3.16		
Al2O3	g 100g^{-1}	11.337	11.545	11.387	11.328	11.636		12.5		12.23	12.22		
Fe2O3T	g 100g^{-1}	12.653	12.567	12.598	12.533	12.582				12.88	12.89		
MgO	g 100g^{-1}	9.286	9.12	10.169	10.092	9.507				9.22	9.19		
CaO	g 100g^{-1}	15.44	15.44	15.874	15.765	15.394				15.91	15.9		
Na2O	g 100g^{-1}	3.369	3.348	3.469	3.506	3.450				3.62	3.61		
K2O	g 100g^{-1}	2.734	2.693	2.643	2.65	2.747				2.79	2.78		
P2O5	g 100g^{-1}	0.815	0.825	1.003	1.003	0.981		0.879		0.95	0.94		
Ag	mg kg^{-1}	0.25	0.3	0.155	0.147	0.284				0.37	0.37		
As	mg kg^{-1}	0.98	0.79	1.178	1.182	0.868							
Au	mg kg^{-1}					0.021							
B	mg kg^{-1}	4.95	5.15			10.715							
Ba	mg kg^{-1}	1207.500	1170	1362.046	1362.319	1215.243		1224		1301.950	1299.810		
Be	mg kg^{-1}			2.291	2.282	2.464				2.43	2.47		
Bi	mg kg^{-1}	0.06	0.06	0.023	0.026								
Cd	mg kg^{-1}			0.125	0.122	0.165							
Ce	mg kg^{-1}	170.550	167.8	189.412	189.445	169.457		169.6		178.340	177.7		
Cl	mg kg^{-1}												
Co	mg kg^{-1}	45.73	45	44.802	44.156	45.100				43.74	43.91		
Cr	mg kg^{-1}	167.3	162.4	176.510	175.950	198.830		171		176.350	175.290		
Cs	mg kg^{-1}	1.24	1.22	1.225	1.228	1.266				1.37	1.36		
Cu	mg kg^{-1}	137.650	136.8	161.631	167.992	137.950				146.430	146.440		
Dy	mg kg^{-1}	5.56	5.55	5.715	5.721	5.779		5.207		5.96	5.92	7.13	7.53
Er	mg kg^{-1}	2.48	2.38	2.494	2.511	2.558		2.277		2.71	2.69	3.21	3.4
Eu	mg kg^{-1}	3.52	3.37	3.503	3.481	3.426		3.253		3.53	3.48	3.99	4.19
Ga	mg kg^{-1}	20.79	20.42	24.852	25.106	20.385		21.62		21.52	21.61	20.07	20.42
Gd	mg kg^{-1}	8.86	9.05	9.395	9.412	8.903		8.377		9.76	9.81	13.27	12.58
Ge	mg kg^{-1}	1.86	1.85	1.506	1.531	1.505							
Hf	mg kg^{-1}			6.967	6.96	7.128		6.753		8.04	8.09	9.94	10.28
Ho	mg kg^{-1}	0.98	0.97	0.968	0.971	0.984		0.929		1.07	1.07	1.44	1.47
In	mg kg^{-1}			0.101	0.102	0.095							
Ir	mg kg^{-1}												
La	mg kg^{-1}	84.65	83	83.674	83.682	83.256		79.75		87.23	87.19	100.9	101.1
Li	mg kg^{-1}	8.05	8.53	7.215	7.195	8.351				8.55	8.52		
Lu	mg kg^{-1}	0.25	0.23	0.268	0.266	0.275		0.259		0.28	0.28		
Mn	mg kg^{-1}	1800	1804	1900.912	1907.330	1794.495		1933		1851.370	1859.740		
Mo	mg kg^{-1}	0.52	0.53	0.525	0.573	0.644				0.58	0.58		
Nb	mg kg^{-1}	121.7	123.2	121.422	120.690	125.073		123.8		137.790	137.830	152.490	154.090
Nd	mg kg^{-1}	71.35	74.7	75.517	75.456	74.429		69.08		80.31	80.12	90.19	89.7
Ni	mg kg^{-1}	97.25	94.4	98.201	96.309	99.790		98		92.63	92.99	88.4	93.38
Pb	mg kg^{-1}	7.57	7.6	6.892	7.146	7.468		7.43		7.54	7.52	7.6	7.54
Pd	mg kg^{-1}					0.180							
Pr	mg kg^{-1}	18.89	17.72	20.359	20.172	19.226		18.72		20.6	20.59	22.02	22.45
Pt	mg kg^{-1}	0.75	1.89			1.834							
Rb	mg kg^{-1}	82.6	81.5	82.172	82.897	83.945		87.76		85.42	85.51	82.73	83.5
Re	mg kg^{-1}					0.003							
Rh	mg kg^{-1}												
S	mg kg^{-1}												
Sb	mg kg^{-1}	0.28	0.29	0.138	0.144	0.183							
Sc	mg kg^{-1}	34.45	34.5	31.733	31.57	34.442				36	36.02		
Se	mg kg^{-1}												
Sm	mg kg^{-1}	11.82	11.8	12.238	12.086	11.968		11.71		12.54	12.64	15.1	14.88
Sn	mg kg^{-1}	11.75	11.3	2.727	2.736	2.795							
Sr	mg kg^{-1}	1254.500	1262	1365.792	1364.175	1258.147		1353		1353.260	1352.110	1337.700	1354.600
Ta	mg kg^{-1}			6.982	6.984	7.452		7.2		7.91	7.92	10.33	10.02
Tb	mg kg^{-1}	1.04	1.03	1.092	1.09	1.092		1.038		1.22	1.23	1.47	1.6
Te	mg kg^{-1}					0.194							
Th	mg kg^{-1}	8.54	8.66	8.948	8.951	9.111		8.683		9.59	9.61	13.38	13.89
Tl	mg kg^{-1}			0.021	0.022	0.027							
Tm	mg kg^{-1}	0.28	0.29	0.315	0.31	0.314		0.304		0.36	0.36	0.49	0.46
U	mg kg^{-1}	2.35	2.33	2.325	2.34	2.345		2.399		2.53	2.51	2.54	2.66
V	mg kg^{-1}	444.750	436	405.897	404.250	425.066		433.9		422.770	422.170	403.140	418.780
W	mg kg^{-1}			0.088	0.089	0.100		0.095		0.11	0.11		
Y	mg kg^{-1}	25.57	25.36	26.047	25.912	26.207		23.3		28.23	28.31	36.03	36.91
Yb	mg kg^{-1}	1.82	1.89	1.957	1.964	1.970		1.884		2.06	2.07	2.71	3.03
Zn	mg kg^{-1}	116.350	114.2	85.426	88.102	91.415				93.11	93.04	97.92	99.6
Zr	mg kg^{-1}	292.3	291.5	292.806	291.052	296.177		274.9		312.690	313.830	406.830	420.660

Table 1 - G-Probe 24 Contributed data for Basanite, BKWE-1G Glass. 25/01/2021

Lab Code		C41A	C41B	C43A	C43B	C44A	C44B	C45A	C45B	C46A	C46B	C47A	C47B
SiO2	g 100g^{-1}	39.7		38.4		42.62							
TiO2	g 100g^{-1}	3.12		3.12		3.24		3.16	3.09	3.3	3.2		
Al2O3	g 100g^{-1}	12.29		11.9		11.63				13	13		
Fe2O3T	g 100g^{-1}	12.16				11.87		13.2	13	11.8	10.8		
MgO	g 100g^{-1}	9.44		9.99		9.41		9.5	9.5	8.77	8.36		
CaO	g 100g^{-1}	15.48		15.2		15.3		16.6	16.6	15.49	15.11		
Na2O	g 100g^{-1}	3.53		3.33		3.34		3.38	3.36	3.7	3.5		
K2O	g 100g^{-1}	2.68		2.64		2.79		2.72	2.7				
P2O5	g 100g^{-1}	0.95		0.5		0.95		0.822	0.819				
Ag	mg kg^{-1}			0.39						0.4	0.4	0.34	0.35
As	mg kg^{-1}			1.24						2.14	2.3	1.5	1.9
Au	mg kg^{-1}			0.035									
B	mg kg^{-1}			20						4.8	5	3.81	3.77
Ba	mg kg^{-1}	1267		1209				1251	1224	1450	1230	1180	1150
Be	mg kg^{-1}			2				2.6	2.54	2.5	2.2	2.5	2.6
Bi	mg kg^{-1}			0.021						0.026	0.024		
Cd	mg kg^{-1}			0.41						0.3	0.3		
Ce	mg kg^{-1}	178.250		163				178	177	202	174	165	157
Cl	mg kg^{-1}												
Co	mg kg^{-1}	47.28		44.2				46.8	46.2	44.2	42.6	44.8	40.7
Cr	mg kg^{-1}	181.490		176				182	182	180	170	176	162
Cs	mg kg^{-1}	1.36		1.22				1.28	1.28	1.6	1.4	1.1	1.1
Cu	mg kg^{-1}	148.890		129				129	130	143	139	132	124
Dy	mg kg^{-1}	6.15		5.47				6.16	6.05	7.4	6.4	5.84	5.76
Er	mg kg^{-1}	2.8		2.43				2.72	2.71	3	2.6	2.56	2.54
Eu	mg kg^{-1}	3.6		3.31				3.64	3.58	4.1	3.5	3.37	3.46
Ga	mg kg^{-1}			19.86				21.8	21.8	23.9	21.7	142	175
Gd	mg kg^{-1}	9.72		8.94				10	9.9	11.1	9.9	9.13	9.54
Ge	mg kg^{-1}			3.42						2.1	2.1		
Hf	mg kg^{-1}	7.49		7.04				7.6	7.45	9.9	8.7	7.5	7.59
Ho	mg kg^{-1}	1.06		0.98				1.05	1.05	1.25	1.15	1.02	1.03
In	mg kg^{-1}	0.08		0.1				0.098	0.097	0.11	0.09	0.09	0.09
Ir	mg kg^{-1}												
La	mg kg^{-1}	89.97		81.71				88.8	87.5	104	91	84.1	85.5
Li	mg kg^{-1}	8.86		17				8.59	8.55	9.8	9	8.2	7.66
Lu	mg kg^{-1}	0.29		0.26				0.294	0.29	0.39	0.32	0.29	0.29
Mn	mg kg^{-1}	1956		1649		401.430		1881	1870	1735	1660	1690	1610
Mo	mg kg^{-1}			0.5				0.566	0.565	0.7	0.6	0.57	0.6
Nb	mg kg^{-1}	126.860		123				130	129	162	148	122	128
Nd	mg kg^{-1}	78.99		70.1				78.5	77.2	96.8	85.7	73.2	74.2
Ni	mg kg^{-1}	100.620		98				101	99.4	92	90	100	88
Pb	mg kg^{-1}	7.75		7.13				7.75	7.62	8.8	7.8	6.46	6.27
Pd	mg kg^{-1}												
Pr	mg kg^{-1}	20.22		18.7				20.1	20	24.9	21.6	19.5	19.3
Pt	mg kg^{-1}											0.5	0.5
Rb	mg kg^{-1}	90.75		82.6				85	83.7	107	95	78.8	72.7
Re	mg kg^{-1}												
Rh	mg kg^{-1}												
S	mg kg^{-1}												
Sb	mg kg^{-1}	0.16		0.09						0.21	0.19	0.13	0.13
Sc	mg kg^{-1}	37.33		31				36.6	37.2	36	34	35.1	34.7
Se	mg kg^{-1}			0.77								2.59	2.71
Sm	mg kg^{-1}	12.87		11.7				12.9	12.8	14.9	13.5	12.2	12.4
Sn	mg kg^{-1}	2.06		2.49				3.22	3.04	2.8	2.3	2.08	2.02
Sr	mg kg^{-1}	1343		1199				1308	1293	1450	1270	1230	1200
Ta	mg kg^{-1}	7.37		6.97						10.3	9.2	7.51	8.16
Tb	mg kg^{-1}	1.15		1.06				1.16	1.15	1.35	1.19	1.14	1.16
Te	mg kg^{-1}												
Th	mg kg^{-1}	9.77		8.84				9.5	9.32	11.9	10.8	9.44	9.85
Tl	mg kg^{-1}			0.018						0.03	0.03	0.02	0.02
Tm	mg kg^{-1}	0.33		0.3				0.329	0.327	0.4	0.36	0.33	0.33
U	mg kg^{-1}	2.39		2.31				2.51	2.47	3.07	2.6	2.46	2.32
V	mg kg^{-1}	453.130		426				455	458	440	415	417	386
W	mg kg^{-1}			0.089						0.13	0.1	0.11	0.11
Y	mg kg^{-1}	28.09		24.8				28	27.7	31	29	25.9	25.5
Yb	mg kg^{-1}	2.08		1.91				2.13	2.08	2.5	2.2	1.99	2.04
Zn	mg kg^{-1}	117.440		123				120	120	106	100	134	125
Zr	mg kg^{-1}	317.010		282				316	312	380	354	289	292

Table 1 - G-Probe 24 Contributed data for Basanite, BKWE-1G Glass. 25/01/2021

Lab Code		C48A	C48B	C49A	C49B	C50A	C50B	-	-	-	-	-	-
SiO2	g 100g⁻¹	40.47		40.59	40.44								
TiO2	g 100g⁻¹	3.05		3.08	3.07	0.168	0.164						
Al2O3	g 100g⁻¹	11.9		12.38	12.42								
Fe2O3T	g 100g⁻¹	11.9		11.88	11.92	0.340	0.385						
MgO	g 100g⁻¹	9.47		9.35	9.3								
CaO	g 100g⁻¹	15.34		15.74	15.78	0.846	0.817						
Na2O	g 100g⁻¹	3.6		3.24	3.27	0.15	0.153						
K2O	g 100g⁻¹	2.95		2.64	2.65								
P2O5	g 100g⁻¹	1.14		0.9	0.96								
Ag	mg kg⁻¹												
As	mg kg⁻¹					0.061	0.073						
Au	mg kg⁻¹												
B	mg kg⁻¹												
Ba	mg kg⁻¹	1263				66.3	62.9						
Be	mg kg⁻¹	2.59											
Bi	mg kg⁻¹												
Cd	mg kg⁻¹												
Ce	mg kg⁻¹	170				8.95	8.67						
Cl	mg kg⁻¹												
Co	mg kg⁻¹	46.7				2.251	2.203						
Cr	mg kg⁻¹	187				8.6	8.2						
Cs	mg kg⁻¹	1.3				0.064	0.062						
Cu	mg kg⁻¹	147				7.13	6.92						
Dy	mg kg⁻¹	5.72				0.306	0.286						
Er	mg kg⁻¹	3				0.138	0.124						
Eu	mg kg⁻¹	3.42				0.176	0.163						
Ga	mg kg⁻¹	74.6				7.29	7.7						
Gd	mg kg⁻¹	8.85				0.455	0.424						
Ge	mg kg⁻¹	3.49				0.173	0.167						
Hf	mg kg⁻¹	6.93				0.363	0.349						
Ho	mg kg⁻¹	0.96				0.053	0.049						
In	mg kg⁻¹	0.103											
Ir	mg kg⁻¹												
La	mg kg⁻¹	83				4.39	4.18						
Li	mg kg⁻¹	8.83				0.435	0.388						
Lu	mg kg⁻¹	0.263				0.014	0.014						
Mn	mg kg⁻¹	1931				93.3	88.4						
Mo	mg kg⁻¹	0.54											
Nb	mg kg⁻¹	120				6.79	6.44						
Nd	mg kg⁻¹	75				3.82	3.73						
Ni	mg kg⁻¹	101				4.9	4.81						
Pb	mg kg⁻¹	7.28				0.425	0.381						
Pd	mg kg⁻¹												
Pr	mg kg⁻¹	19				0.985	0.949						
Pt	mg kg⁻¹												
Rb	mg kg⁻¹	84.6				4.42	4.29						
Re	mg kg⁻¹												
Rh	mg kg⁻¹												
S	mg kg⁻¹												
Sb	mg kg⁻¹												
Sc	mg kg⁻¹	35.3				1.85	1.807						
Se	mg kg⁻¹												
Sm	mg kg⁻¹	12.1				0.635	0.602						
Sn	mg kg⁻¹												
Sr	mg kg⁻¹	1288				68.9	65.4						
Ta	mg kg⁻¹	6.62				0.399	0.389						
Tb	mg kg⁻¹	1.06				0.055	0.052						
Te	mg kg⁻¹												
Th	mg kg⁻¹	8.96				0.466	0.458						
Tl	mg kg⁻¹	0.029											
Tm	mg kg⁻¹	0.297				0.018	0.016						
U	mg kg⁻¹	2.39				0.122	0.117						
V	mg kg⁻¹	448				23.29	22.22						
W	mg kg⁻¹					0.006	0.006						
Y	mg kg⁻¹	24.6				1.325	1.264						
Yb	mg kg⁻¹	1.95				0.107	0.099						
Zn	mg kg⁻¹	115				6.43	5.75						
Zr	mg kg⁻¹	294				15.49	14.65						

Table 2 - G-Probe 24 Designated values and statistical summary for Basanite, BKWE-1G Glass.

	Designated Value	Uncertainty of designated value	Horwitz Quality	Horwitz Target Value	Uncertainty/ Target	Number of reported results	Robust Mean of results	Robust SD of results	Median of results	Status of designated value	Type of designated value
	X_a	*sdm*	*k x 0.01*	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	39.98	0.191	1	0.459	0.4161	28	39.76	0.6845	39.87	Assigned	Mode
TiO2	3.116	0.02053	1	0.05252	0.3909	32	3.105	0.1148	3.116	Assigned	Median
Al2O3	11.93	0.1035	1	0.1642	0.6303	29	11.99	0.4983	11.93	Provisional	Median
Fe2O3T	12.09	0.0599	1	0.1662	0.3605	29	12.17	0.413	12.16	Provisional	Mode
MgO	9.45	0.04809	1	0.1348	0.3568	30	9.458	0.2677	9.45	Assigned	Median
CaO	15.48	0.105	1	0.205	0.5122	29	15.55	0.3484	15.55	Assigned	Mode
Na2O	3.47	0.0345	1	0.05755	0.5996	29	3.43	0.1529	3.47	Provisional	Median
K2O	2.722	0.02291	1	0.04683	0.4893	28	2.714	0.1	2.722	Provisional	Median
P2O5	0.9463	0.01953	1	0.01908	1.023	28	0.9463	0.1033	0.9475	Provisional	Robust Mean
	mg kg^{-1}	mg kg^{-1}		mg kg^{-1}			mg kg^{-1}	mg kg^{-1}	mg kg^{-1}		
Ba	1243	9.38	1	34.03	0.2756	31	1247	59.34	1243	Assigned	Median
Be	2.437	0.07084	1	0.1705	0.4155	16	2.421	0.2472	2.437	Provisional	Median
Ce	170	2.027	1	6.277	0.3229	29	172	8.624	170	Assigned	Median
Co	44.38	0.5289	1	2.006	0.2637	27	44.38	2.748	44.48	Assigned	Robust Mean
Cr	176.1	3.501	1	6.469	0.5411	29	177.1	16.01	176.1	Provisional	Median
Cs	1.228	0.02906	1	0.09525	0.3051	26	1.215	0.1195	1.228	Assigned	Median
Cu	139	3.397	1	5.29	0.6421	27	139.6	17.56	139	Provisional	Median
Dy	5.739	0.08661	1	0.3529	0.2454	29	5.781	0.4209	5.739	Assigned	Median
Er	2.55	0.05176	1	0.1772	0.2922	29	2.564	0.2177	2.55	Assigned	Median
Eu	3.426	0.02764	1	0.2276	0.1214	29	3.474	0.1863	3.426	Assigned	Median
Ga	20.8	0.3642	1	1.054	0.3457	23	21.09	1.714	20.8	Assigned	Median
Gd	8.97	0.0874	1	0.5157	0.1695	29	9.165	0.6408	9.05	Assigned	Mode
Hf	6.93	0.127	1	0.4142	0.3066	28	7.176	0.5122	7.048	Assigned	Mode
Ho	0.976	0.00866	1	0.07835	0.1105	29	1.004	0.07795	0.9844	Assigned	Mode
In	0.09743	0.002588	1	0.01106	0.2339	12	0.09639	0.006818	0.09743	Provisional	Median
La	83.66	0.958	1	3.437	0.2787	29	85.17	3.777	84.49	Assigned	Mode
Li	8.399	0.1604	1	0.4877	0.3288	25	8.482	0.6727	8.399	Assigned	Median
Lu	0.27	0.0093	1	0.0263	0.3536	29	0.2783	0.02863	0.274	Assigned	Mode
Mn	1802	32.37	1	46.64	0.6941	31	1794	118.3	1802	Provisional	Median
Mo	0.5455	0.01839	1	0.0478	0.3848	18	0.5589	0.07158	0.5455	Provisional	Median
Nb	125.3	0.9748	1	4.843	0.2013	29	126.5	6.507	125.3	Assigned	Median
Nd	74.43	1.159	1	3.112	0.3724	29	74.8	4.4	74.43	Assigned	Median
Ni	96.63	1.254	1	3.885	0.3227	30	96.25	6.73	96.63	Assigned	Median
Pb	7.377	0.1137	1	0.4368	0.2603	27	7.377	0.5907	7.43	Assigned	Robust Mean
Pr	19.13	0.154	1	0.9813	0.1569	29	19.52	0.9465	19.28	Assigned	Mode
Rb	84.4	1.06	1	3.463	0.3062	29	84.4	5.709	84.6	Assigned	Robust Mean
Sc	34.49	0.5376	1	1.619	0.3321	24	34.52	2.033	34.49	Assigned	Median
Sm	12.13	0.146	1	0.6665	0.219	29	12.19	0.6453	12.13	Assigned	Median
Sr	1300	12.11	1	35.35	0.3426	31	1300	67.44	1287	Provisional	Robust Mean
Ta	7.411	0.1516	1	0.4385	0.3458	27	7.507	0.592	7.411	Assigned	Median
Tb	1.083	0.0129	1	0.08559	0.1508	28	1.092	0.06323	1.083	Assigned	Median
Th	9.06	0.1208	1	0.5201	0.2322	29	9.193	0.6227	9.06	Assigned	Median
Tm	0.3134	0.005794	1	0.02985	0.1941	28	0.3164	0.02541	0.3134	Assigned	Median
U	2.345	0.015	1	0.165	0.09092	29	2.385	0.1293	2.37	Assigned	Mode
V	425.5	6.672	1	13.69	0.4875	28	422.4	25.28	425.5	Provisional	Median
W	0.1003	0.005632	1	0.01134	0.4967	12	0.09853	0.01746	0.1003	Provisional	Median
Y	25.98	0.476	1	1.273	0.374	29	26.08	2.128	25.98	Assigned	Median
Yb	1.963	0.02864	1	0.1419	0.2019	29	1.985	0.1354	1.963	Assigned	Median
Zr	295.1	3.366	1	10.03	0.3356	30	295.1	18.43	295.1	Assigned	Robust Mean

Table 3 - G-Probe 24 Z-scores for Basanite, BKWE-1G Glass. 25/01/2021

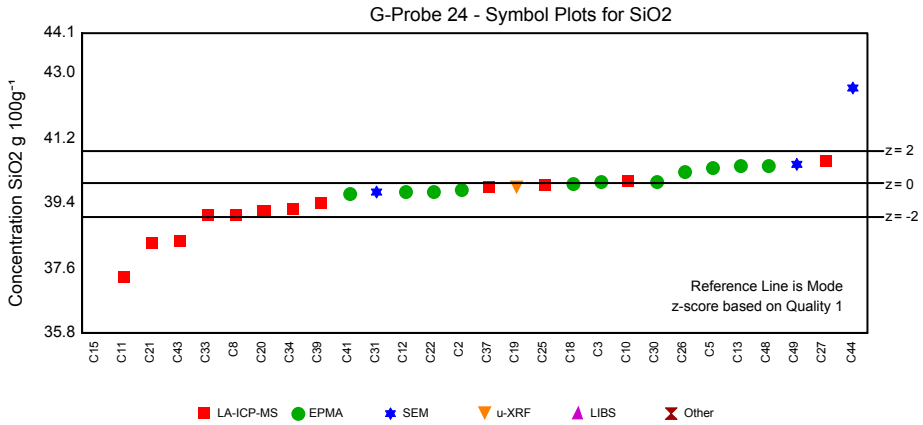
Lab Code	C2	C3	C4	C5	C6	C8	C9	C10	C11	C12	C13	C15	C17
SiO2: 1	-0.28	0.16	*	1.00	*	-1.88	*	0.16	-5.60	-0.46	1.07	-47.50	*
TiO2: 1	0.08	0.31	*	-1.25	*	-2.72	*	1.70	-5.54	-0.11	1.13	-19.55	*
Al2O3: 1	*-0.33*	*0.41*	*	*	*	*-3.77*	*	*3.29*	*	*0.33*	*3.29*	*-35.16*	*825.71*
Fe2O3T: 1	*0.00*	*2.35*	*	*	*	*0.84*	*	*-4.75*	*-4.57*	*1.32*	*-0.15*	*-0.66*	*
MgO: 1	-0.37	-0.59	*	*	*	-0.27	*	-1.34	1.52	0.15	3.00	-26.47	499.44
CaO: 1	0.54	1.56	*	*	*	*	*	0.76	*	0.34	0.37	-16.33	727.68
Na2O: 1	*0.00*	*0.50*	*	*	*	*1.60*	*	*-2.78*	*-4.87*	*-1.22*	*-3.30*	*-17.89*	*
K2O: 1	*-2.82*	*0.51*	*	*	*	*0.19*	*	*-3.14*	*-3.04*	*0.59*	*4.44*	*-14.02*	*
P2O5: 1	*-0.12*	*3.65*	*	*	*	*0.64*	*	*51.54*	*-2.69*	*-2.27*	*4.91*	*-19.51*	*
Ba: 1	-1.66	*	0.93	0.80	-0.78	0.31	-4.12	-0.69	-1.53	*	*	-0.77	16.42
Be: 1	*	*	*-2.01*	*-0.89*	*	*	*	*1.07*	*-1.48*	*	*	*-0.07*	*
Ce: 1	-2.36	*	0.94	0.00	-0.23	1.32	-4.26	0.38	0.13	*	*	-0.00	*
Co: 1	-4.24	*	-0.60	1.33	-0.65	-1.20	*	-0.20	-2.39	*	*	-1.22	10.48
Cr: 1	*-4.92*	*	*0.00*	*1.99*	*-1.70*	*1.46*	*	*1.36*	*-3.59*	*	*	*5.42*	*
Cs: 1	-3.35	*	-1.08	0.49	*	-0.22	-1.84	-1.66	-0.77	*	*	-0.86	*
Cu: 1	*-5.97*	*	*	*-1.80*	*1.07*	*-1.20*	*	*-0.09*	*-2.17*	*	*	*-5.29*	*6.19*
Dy: 1	-1.10	*	*	-1.47	0.00	-0.63	0.11	-0.12	-0.08	*	*	0.43	*
Er: 1	-1.13	*	*	-1.64	0.23	-1.10	0.01	1.19	-0.71	*	*	-0.52	*
Eu: 1	0.15	*	*	-0.33	-0.05	-0.82	-0.16	-0.09	0.20	*	*	0.95	*
Ga: 1	*	*	*	0.38	-1.24	-0.01	-4.11	-0.44	*	*	*	-0.45	*
Gd: 1	-1.05	*	*	-1.43	0.41	-1.29	-0.06	-0.05	0.48	*	*	0.35	*
Hf: 1	-0.56	*	*	-0.76	0.21	-0.46	0.16	0.91	-0.27	*	*	-0.18	*
Ho: 1	-0.49	*	*	-1.03	0.29	-0.24	0.04	-0.01	0.24	*	*	0.13	*
In: 1	*	*	*	*	*	*	*1.97*	*-0.67*	*	*	*	*-0.04*	*
La: 1	-0.21	*	*	-1.02	0.51	-0.46	-0.24	0.24	1.31	*	*	0.83	*
Li: 1	*	*	0.22	1.45	-0.10	-0.90	*	-8.09	0.71	*	*	0.00	7.90
Lu: 1	-0.49	*	8.18	-1.14	0.15	-0.24	3.36	0.38	0.00	*	*	0.06	*
Mn: 1	*-1.89*	*2.08*	*	*0.49*	*0.95*	*-0.77*	*	*0.39*	*-2.28*	*-0.28*	*1.22*	*-1.23*	*
Mo: 1	*-3.23*	*	*	*	*-0.07*	*	*-0.76*	*-1.06*	*-0.53*	*	*	*7.77*	*
Nb: 1	-0.28	*	*	0.25	-0.43	1.12	-2.53	0.10	-3.11	*	*	1.80	*
Nd: 1	-0.47	*	*	-1.28	-0.05	-1.16	-1.51	0.25	0.12	*	*	1.63	*
Ni: 1	-5.16	*	*	2.58	-1.90	-1.22	*	-0.19	-0.75	*	*	0.49	9.60
Pb: 1	-4.89	*	*	-0.55	-0.49	-0.16	*	0.37	-1.24	*	*	0.12	*
Pr: 1	0.00	*	*	-0.08	0.15	0.06	-3.31	0.23	1.41	*	*	1.12	*
Rb: 1	-6.47	*	*	1.79	-1.07	0.68	*	-1.66	-1.02	*	*	-2.24	*
Sc: 1	-1.08	*	*	-0.42	0.46	-1.01	*	1.01	-2.23	*	*	-0.04	*
Sm: 1	-0.35	*	*	-1.02	0.00	-1.17	-1.27	0.13	-0.18	*	*	1.46	*
Sr: 1	*-0.86*	*	*	*-0.83*	*-0.77*	*-0.96*	*	*-0.53*	*-1.32*	*	*	*3.90*	*-15.91*
Ta: 1	-0.25	*	*	-1.09	-0.73	0.00	1.50	-0.95	-0.07	*	*	1.31	*
Tb: 1	-0.39	*	*	-1.15	0.06	-0.05	-0.09	-0.27	0.72	*	*	-0.20	*
Th: 1	-0.35	*	*	-1.17	-4.50	-0.58	*	-0.48	0.00	*	*	-0.08	5.46
Tm: 1	-0.72	*	*	-1.12	0.05	0.14	0.99	-0.28	-0.11	*	*	-0.11	*
U: 1	-2.58	*	*	0.15	0.01	-0.19	*	1.18	-0.36	*	*	-1.11	8.52
V: 1	*-6.54*	*	*	*1.42*	*0.50*	*-1.46*	*	*1.74*	*-3.08*	*	*	*-2.70*	*
W: 1	*	*	*	*	*	*	*28.05*	*-2.67*	*	*	*	*0.02*	*
Y: 1	-2.08	*	*	-2.42	0.50	-0.57	1.61	-0.40	-0.05	*	*	-0.94	*
Yb: 1	-0.37	*	*	-1.29	0.00	-0.57	-0.12	-0.59	-0.37	*	*	0.19	*
Zr: 1	-2.48	*	*	-2.86	0.38	-0.65	-0.75	0.89	-0.95	*	*	-1.56	*

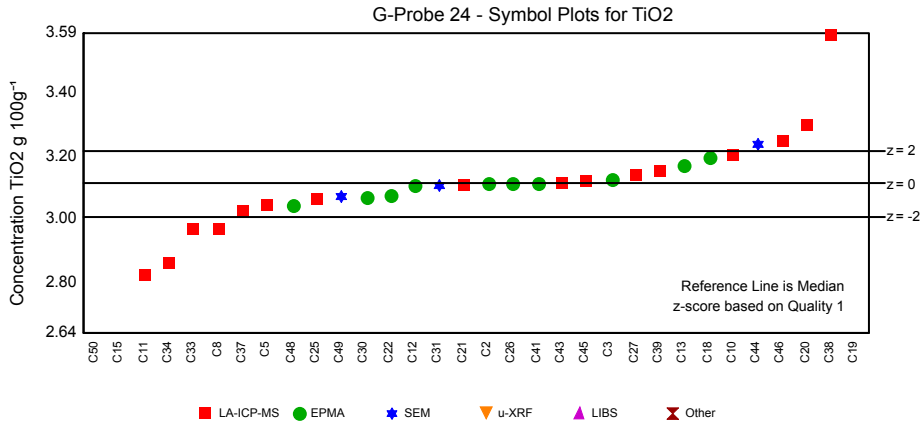
Table 3 - G-Probe 24 Z-scores for Basanite, BKWE-1G Glass. 25/01/2021

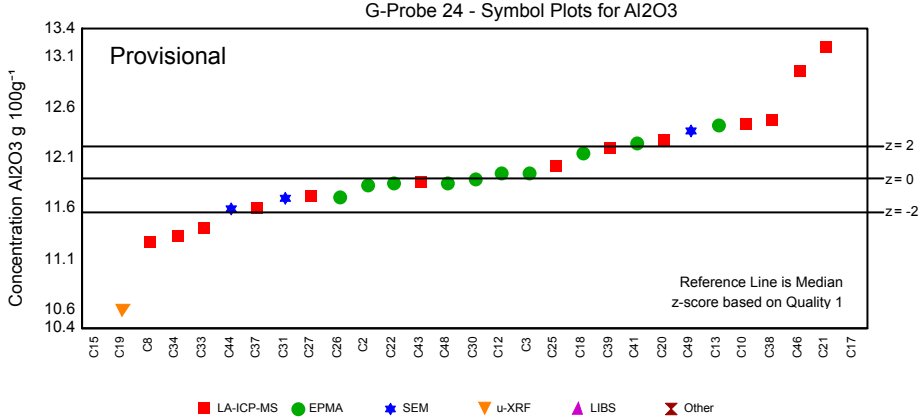
Lab Code	C18	C19	C20	C21	C22	C25	C26	C27	C28	C30	C31	C33	C34
SiO2: 1	0.00	-0.17	-1.70	-3.60	-0.44	-0.12	0.76	1.33	*	0.20	-0.50	-1.93	-1.52
TiO2: 1	1.60	25.79	3.51	-0.08	-0.72	-0.97	0.08	0.46	*	-0.76	-0.11	-2.77	-4.76
Al2O3: 1	*1.61*	*-7.88*	*2.28*	*7.93*	*-0.21*	*0.70*	*-1.07*	*-1.07*	*	*0.00*	*-1.16*	*-2.95*	*-3.46*
Fe2O3T: 1	*-0.24*	*53.68*	*2.47*	*0.95*	*-0.18*	*0.66*	*-0.96*	*1.56*	*	*0.93*	*0.12*	*3.13*	*2.86*
MgO: 1	0.07	-10.79	1.11	2.21	-2.09	0.78	0.37	2.23	*	-0.99	-0.41	-1.83	5.05
CaO: 1	0.00	16.12	3.02	1.27	-2.24	*	-0.68	0.54	-0.20	0.41	-1.12	-0.20	1.66
Na2O: 1	*-0.17*	*	*2.26*	*-4.93*	*1.44*	*1.04*	*1.74*	*0.17*	*	*0.17*	*1.30*	*-1.94*	*0.30*
K2O: 1	*-0.26*	*17.25*	*-0.48*	*-5.31*	*1.08*	*0.81*	*1.45*	*1.45*	*	*-1.30*	*0.81*	*-0.19*	*-1.62*
P2O5: 1	*-0.33*	*-14.74*	*2.81*	*8.92*	*16.12*	*-2.16*	*	*0.19*	*	*0.61*	*-0.86*	*-6.62*	*2.97*
Ba: 1	0.20	*	1.28	-0.22	5.01	0.20	15.13	0.44	0.00	-0.02	*	-1.60	3.49
Be: 1	*	*	*	*	*-1.19*	*2.66*	*	*5.50*	*	*	*	*	*-0.88*
Ce: 1	*	*	1.59	-0.73	0.88	0.64	10.67	-0.29	2.03	-0.19	*	-0.13	3.10
Co: 1	*	*	0.16	-1.51	2.05	0.26	9.61	0.42	*	0.36	*	0.49	0.05
Cr: 1	*-2.50*	*19.14*	*1.37*	*-2.43*	*-0.75*	*-1.57*	*11.41*	*0.68*	*	*2.53*	*	*-1.75*	*0.01*
Cs: 1	*	*	-1.35	-0.82	1.03	0.49	*	0.86	0.82	0.43	*	0.02	-0.02
Cu: 1	*	*11.53*	*0.00*	*-2.52*	*4.86*	*0.19*	*9.80*	*0.03*	*	*0.20*	*	*-0.34*	*4.88*
Dy: 1	*	*	1.59	-1.14	-1.02	1.82	6.86	0.71	0.36	-0.20	*	-0.52	-0.06
Er: 1	*	*	0.85	-1.16	0.59	0.99	5.98	0.00	-0.19	-0.54	*	-0.68	-0.27
Eu: 1	*	*	1.64	-0.13	1.69	0.48	6.08	-0.11	-0.74	-0.35	*	0.09	0.29
Ga: 1	*	*	0.00	*	1.32	-1.61	*	2.06	*	0.14	*	-0.19	3.97
Gd: 1	*	*	1.42	0.00	0.81	1.62	7.23	0.16	-0.47	-0.04	*	-0.03	0.84
Hf: 1	*	*	1.62	-0.80	-0.21	1.00	8.67	2.10	0.31	0.32	*	*	0.08
Ho: 1	*	*	1.58	-1.11	0.00	2.09	5.79	1.07	0.58	-0.06	*	-0.01	-0.08
In: 1	*	*	*	*	*	*-0.67*	*	*	*	*	*	*	*0.37*
La: 1	*	*	1.03	-0.18	2.67	0.43	10.31	0.80	-0.07	0.06	*	0.05	0.01
Li: 1	*	*	7.18	-1.06	-0.22	0.31	*	-0.11	*	-0.27	*	-0.22	-2.45
Lu: 1	*	*	1.14	-0.80	-0.46	2.09	4.18	0.76	0.82	-0.06	*	-1.14	-0.11
Mn: 1	*-0.26*	*22.47*	*2.19*	*-2.08*	*-3.30*	*0.04*	*	*-2.91*	*	*1.78*	*	*0.00*	*2.19*
Mo: 1	*	*	*	*-1.34*	*	*5.74*	*	*0.93*	*	*	*	*-0.43*	*0.07*
Nb: 1	*	*	1.80	0.74	0.46	0.56	11.12	0.00	-0.22	-0.15	*	-0.58	-0.87
Nd: 1	*	*	1.92	-0.80	-1.08	0.46	9.07	0.26	-0.61	-0.09	*	-0.45	0.34
Ni: 1	-2.74	0.87	-0.52	-2.47	5.19	-0.16	10.94	0.44	*	0.60	*	-0.21	0.16
Pb: 1	*	*	3.03	-1.58	2.49	-0.83	*	-0.38	1.23	1.96	*	0.48	-0.82
Pr: 1	*	*	1.40	0.04	-0.48	0.68	7.96	0.45	-0.06	-0.18	*	-0.84	1.16
Rb: 1	13.17	*	0.26	-1.46	0.75	0.09	11.33	0.94	0.98	1.02	*	-0.68	-0.54
Sc: 1	*	*	0.81	*	1.20	-0.15	9.56	-0.06	*	0.01	*	-0.01	-1.75
Sm: 1	*	*	0.85	-0.64	0.58	0.18	7.27	0.46	-0.46	-0.26	*	-0.48	0.04
Sr: 1	*1.40*	*41.01*	*1.04*	*-1.18*	*2.22*	*0.05*	*14.09*	*-0.37*	*-1.04*	*-0.68*	*	*-1.19*	*1.83*
Ta: 1	*	*	2.03	-0.37	0.01	0.61	6.70	0.19	1.39	-0.46	*	*	-0.98
Tb: 1	*	*	0.20	-0.63	-0.08	1.83	*	0.37	0.05	-0.47	*	-0.56	0.09
Th: 1	*	*	0.65	-0.59	1.63	0.70	7.31	0.54	0.30	-0.16	*	-0.88	-0.21
Tm: 1	*	*	-0.45	-0.70	0.76	1.56	*	0.39	0.59	-0.28	*	-0.95	-0.03
U: 1	*	*	0.33	-0.47	0.52	0.61	6.15	-0.06	-0.02	-0.27	*	-0.03	-0.08
V: 1	*-1.13*	*	*0.18*	*-1.65*	*1.28*	*-1.35*	*13.31*	*-0.18*	*	*0.22*	*	*1.08*	*-1.49*
W: 1	*	*	*	*	*	*0.42*	*	*	*	*	*	*	*-1.04*
Y: 1	*	*	1.19	-2.17	1.19	0.09	8.01	0.52	0.34	-0.24	*	-0.40	0.00
Yb: 1	*	*	0.97	-1.18	0.83	1.92	4.98	0.19	0.67	-0.14	*	-0.76	-0.02
Zr: 1	1.48	*	1.08	-2.23	0.65	0.39	12.66	0.83	-1.42	0.15	*	-0.32	-0.32

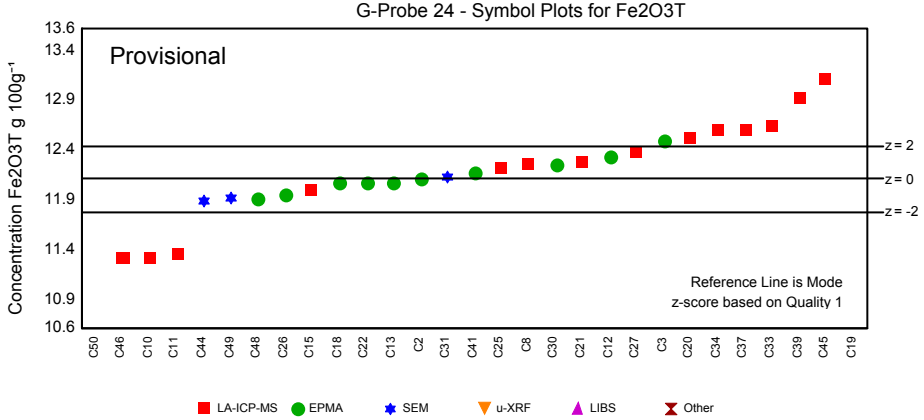
Table 3 - G-Probe 24 Z-scores for Basanite, BKWE-1G Glass. 25/01/2021

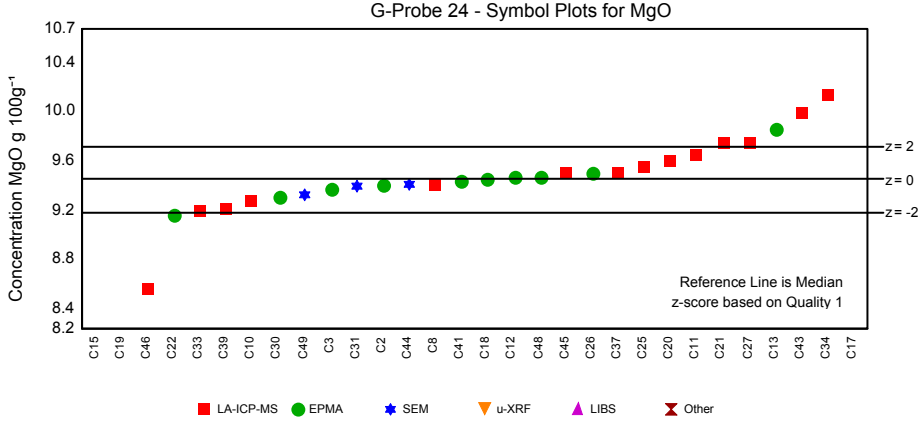
Lab Code	C37	C38	C39	C40	C41	C43	C44	C45	C46	C47	C48	C49	C50
SiO2: 1	-0.20	*	-1.20	*	-0.61	-3.44	5.75	*	*	*	1.07	1.17	*
TiO2: 1	-1.68	8.97	0.75	*	0.08	0.08	2.37	0.18	2.56	*	-1.25	-0.78	-56.17
Al2O3: 1	*-1.76*	*3.50*	*1.83*	*	*2.22*	*-0.15*	*-1.80*	*	*6.55*	*	*-0.15*	*2.89*	*
Fe2O3T: 1	*2.96*	*	*4.78*	*	*0.42*	*	*-1.32*	*6.08*	*-4.75*	*	*-1.14*	*-1.14*	*-70.58*
MgO: 1	0.42	*	-1.82	*	-0.07	4.01	-0.30	0.37	-6.57	*	0.15	-0.93	*
CaO: 1	-0.42	*	2.07	*	0.00	-1.37	-0.88	5.46	-0.88	*	-0.68	1.37	-71.46
Na2O: 1	*-0.34*	*	*2.52*	*	*1.04*	*-2.43*	*-2.26*	*-1.74*	*2.26*	*	*2.26*	*-3.74*	*-57.66*
K2O: 1	*0.52*	*	*1.34*	*	*-0.90*	*-1.76*	*1.45*	*-0.26*	*	*	*4.86*	*-1.65*	*
P2O5: 1	*1.80*	*-3.53*	*-0.07*	*	*0.19*	*-23.39*	*0.19*	*-6.59*	*	*	*10.15*	*-0.86*	*
Ba: 1	-0.83	-0.57	1.69	*	0.69	-1.01	*	-0.17	2.84	-2.30	0.58	*	-34.64
Be: 1	*0.15*	*	*0.07*	*	*	*-2.56*	*	*0.78*	*-0.51*	*0.66*	*0.90*	*	*
Ce: 1	-0.09	-0.06	1.28	*	1.31	-1.12	*	1.19	2.87	-1.43	0.00	*	-25.68
Co: 1	0.36	*	-0.28	*	1.44	-0.09	*	1.06	-0.49	-0.81	1.15	*	-21.02
Cr: 1	*3.51*	*-0.80*	*-0.05*	*	*0.83*	*-0.02*	*	*0.91*	*-0.18*	*-1.10*	*1.68*	*	*-25.93*
Cs: 1	0.40	*	1.44	*	1.38	-0.09	*	0.54	2.85	-1.35	0.75	*	-12.23
Cu: 1	*-0.20*	*	*1.41*	*	*1.87*	*-1.89*	*	*-1.80*	*0.38*	*-2.08*	*1.51*	*	*-24.95*
Dy: 1	0.11	-1.51	0.57	4.51	1.16	-0.76	*	1.04	3.29	0.17	-0.05	*	-15.42
Er: 1	0.05	-1.54	0.85	4.26	1.41	-0.68	*	0.93	1.41	0.00	2.54	*	-13.66
Eu: 1	0.00	-0.76	0.35	2.92	0.77	-0.51	*	0.81	1.64	-0.05	-0.02	*	-14.30
Ga: 1	-0.39	0.78	0.73	-0.53	*	-0.89	*	0.95	1.90	130.69	51.06	*	-12.63
Gd: 1	-0.13	-1.15	1.58	7.67	1.45	-0.06	*	1.90	2.97	0.71	-0.23	*	-16.54
Hf: 1	0.48	-0.43	2.74	7.68	1.35	0.27	*	1.44	5.72	1.48	0.00	*	-15.87
Ho: 1	0.11	-0.61	1.20	6.11	1.07	0.05	*	0.94	2.86	0.63	-0.20	*	-11.81
In: 1	*-0.26*	*	*	*	*-1.58*	*0.23*	*	*0.04*	*0.23*	*-0.67*	*0.50*	*	*
La: 1	-0.12	-1.14	1.03	5.05	1.84	-0.57	*	1.31	4.03	0.33	-0.19	*	-23.09
Li: 1	-0.10	*	0.28	*	0.95	17.64	*	0.35	2.05	-0.96	0.88	*	-16.38
Lu: 1	0.19	-0.41	0.38	*	0.76	-0.38	*	0.84	3.23	0.76	-0.27	*	-9.73
Mn: 1	*-0.16*	*2.81*	*1.15*	*	*3.30*	*-3.28*	*-30.03*	*1.58*	*-2.24*	*-3.26*	*2.77*	*	*-36.69*
Mo: 1	*2.06*	*	*0.72*	*	*	*-0.95*	*	*0.42*	*2.19*	*0.83*	*-0.12*	*	*
Nb: 1	-0.04	-0.30	2.59	5.78	0.33	-0.47	*	0.87	6.14	-0.06	-1.09	*	-24.50
Nd: 1	0.00	-1.72	1.86	4.99	1.47	-1.39	*	1.10	5.41	-0.23	0.18	*	-22.70
Ni: 1	0.81	0.35	-0.98	-1.48	1.03	0.35	*	0.92	-1.45	-0.68	1.13	*	-23.62
Pb: 1	0.21	0.12	0.35	0.44	0.85	-0.57	*	0.71	2.11	-2.32	-0.22	*	-15.97
Pr: 1	0.10	-0.42	1.49	3.16	1.11	-0.44	*	0.94	4.20	0.28	-0.13	*	-18.51
Rb: 1	-0.13	0.97	0.31	-0.37	1.83	-0.52	*	-0.01	4.79	-2.50	0.06	*	-23.12
Sc: 1	-0.03	*	0.94	*	1.76	-2.15	*	1.49	0.32	0.25	0.50	*	-20.17
Sm: 1	-0.25	-0.63	0.69	4.29	1.11	-0.65	*	1.08	3.10	0.25	-0.05	*	-17.27
Sr: 1	*-1.19*	*1.49*	*1.48*	*1.29*	*1.21*	*-2.87*	*	*0.00*	*1.69*	*-2.42*	*-0.35*	*	*-34.89*
Ta: 1	0.09	-0.48	1.15	6.30	-0.09	-1.01	*	*	5.33	0.97	-1.80	*	-16.00
Tb: 1	0.10	-0.53	1.66	5.28	0.78	-0.27	*	0.84	2.18	0.78	-0.27	*	-12.03
Th: 1	0.10	-0.72	1.04	8.80	1.37	-0.42	*	0.67	4.40	1.12	-0.19	*	-16.53
Tm: 1	0.03	-0.32	1.56	5.42	0.56	-0.45	*	0.49	2.23	0.56	-0.55	*	-9.93
U: 1	-0.00	0.33	1.06	1.55	0.27	-0.21	*	0.88	2.97	0.27	0.27	*	-13.49
V: 1	*-0.03*	*0.61*	*-0.22*	*-1.06*	*2.02*	*0.03*	*	*2.26*	*0.14*	*-1.76*	*1.64*	*	*-29.43*
W: 1	*-0.02*	*-0.47*	*0.86*	*	*	*-1.00*	*	*	*1.30*	*0.86*	*	*	*-8.35*
Y: 1	0.18	-2.11	1.80	8.24	1.66	-0.93	*	1.47	3.16	-0.22	-1.08	*	-19.40
Yb: 1	0.05	-0.56	0.72	6.39	0.82	-0.37	*	1.00	2.73	0.37	-0.09	*	-13.11
Zr: 1	0.10	-2.02	1.81	11.83	2.18	-1.31	*	1.88	7.16	-0.46	-0.11	*	-27.92

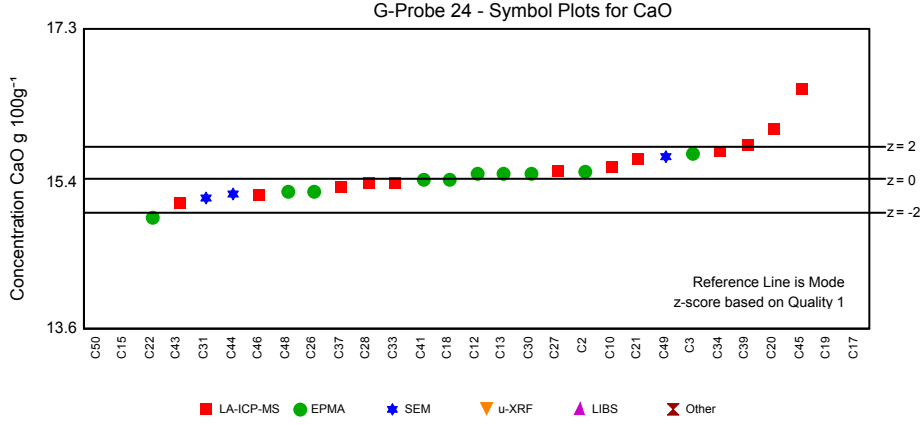

G-Probe 24 - Symbol Plots for SiO2
Concentration SiO2 g 100g⁻¹
44.1
43.0
41.2
39.4
37.6
35.8
z = 2
z = 0
z = -2
Reference Line is Mode
z-score based on Quality 1
C15 C11 C21 C43 C33 C8 C20 C34 C39 C41 C31 C12 C22 C2 C37 C19 C25 C18 C3 C10 C30 C26 C5 C13 C48 C49 C27 C44
LA-ICP-MS EPMA SEM u-XRF LIBS Other

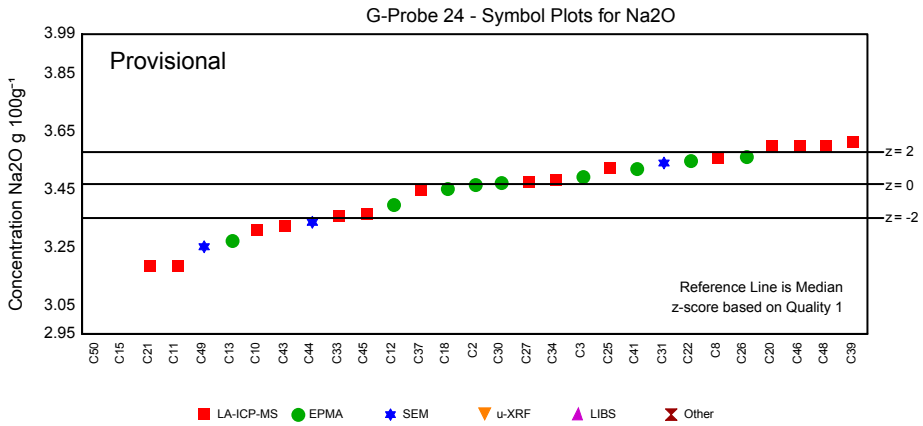

G-Probe 24 - Symbol Plots for TiO2
Concentration TiO2 g 100g⁻¹
3.59
3.40
3.20
3.00
2.80
2.64
z = 2
z = 0
z = -2
Reference Line is Median
z-score based on Quality 1
C50 C15 C11 C34 C33 C8 C37 C5 C48 C25 C49 C30 C22 C12 C31 C21 C2 C26 C41 C43 C45 C3 C27 C39 C13 C18 C10 C44 C46 C20 C38 C19
LA-ICP-MS EPMA SEM u-XRF LIBS Other

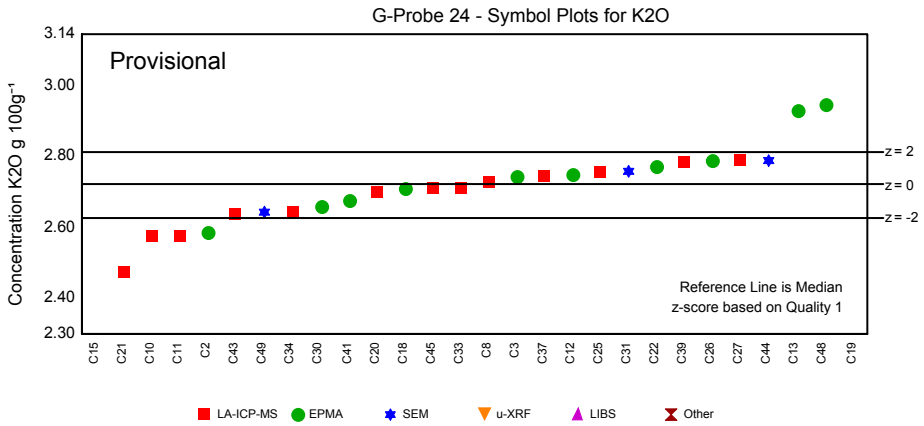

G-Probe 24 - Symbol Plots for Al2O3
Provisional
Concentration Al2O3 g 100g⁻¹
13.4
13.1
12.6
12.1
11.6
11.1
10.6
10.4
z = 2
z = 0
z = -2
Reference Line is Median
z-score based on Quality 1
C15 C19 C8 C34 C33 C44 C37 C31 C27 C26 C2 C22 C43 C48 C30 C12 C3 C25 C18 C39 C41 C20 C49 C13 C10 C38 C46 C21 C17
LA-ICP-MS EPMA SEM u-XRF LIBS Other

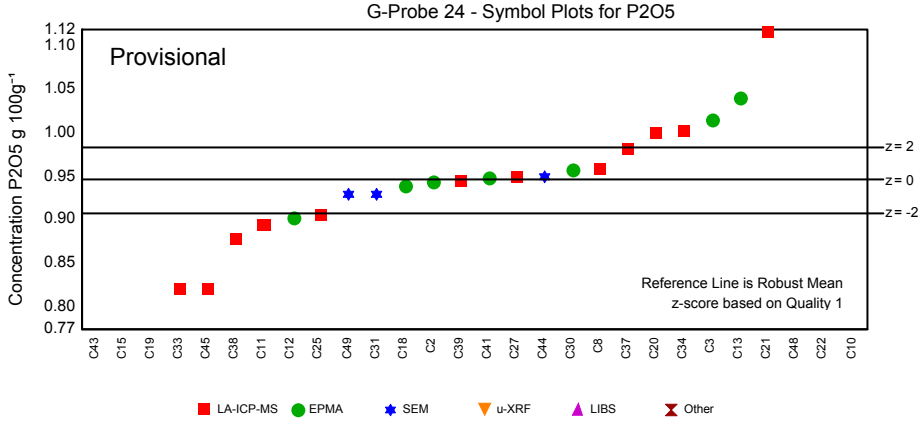

G-Probe 24 - Symbol Plots for Fe2O3T
Provisional
Concentration Fe2O3T g 100g⁻¹
13.6
13.4
12.9
12.4
11.9
11.4
10.9
10.6
z = 2
z = 0
z = -2
Reference Line is Mode
z-score based on Quality 1
C50 C46 C10 C11 C44 C49 C48 C26 C15 C18 C22 C13 C2 C31 C41 C25 C8 C30 C21 C12 C27 C3 C20 C34 C37 C33 C39 C45 C19
LA-ICP-MS EPMA SEM u-XRF LIBS Other

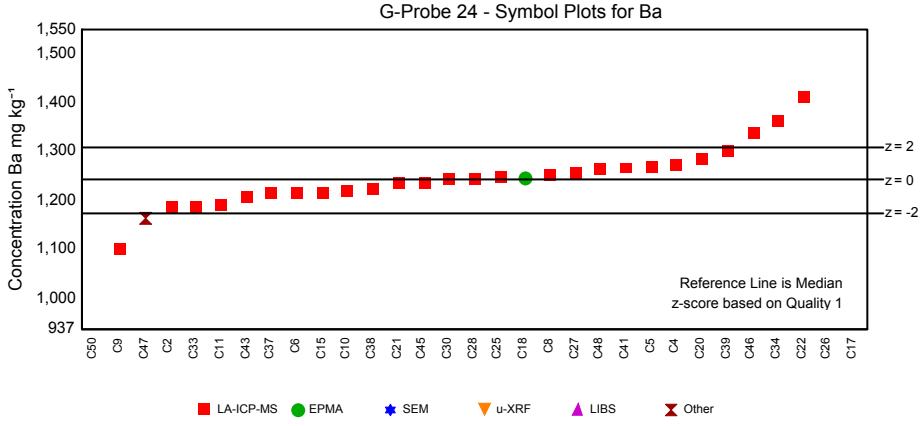

G-Probe 24 - Symbol Plots for MgO
Concentration MgO g 100g⁻¹
10.7
10.4
10.0
9.6
9.2
8.8
8.4
8.2
z = 2
z = 0
z = -2
Reference Line is Median
z-score based on Quality 1
C15 C19 C46 C22 C33 C39 C10 C30 C49 C3 C31 C2 C44 C8 C41 C18 C12 C48 C45 C26 C37 C25 C20 C11 C21 C27 C13 C43 C34 C17
LA-ICP-MS EPMA SEM u-XRF LIBS Other

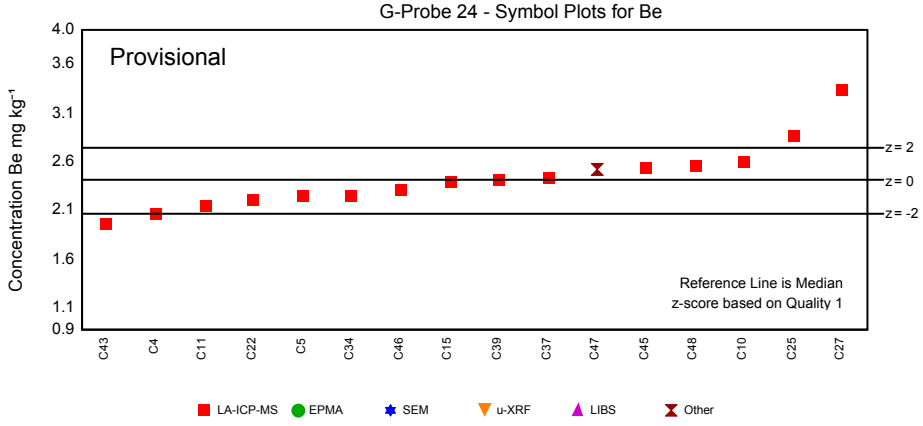

G-Probe 24 - Symbol Plots for CaO
Concentration CaO g 100g⁻¹
17.3
15.4
13.6
z = 2
z = 0
z = -2
Reference Line is Mode
z-score based on Quality 1
C50 C15 C22 C43 C31 C44 C46 C48 C26 C37 C28 C33 C41 C18 C12 C13 C30 C27 C2 C10 C21 C49 C3 C34 C39 C20 C45 C19 C17
LA-ICP-MS EPMA SEM u-XRF LIBS Other

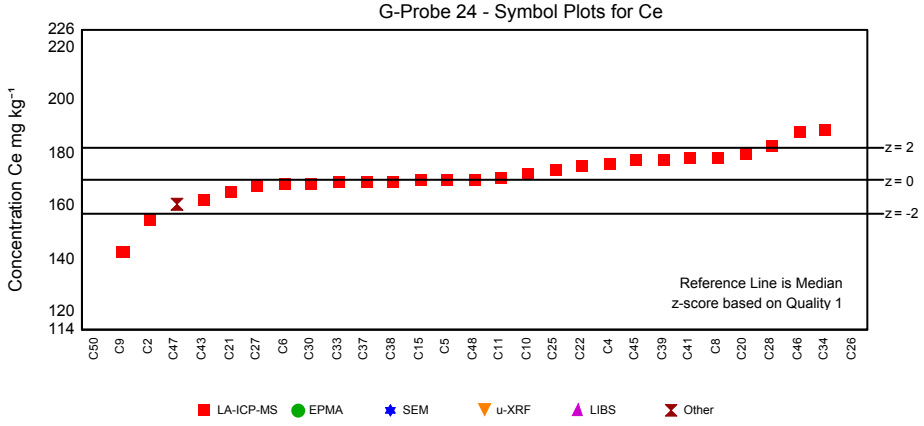

G-Probe 24 - Symbol Plots for Na2O
Provisional
Concentration Na2O g 100g⁻¹
3.99
3.85
3.65
3.45
3.25
3.05
2.95
z = 2
z = 0
z = -2
Reference Line is Median
z-score based on Quality 1
C50 C15 C21 C11 C49 C13 C10 C43 C44 C33 C45 C12 C37 C18 C2 C30 C27 C34 C3 C25 C41 C31 C22 C8 C26 C20 C46 C48 C39
LA-ICP-MS EPMA SEM u-XRF LIBS Other

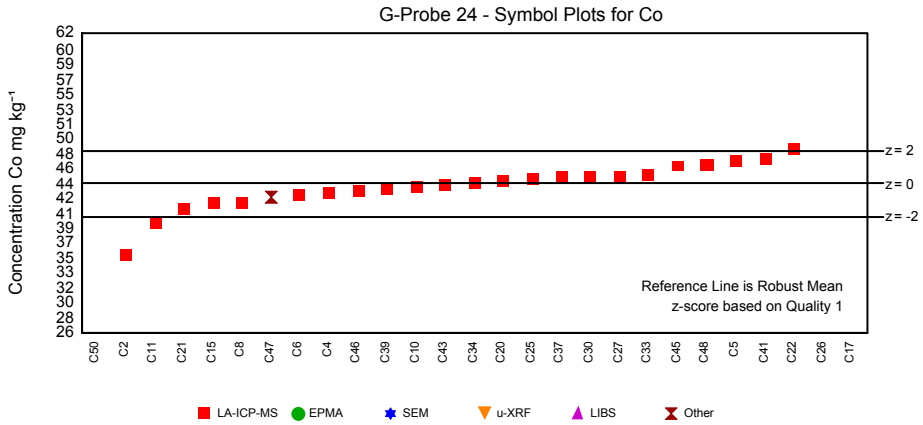

G-Probe 24 - Symbol Plots for K2O
Provisional
Concentration K2O g 100g⁻¹
3.14
3.00
2.80
2.60
2.40
2.30
z = 2
z = 0
z = -2
Reference Line is Median
z-score based on Quality 1
C15 C21 C10 C11 C2 C43 C49 C34 C30 C41 C20 C18 C45 C33 C8 C3 C37 C12 C25 C31 C22 C39 C26 C27 C44 C13 C48 C19
LA-ICP-MS EPMA SEM u-XRF LIBS Other

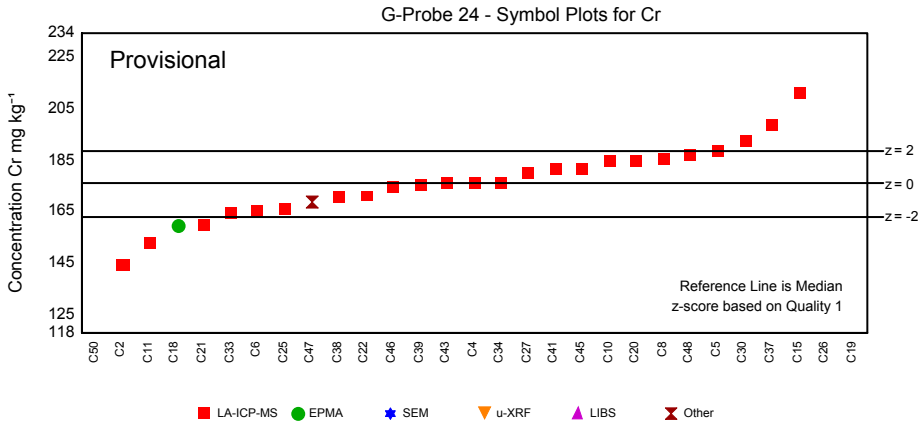

G-Probe 24 - Symbol Plots for P2O5
Provisional
Concentration P2O5 g 100g⁻¹
1.12
1.10
1.05
1.00
0.95
0.90
0.85
0.80
0.77
z = 2
z = 0
z = -2
Reference Line is Robust Mean
z-score based on Quality 1
C43 C15 C19 C33 C45 C38 C11 C12 C25 C49 C31 C18 C2 C39 C41 C27 C44 C30 C8 C37 C20 C34 C3 C13 C21 C48 C22 C10
LA-ICP-MS EPMA SEM u-XRF LIBS Other

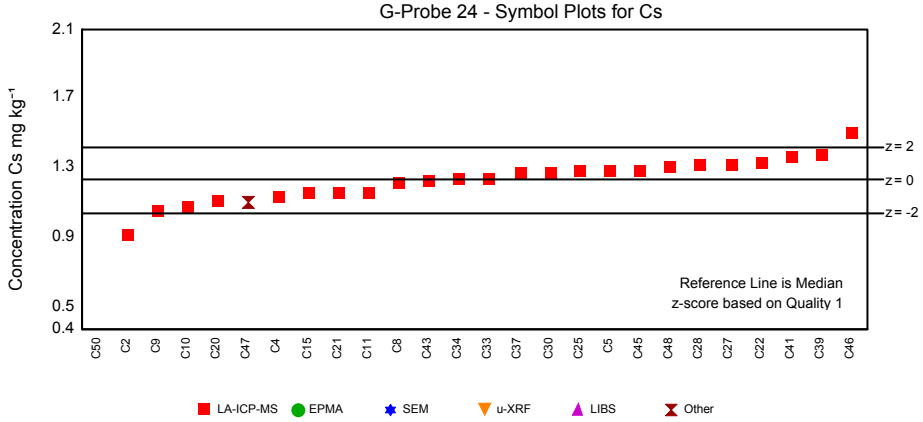

G-Probe 24 - Symbol Plots for Ba
Concentration Ba mg kg⁻¹
1,550
1,500
1,400
1,300
1,200
1,100
1,000
937
z = 2
z = 0
z = -2
Reference Line is Median
z-score based on Quality 1
C50 C9 C47 C2 C33 C11 C43 C37 C6 C15 C10 C38 C21 C45 C30 C28 C25 C18 C8 C27 C48 C41 C5 C4 C20 C39 C46 C34 C22 C26 C17
LA-ICP-MS EPMA SEM u-XRF LIBS Other

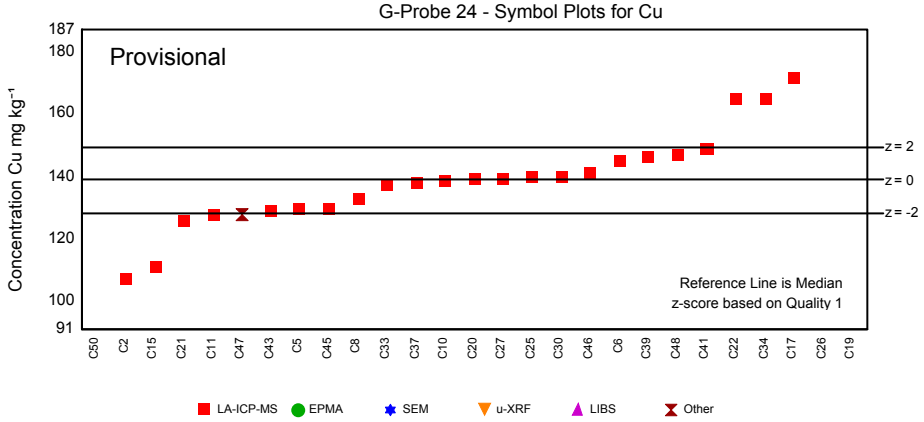

G-Probe 24 - Symbol Plots for Be
Provisional
Concentration Be mg kg⁻¹
4.0
3.6
3.1
2.6
2.1
1.6
1.1
0.9
z = 2
z = 0
z = -2
Reference Line is Median
z-score based on Quality 1
C43 C4 C11 C22 C5 C34 C46 C15 C39 C37 C47 C45 C48 C10 C25 C27
LA-ICP-MS EPMA SEM u-XRF LIBS Other

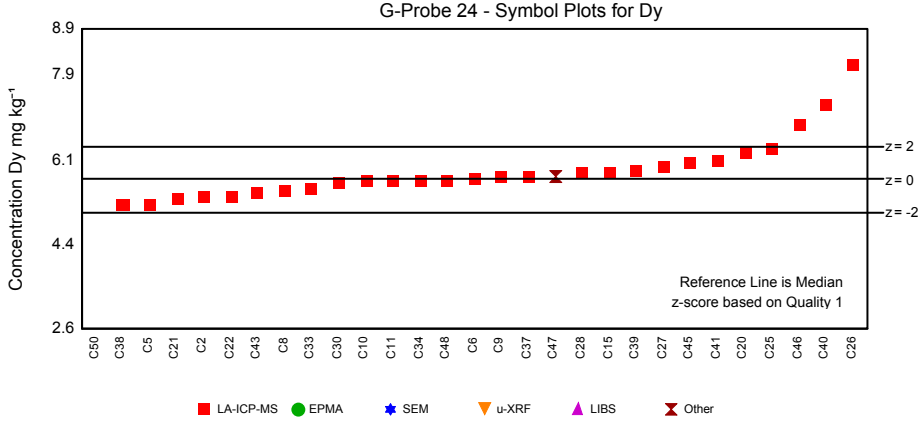

G-Probe 24 - Symbol Plots for Ce
Concentration Ce mg kg⁻¹
226
220
200
180
160
140
120
114
z = 2
z = 0
z = -2
Reference Line is Median
z-score based on Quality 1
C50 C9 C2 C47 C43 C21 C27 C6 C30 C33 C37 C38 C15 C5 C48 C11 C10 C25 C22 C4 C45 C39 C41 C8 C20 C28 C46 C34 C26
LA-ICP-MS EPMA SEM u-XRF LIBS Other

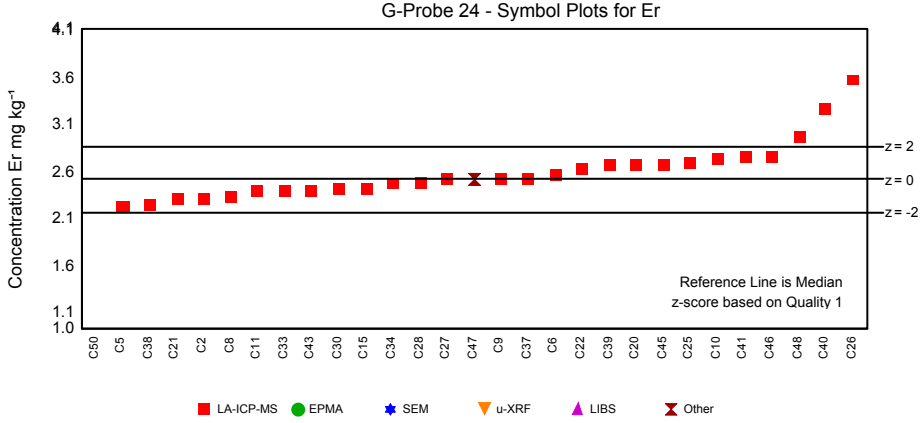

G-Probe 24 - Symbol Plots for Co
Concentration Co mg kg⁻¹
62
60
59
57
55
53
51
50
48
46
44
42
41
39
37
35
33
32
30
28
26
z = 2
z = 0
z = -2
Reference Line is Robust Mean
z-score based on Quality 1
C50 C2 C11 C21 C15 C8 C47 C6 C4 C46 C39 C10 C43 C34 C20 C25 C37 C30 C27 C33 C45 C48 C5 C41 C22 C26 C17
LA-ICP-MS EPMA SEM u-XRF LIBS Other

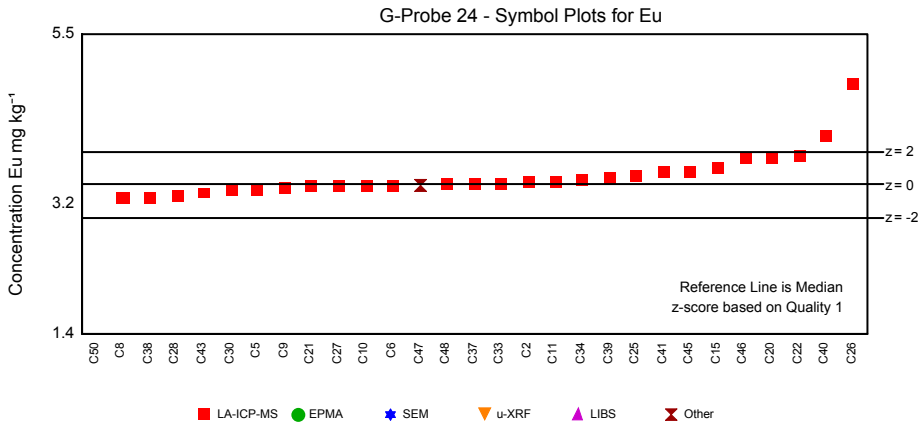

G-Probe 24 - Symbol Plots for Cr
Concentration Cr mg kg⁻¹
Provisional
234
225
205
185
165
145
125
118
z = 2
z = 0
z = -2
Reference Line is Median
z-score based on Quality 1
C50 C2 C11 C18 C21 C33 C6 C25 C47 C38 C22 C46 C39 C43 C4 C34 C27 C41 C45 C10 C20 C8 C48 C5 C30 C37 C15 C26 C19
LA-ICP-MS EPMA SEM u-XRF LIBS Other

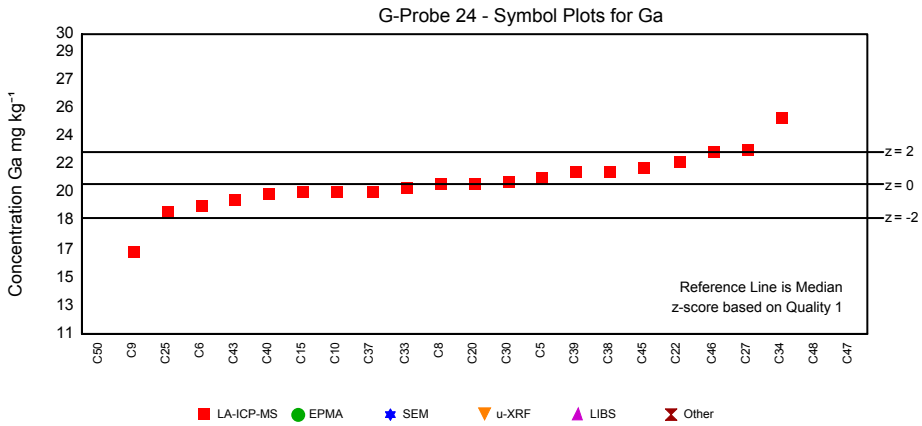

G-Probe 24 - Symbol Plots for Cs
Concentration Cs mg kg⁻¹
2.1
1.7
1.3
0.9
0.5
0.4
z = 2
z = 0
z = -2
Reference Line is Median
z-score based on Quality 1
C50 C2 C9 C10 C20 C47 C4 C15 C21 C11 C8 C43 C34 C33 C37 C30 C25 C5 C45 C48 C28 C27 C22 C41 C39 C46
LA-ICP-MS EPMA SEM u-XRF LIBS Other

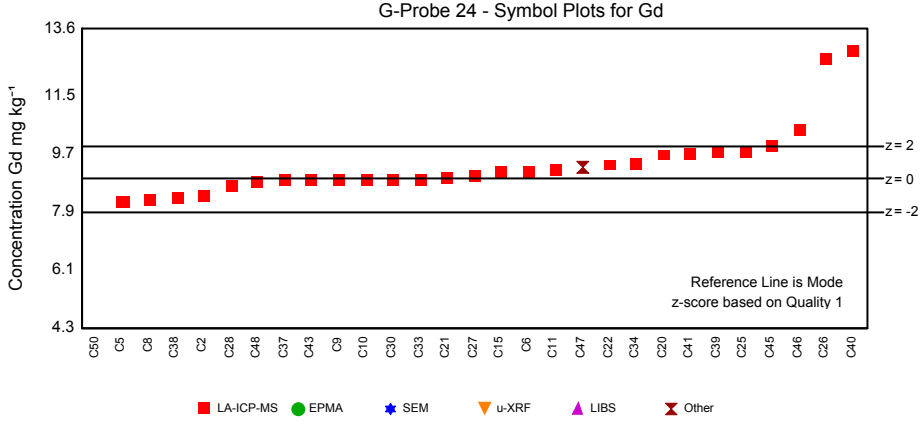

G-Probe 24 - Symbol Plots for Cu
Concentration Cu mg kg⁻¹
Provisional
187
180
160
140
120
100
91
z = 2
z = 0
z = -2
Reference Line is Median
z-score based on Quality 1
C50 C2 C15 C21 C11 C47 C43 C5 C45 C8 C33 C37 C10 C20 C27 C25 C30 C46 C6 C39 C48 C41 C22 C34 C17 C26 C19
LA-ICP-MS EPMA SEM u-XRF LIBS Other

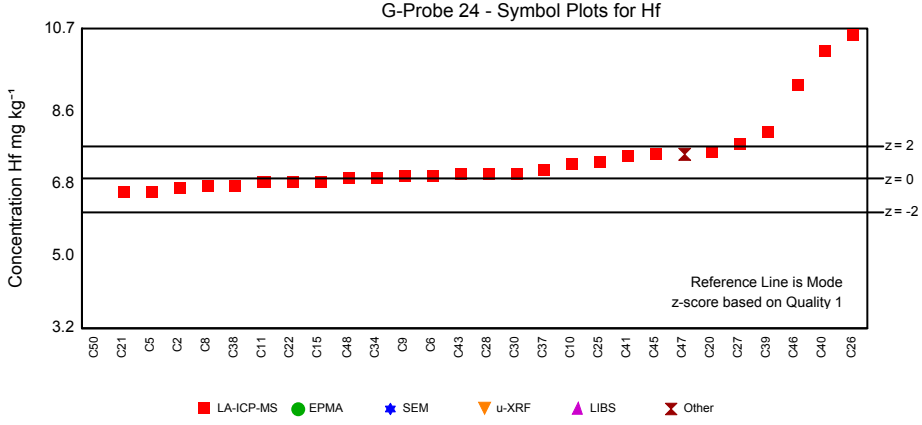

G-Probe 24 - Symbol Plots for Dy
Concentration Dy mg kg⁻¹
8.9
7.9
6.1
4.4
2.6
z = 2
z = 0
z = -2
Reference Line is Median
z-score based on Quality 1
C50 C38 C5 C21 C2 C22 C43 C8 C33 C30 C10 C11 C34 C48 C6 C9 C37 C47 C28 C15 C39 C27 C45 C41 C20 C25 C46 C40 C26
LA-ICP-MS EPMA SEM u-XRF LIBS Other

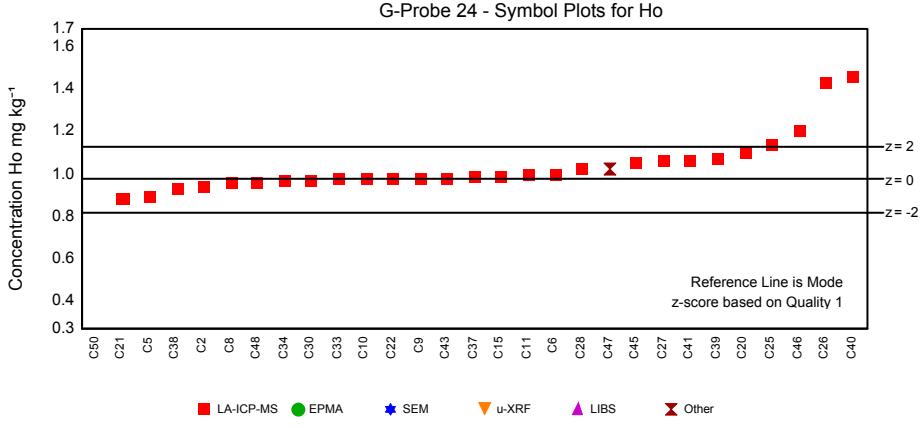

G-Probe 24 - Symbol Plots for Er
Concentration Er mg kg⁻¹
4.1
3.6
3.1
2.6
2.1
1.6
1.1
1.0
z = 2
z = 0
z = -2
Reference Line is Median
z-score based on Quality 1
C50 C5 C38 C21 C2 C8 C11 C33 C43 C30 C15 C34 C28 C27 C47 C9 C37 C6 C22 C39 C20 C45 C25 C10 C41 C46 C48 C40 C26
LA-ICP-MS EPMA SEM u-XRF LIBS Other

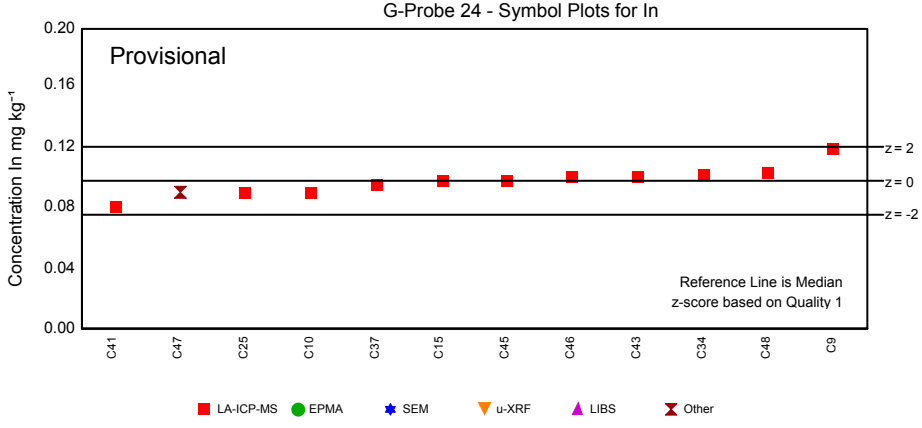

G-Probe 24 - Symbol Plots for Eu
Concentration Eu mg kg⁻¹
5.5
3.2
1.4
z = 2
z = 0
z = -2
Reference Line is Median
z-score based on Quality 1
C50 C8 C38 C28 C43 C30 C5 C9 C21 C27 C10 C6 C47 C48 C37 C33 C2 C11 C34 C39 C25 C41 C45 C15 C46 C20 C22 C40 C26
LA-ICP-MS EPMA SEM u-XRF LIBS Other

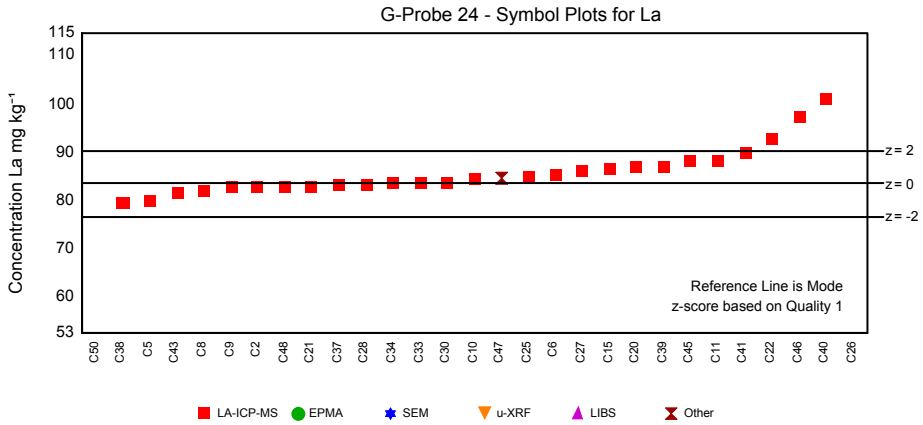

G-Probe 24 - Symbol Plots for Ga
Concentration Ga mg kg⁻¹
30 29 27 26 24 22 20 18 17 15 13 11
z = 2
z = 0
z = -2
Reference Line is Median
z-score based on Quality 1
C50 C9 C25 C6 C43 C40 C15 C10 C37 C33 C8 C20 C30 C5 C39 C38 C45 C22 C46 C27 C34 C48 C47
LA-ICP-MS EPMA SEM u-XRF LIBS Other

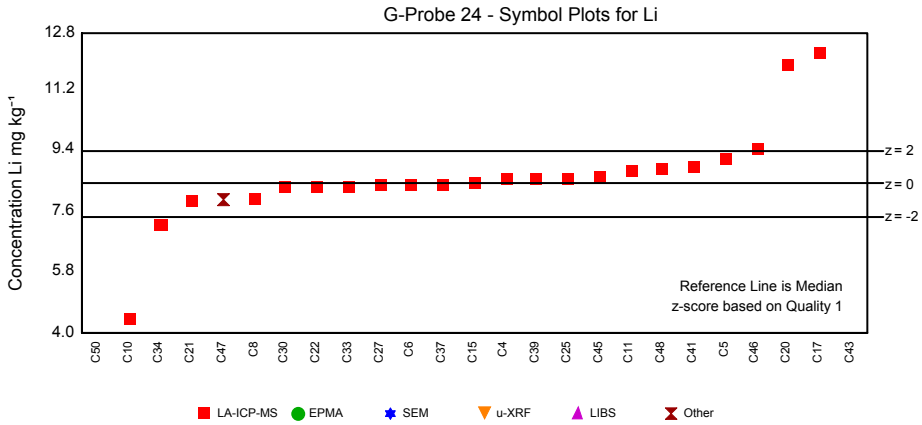

G-Probe 24 - Symbol Plots for Gd
Concentration Gd mg kg⁻¹
13.6
11.5
9.7
7.9
6.1
4.3
z = 2
z = 0
z = -2
Reference Line is Mode
z-score based on Quality 1
C50 C5 C8 C38 C2 C28 C48 C37 C43 C9 C10 C30 C33 C21 C27 C15 C6 C11 C47 C22 C34 C20 C41 C39 C25 C45 C46 C26 C40
LA-ICP-MS EPMA SEM u-XRF LIBS Other

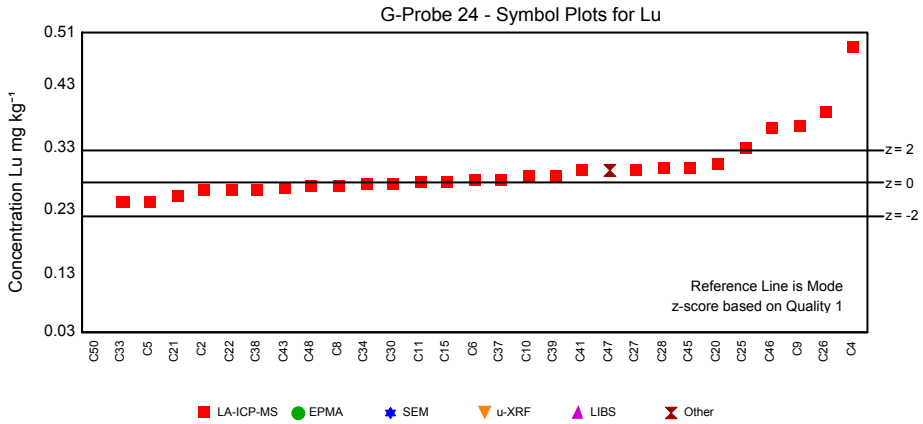

G-Probe 24 - Symbol Plots for Hf
Concentration Hf mg kg⁻¹
10.7
8.6
6.8
5.0
3.2
z = 2
z = 0
z = -2
Reference Line is Mode
z-score based on Quality 1
C50 C21 C5 C2 C8 C38 C11 C22 C15 C48 C34 C9 C6 C43 C28 C30 C37 C10 C25 C41 C45 C47 C20 C27 C39 C46 C40 C26
LA-ICP-MS EPMA SEM u-XRF LIBS Other

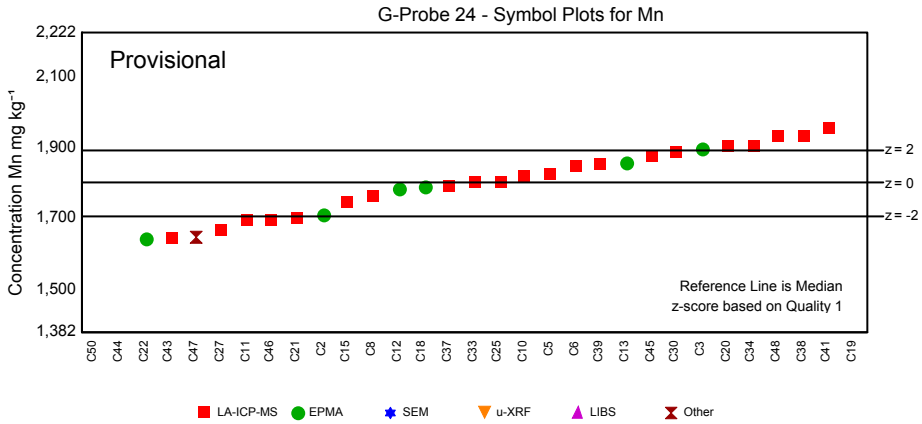

G-Probe 24 - Symbol Plots for Ho
Concentration Ho mg kg⁻¹
1.7
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.3
z = 2
z = 0
z = -2
Reference Line is Mode
z-score based on Quality 1
C50 C21 C5 C38 C2 C8 C48 C34 C30 C33 C10 C22 C9 C43 C37 C15 C11 C6 C28 C47 C45 C27 C41 C39 C20 C25 C46 C26 C40
LA-ICP-MS EPMA SEM u-XRF LIBS Other

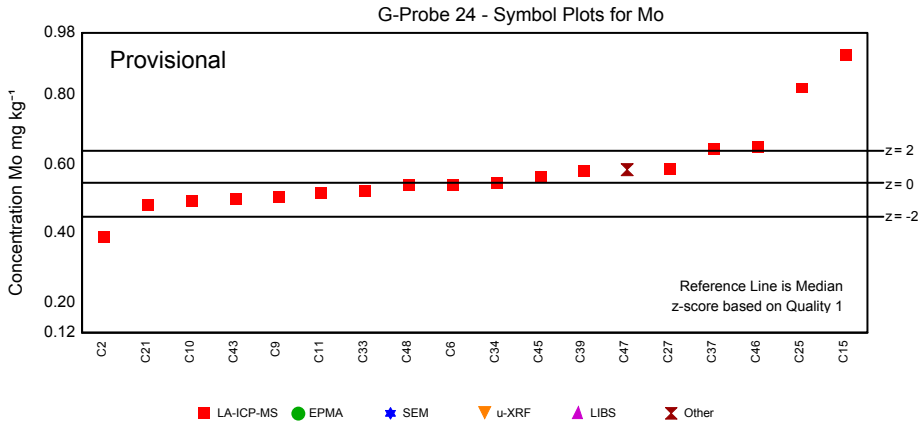

G-Probe 24 - Symbol Plots for In
Provisional
Concentration In mg kg⁻¹
0.20
0.16
0.12
0.08
0.04
0.00
z = 2
z = 0
z = -2
Reference Line is Median
z-score based on Quality 1
C41 C47 C25 C10 C37 C15 C45 C46 C43 C34 C48 C9
LA-ICP-MS EPMA SEM u-XRF LIBS Other

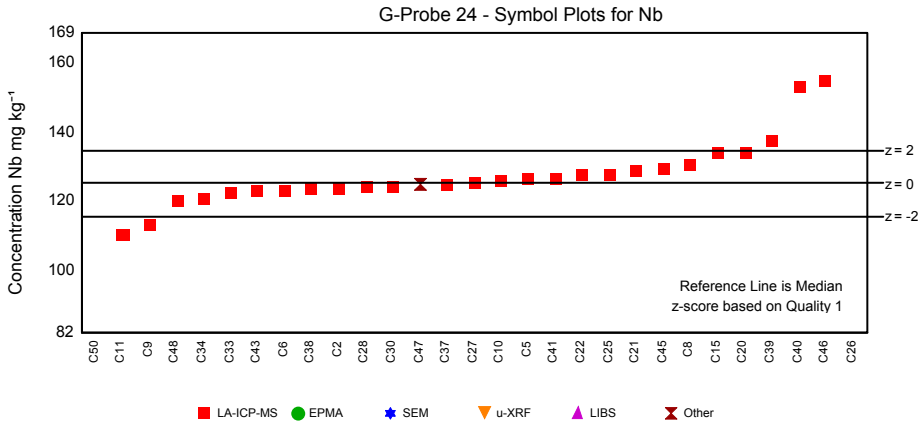

G-Probe 24 - Symbol Plots for La
Concentration La mg kg⁻¹
115
110
100
90
80
70
60
53
z = 2
z = 0
z = -2
Reference Line is Mode
z-score based on Quality 1
C50 C38 C5 C43 C8 C9 C2 C48 C21 C37 C28 C34 C33 C30 C10 C47 C25 C6 C27 C15 C20 C39 C45 C11 C41 C22 C46 C40 C26
LA-ICP-MS EPMA SEM u-XRF LIBS Other

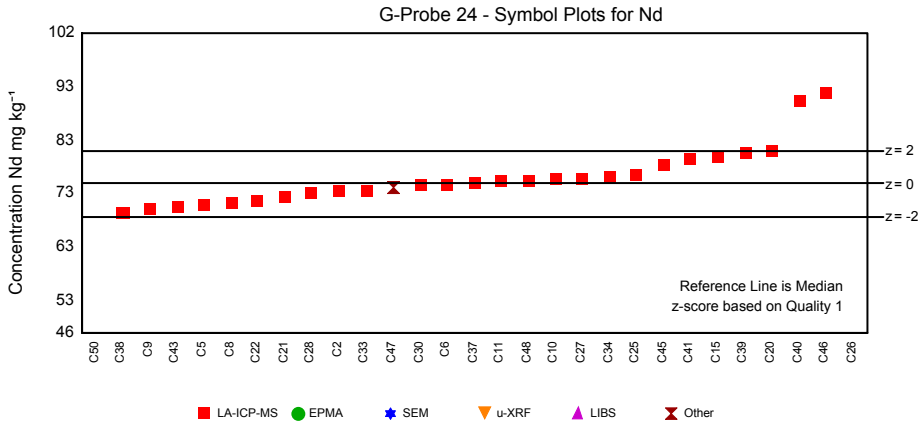

G-Probe 24 - Symbol Plots for Li
Concentration Li mg kg⁻¹
12.8
11.2
9.4
7.6
5.8
4.0
z = 2
z = 0
z = -2
Reference Line is Median
z-score based on Quality 1
C50 C10 C34 C21 C47 C8 C30 C22 C33 C27 C6 C37 C15 C4 C39 C25 C45 C11 C48 C41 C5 C46 C20 C17 C43
LA-ICP-MS EPMA SEM u-XRF LIBS Other

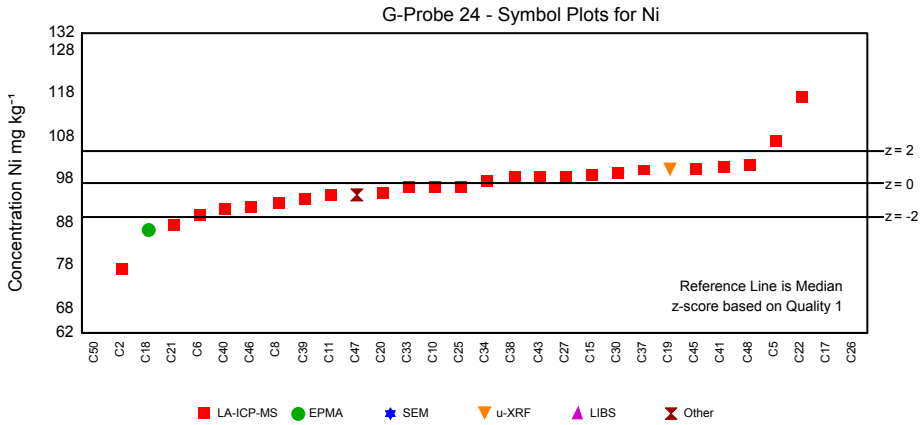

G-Probe 24 - Symbol Plots for Lu
Concentration Lu mg kg⁻¹
0.51
0.43
0.33
0.23
0.13
0.03
z = 2
z = 0
z = -2
Reference Line is Mode
z-score based on Quality 1
C50 C33 C5 C21 C2 C22 C38 C43 C48 C8 C34 C30 C11 C15 C6 C37 C10 C39 C41 C47 C27 C28 C45 C20 C25 C46 C9 C26 C4
LA-ICP-MS EPMA SEM u-XRF LIBS Other

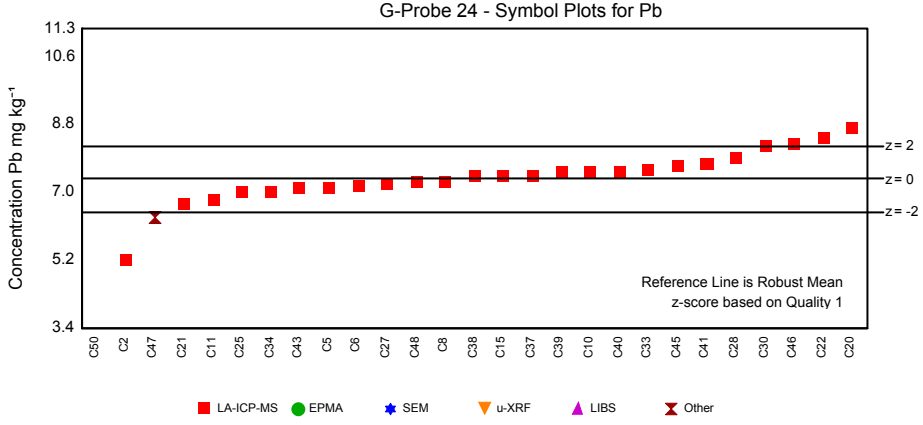

G-Probe 24 - Symbol Plots for Mn
Provisional
Concentration Mn mg kg⁻¹
2,222
2,100
1,900
1,700
1,500
1,382
z = 2
z = 0
z = -2
Reference Line is Median
z-score based on Quality 1
C50 C44 C22 C43 C47 C27 C11 C46 C21 C2 C15 C8 C12 C18 C37 C33 C25 C10 C5 C6 C39 C13 C45 C30 C3 C20 C34 C48 C38 C41 C19
LA-ICP-MS EPMA SEM u-XRF LIBS Other

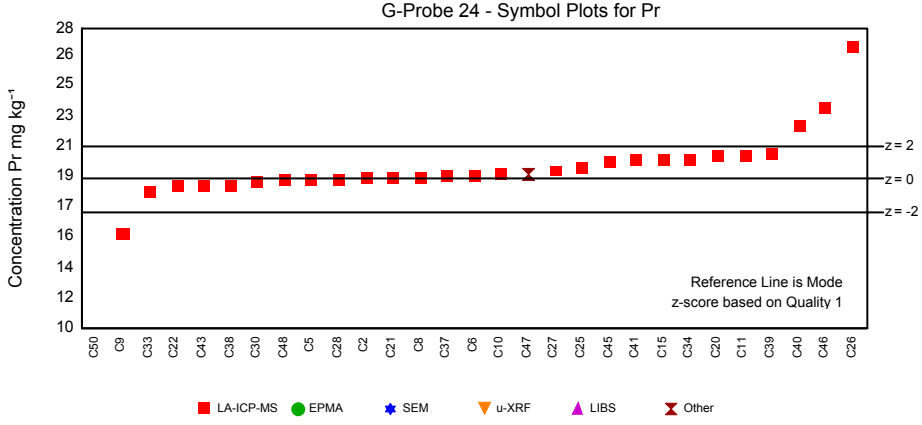

G-Probe 24 - Symbol Plots for Mo
Provisional
Concentration Mo mg kg⁻¹
0.98
0.80
0.60
0.40
0.20
0.12
z = 2
z = 0
z = -2
Reference Line is Median
z-score based on Quality 1
C2 C21 C10 C43 C9 C11 C33 C48 C6 C34 C45 C39 C47 C27 C37 C46 C25 C15
LA-ICP-MS EPMA SEM u-XRF LIBS Other

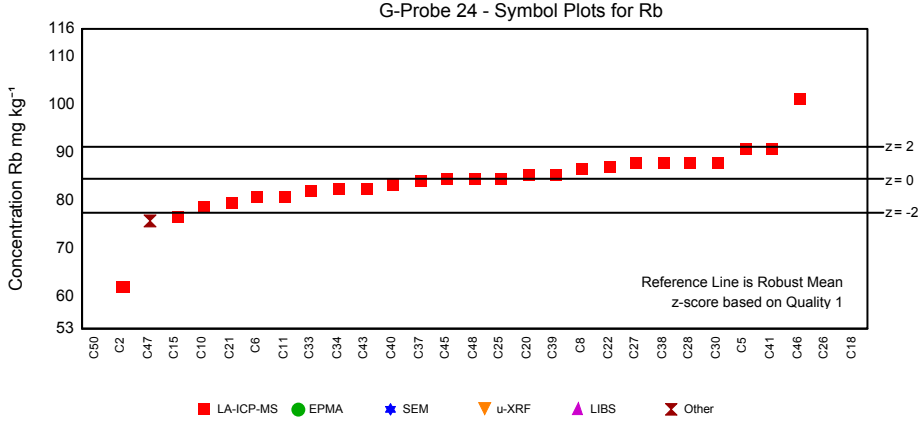

G-Probe 24 - Symbol Plots for Nb
Concentration Nb mg kg⁻¹
169
160
140
120
100
82
z = 2
z = 0
z = -2
Reference Line is Median
z-score based on Quality 1
C50 C11 C9 C48 C34 C33 C43 C6 C38 C2 C28 C30 C47 C37 C27 C10 C5 C41 C22 C25 C21 C45 C8 C15 C20 C39 C40 C46 C26
LA-ICP-MS EPMA SEM u-XRF LIBS Other

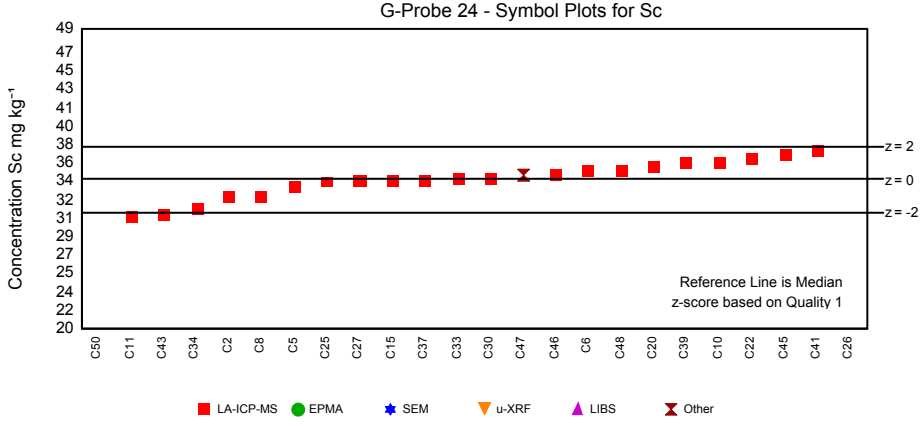

G-Probe 24 - Symbol Plots for Nd
Concentration Nd mg kg⁻¹
102
93
83
73
63
53
46
z = 2
z = 0
z = -2
Reference Line is Median
z-score based on Quality 1
C50 C38 C9 C43 C5 C8 C22 C21 C28 C2 C33 C47 C30 C6 C37 C11 C48 C10 C27 C34 C25 C45 C41 C15 C39 C20 C40 C46 C26
LA-ICP-MS EPMA SEM u-XRF LIBS Other

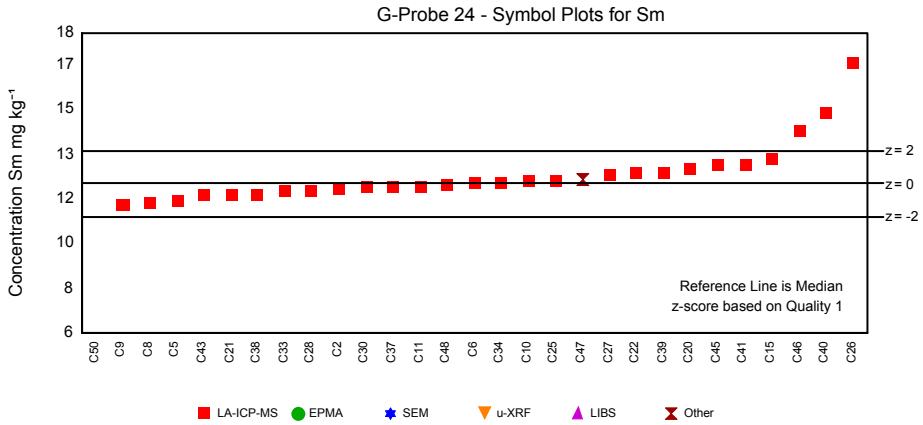

G-Probe 24 - Symbol Plots for Ni
Concentration Ni mg kg⁻¹
132
128
118
108
98
88
78
68
62
z = 2
z = 0
z = -2
Reference Line is Median
z-score based on Quality 1
C50 C2 C18 C21 C6 C40 C46 C8 C39 C11 C47 C20 C33 C10 C25 C34 C38 C43 C27 C15 C30 C37 C19 C45 C41 C48 C5 C22 C17 C26
LA-ICP-MS EPMA SEM u-XRF LIBS Other

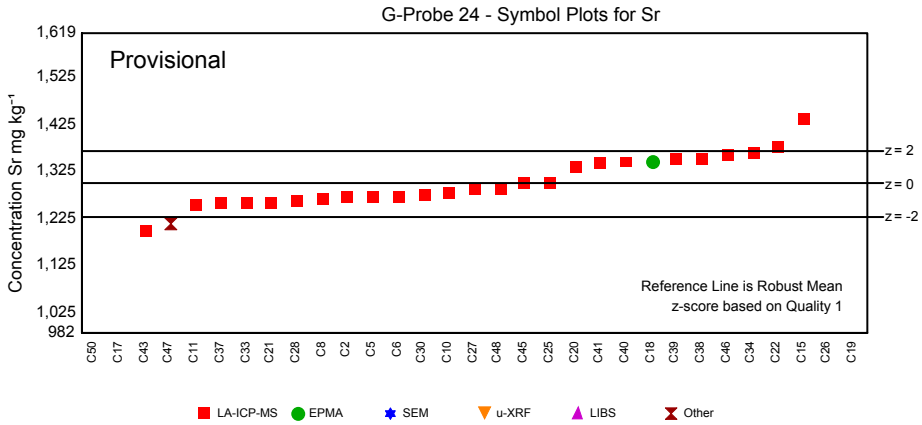

G-Probe 24 - Symbol Plots for Pb
Concentration Pb mg kg⁻¹
11.3
10.6
8.8
7.0
5.2
3.4
z = 2
z = 0
z = -2
Reference Line is Robust Mean
z-score based on Quality 1
C50 C2 C47 C21 C11 C25 C34 C43 C5 C6 C27 C48 C8 C38 C15 C37 C39 C10 C40 C33 C45 C41 C28 C30 C46 C22 C20
LA-ICP-MS EPMA SEM u-XRF LIBS Other

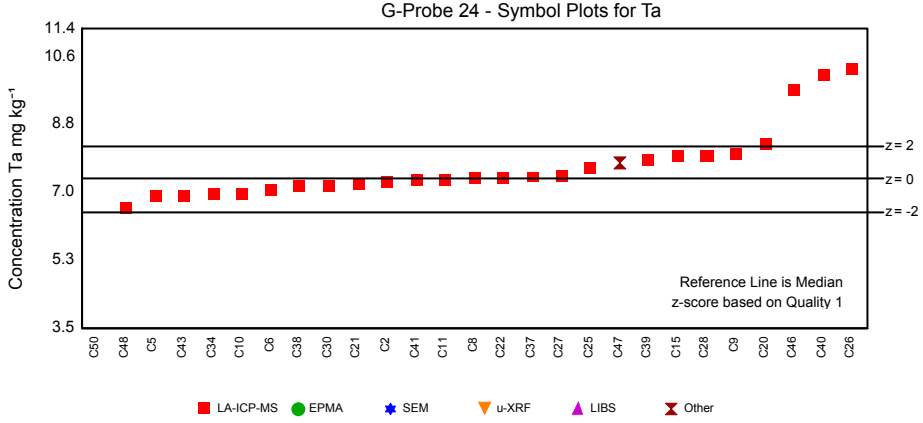

G-Probe 24 - Symbol Plots for Pr
Concentration Pr mg kg⁻¹
28
26
25
23
21
19
17
16
14
12
10
z = 2
z = 0
z = -2
Reference Line is Mode
z-score based on Quality 1
C50 C9 C33 C22 C43 C38 C30 C48 C5 C28 C2 C21 C8 C37 C6 C10 C47 C27 C25 C45 C41 C15 C34 C20 C11 C39 C40 C46 C26
LA-ICP-MS EPMA SEM u-XRF LIBS Other

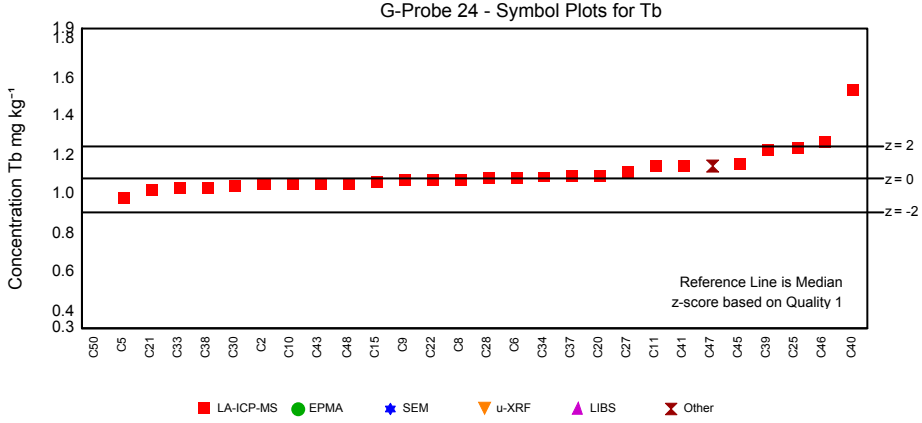

G-Probe 24 - Symbol Plots for Rb
Concentration Rb mg kg⁻¹
116
110
100
90
80
70
60
53
z = 2
z = 0
z = -2
Reference Line is Robust Mean
z-score based on Quality 1
C50 C2 C47 C15 C10 C21 C6 C11 C33 C34 C43 C40 C37 C45 C48 C25 C20 C39 C8 C22 C27 C38 C28 C30 C5 C41 C46 C26 C18
LA-ICP-MS EPMA SEM u-XRF LIBS Other

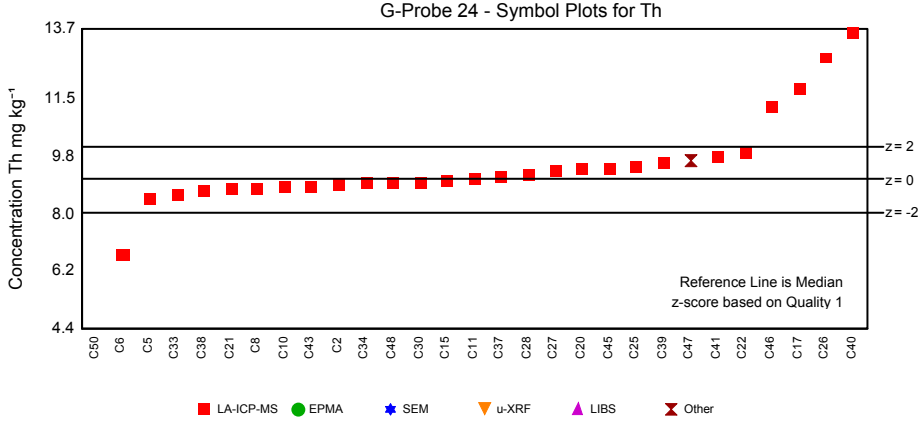

G-Probe 24 - Symbol Plots for Sc
Concentration Sc mg kg⁻¹
49
47
45
43
41
40
38
36
34
32
31
29
27
25
24
22
20
z = 2
z = 0
z = -2
Reference Line is Median
z-score based on Quality 1
C50 C11 C43 C34 C2 C8 C5 C25 C27 C15 C37 C33 C30 C47 C46 C6 C48 C20 C39 C10 C22 C45 C41 C26
LA-ICP-MS EPMA SEM u-XRF LIBS Other

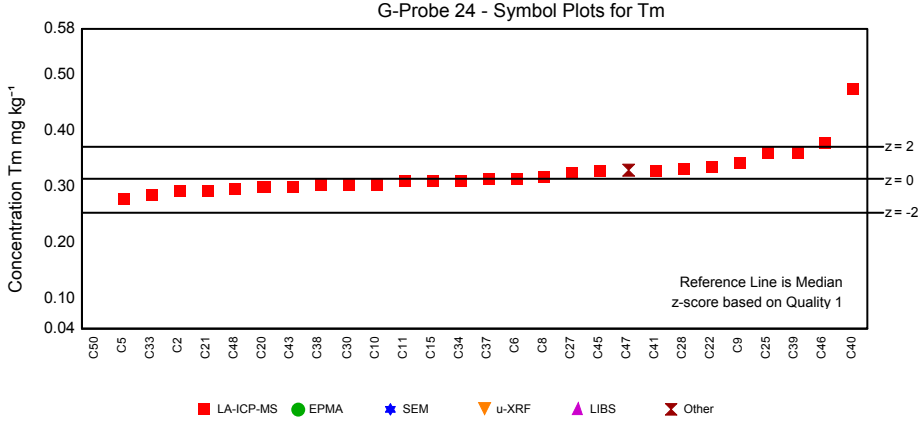

G-Probe 24 - Symbol Plots for Sm
Concentration Sm mg kg⁻¹
18
17
15
13
12
10
8
6
z = 2
z = 0
z = -2
Reference Line is Median
z-score based on Quality 1
C50 C9 C8 C5 C43 C21 C38 C33 C28 C2 C30 C37 C11 C48 C6 C34 C10 C25 C47 C27 C22 C39 C20 C45 C41 C15 C46 C40 C26
LA-ICP-MS EPMA SEM u-XRF LIBS Other

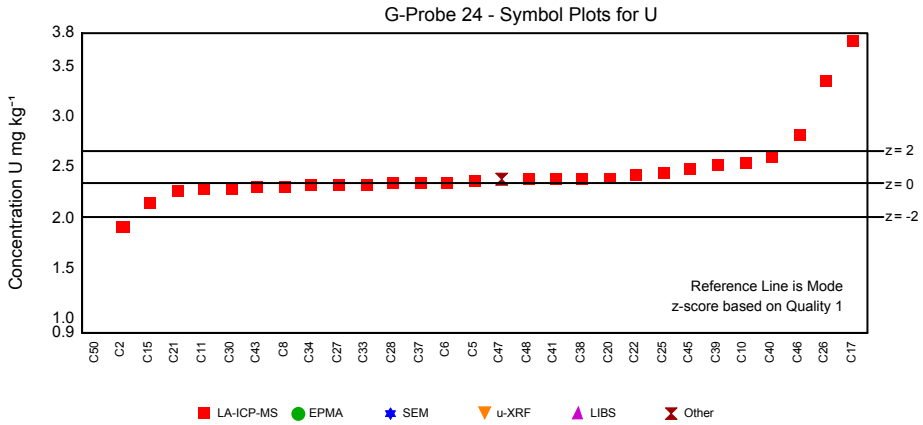

G-Probe 24 - Symbol Plots for Sr
Provisional
Concentration Sr mg kg⁻¹
1,619
1,525
1,425
1,325
1,225
1,125
1,025
982
z = 2
z = 0
z = -2
Reference Line is Robust Mean
z-score based on Quality 1
C50 C17 C43 C47 C11 C37 C33 C21 C28 C8 C2 C5 C6 C30 C10 C27 C48 C45 C25 C20 C41 C40 C18 C39 C38 C46 C34 C22 C15 C26 C19
LA-ICP-MS EPMA SEM u-XRF LIBS Other

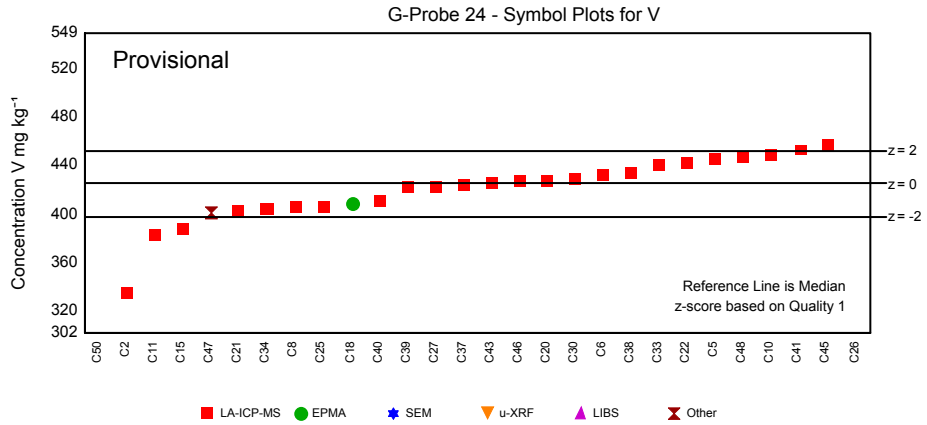

G-Probe 24 - Symbol Plots for Ta
Concentration Ta mg kg⁻¹
11.4
10.6
8.8
7.0
5.3
3.5
z = 2
z = 0
z = -2
Reference Line is Median
z-score based on Quality 1
C50 C48 C5 C43 C34 C10 C6 C38 C30 C21 C2 C41 C11 C8 C22 C37 C27 C25 C47 C39 C15 C28 C9 C20 C46 C40 C26
LA-ICP-MS EPMA SEM u-XRF LIBS Other

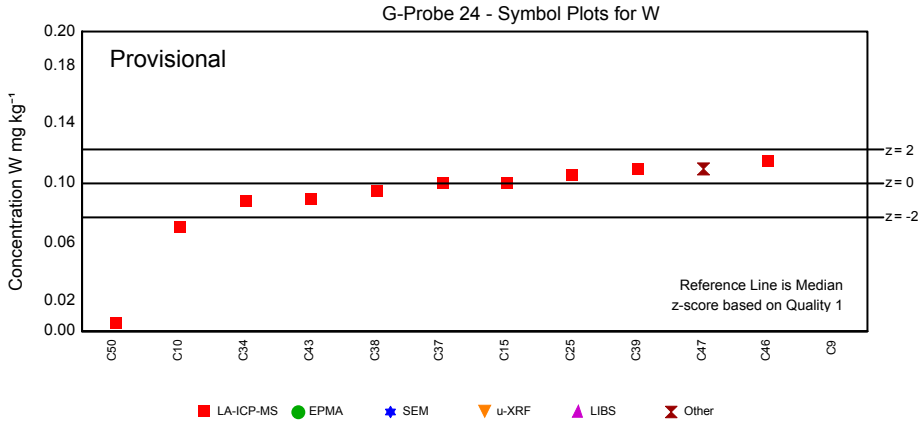

G-Probe 24 - Symbol Plots for Tb
Concentration Tb mg kg⁻¹
1.9
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.3
z = 2
z = 0
z = -2
Reference Line is Median
z-score based on Quality 1
C50 C5 C21 C33 C38 C30 C2 C10 C43 C48 C15 C9 C22 C8 C28 C6 C34 C37 C20 C27 C11 C41 C47 C45 C39 C25 C46 C40
LA-ICP-MS EPMA SEM u-XRF LIBS Other

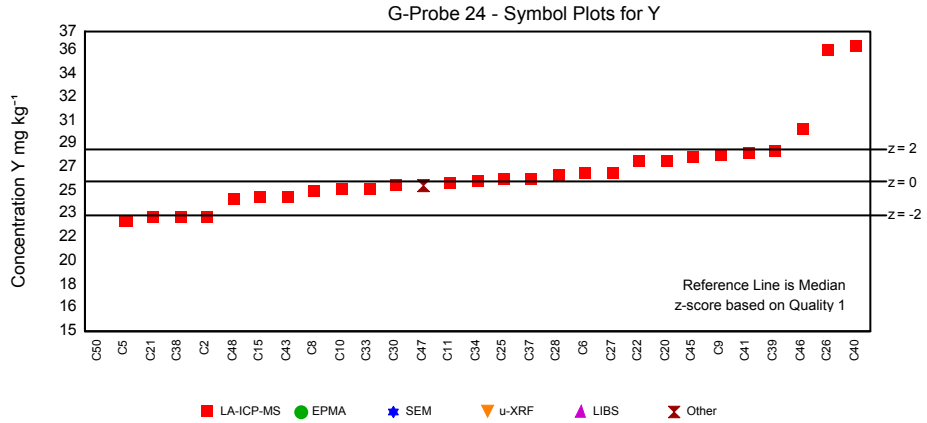

G-Probe 24 - Symbol Plots for Th
Concentration Th mg kg⁻¹
13.7
11.5
9.8
8.0
6.2
4.4
z = 2
z = 0
z = -2
Reference Line is Median
z-score based on Quality 1
C50 C6 C5 C33 C38 C21 C8 C10 C43 C2 C34 C48 C30 C15 C11 C37 C28 C27 C20 C45 C25 C39 C47 C41 C22 C46 C17 C26 C40
LA-ICP-MS EPMA SEM u-XRF LIBS Other

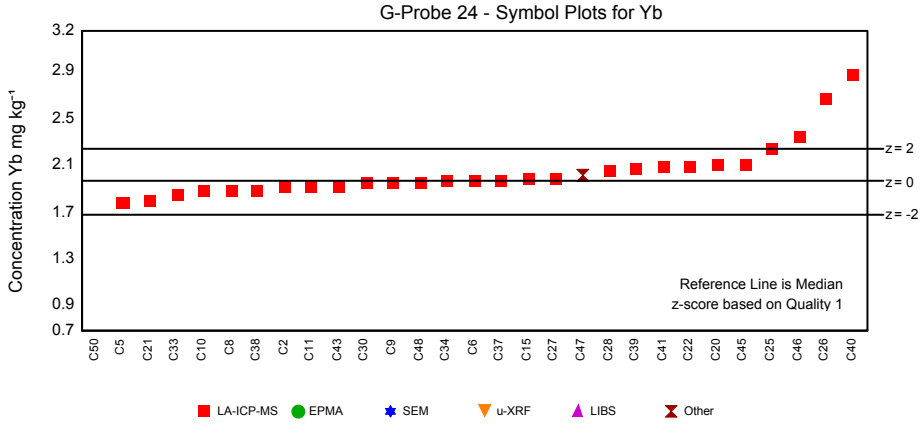

G-Probe 24 - Symbol Plots for Tm
Concentration Tm mg kg⁻¹
0.58
0.50
0.40
0.30
0.20
0.10
0.04
z = 2
z = 0
z = -2
Reference Line is Median
z-score based on Quality 1
C50 C5 C33 C2 C21 C48 C20 C43 C38 C30 C10 C11 C15 C34 C37 C6 C8 C27 C45 C47 C41 C28 C22 C9 C25 C39 C46 C40
LA-ICP-MS EPMA SEM u-XRF LIBS Other











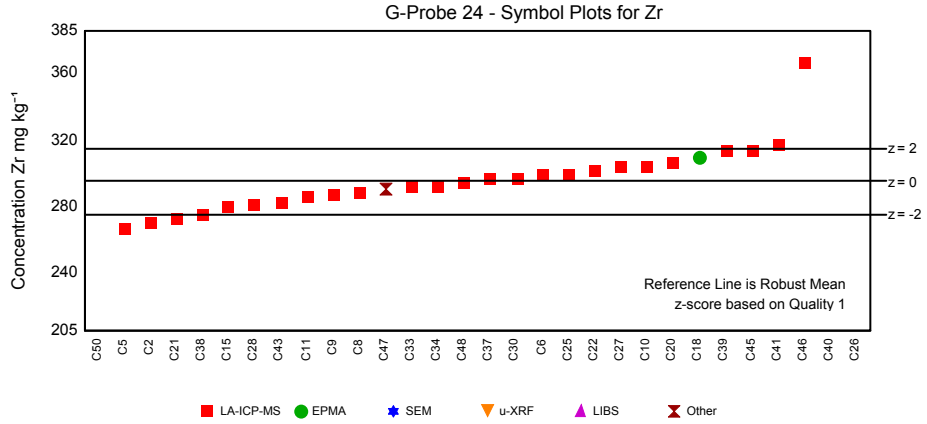
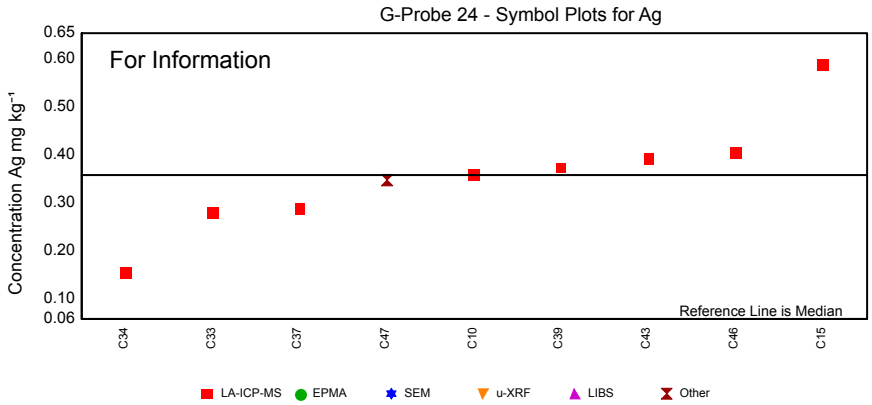
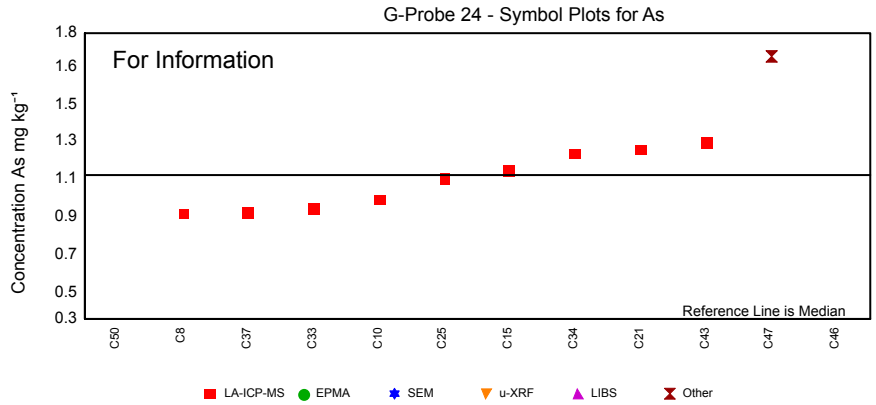
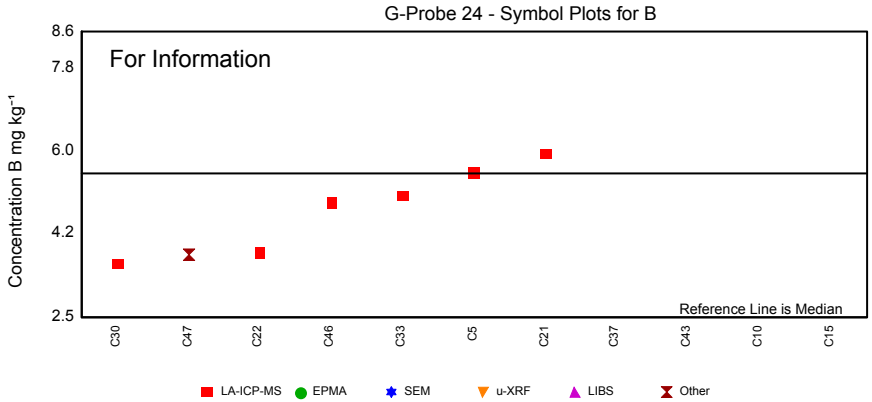
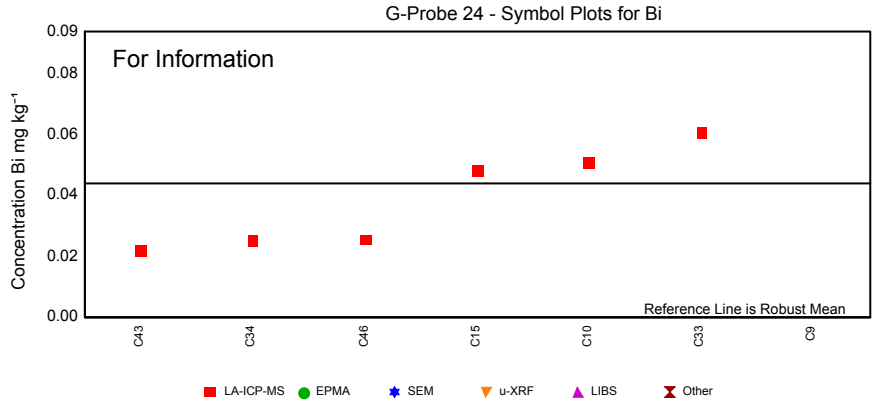


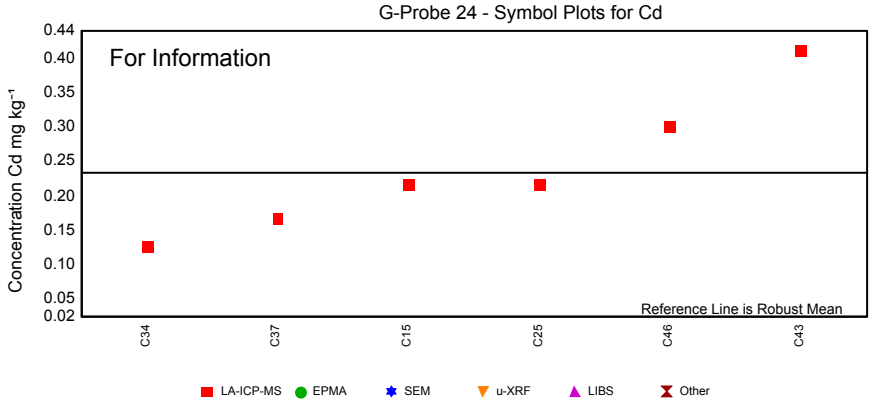
Figure 1: G-Probe 24 - Basanite, BKWE-1G Glass. Data distribution charts for elements for which values were assigned or provisional values given for guidance. Horizontal lines show the limits for -2<z<2 where the z-score is derived according to the Quality specified.

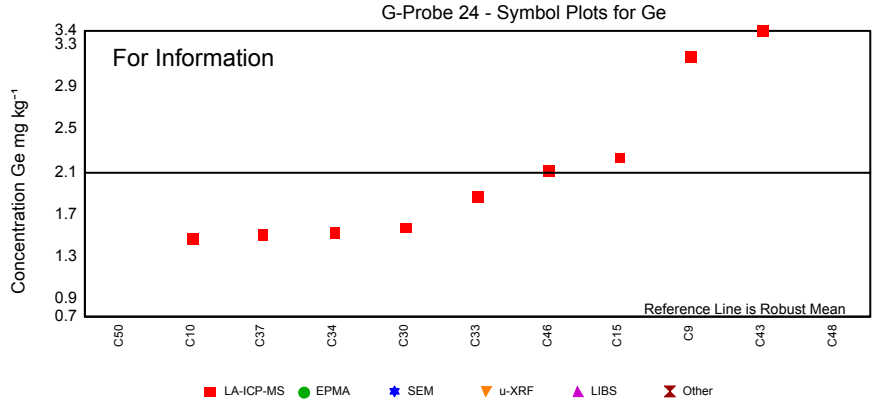

G-Probe 24 - Symbol Plots for Ag
For Information
Concentration Ag mg kg⁻¹
0.65
0.60
0.50
0.40
0.30
0.20
0.10
0.06
Reference Line is Median
C34
C33
C37
C47
C10
C39
C43
C46
C15
LA-ICP-MS
EPMA
SEM
u-XRF
LIBS
Other

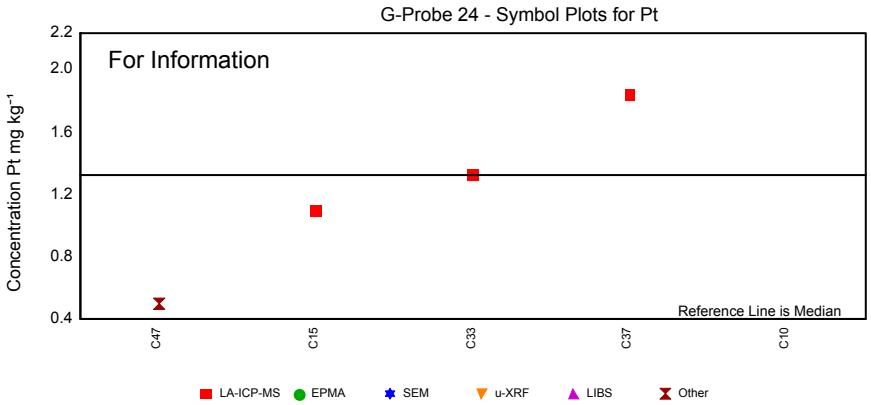

G-Probe 24 - Symbol Plots for As
For Information
Concentration As mg kg⁻¹
1.8
1.6
1.5
1.3
1.1
0.9
0.7
0.5
0.3
Reference Line is Median
C50
C8
C37
C33
C10
C25
C15
C34
C21
C43
C47
C46
LA-ICP-MS
EPMA
SEM
u-XRF
LIBS
Other

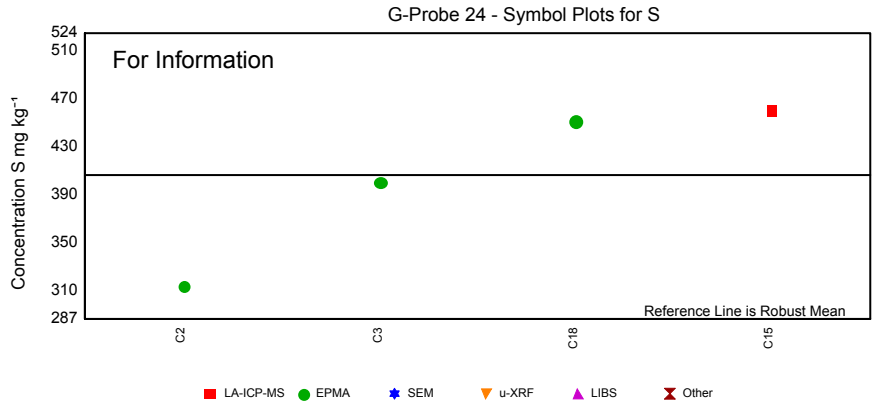

G-Probe 24 - Symbol Plots for B
For Information
Concentration B mg kg⁻¹
8.6
7.8
6.0
4.2
2.5
Reference Line is Median
C30
C47
C22
C46
C33
C5
C21
C37
C43
C10
C15
LA-ICP-MS
EPMA
SEM
u-XRF
LIBS
Other

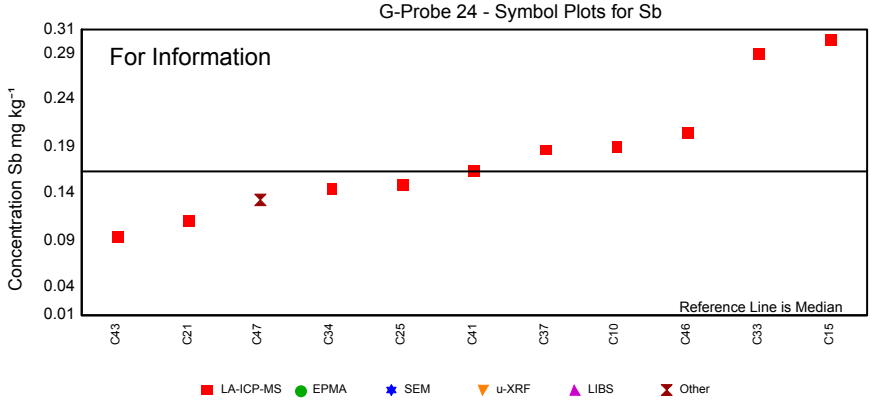

G-Probe 24 - Symbol Plots for Bi
For Information
Concentration Bi mg kg⁻¹
0.09
0.08
0.06
0.04
0.02
0.00
Reference Line is Robust Mean
C43
C34
C46
C15
C10
C33
C9
LA-ICP-MS
EPMA
SEM
u-XRF
LIBS
Other

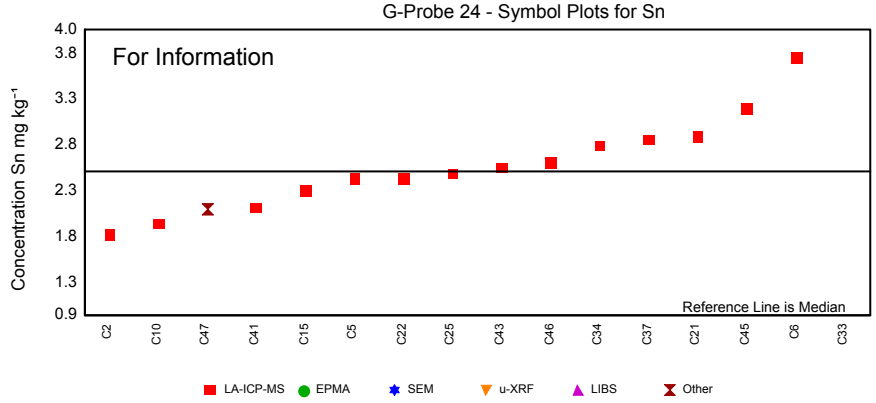

G-Probe 24 - Symbol Plots for Cd
For Information
Concentration Cd mg kg⁻¹
0.44
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.02
Reference Line is Robust Mean
C34
C37
C15
C25
C46
C43
LA-ICP-MS
EPMA
SEM
u-XRF
LIBS
Other

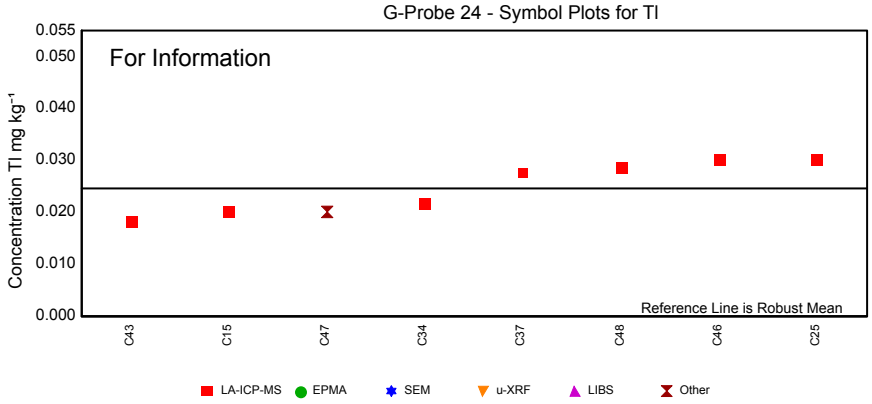

G-Probe 24 - Symbol Plots for Ge
For Information
Concentration Ge mg kg⁻¹
3.4
3.3
2.9
2.5
2.1
1.7
1.3
0.9
0.7
Reference Line is Robust Mean
C50
C10
C37
C34
C30
C33
C46
C15
C9
C43
C48
LA-ICP-MS
EPMA
SEM
u-XRF
LIBS
Other











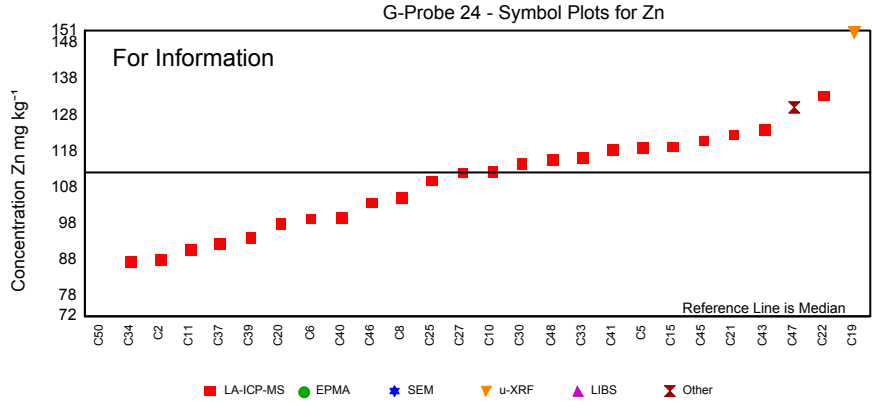
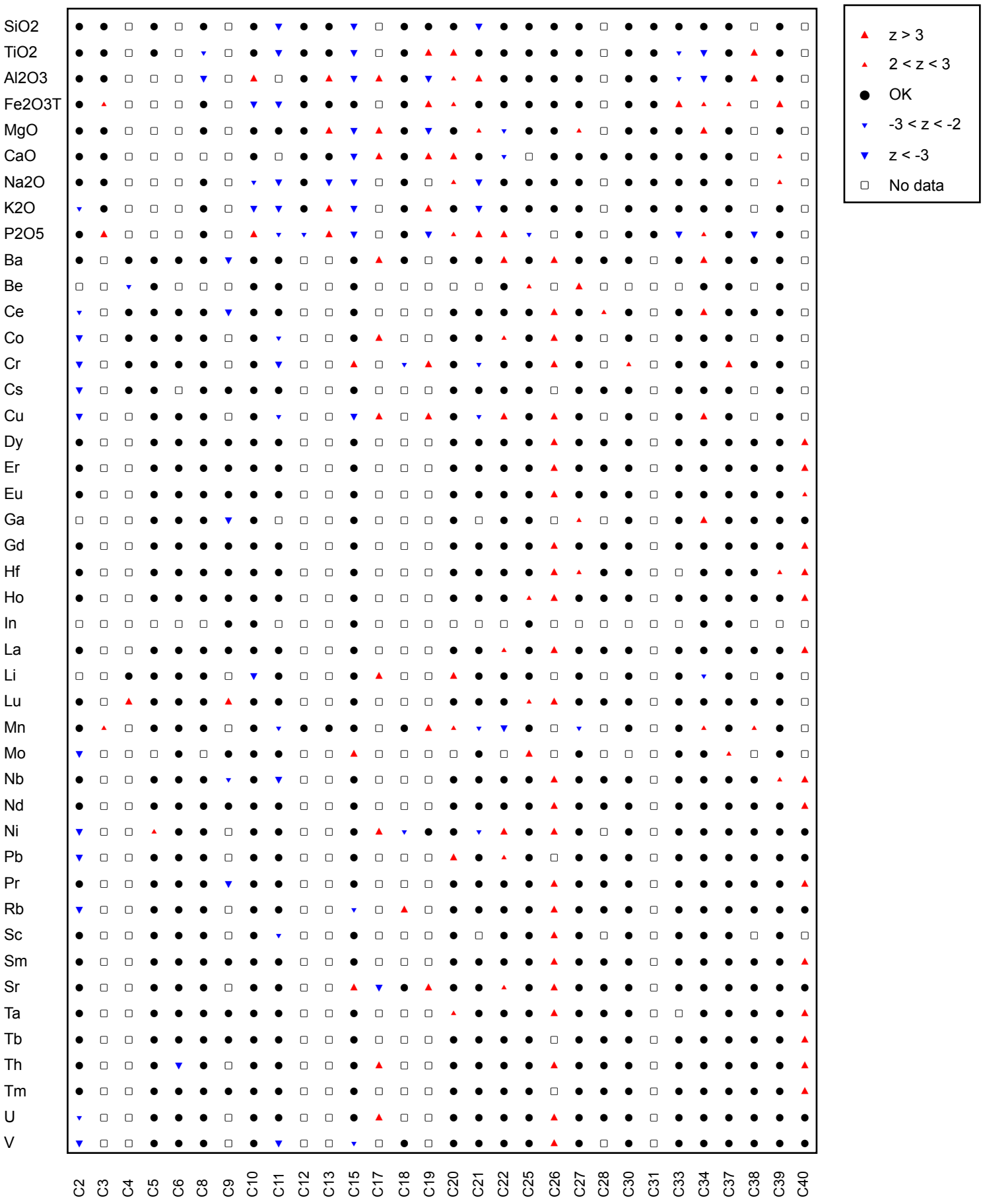


Figure 2: G-Probe 24 - Basanite, BKWE-1G Glass. Data distribution charts provided for information only for elements for which values could not be credited with assigned or provisional status.

Multiple Z-Score Chart for G-Probe 24



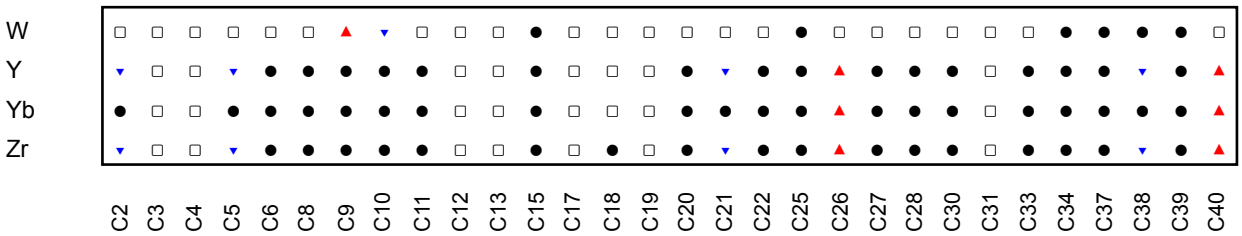
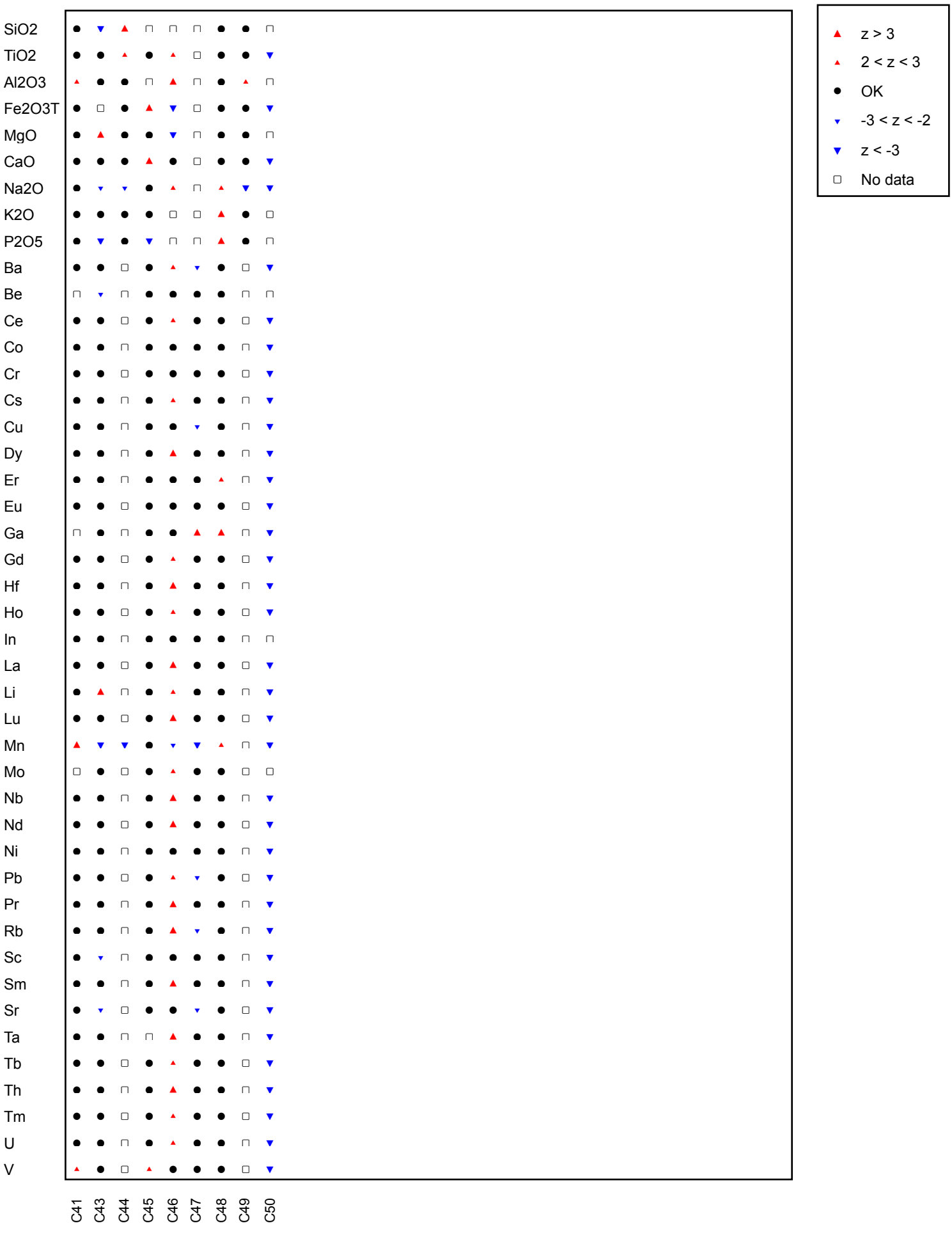


Figure 3: G-Probe 24 - Basanite, BKWE-1G Glass. Multiple z-score charts for laboratories participating in the G-Probe 24 round. Symbols indicate whether or not an elemental result complies with the -2<z<+2 criteria (see key).

Multiple Z-Score Chart for G-Probe 24



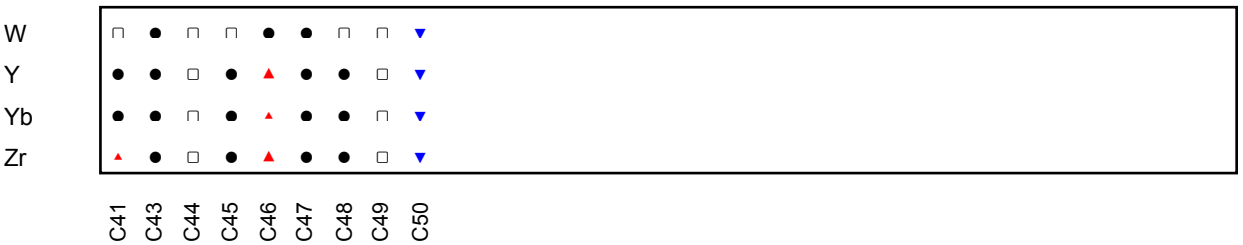


Figure 3: G-Probe 24 - Basanite, BKWE-1G Glass. Multiple z-score charts for laboratories participating in the G-Probe 24 round. Symbols indicate whether or not an elemental result complies with the -2<z<+2 criteria (see key).