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CRB Analyse Service GmbH

# RFA Ringversuch GeoPT 51A, IAG - MEG-1. Granit

**Veranstalter des Ringversuchs:** International Association of Geoanalysts and Geostandards Newsletter - GeoPT51A
**Ringversuchsmaterial:** MEG-1. Granit
**RV geschlossen:** 2022 – 8
**Literatur:** Report - GeoPT51A - Proficiency Testing Round 51A (Laborcode CRB = P80)

## Hauptelemente [MA%]

| | CRB | RV | 1sRV | Z-Score |
|---|---|---|---|---|
| $SiO_2$ | 72,190 | 72,260 | 0,759 | -0,050 |
| $TiO_2$ | 0,300 | 0,296 | 0,007 | 0,300 |
| $Al_2O_3$ | 14,120 | 14,090 | 0,189 | 0,080 |
| $Fe_2O_3$tot | 2,470 | 2,451 | 0,043 | 0,220 |
| MnO | 0,062 | 0,060 | 0,002 | 0,550 |
| MgO | 0,380 | 0,386 | 0,009 | -0,310 |
| CaO | 1,160 | 1,150 | 0,023 | 0,220 |
| $Na_2O$ | 3,680 | 3,660 | 0,060 | 0,170 |
| $K_2O$ | 4,740 | 4,709 | 0,075 | 0,210 |
| $P_2O5$ | 0,136 | 0,134 | 0,004 | 0,290 |
| L.O.I. * | 0,610 | 0,590 | 0,120 | 0,070 |
| F * | 0,104 | 0,107 | 0,013 | -0,130 |

## Spurenelemente [µg/g]

| | CRB | RV | 1sRV | Z-Score |
|---|---|---|---|---|
| Ba | 325,00 | 346,90 | 11,51 | -0,95 |
| Cr | 188,00 | 193,00 | 6,99 | -0,36 |
| Ga | 25,00 | 22,50 | 1,11 | 1,13 |
| Hf | 5,40 | 4,97 | 0,31 | 0,70 |
| Nb | 19,00 | 15,50 | 0,82 | 2,10 |
| Pb | 26,00 | 24,50 | 1,21 | 0,64 |
| Rb | 258,00 | 272,00 | 9,36 | -0,75 |
| Sr | 113,00 | 111,00 | 4,37 | 0,23 |
| Y | 35,00 | 25,30 | 1,24 | 3,93 |
| Zn | 57,00 | 53,60 | 2,36 | 0,72 |
| Zr | 170,00 | 167,40 | 6,17 | 0,21 |

## Legende

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

# Geo*PT*

# Proficiency Testing Programme for Geochemical Laboratories

Organised by the International Association of Geoanalysts (IAG)

## *Certificate of Performance*

| | | | | |
|---|---|---|---|---|
| Subscriber: | **GeoPT240** | Laboratory Code: **P80** | Test Material: | **MEG-1** |
| Round: | **GeoPT51A** | | Date: | **June 2022** |

| Analyte | Z-Score | Data Quality | Consensus Value | Result Submitted |
|---|---|---|---|---|
| | | | g/100g | g/100g |
| SiO2 | **-0.04** | 2 | 72.26 | 72.19 |
| TiO2 | **0.3** | 2 | 0.2957 | 0.3 |
| Al2O3 | **0.08** | 2 | 14.09 | 14.12 |
| Fe2O3T | **0.22** | 2 | 2.451 | 2.47 |
| MnO | **0.55** | 2 | 0.06000 | 0.062 |
| MgO | **-0.31** | 2 | 0.3855 | 0.38 |
| CaO | **0.22** | 2 | 1.150 | 1.16 |
| Na2O | **0.17** | 2 | 3.660 | 3.68 |
| K2O | **0.21** | 2 | 4.709 | 4.74 |
| P2O5 | **0.29** | 2 | 0.1339 | 0.136 |
| | | | mg/kg | mg/kg |
| Ag | - | 2 | 0.1200 | |
| As | - | 2 | 2.268 | |
| Ba | **-0.95** | 2 | 346.9 | 325 |
| Be | - | 2 | 9.010 | |
| Bi | - | 2 | 1.085 | |
| Cd | - | 2 | 0.1100 | |
| Ce | - | 2 | 66.16 | |
| Co | - | 2 | 2.623 | |
| Cr | **-0.36** | 2 | 193.0 | 188 |
| Cs | - | 2 | 17.10 | |
| Cu | - | 2 | 6.381 | |
| Dy | - | 2 | 4.560 | |
| Er | - | 2 | 2.490 | |
| Eu | - | 2 | 0.5900 | |
| Ga | **1.33** | 2 | 22.05 | 25 |
| Gd | - | 2 | 4.900 | |
| Ge | - | 2 | 1.700 | |
| Hf | **0.7** | 2 | 4.965 | 5.4 |

| Analyte | Z-Score | Data Quality | Consensus Value | Result Submitted |
|---|---|---|---|---|
| | | | mg/kg | mg/kg |
| Ho | - | 2 | 0.8734 | |
| In | - | 2 | 0.06000 | |
| La | - | 2 | 31.00 | |
| Li | - | 2 | 122.1 | |
| Lu | - | 2 | 0.3730 | |
| Mo | - | 2 | 3.167 | |
| Nb | **2.1** | 2 | 15.54 | 19 |
| Nd | - | 2 | 26.88 | |
| Ni | - | 2 | 5.548 | |
| Pb | - | 2 | 24.45 | |
| Pr | - | 2 | 7.733 | |
| Rb | **-0.75** | 2 | 272.0 | 258 |
| Sb | - | 2 | 0.1670 | |
| Sc | - | 2 | 4.478 | |
| Sm | - | 2 | 5.730 | |
| Sn | - | 2 | 12.98 | |
| Sr | **0.23** | 2 | 111.0 | 113 |
| Ta | - | 2 | 2.455 | |
| Tb | - | 2 | 0.7925 | |
| Th | - | 2 | 19.20 | |
| Tl | - | 2 | 1.700 | |
| Tm | - | 2 | 0.3880 | |
| U | - | 2 | 5.531 | |
| V | - | 2 | 13.20 | |
| W | - | 2 | 0.5260 | |
| Y | **3.93** | 2 | 25.25 | 35 |
| Yb | - | 2 | 2.485 | |
| Zn | **0.72** | 2 | 53.61 | 57 |
| Zr | **0.21** | 2 | 167.4 | 170 |

| |
|---|
| The principles upon which GeoPT z-scores are based are detailed in the full report for this round |
| - indicates result within acceptable range of z-score limits \|z\| < 2 |
| - indicates result outside z-score limits \|z\| > 2 but within the z-score limits \|z\| < or = 3 |
| - indicates result outside z-score limits \|z\| > 3 and likely to require investigation |
| Consensus values are assigned values unless otherwise indicated |
| Shaded Consensus values have provisional status |

Peter Webb . Peter Webb - Administrator of GeoPT on behalf of the International Association of Geoanalysts

# Geo*PT*51A — AN INTERNATIONAL PROFICIENCY TEST FOR ANALYTICAL GEOCHEMISTRY LABORATORIES — REPORT ON ROUND 51A (Granite, MEG-1) / July 2022

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*Keywords: proficiency testing, quality assurance, Geo*PT*, Geo*PT*51A, Round 51A, MEG-1, Granite*

## Abstract

Results are presented for Round 51A of the Geo*PT* proficiency testing programme for analytical geochemistry laboratories organised by the International Association of Geoanalysts (IAG). The test material distributed in this round was the Granite, MEG-1, supplied by the Central Geological Laboratory, Mongolia. In fact, this test material is a certified reference material, the Granite MGT-1 (code CGL 008), renamed to ensure complete anonymity. In this report, the data contributed by 112 laboratories are listed, together with an assessment of consensus values, consequent *z*-scores and a series of charts to show the distribution of contributed results and the overall performance of participating laboratories.

## Introduction

This fifty-first round of Geo*PT*, the international proficiency testing programme for geoanalytical laboratories, was conducted in a similar manner to earlier rounds (reports listed in Appendix 1). The programme is designed to be a key part of the routine quality assurance procedures employed by an analytical geochemistry laboratory. It is organised by the International Association of Geoanalysts and is conducted in accordance with a published protocol, recently revised (IAG, 2020). The overall aim of the programme is to provide participating laboratories with information on their performance in the form of *z*-scores for each reported measurement result so that every laboratory can decide whether the quality of their data is satisfactory in relation both to their chosen fitness-for-purpose criteria and to the performance of other laboratories participating in this round. In circumstances where its *z*-scores are unsatisfactory, a participating laboratory is encouraged to investigate for unsuspected analytical bias and to take corrective action when it appears justified.

**Steering Committee for Round 51A:** P.C. Webb (administrator and results assessor), P.J. Potts (results reviewer), C.J.B. Gowing (results reviewer and distribution manager), M. Thompson (statistical advisor).

**Timetable for Round 51A:**
Distribution of sample: March 2022
Results accepted from: 10th May 2022
Results submission deadline: 15th June 2022
Release of report: July 2022

## Test Material details

**Geo*PT*51A**: The Granite test material, MEG-1, is in fact, the certified reference material (CRM) known as Granite MGT-1 (code CGL 008), purchased from the Central Geological Laboratory, Mongolia. Supplied in 100g portions, it was repackaged at BGS Keyworth, whereby portions were combined in pairs and divided 8 ways to provide 140 packets of test material in a form suitable for distribution to participating laboratories. The test material had been evaluated for homogeneity as part of the CGL certification process. As a result, the sample was considered suitable for use in this proficiency test.

## Submission of results

For Geo*PT*51A (MEG-1), a total of 3888 measurement results submitted by 112 laboratories are listed in Table 1. We are pleased to report that this number reflects the highest level of participation in any round of Geo*PT* since its inception. Of the measurements submitted, 1783 results were designated by their originators as data quality 1 (see ***z*-score analysis section** below for explanation of data quality) and are shown in **bold**, whereas 2105 results were specified as data quality 2 and are shown underlined. Results from all laboratories submitting data were used to assess consensus values for each measurand.

Several laboratories reported values of ‘0’ (i.e. zero) in this round. We continue to remind participants not to report zeros or values that are close to detection limits, below their recognised quantification limits and have an unacceptably large uncertainty associated with them. However, it is apparent that a few laboratories reported **results for C(org), C(tot), Cl and S in units of g/100g instead of mg/kg**. Consequently, we must respectfully, but **firmly remind analysts** that **measurement results** of **all constituents listed in elemental form should be reported in mg/kg**. Analysts should be aware that **erroneous results cannot be altered or removed** either by them or by us once they have been submitted and that their corresponding ***z*-scores will be adversely affected**.

## Assigned values and results summary

Following procedures described in earlier rounds, and detailed fully in the Geo*PT* protocol (IAG, 2020), robust statistical procedures were used to derive consensus values for measurands in this test material: these consensus values being judged to be the best available estimates of the true composition of the test material. Values were assigned on the basis that: i) sufficient laboratories (15 or more) had contributed data for estimating the consensus, ii) visual assessment gave confidence that a substantial proportion of the results distribution was symmetrically disposed about the consensus value, iii) the ratio of the uncertainty in the location estimate to the target precision was an acceptably small value, and iv) an evaluation of measurement results by procedure – including both methods of analysis and sample preparation – indicated that no significant procedural bias was discernible amongst measurement results from which the consensus was derived. Where these criteria were largely, but not fully met, or where obvious anomalies in the dataset could be accommodated by judicious selection of the consensus, values were credited with 'provisional' rather than ‘assigned’ status.

Data assessments involved an examination of bar charts showing the distribution of results contributed for each measurand (as presented in Figures 1 and 2). In addition, when appropriate, a variety of plots, permitting discrimination of data by method of measurement and by sample preparation procedure, as developed by Thomas Meisel using the Shiny App (*https://www.shinyapps.io*) and linked to the statistical package 'R', were also examined. This enables us, when necessary, to refine the selection of consensus values by taking account of data distributions according to measurement procedure. As previously notified to participants, the facility now exists for participants to observe Geo*PT* data distributions using Shiny App graphics through the link: *https://www.geoanalyst.shinyapps.io/GeoPTcommon2/*. You will be able to view all data submitted according to the principle of measurement, the method of sample preparation, and the chosen fitness-for-purpose criterion.

Consensus values derived from contributed data were provided in 8 instances by the Huber robust mean. Although outliers can be accommodated by this procedure, it is less effective when a dataset is skewed, when it tends not to provide a satisfactory estimation of the consensus. In such circumstances, the median is often a more appropriate robust estimator and was employed in 27 cases. For more severely skewed and strongly tailed datasets, the median may not be an adequate estimator and a mode can provide a more effective means of estimating the location of the consensus. In this round the use of a mode as a consensus location estimator was preferred in 22 cases, and in 14 of these, the distribution of data was sufficiently compatible with the conditions outlined above to justify its designation as an assigned value. Although the choice of a mode may be sometimes be used to ‘fine tune’ the location of the consensus, the extensive use of modes in this round was necessary because a large number of datasets were skewed and the source of the skew could be attributed to a known analytical problem or problems as discussed later. The procedure used to determine modes was mostly as described by Thompson (2017) involving the estimation of the mass fraction corresponding to the maximum value of the kernel density distribution for the dataset. Such modes provide a robust estimate of the consensus location that represents the most coherent part of the data distribution often where the data are symmetrically disposed, although the dataset as a whole may be asymmetric.

Table 2 lists assigned and provisional values for 10 major components and 47 trace elements in Geo*PT*51A (MEG-1). Barcharts that were judged to have satisfactory distributions for consensus values to be designated as assigned or provisional values, enabling *z*-scores to be calculated, are shown in Figure 1. Statistical data, consensus values and status designations are listed in Table 2 for the 57 analytes: $SiO_2$, $TiO_2$, $Al_2O_3$, $Fe_2O_3T$, MnO, MgO*, CaO, $Na_2O$, $K_2O$, $P_2O_5$*, Ag*, As*, Ba, Be, Bi, Cd*, Ce, Co, Cr*, Cs, Cu*, Dy, Er, Eu, Ga, Gd, Ge*, Hf, Ho, In*, La, Li, Lu, Mo, Nb, Nd, Ni*, Pb, Pr, Rb, Sb*, Sc, Sm, Sn, Sr, Ta, Tb, Th, Tl, Tm, U, V, W*, Y, Yb, Zn and Zr. Of these, the measurands of the 12 analytes marked '*' could be credited only with provisional status. Such instances of provisional status were conferred because either: i) a relatively small number of results (less than 15, but usually more than 9) contributed to the consensus, or ii) the results were unduly dispersed in relation to the target value, or iii) the distribution of results was significantly skewed, or iv) the dataset was affected by bias in one or more methods employed but the remaining data defined a viable consensus. Of the provisional results, those for Ge and W, with fewer data reported, have a relatively high degree of uncertainty associated with them.

Bar charts for the 9 analytes: Fe(II)O, $H_2O^+$, LOI, B, C(tot), Cl, F, S and Se are plotted in Figure 2 for information only, as the data were either insufficient in number, or the distribution was too highly skewed or too highly dispersed for a sufficiently reliable determination of a consensus for the estimation of *z*-scores.

In this round, as in Round 51, although many datasets are symmetrically disposed, it is common for many to be asymmetrical on account of notable low tails, especially for the REEs, as well as Hf, U, Y and Zr, elements known to reside in refractory accessory minerals in granitic rocks. As with GMN-1, this effect was less striking for MEG-1 than for CSd-1 in Geo*PT*50, but evidence of procedures from metadata supplied indicated that this effect was again, in many cases associated with acid digestion (AD) as a means of dissolution. A particularly marked low tail is apparent for data reported by a small number of laboratories as illustrated for Sm in Figure 0.1, as representative of LREEs. The consensus for Sm is defined by the maximum density of results which use a variety of forms of sample preparation, including acid digestion, permitting an assigned status to be conferred. Potts *et al.* (2014) demonstrated that incomplete dissolution of refractory minerals, such as zircon, does not affect all of the data obtained by acid digestion but is observed when the dissolution procedure was insufficiently rigorous. For many such asymmetric distributions in this round it was necessary to use a mode to obtain a value to represent the most coherent consensus location.

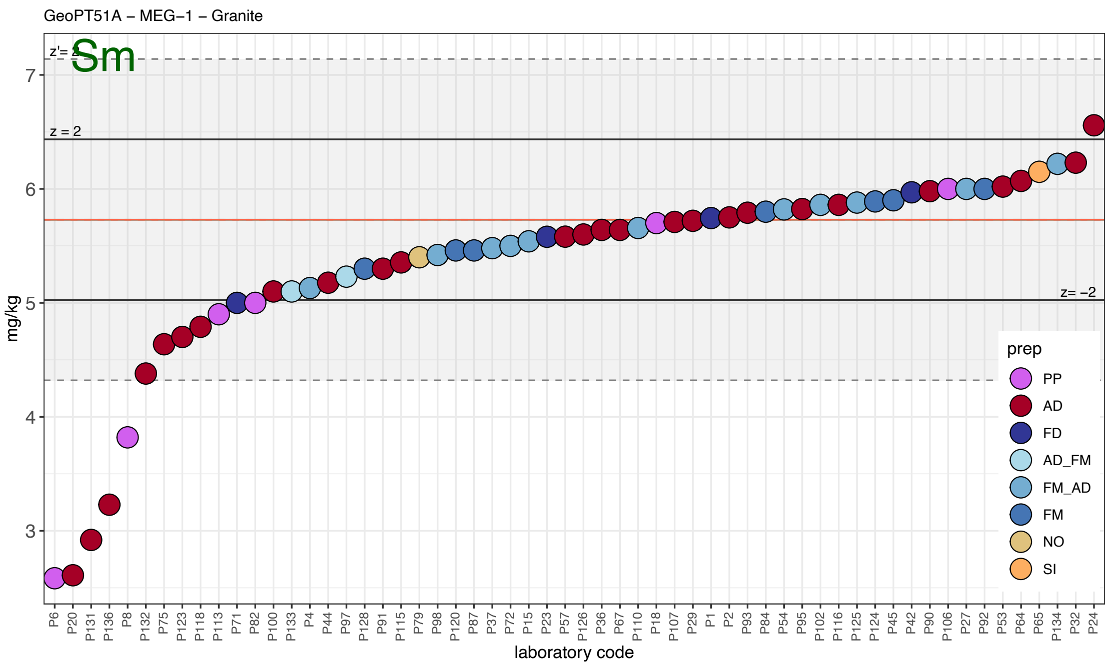


Figure 0.1 A sequential plot for MEG-1 of sorted Sm results distinguished according to method of sample preparation typifies many LREE data distributions. Some of the acid digestion (AD) data form a striking low tail. The lowest powder pellet (PP) results are not by XRF but by LA-ICP-MS on nano-pellets. ICP-MS data derived by a variety of forms of sample preparation including many by acid digestion, form a convincing consensus, sufficient to confer an assigned value. FM procedures involve fusion, SI is sintering. FD is fusion disc; NO represents no preparation.

For HREEs it is apparent that many of the low values are recorded by the same laboratories that reported low values for LREEs, but in addition, a number of other laboratories undertaking acid digestion also record what appear to be systematically low values. It is suggested, therefore, that the HREEs and the LREEs are dominantly hosted by different mineral phases which respond differently to different dissolution procedures. For most HREEs, an appropriate consensus, defined as a mode, thus providing a robust representation of the most coherent part of the results distribution, was credited with assigned status when a sufficient number of measurements involved a variety of analytical procedures. This situation is exemplified for Tm in Figure 0.2.

For some elements the asymmetry of data distributions is due to high tails, examples of which are apparent in Figure 1, most notably for Ag, As, Cd, Co, Cu, Ni, Sb and W. In all of these cases the quantities of the analytes are at

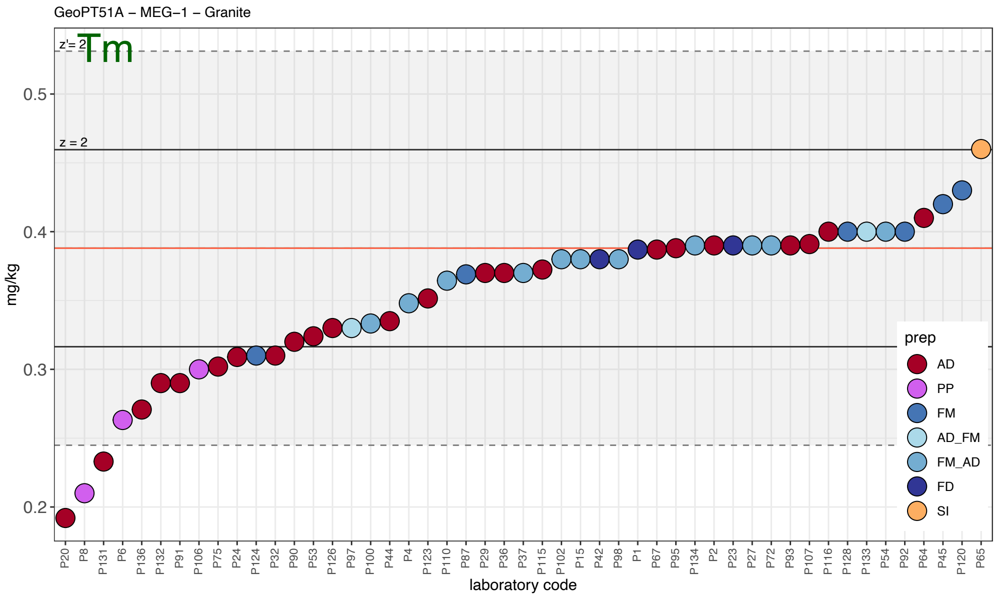


Figure 0.2 A sequential plot of sorted Tm results for MEG-1 distinguished according to method of sample preparation. Much of the acid digestion (AD) data tends to be low and less well aligned compared to most of the data derived using other forms of sample preparation, usually involving fusion, which are in better agreement and on which the consensus value is based. See Figure 0.1 caption for definition of the symbols.

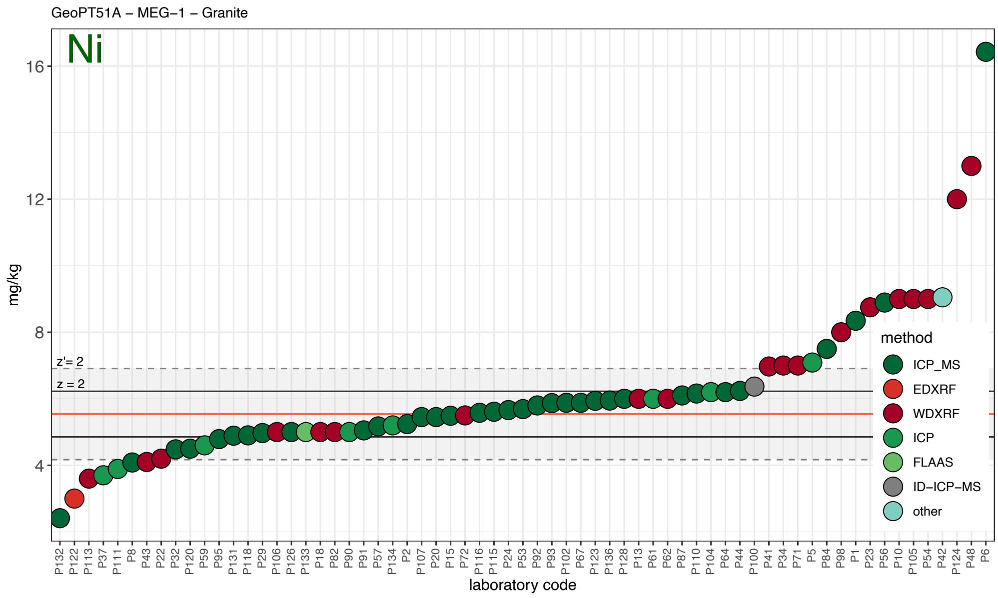


Figure 0.3 A sequential plot of sorted Ni results for MEG-1 distinguished according to analytical technique. Much of the XRF data contributes to the high tail. The distribution was credited with a provisional value as there was insufficient coherence of results around the consensus value. Key: WDXRF – Wavelength dispersive XRF; INAA – Instrumental neutron activation analysis; ICP-MS – Inductively coupled plasma-mass spectrometry; ICP – Inductively coupled plasma - atomic/optical emission spectrometry; ID-ICP-MS – Isotope dilution-inductively coupled plasma-mass spectrometry.

low mass fractions (As: 2.268 mg/kg, Cd: 0.11 mg/kg, Co: 2.623 mg/kg, Ni: 5.548 mg/kg and W 0.526 mg/kg). Figure 0.3 is one such example which reveals the distribution of data for Ni where XRF results contribute significantly to the high tail. In other examples, however, a varied range of measurement procedures contribute to the high tail.

As is often the case, some sets of results, especially those of $TiO_2$, MnO, MgO, $P_2O_5$, Co, Ga, Li, Nb, Ni and Sc feature stepped distributions caused by over-rounding of much of the contributed data (see Figure 1 barcharts). The distributions of MgO and $P_2O_5$ results were so significantly affected that values could only be credited with provisional status. See Figure 0.4 to examine the problematic $P_2O_5$ data distribution. We continue to recommend that for proficiency testing purposes **all measurands** should be quoted to **at least one decimal place more than would be routinely presented** to a client. This would enable our statistical procedures to define a robust consensus more effectively. This recommendation is especially relevant to distributions of major element components reported at low mass fractions.

## *Z*-score analysis

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

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

**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 **standard deviation for proficiency** ($\sigma_{pt}$) – also referred to as the target precision – for each measurand assessed was calculated from a modified form of the Horwitz function as follows:

$$\sigma_{pt} = k.x_{pt}^{0.8495}$$

Where $x_{pt}$ is the mass fraction of the element; the factor k = 0.01 for pure geochemistry laboratories (quality 1) and k = 0.02 for applied geochemistry laboratories (quality 2).

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

$$z_i = [x_i - x_{pt}] / \sigma_{pt}$$

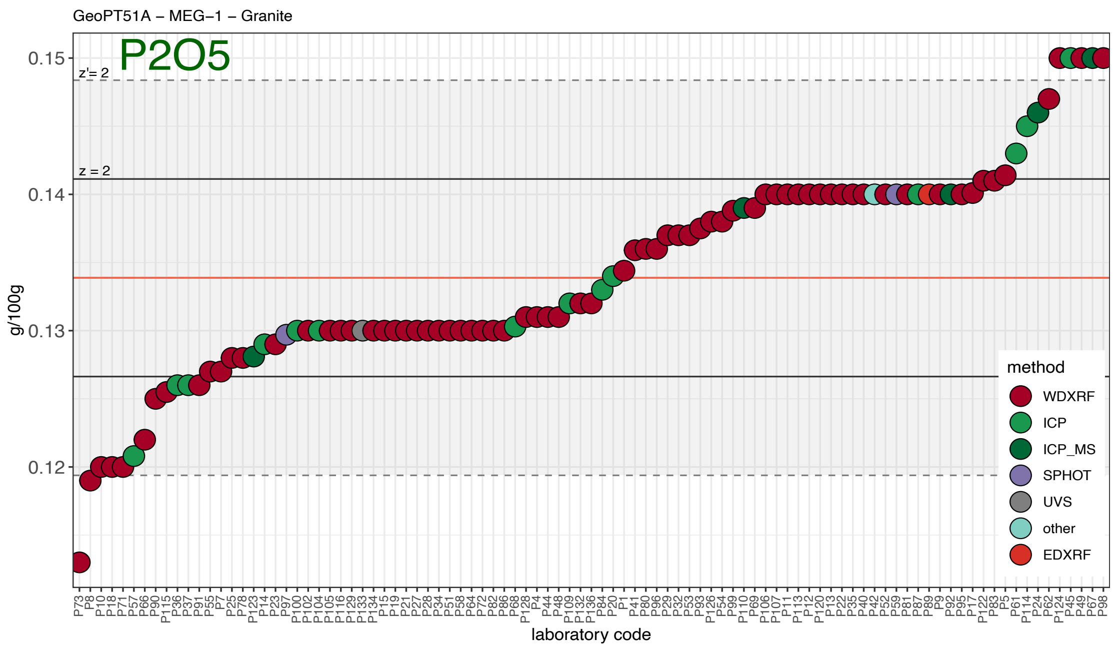


Figure 0.4 A sequential plot of sorted $P_2O_5$ results for MEG-1 distinguished according to analytical technique. Many of the XRF results are quoted to only two significant figures, producing an artificially stepped distribution of data, for which it is not possible to define a reliable consensus, hence the provisional status of the estimated value. See Figure 0.3 caption for definition of the symbols. SPHOT – Spectrophotometry; UVS – Ultraviolet spectrometry.

Where $x_i$ is the contributed measurement result, $x_{pt}$ is the assigned (or provisional) value and $\sigma_{pt}$ is the target standard deviation (all as mass fractions). *Z*-scores for results contributed to Geo*PT*51A are listed in Table 3. Those of results designated as data **quality 1** are shown in **bold**: those of data quality 2 are shown underlined. *Z*-scores derived from *provisional value*s 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 participating laboratory). If the *z*-score for an element falls outside this range, more especially if it is outside the range $-3<z<3$, laboratories are advised to examine their procedures, and if necessary, take appropriate action to ensure that their determinations are not subject to unsuspected analytical bias.

## Overall performance

A summary of the overall performance of individual laboratories for this round is plotted in multiple *z*-score charts in Figure 3. In these charts, the *z*-score performance for each element is distinguished by symbols that make it easy 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. 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 52, the test materials for which will be distributed during September 2022.

## Acknowledgements

The authors once again thank Andrea Mills (BGS) for much-valued assistance in distributing these samples and Thomas Meisel (Montanuniversität Leoben, Austria) for both maintaining the system and developing procedures involving the package ‘R’ and the Shiny App which has greatly assisted in the investigation of data according to analytical procedure, provided the graphics featured in Figures 0.1, 0.2, 0.3 and 0.4, as well as facilitating the analysis of datasets involving modes derived according to Thompson (2017). In addition, Jenny Cook (IAGeo Ltd) is thanked for arranging acquisition of the reference material CGL 008 from the Central Geological Laboratory, Mongolia.

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# ADDENDUM
# — IMPORTANT NOTICES TO ANALYSTS

## New procedural coding for Round 52

**New procedural codes** will be available for Round 52. Please note that on account of the number of laboratories now measuring by **LA-ICP-MS on nano-particulate pellets (NP) and glass discs (FD)** there will be new analytical technique and sample preparation method codes available for more accurate definition of procedures in subsequent rounds.

## Change in uncertainty estimation, 2020

A change was made to the algorithm for the estimation of the uncertainty of median values and implemented for the first time in Round 47/47A. As described in the revised Geo*PT* protocol (IAG, 2020), median uncertainties are increased by a factor of 1.2533 compared to those from rounds prior to that date. Uncertainty values previously reported for values estimated as medians should be increased by this factor.

## Explicit advice to analysts for reporting of procedures involving ignition and fusion

Note that some laboratories are still listing their procedure for determining LOI as the same as that employed for major elements, rather than providing separate, specific details. We must remind analysts that it is important to provide information that is appropriate for every analyte. Indeed, analysts reporting measurement results for procedures involving fusion, sintering or ignition, and in particular, LOI determinations, should specify the correct method used and give details both of the temperature used and where appropriate, the end-point criterion, e.g., the duration of ignition. This information should be supplied in the description of the relevant **Procedure,** as **Additional Details**.

We recommend that details of gravimetric procedures are included under **Analytical Technique details** rather than under **Sample Preparation details**. For gravimetric analysis, other than drying, which should in any case be carried out according to our instructions, there is no other sample preparation involved.

## Access to graphical displays of data distributions

Via Shiny App graphics:
*https://www.geoanalyst.shinyapps.io/GeoPTcommon2*

# Appendix 1

### Publication status of proficiency testing reports.

Previous reports are available for download from the IAG website (http://www.geoanalyst.org/).


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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

# Appendix 1 (Cont'd)


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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

## Appendix 1 (Cont'd)


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

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

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

**Geo*PT*41**
Webb, P.C., Thompson, M., Potts, P.J, Gowing, C.J.B. and Wilson, S.A. (2017)
Geo*PT*41 - an international proficiency test for analytical geochemistry laboratories - report on round 41 (Andesite, ORA-1) / July 2017. International Association of Geoanalysts, Keyworth. Unpublished report.

**Geo*PT*41A**
Webb, P.C., Thompson, M., Potts, P.J, Gowing, C.J.B. and Wilson, S.A. (2017)
Geo*PT*41A - an international proficiency test for analytical geochemistry laboratories - report on round 41A (Mineralized stream sediment, SSCO-1) / July 2017. International Association of Geoanalysts, Keyworth. Unpublished report.

**Geo*PT*42**
Webb, P.C., Thompson, M., Potts, P.J., Gowing, C.J.B. and Burnham, M. (2018)
Geo*PT*42 – an international proficiency test for analytical geochemistry laboratories – report on round 42 (Queenston shale, QS-1) / January 2018. International Association of Geoanalysts, Keyworth. Unpublished report.

**Geo*PT*43**
Webb, P.C., Potts, P.J., Thompson, M. and Gowing, C.J.B. (2018)
Geo*PT*43 – an international proficiency test for analytical geochemistry laboratories – report on round 43 (Dolerite, ADS-1) / July 2018. International Association of Geoanalysts, Keyworth. Unpublished report.

**Geo*PT*44**
Webb, P.C., Potts, P.J., Thompson, M., Gowing, C.J.B. (2019)
Geo*PT*44 – an international proficiency test for analytical geochemistry laboratories – report on round 44 (Calcareous shale, ShCX-1) / January 2019. International Association of Geoanalysts, Keyworth. Unpublished report.

**Geo*PT*44A**
Webb, P.C., Potts, P.J., Thompson, M. Gowing, C.J.B. and Wilson, S.A. (2019)
Geo*PT*44A – an international proficiency test for analytical geochemistry laboratories – report on round 44A (Calcareous mudrock, CM-1) / January 2019. International Association of Geoanalysts, Keyworth. Unpublished report.

**Geo*PT*45**
Webb, P.C., Potts, P.J., Thompson, M. Gowing, C.J.B. and Wilson, S.A. (2019)
Geo*PT*45 – an international proficiency test for analytical geochemistry laboratories – report on round 45 (Silicified siltstone, GONV-1) / July 2019. International Association of Geoanalysts, Keyworth. Unpublished report.

**Geo*PT*46**
Webb, P.C., Potts, P.J., Thompson, M. and Gowing, C.J.B. (2020)
Geo*PT*46 – an international proficiency test for analytical geochemistry laboratories – report on round 46 (Granodiorite, HG-1) / January 2020. International Association of Geoanalysts, Keyworth. Unpublished report.

**Geo*PT*46A**
Webb, P.C., Potts, P.J., Thompson, M. Gowing, C.J.B. and Wilson, S.A. (2020)
Geo*PT*46A – an international proficiency test for analytical geochemistry laboratories – report on round 46A (Phosphate rock, POLC-1) / January 2020. International Association of Geoanalysts, Keyworth. Unpublished report.

**Geo*PT*47**
Webb, P.C., Potts, P.J., Thompson, M. and Gowing, C.J.B. (2020)
Geo*PT*47 – an international proficiency test for analytical geochemistry laboratories – report on round 47 (Silty Soil BIM-1) / December 2020. International Association of Geoanalysts, Keyworth. Unpublished report.

**Geo*PT*47A**
Webb, P.C., Potts, P.J., Thompson, M. and Gowing, C.J.B. (2020)
Geo*PT*47A – an international proficiency test for analytical geochemistry laboratories – report on round 47A (Silty Soil, NES-1) / December 2020. International Association of Geoanalysts, Keyworth. Unpublished report.

**Geo*PT*48**
Webb, P.C., Potts, P.J., Thompson, M., Gowing, C.J.B., Glodny, J., Wiedenbeck, M. (2021)
Geo*PT*48 – an international proficiency test for analytical geochemistry laboratories – report on round 48 (Monzonite, MzBP-1) / April 2021. International Association of Geoanalysts, Keyworth. Unpublished report.

**Geo*PT*49**
Webb, P.C., Potts, P.J., Thompson, M., Gowing, C.J.B., and Wilson, S.A. (2021)
Geo*PT*49 – an international proficiency test for analytical geochemistry laboratories – report on round 49 (Basalt, BVA-1) / July 2021. International Association of Geoanalysts, Keyworth. Unpublished report.

**Geo*PT*50**
Webb, P.C., Potts, P.J., Thompson, M., and Gowing, C.J.B. (2022)
Geo*PT*50 – an international proficiency test for analytical geochemistry laboratories – report on round 50 (Calcified sediment, CSd-1) / January 2022. International Association of Geoanalysts, Keyworth. Unpublished report.

## Table 1 - GeoPT51A Contributed data for Granite, MEG-1. 15/06/2022

| Lab Code | | P1 | P2 | P4 | P5 | P6 | P7 | P8 | P9 | P10 | P11 | P12 | P13 | P14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SiO2 | g 100g$^{-1}$ | **72.402** | | 72.81 | **71.715** | **83.96** | **72.979** | **72.114** | 73.53 | **71.52** | 72.33 | 72.5 | 71.97 | 72.12 |
| TiO2 | g 100g$^{-1}$ | **0.308** | **0.28** | 0.292 | **0.302** | **0.104** | **0.281** | **0.303** | 0.3 | **0.32** | 0.29 | 0.28 | 0.28 | 0.289 |
| Al2O3 | g 100g$^{-1}$ | **14.006** | | 13.94 | **14.096** | **6.253** | **13.885** | **14.014** | 14.4 | **13.73** | 14.28 | 14.5 | 14.2 | 13.81 |
| Fe2O3T | g 100g$^{-1}$ | **2.438** | | 2.41 | **2.549** | **0.998** | **2.467** | **2.472** | 2.5 | **2.47** | 2.49 | 2.37 | 2.51 | 2.42 |
| Fe(II)O | g 100g$^{-1}$ | | | | | | | | | **2.08** | | | | |
| MnO | g 100g$^{-1}$ | **0.061** | **0.06** | 0.062 | **0.065** | **0.027** | **0.06** | **0.061** | 0.06 | **0.062** | 0.05 | 0.082 | 0.05 | 0.06 |
| MgO | g 100g$^{-1}$ | **0.347** | | 0.39 | **0.401** | **0.231** | **0.432** | **0.383** | 0.35 | **0.26** | 0.4 | 0.42 | 0.36 | 0.376 |
| CaO | g 100g$^{-1}$ | **1.168** | | 1.13 | **1.236** | **0.563** | **1.123** | | 1.17 | **1.11** | 1.18 | 1.12 | 1.12 | 1.113 |
| Na2O | g 100g$^{-1}$ | **3.671** | | 3.51 | **3.947** | **2.015** | **3.403** | **3.574** | 3.58 | **3.6** | 3.77 | 3.62 | 3.66 | 3.62 |
| K2O | g 100g$^{-1}$ | **4.693** | | 4.548 | **5.062** | **2.826** | **4.667** | **4.707** | 4.81 | **4.63** | 4.75 | 4.64 | 4.54 | 4.6 |
| P2O5 | g 100g$^{-1}$ | **0.134** | | 0.131 | **0.141** | **0.028** | **0.127** | **0.119** | 0.14 | **0.12** | 0.14 | 0.14 | 0.14 | 0.129 |
| H2O+ | g 100g$^{-1}$ | | | | | | **0.29** | | | **0.77** | | | | |
| CO2 | g 100g$^{-1}$ | | | | | | | | | **0.12** | | | | |
| LOI | g 100g$^{-1}$ | **0.56** | | 0.53 | 0.383 | | **0.69** | **0.69** | 0.67 | | 0.68 | 0.71 | | |
| Ag | mg kg$^{-1}$ | **0.095** | | | | **0.012** | | | | | | | | |
| As | mg kg$^{-1}$ | **2.152** | | | | **1.192** | | | | | | | | |
| Au | mg kg$^{-1}$ | | | | | | | | | | | | | |
| B | mg kg$^{-1}$ | | | | | **22.29** | | 8.67 | | | | | | |
| Ba | mg kg$^{-1}$ | **346.9** | **353** | 354.1 | 358.1 | **161.3** | **400** | 346.8 | 300 | **329** | 389 | | 378 | 351 |
| Be | mg kg$^{-1}$ | | **9.29** | | | **3.048** | | 9.042 | | | | | | |
| Bi | mg kg$^{-1}$ | **1.297** | | | | **0.104** | | | | | | | | |
| Br | mg kg$^{-1}$ | | | | | | | | | | | | | |
| C(org) | mg kg$^{-1}$ | | | | | | | | | | | | | |
| C(tot) | mg kg$^{-1}$ | | | | | | | | | | | 200 | | 180 |
| Cd | mg kg$^{-1}$ | **0.273** | | | | | | | | | | | | |
| Ce | mg kg$^{-1}$ | **65.008** | **66.5** | 60.1 | | **33.77** | | 32.16 | 66 | **56** | | | | 64 |
| Cl | mg kg$^{-1}$ | | | 0.004 | | | | | | 22 | | | | |
| Co | mg kg$^{-1}$ | | **2.62** | | | **1.326** | | 5.23 | | **3** | | | 3 | |
| Cr | mg kg$^{-1}$ | **200.1** | **191** | 188 | 189.5 | **497.8** | **180** | 90.81 | 171 | **370** | 199 | | 225 | 198 |
| Cs | mg kg$^{-1}$ | **17.376** | **16.9** | 15 | | **4.111** | | 26.85 | | **13** | | | | |
| Cu | mg kg$^{-1}$ | **8.22** | **6.32** | 8 | 7.96 | **4.554** | | 8.435 | | **2** | | | 6 | |
| Dy | mg kg$^{-1}$ | **4.647** | **4.64** | 4.11 | | **2.536** | | 3.446 | | | | | | |
| Er | mg kg$^{-1}$ | **2.493** | **2.55** | 2.26 | | **1.654** | | 1.56 | | | | | | |
| Eu | mg kg$^{-1}$ | **0.598** | **0.59** | 0.658 | | **0.297** | | 0.514 | | | | | | |
| F | mg kg$^{-1}$ | | | | | | | | | 857 | | | | |
| Ga | mg kg$^{-1}$ | **21.582** | **23** | 23 | | **9.719** | | 33.97 | 24 | **11** | 20 | | 22 | |
| Gd | mg kg$^{-1}$ | **5** | **4.97** | 4.3 | | **2.315** | | 3.914 | | | | | | |
| Ge | mg kg$^{-1}$ | **1.69** | | | | **1.796** | | 1.936 | | | | | | |
| Hf | mg kg$^{-1}$ | **5.156** | **5.06** | | 6.74 | **2.881** | | 0.489 | | **3** | | | | |
| Hg | mg kg$^{-1}$ | | | 0.003 | | | | | | | 0.001 | | | |
| Ho | mg kg$^{-1}$ | **0.873** | **0.87** | 0.756 | | **0.580** | | 0.581 | | | | | | |
| I | mg kg$^{-1}$ | | | | | | | | | | | | | |
| In | mg kg$^{-1}$ | | | | | **0.022** | | | | | | | | |
| La | mg kg$^{-1}$ | **30.202** | **30.7** | 31.5 | 30.39 | **18.07** | | 11.66 | 24 | **33** | | | | 30 |
| Li | mg kg$^{-1}$ | | **122** | | | **27.07** | | 235.6 | | | | | | |
| Lu | mg kg$^{-1}$ | **0.362** | **0.38** | 0.363 | | **0.268** | | 0.166 | | | | | | |
| Mo | mg kg$^{-1}$ | **3.161** | **3.19** | | | **1.691** | | | | **7** | | | | |
| Nb | mg kg$^{-1}$ | **15.306** | **16.1** | 14.3 | 15.63 | **11.45** | | 29.31 | 15 | **20** | 20 | | 13 | |
| Nd | mg kg$^{-1}$ | **27.738** | **27.9** | 22.6 | 27.33 | **12.35** | | 14.39 | | **25** | | | | |
| Ni | mg kg$^{-1}$ | **8.346** | **5.24** | | 7.09 | **16.43** | | 4.085 | | **9** | | | 6 | |
| Pb | mg kg$^{-1}$ | **22.852** | **25.5** | 24 | | **15.99** | | 34.25 | 29 | **24** | 26 | | 24 | |
| Pd | mg kg$^{-1}$ | | | | | | | | | | | | | |
| Pr | mg kg$^{-1}$ | **7.569** | **7.55** | 6.83 | | **3.814** | | 3.66 | | | | | | |
| Pt | mg kg$^{-1}$ | | | | | | | | | | | | | |
| Rb | mg kg$^{-1}$ | **271.1** | **291** | 258 | 300.5 | **154.010** | | 404.4 | 274 | **89** | 293 | | 261 | |
| Re | mg kg$^{-1}$ | | | | | | | | | | | | | |
| S | mg kg$^{-1}$ | | | | | | | | | | | 100 | | |
| Sb | mg kg$^{-1}$ | **0.409** | | | | **0.256** | | | | | | | | |
| Sc | mg kg$^{-1}$ | **4.438** | **4.62** | 4.59 | 4.41 | **4.591** | | 8.958 | | **4** | 5 | | 6 | |
| Se | mg kg$^{-1}$ | | | | | | | | | | | | | |
| Sm | mg kg$^{-1}$ | **5.744** | **5.75** | 5.13 | | **2.584** | | 3.82 | | | | | | |
| Sn | mg kg$^{-1}$ | **12.608** | **12.9** | 12.2 | | **2.892** | | | | **4** | | | | |
| Sr | mg kg$^{-1}$ | **112.020** | **108** | 109 | 121.6 | **66.69** | **100** | 105 | 110 | **135** | 121 | | 114 | |
| Ta | mg kg$^{-1}$ | **2.447** | **2.46** | | | **0.977** | | 4.212 | | **6** | | | | |
| Tb | mg kg$^{-1}$ | **0.807** | **0.8** | 0.677 | | **0.429** | | 0.603 | | | | | | |
| Te | mg kg$^{-1}$ | | | | | | | | | | | | | |
| Th | mg kg$^{-1}$ | **19.673** | **20.1** | 19.8 | | **19.61** | | 11.77 | | **32** | 28 | | 18 | |
| Tl | mg kg$^{-1}$ | **1.806** | **1.8** | | | **0.657** | | | | | | | | |
| Tm | mg kg$^{-1}$ | **0.387** | **0.39** | 0.348 | | **0.263** | | 0.21 | | | | | | |
| U | mg kg$^{-1}$ | **5.474** | **5.5** | 6.06 | | **7.318** | | 3.503 | | **10** | | | | |
| V | mg kg$^{-1}$ | **15.12** | **12.9** | | 13.82 | **7.458** | | 26.8 | | **12** | 15 | | 17 | 10 |
| W | mg kg$^{-1}$ | | | | | **2.16** | | | | **8** | | | | |
| Y | mg kg$^{-1}$ | **26.225** | **27** | 23.4 | 26.11 | **18.6** | | 16.7 | 27 | **62** | 31 | | 25 | 23 |
| Yb | mg kg$^{-1}$ | **2.519** | **2.57** | 2.63 | | **1.772** | | 1.395 | | | | | | |
| Zn | mg kg$^{-1}$ | **54** | **53.4** | 56.3 | 54.06 | **17.96** | | 53.6 | | **29** | 60 | | 53 | 52 |
| Zr | mg kg$^{-1}$ | **179.4** | **178** | 179 | 188.770 | **73.61** | **130** | 164.7 | 161 | **132** | 165 | | 161 | 151 |

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

## Table 1 - GeoPT51A Contributed data for Granite, MEG-1. 15/06/2022

| Lab Code | | P15 | P17 | P18 | P19 | P20 | P21 | P22 | P23 | P24 | P25 | P27 | P28 | P29 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SiO2 | g 100g$^{-1}$ | **71.65** | 71.471 | **72.12** | 71.67 | 61.59 | **73.32** | **72.53** | **73.85** | **68.52** | 72.1 | 71.82 | 72.83 | 72.76 |
| TiO2 | g 100g$^{-1}$ | **0.293** | 0.309 | **0.3** | 0.29 | 0.282 | **0.29** | **0.297** | **0.3** | **0.272** | 0.3 | 0.31 | 0.29 | 0.297 |
| Al2O3 | g 100g$^{-1}$ | **13.89** | 14.000 | **14.3** | 14.02 | 13.96 | **14.08** | **14.21** | **13.88** | **14.997** | 14.1 | 14.05 | 13.69 | 14.23 |
| Fe2O3T | g 100g$^{-1}$ | **2.46** | 2.440 | **2.45** | 2.34 | 2.4 | **2.23** | **2.39** | **2.33** | **2.54** | 2.48 | 2.47 | 2.42 | 2.37 |
| Fe(II)O | g 100g$^{-1}$ | | | | | 2.16 | | | | | | | | |
| MnO | g 100g$^{-1}$ | **0.063** | 0.054 | **0.06** | 0.05 | 0.06 | **0.06** | **0.064** | **0.054** | **0.064** | 0.063 | 0.06 | 0.06 | 0.064 |
| MgO | g 100g$^{-1}$ | **0.367** | 0.357 | **0.42** | 0.37 | 0.383 | **0.42** | **0.395** | **0.38** | **0.408** | 0.407 | 0.37 | 0.45 | 0.34 |
| CaO | g 100g$^{-1}$ | **1.138** | 1.142 | **1.14** | 1.14 | 1.14 | **1.17** | **1.2** | **1.11** | **1.162** | 1.16 | 1.15 | 1.11 | 1.158 |
| Na2O | g 100g$^{-1}$ | **3.31** | 3.625 | **3.8** | 3.64 | | **3.62** | **3.77** | **3.62** | **3.795** | 3.7 | 3.65 | 3.58 | 3.624 |
| K2O | g 100g$^{-1}$ | **4.71** | 4.706 | **4.7** | 4.77 | 4.63 | **4.7** | **4.835** | **4.53** | **4.594** | 4.79 | 4.74 | 4.6 | 4.772 |
| P2O5 | g 100g$^{-1}$ | **0.13** | 0.140 | **0.12** | 0.13 | 0.134 | **0.13** | **0.14** | **0.129** | **0.146** | 0.128 | 0.13 | 0.13 | 0.137 |
| H2O+ | g 100g$^{-1}$ | | | | | | | | | | | | | |
| CO2 | g 100g$^{-1}$ | | | | | | | | | | | | | |
| LOI | g 100g$^{-1}$ | **0.63** | 0.501 | **0.54** | **0.59** | | | **0.13** | **0.539** | **0.68** | 0.58 | 0.49 | 0.52 | 0.53 |
| Ag | mg kg$^{-1}$ | **0.13** | | | | 0.125 | | | | | | | | |
| As | mg kg$^{-1}$ | **2.18** | | **4.5** | | 2.17 | | | **1.16** | **2.093** | | | | 2.04 |
| Au | mg kg$^{-1}$ | | | | | 0.104 | | | | | | | | |
| B | mg kg$^{-1}$ | | | | | | | | | | | | | |
| Ba | mg kg$^{-1}$ | **356** | 298 | **322.2** | | 282 | **336** | **335** | **342** | **404.801** | | 360 | | 377 |
| Be | mg kg$^{-1}$ | **8.56** | | | | 8.91 | | | | **9.305** | | 8.9 | | 7.9 |
| Bi | mg kg$^{-1}$ | | | | | 1.12 | | | | **1.03** | | 1.1 | | 1.19 |
| Br | mg kg$^{-1}$ | | | | | | | | | | | | | |
| C(org) | mg kg$^{-1}$ | | | | | | | | | | | | | |
| C(tot) | mg kg$^{-1}$ | | | | | | | | | | | | | |
| Cd | mg kg$^{-1}$ | | | | | 0.12 | | | | **0.106** | | | | 0.26 |
| Ce | mg kg$^{-1}$ | **59.7** | | **67.5** | | 21.2 | | **52.9** | **64** | **88.803** | | 67 | | 67.2 |
| Cl | mg kg$^{-1}$ | | | | | | | | | | | | | |
| Co | mg kg$^{-1}$ | **2.57** | | **3.2** | | 2.67 | | | **2.6** | **2.626** | | 3 | | 2.62 |
| Cr | mg kg$^{-1}$ | **191** | 224 | **163.7** | | 171 | **185** | **162.4** | **193** | **216.712** | 214 | | | 204 |
| Cs | mg kg$^{-1}$ | 16 | | **14.7** | | 16.7 | **17.8** | | **17.6** | **19.329** | | 17.6 | | 22.3 |
| Cu | mg kg$^{-1}$ | **6.09** | 36 | **2.6** | | 6.31 | | **5.3** | **14.3** | **4.375** | | | | 6.38 |
| Dy | mg kg$^{-1}$ | **4.31** | | | | 2.51 | | | **4.56** | **0.511** | | 4.7 | | 4.65 |
| Er | mg kg$^{-1}$ | **2.47** | | | | 1.27 | | | **2.58** | **2.156** | | 2.6 | | 2.37 |
| Eu | mg kg$^{-1}$ | **0.56** | | | | 0.293 | | | **0.6** | **0.578** | | 0.61 | | 0.62 |
| F | mg kg$^{-1}$ | | | | | | | | | | | | | |
| Ga | mg kg$^{-1}$ | 20.8 | | **20.8** | | 23.9 | **22** | **22.5** | **20** | **25.987** | | 22.5 | | 24.5 |
| Gd | mg kg$^{-1}$ | **4.9** | | | | 2.46 | | | **4.73** | **5.527** | | 5.1 | | 5.01 |
| Ge | mg kg$^{-1}$ | | | | | 1.6 | | | | | | | | 1.61 |
| Hf | mg kg$^{-1}$ | 6.91 | | **5.1** | | 3.28 | | | **5.94** | **8.293** | | 5.3 | | 4.14 |
| Hg | mg kg$^{-1}$ | | | | | | | | | | | | | |
| Ho | mg kg$^{-1}$ | **0.83** | | | | 0.428 | | | **0.84** | **0.763** | | 0.92 | | 0.89 |
| I | mg kg$^{-1}$ | 3.57 | | | | | | | | | | | | |
| In | mg kg$^{-1}$ | | | | | 0.073 | | | | | | | | |
| La | mg kg$^{-1}$ | **28.7** | | **31.4** | | 8.84 | | **27** | **29.5** | **33.736** | | 31.9 | | 31.6 |
| Li | mg kg$^{-1}$ | **160** | | | | 115 | | | | **118.658** | 131 | | | 130 |
| Lu | mg kg$^{-1}$ | **0.36** | | | | 0.189 | | | **0.39** | **0.286** | | 0.37 | | 0.36 |
| Mo | mg kg$^{-1}$ | **2.89** | | **2.5** | | 3.18 | | **9.8** | **2.64** | **3.122** | | 3.2 | | 7.33 |
| Nb | mg kg$^{-1}$ | 14.9 | | **14.2** | | 15.5 | **17** | **17.9** | **15.5** | | | | | 15.9 |
| Nd | mg kg$^{-1}$ | **25.7** | | **25.2** | | 11.1 | | **25.5** | **27.09** | | | 28.1 | | 27.6 |
| Ni | mg kg$^{-1}$ | **5.49** | | **5** | | 5.45 | | **4.2** | **8.75** | **5.66** | | | | 4.97 |
| Pb | mg kg$^{-1}$ | **24.6** | | **24.6** | | 23.8 | | **22** | **23.4** | **32.311** | 26 | | | 26.4 |
| Pd | mg kg$^{-1}$ | | | | | 0.012 | | | | | | | | |
| Pr | mg kg$^{-1}$ | **6.69** | | | | 2.77 | | | **7.23** | **8.642** | | 7.8 | | 7.68 |
| Pt | mg kg$^{-1}$ | | | | | 0.01 | | | | | | | | |
| Rb | mg kg$^{-1}$ | 257 | 258 | **260.4** | | 173 | **275** | **267.8** | **248** | **303.169** | | 291 | | 318 |
| Re | mg kg$^{-1}$ | | | | | | | | | | | | | |
| S | mg kg$^{-1}$ | | | | | | | | **0.005** | | | | | |
| Sb | mg kg$^{-1}$ | **0.15** | | | | 0.167 | | | | **0.142** | | | | 0.18 |
| Sc | mg kg$^{-1}$ | 3.91 | | **8.7** | | 3.12 | **4.3** | | **4.52** | **5.756** | | 4.6 | | 5.3 |
| Se | mg kg$^{-1}$ | **2.62** | | | | | | | | | | | | |
| Sm | mg kg$^{-1}$ | **5.54** | | **5.7** | | 2.61 | | | **5.58** | **6.558** | | 6 | | 5.72 |
| Sn | mg kg$^{-1}$ | 12.8 | | | | 14 | | | | **22.569** | | 14.3 | | 14.8 |
| Sr | mg kg$^{-1}$ | **113** | 104 | **106.1** | | 90.4 | **111** | **106.5** | **114** | **111.402** | | 114 | | 122 |
| Ta | mg kg$^{-1}$ | **2.28** | | | | 2.79 | | | **2.41** | **5.645** | | 2.4 | | 2.55 |
| Tb | mg kg$^{-1}$ | **0.76** | | | | 0.392 | | | **0.74** | **0.745** | | 0.83 | | 0.82 |
| Te | mg kg$^{-1}$ | | | | | | | | | **0.281** | | | | |
| Th | mg kg$^{-1}$ | **20.5** | | **19.5** | | 10.9 | **19** | **18.2** | **19.2** | **23.507** | | 18.7 | | 18.5 |
| Tl | mg kg$^{-1}$ | **1.7** | | | | 1.77 | | | | **1.701** | | 1.7 | | 1.83 |
| Tm | mg kg$^{-1}$ | **0.38** | | | | 0.192 | | | **0.39** | **0.309** | | 0.39 | | 0.37 |
| U | mg kg$^{-1}$ | **5.49** | | **4.8** | | 3.32 | | **6.4** | **6.1** | **5.707** | | 6.1 | | 5.1 |
| V | mg kg$^{-1}$ | **13.7** | | **14.2** | | 12.9 | **14** | **13.2** | **18** | **15.941** | | 14.7 | | 13.2 |
| W | mg kg$^{-1}$ | | | **6.1** | | 0.563 | | | | **0.618** | | | | 0.47 |
| Y | mg kg$^{-1}$ | **21.1** | 23 | **25.9** | | 9.24 | **27** | **26.1** | **25.3** | **22.299** | | 25.6 | | 25.7 |
| Yb | mg kg$^{-1}$ | **2.52** | | | | 1.26 | | | **2.6** | **1.973** | | 2.5 | | 2.45 |
| Zn | mg kg$^{-1}$ | **56.9** | 4 | **51.5** | | 55.4 | **48** | **46.1** | **49.3** | **41.295** | 749 | 56.4 | | 55.1 |
| Zr | mg kg$^{-1}$ | 152 | 156 | **159.4** | | 108 | **180** | **160.3** | **212** | **116.135** | 207 | 171 | | 143 |

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

## Table 1 - GeoPT51A Contributed data for Granite, MEG-1. 15/06/2022

| Lab Code | | P32 | P34 | P35 | P36 | P37 | P38 | P40 | P41 | P42 | P43 | P44 | P45 | P48 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SiO2 | $g\ 100g^{-1}$ | **72.29** | **71.67** | **72.54** | | 75.307 | 71.68 | 72.22 | 72.3 | 72.45 | | **73.08** | 74.09 | 72.332 |
| TiO2 | $g\ 100g^{-1}$ | **0.3** | **0.28** | **0.3** | **0.29** | 0.309 | | 0.29 | 0.294 | 0.3 | 0.256 | **0.291** | 0.287 | 0.309 |
| Al2O3 | $g\ 100g^{-1}$ | **14.11** | **13.84** | **14.43** | **14.1** | 14.421 | 14.26 | 14.66 | 13.87 | 14.05 | | **13.49** | 13.48 | 14.125 |
| Fe2O3T | $g\ 100g^{-1}$ | **2.42** | **2.47** | **2.41** | | 2.455 | 2.61 | 2.46 | 2.422 | 2.41 | | **2.432** | 2.38 | 2.505 |
| Fe(II)O | $g\ 100g^{-1}$ | | | | | | | | | | | | | |
| MnO | $g\ 100g^{-1}$ | **0.063** | **0.06** | **0.05** | **0.06** | 0.057 | | 0.05 | 0.062 | 0.06 | 0.052 | **0.057** | 0.061 | 0.057 |
| MgO | $g\ 100g^{-1}$ | **0.38** | **0.41** | **0.38** | **0.4** | 0.366 | 0.42 | 0.37 | 0.380 | 0.39 | | **0.384** | 0.36 | 0.402 |
| CaO | $g\ 100g^{-1}$ | **1.12** | **1.11** | **1.13** | | 1.136 | 1.17 | 0.32 | 1.142 | 1.42 | | **1.124** | 1.16 | 1.159 |
| Na2O | $g\ 100g^{-1}$ | **3.62** | **3.57** | **3.62** | | 3.87 | | 3.84 | 3.784 | 3.74 | | **3.506** | 3.5 | 3.621 |
| K2O | $g\ 100g^{-1}$ | **4.51** | **4.73** | **4.62** | | 4.651 | | 4.98 | 4.649 | 4.78 | | **4.48** | 4.61 | 4.779 |
| P2O5 | $g\ 100g^{-1}$ | **0.137** | **0.13** | **0.14** | **0.126** | 0.126 | | 0.14 | 0.136 | 0.14 | | **0.131** | 0.15 | 0.131 |
| H2O+ | $g\ 100g^{-1}$ | | | | | | | | | | | | | |
| CO2 | $g\ 100g^{-1}$ | | | | | | | | | 0.085 | | | | |
| LOI | $g\ 100g^{-1}$ | **0.76** | **0.46** | **0.53** | | 0.57 | 0.6 | 0.71 | 0.540 | 0.7 | | **0.393** | 0.49 | 0.58 |
| Ag | $mg\ kg^{-1}$ | **0.178** | | | | | | | | 0.14 | 0.078 | **0.142** | | |
| As | $mg\ kg^{-1}$ | **2.3** | | | | | | | | 2.98 | 1.71 | **2.268** | | |
| Au | $mg\ kg^{-1}$ | | | | | | | | | | | | | |
| B | $mg\ kg^{-1}$ | **3.68** | | | | | | | | | | | | |
| Ba | $mg\ kg^{-1}$ | **337** | **345** | **360** | **348** | 342.240 | | | 292.8 | 367.440 | 311.4 | **343.5** | 356 | 424 |
| Be | $mg\ kg^{-1}$ | **9.15** | | | **9.25** | 9.01 | | | | | | **7.439** | 9 | |
| Bi | $mg\ kg^{-1}$ | **1.14** | | | | | | | | | 1.029 | **1.027** | | |
| Br | $mg\ kg^{-1}$ | | | | | | | | | | | | | |
| C(org) | $mg\ kg^{-1}$ | | | | | | | | | | | | | |
| C(tot) | $mg\ kg^{-1}$ | | | | | | | | | 231.350 | | **297.6** | | |
| Cd | $mg\ kg^{-1}$ | **0.121** | | | | | | | | | 0.084 | **0.119** | | |
| Ce | $mg\ kg^{-1}$ | **74.8** | **43** | | **63.3** | 68.96 | | | 46.45 | 68.86 | 59.8 | **61.71** | 70.3 | |
| Cl | $mg\ kg^{-1}$ | | | | | | | | | | | | | |
| Co | $mg\ kg^{-1}$ | **2.38** | | | **2.64** | 2.46 | | | | 2.85 | 2.57 | **2.458** | | 5 |
| Cr | $mg\ kg^{-1}$ | **194** | **188** | **170** | **202** | 203.050 | | | 149.3 | 198.140 | 166.2 | **166.5** | | 206 |
| Cs | $mg\ kg^{-1}$ | **17.12** | | | **17.9** | 17.29 | | | | 16.93 | | **15.91** | | |
| Cu | $mg\ kg^{-1}$ | **5.48** | | | **5.16** | 5.7 | | | | 13.74 | 5.76 | **16.51** | | 8 |
| Dy | $mg\ kg^{-1}$ | **4.28** | | | **4.51** | 4.58 | | | | 4.73 | | **3.923** | 4.6 | |
| Er | $mg\ kg^{-1}$ | **2.19** | | | **2.51** | 2.49 | | | | 2.53 | | **2.189** | 2.4 | |
| Eu | $mg\ kg^{-1}$ | **0.64** | | | **0.57** | 0.57 | | | | 0.6 | | **0.538** | 0.59 | |
| F | $mg\ kg^{-1}$ | | **938** | | | | | | | | | | | |
| Ga | $mg\ kg^{-1}$ | **22** | **19** | | **21.9** | 20.88 | | | 20.76 | 22.27 | 21.01 | **22.56** | | |
| Gd | $mg\ kg^{-1}$ | **5.24** | **3** | | **4.77** | 4.76 | | | | 5.08 | | **4.502** | 4.7 | |
| Ge | $mg\ kg^{-1}$ | **1.1** | | | | | | | | | | | | |
| Hf | $mg\ kg^{-1}$ | **4.85** | **6** | | **5.1** | 4.8 | | | 6.485 | 4.97 | | **4.613** | 5 | |
| Hg | $mg\ kg^{-1}$ | | | | | | | | | | | | | |
| Ho | $mg\ kg^{-1}$ | **0.78** | | | **0.85** | 0.86 | | | | 0.89 | | **0.774** | 0.9 | |
| I | $mg\ kg^{-1}$ | | | | | | | | | | | | | |
| In | $mg\ kg^{-1}$ | | | | | | | | | | 0.052 | | | |
| La | $mg\ kg^{-1}$ | **33.5** | **32** | | **29.5** | 29.97 | | | 33.11 | 31.47 | 26.6 | **26.06** | 32.1 | |
| Li | $mg\ kg^{-1}$ | **111** | | | | | | | | | | **105** | | |
| Lu | $mg\ kg^{-1}$ | **0.31** | | | **0.33** | 0.37 | | | | 0.38 | | **0.34** | 0.39 | |
| Mo | $mg\ kg^{-1}$ | **3.16** | | | | 2.97 | | | | 3.6 | 2.4 | **3.526** | | |
| Nb | $mg\ kg^{-1}$ | **15.9** | **16** | | **15.2** | 12.93 | | | 13.4 | 15.58 | 14.37 | **14.18** | 12 | 16 |
| Nd | $mg\ kg^{-1}$ | **30** | **31** | | **26.8** | 27.16 | | | 25.09 | 28.15 | | **24.56** | 28.1 | |
| Ni | $mg\ kg^{-1}$ | **4.48** | **7** | | | 3.7 | | | 6.971 | 9.05 | 4.1 | **6.236** | | 13 |
| Pb | $mg\ kg^{-1}$ | **23.4** | **25** | | | 23.94 | | | 24.45 | 28.57 | 25.86 | **23.34** | | 21 |
| Pd | $mg\ kg^{-1}$ | | | | | | | | | | | | | |
| Pr | $mg\ kg^{-1}$ | **8.06** | | | **7.31** | 7.85 | | | | 7.82 | | **6.767** | 7.64 | |
| Pt | $mg\ kg^{-1}$ | | | | | | | | | | | | | |
| Rb | $mg\ kg^{-1}$ | **264** | **283** | | **274** | 267.310 | | | 260.3 | 284.870 | 269.530 | **251.1** | 271 | 279 |
| Re | $mg\ kg^{-1}$ | | | | | | | | | | | | | |
| S | $mg\ kg^{-1}$ | | | | | | | | | 61.49 | | **101.970** | | |
| Sb | $mg\ kg^{-1}$ | **0.156** | | | | | | | | 0.29 | 0.086 | **0.284** | | |
| Sc | $mg\ kg^{-1}$ | **2.47** | **4** | | | 4.3 | | | | 5.06 | | **5.01** | 4 | |
| Se | $mg\ kg^{-1}$ | **1.11** | | | | | | | | | 0.165 | | | |
| Sm | $mg\ kg^{-1}$ | **6.23** | | | **5.64** | 5.48 | | | | 5.97 | | **5.177** | 5.9 | |
| Sn | $mg\ kg^{-1}$ | **14.12** | | | **15.2** | | | | 11.48 | | | **12.19** | 13 | |
| Sr | $mg\ kg^{-1}$ | **113** | **103** | | **113** | 114.890 | | | 102 | 112.790 | 108.480 | **101.2** | 111 | 112 |
| Ta | $mg\ kg^{-1}$ | **2.46** | | | **2.82** | 2.26 | | | | 2.36 | | **1.961** | 2.1 | |
| Tb | $mg\ kg^{-1}$ | **0.77** | | | **0.75** | 0.76 | | | | 0.78 | | **0.693** | 0.8 | |
| Te | $mg\ kg^{-1}$ | | | | | | | | | | | | | |
| Th | $mg\ kg^{-1}$ | **17.8** | **20** | | **19.2** | 21.22 | | | 18.11 | 20.37 | 19.06 | **16.94** | 18 | 21 |
| Tl | $mg\ kg^{-1}$ | **1.67** | | | **2.37** | 1.44 | | | | | 0.655 | **1.607** | | |
| Tm | $mg\ kg^{-1}$ | **0.31** | | | **0.37** | 0.37 | | | | 0.38 | | **0.335** | 0.42 | |
| U | $mg\ kg^{-1}$ | **4.89** | **4** | | **5.61** | 6.25 | | | 7.689 | 5.8 | 4.94 | **5.791** | 5.7 | |
| V | $mg\ kg^{-1}$ | **13.4** | **9** | | **13.8** | 13.3 | | | 11.63 | 17.19 | 11.28 | **12.85** | 15 | 58 |
| W | $mg\ kg^{-1}$ | **1.05** | | | | | | | | | | **0.613** | | |
| Y | $mg\ kg^{-1}$ | **20.5** | **30** | | **25.7** | 28 | | | 24.39 | 25.4 | 24.67 | **22.4** | 23 | 44 |
| Yb | $mg\ kg^{-1}$ | **2.03** | **9** | | **2.52** | 2.52 | | | | 2.53 | | **2.175** | 2.7 | |
| Zn | $mg\ kg^{-1}$ | **51** | **55** | | | 60.5 | | | 45.88 | 59.88 | 51.3 | **51.5** | | 54 |
| Zr | $mg\ kg^{-1}$ | **168** | **176** | | **177** | 164.630 | | | 172.2 | 158.260 | 161.170 | **172.7** | 168 | 161 |

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

## Table 1 - GeoPT51A Contributed data for Granite, MEG-1. 15/06/2022

| Lab Code | | P49 | P51 | P52 | P53 | P54 | P55 | P56 | P57 | P58 | P59 | P61 | P62 | P64 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SiO2 | g 100g$^{-1}$ | 71.4 | 72.29 | 71.9 | 72.11 | **72.11** | **73.12** | 71.1 | **72.79** | 72.5 | 73.63 | 72.314 | **72.39** | 72.32 |
| TiO2 | g 100g$^{-1}$ | 0.35 | 0.3 | 0.283 | 0.29 | **0.299** | **0.324** | 0.26 | **0.293** | 0.28 | 0.291 | 0.317 | **0.299** | 0.31 |
| Al2O3 | g 100g$^{-1}$ | 14.94 | 14.11 | 14.6 | 14.13 | **14.12** | **14.2** | 13.4 | **13.08** | 14.1 | 13.241 | 14.185 | **14.15** | 13.97 |
| Fe2O3T | g 100g$^{-1}$ | 2.42 | 2.44 | 2.42 | 2.44 | **2.54** | **2.64** | 2.4 | **2.48** | 2.46 | 2.211 | 2.682 | **2.431** | 2.5 |
| Fe(II)O | g 100g$^{-1}$ | | | | 2.06 | | | | | | | | | |
| MnO | g 100g$^{-1}$ | 0.07 | 0.06 | | 0.06 | **0.06** | **0.059** | 0.06 | **0.057** | 0.06 | 0.309 | 0.058 | **0.064** | 0.06 |
| MgO | g 100g$^{-1}$ | 0.45 | 0.37 | 0.384 | 0.38 | **0.38** | **0.408** | 0.45 | **0.359** | 0.4 | 0.349 | 0.395 | **0.383** | 0.42 |
| CaO | g 100g$^{-1}$ | 1.15 | 1.16 | 1.12 | 1.16 | **1.16** | **1.11** | 1.23 | **1.104** | 1.2 | 1.143 | 1.17 | **1.15** | 1.13 |
| Na2O | g 100g$^{-1}$ | 3.59 | 3.65 | 3.62 | 3.66 | **3.69** | **3.65** | 3.6 | **3.492** | 3.71 | 3.529 | 3.669 | **3.702** | 3.65 |
| K2O | g 100g$^{-1}$ | 4.68 | 4.79 | 4.67 | 4.72 | **4.75** | **4.63** | 4.47 | **4.542** | 4.68 | 4.548 | 4.654 | **4.67** | 4.74 |
| P2O5 | g 100g$^{-1}$ | 0.15 | 0.13 | 0.14 | 0.137 | **0.138** | **0.127** | | **0.121** | 0.13 | 0.14 | 0.143 | **0.147** | 0.13 |
| H2O+ | g 100g$^{-1}$ | | | | 0.54 | | | 0.15 | | | | | | |
| CO2 | g 100g$^{-1}$ | | | | | | | | | | | | | |
| LOI | g 100g$^{-1}$ | **0.56** | 0.47 | 0.493 | 0.42 | **0.67** | **0.53** | 0.34 | **0.694** | 0.54 | 0.625 | 0.635 | **0.64** | 0.59 |
| Ag | mg kg$^{-1}$ | | | | 0.107 | | | | | | | | | |
| As | mg kg$^{-1}$ | | | | 2.07 | | | 2.285 | | | 2 | | **6** | |
| Au | mg kg$^{-1}$ | | | | | | | | | | | | | |
| B | mg kg$^{-1}$ | | | | | | | | | | 20.8 | | | |
| Ba | mg kg$^{-1}$ | | 327 | | 360 | **351** | 379 | 362.4 | **355.4** | | 332.6 | 396 | **347** | 344 |
| Be | mg kg$^{-1}$ | | | | 8.72 | | | | **9.72** | | 7.5 | | | 9.53 |
| Bi | mg kg$^{-1}$ | | | | 1.115 | | | | | | 2.7 | | | |
| Br | mg kg$^{-1}$ | | | | | | | | | | | | | |
| C(org) | mg kg$^{-1}$ | | | | 300 | | | 342.6 | | | | | | |
| C(tot) | mg kg$^{-1}$ | | | | 300 | | | 178.8 | | | | | | |
| Cd | mg kg$^{-1}$ | | | | 0.06 | | | | | | | | | |
| Ce | mg kg$^{-1}$ | | | | 66.8 | **67.04** | | | **64.94** | | | | **58** | 65.7 |
| Cl | mg kg$^{-1}$ | | | | 110 | | | | | | | | **71** | |
| Co | mg kg$^{-1}$ | | | | 2.74 | | | 3.016 | **2.588** | | 5 | 2 | **5** | 2.7 |
| Cr | mg kg$^{-1}$ | 0.021 | 182 | | 164.5 | **202** | 183 | 231.4 | **190.6** | | 153.3 | 184 | **215** | 205 |
| Cs | mg kg$^{-1}$ | | | | 18.7 | **17.59** | | | **17.1** | | | | **19** | 17.8 |
| Cu | mg kg$^{-1}$ | | | | 6.45 | **6** | | 9.396 | **6.04** | | 2.5 | 8 | **9** | 7.53 |
| Dy | mg kg$^{-1}$ | | | | 4.33 | **4.71** | | | **4.263** | | | | | 4.82 |
| Er | mg kg$^{-1}$ | | | | 2.27 | **2.52** | | | **2.246** | | | | | 2.62 |
| Eu | mg kg$^{-1}$ | | | | 0.583 | **0.57** | | | **0.545** | | | | | 0.611 |
| F | mg kg$^{-1}$ | | | | 1090 | | | | | 966 | | 1182 | **1111** | |
| Ga | mg kg$^{-1}$ | | 22 | | 23.9 | **22** | 26 | | **22.1** | | 20.7 | 20 | **23** | 22.7 |
| Gd | mg kg$^{-1}$ | | | | 4.78 | **5.04** | | | **4.679** | | | | | 5.33 |
| Ge | mg kg$^{-1}$ | | | | 0.13 | | | | | | | | | 1.96 |
| Hf | mg kg$^{-1}$ | | | | 3.51 | **4.82** | | | **4.273** | | | 6 | | 4.71 |
| Hg | mg kg$^{-1}$ | | | | | | | | | | | | | |
| Ho | mg kg$^{-1}$ | | | | 0.767 | **0.91** | | | **0.804** | | | | | 0.917 |
| I | mg kg$^{-1}$ | | | | | | | | | | | | | |
| In | mg kg$^{-1}$ | | | | 0.056 | | | | | | 32.9 | | | |
| La | mg kg$^{-1}$ | | | | 32.2 | **30.94** | | | **30.57** | | 31.2 | | **18** | 31.6 |
| Li | mg kg$^{-1}$ | | | | 125 | | | | **148.530** | | 115.6 | 125 | | 124 |
| Lu | mg kg$^{-1}$ | | | | 0.304 | **0.38** | | | **0.322** | | | | | 0.399 |
| Mo | mg kg$^{-1}$ | | | | 3.22 | | | 4.519 | **3.525** | | 2.5 | | | |
| Nb | mg kg$^{-1}$ | | | | 16.6 | **15.96** | | | **15.62** | | | | **15** | 16 |
| Nd | mg kg$^{-1}$ | 0.051 | | | 29.2 | **28.38** | | | **26.95** | | | | **26** | 29.2 |
| Ni | mg kg$^{-1}$ | | | | 5.69 | **9** | | 8.893 | **5.17** | | 4.6 | 6 | **6** | 6.2 |
| Pb | mg kg$^{-1}$ | | | | 24.8 | **25.76** | | 23.92 | **25.88** | | 16.1 | 49 | **23** | 26.5 |
| Pd | mg kg$^{-1}$ | | | | | | | | | | | | | |
| Pr | mg kg$^{-1}$ | | | | 8.21 | **7.84** | | | **7.514** | | | | | 7.9 |
| Pt | mg kg$^{-1}$ | | | | | | | | | | | | | |
| Rb | mg kg$^{-1}$ | | | | 302 | **277.8** | 264 | 273 | **270.790** | | | | **273** | 272 |
| Re | mg kg$^{-1}$ | | | | | | | | | | | | | |
| S | mg kg$^{-1}$ | | | | | | | | | | 50.57 | | | |
| Sb | mg kg$^{-1}$ | | | | 0.16 | | | 0.284 | | | | | | |
| Sc | mg kg$^{-1}$ | | | | 3.91 | **4.5** | | | **4.4** | | 3.8 | | **7** | 4.92 |
| Se | mg kg$^{-1}$ | | | | 0.009 | | | | | | 4.7 | | | |
| Sm | mg kg$^{-1}$ | | | | 6.02 | **5.82** | | | **5.581** | | | | | 6.07 |
| Sn | mg kg$^{-1}$ | | | | 13.7 | | | 11.61 | | | 13.1 | | **16** | |
| Sr | mg kg$^{-1}$ | 0.008 | 101 | | 120.5 | **112** | 111 | 104.2 | **106.590** | | 109 | 137 | **113** | 117 |
| Ta | mg kg$^{-1}$ | | | | 2.36 | **2.58** | | | **2.496** | | | | | 2.54 |
| Tb | mg kg$^{-1}$ | | | | 0.766 | **0.84** | | | **0.753** | | | | | 0.847 |
| Te | mg kg$^{-1}$ | | | | | | | | | | | | | |
| Th | mg kg$^{-1}$ | | | | 20.2 | **20.54** | | | **20.01** | | | | **22** | 20.8 |
| Tl | mg kg$^{-1}$ | | | | 1.615 | | | | | | | | | |
| Tm | mg kg$^{-1}$ | | | | 0.324 | **0.4** | | | | | | | | 0.41 |
| U | mg kg$^{-1}$ | | | | 4.91 | **5.67** | | | **5.315** | | | | **6** | 5.43 |
| V | mg kg$^{-1}$ | | 13 | | 14 | **15** | | 14.32 | **12.873** | | 12.9 | | **14** | 13.5 |
| W | mg kg$^{-1}$ | | | | 0.497 | | | | **1.007** | | | | | |
| Y | mg kg$^{-1}$ | | | | 23.5 | **26.36** | 63 | | **23.43** | | 21.9 | 27 | **27** | 27.4 |
| Yb | mg kg$^{-1}$ | | | | 2.26 | **2.49** | | | **2.237** | | | | | 2.6 |
| Zn | mg kg$^{-1}$ | 0.024 | 53 | | 59.4 | **54** | 54 | 54.56 | **55.77** | | 55.7 | 55 | **56** | 52.7 |
| Zr | mg kg$^{-1}$ | 0.037 | 161 | | 125.5 | **167** | 186 | | **144.040** | | 109.2 | 289 | **158** | 165 |

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

## Table 1 - GeoPT51A Contributed data for Granite, MEG-1. 15/06/2022

| Lab Code | | P65 | P66 | P67 | P68 | P69 | P71 | P72 | P73 | P75 | P77 | P78 | P79 | P80 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SiO2 | g 100g$^{-1}$ | | 71.523 | **73.18** | **72.6** | 71.82 | 69.05 | 72.88 | 72.11 | | 68.9 | 72.4 | **87.71** | 72.19 |
| TiO2 | g 100g$^{-1}$ | | 0.291 | **0.312** | **0.298** | 0.293 | 0.28 | 0.29 | 0.306 | | 0.283 | 0.29 | **0.317** | 0.3 |
| Al2O3 | g 100g$^{-1}$ | | 13.713 | **15.24** | **14.152** | 14.14 | 13.38 | 14.22 | 14.09 | | 14.7 | 14.14 | **14.04** | 14.12 |
| Fe2O3T | g 100g$^{-1}$ | | 2.469 | **2.66** | **2.434** | 2.43 | 2.44 | 2.38 | 2.472 | | 2.3 | 2.433 | **2.52** | 2.47 |
| Fe(II)O | g 100g$^{-1}$ | | | | | | | | | | | | | |
| MnO | g 100g$^{-1}$ | | 0.08 | **0.065** | **0.062** | 0.06 | 0.058 | 0.05 | 0.057 | | 0.051 | 0.061 | **0.066** | 0.062 |
| MgO | g 100g$^{-1}$ | | 0.61 | **0.419** | **0.390** | 0.39 | 0.52 | 0.35 | 0.387 | | | 0.437 | **0.51** | 0.38 |
| CaO | g 100g$^{-1}$ | | 1.099 | **1.27** | **1.114** | 1.14 | 1.08 | 1.16 | 1.168 | | 1.15 | 1.143 | **1.105** | 1.16 |
| Na2O | g 100g$^{-1}$ | | 3.734 | **3.61** | **3.755** | 3.66 | 3.76 | 3.6 | 3.755 | | | 3.794 | **3.88** | 3.68 |
| K2O | g 100g$^{-1}$ | | 4.842 | **5.09** | **4.877** | 4.65 | 4.9 | 4.63 | 4.779 | | 4.14 | 4.827 | **4.94** | 4.74 |
| P2O5 | g 100g$^{-1}$ | | 0.122 | **0.15** | **0.130** | 0.139 | 0.12 | 0.13 | 0.113 | | | 0.128 | | 0.136 |
| H2O+ | g 100g$^{-1}$ | | | | | | | | | | | | | |
| CO2 | g 100g$^{-1}$ | | | | | | | | | | | | | |
| LOI | g 100g$^{-1}$ | | 0.748 | | **0.744** | 0.58 | 4.41 | 0.66 | 0.631 | | | | | 0.61 |
| Ag | mg kg$^{-1}$ | | | | | | | | | | | | **1.3** | |
| As | mg kg$^{-1}$ | | | | | | 3 | | | | | | | |
| Au | mg kg$^{-1}$ | | | | | | | | | | | | | |
| B | mg kg$^{-1}$ | | | | | | | | | | | | | |
| Ba | mg kg$^{-1}$ | | 360 | **363.6** | **352.440** | 344.1 | 296 | 352 | | **312.4** | 356 | | **320** | 325 |
| Be | mg kg$^{-1}$ | | | | | | | 8.57 | | | | | | |
| Bi | mg kg$^{-1}$ | | | | | | | | | | | | | |
| Br | mg kg$^{-1}$ | | | | | | | | | | 6.6 | | | |
| C(org) | mg kg$^{-1}$ | | | | | | | | | | | | | |
| C(tot) | mg kg$^{-1}$ | | | | | | | | | | | | | |
| Cd | mg kg$^{-1}$ | | | **0.332** | | | | | | | | | | |
| Ce | mg kg$^{-1}$ | **64.52** | 67 | **68.25** | | | 51 | 64.79 | | **58.08** | 66.9 | | **67** | |
| Cl | mg kg$^{-1}$ | | | | | | | | | | | | **110** | 360 |
| Co | mg kg$^{-1}$ | | 14 | **2.73** | | | | 4 | | | | | **2.68** | |
| Cr | mg kg$^{-1}$ | | 172 | **203.3** | **183.9** | 192.6 | 160 | 212 | | | 204 | 198 | **209** | 188 |
| Cs | mg kg$^{-1}$ | | 14 | **17.01** | | | 15 | | | **16.22** | | | **17.7** | |
| Cu | mg kg$^{-1}$ | | | **7.37** | | | 6 | 7.5 | | | 11.1 | | | |
| Dy | mg kg$^{-1}$ | **5.27** | | **4.46** | | | | 4.52 | | **3.584** | | | **5.6** | |
| Er | mg kg$^{-1}$ | **2.83** | | **2.43** | | | | 2.41 | | **1.941** | | | | |
| Eu | mg kg$^{-1}$ | **0.63** | | **0.56** | | | | 0.58 | | **0.621** | | | **0.6** | |
| F | mg kg$^{-1}$ | | | | | | | | | | | | | 1035 |
| Ga | mg kg$^{-1}$ | | 22 | **22.23** | | 21.7 | 20 | 21 | | | 22.3 | | | 25 |
| Gd | mg kg$^{-1}$ | **5.33** | | **5.01** | | | | 4.84 | | | | | | |
| Ge | mg kg$^{-1}$ | | | | | | | 1.71 | | | | | | |
| Hf | mg kg$^{-1}$ | | 4 | **4.85** | | | 4 | 5.2 | | **4.167** | | | **4.54** | 5.4 |
| Hg | mg kg$^{-1}$ | | | | | | | | | | | | | |
| Ho | mg kg$^{-1}$ | **0.87** | | **0.883** | | | | 0.83 | | **0.681** | | | | |
| I | mg kg$^{-1}$ | | | | | | 3 | | | | | | | |
| In | mg kg$^{-1}$ | | | | | | | | | | | | | |
| La | mg kg$^{-1}$ | **32.64** | 29 | **31.69** | | | 31 | 30.46 | | **25.76** | 28.9 | | **31** | |
| Li | mg kg$^{-1}$ | | | **122.1** | | | | | | | | | | |
| Lu | mg kg$^{-1}$ | **0.33** | | **0.376** | | | | 0.39 | | **0.259** | | | **0.33** | |
| Mo | mg kg$^{-1}$ | | | **2.64** | | | 3 | | | | | | | |
| Nb | mg kg$^{-1}$ | | 8 | **16.05** | | 14.7 | 14 | 15 | | **14.48** | 22.1 | | | 19 |
| Nd | mg kg$^{-1}$ | **28.13** | 34 | **28.3** | | | 22 | 28.43 | | **23.73** | 25.7 | | **26** | |
| Ni | mg kg$^{-1}$ | | | **5.88** | | | 7 | 5.5 | | | | | | |
| Pb | mg kg$^{-1}$ | | 31 | **24.03** | | 23.9 | 23 | 25 | | **23.06** | 30.3 | | | |
| Pd | mg kg$^{-1}$ | | | | | | | | | | | | **140** | |
| Pr | mg kg$^{-1}$ | **7.89** | | **7.85** | | | | 7.78 | | **6.56** | | | | |
| Pt | mg kg$^{-1}$ | | | | | | | | | | | | | |
| Rb | mg kg$^{-1}$ | | 268 | **278.4** | | 272 | 264 | 275 | | **276.8** | 289 | | **282** | 258 |
| Re | mg kg$^{-1}$ | | | | | | | | | | | | | |
| S | mg kg$^{-1}$ | | | | | | | | | | | | | |
| Sb | mg kg$^{-1}$ | | | | | | | | | | | | **0.22** | |
| Sc | mg kg$^{-1}$ | | | **4.36** | **4.533** | | 5 | | | **3.268** | | | **4.43** | |
| Se | mg kg$^{-1}$ | | | | | | | | | | | | | |
| Sm | mg kg$^{-1}$ | **6.15** | | **5.64** | | | 5 | 5.5 | | **4.637** | | | **5.4** | |
| Sn | mg kg$^{-1}$ | | 11 | | | | 13 | | | | | | | |
| Sr | mg kg$^{-1}$ | | 114 | **105.9** | **113.520** | 112.4 | 108 | 115 | | **101.5** | 117 | 110 | **110** | 113 |
| Ta | mg kg$^{-1}$ | | | **2.51** | | | | 2.47 | | **2.292** | | | **2.23** | |
| Tb | mg kg$^{-1}$ | **0.85** | | **0.835** | | | | 0.81 | | **0.690** | | | **0.73** | |
| Te | mg kg$^{-1}$ | | | | | | | | | | | | | |
| Th | mg kg$^{-1}$ | | 24 | **18.92** | | | 19 | 18 | | **19.09** | 18.4 | | **20.5** | |
| Tl | mg kg$^{-1}$ | | | | | | | | | | | | | |
| Tm | mg kg$^{-1}$ | **0.46** | | **0.387** | | | | 0.39 | | **0.302** | | | | |
| U | mg kg$^{-1}$ | | 3 | **5.59** | | | 6 | 5.55 | | **4.865** | 4.3 | | **4.7** | |
| V | mg kg$^{-1}$ | | | **12.7** | | | 12 | 14 | | | | | **12.3** | |
| W | mg kg$^{-1}$ | | | | | | | | | | | | | |
| Y | mg kg$^{-1}$ | **24.93** | 7 | **26** | **25.19** | 25.6 | 25 | 25.33 | | **18.87** | 28.3 | | | 35 |
| Yb | mg kg$^{-1}$ | **2.46** | | **2.53** | | | 3 | 2.5 | | **1.899** | | | **2.56** | |
| Zn | mg kg$^{-1}$ | | 53 | **53.87** | **53.8** | 53.6 | 47 | 54 | | | 52.1 | | **77** | 57 |
| Zr | mg kg$^{-1}$ | | 200 | **163.780** | **183.7** | 163.6 | 162 | 176 | | **167.4** | 154 | 178 | **170** | 170 |

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

## Table 1 - GeoPT51A Contributed data for Granite, MEG-1. 15/06/2022

| Lab Code | | P81 | P82 | P83 | P84 | P85 | P86 | P87 | P88 | P89 | P90 | P91 | P92 | P93 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SiO2 | g 100g$^{-1}$ | **71.48** | **73.31** | **72.189** | 72.5 | 71.53 | 72.05 | **71.93** | 72.6 | 72.23 | 73.2 | 72.667 | 71.83 | **72.218** |
| TiO2 | g 100g$^{-1}$ | **0.31** | **0.28** | **0.301** | 0.288 | 0.3 | 0.3 | **0.3** | 0.28 | 0.3 | 0.3 | 0.315 | 0.29 | **0.297** |
| Al2O3 | g 100g$^{-1}$ | **13.79** | **14.07** | **13.981** | 14.23 | 14.55 | 13.98 | **14.01** | 14 | 13.97 | 13.8 | 13.874 | 14.32 | **14.107** |
| Fe2O3T | g 100g$^{-1}$ | **2.43** | **2.33** | **2.482** | 2.434 | 2.5 | 2.44 | **2.52** | 3.07 | 2.44 | 2.45 | 2.512 | 2.49 | **2.429** |
| Fe(II)O | g 100g$^{-1}$ | | | **1.66** | | | | **1.786** | | 2.3 | | | | **1.825** |
| MnO | g 100g$^{-1}$ | **0.06** | **0.056** | **0.06** | 0.055 | 0.058 | 0.06 | **0.06** | | 0.058 | 0.062 | 0.064 | 0.06 | **0.060** |
| MgO | g 100g$^{-1}$ | **0.38** | **0.36** | **0.362** | 0.372 | 0.4 | 0.33 | **0.38** | 0.31 | 0.42 | 0.34 | 0.433 | 0.43 | **0.404** |
| CaO | g 100g$^{-1}$ | **1.08** | **1.14** | **1.159** | 1.105 | 1.09 | 1.14 | **1.2** | 1.05 | 1.2 | 1.16 | 1.144 | 1.27 | **1.174** |
| Na2O | g 100g$^{-1}$ | **3.63** | **3.69** | **3.84** | 3.636 | 3.94 | 3.83 | **3.7** | 2 | 3.7 | 3.91 | 3.68 | 3.72 | **3.686** |
| K2O | g 100g$^{-1}$ | **4.59** | **4.72** | **4.734** | 4.515 | 4.72 | 4.96 | **4.77** | 4.74 | 4.7 | 4.8 | 4.823 | 4.83 | **4.769** |
| P2O5 | g 100g$^{-1}$ | **0.14** | **0.13** | **0.141** | 0.133 | | 0.13 | **0.14** | 0.09 | 0.14 | 0.125 | 0.126 | 0.14 | **0.138** |
| H2O+ | g 100g$^{-1}$ | | | | | | | **0.667** | | | | | | |
| CO2 | g 100g$^{-1}$ | | | | | | | **0.149** | | | | | | |
| LOI | g 100g$^{-1}$ | 0.65 | **0.66** | **0.554** | | 0.5 | 0.64 | **0.72** | 0.83 | 0.64 | 0.6 | 0.455 | | **0.555** |
| Ag | mg kg$^{-1}$ | | | | | | | **0.115** | | | | 0.12 | | |
| As | mg kg$^{-1}$ | | **3** | | 2.867 | | | **1.86** | | | | 1.98 | | |
| Au | mg kg$^{-1}$ | | | | | | | | | | | | | |
| B | mg kg$^{-1}$ | | | | | | | **6.075** | | | | | | |
| Ba | mg kg$^{-1}$ | **375** | **320** | **337.630** | 336 | 335 | 307 | **326** | | 338 | 359 | 347.940 | 368.5 | **349.118** |
| Be | mg kg$^{-1}$ | | | **9.25** | 9.767 | | | **8.59** | | 8.2 | 8.39 | 7.66 | 9.1 | **9.366** |
| Bi | mg kg$^{-1}$ | | **1** | | 1.25 | | | **1.04** | | | | 1 | | |
| Br | mg kg$^{-1}$ | | | | | | | | | | | | | |
| C(org) | mg kg$^{-1}$ | | | | | | | **119** | | | | | | |
| C(tot) | mg kg$^{-1}$ | | | | | | | | | | | | | |
| Cd | mg kg$^{-1}$ | | | | | | | **0.12** | | | | 0.11 | | |
| Ce | mg kg$^{-1}$ | | **54** | | 67 | | | **60.9** | | 60 | 69.6 | 66.32 | 69.9 | **66.955** |
| Cl | mg kg$^{-1}$ | | | | 51 | | | **100.278** | | | 70 | | | |
| Co | mg kg$^{-1}$ | | **3** | | 2.733 | | | **2.59** | | | 2.6 | 2.4 | 3 | **2.618** |
| Cr | mg kg$^{-1}$ | **198** | **160** | **189.490** | 94.33 | | 158 | **197** | | 164 | | 218.330 | 217.1 | **193.615** |
| Cs | mg kg$^{-1}$ | | **15** | | | | | **16.9** | | | | 15.25 | 18.1 | **16.712** |
| Cu | mg kg$^{-1}$ | | **5** | **6.63** | 6.6 | | | **6.7** | | | | 6.68 | 7.8 | **6.588** |
| Dy | mg kg$^{-1}$ | | | | 4.7 | | | **4.52** | | | 4.24 | 3.89 | 4.7 | **4.719** |
| Er | mg kg$^{-1}$ | | | | 2.8 | | | **2.38** | | | 2.2 | 2.05 | 2.6 | **2.574** |
| Eu | mg kg$^{-1}$ | | | | | | | **0.571** | | | 0.64 | 0.54 | 0.6 | **0.612** |
| F | mg kg$^{-1}$ | | | | 1150 | | | **1210** | | | 1200 | | | |
| Ga | mg kg$^{-1}$ | | **21** | | 22.5 | | 17 | **23.1** | | 21 | 22.7 | 19.89 | 22.8 | **22.576** |
| Gd | mg kg$^{-1}$ | | | | 5.4 | | | **4.54** | | | | 4.5 | 5.6 | **4.941** |
| Ge | mg kg$^{-1}$ | | | | | | | **1.65** | | | | 3.07 | | |
| Hf | mg kg$^{-1}$ | | **5** | | | | | **4.99** | | | | | 5 | **4.671** |
| Hg | mg kg$^{-1}$ | | | | | | | **0.011** | | | | | | |
| Ho | mg kg$^{-1}$ | | | | | | | **0.882** | | | 0.77 | 0.7 | 1 | **0.902** |
| I | mg kg$^{-1}$ | | | | | | | | | | | | | |
| In | mg kg$^{-1}$ | | | | | | | **0.06** | | | | | | |
| La | mg kg$^{-1}$ | 29 | **26** | | 31 | | | **28.4** | | 29 | 32.2 | 31.52 | 33.3 | **31.874** |
| Li | mg kg$^{-1}$ | | | **131.150** | 128.3 | | | **123.723** | | 104 | 124 | 110.8 | | **118.829** |
| Lu | mg kg$^{-1}$ | | | | | | | **0.357** | | | 0.29 | 0.27 | 0.4 | **0.367** |
| Mo | mg kg$^{-1}$ | | **2** | **3.02** | 3.167 | | | **2.87** | | | | 2.99 | 3.4 | **3.123** |
| Nb | mg kg$^{-1}$ | | **13** | | | | 15 | **12.9** | | 15 | 14 | 14.22 | 15.2 | **15.91** |
| Nd | mg kg$^{-1}$ | | **22** | | 29 | | | **25.7** | | | 28.7 | 25.9 | 29.9 | **28.317** |
| Ni | mg kg$^{-1}$ | | **5** | | 7.5 | | | **6.1** | | | 5 | 5.05 | 5.8 | **5.87** |
| Pb | mg kg$^{-1}$ | | **24** | **34.22** | 26.33 | 24 | 28 | **23.6** | | 25 | 24.3 | 21.95 | 32.2 | **25.853** |
| Pd | mg kg$^{-1}$ | | | | | | | | | | | | | |
| Pr | mg kg$^{-1}$ | | | | 7.8 | | | **7** | | | 7.82 | 7.14 | 8.3 | **7.61** |
| Pt | mg kg$^{-1}$ | | | | | | | | | | | | | |
| Rb | mg kg$^{-1}$ | **274** | **260** | | 342 | 260 | 256 | **271** | | 264 | 259 | 257.020 | 291.5 | **278.142** |
| Re | mg kg$^{-1}$ | | | | | | | | | | | | | |
| S | mg kg$^{-1}$ | | | **14.09** | | | | | | | 130 | | | |
| Sb | mg kg$^{-1}$ | | | | | | | **0.18** | | | 0.22 | 0.18 | | |
| Sc | mg kg$^{-1}$ | | **3** | **4.25** | 5.8 | | | **4.65** | | | | | | **4.277** |
| Se | mg kg$^{-1}$ | | | | | | | **0.004** | | | | | | |
| Sm | mg kg$^{-1}$ | | **5** | | 5.8 | | | **5.46** | | | 5.98 | 5.3 | 6 | **5.791** |
| Sn | mg kg$^{-1}$ | | **9** | **10.59** | 13 | | | **12.6** | | 12 | 13.6 | | 12.6 | **12.873** |
| Sr | mg kg$^{-1}$ | **127** | **108** | **112.190** | 102.7 | 117 | 108 | **110** | | 107 | 110 | 102.270 | 116.3 | **112.067** |
| Ta | mg kg$^{-1}$ | | **2** | | 3.4 | | | **2.72** | | | | | 2.8 | **2.485** |
| Tb | mg kg$^{-1}$ | | | | | | | **0.752** | | | | 0.68 | 0.9 | **0.832** |
| Te | mg kg$^{-1}$ | | | | | | | | | | | | | |
| Th | mg kg$^{-1}$ | | **18** | | 19 | 23 | 23 | **19.5** | | 20 | | 18.67 | 21.1 | **20.571** |
| Tl | mg kg$^{-1}$ | | **1** | | 1.9 | | | | | | 1.72 | 1.39 | 1.6 | **1.813** |
| Tm | mg kg$^{-1}$ | | | | | | | **0.369** | | | 0.32 | 0.29 | 0.4 | **0.39** |
| U | mg kg$^{-1}$ | | **5** | | 6.8 | | | **5.39** | | | 5.4 | 4.57 | 5.8 | **5.664** |
| V | mg kg$^{-1}$ | | **13** | **13.2** | 14.33 | | 12 | **12** | | | 14.5 | 12.4 | 15.1 | **13.399** |
| W | mg kg$^{-1}$ | | **2** | | 1.95 | | | | | | | | 0.9 | |
| Y | mg kg$^{-1}$ | **24** | **25** | | 27 | 25 | 23 | **24** | | 25 | 28 | 21.26 | 28.1 | **27.211** |
| Yb | mg kg$^{-1}$ | | | | 2.7 | | | **2.42** | | | 2.15 | | 2.6 | **2.611** |
| Zn | mg kg$^{-1}$ | 46 | **50** | **53.61** | | | 42 | **58** | | 54 | 54.8 | 46.92 | 56.6 | **50.394** |
| Zr | mg kg$^{-1}$ | **184** | **172** | | 103.6 | 149 | 163 | **166** | | 182 | 180 | 111.380 | 168.1 | **169.225** |

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

## Table 1 - GeoPT51A Contributed data for Granite, MEG-1. 15/06/2022

| Lab Code | | P95 | P96 | P97 | P98 | P99 | P100 | P102 | P104 | P105 | P106 | P107 | P109 | P110 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SiO2 | g 100g$^{-1}$ | **72.74** | 72 | **70.85** | 71.61 | **71.975** | **72.733** | 71.55 | 70.89 | **70.93** | 72.88 | **72.1** | **71.2** | 77.04 |
| TiO2 | g 100g$^{-1}$ | **0.3** | 0.294 | **0.35** | 0.3 | **0.302** | **0.283** | 0.3 | 0.3 | **0.29** | 0.29 | **0.286** | **0.291** | 0.306 |
| Al2O3 | g 100g$^{-1}$ | **13.9** | 14 | **13.9** | 14.05 | **14.142** | **14.567** | 14.16 | 13.8 | **13.98** | 14.82 | **14.3** | **13.6** | 14.36 |
| Fe2O3T | g 100g$^{-1}$ | **2.39** | 2.46 | **2.662** | 2.48 | **2.488** | **2.463** | 2.45 | 2.58 | **2.44** | 2.47 | **2.42** | **2.44** | 2.42 |
| Fe(II)O | g 100g$^{-1}$ | | | **1.84** | | | | | | | | | | |
| MnO | g 100g$^{-1}$ | **0.06** | 0.061 | **0.058** | 0.06 | **0.063** | **0.057** | 0.06 | 0.047 | **0.07** | 0.06 | **0.063** | **0.060** | 0.059 |
| MgO | g 100g$^{-1}$ | **0.41** | 0.396 | **0.41** | 0.4 | **0.425** | **0.38** | 0.4 | 0.4 | **0.38** | 0.36 | **0.463** | **0.384** | 0.351 |
| CaO | g 100g$^{-1}$ | **1.2** | 1.18 | **1.241** | 1.18 | **1.173** | **1.1** | 1.14 | 1.16 | **1.17** | 1.11 | **1.049** | **1.17** | 1.162 |
| Na2O | g 100g$^{-1}$ | **3.71** | 3.71 | **3.67** | 4.02 | **3.933** | **3.607** | 3.69 | 3.48 | **3.06** | 3.88 | **3.75** | **3.6** | 3.993 |
| K2O | g 100g$^{-1}$ | **4.71** | 4.78 | **5.06** | 4.65 | **4.721** | **4.227** | 4.73 | 4.69 | **4.7** | 4.68 | **4.59** | **4.5** | 4.883 |
| P2O5 | g 100g$^{-1}$ | **0.14** | 0.136 | **0.130** | 0.15 | **0.139** | **0.13** | 0.13 | 0.13 | **0.13** | 0.14 | **0.14** | **0.132** | 0.139 |
| H2O+ | g 100g$^{-1}$ | | | **0.78** | | | | | | | | | **0.94** | |
| CO2 | g 100g$^{-1}$ | | | | | | | | | | | | **0.207** | |
| LOI | g 100g$^{-1}$ | | 0.6 | **0.595** | | **0.62** | **0.5** | 0.51 | 0.73 | **0.63** | 0.77 | **0.66** | | |
| Ag | mg kg$^{-1}$ | **0.176** | | | | | **0.3** | 0.103 | | | | | | 0.107 |
| As | mg kg$^{-1}$ | **2.322** | | | 4.78 | | **2.567** | 2.29 | 2.5 | | 4 | | | 1.811 |
| Au | mg kg$^{-1}$ | | | | | | | | | | | | | |
| B | mg kg$^{-1}$ | **3.618** | | | | | | | | | | | | 8.859 |
| Ba | mg kg$^{-1}$ | **339** | 154 | 286.6 | 380 | | **377.333** | 344 | | **328** | 385 | **349** | | 363.2 |
| Be | mg kg$^{-1}$ | **9.42** | | | 8.11 | | **8.867** | 8.14 | 7 | | | **8.78** | | 12.65 |
| Bi | mg kg$^{-1}$ | | | | | **1.075** | **1.167** | 1.085 | | | | | | 1.084 |
| Br | mg kg$^{-1}$ | | | | | | | | | | | | | |
| C(org) | mg kg$^{-1}$ | | | | | | **0.01** | 200 | | | | | | |
| C(tot) | mg kg$^{-1}$ | | | | | | **0.01** | 200 | | **960** | | | | |
| Cd | mg kg$^{-1}$ | **0.155** | | | | | **0.2** | 0.064 | 0.91 | | | **0.117** | | 0.102 |
| Ce | mg kg$^{-1}$ | **68.964** | | **65.4** | 64.12 | | **100.333** | 66.9 | | **73** | 61 | **65.2** | | 63.63 |
| Cl | mg kg$^{-1}$ | | | | | | | | 45 | | 118 | | | |
| Co | mg kg$^{-1}$ | **2.416** | | | | | **2.807** | 2.99 | 10.3 | **7** | 4 | **2.71** | | 2.642 |
| Cr | mg kg$^{-1}$ | **192.1** | 173 | 9.76 | 197 | | | 166.5 | 162 | **199** | 218 | **199** | | 151.2 |
| Cs | mg kg$^{-1}$ | **17.078** | | | | **17.108** | **18.5** | 18.85 | | | | **17.72** | | 17.16 |
| Cu | mg kg$^{-1}$ | **5.72** | 9.64 | | 5 | | **8.933** | 7.36 | 7.7 | | 7 | **6.3** | | 5.967 |
| Dy | mg kg$^{-1}$ | **4.64** | | **4.22** | 4.31 | | **4.433** | 4.63 | | | 4 | **4.56** | | 4.617 |
| Er | mg kg$^{-1}$ | **2.537** | | **2.33** | 2.36 | | **2.303** | 2.49 | | | 4 | **2.5** | | 2.555 |
| Eu | mg kg$^{-1}$ | **0.641** | | **0.576** | 0.62 | | **0.68** | 0.55 | | | 1 | **0.571** | | 0.600 |
| F | mg kg$^{-1}$ | | | **8355** | | | | | | | 1248 | | | |
| Ga | mg kg$^{-1}$ | **23.678** | | 24 | 23 | **23.052** | **19** | 24.7 | | | 22 | **22** | | 19.49 |
| Gd | mg kg$^{-1}$ | **5.495** | | **0.636** | 4.9 | | **4.7** | 5.02 | | | 5 | **4.87** | | 4.934 |
| Ge | mg kg$^{-1}$ | | | | 1.37 | | **1.533** | 0.19 | | | 2 | | | |
| Hf | mg kg$^{-1}$ | **4.973** | | 2.15 | 5.18 | **4.879** | **4.5** | 3.56 | | | 5 | **5.15** | | 5.275 |
| Hg | mg kg$^{-1}$ | | | | | | | | 0.007 | | | | | |
| Ho | mg kg$^{-1}$ | **0.891** | | **0.796** | 0.9 | | **0.827** | 0.85 | | | 0.9 | **0.897** | | 0.936 |
| I | mg kg$^{-1}$ | | | | | | | | | | | | | |
| In | mg kg$^{-1}$ | **0.092** | | | | | | 0.06 | | | | | | |
| La | mg kg$^{-1}$ | **32.137** | | **30.1** | 30.11 | | **42.667** | 31.2 | | **33** | 30 | **29.7** | | 30.12 |
| Li | mg kg$^{-1}$ | **122.123** | | **130.1** | | **124.790** | **0.353** | 120 | | | | **131** | | 119.7 |
| Lu | mg kg$^{-1}$ | **0.363** | | **0.335** | 0.38 | | | 0.36 | | | 0.4 | **0.373** | | 0.377 |
| Mo | mg kg$^{-1}$ | **3.835** | | | | | **3.653** | 3.21 | 2.8 | | 2 | **3.06** | | 3.121 |
| Nb | mg kg$^{-1}$ | **13.606** | | 14 | 14 | **16.03** | **17.167** | 15.4 | | **20** | 15 | **16.1** | | 14.31 |
| Nd | mg kg$^{-1}$ | **29.177** | | **24.9** | 26.68 | | **28.433** | 27.8 | | | 26 | **27.5** | | 26.95 |
| Ni | mg kg$^{-1}$ | **4.789** | 28.5 | 41 | 8 | | **6.367** | 5.88 | 6.2 | **9** | 5 | **5.45** | | 6.158 |
| Pb | mg kg$^{-1}$ | **24.096** | | 25 | 33 | | **24.1** | 26 | 18.4 | | 28 | **23.1** | | 24.03 |
| Pd | mg kg$^{-1}$ | | | | | | | | | | | | | |
| Pr | mg kg$^{-1}$ | **7.897** | | **6.95** | 7.09 | | **7.733** | 7.92 | | | 7 | **7.7** | | 7.388 |
| Pt | mg kg$^{-1}$ | | | | | | | | | | | | | |
| Rb | mg kg$^{-1}$ | **278.315** | | 263.3 | 273 | | **302** | 287 | | **268** | 277 | **271** | | 274.4 |
| Re | mg kg$^{-1}$ | | | | | | | 0.001 | | | | | | |
| S | mg kg$^{-1}$ | **9.195** | | | | | | 100 | 26 | **400** | 70 | | | 17.21 |
| Sb | mg kg$^{-1}$ | **0.123** | | | | **0.150** | | 0.15 | 0.77 | | | **0.169** | | 0.114 |
| Sc | mg kg$^{-1}$ | **3.881** | | 5.21 | | | **4.467** | 4.02 | | | 5 | **5.59** | | |
| Se | mg kg$^{-1}$ | | | | | | **9.333** | 0.019 | 2.8 | | | | | |
| Sm | mg kg$^{-1}$ | **5.823** | | **5.23** | 5.42 | | **5.1** | 5.86 | | | 6 | **5.71** | | 5.657 |
| Sn | mg kg$^{-1}$ | **9.801** | | | | **13.272** | **12.4** | 13.25 | 11.3 | | 14 | **15.5** | | 13.28 |
| Sr | mg kg$^{-1}$ | **5.72** | | **118.4** | 112 | | **117** | 120.5 | 100 | **123** | 110 | **110.4** | | 112.4 |
| Ta | mg kg$^{-1}$ | **2.105** | | | 2.53 | **2.058** | **2.067** | 2.59 | | | 3 | **2.52** | | 2.202 |
| Tb | mg kg$^{-1}$ | **0.834** | | **0.721** | 0.78 | | **0.73** | 0.77 | | | 1 | **0.798** | | 0.783 |
| Te | mg kg$^{-1}$ | | | | | | | 0.006 | 2.4 | | | | | |
| Th | mg kg$^{-1}$ | **18.99** | | 18 | 18.19 | | **22.2** | 19.85 | | **28** | 29 | **17.67** | | 16.8 |
| Tl | mg kg$^{-1}$ | **1.706** | | | | | | 1.595 | 1 | | | **1.72** | | 1.689 |
| Tm | mg kg$^{-1}$ | **0.388** | | **0.33** | 0.38 | | **0.333** | 0.38 | | | 0.3 | **0.391** | | 0.364 |
| U | mg kg$^{-1}$ | **5.615** | | 5.21 | 4.02 | | **6.907** | 4.94 | | **4** | 7 | **5.15** | | 5.62 |
| V | mg kg$^{-1}$ | | 14.9 | 11 | 23 | | | 13.2 | 10.5 | **13** | 12 | **13.04** | | 14.09 |
| W | mg kg$^{-1}$ | **0.477** | | | | | **0.7** | 0.516 | | | 1 | **0.494** | | 0.504 |
| Y | mg kg$^{-1}$ | **25.665** | | **24.3** | 27 | | **22.767** | 25.8 | | **37** | 26 | **24.5** | | 24.28 |
| Yb | mg kg$^{-1}$ | **2.48** | | **2.45** | 2.4 | | **2.193** | 2.59 | | | 5 | **2.59** | | 2.742 |
| Zn | mg kg$^{-1}$ | | 37.3 | | 53 | | **53.333** | 56 | 44.9 | **117** | 55 | **54.5** | | 53.21 |
| Zr | mg kg$^{-1}$ | **177.362** | | 154 | 165 | **186.871** | **161.667** | 193 | | **186** | 161 | **183.2** | | 171.8 |

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

## Table 1 - GeoPT51A Contributed data for Granite, MEG-1. 15/06/2022

| Lab Code | | P111 | P113 | P114 | P115 | P116 | P118 | P120 | P121 | P122 | P123 | P124 | P125 | P126 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SiO2 | g 100g$^{-1}$ | | 72.22 | **72.19** | 73.582 | **72.14** | 73.09 | 71.31 | **69.85** | 73.065 | | **71.55** | | **72.08** |
| TiO2 | g 100g$^{-1}$ | 0.31 | 0.28 | **0.3** | 0.302 | **0.3** | 0.297 | 0.296 | **0.24** | 0.316 | | **0.29** | | **0.299** |
| Al2O3 | g 100g$^{-1}$ | 13.65 | 14.09 | **14.32** | 13.931 | **14.1** | 14.09 | 14.09 | **16.44** | 13.945 | **12.11** | **14.34** | | **14.11** |
| Fe2O3T | g 100g$^{-1}$ | 2.8 | 2.56 | **2.58** | 2.373 | **2.5** | 2.14 | 2.43 | **1.87** | 2.446 | | **2.48** | | **2.45** |
| Fe(II)O | g 100g$^{-1}$ | | | | 2.47 | | | 2.25 | | | | | | |
| MnO | g 100g$^{-1}$ | 0.06 | 0.053 | **0.066** | 0.055 | **0.06** | 0.064 | 0.06 | | 0.053 | **0.055** | **0.06** | | **0.062** |
| MgO | g 100g$^{-1}$ | 0.44 | 0.44 | **0.4** | 0.376 | **0.38** | | 0.39 | **0.42** | 0.422 | | **0.26** | | **0.37** |
| CaO | g 100g$^{-1}$ | 1.35 | 1.21 | **1.21** | 1.118 | **1.15** | 1.11 | 1.16 | **1.28** | 1.119 | **1.186** | **1.24** | | **1.15** |
| Na2O | g 100g$^{-1}$ | 4.49 | 3.84 | **3.92** | 3.733 | **3.66** | 3.43 | 4.31 | **4.63** | 3.678 | | **4.07** | | **3.55** |
| K2O | g 100g$^{-1}$ | 3.88 | 4.73 | **5.01** | 4.478 | **4.68** | 4.84 | 4.71 | **4.52** | 4.826 | **4.344** | **4.87** | | **4.75** |
| P2O5 | g 100g$^{-1}$ | | 0.14 | **0.145** | 0.126 | **0.13** | | 0.14 | | 0.141 | **0.128** | **0.15** | | **0.138** |
| H2O+ | g 100g$^{-1}$ | | | | 0.14 | | | 0.4 | | | | | | |
| CO2 | g 100g$^{-1}$ | | | | | | | | | | | | | |
| LOI | g 100g$^{-1}$ | 0.795 | 0.5 | **0.6** | 0.437 | **0.61** | 0.6 | 0.88 | **0.62** | 0.63 | | **0.59** | | **0.71** |
| Ag | mg kg$^{-1}$ | | | | | | | 0.38 | | | | **0.42** | | |
| As | mg kg$^{-1}$ | | 3.6 | | | **12.76** | | | | | | **2.56** | **4.89** | |
| Au | mg kg$^{-1}$ | | | | | | | | **0.2** | | | | | |
| B | mg kg$^{-1}$ | | | | | | | | | | | | | |
| Ba | mg kg$^{-1}$ | 342.720 | 317.8 | | 339.980 | **356.310** | 321 | 347.2 | | 350 | **316.7** | **349** | | **344** |
| Be | mg kg$^{-1}$ | | | | 9.216 | **8.94** | 8.03 | 8.286 | | | **9.839** | **7.84** | **8.08** | |
| Bi | mg kg$^{-1}$ | | 1.6 | | | | | 1.07 | | | | | | |
| Br | mg kg$^{-1}$ | | | | | | | | | | | | | |
| C(org) | mg kg$^{-1}$ | | | | | | | | | | | | | |
| C(tot) | mg kg$^{-1}$ | | 0.02 | | 206 | | | 268 | | | | | | |
| Cd | mg kg$^{-1}$ | | 1.5 | | 0.092 | **0.07** | | | | | **0.065** | **2.38** | | |
| Ce | mg kg$^{-1}$ | | 56 | | 62.698 | **65.97** | 58.95 | 59.1 | | | **27.63** | **70.45** | **67.04** | **62.1** |
| Cl | mg kg$^{-1}$ | | | | | | | | | | | | | |
| Co | mg kg$^{-1}$ | 3.59 | 3 | | 2.417 | **2.68** | 2.84 | | | | **2.534** | **26** | | **3** |
| Cr | mg kg$^{-1}$ | 174.930 | 157.2 | | 186.090 | **213.690** | | 201.3 | | 171 | **177.3** | **193** | | **183** |
| Cs | mg kg$^{-1}$ | | 15.2 | | 17.393 | **17.95** | 15.31 | | | | **16.57** | **16.32** | | **17.7** |
| Cu | mg kg$^{-1}$ | 4.05 | 5.1 | | 7.91 | **7.63** | | 7.2 | | | **15.88** | **5** | | |
| Dy | mg kg$^{-1}$ | | | | 4.378 | **4.64** | 3.5 | 5.36 | | | **3.978** | **4.01** | **4.37** | **4.08** |
| Er | mg kg$^{-1}$ | | | | 2.434 | **2.6** | 1.81 | 3.62 | | | **2.219** | **2.17** | **2.39** | **2.18** |
| Eu | mg kg$^{-1}$ | | | | 0.561 | **0.61** | 0.51 | 0.99 | | | **0.526** | **0.64** | **0.62** | **0.57** |
| F | mg kg$^{-1}$ | | | | | | | | | | | | | 952 |
| Ga | mg kg$^{-1}$ | | 21.5 | | 22.348 | **22.5** | | | | | | **32.63** | | **24** |
| Gd | mg kg$^{-1}$ | | | | 4.708 | **5.01** | 5.08 | 5.77 | | | **4.182** | **5.11** | **5.18** | **4.63** |
| Ge | mg kg$^{-1}$ | | | | | | | | | | | **2.19** | **1.27** | |
| Hf | mg kg$^{-1}$ | | 2.9 | | 5.54 | **4.23** | | | | | **6.015** | **3.75** | **4.96** | **4.31** |
| Hg | mg kg$^{-1}$ | | 0.017 | | | | | | | | | | | |
| Ho | mg kg$^{-1}$ | | | | 0.827 | **0.89** | | 0.94 | | | **0.779** | **0.75** | **0.78** | **0.79** |
| I | mg kg$^{-1}$ | | | | | | | | | | | | | |
| In | mg kg$^{-1}$ | | | | 0.061 | **0.07** | | | | | **0.058** | | | |
| La | mg kg$^{-1}$ | | 23.4 | | 28.794 | **32** | 27.45 | 30.2 | | | **22.63** | **31.49** | **32.8** | **29** |
| Li | mg kg$^{-1}$ | 131.650 | | | 120.330 | | 110 | 146.2 | | | **121.1** | | | **131** |
| Lu | mg kg$^{-1}$ | | | | 0.360 | **0.39** | 0.27 | 0.67 | | | **0.349** | **0.29** | **0.36** | **0.31** |
| Mo | mg kg$^{-1}$ | | 3.9 | | 3.12 | | 3.4 | 3.41 | | | | **3.93** | | |
| Nb | mg kg$^{-1}$ | | 13.6 | | 14.707 | **15.75** | | | | | **14.94** | **21** | | 16 |
| Nd | mg kg$^{-1}$ | | 21.5 | | 26.73 | **27.64** | 26.02 | 25.7 | | | **22.05** | **27.42** | **29.74** | **26.3** |
| Ni | mg kg$^{-1}$ | 3.89 | 3.6 | | 5.61 | **5.58** | 4.9 | 4.5 | | 3 | **5.94** | **12** | | **5** |
| Pb | mg kg$^{-1}$ | | 23.9 | | 23.961 | **27.24** | 21.49 | | | 25 | **25.74** | **24** | | **24.7** |
| Pd | mg kg$^{-1}$ | | | | | | | | | | | | | |
| Pr | mg kg$^{-1}$ | | | | 7.359 | **7.84** | 7.46 | 7.5 | | | **6.064** | **7.67** | **8.17** | **7.32** |
| Pt | mg kg$^{-1}$ | | | | | | | | | | | | | |
| Rb | mg kg$^{-1}$ | | 260 | | 266.635 | **274.190** | 238 | | | | **222.2** | **315** | **277.480** | **278** |
| Re | mg kg$^{-1}$ | | | | | | | | | | | | | |
| S | mg kg$^{-1}$ | | | | | | | 132 | | 157 | | | | |
| Sb | mg kg$^{-1}$ | | | | 0.203 | | | | | | **0.285** | **1.1** | | |
| Sc | mg kg$^{-1}$ | | 4.8 | | 4.27 | **5.47** | 3.6 | | | | **4.438** | **4** | | 4 |
| Se | mg kg$^{-1}$ | | 1.8 | | | | | | | | | **3.8** | | |
| Sm | mg kg$^{-1}$ | | 4.9 | | 5.355 | **5.86** | 4.79 | 5.46 | | | **4.701** | **5.89** | **5.88** | **5.6** |
| Sn | mg kg$^{-1}$ | | 16.8 | | 12.49 | | | 13.5 | | | **12.88** | **22** | **12.12** | |
| Sr | mg kg$^{-1}$ | | 105.6 | | 109.770 | **112.550** | 97.28 | 109 | | 103 | | **130** | | **113** |
| Ta | mg kg$^{-1}$ | | 1.9 | | 2.391 | **0.98** | | | | | **2.455** | **4.79** | **2.37** | 2.52 |
| Tb | mg kg$^{-1}$ | | | | 0.727 | **0.83** | 0.65 | 1.05 | | | **0.688** | **0.76** | **0.83** | **0.74** |
| Te | mg kg$^{-1}$ | | | | | | | | | | | | | |
| Th | mg kg$^{-1}$ | 20.28 | 19.3 | | 18.561 | **19.2** | 20.39 | 18.03 | | | | **18.77** | **19.93** | **18.8** |
| Tl | mg kg$^{-1}$ | | 2.3 | | 1.657 | | | 1.71 | | | | **1.79** | | |
| Tm | mg kg$^{-1}$ | | | | 0.373 | **0.4** | | 0.43 | | | **0.352** | **0.31** | | **0.33** |
| U | mg kg$^{-1}$ | | 5.7 | | 5.657 | **6.08** | 4.63 | 6.4 | | | **5.531** | **4.81** | **4.7** | **4.96** |
| V | mg kg$^{-1}$ | 9.58 | 12.1 | | 12.81 | **13.7** | | 13.8 | | 17 | **12.39** | **9** | | **13** |
| W | mg kg$^{-1}$ | | | | 0.532 | | | | | | **0.635** | **0.9** | | |
| Y | mg kg$^{-1}$ | | 27.2 | | 24.817 | **26.33** | 19.63 | 26.18 | | | **22.38** | **88** | | **23.3** |
| Yb | mg kg$^{-1}$ | | 1.5 | | 2.515 | **2.63** | 1.68 | 2.73 | | | **2.349** | **2.01** | **2.42** | **2.14** |
| Zn | mg kg$^{-1}$ | 52.45 | 48.8 | | 52.74 | **51.11** | 56.64 | 64.9 | | 51 | **58.38** | **79** | | **57** |
| Zr | mg kg$^{-1}$ | | 160.8 | | 211 | **177.450** | | | | 167 | **208.7** | **170** | | **156** |

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

## Table 1 - GeoPT51A Contributed data for Granite, MEG-1. 15/06/2022

| Lab Code | | P128 | P129 | P131 | P132 | P133 | P134 | P135 | P136 | - | - | - | - | - |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SiO2 | g 100g$^{-1}$ | 73.2 | 72.31 | | **72.672** | 72.24 | 72.228 | 71.26 | **72.52** | | | | | |
| TiO2 | g 100g$^{-1}$ | 0.28 | 0.29 | | **0.299** | 0.3 | 0.305 | | **0.32** | | | | | |
| Al2O3 | g 100g$^{-1}$ | 13.73 | 14.14 | | **14.03** | 14.11 | 14.162 | 13.78 | **14.23** | | | | | |
| Fe2O3T | g 100g$^{-1}$ | 2.32 | 2.42 | | **2.471** | 2.46 | 2.523 | 2.36 | **2.5** | | | | | |
| Fe(II)O | g 100g$^{-1}$ | | | | | 1.98 | | | **1.91** | | | | | |
| MnO | g 100g$^{-1}$ | 0.06 | 0.06 | | **0.062** | 0.06 | 0.067 | | **0.061** | | | | | |
| MgO | g 100g$^{-1}$ | 0.37 | 0.36 | | **0.403** | 0.38 | 0.439 | | **0.38** | | | | | |
| CaO | g 100g$^{-1}$ | 1.13 | 1.15 | | **1.169** | 1.19 | 1.164 | | **1.11** | | | | | |
| Na2O | g 100g$^{-1}$ | 3.59 | 3.64 | | **3.647** | 3.73 | 3.655 | 3.51 | **3.6** | | | | | |
| K2O | g 100g$^{-1}$ | 4.52 | 4.65 | | **4.784** | 4.78 | 4.884 | 4.43 | **4.73** | | | | | |
| P2O5 | g 100g$^{-1}$ | 0.131 | 0.13 | | **0.132** | 0.13 | 0.13 | | **0.132** | | | | | |
| H2O+ | g 100g$^{-1}$ | | | | | 0.15 | | 0.16 | | | | | | |
| CO2 | g 100g$^{-1}$ | | | | | | 0.009 | | | | | | | |
| LOI | g 100g$^{-1}$ | 0.43 | | | **0.55** | 0.73 | 0.54 | 0.61 | **0.47** | | | | | |
| Ag | mg kg$^{-1}$ | | | | | | 0.16 | | | | | | | |
| As | mg kg$^{-1}$ | 2.3 | | **2.64** | **2.8** | | 2.72 | | | | | | | |
| Au | mg kg$^{-1}$ | | | | | | | | | | | | | |
| B | mg kg$^{-1}$ | | | **3.24** | | | | | **9.301** | | | | | |
| Ba | mg kg$^{-1}$ | 332.7 | 350 | **311.3** | **285.2** | 350 | 396 | | | | | | | |
| Be | mg kg$^{-1}$ | 9.4 | | **9.35** | **5** | | 8.58 | | **7.37** | | | | | |
| Bi | mg kg$^{-1}$ | 1.1 | | **1.02** | **0.53** | | 1.2 | | **1.046** | | | | | |
| Br | mg kg$^{-1}$ | | | | | | | | | | | | | |
| C(org) | mg kg$^{-1}$ | | | | | | | | | | | | | |
| C(tot) | mg kg$^{-1}$ | 200 | | | | | 3028.300 | | | | | | | |
| Cd | mg kg$^{-1}$ | 0.12 | | **0.28** | **0.09** | | 0.141 | | | | | | | |
| Ce | mg kg$^{-1}$ | 63.6 | 63 | **27.02** | **34.14** | 63.6 | 71.5 | | **29.06** | | | | | |
| Cl | mg kg$^{-1}$ | | | | | | | | | | | | | |
| Co | mg kg$^{-1}$ | 2.6 | | **2.02** | **1.1** | | 2.4 | | **2.293** | | | | | |
| Cr | mg kg$^{-1}$ | 176 | 184 | **195.7** | **84.08** | 184 | 203.005 | | | | | | | |
| Cs | mg kg$^{-1}$ | 14.8 | | **14.49** | **12.03** | 17.2 | 18.137 | | **16.1** | | | | | |
| Cu | mg kg$^{-1}$ | 15.5 | 11 | **6.16** | **2.85** | 7 | 6.1 | | **6.341** | | | | | |
| Dy | mg kg$^{-1}$ | 4.3 | | **2.6** | **3.4** | 4.3 | 5 | | **2.918** | | | | | |
| Er | mg kg$^{-1}$ | 2.3 | | **1.52** | **1.87** | 2.5 | 2.74 | | **1.679** | | | | | |
| Eu | mg kg$^{-1}$ | 0.6 | | **0.357** | **0.46** | 0.5 | 0.79 | | **0.408** | | | | | |
| F | mg kg$^{-1}$ | | | | | | 947 | | | | | | | |
| Ga | mg kg$^{-1}$ | 21 | 23 | **21.61** | **13.51** | | 23.619 | | **20.93** | | | | | |
| Gd | mg kg$^{-1}$ | 4.74 | | **2.89** | **3.89** | 6.5 | 5.14 | | **3.018** | | | | | |
| Ge | mg kg$^{-1}$ | 1.6 | | **2.79** | **3.15** | | 2.41 | | **2.27** | | | | | |
| Hf | mg kg$^{-1}$ | 5.2 | | **6.44** | **3.66** | | 5.3 | | **4.914** | | | | | |
| Hg | mg kg$^{-1}$ | | | | | | | | | | | | | |
| Ho | mg kg$^{-1}$ | 0.8 | | **0.509** | **0.65** | 0.9 | 0.92 | | **0.603** | | | | | |
| I | mg kg$^{-1}$ | | | | | | | | | | | | | |
| In | mg kg$^{-1}$ | | | **0.108** | | | 0.059 | | | | | | | |
| La | mg kg$^{-1}$ | 29.3 | | **11.62** | **22.38** | 30.2 | 38.361 | | **13.16** | | | | | |
| Li | mg kg$^{-1}$ | 112 | | **117.7** | **66.78** | 129 | 128 | | **104.9** | | | | | |
| Lu | mg kg$^{-1}$ | 0.4 | | **0.233** | **0.28** | 0.4 | 0.37 | | **0.266** | | | | | |
| Mo | mg kg$^{-1}$ | 3.2 | | **4.2** | **2.44** | | 3.61 | | **3.275** | | | | | |
| Nb | mg kg$^{-1}$ | 14.1 | 17 | **18.38** | **13.46** | 16 | 15.697 | | **16.32** | | | | | |
| Nd | mg kg$^{-1}$ | 25.9 | | **12.91** | **21.07** | 27.9 | 31 | | **14.17** | | | | | |
| Ni | mg kg$^{-1}$ | 6 | | **4.89** | **2.41** | 5 | 5.2 | | **5.947** | | | | | |
| Pb | mg kg$^{-1}$ | 24.3 | 25 | **11.4** | **8.01** | 25 | 29.86 | | **15.93** | | | | | |
| Pd | mg kg$^{-1}$ | | | | | | | | | | | | | |
| Pr | mg kg$^{-1}$ | 7.3 | | **3.45** | **5.7** | 7.5 | 8.1 | | **3.951** | | | | | |
| Pt | mg kg$^{-1}$ | | | | | | | | | | | | | |
| Rb | mg kg$^{-1}$ | 254.1 | 277 | **131.7** | **134.170** | 277 | 275.220 | | | | | | | |
| Re | mg kg$^{-1}$ | | | | | | 0.003 | | | | | | | |
| S | mg kg$^{-1}$ | | | | | | | | | | | | | |
| Sb | mg kg$^{-1}$ | 0.28 | | **0.197** | **0.19** | | 0.13 | | | | | | | |
| Sc | mg kg$^{-1}$ | 4.8 | | **2.43** | **2.99** | 4 | 5.2 | | **3.554** | | | | | |
| Se | mg kg$^{-1}$ | | | **0.76** | **1.89** | | 1.2 | | | | | | | |
| Sm | mg kg$^{-1}$ | 5.3 | | **2.92** | **4.38** | 5.1 | 6.22 | | **3.229** | | | | | |
| Sn | mg kg$^{-1}$ | 13 | | **16.63** | **11.62** | | 13.515 | | **12.47** | | | | | |
| Sr | mg kg$^{-1}$ | 108.5 | 114 | **50.8** | **59.67** | 112 | 113.176 | | | | | | | |
| Ta | mg kg$^{-1}$ | 2.3 | | **1.58** | **2.94** | | 2.4 | | | | | | | |
| Tb | mg kg$^{-1}$ | 0.8 | | **0.456** | **0.61** | 0.8 | 0.85 | | **0.522** | | | | | |
| Te | mg kg$^{-1}$ | | | | | | 0.017 | | | | | | | |
| Th | mg kg$^{-1}$ | 17.8 | 19 | | **13.42** | 17 | 23.989 | | **8.812** | | | | | |
| Tl | mg kg$^{-1}$ | 1.68 | | **1.67** | **1.27** | | 1.76 | | | | | | | |
| Tm | mg kg$^{-1}$ | 0.4 | | **0.233** | **0.29** | 0.4 | 0.39 | | **0.271** | | | | | |
| U | mg kg$^{-1}$ | 5.3 | | | **2.22** | 6 | 5.58 | | **2.759** | | | | | |
| V | mg kg$^{-1}$ | 12 | | **13.47** | **11.27** | 20 | 15.072 | | **8.59** | | | | | |
| W | mg kg$^{-1}$ | 0.7 | | | **0.38** | | 0.526 | | | | | | | |
| Y | mg kg$^{-1}$ | 22.6 | 26 | **13.11** | **18.11** | 23.2 | 27.885 | | **12.01** | | | | | |
| Yb | mg kg$^{-1}$ | 2.3 | | **1.57** | **1.88** | 2.3 | 2.7 | | **1.71** | | | | | |
| Zn | mg kg$^{-1}$ | 53 | 54 | **26.3** | **18.03** | 54 | 54.4 | | **40.43** | | | | | |
| Zr | mg kg$^{-1}$ | 193 | 164 | **263.3** | | 158 | 183 | | **161.5** | | | | | |

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

**Table 2 - GeoPT51A Consensus values and statistical summary for Granite, MEG-1.**

| | Consensus Value | Uncertainty of consensus value | Horwitz Target Precision | Uncertainty/ Target Precision | Number of reported results | Robust Mean of results | Robust SD of results | Median of results | Status of consensus value | Type of consensus value |
|---|---|---|---|---|---|---|---|---|---|---|
| | $x_{pt}$ | $u(x_{pt})$ | $\sigma_{pt}$ | $u(x_{pt}) / \sigma_{pt}$ | $n$ | | | | | |
| | $g\ 100g^{-1}$ | $g\ 100g^{-1}$ | $g\ 100g^{-1}$ | | | $g\ 100g^{-1}$ | $g\ 100g^{-1}$ | $g\ 100g^{-1}$ | | |
| **SiO2** | 72.26 | 0.07453 | 0.7588 | 0.09822 | 103 | 72.26 | 0.7564 | 72.23 | Assigned | Robust Mean |
| **TiO2** | 0.2957 | 0.001146 | 0.007104 | 0.1613 | 105 | 0.2957 | 0.01174 | 0.297 | Assigned | Robust Mean |
| **Al2O3** | 14.09 | 0.02527 | 0.1892 | 0.1335 | 106 | 14.07 | 0.2589 | 14.09 | Assigned | Median |
| **Fe2O3T** | 2.451 | 0.006162 | 0.04284 | 0.1438 | 104 | 2.451 | 0.06284 | 2.45 | Assigned | Robust Mean |
| **MnO** | 0.06 | 0.0003662 | 0.001833 | 0.1998 | 103 | 0.05986 | 0.003585 | 0.06 | Assigned | Median |
| **MgO** | 0.3855 | 0.003523 | 0.008899 | 0.3959 | 102 | 0.3905 | 0.032 | 0.3855 | Provisional | Median |
| **CaO** | 1.15 | 0.004394 | 0.02252 | 0.1951 | 103 | 1.149 | 0.03828 | 1.15 | Assigned | Median |
| **Na2O** | 3.66 | 0.01294 | 0.06022 | 0.2149 | 101 | 3.681 | 0.1329 | 3.66 | Assigned | Median |
| **K2O** | 4.708 | 0.0143 | 0.07458 | 0.1918 | 104 | 4.699 | 0.1352 | 4.708 | Assigned | Median |
| **P2O5** | 0.1339 | 0.0007652 | 0.003624 | 0.2112 | 97 | 0.1339 | 0.007537 | 0.132 | Provisional | Robust Mean |
| | $mg\ kg^{-1}$ | $mg\ kg^{-1}$ | $mg\ kg^{-1}$ | | | $mg\ kg^{-1}$ | $mg\ kg^{-1}$ | $mg\ kg^{-1}$ | | |
| **Ag** | 0.12 | 0.01051 | 0.01321 | 0.7957 | 19 | 0.1507 | 0.07431 | 0.13 | Provisional | Mode |
| **As** | 2.268 | 0.14 | 0.1604 | 0.873 | 36 | 2.559 | 0.7662 | 2.311 | Provisional | Mode |
| **Ba** | 346.9 | 2.552 | 11.51 | 0.2218 | 91 | 344.4 | 25.2 | 346.9 | Assigned | Median |
| **Be** | 9.01 | 0.1799 | 0.5177 | 0.3476 | 45 | 8.682 | 0.8243 | 8.867 | Assigned | Mode |
| **Bi** | 1.085 | 0.02059 | 0.08569 | 0.2403 | 26 | 1.097 | 0.1036 | 1.085 | Assigned | Median |
| **Cd** | 0.11 | 0.01236 | 0.01226 | 1.007 | 26 | 0.1569 | 0.09701 | 0.12 | Provisional | Mode |
| **Ce** | 66.16 | 1.06 | 2.816 | 0.3765 | 71 | 63.19 | 6.666 | 64.52 | Assigned | Mode |
| **Co** | 2.623 | 0.0495 | 0.1815 | 0.2728 | 58 | 2.814 | 0.4764 | 2.69 | Assigned | Mode |
| **Cr** | 193 | 4.03 | 6.992 | 0.5764 | 88 | 187.5 | 22.9 | 190.1 | Provisional | Mode |
| **Cs** | 17.1 | 0.217 | 0.8921 | 0.2432 | 53 | 16.83 | 1.568 | 17.1 | Assigned | Median |
| **Cu** | 6.38 | 0.449 | 0.3861 | 1.163 | 65 | 6.889 | 1.945 | 6.6 | Provisional | Mode |
| **Dy** | 4.56 | 0.06015 | 0.2903 | 0.2072 | 54 | 4.341 | 0.4712 | 4.406 | Assigned | Mode |
| **Er** | 2.49 | 0.02981 | 0.1736 | 0.1717 | 53 | 2.366 | 0.2788 | 2.4 | Assigned | Mode |
| **Eu** | 0.59 | 0.007657 | 0.05109 | 0.1499 | 53 | 0.5845 | 0.0534 | 0.59 | Assigned | Median |
| **Ga** | 22.05 | 0.203 | 1.107 | 0.1833 | 71 | 22.05 | 1.71 | 22 | Assigned | Robust Mean |
| **Gd** | 4.9 | 0.05553 | 0.3085 | 0.18 | 52 | 4.828 | 0.4961 | 4.9 | Assigned | Median |
| **Ge** | 1.7 | 0.1248 | 0.1255 | 0.9941 | 22 | 1.798 | 0.586 | 1.7 | Provisional | Median |
| **Hf** | 4.965 | 0.1049 | 0.312 | 0.3362 | 58 | 4.812 | 0.9217 | 4.965 | Assigned | Median |
| **Ho** | 0.8734 | 0.012 | 0.07129 | 0.1683 | 51 | 0.8281 | 0.08821 | 0.84 | Assigned | Mode |
| **In** | 0.06 | 0.004344 | 0.007329 | 0.5928 | 13 | 0.06702 | 0.01992 | 0.06 | Provisional | Median |
| **La** | 31 | 0.451 | 1.479 | 0.3049 | 73 | 29.96 | 2.789 | 30.2 | Assigned | Mode |
| **Li** | 122.1 | 2.15 | 4.739 | 0.4537 | 42 | 121.6 | 11.42 | 122.1 | Assigned | Median |
| **Lu** | 0.373 | 0.005408 | 0.03461 | 0.1563 | 52 | 0.3441 | 0.05179 | 0.36 | Assigned | Mode |
| **Mo** | 3.167 | 0.0805 | 0.213 | 0.378 | 47 | 3.195 | 0.554 | 3.167 | Assigned | Median |
| **Nb** | 15.54 | 0.294 | 0.8225 | 0.3574 | 71 | 15.29 | 1.578 | 15.31 | Assigned | Mode |
| **Nd** | 26.88 | 0.3279 | 1.31 | 0.2503 | 66 | 26.43 | 2.781 | 26.88 | Assigned | Median |
| **Ni** | 5.548 | 0.169 | 0.3429 | 0.4928 | 67 | 5.976 | 1.663 | 5.8 | Provisional | Mode |
| **Pb** | 24.45 | 0.2897 | 1.209 | 0.2396 | 75 | 24.81 | 2.45 | 24.45 | Assigned | Median |
| **Pr** | 7.733 | 0.1049 | 0.4546 | 0.2308 | 53 | 7.433 | 0.602 | 7.55 | Assigned | Mode |
| **Rb** | 272 | 1.942 | 9.358 | 0.2076 | 80 | 271.2 | 15.46 | 272 | Assigned | Median |
| **Sb** | 0.167 | 0.01651 | 0.01748 | 0.9442 | 29 | 0.2034 | 0.07537 | 0.18 | Provisional | Mode |
| **Sc** | 4.478 | 0.1011 | 0.2858 | 0.3539 | 58 | 4.478 | 0.7703 | 4.438 | Assigned | Robust Mean |
| **Sm** | 5.73 | 0.09467 | 0.3524 | 0.2686 | 58 | 5.505 | 0.522 | 5.591 | Assigned | Mode |
| **Sn** | 12.98 | 0.2303 | 0.7058 | 0.3263 | 48 | 12.98 | 1.595 | 12.95 | Assigned | Robust Mean |
| **Sr** | 111 | 0.5909 | 4.37 | 0.1352 | 89 | 110.3 | 6.892 | 111 | Assigned | Median |
| **Ta** | 2.455 | 0.04645 | 0.1715 | 0.2708 | 49 | 2.444 | 0.3571 | 2.455 | Assigned | Median |
| **Tb** | 0.7925 | 0.02995 | 0.06564 | 0.4563 | 52 | 0.7642 | 0.07736 | 0.768 | Assigned | Mode |
| **Th** | 19.2 | 0.2562 | 0.9844 | 0.2603 | 72 | 19.47 | 1.795 | 19.2 | Assigned | Median |
| **Tl** | 1.7 | 0.03008 | 0.1255 | 0.2396 | 33 | 1.662 | 0.1849 | 1.7 | Assigned | Median |
| **Tm** | 0.388 | 0.004486 | 0.03579 | 0.1253 | 49 | 0.3575 | 0.05004 | 0.37 | Assigned | Mode |
| **U** | 5.531 | 0.197 | 0.342 | 0.5761 | 65 | 5.398 | 0.8219 | 5.5 | Assigned | Mode |
| **V** | 13.2 | 0.2436 | 0.716 | 0.3402 | 73 | 13.38 | 1.749 | 13.2 | Assigned | Median |
| **W** | 0.526 | 0.0332 | 0.04634 | 0.7164 | 25 | 0.7988 | 0.386 | 0.6347 | Provisional | Mode |
| **Y** | 25.25 | 0.3619 | 1.242 | 0.2914 | 84 | 24.99 | 2.908 | 25.25 | Assigned | Median |
| **Yb** | 2.485 | 0.04097 | 0.1733 | 0.2364 | 56 | 2.384 | 0.3362 | 2.485 | Assigned | Median |
| **Zn** | 53.61 | 0.4817 | 2.355 | 0.2045 | 85 | 52.94 | 4.948 | 53.61 | Assigned | Median |
| **Zr** | 167.4 | 1.833 | 6.195 | 0.2959 | 88 | 167.4 | 17.2 | 166.5 | Assigned | Robust Mean |

**Table 3 - GeoPT51A Z-scores for Granite, MEG-1. 15/06/2022**

| Lab Code | P1 | P2 | P4 | P5 | P6 | P7 | P8 | P9 | P10 | P11 | P12 | P13 | P14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SiO2 | 0.19 | * | 0.36 | -0.71 | 15.42 | 0.95 | -0.19 | 0.84 | -0.97 | 0.05 | 0.16 | -0.19 | -0.09 |
| TiO2 | 1.75 | -2.21 | -0.26 | 0.93 | -26.95 | -2.07 | 1.03 | 0.30 | 3.42 | -0.40 | -1.10 | -1.10 | -0.47 |
| Al2O3 | -0.44 | * | -0.40 | 0.03 | -41.41 | -1.08 | -0.40 | 0.82 | -1.90 | 0.50 | 1.08 | 0.29 | -0.74 |
| Fe2O3T | -0.31 | * | -0.48 | 2.28 | -33.93 | 0.36 | 0.48 | 0.57 | 0.43 | 0.45 | -0.95 | 0.68 | -0.37 |
| MnO | 0.49 | 0.00 | 0.55 | 2.62 | -18.01 | 0.00 | 0.55 | 0.00 | 1.09 | -2.73 | 6.00 | -2.73 | 0.00 |
| MgO | -4.33 | * | 0.25 | 1.73 | -17.36 | 5.23 | -0.28 | -1.99 | -14.10 | 0.81 | 1.94 | -1.43 | -0.53 |
| CaO | 0.80 | * | -0.44 | 3.80 | -26.07 | -1.20 | * | 0.44 | -1.78 | 0.67 | -0.67 | -0.67 | -0.82 |
| Na2O | 0.18 | * | -1.25 | 4.76 | -27.32 | -4.27 | -1.43 | -0.66 | -1.00 | 0.91 | -0.33 | 0.00 | -0.33 |
| K2O | -0.21 | * | -1.08 | 4.75 | -25.24 | -0.56 | -0.02 | 0.68 | -1.05 | 0.28 | -0.46 | -1.13 | -0.73 |
| P2O5 | 0.14 | * | -0.40 | 2.08 | -29.11 | -1.90 | -4.11 | 0.84 | -3.83 | 0.84 | 0.84 | 0.84 | -0.67 |
| Ag | -1.89 | * | * | * | -8.18 | * | * | * | * | * | * | * | * |
| As | -0.72 | * | * | * | -6.71 | * | * | * | * | * | * | * | * |
| Ba | 0.00 | 0.53 | 0.31 | 0.49 | -16.13 | 4.62 | -0.00 | -2.04 | -1.56 | 1.83 | * | 1.35 | 0.18 |
| Be | * | 0.54 | * | * | -11.52 | * | 0.03 | * | * | * | * | * | * |
| Bi | 2.48 | * | * | * | -11.44 | * | * | * | * | * | * | * | * |
| Cd | 13.29 | * | * | * | * | * | * | * | * | * | * | * | * |
| Ce | -0.41 | 0.12 | -1.08 | * | -11.50 | * | -6.04 | -0.03 | -3.61 | * | * | * | -0.38 |
| Co | * | -0.02 | * | * | -7.15 | * | 7.18 | * | 2.08 | * | * | 1.04 | * |
| Cr | 1.01 | -0.29 | -0.36 | -0.25 | 43.59 | -1.86 | -7.31 | -1.57 | 25.31 | 0.43 | * | 2.29 | 0.36 |
| Cs | 0.31 | -0.22 | -1.18 | * | -14.56 | * | 5.46 | * | -4.60 | * | * | * | * |
| Cu | 4.76 | -0.16 | 2.10 | 2.05 | -4.73 | * | 2.66 | * | -11.34 | * | * | -0.49 | * |
| Dy | 0.30 | 0.28 | -0.78 | * | -6.97 | * | -1.92 | * | * | * | * | * | * |
| Er | 0.02 | 0.35 | -0.66 | * | -4.82 | * | -2.68 | * | * | * | * | * | * |
| Eu | 0.16 | 0.00 | 0.67 | * | -5.73 | * | -0.74 | * | * | * | * | * | * |
| Ga | -0.42 | 0.86 | 0.43 | * | -11.14 | * | 5.38 | 0.88 | -9.98 | -0.93 | * | -0.02 | * |
| Gd | 0.32 | 0.23 | -0.97 | * | -8.38 | * | -1.60 | * | * | * | * | * | * |
| Ge | -0.08 | * | * | * | 0.76 | * | 0.94 | * | * | * | * | * | * |
| Hf | 0.61 | 0.30 | * | 2.84 | -6.68 | * | -7.17 | * | -6.30 | * | * | * | * |
| Ho | -0.00 | -0.05 | -0.82 | * | -4.11 | * | -2.05 | * | * | * | * | * | * |
| In | * | * | * | * | -5.17 | * | * | * | * | * | * | * | * |
| La | -0.54 | -0.20 | 0.17 | -0.21 | -8.74 | * | -6.54 | -2.37 | 1.35 | * | * | * | -0.34 |
| Li | * | -0.02 | * | * | -20.05 | * | 11.97 | * | * | * | * | * | * |
| Lu | -0.32 | 0.20 | -0.14 | * | -3.04 | * | -2.99 | * | * | * | * | * | * |
| Mo | -0.03 | 0.11 | * | * | -6.93 | * | * | * | 18.00 | * | * | * | * |
| Nb | -0.28 | 0.68 | -0.75 | 0.05 | -4.97 | * | 8.37 | -0.33 | 5.42 | 2.71 | * | -1.54 | * |
| Nd | 0.66 | 0.78 | -1.63 | 0.17 | -11.09 | * | -4.77 | * | -1.43 | * | * | * | * |
| Ni | 8.16 | -0.90 | * | 2.25 | 31.74 | * | -2.13 | * | 10.07 | * | * | 0.66 | * |
| Pb | -1.32 | 0.87 | -0.19 | * | -7.00 | * | 4.05 | 1.88 | -0.37 | 0.64 | * | -0.19 | * |
| Pr | -0.36 | -0.40 | -0.99 | * | -8.62 | * | -4.48 | * | * | * | * | * | * |
| Rb | -0.10 | 2.03 | -0.75 | 1.52 | -12.61 | * | 7.07 | 0.11 | -19.56 | 1.12 | * | -0.59 | * |
| Sb | 13.84 | * | * | * | 5.11 | * | * | * | * | * | * | * | * |
| Sc | -0.14 | 0.50 | 0.20 | -0.12 | 0.40 | * | 7.84 | * | -1.67 | 0.91 | * | 2.66 | * |
| Sm | 0.04 | 0.06 | -0.85 | * | -8.93 | * | -2.71 | * | * | * | * | * | * |
| Sn | -0.52 | -0.11 | -0.55 | * | -14.29 | * | * | * | -12.72 | * | * | * | * |
| Sr | 0.23 | -0.69 | -0.23 | 1.21 | -10.14 | -2.52 | -0.69 | -0.11 | 5.49 | 1.14 | * | 0.34 | * |
| Ta | -0.05 | 0.03 | * | * | -8.62 | * | 5.12 | * | 20.67 | * | * | * | * |
| Tb | 0.22 | 0.11 | -0.88 | * | -5.54 | * | -1.44 | * | * | * | * | * | * |
| Th | 0.48 | 0.91 | 0.30 | * | 0.42 | * | -3.77 | * | 13.00 | 4.47 | * | -0.61 | * |
| Tl | 0.84 | 0.80 | * | * | -8.31 | * | * | * | * | * | * | * | * |
| Tm | -0.03 | 0.06 | -0.56 | * | -3.49 | * | -2.49 | * | * | * | * | * | * |
| U | -0.17 | -0.09 | 0.77 | * | 5.23 | * | -2.97 | * | 13.07 | * | * | * | * |
| V | 2.68 | -0.42 | * | 0.43 | -8.02 | * | 9.50 | * | -1.68 | 1.26 | * | 2.65 | -2.23 |
| W | * | * | * | * | 35.26 | * | * | * | 161.27 | * | * | * | * |
| Y | 0.79 | 1.41 | -0.74 | 0.35 | -5.35 | * | -3.44 | 0.71 | 29.59 | 2.32 | * | -0.10 | -0.90 |
| Yb | 0.20 | 0.49 | 0.42 | * | -4.11 | * | -3.14 | * | * | * | * | * | * |
| Zn | 0.17 | -0.09 | 0.57 | 0.10 | -15.14 | * | -0.00 | * | -10.45 | 1.36 | * | -0.13 | -0.34 |
| Zr | 1.94 | 1.71 | 0.94 | 1.73 | -15.14 | -6.04 | -0.22 | -0.52 | -5.71 | -0.19 | * | -0.52 | -1.32 |

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

**Table 3 - GeoPT51A Z-scores for Granite, MEG-1. 15/06/2022**

| Lab Code | P15 | P17 | P18 | P19 | P20 | P21 | P22 | P23 | P24 | P25 | P27 | P28 | P29 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SiO2 | -0.80 | -0.52 | -0.18 | -0.39 | -7.03 | 1.40 | 0.36 | 2.10 | -4.92 | -0.10 | -0.29 | 0.38 | 0.33 |
| TiO2 | -0.38 | 0.94 | 0.61 | -0.40 | -0.96 | -0.80 | 0.12 | 0.61 | -3.33 | 0.30 | 1.01 | -0.40 | 0.09 |
| Al2O3 | -1.06 | -0.24 | 1.11 | -0.18 | -0.34 | -0.05 | 0.63 | -1.11 | 4.79 | 0.03 | -0.11 | -1.06 | 0.37 |
| Fe2O3T | 0.20 | -0.13 | -0.03 | -1.30 | -0.60 | -5.17 | -1.43 | -2.83 | 2.07 | 0.33 | 0.22 | -0.37 | -0.95 |
| MnO | 1.64 | -1.75 | 0.00 | -2.73 | 0.00 | 0.00 | 1.91 | -3.27 | 2.18 | 0.82 | 0.00 | 0.00 | 1.09 |
| MgO | -2.08 | -1.60 | 3.88 | -0.87 | -0.14 | 3.88 | 1.07 | -0.62 | 2.53 | 1.21 | -0.87 | 3.62 | -2.56 |
| CaO | -0.53 | -0.17 | -0.44 | -0.22 | -0.22 | 0.89 | 2.22 | -1.78 | 0.53 | 0.22 | 0.00 | -0.89 | 0.18 |
| Na2O | -5.81 | -0.29 | 2.32 | -0.17 | * | -0.66 | 1.83 | -0.66 | 2.24 | 0.33 | -0.08 | -0.66 | -0.30 |
| K2O | 0.02 | -0.02 | -0.11 | 0.41 | -0.53 | -0.11 | 1.70 | -2.39 | -1.54 | 0.55 | 0.21 | -0.73 | 0.43 |
| P2O5 | -1.07 | 0.86 | -3.83 | -0.53 | 0.02 | -1.07 | 1.69 | -1.35 | 3.35 | -0.81 | -0.53 | -0.53 | 0.43 |
| Ag | 0.76 | * | * | * | 0.19 | * | * | * | * | * | * | * | * |
| As | -0.55 | * | 13.92 | * | -0.31 | * | * | -6.91 | -1.09 | * | * | * | -0.71 |
| Ba | 0.79 | -2.13 | -2.15 | * | -2.82 | -0.95 | -1.03 | -0.43 | 5.03 | * | 0.57 | * | 1.31 |
| Be | -0.87 | * | * | * | -0.10 | * | * | * | 0.57 | * | -0.11 | * | -1.07 |
| Bi | * | * | * | * | 0.21 | * | * | * | -0.64 | * | 0.09 | * | 0.62 |
| Cd | * | * | * | * | 0.41 | * | * | * | -0.33 | * | * | * | 6.12 |
| Ce | -2.29 | * | 0.48 | * | -7.98 | * | -4.71 | -0.77 | 8.04 | * | 0.15 | * | 0.18 |
| Co | -0.29 | * | 3.18 | * | 0.13 | * | * | -0.13 | 0.02 | * | 1.04 | * | -0.01 |
| Cr | -0.29 | 2.22 | -4.19 | * | -1.57 | -1.15 | -4.38 | -0.00 | 3.39 | 1.50 | * | * | 0.79 |
| Cs | -0.62 | * | -2.69 | * | -0.22 | 0.78 | * | 0.56 | 2.50 | * | 0.28 | * | 2.91 |
| Cu | -0.75 | 38.36 | -9.79 | * | -0.09 | * | -2.80 | 20.51 | -5.19 | * | * | * | -0.00 |
| Dy | -0.86 | * | * | * | -3.53 | * | * | 0.00 | -13.95 | * | 0.24 | * | 0.16 |
| Er | -0.12 | * | * | * | -3.51 | * | * | 0.52 | -1.92 | * | 0.32 | * | -0.35 |
| Eu | -0.59 | * | * | * | -2.91 | * | * | 0.20 | -0.23 | * | 0.20 | * | 0.29 |
| Ga | -0.56 | * | -1.13 | * | 0.84 | -0.04 | 0.41 | -1.85 | 3.56 | * | 0.20 | * | 1.11 |
| Gd | 0.00 | * | * | * | -3.95 | * | * | -0.55 | 2.03 | * | 0.32 | * | 0.18 |
| Ge | * | * | * | * | -0.40 | * | * | * | * | * | * | * | -0.36 |
| Hf | 3.12 | * | 0.43 | * | -2.70 | * | * | 3.12 | 10.67 | * | 0.54 | * | -1.32 |
| Ho | -0.61 | * | * | * | -3.12 | * | * | -0.47 | -1.55 | * | 0.33 | * | 0.12 |
| In | * | * | * | * | 0.89 | * | * | * | * | * | * | * | * |
| La | -1.56 | * | 0.27 | * | -7.49 | * | -2.70 | -1.01 | 1.85 | * | 0.30 | * | 0.20 |
| Li | 7.99 | * | * | * | -0.75 | * | * | * | -0.73 | 0.94 | * | * | 0.83 |
| Lu | -0.38 | * | * | * | -2.66 | * | * | 0.49 | -2.51 | * | -0.04 | * | -0.19 |
| Mo | -1.30 | * | -3.13 | * | 0.03 | * | 31.15 | -2.47 | -0.21 | * | 0.08 | * | 9.77 |
| Nb | -0.39 | * | -1.63 | * | -0.02 | 1.78 | 2.87 | -0.05 | * | * | * | * | 0.22 |
| Nd | -0.90 | * | -1.28 | * | -6.02 | * | -1.05 | 0.16 | * | * | 0.47 | * | 0.28 |
| Ni | -0.17 | * | -1.60 | * | -0.14 | * | -3.93 | 9.34 | 0.33 | * | * | * | -0.84 |
| Pb | 0.12 | * | 0.12 | * | -0.27 | * | -2.03 | -0.87 | 6.50 | 0.64 | * | * | 0.81 |
| Pr | -2.29 | * | * | * | -5.46 | * | * | -1.11 | 2.00 | * | 0.07 | * | -0.06 |
| Rb | -0.80 | -0.75 | -1.24 | * | -5.29 | 0.32 | -0.45 | -2.56 | 3.33 | * | 1.02 | * | 2.46 |
| Sb | -0.97 | * | * | * | 0.00 | * | * | * | -1.43 | * | * | * | 0.37 |
| Sc | -0.99 | * | 14.77 | * | -2.38 | -0.62 | * | 0.15 | 4.47 | * | 0.21 | * | 1.44 |
| Sm | -0.54 | * | -0.09 | * | -4.43 | * | * | -0.43 | 2.35 | * | 0.38 | * | -0.01 |
| Sn | -0.13 | * | * | * | 0.72 | * | * | * | 13.59 | * | 0.94 | * | 1.29 |
| Sr | 0.46 | -0.80 | -1.12 | * | -2.36 | 0.00 | -1.03 | 0.69 | 0.09 | * | 0.34 | * | 1.26 |
| Ta | -1.02 | * | * | * | 0.98 | * | * | -0.26 | 18.60 | * | -0.16 | * | 0.28 |
| Tb | -0.50 | * | * | * | -3.05 | * | * | -0.80 | -0.72 | * | 0.29 | * | 0.21 |
| Th | 1.32 | * | 0.30 | * | -4.22 | -0.20 | -1.02 | 0.00 | 4.38 | * | -0.25 | * | -0.36 |
| Tl | 0.00 | * | * | * | 0.28 | * | * | * | 0.01 | * | 0.00 | * | 0.52 |
| Tm | -0.22 | * | * | * | -2.74 | * | * | 0.06 | -2.21 | * | 0.03 | * | -0.25 |
| U | -0.12 | * | -2.14 | * | -3.23 | * | 2.54 | 1.66 | 0.51 | * | 0.83 | * | -0.63 |
| V | 0.70 | * | 1.40 | * | -0.21 | 1.12 | 0.00 | 6.70 | 3.83 | * | 1.05 | * | 0.00 |
| W | * | * | 120.27 | * | 0.40 | * | * | * | 1.98 | * | * | * | -0.60 |
| Y | -3.34 | -0.90 | 0.53 | * | -6.44 | 1.41 | 0.69 | 0.04 | -2.37 | * | 0.14 | * | 0.18 |
| Yb | 0.20 | * | * | * | -3.53 | * | * | 0.66 | -2.95 | * | 0.04 | * | -0.10 |
| Zn | 1.40 | -10.53 | -0.90 | * | 0.38 | -2.38 | -3.19 | -1.83 | -5.23 | 147.64 | 0.59 | * | 0.32 |
| Zr | -1.24 | -0.92 | -1.29 | * | -4.79 | 2.04 | -1.14 | 7.20 | -8.27 | 3.20 | 0.29 | * | -1.97 |

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

## Table 3 - GeoPT51A Z-scores for Granite, MEG-1. 15/06/2022

| Lab Code | P32 | P34 | P35 | P36 | P37 | P38 | P40 | P41 | P42 | P43 | P44 | P45 | P48 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SiO2 | 0.04 | -0.77 | 0.37 | * | 2.01 | -0.38 | -0.02 | 0.03 | 0.13 | * | 1.08 | 1.21 | 0.05 |
| TiO2 | 0.61 | -2.21 | 0.61 | -0.80 | 0.94 | * | -0.40 | -0.10 | 0.30 | -2.80 | -0.66 | -0.61 | 0.94 |
| Al2O3 | 0.11 | -1.32 | 1.80 | 0.05 | 0.87 | 0.45 | 1.51 | -0.58 | -0.11 | * | -3.17 | -1.61 | 0.09 |
| Fe2O3T | -0.73 | 0.43 | -0.97 | * | 0.04 | 1.85 | 0.10 | -0.34 | -0.48 | * | -0.45 | -0.83 | 0.63 |
| MnO | 1.64 | 0.00 | -5.46 | 0.00 | -0.82 | * | -2.73 | 0.46 | 0.00 | -2.27 | -1.64 | 0.27 | -0.82 |
| MgO | -0.62 | 2.75 | -0.62 | 1.63 | -1.10 | 1.94 | -0.87 | -0.31 | 0.25 | * | -0.17 | -1.43 | 0.93 |
| CaO | -1.33 | -1.78 | -0.89 | * | -0.31 | 0.44 | -18.43 | -0.18 | 5.99 | * | -1.15 | 0.22 | 0.20 |
| Na2O | -0.66 | -1.49 | -0.66 | * | 1.74 | * | 1.49 | 1.03 | 0.66 | * | -2.56 | -1.33 | -0.32 |
| K2O | -2.66 | 0.29 | -1.19 | * | -0.39 | * | 1.82 | -0.40 | 0.48 | * | -3.06 | -0.66 | 0.47 |
| P2O5 | 0.86 | -1.07 | 1.69 | -2.17 | -1.09 | * | 0.84 | 0.28 | 0.84 | * | -0.79 | 2.22 | -0.40 |
| Ag | 4.39 | * | * | * | * | * | * | * | 0.76 | -1.59 | 1.67 | * | * |
| As | 0.20 | * | * | * | * | * | * | * | 2.22 | -1.74 | 0.00 | * | * |
| Ba | -0.86 | -0.17 | 1.14 | 0.10 | -0.20 | * | * | -2.35 | 0.89 | -1.54 | -0.30 | 0.40 | 3.35 |
| Be | 0.27 | * | * | 0.46 | -0.00 | * | * | * | * | * | -3.04 | -0.01 | * |
| Bi | 0.65 | * | * | * | * | * | * | * | * | -0.32 | -0.67 | * | * |
| Cd | 0.90 | * | * | * | * | * | * | * | * | -1.05 | 0.73 | * | * |
| Ce | 3.07 | -8.23 | * | -1.02 | 0.50 | * | * | -3.50 | 0.48 | -1.13 | -1.58 | 0.74 | * |
| Co | -1.34 | * | * | 0.09 | -0.45 | * | * | * | 0.63 | -0.15 | -0.91 | * | 6.55 |
| Cr | 0.14 | -0.72 | -3.29 | 1.29 | 0.72 | * | * | -3.13 | 0.37 | -1.92 | -3.79 | * | 0.93 |
| Cs | 0.02 | * | * | 0.90 | 0.11 | * | * | * | -0.10 | * | -1.33 | * | * |
| Cu | -2.33 | * | * | -3.16 | -0.88 | * | * | * | 9.53 | -0.80 | 26.23 | * | 2.10 |
| Dy | -0.96 | * | * | -0.17 | 0.03 | * | * | * | 0.29 | * | -2.19 | 0.07 | * |
| Er | -1.73 | * | * | 0.12 | 0.00 | * | * | * | 0.12 | * | -1.73 | -0.26 | * |
| Eu | 0.98 | * | * | -0.39 | -0.20 | * | * | * | 0.10 | * | -1.02 | 0.00 | * |
| Ga | -0.04 | -2.75 | * | -0.13 | -0.53 | * | * | -0.58 | 0.10 | -0.47 | 0.46 | * | * |
| Gd | 1.10 | -6.16 | * | -0.42 | -0.23 | * | * | * | 0.29 | * | -1.29 | -0.32 | * |
| Ge | -4.78 | * | * | * | * | * | * | * | * | * | * | * | * |
| Hf | -0.37 | 3.32 | * | 0.43 | -0.26 | * | * | 2.44 | 0.01 | * | -1.13 | 0.06 | * |
| Ho | -1.31 | * | * | -0.33 | -0.09 | * | * | * | 0.12 | * | -1.39 | 0.19 | * |
| In | * | * | * | * | * | * | * | * | * | -0.58 | * | * | * |
| La | 1.69 | 0.68 | * | -1.01 | -0.35 | * | * | 0.71 | 0.16 | -1.49 | -3.34 | 0.37 | * |
| Li | -2.34 | * | * | * | * | * | * | * | * | * | -3.61 | * | * |
| Lu | -1.82 | * | * | -1.24 | -0.04 | * | * | * | 0.10 | * | -0.95 | 0.25 | * |
| Mo | -0.03 | * | * | * | -0.46 | * | * | * | 1.02 | -1.80 | 1.69 | * | * |
| Nb | 0.44 | 0.56 | * | -0.41 | -1.59 | * | * | -1.30 | 0.02 | -0.71 | -1.65 | -2.15 | 0.28 |
| Nd | 2.39 | 3.15 | * | -0.06 | 0.11 | * | * | -0.68 | 0.49 | * | -1.77 | 0.47 | * |
| Ni | -3.11 | 4.24 | * | * | -2.69 | * | * | 2.08 | 5.11 | -2.11 | 2.01 | * | 10.87 |
| Pb | -0.87 | 0.46 | * | * | -0.21 | * | * | 0.00 | 1.70 | 0.58 | -0.92 | * | -1.43 |
| Pr | 0.72 | * | * | -0.93 | 0.13 | * | * | * | 0.10 | * | -2.13 | -0.10 | * |
| Rb | -0.85 | 1.18 | * | 0.21 | -0.25 | * | * | -0.63 | 0.69 | -0.13 | -2.23 | -0.05 | 0.37 |
| Sb | -0.63 | * | * | * | * | * | * | * | 3.52 | -2.32 | 6.69 | * | * |
| Sc | -7.02 | -1.67 | * | * | -0.31 | * | * | * | 1.02 | * | 1.86 | -0.84 | * |
| Sm | 1.42 | * | * | -0.26 | -0.35 | * | * | * | 0.34 | * | -1.57 | 0.24 | * |
| Sn | 1.62 | * | * | 3.15 | * | * | * | -1.06 | * | * | -1.12 | 0.02 | * |
| Sr | 0.46 | -1.83 | * | 0.46 | 0.45 | * | * | -1.03 | 0.20 | -0.29 | -2.24 | 0.00 | 0.11 |
| Ta | 0.03 | * | * | 2.13 | -0.57 | * | * | * | -0.28 | * | -2.88 | -1.03 | * |
| Tb | -0.34 | * | * | -0.65 | -0.25 | * | * | * | -0.10 | * | -1.52 | 0.06 | * |
| Th | -1.42 | 0.81 | * | 0.00 | 1.03 | * | * | -0.55 | 0.59 | -0.07 | -2.30 | -0.61 | 0.91 |
| Tl | -0.24 | * | * | 5.34 | -1.04 | * | * | * | * | -4.16 | -0.74 | * | * |
| Tm | -2.18 | * | * | -0.50 | -0.25 | * | * | * | -0.11 | * | -1.48 | 0.45 | * |
| U | -1.87 | -4.48 | * | 0.23 | 1.05 | * | * | 3.16 | 0.39 | -0.86 | 0.76 | 0.25 | * |
| V | 0.28 | -5.87 | * | 0.84 | 0.07 | * | * | -1.10 | 2.79 | -1.34 | -0.49 | 1.26 | 31.28 |
| W | 11.31 | * | * | * | * | * | * | * | * | * | 1.88 | * | * |
| Y | -3.82 | 3.83 | * | 0.37 | 1.11 | * | * | -0.34 | 0.06 | -0.23 | -2.29 | -0.90 | 7.55 |
| Yb | -2.63 | 37.59 | * | 0.20 | 0.10 | * | * | * | 0.13 | * | -1.79 | 0.62 | * |
| Zn | -1.11 | 0.59 | * | * | 1.46 | * | * | -1.64 | 1.33 | -0.49 | -0.90 | * | 0.08 |
| Zr | 0.10 | 1.39 | * | 1.55 | -0.22 | * | * | 0.39 | -0.74 | -0.50 | 0.86 | 0.05 | -0.52 |

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

**Table 3 - GeoPT51A Z-scores for Granite, MEG-1. 15/06/2022**

| Lab Code | P49 | P51 | P52 | P53 | P54 | P55 | P56 | P57 | P58 | P59 | P61 | P62 | P64 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SiO2 | -0.56 | 0.02 | -0.24 | -0.10 | **-0.19** | **1.14** | -0.76 | **0.70** | 0.16 | 0.90 | 0.04 | **0.18** | 0.04 |
| TiO2 | 3.82 | 0.30 | -0.89 | -0.40 | **0.47** | **3.99** | -2.51 | **-0.38** | -1.10 | -0.33 | 1.50 | **0.47** | 1.01 |
| Al2O3 | 2.25 | 0.05 | 1.35 | 0.11 | **0.16** | **0.58** | -1.82 | **-5.34** | 0.03 | -2.24 | 0.25 | **0.32** | -0.32 |
| Fe2O3T | -0.37 | -0.13 | -0.37 | -0.13 | **2.07** | **4.40** | -0.60 | **0.67** | 0.10 | -2.81 | 2.69 | **-0.49** | 0.57 |
| MnO | 2.73 | 0.00 | * | 0.00 | **0.00** | **-0.71** | 0.00 | **-1.42** | 0.00 | 67.94 | -0.55 | **2.18** | 0.00 |
| MgO | *3.62* | *-0.87* | *-0.08* | *-0.31* | ***-0.62*** | ***2.53*** | *3.62* | ***-2.98*** | *0.81* | *-2.05* | *0.53* | ***-0.28*** | *1.94* |
| CaO | 0.00 | 0.22 | -0.67 | 0.22 | **0.44** | **-1.78** | 1.78 | **-2.04** | 1.11 | -0.16 | 0.44 | **0.00** | -0.44 |
| Na2O | -0.58 | -0.08 | -0.33 | 0.00 | **0.50** | **-0.17** | -0.50 | **-2.79** | 0.42 | -1.09 | 0.07 | **0.70** | -0.08 |
| K2O | -0.19 | 0.55 | -0.26 | 0.08 | **0.56** | **-1.05** | -1.60 | **-2.23** | -0.19 | -1.08 | -0.37 | **-0.52** | 0.21 |
| P2O5 | *2.22* | *-0.53* | *0.84* | *0.43* | ***1.14*** | ***-1.90*** | * | ***-3.61*** | *-0.53* | *0.84* | *1.26* | ***3.62*** | *-0.53* |
| Ag | * | * | * | *-0.49* | * | * | * | * | * | * | * | * | * |
| As | * | * | * | *-0.62* | * | * | *0.05* | * | * | *-0.84* | * | ***23.27*** | * |
| Ba | * | -0.86 | * | 0.57 | **0.36** | 1.39 | 0.67 | **0.74** | * | -0.62 | 2.13 | **0.01** | -0.13 |
| Be | * | * | * | -0.28 | * | * | * | **1.37** | * | -1.46 | * | * | 0.50 |
| Bi | * | * | * | 0.18 | * | * | * | * | * | 9.43 | * | * | * |
| Cd | * | * | * | *-2.04* | * | * | * | * | * | * | * | * | * |
| Ce | * | * | * | 0.11 | **0.31** | * | * | **-0.43** | * | * | * | **-2.90** | -0.08 |
| Co | * | * | * | 0.32 | * | * | 1.08 | **-0.19** | * | 6.55 | -1.72 | **13.10** | 0.21 |
| Cr | *-13.80* | *-0.79* | * | *-2.04* | ***1.29*** | *-0.72* | *2.75* | ***-0.34*** | * | *-2.84* | *-0.64* | ***3.15*** | *0.86* |
| Cs | * | * | * | 0.90 | **0.55** | * | * | **0.00** | * | * | * | **2.13** | 0.39 |
| Cu | * | * | * | *0.09* | ***-0.99*** | * | *3.90* | ***-0.88*** | * | *-5.02* | *2.10* | ***6.78*** | *1.49* |
| Dy | * | * | * | -0.40 | **0.52** | * | * | **-1.02** | * | * | * | * | 0.45 |
| Er | * | * | * | -0.63 | **0.17** | * | * | **-1.41** | * | * | * | * | 0.37 |
| Eu | * | * | * | -0.07 | **-0.39** | * | * | **-0.88** | * | * | * | * | 0.21 |
| Ga | * | -0.02 | * | 0.84 | **-0.04** | 1.78 | * | **0.05** | * | -0.61 | -0.93 | **0.86** | 0.29 |
| Gd | * | * | * | -0.19 | **0.45** | * | * | **-0.72** | * | * | * | * | 0.70 |
| Ge | * | * | * | *-6.25* | * | * | * | * | * | * | * | * | *1.04* |
| Hf | * | * | * | -2.33 | **-0.46** | * | * | **-2.22** | * | * | 1.66 | * | -0.41 |
| Ho | * | * | * | -0.75 | **0.51** | * | * | **-0.97** | * | * | * | * | 0.31 |
| In | * | * | * | *-0.27* | * | * | * | * | * | *2240.44* | * | * | * |
| La | * | * | * | 0.41 | **-0.04** | * | * | **-0.29** | * | 0.07 | * | **-8.79** | 0.20 |
| Li | * | * | * | 0.30 | * | * | * | **5.57** | * | -0.69 | 0.30 | * | 0.20 |
| Lu | * | * | * | -1.00 | **0.20** | * | * | **-1.47** | * | * | * | * | 0.38 |
| Mo | * | * | * | 0.12 | * | * | 3.17 | **1.68** | * | -1.57 | * | * | * |
| Nb | * | * | * | 0.64 | **0.51** | * | * | **0.10** | * | * | * | **-0.66** | 0.28 |
| Nd | -10.24 | * | * | 0.89 | **1.15** | * | * | **0.06** | * | * | * | **-0.67** | 0.89 |
| Ni | * | * | * | *0.21* | ***10.07*** | * | *4.88* | ***-1.10*** | * | *-1.38* | *0.66* | ***1.32*** | *0.95* |
| Pb | * | * | * | 0.14 | **1.08** | * | -0.22 | **1.18** | * | -3.45 | 10.15 | **-1.20** | 0.85 |
| Pr | * | * | * | 0.52 | **0.23** | * | * | **-0.48** | * | * | * | * | 0.18 |
| Rb | * | * | * | 1.60 | **0.62** | -0.43 | 0.05 | **-0.13** | * | * | * | **0.11** | 0.00 |
| Sb | * | * | * | *-0.20* | * | * | *3.35* | * | * | * | * | * | * |
| Sc | * | * | * | -0.99 | **0.08** | * | * | **-0.27** | * | -1.19 | * | **8.82** | 0.77 |
| Sm | * | * | * | 0.41 | **0.26** | * | * | **-0.42** | * | * | * | * | 0.48 |
| Sn | * | * | * | 0.51 | * | * | -0.97 | * | * | 0.09 | * | **4.28** | * |
| Sr | -12.70 | -1.14 | * | 1.09 | **0.23** | 0.00 | -0.78 | **-1.01** | * | -0.23 | 2.97 | **0.46** | 0.69 |
| Ta | * | * | * | -0.28 | **0.73** | * | * | **0.24** | * | * | * | * | 0.25 |
| Tb | * | * | * | -0.20 | **0.72** | * | * | **-0.60** | * | * | * | * | 0.42 |
| Th | * | * | * | 0.51 | **1.36** | * | * | **0.82** | * | * | * | **2.84** | 0.81 |
| Tl | * | * | * | -0.34 | * | * | * | * | * | * | * | * | * |
| Tm | * | * | * | -0.89 | **0.34** | * | * | * | * | * | * | * | 0.31 |
| U | * | * | * | -0.91 | **0.41** | * | * | **-0.63** | * | * | * | **1.37** | -0.15 |
| V | * | -0.14 | * | 0.56 | **2.51** | * | 0.78 | **-0.46** | * | -0.21 | * | **1.12** | 0.21 |
| W | * | * | * | *-0.31* | * | * | * | ***10.38*** | * | * | * | * | * |
| Y | * | * | * | -0.70 | **0.90** | 15.20 | * | **-1.46** | * | -1.35 | 0.71 | **1.41** | 0.87 |
| Yb | * | * | * | -0.65 | **0.03** | * | * | **-1.43** | * | * | * | * | 0.33 |
| Zn | -11.38 | -0.13 | * | 1.23 | **0.17** | 0.08 | 0.20 | **0.92** | * | 0.44 | 0.30 | **1.01** | -0.19 |
| Zr | -13.51 | -0.52 | * | -3.38 | **-0.06** | 1.50 | * | **-3.77** | * | -4.70 | 9.81 | **-1.52** | -0.19 |

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

**Table 3 - GeoPT51A Z-scores for Granite, MEG-1. 15/06/2022**

| Lab Code | P65 | P66 | P67 | P68 | P69 | P71 | P72 | P73 | P75 | P77 | P78 | P79 | P80 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **SiO2** | * | -0.48 | **1.22** | **0.45** | -0.29 | -2.11 | 0.41 | -0.10 | * | -2.21 | 0.09 | **20.36** | -0.04 |
| **TiO2** | * | -0.33 | **2.30** | **0.27** | -0.19 | -1.10 | -0.40 | 0.73 | * | -0.89 | -0.40 | **3.00** | 0.30 |
| **Al2O3** | * | -1.00 | **6.08** | **0.33** | 0.13 | -1.88 | 0.34 | 0.00 | * | 1.61 | 0.13 | **-0.26** | 0.08 |
| **Fe2O3T** | * | 0.21 | **4.87** | **-0.41** | -0.25 | -0.13 | -0.83 | 0.24 | * | -1.77 | -0.21 | **1.60** | 0.22 |
| **MnO** | * | 5.46 | **2.73** | **0.82** | 0.00 | -0.55 | -2.73 | -0.90 | * | -2.46 | 0.38 | **3.33** | 0.55 |
| **MgO** | * | *12.61* | ***3.76*** | ***0.54*** | *0.25* | *7.56* | *-1.99* | *0.08* | * | * | *2.89* | ***13.99*** | *-0.31* |
| **CaO** | * | -1.13 | **5.33** | **-1.60** | -0.22 | -1.55 | 0.22 | 0.40 | * | 0.00 | -0.16 | **-2.00** | 0.22 |
| **Na2O** | * | 0.61 | **-0.83** | **1.58** | 0.00 | 0.83 | -0.50 | 0.79 | * | * | 1.11 | **3.65** | 0.17 |
| **K2O** | * | 0.89 | **5.12** | **2.26** | -0.39 | 1.28 | -0.53 | 0.47 | * | -3.81 | 0.79 | **3.10** | 0.21 |
| **P2O5** | * | *-1.64* | ***4.45*** | ***-0.99*** | *0.71* | *-1.91* | *-0.53* | *-2.88* | * | * | *-0.81* | * | *0.29* |
| **Ag** | * | * | * | * | * | * | * | * | * | * | * | ***89.35*** | * |
| **As** | * | * | * | * | * | *2.28* | * | * | * | * | * | * | * |
| **Ba** | * | 0.57 | **1.45** | **0.48** | -0.12 | -2.21 | 0.22 | * | **-3.00** | 0.40 | * | **-2.34** | -0.95 |
| **Be** | * | * | * | * | * | * | -0.43 | * | * | * | * | * | * |
| **Bi** | * | * | * | * | * | * | * | * | * | * | * | * | * |
| **Cd** | * | * | ***18.10*** | * | * | * | * | * | * | * | * | * | * |
| **Ce** | **-0.58** | 0.15 | **0.74** | * | * | -2.69 | -0.24 | * | **-2.87** | 0.13 | * | **0.30** | * |
| **Co** | * | 31.35 | **0.59** | * | * | * | 3.79 | * | * | * | * | **0.31** | * |
| **Cr** | * | *-1.50* | ***1.47*** | ***-1.30*** | *-0.03* | *-2.36* | *1.36* | * | * | *0.79* | *0.36* | ***2.29*** | *-0.36* |
| **Cs** | * | -1.74 | **-0.10** | * | * | -1.18 | * | * | **-0.99** | * | * | **0.67** | * |
| **Cu** | * | * | ***2.56*** | * | * | *-0.49* | *1.45* | * | * | *6.11* | * | * | * |
| **Dy** | **2.45** | * | **-0.34** | * | * | * | -0.07 | * | **-3.36** | * | * | **3.58** | * |
| **Er** | **1.96** | * | **-0.35** | * | * | * | -0.23 | * | **-3.16** | * | * | * | * |
| **Eu** | **0.78** | * | **-0.59** | * | * | * | -0.10 | * | **0.60** | * | * | **0.20** | * |
| **Ga** | * | -0.02 | **0.16** | * | -0.16 | -0.93 | -0.47 | * | * | 0.11 | * | * | 1.33 |
| **Gd** | **1.39** | * | **0.36** | * | * | * | -0.10 | * | * | * | * | * | * |
| **Ge** | * | * | * | * | * | * | *0.04* | * | * | * | * | * | * |
| **Hf** | * | -1.55 | **-0.37** | * | * | -1.55 | 0.38 | * | **-2.56** | * | * | **-1.36** | 0.70 |
| **Ho** | **-0.05** | * | **0.14** | * | * | * | -0.30 | * | **-2.69** | * | * | * | * |
| **In** | * | * | * | * | * | * | * | * | * | * | * | * | * |
| **La** | **1.11** | -0.68 | **0.47** | * | * | 0.00 | -0.18 | * | **-3.54** | -0.71 | * | **0.00** | * |
| **Li** | * | * | **-0.00** | * | * | * | * | * | * | * | * | * | * |
| **Lu** | **-1.24** | * | **0.09** | * | * | * | 0.25 | * | **-3.29** | * | * | **-1.24** | * |
| **Mo** | * | * | **-2.47** | * | * | -0.39 | * | * | * | * | * | * | * |
| **Nb** | * | -4.58 | **0.62** | * | -0.51 | -0.94 | -0.33 | * | **-1.29** | 3.99 | * | * | 2.10 |
| **Nd** | **0.96** | 2.72 | **1.09** | * | * | -1.86 | 0.59 | * | **-2.40** | -0.45 | * | **-0.67** | * |
| **Ni** | * | * | ***0.97*** | * | * | *2.12* | *-0.07* | * | * | * | * | * | * |
| **Pb** | * | 2.71 | **-0.35** | * | -0.23 | -0.60 | 0.23 | * | **-1.15** | 2.42 | * | * | * |
| **Pr** | **0.34** | * | **0.26** | * | * | * | 0.05 | * | **-2.58** | * | * | * | * |
| **Rb** | * | -0.21 | **0.68** | * | 0.00 | -0.43 | 0.16 | * | **0.51** | 0.91 | * | **1.07** | -0.75 |
| **Sb** | * | * | * | * | * | * | * | * | * | * | * | ***3.03*** | * |
| **Sc** | * | * | **-0.41** | **0.19** | * | 0.91 | * | * | **-4.23** | * | * | **-0.17** | * |
| **Sm** | **1.19** | * | **-0.26** | * | * | -1.04 | -0.33 | * | **-3.10** | * | * | **-0.94** | * |
| **Sn** | * | -1.40 | * | * | * | 0.02 | * | * | * | * | * | * | * |
| **Sr** | * | 0.34 | **-1.17** | **0.58** | 0.16 | -0.34 | 0.46 | * | **-2.17** | 0.69 | -0.11 | **-0.23** | 0.23 |
| **Ta** | * | * | **0.32** | * | * | * | 0.04 | * | **-0.95** | * | * | **-1.31** | * |
| **Tb** | **0.88** | * | **0.65** | * | * | * | 0.13 | * | **-1.57** | * | * | **-0.95** | * |
| **Th** | * | 2.44 | **-0.28** | * | * | -0.10 | -0.61 | * | **-0.11** | -0.41 | * | **1.32** | * |
| **Tl** | * | * | * | * | * | * | * | * | * | * | * | * | * |
| **Tm** | **2.01** | * | **-0.03** | * | * | * | 0.03 | * | **-2.40** | * | * | * | * |
| **U** | * | -3.70 | **0.17** | * | * | 0.69 | 0.03 | * | **-1.95** | -1.80 | * | **-2.43** | * |
| **V** | * | * | **-0.70** | * | * | -0.84 | 0.56 | * | * | * | * | **-1.26** | * |
| **W** | * | * | * | * | * | * | * | * | * | * | * | * | * |
| **Y** | **-0.25** | -7.34 | **0.61** | **-0.04** | 0.14 | -0.10 | 0.03 | * | **-5.13** | 1.23 | * | * | 3.93 |
| **Yb** | **-0.14** | * | **0.26** | * | * | 1.49 | 0.04 | * | **-3.38** | * | * | **0.43** | * |
| **Zn** | * | -0.13 | **0.11** | **0.08** | -0.00 | -1.40 | 0.08 | * | * | -0.32 | * | **9.93** | 0.72 |
| **Zr** | * | 2.63 | **-0.58** | **2.63** | -0.31 | -0.43 | 0.69 | * | **0.00** | -1.08 | 0.86 | **0.42** | 0.21 |

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

**Table 3 - GeoPT51A Z-scores for Granite, MEG-1. 15/06/2022**

| Lab Code | P81 | P82 | P83 | P84 | P85 | P86 | P87 | P88 | P89 | P90 | P91 | P92 | P93 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SiO2 | -1.02 | 1.39 | -0.09 | 0.16 | -0.48 | -0.14 | -0.43 | 0.23 | -0.02 | 0.62 | 0.27 | -0.28 | -0.05 |
| TiO2 | 2.02 | -2.21 | 0.75 | -0.55 | 0.30 | 0.30 | 0.61 | -1.10 | 0.30 | 0.30 | 1.36 | -0.40 | 0.12 |
| Al2O3 | -1.59 | -0.11 | -0.58 | 0.37 | 1.22 | -0.29 | -0.42 | -0.24 | -0.32 | -0.77 | -0.57 | 0.61 | 0.09 |
| Fe2O3T | -0.50 | -2.83 | 0.71 | -0.20 | 0.57 | -0.13 | 1.60 | 7.22 | -0.13 | -0.02 | 0.71 | 0.45 | -0.53 |
| MnO | 0.00 | -2.18 | 0.00 | -1.26 | -0.55 | 0.00 | 0.00 | * | -0.55 | 0.55 | 1.09 | 0.00 | -0.27 |
| MgO | -0.62 | -2.87 | -2.64 | -0.76 | 0.81 | -3.12 | -0.62 | -4.24 | 1.94 | -2.56 | 2.67 | 2.50 | 2.11 |
| CaO | -3.11 | -0.44 | 0.40 | -1.00 | -1.33 | -0.22 | 2.22 | -2.22 | 1.11 | 0.22 | -0.13 | 2.66 | 1.07 |
| Na2O | -0.50 | 0.50 | 2.99 | -0.20 | 2.32 | 1.41 | 0.66 | -13.78 | 0.33 | 2.08 | 0.17 | 0.50 | 0.42 |
| K2O | -1.59 | 0.15 | 0.34 | -1.30 | 0.08 | 1.69 | 0.82 | 0.21 | -0.06 | 0.61 | 0.77 | 0.81 | 0.81 |
| P2O5 | 1.69 | -1.07 | 1.97 | -0.12 | * | -0.53 | 1.69 | -6.05 | 0.84 | -1.22 | -1.09 | 0.84 | 1.00 |
| Ag | * | * | * | * | * | * | -0.38 | * | * | * | 0.00 | * | * |
| As | * | 4.56 | * | 1.87 | * | * | -2.54 | * | * | * | -0.90 | * | * |
| Ba | 2.44 | -2.34 | -0.81 | -0.47 | -0.52 | -1.73 | -1.82 | * | -0.39 | 0.53 | 0.05 | 0.94 | 0.19 |
| Be | * | * | 0.46 | 0.73 | * | * | -0.81 | * | -0.78 | -0.60 | -1.30 | 0.09 | 0.69 |
| Bi | * | -0.99 | * | 0.97 | * | * | -0.52 | * | * | * | -0.49 | * | * |
| Cd | * | * | * | * | * | * | 0.82 | * | * | * | 0.00 | * | * |
| Ce | * | -4.32 | * | 0.15 | * | * | -1.87 | * | -1.09 | 0.61 | 0.03 | 0.66 | 0.28 |
| Co | * | 2.08 | * | 0.30 | * | * | -0.18 | * | * | -0.06 | -0.61 | 1.04 | -0.03 |
| Cr | 0.71 | -4.72 | -0.50 | -7.06 | * | -2.50 | 0.57 | * | -2.07 | * | 1.81 | 1.72 | 0.09 |
| Cs | * | -2.35 | * | * | * | * | -0.22 | * | * | * | -1.04 | 0.56 | -0.43 |
| Cu | * | -3.58 | 0.65 | 0.28 | * | * | 0.83 | * | * | * | 0.39 | 1.84 | 0.54 |
| Dy | * | * | * | 0.24 | * | * | -0.14 | * | * | -0.55 | -1.15 | 0.24 | 0.55 |
| Er | * | * | * | 0.89 | * | * | -0.63 | * | * | -0.84 | -1.27 | 0.32 | 0.48 |
| Eu | * | * | * | * | * | * | -0.37 | * | * | 0.49 | -0.49 | 0.10 | 0.43 |
| Ga | * | -0.95 | * | 0.20 | * | -2.28 | 0.95 | * | -0.47 | 0.29 | -0.97 | 0.34 | 0.48 |
| Gd | * | * | * | 0.81 | * | * | -1.17 | * | * | * | -0.65 | 1.13 | 0.13 |
| Ge | * | * | * | * | * | * | -0.40 | * | * | * | 5.46 | * | * |
| Hf | * | 0.11 | * | * | * | * | 0.08 | * | * | * | * | 0.06 | -0.94 |
| Ho | * | * | * | * | * | * | 0.12 | * | * | -0.72 | -1.22 | 0.89 | 0.40 |
| In | * | * | * | * | * | * | 0.00 | * | * | * | * | * | * |
| La | -0.68 | -3.38 | * | 0.00 | * | * | -1.76 | * | -0.68 | 0.41 | 0.18 | 0.78 | 0.59 |
| Li | * | * | 1.91 | 0.65 | * | * | 0.34 | * | -1.91 | 0.20 | -1.19 | * | -0.69 |
| Lu | * | * | * | * | * | * | -0.46 | * | * | -1.20 | -1.49 | 0.39 | -0.17 |
| Mo | * | -5.48 | -0.69 | 0.00 | * | * | -1.39 | * | * | * | -0.42 | 0.55 | -0.21 |
| Nb | * | -3.09 | * | * | * | -0.33 | -3.21 | * | -0.33 | -0.94 | -0.80 | -0.21 | 0.45 |
| Nd | * | -3.72 | * | 0.81 | * | * | -0.90 | * | * | 0.70 | -0.37 | 1.15 | 1.10 |
| Ni | * | -1.60 | * | 2.85 | * | * | 1.61 | * | * | -0.80 | -0.73 | 0.37 | 0.94 |
| Pb | * | -0.37 | 8.08 | 0.78 | -0.19 | 1.47 | -0.70 | * | 0.23 | -0.06 | -1.03 | 3.21 | 1.16 |
| Pr | * | * | * | 0.07 | * | * | -1.61 | * | * | 0.10 | -0.65 | 0.62 | -0.27 |
| Rb | 0.21 | -1.28 | * | 3.74 | -0.64 | -0.85 | -0.11 | * | -0.43 | -0.69 | -0.80 | 1.04 | 0.66 |
| Sb | * | * | * | * | * | * | 0.74 | * | * | 1.52 | 0.37 | * | * |
| Sc | * | -5.17 | -0.80 | 2.31 | * | * | 0.60 | * | * | * | * | * | -0.70 |
| Sm | * | -2.07 | * | 0.10 | * | * | -0.77 | * | * | 0.35 | -0.61 | 0.38 | 0.17 |
| Sn | * | -5.64 | -3.38 | 0.02 | * | * | -0.54 | * | -0.69 | 0.44 | * | -0.27 | -0.15 |
| Sr | 3.66 | -0.69 | 0.27 | -0.95 | 0.69 | -0.34 | -0.23 | * | -0.46 | -0.11 | -1.00 | 0.61 | 0.24 |
| Ta | * | -2.65 | * | 2.75 | * | * | 1.54 | * | * | * | * | 1.01 | 0.17 |
| Tb | * | * | * | * | * | * | -0.62 | * | * | * | -0.86 | 0.82 | 0.60 |
| Th | * | -1.22 | * | -0.10 | 1.93 | 1.93 | 0.30 | * | 0.41 | * | -0.27 | 0.97 | 1.39 |
| Tl | * | -5.58 | * | 0.80 | * | * | * | * | * | 0.08 | -1.23 | -0.40 | 0.90 |
| Tm | * | * | * | * | * | * | -0.53 | * | * | -0.95 | -1.37 | 0.17 | 0.06 |
| U | * | -1.55 | * | 1.86 | * | * | -0.41 | * | * | -0.19 | -1.41 | 0.39 | 0.39 |
| V | * | -0.28 | 0.00 | 0.79 | * | -0.84 | -1.68 | * | * | 0.91 | -0.56 | 1.33 | 0.28 |
| W | * | 31.81 | * | 15.36 | * | * | * | * | * | * | * | 4.03 | * |
| Y | -1.00 | -0.20 | * | 0.71 | -0.10 | -0.90 | -1.00 | * | -0.10 | 1.11 | -1.60 | 1.15 | 1.58 |
| Yb | * | * | * | 0.62 | * | * | -0.38 | * | * | -0.97 | * | 0.33 | 0.73 |
| Zn | -1.62 | -1.53 | 0.00 | * | * | -2.46 | 1.86 | * | 0.08 | 0.25 | -1.42 | 0.63 | -1.37 |
| Zr | 2.68 | 0.74 | * | -5.15 | -1.48 | -0.35 | -0.22 | * | 1.18 | 1.02 | -4.52 | 0.06 | 0.30 |

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

**Table 3 - GeoPT51A Z-scores for Granite, MEG-1. 15/06/2022**

| Lab Code | P95 | P96 | P97 | P98 | P99 | P100 | P102 | P104 | P105 | P106 | P107 | P109 | P110 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SiO2 | 0.64 | -0.17 | -1.85 | -0.43 | -0.37 | 0.63 | -0.47 | -0.90 | -1.75 | 0.41 | -0.21 | -1.39 | 3.15 |
| TiO2 | 0.61 | -0.12 | 7.65 | 0.30 | 0.82 | -1.74 | 0.30 | 0.30 | -0.80 | -0.40 | -1.36 | -0.66 | 0.73 |
| Al2O3 | -1.00 | -0.24 | -1.00 | -0.11 | 0.27 | 2.52 | 0.18 | -0.77 | -0.58 | 1.93 | 1.11 | -2.59 | 0.71 |
| Fe2O3T | -1.43 | 0.10 | 4.92 | 0.33 | 0.85 | 0.28 | -0.02 | 1.50 | -0.27 | 0.22 | -0.73 | -0.27 | -0.37 |
| MnO | 0.00 | 0.27 | -1.04 | 0.00 | 1.80 | -1.80 | 0.00 | -3.55 | 5.46 | 0.00 | 1.64 | 0.22 | -0.27 |
| MgO | 2.75 | 0.59 | 2.75 | 0.81 | 4.44 | -0.62 | 0.81 | 0.81 | -0.62 | -1.43 | 8.71 | -0.17 | -1.94 |
| CaO | 2.22 | 0.67 | 4.04 | 0.67 | 1.02 | -2.22 | -0.22 | 0.22 | 0.89 | -0.89 | -4.48 | 0.89 | 0.27 |
| Na2O | 0.83 | 0.42 | 0.17 | 2.99 | 4.53 | -0.89 | 0.25 | -1.49 | -9.96 | 1.83 | 1.49 | -1.00 | 2.77 |
| K2O | 0.02 | 0.48 | 4.71 | -0.39 | 0.17 | -6.46 | 0.14 | -0.12 | -0.11 | -0.19 | -1.59 | -2.80 | 1.17 |
| P2O5 | 1.69 | 0.29 | -1.15 | 2.22 | 1.36 | -1.07 | -0.53 | -0.53 | -1.07 | 0.84 | 1.69 | -0.52 | 0.71 |
| Ag | 4.23 | * | * | * | * | 13.63 | -0.64 | * | * | * | * | * | -0.50 |
| As | 0.34 | * | * | 7.83 | * | 1.86 | 0.07 | 0.72 | * | 5.40 | * | * | -1.42 |
| Ba | -0.69 | -8.38 | -2.62 | 1.44 | * | 2.65 | -0.13 | * | -1.64 | 1.66 | 0.18 | * | 0.71 |
| Be | 0.79 | * | * | -0.87 | * | -0.28 | -0.84 | -1.94 | * | * | -0.44 | * | 3.52 |
| Bi | * | * | * | * | -0.11 | 0.96 | 0.00 | * | * | * | * | * | -0.00 |
| Cd | 3.66 | * | * | * | * | 7.34 | -1.88 | 32.61 | * | * | 0.57 | * | -0.33 |
| Ce | 1.00 | * | -0.27 | -0.36 | * | 12.14 | 0.13 | * | 2.43 | -0.92 | -0.34 | * | -0.45 |
| Co | -1.14 | * | * | * | * | 1.01 | 1.01 | 21.15 | 24.12 | 3.79 | 0.48 | * | 0.05 |
| Cr | -0.13 | -1.43 | -13.10 | 0.29 | * | * | -1.90 | -2.22 | 0.86 | 1.79 | 0.86 | * | -2.99 |
| Cs | -0.02 | * | * | * | 0.01 | 1.57 | 0.98 | * | * | * | 0.69 | * | 0.03 |
| Cu | -1.71 | 4.22 | * | -1.79 | * | 6.61 | 1.27 | 1.71 | * | 0.80 | -0.21 | * | -0.54 |
| Dy | 0.28 | * | -1.17 | -0.43 | * | -0.44 | 0.12 | * | * | -0.96 | 0.00 | * | 0.10 |
| Er | 0.27 | * | -0.92 | -0.37 | * | -1.08 | 0.00 | * | * | 4.35 | 0.06 | * | 0.19 |
| Eu | 0.99 | * | -0.27 | 0.29 | * | 1.76 | -0.39 | * | * | 4.01 | -0.37 | * | 0.10 |
| Ga | 1.47 | * | 0.88 | 0.43 | 0.91 | -2.75 | 1.20 | * | * | -0.02 | -0.04 | * | -1.16 |
| Gd | 1.93 | * | -13.82 | 0.00 | * | -0.65 | 0.19 | * | * | 0.16 | -0.10 | * | 0.06 |
| Ge | * | * | * | -1.31 | * | -1.33 | -6.01 | * | * | 1.19 | * | * | * |
| Hf | 0.03 | * | -4.51 | 0.34 | -0.28 | -1.49 | -2.25 | * | * | 0.06 | 0.59 | * | 0.50 |
| Ho | 0.24 | * | -1.08 | 0.19 | * | -0.65 | -0.16 | * | * | 0.19 | 0.33 | * | 0.44 |
| In | 4.41 | * | * | * | * | * | 0.00 | * | * | * | * | * | * |
| La | 0.77 | * | -0.61 | -0.30 | * | 7.89 | 0.07 | * | 1.35 | -0.34 | -0.88 | * | -0.30 |
| Li | 0.00 | * | 1.69 | * | 0.57 | -25.69 | -0.22 | * | * | * | 1.88 | * | -0.25 |
| Lu | -0.28 | * | -1.10 | 0.10 | * | * | -0.19 | * | * | 0.39 | 0.00 | * | 0.05 |
| Mo | 3.14 | * | * | * | * | 2.28 | 0.10 | -0.86 | * | -2.74 | -0.50 | * | -0.11 |
| Nb | -2.35 | * | -0.94 | -0.94 | 0.60 | 1.98 | -0.09 | * | 5.42 | -0.33 | 0.68 | * | -0.75 |
| Nd | 1.76 | * | -1.51 | -0.07 | * | 1.19 | 0.35 | * | * | -0.33 | 0.48 | * | 0.03 |
| Ni | -2.21 | 33.47 | 51.70 | 3.58 | * | 2.39 | 0.48 | 0.95 | 10.07 | -0.80 | -0.28 | * | 0.89 |
| Pb | -0.29 | * | 0.23 | 3.54 | * | -0.29 | 0.64 | -2.50 | * | 1.47 | -1.12 | * | -0.17 |
| Pr | 0.36 | * | -1.72 | -0.71 | * | 0.00 | 0.21 | * | * | -0.81 | -0.07 | * | -0.38 |
| Rb | 0.67 | * | -0.46 | 0.05 | * | 3.21 | 0.80 | * | -0.43 | 0.27 | -0.11 | * | 0.13 |
| Sb | -2.54 | * | * | * | -0.95 | * | -0.49 | 17.24 | * | * | 0.12 | * | -1.51 |
| Sc | -2.09 | * | 1.28 | * | * | -0.04 | -0.80 | * | * | 0.91 | 3.89 | * | * |
| Sm | 0.26 | * | -1.42 | -0.44 | * | -1.79 | 0.18 | * | * | 0.38 | -0.06 | * | -0.10 |
| Sn | -4.50 | * | * | * | 0.42 | -0.82 | 0.19 | -1.19 | * | 0.72 | 3.57 | * | 0.21 |
| Sr | -24.09 | * | 1.69 | 0.11 | * | 1.37 | 1.09 | -1.26 | 2.75 | -0.11 | -0.14 | * | 0.16 |
| Ta | -2.04 | * | * | 0.22 | -2.31 | -2.26 | 0.39 | * | * | 1.59 | 0.38 | * | -0.74 |
| Tb | 0.63 | * | -1.09 | -0.10 | * | -0.95 | -0.17 | * | * | 1.58 | 0.08 | * | -0.07 |
| Th | -0.21 | * | -0.61 | -0.51 | * | 3.05 | 0.33 | * | 8.94 | 4.98 | -1.55 | * | -1.22 |
| Tl | 0.05 | * | * | * | * | * | -0.42 | -2.79 | * | * | 0.16 | * | -0.04 |
| Tm | 0.00 | * | -1.62 | -0.11 | * | -1.53 | -0.11 | * | * | -1.23 | 0.08 | * | -0.33 |
| U | 0.25 | * | -0.47 | -2.21 | * | 4.02 | -0.86 | * | -4.48 | 2.15 | -1.11 | * | 0.13 |
| V | * | 1.19 | -1.54 | 6.84 | * | * | 0.00 | -1.89 | -0.28 | -0.84 | -0.22 | * | 0.62 |
| W | -1.06 | * | * | * | * | 3.75 | -0.11 | * | * | 5.11 | -0.69 | * | -0.24 |
| Y | 0.34 | * | -0.76 | 0.71 | * | -2.00 | 0.22 | * | 9.46 | 0.30 | -0.60 | * | -0.39 |
| Yb | -0.03 | * | -0.20 | -0.25 | * | -1.68 | 0.30 | * | * | 7.26 | 0.61 | * | 0.74 |
| Zn | * | -3.46 | * | -0.13 | * | -0.12 | 0.51 | -1.85 | 26.92 | 0.30 | 0.38 | * | -0.08 |
| Zr | 1.61 | * | -1.08 | -0.19 | 3.14 | -0.92 | 2.07 | * | 3.00 | -0.52 | 2.55 | * | 0.36 |

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

**Table 3 - GeoPT51A Z-scores for Granite, MEG-1. 15/06/2022**

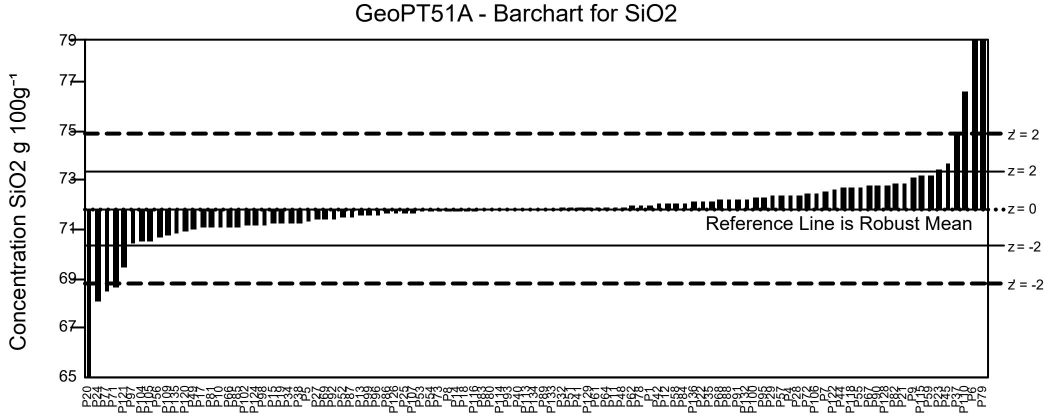
| Lab Code | P111 | P113 | P114 | P115 | P116 | P118 | P120 | P121 | P122 | P123 | P124 | P125 | P126 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SiO2 | * | -0.02 | **-0.09** | 0.87 | **-0.15** | 0.55 | -0.62 | **-3.17** | 0.53 | * | **-0.93** | * | **-0.23** |
| TiO2 | 1.01 | -1.10 | **0.61** | 0.46 | **0.61** | 0.09 | 0.02 | **-7.84** | 1.43 | * | **-0.80** | * | **0.47** |
| Al2O3 | -1.16 | 0.00 | **1.22** | -0.42 | **0.05** | 0.00 | 0.00 | **12.42** | -0.38 | **-10.46** | **1.32** | * | **0.11** |
| Fe2O3T | 4.07 | 1.27 | **3.00** | -0.92 | **1.14** | -3.63 | -0.25 | **-13.57** | -0.06 | * | **0.67** | * | **-0.03** |
| MnO | 0.00 | -1.91 | **3.27** | -1.40 | **0.00** | 1.09 | 0.00 | * | -1.91 | **-2.53** | **0.00** | * | **1.09** |
| MgO | *3.06* | *3.06* | ***1.63*** | *-0.53* | ***-0.62*** | * | *0.25* | ***3.88*** | *2.05* | * | ***-14.10*** | * | ***-1.74*** |
| CaO | 4.44 | 1.33 | **2.66** | -0.71 | **0.00** | -0.89 | 0.22 | **5.77** | -0.69 | **1.60** | **4.00** | * | **0.00** |
| Na2O | 6.89 | 1.49 | **4.32** | 0.61 | **0.00** | -1.91 | 5.40 | **16.11** | 0.15 | * | **6.81** | * | **-1.83** |
| K2O | -5.55 | 0.14 | **4.04** | -1.55 | **-0.38** | 0.88 | 0.01 | **-2.53** | 0.79 | **-4.89** | **2.17** | * | **0.56** |
| P2O5 | * | *0.84* | ***3.07*** | *-1.16* | ***-1.07*** | * | *0.84* | * | *0.98* | ***-1.59*** | ***4.45*** | * | ***1.14*** |
| Ag | * | * | * | * | * | * | *9.84* | * | * | * | ***22.72*** | * | * |
| As | * | *4.15* | * | * | ***65.42*** | * | * | * | * | * | ***1.82*** | ***16.35*** | * |
| Ba | -0.18 | -1.26 | * | -0.30 | **0.82** | -1.13 | 0.01 | * | 0.13 | **-2.62** | **0.18** | * | **-0.25** |
| Be | * | * | * | 0.20 | **-0.14** | -0.95 | -0.70 | * | * | **1.60** | **-2.26** | **-1.80** | * |
| Bi | * | 3.01 | * | * | * | * | -0.08 | * | * | * | * | * | * |
| Cd | * | *56.67* | * | *-0.73* | ***-3.26*** | * | * | * | * | ***-3.69*** | ***185.08*** | * | * |
| Ce | * | -1.80 | * | -0.61 | **-0.07** | -1.28 | -1.25 | * | * | **-13.68** | **1.52** | **0.31** | **-1.44** |
| Co | 2.66 | 1.04 | * | -0.57 | **0.31** | 0.60 | * | * | * | **-0.49** | **128.83** | * | **2.08** |
| Cr | *-1.29* | *-2.56* | * | *-0.49* | ***2.96*** | * | *0.59* | * | *-1.57* | ***-2.25*** | ***-0.00*** | * | ***-1.43*** |
| Cs | * | -1.06 | * | 0.16 | **0.95** | -1.00 | * | * | * | **-0.59** | **-0.87** | * | **0.67** |
| Cu | *-3.02* | *-1.66* | * | *1.98* | ***3.24*** | * | *1.06* | * | * | ***24.60*** | ***-3.58*** | * | * |
| Dy | * | * | * | -0.31 | **0.28** | -1.83 | 1.38 | * | * | **-2.01** | **-1.89** | **-0.65** | **-1.65** |
| Er | * | * | * | -0.16 | **0.63** | -1.96 | 3.25 | * | * | **-1.56** | **-1.84** | **-0.58** | **-1.79** |
| Eu | * | * | * | -0.29 | **0.39** | -0.78 | 3.91 | * | * | **-1.26** | **0.98** | **0.59** | **-0.39** |
| Ga | * | -0.25 | * | 0.14 | **0.41** | * | * | * | * | * | **9.56** | * | **1.76** |
| Gd | * | * | * | -0.31 | **0.36** | 0.29 | 1.41 | * | * | **-2.33** | **0.68** | **0.91** | **-0.88** |
| Ge | * | * | * | * | * | * | * | * | * | * | ***3.90*** | ***-3.43*** | * |
| Hf | * | -3.31 | * | 0.92 | **-2.36** | * | * | * | * | **3.37** | **-3.89** | **-0.02** | **-2.10** |
| Ho | * | * | * | -0.33 | **0.23** | * | 0.47 | * | * | **-1.33** | **-1.73** | **-1.31** | **-1.17** |
| In | * | * | * | *0.06* | ***1.36*** | * | * | * | * | ***-0.33*** | * | * | * |
| La | * | -2.57 | * | -0.75 | **0.68** | -1.20 | -0.27 | * | * | **-5.66** | **0.33** | **1.22** | **-1.35** |
| Li | 1.01 | * | * | -0.19 | * | -1.28 | 2.54 | * | * | **-0.21** | * | * | **1.88** |
| Lu | * | * | * | -0.19 | **0.49** | -1.49 | 4.29 | * | * | **-0.69** | **-2.40** | **-0.38** | **-1.82** |
| Mo | * | 1.72 | * | -0.11 | * | 0.55 | 0.57 | * | * | * | **3.58** | * | * |
| Nb | * | -1.18 | * | -0.51 | **0.26** | * | * | * | * | **-0.73** | **6.64** | * | 0.28 |
| Nd | * | -2.05 | * | -0.06 | **0.58** | -0.33 | -0.45 | * | * | **-3.68** | **0.42** | **2.19** | **-0.44** |
| Ni | *-2.42* | *-2.84* | * | *0.09* | ***0.09*** | *-0.94* | *-1.53* | * | *-3.72* | ***1.14*** | ***18.82*** | * | ***-1.60*** |
| Pb | * | -0.23 | * | -0.20 | **2.31** | -1.22 | * | * | 0.23 | **1.07** | **-0.37** | * | **0.21** |
| Pr | * | * | * | -0.41 | **0.23** | -0.30 | -0.26 | * | * | **-3.67** | **-0.14** | **0.96** | **-0.91** |
| Rb | * | -0.64 | * | -0.29 | **0.23** | -1.82 | * | * | * | **-5.32** | **4.60** | **0.59** | **0.64** |
| Sb | * | * | * | *1.03* | * | * | * | * | * | ***6.72*** | ***53.36*** | * | * |
| Sc | * | 0.56 | * | -0.36 | **3.47** | -1.54 | * | * | * | **-0.14** | **-1.67** | * | -0.84 |
| Sm | * | -1.18 | * | -0.53 | **0.37** | -1.33 | -0.38 | * | * | **-2.92** | **0.45** | **0.43** | **-0.37** |
| Sn | * | 2.71 | * | -0.35 | * | * | 0.37 | * | * | **-0.14** | **12.78** | **-1.22** | * |
| Sr | * | -0.62 | * | -0.14 | **0.35** | -1.57 | -0.23 | * | -0.92 | * | **4.35** | * | **0.46** |
| Ta | * | -1.62 | * | -0.19 | **-8.60** | * | * | * | * | **0.00** | **13.61** | **-0.50** | 0.19 |
| Tb | * | * | * | -0.50 | **0.57** | -1.09 | 1.96 | * | * | **-1.59** | **-0.50** | **0.57** | **-0.80** |
| Th | 0.55 | 0.05 | * | -0.32 | **0.00** | 0.60 | -0.59 | * | * | * | **-0.44** | **0.74** | **-0.41** |
| Tl | * | 2.39 | * | -0.17 | * | * | 0.04 | * | * | * | **0.72** | * | * |
| Tm | * | * | * | -0.22 | **0.34** | * | 0.59 | * | * | **-1.02** | **-2.18** | * | **-1.62** |
| U | * | 0.25 | * | 0.18 | **1.61** | -1.32 | 1.27 | * | * | **0.00** | **-2.11** | **-2.43** | **-1.67** |
| V | -2.53 | -0.77 | * | -0.27 | **0.70** | * | 0.42 | * | 2.65 | **-1.13** | **-5.87** | * | **-0.28** |
| W | * | * | * | *0.06* | * | * | * | * | * | ***2.35*** | ***8.07*** | * | * |
| Y | * | 0.79 | * | -0.17 | **0.87** | -2.26 | 0.38 | * | * | **-2.31** | **50.52** | * | **-1.57** |
| Yb | * | -2.84 | * | 0.09 | **0.84** | -2.32 | 0.71 | * | * | **-0.78** | **-2.74** | **-0.38** | **-1.99** |
| Zn | -0.25 | -1.02 | * | -0.18 | **-1.06** | 0.64 | 2.40 | * | -0.55 | **2.03** | **10.78** | * | **1.44** |
| Zr | * | -0.53 | * | 3.52 | **1.62** | * | * | * | -0.03 | **6.67** | **0.42** | * | **-1.84** |

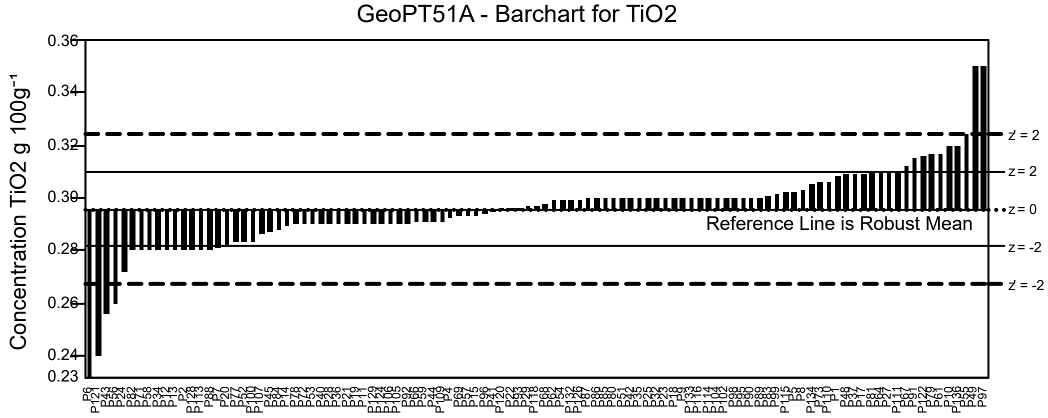
**Bold entries** are Data Quality 1 - Underlined entries are Data Quality 2 - *Entries in italics* are derived from Provisional Values.

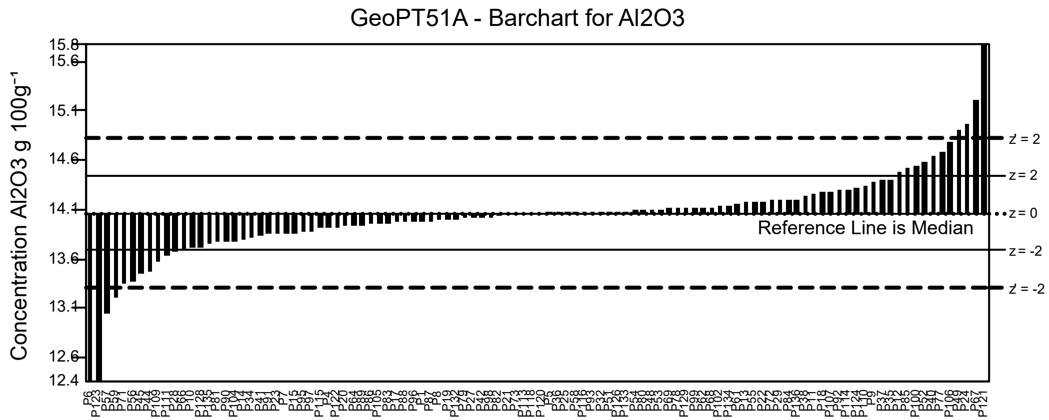
**Table 3 - GeoPT51A Z-scores for Granite, MEG-1. 15/06/2022 9**

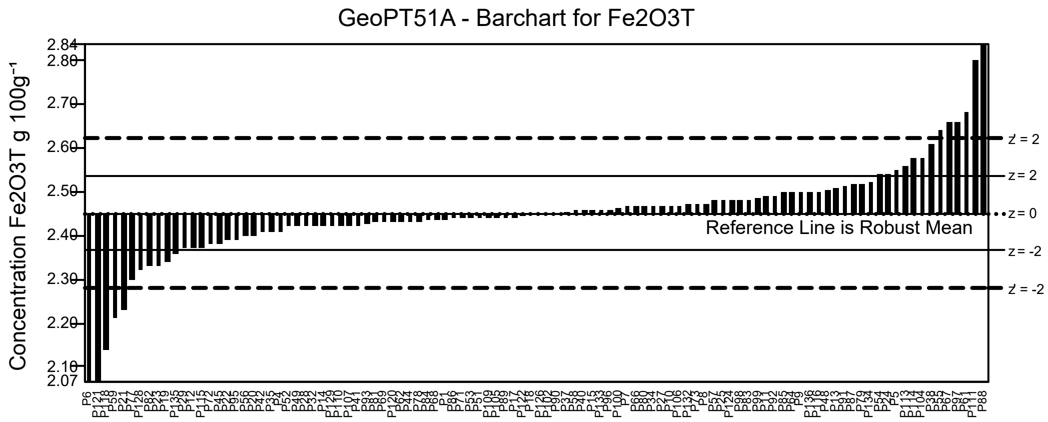
| Lab Code | P128 | P129 | P131 | P132 | P133 | P134 | P135 | P136 |
|---|---|---|---|---|---|---|---|---|
| SiO2 | 0.62 | 0.03 | * | **0.55** | -0.01 | -0.02 | -0.66 | **0.35** |
| TiO2 | -1.10 | -0.40 | * | **0.47** | 0.30 | 0.66 | * | **3.42** |
| Al2O3 | -0.95 | 0.13 | * | **-0.32** | 0.05 | 0.19 | -0.82 | **0.74** |
| Fe2O3T | -1.53 | -0.37 | * | **0.46** | 0.10 | 0.84 | -1.07 | **1.14** |
| MnO | 0.00 | 0.00 | * | **1.04** | 0.00 | 1.91 | * | **0.55** |
| MgO | *-0.87* | *-1.43* | * | ***1.97*** | *-0.31* | *3.01* | * | ***-0.62*** |
| CaO | -0.44 | 0.00 | * | **0.84** | 0.89 | 0.31 | * | **-1.78** |
| Na2O | -0.58 | -0.17 | * | **-0.22** | 0.58 | -0.04 | -1.25 | **-1.00** |
| K2O | -1.26 | -0.39 | * | **1.01** | 0.48 | 1.18 | -1.87 | **0.29** |
| P2O5 | *-0.40* | *-0.53* | * | ***-0.52*** | *-0.53* | *-0.53* | * | ***-0.52*** |
| Ag | * | * | * | * | * | *1.51* | * | * |
| As | *0.10* | * | ***2.32*** | ***3.32*** | * | *1.41* | * | * |
| Ba | -0.62 | 0.13 | **-3.09** | **-5.36** | 0.13 | 2.13 | * | * |
| Be | 0.38 | * | **0.66** | **-7.75** | * | -0.42 | * | **-3.17** |
| Bi | 0.09 | * | **-0.75** | **-6.47** | * | 0.67 | * | **-0.45** |
| Cd | *0.41* | * | ***13.86*** | ***-1.63*** | * | *1.26* | * | * |
| Ce | -0.45 | -0.56 | **-13.90** | **-11.37** | -0.45 | 0.95 | * | **-13.18** |
| Co | -0.06 | * | **-3.32** | **-8.39** | * | -0.61 | * | **-1.82** |
| Cr | *-1.22* | *-0.64* | ***0.38*** | ***-15.58*** | *-0.64* | *0.71* | * | * |
| Cs | -1.29 | * | **-2.93** | **-5.68** | 0.06 | 0.58 | * | **-1.12** |
| Cu | *11.81* | *5.98* | ***-0.57*** | ***-9.14*** | *0.80* | *-0.36* | * | ***-0.10*** |
| Dy | -0.45 | * | **-6.75** | **-4.00** | -0.45 | 0.76 | * | **-5.66** |
| Er | -0.55 | * | **-5.59** | **-3.57** | 0.03 | 0.72 | * | **-4.67** |
| Eu | 0.10 | * | **-4.56** | **-2.54** | -0.88 | 1.96 | * | **-3.57** |
| Ga | -0.47 | 0.43 | **-0.40** | **-7.71** | * | 0.71 | * | **-1.01** |
| Gd | -0.26 | * | **-6.51** | **-3.27** | 2.59 | 0.39 | * | **-6.10** |
| Ge | *-0.40* | * | ***8.68*** | ***11.55*** | * | *2.83* | * | ***4.54*** |
| Hf | 0.38 | * | **4.73** | **-4.18** | * | 0.54 | * | **-0.16** |
| Ho | -0.51 | * | **-5.11** | **-3.13** | 0.19 | 0.33 | * | **-3.79** |
| In | * | * | ***6.55*** | * | * | *-0.07* | * | * |
| La | -0.57 | * | **-13.11** | **-5.83** | -0.27 | 2.49 | * | **-12.06** |
| Li | -1.07 | * | **-0.93** | **-11.68** | 0.73 | 0.62 | * | **-3.63** |
| Lu | 0.39 | * | **-4.05** | **-2.69** | 0.39 | -0.04 | * | **-3.10** |
| Mo | 0.08 | * | **4.85** | **-3.41** | * | 1.04 | * | **0.51** |
| Nb | -0.88 | 0.89 | **3.45** | **-2.53** | 0.28 | 0.10 | * | **0.95** |
| Nd | -0.37 | * | **-10.66** | **-4.43** | 0.39 | 1.57 | * | **-9.70** |
| Ni | *0.66* | * | ***-1.92*** | ***-9.15*** | *-0.80* | *-0.51* | * | ***1.16*** |
| Pb | -0.06 | 0.23 | **-10.80** | **-13.60** | 0.23 | 2.24 | * | **-7.05** |
| Pr | -0.48 | * | **-9.42** | **-4.47** | -0.26 | 0.40 | * | **-8.32** |
| Rb | -0.96 | 0.27 | **-14.99** | **-14.73** | 0.27 | 0.17 | * | * |
| Sb | *3.23* | * | ***1.72*** | ***1.32*** | * | *-1.06* | * | * |
| Sc | 0.56 | * | **-7.16** | **-5.21** | -0.84 | 1.26 | * | **-3.23** |
| Sm | -0.61 | * | **-7.97** | **-3.83** | -0.89 | 0.70 | * | **-7.10** |
| Sn | 0.02 | * | **5.17** | **-1.92** | * | 0.38 | * | **-0.72** |
| Sr | -0.29 | 0.34 | **-13.78** | **-11.75** | 0.11 | 0.25 | * | * |
| Ta | -0.45 | * | **-5.10** | **2.83** | * | -0.16 | * | * |
| Tb | 0.06 | * | **-5.13** | **-2.78** | 0.06 | 0.44 | * | **-4.12** |
| Th | -0.71 | -0.10 | * | **-5.87** | -1.12 | 2.43 | * | **-10.55** |
| Tl | -0.08 | * | **-0.24** | **-3.43** | * | 0.24 | * | * |
| Tm | 0.17 | * | **-4.33** | **-2.74** | 0.17 | 0.03 | * | **-3.28** |
| U | -0.34 | * | * | **-9.68** | 0.69 | 0.07 | * | **-8.11** |
| V | -0.84 | * | **0.38** | **-2.70** | 4.75 | 1.31 | * | **-6.44** |
| W | *1.88* | * | * | ***-3.15*** | * | *-0.00* | * | * |
| Y | -1.06 | 0.30 | **-9.77** | **-5.74** | -0.82 | 1.06 | * | **-10.66** |
| Yb | -0.53 | * | **-5.28** | **-3.49** | -0.53 | 0.62 | * | **-4.47** |
| Zn | -0.13 | 0.08 | **-11.60** | **-15.11** | 0.08 | 0.17 | * | **-5.60** |
| Zr | 2.07 | -0.27 | **15.48** | * | -0.76 | 1.26 | * | **-0.95** |

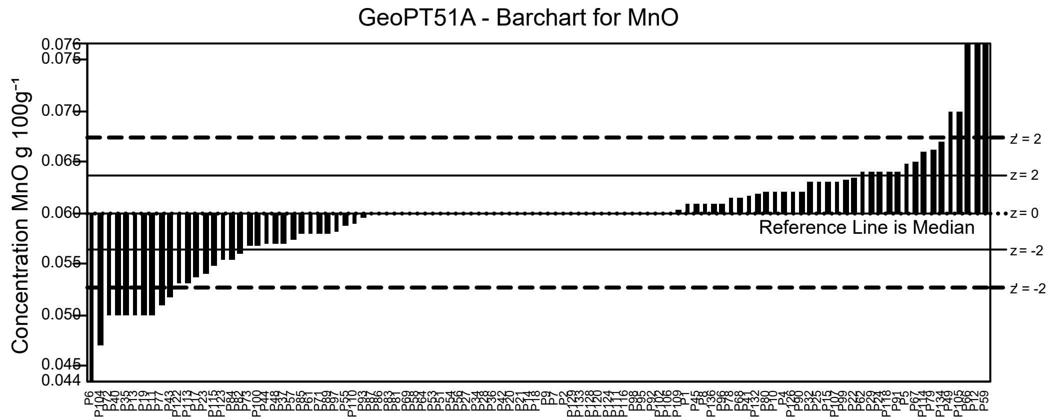
**Bold entries** are Data Quality 1 - Underlined entries are Data Quality 2 - *Entries in italics* are derived from Provisional Values.

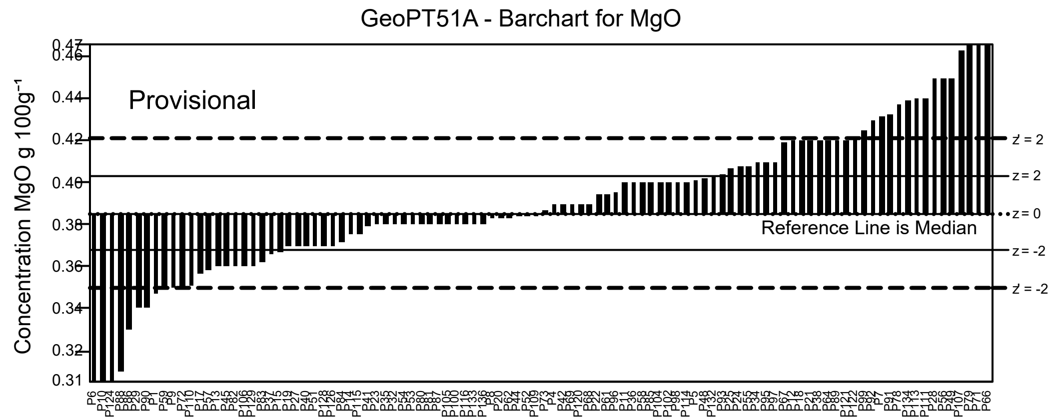

GeoPT51A - Barchart for SiO2
Concentration SiO2 g 100g⁻¹
79
77
75
73
71
69
67
65
z' = 2
z = 2
z = 0
z = -2
z' = -2
Reference Line is Robust Mean

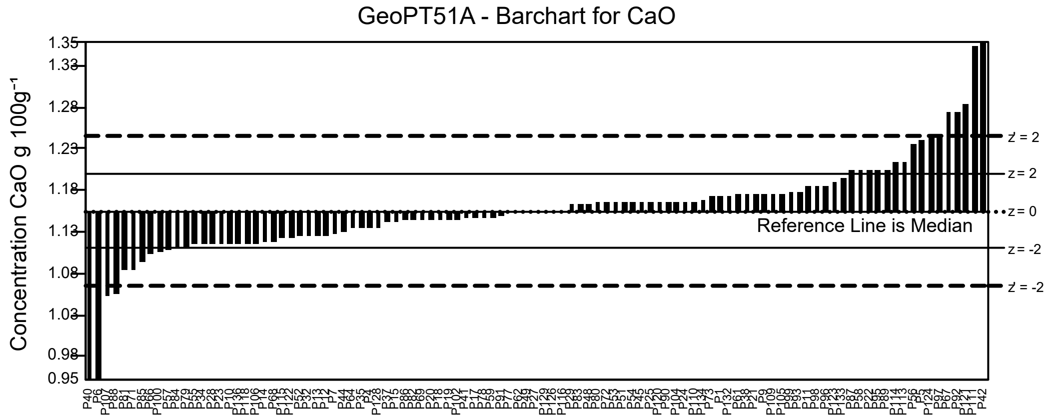

GeoPT51A - Barchart for TiO2
Concentration TiO2 g 100g⁻¹
0.36
0.34
0.32
0.30
0.28
0.26
0.24
0.23
z' = 2
z = 2
z = 0
z = -2
z' = -2
Reference Line is Robust Mean

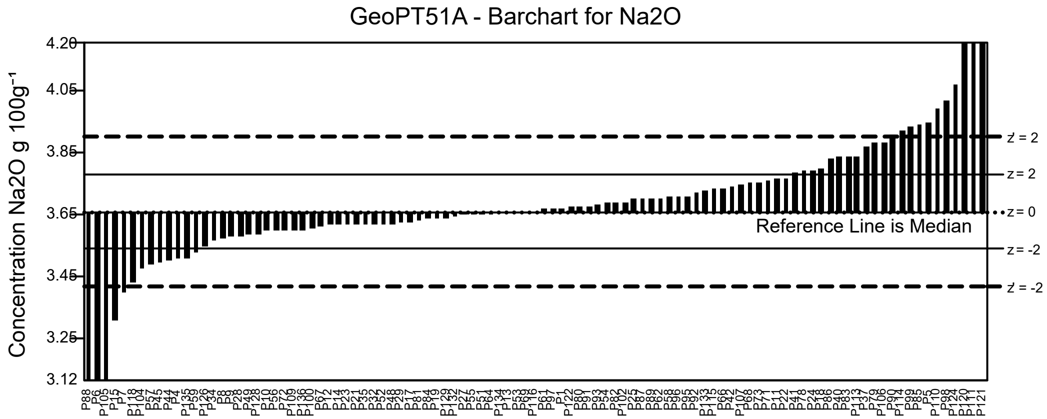

GeoPT51A - Barchart for Al2O3
Concentration Al2O3 g 100g⁻¹
15.8
15.6
15.1
14.6
14.1
13.6
13.1
12.6
12.4
z' = 2
z = 2
z = 0
z = -2
z' = -2
Reference Line is Median

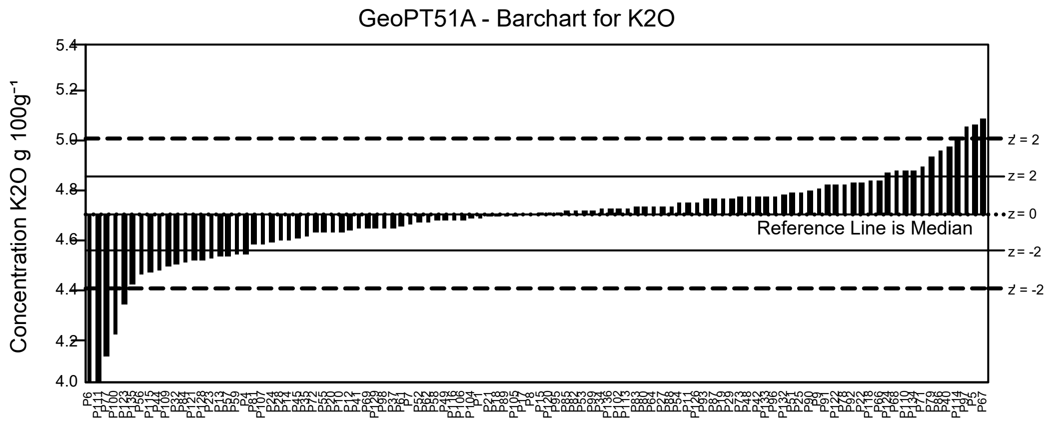

GeoPT51A - Barchart for Fe2O3T
Concentration Fe2O3T g 100g⁻¹
2.84
2.80
2.70
2.60
2.50
2.40
2.30
2.20
2.10
2.07
z' = 2
z = 2
z = 0
z = -2
z' = -2
Reference Line is Robust Mean

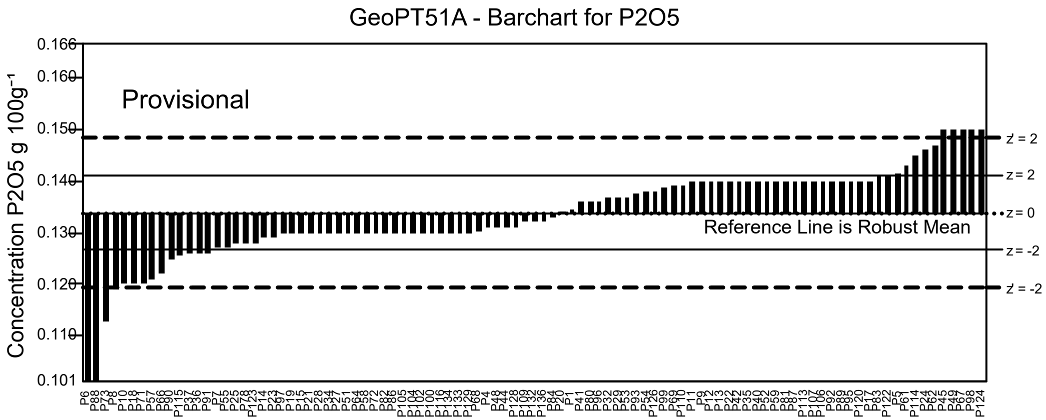

GeoPT51A - Barchart for MnO
Concentration MnO g 100g⁻¹
0.076
0.075
0.070
0.065
0.060
0.055
0.050
0.045
0.044
z' = 2
z = 2
z = 0
z = -2
z' = -2
Reference Line is Median

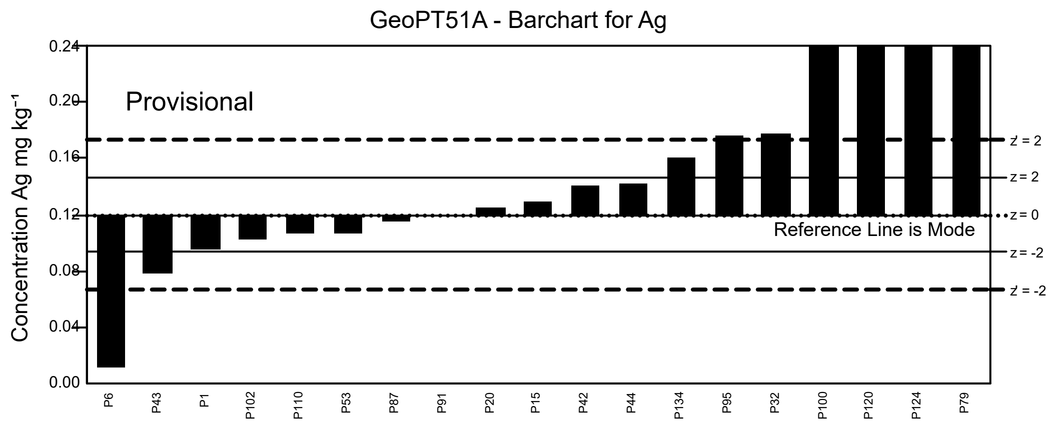

GeoPT51A - Barchart for MgO
Concentration MgO g 100g⁻¹
Provisional
0.47
0.46
0.44
0.42
0.40
0.38
0.36
0.34
0.32
0.31
z' = 2
z = 2
z = 0
z = -2
z' = -2
Reference Line is Median

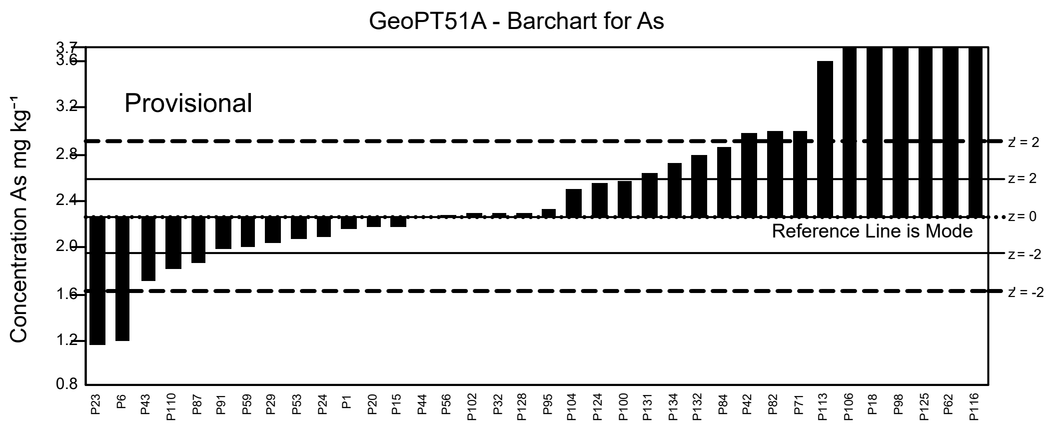

GeoPT51A - Barchart for CaO
Concentration CaO g 100g⁻¹
z' = 2
z = 2
z = 0
Reference Line is Median
z = -2
z' = -2


GeoPT51A - Barchart for Na2O
Concentration Na2O g 100g⁻¹
z' = 2
z = 2
z = 0
Reference Line is Median
z = -2
z' = -2

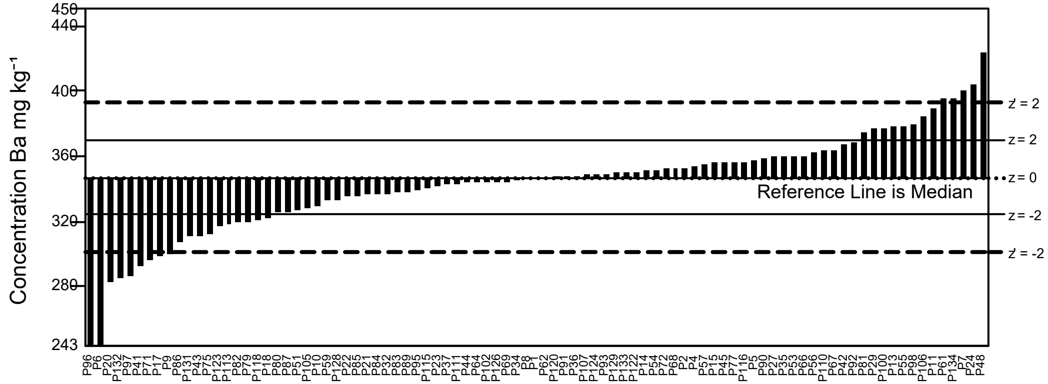

GeoPT51A - Barchart for K2O
Concentration K2O g 100g⁻¹
z' = 2
z = 2
z = 0
Reference Line is Median
z = -2
z' = -2


GeoPT51A - Barchart for P2O5
Provisional
Concentration P2O5 g 100g⁻¹
z' = 2
z = 2
z = 0
Reference Line is Robust Mean
z = -2
z' = -2

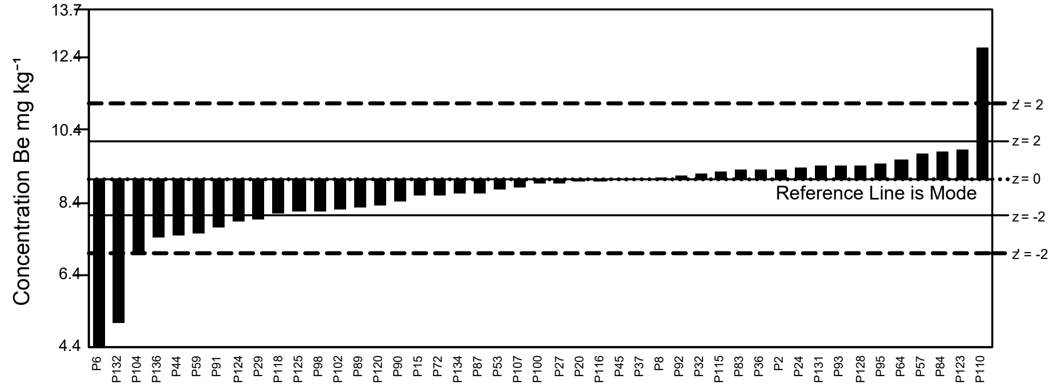

GeoPT51A - Barchart for Ag
Provisional
Concentration Ag mg kg⁻¹
z' = 2
z = 2
z = 0
Reference Line is Mode
z = -2
z' = -2
P6
P43
P1
P102
P110
P53
P87
P91
P20
P15
P42
P44
P134
P95
P32
P100
P120
P124
P79


GeoPT51A - Barchart for As
Provisional
Concentration As mg kg⁻¹
z' = 2
z = 2
z = 0
Reference Line is Mode
z = -2
z' = -2
P23
P6
P43
P110
P87
P91
P59
P29
P53
P24
P1
P20
P15
P44
P56
P102
P32
P128
P95
P104
P124
P100
P131
P134
P132
P84
P42
P82
P71
P113
P106
P18
P98
P125
P62
P116

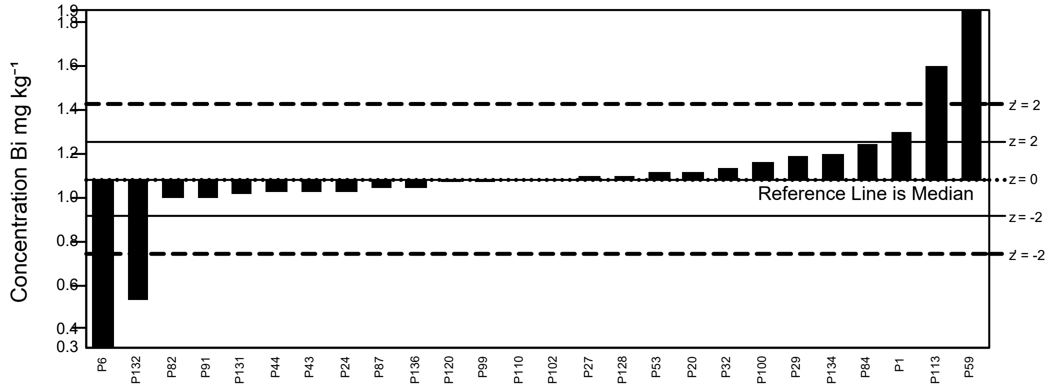
GeoPT51A - Barchart for Ba



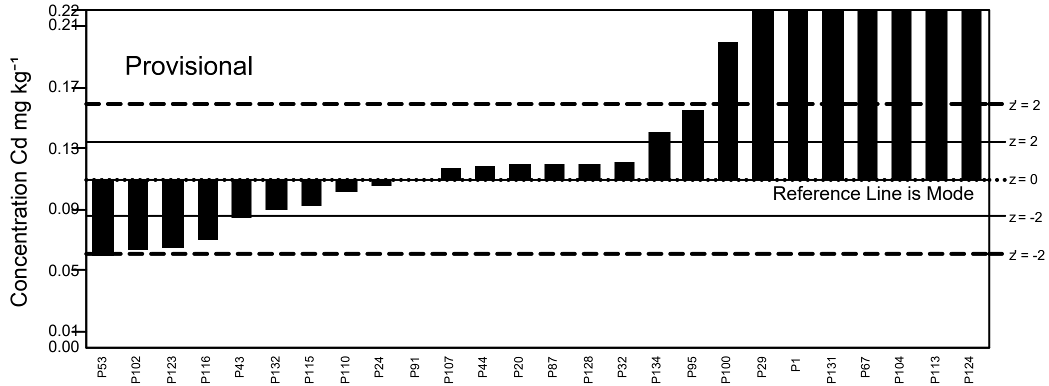

GeoPT51A - Barchart for Be



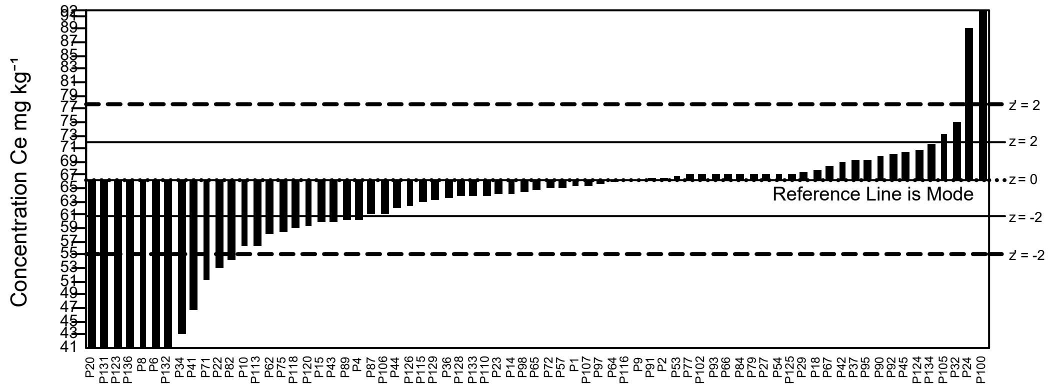

GeoPT51A - Barchart for Bi



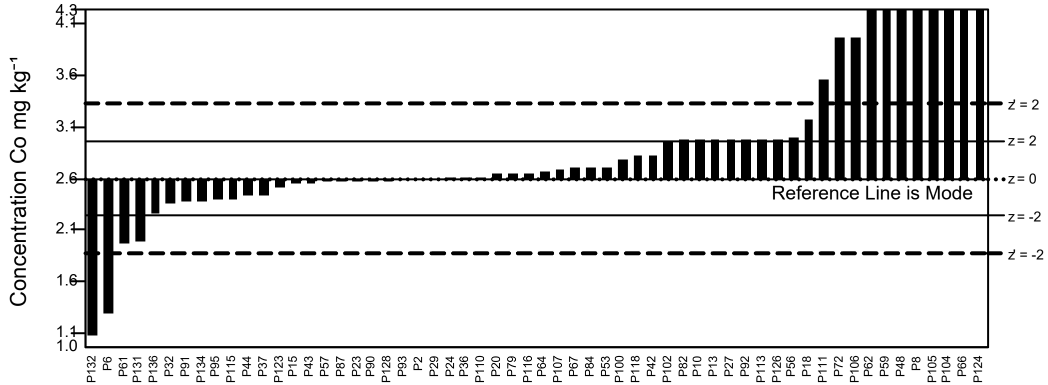

GeoPT51A - Barchart for Cd



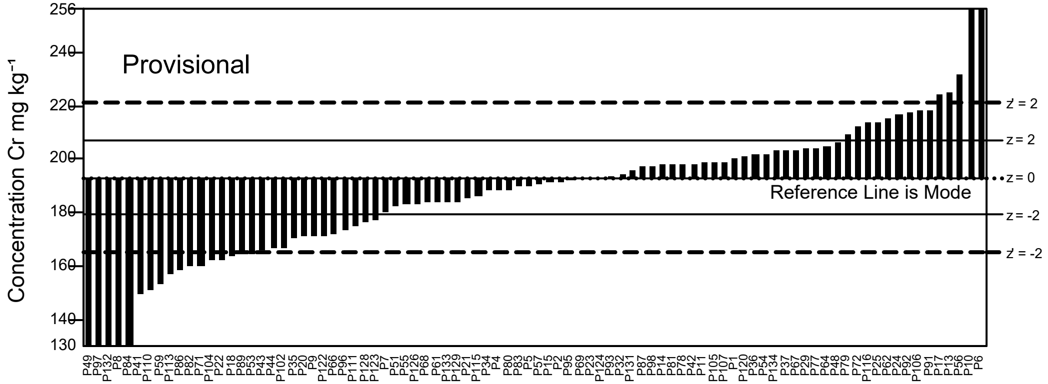

GeoPT51A - Barchart for Ce



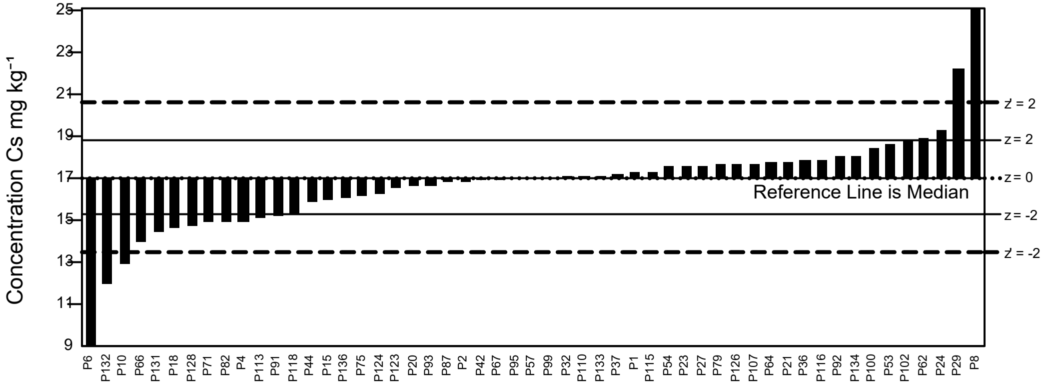

GeoPT51A - Barchart for Co



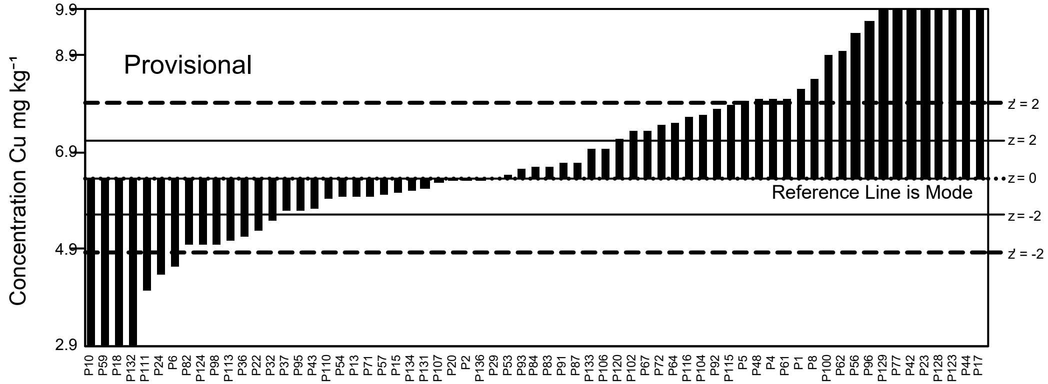
GeoPT51A - Barchart for Cr



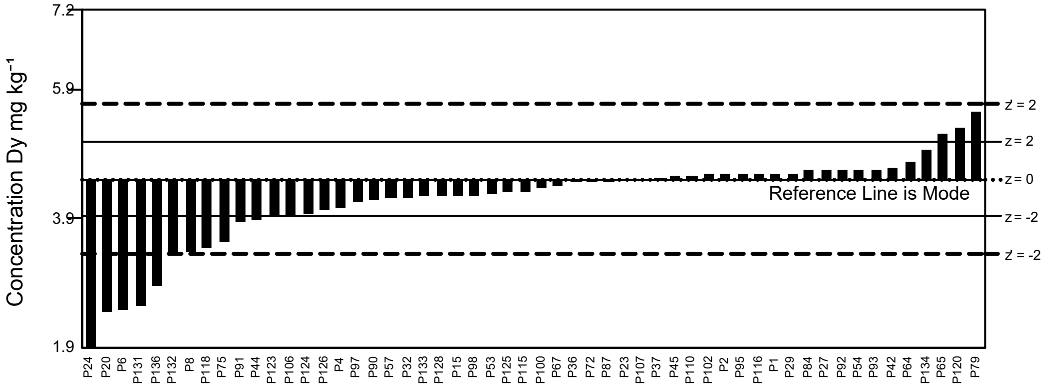

GeoPT51A - Barchart for Cs



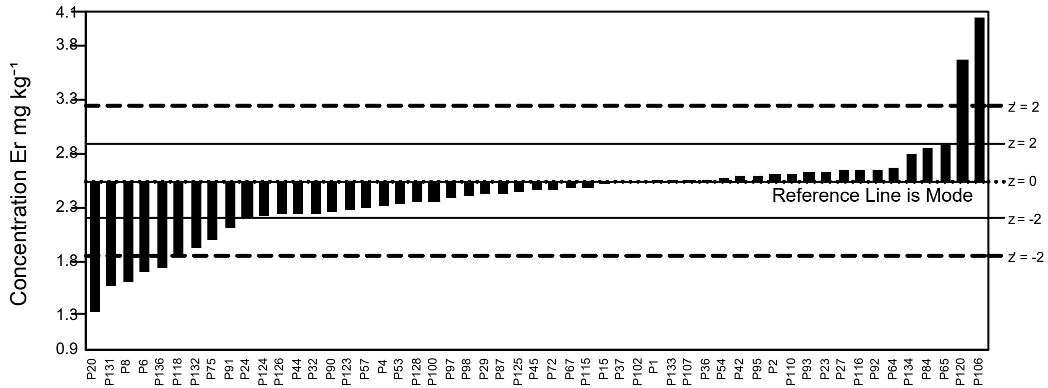

GeoPT51A - Barchart for Cu



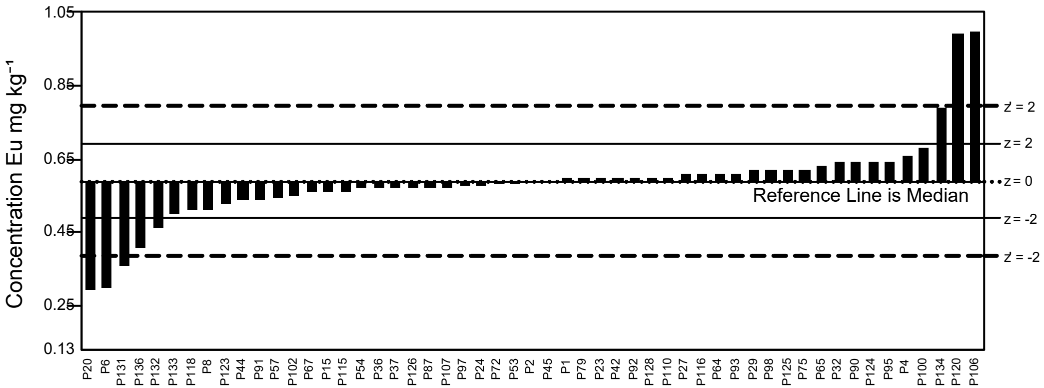

GeoPT51A - Barchart for Dy

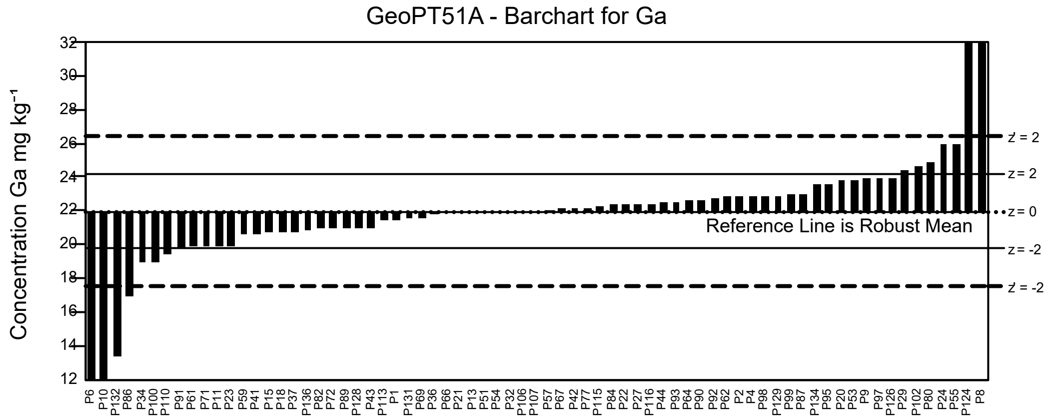


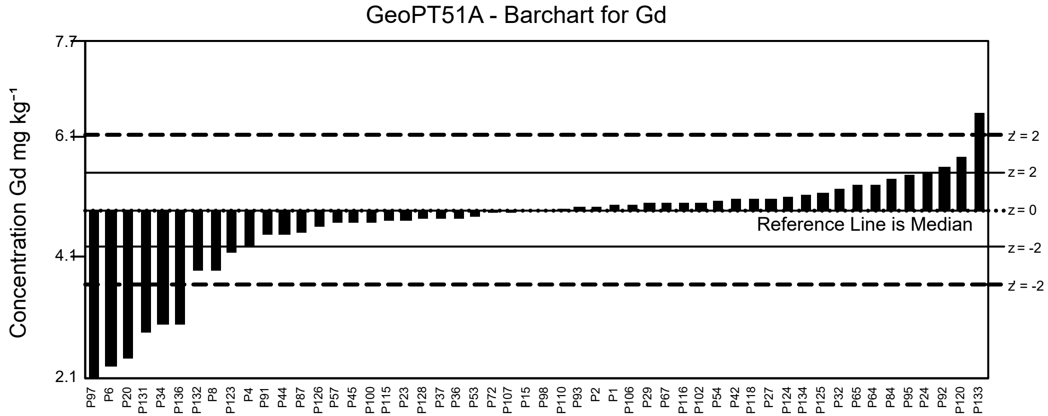

GeoPT51A - Barchart for Er

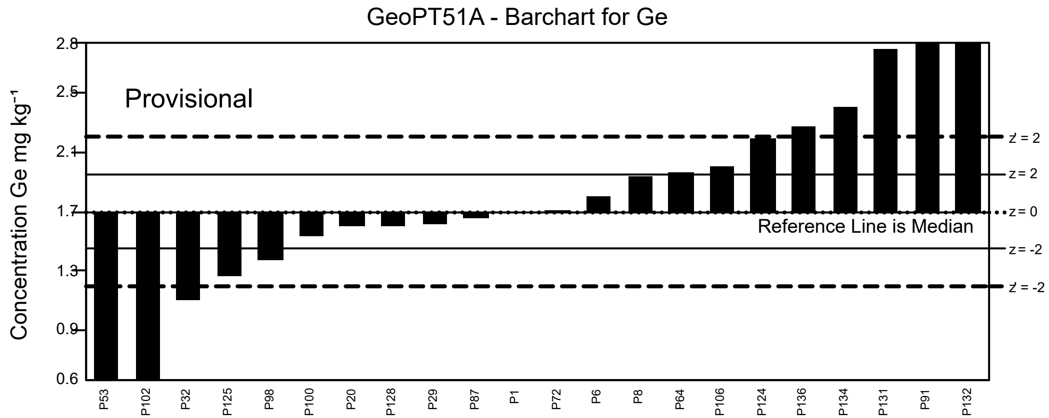


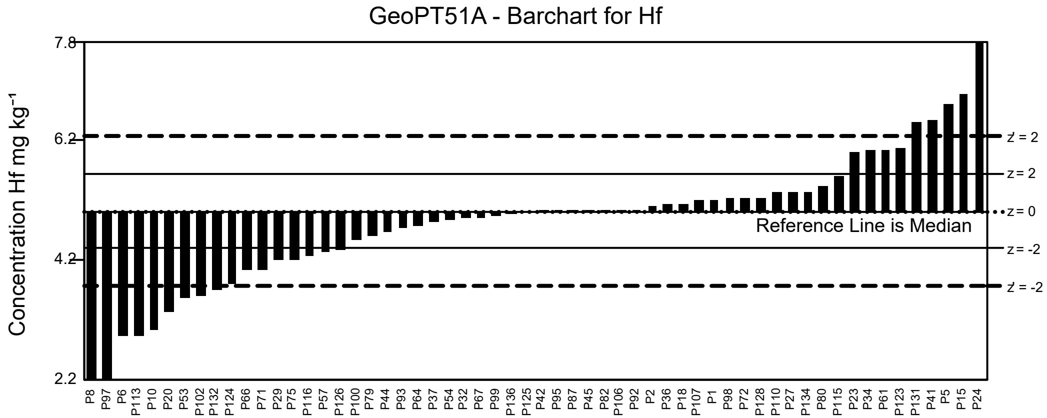

GeoPT51A - Barchart for Eu

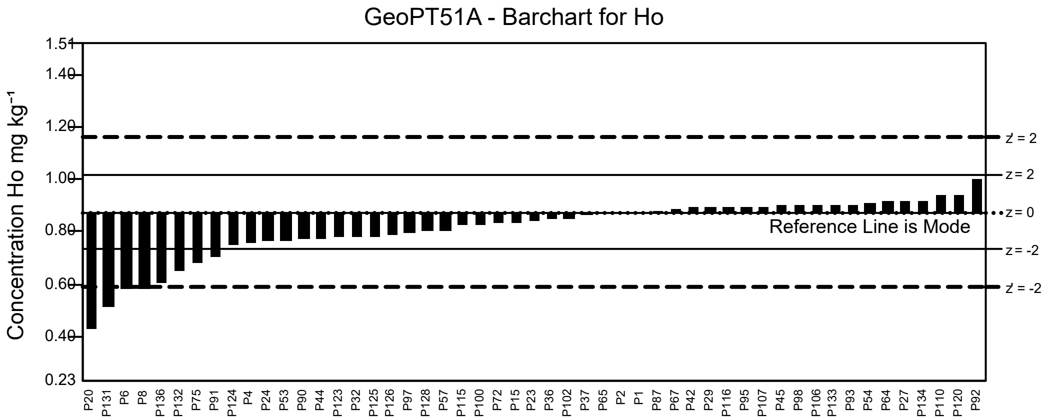


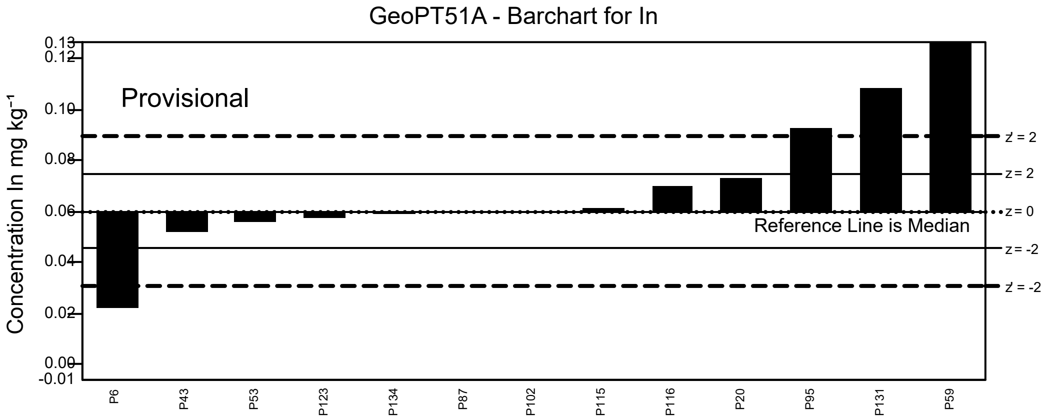

GeoPT51A - Barchart for Ga
Concentration Ga mg kg⁻¹
Reference Line is Robust Mean
z' = 2
z = 2
z = 0
z = -2
z' = -2


GeoPT51A - Barchart for Gd
Concentration Gd mg kg⁻¹
Reference Line is Median
z' = 2
z = 2
z = 0
z = -2
z' = -2

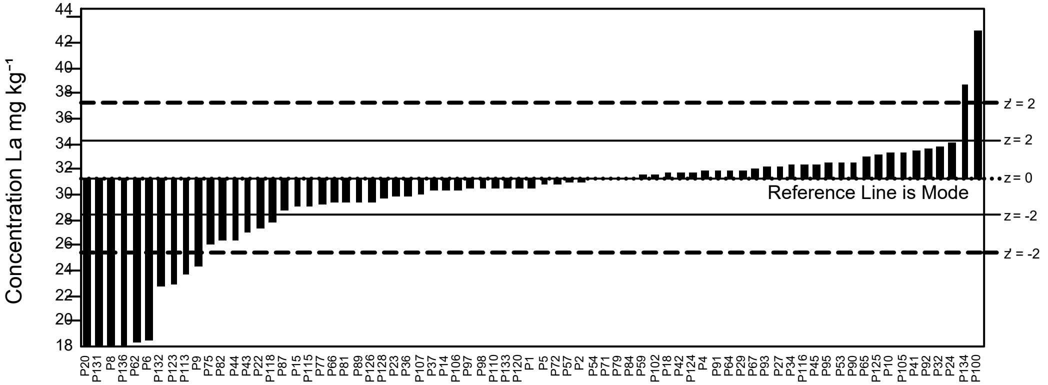

GeoPT51A - Barchart for Ge
Provisional
Concentration Ge mg kg⁻¹
Reference Line is Median
z' = 2
z = 2
z = 0
z = -2
z' = -2


GeoPT51A - Barchart for Hf
Concentration Hf mg kg⁻¹
Reference Line is Median
z' = 2
z = 2
z = 0
z = -2
z' = -2

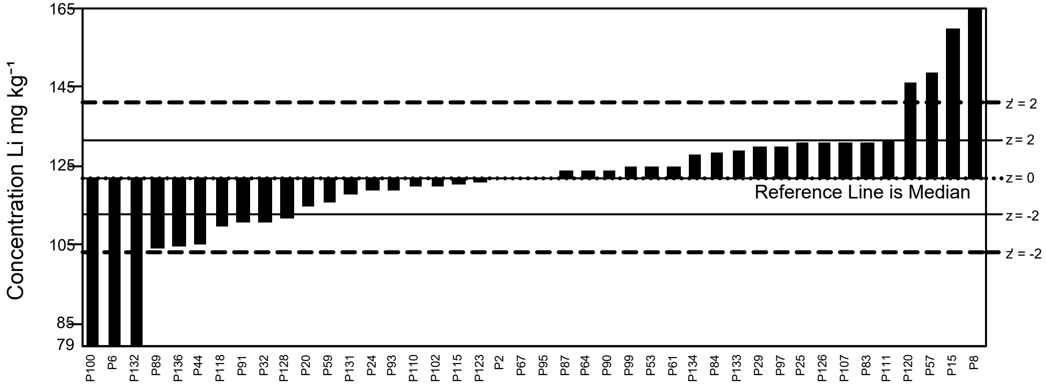

GeoPT51A - Barchart for Ho
Concentration Ho mg kg⁻¹
Reference Line is Mode
z' = 2
z = 2
z = 0
z = -2
z' = -2


GeoPT51A - Barchart for In
Provisional
Concentration In mg kg⁻¹
Reference Line is Median
z' = 2
z = 2
z = 0
z = -2
z' = -2

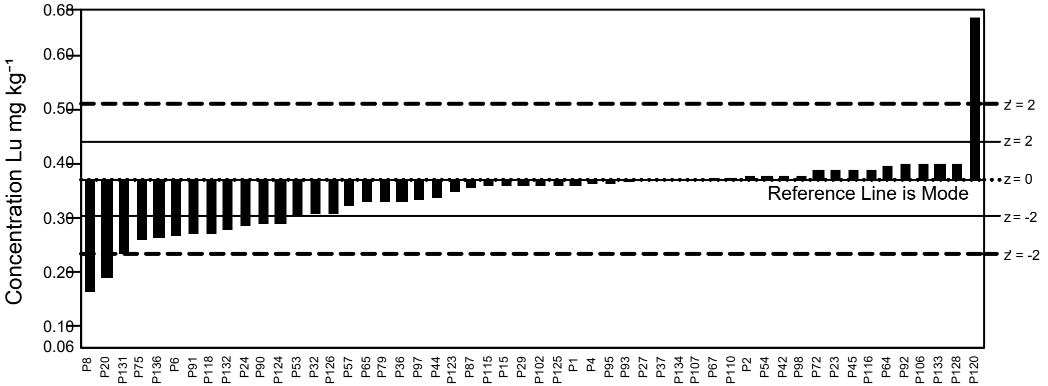
GeoPT51A - Barchart for La



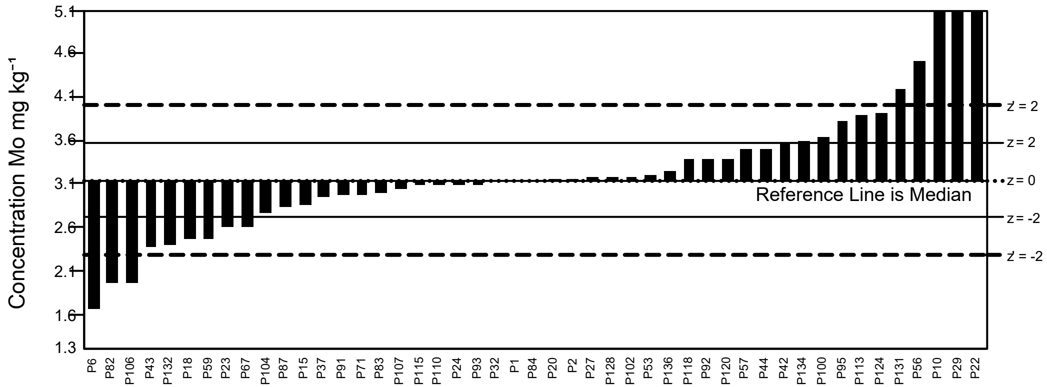

GeoPT51A - Barchart for Li



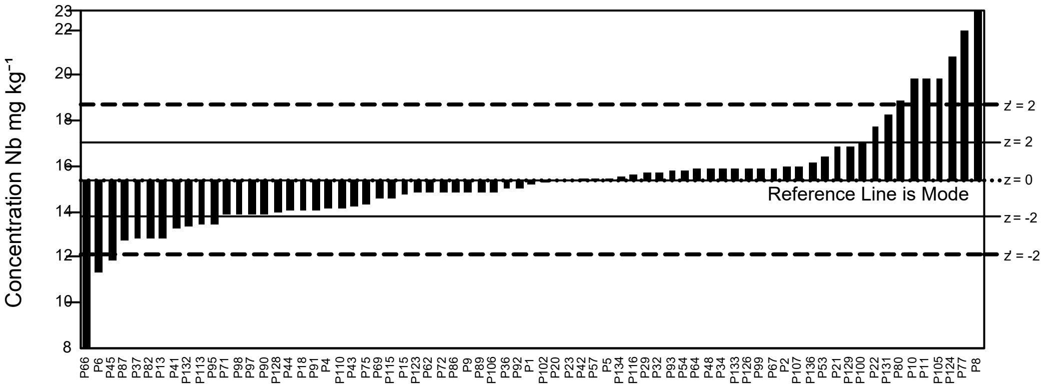

GeoPT51A - Barchart for Lu



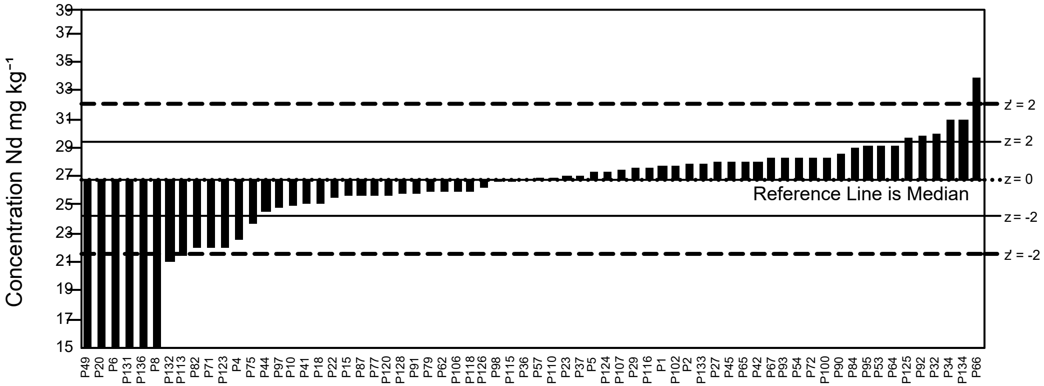

GeoPT51A - Barchart for Mo

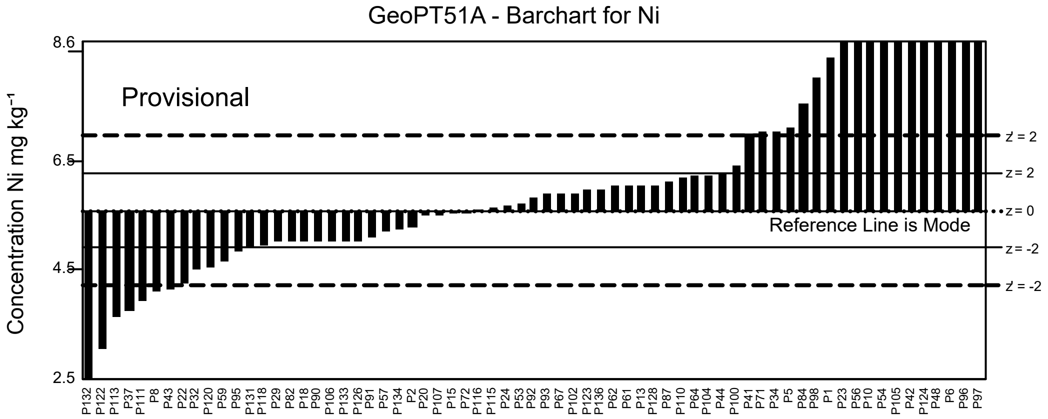


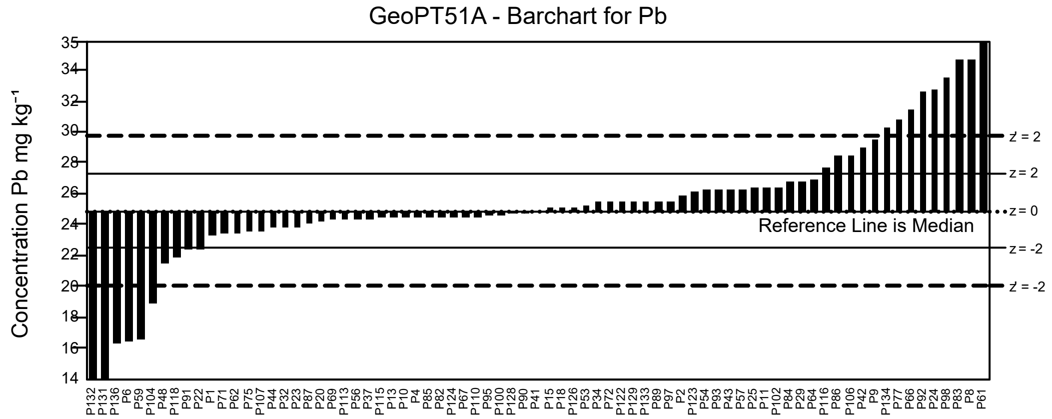

GeoPT51A - Barchart for Nb

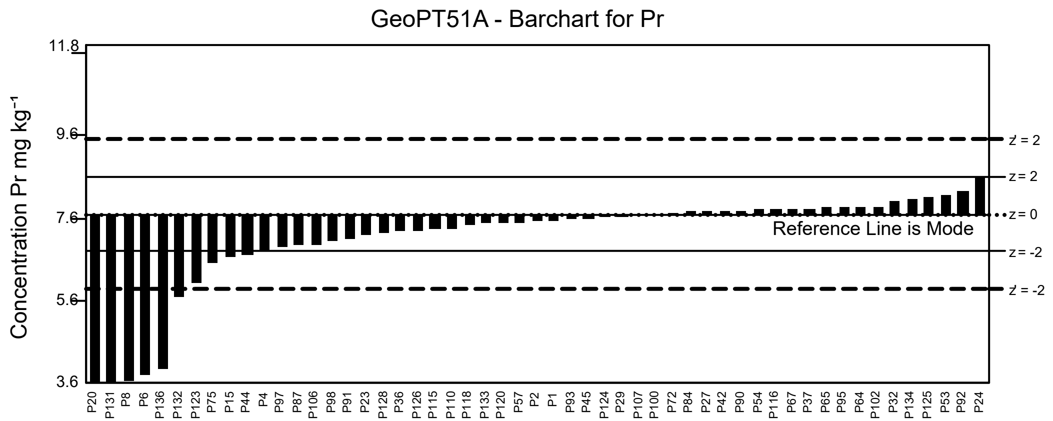


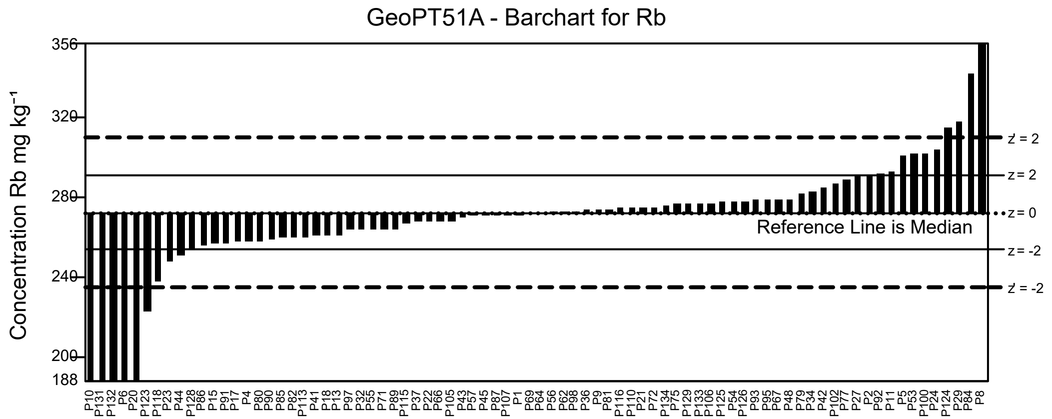

GeoPT51A - Barchart for Nd

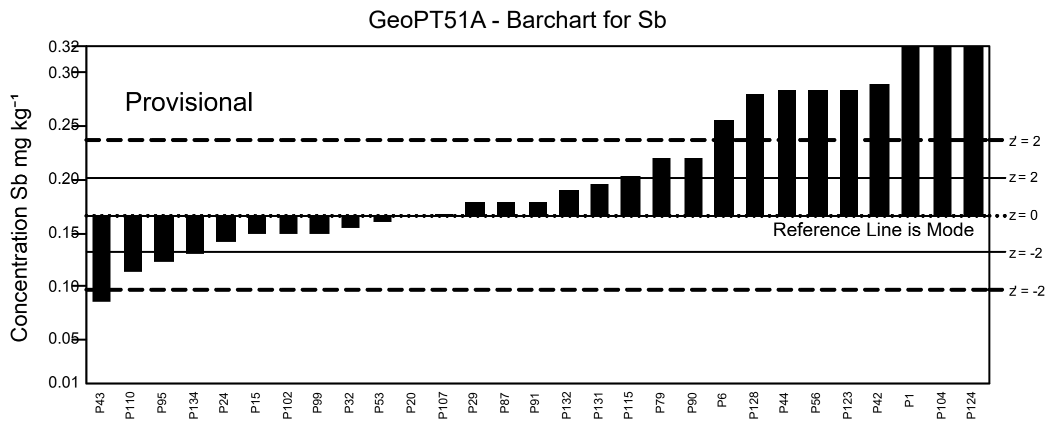


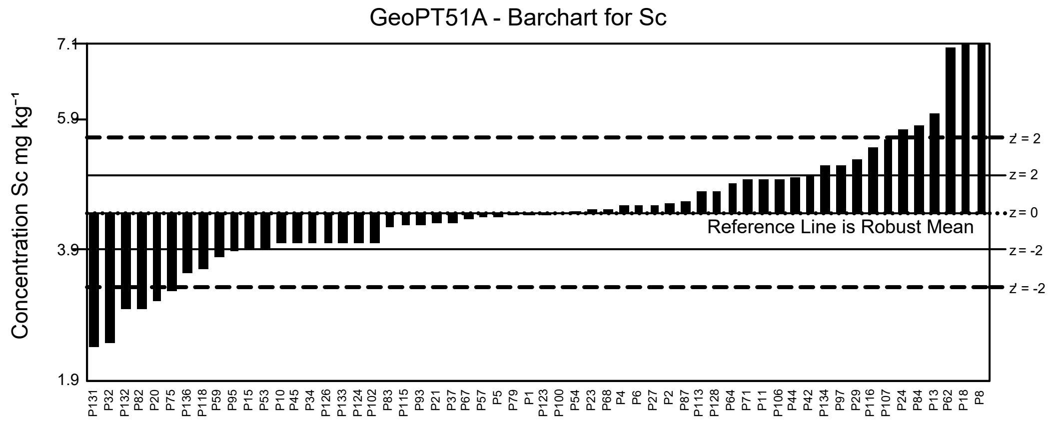

GeoPT51A - Barchart for Ni
Provisional
Concentration Ni mg kg⁻¹
8.6
6.5
4.5
2.5
z' = 2
z = 2
z = 0
z = -2
z' = -2
Reference Line is Mode


GeoPT51A - Barchart for Pb
Concentration Pb mg kg⁻¹
35
34
32
30
28
26
24
22
20
18
16
14
z' = 2
z = 2
z = 0
z = -2
z' = -2
Reference Line is Median

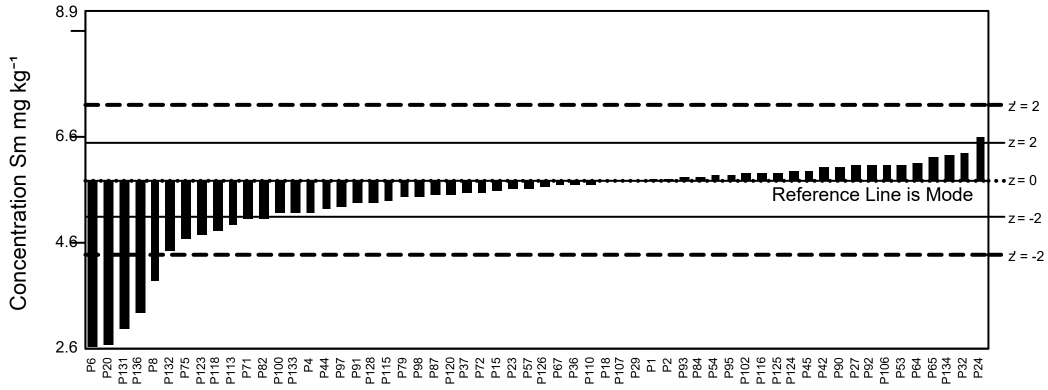

GeoPT51A - Barchart for Pr
Concentration Pr mg kg⁻¹
11.8
9.6
7.6
5.6
3.6
z' = 2
z = 2
z = 0
z = -2
z' = -2
Reference Line is Mode


GeoPT51A - Barchart for Rb
Concentration Rb mg kg⁻¹
356
320
280
240
200
188
z' = 2
z = 2
z = 0
z = -2
z' = -2
Reference Line is Median

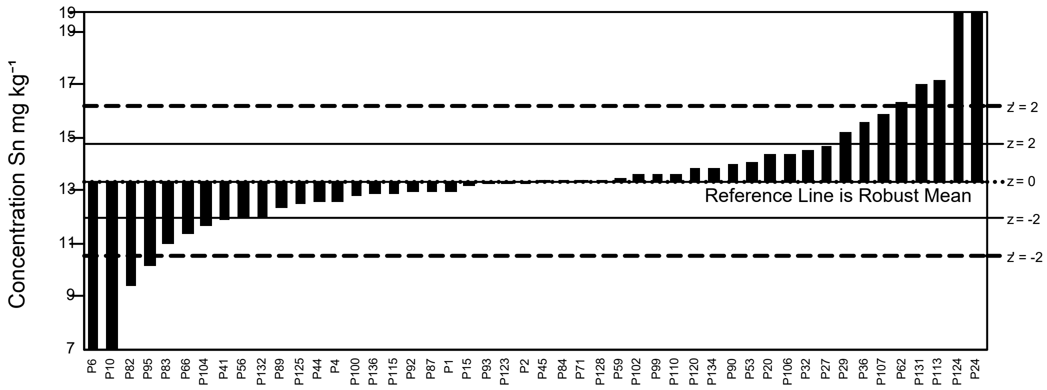

GeoPT51A - Barchart for Sb
Provisional
Concentration Sb mg kg⁻¹
0.32
0.30
0.25
0.20
0.15
0.10
0.05
0.01
z' = 2
z = 2
z = 0
z = -2
z' = -2
Reference Line is Mode


GeoPT51A - Barchart for Sc
Concentration Sc mg kg⁻¹
7.1
5.9
3.9
1.9
z' = 2
z = 2
z = 0
z = -2
z' = -2
Reference Line is Robust Mean

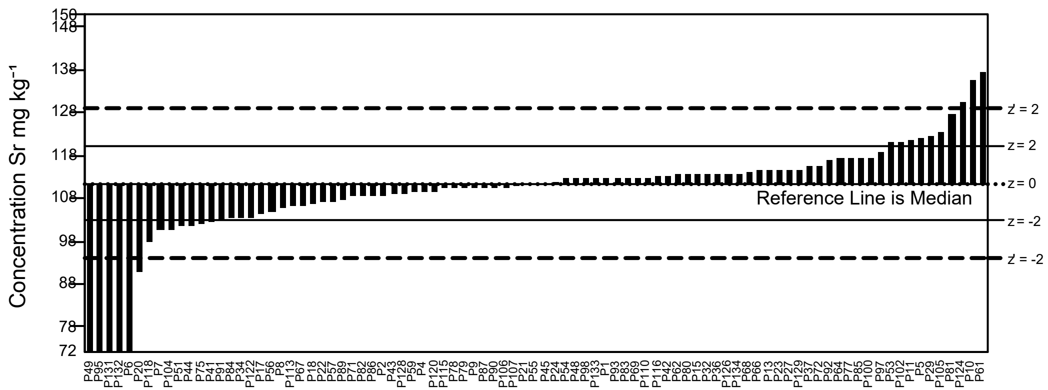
GeoPT51A - Barchart for Sm



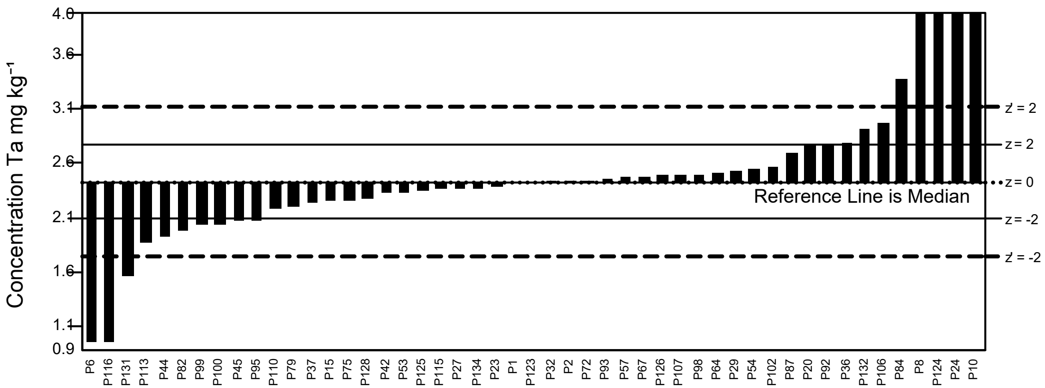

GeoPT51A - Barchart for Sn



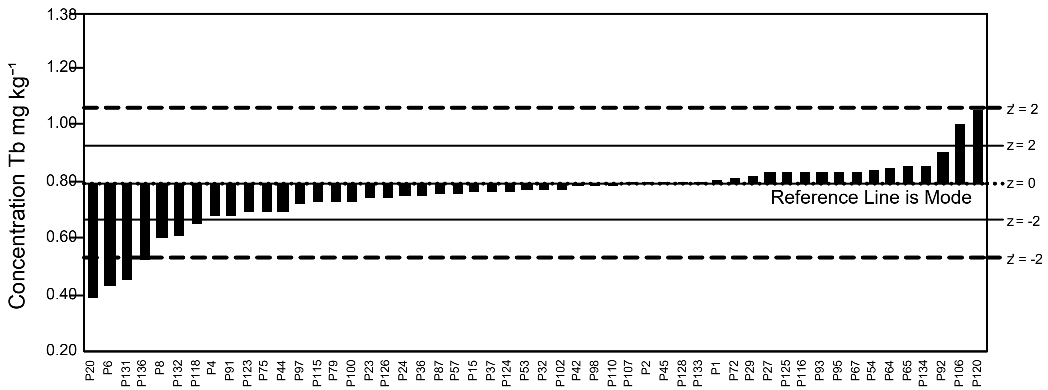

GeoPT51A - Barchart for Sr



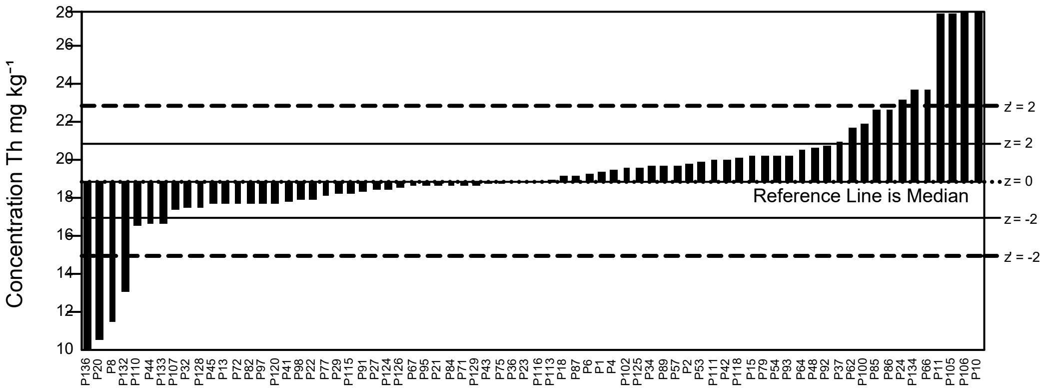

GeoPT51A - Barchart for Ta



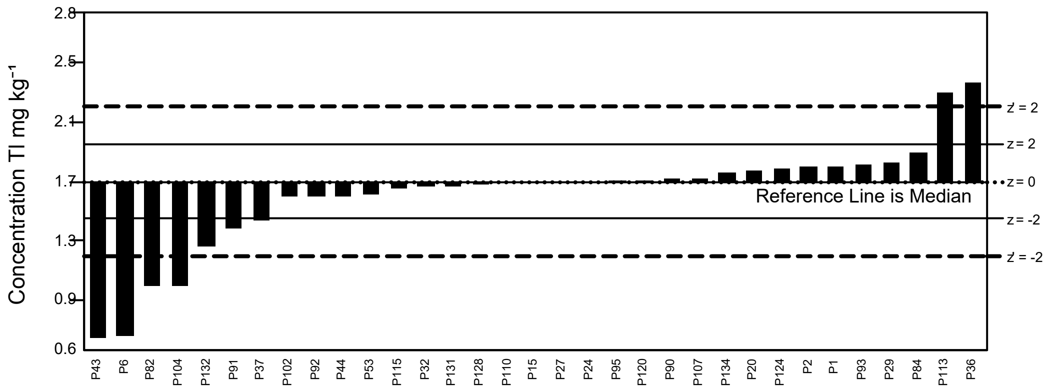

GeoPT51A - Barchart for Tb



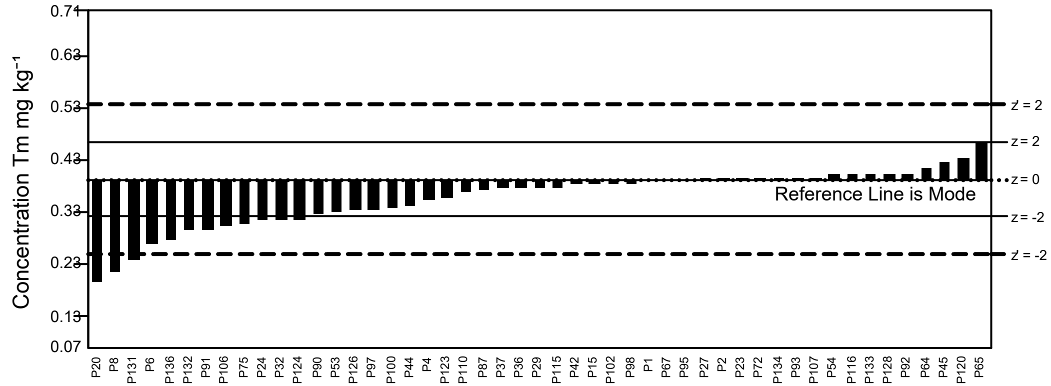

GeoPT51A - Barchart for Th



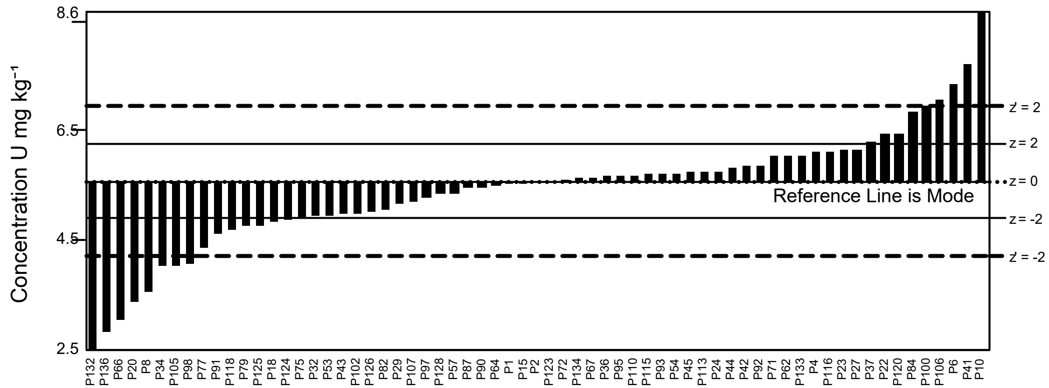
GeoPT51A - Barchart for Tl



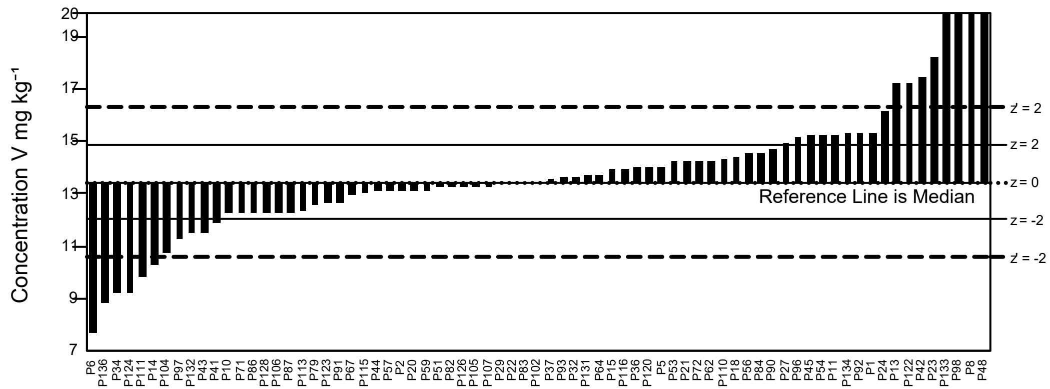

GeoPT51A - Barchart for Tm



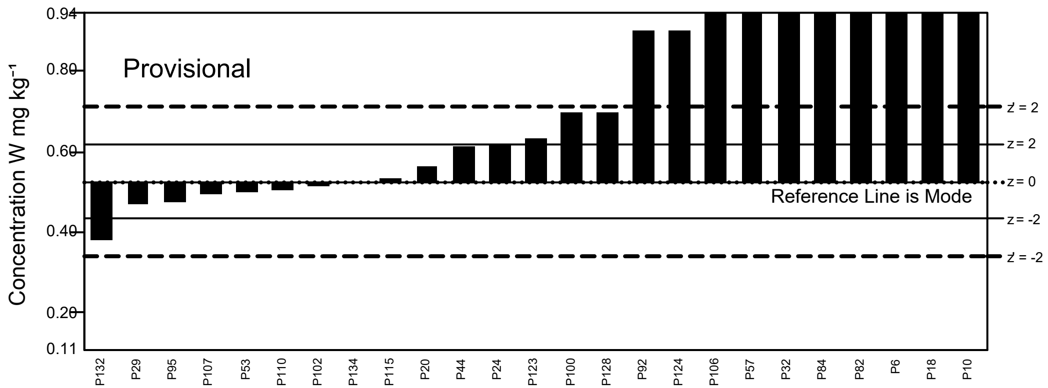

GeoPT51A - Barchart for U



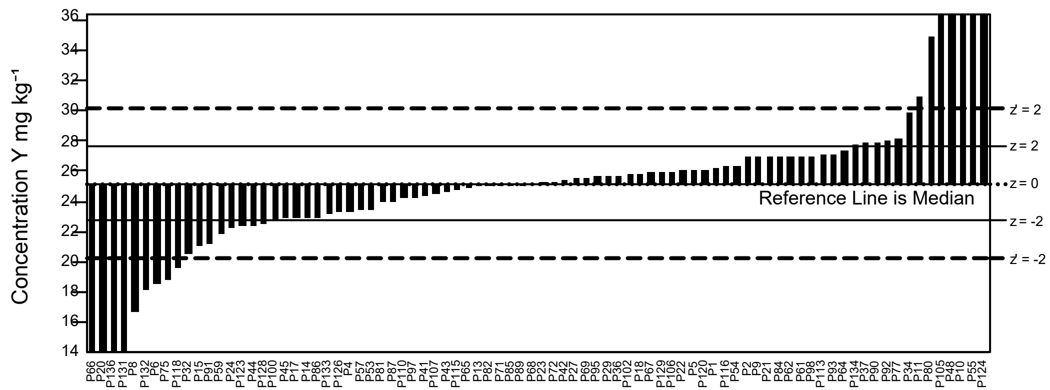

GeoPT51A - Barchart for V

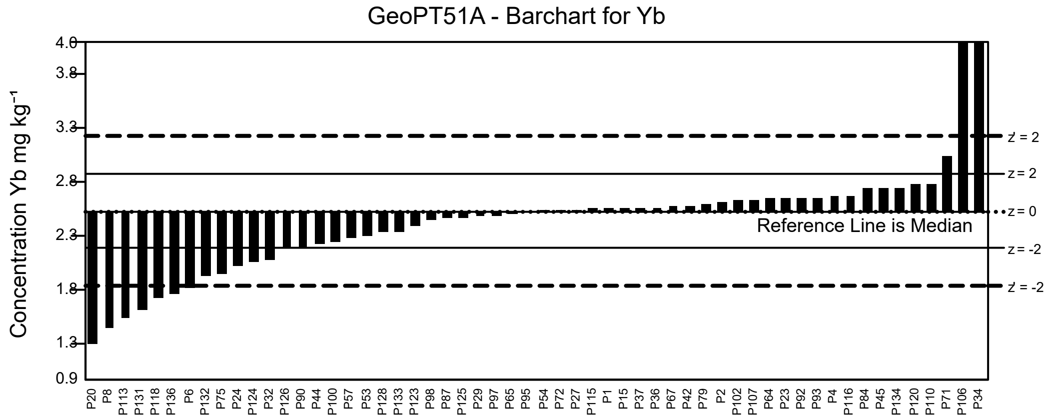


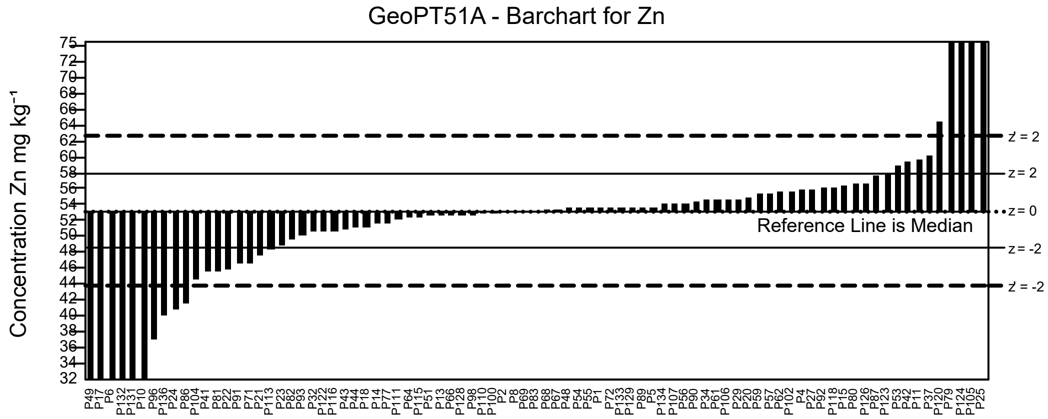

GeoPT51A - Barchart for W




GeoPT51A - Barchart for Y





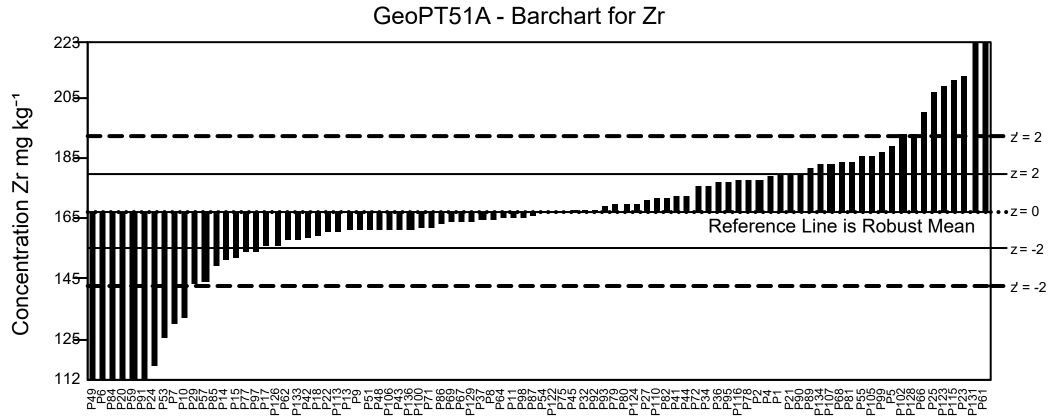
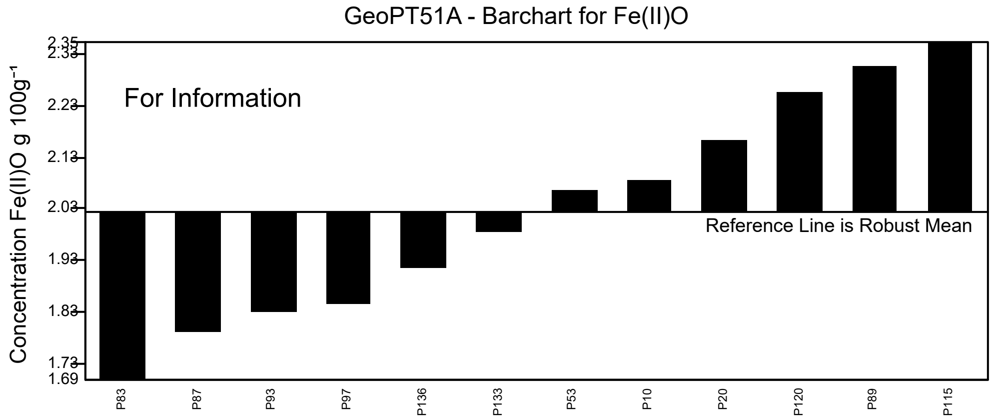
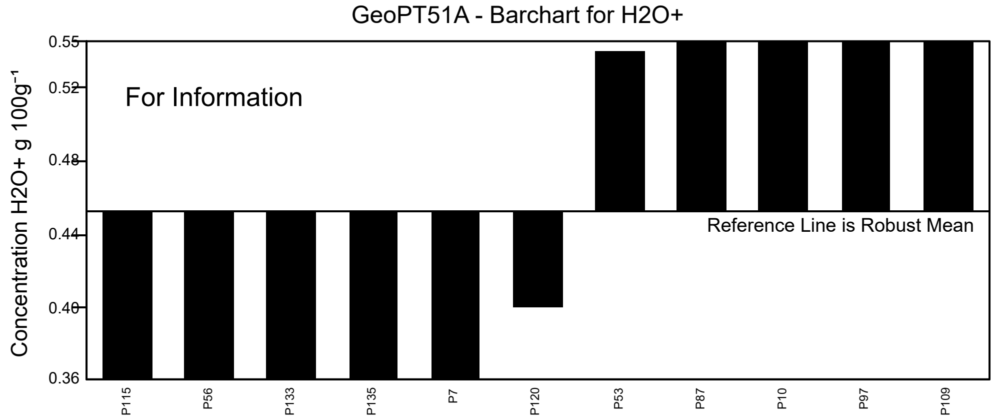



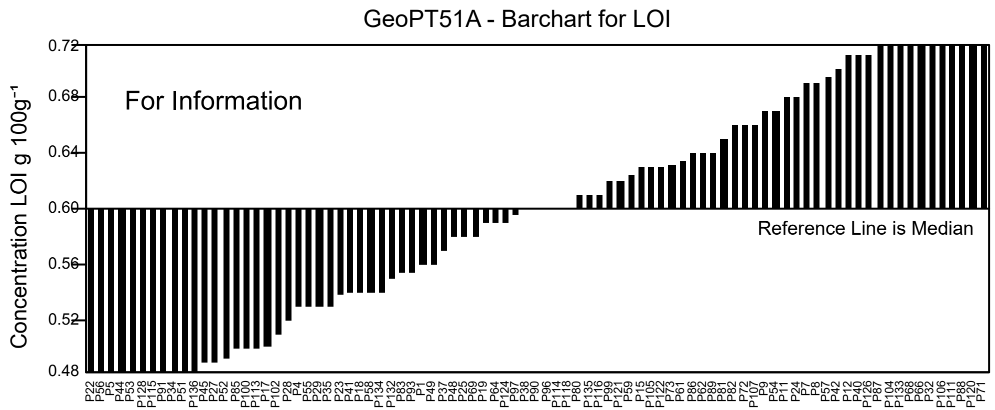

Figure 1: GeoPT51A - Granite, MEG-1. Data distribution charts for elements for which values were assigned or provisional values given for guidance. Horizontal lines show the limits for -2<z<2 for pure geochemistry labs (solid lines) and -2<z'<2 for applied geochemistry labs (pecked lines).



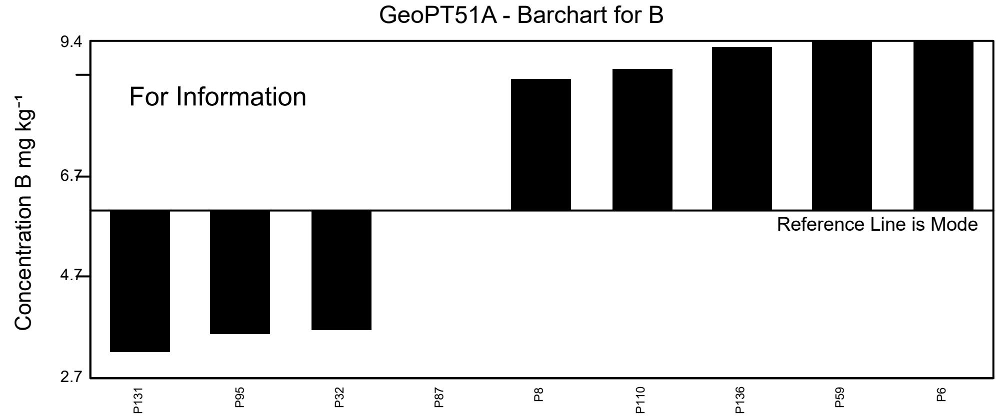
GeoPT51A - Barchart for Fe(II)O
Concentration Fe(II)O g 100g⁻¹
For Information
Reference Line is Robust Mean
2.35
2.33
2.23
2.13
2.03
1.93
1.83
1.73
1.69
P83
P87
P93
P97
P136
P133
P53
P10
P20
P120
P89
P115

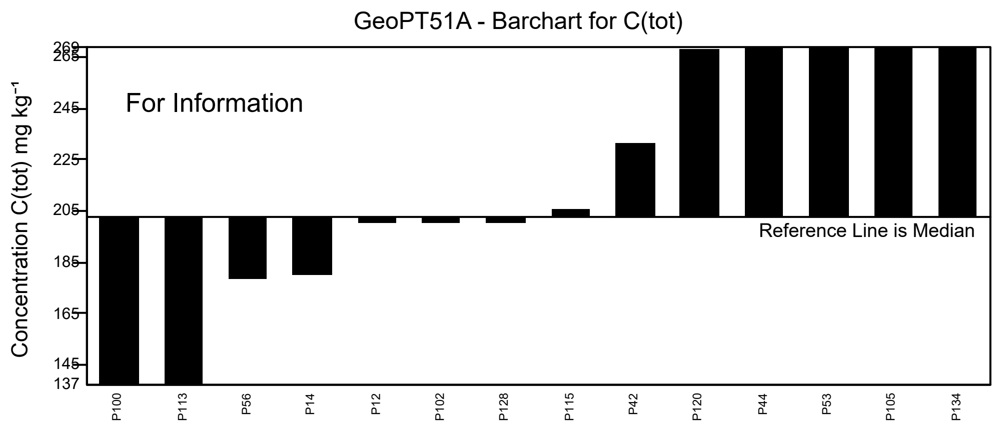
GeoPT51A - Barchart for H2O+
Concentration H2O+ g 100g⁻¹
For Information
Reference Line is Robust Mean
0.55
0.52
0.48
0.44
0.40
0.36
P115
P56
P133
P135
P7
P120
P53
P87
P10
P97
P109

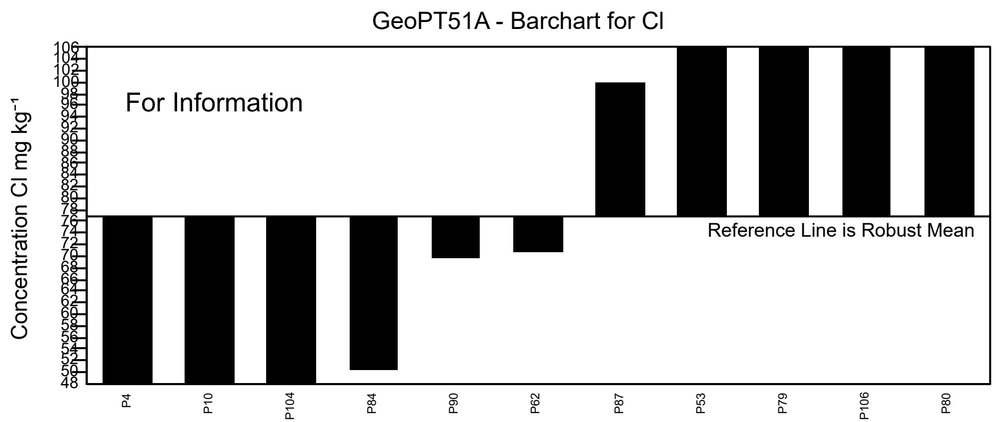
GeoPT51A - Barchart for LOI
Concentration LOI g 100g⁻¹
For Information
Reference Line is Median
0.72
0.68
0.64
0.60
0.56
0.52
0.48

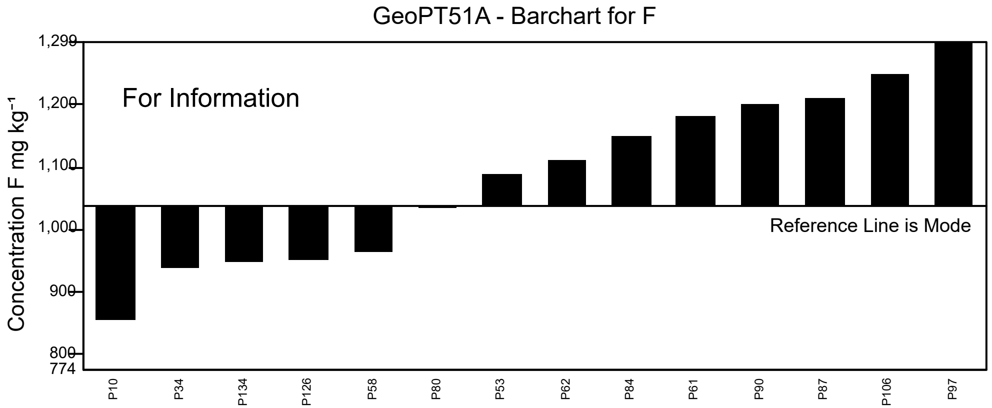
GeoPT51A - Barchart for B
Concentration B mg kg⁻¹
For Information
Reference Line is Mode
9.4
6.7
4.7
2.7
P131
P95
P32
P87
P8
P110
P136
P59
P6

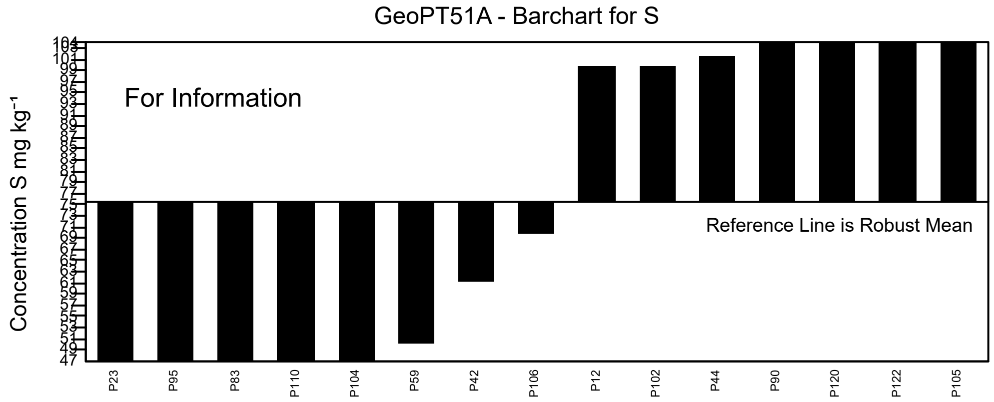



GeoPT51A - Barchart for C(tot)
Concentration C(tot) mg kg⁻¹
For Information
Reference Line is Median
269
265
245
225
205
185
165
145
137
P100
P113
P56
P14
P12
P102
P128
P115
P42
P120
P44
P53
P105
P134

GeoPT51A - Barchart for Cl
Concentration Cl mg kg⁻¹
For Information
Reference Line is Robust Mean
P4
P10
P104
P84
P90
P62
P87
P53
P79
P106
P80



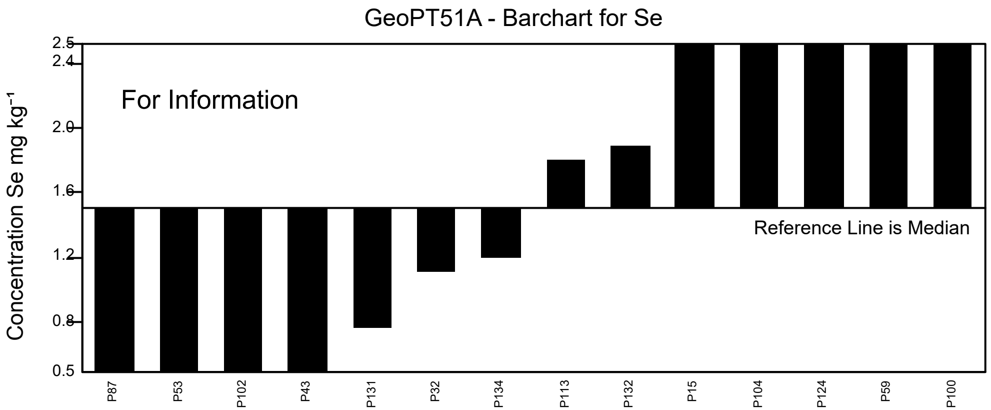
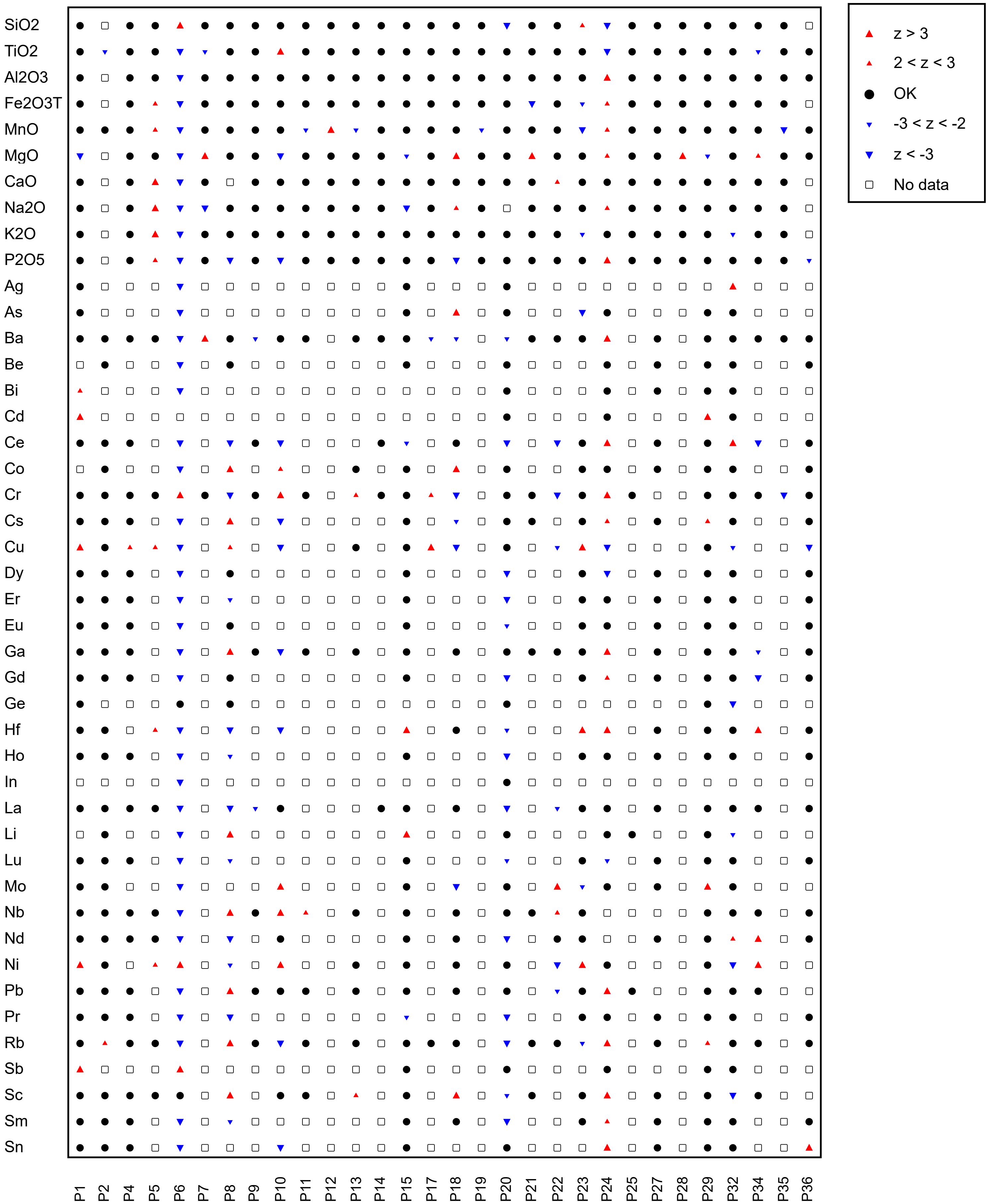




Figure 2: GeoPT51A - Granite, MEG-1. Data distribution charts provided for information only for elements for which values could not be assigned.

## Multiple Z-Score Chart for GeoPT51A



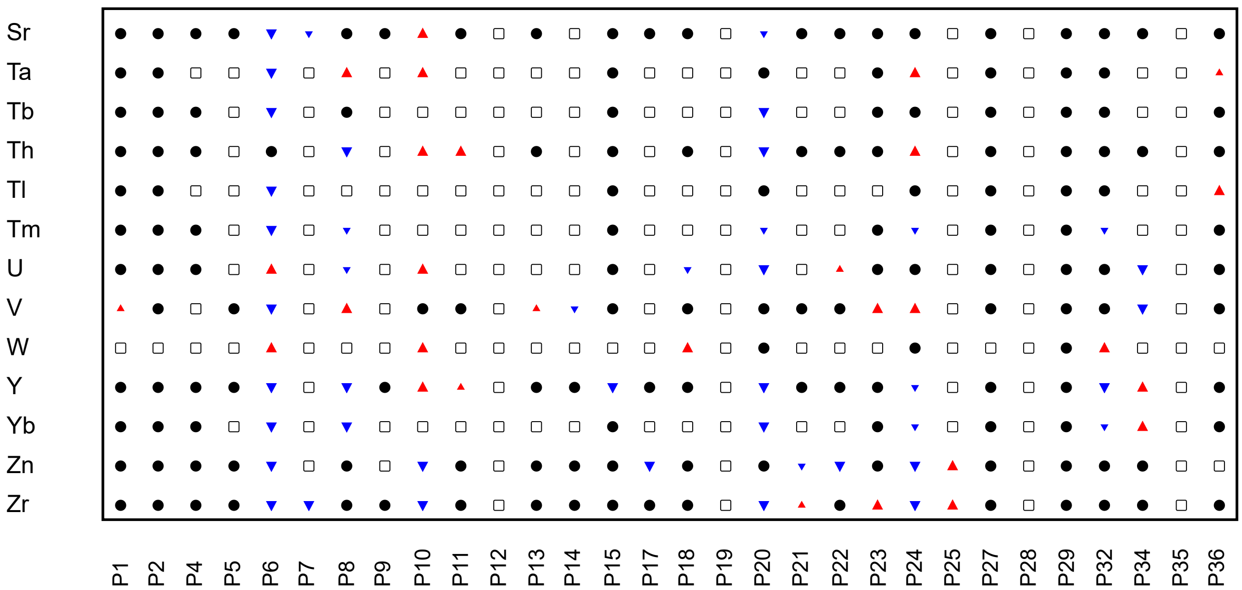
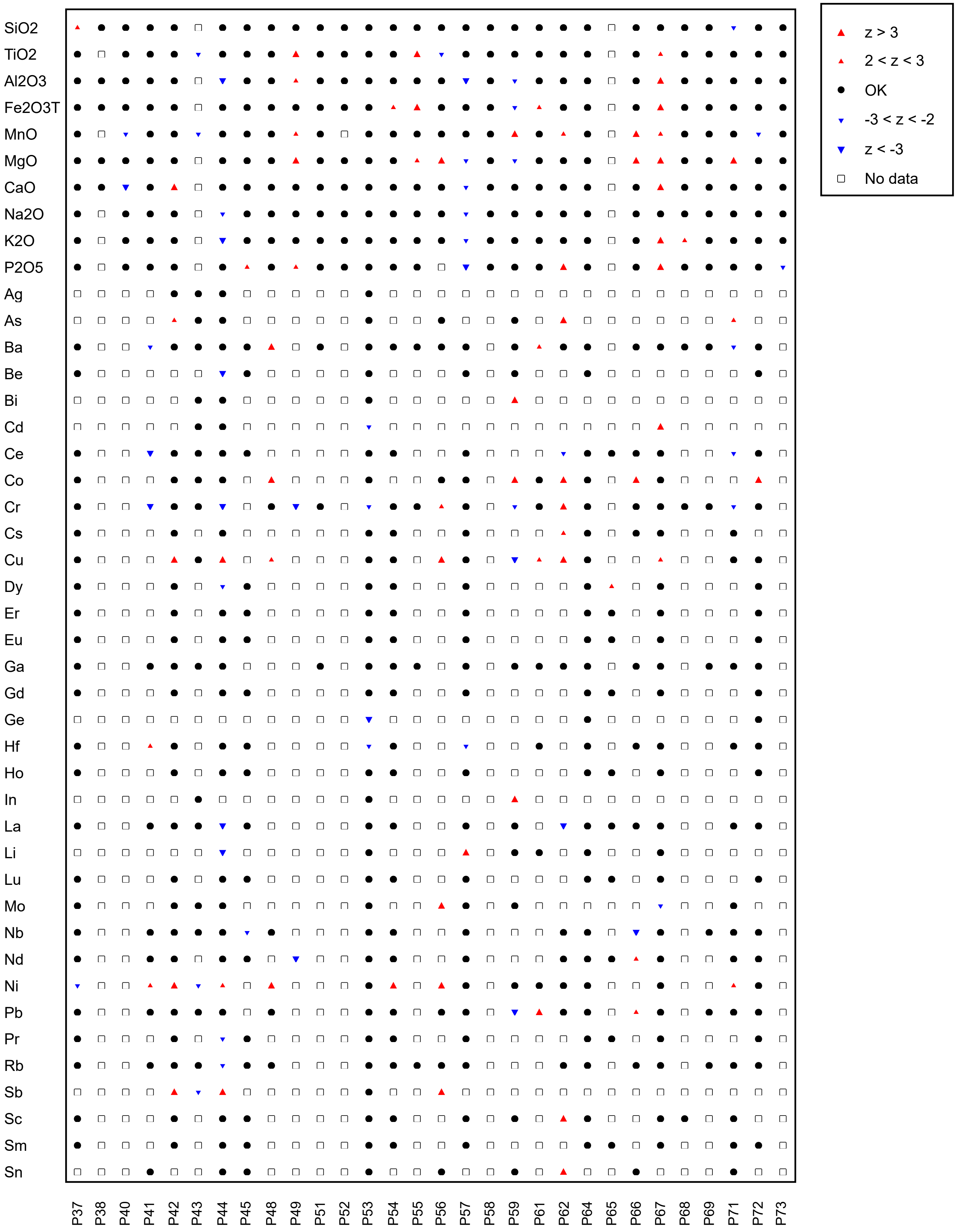



Figure 3: GeoPT51A - Granite, MEG-1. Multiple z-score charts for laboratories participating in the GeoPT51 A round. Symbols indicate whether or not an elemental result complies with the -2<z<+2 criteria (see key).

**Multiple Z-Score Chart for GeoPT51A**



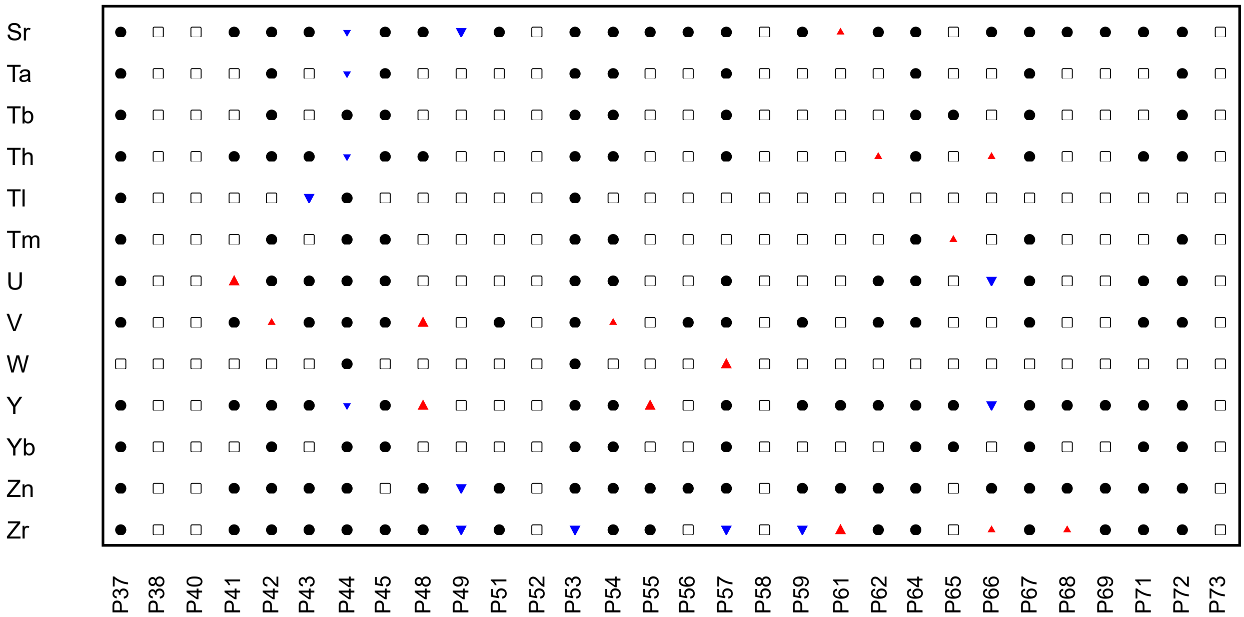
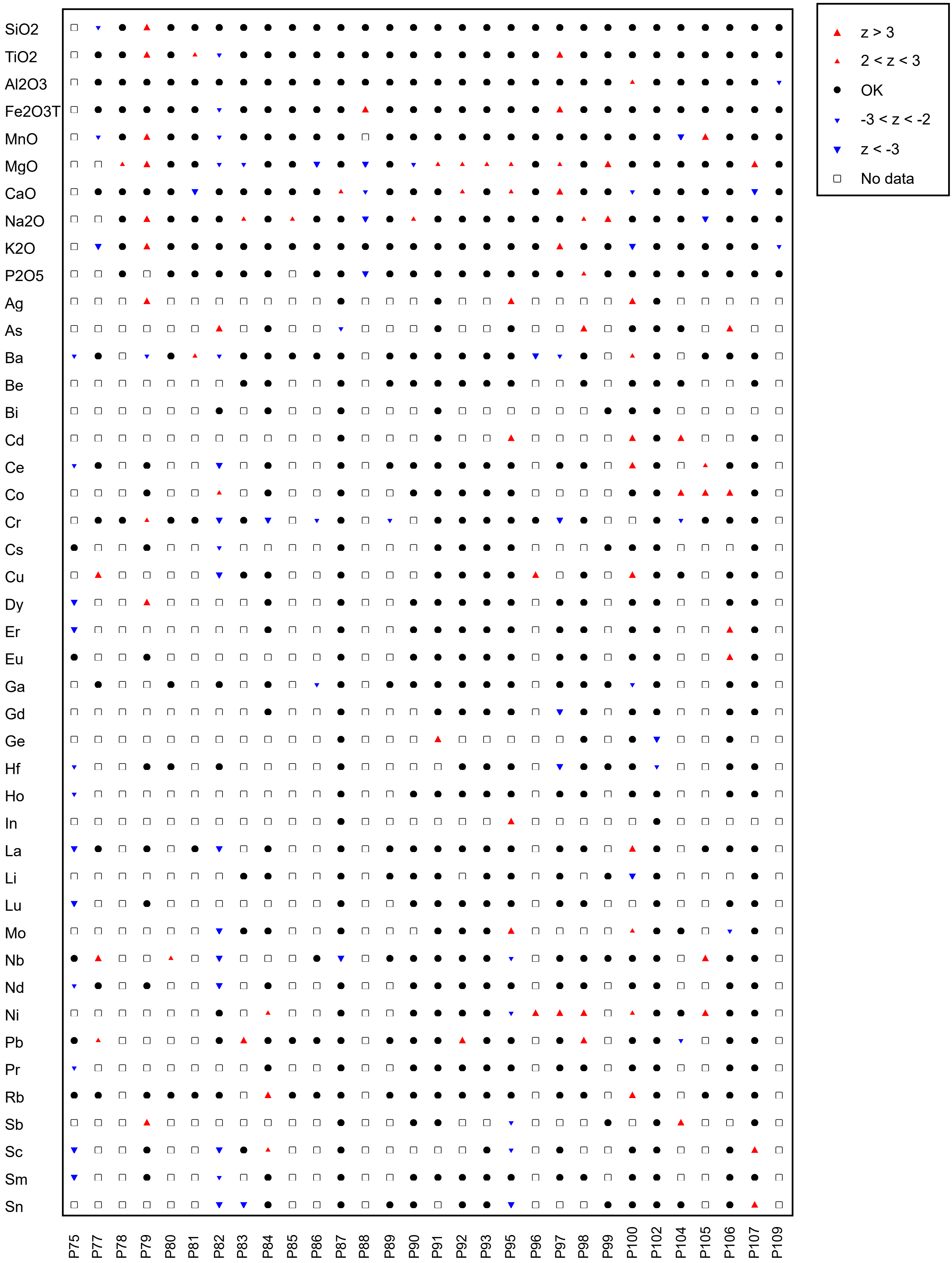



Figure 3: GeoPT51A - Granite, MEG-1. Multiple z-score charts for laboratories participating in the GeoPT51 A round. Symbols indicate whether or not an elemental result complies with the -2<z<+2 criteria (see key).

**Multiple Z-Score Chart for GeoPT51A**



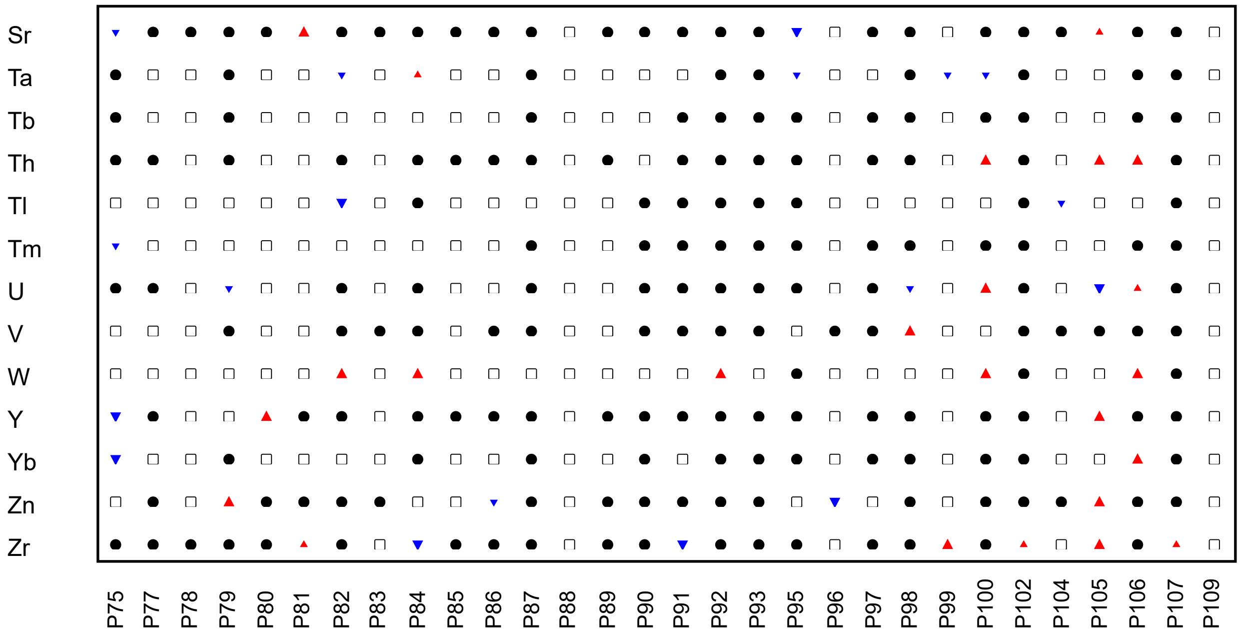
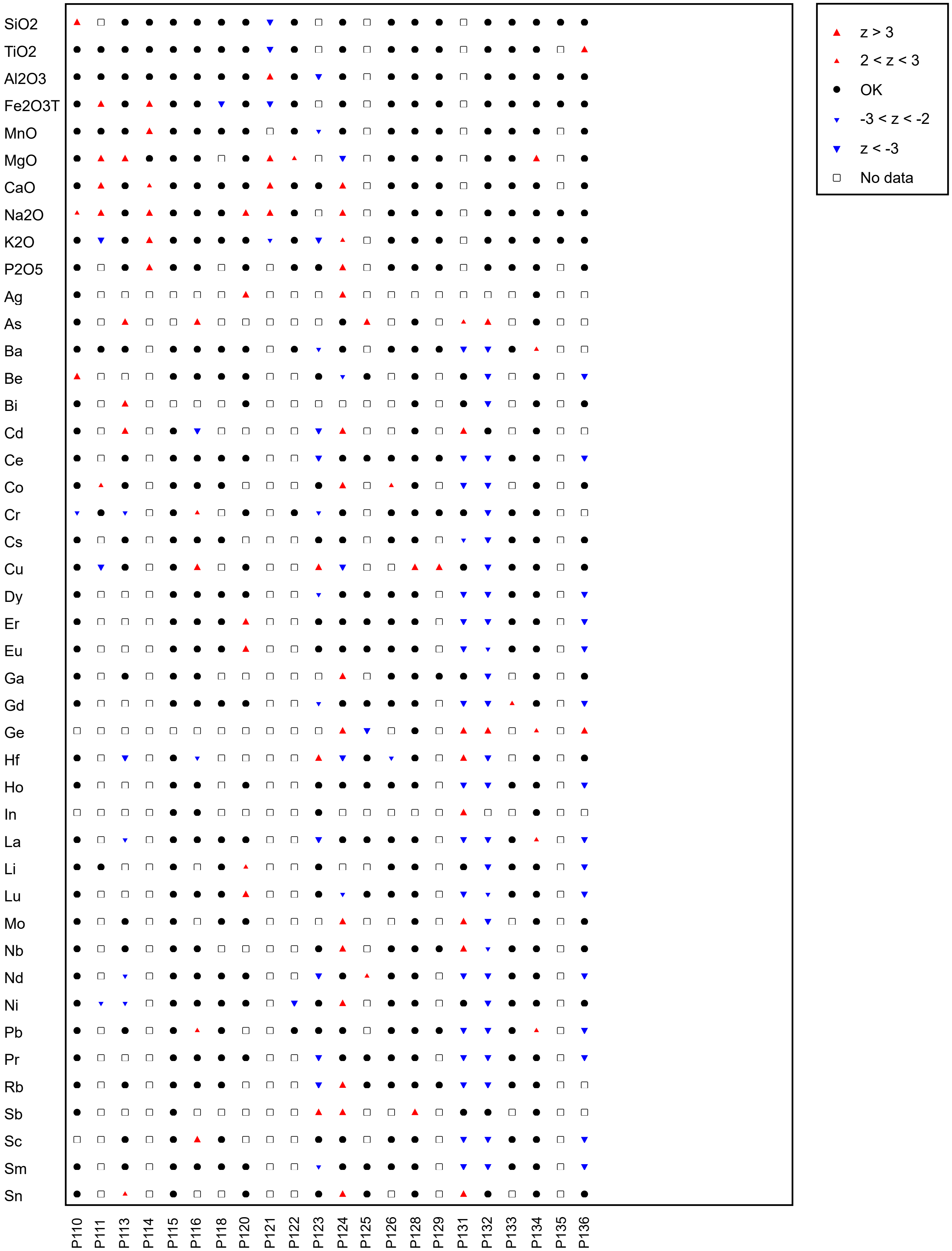



Figure 3: GeoPT51A - Granite, MEG-1. Multiple z-score charts for laboratories participating in the GeoPT51 A round. Symbols indicate whether or not an elemental result complies with the -2<z<+2 criteria (see key).

## Multiple Z-Score Chart for GeoPT51A



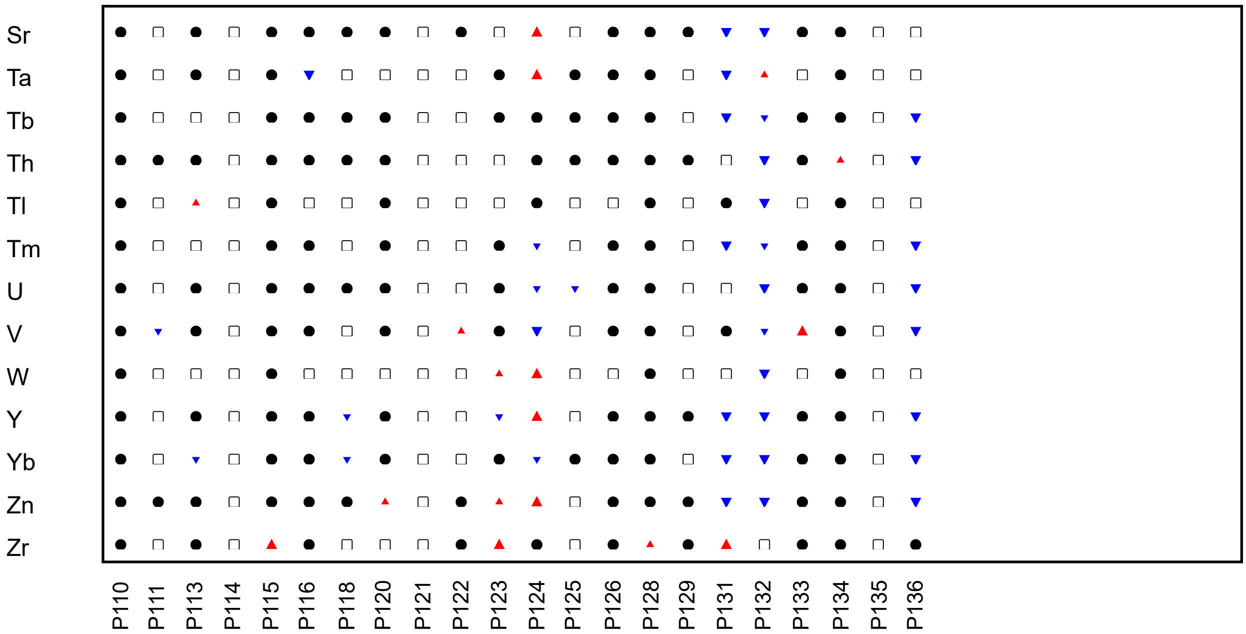



Figure 3: GeoPT51A - Granite, MEG-1. Multiple z-score charts for laboratories participating in the GeoPT51 A round. Symbols indicate whether or not an elemental result complies with the -2<z<+2 criteria (see key).