

**LODE GOLD DEPOSIT CHARACTERIZATION USING EVIDENCE FROM
STREAM SEDIMENTS: AN EXAMPLE FROM BRUSH CREEK,
MONTGOMERY COUNTY, VIRGINIA**

by
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(ABSTRACT)

Placer ore minerals are commonly intergrown with "relict" phases that coexisted with the ore mineral in the original lode deposit. Studying these relict phases can yield important information about the nature, and formation of the lode deposit. This type of study can be useful in areas with poor exposure, areas that are remote, or areas where discretion is important.

Analysis of the heavy mineral suite of stream sediments from the Brush Creek area shows no correlation between the heavy minerals and the gold. However, analysis of the relict phases intergrown with the gold grains yields important results.

Placer gold grains recovered from streams draining the Brush Creek deposit, in southwestern Virginia, contain relict quartz, orthoclase, ilmenite and mica. Textures, and fluid inclusion composition and character in the relict quartz, indicate that the gold mineralization post dated the mylonitization associated with the Fries ductile deformation zone, which hosts the gold mineralization. The relict orthoclase is interpreted to be adularia, which is common in low-temperature, hydrothermal environments. The intergrowth textures of the gold and ilmenite show that the ilmenite was present in the country rocks prior to gold mineralization, and was not, therefore, cogenetic with the gold. The relict mica was not positively identified, but is believed to be chlorite, which is consistent with the proposed low temperature mineralization. The textures of the relict phases indicate that gold mineralization occurs in late, brittle fractures, with little or no significant alteration.

The study of the relict phases intergrown with the alluvial gold grains has yielded information that otherwise could only have been obtained by more advanced, but also much more expensive, exploration techniques.

ACKNOWLEDGEMENTS

My most special thanks go to Mom, Dad, and . They've been behind me all the way. I also want to thank for his guidance during some trying times at Purdue, for getting me interested in this stuff by forcing me to take his ore deposits class, for making geology exciting, and who has had a great influence on me in a number of ways.

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INTRODUCTION

Exploration for economic mineral deposits is an expensive and risky business, with the more advanced stages being even more so. Accordingly, techniques and technological advancements that lead to greater understanding of mineral prospects for lower cost and commitment are highly desirable. One such technique is presented here.

The earliest form of exploration, perhaps, was the "panning" of stream sediments in order to isolate drainages that were gold-bearing. With scientific and technological advancements, this method has become more complicated, but also more effective. In addition to determining the actual *presence* of ore minerals in stream sediments, explorationists now study the nature of the ore minerals (Antweiler and Campbell, 1977; Groen, 1987), and additionally, the mineralogy and chemistry of the heavy mineral suite of sediments associated with the ore minerals. These advancements have led to considerable success in exploration, and in some cases, have helped provide information about the source of the ore minerals (Cabri and Harris, 1975). This study employs stream sediment sampling, in conjunction with detailed geochemical, petrographic, and petrologic analysis to not only help locate a lode gold deposit, but also to characterize it.

When ore minerals are eroded from their lode source, they commonly retain other phases that were intergrown with the ore minerals in the lode. These "relict" phases can survive with the ore minerals in the weathering environment for variable times and transport distances from the lode source, depending on the mineralogy of the ore and relict phases, as well as the chemical and physical rigors of the secondary environment. The technique presented in this paper involves the examination of intergrown ore and relict phases recovered from the alluvial environment (Driscoll et al., 1989a, 1989b).

Samples collected from streams draining the area of the Brush Creek prospect in southwestern Virginia are used to illustrate this technique. All findings presented in this paper are a result of the study of stream sediment samples - no in situ mineralization has been studied by this author, and historical descriptions are tenuous.

History

The Brush Creek gold occurrence is located at the boundary between Floyd and Montgomery Counties, in the Blue Ridge province of southwestern Virginia (Fig. 1), (Sweet, 1980; Sweet and Trimble, 1983). Gold was discovered in the Brush Creek drainage in the summer of 1879 by J.M. Thomas of Blacksburg, Virginia, who reportedly

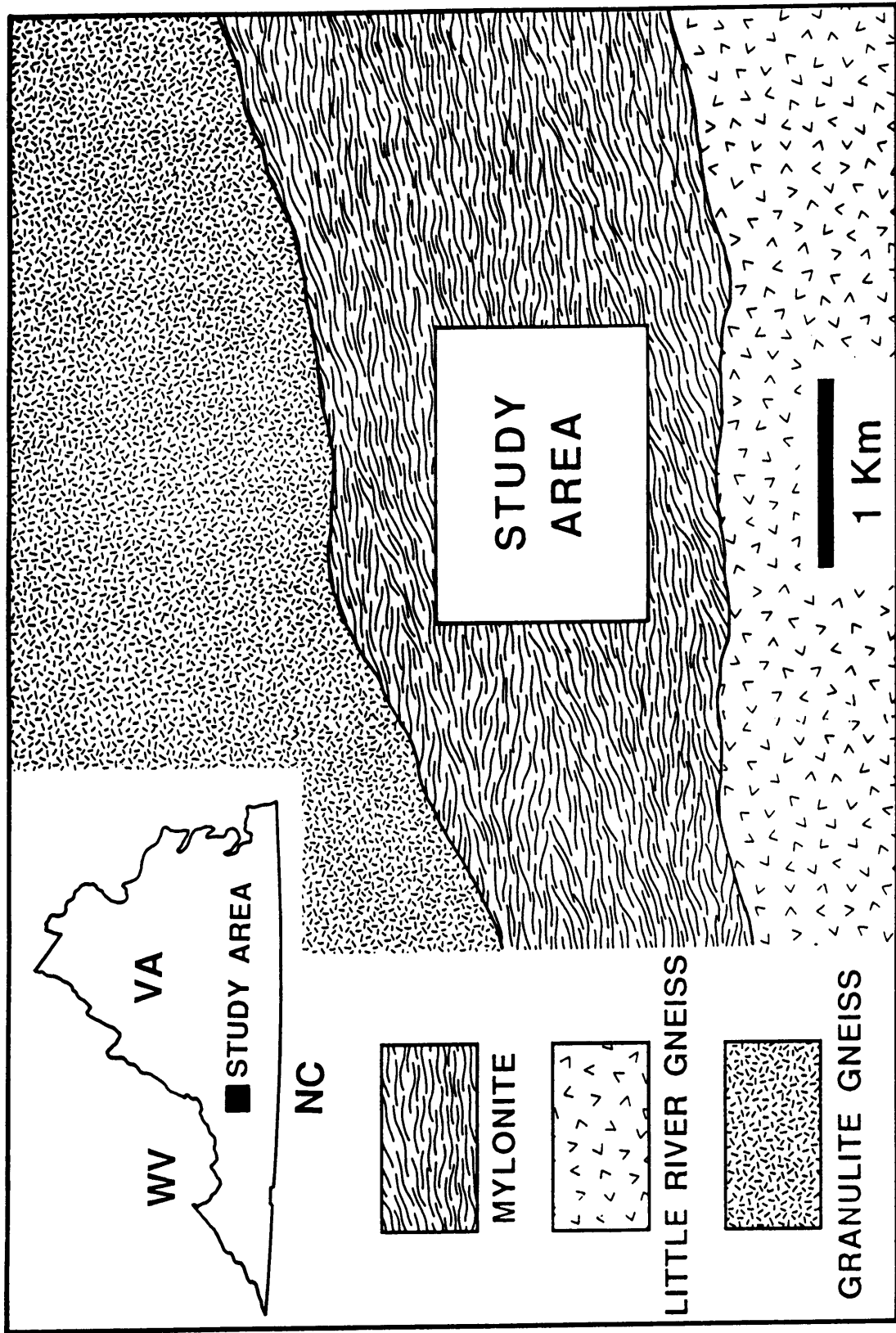


Figure 1. Location and general geology of the Brush Creek area, Virginia. The box labeled "study area" refers to figure 4.

"suspected its existence from the similarity of the rocks, timber, and soil to that of the California diggings" (The Virginias, 1880, p. 50). This initial report notes that gold was found to the value of 20 to 75 cents per bushel of earth, with the largest particles being worth about 50 cents (about 0.5 gm). At the time of the discovery the gold was apparently irregularly, but locally richly distributed; within the first year, a Mr. H.D. Walters reportedly "took three hundred and fifty pieces of gold from one pan of washings" (The Virginias, 1880, p. 50). Later in the same year there was the report of "a nugget that sold for \$2.35 on the spot" that "two men with only a tin pan in five days 'panned out' \$100 worth of gold" (The Virginias, 1880, p. 188), and that "about \$2500 [of gold was] obtained in two and a half months" [about 120 troy ounces] (Campbell, 1880).

The flurry of mining activity resulted in the panning and sluicing of several acres of land along Brush Creek and the unnamed creek passing through the Walters property (Campbell, 1880; Fontaine 1882, 1883). Lucas (1975) notes that in the early- to mid-1880's Theodore DeForest founded the Brush Creek Gold Mining Company. A stamp mill was used to reduce coarse overburden and weathered bedrock to a suitable size for sluicing, and several thousands of dollars worth of gold were recovered over the next ten years as a result. Intermittent placer mining efforts continued through the mid 1920's with minor production (Dietrich, 1959). In the 1980's two attempts were made to locate the lode deposits providing the gold in the Brush Creek and neighboring Laurel Creek placers. To date, no production has resulted from these efforts.

The total production of gold from Brush Creek is not known, but the report of \$2500 worth of gold by Campbell (1880) would suggest more than 120 troy ounces at the 1880 price of \$20.67 per troy ounce. Subsequently, Fontaine reported production of over 10,000 pwt by 1882 (500 troy oz), and of 12,000 pwt by 1883 (600 troy oz). Dietrich (1959) reports the personal communication of O. O. Walters who claimed that the gold from Brush Creek was sold for "well over \$30,000". This value would indicate a minimum recovery of close to 1500 troy ounces at \$ 20.67 per troy ounce. These values are certainly conservative as it is likely that not all of the early gold recovery was reported, and because numerous panners have continued to extract small amounts episodically over the past 30 years.

Previous Work

The earliest description of the geology of the Brush Creek gold occurrence followed closely upon the heels of the discovery of the gold, and was contained in a letter from J. L.

Campbell to the A.M. & O. railroad (Campbell, 1880). Campbell stated that "the country rocks of the gold region are all metamorphic, and are traversed by numerous veins of white and mottled quartz, from one or more of which the gold has been derived. This is evinced by the fact that many fragments of the quartz have been found that contain just such particles of the metal as are washed from the alluvium ...; and by the additional fact that little particles of the quartz are sometimes found adhering to some of the little nuggets of gold."

Fontaine (1882, 1883) described the Brush Creek rocks as Archean hydromica slates and schists, with bands of "imperfectly crystal[l]ized gneiss." He noted the occurrence of auriferous quartz within the gneiss, in addition to that in veins, and suggested that the gneiss may contain more gold than the veins. The veins he described as honey-combed, containing abundant iron oxide and diffuse pyrite.

Both Porcher (1882), and Fontaine (1882) described the gold itself, noting that the gold grains were neither homogeneous nor as fine as their bright yellow color suggested. Fontaine also noted the rounded, shot-like appearance of the alluvial grains, as compared to the "thinner and smaller" scales and grains, and relative silvery color of gold in the gneiss and veins.

Geologic Setting

The Brush Creek deposit lies within the Fries Fault, a major ductile deformation, or mylonite zone, within the Blue Ridge anticlinorium. The Fries Fault is thought to extend to the northeast as the Rockfish Valley Fault, and to the southwest as the Fork Ridge Fault, for an overall length of at least 300 km (Kaygi, 1979). In the vicinity of Brush Creek, the Fries Fault is bounded by the Little River Gneiss on the southeast, and a unit that may correspond to the Pilot Gneiss on the northwest (Fig. 1), though this area has not been sufficiently mapped.

The Little River Gneiss is a medium- to fine-grained, biotite augen gneiss, of approximately granitic or granodioritic composition (Kaygi, 1979), and has been dated at 1128 ± 25 ma by U-Pb analyses of zircons (Truman, 1976).

The unit termed Pilot Gneiss, in the vicinity of Brush Creek, is a porphyroblastic granulite gneiss. Perthitic feldspar porphyroblasts range from 3-4 cm in size. This unit has not been dated, but is believed to be Precambrian (Kaygi, 1979).

The Fries Fault, near Brush Creek, is a variably deformed mylonite zone on the order of a kilometer in width. Rocks within this ductile deformation zone consist

dominantly of mylonitized gneiss (Fig. 2), and mylonitized quartz segregations (Fig. 3). The mylonitic gneiss consists primarily of feldspar, quartz, and chlorite, where chlorite defines the foliation (Fig. 2). In thin section the feldspars are seen to have been deformed brittlely, whereas the quartz has been deformed in a more ductile fashion as seen by the recrystallization, and deformation bands. The quartz segregations, up to two meters in thickness, display the same deformation features as those seen in the mylonitic gneiss (Fig. 3), but are locally strained to the point of "ribbon quartz".

Metamorphism associated with movement on the Fries Fault retrogressed rocks within the deformation zone to greenschist facies (Kaygi, 1979). The common assemblage in the mylonite zone near Brush Creek, of albite + chlorite \pm epidote, the rarity of biotite, and the lack of garnet suggests that the prevailing metamorphic grade recorded is lower greenschist facies. Furthermore, the fact that chlorite usually defines the mylonitic foliation in these rocks suggests that this grade was attained during mylonitization. The latest movement along the Fries Fault, based on Rb-Sr mineral and whole rock analyses (Dietrich et al., 1969), is placed at 330 ± 15 ma, or late Mississippian.

As is typical of the southeastern United States, the Brush Creek area is deeply weathered, resulting in outcrop of only the most resistant rock types, and even these are rare. Accordingly, quartz veins or segregations are commonly seen to form topographic highs in the area.

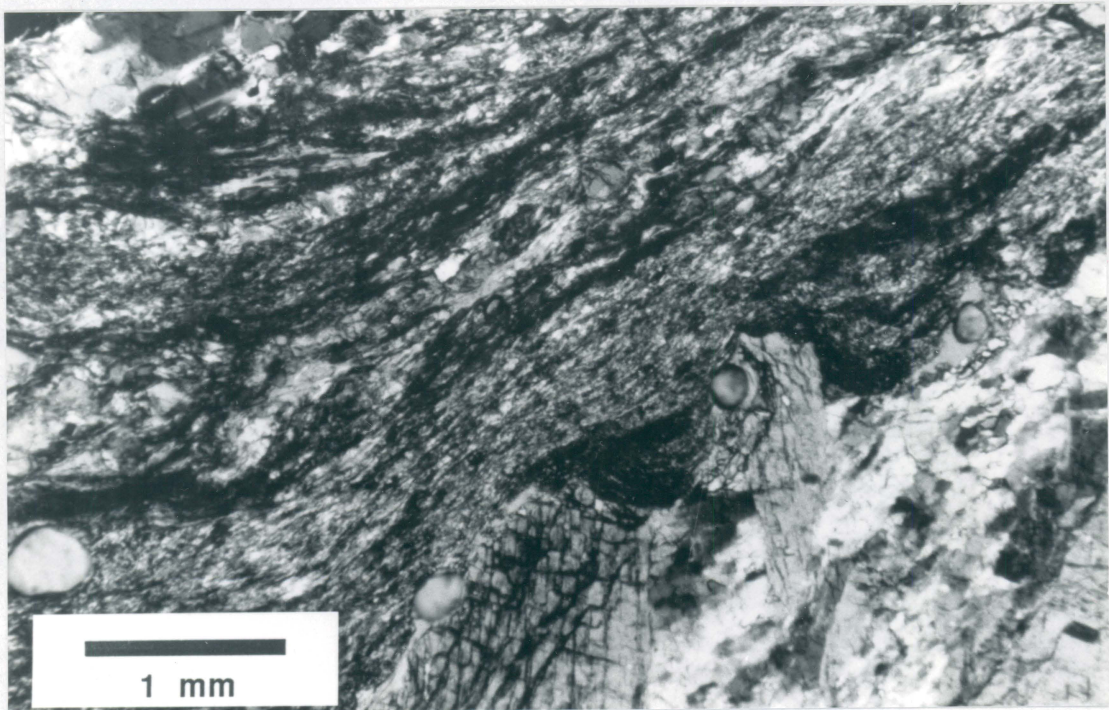
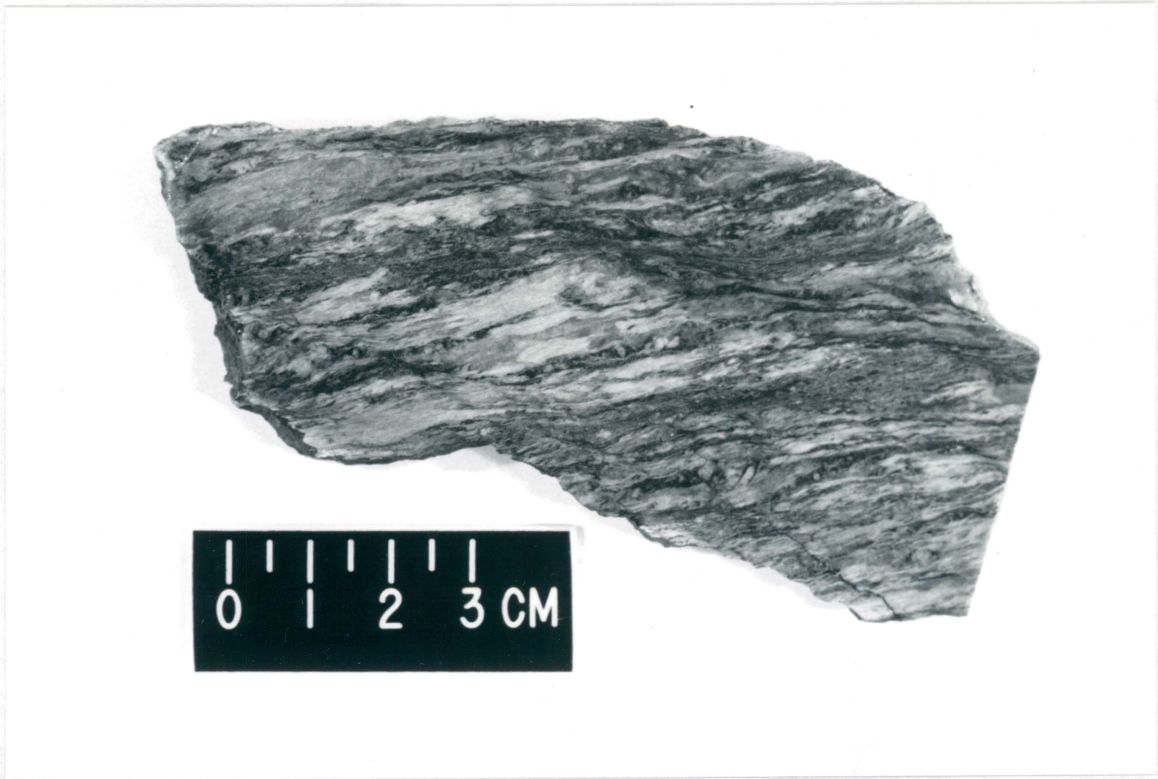


Figure 2. Photographs of mylonitic gneiss from Brush Creek, Virginia in a) hand sample (top), and b) thin section (bottom). Note that the mylonitic foliation is defined by chlorite.

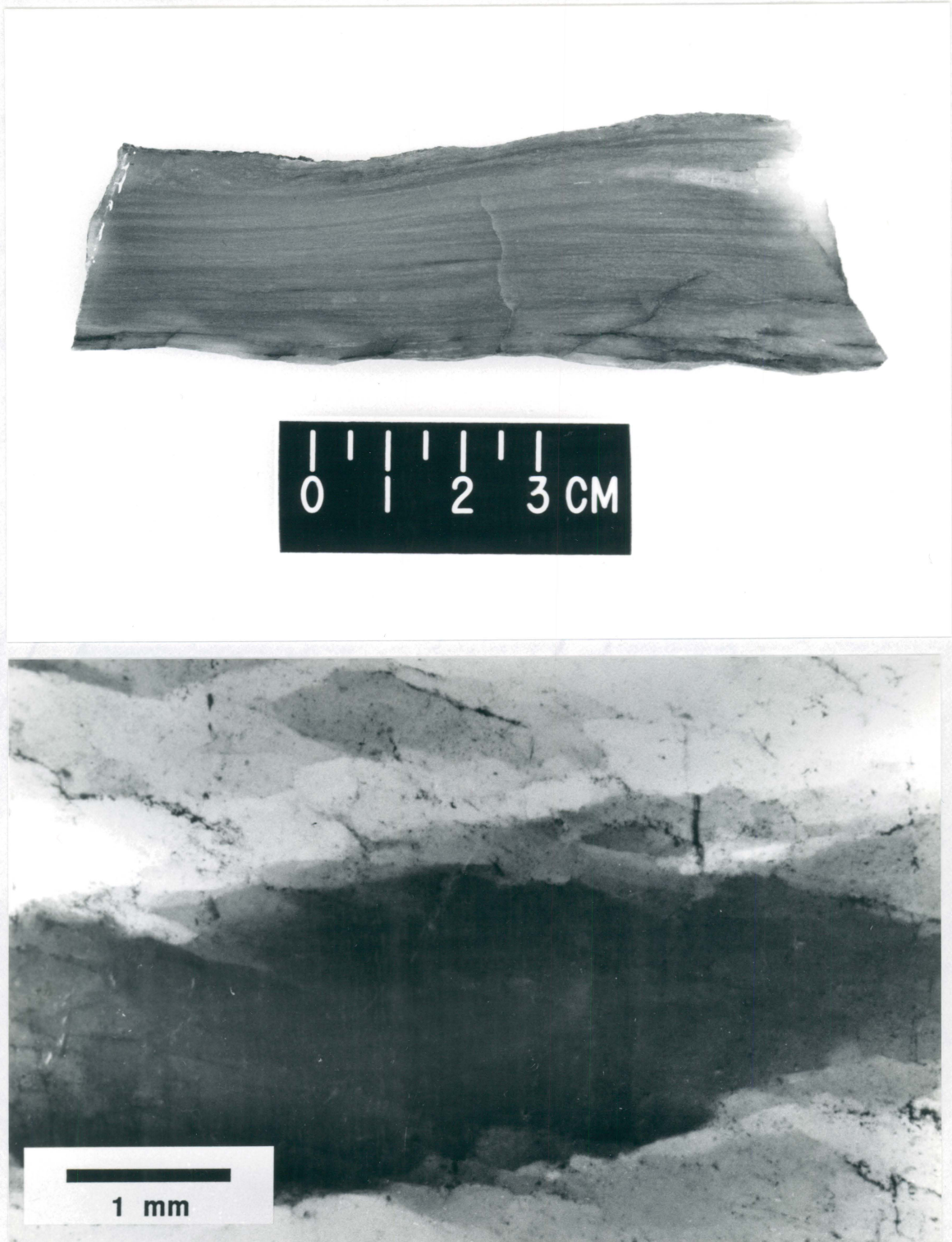


Figure 3. Photographs of mylonitic quartz from Brush Creek, Virginia in a) hand sample, and b) thin section. Note the extensive deformation as evidenced by the "ribbon" texture in a) (top), and deformation bands and recrystallization in b) (bottom).

METHODS

Due to the paucity of outcrop, and deep weathering in the Brush Creek area, detailed mapping and hard-rock sampling are ineffective for exploration. Therefore, stream sediment sampling was deemed the most appropriate exploration method.

Stream sediment samples were collected from all of the drainages in the study area (Fig. 4). Portions of the study drainages evidence historic placer operations and extensive prospecting activities, as seen by the widened stream channels, dam remnants, lack of coarse material in the stream bed, and commonly, piles of quartz along the sides of the stream. Samples were collected from undisturbed areas whenever possible, but some were clearly from disturbed ground, while others were from ground where the degree of disturbance was not clear. At least two samples were collected from every drainage.

Because small samples, however carefully chosen, could be easily biased by surface disturbances, approximately 40 liters (two five-gallon buckets) of sediment was collected from every locality. At each sample site, organic material was removed from the surface over an area of about 1 m², and then a small hole (roughly 20-30 cm in diameter) was dug through the stream sediments to ascertain the depth to bedrock (saprolite). As a result of the variable depth to bedrock, and in order to attain the requisite sample volume, the size of the area from which each sample was collected also varied. The material sampled included the bottom 5 to 25 cm of sediment above "bedrock", and the upper 5 to 10 cm of saprolite. Material from the two buckets was screened to remove the material larger than 6.35 mm in diameter (+1/4" fraction), and then run through a sluicebox to reduce the sample volume to a manageable size (generally less than a liter). Representative and unusual material from the coarse fractions of each sample were collected for later inspection.

In the laboratory, cobbles from the coarse fractions of the samples were carefully inspected, and thin sections made whenever gold was found. The stream sediment samples were screened to -10 mesh, then carefully panned down to remove the lighter silicate minerals. Gold was separated by hand picking from the pan itself, or from a smaller dish under a binocular microscope. Gold grains were prepared for microprobe analysis, and additionally, when relict phases were present, for petrography and/or fluid inclusion analysis. Samples intended for fluid inclusion measurements were mounted to a glass slide with a drop of high temperature epoxy (Epo-tek) and cured at 100°C for approximately one hour. After polishing, the polished surface was mounted to a second slide with

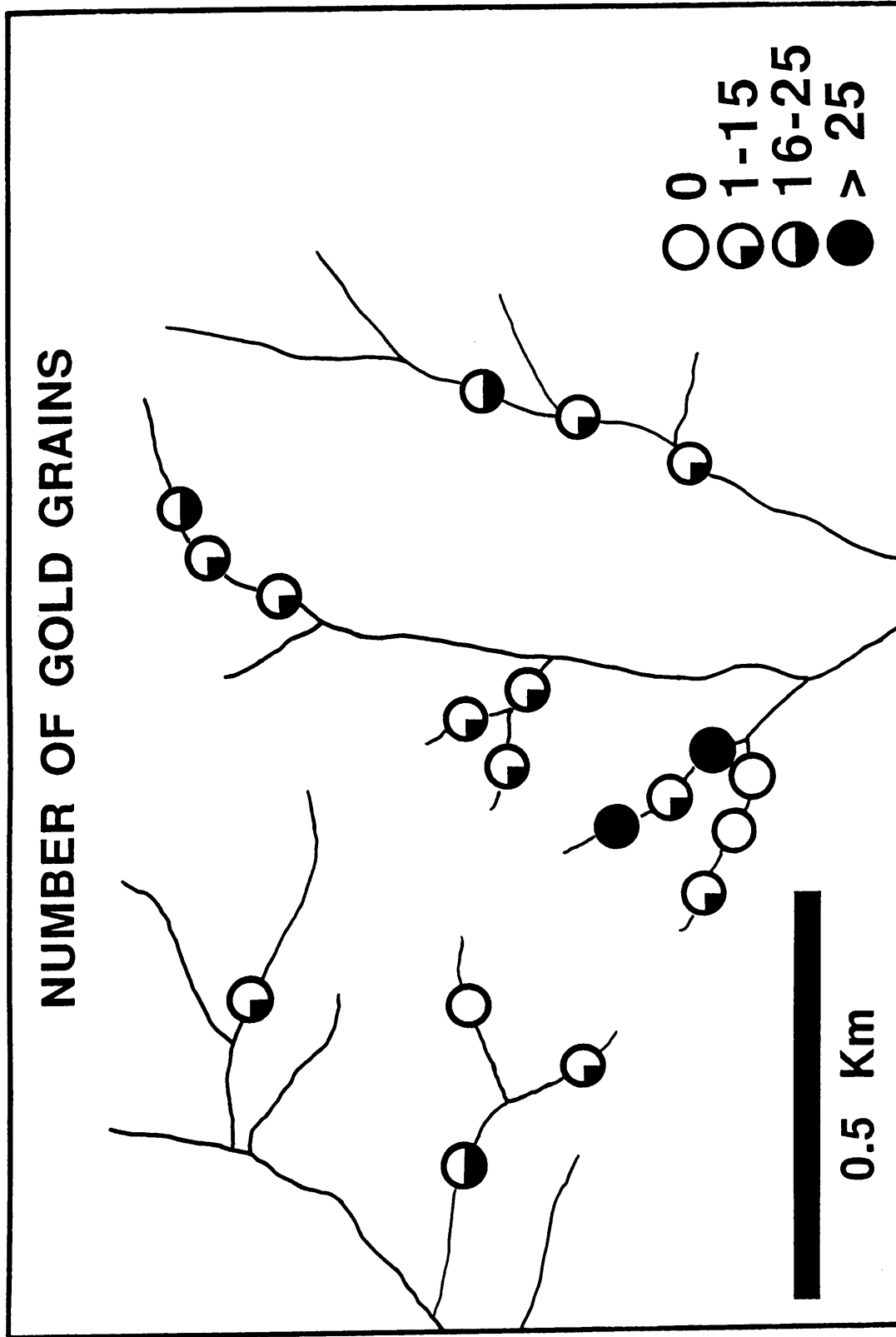


Figure 4. Location of stream sediment samples, and number of gold grains collected from each sample in the Brush Creek area, VA.

"super-glue". The glass was then ground off the unpolished side to allow its polishing as well. The "super-glue" was then dissolved in acetone, releasing a doubly polished epoxy/sample chip ideal for fluid inclusion work. Samples intended for electron microprobe analysis were mounted in standard epoxy and polished on one side (Craig and Vaughan, 1981).

The -10 mesh, heavy mineral fraction of each sample was dried, and weighed. The magnetic fraction was separated using a hand held magnet, weighed, and then returned to the sample. Standard grain mounts were prepared and then analyzed by electron microprobe. One hundred twenty five (125) analyses were performed on each sample for Na, Mg, Al, Si, Ca, K, Fe, Y, P, Zr, Th, U, Ti, La, Ce, Nd, Cr, and Mn. In order to assure that statistically representative fractions were analyzed, a line was etched across the surface of each grain mount with the electron beam, and then analyses performed at regular intervals along this line. Analyses with totals of less than 60 wt.%, or greater than 120 wt.% were discarded. The microprobe data for each sample were then sorted by Fe, Ti, Zr, and P to distinguish between magnetite, rutile, ilmenite, zircon and monazite. The remaining analyses were invariably low-density silicates and were saved, but not used. A summary of the mineralogy of the samples is presented in table 1. The raw microprobe analyses of the heavy minerals are listed in appendix A .

Fluid inclusions were studied using standard microthermometric techniques, employing a U.S.G.S -type gas-flow, heating-freezing stage (Werre et al., 1979) for data collection. This stage was calibrated at the triple point of CO₂ (-56.6°C), the freezing point of water (0.0°C) and the critical point of water (374.1°C) using synthetic fluid inclusions (Sterner and Bodnar, 1984). In addition to microthermometry, a crushing stage and Raman microprobe were used to assess the gas contents of inclusions.

Table 1. Summary of the mineralogy of the stream sediment samples collected from the Brush Creek area.

| Gold # of grains | Heavies gm. | Magnetics wt % | Rutile count % | Ilmenite count % | Zircon count % | Monazite count % |
|---------------------|----------------|-------------------|-------------------|---------------------|-------------------|---------------------|
| 9 | 5 | 7 | 0 | 67 | 25 | 2 |
| 1 | 1 | 13 | 0 | 59 | 28 | 10 |
| 6 | 2 | 7 | 3 | 51 | 34 | 10 |
| 0 | 4 | 3 | 4 | 37 | 49 | 8 |
| 149 | 11 | 1 | 0 | 76 | 17 | 5 |
| 0 | 4 | 7 | 0 | 52 | 41 | 1 |
| 3 | 9 | 2 | 0 | 26 | 68 | 3 |
| 252 | 8 | 1 | 5 | 59 | 29 | 4 |
| 1 | 6 | 4 | 0 | 13 | 81 | 4 |
| 18 | 16 | 5 | 0 | 18 | 81 | 3 |
| 6 | 10 | 2 | 0 | 49 | 49 | 2 |
| 2 | 6 | 2 | 3 | 12 | 86 | 1 |
| 3 | 23 | 3 | 0 | 26 | 65 | 8 |
| 3 | 15 | 1 | 3 | 80 | 13 | 4 |
| 21 | 23 | 3 | 4 | 74 | 16 | 6 |
| 0 | 3 | 9 | 3 | 58 | 32 | 7 |
| 2 | 3 | 12 | 0 | 43 | 50 | 2 |
| 21 | 4 | 19 | 0 | 50 | 38 | 12 |
| 1 | 25 | 0 | 0 | 38 | 52 | 7 |

RESULTS

Heavy Minerals

The heavy mineral suite of the Brush Creek area, which constitutes 0.05 to 0.8 wt.% of the stream sediments, consists primarily of ilmenite, zircon, monazite, and rutile, in decreasing order. Other minerals such as magnetite, pyrite, and, garnet, make up less than one percent of any given sample. Greater than 80% of the heavy minerals were found to be in the - 40 mesh fraction for the majority of the samples.

Gold values (number of gold grains) in stream sediment samples were compared to the total weight of the heavy mineral fractions (hmf), the magnetic fraction within the hmf's, the fraction of rutile, ilmenite, zircon, and monazite within the hmf's, and the average Fe/Fe+Ti+Mn, Ti/Fe+Ti+Mn, and Mn/Fe+Ti+Mn ratios of the Fe-Ti oxides within the hmf's. These comparisons were performed graphically by means of the Cricket Graph© program (distributed by Cricket Software, Inc.). No correlation was found between these variables and the gold.

This lack of correlation indicates that the heavy minerals are not genetically related to the gold, but rather, have been eroded from the country rocks. Furthermore, this lack of correlation between the gold and the heavy minerals suggests that there is little to no significant alteration associated with the gold mineralization, as it would be unlikely for the ore-forming fluids to be in equilibrium with the host rocks, unless the host rocks and the gold were cogenetic. During the course of this paper it will be demonstrated that the gold and host rocks (i.e. mylonites) are not cogenetic, and that the lack of alteration is significant.

Gold and Relict Phases

Placer gold particles from the Brush Creek occurrence range downward in size from 2-3 mm and exhibit a variety of shapes from shot-like, to flattened disks, to wire-like. Although most grains exhibit some degree of rounding and abrasion, many are extremely irregular, having sharp edges and point-like protrusions (Fig.5).

Several of the gold grains recovered by VPI&SU geologists in recent years exhibit silvery areas on their surfaces which have been identified as amalgam. Furthermore, small droplets of free mercury have been recovered from sediments in the Brush Creek drainage (J.R. Craig, personal communication). Fontaine (1882, 1883) states that no mercury was used at that time, but the Brush Creek Gold Company reportedly employed amalgamation

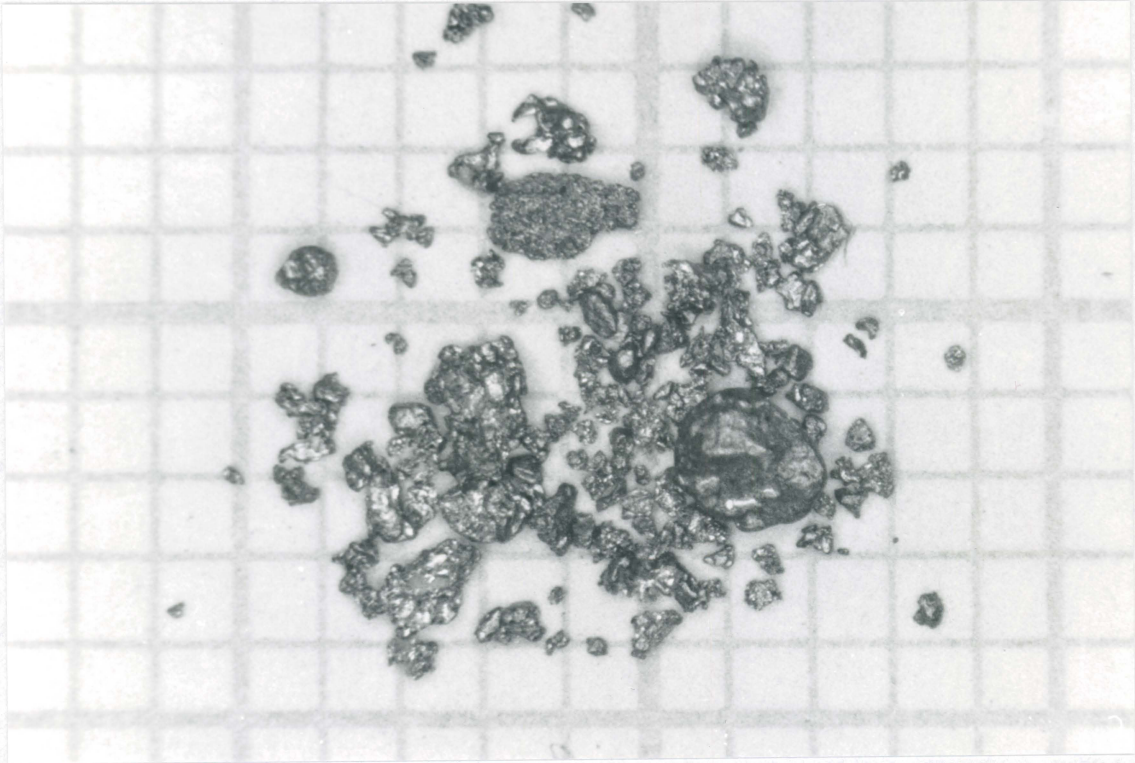


Figure 5. Photograph of placer gold grains recovered from tributaries of Brush Creek, Virginia, showing typical of morphologies. Lines in background grid are 1mm apart.

in conjunction with their sluicebox (Lucas, 1975). Mercury was probably also used by individual prospectors and panners over the years. The mercury in the stream sediments, and rimming some of the gold grains then, is apparently a contaminant resulting from these early operations.

Few data are available on the composition of the early recovered gold. Porcher (1882) lists an analysis of 65.31 percent gold, 34.01 silver, 0.14 copper, and 0.20 percent iron. He notes that "the metal is in small rounded grains, which have almost exactly the color of fine gold and full metallic lustre; but specific gravity is low (15.46), and on cutting the grains, or scraping them with a knife, it becomes apparent that the color first observed is superficial only, the metal in the interior being almost white." Similarly, Fontaine (1882) states that "most of [the gold] has a rich gold color, and judged by the color of the surface, would seem to contain over 90 per. ct. of gold. This color, however, is confined to a thin external film. When this is removed by the file or knife the color is quite white. It would seem that the silver had been removed from the surface by solution in some naturally formed solvent, and that the gold thus was concentrated in the external film."

A large number of analyses have been performed on Brush Creek gold samples in recent years (Craig and Rimstidt, 1985; Craig and Solberg, 1986), and it is evident that the gold from Brush Creek exhibits a wide range in composition, as shown in Figure 6. This wide range is unusual for a single deposit. As mentioned by both Porcher (1882) and Fontaine (1882), placer gold from Brush Creek displays very prominent gold enriched rims. Traverses with an electron microprobe show that the boundary between the core and the rim of these grains is quite sharp, on the order of one micron or less (Solberg and Craig, 1981). The gold rims associated with placer gold at Brush Creek are discussed by Groen (1987), who concludes that they have formed as a result of chemical processes within the alluvial environment. Gold grains recovered from the same drainages sampled by Groen (1987), but from further upstream, were generally found to have less rim development, to be more angular and, as discussed below, to bear more relict phases. These observations are consistent with Groen's (1987) model of the evolution of gold grain morphology in the alluvial environment. The gold enriched rims, then, do not have any bearing on the formation of the lode deposit.

A relict phase is one that has remained attached to, or intergrown with, its coexisting phase (in this paper, gold) since it was weathered from its original host rock. The presence of relict phases provides an opportunity to indirectly study the host rock, and may yield important information about the formation of the lode deposit itself. Information from

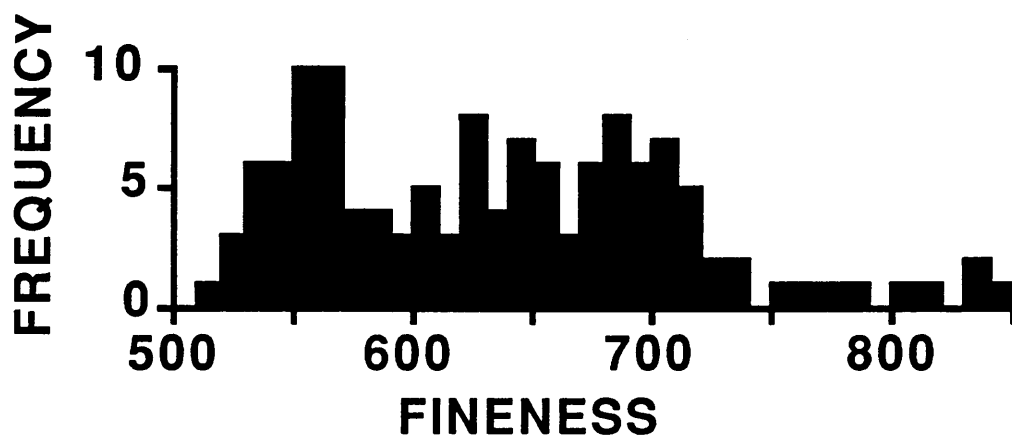


Figure 6. Histogram of the fineness values of the cores of placer gold grains recovered from the Brush Creek area, Virginia. Data are from J.R. Craig (personal communication), J.C. Groen (personal communication), and from the present study.

coexisting phases that are attached due to physical agglomeration, or intergrown due to chemical precipitation subsequent to liberation from the lode, reflects that secondary environment, but *not* that of the primary host rock. Careful examination of the textural relationships between the coexisting phases must be employed to ascertain their genetic relationship (Driscoll et al., 1989a, 1989b).

Many of the alluvial gold grains recovered from Brush Creek contain relict quartz, and a few grains contain relict orthoclase, ilmenite, and/or mica. Gold recovered from streams with smaller catchments was generally found to contain the largest proportions of relict phases (in excess of 25% of the gold grains contained relict phases in some samples), which probably reflects less exposure to the weathering environment than that of gold recovered farther downstream. This observation, and textural relationships between the relict phases and the gold, indicate that they are in fact relict of the lode, and as will be shown, preserve information about its formation.

The relict quartz occurs as irregular blebs within, and angular fragments protruding from, the gold grains. Only rarely is the relict quartz large enough to be visible to the naked eye, and it is usually less than a tenth of a millimeter across. When examined under the petrographic microscope, the relict quartz ranges from moderately strained, displaying undulose extinction and minor recrystallization to completely unstrained with sharp extinction under crossed nicols. The moderate strain experienced by the auriferous quartz should not be confused with the intense deformation experienced by the barren, mylonitic quartz. Figure 7 is an example of a placer gold grain bearing moderately strained relict quartz. A small volume of the quartz in this sample has undergone recrystallization. The grain boundaries of this recrystallized quartz, where proximal to the host gold grain, are decorated with small particles of gold (Fig. 7b). This is probably a result of small-scale remobilization of the gold synchronous with the quartz recrystallization, and indicates that this quartz texture developed during or after precipitation of this gold grain.

The sample in figure 8 consists of gold (a gold grain lies just out of the field of view to the upper left in this photograph) within moderately strained quartz, which cross-cuts the mylonitic foliation in an earlier generation of highly deformed quartz. Due to the intense, and pervasive nature of the mylonitization, it would be unlikely for any quartz to survive with only moderate strain. This, and the fact that the auriferous quartz truncates the foliation in the barren quartz, indicates that the auriferous quartz was deposited after the mylonitization associated with the Fries Fault. As will be discussed later, the fluid inclusions associated with these two types of quartz are completely different, which is

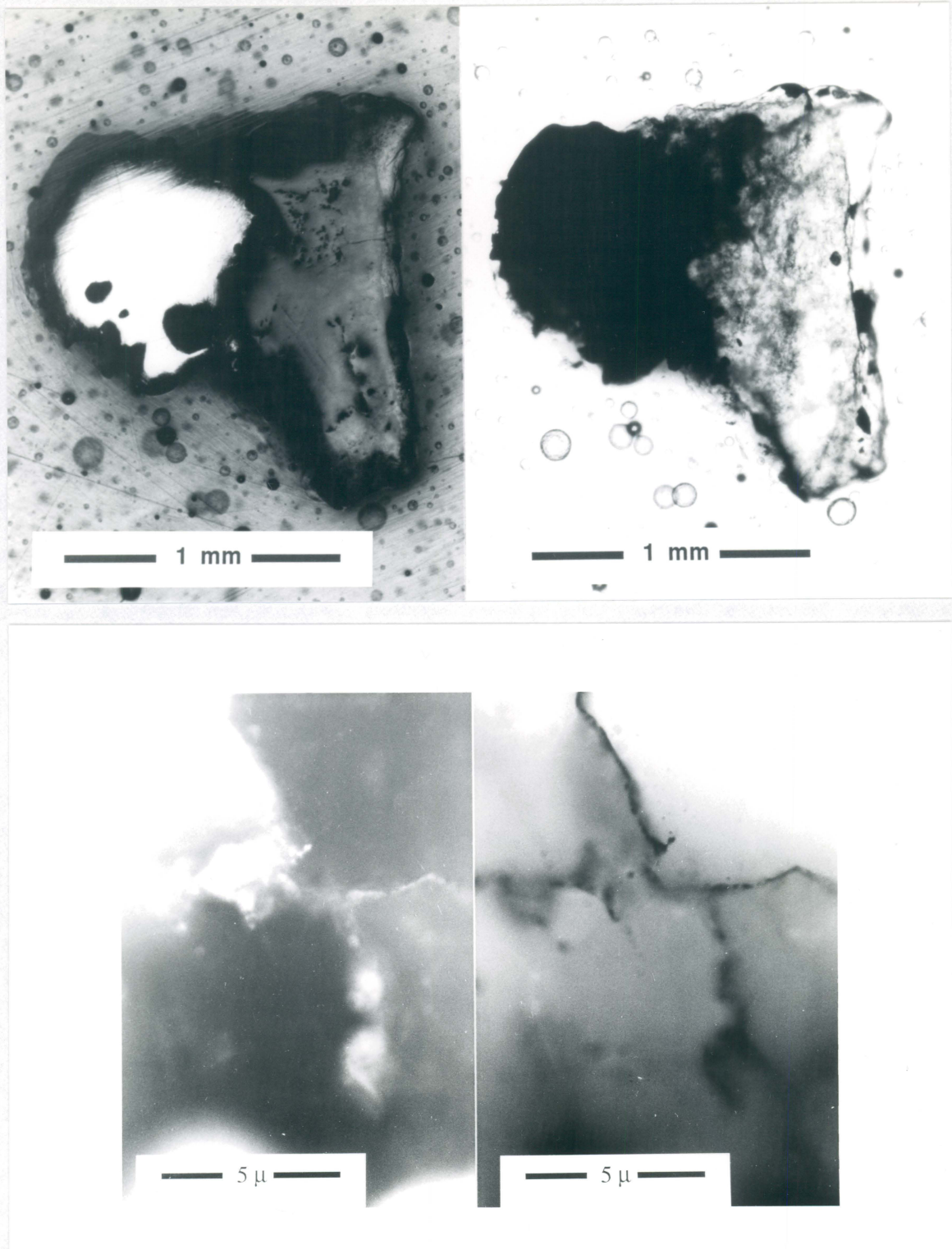


Figure 7. Photomicrographs of a placer gold grain with relict quartz showing a), the general textural relationships (top), and b), gold decorating the grain boundaries of recrystallized quartz (bottom). Reflected light on left, transmitted light on right.

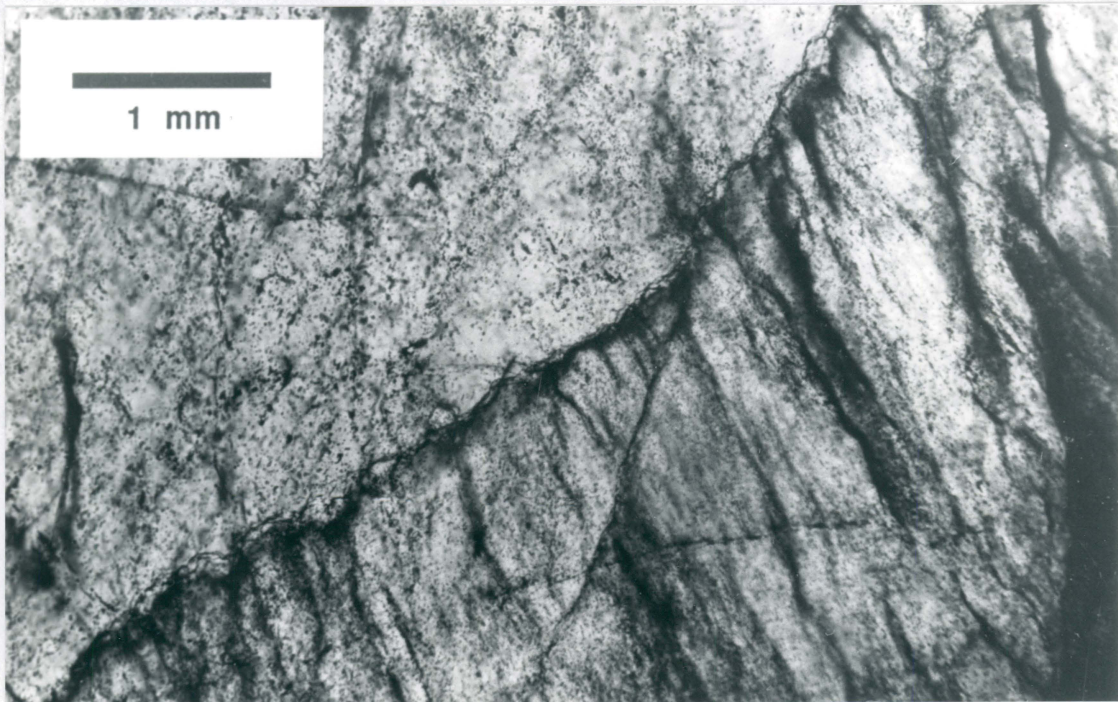


Figure 8. Photograph of auriferous quartz (upper left) truncating barren, mylonitic quartz (lower right). A gold grain is just out of the field of view to the upper left.

CHIEFTAIN BOND

50% COTTON FIBER

consistent with their being genetically unrelated.

Three gold samples were found to have relict feldspar grains (Fig. 9). These were analyzed by electron microprobe and found to be virtually pure orthoclase (table 2). This composition is typical of low temperature, hydrothermal orthoclase, or "adularia", and is consistent with mineralization temperatures derived from fluid inclusion analysis. Some of these adularia grains display moderate undulose extinction, while others display uniform extinction. One of these samples also contains a relict mica grain that optically appeared to be chlorite, but microprobe analysis was inconclusive (Fig. 9, table 2).

Two gold samples contain relict ilmenite. One of these consists of a series of interleaved wedges of gold, ilmenite, and quartz (Fig. 10, table 2). This texture suggests that the ilmenite grain was fractured, and then the gold and quartz precipitated in the resulting, wedge-shaped openings. In the other sample, the ilmenite grain is separated from its gold host by a rim or zone that is depleted in Fe and Mn, and enriched in Al, Si, and Na (Fig. 11, table 2). This is interpreted to be an alteration zone resulting from disequilibrium between the ilmenite and the gold-bearing solution. From their textural relationship with the gold, both of these relict ilmenite grains appear to have been present in the host rock prior to gold mineralization. The fact that alteration occurs on only a microscopic scale on one of the relict ilmenites, and that no alteration is observed on the other relict ilmenite is consistent with the lack of correlation between gold and heavy minerals in the stream sediments.

Relict limonite, along with quartz, is present in one sample of alluvial gold. Though rarely seen in stream sediments because of the extensive weathering, pyrite and/or limonite, and limonite staining are frequently observed in quartz float from gold-bearing drainages. This, in conjunction with historical descriptions of pyrite associated with the gold, and the gold sample with relict pyrite (now limonite) just described, indicates that pyrite mineralization, at least in part, accompanied gold mineralization. Polishing of the surface of this grain revealed a euhedral cubic pseudomorph of the limonite after pyrite. The euhedral form of the pyrite suggests that it crystallized under static conditions, and in open space. Further evidence for mineral growth in open space conditions is given by a sample of breccia, consisting of deformed quartz clasts with interstitial sulfide mineralization (Fig. 12), and also by the presence of euhedral, and subhedral quartz fragments collected from gold-bearing drainages.

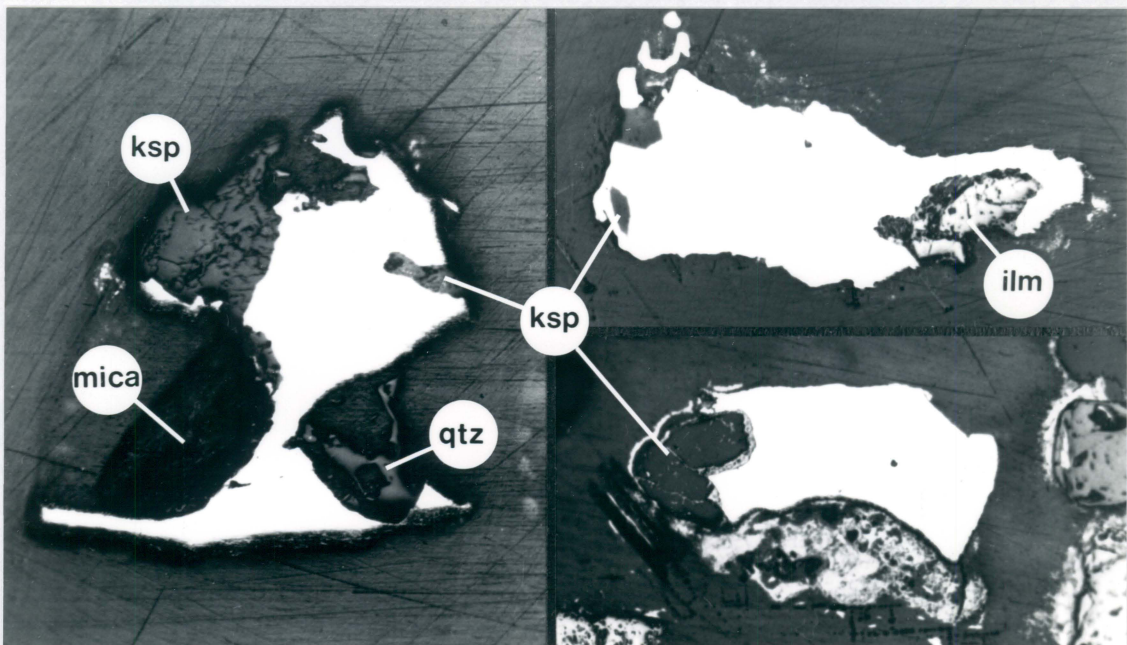


Figure 9. Photograph of three placer gold grains bearing relict phases. Gold is the white phase, qtz = quartz, ilm = ilmenite, ksp = orthoclase, and mica = a mica grain tentatively identified as chlorite (see text, and table 2). Sample numbers (clockwise from left) are 9G1, 12G7, and 5G3. These sample designations correspond to those in table 2. The grain on the left is approximately 0.3 mm in diameter.

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Table 2. Electron microprobe analyses of relict phases in placer gold grains from the Brush Creek area. Analyses are reported as wt. % oxides. K-SPAR = orthoclase, ILM = ilmenite, ALT ZONE = alteration zone. K-SPARa and K-SPARb refer to different orthoclase grains within the same gold grain.

| Sample | Phase | Na ₂ O | Al ₂ O ₃ | SiO ₂ | MgO | CaO | K ₂ O | FeO | MnO | TiO ₂ | Total |
|---------|----------|-------------------|--------------------------------|------------------|-------|------|------------------|-------|-------|------------------|--------|
| 5G3-1 | K-SPARa | 0.11 | 17.67 | 62.936 | 0.03 | 0.03 | 15.63 | 0.21 | 0.04 | 0.16 | 96.80 |
| 5G3-2 | " | 0.10 | 16.28 | 61.27 | -0.02 | 0.02 | 15.34 | 0.15 | 0.03 | 0.13 | 93.29 |
| 5G3-4 | K-SPARb | 0.12 | 17.46 | 61.48 | 0.03 | 0.00 | 15.54 | 0.52 | 0.02 | 0.20 | 95.37 |
| 5G3-5 | " | 0.07 | 17.36 | 62.391 | -0.01 | 0.02 | 15.68 | 0.26 | 0.05 | 0.19 | 96.02 |
| 12G7-1 | K-SPARa | 0.12 | 17.79 | 63.128 | 0.00 | 0.04 | 15.58 | -0.02 | 0.07 | 0.08 | 96.79 |
| 12G7-3 | " | 0.13 | 18.17 | 63.66 | 0.04 | 0.00 | 15.68 | 0.05 | 0.02 | 0.11 | 97.85 |
| 12G7-4 | K-SPARb | 0.14 | 17.82 | 63.478 | 0.04 | 0.01 | 15.82 | 0.04 | 0.05 | 0.09 | 97.48 |
| 12G7-6 | " | 0.14 | 18.05 | 63.29 | 0.03 | 0.02 | 15.90 | 0.06 | 0.03 | 0.09 | 97.61 |
| 9G1-4 | K-SPAR | 0.16 | 17.33 | 59.02 | 0.03 | 0.02 | 14.57 | 0.04 | -0.02 | 0.14 | 91.28 |
| 9G1-5 | " | 0.12 | 17.07 | 60.212 | 0.03 | 0.02 | 14.70 | 0.08 | 0.04 | 0.13 | 92.41 |
| 9G1-1 | MICA | 0.03 | 23.19 | 35.484 | 2.73 | 0.22 | 2.41 | 7.60 | 0.13 | 2.85 | 74.66 |
| 9G1-2 | " | 0.04 | 22.03 | 36.381 | 3.07 | 0.18 | 2.67 | 7.98 | 0.09 | 0.74 | 73.17 |
| 9G1-3 | " | 0.03 | 24.71 | 36.639 | 1.85 | 0.12 | 1.59 | 5.52 | 0.12 | 1.10 | 71.67 |
| 12G7-13 | ILM | -0.02 | 0.06 | -0.046 | 0.04 | 0.14 | 0.07 | 39.00 | 5.62 | 56.08 | 100.93 |
| 12G7-14 | " | 0.00 | 0.02 | -0.027 | -0.02 | 0.15 | 0.08 | 41.03 | 4.03 | 55.28 | 100.55 |
| 12G7-15 | " | 0.01 | 0.08 | -0.07 | 0.03 | 0.14 | 0.06 | 36.86 | 3.87 | 56.92 | 97.88 |
| 5G2-1 | " | 0.02 | 0.08 | -0.027 | 0.03 | 0.12 | 0.06 | 43.40 | 2.48 | 54.77 | 100.94 |
| 5G2-2 | " | 0.01 | 0.13 | 0.024 | 0.06 | 0.15 | 0.07 | 40.44 | 2.12 | 56.27 | 99.28 |
| 5G2-4 | " | -0.03 | 0.01 | 0.011 | 0.03 | 0.16 | 0.07 | 44.33 | 2.38 | 54.05 | 101.00 |
| 12G7-7B | ALT ZONE | 0.81 | 4.76 | 1.009 | 0.16 | 0.52 | 0.12 | 5.28 | 0.14 | 78.63 | 91.42 |
| 12G7-8B | " | 1.02 | 4.68 | 1.02 | 0.09 | 0.44 | 0.14 | 5.22 | 0.10 | 79.37 | 92.09 |
| 12G7-9 | " | 0.47 | 4.17 | 1.038 | 0.02 | 0.47 | 0.11 | 6.13 | 0.13 | 79.59 | 92.13 |

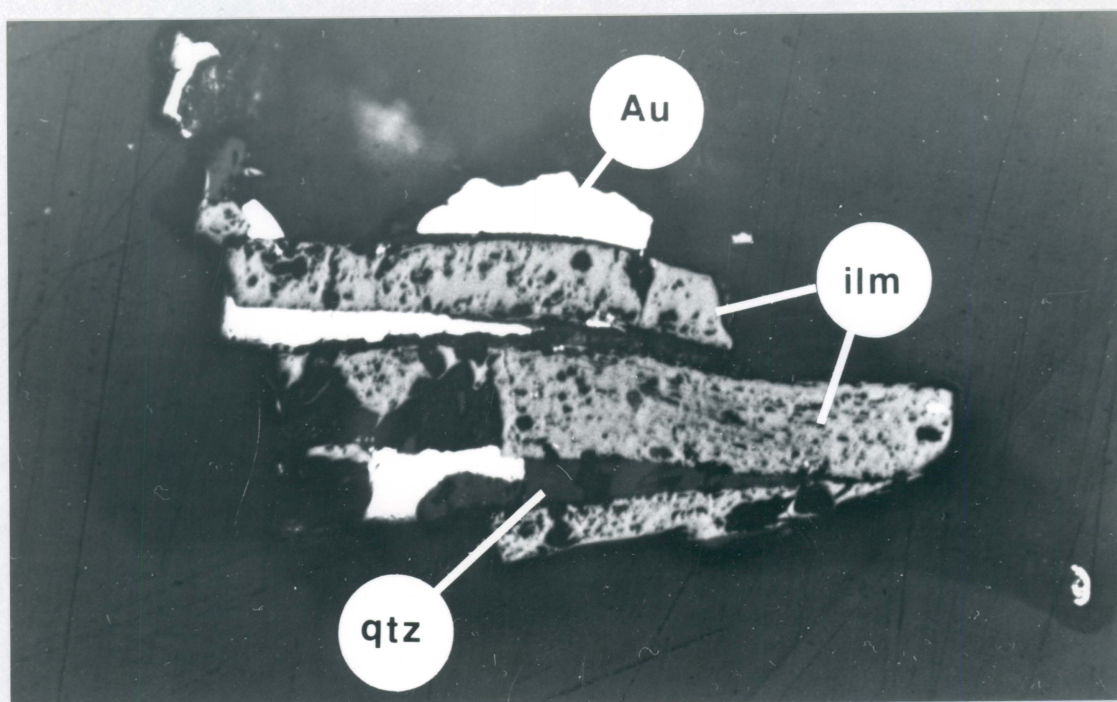


Figure 10. Photograph of a placer gold grain (sample 5G2, table 2) consisting of "wedges" of gold (Au) and quartz (qtz) in spaces left by brittle fracture of ilmenite (ilm). This grain is approximately 0.4 mm across.

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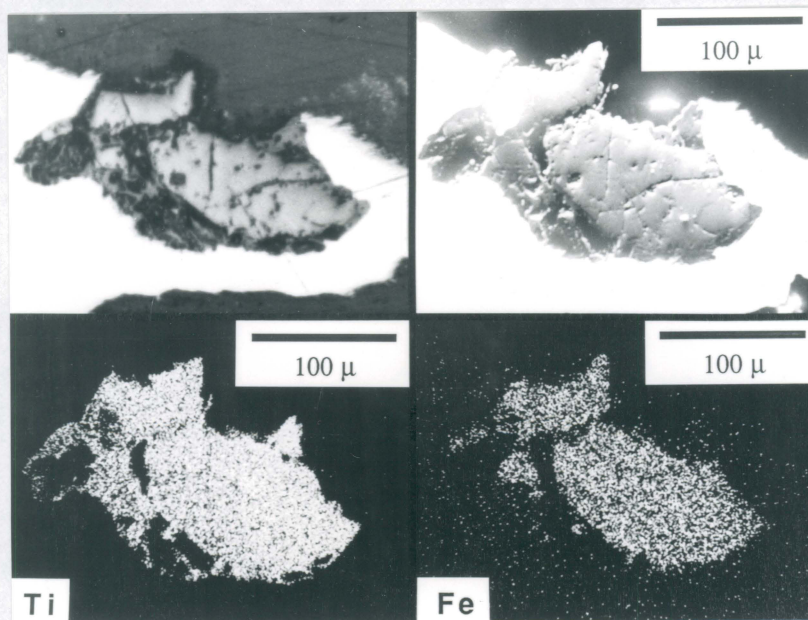


Figure 11. Photomicrograph (upper left), backscattered electron image (upper right), and X-ray maps for Ti and Fe (lower left and lower right, respectively) of a placer gold (white in the photograph) grain (sample 12G7, table 2) bearing relict ilmenite (gray in the photograph). Note the alteration zone between the gold and ilmenite, best shown by the difference in the Ti and Fe content of this zone and the ilmenite.

CHIEFTAIN BOND

50% COTTON FIBER

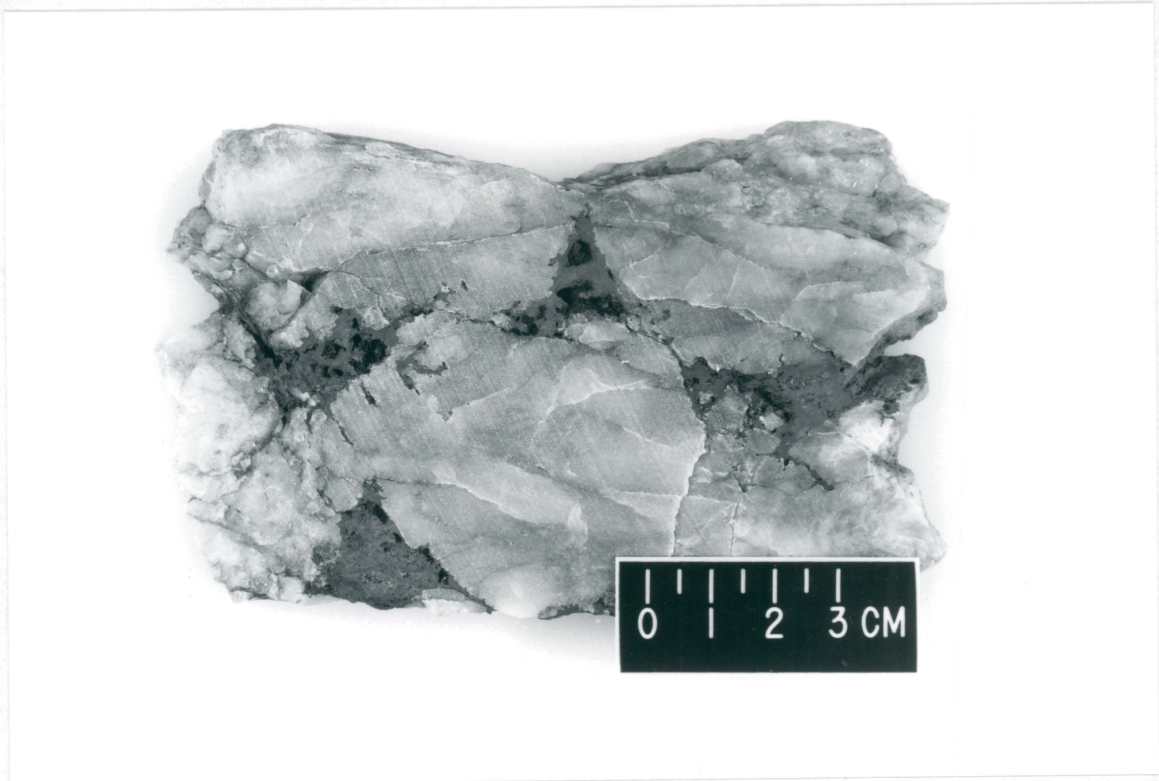


Figure 12. Photograph of breccia with quartz clasts and sulfide (now limonite) mineralization of the interstices.

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Fluid Inclusions

Fluid inclusions suitable for study are present in relict quartz attached to placer gold grains, and in gold-bearing quartz cobbles collected along with the placer grains. Two distinct fluid inclusion populations were noted on the basis of phase ratios, compositions, morphologies and/or textural relationships among quartz, gold and fluid inclusions. Type 1 inclusions, the earliest-formed type occur in barren, mylonitic quartz, and consist of two fluid phases, liquid and vapor, at room temperature (Fig. 13). They range from 3-10 μm in size and decorate grain boundaries of recrystallized quartz, lie along healed, intergranular and intragranular microfractures, or occur as randomly-oriented groups in the centers of grains. Type 1 inclusions are characterized by apparent eutectic temperatures (T_e) of -60°C or less, final melting temperatures of ice (T_m , ice) of -7° to -22°C and homogenization temperatures (T_h) of $150^\circ \pm 50^\circ\text{C}$ (Fig. 14). These data suggest that the inclusions contain significant amounts of $\text{CaCl}_2 \pm \text{MgCl}_2$ in addition to NaCl . Modelling the low temperature behavior of Type 1 inclusions in the system $\text{CaCl}_2\text{-NaCl-H}_2\text{O}$ suggests that they contain 20-27 wt. % total salt (Oakes and Bodnar, 1988). In addition, a final melting point of -33°C implies a maximum $\text{NaCl}/(\text{NaCl}+\text{CaCl}_2)$ weight ratio of 0.2, or a Na/Ca atomic ratio of 0.5, for these inclusions. Evidence for necking and partial decrepitation is common in Type 1 inclusions and probably accounts for the scatter in homogenization temperatures. The combination of these effects can produce both lower and higher densities, thus making T_h of limited utility in these inclusions. Type 1 inclusions correspond to those found by Kirby et al. (1988) in mylonitic gneiss and mylonitic quartz segregations within the Fries fault. These authors have shown that $\text{CaCl}_2\text{-NaCl-H}_2\text{O}$ fluid inclusions record the fluid present in the late stages of mylonitization.

Type 2 inclusions occur in auriferous, unstrained to moderately strained quartz, and are dominantly one-phase liquids at room temperature (Fig. 15). They average 2-5 μm in size, occur along healed intergranular and intragranular microfractures, but were not found along grain boundaries. Apparent eutectic temperatures of -21° to -23°C were measured for some of the Type 2 inclusions (Fig. 14), but could not be measured for the lower salinity Type 2 inclusions. This was primarily due to the small volume of melt produced at the eutectic, reflecting the low salinities, but was compounded by the small size of the inclusions. Final melting temperatures of ice range from -0.4° to -15°C , (Fig. 14). As most inclusions are one phase liquids, and vapor-absent phase transitions are generally metastable (Roedder, 1984), melting temperatures were measured on inclusions which were made two phase by partial decrepitation during heating. Cooling one-phase, Type 2

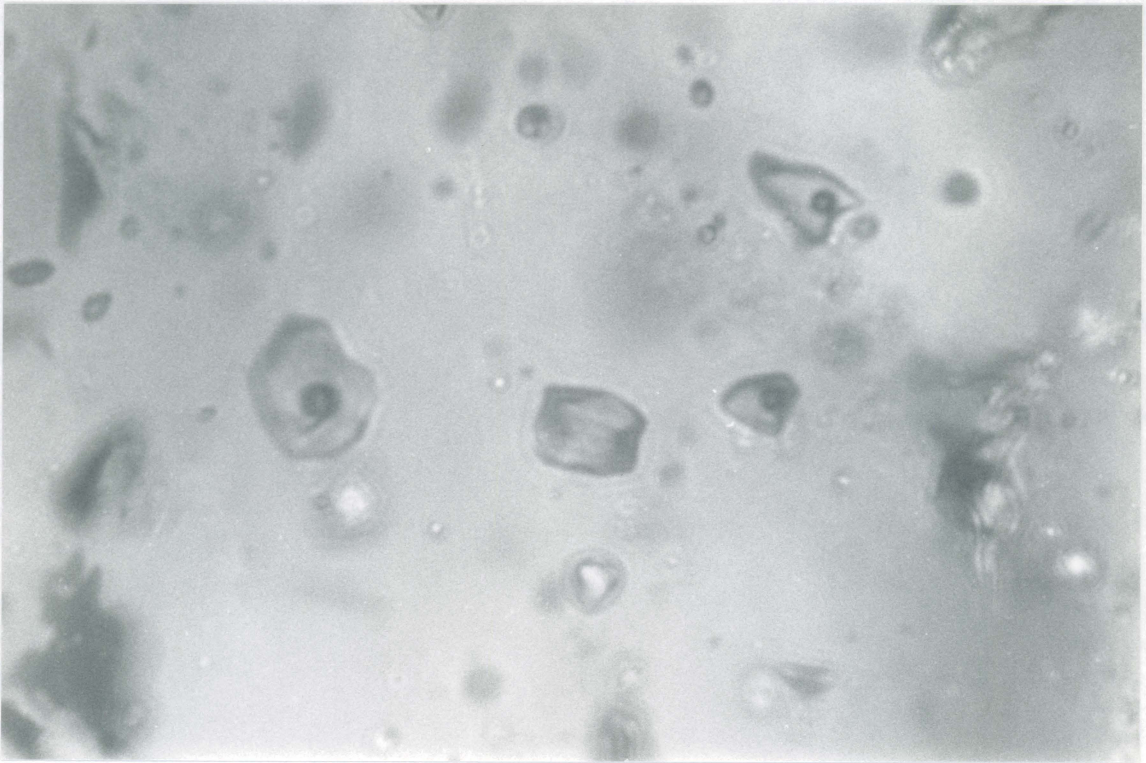


Figure 13. Photograph of Type 1 fluid inclusions. These are found in barren, mylonitic quartz, and are generally two-phase (liquid + vapor) aqueous inclusions. The inclusions shown here are about five to eight micrometers in diameter.

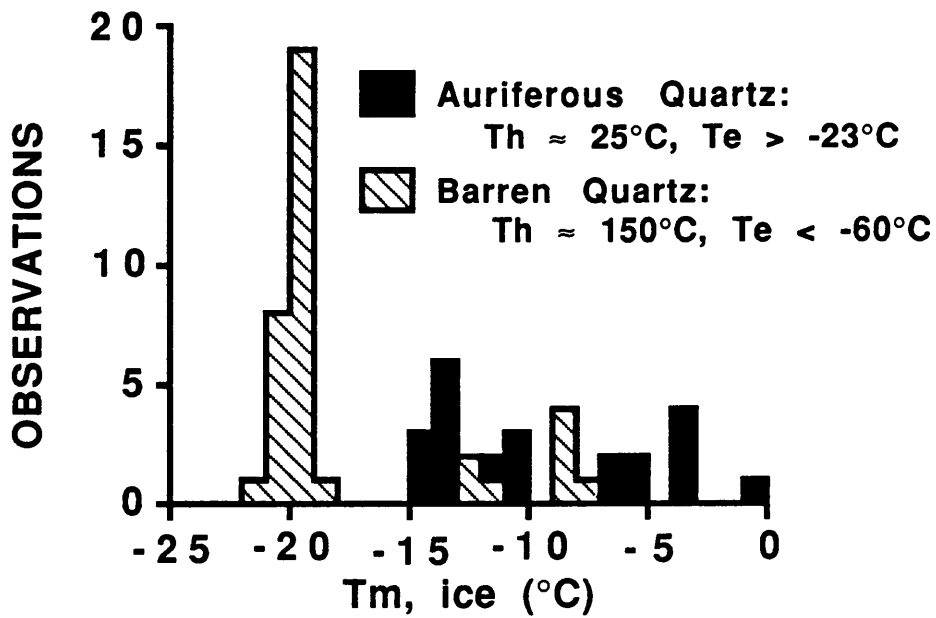


Figure 14. Histogram showing range of ice melting temperatures ($T_{m, \text{ice}}$) for fluid inclusions in auriferous and barren quartz. Homogenization (T_h) and eutectic (T_e) temperatures are also indicated for these inclusions.

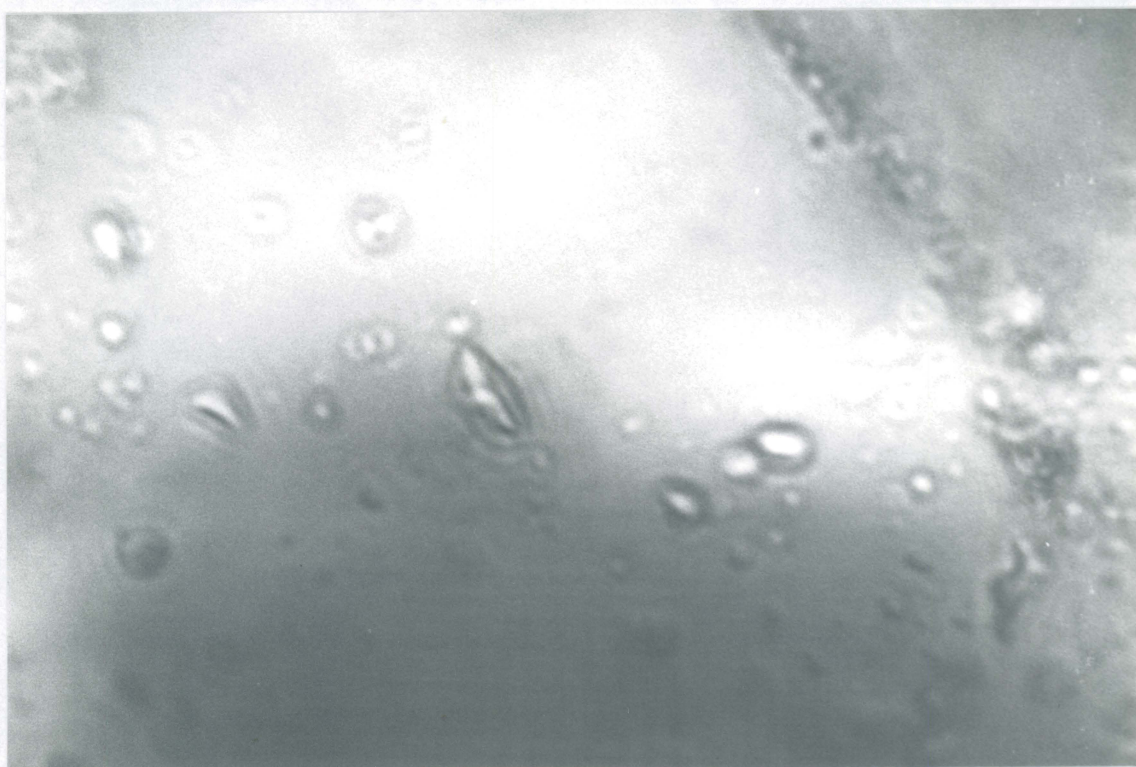


Figure 15. Photograph of Type 2 fluid inclusions. These are found in auriferous quartz that is unstrained to moderately strained, and are one-phase aqueous liquids. The inclusions shown here are about five micrometers in diameter.

inclusions to liquid nitrogen temperatures failed to nucleate a vapor bubble, so homogenization temperatures could not be measured. The eutectic temperatures of -21° to -23°C suggest that some of the Type 2 inclusions contain KCl in addition to NaCl. Modelling these fluids in the system NaCl-KCl-H₂O suggests total salinities of 1 to 22 wt.% for the Type 2 inclusions (Hall et al., 1988). Na/K ratios could not be determined because the melting temperature of hydrohalite or sylvite along the hydrohalite-ice or sylvite-ice cotectics, respectively, could not be measured due to the small size of these inclusions. However, T_m ice of -14.5°C implies NaCl/(NaCl+KCl) weight ratios greater than 0.4 (Na/K ratios > 0.85).

Crushing studies of Type 2 inclusions revealed that very minor quantities of gases are dissolved in the aqueous phase. When one-phase, Type 2 inclusions are opened during crushing, this gas exsolves, is expelled into the surrounding immersion oil, and dissolves into the oil in a few seconds. The vapor phase expelled from each inclusion has a diameter 1-2 times that of the original inclusion. If the aqueous portion of the inclusion is taken to be pure H₂O, the density of CO₂ at one atmosphere and 25°C indicates that less than 0.5 mol % gas is dissolved in these inclusions. Raman spectroscopy on both one and two phase Type 2 inclusions failed to detect any CO₂, CH₄, N₂ or sulfur species.

Type 2, one phase inclusions commonly coexist with two-phase liquid + vapor inclusions (slightly larger in size) with variable liquid/vapor ratios. Close inspection of these two-phase inclusions often reveals microfractures which emanate from the inclusion walls and propagate into the surrounding quartz host. The two-phase inclusions are interpreted as having originally been one-phase, but then partially decrepitated during uplift in response to internal overpressures. This is supported by the fact that compositions of initially two-phase inclusions and those which were rendered two-phase in the laboratory are similar. The brittle nature of decrepitation, as opposed to stretching, suggests that it occurred at relatively low temperatures and probably, therefore, late in the uplift history. The relationship between inclusion size and the internal pressure required for decrepitation (Bodnar et al., 1989; Sterner and Bodnar, 1989) indicates that about two kb of internal overpressure is necessary to initiate decrepitation in these inclusions, which may have significant implications for the P-T conditions of trapping for these inclusions.

DISCUSSION AND CONCLUSIONS

The abundance of relict quartz, and the presence of relict adularia and pyrite in alluvial gold, and the lack of correlation between gold and heavy minerals in stream sediments indicates that the ore mineralogy consists of gold, quartz, pyrite, and adularia. Dissolution cavities found in quartz float, though not necessarily auriferous quartz, suggests the possibility of carbonates as accessory minerals, though no direct evidence can support this.

The contrast in textures between the auriferous and barren quartz, the truncation of the mylonitic fabric in the barren quartz by the auriferous quartz, and the distinct difference in the character and composition of fluid inclusions between the auriferous and barren quartz, clearly indicate that the gold mineralization post dated the mylonitization.

The variable degree of strain, and fluid inclusion composition of auriferous quartz, in addition to the wide range in gold compositions suggest either multiple episodes of mineralization, or one protracted episode of mineralization, perhaps related to an evolving composition of the ore-forming fluids.

The euhedral relict limonite pseudomorph in one of the alluvial gold samples, the interstitial sulfide mineralization of the breccia, and the presence of euhedral quartz fragments found in stream sediments with high gold values, all suggest that some of the gold mineralization occurred as open space filling.

The occurrence of the gold in late, cross-cutting quartz, apparent lack of significant alteration associated with gold mineralization, and the small areal distribution of the gold anomaly in stream sediments, suggests that the gold occurs in irregular and discontinuous veins. These veins are believed to have resulted from brittle fracture of rocks within the Fries Fault zone, which focussed the ore-forming fluids into discrete channels, rather than allowing them to percolate through the country rocks. The brittle fracturing was related to a tectonic event sometime after late Mississippian (the latest mylonitization associated with the Fries Fault; Dietrich et al., 1969). The highly silicified rocks of the Fries Fault zone may have been more easily fractured than those rocks outside the deformation zone, accounting for the localization of the gold mineralization within the Fault zone.

The foregoing discussion is an example of what can be learned by studying stream sediments, and in particular, relict phases associated with ore minerals. While not a substitute for drilling or trenching, in appropriate cases this technique can serve as an excellent, intermediate exploration phase that might save time, money, and commitment

further down the road.

The advantages are that it is extremely cost effective, it does not require the purchase of land or mineral rights, it can be applied in areas that might prohibit the use of *other* advanced exploration methods, and it is discrete.

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APPENDIX A: Microprobe Analyses of Heavy Minerals

As discussed in the text, 125 grains from the heavy mineral fraction of each stream sediment sample were analyzed by electron microprobe for Na, Mg, Al, Si, Ca, K, Fe, Y, P, Zr, Th, U, Ti, La, Ce, Nd, Cr, and Mn.

The raw data from these analyses are presented in this appendix. The sample number for each set of analyses is indicated.

SAMPLE 5

| NA | MG | AL | SI | CA | K | FE | Y | P | ZR | TH | U | Tl | LA | CE | ND | CR | MN | sum |
|-------|-------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|--------|
| -0.02 | -0.05 | 0.05 | 0.09 | 0.17 | 0.04 | 19.79 | -0.05 | 0.03 | 0.04 | -0.02 | 0.04 | 80.96 | 0.02 | 0 | 0.13 | -0.01 | 1.7 | 102.91 |
| 0.05 | -0.05 | 0.46 | 0.32 | 0.13 | 0.04 | 20.63 | -0.02 | -0.02 | 0.21 | -0.03 | -0.04 | 74.28 | -0.04 | 0.05 | 0.02 | -0.02 | 1.28 | 97.25 |
| 0 | -0.06 | 0.39 | 0.49 | 0.18 | 0.05 | 21.03 | -0.06 | 0.05 | 0.06 | -0.04 | 0.01 | 69.43 | 0.16 | 0.12 | 0.05 | 0.02 | 1.55 | 93.43 |
| 0 | -0.04 | 0.15 | 1.12 | 0.15 | 0.07 | 30.75 | -0.06 | 0.06 | 0 | -0.03 | 0 | 65.26 | 0.09 | -0.14 | 0.13 | 0.05 | 3.25 | 100.81 |
| 0.05 | -0.08 | 1.92 | 0.6 | 0.21 | 0.05 | 24.49 | 0 | 0.22 | 0.02 | 0.02 | -0.06 | 62.17 | -0.09 | 0.21 | -0.07 | 0.08 | 1.43 | 91.17 |
| 0.02 | 0.01 | 0.3 | 0.07 | 0.14 | 0.05 | 36.06 | -0.05 | 0.05 | 0.17 | 0.08 | -0.01 | 60.44 | 0.04 | 0.08 | -0.03 | -0.02 | 2.99 | 100.39 |
| 0.04 | -0.05 | 0.88 | 0.09 | 0.16 | 0.05 | 37.61 | 0.01 | 0 | 0.03 | 0.03 | -0.08 | 60.1 | 0.05 | 0 | 0.04 | 0 | 2.29 | 101.25 |
| -0.03 | -0.02 | 0.26 | 0.05 | 0.15 | 0.05 | 40.25 | 0.06 | 0.03 | 0.01 | -0.02 | 0.03 | 59.21 | 0.05 | 0.17 | -0.04 | -0.01 | 3.47 | 104.24 |
| -0.01 | 0 | 0.5 | 0.11 | 0.15 | 0.06 | 40.66 | 0.05 | 0 | -0.09 | -0.04 | -0.06 | 59.15 | -0.04 | -0.16 | 0.12 | 0 | 3.76 | 103.96 |
| 0.05 | -0.01 | 0.09 | 0.04 | 0.15 | 0.05 | 39.88 | -0.1 | 0.02 | -0.03 | -0.05 | -0.06 | 59.01 | -0.08 | 0.16 | 0.04 | -0.02 | 3.92 | 104.32 |
| 0 | -0.03 | 0.72 | 0.07 | 0.14 | 0.05 | 40.09 | 0.02 | -0.05 | 0.02 | 0.01 | -0.04 | 58.99 | -0.07 | 0.09 | -0.04 | 0.03 | 2.75 | 102.75 |
| -0.02 | -0.01 | 0.08 | 0.07 | 0.15 | 0.05 | 40.12 | 0.03 | -0.02 | -0.08 | -0.04 | -0.02 | 58.97 | 0 | 0.01 | -0.31 | 0.09 | 3.08 | 102.15 |
| 0.02 | -0.05 | 0.13 | 0.08 | 0.15 | 0.05 | 39.51 | 0.01 | -0.01 | -0.03 | -0.03 | -0.08 | 58.95 | -0.11 | -0.09 | 0.02 | 0.11 | 5.02 | 103.65 |
| 0 | -0.06 | 1.6 | 1.75 | 0.22 | 0.07 | 29.6 | -0.06 | 0.29 | 0 | -0.03 | 0 | 58.87 | 0.03 | -0.01 | -0.06 | -0.04 | 4.13 | 96.3 |
| 0.01 | -0.05 | 0.56 | 0.21 | 0.17 | 0.04 | 36.47 | 0.11 | 0.05 | 0.02 | -0.09 | -0.1 | 58.76 | -0.05 | -0.01 | 0.04 | 0.09 | 2.48 | 98.71 |
| -0.02 | -0.04 | 0.07 | 0.08 | 0.16 | 0.06 | 41.47 | 0.11 | -0.01 | -0.06 | 0.01 | -0.06 | 58.68 | -0.08 | 0.06 | 0.08 | 0.04 | 2.82 | 103.37 |
| 0.01 | 0.01 | 0.94 | 0.65 | 0.23 | 0.1 | 35.76 | 0.05 | 0.06 | -0.15 | 0.04 | -0.01 | 58.26 | -0.09 | 0.05 | 0.09 | 0.08 | 3.57 | 99.65 |
| -0.01 | -0.05 | 0.18 | 0.07 | 0.15 | 0.06 | 38.77 | -0.02 | 0.01 | 0.06 | 0.1 | 0.01 | 58.06 | -0.05 | -0.29 | 0.11 | -0.01 | 4.11 | 101.26 |
| 0.02 | -0.01 | 0.04 | 0.07 | 0.15 | 0.05 | 41.3 | -0.03 | 0.03 | 0.09 | -0.1 | 0.01 | 57.77 | 0.1 | 0.1 | 0.01 | 0.07 | 5.13 | 104.8 |
| 0.04 | -0.05 | 0.13 | 0.91 | 0.18 | 0.08 | 40.46 | -0.11 | 0.03 | 0.06 | -0.02 | -0.02 | 57.64 | -0.04 | -0.1 | -0.01 | 0.05 | 4 | 103.23 |
| 0.04 | -0.03 | 0.52 | 0.3 | 0.3 | 0.08 | 34.66 | 0.06 | 0.34 | 0 | -0.05 | -0.06 | 57.45 | 0.07 | 0.15 | 0.16 | 0.05 | 3.52 | 97.56 |
| 0.04 | -0.01 | 0.09 | 0.2 | 0.26 | 0.05 | 38.42 | -0.03 | 0.03 | 0.07 | -0.09 | -0.03 | 56.97 | -0.06 | 0.04 | 0.07 | 0.02 | 4.88 | 100.92 |
| -0.01 | -0.06 | 0.43 | 0.25 | 0.16 | 0.05 | 33.2 | 0.03 | 0.1 | 0.1 | -0.09 | 0.05 | 56.96 | 0.02 | -0.03 | -0.01 | 0.06 | 4.87 | 96.08 |
| -0.03 | -0.04 | 0.15 | 0.12 | 0.16 | 0.05 | 41.83 | 0.01 | 0.03 | 0 | 0.06 | -0.06 | 56.8 | -0.06 | 0.02 | 0.05 | 0.08 | 2.14 | 101.31 |
| 0 | -0.05 | 0.1 | 0.26 | 0.27 | 0.06 | 40.58 | 0.03 | 0.03 | 0.14 | 0 | -0.03 | 56.56 | -0.13 | -0.05 | -0.03 | 0.01 | 4.81 | 102.56 |
| -0.01 | -0.01 | 0.31 | 2.27 | 1.76 | 0.12 | 37.44 | 0.01 | 0.01 | -0.01 | 0.05 | 0.02 | 56.32 | -0.08 | 0.04 | -0.03 | -0.03 | 3 | 101.18 |
| 0.01 | -0.04 | 0.13 | 1.87 | 0.15 | 0.07 | 41.31 | 0.02 | -0.01 | 0.07 | 0.03 | -0.07 | 56.27 | 0.01 | -0.06 | 0.12 | 0.04 | 2.51 | 102.28 |
| 0.05 | 0 | 0.35 | 0.28 | 0.13 | 0.06 | 41.47 | 0.07 | -0.01 | 0.03 | -0.02 | -0.07 | 56.11 | -0.05 | 0.09 | -0.04 | -0.05 | 1.85 | 99.81 |
| 0.03 | -0.02 | 0.32 | 0.12 | 0.16 | 0.06 | 41.1 | 0.01 | 0.03 | -0.03 | 0.03 | 0.06 | 55.99 | 0.08 | 0.16 | -0.11 | -0.05 | 5.12 | 103.13 |
| 0.02 | -0.05 | 0.18 | 0.31 | 0.17 | 0.06 | 37.21 | 0.15 | 0 | 0.08 | 0 | -0.01 | 55.91 | 0.04 | 0.06 | -0.11 | -0.08 | 5.15 | 99.09 |
| 0.15 | -0.06 | 0.75 | 0.29 | 0.25 | 0.06 | 33.09 | 0.04 | 0.06 | -0.11 | -0.04 | 0.05 | 55.79 | -0.08 | -0.02 | -0.03 | -0.03 | 5.02 | 95.18 |
| 0.01 | -0.01 | 0.19 | 0.12 | 0.16 | 0.05 | 40.87 | -0.07 | 0.04 | 0.04 | 0 | -0.03 | 55.72 | 0.04 | 0.14 | 0 | -0.02 | 3.71 | 100.88 |
| 0.01 | -0.03 | 0.64 | 0.69 | 0.24 | 0.07 | 38.74 | 0.04 | 0.04 | -0.05 | 0 | -0.02 | 55.62 | -0.04 | -0.1 | 0.08 | 0.03 | 3.32 | 99.28 |
| 0.03 | -0.03 | 0.14 | 0.09 | 0.15 | 0.06 | 38.86 | -0.05 | 0.03 | 0 | -0.12 | 0 | 55.51 | -0.12 | 0.11 | 0.07 | -0.02 | 5.79 | 100.5 |
| 0.04 | -0.01 | 0.17 | 0.1 | 0.15 | 0.06 | 39.22 | 0.06 | 0.02 | -0.01 | 0.02 | -0.03 | 55.5 | 0.02 | -0.15 | 0.05 | 0.02 | 4.54 | 99.77 |
| 0 | -0.02 | 0.14 | 0.09 | 0.15 | 0.06 | 41.05 | -0.08 | 0.02 | -0.07 | 0.07 | -0.01 | 55.43 | -0.06 | -0.01 | -0.08 | 0.03 | 2.84 | 99.55 |
| 0.01 | 0 | 0.33 | 0.08 | 0.16 | 0.06 | 43.58 | 0.07 | 0.01 | 0.01 | 0.03 | -0.05 | 55.42 | -0.25 | 0.14 | -0.09 | -0.06 | 4.11 | 103.56 |
| 0.03 | -0.06 | 0.12 | 0.82 | 0.18 | 0.06 | 38.58 | 0 | 0.05 | -0.03 | 0.04 | -0.03 | 55.36 | 0.16 | 0.04 | 0.07 | 0 | 5.34 | 100.69 |
| 0 | -0.01 | 0.11 | 0.09 | 0.16 | 0.06 | 42.76 | 0.01 | 0.07 | 0.03 | 0.04 | -0.04 | 55.26 | 0.06 | -0.21 | 0.01 | -0.03 | 3.15 | 101.52 |
| 0.05 | -0.03 | 0.08 | 0.07 | 0.15 | 0.06 | 43.27 | 0.02 | -0.05 | -0.04 | -0.01 | -0.01 | 55.09 | 0.03 | -0.18 | -0.04 | -0.01 | 3.03 | 101.48 |
| 0.03 | -0.04 | 0.21 | 0.09 | 0.15 | 0.05 | 41.58 | 0.01 | 0.02 | 0.05 | -0.05 | 0.01 | 54.98 | -0.02 | 0 | 0.01 | -0.03 | 3.41 | 100.46 |
| -0.05 | 0.01 | 0.1 | 0.09 | 0.17 | 0.05 | 41.75 | -0.04 | 0.03 | -0.04 | 0.01 | 0 | 54.78 | 0.2 | -0.13 | -0.09 | 0.02 | 3.6 | 100.46 |
| 0.02 | -0.05 | 0.09 | 0.62 | 0.15 | 0.06 | 41.98 | 0.08 | -0.04 | 0.07 | 0.08 | 0 | 54.65 | -0.01 | -0.02 | 0.09 | 0 | 3.74 | 101.51 |
| -0.01 | -0.02 | 0.98 | 0.27 | 0.24 | 0.06 | 38.77 | -0.06 | 0.11 | 0.02 | 0 | -0.04 | 54.54 | -0.06 | -0.03 | -0.03 | 0 | 2.57 | 97.31 |
| 0 | -0.03 | 0.15 | 0.13 | 0.15 | 0.05 | 39.71 | -0.01 | -0.02 | 0.05 | 0.02 | 0.05 | 54.33 | -0.05 | 0.18 | 0.02 | -0.02 | 3.71 | 98.42 |

| NA | MG | AL | SI | CA | K | FE | Y | P | ZR | TH | U | TI | LA | CE | ND | CR | MIN | sum |
|-------|-------|------|-------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| 0.04 | 0.19 | 7.09 | 2.96 | 0.92 | 0.1 | 7.64 | 0.03 | 0.41 | 0 | 0.1 | 0.09 | 54.25 | -0.05 | 0.09 | -0.05 | 0.23 | 0.18 | 74.22 |
| 0.02 | -0.08 | 0.21 | 0.39 | 0.15 | 0.05 | 38.16 | -0.03 | -0.01 | -0.03 | -0.08 | -0.04 | 54.1 | 0.02 | 0.04 | -0.02 | 0.01 | 4.27 | 97.13 |
| 0.02 | 0.16 | 6.56 | 2.54 | 0.89 | 0.09 | 6.89 | -0.01 | 0.41 | 0.02 | -0.03 | 0.07 | 54.1 | 0.04 | -0.04 | -0.03 | 0.1 | 0.25 | 72.03 |
| 0.04 | -0.04 | 0.11 | 0.08 | 0.16 | 0.05 | 44.61 | -0.02 | 0.03 | 0.04 | 0.01 | -0.03 | 54.03 | 0 | -0.1 | 0.02 | -0.01 | 2.05 | 101.03 |
| -0.02 | -0.05 | 0.11 | 0.11 | 0.16 | 0.06 | 43.73 | 0.02 | 0.01 | 0.04 | -0.01 | -0.01 | 53.98 | -0.06 | 0.08 | -0.06 | 0 | 3.82 | 101.91 |
| 0.02 | -0.05 | 0.39 | 0.53 | 0.15 | 0.13 | 40.42 | -0.03 | 0.04 | 0.04 | 0.04 | -0.09 | 53.69 | -0.2 | -0.11 | -0.11 | 0.02 | 3.27 | 98.15 |
| 0.04 | -0.05 | 0.58 | 0.17 | 0.49 | 0.05 | 40.05 | 0.06 | 0.02 | -0.03 | 0.01 | -0.03 | 53.4 | 0.03 | 0.05 | -0.01 | -0.01 | 3.21 | 98.21 |
| -0.03 | -0.02 | 0.09 | 0.07 | 0.14 | 0.06 | 41.8 | 0.14 | 0.05 | 0.03 | -0.09 | -0.04 | 53.17 | -0.05 | 0.02 | -0.04 | -0.03 | 3.3 | 98.57 |
| 0 | -0.04 | 0.27 | 0.19 | 0.2 | 0.06 | 34.99 | -0.06 | 0.04 | -0.03 | 0.04 | -0.07 | 52.59 | 0 | 0.22 | -0.18 | 0.12 | 3.76 | 98.1 |
| 0.02 | -0.02 | 1.78 | 1.53 | 0.19 | 0.08 | 40.45 | -0.03 | 0.13 | -0.03 | -0.11 | -0.03 | 51.18 | 0.09 | -0.2 | 0.14 | 0.06 | 3.37 | 92.6 |
| -0.02 | 0.01 | 1.87 | 2.49 | 0.13 | 0.08 | 33.91 | 0.05 | 0.1 | 0.03 | -0.09 | 0.11 | 44.3 | 0.02 | 0.27 | -0.02 | 0.04 | 3.5 | 86.78 |
| -0.01 | -0.01 | 0.68 | 5.07 | 0.15 | 0.04 | 22.99 | 0.04 | 0.09 | 8.58 | -0.04 | -0.04 | 42.02 | -0.06 | -0.03 | 0.04 | 2.94 | 82.56 | |
| -0.03 | -0.07 | 0.3 | 0.6 | 0.14 | 0.07 | 36.06 | -0.07 | 0.02 | 0.1 | 0.01 | -0.09 | 41.21 | 0.05 | 0 | -0.13 | -0.06 | 1.99 | 80.1 |
| -0.01 | 0.16 | 2.13 | 19.45 | 0.22 | 0.24 | 29.08 | 0.01 | 0.03 | 0 | -0.01 | -0.06 | 40.89 | 0 | -0.09 | -0.08 | -0.04 | 1.4 | 93.32 |
| 0.19 | -0.1 | 0.27 | 0.44 | 0.09 | 0.05 | 23.98 | 0.06 | 0.04 | -0.01 | 0.05 | -0.05 | 37.47 | 0.16 | 0.16 | -0.03 | 0 | 2.45 | 65.22 |
| 0.04 | 0.2 | 7.01 | 7.12 | 0.21 | 0.33 | 29.98 | -0.03 | 0.06 | 0 | 0 | -0.06 | 37.42 | 0.01 | 0.04 | 0.12 | 0.03 | 2.71 | 85.19 |
| 0.04 | 0.06 | 1.02 | 67.9 | 0.59 | 0.26 | 1.71 | -0.03 | 0.04 | -0.03 | -0.01 | -0.02 | 34.5 | 0.07 | 0.08 | -0.1 | 0.04 | 0.09 | 96.07 |
| -0.17 | 0.06 | 0.07 | 31.21 | 0.21 | 0.07 | 0.37 | 0.11 | -0.16 | 66.5 | 0.02 | 0.05 | 0.13 | -0.14 | -0.18 | -0.03 | -0.07 | -0.04 | 98.01 |
| -0.04 | 0.05 | 0.11 | 33.13 | 0.23 | 0.07 | 0.53 | 0.13 | -0.19 | 66.38 | -0.1 | 0.21 | 0.3 | 0.08 | -0.07 | -0.07 | 0.11 | 0.06 | 100.92 |
| -0.16 | 0.06 | 0.08 | 31.01 | 0.21 | 0.07 | 0.36 | 0.57 | 0.22 | 66.25 | 0.01 | 0.11 | 0.14 | 0.01 | -0.06 | -0.14 | 0 | 0.09 | 98.83 |
| -0.03 | 0.04 | 0.07 | 32.85 | 0.2 | 0.07 | 0.4 | 0.14 | -0.01 | 65.24 | 0.11 | 0.06 | 0.1 | 0.04 | 0.14 | 0.12 | 0.03 | 0 | 99.57 |
| 0 | 0.05 | 0.07 | 32.86 | 0.2 | 0.08 | 0.35 | -0.04 | -0.2 | 65.22 | -0.05 | -0.02 | 0.11 | -0.24 | 0.17 | -0.01 | -0.04 | -0.02 | 98.57 |
| -0.01 | 0.04 | 0.1 | 32.72 | 0.22 | 0.07 | 0.49 | 0.15 | -0.09 | 65 | -0.08 | 0.03 | 0.08 | 0.12 | -0.1 | 0.01 | -0.04 | 0 | 98.82 |
| -0.01 | 0.04 | 0.07 | 32.66 | 0.21 | 0.08 | 0.37 | 0.17 | -0.17 | 65 | -0.08 | 0.15 | 0.08 | -0.06 | -0.16 | -0.02 | -0.02 | -0.02 | 98.29 |
| 0.04 | 0.04 | 0.07 | 32.11 | 0.22 | 0.08 | 0.46 | 0.53 | 0.24 | 64.93 | 0.11 | 0.17 | 0.02 | 0.02 | -0.1 | 0 | -0.05 | -0.01 | 98.88 |
| -0.04 | 0.03 | 0.25 | 31.65 | 0.21 | 0.07 | 0.57 | 0.2 | -0.14 | 64.75 | 0.07 | 0.02 | 0.12 | -0.02 | 0.08 | -0.03 | 0.09 | 0 | 97.88 |
| 0 | 0.06 | 0.08 | 32.81 | 0.22 | 0.07 | 0.42 | 0.04 | -0.26 | 64.51 | -0.02 | 0.04 | 0.13 | 0.19 | -0.01 | 0.02 | -0.06 | 0.05 | 98.29 |
| -0.02 | 0.03 | 0.1 | 31.75 | 0.21 | 0.07 | 0.5 | 0.14 | -0.1 | 64.38 | 0.04 | -0.02 | 0.11 | -0.13 | 0.03 | 0.01 | -0.02 | 0 | 97.08 |
| -0.01 | 0.04 | 0.24 | 32.78 | 0.23 | 0.08 | 0.43 | 0.32 | -0.03 | 64.18 | 0.04 | 0.03 | 0.15 | -0.06 | -0.07 | -0.12 | -0.03 | -0.02 | 98.18 |
| -0.01 | 0.56 | 0.13 | 31.71 | 1.13 | 0.08 | 0.39 | 0.19 | -0.08 | 63.89 | 0.03 | -0.03 | 0.11 | 0.11 | -0.15 | 0.11 | -0.04 | -0.03 | 98.1 |
| 0 | 0.05 | 0.17 | 32.34 | 0.2 | 0.08 | 0.54 | 0.13 | -0.22 | 63.87 | -0.01 | 0.13 | 0.21 | -0.13 | -0.18 | 0.03 | -0.02 | -0.02 | 97.22 |
| -0.06 | 0.05 | 0.25 | 32.05 | 0.21 | 0.07 | 0.62 | 0.08 | -0.11 | 63.68 | -0.01 | 0.04 | 0.14 | -0.15 | -0.1 | 0.04 | -0.05 | 0.07 | 96.82 |
| -0.02 | 0.05 | 0.1 | 31.91 | 0.2 | 0.07 | 0.55 | 0.43 | 0.03 | 63.59 | -0.02 | 0.04 | 0.13 | 0.07 | 0.03 | 0 | 0.01 | 0.03 | 97.2 |
| -0.01 | 0.07 | 0.25 | 32.01 | 0.3 | 0.08 | 0.57 | 0.58 | 0.26 | 63.58 | 0.04 | 0.16 | 0.18 | 0.05 | 0 | 0.02 | -0.02 | 0.02 | 98.14 |
| -0.02 | 0.04 | 0.07 | 32.65 | 0.23 | 0.07 | 0.45 | 0.23 | -0.06 | 63.33 | 0.05 | -0.01 | 0.1 | -0.01 | 0.09 | 0.01 | 0 | -0.02 | 97.17 |
| -0.03 | 0.04 | 0.2 | 32.17 | 0.23 | 0.08 | 0.64 | 0.16 | -0.1 | 63.21 | 0.02 | 0.07 | 0.11 | -0.1 | 0.06 | -0.06 | -0.02 | 0.04 | 96.72 |
| -0.01 | 0.06 | 0.25 | 32 | 0.24 | 0.07 | 0.75 | 0.39 | 0.11 | 63.09 | 0.1 | 0.08 | 0.03 | 0.08 | 0.05 | -0.09 | 0.06 | 0.1 | 97.36 |
| -0.2 | 0.06 | 0.23 | 30.04 | 0.23 | 0.07 | 0.62 | 0.32 | -0.02 | 62.76 | 0.15 | 0.2 | 0.27 | 0.04 | -0.02 | 0.05 | -0.02 | 0.04 | 94.82 |
| -0.03 | 0.03 | 0.1 | 31.25 | 0.19 | 0.07 | 0.68 | 0.12 | -0.02 | 62.28 | 0.02 | 0 | 0.28 | 0.05 | -0.02 | 0.04 | 0.02 | 0.02 | 95.04 |
| 0 | 0.03 | 0.08 | 31.47 | 0.2 | 0.07 | 0.5 | 0.23 | -0.02 | 62.05 | -0.04 | 0.06 | 0.13 | -0.11 | 0.05 | 0.07 | 0.08 | 0.04 | 94.89 |
| 0.01 | 0.08 | 0.44 | 31.97 | 0.34 | 0.09 | 0.68 | 1.19 | 0.33 | 59.86 | 0.06 | 0.26 | 0.15 | 0.11 | 0.05 | 0.09 | -0.04 | 0.09 | 95.76 |
| -0.04 | 0.01 | 0.15 | 27.19 | 0.19 | 0.06 | 0.48 | 0.17 | -0.11 | 51.35 | 0.11 | 0.09 | 0.22 | 0.04 | 0 | -0.05 | 0.06 | -0.04 | 79.88 |
| -0.01 | 0.06 | 0.09 | 0.46 | 0.54 | 0.14 | 0.56 | 1.12 | 31.79 | -0.27 | 0.97 | -0.02 | 0.09 | 14.65 | 32.83 | 14.08 | -0.7 | -0.24 | 96.14 |
| -0.09 | 0.04 | 0.11 | 1.12 | 1.15 | 0.15 | 0.51 | 0.33 | 31.23 | -0.2 | 6.69 | -0.98 | 0.12 | 14.19 | 31.64 | 13.71 | -0.87 | -0.07 | 98.78 |

SAMPLE 6

| NA | MS | AL | SI | CA | K | FE | Y | P | ZR | TH | U | TI | LA | CE | ND | CR | MN | SUM |
|-------|-------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|
| 0.06 | 0.14 | 3.85 | 3.02 | 0.25 | 0.07 | 67.28 | -0.08 | 2.13 | -0.07 | 0.1 | 0.06 | 0.16 | -0.1 | -0.05 | 0.04 | 0 | 0.12 | 76.98 |
| 0 | -0.08 | 0.13 | 0.27 | 0.25 | 0.04 | 8.65 | 0.06 | 0.03 | 0.13 | -0.02 | 0.05 | 92.37 | -0.12 | 0.04 | -0.07 | 0 | 1.17 | 102.9 |
| -0.01 | -0.05 | 0.14 | 0.4 | 0.33 | 0.06 | 19.7 | -0.03 | 0 | -0.01 | -0.02 | 0.02 | 79.02 | -0.04 | 0.06 | 0.06 | 0 | 2.36 | 101.99 |
| 0.13 | -0.02 | 1.72 | 0.28 | 0.18 | 0.04 | 21.06 | -0.07 | 0.21 | 0.03 | -0.01 | 0.01 | 71.42 | 0 | -0.1 | -0.01 | 0.17 | 2.81 | 97.85 |
| 0.02 | -0.06 | 0.54 | 0.34 | 0.14 | 0.05 | 28.67 | 0.02 | 0.06 | 0.03 | 0.06 | 0.04 | 63.03 | 0.12 | 0.19 | -0.16 | 0.01 | 3.18 | 96.28 |
| 0.02 | -0.05 | 0.16 | 0.16 | 0.14 | 0.05 | 34.63 | -0.06 | 0.02 | 0 | 0.1 | 0.08 | 61.56 | 0.06 | -0.1 | 0.07 | 0.01 | 3.8 | 100.65 |
| 0.04 | -0.03 | 2.94 | 1.04 | 0.2 | 0.08 | 27.92 | -0.03 | 0.05 | 0.07 | 0.05 | 0.05 | 61.38 | 0.08 | 0.1 | 0.13 | 2.44 | 97.02 | |
| 0.04 | -0.06 | 0.17 | 0.14 | 0.14 | 0.05 | 35.22 | 0 | 0.45 | 0.07 | -0.01 | 0 | 60.77 | -0.11 | -0.1 | 0.04 | 3.94 | 100.31 | |
| 0.05 | -0.02 | 0.09 | 0.07 | 0.15 | 0.05 | 37.92 | -0.01 | 0 | 0.02 | -0.01 | -0.06 | 59.89 | -0.02 | -0.02 | 0.02 | -0.01 | 4.68 | 102.79 |
| 0.04 | 0.01 | 0.1 | 0.07 | 0.15 | 0.05 | 38.98 | -0.01 | -0.04 | 0 | -0.06 | -0.05 | 59.51 | 0.01 | 0.01 | 0.12 | 0.04 | 3.63 | 102.56 |
| -0.03 | -0.02 | 0.13 | 0.09 | 0.15 | 0.05 | 39.1 | 0.05 | 0.02 | 0.08 | -0.08 | -0.03 | 59.18 | 0.04 | 0.03 | -0.05 | 0.04 | 3.67 | 102.42 |
| 0.01 | 0 | 0.52 | 0.09 | 0.15 | 0.05 | 37.32 | 0.08 | 0.01 | 0 | 0.01 | -0.07 | 59.06 | 0.11 | 0.14 | -0.03 | 0.06 | 3.77 | 101.28 |
| -0.01 | -0.05 | 0.19 | 0.09 | 0.14 | 0.05 | 36.84 | 0.07 | 0.01 | 0.04 | -0.06 | -0.05 | 58.86 | 0.02 | 0.05 | 0.04 | -0.01 | 3.23 | 99.45 |
| -0.01 | -0.03 | 0.42 | 0.16 | 0.15 | 0.05 | 35.81 | 0.07 | 0.01 | 0.07 | 0.07 | -0.01 | 58.71 | -0.03 | -0.08 | 0.11 | -0.03 | 3.8 | 99.24 |
| 0.01 | 0 | 0.28 | 0.1 | 0.15 | 0.05 | 39.91 | 0.04 | 0 | 0.02 | 0.01 | 0.06 | 58.69 | -0.05 | 0.06 | -0.04 | 0.02 | 3.31 | 102.62 |
| 0.03 | -0.04 | 0.38 | 0.07 | 0.13 | 0.05 | 37.78 | 0.02 | 0 | 0.01 | 0.08 | -0.09 | 58.22 | -0.03 | -0.02 | 0.1 | -0.01 | 3.95 | 100.63 |
| 0.05 | -0.02 | 0.35 | 0.12 | 0.16 | 0.06 | 40.8 | 0.08 | 0.02 | 0.08 | -0.01 | -0.04 | 58.19 | 0.07 | -0.01 | 0.1 | -0.01 | 3.81 | 103.8 |
| -0.02 | -0.02 | 0.18 | 0.06 | 0.15 | 0.05 | 42.03 | -0.01 | -0.03 | -0.02 | -0.01 | 0.02 | 58.05 | 0.06 | -0.05 | -0.12 | -0.04 | 3.34 | 103.62 |
| 0.02 | -0.06 | 0.45 | 0.25 | 0.14 | 0.05 | 33.27 | 0.01 | 0.03 | 0.01 | -0.02 | -0.01 | 57.63 | -0.11 | 0 | 0.06 | 0.04 | 4.5 | 96.26 |
| -0.03 | -0.03 | 0.09 | 0.46 | 0.14 | 0.07 | 39.73 | -0.07 | 0.01 | 0.06 | 0.02 | 0.03 | 57.56 | 0.11 | 0.14 | 0.08 | 0.07 | 3.96 | 102.41 |
| 0.04 | -0.03 | 0.68 | 0.69 | 0.14 | 0.12 | 31.98 | -0.07 | 0.03 | 0.04 | -0.09 | -0.01 | 57.5 | -0.01 | -0.01 | 0.08 | 0.03 | 3.76 | 94.87 |
| 0.01 | -0.02 | 0.11 | 0.08 | 0.15 | 0.06 | 42.73 | 0.01 | 0.02 | -0.04 | 0.05 | 0.04 | 56.94 | 0.16 | -0.02 | 0.04 | -0.01 | 3.52 | 103.83 |
| 0.03 | -0.03 | 0.6 | 0.27 | 0.17 | 0.05 | 39.95 | 0.01 | 0.12 | 0.14 | -0.01 | -0.05 | 56.92 | -0.06 | 0.2 | 0.02 | 0.09 | 3.88 | 102.3 |
| 0.02 | -0.04 | 0.22 | 0.08 | 0.15 | 0.05 | 38.43 | -0.01 | 0.04 | 0.01 | 0.01 | -0.01 | 56.85 | 0.08 | 0.06 | 0.09 | -0.04 | 5.25 | 101.24 |
| 0.01 | -0.02 | 0.11 | 0.07 | 0.16 | 0.06 | 44.81 | -0.04 | 0.04 | 0 | -0.11 | 0 | 56.74 | 0.09 | -0.2 | 0.04 | 0.02 | 1.9 | 103.68 |
| 0.03 | -0.03 | 0.34 | 0.06 | 0.15 | 0.05 | 42.3 | -0.01 | 0 | 0.04 | 0.01 | 0.01 | 56.52 | -0.03 | 0.11 | 0.12 | -0.05 | 3.38 | 103 |
| 0.02 | -0.03 | 0.15 | 0.1 | 0.15 | 0.05 | 40.66 | 0.03 | 0 | -0.04 | 0.04 | -0.08 | 56.34 | 0.08 | 0.01 | 0.02 | -0.03 | 3.95 | 101.42 |
| 0.03 | -0.05 | 1.48 | 0.53 | 0.15 | 0.05 | 32.57 | -0.05 | 0.33 | 0.02 | -0.02 | -0.04 | 55.9 | 0.07 | -0.07 | 0.06 | 0.01 | 2.43 | 93.4 |
| 0.02 | -0.03 | 0.34 | 0.18 | 0.16 | 0.05 | 38.02 | -0.02 | 0.04 | -0.06 | 0 | -0.07 | 55.83 | -0.07 | 0.07 | -0.06 | 0.03 | 4.17 | 98.6 |
| -0.02 | -0.03 | 0.14 | 0.25 | 0.16 | 0.06 | 41.93 | 0.11 | 0.01 | -0.03 | 0 | -0.03 | 55.72 | -0.16 | -0.02 | -0.15 | -0.03 | 4.32 | 102.23 |
| 0.03 | -0.02 | 0.08 | 0.08 | 0.15 | 0.06 | 40.68 | -0.1 | 0.01 | 0 | 0 | -0.06 | 55.71 | -0.16 | 0 | -0.04 | 0 | 4.05 | 100.47 |
| 0.03 | -0.01 | 0.77 | 0.27 | 0.19 | 0.06 | 37.74 | -0.07 | 0.16 | -0.01 | 0.08 | -0.04 | 55.6 | -0.05 | 0 | 0.04 | 0.02 | 3.72 | 98.5 |
| 0.01 | 0.16 | 1.27 | 2.8 | 0.15 | 0.29 | 34.08 | 0.04 | -0.01 | 0.03 | 0.02 | 0 | 55.47 | 0.07 | 0 | -0.07 | 0 | 7.14 | 101.45 |
| 0.12 | -0.06 | 0.38 | 0.37 | 0.19 | 0.06 | 36.23 | -0.03 | 0.02 | 0.03 | -0.01 | -0.03 | 55.36 | -0.07 | 0.06 | -0.11 | 0.04 | 3.77 | 96.32 |
| -0.03 | -0.03 | 0.14 | 0.1 | 0.17 | 0.06 | 41.22 | 0.07 | -0.01 | -0.02 | -0.01 | -0.02 | 55.13 | 0.03 | 0.06 | 0.13 | 0.03 | 3.9 | 100.92 |
| 0.01 | -0.01 | 0.23 | 0.13 | 0.15 | 0.05 | 40.46 | 0.05 | 0.02 | -0.05 | -0.03 | 0 | 55 | -0.07 | 0.06 | -0.09 | -0.08 | 3.2 | 99.03 |
| -0.01 | 0 | 0.12 | 0.09 | 0.16 | 0.06 | 43.02 | 0.01 | 0.01 | -0.02 | 0 | -0.1 | 54.53 | -0.09 | 0.04 | 0.07 | -0.01 | 4.05 | 101.93 |
| -0.03 | -0.09 | 0.21 | 4.8 | 0.12 | 0.04 | 25.97 | -0.02 | 0.01 | 0 | -0.02 | -0.08 | 54.46 | -0.21 | -0.25 | -0.04 | 0.01 | 4.22 | 89.1 |
| 0.07 | 0 | 1.58 | 0.82 | 0.21 | 0.07 | 34.21 | -0.01 | 0.37 | 0 | 0.05 | 0.05 | 53.94 | 0 | -0.01 | 0 | -0.04 | 3.35 | 94.66 |
| 0.02 | -0.04 | 0.4 | 0.17 | 0.17 | 0.06 | 39.11 | 0.07 | 0.04 | -0.05 | -0.08 | -0.05 | 53.69 | 0.08 | 0.06 | -0.13 | 0.04 | 5.67 | 99.23 |
| -0.01 | 0.02 | 1.13 | 1.59 | 0.14 | 0.36 | 41.63 | 0.02 | -0.01 | 0.05 | 0.02 | 0.03 | 53.66 | 0.07 | -0.03 | -0.01 | 0.01 | 2.01 | 100.68 |
| 0.03 | -0.04 | 1.79 | 1.88 | 0.22 | 0.07 | 29.75 | 0.48 | 0.48 | 0.04 | 0.08 | 0 | 53.55 | -0.16 | -0.11 | -0.04 | 0.05 | 4.79 | 92.86 |
| 0.04 | -0.05 | 0.19 | 0.15 | 0.15 | 0.05 | 38.58 | 0.11 | 0.02 | -0.03 | -0.08 | -0.1 | 52.67 | -0.05 | 0.07 | -0.1 | -0.01 | 5.38 | 96.99 |
| 0.01 | -0.06 | 0.13 | 0.23 | 0.16 | 0.04 | 36.88 | 0.07 | -0.01 | -0.05 | -0.06 | 0.01 | 51.66 | 0.03 | 0.01 | 0.03 | 0.07 | 4.56 | 93.71 |
| -0.02 | -0.06 | 0.65 | 0.74 | 0.14 | 0.07 | 35.05 | 0.04 | 0.03 | 0 | 0.02 | -0.09 | 48.9 | 0.09 | 0.23 | 0.14 | 0.01 | 3.91 | 89.85 |
| 0 | 0.01 | 1.35 | 2.57 | 0.13 | 0.43 | 33.17 | 0 | 0.01 | 0.04 | -0.02 | -0.03 | 48.57 | -0.12 | -0.01 | -0.06 | -0.02 | 3.11 | 89.13 |
| 0.02 | -0.02 | 1.22 | 0.92 | 0.12 | 0.06 | 35.14 | -0.04 | 0.04 | -0.04 | -0.01 | 0.01 | 46.98 | 0.01 | 0.11 | -0.02 | 0.07 | 4.21 | 88.78 |

| NA | MG | AL | SI | CA | K | FE | Y | P | ZR | TH | U | TI | LA | OE | ND | CR | MIN | SUM |
|-------|-------|-------|-------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| 0.01 | -0.04 | 1.13 | 5.55 | 0.15 | 0.06 | 26.89 | -0.02 | 0.06 | 0 | 0 | 0.01 | 44.48 | -0.24 | -0.18 | -0.12 | 0.01 | 2.79 | 80.54 |
| -0.01 | 0.04 | 2.07 | 7.41 | 0.12 | 0.17 | 27.66 | -0.02 | 0.09 | 0.09 | 0.08 | -0.02 | 44.38 | -0.06 | -0.05 | 0 | -0.04 | 2.57 | 84.48 |
| 0.05 | 0.21 | 13.28 | 14.45 | 0.33 | 0.38 | 12.7 | -0.05 | 0.93 | 0.02 | 0 | 0.07 | 41.37 | 0.16 | -0.02 | -0.02 | 0.07 | -0.04 | 83.89 |
| 0.01 | 0.01 | 1.09 | 8.39 | 0.3 | 0.07 | 23.61 | 1.59 | 0.53 | 14.13 | 0.24 | 0.06 | 40.84 | -0.02 | 0.12 | 0.07 | 0.02 | 3.09 | 94.15 |
| 0.01 | -0.08 | 0.86 | 17.81 | 0.1 | 0.04 | 18.89 | 0.02 | 0.06 | 0.02 | 0.04 | 0 | 31.88 | -0.2 | -0.04 | -0.09 | -0.03 | 1.85 | 71.14 |
| 0.31 | -0.03 | 3.25 | 66.91 | 0.03 | 0.37 | 0.5 | 0.05 | 0.03 | 0.1 | -0.01 | -0.03 | 27.58 | -0.06 | 0.11 | -0.04 | 0.03 | 0.05 | 99.15 |
| -0.15 | 0.05 | 0.06 | 31.8 | 0.2 | 0.07 | 0.41 | 0.24 | -0.22 | 67.16 | -0.14 | -0.02 | 10.12 | -0.13 | -0.07 | 0.05 | 0.06 | 0.03 | 99.52 |
| -0.16 | 0.04 | 0.06 | 31.57 | 0.21 | 0.07 | 0.37 | 0.18 | -0.09 | 65.87 | 0 | 0.01 | 15.15 | -0.11 | 0.06 | 0.03 | 0.04 | -0.1 | 98.2 |
| -0.14 | 0.04 | 0.05 | 31.39 | 0.2 | 0.07 | 0.47 | 0.26 | -0.08 | 65.11 | -0.02 | -0.02 | 0.27 | 0.09 | 0.2 | 0.06 | 0.01 | -0.06 | 97.9 |
| -0.02 | 0.04 | 0.15 | 32.74 | 0.21 | 0.07 | 0.46 | 0.19 | -0.14 | 64.92 | 0.04 | 0.04 | 0.02 | 0.05 | 0.08 | -0.01 | 0.02 | 0.01 | 98.79 |
| -0.07 | 0.05 | 0.05 | 32.89 | 0.21 | 0.07 | 0.37 | 0.06 | -0.11 | 64.89 | 0.06 | -0.02 | 0.09 | 0.02 | -0.02 | 0.12 | 0.06 | -0.03 | 98.69 |
| -0.15 | 0.05 | 0.11 | 31.13 | 0.2 | 0.07 | 0.37 | 0.2 | -0.23 | 64.77 | 0.01 | -0.03 | 0.03 | 0.06 | 0.04 | 0.05 | 0.06 | 0.01 | 96.75 |
| -0.07 | 0.04 | 0.07 | 33.22 | 0.2 | 0.07 | 0.51 | 0.09 | -0.28 | 64.67 | -0.01 | 0.04 | 0.14 | -0.13 | -0.01 | 0.09 | 0 | 0.07 | 98.71 |
| -0.03 | 0.05 | 0.05 | 32.84 | 0.21 | 0.07 | 0.31 | 0.08 | -0.15 | 64.33 | -0.04 | 0.18 | 0.04 | -0.14 | -0.05 | 0.05 | 0.08 | 0.04 | 97.92 |
| -0.02 | 0.06 | 0.07 | 32.79 | 0.21 | 0.07 | 0.39 | 0.13 | -0.21 | 64.25 | -0.09 | 0.01 | 0.2 | -0.13 | -0.17 | 0.02 | -0.01 | 0.02 | 97.59 |
| -0.04 | 0.05 | 0.18 | 32.25 | 0.22 | 0.07 | 0.59 | 0.24 | -0.06 | 63.74 | 0.07 | 0.02 | 0.12 | -0.09 | 0.21 | -0.15 | 0.02 | -0.02 | 97.62 |
| -0.06 | 0.06 | 0.26 | 32.53 | 0.22 | 0.07 | 0.43 | 0.38 | 0.05 | 63.69 | 0.07 | 0.02 | 0.16 | -0.07 | -0.01 | -0.02 | 0.02 | 0.06 | 97.86 |
| -0.06 | 0.06 | 0.31 | 32.65 | 0.21 | 0.08 | 0.47 | 0.05 | -0.07 | 63.48 | 0.02 | 0 | 0.25 | -0.08 | -0.05 | 0.12 | -0.13 | 0.05 | 97.36 |
| -0.06 | 0.05 | 0.08 | 32.46 | 0.2 | 0.08 | 0.41 | 0.06 | -0.13 | 63.46 | 0.06 | 0.06 | 0.04 | 0.01 | 0.07 | -0.04 | -0.02 | 0.02 | 96.81 |
| -0.08 | 0.04 | 0.08 | 32.8 | 0.21 | 0.07 | 0.41 | 0.12 | -0.17 | 63.26 | 0.04 | 0.13 | 0.18 | -0.24 | 0.36 | -0.02 | 0.07 | -0.03 | 97.24 |
| -0.05 | 0.05 | 0.16 | 31.92 | 1.14 | 0.07 | 0.55 | 0.21 | 0.48 | 62.44 | 0.06 | -0.01 | 0.16 | -0.02 | 0.05 | -0.16 | -0.03 | 0.08 | 97.1 |
| -0.04 | 0.06 | 0.4 | 31.65 | 0.27 | 0.1 | 0.66 | 0.42 | 0.26 | 62.24 | 0.07 | 0.19 | 0.35 | -0.07 | -0.02 | 0.11 | 0.02 | -0.02 | 96.65 |
| -0.02 | 0.04 | 0.15 | 32.06 | 0.27 | 0.08 | 0.65 | 0.44 | 0 | 62.05 | -0.04 | 0.23 | 0.19 | 0.05 | -0.15 | 0.02 | 0.03 | 0.01 | 96.06 |
| -0.06 | 0.05 | 0.08 | 32.4 | 0.22 | 0.08 | 0.54 | 0.31 | 0.01 | 61.91 | 0.01 | 0.04 | 0.1 | 0.22 | -0.11 | -0.12 | -0.01 | -0.04 | 95.63 |
| -0.1 | 0.04 | 0.32 | 31.65 | 0.21 | 0.08 | 0.63 | 0.07 | -0.21 | 61.8 | -0.12 | 0.12 | 0.13 | 0.15 | 0.01 | -0.19 | -0.03 | 0.02 | 94.58 |
| -0.02 | 0.05 | 0.18 | 32.39 | 0.22 | 0.08 | 0.4 | 0.16 | -0.14 | 61.79 | -0.05 | 0.25 | 0.14 | 0.08 | -0.09 | -0.06 | 0.09 | 0.06 | 95.53 |
| -0.04 | 0.05 | 0.17 | 31.97 | 0.23 | 0.08 | 0.47 | 0.41 | 0.3 | 61.08 | 0.08 | 0.25 | 0.12 | -0.02 | -0.01 | -0.2 | 0.03 | -0.07 | 94.85 |
| -0.02 | 0.04 | 0.33 | 31.45 | 0.22 | 0.07 | 0.97 | 0.47 | 0.16 | 60.06 | 0.09 | 0.12 | 0.38 | 0.12 | 0.24 | -0.01 | 0 | -0.03 | 94.66 |
| -0.07 | 0.09 | 0.98 | 27.37 | 0.44 | 0.07 | 1.5 | 0.95 | 0.24 | 59.87 | 0.07 | 0.22 | 0.44 | -0.1 | 0.1 | 0.14 | -0.08 | 0.11 | 92.34 |
| -0.05 | 0.16 | 0.15 | 31.94 | 0.46 | 0.07 | 0.76 | 0.01 | -0.19 | 59.8 | 0.03 | 0.06 | 0.06 | 0.02 | 0.13 | -0.02 | -0.04 | -0.01 | 93.34 |
| 0.02 | 0.12 | 2.04 | 22.06 | 0.54 | 0.23 | 2.07 | 1.12 | 0.69 | 41 | 0.01 | 0.35 | 0.65 | 0.07 | 0.09 | 0.24 | 0 | 0.12 | 71.42 |
| -0.08 | 0.03 | 0.25 | 0.39 | 0.38 | 0.13 | 0.56 | 0.3 | 31.35 | -0.34 | 0.46 | -0.09 | 0.1 | 13.84 | 36.42 | 15.13 | -0.82 | -0.17 | 97.84 |
| -0.02 | 0.05 | 0.11 | 1.08 | 0.69 | 0.15 | 0.57 | 0.22 | 31.48 | -0.39 | 4.62 | -0.48 | 0.05 | 14.65 | 35.98 | 14.26 | -0.81 | -0.13 | 102.08 |
| -0.13 | 0.05 | 0.11 | 0.89 | 0.53 | 0.14 | 0.52 | 0.13 | 31.42 | -0.4 | 2.62 | -0.13 | 0.03 | 14.83 | 34.54 | 14.86 | -0.67 | -0.15 | 99.19 |
| -0.04 | 0.05 | 0.08 | 1.7 | 1.2 | 0.16 | 0.71 | 0.91 | 30.05 | -0.15 | 8.7 | -0.74 | 0.3 | 10.57 | 29.43 | 14.62 | -0.48 | -0.11 | 96.96 |
| -0.07 | 0.06 | 0.12 | 0.81 | 1.2 | 0.15 | 0.58 | 0.77 | 31.4 | -0.26 | 3.19 | 1.44 | 0.14 | 7.66 | 28.43 | 18.83 | -0.48 | -0.14 | 93.83 |
| -0.06 | 0.04 | 0.6 | 1.35 | 0.97 | 0.14 | 1.84 | 0.91 | 27.84 | -0.27 | 5.63 | -0.33 | 0.15 | 8.96 | 26.94 | 15.11 | -0.37 | -0.21 | 89.24 |
| -0.01 | 0.07 | 0.13 | 1.61 | 2.33 | 0.18 | 0.58 | 1.22 | 30.29 | -0.38 | 10.91 | 1.4 | 0.07 | 6.4 | 24.13 | 15.65 | -0.28 | -0.05 | 94.25 |
| 0 | 0.12 | 0.88 | 1.65 | 0.25 | 0.31 | 0.64 | 36.91 | 32.23 | -0.83 | 0.05 | 0.54 | 0.31 | -0.03 | 0.07 | 0.07 | 0 | -0.01 | 73.16 |
| 0.03 | 0.53 | 4.57 | 7.75 | 0.26 | 1.97 | 1.76 | 30.96 | 29.15 | -0.29 | 0.14 | 0.11 | 0.36 | -0.12 | -0.12 | -0.01 | 0.08 | -0.1 | 77.03 |

SAMPLE 7

| NA | MG | AL | SI | CA | K | FE | Y | P | ZR | TH | U | TI | LA | CE | ND | CR | MN | sum |
|-------|-------|------|------|------|------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|--------|
| 0.07 | -0.04 | 0.34 | 0.62 | 0.28 | 0.05 | 0.70 | -0.01 | 0.01 | 0.04 | -0.01 | -0.03 | 100.40 | -0.15 | -0.03 | -0.08 | 0.06 | 0.12 | 102.34 |
| 0.10 | -0.04 | 0.61 | 0.53 | 0.24 | 0.07 | 1.05 | -0.04 | 0.10 | -0.03 | -0.01 | 0.04 | 97.12 | 0.09 | 0.01 | 0.04 | 0.04 | -0.03 | 99.89 |
| 0.00 | -0.02 | 1.26 | 1.52 | 0.24 | 0.10 | 1.06 | -0.02 | -0.01 | 0.17 | -0.05 | 0.04 | 96.28 | -0.02 | 0.02 | 0.05 | -0.01 | -0.04 | 100.57 |
| 0.02 | -0.05 | 0.11 | 0.33 | 0.20 | 0.06 | 12.19 | 0.06 | 0.01 | 0.03 | 0.02 | 0.02 | 86.94 | -0.10 | 0.14 | 0.07 | -0.02 | 0.89 | 100.92 |
| -0.03 | -0.03 | 0.12 | 5.78 | 0.15 | 0.07 | 22.58 | 0.06 | 0.03 | 0.02 | -0.07 | 0.00 | 72.83 | -0.05 | 0.15 | 0.02 | 0.02 | 3.61 | 105.26 |
| 0.03 | -0.04 | 0.30 | 0.55 | 0.16 | 0.07 | 37.09 | 0.01 | 0.02 | -0.04 | -0.02 | -0.02 | 61.00 | 0.00 | -0.16 | -0.05 | 0.00 | 0.76 | 99.66 |
| 0.10 | -0.04 | 0.10 | 0.09 | 0.15 | 0.06 | 37.36 | -0.05 | 0.02 | -0.03 | -0.10 | -0.05 | 60.43 | -0.11 | -0.05 | -0.06 | -0.02 | 3.01 | 100.81 |
| 0.03 | 0.00 | 0.21 | 0.07 | 0.15 | 0.06 | 38.04 | 0.01 | 0.02 | -0.07 | -0.08 | -0.11 | 59.31 | -0.09 | -0.08 | 0.02 | 0.03 | 3.60 | 101.12 |
| 0.01 | -0.03 | 0.09 | 0.12 | 0.15 | 0.05 | 40.73 | 0.11 | -0.04 | -0.05 | -0.04 | -0.03 | 59.30 | 0.15 | 0.02 | -0.08 | -0.05 | 2.36 | 102.77 |
| 0.09 | -0.02 | 1.06 | 0.24 | 0.21 | 0.06 | 34.73 | 0.03 | 0.15 | 0.04 | 0.06 | 0.02 | 58.67 | -0.13 | -0.14 | 0.16 | 0.09 | 2.71 | 97.71 |
| 0.10 | -0.04 | 0.37 | 0.36 | 0.18 | 0.08 | 39.42 | -0.01 | 0.07 | 0.01 | -0.10 | 0.02 | 58.50 | 0.09 | -0.13 | 0.09 | 0.03 | 1.33 | 100.39 |
| 0.03 | -0.02 | 0.24 | 0.08 | 0.15 | 0.06 | 37.79 | 0.03 | 0.03 | 0.02 | 0.04 | 0.03 | 58.38 | -0.12 | 0.00 | -0.08 | -0.04 | 4.20 | 100.82 |
| 0.02 | -0.05 | 0.12 | 0.08 | 0.15 | 0.06 | 41.98 | -0.05 | 0.06 | -0.03 | 0.00 | 0.01 | 58.29 | -0.18 | -0.01 | 0.00 | 0.00 | 2.97 | 103.42 |
| 0.11 | 0.22 | 6.86 | 7.00 | 0.44 | 0.21 | 9.25 | 0.06 | 1.72 | 0.01 | 0.01 | -0.04 | 58.17 | -0.06 | 0.14 | -0.03 | 0.00 | 0.09 | 84.16 |
| 0.06 | -0.04 | 0.28 | 0.12 | 0.15 | 0.06 | 38.12 | -0.01 | 0.07 | 0.01 | 0.02 | -0.01 | 57.98 | -0.06 | 0.03 | -0.03 | -0.01 | 3.43 | 100.17 |
| 0.02 | -0.01 | 0.11 | 0.09 | 0.15 | 0.05 | 39.41 | -0.02 | 0.01 | 0.08 | -0.02 | -0.04 | 57.92 | 0.10 | -0.08 | 0.03 | 0.02 | 4.46 | 102.28 |
| 0.04 | -0.04 | 0.20 | 0.10 | 0.17 | 0.07 | 43.09 | 0.03 | 0.01 | 0.00 | 0.09 | -0.04 | 57.89 | -0.09 | 0.16 | 0.02 | -0.02 | 3.70 | 105.38 |
| 0.01 | -0.04 | 0.36 | 0.14 | 0.16 | 0.06 | 40.91 | 0.00 | 0.01 | -0.02 | 0.01 | 0.01 | 57.77 | 0.11 | 0.01 | 0.11 | -0.03 | 2.29 | 101.87 |
| 0.06 | -0.05 | 0.22 | 0.21 | 0.22 | 0.07 | 37.17 | 0.05 | 0.06 | -0.01 | 0.00 | -0.02 | 57.48 | -0.05 | -0.02 | -0.10 | -0.07 | 4.36 | 99.58 |
| 0.03 | -0.03 | 0.13 | 0.10 | 0.18 | 0.06 | 40.47 | 0.04 | 0.06 | -0.01 | -0.03 | -0.03 | 57.40 | -0.13 | -0.09 | -0.03 | 0.05 | 3.78 | 101.95 |
| 0.08 | -0.04 | 0.07 | 0.08 | 0.16 | 0.06 | 39.83 | -0.01 | 0.02 | 0.06 | -0.12 | -0.05 | 57.16 | -0.15 | 0.06 | 0.13 | 0.01 | 4.10 | 101.45 |
| 0.04 | -0.05 | 0.20 | 0.16 | 0.21 | 0.06 | 39.57 | -0.01 | 0.10 | 0.01 | 0.03 | 0.03 | 56.84 | -0.04 | -0.03 | 0.03 | 0.05 | 4.25 | 101.37 |
| 0.07 | -0.06 | 0.17 | 0.21 | 0.14 | 0.07 | 26.21 | 0.00 | 0.07 | -0.01 | -0.03 | -0.01 | 56.76 | 0.10 | 0.15 | 0.01 | 0.01 | 2.74 | 86.60 |
| 0.09 | -0.03 | 0.67 | 0.75 | 0.17 | 0.08 | 37.52 | 0.14 | 0.02 | 0.00 | 0.04 | -0.01 | 56.48 | -0.06 | -0.03 | 0.05 | -0.02 | 1.73 | 97.59 |
| 0.02 | -0.03 | 0.21 | 0.09 | 0.16 | 0.07 | 39.90 | -0.02 | 0.02 | 0.03 | -0.01 | 0.03 | 56.41 | 0.08 | -0.03 | -0.02 | 0.06 | 4.26 | 101.23 |
| 0.41 | 0.01 | 0.20 | 0.11 | 0.16 | 0.15 | 36.09 | -0.01 | 0.07 | 0.04 | 0.00 | -0.06 | 56.29 | -0.06 | -0.12 | -0.02 | 0.11 | 3.91 | 97.28 |
| 0.09 | -0.04 | 0.18 | 0.11 | 0.17 | 0.07 | 44.69 | -0.03 | -0.06 | 0.10 | -0.04 | -0.04 | 55.77 | -0.10 | -0.19 | -0.02 | 0.00 | 2.67 | 103.33 |
| 0.00 | -0.04 | 0.16 | 0.12 | 0.15 | 0.06 | 40.02 | -0.03 | 0.06 | -0.06 | -0.01 | 0.02 | 55.76 | -0.15 | -0.10 | 0.01 | 0.00 | 5.55 | 101.52 |
| 0.18 | 0.00 | 1.29 | 0.45 | 0.19 | 0.12 | 38.34 | -0.02 | 0.08 | 0.00 | 0.00 | 0.00 | 55.70 | 0.00 | -0.16 | 0.04 | 0.00 | 3.27 | 99.48 |
| 0.01 | -0.01 | 0.13 | 0.67 | 0.17 | 0.09 | 41.02 | -0.02 | 0.00 | 0.02 | 0.00 | -0.02 | 55.68 | 0.00 | -0.10 | 0.07 | -0.04 | 4.75 | 102.40 |
| 0.04 | -0.02 | 0.28 | 0.09 | 0.15 | 0.06 | 43.82 | -0.03 | -0.04 | -0.02 | 0.02 | 0.00 | 55.02 | 0.02 | 0.16 | -0.04 | 0.00 | 3.25 | 102.76 |
| 0.01 | -0.03 | 0.32 | 0.11 | 0.17 | 0.06 | 43.09 | 0.07 | 0.02 | 0.04 | 0.00 | -0.09 | 54.95 | 0.05 | -0.28 | -0.11 | -0.03 | 4.38 | 102.73 |
| -0.01 | -0.03 | 0.25 | 0.14 | 0.16 | 0.06 | 41.41 | 0.05 | 0.08 | 0.00 | -0.01 | 0.07 | 54.88 | -0.21 | 0.17 | -0.21 | -0.04 | 3.56 | 100.32 |
| 0.03 | -0.04 | 0.17 | 0.15 | 0.16 | 0.07 | 41.79 | 0.05 | 0.08 | -0.03 | 0.04 | -0.08 | 54.78 | -0.04 | -0.13 | 0.02 | 0.00 | 4.54 | 101.56 |
| 0.07 | 0.03 | 1.68 | 2.53 | 0.17 | 0.10 | 38.06 | -0.02 | 0.05 | 0.04 | -0.02 | 0.00 | 54.69 | -0.12 | 0.19 | -0.02 | -0.07 | 2.89 | 100.25 |
| 0.04 | -0.01 | 0.44 | 0.45 | 0.18 | 0.11 | 39.29 | 0.01 | 0.01 | 0.08 | 0.00 | -0.07 | 54.61 | 0.09 | 0.04 | 0.02 | 0.00 | 3.69 | 98.98 |
| 0.03 | -0.04 | 0.41 | 0.94 | 0.69 | 0.06 | 42.07 | 0.08 | 0.09 | -0.06 | -0.02 | -0.04 | 54.41 | 0.17 | -0.05 | -0.01 | -0.01 | 2.69 | 101.41 |
| 0.03 | -0.05 | 0.98 | 1.20 | 0.17 | 0.13 | 41.92 | 0.09 | 0.03 | -0.03 | 0.01 | -0.06 | 54.37 | -0.11 | 0.03 | -0.05 | -0.03 | 1.51 | 100.14 |
| 0.02 | -0.03 | 0.27 | 0.16 | 0.17 | 0.07 | 46.42 | 0.05 | 0.06 | 0.00 | -0.06 | 0.02 | 54.36 | -0.10 | -0.08 | -0.02 | -0.05 | 1.06 | 102.32 |
| -0.01 | -0.04 | 0.23 | 0.27 | 0.16 | 0.06 | 41.11 | 0.15 | 0.04 | 0.02 | -0.13 | 0.10 | 52.94 | -0.16 | 0.20 | -0.08 | 0.03 | 2.86 | 97.75 |
| 0.06 | -0.04 | 0.22 | 6.93 | 0.37 | 0.08 | 39.55 | -0.04 | 0.00 | 0.00 | -0.06 | -0.05 | 51.70 | -0.09 | 0.03 | 0.06 | 0.01 | 2.28 | 101.01 |
| 0.05 | 0.01 | 1.84 | 1.34 | 0.16 | 0.09 | 35.93 | -0.05 | 0.12 | -0.05 | 0.00 | 0.03 | 50.46 | -0.07 | -0.05 | -0.02 | -0.02 | 3.64 | 93.58 |
| 0.03 | -0.08 | 0.45 | 0.38 | 0.14 | 0.06 | 28.95 | -0.01 | 0.03 | 0.20 | -0.06 | 0.01 | 47.04 | -0.02 | -0.05 | -0.01 | 0.06 | 3.48 | 80.55 |
| 0.08 | -0.04 | 0.41 | 0.29 | 0.16 | 0.08 | 34.87 | -0.02 | 0.02 | 0.12 | 0.00 | 0.03 | 45.34 | 0.06 | -0.03 | 0.03 | -0.04 | 3.62 | 84.98 |
| 0.06 | 0.05 | 4.22 | 4.13 | 0.18 | 0.20 | 15.56 | -0.06 | 0.35 | 0.05 | -0.03 | -0.02 | 43.89 | 0.06 | -0.11 | 0.00 | 0.04 | 1.51 | 70.08 |
| 0.02 | -0.05 | 1.49 | 1.30 | 0.17 | 0.07 | 30.52 | -0.04 | 0.24 | -0.04 | 0.05 | -0.06 | 40.66 | 0.02 | -0.09 | -0.07 | 0.06 | 3.76 | 78.01 |

| NA | MG | AL | SI | CA | K | FE | Y | P | ZR | TH | U | TI | LA | CE | ND | CR | MN | sum |
|-------|-------|------|-------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| 0.21 | 0.05 | 8.90 | 15.82 | 0.18 | 0.17 | 4.88 | -0.04 | 0.56 | -0.02 | 0.02 | 0.05 | 37.97 | 0.12 | 0.16 | 0.01 | 0.10 | 0.05 | 69.19 |
| 0.06 | -0.12 | 0.37 | 0.66 | 0.08 | 0.05 | 26.16 | 0.02 | 0.04 | 0.04 | -0.05 | -0.02 | 33.32 | 0.14 | 0.05 | -0.05 | 0.02 | 0.54 | 61.31 |
| 0.03 | -0.05 | 0.73 | 8.93 | 0.10 | 0.05 | 21.51 | 0.07 | 0.04 | 0.02 | 0.10 | -0.07 | 32.78 | -0.05 | -0.07 | -0.04 | 0.03 | 1.75 | 65.86 |
| -0.01 | 0.05 | 0.08 | 33.20 | 0.23 | 0.08 | 4.00 | 0.11 | -0.09 | 67.18 | 0.03 | 0.06 | 0.26 | 0.05 | 0.11 | -0.06 | -0.06 | -0.02 | 101.68 |
| -0.01 | 0.05 | 0.07 | 33.68 | 0.23 | 0.09 | 0.37 | 0.11 | -0.20 | 66.87 | 0.01 | -0.04 | 0.12 | -0.06 | 0.07 | -0.01 | 0.00 | 0.06 | 101.41 |
| -0.05 | 0.05 | 0.07 | 31.72 | 0.21 | 0.08 | 0.38 | 0.18 | -0.09 | 66.50 | -0.02 | -0.05 | 0.40 | -0.08 | 0.13 | -0.03 | -0.03 | 0.05 | 99.49 |
| 0.04 | 0.06 | 0.05 | 33.24 | 0.21 | 0.08 | 0.44 | 0.07 | -0.08 | 66.39 | -0.05 | 0.06 | 0.15 | -0.13 | -0.02 | 0.03 | 0.00 | 0.03 | 100.51 |
| 0.06 | 0.05 | 0.07 | 32.78 | 0.21 | 0.09 | 0.57 | 0.14 | -0.16 | 66.10 | 0.06 | -0.04 | 0.27 | -0.27 | 0.07 | -0.02 | 0.00 | 0.02 | 100.00 |
| -0.05 | 0.05 | 0.06 | 33.37 | 0.22 | 0.10 | 0.44 | 0.16 | -0.10 | 65.87 | 0.07 | 0.11 | 0.02 | 0.24 | -0.01 | -0.10 | -0.06 | 0.05 | 100.42 |
| 0.02 | 0.06 | 0.07 | 33.22 | 0.22 | 0.10 | 0.45 | 0.30 | -0.10 | 65.57 | -0.01 | 0.07 | 0.15 | 0.04 | -0.16 | -0.12 | -0.01 | -0.04 | 99.83 |
| -0.13 | 0.05 | 0.79 | 31.65 | 0.21 | 0.08 | 0.51 | 0.26 | -0.18 | 65.46 | -0.05 | 0.12 | 0.02 | -0.06 | 0.19 | 0.03 | -0.01 | 0.00 | 98.94 |
| 0.02 | 0.05 | 0.09 | 33.07 | 0.22 | 0.08 | 0.47 | 0.17 | -0.14 | 65.39 | -0.01 | 0.14 | 0.26 | -0.13 | 0.12 | 0.08 | 0.04 | -0.06 | 99.86 |
| 0.02 | 0.06 | 0.15 | 33.04 | 0.23 | 0.12 | 0.44 | 0.33 | -0.08 | 65.28 | 0.10 | 0.05 | 0.18 | 0.01 | 0.01 | -0.05 | 0.00 | 0.03 | 99.92 |
| 0.03 | 0.06 | 0.15 | 32.64 | 0.23 | 0.10 | 0.49 | 0.11 | -0.10 | 64.94 | 0.10 | 0.06 | 0.17 | 0.15 | -0.05 | 0.11 | 0.00 | -0.03 | 99.16 |
| -0.01 | 0.06 | 0.11 | 32.68 | 0.23 | 0.08 | 0.45 | 0.33 | 0.11 | 64.66 | 0.01 | 0.14 | 0.07 | 0.03 | -0.14 | -0.01 | 0.02 | -0.07 | 98.75 |
| 0.06 | 0.06 | 0.15 | 33.33 | 0.23 | 0.12 | 0.45 | 0.20 | -0.12 | 64.65 | -0.03 | 0.01 | 0.24 | 0.11 | 0.22 | -0.09 | -0.01 | 0.03 | 99.51 |
| 0.03 | 0.07 | 0.12 | 32.86 | 0.22 | 0.08 | 0.75 | 0.68 | 0.06 | 64.43 | 0.07 | 0.12 | 0.17 | -0.20 | -0.02 | -0.02 | -0.09 | 0.04 | 99.37 |
| -0.11 | 0.08 | 0.40 | 30.78 | 0.21 | 0.09 | 0.83 | 0.16 | -0.14 | 64.36 | -0.02 | 0.02 | 0.58 | 0.23 | 0.10 | -0.05 | -0.03 | 0.06 | 97.55 |
| 0.01 | 0.05 | 0.24 | 31.85 | 0.28 | 0.08 | 0.56 | 0.30 | 0.00 | 64.31 | 0.10 | 0.18 | 0.20 | -0.05 | -0.07 | 0.05 | -0.03 | 0.06 | 98.12 |
| 0.02 | 0.05 | 0.21 | 32.02 | 0.21 | 0.10 | 0.69 | -0.02 | -0.09 | 64.30 | 0.02 | 0.11 | 0.44 | 0.00 | 0.02 | 0.01 | 0.02 | -0.01 | 98.10 |
| 0.01 | 0.05 | 0.33 | 32.47 | 0.24 | 0.08 | 0.56 | 0.28 | 0.00 | 64.07 | 0.00 | 0.15 | 0.20 | 0.14 | 0.02 | 0.01 | 0.05 | -0.03 | 98.63 |
| -0.02 | 0.04 | 0.45 | 32.01 | 0.33 | 0.11 | 0.58 | 0.13 | -0.09 | 64.05 | 0.11 | 0.06 | 0.18 | 0.09 | 0.20 | 0.15 | 0.04 | -0.05 | 98.37 |
| -0.12 | 0.05 | 0.12 | 31.34 | 0.24 | 0.08 | 0.47 | 0.53 | 0.01 | 64.00 | 0.05 | 0.20 | 0.15 | 0.11 | 0.17 | -0.15 | -0.08 | 0.02 | 97.19 |
| -0.03 | 0.06 | 0.17 | 32.21 | 0.25 | 0.09 | 0.56 | 0.10 | -0.03 | 63.54 | 0.06 | 0.15 | 0.14 | -0.09 | 0.18 | -0.11 | -0.06 | -0.08 | 97.11 |
| 0.06 | 0.04 | 0.17 | 31.67 | 0.23 | 0.11 | 0.75 | 0.14 | -0.13 | 63.26 | 0.03 | -0.08 | 0.15 | 0.07 | 0.07 | 0.03 | -0.05 | 0.05 | 96.57 |
| 0.06 | 0.05 | 0.22 | 31.72 | 0.24 | 0.10 | 0.57 | 0.23 | 0.00 | 61.52 | 0.01 | 0.11 | 0.16 | 0.09 | 0.17 | 0.11 | 0.05 | 0.01 | 95.42 |
| -0.01 | 0.09 | 0.68 | 30.40 | 0.42 | 0.10 | 1.29 | 1.46 | 0.70 | 61.21 | 0.16 | 0.34 | 0.20 | -0.03 | -0.06 | 0.09 | -0.02 | -0.04 | 96.98 |
| 0.05 | 0.05 | 1.17 | 33.70 | 0.28 | 0.77 | 0.42 | 0.05 | -0.21 | 60.83 | 0.07 | 0.00 | 0.16 | 0.04 | 0.07 | -0.01 | 0.00 | 0.01 | 97.45 |
| 0.04 | 0.05 | 0.69 | 29.32 | 0.18 | 0.11 | 0.60 | 0.12 | -0.23 | 58.64 | -0.04 | 0.16 | 0.10 | -0.20 | -0.04 | 0.02 | 0.00 | 0.01 | 89.53 |
| 0.02 | 0.04 | 0.26 | 29.97 | 0.25 | 0.10 | 0.59 | 0.35 | 0.03 | 58.14 | 0.07 | 0.07 | 0.13 | 0.00 | 0.00 | 0.09 | 0.03 | 0.04 | 90.18 |
| 0.00 | 0.00 | 0.23 | 26.75 | 0.18 | 0.08 | 0.41 | 0.27 | -0.07 | 53.57 | 0.01 | -0.06 | 0.12 | 0.02 | 0.00 | 0.08 | 0.04 | 0.02 | 81.65 |
| -0.02 | 0.02 | 0.14 | 48.62 | 0.16 | 0.07 | 0.40 | 0.16 | -0.14 | 49.98 | 0.05 | 0.00 | 0.27 | -0.19 | 0.20 | -0.13 | 0.01 | 0.00 | 99.60 |
| 0.01 | -0.01 | 0.07 | 24.90 | 0.14 | 0.06 | 0.34 | 0.08 | -0.20 | 49.81 | 0.02 | 0.07 | 0.19 | -0.05 | 0.02 | -0.11 | 0.00 | 0.01 | 75.35 |
| -0.01 | 0.00 | 0.17 | 25.14 | 0.15 | 0.06 | 0.47 | 0.02 | -0.10 | 47.12 | 0.14 | -0.04 | 0.10 | 0.12 | -0.07 | 0.12 | 0.00 | -0.15 | 73.24 |
| 0.04 | -0.04 | 0.19 | 19.03 | 0.10 | 0.04 | 0.48 | 0.13 | -0.02 | 40.60 | -0.06 | -0.01 | 0.15 | 0.00 | -0.02 | 0.02 | 0.04 | 0.04 | 60.71 |
| -0.05 | 0.04 | 0.19 | 1.45 | 0.69 | 0.15 | 0.64 | 0.35 | 30.07 | -0.35 | 5.58 | -0.70 | 0.09 | 13.95 | 35.57 | 13.16 | -0.80 | -0.11 | 99.92 |
| -0.05 | 0.06 | 0.15 | 0.58 | 0.44 | 0.15 | 0.61 | 0.67 | 31.26 | -0.18 | 1.00 | -0.10 | -0.01 | 15.38 | 32.85 | 14.76 | -0.71 | -0.11 | 96.75 |
| -0.10 | 0.05 | 0.12 | 1.24 | 0.55 | 0.15 | 0.60 | 0.76 | 29.59 | -0.15 | 4.75 | -0.52 | 0.28 | 15.36 | 31.87 | 12.98 | -0.76 | -0.16 | 96.61 |
| -0.02 | 0.05 | 0.31 | 2.51 | 0.68 | 0.17 | 0.68 | 0.25 | 28.25 | -0.26 | 9.93 | -1.16 | 0.13 | 13.34 | 31.68 | 13.34 | -0.76 | -0.11 | 99.01 |
| -0.01 | 0.04 | 0.21 | 2.05 | 0.67 | 0.16 | 1.04 | 0.47 | 27.22 | -0.15 | 8.68 | -1.09 | 0.12 | 12.60 | 31.67 | 12.86 | -0.58 | -0.12 | 95.84 |
| -0.12 | 0.03 | 0.20 | 1.03 | 0.73 | 0.14 | 0.61 | 0.37 | 28.62 | -0.17 | 4.26 | -0.42 | 0.04 | 13.93 | 31.38 | 13.13 | -0.69 | -0.12 | 92.95 |
| -0.04 | 0.04 | 0.21 | 2.33 | 0.61 | 0.16 | 1.10 | 0.25 | 26.48 | -0.28 | 9.20 | -1.03 | 0.14 | 12.58 | 31.00 | 11.87 | -0.69 | -0.22 | 93.71 |
| 0.01 | 0.13 | 1.19 | 2.78 | 0.55 | 0.42 | 2.73 | 3.92 | 28.33 | -0.10 | 0.39 | 0.01 | 3.63 | 13.74 | 29.15 | 11.45 | -0.65 | 0.01 | 97.69 |
| 0.02 | 0.12 | 0.18 | 2.52 | 0.32 | 0.10 | 0.58 | 39.32 | 32.09 | 3.07 | 0.06 | 0.31 | 0.17 | 0.21 | 0.13 | -0.15 | -0.02 | -0.04 | 78.99 |

SAMPLE 8

| NA | MG | AL | SI | CA | K | FE | Y | P | ZR | TH | U | TI | LA | CE | ND | OR | MIN | sum |
|-------|-------|------|-------|------|------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|--------|
| 0.04 | -0.06 | 0.09 | 0.24 | 0.29 | 0.03 | 2.18 | 0.02 | 0.01 | 0.14 | 0.04 | -0.02 | 103.80 | 0.20 | 0.01 | -0.10 | 0.01 | 0.24 | 107.16 |
| 0.01 | -0.05 | 0.25 | 0.18 | 0.19 | 0.04 | 8.94 | -0.04 | 0.04 | 0.00 | -0.05 | -0.05 | 89.03 | -0.02 | -0.05 | 0.07 | 0.03 | 1.04 | 99.56 |
| 0.08 | 0.05 | 4.34 | 1.77 | 0.56 | 0.05 | 6.37 | -0.05 | 1.06 | 0.10 | 0.03 | 0.00 | 71.16 | 0.00 | 0.12 | -0.08 | 0.18 | 5.10 | 86.25 |
| 0.03 | -0.03 | 0.69 | 0.14 | 0.17 | 0.05 | 33.39 | -0.04 | 0.08 | 0.04 | 0.06 | -0.09 | 60.31 | -0.06 | 0.07 | -0.16 | -0.06 | 5.10 | 99.69 |
| 0.03 | 0.01 | 0.41 | 0.20 | 0.15 | 0.05 | 34.97 | 0.04 | 0.05 | 0.07 | 0.03 | -0.01 | 60.13 | 0.15 | -0.08 | -0.07 | 0.08 | 2.63 | 98.82 |
| -0.03 | -0.03 | 0.17 | 0.29 | 0.22 | 0.05 | 35.22 | 0.04 | 0.03 | -0.02 | -0.06 | -0.06 | 59.92 | 0.09 | 0.13 | 0.13 | 0.03 | 4.41 | 100.53 |
| 0.02 | 0.00 | 0.46 | 0.19 | 0.17 | 0.05 | 35.57 | 0.01 | -0.02 | 0.00 | -0.03 | 0.01 | 59.72 | -0.09 | -0.07 | -0.04 | 0.01 | 4.17 | 100.13 |
| 0.03 | 0.05 | 0.26 | 0.11 | 0.16 | 0.05 | 39.51 | 0.02 | -0.01 | 0.09 | 0.03 | -0.04 | 58.63 | -0.01 | 0.09 | -0.08 | 0.00 | 2.84 | 101.63 |
| -0.04 | -0.06 | 0.72 | 0.27 | 0.18 | 0.05 | 32.10 | 0.00 | 0.15 | 0.06 | 0.05 | -0.01 | 58.27 | -0.09 | -0.02 | -0.19 | 0.07 | 6.01 | 97.52 |
| 0.01 | -0.01 | 0.21 | 0.10 | 0.17 | 0.06 | 41.48 | 0.03 | 0.05 | -0.01 | -0.05 | -0.02 | 57.18 | -0.18 | 0.06 | -0.11 | 0.01 | 3.27 | 102.25 |
| 0.03 | -0.02 | 0.16 | 0.07 | 0.15 | 0.05 | 38.35 | -0.02 | 0.00 | 0.11 | -0.01 | -0.06 | 57.12 | 0.07 | 0.20 | -0.05 | -0.04 | 3.24 | 99.41 |
| -0.05 | -0.02 | 0.30 | 0.10 | 0.15 | 0.05 | 36.35 | -0.02 | 0.03 | 0.00 | -0.05 | -0.06 | 57.11 | 0.06 | 0.06 | 0.12 | 0.02 | 5.49 | 101.62 |
| 0.04 | -0.03 | 0.16 | 0.11 | 0.17 | 0.05 | 38.23 | -0.01 | 0.06 | 0.03 | 0.01 | -0.06 | 57.11 | 0.06 | 0.06 | 0.12 | 0.02 | 5.49 | 101.62 |
| 0.02 | -0.04 | 0.18 | 0.11 | 0.14 | 0.05 | 35.77 | -0.10 | 0.00 | 0.08 | -0.09 | -0.06 | 57.06 | 0.03 | -0.15 | 0.03 | 0.06 | 4.09 | 97.18 |
| 0.03 | 0.03 | 0.10 | 0.08 | 0.16 | 0.06 | 40.54 | -0.02 | 0.04 | -0.04 | 0.04 | -0.06 | 56.32 | -0.06 | 0.06 | -0.11 | 0.04 | 4.12 | 101.29 |
| -0.02 | 0.00 | 0.67 | 0.73 | 0.15 | 0.05 | 38.51 | 0.04 | 0.06 | 0.17 | -0.02 | 0.08 | 56.67 | 0.13 | -0.22 | 0.02 | 0.00 | 2.96 | 99.98 |
| 0.01 | -0.04 | 0.08 | 0.04 | 0.16 | 0.05 | 42.85 | -0.03 | 0.04 | 0.01 | -0.07 | -0.07 | 56.52 | 0.04 | 0.16 | -0.04 | -0.02 | 3.26 | 102.95 |
| 0.05 | -0.03 | 0.10 | 0.08 | 0.16 | 0.06 | 40.54 | -0.02 | 0.04 | -0.04 | 0.04 | -0.06 | 56.32 | -0.06 | 0.06 | -0.11 | 0.04 | 4.12 | 101.29 |
| 0.00 | -0.02 | 0.15 | 0.09 | 0.15 | 0.05 | 38.82 | -0.06 | 0.01 | 0.05 | -0.03 | -0.09 | 56.28 | -0.06 | 0.09 | -0.07 | 0.05 | 5.44 | 100.85 |
| 0.03 | 0.03 | 0.28 | 0.12 | 0.18 | 0.06 | 38.76 | 0.03 | 0.10 | 0.06 | 0.04 | -0.05 | 56.26 | -0.01 | -0.14 | -0.01 | 0.03 | 5.61 | 97.75 |
| 0.05 | -0.01 | 1.37 | 0.54 | 0.29 | 0.06 | 33.42 | -0.05 | 0.29 | 0.06 | 0.04 | -0.05 | 56.20 | 0.10 | 0.03 | -0.04 | 0.04 | 5.16 | 101.06 |
| 0.03 | -0.02 | 0.16 | 4.38 | 0.24 | 0.08 | 39.72 | 0.12 | 0.01 | 0.06 | -0.01 | -0.05 | 56.11 | -0.07 | -0.08 | 0.04 | 0.02 | 1.32 | 102.06 |
| -0.05 | -0.03 | 0.15 | 0.11 | 0.17 | 0.05 | 40.19 | -0.06 | -0.02 | 0.01 | -0.07 | 0.00 | 56.08 | -0.10 | -0.09 | -0.13 | 0.00 | 5.18 | 101.39 |
| 0.06 | -0.05 | 0.09 | 0.08 | 0.16 | 0.05 | 43.36 | 0.00 | 0.03 | 0.06 | -0.07 | 0.00 | 55.74 | 0.00 | 0.02 | 0.03 | -0.05 | 3.98 | 103.49 |
| -0.01 | -0.02 | 0.68 | 0.15 | 0.16 | 0.05 | 38.94 | -0.04 | 0.03 | 0.13 | -0.04 | 0.04 | 55.55 | -0.04 | 0.00 | -0.19 | 0.10 | 5.36 | 100.85 |
| 0.03 | 0.00 | 0.35 | 0.28 | 0.15 | 0.09 | 41.10 | 0.06 | 0.02 | 0.08 | 0.01 | -0.06 | 54.78 | -0.03 | 0.00 | 0.00 | 0.02 | 5.34 | 102.21 |
| 0.00 | 0.07 | 3.35 | 2.59 | 0.44 | 0.13 | 27.69 | -0.05 | 0.57 | 0.02 | 0.09 | -0.08 | 54.64 | 0.10 | -0.10 | 0.06 | 0.10 | 2.42 | 92.04 |
| 0.04 | 0.00 | 0.84 | 0.63 | 0.24 | 0.06 | 38.57 | 0.03 | 0.11 | -0.02 | 0.04 | -0.05 | 54.54 | 0.06 | 0.04 | 0.02 | -0.06 | 3.63 | 98.72 |
| 0.05 | -0.05 | 0.34 | 0.16 | 0.22 | 0.06 | 41.94 | -0.03 | 0.01 | 0.10 | -0.02 | -0.03 | 53.22 | -0.04 | -0.20 | 0.03 | 0.03 | 3.86 | 99.65 |
| 0.01 | 0.09 | 3.07 | 45.24 | 0.07 | 1.13 | 9.97 | 0.08 | 0.01 | -0.05 | -0.01 | -0.02 | 50.20 | 0.16 | -0.03 | 0.02 | 0.00 | 0.02 | 100.96 |
| -0.02 | 0.05 | 0.85 | 1.78 | 0.16 | 0.10 | 38.21 | -0.01 | 0.06 | 0.10 | -0.06 | -0.03 | 49.68 | 0.00 | -0.05 | -0.06 | 0.08 | 2.46 | 93.34 |
| -0.01 | 0.06 | 0.14 | 33.17 | 0.21 | 0.07 | 0.45 | 0.24 | -0.10 | 66.51 | -0.02 | -0.02 | 0.10 | 0.09 | -0.05 | 0.07 | 0.07 | 0.04 | 101.02 |
| -0.02 | 0.05 | 0.08 | 33.18 | 0.21 | 0.08 | 0.33 | 0.13 | -0.18 | 66.26 | -0.02 | 0.01 | 0.06 | -0.02 | -0.12 | -0.06 | -0.04 | 0.05 | 99.98 |
| -0.01 | 0.05 | 0.06 | 32.63 | 0.21 | 0.08 | 0.42 | 0.30 | 0.09 | 66.12 | 0.00 | 0.14 | 0.07 | -0.08 | 0.13 | -0.22 | 0.11 | 0.00 | 100.10 |
| -0.04 | 0.04 | 0.06 | 31.67 | 0.19 | 0.07 | 0.31 | 0.11 | -0.31 | 66.10 | 0.00 | 0.02 | 0.06 | 0.03 | 0.11 | -0.08 | -0.02 | 0.09 | 98.41 |
| -0.12 | 0.05 | 0.08 | 31.05 | 0.21 | 0.07 | 0.34 | 0.36 | -0.01 | 65.91 | -0.09 | 0.10 | 0.13 | -0.04 | -0.05 | 0.06 | 0.04 | -0.05 | 98.15 |
| -0.09 | 0.03 | 0.08 | 31.39 | 0.20 | 0.07 | 0.37 | 0.11 | -0.11 | 65.81 | -0.02 | 0.05 | 0.09 | -0.14 | -0.07 | 0.04 | 0.05 | 0.06 | 97.88 |
| 0.01 | 0.04 | 0.11 | 32.67 | 0.21 | 0.07 | 0.35 | 0.10 | -0.07 | 65.64 | -0.06 | -0.05 | 0.09 | -0.14 | 0.06 | -0.05 | 0.03 | 0.06 | 99.07 |
| -0.06 | 0.05 | 0.12 | 31.25 | 0.19 | 0.08 | 0.36 | -0.01 | -0.26 | 65.55 | -0.02 | 0.06 | 0.15 | -0.10 | 0.14 | -0.10 | 0.00 | -0.05 | 97.55 |
| -0.05 | 0.05 | 0.08 | 31.53 | 0.20 | 0.07 | 0.35 | 0.11 | -0.23 | 65.55 | -0.02 | 0.05 | 0.12 | -0.06 | 0.13 | -0.12 | -0.01 | 0.02 | 97.77 |
| -0.08 | 0.06 | 0.09 | 31.48 | 0.20 | 0.08 | 0.47 | 0.12 | -0.12 | 65.44 | -0.06 | 0.16 | 0.01 | -0.24 | 0.01 | -0.02 | 0.00 | 0.02 | 98.10 |
| -0.07 | 0.05 | 0.07 | 30.89 | 0.20 | 0.08 | 0.32 | 0.63 | 0.20 | 65.30 | 0.02 | 0.28 | 0.15 | -0.13 | 0.02 | -0.07 | -0.04 | 0.07 | 97.97 |
| -0.02 | 0.06 | 0.07 | 32.92 | 0.22 | 0.08 | 0.41 | 0.26 | -0.21 | 65.13 | 0.09 | 0.02 | 0.04 | 0.13 | 0.26 | 0.15 | 0.00 | 0.00 | 99.61 |
| -0.01 | 0.05 | 0.07 | 32.97 | 0.21 | 0.08 | 0.44 | 0.07 | -0.13 | 64.99 | 0.03 | -0.03 | 0.05 | -0.03 | 0.09 | -0.04 | -0.05 | -0.12 | 98.64 |

| NA | MG | AL | SI | CA | K | FE | Y | P | ZR | TH | U | TI | LA | CE | ND | CR | MIN | sum |
|-------|-------|-------|-------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| 0.02 | 0.06 | 0.11 | 32.54 | 0.21 | 0.07 | 0.47 | 0.10 | -0.22 | 64.85 | 0.06 | 0.02 | 0.30 | 0.05 | -0.22 | -0.09 | 0.04 | 0.05 | 98.42 |
| 0.00 | 0.06 | 0.07 | 32.35 | 0.21 | 0.07 | 0.48 | 0.41 | 0.21 | 64.82 | 0.09 | 0.18 | 0.17 | -0.02 | 0.02 | 0.02 | -0.01 | 0.02 | 99.15 |
| -0.05 | 0.06 | 0.11 | 31.39 | 0.22 | 0.07 | 0.46 | 0.40 | -0.11 | 64.77 | -0.02 | 0.01 | 0.17 | 0.09 | -0.01 | 0.01 | 0.10 | 0.08 | 97.73 |
| -0.10 | 0.04 | 0.11 | 31.47 | 0.19 | 0.07 | 0.35 | 0.04 | -0.20 | 64.52 | 0.05 | 0.05 | 0.01 | 0.10 | 0.14 | 0.12 | -0.02 | -0.05 | 96.89 |
| -0.02 | 0.07 | 0.14 | 32.51 | 0.22 | 0.09 | 0.40 | 0.47 | 0.12 | 64.51 | -0.01 | 0.12 | 0.02 | -0.03 | -0.06 | -0.11 | 0.02 | 0.02 | 98.48 |
| 0.00 | 0.07 | 0.33 | 31.88 | 0.33 | 0.09 | 0.60 | 0.49 | 0.10 | 64.43 | 0.06 | 0.11 | 0.10 | -0.07 | 0.00 | 0.00 | -0.05 | 0.10 | 98.57 |
| -0.03 | 0.03 | 0.10 | 32.53 | 0.22 | 0.08 | 0.59 | 0.23 | -0.04 | 63.53 | -0.07 | 0.15 | 0.04 | 0.14 | 0.15 | 0.09 | 0.00 | 0.00 | 97.73 |
| -0.02 | 0.04 | 0.20 | 31.03 | 0.21 | 0.07 | 0.55 | 0.17 | -0.08 | 63.36 | -0.03 | 0.15 | 0.09 | 0.13 | -0.02 | -0.11 | 0.02 | 0.06 | 95.82 |
| 0.01 | 0.06 | 0.35 | 31.67 | 0.42 | 0.08 | 0.78 | 0.20 | 0.02 | 63.19 | 0.06 | 0.25 | 0.14 | -0.05 | -0.05 | -0.02 | 0.00 | 0.04 | 97.15 |
| 0.03 | 0.04 | 0.22 | 31.22 | 0.20 | 0.06 | 0.52 | 0.15 | -0.17 | 61.87 | 0.04 | 0.08 | 0.24 | 0.00 | 0.04 | 0.04 | -0.03 | 0.01 | 94.56 |
| 0.01 | 0.04 | 0.49 | 29.89 | 0.22 | 0.07 | 0.56 | 0.38 | 0.02 | 61.72 | 0.00 | 0.11 | 0.10 | 0.21 | 0.08 | -0.02 | 0.01 | 0.00 | 93.87 |
| 0.01 | 0.04 | 0.13 | 32.06 | 0.19 | 0.08 | 0.41 | 0.11 | -0.14 | 61.45 | -0.04 | 0.04 | 0.11 | 0.04 | -0.14 | 0.00 | -0.08 | -0.08 | 94.33 |
| -0.02 | 0.03 | 0.15 | 29.51 | 0.17 | 0.06 | 0.43 | 0.06 | -0.15 | 61.20 | 0.02 | -0.06 | 0.05 | -0.20 | 0.08 | -0.07 | 0.10 | 0.00 | 91.16 |
| 0.00 | 0.02 | 0.15 | 30.39 | 0.20 | 0.07 | 0.49 | 0.11 | -0.18 | 60.69 | 0.00 | -0.06 | 0.29 | -0.04 | -0.15 | -0.07 | 0.02 | 0.06 | 91.99 |
| -0.02 | 0.02 | 0.15 | 28.54 | 0.17 | 0.06 | 0.41 | 0.02 | -0.19 | 60.20 | 0.05 | -0.01 | 0.07 | -0.09 | -0.02 | 0.06 | 0.07 | 0.03 | 90.52 |
| -0.01 | 0.04 | 0.17 | 29.82 | 0.18 | 0.06 | 0.50 | 0.12 | -0.15 | 60.12 | 0.02 | -0.04 | 0.22 | 0.05 | -0.15 | -0.11 | -0.07 | -0.05 | 90.72 |
| -0.08 | 0.18 | 1.23 | 28.83 | 0.63 | 0.10 | 1.65 | 0.57 | 0.59 | 58.76 | 0.10 | 0.19 | 0.31 | 0.16 | 0.12 | 0.10 | 0.04 | 0.12 | 93.60 |
| 0.02 | 0.23 | 1.40 | 27.95 | 0.95 | 0.09 | 1.78 | 1.48 | 2.17 | 57.27 | 0.28 | 0.35 | 0.31 | 0.05 | 0.21 | 0.40 | -0.04 | 0.09 | 94.39 |
| 0.01 | 0.12 | 0.57 | 36.13 | 0.37 | 0.17 | 1.17 | 0.68 | -0.04 | 57.23 | -0.02 | 0.15 | 0.01 | -0.16 | 0.10 | 0.02 | -0.04 | 0.02 | 87.50 |
| 0.01 | 0.05 | 0.23 | 29.53 | 0.29 | 0.08 | 0.55 | 0.31 | 0.04 | 56.36 | 0.22 | 0.29 | 0.06 | 0.12 | 0.21 | 0.18 | 0.00 | 0.03 | 88.56 |
| 0.01 | 0.01 | 0.21 | 28.67 | 0.18 | 0.06 | 0.33 | 0.19 | -0.03 | 56.05 | 0.03 | 0.04 | 0.03 | 0.00 | 0.13 | -0.02 | 0.08 | -0.08 | 85.89 |
| -0.01 | -0.02 | 0.24 | 22.82 | 0.13 | 0.03 | 0.41 | 0.08 | -0.04 | 41.26 | 0.08 | -0.07 | 0.08 | 0.06 | 0.09 | 0.09 | -0.05 | -0.04 | 65.14 |
| 0.06 | -0.02 | 0.05 | 19.00 | 0.11 | 0.03 | 6.25 | -0.07 | -0.19 | 40.88 | -0.09 | 0.05 | 6.83 | -0.20 | 0.21 | -0.20 | -0.01 | 0.50 | 73.19 |
| 0.04 | 0.19 | 10.28 | 29.06 | 0.18 | 0.29 | 4.50 | 0.18 | 0.15 | 35.04 | -0.05 | 0.08 | 0.42 | 0.17 | 0.03 | 0.02 | 0.05 | 0.00 | 80.63 |
| -0.10 | 0.04 | 0.10 | 1.53 | 0.65 | 0.14 | 0.52 | 0.42 | 29.96 | -0.15 | 6.18 | -0.53 | 0.02 | 13.52 | 33.76 | 12.81 | -0.67 | -0.19 | 98.01 |
| -0.11 | 0.06 | 0.09 | 1.95 | 0.95 | 0.15 | 0.54 | 0.06 | 30.16 | -0.31 | 9.10 | -0.66 | -0.04 | 16.26 | 33.11 | 11.69 | -0.77 | -0.13 | 102.10 |
| -0.09 | 0.05 | 0.11 | 1.32 | 0.87 | 0.15 | 0.56 | 0.68 | 31.31 | -0.21 | 5.82 | -0.46 | -0.02 | 15.66 | 31.72 | 13.12 | -0.84 | -0.09 | 99.66 |
| -0.10 | 0.05 | 0.10 | 1.80 | 1.08 | 0.15 | 0.66 | 1.14 | 29.37 | -0.22 | 9.54 | -0.94 | 0.37 | 14.96 | 31.05 | 11.89 | -0.74 | -0.08 | 100.08 |
| -0.03 | 0.08 | 0.13 | 1.54 | 1.21 | 0.16 | 0.51 | 0.77 | 29.79 | -0.35 | 9.03 | -0.99 | 0.02 | 10.91 | 31.04 | 14.19 | -0.73 | -0.11 | 97.17 |
| -0.08 | 0.04 | 0.13 | 2.01 | 1.09 | 0.15 | 0.68 | 0.32 | 28.50 | -0.17 | 10.30 | -1.19 | 0.05 | 14.25 | 29.97 | 12.17 | -0.71 | -0.16 | 97.35 |

SAMPLE 9

| NA | MG | AL | SI | CA | K | FE | Y | P | ZR | TH | U | TI | LA | CE | ND | CR | MIN | sum |
|-------|-------|-------|-------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|
| 0.00 | -0.04 | 0.08 | 0.13 | 1.05 | 0.05 | 17.22 | 0.03 | 0.02 | 0.03 | -0.08 | -0.02 | 86.15 | 0.04 | 0.00 | 0.01 | 0.01 | 3.17 | 107.85 |
| 0.08 | 0.05 | 3.43 | 0.80 | 0.59 | 0.15 | 15.84 | 0.02 | 1.52 | 0.06 | -0.05 | 0.02 | 76.51 | 0.13 | 0.06 | 0.06 | 0.19 | 2.66 | 102.12 |
| 0.06 | 0.11 | 6.58 | 4.04 | 0.74 | 0.17 | 9.87 | -0.01 | 1.99 | 0.00 | 0.03 | 0.01 | 65.57 | 0.00 | 0.09 | -0.25 | 0.09 | 0.79 | 89.88 |
| 0.00 | -0.01 | 0.34 | 0.20 | 0.21 | 0.06 | 34.30 | 0.03 | 0.11 | 0.03 | 0.07 | -0.01 | 61.93 | 0.07 | 0.14 | -0.09 | -0.07 | 4.77 | 102.08 |
| 0.04 | -0.04 | 0.26 | 0.19 | 0.19 | 0.06 | 38.16 | -0.05 | 0.15 | 0.06 | -0.08 | -0.02 | 61.21 | -0.16 | 0.09 | -0.10 | 0.01 | 3.46 | 103.43 |
| 0.05 | -0.04 | 2.77 | 1.85 | 0.26 | 0.06 | 25.51 | -0.01 | 0.51 | 0.04 | 0.04 | 0.00 | 60.59 | -0.09 | -0.07 | -0.01 | 0.10 | 3.73 | 95.29 |
| 0.02 | -0.04 | 0.19 | 0.08 | 0.15 | 0.05 | 34.83 | -0.04 | 0.01 | 0.00 | 0.01 | -0.03 | 60.28 | 0.02 | 0.32 | -0.02 | 0.03 | 5.38 | 101.24 |
| 0.03 | -0.03 | 0.12 | 0.10 | 0.17 | 0.06 | 36.70 | 0.00 | 0.04 | 0.02 | 0.02 | -0.03 | 60.22 | 0.06 | -0.09 | -0.10 | -0.01 | 5.13 | 102.37 |
| -0.01 | -0.04 | 0.16 | 0.09 | 0.15 | 0.05 | 38.34 | 0.02 | 0.04 | 0.00 | -0.03 | 0.01 | 60.12 | 0.07 | -0.11 | 0.06 | 0.02 | 2.49 | 101.43 |
| 0.00 | -0.02 | 0.43 | 0.11 | 0.21 | 0.06 | 33.39 | -0.03 | 0.27 | 0.06 | 0.00 | -0.01 | 59.71 | 0.09 | 0.04 | 0.01 | -0.06 | 3.91 | 98.17 |
| 0.02 | -0.04 | 0.26 | 0.15 | 0.15 | 0.05 | 34.56 | -0.02 | 0.07 | 0.04 | -0.05 | -0.02 | 59.42 | -0.01 | -0.11 | -0.11 | -0.02 | 4.41 | 98.75 |
| -0.03 | -0.05 | 0.07 | 0.10 | 0.16 | 0.06 | 38.94 | 0.05 | 0.01 | -0.04 | 0.01 | -0.02 | 58.71 | -0.08 | 0.07 | -0.05 | -0.02 | 6.73 | 104.62 |
| 0.04 | -0.05 | 0.06 | 7.82 | 0.23 | 0.05 | 40.53 | -0.03 | 0.04 | 0.02 | -0.02 | -0.03 | 58.67 | -0.02 | 0.00 | 0.01 | 2.32 | 109.50 | |
| 0.01 | -0.02 | 0.07 | 0.07 | 0.17 | 0.06 | 45.88 | 0.04 | 0.06 | 0.02 | -0.03 | -0.08 | 58.33 | -0.06 | 0.08 | 0.03 | -0.02 | 3.40 | 107.99 |
| 0.00 | 0.00 | 0.21 | 0.08 | 0.16 | 0.06 | 37.81 | -0.03 | 0.08 | -0.06 | -0.08 | 0.06 | 58.32 | -0.06 | -0.23 | -0.05 | -0.02 | 6.43 | 102.75 |
| -0.01 | -0.03 | 0.11 | 0.11 | 0.16 | 0.06 | 42.72 | -0.02 | -0.02 | 0.06 | 0.02 | 0.02 | 58.10 | 0.05 | 0.13 | 0.03 | 0.00 | 5.15 | 106.66 |
| -0.01 | -0.04 | 0.13 | 0.12 | 0.16 | 0.06 | 40.10 | 0.03 | 0.03 | 0.04 | 0.07 | -0.01 | 57.98 | -0.05 | -0.02 | 0.01 | -0.06 | 6.11 | 103.27 |
| 0.03 | -0.06 | 0.08 | 0.08 | 0.15 | 0.06 | 38.13 | 0.01 | 0.04 | -0.01 | 0.03 | -0.08 | 57.88 | 0.05 | -0.11 | -0.10 | 0.00 | 4.66 | 100.84 |
| -0.03 | -0.03 | 0.09 | 0.08 | 0.15 | 0.06 | 41.59 | 0.07 | 0.01 | -0.02 | -0.04 | 0.00 | 57.70 | -0.17 | 0.11 | -0.07 | -0.03 | 5.85 | 105.32 |
| 0.04 | -0.03 | 0.07 | 0.06 | 0.15 | 0.06 | 43.93 | 0.03 | 0.07 | 0.01 | -0.07 | -0.11 | 57.68 | -0.13 | 0.02 | -0.08 | 0.07 | 4.71 | 106.48 |
| -0.01 | -0.03 | 0.08 | 0.05 | 0.14 | 0.05 | 38.70 | -0.05 | 0.01 | -0.06 | -0.14 | -0.04 | 57.65 | 0.06 | 0.01 | -0.06 | 0.05 | 7.48 | 103.89 |
| 0.01 | -0.02 | 0.09 | 0.10 | 0.15 | 0.06 | 42.75 | 0.03 | 0.04 | 0.03 | 0.05 | -0.05 | 57.40 | -0.01 | 0.04 | 0.12 | 0.02 | 4.54 | 105.35 |
| -0.01 | -0.04 | 0.14 | 0.15 | 0.15 | 0.06 | 43.96 | -0.08 | 0.02 | 0.06 | -0.03 | 0.03 | 57.06 | 0.00 | -0.23 | -0.08 | 0.08 | 2.84 | 102.64 |
| -0.02 | -0.03 | 0.46 | 0.12 | 0.16 | 0.05 | 42.99 | -0.08 | 0.04 | 0.02 | 0.04 | 0.01 | 57.03 | 0.03 | 0.14 | 0.17 | 0.04 | 3.60 | 105.77 |
| 0.01 | -0.03 | 0.07 | 0.07 | 0.16 | 0.06 | 41.53 | 0.05 | 0.00 | -0.01 | -0.08 | -0.03 | 57.02 | 0.00 | 0.03 | -0.12 | 0.08 | 5.15 | 103.96 |
| 0.03 | -0.04 | 0.40 | 0.18 | 0.19 | 0.07 | 38.94 | -0.04 | 0.03 | -0.10 | 0.03 | -0.03 | 56.82 | -0.03 | 0.00 | -0.01 | 0.07 | 8.32 | 104.83 |
| -0.04 | -0.03 | 0.09 | 0.24 | 0.25 | 0.06 | 44.85 | -0.02 | 0.01 | -0.11 | -0.03 | -0.01 | 56.72 | -0.07 | -0.15 | 0.07 | -0.03 | 3.26 | 105.44 |
| 0.00 | 0.00 | 0.38 | 0.12 | 0.16 | 0.06 | 42.01 | 0.02 | 0.02 | 0.01 | -0.03 | 0.00 | 56.67 | -0.09 | 0.03 | 0.03 | 0.01 | 4.20 | 103.48 |
| 0.01 | -0.03 | 0.07 | 0.08 | 0.16 | 0.05 | 42.70 | -0.03 | 0.03 | -0.02 | 0.01 | 0.00 | 56.68 | 0.22 | 0.13 | 0.00 | 0.09 | 3.36 | 103.51 |
| 0.00 | 0.00 | 0.09 | 0.08 | 0.15 | 0.06 | 40.84 | -0.01 | 0.04 | -0.03 | -0.05 | -0.01 | 56.67 | -0.09 | 0.03 | 0.03 | -0.01 | 3.99 | 101.78 |
| 0.03 | -0.03 | 0.15 | 0.09 | 0.16 | 0.06 | 45.63 | 0.03 | 0.05 | 0.01 | -0.06 | -0.11 | 56.62 | 0.00 | 0.15 | 0.06 | -0.02 | 3.18 | 105.87 |
| -0.02 | -0.05 | 0.10 | 0.05 | 0.16 | 0.06 | 42.63 | -0.04 | 0.03 | 0.02 | 0.00 | 0.07 | 56.62 | -0.06 | -0.07 | -0.05 | 0.02 | 5.92 | 105.55 |
| 0.00 | -0.07 | 0.46 | 0.39 | 0.19 | 0.05 | 36.65 | 0.10 | 0.05 | -0.04 | -0.06 | -0.03 | 56.42 | -0.01 | 0.01 | 0.02 | 0.12 | 4.61 | 98.85 |
| 0.03 | -0.04 | 0.25 | 0.08 | 0.16 | 0.06 | 42.60 | 0.05 | 0.05 | 0.04 | -0.10 | -0.08 | 56.36 | -0.10 | 0.02 | 0.02 | 0.04 | 5.53 | 104.97 |
| 0.00 | -0.02 | 0.11 | 0.07 | 0.16 | 0.06 | 43.98 | -0.02 | 0.04 | 0.02 | -0.04 | 0.00 | 56.24 | -0.15 | -0.01 | -0.01 | 0.07 | 3.33 | 103.83 |
| 0.00 | -0.02 | 0.11 | 0.13 | 0.20 | 0.06 | 41.64 | 0.07 | 0.02 | 0.00 | 0.01 | -0.02 | 56.19 | -0.05 | 0.02 | 0.10 | 0.01 | 5.83 | 104.30 |
| -0.01 | -0.05 | 0.11 | 0.07 | 0.16 | 0.06 | 43.31 | -0.08 | -0.01 | -0.06 | -0.09 | -0.03 | 56.12 | 0.10 | 0.08 | 0.08 | 0.01 | 4.00 | 103.57 |
| -0.03 | 0.03 | 0.50 | 0.68 | 0.59 | 0.07 | 41.84 | 0.10 | 0.04 | 0.00 | 0.02 | -0.04 | 55.79 | -0.11 | 0.12 | 0.01 | 0.03 | 5.44 | 105.08 |
| -0.01 | -0.07 | 1.87 | 14.08 | 0.30 | 0.11 | 29.28 | 0.09 | 0.04 | -0.02 | -0.03 | -0.02 | 54.90 | 0.01 | -0.09 | -0.06 | -0.03 | 3.02 | 103.86 |
| -0.01 | 0.07 | 2.36 | 4.32 | 0.19 | 0.73 | 32.67 | 4.42 | 4.12 | -0.03 | -0.07 | 0.00 | 46.57 | 0.23 | 0.35 | 0.19 | 0.00 | 2.80 | 98.91 |
| 0.06 | 1.32 | 10.06 | 16.33 | 3.23 | 3.23 | 31.78 | -0.07 | 0.02 | -0.09 | -0.09 | -0.06 | 45.09 | -0.02 | -0.07 | -0.10 | 0.04 | 1.36 | 109.07 |
| 0.00 | -0.14 | 0.45 | 0.35 | 0.09 | 0.02 | 19.57 | -0.03 | 0.07 | 0.01 | 0.06 | -0.01 | 40.57 | -0.03 | 0.04 | 0.04 | 0.05 | 4.12 | 65.15 |
| -0.03 | 0.04 | 0.05 | 33.55 | 0.21 | 0.08 | 0.35 | 0.00 | -0.14 | 68.21 | 0.05 | 0.00 | 0.06 | -0.18 | -0.12 | 0.13 | -0.02 | 0.03 | 102.27 |
| -0.03 | 0.04 | 0.07 | 33.09 | 0.21 | 0.07 | 0.35 | 0.29 | -0.10 | 67.17 | -0.01 | -0.03 | 0.14 | -0.11 | 0.01 | 0.13 | 0.03 | -0.03 | 101.29 |

| NA | MG | AL | SI | CA | K | FE | Y | P | ZR | TH | U | TI | LA | CE | ND | CR | MN | sum |
|-------|------|------|-------|------|------|------|------|-------|-------|-------|-------|------|-------|-------|-------|-------|-------|--------|
| 0.01 | 0.04 | 0.05 | 33.45 | 0.20 | 0.08 | 0.36 | 0.10 | -0.22 | 67.17 | 0.04 | -0.01 | 0.06 | -0.20 | -0.26 | -0.06 | 0.03 | -0.02 | 100.82 |
| -0.05 | 0.04 | 0.12 | 33.08 | 0.22 | 0.08 | 0.56 | 0.06 | -0.18 | 66.94 | 0.01 | -0.02 | 0.12 | -0.14 | 0.11 | 0.20 | 0.04 | -0.09 | 101.10 |
| -0.04 | 0.03 | 0.08 | 33.58 | 0.21 | 0.08 | 0.37 | 0.07 | -0.17 | 66.66 | -0.05 | -0.05 | 0.09 | 0.22 | 0.01 | 0.07 | 0.05 | 0.00 | 101.21 |
| 0.00 | 0.05 | 0.14 | 33.29 | 0.21 | 0.07 | 0.46 | 0.18 | -0.07 | 65.98 | 0.10 | 0.10 | 0.16 | -0.04 | -0.05 | 0.08 | 0.02 | 0.05 | 100.73 |
| 0.01 | 0.05 | 0.06 | 33.11 | 0.20 | 0.08 | 0.31 | 0.12 | -0.19 | 65.65 | 0.00 | 0.21 | 0.07 | 0.14 | -0.05 | 0.16 | -0.01 | -0.01 | 99.91 |
| -0.03 | 0.05 | 0.43 | 32.80 | 0.21 | 0.08 | 0.39 | 0.12 | -0.15 | 65.25 | 0.01 | 0.15 | 0.09 | 0.08 | -0.09 | 0.06 | 0.00 | 0.02 | 99.47 |
| -0.02 | 0.05 | 0.08 | 33.74 | 0.21 | 0.07 | 0.41 | 0.07 | -0.25 | 65.23 | 0.01 | -0.02 | 0.00 | -0.11 | -0.18 | 0.08 | 0.05 | -0.06 | 99.36 |
| -0.01 | 0.00 | 0.21 | 28.28 | 0.18 | 0.07 | 0.34 | 0.09 | -0.20 | 60.61 | 0.02 | 0.07 | 0.01 | -0.08 | -0.10 | 0.08 | 0.07 | -0.01 | 89.63 |
| -0.04 | 0.03 | 0.09 | 1.94 | 0.90 | 0.16 | 0.54 | 0.17 | 29.52 | -0.27 | 8.84 | -0.89 | 0.09 | 13.58 | 33.09 | 12.91 | -0.67 | -0.21 | 99.78 |
| -0.04 | 0.06 | 0.14 | 2.27 | 1.03 | 0.16 | 0.57 | 0.23 | 29.19 | -0.36 | 10.75 | -0.45 | 0.12 | 12.62 | 29.95 | 13.03 | -0.53 | -0.02 | 98.72 |
| -0.08 | 0.04 | 0.11 | 2.17 | 1.16 | 0.17 | 0.51 | 0.93 | 29.59 | -0.24 | 10.69 | -0.39 | 0.05 | 12.71 | 29.47 | 12.30 | -0.77 | -0.11 | 98.31 |

SAMPLE 10

| NA | MG | AL | SI | CA | K | FE | Y | P | ZR | TH | U | TI | LA | CE | ND | QR | MIN | sum |
|-------|-------|------|-------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| 0.05 | 0.00 | 6.52 | 4.17 | 0.27 | 0.05 | 64.19 | 0.03 | 1.87 | -0.02 | -0.04 | -0.13 | 0.51 | 0.17 | 0.01 | -0.09 | 0.20 | 0.19 | 77.95 |
| -0.02 | -0.03 | 3.89 | 1.35 | 0.28 | 0.05 | 7.97 | 0.03 | 0.99 | 0.04 | -0.07 | 0.10 | 73.98 | 0.02 | 0.05 | -0.08 | 0.21 | -0.01 | 88.75 |
| 0.08 | -0.04 | 0.34 | 0.12 | 0.17 | 0.05 | 32.88 | 0.01 | 0.09 | -0.08 | -0.06 | -0.02 | 62.02 | 0.03 | 0.14 | 0.10 | 0.03 | 6.96 | 102.82 |
| 0.01 | -0.01 | 8.22 | 3.57 | 0.34 | 0.07 | 16.24 | 0.02 | 1.18 | 0.06 | -0.06 | -0.06 | 61.37 | -0.14 | -0.08 | 0.12 | 0.16 | 0.29 | 91.30 |
| 0.05 | -0.05 | 6.03 | 1.94 | 0.29 | 0.05 | 21.52 | -0.10 | 0.79 | 0.13 | -0.05 | 0.08 | 60.45 | -0.05 | 0.00 | -0.08 | 0.09 | 3.02 | 94.11 |
| -0.02 | 0.00 | 0.51 | 0.21 | 0.17 | 0.06 | 36.94 | 0.01 | 0.01 | 0.08 | 0.04 | -0.04 | 59.68 | 0.05 | -0.08 | -0.02 | 0.08 | 5.36 | 103.04 |
| 0.01 | -0.03 | 0.54 | 0.15 | 0.16 | 0.06 | 35.66 | 0.03 | 0.03 | -0.01 | 0.00 | -0.07 | 58.99 | 0.00 | 0.00 | -0.08 | 0.03 | 4.75 | 100.27 |
| 0.06 | 0.00 | 7.99 | 2.35 | 0.41 | 0.07 | 17.51 | 0.00 | 1.20 | 0.15 | -0.05 | 0.00 | 58.35 | 0.17 | 0.05 | 0.13 | 0.10 | 1.84 | 90.33 |
| -0.02 | 0.05 | 1.36 | 0.73 | 0.18 | 0.10 | 36.06 | 0.03 | 0.09 | 0.05 | -0.02 | 0.00 | 58.26 | 0.08 | 0.27 | 0.10 | 0.03 | 2.30 | 99.65 |
| 0.04 | -0.04 | 3.47 | 1.66 | 0.20 | 0.06 | 31.66 | -0.04 | 0.09 | 0.16 | -0.04 | 0.05 | 57.20 | 0.03 | 0.02 | 0.10 | 0.02 | 4.25 | 98.89 |
| 0.01 | -0.02 | 0.40 | 0.11 | 0.15 | 0.06 | 37.25 | -0.06 | -0.02 | -0.09 | 0.11 | -0.05 | 57.08 | 0.01 | 0.00 | 0.09 | 0.03 | 5.73 | 100.79 |
| -0.01 | 0.02 | 0.14 | 0.08 | 0.16 | 0.06 | 42.12 | -0.01 | 0.01 | 0.09 | -0.02 | 0.01 | 57.04 | -0.07 | -0.11 | 0.10 | 0.03 | 3.17 | 101.36 |
| 0.01 | -0.02 | 1.78 | 0.42 | 0.19 | 0.05 | 36.21 | -0.01 | 0.01 | 0.23 | 0.01 | -0.01 | 56.80 | -0.01 | -0.10 | -0.02 | 0.03 | 3.09 | 102.68 |
| 0.03 | 0.02 | 3.58 | 0.79 | 0.22 | 0.05 | 38.12 | -0.03 | 0.30 | 0.04 | 0.04 | -0.09 | 56.57 | -0.06 | -0.01 | -0.04 | 0.07 | 2.64 | 102.24 |
| 0.04 | 0.00 | 1.91 | 0.88 | 0.21 | 0.05 | 37.95 | -0.05 | 0.19 | 0.05 | -0.02 | 0.04 | 56.50 | -0.16 | 0.12 | -0.07 | 0.06 | 2.78 | 100.48 |
| 0.04 | -0.02 | 0.85 | 0.16 | 0.16 | 0.06 | 38.61 | -0.02 | -0.03 | 0.03 | -0.04 | 0.02 | 56.31 | 0.04 | 0.09 | 0.06 | 0.06 | 7.52 | 103.96 |
| 0.00 | 0.00 | 0.75 | 0.21 | 0.16 | 0.05 | 40.92 | -0.03 | 0.06 | 0.03 | 0.00 | -0.05 | 56.31 | 0.02 | 0.03 | -0.14 | 0.04 | 4.77 | 103.13 |
| -0.02 | -0.01 | 1.49 | 0.47 | 0.20 | 0.05 | 36.73 | -0.10 | 0.08 | 0.18 | 0.02 | -0.01 | 56.25 | -0.09 | 0.15 | -0.10 | 0.11 | 7.90 | 103.30 |
| -0.02 | -0.03 | 0.62 | 0.10 | 0.15 | 0.05 | 38.95 | 0.50 | 0.06 | 0.01 | -0.06 | 0.05 | 56.17 | -0.16 | 0.05 | -0.20 | 0.01 | 6.06 | 102.16 |
| -0.03 | -0.05 | 0.47 | 0.10 | 0.17 | 0.06 | 41.42 | 0.01 | -0.03 | 0.12 | -0.03 | -0.08 | 56.15 | -0.03 | 0.02 | 0.03 | 0.03 | 6.66 | 105.21 |
| 0.01 | 0.01 | 0.36 | 0.18 | 0.15 | 0.05 | 39.03 | 0.01 | -0.01 | 0.12 | 0.00 | -0.06 | 56.11 | 0.04 | 0.08 | 0.01 | 0.08 | 4.97 | 101.14 |
| 0.01 | 0.00 | 0.38 | 0.17 | 0.15 | 0.05 | 40.77 | -0.03 | -0.02 | 0.12 | -0.02 | -0.01 | 56.03 | -0.09 | 0.01 | 0.02 | 0.00 | 4.34 | 101.88 |
| 0.04 | -0.01 | 0.29 | 0.12 | 0.16 | 0.05 | 43.46 | 0.04 | 0.04 | 0.13 | 0.06 | -0.01 | 55.98 | -0.12 | 0.08 | -0.08 | 0.02 | 4.07 | 104.43 |
| 0.01 | -0.02 | 0.29 | 0.12 | 0.15 | 0.06 | 42.64 | -0.09 | 0.06 | 0.10 | -0.05 | -0.07 | 55.82 | -0.02 | 0.22 | 0.02 | 0.05 | 4.79 | 104.03 |
| -0.01 | -0.02 | 0.24 | 0.11 | 0.15 | 0.06 | 39.68 | 0.03 | -0.01 | 0.08 | -0.08 | 0.00 | 55.72 | -0.03 | 0.12 | -0.07 | 0.06 | 6.32 | 102.35 |
| -0.05 | -0.03 | 0.10 | 0.08 | 0.16 | 0.05 | 44.06 | -0.09 | 0.00 | 0.03 | -0.01 | -0.03 | 55.70 | -0.04 | 0.11 | 0.03 | 0.08 | 6.09 | 103.16 |
| 0.01 | -0.01 | 0.24 | 0.10 | 0.15 | 0.06 | 40.61 | 0.04 | 0.05 | 0.01 | -0.03 | -0.07 | 55.33 | 0.12 | -0.02 | 0.03 | -0.02 | 4.75 | 102.05 |
| 0.03 | -0.04 | 0.40 | 0.25 | 0.17 | 0.05 | 39.62 | -0.01 | -0.02 | 0.11 | -0.02 | -0.05 | 55.13 | -0.16 | -0.04 | 0.06 | 0.01 | 6.34 | 102.48 |
| 0.05 | -0.01 | 1.00 | 0.25 | 0.15 | 0.06 | 39.55 | -0.03 | -0.02 | -0.02 | 0.01 | -0.06 | 54.92 | 0.00 | -0.12 | -0.03 | 0.06 | 6.89 | 101.93 |
| 0.03 | -0.04 | 0.43 | 0.15 | 0.15 | 0.06 | 37.45 | 0.09 | 0.21 | 0.11 | -0.01 | -0.05 | 54.42 | -0.04 | 0.16 | 0.00 | -0.01 | 4.74 | 98.82 |
| 0.03 | -0.02 | 3.13 | 0.97 | 0.30 | 0.05 | 28.98 | -0.03 | 0.28 | 0.28 | -0.01 | 0.03 | 54.35 | 0.02 | 0.01 | -0.13 | 0.07 | 2.85 | 91.16 |
| 0.02 | -0.03 | 2.59 | 1.30 | 0.17 | 0.07 | 36.22 | 0.01 | 0.12 | 0.08 | -0.05 | -0.01 | 52.32 | -0.01 | -0.03 | 0.12 | 0.11 | 5.53 | 98.53 |
| 0.01 | -0.04 | 3.77 | 0.90 | 0.23 | 0.05 | 34.17 | -0.03 | 0.08 | 0.13 | 0.04 | -0.16 | 50.19 | 0.20 | 0.05 | 0.02 | 0.05 | 4.87 | 94.53 |
| 0.02 | -0.09 | 4.51 | 1.32 | 0.23 | 0.05 | 36.39 | 0.02 | 0.05 | 0.25 | -0.02 | -0.08 | 49.60 | -0.07 | 0.12 | -0.02 | 0.14 | 2.17 | 94.59 |
| 0.03 | 1.18 | 6.70 | 7.58 | 0.40 | 1.13 | 19.26 | 0.02 | 1.28 | 0.04 | 0.00 | 0.06 | 43.01 | -0.06 | 0.09 | 0.00 | -0.09 | 1.60 | 82.23 |
| -0.00 | -0.03 | 2.01 | 1.01 | 0.13 | 0.05 | 29.21 | -0.03 | 0.02 | 0.18 | 0.05 | -0.01 | 40.83 | -0.04 | 0.10 | 0.06 | 0.04 | 2.95 | 76.53 |
| -0.02 | 0.05 | 0.06 | 33.30 | 0.21 | 0.08 | 0.33 | 0.15 | -0.15 | 67.66 | 0.05 | -0.02 | 0.11 | 0.01 | 0.00 | -0.16 | 0.02 | 0.03 | 101.71 |
| 0.02 | 0.05 | 0.07 | 33.19 | 0.20 | 0.07 | 0.42 | 0.04 | -0.19 | 67.23 | 0.02 | 0.09 | 0.23 | -0.08 | 0.01 | 0.01 | -0.07 | 0.04 | 101.35 |
| 0.02 | 0.04 | 0.13 | 33.17 | 0.22 | 0.08 | 0.37 | 0.18 | -0.04 | 66.97 | 0.06 | 0.06 | 0.17 | -0.01 | 0.12 | -0.03 | -0.01 | 0.10 | 101.60 |
| 0.00 | 0.06 | 0.11 | 33.60 | 0.21 | 0.07 | 0.49 | 0.06 | -0.30 | 66.86 | 0.05 | 0.14 | 0.26 | -0.01 | -0.08 | 0.16 | 0.07 | -0.01 | 101.74 |
| -0.02 | 0.04 | 0.07 | 33.03 | 0.21 | 0.08 | 0.31 | -0.01 | -0.26 | 66.60 | 0.04 | 0.08 | 0.08 | -0.01 | 0.04 | 0.18 | -0.02 | 0.07 | 100.51 |
| -0.01 | 0.04 | 0.14 | 33.17 | 0.22 | 0.08 | 0.33 | 0.04 | -0.21 | 66.45 | 0.01 | -0.01 | 0.05 | -0.05 | 0.11 | -0.08 | 0.00 | -0.15 | 100.13 |
| 0.02 | 0.05 | 0.06 | 32.86 | 0.21 | 0.08 | 0.32 | 0.38 | 0.14 | 66.18 | 0.01 | 0.09 | 0.08 | -0.05 | -0.13 | 0.01 | -0.06 | 0.00 | 100.25 |
| -0.04 | 0.05 | 0.10 | 33.40 | 0.21 | 0.07 | 0.42 | 0.31 | -0.02 | 65.85 | 0.06 | 0.07 | 0.17 | 0.07 | -0.17 | 0.04 | -0.05 | 0.07 | 100.61 |
| 0.02 | 0.05 | 0.16 | 33.19 | 0.21 | 0.08 | 0.37 | 0.33 | -0.06 | 65.62 | 0.05 | 0.13 | 0.01 | -0.09 | 0.02 | -0.01 | 0.04 | -0.04 | 100.08 |

| NA | MG | AL | SI | CA | K | FE | Y | P | ZR | TH | U | TI | LA | OE | ND | CR | MIN | sum |
|-------|------|-------|-------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| -0.01 | 0.04 | 0.10 | 33.08 | 0.21 | 0.07 | 0.43 | 0.41 | 0.08 | 65.58 | 0.08 | -0.02 | 0.12 | -0.02 | -0.04 | 0.15 | -0.09 | 0.08 | 100.26 |
| 0.00 | 0.06 | 0.47 | 32.90 | 0.23 | 0.07 | 0.42 | 0.02 | -0.25 | 65.55 | 0.00 | -0.03 | 0.01 | 0.09 | 0.00 | -0.22 | -0.04 | 0.00 | 99.28 |
| 0.02 | 0.04 | 0.29 | 33.12 | 0.22 | 0.07 | 0.41 | 0.12 | -0.24 | 65.53 | 0.03 | -0.03 | -0.01 | 0.04 | -0.17 | 0.13 | 0.04 | 0.01 | 99.62 |
| 0.02 | 0.08 | 0.46 | 33.12 | 0.23 | 0.09 | 0.52 | 0.24 | -0.05 | 64.98 | 0.04 | 0.09 | 0.14 | -0.05 | 0.20 | 0.11 | 0.05 | -0.06 | 100.21 |
| 0.02 | 0.05 | 0.43 | 32.94 | 0.23 | 0.07 | 0.38 | 0.20 | -0.26 | 64.92 | 0.00 | 0.09 | 0.08 | -0.16 | -0.07 | -0.02 | -0.06 | 0.04 | 98.88 |
| -0.04 | 0.05 | 0.87 | 32.71 | 0.24 | 0.07 | 0.50 | 0.21 | 0.02 | 64.83 | -0.08 | 0.11 | 0.14 | -0.16 | -0.16 | -0.02 | 0.03 | 0.07 | 99.39 |
| 0.01 | 0.05 | 0.27 | 32.99 | 0.23 | 0.08 | 0.44 | 0.12 | -0.15 | 64.66 | 0.03 | 0.08 | 0.08 | -0.06 | 0.08 | 0.02 | -0.01 | 0.04 | 98.96 |
| 0.01 | 0.06 | 1.04 | 32.77 | 0.24 | 0.07 | 0.48 | 0.22 | -0.17 | 64.55 | -0.01 | 0.02 | 0.06 | -0.19 | -0.01 | -0.17 | 0.09 | -0.03 | 99.03 |
| -0.01 | 0.05 | 0.75 | 32.57 | 0.23 | 0.07 | 0.46 | 0.28 | -0.09 | 64.10 | -0.01 | 0.10 | 0.19 | -0.01 | 0.03 | -0.06 | 0.02 | -0.12 | 98.55 |
| 0.01 | 0.05 | 1.09 | 32.93 | 0.24 | 0.07 | 0.55 | 0.17 | -0.19 | 64.03 | -0.01 | -0.06 | 0.05 | 0.12 | -0.11 | 0.05 | -0.03 | 0.02 | 98.98 |
| 0.00 | 0.06 | 1.50 | 32.76 | 0.25 | 0.07 | 0.60 | 0.29 | 0.02 | 63.99 | 0.00 | -0.01 | 0.05 | 0.02 | -0.11 | -0.02 | 0.08 | 0.05 | 99.60 |
| -0.02 | 0.06 | 1.04 | 33.75 | 0.21 | 0.07 | 0.44 | 0.07 | -0.30 | 63.62 | -0.04 | 0.04 | -0.02 | 0.07 | 0.02 | 0.00 | 0.03 | -0.02 | 99.02 |
| -0.01 | 0.05 | 1.11 | 32.28 | 0.28 | 0.08 | 0.54 | 0.30 | 0.12 | 63.54 | 0.05 | -0.04 | 0.17 | 0.07 | 0.03 | 0.14 | 0.04 | -0.04 | 98.71 |
| 0.02 | 0.06 | 2.43 | 32.27 | 0.28 | 0.07 | 0.77 | 0.03 | -0.22 | 62.96 | -0.01 | -0.04 | 0.12 | -0.07 | 0.00 | 0.16 | 0.05 | 0.02 | 98.90 |
| 0.01 | 0.06 | 0.51 | 31.62 | 0.37 | 0.08 | 0.75 | 0.72 | 0.40 | 62.49 | 0.03 | 0.18 | 0.18 | 0.01 | -0.01 | 0.17 | 0.06 | -0.01 | 97.62 |
| 0.00 | 0.05 | 2.92 | 32.03 | 0.30 | 0.07 | 0.79 | 0.23 | -0.07 | 61.56 | -0.03 | 0.08 | 0.26 | -0.09 | 0.11 | 0.17 | 0.07 | -0.02 | 98.43 |
| 0.01 | 0.07 | 4.46 | 31.19 | 0.35 | 0.07 | 1.10 | 0.24 | -0.05 | 58.87 | 0.01 | 0.06 | 0.33 | 0.09 | -0.13 | -0.01 | 0.20 | -0.01 | 96.85 |
| 0.00 | 0.09 | 3.31 | 28.82 | 0.70 | 0.08 | 1.64 | 0.97 | 0.41 | 57.67 | 0.19 | 0.24 | 0.27 | 0.12 | 0.15 | 0.44 | 0.08 | 0.03 | 95.21 |
| 0.02 | 0.08 | 1.41 | 36.50 | 0.55 | 0.07 | 1.50 | 1.22 | 1.28 | 53.76 | 0.44 | 0.27 | 0.26 | 0.01 | 0.23 | 0.16 | 0.04 | 0.03 | 97.83 |
| -0.06 | 0.02 | 3.95 | 27.73 | 0.26 | 0.05 | 0.83 | -0.09 | 0.04 | 48.75 | 0.08 | 0.04 | 1.22 | 0.09 | -0.12 | 0.11 | 0.04 | 0.06 | 83.00 |
| -0.06 | 0.06 | 0.70 | 1.51 | 0.71 | 0.16 | 0.60 | 0.38 | 30.46 | -0.24 | 5.27 | -0.32 | 0.02 | 16.03 | 33.32 | 13.90 | -0.77 | 0.00 | 101.73 |
| 0.03 | 0.05 | 28.39 | 8.26 | 2.33 | 0.12 | 2.63 | 0.41 | 20.42 | -0.08 | -0.06 | 0.09 | 0.18 | 2.75 | 3.81 | 1.82 | -0.14 | 0.00 | 71.01 |

SAMPLE 11

| NA | MG | AL | SI | CA | K | FE | Y | P | ZR | TH | U | TI | LA | OE | ND | CR | MN | sum |
|-------|-------|------|-------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| -0.01 | -0.05 | 0.38 | 0.13 | 0.15 | 0.05 | 26.72 | -0.01 | 0.04 | 0.00 | -0.09 | 0.00 | 69.91 | -0.16 | -0.09 | -0.09 | 0.01 | 2.38 | 99.27 |
| -0.02 | -0.01 | 5.63 | 2.27 | 0.39 | 0.05 | 16.36 | 0.04 | 0.80 | 0.09 | -0.01 | 0.07 | 63.94 | -0.01 | 0.00 | -0.03 | 0.25 | 1.65 | 91.46 |
| 0.04 | -0.02 | 1.92 | 0.74 | 0.20 | 0.05 | 31.24 | 0.03 | 0.37 | 0.12 | 0.03 | -0.04 | 58.98 | 0.01 | 0.12 | -0.11 | 0.11 | 3.18 | 96.97 |
| 0.00 | 0.04 | 0.50 | 0.18 | 0.18 | 0.08 | 36.80 | 0.03 | 0.08 | -0.05 | -0.01 | -0.03 | 58.74 | 0.06 | 0.24 | -0.08 | 0.00 | 6.47 | 103.15 |
| 0.02 | -0.01 | 0.62 | 0.15 | 0.15 | 0.06 | 38.70 | -0.01 | 0.01 | 0.07 | 0.03 | -0.04 | 58.23 | 0.03 | 0.14 | 0.07 | 0.02 | 4.18 | 102.42 |
| -0.01 | 0.01 | 0.28 | 0.10 | 0.15 | 0.05 | 41.67 | 0.02 | 0.02 | 0.11 | -0.06 | 0.00 | 57.79 | -0.08 | 0.00 | -0.22 | 0.05 | 4.48 | 104.36 |
| 0.00 | -0.01 | 1.10 | 0.08 | 0.16 | 0.05 | 37.87 | 0.07 | 0.06 | 0.03 | -0.06 | -0.02 | 57.37 | -0.01 | 0.03 | 0.02 | 0.04 | 4.27 | 104.76 |
| 0.00 | -0.04 | 0.46 | 0.27 | 0.16 | 0.06 | 43.52 | -0.02 | -0.01 | 0.10 | -0.05 | -0.04 | 57.08 | -0.03 | 0.05 | -0.02 | 0.01 | 2.65 | 104.15 |
| -0.01 | 0.01 | 0.35 | 0.16 | 0.15 | 0.06 | 43.02 | 0.02 | 0.04 | 0.13 | 0.06 | -0.09 | 57.06 | -0.01 | 0.20 | 0.00 | 0.01 | 3.38 | 104.54 |
| 0.00 | 0.08 | 5.57 | 2.65 | 0.75 | 0.09 | 6.45 | 0.06 | 2.24 | 0.12 | -0.09 | 0.01 | 57.03 | 0.20 | 0.02 | -0.05 | 0.03 | 0.11 | 74.87 |
| -0.02 | -0.04 | 0.64 | 0.30 | 0.16 | 0.05 | 38.58 | -0.03 | 0.02 | 0.09 | -0.01 | -0.03 | 56.84 | -0.07 | -0.09 | 0.04 | -0.07 | 6.28 | 102.64 |
| 0.01 | -0.02 | 2.89 | 0.77 | 0.24 | 0.05 | 36.66 | 0.06 | 0.03 | 0.18 | 0.01 | -0.03 | 55.84 | 0.16 | -0.06 | -0.14 | 0.14 | 4.85 | 101.64 |
| 0.01 | -0.04 | 0.23 | 0.20 | 0.15 | 0.05 | 43.17 | -0.03 | 0.07 | -0.01 | -0.01 | 0.02 | 54.02 | 0.01 | 0.04 | 0.11 | 0.10 | 4.05 | 102.14 |
| 0.01 | -0.01 | 4.98 | 2.12 | 0.45 | 0.05 | 4.64 | -0.05 | 1.67 | 0.12 | -0.02 | 0.04 | 53.21 | -0.09 | 0.13 | 0.01 | 0.21 | 0.09 | 67.60 |
| 0.02 | -0.04 | 1.68 | 1.01 | 0.14 | 0.08 | 28.76 | 0.00 | 0.11 | 0.10 | 0.16 | -0.03 | 49.89 | 0.08 | -0.04 | 0.16 | 0.09 | 2.30 | 84.47 |
| 0.01 | 0.51 | 3.31 | 50.00 | 0.08 | 0.44 | 1.52 | 0.05 | 0.06 | 0.07 | 0.15 | -0.03 | 46.90 | -0.11 | -0.05 | -0.03 | 0.08 | -0.03 | 102.93 |
| 0.02 | -0.06 | 2.46 | 0.58 | 0.14 | 0.03 | 25.09 | 0.01 | 0.17 | 0.12 | 0.00 | 0.02 | 42.92 | -0.02 | 0.01 | 0.11 | 0.07 | 2.62 | 74.27 |
| -0.02 | 0.05 | 0.07 | 33.30 | 0.21 | 0.08 | 0.39 | 0.19 | -0.07 | 67.33 | 0.00 | 0.07 | 0.09 | 0.00 | -0.13 | -0.08 | -0.06 | 0.01 | 101.43 |
| 0.01 | 0.04 | 0.14 | 33.54 | 0.21 | 0.07 | 0.48 | 0.02 | -0.11 | 66.97 | -0.02 | 0.08 | 0.14 | -0.18 | -0.08 | 0.04 | -0.04 | 0.04 | 101.35 |
| -0.02 | 0.06 | 0.14 | 33.52 | 0.22 | 0.07 | 0.33 | 0.04 | -0.24 | 66.88 | 0.04 | -0.09 | 0.04 | -0.16 | 0.18 | 0.06 | -0.04 | 0.01 | 101.04 |
| 0.02 | 0.05 | 0.06 | 33.24 | 0.21 | 0.07 | 0.37 | 0.11 | -0.30 | 66.46 | -0.04 | 0.01 | 0.08 | 0.05 | 0.29 | -0.03 | 0.00 | 0.03 | 100.68 |
| 0.02 | 0.05 | 0.08 | 33.86 | 0.21 | 0.08 | 0.41 | 0.10 | -0.15 | 66.24 | 0.00 | 0.07 | 0.08 | 0.17 | -0.20 | 0.03 | -0.02 | 0.04 | 100.91 |
| -0.01 | 0.05 | 0.06 | 33.90 | 0.21 | 0.07 | 0.31 | 0.10 | -0.27 | 66.09 | -0.03 | 0.00 | 0.16 | -0.14 | -0.08 | 0.02 | 0.02 | -0.08 | 100.38 |
| 0.01 | 0.05 | 0.12 | 33.44 | 0.22 | 0.08 | 0.33 | 0.14 | 0.03 | 65.71 | -0.03 | 0.06 | 0.12 | -0.12 | 0.19 | -0.01 | 0.08 | 0.07 | 100.39 |
| -0.01 | 0.05 | 0.08 | 33.41 | 0.21 | 0.08 | 0.41 | 0.09 | -0.21 | 65.69 | 0.03 | 0.13 | 0.05 | 0.04 | 0.01 | -0.12 | 0.03 | -0.03 | 99.94 |
| -0.01 | 0.05 | 0.65 | 33.64 | 0.22 | 0.08 | 0.46 | 0.30 | -0.26 | 65.66 | 0.08 | 0.08 | 0.02 | 0.01 | -0.11 | -0.12 | 0.02 | 0.00 | 100.77 |
| -0.01 | 0.06 | 0.13 | 33.29 | 0.22 | 0.07 | 0.37 | 0.20 | -0.07 | 65.57 | -0.05 | 0.05 | 0.01 | 0.00 | -0.10 | 0.03 | -0.01 | 0.04 | 99.80 |
| -0.04 | 0.05 | 0.25 | 33.26 | 0.20 | 0.08 | 0.37 | 0.23 | -0.16 | 65.47 | 0.10 | -0.04 | 0.10 | 0.07 | -0.01 | -0.01 | 0.07 | -0.01 | 99.98 |
| -0.02 | 0.06 | 0.12 | 32.66 | 0.26 | 0.07 | 0.49 | 0.46 | 0.18 | 65.38 | 0.00 | 0.25 | 0.08 | 0.13 | 0.12 | 0.04 | 0.06 | 0.06 | 100.40 |
| 0.03 | 0.05 | 0.11 | 32.83 | 0.24 | 0.08 | 0.39 | 0.50 | 0.15 | 65.02 | 0.03 | 0.11 | 0.02 | 0.00 | 0.10 | 0.03 | 0.09 | 0.08 | 99.86 |
| 0.04 | 0.04 | 0.07 | 33.78 | 0.19 | 0.07 | 0.36 | 0.13 | -0.23 | 64.93 | -0.03 | -0.03 | 0.09 | 0.07 | 0.21 | 0.07 | 0.01 | -0.01 | 99.76 |
| 0.00 | 0.05 | 1.09 | 32.87 | 0.24 | 0.08 | 0.56 | 0.03 | -0.18 | 64.59 | -0.03 | 0.17 | 0.14 | -0.01 | 0.00 | 0.07 | 0.03 | -0.03 | 99.67 |
| 0.03 | 0.06 | 0.13 | 33.02 | 0.20 | 0.07 | 0.38 | 0.41 | 0.31 | 64.13 | -0.02 | 0.12 | 0.14 | 0.06 | 0.07 | 0.08 | -0.11 | -0.05 | 99.03 |
| 0.00 | 0.06 | 1.02 | 32.72 | 0.26 | 0.07 | 0.55 | 0.49 | 0.13 | 64.01 | 0.09 | 0.12 | 0.13 | 0.08 | 0.07 | 0.07 | 0.04 | 0.05 | 99.96 |
| 0.02 | 0.05 | 2.06 | 32.32 | 0.29 | 0.07 | 0.85 | 0.13 | -0.17 | 63.94 | 0.03 | 0.06 | 0.16 | 0.11 | -0.06 | 0.11 | 0.06 | -0.05 | 99.98 |
| -0.03 | 0.06 | 0.10 | 33.15 | 0.22 | 0.08 | 0.36 | 0.21 | 0.04 | 63.74 | -0.07 | 0.04 | 0.08 | 0.02 | -0.06 | -0.09 | -0.03 | 0.06 | 98.06 |
| -0.01 | 0.06 | 0.59 | 33.23 | 0.26 | 0.07 | 0.46 | 0.43 | -0.05 | 63.61 | 0.08 | 0.05 | 0.02 | 0.00 | -0.06 | -0.03 | 0.03 | 0.00 | 98.74 |
| -0.03 | 0.05 | 0.49 | 32.20 | 0.22 | 0.07 | 0.43 | 0.43 | 0.18 | 63.48 | 0.01 | 0.13 | 0.13 | 0.09 | -0.18 | 0.12 | 0.05 | 0.01 | 97.88 |
| -0.02 | 0.06 | 0.83 | 32.37 | 0.29 | 0.07 | 0.59 | 0.49 | 0.18 | 63.37 | 0.10 | 0.14 | 0.13 | 0.12 | -0.06 | 0.05 | -0.05 | 0.07 | 98.73 |
| -0.01 | 0.05 | 0.82 | 33.05 | 0.24 | 0.07 | 0.49 | 0.27 | 0.02 | 62.52 | -0.02 | 0.12 | 0.05 | -0.23 | -0.03 | 0.02 | 0.04 | -0.06 | 97.41 |
| 0.00 | 0.06 | 2.86 | 31.92 | 0.33 | 0.07 | 1.01 | 0.10 | -0.19 | 61.91 | 0.07 | 0.02 | 0.27 | -0.17 | 0.09 | 0.03 | 0.18 | -0.03 | 98.52 |
| 0.00 | 0.04 | 1.59 | 31.80 | 0.30 | 0.07 | 0.78 | 0.28 | 0.20 | 61.80 | 0.06 | 0.15 | 0.20 | 0.09 | 0.04 | 0.01 | 0.11 | 0.07 | 97.59 |
| -0.02 | 0.03 | 2.65 | 32.13 | 0.29 | 0.07 | 0.75 | 0.02 | -0.11 | 61.20 | -0.04 | 0.18 | 0.25 | 0.25 | 0.11 | 0.07 | -0.06 | 0.06 | 97.66 |
| 0.02 | 0.07 | 0.44 | 31.56 | 0.33 | 0.08 | 0.57 | 1.35 | 0.73 | 61.08 | 0.04 | 0.18 | 0.13 | -0.07 | 0.19 | 0.04 | 0.03 | 0.01 | 96.78 |
| -0.02 | 0.04 | 3.24 | 31.48 | 0.33 | 0.07 | 0.92 | 0.24 | 0.05 | 60.98 | 0.04 | 0.00 | 0.32 | -0.09 | -0.09 | -0.10 | 0.30 | 0.10 | 97.81 |
| -0.02 | 0.07 | 1.72 | 32.18 | 0.25 | 0.09 | 0.94 | 0.16 | -0.10 | 60.27 | 0.01 | 0.02 | 0.33 | -0.06 | 0.07 | 0.06 | 0.10 | 0.06 | 96.15 |

| NA | MG | AL | SI | CA | K | FE | Y | P | ZR | TH | U | TI | LA | CE | ND | CR | MIN | sum |
|-------|-------|-------|-------|------|------|------|------|-------|-------|-------|-------|------|-------|-------|-------|-------|-------|-------|
| -0.01 | 0.06 | 4.13 | 31.11 | 0.35 | 0.07 | 1.17 | 0.19 | -0.12 | 59.13 | 0.03 | -0.04 | 0.30 | -0.17 | 0.08 | -0.06 | 0.15 | -0.04 | 96.33 |
| 0.03 | 0.07 | 0.52 | 29.82 | 0.25 | 0.10 | 0.71 | 0.50 | 0.45 | 58.85 | 0.03 | 0.19 | 0.16 | 0.01 | 0.13 | -0.10 | 0.00 | 0.01 | 91.73 |
| -0.01 | 0.05 | 0.73 | 30.64 | 0.21 | 0.07 | 0.51 | 0.10 | -0.06 | 58.29 | 0.05 | 0.16 | 0.07 | 0.19 | -0.03 | -0.01 | 0.00 | -0.08 | 90.88 |
| -0.01 | 0.04 | 0.60 | 30.54 | 0.26 | 0.06 | 0.63 | 0.56 | 0.18 | 58.11 | 0.08 | 0.05 | 0.53 | 0.18 | -0.09 | -0.03 | -0.04 | 0.06 | 91.71 |
| 0.02 | 0.03 | 0.63 | 30.95 | 0.20 | 0.07 | 0.45 | 0.32 | 0.12 | 57.86 | 0.08 | -0.01 | 0.13 | 0.19 | 0.06 | -0.01 | -0.02 | -0.02 | 91.05 |
| 0.02 | 0.07 | 3.74 | 30.75 | 0.48 | 0.08 | 1.13 | 0.70 | 0.30 | 57.56 | 0.11 | 0.17 | 0.22 | -0.13 | 0.10 | 0.06 | 0.18 | 0.00 | 95.54 |
| 0.04 | 0.06 | 5.78 | 30.50 | 0.48 | 0.07 | 1.24 | 0.69 | 0.26 | 56.38 | -0.03 | 0.13 | 0.35 | -0.11 | -0.11 | -0.08 | 0.29 | 0.03 | 95.97 |
| 0.00 | 0.01 | 0.99 | 31.87 | 0.33 | 0.08 | 0.82 | 0.70 | 0.42 | 55.79 | 0.06 | 0.12 | 0.35 | 0.32 | 0.01 | 0.07 | 0.00 | -0.08 | 91.86 |
| 0.01 | 0.03 | 1.51 | 29.56 | 0.22 | 0.06 | 0.63 | 0.12 | -0.14 | 55.56 | -0.08 | -0.06 | 0.22 | 0.10 | 0.00 | -0.14 | -0.03 | 0.05 | 87.62 |
| 0.02 | 0.02 | 2.68 | 28.00 | 0.27 | 0.06 | 0.90 | 0.04 | -0.12 | 53.96 | -0.03 | 0.04 | 0.48 | 0.08 | 0.07 | -0.05 | 0.11 | 0.10 | 86.63 |
| 0.00 | 0.03 | 3.29 | 28.74 | 0.30 | 0.06 | 1.05 | 0.16 | 0.01 | 52.33 | 0.00 | -0.01 | 0.27 | -0.07 | 0.20 | 0.02 | 0.09 | 0.02 | 86.49 |
| 0.02 | 0.02 | 5.76 | 27.97 | 0.25 | 0.06 | 0.69 | 0.02 | -0.17 | 51.54 | 0.05 | 0.03 | 0.19 | -0.06 | -0.07 | -0.03 | 0.05 | 0.05 | 86.37 |
| 0.02 | 0.05 | 6.60 | 26.75 | 0.41 | 0.06 | 1.70 | 0.08 | 0.02 | 49.04 | -0.12 | 0.08 | 0.70 | -0.13 | 0.10 | -0.09 | 0.23 | 0.07 | 85.57 |
| 0.00 | 0.06 | 3.86 | 37.20 | 0.55 | 0.07 | 1.51 | 1.44 | 1.06 | 46.15 | 0.14 | 0.23 | 0.24 | 0.04 | 0.01 | 0.04 | 0.10 | 0.13 | 92.83 |
| -0.01 | -0.01 | 2.51 | 23.07 | 0.23 | 0.03 | 0.89 | 0.21 | 0.10 | 44.31 | -0.03 | -0.01 | 0.23 | 0.01 | 0.07 | 0.16 | 0.08 | -0.10 | 71.74 |
| 0.02 | 0.01 | 10.21 | 25.67 | 0.52 | 0.05 | 2.12 | 0.07 | 0.07 | 33.44 | 0.12 | 0.00 | 0.48 | -0.04 | 0.06 | 0.02 | 0.37 | 0.08 | 73.27 |
| 0.03 | 0.01 | 7.63 | 18.53 | 0.31 | 0.04 | 4.35 | 0.10 | 0.00 | 29.92 | 0.06 | 0.15 | 6.55 | 0.11 | 0.09 | 0.03 | 0.30 | 0.51 | 68.72 |
| -0.07 | 0.06 | 0.12 | 1.82 | 0.83 | 0.15 | 0.57 | 0.43 | 29.73 | -0.22 | 8.50 | -0.60 | 0.02 | 15.67 | 31.18 | 11.93 | -0.75 | -0.13 | 98.24 |
| 0.00 | 0.06 | 1.20 | 3.80 | 0.94 | 0.18 | 0.88 | 0.16 | 25.07 | 0.10 | 15.51 | -0.56 | 0.17 | 11.81 | 28.72 | 10.57 | -0.44 | -0.09 | 98.08 |

SAMPLE 12

| NA | MG | AL | SI | CA | K | FE | Y | P | ZR | TH | U | TI | LA | CE | ND | OR | MIN | sum |
|-------|-------|------|------|------|------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|-------|------|--------|
| 0.03 | -0.04 | 0.14 | 0.45 | 0.21 | 0.04 | 2.91 | 0.05 | 0.02 | 0.06 | 0.02 | 0.05 | 101.00 | -0.04 | 0.09 | 0.05 | -0.01 | 0.06 | 105.09 |
| 0.03 | -0.04 | 0.19 | 0.38 | 0.20 | 0.05 | 8.93 | 0.02 | 0.09 | 0.04 | -0.04 | -0.04 | 96.10 | 0.03 | 0.31 | 0.16 | 0.03 | 0.80 | 107.24 |
| 0.02 | -0.05 | 0.10 | 0.11 | 0.15 | 0.04 | 6.43 | 0.04 | -0.02 | 0.04 | -0.04 | 0.01 | 95.85 | -0.04 | 0.03 | -0.15 | 0.07 | 0.61 | 103.15 |
| 0.02 | -0.06 | 0.75 | 0.31 | 0.28 | 0.04 | 11.38 | 0.10 | 0.03 | 0.09 | -0.02 | -0.02 | 92.01 | 0.08 | -0.05 | 0.00 | 0.00 | 1.10 | 105.84 |
| 0.01 | -0.03 | 0.12 | 0.45 | 0.16 | 0.06 | 19.38 | -0.07 | -0.05 | -0.05 | -0.04 | -0.04 | 81.65 | 0.14 | 0.00 | -0.02 | -0.03 | 3.00 | 104.64 |
| 0.02 | 0.00 | 3.49 | 0.65 | 0.36 | 0.05 | 20.75 | 0.06 | 0.72 | 0.05 | 0.11 | 0.05 | 67.71 | 0.20 | -0.02 | -0.02 | 0.12 | 1.53 | 95.83 |
| -0.01 | 0.01 | 0.42 | 0.13 | 0.18 | 0.05 | 33.79 | 0.03 | 0.10 | 0.00 | -0.04 | 0.03 | 63.05 | 0.02 | 0.08 | 0.08 | -0.01 | 4.18 | 102.09 |
| 0.02 | -0.01 | 0.69 | 0.82 | 0.14 | 0.13 | 36.79 | 0.00 | 0.10 | -0.01 | -0.05 | 0.00 | 60.55 | 0.11 | 0.07 | -0.04 | 0.02 | 2.06 | 101.39 |
| 0.03 | -0.01 | 0.78 | 0.25 | 0.20 | 0.06 | 37.00 | 0.01 | 0.13 | 0.12 | -0.02 | 0.03 | 60.29 | 0.12 | -0.03 | -0.07 | 0.02 | 4.77 | 103.68 |
| 0.00 | -0.03 | 0.34 | 0.09 | 0.14 | 0.05 | 33.61 | 0.01 | 0.02 | 0.05 | 0.03 | 0.02 | 60.27 | -0.03 | 0.01 | 0.13 | 0.02 | 5.42 | 100.13 |
| -0.01 | 0.38 | 3.50 | 5.96 | 0.18 | 0.46 | 27.99 | 0.00 | 0.02 | 0.06 | 0.01 | -0.05 | 60.23 | 0.12 | 0.11 | -0.09 | 0.05 | 2.44 | 101.36 |
| 0.02 | 0.00 | 3.52 | 0.75 | 0.21 | 0.05 | 33.25 | -0.01 | 0.13 | -0.02 | 0.00 | -0.06 | 59.87 | -0.07 | 0.23 | 0.09 | 0.03 | 3.82 | 101.81 |
| -0.01 | 0.00 | 0.60 | 0.16 | 0.15 | 0.05 | 37.16 | 0.07 | 0.02 | 0.04 | 0.03 | 0.03 | 59.16 | -0.11 | -0.14 | -0.05 | 0.01 | 3.61 | 100.78 |
| 0.03 | -0.06 | 0.71 | 0.29 | 0.16 | 0.05 | 39.97 | 0.09 | 0.05 | 0.10 | -0.04 | -0.04 | 59.01 | -0.08 | 0.09 | -0.10 | 0.00 | 3.09 | 103.27 |
| 0.00 | -0.02 | 0.26 | 0.09 | 0.14 | 0.05 | 36.15 | 0.01 | -0.02 | 0.05 | 0.00 | -0.04 | 58.36 | 0.00 | 0.13 | 0.09 | -0.03 | 4.36 | 99.58 |
| 0.06 | -0.04 | 0.49 | 0.13 | 0.16 | 0.05 | 36.77 | -0.05 | 0.09 | -0.01 | -0.02 | 0.00 | 58.31 | -0.08 | -0.03 | -0.19 | -0.04 | 6.67 | 102.27 |
| -0.02 | 0.00 | 0.52 | 0.18 | 0.15 | 0.05 | 39.62 | 0.10 | 0.02 | 0.03 | -0.02 | 0.04 | 58.29 | -0.07 | 0.11 | 0.02 | 0.05 | 4.10 | 103.17 |
| 0.00 | -0.02 | 1.01 | 0.23 | 0.17 | 0.06 | 40.31 | 0.03 | 0.01 | 0.07 | -0.01 | -0.06 | 57.97 | -0.06 | 0.07 | 0.08 | -0.05 | 4.37 | 104.18 |
| 0.03 | -0.04 | 0.63 | 0.34 | 0.21 | 0.06 | 38.42 | -0.04 | 0.07 | 0.09 | 0.01 | -0.10 | 57.94 | 0.21 | -0.10 | 0.05 | -0.01 | 3.74 | 101.51 |
| 0.00 | -0.01 | 0.16 | 0.09 | 0.15 | 0.06 | 39.65 | -0.04 | 0.01 | 0.05 | -0.02 | -0.02 | 57.84 | 0.05 | 0.03 | -0.02 | -0.05 | 4.71 | 102.70 |
| 0.01 | 0.01 | 0.67 | 0.16 | 0.15 | 0.06 | 37.72 | -0.01 | 0.04 | 0.12 | 0.00 | -0.02 | 57.82 | 0.08 | 0.09 | 0.01 | 0.06 | 4.80 | 101.71 |
| 0.00 | -0.06 | 0.38 | 0.22 | 0.14 | 0.06 | 38.28 | 0.05 | 0.00 | 0.06 | 0.07 | -0.02 | 57.81 | 0.05 | 0.00 | -0.09 | 0.05 | 2.67 | 99.67 |
| 0.06 | -0.03 | 0.65 | 0.13 | 0.15 | 0.06 | 40.16 | 0.07 | 0.07 | 0.05 | -0.06 | -0.01 | 57.79 | -0.08 | 0.11 | 0.03 | 0.02 | 5.16 | 104.33 |
| 0.09 | 0.01 | 1.50 | 0.71 | 0.32 | 0.05 | 33.21 | 0.04 | 0.03 | 0.06 | 0.00 | -0.07 | 57.46 | -0.20 | -0.11 | 0.02 | 0.06 | 4.65 | 97.83 |
| 0.00 | 0.02 | 0.35 | 0.10 | 0.17 | 0.06 | 41.44 | -0.04 | 0.02 | 0.05 | 0.00 | -0.06 | 57.44 | -0.13 | -0.04 | -0.02 | -0.02 | 4.00 | 103.34 |
| 0.04 | 0.00 | 1.29 | 0.42 | 0.16 | 0.05 | 39.03 | -0.01 | 0.05 | 0.03 | 0.03 | -0.06 | 57.16 | 0.05 | -0.04 | -0.03 | 0.04 | 3.55 | 101.76 |
| -0.02 | -0.02 | 0.12 | 0.07 | 0.15 | 0.05 | 41.52 | 0.03 | 0.04 | -0.11 | -0.06 | -0.05 | 57.12 | -0.15 | 0.02 | 0.02 | 0.03 | 4.17 | 102.93 |
| -0.06 | -0.01 | 0.32 | 0.09 | 0.14 | 0.06 | 40.08 | 0.02 | -0.04 | 0.01 | -0.01 | -0.08 | 57.08 | 0.03 | 0.17 | 0.02 | 0.02 | 5.10 | 102.94 |
| 0.01 | -0.01 | 0.19 | 0.09 | 0.14 | 0.06 | 45.40 | -0.01 | 0.02 | -0.01 | -0.04 | -0.07 | 56.94 | -0.12 | -0.22 | 0.08 | -0.03 | 0.82 | 103.24 |
| 0.10 | -0.02 | 4.71 | 0.88 | 0.24 | 0.05 | 30.23 | -0.02 | 0.21 | 0.15 | -0.07 | -0.02 | 56.85 | -0.25 | 0.09 | 0.00 | 0.11 | 3.95 | 97.19 |
| -0.04 | -0.01 | 0.31 | 0.10 | 0.16 | 0.06 | 40.53 | -0.04 | 0.04 | 0.01 | -0.05 | -0.01 | 56.62 | 0.09 | 0.02 | 0.05 | -0.02 | 5.11 | 102.93 |
| 0.00 | 0.02 | 0.36 | 0.11 | 0.17 | 0.05 | 41.29 | -0.05 | 0.04 | 0.04 | -0.03 | -0.02 | 56.47 | 0.06 | 0.11 | -0.06 | 0.07 | 3.49 | 102.12 |
| -0.05 | 0.00 | 1.11 | 0.17 | 0.17 | 0.06 | 41.43 | -0.01 | 0.04 | 0.00 | -0.10 | 0.00 | 56.41 | 0.10 | -0.11 | 0.01 | -0.03 | 4.04 | 103.24 |
| 0.03 | 0.02 | 0.94 | 0.37 | 0.20 | 0.05 | 38.78 | -0.03 | 0.04 | 0.02 | -0.09 | -0.03 | 56.32 | -0.02 | 0.19 | 0.13 | 0.08 | 5.23 | 102.23 |
| 0.02 | -0.05 | 1.81 | 0.54 | 0.16 | 0.05 | 36.33 | 0.01 | 0.03 | 0.06 | 0.02 | -0.02 | 56.30 | -0.01 | -0.12 | 0.03 | 0.05 | 2.66 | 97.87 |
| 0.05 | -0.01 | 0.40 | 0.15 | 0.16 | 0.05 | 39.96 | -0.04 | -0.01 | 0.07 | -0.08 | -0.02 | 56.08 | -0.04 | 0.14 | 0.03 | 0.06 | 5.15 | 102.10 |
| 0.09 | 0.01 | 1.29 | 0.38 | 0.16 | 0.10 | 38.11 | 0.03 | 0.15 | 0.03 | -0.02 | 0.00 | 55.90 | -0.01 | -0.13 | 0.03 | -0.06 | 6.15 | 102.21 |
| 0.01 | -0.04 | 1.24 | 0.54 | 0.23 | 0.05 | 34.44 | 0.03 | 0.08 | 0.03 | -0.05 | -0.09 | 55.84 | -0.07 | 0.19 | -0.13 | 0.05 | 3.36 | 95.71 |
| 0.01 | 0.02 | 0.65 | 0.64 | 0.15 | 0.06 | 41.62 | 0.04 | 0.02 | 0.05 | -0.02 | -0.09 | 55.83 | -0.10 | 0.08 | 0.05 | 0.05 | 4.20 | 103.26 |
| 0.01 | -0.03 | 1.96 | 1.96 | 0.20 | 0.11 | 42.88 | -0.02 | 0.05 | 0.08 | 0.00 | 0.03 | 55.01 | -0.21 | 0.12 | 0.03 | 0.04 | 2.61 | 103.65 |
| 0.01 | 0.00 | 2.84 | 0.60 | 0.20 | 0.06 | 40.74 | -0.08 | 0.03 | 0.16 | 0.00 | -0.04 | 55.09 | 0.18 | -0.05 | -0.12 | 0.04 | 3.98 | 103.64 |
| 0.02 | -0.01 | 2.40 | 0.72 | 0.21 | 0.05 | 37.08 | 0.02 | 0.04 | 0.11 | -0.03 | -0.03 | 54.92 | 0.06 | -0.16 | -0.05 | 0.03 | 6.60 | 101.98 |
| -0.01 | 0.02 | 0.86 | 0.87 | 0.60 | 0.07 | 39.45 | -0.04 | 0.03 | 0.10 | -0.04 | -0.06 | 54.91 | -0.15 | 0.10 | -0.03 | 0.01 | 4.83 | 101.52 |
| 0.05 | 0.03 | 9.16 | 4.66 | 0.33 | 0.09 | 18.46 | 0.04 | 0.93 | 0.04 | 0.01 | -0.07 | 54.70 | -0.18 | -0.11 | 0.14 | 0.14 | 2.45 | 90.84 |
| 0.05 | 0.06 | 7.59 | 5.14 | 0.22 | 0.38 | 22.00 | 0.05 | 0.09 | 0.22 | -0.12 | -0.01 | 54.65 | 0.04 | 0.04 | -0.04 | 0.07 | 1.52 | 91.95 |
| 0.00 | 0.00 | 2.37 | 2.07 | 0.22 | 0.08 | 33.39 | -0.08 | 0.22 | -0.06 | -0.03 | -0.03 | 54.52 | -0.07 | 0.04 | 0.12 | -0.01 | 4.71 | 97.46 |
| 0.04 | -0.01 | 2.64 | 0.87 | 0.19 | 0.05 | 36.42 | 0.01 | 0.06 | 0.15 | -0.04 | -0.03 | 53.24 | -0.16 | -0.02 | -0.07 | 0.05 | 4.46 | 97.85 |

| NA | MG | AL | SI | CA | K | FE | Y | P | ZR | TH | U | TI | LA | CE | ND | CR | MIN | sum |
|-------|-------|------|-------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| 0.06 | -0.03 | 0.97 | 1.35 | 0.22 | 0.05 | 35.76 | 0.03 | 0.03 | 0.06 | -0.04 | 0.03 | 52.47 | 0.00 | 0.23 | 0.06 | -0.06 | 4.94 | 96.13 |
| 0.00 | -0.01 | 0.47 | 0.19 | 0.16 | 0.05 | 38.45 | 0.01 | 0.03 | 0.02 | 0.01 | 0.00 | 51.85 | -0.11 | -0.12 | 0.04 | -0.10 | 5.99 | 96.93 |
| 0.01 | -0.05 | 1.52 | 27.20 | 0.14 | 0.05 | 19.91 | 0.09 | 0.13 | 0.23 | 0.02 | 0.05 | 50.96 | 0.01 | 0.16 | 0.09 | 0.06 | 1.54 | 102.12 |
| 0.07 | -0.03 | 3.39 | 2.03 | 0.17 | 0.04 | 29.76 | -0.01 | 0.01 | 3.15 | -0.01 | 0.00 | 49.58 | 0.14 | -0.02 | 0.01 | 0.10 | 4.16 | 92.54 |
| 0.01 | 0.05 | 0.08 | 33.45 | 0.21 | 0.07 | 0.43 | 0.14 | -0.24 | 67.06 | 0.06 | 0.02 | 0.08 | -0.20 | 0.11 | -0.13 | -0.01 | 0.04 | 101.23 |
| 0.00 | 0.04 | 0.14 | 32.61 | 0.21 | 0.08 | 0.43 | 0.20 | -0.04 | 65.95 | -0.11 | 0.01 | 0.23 | -0.02 | -0.01 | -0.01 | 0.00 | 0.06 | 99.77 |
| -0.02 | 0.06 | 0.09 | 32.84 | 0.20 | 0.07 | 0.40 | 0.05 | -0.15 | 65.93 | -0.01 | 0.07 | 0.07 | -0.27 | -0.08 | -0.15 | -0.01 | 0.06 | 98.15 |
| -0.04 | 0.05 | 0.08 | 32.68 | 0.21 | 0.07 | 0.41 | 0.10 | -0.17 | 65.58 | -0.02 | 0.18 | 0.16 | 0.02 | -0.07 | 0.18 | 0.01 | 0.01 | 99.44 |
| -0.03 | 0.06 | 0.24 | 32.55 | 0.22 | 0.10 | 0.55 | 0.19 | 0.02 | 65.50 | 0.06 | 0.16 | 0.28 | -0.14 | -0.07 | -0.05 | -0.03 | 0.04 | 99.65 |
| 0.01 | 0.05 | 0.11 | 32.44 | 0.20 | 0.07 | 0.35 | 0.26 | 0.02 | 65.37 | 0.10 | 0.05 | 0.08 | -0.13 | 0.03 | -0.15 | -0.02 | 0.02 | 98.86 |
| 0.02 | 0.05 | 0.06 | 32.96 | 0.21 | 0.07 | 0.34 | 0.37 | -0.04 | 65.33 | 0.05 | 0.03 | 0.06 | 0.06 | 0.06 | -0.11 | -0.06 | -0.01 | 99.45 |
| 0.03 | 0.05 | 0.08 | 33.00 | 0.21 | 0.07 | 0.35 | 0.01 | -0.27 | 65.21 | -0.08 | 0.00 | 0.09 | 0.06 | 0.06 | -0.03 | 0.01 | -0.11 | 98.74 |
| -0.03 | 0.05 | 0.06 | 32.51 | 0.20 | 0.08 | 0.41 | 0.42 | -0.02 | 65.04 | 0.10 | 0.00 | 0.12 | 0.02 | 0.01 | -0.12 | 0.04 | -0.02 | 98.87 |
| -0.02 | 0.05 | 0.08 | 32.91 | 0.21 | 0.08 | 0.35 | 0.11 | -0.17 | 64.76 | 0.06 | -0.04 | 0.10 | 0.06 | -0.05 | -0.02 | -0.11 | 0.01 | 98.58 |
| -0.01 | 0.05 | 0.70 | 32.34 | 0.27 | 0.07 | 1.01 | 0.04 | -0.25 | 64.62 | -0.10 | 0.06 | 0.46 | -0.05 | -0.14 | 0.07 | 0.03 | 0.08 | 100.27 |
| -0.01 | 0.06 | 0.88 | 32.62 | 0.22 | 0.07 | 0.54 | 0.11 | -0.14 | 64.57 | 0.05 | 0.00 | 0.13 | 0.08 | -0.15 | 0.06 | 0.08 | 0.01 | 99.18 |
| -0.02 | 0.05 | 0.11 | 32.85 | 0.27 | 0.07 | 0.59 | 0.32 | 0.00 | 64.32 | -0.02 | 0.11 | 0.21 | 0.07 | 0.06 | 0.17 | 0.04 | -0.01 | 99.27 |
| 0.01 | 0.05 | 0.07 | 32.69 | 0.22 | 0.08 | 0.39 | 0.21 | 0.19 | 64.18 | -0.04 | -0.02 | 0.10 | 0.07 | 0.04 | 0.20 | 0.03 | 0.01 | 99.04 |
| -0.02 | 0.05 | 0.04 | 32.48 | 0.20 | 0.22 | 0.42 | 0.21 | 0.06 | 63.06 | -0.01 | 0.04 | 0.14 | -0.12 | 0.02 | -0.01 | -0.03 | 0.04 | 97.13 |
| -0.01 | 0.05 | 0.11 | 32.65 | 0.21 | 0.08 | 0.39 | 0.36 | -0.01 | 62.36 | -0.03 | 0.08 | 0.10 | -0.19 | -0.01 | -0.02 | 0.04 | 0.04 | 96.20 |
| -0.01 | 0.05 | 2.05 | 32.32 | 0.28 | 0.08 | 0.77 | 0.25 | -0.03 | 61.13 | 0.04 | -0.04 | 0.25 | -0.02 | -0.01 | 0.05 | 0.10 | -0.06 | 97.20 |
| 0.00 | 0.04 | 2.01 | 31.21 | 0.25 | 0.07 | 0.68 | 0.32 | 0.21 | 59.83 | -0.08 | 0.10 | 0.18 | 0.05 | -0.01 | 0.02 | 0.12 | 0.10 | 95.10 |
| 0.01 | 0.02 | 1.58 | 28.73 | 0.23 | 0.07 | 2.38 | 0.09 | -0.19 | 54.23 | 0.02 | 0.05 | 3.80 | -0.01 | -0.10 | 0.01 | 0.13 | 0.13 | 91.18 |
| 0.00 | 0.02 | 4.96 | 28.36 | 0.29 | 0.06 | 0.92 | 0.13 | -0.06 | 51.63 | 0.09 | 0.02 | 0.32 | -0.04 | 0.16 | -0.05 | 0.10 | 0.01 | 86.92 |
| 0.01 | 0.12 | 2.79 | 25.77 | 1.12 | 0.09 | 1.54 | 2.89 | 1.66 | 50.12 | 0.06 | 0.47 | 0.39 | -0.01 | 0.04 | 0.16 | 0.09 | 0.10 | 87.41 |
| 0.03 | 0.01 | 1.00 | 19.88 | 0.15 | 0.05 | 11.03 | 0.14 | -0.09 | 36.55 | -0.05 | 0.00 | 15.12 | 0.06 | -0.18 | -0.09 | 0.03 | 0.18 | 83.82 |
| -0.06 | 0.05 | 0.11 | 0.57 | 0.58 | 0.15 | 0.55 | 0.97 | 31.29 | -0.43 | 2.21 | -0.16 | -0.03 | 12.84 | 34.31 | 14.08 | -0.66 | -0.16 | 96.21 |
| -0.04 | 0.07 | 0.13 | 0.52 | 1.38 | 0.14 | 0.56 | 0.65 | 31.89 | -0.35 | 5.17 | 0.07 | 0.09 | 14.01 | 32.84 | 13.88 | -0.73 | -0.13 | 100.15 |
| -0.05 | 0.07 | 0.15 | 1.05 | 1.93 | 0.16 | 0.56 | 2.85 | 31.12 | -0.39 | 8.19 | 0.71 | 0.01 | 9.81 | 26.72 | 12.90 | -0.46 | -0.13 | 95.20 |

SAMPLE 13

| NA | MG | AL | SI | CA | K | FE | Y | P | ZR | TH | U | TI | LA | CE | ND | CR | MIN | sum |
|-------|-------|-------|-------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| -0.02 | -0.04 | 0.26 | 0.09 | 0.14 | 0.05 | 33.79 | -0.03 | -0.02 | 0.04 | -0.07 | -0.03 | 61.52 | 0.02 | -0.01 | -0.07 | 0.00 | 3.26 | 98.88 |
| 0.00 | 0.03 | 8.61 | 6.29 | 0.21 | 0.11 | 12.19 | 0.07 | 1.35 | 0.05 | -0.07 | 0.01 | 58.88 | -0.06 | 0.01 | 0.12 | 0.16 | -0.01 | 87.95 |
| -0.01 | -0.01 | 0.78 | 0.42 | 0.17 | 0.06 | 41.37 | 0.04 | 0.02 | 0.39 | 0.02 | -0.02 | 56.44 | 0.14 | -0.09 | -0.08 | 0.07 | 3.29 | 103.00 |
| 0.02 | 0.00 | 0.96 | 0.45 | 0.17 | 0.05 | 38.38 | 0.03 | 0.05 | 0.52 | 0.01 | 0.00 | 56.28 | -0.09 | 0.06 | -0.02 | -0.03 | 2.94 | 99.78 |
| -0.03 | -0.03 | 1.13 | 0.36 | 0.16 | 0.05 | 42.13 | 0.04 | 0.03 | 0.22 | -0.07 | -0.05 | 50.58 | -0.02 | 0.10 | -0.05 | 0.05 | 3.29 | 97.89 |
| 0.02 | -0.05 | 1.92 | 1.43 | 0.12 | 0.09 | 19.69 | 0.06 | 0.21 | 0.08 | 0.00 | 0.03 | 34.57 | 0.14 | 0.00 | -0.04 | 0.02 | 2.39 | 60.60 |
| 0.05 | -0.05 | 3.01 | 1.25 | 0.15 | 0.03 | 24.90 | -0.07 | 0.06 | 0.49 | 0.00 | -0.08 | 32.23 | -0.09 | -0.01 | -0.04 | 0.07 | 2.75 | 64.65 |
| -0.04 | 0.05 | 0.29 | 33.20 | 0.21 | 0.07 | 0.34 | -0.03 | -0.26 | 66.37 | -0.08 | 0.08 | 0.13 | -0.24 | 0.20 | -0.20 | 0.01 | 0.03 | 100.13 |
| 0.01 | 0.05 | 0.17 | 33.02 | 0.21 | 0.07 | 0.35 | 0.12 | -0.19 | 66.19 | 0.03 | -0.01 | 0.01 | -0.06 | -0.07 | 0.06 | 0.01 | 0.09 | 100.06 |
| -0.02 | 0.06 | 0.11 | 33.11 | 0.21 | 0.07 | 0.36 | 0.06 | -0.09 | 65.84 | 0.02 | 0.02 | 0.05 | 0.09 | -0.10 | 0.01 | 0.02 | 0.11 | 99.93 |
| -0.02 | 0.06 | 0.75 | 32.67 | 0.23 | 0.08 | 0.45 | 0.14 | -0.23 | 65.54 | 0.01 | 0.07 | -0.01 | -0.08 | -0.04 | -0.01 | -0.04 | 0.02 | 99.59 |
| 0.04 | 0.03 | 0.08 | 33.29 | 0.21 | 0.08 | 0.38 | 0.18 | -0.13 | 65.32 | -0.02 | 0.01 | 0.08 | -0.07 | -0.07 | 0.02 | 0.00 | 0.02 | 99.45 |
| -0.01 | 0.07 | 0.12 | 32.48 | 0.22 | 0.07 | 0.37 | 0.41 | 0.26 | 65.23 | -0.03 | 0.16 | 0.04 | 0.12 | 0.17 | -0.03 | 0.00 | 0.01 | 99.66 |
| -0.02 | 0.05 | 0.17 | 32.50 | 0.23 | 0.08 | 0.38 | 0.06 | -0.25 | 64.96 | -0.02 | 0.05 | 0.11 | 0.02 | -0.09 | 0.00 | -0.06 | 0.03 | 98.20 |
| -0.01 | 0.06 | 0.49 | 32.96 | 0.21 | 0.07 | 1.01 | 0.09 | -0.08 | 64.62 | -0.04 | 0.01 | 0.04 | 0.08 | -0.16 | 0.12 | 0.11 | 0.01 | 99.59 |
| 0.00 | 0.06 | 0.34 | 31.75 | 0.32 | 0.08 | 0.53 | 0.81 | 0.55 | 64.26 | -0.02 | 0.13 | 0.07 | -0.08 | -0.01 | -0.11 | 0.04 | -0.08 | 98.64 |
| 0.01 | 0.06 | 0.37 | 32.74 | 0.21 | 0.07 | 0.37 | 0.20 | -0.12 | 64.25 | 0.01 | 0.11 | 0.07 | 0.06 | -0.08 | 0.00 | 0.02 | 0.00 | 98.35 |
| -0.04 | 0.05 | 1.00 | 32.26 | 0.23 | 0.07 | 0.43 | 0.28 | -0.01 | 63.77 | 0.01 | 0.17 | 0.05 | -0.15 | -0.16 | -0.02 | 0.05 | -0.01 | 97.98 |
| 0.00 | 0.12 | 1.04 | 32.98 | 0.20 | 0.11 | 1.14 | 0.10 | -0.24 | 63.48 | 0.01 | 0.08 | -0.02 | 0.01 | 0.12 | 0.06 | -0.04 | 0.01 | 99.16 |
| 0.00 | 0.03 | 0.40 | 31.44 | 0.20 | 0.07 | 0.37 | 0.08 | -0.26 | 63.13 | -0.08 | 0.10 | 0.02 | -0.02 | 0.16 | -0.09 | 0.01 | 0.01 | 95.57 |
| 0.09 | 0.05 | 0.41 | 34.13 | 0.23 | 0.23 | 0.49 | 0.49 | 0.00 | 63.11 | 0.11 | 0.23 | 0.23 | -0.01 | -0.09 | -0.08 | 0.10 | -0.08 | 99.64 |
| 0.01 | 0.08 | 0.26 | 33.48 | 0.24 | 0.10 | 0.92 | 0.42 | 0.15 | 63.04 | 0.03 | 0.27 | 0.07 | -0.20 | -0.03 | -0.12 | -0.05 | 0.03 | 98.70 |
| 0.00 | 0.11 | 0.95 | 30.39 | 0.60 | 0.07 | 1.05 | 0.49 | 0.60 | 62.34 | 0.28 | 0.19 | 0.16 | 0.02 | 0.12 | 0.16 | -0.01 | 0.13 | 97.65 |
| 0.00 | 0.04 | 0.78 | 30.23 | 0.21 | 0.07 | 0.37 | 0.07 | -0.18 | 59.84 | 0.06 | 0.02 | 0.04 | -0.05 | -0.03 | -0.05 | 0.01 | 0.01 | 91.38 |
| -0.01 | 0.04 | 4.18 | 30.84 | 0.27 | 0.08 | 0.71 | 0.13 | -0.13 | 58.87 | 0.10 | 0.10 | 0.19 | -0.08 | -0.25 | 0.12 | 0.03 | 0.00 | 95.19 |
| -0.02 | 0.03 | 2.37 | 28.27 | 0.25 | 0.05 | 0.73 | 0.05 | -0.06 | 56.57 | -0.04 | 0.02 | 0.23 | 0.11 | -0.10 | -0.02 | 0.03 | 0.02 | 86.49 |
| -0.01 | -0.02 | 0.49 | 24.19 | 0.23 | 0.05 | 0.83 | 0.14 | -0.06 | 56.53 | 0.07 | 0.04 | 0.35 | 0.11 | -0.14 | 0.08 | 0.11 | 0.01 | 83.00 |
| 0.02 | 0.02 | 0.91 | 30.40 | 0.20 | 0.07 | 0.65 | 0.18 | -0.18 | 56.52 | -0.06 | -0.05 | 0.23 | 0.07 | -0.18 | -0.01 | 0.00 | 0.05 | 88.84 |
| 0.00 | 0.06 | 1.85 | 28.62 | 0.22 | 0.06 | 0.50 | 0.15 | -0.03 | 56.48 | -0.02 | 0.09 | 0.07 | -0.07 | -0.09 | 0.02 | 0.03 | 0.05 | 87.99 |
| -0.01 | 0.04 | 1.96 | 30.70 | 0.27 | 0.06 | 0.57 | 0.72 | 0.24 | 53.24 | 0.06 | 0.07 | -0.03 | 0.00 | 0.06 | -0.12 | -0.07 | 0.05 | 86.53 |
| 0.02 | 0.05 | 1.72 | 27.69 | 0.30 | 0.06 | 0.66 | 0.18 | 0.03 | 52.50 | -0.06 | 0.21 | 0.10 | 0.01 | 0.17 | 0.02 | 0.00 | 0.05 | 83.71 |
| 0.01 | 0.03 | 4.45 | 32.52 | 0.29 | 0.06 | 0.86 | 0.20 | 0.08 | 51.15 | 0.18 | 0.06 | 0.10 | 0.14 | 0.05 | -0.03 | 0.05 | -0.01 | 90.19 |
| -0.04 | 0.00 | 0.61 | 44.12 | 0.17 | 0.06 | 0.49 | 0.29 | 0.10 | 51.09 | 0.12 | -0.04 | 0.18 | 0.01 | 0.00 | -0.07 | 0.08 | -0.04 | 97.13 |
| 0.03 | 0.04 | 4.92 | 26.03 | 0.29 | 0.05 | 1.05 | 0.02 | -0.09 | 50.71 | 0.10 | 0.01 | 0.40 | 0.07 | -0.08 | 0.07 | 0.19 | 0.09 | 83.90 |
| -0.01 | 0.02 | 0.56 | 25.11 | 0.18 | 0.05 | 0.60 | 0.09 | -0.04 | 49.74 | 0.06 | 0.15 | 0.22 | 0.15 | -0.20 | -0.01 | 0.06 | -0.03 | 76.70 |
| -0.01 | 0.03 | 3.17 | 26.03 | 0.31 | 0.06 | 1.22 | 0.11 | -0.01 | 48.73 | 0.05 | 0.15 | 0.15 | -0.08 | 0.00 | 0.03 | 0.10 | 0.10 | 80.14 |
| -0.01 | -0.01 | 1.14 | 26.03 | 0.18 | 0.05 | 0.45 | 0.18 | 0.02 | 48.55 | 0.00 | 0.06 | 0.21 | -0.07 | 0.02 | 0.06 | 0.10 | -0.02 | 76.94 |
| 0.01 | 0.01 | 1.56 | 24.31 | 0.17 | 0.04 | 0.41 | 0.13 | -0.10 | 47.17 | 0.05 | 0.02 | 0.13 | 0.01 | 0.15 | -0.02 | 0.00 | -0.05 | 74.00 |
| 0.02 | 0.11 | 9.36 | 26.32 | 0.33 | 0.16 | 1.87 | 0.09 | 0.05 | 46.60 | -0.04 | 0.11 | 0.30 | 0.07 | -0.01 | 0.16 | 0.10 | 0.10 | 85.52 |
| 0.01 | 0.02 | 2.61 | 23.32 | 0.35 | 0.05 | 0.92 | 0.24 | 0.35 | 46.51 | 0.18 | 0.20 | 0.22 | 0.06 | 0.03 | -0.01 | 0.05 | -0.01 | 75.10 |
| 0.01 | 0.12 | 12.25 | 27.46 | 0.72 | 0.07 | 2.15 | 0.52 | 0.41 | 46.12 | 0.09 | 0.10 | 0.54 | 0.02 | -0.09 | 0.23 | 0.36 | 0.05 | 91.13 |
| 0.00 | 0.00 | 0.19 | 22.97 | 0.11 | 0.03 | 0.20 | -0.03 | -0.23 | 45.21 | 0.08 | 0.02 | -0.02 | -0.04 | 0.04 | 0.00 | 0.00 | 0.01 | 68.54 |
| -0.04 | -0.01 | 2.49 | 22.68 | 0.15 | 0.04 | 0.49 | 0.02 | -0.12 | 40.76 | 0.00 | 0.02 | 0.18 | 0.12 | -0.02 | -0.08 | 0.01 | 0.02 | 66.71 |
| 0.00 | -0.02 | 1.54 | 21.81 | 0.16 | 0.03 | 0.44 | 0.14 | -0.19 | 40.65 | -0.06 | 0.06 | 0.14 | -0.07 | -0.10 | 0.08 | 0.09 | -0.02 | 64.68 |
| -0.01 | -0.03 | 1.13 | 20.61 | 0.16 | 0.02 | 0.49 | 0.15 | 0.03 | 38.09 | -0.04 | 0.00 | 0.12 | -0.10 | -0.18 | 0.03 | 0.04 | -0.08 | 60.43 |
| 0.02 | -0.01 | 3.87 | 19.16 | 0.22 | 0.02 | 0.89 | 0.04 | -0.12 | 37.24 | -0.05 | 0.14 | 0.61 | -0.18 | -0.01 | -0.01 | 0.11 | 0.03 | 61.97 |

| NA | MG | AL | SI | CA | K | FE | Y | P | ZR | TH | U | TI | LA | CE | ND | CR | MN | sum |
|-------|------|------|-------|------|------|------|------|-------|-------|-------|-------|------|-------|-------|-------|-------|-------|--------|
| 0.01 | 0.02 | 3.04 | 19.52 | 0.27 | 0.06 | 0.76 | 0.12 | 0.07 | 36.14 | 0.07 | 0.10 | 0.22 | 0.08 | 0.10 | 0.01 | 0.10 | 0.03 | 60.72 |
| -0.02 | 0.00 | 4.03 | 22.77 | 0.24 | 0.04 | 0.68 | 0.04 | -0.14 | 35.41 | 0.06 | 0.06 | 0.20 | -0.16 | -0.08 | -0.09 | 0.04 | -0.03 | 63.05 |
| 0.00 | 0.06 | 0.76 | 44.73 | 0.09 | 0.11 | 0.61 | 0.16 | -0.02 | 31.09 | 0.02 | 0.06 | 0.13 | 0.15 | -0.01 | -0.01 | -0.01 | 0.03 | 77.95 |
| -0.08 | 0.04 | 0.24 | 0.77 | 0.65 | 0.14 | 0.57 | 0.21 | 31.62 | -0.33 | 2.75 | -0.13 | 0.04 | 16.83 | 35.27 | 12.31 | -0.64 | 0.00 | 100.26 |
| 0.03 | 0.08 | 0.13 | 1.68 | 2.51 | 0.17 | 0.65 | 1.29 | 29.84 | -0.21 | 13.02 | 1.08 | 0.17 | 7.28 | 23.33 | 14.62 | -0.26 | -0.01 | 95.40 |

SAMPLE 14

| NA | MG | AL | SI | CA | K | FE | Y | P | ZR | TH | U | TI | LA | CE | ND | CR | MN | sum |
|-------|-------|------|-------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| 0.00 | -0.03 | 1.85 | 0.74 | 0.19 | 0.05 | 13.71 | 0.07 | 0.18 | 0.33 | -0.03 | -0.02 | 85.43 | -0.22 | 0.17 | 0.05 | 0.04 | 1.50 | 104.01 |
| -0.04 | -0.03 | 0.68 | 0.20 | 0.19 | 0.05 | 25.34 | 0.05 | 0.05 | 0.04 | -0.03 | 0.01 | 74.14 | 0.01 | 0.02 | -0.02 | 0.02 | 3.49 | 104.17 |
| 0.00 | 0.01 | 4.07 | 1.79 | 0.34 | 0.06 | 25.12 | -0.01 | 0.34 | 0.34 | -0.03 | -0.03 | 60.94 | -0.02 | -0.09 | -0.03 | 0.06 | 2.88 | 95.70 |
| 0.00 | -0.04 | 0.62 | 0.25 | 0.17 | 0.05 | 38.29 | -0.02 | 0.06 | 0.10 | -0.04 | 0.08 | 60.88 | -0.14 | -0.16 | 0.00 | 0.02 | 3.76 | 103.88 |
| 0.00 | -0.03 | 0.45 | 0.19 | 0.17 | 0.05 | 37.52 | -0.01 | 0.02 | 0.05 | 0.01 | 0.02 | 58.59 | 0.06 | 0.18 | -0.11 | -0.01 | 5.60 | 102.75 |
| 0.03 | -0.04 | 0.07 | 0.09 | 0.16 | 0.06 | 41.91 | 0.06 | -0.01 | 0.02 | -0.01 | -0.08 | 57.64 | 0.01 | 0.01 | 0.02 | 0.00 | 4.34 | 104.28 |
| 0.02 | 0.01 | 1.16 | 0.57 | 0.31 | 0.06 | 35.05 | -0.08 | 0.37 | 0.10 | 0.02 | 0.00 | 57.09 | 0.08 | -0.11 | 0.04 | -0.03 | 5.50 | 100.16 |
| -0.01 | -0.05 | 0.49 | 0.35 | 0.16 | 0.05 | 39.74 | -0.04 | -0.02 | -0.04 | -0.04 | -0.05 | 57.04 | -0.02 | -0.07 | -0.08 | -0.04 | 6.13 | 103.52 |
| -0.01 | 0.01 | 1.15 | 0.56 | 0.16 | 0.06 | 40.91 | -0.03 | 0.06 | 0.08 | -0.03 | -0.02 | 56.18 | -0.02 | 0.04 | 0.05 | 0.08 | 4.74 | 103.97 |
| 0.03 | 0.00 | 1.49 | 1.03 | 0.17 | 0.11 | 32.99 | 0.03 | 0.07 | 0.13 | -0.04 | -0.04 | 54.24 | -0.05 | 0.03 | -0.09 | 0.06 | 4.31 | 94.47 |
| 0.01 | 0.47 | 5.19 | 5.13 | 0.17 | 0.57 | 7.57 | -0.01 | 0.55 | 0.21 | 0.00 | -0.07 | 54.12 | 0.04 | 0.15 | -0.04 | 0.25 | 0.27 | 74.58 |
| 0.04 | 0.00 | 4.73 | 2.45 | 0.22 | 0.06 | 33.94 | -0.02 | 0.08 | 0.54 | -0.05 | -0.02 | 45.97 | -0.12 | -0.10 | -0.05 | 0.10 | 3.37 | 91.14 |
| -0.03 | 0.04 | 0.05 | 33.49 | 0.20 | 0.08 | 0.31 | 0.02 | -0.21 | 67.79 | -0.04 | 0.03 | 0.09 | -0.08 | 0.26 | -0.02 | 0.03 | -0.03 | 101.98 |
| 0.00 | 0.05 | 0.06 | 33.17 | 0.21 | 0.07 | 0.42 | 0.39 | 0.05 | 67.06 | 0.03 | 0.09 | 0.03 | 0.04 | -0.10 | 0.02 | -0.02 | -0.05 | 101.52 |
| -0.05 | 0.05 | 0.06 | 33.40 | 0.20 | 0.07 | 0.32 | 0.05 | -0.16 | 66.83 | -0.01 | 0.11 | 0.04 | 0.01 | -0.07 | -0.07 | -0.01 | -0.03 | 100.74 |
| -0.01 | 0.05 | 0.10 | 33.46 | 0.20 | 0.07 | 0.35 | -0.01 | -0.21 | 66.82 | 0.08 | 0.05 | -0.07 | -0.10 | 0.20 | 0.02 | 0.02 | -0.08 | 100.94 |
| -0.03 | 0.06 | 0.09 | 33.26 | 0.20 | 0.08 | 0.35 | 0.04 | -0.20 | 66.80 | -0.05 | -0.01 | 0.01 | 0.00 | -0.08 | 0.08 | -0.01 | 0.00 | 100.59 |
| -0.03 | 0.06 | 0.06 | 33.84 | 0.21 | 0.08 | 0.31 | 0.28 | -0.18 | 66.72 | -0.02 | 0.13 | 0.15 | -0.05 | 0.17 | 0.11 | 0.02 | -0.01 | 101.85 |
| -0.02 | 0.05 | 0.07 | 33.33 | 0.20 | 0.07 | 0.32 | 0.27 | -0.10 | 66.51 | -0.01 | 0.08 | 0.09 | 0.01 | -0.06 | -0.05 | -0.06 | 0.06 | 100.76 |
| 0.00 | 0.01 | 0.24 | 33.30 | 0.22 | 0.07 | 0.36 | 0.08 | -0.19 | 66.13 | 0.09 | 0.14 | 0.07 | 0.22 | -0.06 | 0.02 | 0.08 | -0.01 | 100.82 |
| 0.00 | 0.06 | 0.09 | 33.02 | 0.21 | 0.07 | 0.33 | 0.28 | 0.13 | 66.03 | -0.04 | 0.13 | 0.04 | -0.20 | -0.06 | 0.06 | 0.05 | 0.00 | 100.20 |
| -0.02 | 0.05 | 0.09 | 33.02 | 0.21 | 0.08 | 0.31 | 0.39 | 0.04 | 65.85 | 0.03 | 0.12 | 0.12 | -0.02 | 0.17 | -0.12 | -0.05 | 0.05 | 100.32 |
| -0.01 | 0.10 | 0.46 | 33.19 | 0.20 | 0.14 | 0.54 | 0.28 | -0.05 | 65.67 | 0.04 | 0.03 | 0.11 | -0.11 | 0.14 | -0.08 | 0.07 | 0.08 | 100.82 |
| -0.01 | 0.05 | 0.14 | 33.39 | 0.20 | 0.07 | 0.38 | 0.11 | -0.14 | 65.64 | 0.00 | 0.02 | 0.09 | -0.02 | 0.09 | -0.13 | -0.05 | 0.02 | 99.85 |
| -0.01 | 0.05 | 0.07 | 33.14 | 0.20 | 0.08 | 0.33 | 0.05 | -0.25 | 65.64 | -0.02 | -0.02 | -0.02 | -0.10 | 0.08 | -0.02 | 0.09 | -0.02 | 99.27 |
| -0.03 | 0.05 | 0.23 | 32.82 | 0.27 | 0.08 | 0.45 | 0.55 | 0.15 | 65.58 | 0.32 | 0.03 | 0.13 | 0.16 | 0.10 | 0.17 | -0.05 | 0.02 | 101.03 |
| -0.00 | 0.06 | 0.26 | 33.01 | 0.23 | 0.10 | 0.46 | 0.31 | 0.18 | 65.48 | 0.02 | 0.05 | 0.03 | -0.28 | 0.12 | -0.22 | 0.00 | 0.05 | 99.86 |
| -0.04 | 0.04 | 0.07 | 33.34 | 0.20 | 0.08 | 0.35 | 0.31 | -0.03 | 65.40 | -0.06 | 0.10 | 0.18 | -0.01 | -0.01 | -0.13 | -0.03 | 0.04 | 99.80 |
| 0.00 | 0.06 | 0.25 | 33.00 | 0.24 | 0.07 | 0.42 | 0.61 | 0.07 | 65.30 | 0.02 | 0.14 | 0.08 | -0.06 | -0.26 | -0.01 | -0.02 | -0.01 | 99.90 |
| 0.00 | 0.06 | 0.06 | 33.10 | 0.21 | 0.07 | 0.32 | 0.75 | 0.36 | 65.29 | 0.07 | 0.05 | 0.02 | 0.11 | 0.01 | 0.12 | 0.06 | -0.03 | 100.63 |
| -0.03 | 0.06 | 0.17 | 33.01 | 0.23 | 0.07 | 0.45 | 0.41 | -0.01 | 65.26 | 0.07 | 0.11 | 0.10 | 0.11 | -0.20 | 0.13 | -0.03 | -0.02 | 99.89 |
| 0.00 | 0.05 | 0.18 | 32.92 | 0.23 | 0.08 | 0.38 | 0.42 | 0.15 | 65.22 | 0.07 | 0.00 | -0.01 | 0.02 | 0.07 | -0.05 | 0.04 | 0.06 | 99.83 |
| -0.02 | 0.06 | 0.23 | 33.14 | 0.22 | 0.09 | 0.38 | 0.11 | -0.22 | 65.10 | -0.09 | 0.16 | 0.02 | -0.10 | -0.08 | 0.10 | -0.02 | 0.03 | 99.11 |
| 0.01 | 0.05 | 0.23 | 32.69 | 0.23 | 0.08 | 0.48 | 0.40 | 0.15 | 65.05 | 0.02 | 0.07 | 0.15 | 0.06 | 0.15 | -0.09 | 0.02 | 0.03 | 99.74 |
| -0.03 | 0.04 | 0.17 | 33.02 | 0.22 | 0.08 | 0.39 | 0.55 | 0.23 | 65.01 | 0.03 | 0.09 | 0.08 | -0.11 | -0.09 | 0.11 | 0.06 | 0.08 | 99.93 |
| -0.02 | 0.05 | 0.08 | 33.19 | 0.22 | 0.08 | 0.36 | 0.17 | -0.06 | 65.01 | 0.08 | -0.01 | 0.03 | 0.07 | 0.02 | -0.12 | 0.02 | -0.02 | 99.15 |
| -0.01 | 0.06 | 0.24 | 32.87 | 0.23 | 0.07 | 0.35 | 0.35 | 0.05 | 64.96 | -0.03 | 0.03 | 0.02 | -0.02 | -0.01 | -0.06 | 0.00 | 0.04 | 99.20 |
| -0.01 | 0.05 | 0.41 | 33.01 | 0.22 | 0.07 | 0.45 | 0.03 | -0.11 | 64.90 | 0.03 | 0.09 | 0.24 | 0.00 | 0.17 | -0.23 | 0.11 | 0.05 | 99.42 |
| -0.05 | 0.06 | 0.11 | 33.00 | 0.20 | 0.08 | 0.73 | 0.08 | -0.16 | 64.72 | 0.01 | -0.06 | 0.21 | 0.17 | -0.11 | 0.02 | 0.04 | -0.07 | 98.98 |
| 0.00 | 0.06 | 0.27 | 33.14 | 0.21 | 0.07 | 0.40 | 0.14 | 0.12 | 64.59 | 0.04 | 0.12 | 0.03 | -0.02 | -0.05 | -0.13 | 0.03 | -0.09 | 98.29 |
| -0.02 | 0.04 | 0.26 | 32.94 | 0.22 | 0.08 | 0.40 | 0.31 | 0.22 | 64.58 | -0.09 | 0.08 | 0.10 | 0.07 | 0.01 | 0.10 | -0.04 | -0.05 | 99.12 |
| -0.05 | 0.05 | 0.20 | 32.37 | 0.25 | 0.08 | 0.78 | 0.68 | -0.04 | 64.37 | 0.20 | 0.13 | 0.12 | 0.00 | 0.17 | 0.10 | 0.00 | -0.12 | 99.29 |
| 0.03 | 0.05 | 0.07 | 32.73 | 0.22 | 0.08 | 0.42 | 0.17 | 0.00 | 64.36 | -0.10 | 0.05 | -0.05 | 0.08 | 0.08 | 0.03 | -0.02 | 0.00 | 98.20 |
| -0.02 | 0.08 | 0.55 | 33.00 | 0.25 | 0.15 | 0.74 | 0.29 | 0.01 | 64.33 | -0.01 | 0.03 | 0.04 | 0.18 | 0.08 | 0.04 | -0.01 | 0.06 | 99.79 |
| 0.00 | 0.05 | 0.09 | 32.76 | 0.21 | 0.07 | 0.38 | 0.27 | -0.06 | 64.15 | 0.04 | 0.18 | 0.06 | 0.07 | -0.25 | -0.01 | 0.02 | -0.03 | 98.00 |
| 0.00 | 0.05 | 0.10 | 32.43 | 0.22 | 0.07 | 0.38 | 0.47 | 0.33 | 63.90 | 0.04 | 0.16 | 0.16 | 0.00 | -0.23 | -0.01 | -0.04 | 0.08 | 98.11 |
| 0.01 | 0.11 | 0.98 | 33.65 | 0.22 | 0.38 | 0.53 | 0.34 | 0.14 | 63.90 | 0.02 | 0.07 | -0.03 | -0.01 | -0.19 | -0.03 | -0.12 | -0.05 | 99.92 |

| NA | MG | AL | SI | CA | K | FE | Y | P | ZR | TH | U | TI | LA | CE | ND | CR | MN | sum |
|-------|-------|------|-------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| -0.03 | 0.05 | 0.10 | 32.77 | 0.20 | 0.07 | 0.39 | 0.28 | 0.03 | 63.69 | 0.03 | -0.05 | 0.02 | -0.21 | -0.12 | 0.02 | -0.08 | -0.03 | 97.13 |
| -0.03 | 0.06 | 0.21 | 32.34 | 0.24 | 0.08 | 0.49 | 0.52 | 0.18 | 63.38 | -0.04 | 0.15 | 0.00 | -0.07 | -0.02 | -0.02 | 0.01 | 0.03 | 97.51 |
| 0.01 | 0.06 | 0.10 | 33.06 | 0.22 | 0.08 | 0.35 | 0.27 | -0.01 | 63.37 | 0.06 | 0.04 | -0.04 | 0.11 | 0.09 | -0.07 | 0.00 | -0.04 | 97.66 |
| 0.00 | 0.06 | 0.12 | 32.62 | 0.20 | 0.08 | 0.42 | 0.36 | -0.02 | 63.25 | 0.00 | 0.04 | 0.13 | 0.06 | -0.03 | 0.06 | 0.00 | 0.04 | 97.39 |
| 0.00 | 0.06 | 0.50 | 32.88 | 0.20 | 0.07 | 0.38 | 0.05 | -0.24 | 63.03 | 0.03 | 0.06 | 0.03 | 0.14 | -0.06 | -0.01 | 0.02 | 0.02 | 97.16 |
| -0.01 | 0.05 | 0.09 | 32.99 | 0.22 | 0.08 | 0.36 | 0.33 | -0.02 | 62.83 | 0.03 | 0.04 | 0.09 | -0.04 | -0.07 | -0.08 | -0.07 | -0.04 | 96.78 |
| -0.00 | 0.05 | 0.82 | 31.80 | 0.21 | 0.07 | 0.50 | 0.18 | -0.10 | 62.79 | 0.01 | 0.09 | 0.01 | -0.23 | 0.07 | 0.01 | 0.12 | 0.10 | 96.50 |
| -0.04 | 0.06 | 0.48 | 31.32 | 0.25 | 0.08 | 0.84 | 1.18 | 0.49 | 62.61 | 0.19 | 0.27 | 0.25 | 0.00 | -0.02 | 0.04 | 0.02 | -0.07 | 97.95 |
| 0.02 | 0.07 | 0.21 | 32.34 | 0.29 | 0.07 | 0.44 | 0.71 | 0.33 | 61.64 | 0.06 | 0.15 | 0.07 | -0.11 | 0.03 | -0.09 | -0.02 | 0.02 | 96.23 |
| 0.00 | 0.05 | 0.20 | 31.33 | 0.26 | 0.07 | 0.39 | 0.42 | 0.24 | 60.74 | 0.06 | 0.08 | 0.07 | 0.13 | 0.15 | -0.04 | 0.00 | -0.04 | 94.11 |
| -0.02 | 0.04 | 0.22 | 29.97 | 0.21 | 0.06 | 0.40 | 0.64 | 0.22 | 59.08 | 0.10 | 0.14 | 0.01 | 0.10 | 0.05 | -0.03 | 0.04 | -0.07 | 91.16 |
| -0.00 | 0.09 | 1.76 | 31.06 | 0.30 | 0.11 | 1.02 | 0.25 | 0.01 | 58.89 | 0.09 | 0.06 | 0.45 | -0.12 | 0.26 | -0.05 | 0.05 | 0.05 | 94.28 |
| -0.01 | 0.14 | 1.37 | 27.13 | 0.73 | 0.08 | 1.18 | 1.74 | 0.82 | 55.93 | 0.15 | 0.32 | 0.15 | 0.20 | 0.40 | 0.23 | 0.05 | 0.09 | 90.70 |
| 0.00 | 0.04 | 1.08 | 39.35 | 0.27 | 0.07 | 0.73 | 0.83 | 0.58 | 55.40 | 0.04 | 0.21 | 0.25 | -0.06 | 0.13 | 0.04 | -0.01 | 0.03 | 98.98 |
| 0.02 | 0.02 | 0.36 | 28.65 | 0.18 | 0.06 | 0.30 | 0.17 | -0.03 | 54.00 | 0.08 | -0.07 | 0.09 | 0.12 | 0.06 | -0.04 | -0.07 | -0.04 | 83.86 |
| -0.04 | 0.05 | 0.13 | 29.07 | 0.20 | 0.07 | 5.74 | 0.17 | 0.01 | 53.52 | 0.03 | -0.05 | 8.68 | -0.10 | 0.02 | -0.13 | -0.07 | 0.05 | 97.35 |
| -0.03 | 0.01 | 0.17 | 24.95 | 0.15 | 0.05 | 0.31 | 0.04 | -0.20 | 49.57 | -0.05 | -0.05 | -0.05 | -0.16 | -0.07 | -0.05 | 0.01 | 0.00 | 74.60 |
| 0.03 | 0.09 | 1.00 | 19.22 | 0.29 | 0.12 | 2.14 | 1.74 | 1.13 | 36.88 | 0.05 | 0.33 | 0.12 | -0.08 | 0.19 | 0.09 | 0.13 | 0.11 | 63.58 |
| -0.06 | 0.05 | 0.37 | 2.32 | 0.70 | 0.16 | 0.61 | 0.23 | 29.06 | -0.13 | 8.99 | -0.73 | 0.12 | 13.12 | 33.45 | 13.46 | -0.74 | -0.03 | 100.95 |
| 0.00 | -0.02 | 0.35 | 4.13 | 0.87 | 0.09 | 0.41 | 0.67 | 20.47 | 0.04 | 7.45 | 0.31 | 0.15 | 7.52 | 21.31 | 9.08 | -0.05 | 0.11 | 72.89 |

SAMPLE 15

| NA | MG | AL | SI | CA | K | FE | Y | P | ZR | TH | U | TI | LA | CE | ND | OR | MN | sum |
|-------|-------|------|-------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| 0.05 | -0.01 | 2.36 | 0.99 | 0.17 | 0.05 | 8.92 | -0.03 | 0.01 | 0.04 | -0.05 | -0.06 | 91.42 | -0.02 | 0.01 | -0.10 | 0.04 | 2.31 | 106.10 |
| 0.05 | 0.03 | 4.46 | 3.16 | 0.25 | 0.09 | 1.74 | 0.01 | 0.73 | 0.05 | -0.11 | -0.05 | 87.53 | 0.17 | 0.01 | 0.09 | 0.10 | 0.02 | 98.33 |
| -0.01 | -0.03 | 0.84 | 0.32 | 0.17 | 0.06 | 35.10 | -0.01 | 0.08 | -0.02 | 0.06 | -0.04 | 64.26 | 0.08 | 0.14 | -0.02 | 0.01 | 4.29 | 105.28 |
| 0.03 | -0.02 | 3.00 | 2.52 | 0.22 | 0.07 | 14.88 | -0.03 | 0.44 | 0.15 | -0.01 | -0.02 | 64.22 | 0.08 | 0.12 | 0.03 | 0.10 | 1.88 | 87.66 |
| -0.02 | 0.10 | 4.96 | 1.51 | 0.79 | 0.05 | 4.61 | 0.03 | 1.89 | 0.08 | -0.03 | 0.00 | 61.79 | 0.02 | 0.01 | -0.03 | 0.27 | 0.02 | 76.05 |
| 0.02 | -0.02 | 1.08 | 0.37 | 0.30 | 0.05 | 35.11 | -0.02 | 0.30 | 0.05 | -0.05 | -0.04 | 60.11 | 0.02 | 0.05 | -0.11 | -0.01 | 4.84 | 101.99 |
| 0.01 | 0.01 | 3.17 | 1.37 | 0.30 | 0.13 | 18.65 | 0.04 | 1.52 | 0.07 | 0.00 | 0.01 | 59.78 | -0.17 | 0.11 | -0.04 | 0.14 | 2.18 | 87.28 |
| 0.04 | -0.01 | 1.68 | 0.46 | 0.33 | 0.06 | 34.44 | 0.04 | 0.71 | 0.02 | 0.00 | 0.00 | 59.55 | -0.02 | -0.03 | 0.03 | 0.00 | 2.51 | 99.81 |
| -0.02 | -0.02 | 0.15 | 0.09 | 0.15 | 0.06 | 39.23 | -0.02 | -0.04 | 0.06 | 0.06 | -0.01 | 59.22 | 0.02 | 0.01 | 0.03 | 0.06 | 5.19 | 104.22 |
| 0.01 | -0.06 | 0.29 | 0.14 | 0.16 | 0.05 | 38.50 | 0.03 | 0.06 | -0.03 | -0.04 | 0.05 | 59.10 | 0.23 | -0.16 | 0.06 | 0.02 | 5.49 | 103.90 |
| 0.03 | 0.03 | 0.78 | 0.37 | 0.30 | 0.06 | 39.19 | 0.02 | 0.07 | 0.01 | 0.04 | -0.04 | 58.98 | -0.09 | -0.16 | -0.07 | 0.04 | 5.45 | 104.96 |
| 0.01 | -0.01 | 0.22 | 0.14 | 0.17 | 0.06 | 39.40 | -0.02 | -0.01 | 0.06 | -0.04 | -0.06 | 58.20 | -0.03 | -0.01 | -0.05 | 0.00 | 5.71 | 103.74 |
| 0.06 | -0.02 | 0.17 | 0.12 | 0.15 | 0.06 | 41.51 | -0.06 | -0.02 | 0.07 | -0.09 | 0.01 | 57.94 | -0.11 | 0.13 | 0.01 | -0.03 | 4.40 | 104.30 |
| 0.02 | 0.04 | 1.01 | 0.74 | 0.17 | 0.15 | 40.74 | 0.01 | 0.07 | -0.07 | 0.02 | -0.07 | 57.92 | 0.03 | 0.00 | 0.03 | 0.09 | 5.52 | 106.42 |
| 0.00 | 0.00 | 2.30 | 1.03 | 0.21 | 0.05 | 36.73 | 0.02 | 0.18 | 0.10 | -0.07 | 0.01 | 57.63 | 0.02 | 0.03 | 0.03 | 0.01 | 2.61 | 100.89 |
| -0.02 | -0.01 | 1.22 | 0.39 | 0.17 | 0.07 | 40.08 | -0.01 | 0.03 | 0.15 | -0.04 | -0.01 | 57.38 | -0.01 | 0.02 | 0.04 | 0.01 | 4.65 | 104.11 |
| 0.03 | 0.00 | 0.14 | 0.12 | 0.15 | 0.06 | 41.43 | -0.03 | 0.00 | 0.06 | -0.04 | -0.04 | 57.00 | 0.08 | -0.09 | 0.01 | -0.01 | 6.53 | 105.40 |
| 0.03 | 0.00 | 1.72 | 1.29 | 0.66 | 0.18 | 39.58 | -0.02 | -0.03 | 0.18 | -0.05 | -0.03 | 56.76 | -0.02 | 0.03 | -0.02 | 0.06 | 4.68 | 105.00 |
| 0.01 | -0.05 | 1.46 | 0.98 | 0.16 | 0.05 | 34.85 | 0.00 | 0.13 | 0.08 | 0.01 | -0.14 | 56.00 | 0.02 | -0.10 | -0.11 | -0.01 | 5.26 | 98.60 |
| 0.04 | -0.03 | 5.38 | 2.11 | 0.23 | 0.05 | 12.54 | -0.02 | 1.41 | 0.09 | 0.07 | 0.04 | 55.79 | 0.05 | 0.01 | 0.01 | 0.04 | 0.36 | 78.17 |
| 0.00 | -0.03 | 1.85 | 0.51 | 0.19 | 0.06 | 43.27 | -0.01 | 0.01 | 0.08 | -0.04 | -0.04 | 55.63 | 0.09 | 0.04 | -0.05 | 0.00 | 2.92 | 104.48 |
| 0.03 | -0.02 | 1.19 | 0.26 | 0.17 | 0.05 | 40.27 | -0.05 | 0.13 | 0.01 | -0.02 | -0.05 | 51.94 | 0.11 | 0.11 | 0.04 | 0.02 | 2.50 | 96.69 |
| 0.03 | 0.04 | 0.05 | 33.38 | 0.21 | 0.07 | 0.34 | 0.26 | -0.14 | 66.21 | -0.02 | 0.02 | 0.13 | -0.07 | 0.10 | -0.03 | 0.01 | -0.04 | 100.67 |
| 0.01 | 0.05 | 0.98 | 33.11 | 0.23 | 0.07 | 0.48 | 0.02 | -0.16 | 65.77 | 0.04 | -0.01 | 0.01 | -0.06 | -0.06 | 0.05 | 0.10 | 0.00 | 100.63 |
| 0.00 | 0.05 | 0.10 | 33.07 | 0.21 | 0.07 | 0.36 | 0.20 | -0.19 | 65.36 | 0.00 | 0.02 | 0.11 | 0.00 | 0.01 | -0.02 | 0.00 | -0.04 | 99.31 |
| 0.02 | 0.05 | 1.06 | 32.02 | 0.23 | 0.07 | 0.48 | 0.04 | -0.17 | 64.94 | -0.06 | 0.09 | 0.13 | -0.07 | 0.17 | 0.06 | 0.06 | 0.03 | 99.15 |
| 0.02 | 0.05 | 0.12 | 33.00 | 0.21 | 0.08 | 0.38 | 0.53 | -0.03 | 64.88 | 0.07 | 0.10 | 0.07 | -0.14 | -0.12 | -0.06 | -0.03 | -0.02 | 99.11 |
| -0.02 | 0.05 | 0.85 | 32.48 | 0.23 | 0.08 | 0.44 | 0.26 | 0.02 | 64.75 | 0.01 | 0.07 | 0.05 | -0.07 | -0.01 | -0.14 | -0.01 | 0.00 | 99.04 |
| 0.02 | 0.04 | 0.06 | 33.46 | 0.20 | 0.08 | 0.40 | 0.01 | -0.18 | 64.73 | 0.05 | -0.04 | 0.16 | -0.05 | 0.14 | -0.02 | 0.00 | 0.09 | 99.19 |
| 0.01 | 0.05 | 0.07 | 33.35 | 0.20 | 0.08 | 0.40 | 0.01 | -0.23 | 64.45 | 0.03 | 0.02 | 0.09 | 0.11 | 0.03 | -0.07 | 0.07 | 0.08 | 98.61 |
| 0.00 | 0.05 | 1.06 | 33.06 | 0.25 | 0.07 | 0.49 | -0.03 | -0.23 | 64.26 | -0.04 | -0.03 | 0.11 | 0.14 | 0.10 | 0.11 | 0.03 | -0.02 | 99.38 |
| -0.03 | 0.07 | 0.88 | 32.97 | 0.24 | 0.08 | 0.49 | 0.06 | -0.23 | 64.23 | -0.04 | 0.14 | 0.05 | -0.10 | -0.06 | -0.02 | -0.01 | 0.02 | 98.74 |
| 0.03 | 0.05 | 0.08 | 32.96 | 0.21 | 0.08 | 0.57 | 0.13 | -0.06 | 64.14 | 0.03 | 0.10 | 0.19 | -0.05 | -0.04 | 0.07 | -0.06 | 0.06 | 98.49 |
| 0.02 | 0.05 | 1.15 | 32.18 | 0.29 | 0.07 | 0.58 | 0.37 | 0.13 | 63.92 | 0.00 | 0.09 | 0.12 | 0.07 | 0.24 | 0.13 | 0.00 | -0.01 | 99.40 |
| -0.04 | 0.06 | 0.06 | 32.89 | 0.23 | 0.08 | 0.35 | 0.47 | 0.16 | 63.85 | 0.07 | 0.14 | 0.13 | 0.02 | -0.02 | -0.05 | -0.02 | 0.01 | 98.39 |
| 0.02 | 0.05 | 1.16 | 33.02 | 0.24 | 0.07 | 0.54 | 0.26 | -0.10 | 63.73 | 0.02 | 0.10 | 0.11 | 0.06 | 0.19 | -0.05 | 0.00 | 0.09 | 99.51 |
| -0.02 | 0.06 | 0.26 | 33.00 | 0.21 | 0.07 | 0.34 | 0.31 | 0.08 | 63.72 | -0.05 | 0.10 | 0.08 | 0.10 | 0.24 | -0.15 | 0.00 | 0.02 | 98.37 |
| -0.01 | 0.04 | 0.43 | 32.59 | 0.22 | 0.08 | 0.46 | 0.23 | -0.10 | 63.53 | 0.09 | -0.01 | 0.06 | 0.11 | -0.28 | -0.11 | 0.02 | 0.04 | 97.39 |
| 0.01 | 0.05 | 0.14 | 32.70 | 0.22 | 0.07 | 0.39 | 0.46 | 0.18 | 63.43 | -0.05 | 0.24 | -0.02 | 0.08 | -0.07 | -0.01 | 0.02 | 0.01 | 97.85 |
| -0.01 | 0.07 | 1.91 | 32.18 | 0.24 | 0.08 | 0.57 | 0.09 | -0.13 | 63.33 | -0.02 | -0.01 | 0.04 | -0.07 | -0.11 | 0.11 | 0.03 | 0.04 | 98.49 |
| -0.01 | 0.07 | 1.03 | 32.28 | 0.29 | 0.08 | 0.58 | 0.29 | 0.04 | 63.18 | 0.10 | -0.02 | 0.12 | -0.07 | 0.27 | -0.19 | 0.08 | -0.03 | 98.09 |
| 0.01 | 0.06 | 2.57 | 32.67 | 0.27 | 0.08 | 0.67 | 0.10 | -0.24 | 62.39 | -0.02 | -0.01 | 0.16 | 0.28 | 0.02 | -0.06 | 0.02 | -0.09 | 98.88 |
| 0.05 | 0.05 | 2.35 | 32.21 | 0.27 | 0.09 | 0.66 | 0.13 | -0.13 | 62.28 | 0.11 | 0.13 | 0.23 | -0.14 | -0.03 | -0.07 | 0.06 | 0.03 | 98.28 |
| 0.01 | 0.07 | 3.73 | 31.75 | 0.31 | 0.07 | 0.96 | 0.20 | -0.06 | 59.03 | 0.00 | 0.11 | 0.11 | -0.28 | -0.19 | 0.05 | 0.12 | 0.00 | 95.99 |
| -0.03 | 0.05 | 0.11 | 2.00 | 0.72 | 0.15 | 0.57 | 0.13 | 29.28 | -0.34 | 8.28 | -0.74 | -0.01 | 13.53 | 32.98 | 12.99 | -0.68 | -0.22 | 98.77 |

SAMPLE 16

| NA | MG | AL | SI | CA | K | FE | Y | P | ZR | TH | U | TI | LA | CE | ND | CR | MN | sum |
|-------|-------|------|-------|------|------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|--------|
| 0.00 | -0.04 | 0.95 | 0.30 | 0.14 | 0.04 | 1.29 | 0.10 | 0.01 | 0.11 | 0.01 | -0.06 | 101.90 | -0.02 | 0.31 | -0.10 | 0.02 | -0.03 | 104.93 |
| 0.03 | 0.02 | 1.37 | 0.84 | 0.22 | 0.07 | 11.34 | 0.03 | 0.29 | 0.07 | -0.09 | -0.02 | 83.12 | 0.02 | 0.15 | 0.00 | 0.10 | 1.22 | 98.78 |
| 0.01 | -0.02 | 3.74 | 1.90 | 0.14 | 0.07 | 5.86 | -0.03 | -0.01 | 0.11 | -0.04 | -0.05 | 77.68 | -0.10 | 0.09 | 0.00 | 0.16 | 0.47 | 89.95 |
| 0.01 | -0.02 | 1.51 | 0.31 | 0.18 | 0.05 | 34.25 | -0.08 | 0.04 | 0.17 | -0.02 | -0.08 | 62.24 | -0.13 | 0.00 | -0.12 | -0.02 | 3.70 | 102.02 |
| -0.05 | 0.00 | 1.10 | 0.23 | 0.16 | 0.05 | 34.72 | -0.07 | -0.01 | 0.11 | -0.01 | -0.02 | 61.11 | 0.05 | -0.01 | 0.03 | 0.04 | 4.90 | 102.33 |
| 0.03 | 0.03 | 3.91 | 2.73 | 0.29 | 0.10 | 24.51 | 0.05 | 0.95 | 0.11 | 0.11 | -0.07 | 61.01 | -0.11 | 0.10 | 0.18 | 0.09 | 2.29 | 96.31 |
| 0.02 | -0.03 | 0.15 | 0.08 | 0.16 | 0.05 | 37.07 | 0.00 | -0.01 | 0.08 | -0.07 | 0.03 | 60.36 | -0.08 | 0.00 | -0.08 | -0.03 | 3.83 | 101.53 |
| 0.00 | -0.02 | 0.61 | 0.18 | 0.15 | 0.05 | 38.98 | -0.03 | 0.06 | 0.14 | 0.00 | -0.05 | 58.84 | -0.13 | -0.02 | 0.05 | 0.00 | 5.62 | 104.43 |
| -0.02 | -0.03 | 0.27 | 0.12 | 0.16 | 0.05 | 35.36 | -0.10 | -0.01 | 0.06 | -0.06 | 0.04 | 58.64 | 0.00 | 0.03 | 0.02 | 0.02 | 6.72 | 101.27 |
| 0.00 | -0.01 | 0.51 | 0.17 | 0.16 | 0.06 | 40.32 | -0.05 | 0.01 | 0.12 | 0.06 | -0.09 | 58.12 | 0.08 | -0.03 | 0.01 | 0.00 | 4.54 | 103.88 |
| 0.07 | 0.00 | 0.53 | 0.29 | 0.26 | 0.06 | 39.05 | -0.03 | 0.01 | 0.00 | -0.02 | -0.12 | 58.10 | 0.08 | 0.00 | 0.04 | -0.01 | 5.90 | 104.19 |
| -0.01 | 0.01 | 4.39 | 1.61 | 0.27 | 0.07 | 29.39 | -0.07 | 0.56 | 0.12 | 0.01 | -0.09 | 57.82 | -0.08 | 0.03 | 0.03 | 0.06 | 2.12 | 96.24 |
| 0.02 | -0.02 | 1.87 | 0.38 | 0.16 | 0.05 | 38.32 | 0.02 | -0.01 | 0.16 | -0.06 | -0.05 | 57.41 | 0.06 | 0.04 | -0.07 | 0.07 | 3.14 | 101.49 |
| -0.02 | -0.05 | 1.39 | 0.41 | 0.16 | 0.05 | 38.04 | -0.05 | 0.01 | 0.10 | -0.06 | -0.04 | 57.17 | -0.06 | 0.08 | -0.09 | 0.02 | 6.08 | 103.14 |
| 0.02 | -0.03 | 3.06 | 1.21 | 0.17 | 0.06 | 23.46 | -0.01 | 0.38 | 0.20 | 0.04 | -0.02 | 54.17 | -0.04 | -0.04 | -0.05 | 0.11 | 2.88 | 85.57 |
| 0.00 | 0.00 | 2.51 | 1.10 | 0.51 | 0.06 | 38.51 | 0.04 | 0.02 | 0.21 | -0.03 | -0.02 | 53.94 | -0.15 | 0.06 | 0.03 | 0.03 | 4.57 | 101.39 |
| -0.01 | 0.10 | 0.76 | 8.02 | 0.14 | 0.19 | 37.76 | 0.06 | 0.04 | 0.12 | -0.10 | 0.00 | 50.27 | -0.09 | 0.04 | -0.06 | -0.01 | 4.05 | 101.28 |
| 0.03 | 0.09 | 8.46 | 5.37 | 0.24 | 0.18 | 21.67 | 0.00 | 1.05 | 0.18 | -0.10 | -0.03 | 47.88 | 0.06 | 0.12 | -0.08 | 0.04 | 2.52 | 87.68 |
| -0.10 | 0.06 | 0.08 | 31.29 | 0.21 | 0.08 | 0.32 | 0.16 | -0.10 | 67.94 | 0.09 | 0.02 | 0.04 | -0.07 | -0.10 | -0.13 | 0.02 | 0.04 | 99.85 |
| -0.13 | 0.05 | 0.14 | 31.61 | 0.22 | 0.07 | 0.45 | 0.33 | -0.05 | 67.79 | 0.03 | 0.01 | 0.25 | 0.07 | 0.06 | -0.13 | 0.02 | 0.02 | 100.78 |
| -0.13 | 0.05 | 0.13 | 31.61 | 0.20 | 0.07 | 0.33 | 0.18 | -0.10 | 67.74 | 0.04 | 0.12 | 0.03 | 0.02 | 0.09 | -0.01 | -0.03 | 0.02 | 100.36 |
| -0.16 | 0.06 | 0.10 | 31.80 | 0.21 | 0.08 | 0.33 | 0.21 | -0.27 | 67.54 | -0.06 | -0.06 | 0.07 | 0.12 | -0.01 | -0.16 | 0.07 | 0.00 | 99.87 |
| -0.10 | 0.05 | 0.06 | 31.78 | 0.21 | 0.08 | 0.28 | 0.24 | -0.15 | 67.52 | 0.00 | 0.02 | 0.07 | -0.17 | 0.10 | 0.07 | -0.02 | -0.06 | 99.98 |
| -0.18 | 0.06 | 0.15 | 31.31 | 0.21 | 0.07 | 0.37 | 0.10 | -0.30 | 67.15 | 0.00 | 0.00 | 0.17 | -0.02 | 0.10 | -0.05 | -0.09 | -0.02 | 99.03 |
| -0.16 | 0.05 | 0.47 | 31.45 | 0.22 | 0.08 | 0.34 | 0.02 | -0.16 | 67.11 | -0.05 | -0.07 | 0.10 | 0.05 | -0.33 | 0.13 | 0.01 | -0.03 | 99.23 |
| -0.08 | 0.06 | 0.36 | 31.21 | 0.23 | 0.07 | 0.38 | 0.21 | -0.08 | 67.10 | 0.05 | 0.06 | 0.05 | 0.04 | 0.08 | -0.18 | -0.03 | -0.06 | 99.47 |
| -0.11 | 0.05 | 0.08 | 31.35 | 0.20 | 0.07 | 0.29 | 0.24 | -0.17 | 67.07 | -0.18 | 0.04 | 0.05 | 0.02 | -0.08 | 0.03 | 0.07 | 0.01 | 99.03 |
| -0.15 | 0.05 | 0.07 | 31.72 | 0.21 | 0.07 | 0.36 | 0.11 | -0.18 | 66.87 | 0.11 | 0.00 | 0.16 | 0.13 | -0.09 | -0.10 | -0.05 | 0.07 | 99.54 |
| -0.13 | 0.06 | 0.48 | 31.55 | 0.22 | 0.08 | 0.37 | 0.16 | -0.22 | 66.86 | -0.04 | 0.03 | 0.09 | -0.07 | -0.09 | -0.07 | 0.04 | 0.02 | 99.34 |
| -0.12 | 0.06 | 0.09 | 31.50 | 0.21 | 0.08 | 0.38 | 0.13 | -0.12 | 66.73 | 0.03 | -0.04 | 0.25 | -0.05 | 0.13 | -0.10 | 0.04 | 0.03 | 99.23 |
| -0.07 | 0.05 | 0.10 | 31.63 | 0.22 | 0.07 | 0.31 | 0.20 | -0.12 | 66.67 | 0.02 | 0.01 | 0.08 | -0.13 | -0.15 | 0.03 | 0.05 | -0.01 | 98.96 |
| -0.10 | 0.06 | 0.13 | 31.17 | 0.21 | 0.07 | 0.37 | 0.35 | 0.03 | 66.58 | -0.06 | 0.13 | 0.15 | -0.05 | -0.05 | 0.09 | 0.02 | 0.01 | 99.11 |
| -0.13 | 0.06 | 0.10 | 31.53 | 0.21 | 0.07 | 0.32 | 0.16 | -0.20 | 66.40 | -0.03 | -0.11 | 0.03 | -0.06 | 0.24 | -0.07 | 0.05 | -0.01 | 98.56 |
| -0.07 | 0.06 | 0.68 | 31.57 | 0.22 | 0.07 | 0.45 | 0.01 | -0.26 | 66.14 | 0.05 | 0.02 | 0.05 | 0.00 | -0.11 | 0.01 | 0.08 | -0.01 | 98.96 |
| -0.12 | 0.06 | 0.38 | 31.04 | 0.21 | 0.08 | 0.38 | 0.06 | -0.10 | 66.09 | 0.00 | 0.07 | 0.12 | -0.21 | 0.00 | -0.13 | -0.03 | 0.08 | 97.98 |
| -0.10 | 0.05 | 0.09 | 31.16 | 0.21 | 0.07 | 0.33 | 0.28 | 0.04 | 65.98 | 0.06 | 0.14 | 0.12 | 0.02 | 0.16 | 0.04 | -0.02 | -0.02 | 98.61 |
| -0.13 | 0.06 | 0.08 | 31.41 | 0.20 | 0.08 | 0.33 | 0.33 | 0.01 | 65.97 | 0.07 | 0.05 | 0.10 | -0.04 | 0.07 | 0.03 | -0.05 | -0.06 | 98.54 |
| -0.15 | 0.05 | 0.36 | 30.97 | 0.22 | 0.08 | 0.37 | 0.09 | -0.19 | 65.91 | -0.04 | 0.18 | 0.01 | 0.05 | -0.09 | -0.17 | -0.04 | -0.04 | 97.54 |
| 0.01 | 0.05 | 0.52 | 32.56 | 0.22 | 0.07 | 0.40 | 0.02 | -0.18 | 65.80 | 0.07 | 0.08 | 0.09 | -0.10 | 0.11 | 0.03 | 0.01 | -0.04 | 99.72 |
| -0.11 | 0.04 | 0.83 | 31.22 | 0.23 | 0.08 | 0.42 | 0.35 | -0.17 | 65.80 | 0.04 | 0.01 | 0.07 | -0.07 | 0.11 | -0.04 | 0.04 | -0.05 | 98.71 |
| -0.15 | 0.06 | 0.62 | 31.24 | 0.22 | 0.07 | 0.41 | 0.08 | -0.25 | 65.74 | -0.05 | 0.09 | -0.07 | -0.07 | -0.12 | 0.06 | 0.02 | 0.08 | 97.98 |
| -0.18 | 0.06 | 0.30 | 31.18 | 0.22 | 0.07 | 0.39 | 0.34 | 0.01 | 65.72 | -0.05 | 0.06 | 0.13 | 0.06 | 0.08 | 0.02 | 0.00 | 0.07 | 98.48 |
| -0.14 | 0.05 | 0.63 | 31.04 | 0.22 | 0.08 | 0.42 | 0.33 | 0.01 | 65.34 | -0.10 | 0.07 | 0.06 | -0.16 | -0.13 | -0.06 | 0.06 | 0.06 | 97.78 |
| -0.16 | 0.07 | 1.04 | 31.21 | 0.25 | 0.07 | 0.49 | 0.04 | -0.23 | 65.23 | -0.03 | 0.10 | 0.15 | -0.02 | 0.10 | -0.14 | 0.03 | -0.05 | 98.15 |
| 0.00 | 0.04 | 0.19 | 32.66 | 0.21 | 0.07 | 0.35 | 0.24 | -0.07 | 65.10 | 0.13 | 0.06 | -0.04 | 0.00 | 0.11 | 0.03 | -0.02 | 0.04 | 99.10 |
| -0.03 | 0.05 | 0.16 | 32.60 | 0.22 | 0.08 | 0.39 | 0.22 | 0.05 | 65.09 | -0.01 | 0.03 | 0.15 | 0.00 | -0.11 | -0.02 | -0.04 | -0.02 | 98.81 |
| 0.00 | 0.06 | 0.75 | 32.60 | 0.23 | 0.07 | 0.41 | 0.14 | -0.22 | 65.09 | -0.03 | 0.19 | 0.13 | -0.17 | 0.11 | -0.09 | -0.01 | 0.07 | 99.33 |

| NA | MG | AL | SI | CA | K | FE | Y | P | ZR | TH | U | TI | LA | OE | ND | CR | MN | sum |
|-------|------|------|-------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| 0.01 | 0.04 | 1.36 | 32.36 | 0.25 | 0.07 | 0.51 | 0.15 | -0.15 | 65.06 | -0.03 | 0.11 | 0.05 | -0.05 | 0.11 | -0.14 | 0.05 | 0.01 | 99.77 |
| -0.13 | 0.06 | 1.44 | 30.15 | 0.25 | 0.06 | 0.66 | 0.20 | 0.02 | 65.04 | -0.03 | 0.04 | 0.32 | -0.17 | 0.04 | 0.02 | 0.05 | 0.04 | 98.06 |
| -0.14 | 0.06 | 0.37 | 31.28 | 0.21 | 0.09 | 0.36 | 0.17 | -0.07 | 65.03 | -0.03 | 0.13 | 0.12 | -0.01 | -0.26 | 0.08 | -0.03 | -0.05 | 97.31 |
| -0.09 | 0.05 | 1.01 | 30.21 | 0.22 | 0.07 | 0.50 | 0.15 | -0.23 | 65.01 | 0.04 | 0.05 | 0.26 | -0.02 | 0.22 | -0.04 | 0.15 | 0.00 | 97.56 |
| -0.09 | 0.05 | 0.67 | 31.31 | 0.21 | 0.07 | 0.39 | 0.39 | -0.08 | 64.99 | 0.09 | 0.12 | 0.09 | -0.01 | 0.10 | 0.03 | -0.03 | -0.06 | 98.24 |
| 0.02 | 0.06 | 1.66 | 32.68 | 0.24 | 0.07 | 0.53 | 0.13 | -0.18 | 64.98 | 0.02 | 0.12 | 0.00 | 0.26 | -0.03 | 0.00 | 0.07 | -0.08 | 100.55 |
| -0.01 | 0.05 | 0.37 | 32.58 | 0.21 | 0.07 | 0.46 | 0.19 | -0.02 | 64.71 | 0.14 | -0.07 | 0.15 | 0.01 | 0.09 | -0.04 | 0.00 | 0.01 | 98.90 |
| -0.02 | 0.04 | 1.06 | 32.61 | 0.30 | 0.08 | 0.51 | 0.39 | -0.03 | 64.58 | 0.06 | 0.07 | 0.12 | -0.29 | 0.09 | -0.13 | 0.02 | -0.07 | 99.39 |
| -0.02 | 0.04 | 1.54 | 32.47 | 0.25 | 0.07 | 0.54 | 0.16 | -0.08 | 64.57 | -0.02 | 0.12 | 0.16 | -0.04 | -0.03 | -0.02 | 0.08 | -0.04 | 99.75 |
| -0.02 | 0.05 | 1.58 | 32.55 | 0.25 | 0.08 | 0.56 | 0.15 | -0.07 | 64.53 | -0.11 | 0.02 | 0.09 | 0.06 | 0.20 | 0.03 | 0.14 | -0.04 | 100.05 |
| 0.02 | 0.05 | 0.82 | 32.68 | 0.22 | 0.07 | 0.55 | 0.16 | -0.20 | 64.49 | 0.03 | 0.03 | 0.07 | -0.01 | 0.07 | 0.03 | 0.00 | -0.06 | 98.02 |
| 0.01 | 0.05 | 0.97 | 32.07 | 0.21 | 0.07 | 0.48 | 0.23 | 0.07 | 64.39 | 0.02 | 0.06 | 0.00 | -0.08 | -0.05 | -0.14 | 0.02 | -0.05 | 98.31 |
| -0.02 | 0.05 | 1.17 | 32.27 | 0.24 | 0.07 | 0.49 | 0.14 | -0.01 | 64.29 | 0.06 | 0.01 | 0.20 | 0.11 | -0.18 | 0.06 | 0.13 | -0.05 | 99.03 |
| -0.07 | 0.07 | 1.94 | 30.76 | 0.25 | 0.07 | 0.66 | 0.06 | -0.22 | 64.23 | 0.06 | -0.02 | 0.14 | -0.01 | -0.09 | -0.04 | 0.01 | -0.03 | 97.77 |
| -0.01 | 0.05 | 1.99 | 32.00 | 0.25 | 0.08 | 0.60 | 0.34 | 0.03 | 64.04 | 0.02 | 0.09 | -0.02 | -0.06 | -0.16 | 0.07 | 0.00 | 0.02 | 99.33 |
| 0.03 | 0.05 | 1.76 | 32.33 | 0.24 | 0.07 | 0.65 | 0.15 | -0.18 | 63.84 | 0.01 | -0.03 | 0.08 | 0.14 | 0.23 | -0.10 | 0.17 | 0.06 | 99.50 |
| -0.01 | 0.06 | 1.29 | 32.37 | 0.23 | 0.07 | 0.61 | 0.05 | -0.20 | 63.83 | 0.04 | -0.02 | 0.13 | 0.06 | -0.25 | -0.10 | 0.04 | -0.02 | 98.18 |
| 0.01 | 0.06 | 1.11 | 32.04 | 0.26 | 0.07 | 0.47 | 0.38 | 0.13 | 63.66 | -0.04 | 0.07 | 0.07 | 0.01 | 0.23 | 0.07 | -0.04 | -0.04 | 98.52 |
| -0.01 | 0.05 | 1.75 | 31.89 | 0.24 | 0.08 | 0.66 | 0.42 | 0.10 | 63.49 | 0.00 | 0.10 | 0.16 | -0.08 | 0.17 | 0.03 | 0.06 | 0.01 | 99.12 |
| 0.02 | 0.05 | 1.37 | 32.25 | 0.25 | 0.08 | 0.60 | 0.32 | 0.02 | 63.25 | -0.02 | 0.02 | 0.12 | 0.02 | 0.03 | -0.06 | 0.08 | 0.01 | 98.41 |
| -0.03 | 0.06 | 1.65 | 32.14 | 0.25 | 0.07 | 0.56 | 0.27 | 0.04 | 63.18 | -0.08 | -0.04 | 0.21 | -0.14 | -0.14 | -0.03 | 0.05 | -0.09 | 97.93 |
| -0.03 | 0.05 | 0.22 | 32.46 | 0.21 | 0.07 | 0.45 | 0.46 | 0.22 | 63.13 | 0.03 | 0.08 | 0.13 | -0.12 | -0.09 | 0.02 | 0.03 | -0.03 | 97.29 |
| 0.02 | 0.05 | 1.86 | 32.54 | 0.25 | 0.07 | 0.58 | 0.08 | -0.10 | 62.99 | -0.02 | 0.05 | 0.05 | -0.13 | 0.03 | -0.06 | -0.02 | 0.04 | 98.15 |
| -0.03 | 0.06 | 3.28 | 31.62 | 0.29 | 0.07 | 0.78 | 0.13 | -0.05 | 62.81 | -0.05 | 0.06 | 0.12 | 0.02 | -0.03 | 0.16 | 0.14 | -0.02 | 99.36 |
| 0.01 | 0.06 | 0.74 | 31.69 | 0.29 | 0.08 | 0.65 | 0.79 | 0.10 | 62.78 | 0.24 | 0.07 | 0.08 | 0.12 | 0.07 | 0.05 | 0.06 | -0.03 | 98.05 |
| -0.05 | 0.05 | 1.00 | 32.75 | 0.22 | 0.07 | 0.69 | -0.02 | -0.18 | 62.73 | 0.11 | 0.02 | 0.09 | 0.08 | 0.03 | 0.00 | 0.05 | 0.08 | 97.72 |
| 0.00 | 0.09 | 1.58 | 32.38 | 0.23 | 0.18 | 0.67 | 0.24 | 0.00 | 62.69 | 0.00 | -0.01 | 0.12 | -0.01 | -0.10 | -0.21 | 0.01 | -0.02 | 97.84 |
| 0.00 | 0.09 | 2.50 | 32.07 | 0.27 | 0.08 | 0.78 | 0.24 | 0.07 | 62.31 | -0.04 | -0.02 | 0.21 | -0.02 | 0.06 | -0.08 | 0.08 | -0.03 | 98.57 |
| -0.01 | 0.07 | 2.46 | 32.34 | 0.25 | 0.08 | 0.68 | 0.11 | -0.14 | 62.23 | 0.16 | -0.01 | 0.15 | -0.16 | -0.15 | -0.02 | 0.08 | 0.02 | 98.14 |
| -0.10 | 0.04 | 3.46 | 28.93 | 0.34 | 0.08 | 1.19 | 0.07 | -0.01 | 62.07 | -0.02 | 0.03 | 0.82 | -0.17 | 0.06 | 0.05 | 0.15 | -0.04 | 96.95 |
| 0.01 | 0.04 | 2.28 | 31.66 | 0.28 | 0.07 | 0.75 | 0.25 | 0.08 | 62.06 | 0.04 | 0.03 | 0.29 | -0.36 | -0.09 | 0.00 | 0.05 | 0.02 | 97.46 |
| -0.01 | 0.07 | 2.69 | 31.44 | 0.28 | 0.07 | 0.74 | 0.21 | -0.01 | 61.95 | 0.02 | 0.04 | 0.05 | -0.06 | -0.16 | 0.05 | 0.08 | -0.04 | 97.41 |
| 0.02 | 0.05 | 2.51 | 31.88 | 0.26 | 0.08 | 0.72 | 0.07 | -0.11 | 61.92 | -0.05 | -0.01 | 0.11 | -0.07 | -0.03 | 0.06 | 0.03 | 0.03 | 97.47 |
| 0.00 | 0.07 | 2.01 | 32.33 | 0.25 | 0.07 | 0.69 | 0.09 | -0.08 | 61.90 | 0.05 | -0.02 | 0.26 | 0.06 | 0.19 | -0.02 | 0.15 | -0.11 | 97.89 |
| -0.06 | 0.06 | 1.26 | 32.12 | 0.24 | 0.07 | 0.48 | 0.27 | 0.11 | 61.85 | 0.00 | 0.05 | 0.11 | -0.01 | 0.02 | -0.02 | 0.04 | -0.02 | 96.57 |
| 0.04 | 0.07 | 1.79 | 31.65 | 0.27 | 0.08 | 0.83 | 0.12 | -0.10 | 61.71 | 0.05 | 0.01 | 0.33 | 0.12 | -0.02 | -0.01 | 0.06 | 0.05 | 97.05 |
| -0.02 | 0.05 | 2.98 | 31.83 | 0.30 | 0.08 | 0.80 | 0.33 | -0.04 | 61.67 | -0.05 | 0.09 | 0.16 | -0.11 | -0.27 | 0.08 | 0.09 | 0.05 | 98.02 |
| -0.09 | 0.42 | 2.11 | 30.50 | 0.21 | 0.18 | 3.56 | 0.21 | -0.04 | 61.65 | 0.02 | -0.08 | 0.06 | 0.19 | 0.16 | -0.05 | -0.02 | 0.01 | 99.00 |
| 0.03 | 0.07 | 2.27 | 31.85 | 0.25 | 0.08 | 0.95 | 0.26 | -0.07 | 61.05 | -0.09 | 0.08 | 0.14 | 0.02 | -0.01 | -0.11 | 0.06 | 0.01 | 96.84 |
| 0.04 | 0.06 | 3.72 | 31.64 | 0.32 | 0.07 | 0.90 | 0.02 | -0.19 | 61.03 | 0.06 | -0.09 | 0.16 | -0.04 | 0.08 | 0.01 | 0.14 | 0.04 | 97.97 |
| 0.01 | 0.05 | 2.39 | 31.61 | 0.27 | 0.08 | 0.81 | 0.31 | 0.14 | 60.88 | 0.07 | 0.08 | 0.32 | 0.06 | -0.02 | 0.09 | 0.04 | -0.03 | 97.16 |
| 0.00 | 0.06 | 3.63 | 31.39 | 0.31 | 0.08 | 0.88 | 0.36 | 0.14 | 60.84 | -0.04 | 0.11 | 0.16 | -0.13 | 0.01 | 0.03 | 0.06 | 0.07 | 97.98 |
| 0.01 | 0.05 | 2.72 | 31.36 | 0.26 | 0.09 | 0.99 | 0.05 | 0.10 | 60.32 | 0.02 | -0.03 | 0.22 | 0.39 | -0.03 | 0.03 | 0.10 | -0.03 | 96.71 |
| -0.01 | 0.06 | 2.22 | 31.49 | 0.26 | 0.07 | 0.77 | 0.51 | 0.38 | 60.02 | 0.05 | 0.12 | 0.24 | 0.05 | 0.00 | -0.14 | 0.07 | 0.02 | 96.18 |
| 0.00 | 0.06 | 2.45 | 30.77 | 0.30 | 0.08 | 0.77 | 0.46 | 0.23 | 60.01 | 0.09 | 0.06 | 0.15 | -0.01 | -0.02 | -0.09 | 0.14 | -0.01 | 95.44 |
| 0.00 | 0.04 | 4.06 | 30.66 | 0.32 | 0.08 | 0.98 | 0.26 | 0.13 | 59.57 | -0.04 | 0.10 | 0.23 | 0.02 | 0.11 | -0.09 | 0.17 | -0.02 | 96.58 |
| 0.02 | 0.05 | 5.07 | 29.85 | 0.30 | 0.16 | 1.69 | 0.54 | 0.27 | 59.30 | 0.07 | 0.12 | 0.29 | 0.07 | 0.02 | 0.17 | 0.17 | -0.03 | 98.13 |
| 0.03 | 0.05 | 2.53 | 30.83 | 0.27 | 0.08 | 0.91 | 0.46 | 0.33 | 58.81 | 0.19 | 0.17 | 0.37 | -0.14 | -0.03 | -0.03 | 0.09 | 0.08 | 95.00 |
| 0.03 | 0.06 | 3.50 | 31.13 | 0.29 | 0.07 | 0.85 | 0.21 | -0.10 | 58.73 | -0.06 | 0.09 | 0.17 | -0.13 | 0.19 | -0.03 | 0.15 | -0.06 | 95.09 |

| NA | MG | AL | SI | CA | K | FE | Y | P | ZR | TH | U | TI | LA | CE | ND | CR | MN | sum |
|-------|-------|------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| 0.02 | 0.06 | 4.82 | 30.34 | 0.40 | 0.08 | 1.21 | 0.59 | 0.41 | 58.63 | 0.28 | 0.09 | 0.22 | 0.06 | 0.07 | -0.02 | 0.16 | 0.03 | 97.45 |
| -0.03 | 0.05 | 1.70 | 30.16 | 0.24 | 0.07 | 0.56 | 0.15 | -0.02 | 58.53 | 0.07 | 0.06 | 0.08 | -0.12 | -0.04 | 0.20 | 0.09 | -0.07 | 91.68 |
| -0.02 | 0.03 | 2.18 | 29.59 | 0.26 | 0.07 | 1.66 | -0.03 | -0.13 | 57.45 | -0.03 | 0.15 | 3.63 | -0.19 | 0.07 | -0.12 | 0.05 | 0.07 | 94.69 |
| 0.01 | 0.06 | 2.95 | 31.34 | 0.25 | 0.07 | 0.80 | -0.01 | -0.23 | 56.91 | -0.03 | 0.04 | 0.21 | 0.10 | 0.02 | 0.11 | 0.09 | -0.02 | 92.67 |
| -0.01 | 0.08 | 2.42 | 27.23 | 0.63 | 0.11 | 2.03 | 1.43 | 1.13 | 56.57 | 2.03 | 0.14 | 0.38 | -0.07 | 0.23 | 0.09 | 0.06 | -0.05 | 94.43 |
| 0.03 | 0.11 | 3.35 | 27.25 | 0.70 | 0.12 | 1.44 | 1.51 | 1.87 | 53.57 | 1.07 | 0.11 | 0.23 | -0.02 | 0.16 | 0.21 | 0.15 | 0.07 | 91.93 |
| 0.00 | 0.06 | 5.60 | 28.77 | 0.31 | 0.10 | 1.16 | 0.32 | 0.16 | 53.03 | 0.06 | 0.06 | 0.30 | -0.01 | -0.18 | 0.01 | 0.15 | -0.02 | 89.88 |
| 0.04 | 0.05 | 3.98 | 27.01 | 0.29 | 0.06 | 0.78 | 0.43 | 0.19 | 49.94 | 0.05 | 0.03 | 0.26 | -0.10 | 0.01 | -0.08 | 0.14 | -0.04 | 83.04 |
| -0.12 | 0.40 | 2.01 | 47.75 | 0.13 | 0.47 | 1.51 | 0.05 | -0.06 | 35.30 | 0.04 | 0.00 | 0.08 | 0.01 | -0.14 | 0.14 | 0.00 | 0.02 | 87.59 |
| -0.01 | -0.01 | 2.81 | 18.70 | 0.19 | 0.03 | 5.91 | 0.19 | 0.03 | 33.04 | 0.06 | 0.02 | 8.25 | 0.06 | -0.02 | 0.00 | 0.02 | 1.09 | 70.36 |
| 0.00 | -0.01 | 9.46 | 19.91 | 0.32 | 0.03 | 1.42 | -0.02 | -0.01 | 28.50 | -0.02 | 0.04 | 0.36 | -0.06 | 0.03 | 0.03 | 0.31 | 0.05 | 60.34 |
| -0.01 | -0.02 | 2.60 | 13.37 | 0.17 | 0.05 | 17.88 | -0.04 | -0.15 | 20.59 | -0.04 | 0.06 | 24.37 | -0.02 | -0.05 | -0.18 | 0.02 | 2.71 | 81.31 |
| 0.01 | -0.03 | 1.48 | 76.58 | 0.06 | 0.00 | 0.58 | 0.08 | -0.02 | 17.51 | 0.04 | 0.05 | 0.09 | -0.06 | 0.12 | -0.05 | 0.05 | -0.02 | 96.47 |
| -0.02 | -0.06 | 2.76 | 10.79 | 0.12 | 0.02 | 7.77 | 0.05 | 0.10 | 16.80 | -0.07 | -0.10 | 23.35 | 0.06 | -0.01 | 0.05 | 0.07 | 1.44 | 63.12 |
| -0.01 | -0.06 | 1.45 | 47.47 | 0.03 | -0.01 | 0.26 | 0.01 | -0.02 | 14.14 | 0.06 | 0.04 | 0.03 | 0.06 | 0.05 | -0.02 | 0.08 | 0.01 | 63.57 |
| -0.12 | 0.06 | 0.18 | 2.55 | 0.86 | 0.17 | 0.54 | 0.15 | 28.83 | -0.16 | 12.16 | -1.39 | -0.02 | 14.85 | 31.53 | 11.78 | -0.71 | -0.15 | 101.11 |

SAMPLE 17

| NA | MG | AL | SI | CA | K | FE | Y | P | ZR | TH | U | TI | LA | CE | ND | CR | MIN | sum |
|-------|-------|-------|-------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| -0.01 | -0.05 | 0.86 | 0.45 | 0.37 | 0.05 | 17.65 | -0.10 | 0.02 | 0.03 | -0.03 | -0.03 | 83.24 | -0.07 | 0.12 | -0.03 | 0.03 | 3.00 | 105.50 |
| -0.01 | -0.03 | 0.29 | 0.15 | 0.15 | 0.05 | 26.12 | 0.01 | -0.01 | 0.00 | -0.05 | 0.01 | 72.64 | -0.55 | -0.02 | -0.05 | 0.02 | 1.71 | 100.43 |
| 0.04 | 0.01 | 1.59 | 0.40 | 0.37 | 0.06 | 28.12 | -0.09 | 0.80 | 0.04 | -0.03 | 0.03 | 63.78 | 0.07 | -0.05 | -0.06 | 0.05 | 6.29 | 101.41 |
| 0.03 | -0.05 | 0.46 | 0.15 | 0.17 | 0.06 | 35.09 | -0.05 | 0.14 | 0.00 | -0.02 | -0.01 | 61.54 | 0.06 | 0.07 | -0.04 | -0.04 | 4.78 | 102.52 |
| 0.03 | -0.03 | 0.80 | 0.20 | 0.19 | 0.06 | 37.04 | 0.02 | 0.23 | 0.07 | -0.01 | 0.01 | 60.02 | -0.06 | 0.01 | -0.21 | 0.03 | 4.46 | 102.86 |
| 0.02 | -0.03 | 0.39 | 0.17 | 0.18 | 0.06 | 36.36 | -0.04 | 0.05 | 0.06 | 0.00 | -0.05 | 58.98 | -0.10 | -0.10 | -0.02 | 0.02 | 4.77 | 103.67 |
| 0.07 | -0.02 | 1.70 | 0.46 | 0.18 | 0.05 | 36.39 | -0.02 | 0.08 | 0.08 | 0.02 | -0.02 | 59.97 | 0.13 | -0.06 | -0.07 | 0.00 | 2.78 | 101.72 |
| 0.01 | -0.03 | 1.86 | 0.57 | 0.18 | 0.05 | 37.35 | -0.04 | 0.06 | -0.04 | 0.02 | -0.02 | 59.24 | -0.09 | 0.01 | -0.12 | 0.04 | 2.69 | 101.74 |
| 0.02 | 0.00 | 0.36 | 0.14 | 0.15 | 0.06 | 39.24 | 0.02 | -0.01 | 0.02 | -0.01 | 0.02 | 58.70 | -0.13 | 0.09 | 0.04 | -0.03 | 2.43 | 101.11 |
| 0.00 | -0.03 | 1.09 | 0.35 | 0.16 | 0.06 | 37.84 | 0.00 | 0.00 | 0.13 | -0.04 | -0.04 | 57.84 | -0.12 | 0.23 | 0.10 | 0.07 | 5.43 | 103.07 |
| -0.02 | -0.01 | 0.49 | 0.27 | 0.16 | 0.05 | 40.80 | 0.14 | -0.04 | 0.01 | 0.04 | -0.06 | 56.58 | 0.01 | 0.23 | 0.17 | 0.05 | 5.09 | 103.96 |
| -0.02 | -0.04 | 0.99 | 0.47 | 0.18 | 0.06 | 34.13 | -0.04 | 0.28 | 0.01 | 0.00 | -0.02 | 56.58 | 0.28 | 0.01 | 0.13 | -0.02 | 3.90 | 96.88 |
| 0.02 | -0.02 | 3.27 | 0.89 | 0.23 | 0.06 | 35.18 | 0.05 | 0.04 | 0.17 | -0.09 | -0.03 | 55.37 | 0.10 | 0.09 | 0.08 | 0.17 | 4.46 | 101.24 |
| 0.02 | -0.01 | 4.29 | 1.13 | 0.24 | 0.05 | 35.28 | -0.03 | 0.04 | 0.18 | 0.08 | 0.01 | 55.37 | -0.13 | 0.09 | 0.03 | 0.19 | 4.40 | 101.23 |
| 0.01 | 0.01 | 3.99 | 0.90 | 0.24 | 0.05 | 36.83 | 0.05 | 0.08 | 0.10 | 0.03 | -0.02 | 54.18 | 0.05 | 0.07 | 0.12 | 0.04 | 3.86 | 100.59 |
| 0.06 | 0.06 | 7.12 | 6.04 | 0.69 | 0.11 | 7.65 | 0.02 | 1.42 | 0.67 | 0.02 | 0.03 | 53.71 | 0.03 | 0.10 | -0.02 | 0.03 | 0.34 | 77.51 |
| 0.07 | -0.02 | 5.42 | 2.53 | 0.29 | 0.05 | 29.22 | 0.05 | 0.14 | 0.67 | 0.00 | 0.05 | 53.61 | -0.14 | -0.01 | -0.04 | 0.21 | 2.60 | 84.68 |
| 0.06 | 0.03 | 19.96 | 4.67 | 0.50 | 0.06 | 25.58 | -0.05 | 0.14 | 1.14 | 0.02 | 0.01 | 30.50 | -0.07 | -0.13 | -0.06 | 0.56 | 3.20 | 86.12 |
| -0.04 | 0.06 | 0.27 | 32.07 | 0.21 | 0.07 | 0.36 | 0.09 | -0.18 | 68.23 | -0.01 | 0.01 | 0.02 | -0.04 | 0.05 | -0.01 | 0.01 | 0.01 | 101.29 |
| -0.03 | 0.05 | 0.20 | 31.90 | 0.21 | 0.08 | 0.36 | 0.01 | -0.19 | 68.05 | -0.01 | 0.02 | 0.04 | 0.02 | 0.15 | -0.08 | 0.03 | -0.05 | 100.76 |
| -0.03 | 0.07 | 0.11 | 31.73 | 0.22 | 0.08 | 0.32 | 0.03 | 0.02 | 67.05 | 0.07 | -0.02 | -0.09 | 0.11 | -0.32 | -0.12 | -0.05 | 0.06 | 99.24 |
| -0.03 | 0.04 | 0.38 | 31.99 | 0.22 | 0.07 | 0.41 | 0.14 | -0.16 | 66.85 | 0.02 | -0.05 | 0.04 | -0.19 | 0.07 | -0.29 | -0.08 | 0.02 | 99.45 |
| -0.06 | 0.04 | 0.06 | 32.05 | 0.21 | 0.07 | 0.32 | 0.27 | -0.05 | 66.35 | 0.00 | -0.02 | 0.08 | -0.07 | -0.15 | -0.11 | 0.09 | -0.08 | 99.11 |
| -0.05 | 0.06 | 0.11 | 31.81 | 0.21 | 0.08 | 0.34 | 0.33 | 0.01 | 66.35 | 0.02 | 0.19 | 0.08 | -0.02 | 0.17 | 0.00 | 0.00 | -0.04 | 99.65 |
| 0.00 | 0.05 | 0.24 | 32.50 | 0.21 | 0.08 | 0.31 | 0.26 | -0.14 | 66.29 | 0.01 | 0.03 | 0.09 | -0.03 | 0.06 | -0.02 | -0.07 | 0.00 | 99.87 |
| -0.05 | 0.06 | 0.21 | 31.88 | 0.22 | 0.07 | 0.33 | 0.34 | -0.03 | 66.18 | 0.02 | 0.06 | 0.03 | 0.03 | 0.17 | 0.02 | 0.07 | 0.07 | 99.68 |
| 0.01 | 0.06 | 0.52 | 31.89 | 0.22 | 0.08 | 0.37 | 0.39 | 0.02 | 65.91 | -0.01 | 0.09 | 0.14 | 0.09 | -0.04 | 0.05 | -0.01 | -0.02 | 99.76 |
| -0.03 | 0.05 | 0.11 | 31.73 | 0.21 | 0.08 | 0.32 | 0.26 | -0.19 | 65.86 | -0.03 | 0.16 | -0.03 | -0.09 | -0.13 | 0.13 | -0.03 | 0.04 | 98.42 |
| -0.03 | 0.05 | 0.66 | 31.92 | 0.22 | 0.08 | 0.37 | 0.10 | -0.16 | 65.80 | 0.05 | 0.03 | 0.05 | -0.09 | 0.07 | -0.03 | -0.02 | -0.02 | 99.05 |
| 0.00 | 0.06 | 0.49 | 32.00 | 0.22 | 0.07 | 0.41 | -0.05 | -0.22 | 65.77 | 0.09 | -0.02 | -0.01 | -0.06 | -0.07 | 0.11 | 0.03 | 0.05 | 98.87 |
| -0.02 | 0.04 | 0.32 | 31.86 | 0.22 | 0.09 | 0.36 | 0.06 | -0.23 | 65.76 | 0.08 | 0.04 | 0.01 | 0.03 | -0.07 | 0.00 | 0.03 | 0.03 | 98.61 |
| 0.02 | 0.05 | 0.23 | 32.19 | 0.22 | 0.08 | 0.35 | 0.17 | -0.23 | 65.65 | -0.07 | 0.04 | 0.08 | 0.05 | 0.05 | -0.07 | -0.02 | 0.02 | 98.81 |
| -0.04 | 0.05 | 0.10 | 32.39 | 0.22 | 0.08 | 0.35 | 0.30 | -0.09 | 65.56 | -0.05 | 0.06 | 0.08 | -0.14 | 0.04 | 0.11 | 0.07 | 0.02 | 99.11 |
| -0.04 | 0.04 | 0.22 | 32.50 | 0.21 | 0.07 | 0.37 | 0.04 | -0.25 | 65.40 | -0.01 | 0.05 | 0.11 | -0.33 | -0.17 | -0.09 | -0.04 | 0.04 | 98.12 |
| 0.00 | 0.05 | 0.13 | 32.41 | 0.21 | 0.08 | 0.36 | 0.06 | -0.29 | 65.36 | 0.05 | 0.08 | 0.15 | -0.01 | -0.09 | 0.10 | 0.03 | -0.03 | 98.65 |
| -0.04 | 0.04 | 0.13 | 31.35 | 0.23 | 0.08 | 0.32 | 0.19 | -0.21 | 65.29 | -0.04 | -0.05 | 0.12 | -0.03 | -0.03 | -0.04 | -0.05 | 0.00 | 97.26 |
| 0.01 | 0.04 | 0.40 | 31.79 | 0.21 | 0.07 | 0.67 | 0.32 | -0.07 | 65.28 | -0.13 | -0.01 | 0.30 | -0.05 | 0.21 | -0.04 | 0.09 | 0.10 | 99.19 |
| 0.01 | 0.05 | 0.35 | 30.89 | 0.28 | 0.08 | 0.67 | 0.29 | 0.07 | 65.11 | -0.07 | 0.21 | 0.30 | -0.16 | 0.08 | 0.01 | -0.03 | 0.00 | 98.14 |
| -0.08 | 0.06 | 1.26 | 31.27 | 0.25 | 0.08 | 0.57 | 0.18 | -0.12 | 65.11 | -0.02 | -0.02 | 0.10 | -0.10 | -0.15 | -0.11 | 0.03 | 0.02 | 98.33 |
| -0.02 | 0.04 | 0.35 | 31.22 | 0.21 | 0.07 | 0.34 | 0.22 | -0.01 | 64.96 | 0.05 | 0.03 | 0.10 | 0.01 | 0.18 | 0.12 | 0.00 | 0.03 | 97.90 |
| 0.01 | 0.04 | 0.29 | 32.28 | 0.21 | 0.08 | 0.37 | 0.26 | -0.18 | 64.75 | 0.10 | 0.05 | 0.23 | 0.20 | -0.07 | -0.04 | 0.00 | 0.02 | 98.60 |
| -0.06 | 0.06 | 1.26 | 31.90 | 0.23 | 0.08 | 0.46 | 0.36 | -0.07 | 64.63 | 0.08 | 0.09 | 0.16 | 0.00 | 0.01 | 0.09 | -0.02 | 0.03 | 99.29 |
| -0.02 | 0.06 | 0.49 | 31.01 | 0.26 | 0.08 | 0.45 | 0.59 | 0.32 | 64.62 | -0.02 | 0.20 | 0.08 | 0.17 | -0.26 | -0.07 | -0.01 | -0.01 | 98.03 |
| 0.01 | 0.05 | 0.84 | 31.59 | 0.22 | 0.07 | 0.42 | 0.50 | 0.00 | 64.54 | 0.01 | 0.15 | 0.04 | -0.08 | 0.11 | -0.04 | 0.00 | -0.06 | 98.37 |
| -0.05 | 0.07 | 1.71 | 30.83 | 0.25 | 0.08 | 0.58 | 0.13 | -0.21 | 64.37 | -0.15 | 0.15 | 0.18 | 0.02 | 0.11 | -0.05 | 0.07 | 0.00 | 98.09 |
| -0.03 | 0.03 | 0.74 | 30.97 | 0.25 | 0.07 | 0.45 | 0.15 | -0.25 | 64.28 | -0.11 | -0.01 | 0.11 | 0.04 | 0.07 | 0.04 | 0.01 | -0.06 | 96.75 |
| -0.02 | 0.05 | 0.06 | 32.21 | 0.20 | 0.08 | 0.29 | 0.48 | 0.06 | 63.93 | -0.07 | 0.10 | 0.05 | -0.03 | 0.05 | -0.18 | 0.01 | -0.06 | 97.21 |

| NA | MG | AL | SI | CA | K | FE | Y | P | ZR | TH | U | TI | LA | CE | ND | CR | MN | sum |
|-------|------|-------|-------|-------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| 0.02 | 0.05 | 1.90 | 32.08 | 0.25 | 0.08 | 0.61 | 0.08 | -0.21 | 63.85 | -0.04 | -0.02 | 0.18 | 0.11 | -0.31 | -0.11 | 0.09 | 0.00 | 98.61 |
| 0.02 | 0.04 | 0.86 | 31.96 | 0.23 | 0.07 | 0.39 | 0.06 | -0.27 | 63.78 | -0.01 | 0.01 | 0.24 | -0.13 | -0.10 | -0.11 | -0.11 | 0.01 | 96.94 |
| -0.04 | 0.06 | 2.51 | 30.52 | 0.31 | 0.08 | 0.73 | 0.07 | -0.15 | 63.60 | 0.02 | 0.05 | 0.35 | 0.00 | 0.02 | 0.05 | 0.22 | -0.02 | 98.38 |
| -0.01 | 0.05 | 1.81 | 30.45 | 0.31 | 0.07 | 0.70 | 0.38 | 0.01 | 63.46 | 0.10 | 0.15 | 0.30 | -0.11 | -0.09 | -0.01 | 0.16 | -0.04 | 97.69 |
| 0.01 | 0.08 | 2.22 | 29.56 | 0.42 | 0.07 | 0.95 | 0.90 | 0.51 | 61.36 | 0.14 | 0.04 | 0.31 | 0.11 | 0.21 | -0.19 | 0.02 | 0.06 | 96.78 |
| -0.01 | 0.07 | 3.41 | 29.61 | 0.47 | 0.07 | 1.21 | 0.38 | 0.17 | 59.21 | 0.03 | 0.07 | 0.27 | -0.01 | 0.00 | 0.26 | 0.20 | 0.04 | 95.45 |
| 0.00 | 0.07 | 3.96 | 30.45 | 0.37 | 0.07 | 1.07 | 0.32 | 0.02 | 58.55 | 0.03 | 0.04 | 0.25 | -0.14 | 0.00 | 0.09 | 0.28 | 0.03 | 95.46 |
| 0.01 | 0.06 | 3.61 | 29.83 | 0.42 | 0.09 | 1.16 | 0.62 | 0.31 | 58.44 | 0.05 | 0.04 | 0.27 | 0.20 | 0.04 | 0.14 | 0.23 | 0.05 | 95.57 |
| 0.01 | 0.04 | 3.34 | 25.51 | 0.36 | 0.07 | 1.01 | 0.18 | 0.68 | 52.89 | 0.03 | 0.10 | 0.29 | -0.04 | 0.31 | 0.11 | 0.16 | -0.10 | 84.95 |
| -0.01 | 0.03 | 4.19 | 35.73 | 0.32 | 0.06 | 0.83 | 0.16 | -0.21 | 52.74 | 0.01 | 0.02 | 0.21 | 0.01 | 0.02 | 0.16 | 0.18 | -0.01 | 94.44 |
| -0.01 | 0.00 | 1.34 | 22.56 | 0.15 | 0.04 | 0.44 | 0.12 | -0.08 | 47.92 | 0.01 | 0.09 | 0.75 | -0.01 | 0.04 | 0.02 | 0.14 | -0.03 | 73.49 |
| 0.13 | 0.27 | 28.05 | 25.29 | 1.14 | 0.31 | 4.53 | -0.01 | 0.29 | 16.41 | 0.01 | 0.01 | 1.13 | 0.10 | 0.11 | 0.05 | 1.16 | 0.00 | 78.98 |
| -0.04 | 0.06 | 1.20 | 1.79 | 0.78 | 0.15 | 0.64 | 0.33 | 30.05 | -0.16 | 6.37 | -0.96 | 0.18 | 13.97 | 34.59 | 13.59 | -0.90 | -0.06 | 101.58 |
| -0.03 | 0.05 | 0.39 | 2.19 | 0.63 | 0.16 | 0.55 | 0.34 | 28.36 | -0.10 | 8.16 | -1.30 | 0.02 | 14.09 | 33.92 | 13.17 | -0.75 | -0.13 | 98.72 |
| -0.03 | 0.04 | 0.22 | 1.65 | 0.68 | 0.15 | 0.52 | 0.19 | 28.20 | -0.32 | 7.14 | -0.99 | 0.04 | 12.86 | 32.79 | 13.70 | -0.61 | -0.07 | 96.16 |
| -0.04 | 0.06 | 0.11 | 2.33 | 0.69 | 0.15 | 0.54 | 0.39 | 27.93 | -0.16 | 9.24 | -1.28 | -0.01 | 12.60 | 32.45 | 13.88 | -0.61 | -0.14 | 98.13 |
| -0.05 | 0.05 | 4.12 | 2.44 | 0.96 | 0.13 | 0.94 | 0.19 | 23.84 | 0.27 | 6.42 | -1.24 | 0.13 | 11.58 | 26.91 | 10.73 | -0.82 | -0.17 | 86.43 |
| 0.09 | 0.00 | 0.51 | 0.36 | 53.76 | 0.04 | 0.26 | 0.01 | 38.60 | -0.32 | -0.06 | 0.05 | 0.11 | 0.03 | 0.26 | 0.25 | 0.06 | 0.04 | 94.05 |

SAMPLE 18

| NA | MG | AL | SI | CA | K | FE | Y | P | ZR | TH | U | TI | LA | CE | ND | CR | MN | sum |
|-------|-------|------|-------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| 0.01 | -0.03 | 0.17 | 0.07 | 0.14 | 0.04 | 7.02 | 0.05 | 0.00 | -0.01 | -0.06 | -0.06 | 95.41 | -0.06 | -0.08 | 0.08 | 0.00 | 0.70 | 103.39 |
| 0.01 | -0.05 | 0.37 | 0.13 | 0.18 | 0.04 | 9.89 | 0.01 | 0.01 | 0.03 | 0.06 | 0.02 | 89.25 | -0.06 | -0.02 | -0.11 | 0.06 | 0.94 | 100.76 |
| 0.00 | -0.02 | 1.40 | 29.09 | 0.08 | 0.43 | 0.40 | 0.03 | 0.00 | 0.06 | 0.02 | -0.02 | 74.50 | -0.02 | -0.10 | 0.00 | 0.09 | -0.08 | 105.96 |
| 0.04 | -0.01 | 2.26 | 0.44 | 0.28 | 0.06 | 31.52 | 0.10 | 0.66 | 0.01 | 0.10 | 0.03 | 62.17 | -0.02 | 0.18 | 0.00 | 0.02 | 2.64 | 100.48 |
| 0.00 | 0.00 | 0.35 | 0.20 | 0.21 | 0.05 | 34.86 | -0.03 | 0.05 | 0.07 | 0.03 | 0.06 | 61.85 | -0.02 | 0.15 | 0.12 | 0.06 | 4.16 | 102.17 |
| -0.03 | -0.01 | 1.41 | 0.44 | 0.19 | 0.05 | 31.01 | 0.05 | 0.07 | 0.04 | -0.03 | -0.06 | 60.86 | -0.02 | -0.17 | -0.07 | -0.04 | 4.01 | 97.74 |
| 0.04 | -0.01 | 0.30 | 0.13 | 0.17 | 0.05 | 34.61 | 0.03 | 0.04 | 0.00 | 0.00 | 0.00 | 59.66 | -0.13 | 0.06 | 0.06 | 0.02 | 5.40 | 100.43 |
| 0.07 | -0.01 | 0.41 | 0.09 | 0.14 | 0.05 | 35.22 | -0.02 | 0.06 | -0.02 | 0.00 | 0.02 | 59.41 | 0.07 | 0.06 | 0.02 | 0.02 | 3.94 | 99.53 |
| 0.08 | -0.04 | 0.47 | 0.09 | 0.14 | 0.05 | 36.71 | 0.07 | -0.01 | 0.01 | -0.11 | 0.07 | 59.35 | -0.01 | -0.01 | 0.03 | 0.01 | 4.27 | 101.17 |
| 0.04 | -0.01 | 2.51 | 1.13 | 0.21 | 0.08 | 32.56 | -0.04 | 0.21 | 0.09 | -0.03 | 0.02 | 59.24 | -0.21 | 0.06 | -0.08 | 0.06 | 4.33 | 100.17 |
| 0.04 | 0.02 | 0.40 | 0.11 | 0.17 | 0.06 | 38.82 | -0.01 | 0.03 | 0.04 | -0.04 | -0.06 | 58.64 | 0.23 | -0.10 | -0.01 | 0.05 | 4.33 | 102.72 |
| 0.01 | 0.00 | 0.98 | 0.23 | 0.15 | 0.05 | 35.30 | 0.03 | 0.05 | -0.04 | -0.04 | 0.02 | 58.64 | -0.12 | -0.13 | -0.05 | -0.03 | 4.47 | 99.52 |
| -0.02 | -0.05 | 0.69 | 0.32 | 0.19 | 0.05 | 33.24 | -0.05 | 0.08 | 0.10 | -0.09 | 0.01 | 58.52 | -0.04 | 0.14 | 0.02 | 0.00 | 4.27 | 97.42 |
| -0.03 | -0.04 | 0.16 | 0.08 | 0.15 | 0.05 | 40.39 | -0.06 | -0.03 | 0.11 | 0.03 | 0.05 | 58.47 | 0.01 | -0.01 | -0.13 | 0.01 | 3.71 | 102.92 |
| -0.03 | -0.01 | 0.17 | 0.05 | 0.15 | 0.06 | 42.77 | -0.07 | -0.02 | 0.06 | -0.04 | -0.09 | 58.37 | -0.19 | -0.06 | 0.03 | -0.02 | 3.34 | 104.47 |
| -0.03 | -0.01 | 0.33 | 0.11 | 0.15 | 0.05 | 39.60 | -0.05 | 0.01 | 0.00 | 0.00 | -0.09 | 58.30 | -0.08 | 0.05 | -0.02 | 0.06 | 4.16 | 102.54 |
| 0.02 | 0.02 | 4.09 | 0.78 | 0.44 | 0.07 | 27.88 | 0.01 | 1.39 | 0.05 | 0.02 | 0.03 | 58.28 | -0.19 | 0.02 | 0.04 | -0.02 | 2.65 | 95.58 |
| 0.04 | -0.04 | 0.40 | 0.10 | 0.16 | 0.05 | 40.26 | 0.05 | 0.02 | 0.00 | -0.01 | 0.06 | 58.24 | -0.01 | 0.02 | 0.04 | -0.04 | 3.86 | 103.20 |
| -0.05 | -0.02 | 0.26 | 0.05 | 0.15 | 0.05 | 39.74 | -0.03 | 0.03 | 0.02 | -0.04 | -0.01 | 58.09 | -0.18 | -0.07 | -0.02 | -0.01 | 4.19 | 102.15 |
| -0.03 | -0.03 | 1.56 | 0.50 | 0.21 | 0.06 | 33.82 | 0.00 | 0.15 | 0.03 | 0.00 | 0.08 | 57.96 | 0.05 | 0.11 | 0.12 | 0.13 | 8.84 | 103.56 |
| 0.08 | -0.04 | 0.27 | 0.26 | 0.25 | 0.06 | 38.23 | 0.02 | 0.00 | 0.13 | 0.00 | -0.05 | 57.91 | -0.10 | 0.18 | 0.08 | 0.12 | 7.36 | 104.75 |
| 0.04 | -0.04 | 0.24 | 0.06 | 0.16 | 0.06 | 41.20 | -0.07 | 0.05 | 0.09 | 0.02 | 0.00 | 57.84 | 0.17 | -0.05 | 0.05 | 0.09 | 3.02 | 102.93 |
| 0.04 | -0.04 | 0.24 | 0.06 | 0.16 | 0.06 | 41.20 | -0.07 | 0.05 | 0.09 | 0.02 | 0.00 | 57.84 | 0.17 | -0.05 | 0.05 | 0.09 | 3.02 | 102.93 |
| 0.04 | -0.04 | 0.24 | 0.06 | 0.16 | 0.06 | 41.20 | -0.07 | 0.05 | 0.09 | 0.02 | 0.00 | 57.84 | 0.17 | -0.05 | 0.05 | 0.09 | 3.02 | 102.93 |
| 0.04 | -0.04 | 0.24 | 0.06 | 0.16 | 0.06 | 41.20 | -0.07 | 0.05 | 0.09 | 0.02 | 0.00 | 57.84 | 0.17 | -0.05 | 0.05 | 0.09 | 3.02 | 102.93 |
| 0.01 | 0.00 | 0.79 | 0.23 | 0.16 | 0.05 | 41.94 | -0.06 | 0.06 | 0.08 | 0.04 | -0.04 | 57.72 | 0.02 | 0.08 | 0.19 | 0.02 | 5.56 | 101.52 |
| 0.03 | -0.04 | 0.18 | 0.06 | 0.16 | 0.06 | 43.45 | -0.04 | -0.01 | 0.03 | -0.02 | -0.05 | 57.65 | -0.01 | 0.01 | -0.06 | 0.03 | 3.66 | 104.60 |
| 0.02 | -0.04 | 0.34 | 0.09 | 0.17 | 0.06 | 40.69 | 0.01 | 0.17 | 0.02 | -0.02 | -0.01 | 57.65 | -0.04 | -0.18 | 0.09 | -0.05 | 3.57 | 102.54 |
| 0.01 | -0.02 | 1.95 | 0.38 | 0.17 | 0.05 | 31.41 | -0.01 | 0.13 | -0.01 | 0.03 | -0.02 | 57.57 | 0.00 | -0.04 | 0.04 | 0.03 | 4.00 | 95.67 |
| -0.02 | -0.02 | 0.20 | 0.06 | 0.16 | 0.05 | 39.77 | -0.08 | 0.02 | 0.08 | -0.06 | -0.03 | 57.49 | -0.02 | -0.01 | -0.03 | -0.01 | 5.86 | 103.41 |
| 0.02 | 0.02 | 2.50 | 0.42 | 0.19 | 0.06 | 38.67 | 0.04 | 0.12 | 0.05 | 0.09 | -0.03 | 57.41 | -0.09 | 0.16 | -0.04 | 0.00 | 4.68 | 104.27 |
| 0.05 | -0.01 | 0.35 | 0.14 | 0.15 | 0.06 | 40.00 | 0.09 | 0.02 | 0.02 | -0.04 | 0.02 | 57.34 | 0.07 | -0.09 | 0.01 | 0.01 | 5.47 | 103.66 |
| -0.02 | 0.01 | 0.13 | 0.06 | 0.16 | 0.06 | 43.79 | -0.04 | -0.02 | 0.00 | -0.06 | -0.06 | 57.31 | 0.08 | 0.13 | 0.01 | 0.05 | 2.73 | 104.32 |
| 0.02 | -0.03 | 0.80 | 0.23 | 0.16 | 0.06 | 41.28 | -0.02 | 0.01 | 0.02 | 0.03 | -0.02 | 57.23 | -0.11 | -0.02 | -0.03 | -0.04 | 4.74 | 104.31 |
| 0.00 | -0.01 | 0.26 | 0.04 | 0.15 | 0.06 | 43.51 | -0.01 | -0.01 | -0.06 | 0.08 | -0.06 | 57.14 | -0.01 | -0.15 | -0.18 | -0.04 | 3.04 | 103.75 |
| -0.05 | -0.03 | 0.71 | 0.52 | 0.22 | 0.06 | 40.01 | 0.02 | 0.02 | -0.04 | -0.01 | -0.02 | 57.11 | 0.01 | 0.13 | -0.14 | 0.04 | 3.05 | 101.61 |
| 0.02 | -0.02 | 2.50 | 1.19 | 0.21 | 0.07 | 31.63 | 0.03 | 0.49 | 0.04 | -0.05 | 0.02 | 57.11 | -0.01 | 0.07 | -0.09 | 0.11 | 4.06 | 97.38 |
| 0.00 | 0.04 | 1.00 | 0.23 | 0.22 | 0.07 | 39.01 | -0.05 | 0.21 | 0.06 | -0.05 | 0.00 | 56.91 | -0.02 | -0.17 | -0.07 | 0.04 | 4.40 | 101.83 |
| 0.00 | -0.02 | 0.15 | 0.07 | 0.15 | 0.06 | 40.64 | -0.07 | 0.04 | -0.02 | -0.12 | 0.00 | 56.90 | -0.02 | -0.17 | -0.11 | 0.03 | 4.67 | 102.46 |
| 0.02 | -0.02 | 0.35 | 0.09 | 0.15 | 0.05 | 38.56 | 0.04 | -0.04 | 0.07 | 0.07 | -0.05 | 56.86 | -0.04 | -0.20 | -0.04 | 0.04 | 5.35 | 101.26 |
| 0.04 | 0.00 | 1.22 | 0.29 | 0.17 | 0.06 | 37.20 | -0.01 | 0.08 | 0.13 | 0.02 | 0.00 | 56.83 | 0.14 | 0.04 | -0.15 | 0.05 | 6.53 | 102.64 |
| -0.01 | 0.06 | 0.59 | 0.18 | 0.20 | 0.06 | 41.02 | 0.02 | 0.09 | -0.01 | -0.03 | -0.04 | 56.69 | 0.05 | 0.08 | 0.01 | 0.01 | 4.65 | 103.69 |
| 0.02 | -0.01 | 0.38 | 0.10 | 0.16 | 0.06 | 42.37 | 0.02 | 0.01 | 0.01 | -0.04 | 0.03 | 56.68 | 0.01 | -0.01 | 0.09 | 0.02 | 3.43 | 103.33 |
| 0.04 | 0.00 | 0.28 | 0.10 | 0.17 | 0.05 | 39.25 | 0.06 | 0.03 | -0.02 | -0.02 | -0.02 | 56.65 | -0.20 | 0.13 | 0.05 | 0.05 | 3.61 | 100.21 |
| 0.00 | -0.03 | 0.25 | 0.15 | 0.16 | 0.05 | 39.44 | -0.06 | 0.01 | -0.03 | 0.06 | -0.01 | 56.62 | 0.04 | 0.01 | 0.13 | 0.05 | 4.47 | 101.31 |
| 0.02 | -0.02 | 0.20 | 0.05 | 0.15 | 0.05 | 38.66 | -0.01 | 0.01 | 0.05 | 0.02 | 0.03 | 56.58 | 0.05 | -0.10 | -0.05 | -0.05 | 3.63 | 99.27 |
| 0.04 | 0.01 | 0.44 | 0.09 | 0.16 | 0.06 | 43.66 | 0.05 | 0.01 | 0.01 | -0.09 | 0.01 | 56.53 | -0.06 | 0.18 | -0.18 | 0.06 | 3.60 | 104.58 |
| 0.03 | 0.00 | 0.92 | 0.21 | 0.22 | 0.06 | 41.88 | 0.02 | 0.21 | -0.04 | -0.04 | 0.00 | 56.47 | 0.11 | -0.03 | 0.06 | 0.03 | 2.02 | 102.13 |
| 0.02 | 0.00 | 0.44 | 0.15 | 0.16 | 0.06 | 42.40 | -0.03 | 0.03 | 0.02 | -0.02 | 0.08 | 56.44 | 0.02 | 0.00 | -0.03 | 0.03 | 3.55 | 103.32 |

| NA | MG | AL | SI | CA | K | FE | Y | P | ZR | TH | U | TI | LA | CE | ND | OR | MN | sum |
|-------|-------|-------|-------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| -0.02 | -0.01 | 0.36 | 0.10 | 0.16 | 0.06 | 38.81 | -0.03 | 0.05 | 0.10 | -0.04 | 0.01 | 56.37 | -0.11 | -0.05 | -0.11 | -0.01 | 7.26 | 102.92 |
| -0.00 | 0.00 | 0.24 | 0.07 | 0.15 | 0.05 | 44.13 | -0.05 | 0.06 | 0.06 | -0.02 | -0.11 | 56.36 | 0.12 | 0.07 | -0.02 | -0.02 | 3.32 | 104.39 |
| 0.02 | 0.00 | 0.82 | 0.13 | 0.15 | 0.05 | 41.22 | 0.07 | -0.01 | 0.01 | -0.04 | -0.04 | 56.24 | 0.01 | -0.14 | -0.11 | 0.03 | 4.35 | 102.76 |
| 0.02 | 0.25 | 0.22 | 0.36 | 0.24 | 0.07 | 43.71 | -0.01 | 0.00 | -0.07 | -0.02 | -0.01 | 56.22 | 0.06 | -0.13 | 0.02 | -0.11 | 3.20 | 104.02 |
| -0.01 | -0.03 | 0.52 | 0.16 | 0.16 | 0.06 | 41.19 | -0.07 | 0.00 | 0.04 | -0.11 | 0.00 | 56.16 | -0.08 | -0.10 | -0.19 | 0.12 | 3.68 | 101.50 |
| 0.05 | -0.03 | 0.33 | 0.14 | 0.16 | 0.05 | 40.59 | 0.03 | 0.02 | -0.05 | -0.05 | -0.01 | 56.16 | -0.16 | -0.08 | -0.05 | -0.05 | 4.98 | 102.03 |
| -0.04 | 0.00 | 0.42 | 0.08 | 0.15 | 0.06 | 42.39 | 0.03 | -0.03 | -0.04 | 0.00 | -0.05 | 56.05 | -0.06 | -0.03 | -0.15 | -0.04 | 2.83 | 101.57 |
| 0.01 | -0.04 | 0.10 | 0.05 | 0.15 | 0.06 | 44.37 | 0.05 | 0.02 | -0.02 | -0.07 | -0.07 | 56.00 | -0.15 | 0.13 | -0.13 | -0.04 | 3.91 | 104.59 |
| -0.01 | -0.03 | 0.16 | 0.05 | 0.16 | 0.07 | 40.61 | -0.01 | 0.05 | 0.03 | -0.01 | 0.00 | 55.78 | -0.02 | -0.09 | 0.14 | 0.02 | 5.69 | 102.55 |
| -0.01 | 0.03 | 0.31 | 0.06 | 0.16 | 0.05 | 42.07 | -0.01 | 0.03 | 0.09 | -0.05 | -0.09 | 55.65 | -0.08 | -0.01 | -0.05 | -0.01 | 4.56 | 102.70 |
| 0.00 | 0.01 | 0.16 | 0.07 | 0.14 | 0.05 | 38.91 | -0.01 | 0.04 | -0.06 | -0.01 | 0.01 | 55.51 | 0.11 | -0.05 | 0.08 | -0.06 | 4.04 | 98.94 |
| 0.02 | -0.04 | 0.95 | 0.30 | 0.19 | 0.06 | 37.93 | -0.08 | 0.24 | 0.03 | -0.03 | 0.04 | 54.99 | -0.01 | 0.04 | -0.10 | -0.05 | 3.83 | 98.31 |
| -0.01 | -0.01 | 0.61 | 0.13 | 0.15 | 0.06 | 44.54 | -0.06 | 0.05 | -0.03 | -0.02 | -0.02 | 54.81 | 0.05 | -0.06 | 0.23 | 0.06 | 2.49 | 102.97 |
| 0.02 | 0.01 | 0.15 | 0.04 | 0.14 | 0.06 | 43.86 | -0.02 | 0.03 | 0.00 | -0.09 | -0.05 | 54.70 | 0.18 | 0.07 | -0.01 | 0.09 | 3.01 | 102.19 |
| 0.04 | -0.01 | 0.47 | 0.14 | 0.16 | 0.06 | 43.10 | 0.07 | 0.02 | -0.04 | -0.07 | 0.04 | 54.69 | 0.07 | 0.19 | -0.15 | 0.00 | 3.38 | 102.16 |
| 0.02 | -0.03 | 0.33 | 0.08 | 0.15 | 0.05 | 42.72 | 0.03 | -0.01 | -0.04 | -0.02 | 0.01 | 54.69 | -0.01 | -0.07 | 0.00 | 0.04 | 3.34 | 101.28 |
| 0.01 | -0.05 | 1.08 | 0.77 | 0.19 | 0.05 | 39.12 | -0.09 | 0.02 | -0.06 | -0.02 | 0.00 | 54.69 | -0.10 | 0.06 | 0.01 | 0.00 | 3.14 | 98.82 |
| 0.04 | -0.04 | 0.34 | 0.10 | 0.16 | 0.06 | 39.75 | 0.05 | 0.00 | 0.03 | 0.03 | -0.08 | 54.61 | 0.30 | 0.07 | 0.14 | 0.02 | 5.84 | 101.42 |
| 0.03 | 0.47 | 1.59 | 1.72 | 0.16 | 0.33 | 41.46 | 0.05 | 0.03 | 0.07 | 0.01 | 0.05 | 54.58 | -0.01 | 0.03 | 0.03 | 0.05 | 2.80 | 103.45 |
| 0.04 | -0.04 | 0.39 | 0.11 | 0.15 | 0.05 | 38.40 | -0.01 | 0.02 | 0.02 | 0.02 | 0.02 | 54.40 | -0.13 | 0.17 | 0.05 | 0.00 | 4.65 | 98.31 |
| 0.02 | -0.03 | 1.10 | 0.27 | 0.21 | 0.06 | 38.92 | 0.01 | 0.01 | 0.03 | 0.01 | -0.03 | 54.25 | -0.14 | -0.09 | -0.13 | -0.02 | 5.23 | 99.68 |
| 0.01 | 0.01 | 3.53 | 1.70 | 0.19 | 0.05 | 34.81 | -0.07 | 0.05 | 0.10 | -0.05 | 0.03 | 54.22 | -0.12 | 0.03 | 0.08 | -0.05 | 3.04 | 97.66 |
| 0.04 | 0.00 | 2.98 | 1.66 | 0.19 | 0.07 | 24.77 | -0.03 | 0.39 | 0.02 | 0.01 | 0.01 | 54.17 | -0.09 | 0.12 | 0.02 | 0.08 | 2.66 | 87.03 |
| 0.03 | 0.01 | 1.95 | 0.27 | 0.18 | 0.05 | 43.05 | -0.05 | 0.02 | 0.04 | -0.06 | -0.01 | 54.06 | -0.02 | 0.16 | -0.06 | 0.05 | 2.88 | 102.55 |
| 0.00 | 0.01 | 2.56 | 0.54 | 0.20 | 0.06 | 41.27 | 0.01 | 0.01 | 0.06 | -0.03 | -0.08 | 53.09 | 0.06 | 0.11 | 0.02 | 0.01 | 5.16 | 103.06 |
| -0.04 | -0.05 | 3.64 | 0.91 | 0.24 | 0.06 | 39.34 | 0.06 | 0.06 | 0.09 | -0.01 | 0.00 | 52.56 | 0.01 | 0.01 | 0.04 | 0.07 | 3.13 | 100.12 |
| -0.05 | -0.06 | 2.14 | 0.78 | 0.16 | 0.05 | 29.20 | -0.05 | 0.22 | 0.01 | 0.07 | -0.01 | 52.13 | 0.00 | 0.12 | 0.00 | 0.05 | 5.24 | 90.00 |
| -0.01 | 0.00 | 4.82 | 1.89 | 0.24 | 0.06 | 34.29 | -0.05 | 0.33 | 0.03 | 0.02 | -0.09 | 51.69 | 0.06 | 0.13 | -0.02 | 0.13 | 2.99 | 96.51 |
| 0.06 | 0.04 | 29.59 | 6.59 | 0.82 | 0.08 | 12.24 | -0.03 | 0.57 | 0.43 | -0.02 | -0.04 | 34.31 | -0.10 | 0.06 | -0.12 | 0.62 | 1.54 | 86.64 |
| 0.02 | 0.06 | 0.07 | 33.04 | 0.21 | 0.08 | 0.34 | 0.33 | -0.19 | 67.10 | 0.02 | 0.06 | 0.01 | 0.12 | 0.09 | 0.09 | 0.05 | -0.07 | 101.43 |
| 0.01 | 0.05 | 0.23 | 33.23 | 0.22 | 0.08 | 0.42 | 0.10 | -0.27 | 66.76 | -0.16 | 0.05 | 0.14 | -0.22 | 0.08 | -0.07 | 0.04 | -0.02 | 100.67 |
| -0.03 | 0.03 | 0.24 | 32.78 | 0.21 | 0.08 | 0.36 | 0.20 | -0.26 | 66.22 | 0.07 | -0.05 | 0.12 | -0.10 | 0.10 | -0.15 | -0.06 | -0.04 | 99.72 |
| 0.00 | 0.04 | 0.05 | 32.80 | 0.20 | 0.08 | 0.37 | 0.11 | -0.23 | 66.15 | 0.01 | 0.08 | 0.13 | -0.17 | -0.10 | -0.10 | -0.03 | -0.07 | 99.55 |
| -0.02 | 0.04 | 0.74 | 32.53 | 0.23 | 0.08 | 0.44 | 0.07 | -0.22 | 65.75 | 0.02 | 0.12 | 0.29 | -0.06 | 0.05 | 0.11 | -0.03 | 0.00 | 100.14 |
| 0.01 | 0.06 | 0.19 | 32.13 | 0.27 | 0.08 | 0.54 | 0.59 | -0.01 | 65.11 | 0.11 | 0.02 | 0.07 | -0.08 | 0.06 | -0.13 | -0.04 | 0.09 | 99.07 |
| 0.01 | 0.05 | 0.36 | 32.52 | 0.21 | 0.08 | 0.40 | 0.10 | -0.19 | 65.09 | -0.04 | 0.02 | 0.29 | -0.04 | 0.06 | -0.04 | -0.01 | -0.07 | 98.80 |
| 0.00 | 0.06 | 1.18 | 31.96 | 0.24 | 0.08 | 0.56 | 0.16 | -0.27 | 64.32 | -0.02 | 0.01 | 0.36 | 0.11 | 0.15 | -0.08 | 0.06 | 0.06 | 98.94 |
| -0.01 | 0.06 | 1.06 | 32.15 | 0.23 | 0.08 | 0.64 | 0.43 | -0.08 | 63.46 | 0.10 | 0.00 | 0.05 | 0.09 | -0.14 | 0.19 | -0.05 | 0.04 | 98.30 |
| -0.01 | 0.06 | 2.07 | 31.88 | 0.28 | 0.07 | 0.81 | 0.19 | 0.08 | 62.28 | -0.02 | 0.15 | 0.19 | 0.09 | -0.06 | -0.03 | 0.10 | 0.08 | 98.21 |
| -0.01 | 0.10 | 3.92 | 30.47 | 0.27 | 0.11 | 1.75 | 0.34 | -0.19 | 57.66 | -0.11 | -0.01 | 0.49 | -0.05 | 0.20 | 0.01 | 0.10 | -0.04 | 95.01 |
| 0.00 | 0.02 | 2.41 | 27.86 | 0.22 | 0.06 | 0.76 | 0.12 | -0.06 | 53.67 | 0.08 | 0.19 | 0.42 | 0.14 | 0.08 | 0.12 | 0.08 | 0.07 | 86.24 |
| -0.11 | 0.05 | 0.12 | 1.53 | 0.97 | 0.15 | 0.62 | 0.74 | 27.84 | -0.18 | 6.54 | -1.17 | 0.01 | 15.03 | 30.92 | 12.60 | -0.81 | -0.16 | 94.69 |
| -0.12 | 0.03 | 0.11 | 1.62 | 1.43 | 0.16 | 0.58 | 0.83 | 28.55 | -0.18 | 8.95 | -1.17 | 0.17 | 12.84 | 30.06 | 12.73 | -0.80 | -0.10 | 95.69 |
| -0.08 | 0.03 | 1.03 | 2.14 | 0.80 | 0.16 | 0.84 | 0.71 | 25.98 | -0.33 | 7.78 | -1.61 | 0.41 | 13.17 | 29.95 | 13.17 | -0.56 | -0.20 | 93.39 |
| -0.05 | 0.06 | 0.78 | 10.36 | 0.96 | 0.15 | 0.72 | 0.58 | 20.19 | 16.26 | 7.60 | -1.43 | 0.14 | 9.78 | 23.57 | 10.32 | -0.66 | -0.14 | 99.19 |

SAMPLE 19

| NA | MG | AL | SI | CA | K | FE | Y | P | ZR | TH | U | TI | LA | CE | ND | CR | MN | sum |
|-------|-------|------|------|------|------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|-------|------|--------|
| 0.01 | -0.06 | 0.21 | 0.10 | 0.16 | 0.04 | 1.58 | 0.04 | 0.00 | 0.04 | 0.01 | -0.06 | 102.10 | 0.05 | 0.04 | 0.05 | 0.03 | 0.16 | 104.50 |
| 0.01 | -0.06 | 1.82 | 0.33 | 0.14 | 0.04 | 1.52 | 0.06 | 0.02 | 0.08 | -0.05 | -0.01 | 100.10 | 0.05 | 0.16 | 0.06 | 0.02 | 0.04 | 104.33 |
| 0.03 | -0.03 | 7.67 | 1.47 | 0.27 | 0.06 | 3.34 | 0.06 | 0.08 | 0.13 | -0.05 | -0.02 | 86.36 | 0.04 | 0.20 | 0.15 | 0.21 | 0.40 | 100.37 |
| -0.01 | -0.04 | 2.37 | 0.54 | 0.18 | 0.04 | 16.13 | -0.01 | 0.01 | 0.06 | -0.09 | -0.03 | 83.12 | -0.05 | -0.15 | -0.06 | 0.14 | 1.46 | 103.61 |
| 0.03 | -0.05 | 1.09 | 0.29 | 0.18 | 0.05 | 16.64 | 0.00 | -0.03 | 0.07 | -0.01 | -0.06 | 77.99 | -0.15 | -0.13 | -0.13 | 0.07 | 2.27 | 98.12 |
| 0.02 | -0.05 | 1.46 | 0.38 | 0.19 | 0.04 | 17.92 | 0.00 | 0.11 | 0.07 | -0.07 | -0.05 | 76.41 | 0.06 | 0.07 | 0.03 | 0.05 | 3.09 | 99.67 |
| 0.04 | -0.02 | 5.94 | 1.45 | 0.24 | 0.05 | 13.65 | -0.05 | 0.08 | 0.22 | 0.00 | -0.09 | 74.94 | -0.07 | 0.14 | 0.04 | 0.06 | 1.69 | 98.31 |
| 0.03 | -0.06 | 0.66 | 0.20 | 0.18 | 0.05 | 25.76 | -0.06 | 0.02 | 0.12 | -0.06 | -0.04 | 73.35 | -0.13 | 0.02 | -0.19 | 0.04 | 3.66 | 103.55 |
| 0.01 | -0.05 | 0.59 | 0.19 | 0.13 | 0.04 | 29.81 | 0.06 | 0.07 | 0.01 | 0.04 | -0.02 | 61.39 | -0.04 | 0.07 | -0.04 | 0.02 | 3.41 | 95.69 |
| 0.07 | -0.05 | 2.43 | 2.10 | 0.21 | 0.07 | 25.06 | -0.05 | 0.24 | 0.03 | -0.05 | -0.05 | 59.81 | 0.00 | 0.09 | -0.06 | -0.02 | 4.85 | 94.68 |
| 0.03 | 0.00 | 0.44 | 0.16 | 0.17 | 0.05 | 37.74 | 0.01 | 0.03 | -0.02 | -0.05 | 0.01 | 59.74 | -0.24 | -0.16 | -0.08 | -0.02 | 3.26 | 101.23 |
| 0.05 | 0.00 | 5.68 | 4.89 | 0.20 | 0.07 | 2.63 | -0.07 | 0.94 | 0.02 | 0.05 | -0.02 | 59.53 | 0.06 | 0.00 | -0.08 | 0.07 | 0.04 | 74.06 |
| -0.04 | -0.03 | 0.37 | 0.17 | 0.16 | 0.06 | 37.99 | -0.05 | 0.03 | 0.01 | -0.03 | -0.08 | 59.21 | 0.04 | -0.08 | 0.15 | -0.01 | 3.98 | 101.45 |
| 0.02 | -0.03 | 0.59 | 0.20 | 0.17 | 0.05 | 36.59 | 0.00 | 0.03 | 0.04 | 0.03 | 0.00 | 58.83 | -0.07 | 0.12 | 0.03 | 0.03 | 3.11 | 100.14 |
| -0.02 | -0.02 | 0.20 | 0.08 | 0.15 | 0.05 | 38.32 | 0.00 | 0.05 | 0.00 | -0.03 | 0.00 | 58.66 | 0.04 | 0.02 | 0.03 | 0.03 | 4.66 | 102.22 |
| 0.00 | 0.02 | 6.32 | 1.77 | 0.40 | 0.07 | 22.67 | -0.01 | 0.98 | 0.10 | 0.07 | 0.00 | 58.55 | 0.10 | 0.14 | -0.04 | 0.29 | 2.54 | 93.97 |
| 0.02 | -0.02 | 0.39 | 0.16 | 0.15 | 0.05 | 38.30 | 0.03 | 0.05 | 0.08 | 0.03 | -0.02 | 57.84 | -0.05 | 0.00 | -0.10 | 0.00 | 4.79 | 101.70 |
| 0.01 | 0.00 | 0.72 | 0.19 | 0.15 | 0.05 | 38.81 | 0.05 | 0.05 | 0.04 | 0.02 | 0.03 | 57.82 | -0.07 | 0.00 | -0.02 | -0.03 | 2.70 | 100.56 |
| -0.00 | -0.01 | 0.36 | 0.10 | 0.15 | 0.06 | 41.50 | 0.06 | -0.01 | 0.00 | -0.15 | -0.06 | 57.79 | -0.04 | 0.03 | 0.03 | 0.02 | 4.93 | 104.76 |
| -0.03 | -0.06 | 0.33 | 0.10 | 0.13 | 0.05 | 35.04 | -0.01 | 0.03 | 0.00 | 0.01 | 0.02 | 57.72 | 0.19 | 0.20 | -0.13 | 0.00 | 6.66 | 100.25 |
| 0.02 | 0.00 | 0.71 | 0.20 | 0.18 | 0.05 | 40.54 | -0.04 | 0.03 | 0.00 | -0.06 | -0.08 | 57.58 | 0.14 | -0.01 | -0.12 | 0.01 | 2.60 | 101.75 |
| 0.04 | -0.03 | 0.17 | 0.08 | 0.15 | 0.06 | 36.83 | -0.01 | 0.00 | 0.10 | 0.01 | 0.00 | 57.51 | -0.12 | 0.23 | 0.04 | -0.07 | 8.65 | 103.64 |
| 0.04 | 0.16 | 4.23 | 2.68 | 0.25 | 0.29 | 11.07 | 0.03 | 1.94 | -0.06 | -0.06 | -0.09 | 57.43 | 0.00 | 0.23 | 0.07 | -0.05 | 0.95 | 79.11 |
| 0.02 | 0.00 | 2.55 | 0.54 | 0.27 | 0.08 | 30.23 | 0.03 | 0.64 | -0.04 | 0.03 | 0.04 | 57.29 | -0.02 | -0.05 | 0.00 | 0.12 | 2.89 | 94.62 |
| -0.04 | 0.06 | 1.42 | 1.34 | 1.05 | 0.08 | 38.93 | 0.07 | 0.10 | 0.04 | 0.08 | 0.00 | 57.28 | 0.06 | -0.07 | 0.09 | -0.06 | 4.93 | 105.36 |
| 0.01 | 0.00 | 4.10 | 2.11 | 0.37 | 0.10 | 24.81 | -0.02 | 1.08 | 0.06 | -0.10 | -0.02 | 57.02 | 0.09 | -0.17 | -0.02 | 0.04 | 3.49 | 93.15 |
| -0.01 | -0.05 | 0.69 | 0.23 | 0.25 | 0.07 | 38.40 | 0.07 | 0.06 | -0.01 | -0.07 | -0.01 | 56.92 | 0.17 | -0.21 | -0.01 | -0.07 | 6.02 | 102.44 |
| 0.02 | 0.17 | 4.49 | 3.08 | 0.34 | 0.28 | 7.95 | -0.01 | 1.53 | 0.11 | 0.00 | -0.04 | 56.88 | -0.17 | 0.11 | 0.13 | 0.04 | 0.02 | 74.73 |
| -0.02 | -0.05 | 0.19 | 0.08 | 0.15 | 0.06 | 41.47 | 0.06 | 0.02 | 0.01 | -0.02 | -0.07 | 56.66 | 0.00 | 0.06 | 0.02 | -0.05 | 5.33 | 103.90 |
| -0.04 | -0.06 | 0.72 | 0.34 | 0.20 | 0.06 | 37.74 | -0.03 | 0.05 | 0.02 | -0.06 | 0.07 | 56.63 | 0.01 | 0.03 | 0.13 | -0.04 | 6.40 | 102.17 |
| 0.03 | 0.00 | 0.33 | 0.13 | 0.15 | 0.06 | 39.09 | 0.01 | 0.03 | 0.00 | 0.04 | -0.08 | 56.49 | -0.05 | 0.04 | 0.01 | -0.01 | 4.71 | 100.98 |
| 0.00 | -0.03 | 0.77 | 0.41 | 0.15 | 0.06 | 35.14 | 0.07 | 0.06 | 0.11 | 0.13 | -0.01 | 56.49 | -0.01 | -0.03 | 0.02 | -0.03 | 5.81 | 99.11 |
| -0.02 | -0.02 | 0.70 | 0.22 | 0.19 | 0.05 | 42.29 | 0.07 | 0.00 | 0.09 | -0.01 | 0.03 | 56.46 | -0.03 | 0.10 | 0.03 | 0.00 | 4.29 | 104.44 |
| 0.03 | 0.01 | 1.44 | 0.29 | 0.17 | 0.05 | 39.19 | 0.09 | 0.15 | 0.00 | -0.02 | -0.07 | 56.39 | -0.02 | 0.05 | -0.04 | 0.06 | 3.08 | 100.85 |
| -0.01 | -0.04 | 0.42 | 0.11 | 0.15 | 0.05 | 38.74 | 0.06 | 0.01 | 0.09 | -0.07 | 0.00 | 56.26 | -0.05 | 0.16 | -0.02 | -0.02 | 4.46 | 100.30 |
| 0.04 | -0.01 | 0.23 | 0.07 | 0.15 | 0.05 | 40.65 | 0.11 | 0.04 | -0.05 | -0.12 | -0.05 | 56.21 | -0.14 | 0.01 | 0.11 | 0.01 | 5.30 | 102.61 |
| 0.00 | 0.00 | 0.58 | 0.15 | 0.16 | 0.06 | 41.71 | -0.04 | 0.02 | 0.04 | -0.01 | 0.03 | 56.16 | 0.17 | -0.08 | 0.00 | -0.01 | 3.44 | 102.38 |
| 0.00 | 0.00 | 0.63 | 0.17 | 0.15 | 0.06 | 40.00 | 0.02 | 0.03 | 0.08 | 0.03 | -0.01 | 55.76 | 0.11 | 0.15 | -0.08 | 0.02 | 5.09 | 102.21 |
| -0.01 | 0.00 | 0.33 | 0.12 | 0.15 | 0.05 | 41.70 | 0.05 | -0.01 | -0.01 | 0.06 | 0.01 | 55.60 | 0.22 | -0.08 | 0.02 | -0.03 | 2.28 | 100.45 |
| -0.02 | -0.03 | 0.86 | 0.26 | 0.16 | 0.06 | 39.86 | -0.05 | 0.02 | 0.05 | -0.09 | 0.04 | 55.57 | -0.10 | -0.06 | -0.05 | 0.06 | 5.85 | 102.39 |
| 0.01 | -0.04 | 4.91 | 0.65 | 0.21 | 0.05 | 34.59 | 0.03 | 0.01 | 0.07 | 0.04 | -0.06 | 55.36 | -0.04 | 0.17 | -0.10 | 0.01 | 4.88 | 100.75 |
| -0.01 | -0.03 | 0.48 | 0.12 | 0.15 | 0.06 | 42.59 | -0.03 | 0.01 | 0.04 | 0.03 | -0.04 | 55.24 | 0.04 | 0.10 | 0.00 | 0.03 | 5.15 | 103.93 |
| 0.00 | -0.02 | 1.70 | 0.38 | 0.18 | 0.05 | 37.35 | -0.04 | 0.11 | 0.10 | 0.00 | -0.01 | 55.02 | -0.13 | 0.06 | -0.13 | 0.02 | 7.57 | 102.21 |
| 0.02 | -0.03 | 0.56 | 0.15 | 0.15 | 0.06 | 43.23 | 0.00 | 0.06 | -0.04 | 0.02 | -0.05 | 54.71 | 0.01 | 0.02 | -0.04 | 0.02 | 2.88 | 101.73 |
| 0.01 | -0.01 | 2.58 | 0.52 | 0.18 | 0.05 | 39.46 | -0.08 | 0.00 | 0.06 | -0.08 | 0.05 | 54.50 | 0.00 | 0.07 | -0.19 | 0.05 | 4.44 | 101.61 |
| 0.00 | -0.04 | 0.39 | 0.15 | 0.24 | 0.05 | 38.91 | 0.02 | -0.02 | -0.05 | 0.06 | 0.02 | 54.38 | -0.18 | 0.03 | 0.00 | -0.01 | 4.60 | 98.55 |
| 0.02 | 0.04 | 2.64 | 0.67 | 0.17 | 0.06 | 41.56 | -0.05 | 0.04 | 0.02 | 0.04 | -0.02 | 54.36 | 0.06 | 0.02 | -0.11 | 0.03 | 4.04 | 103.59 |

| NA | MG | AL | SI | CA | K | FE | Y | P | ZR | TH | U | TI | LA | CE | ND | CR | MIN | sum |
|-------|-------|-------|-------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| -0.02 | -0.06 | 2.47 | 1.52 | 0.29 | 0.03 | 4.88 | -0.01 | 0.90 | 0.04 | -0.01 | 0.26 | 54.26 | 0.00 | 0.12 | -0.12 | 0.09 | 0.14 | 64.78 |
| 0.05 | -0.03 | 1.46 | 0.33 | 0.17 | 0.05 | 44.08 | -0.05 | 0.01 | 0.08 | 0.00 | -0.04 | 54.09 | 0.00 | 0.14 | -0.07 | 0.07 | 2.49 | 102.83 |
| 0.00 | -0.03 | 0.55 | 0.11 | 0.15 | 0.06 | 43.74 | -0.03 | -0.01 | 0.12 | -0.04 | -0.02 | 53.68 | -0.07 | 0.09 | -0.03 | 0.03 | 2.77 | 101.07 |
| -0.02 | -0.05 | 0.45 | 0.15 | 0.13 | 0.05 | 37.50 | 0.01 | 0.06 | 0.02 | -0.04 | -0.06 | 52.74 | -0.02 | 0.02 | -0.04 | 0.03 | 3.96 | 94.89 |
| 0.03 | -0.02 | 1.89 | 0.31 | 0.17 | 0.06 | 42.40 | -0.09 | 0.06 | 0.03 | 0.02 | -0.03 | 52.61 | -0.01 | 0.07 | 0.11 | 0.05 | 3.61 | 101.27 |
| 0.00 | -0.03 | 0.81 | 0.19 | 0.20 | 0.05 | 40.66 | 0.00 | 0.05 | -0.01 | -0.01 | -0.04 | 52.60 | -0.13 | 0.05 | 0.03 | 0.06 | 3.95 | 98.43 |
| 0.07 | 0.09 | 7.57 | 4.27 | 0.38 | 0.15 | 20.07 | -0.01 | 1.51 | 0.02 | 0.09 | -0.05 | 51.01 | -0.17 | 0.21 | -0.08 | 0.12 | 1.86 | 87.11 |
| 0.03 | 0.00 | 3.81 | 1.67 | 0.33 | 0.07 | 26.73 | 0.04 | 0.83 | 0.05 | 0.02 | 0.04 | 50.60 | 0.06 | -0.01 | -0.15 | 0.06 | 2.55 | 86.73 |
| -0.01 | 0.08 | 4.37 | 6.43 | 0.18 | 0.19 | 29.64 | -0.01 | 0.21 | 0.14 | -0.05 | -0.10 | 49.46 | -0.16 | 0.27 | -0.04 | -0.01 | 4.77 | 95.37 |
| 0.02 | -0.02 | 2.20 | 1.79 | 0.23 | 0.09 | 29.26 | 0.05 | 0.46 | 0.21 | -0.06 | -0.02 | 43.92 | -0.01 | 0.27 | 0.08 | -0.02 | 3.14 | 81.59 |
| 0.01 | -0.07 | 0.17 | 48.11 | 0.09 | 0.02 | 22.12 | -0.03 | 0.01 | -0.01 | -0.05 | 0.02 | 34.13 | 0.04 | 0.24 | -0.02 | 0.00 | 2.96 | 107.74 |
| 0.03 | 2.45 | 12.61 | 29.74 | 0.19 | 2.67 | 9.40 | 0.07 | 0.95 | 0.06 | 0.02 | -0.02 | 16.52 | -0.16 | -0.04 | -0.02 | 0.06 | 0.11 | 74.64 |
| 0.01 | 0.04 | 0.37 | 32.70 | 0.21 | 0.07 | 0.36 | 0.12 | -0.18 | 66.19 | 0.01 | 0.06 | 0.04 | -0.09 | -0.01 | 0.04 | 0.07 | 0.05 | 100.06 |
| -0.01 | 0.03 | 0.19 | 32.83 | 0.21 | 0.08 | 0.33 | 0.10 | -0.12 | 64.89 | -0.06 | -0.03 | 0.10 | -0.11 | -0.05 | 0.09 | -0.03 | 0.00 | 98.44 |
| -0.02 | 0.05 | 0.47 | 32.81 | 0.20 | 0.07 | 0.48 | 0.04 | -0.25 | 63.98 | -0.12 | 0.11 | 0.25 | -0.15 | -0.07 | 0.06 | 0.06 | -0.09 | 97.88 |
| 0.02 | 0.04 | 1.76 | 32.12 | 0.23 | 0.07 | 0.60 | 0.27 | -0.11 | 63.29 | 0.01 | 0.01 | 0.16 | 0.03 | -0.04 | 0.07 | -0.02 | -0.02 | 98.49 |
| -0.01 | 0.05 | 1.28 | 32.19 | 0.25 | 0.07 | 0.62 | 0.20 | -0.17 | 63.13 | -0.09 | 0.20 | 0.45 | 0.05 | -0.12 | -0.09 | 0.03 | 0.03 | 98.07 |
| 0.03 | 0.05 | 0.97 | 32.37 | 0.22 | 0.08 | 0.51 | 0.41 | 0.12 | 62.20 | 0.01 | 0.01 | 0.09 | 0.03 | -0.20 | 0.04 | 0.03 | 0.09 | 97.06 |
| -0.02 | 0.04 | 2.38 | 32.05 | 0.25 | 0.07 | 0.68 | 0.29 | -0.17 | 61.78 | -0.04 | -0.02 | 0.19 | -0.10 | -0.10 | -0.01 | 0.09 | 0.01 | 97.37 |
| 0.03 | 0.05 | 2.47 | 31.96 | 0.27 | 0.07 | 0.66 | 0.14 | -0.16 | 61.22 | -0.07 | 0.00 | 0.09 | -0.06 | -0.06 | 0.03 | 0.01 | 0.05 | 96.70 |
| -0.03 | 0.02 | 1.87 | 31.15 | 0.22 | 0.07 | 0.60 | 0.15 | -0.10 | 60.70 | 0.01 | 0.11 | 0.26 | -0.03 | 0.04 | -0.04 | 0.06 | 0.05 | 95.11 |
| -0.01 | 0.06 | 2.55 | 29.98 | 0.45 | 0.08 | 1.31 | 1.39 | 0.48 | 59.62 | 0.97 | 0.12 | 0.20 | 0.11 | 0.08 | 0.08 | 0.07 | 0.01 | 97.55 |
| 0.00 | 0.04 | 3.03 | 31.05 | 0.25 | 0.08 | 0.73 | 0.06 | -0.17 | 59.17 | -0.06 | 0.07 | 0.39 | 0.04 | 0.05 | -0.04 | 0.04 | -0.01 | 94.72 |
| -0.02 | 0.06 | 7.93 | 29.16 | 0.38 | 0.07 | 1.35 | 0.26 | -0.09 | 56.39 | -0.02 | 0.05 | 0.33 | -0.09 | 0.07 | -0.05 | 0.21 | 0.02 | 86.01 |
| -0.01 | 0.14 | 1.63 | 20.77 | 1.11 | 0.11 | 1.52 | 5.65 | 5.71 | 46.12 | 2.23 | 0.17 | 0.12 | 0.05 | 0.01 | 0.14 | 0.04 | 0.05 | 85.56 |
| -0.04 | 0.04 | 0.60 | 1.17 | 0.81 | 0.14 | 0.64 | 0.59 | 29.77 | -0.18 | 4.97 | -0.47 | 0.02 | 15.20 | 32.32 | 13.06 | -0.73 | -0.13 | 97.78 |
| -0.01 | 0.05 | 0.36 | 3.34 | 0.66 | 0.17 | 0.57 | 0.17 | 27.03 | -0.29 | 13.97 | -0.79 | 0.15 | 11.45 | 31.10 | 12.56 | -0.51 | -0.08 | 99.90 |
| 0.00 | 0.07 | 1.86 | 3.25 | 1.80 | 0.18 | 0.72 | 0.89 | 26.28 | -0.11 | 16.07 | -0.04 | 0.03 | 7.98 | 23.90 | 12.41 | -0.41 | 0.00 | 94.88 |
| 0.00 | 0.08 | 0.78 | 2.04 | 2.73 | 0.18 | 0.66 | 1.18 | 29.63 | -0.14 | 14.16 | 1.42 | 0.05 | 5.29 | 22.56 | 14.87 | -0.34 | -0.09 | 95.06 |
| 0.03 | 0.11 | 0.65 | 0.60 | 0.29 | 0.10 | 0.54 | 38.71 | 33.68 | -0.66 | 0.07 | 0.39 | 0.07 | -0.07 | -0.02 | 0.06 | 0.00 | -0.12 | 74.43 |

SAMPLE 20

| NA | MG | AL | SI | CA | K | FE | Y | P | ZR | TH | U | TI | LA | CE | ND | OR | MIN | sum |
|-------|-------|-------|-------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| 0.00 | -0.05 | 0.11 | 0.08 | 0.14 | 0.05 | 13.46 | -0.02 | -0.01 | 0.07 | -0.02 | -0.05 | 90.69 | -0.07 | -0.11 | 0.00 | 0.09 | 1.84 | 106.20 |
| 0.04 | 0.12 | 8.11 | 1.14 | 0.62 | 0.16 | 4.92 | 0.05 | 2.87 | -0.05 | -0.12 | -0.01 | 79.89 | -0.15 | 0.07 | -0.02 | 0.41 | 0.09 | 98.14 |
| 0.01 | 0.01 | 9.09 | 3.77 | 0.37 | 0.10 | 9.70 | -0.05 | 1.25 | 0.05 | 0.12 | 0.03 | 69.06 | 0.00 | 0.16 | 0.04 | 0.15 | 0.44 | 94.24 |
| 0.01 | -0.03 | 3.31 | 1.66 | 0.19 | 0.06 | 15.36 | -0.04 | 1.07 | 0.07 | -0.07 | -0.01 | 67.88 | 0.02 | -0.03 | -0.06 | 0.00 | 1.59 | 90.98 |
| 0.02 | -0.02 | 1.02 | 0.28 | 0.16 | 0.06 | 33.66 | -0.11 | 0.17 | 0.08 | 0.09 | 0.05 | 65.47 | 0.01 | 0.11 | 0.02 | -0.05 | 2.02 | 103.04 |
| 0.08 | 0.24 | 13.90 | 8.22 | 0.45 | 0.93 | 7.11 | 0.04 | 0.94 | 0.14 | 0.03 | 0.02 | 63.36 | 0.06 | 0.11 | 0.06 | 0.30 | 0.13 | 96.12 |
| 0.02 | 0.00 | 0.51 | 0.15 | 0.20 | 0.05 | 35.90 | -0.01 | 0.04 | 0.02 | -0.02 | -0.06 | 61.59 | 0.03 | 0.00 | 0.06 | 0.04 | 3.47 | 102.37 |
| 0.03 | -0.04 | 1.82 | 0.65 | 0.16 | 0.07 | 29.45 | 0.02 | 0.54 | 0.05 | -0.06 | -0.04 | 61.05 | -0.13 | -0.09 | -0.03 | 0.01 | 3.70 | 97.16 |
| -0.02 | -0.02 | 0.06 | 0.06 | 0.15 | 0.06 | 42.02 | 0.01 | -0.02 | -0.05 | 0.00 | -0.06 | 60.21 | 0.00 | 0.09 | -0.02 | -0.03 | 4.06 | 106.53 |
| 0.03 | 0.03 | 14.39 | 3.19 | 0.44 | 0.04 | 10.75 | 0.03 | 0.47 | 0.45 | 0.03 | 0.04 | 60.14 | 0.00 | -0.26 | 0.15 | 0.31 | 0.66 | 90.89 |
| 0.01 | -0.02 | 0.06 | 0.07 | 0.15 | 0.06 | 40.98 | -0.01 | 0.02 | -0.02 | -0.03 | -0.04 | 59.71 | -0.12 | 0.11 | 0.03 | -0.01 | 3.53 | 104.48 |
| 0.05 | 0.01 | 0.21 | 0.12 | 0.16 | 0.05 | 40.95 | -0.07 | 0.00 | -0.03 | -0.06 | 0.01 | 59.45 | -0.01 | 0.03 | -0.03 | 0.07 | 3.63 | 104.54 |
| 0.01 | -0.03 | 0.12 | 0.08 | 0.16 | 0.06 | 41.34 | 0.12 | 0.02 | 0.02 | -0.02 | -0.02 | 59.28 | 0.01 | 0.04 | 0.02 | 0.01 | 4.54 | 105.76 |
| 0.01 | -0.02 | 0.07 | 0.05 | 0.15 | 0.05 | 40.77 | 0.09 | 0.04 | -0.04 | -0.04 | -0.05 | 59.20 | -0.02 | 0.26 | -0.04 | 0.00 | 3.87 | 104.35 |
| 0.04 | 0.00 | 0.25 | 0.14 | 0.09 | 0.15 | 40.29 | 0.06 | -0.01 | 0.01 | 0.01 | -0.03 | 59.09 | 0.15 | 0.05 | -0.11 | 0.05 | 4.80 | 104.81 |
| 0.04 | 0.00 | 0.25 | 0.12 | 0.15 | 0.06 | 41.55 | 0.03 | 0.01 | 0.00 | 0.02 | -0.04 | 58.86 | -0.01 | 0.17 | 0.04 | 0.05 | 4.75 | 105.46 |
| 0.05 | -0.02 | 0.33 | 0.15 | 0.16 | 0.06 | 40.77 | -0.09 | 0.02 | -0.03 | -0.03 | 0.01 | 58.77 | -0.05 | 0.29 | -0.02 | 0.06 | 4.16 | 105.18 |
| -0.03 | 0.00 | 0.22 | 0.09 | 0.15 | 0.06 | 42.73 | 0.04 | -0.01 | 0.07 | -0.09 | -0.11 | 58.69 | 0.08 | -0.03 | -0.03 | 0.00 | 4.74 | 106.57 |
| 0.01 | -0.02 | 0.09 | 0.07 | 0.15 | 0.06 | 41.15 | -0.06 | -0.07 | -0.05 | -0.07 | 0.00 | 58.67 | 0.02 | 0.05 | -0.05 | -0.10 | 6.54 | 106.49 |
| -0.01 | 0.00 | 0.07 | 0.07 | 0.15 | 0.06 | 42.37 | 0.05 | 0.00 | 0.02 | 0.04 | -0.09 | 58.62 | 0.07 | -0.07 | 0.00 | 0.01 | 4.55 | 105.87 |
| 0.05 | -0.01 | 0.14 | 0.09 | 0.15 | 0.05 | 41.07 | -0.09 | 0.02 | -0.05 | -0.04 | -0.07 | 58.13 | 0.13 | 0.13 | -0.07 | 0.00 | 3.68 | 103.31 |
| 0.01 | -0.02 | 0.22 | 0.12 | 0.16 | 0.06 | 42.97 | 0.04 | -0.01 | 0.00 | -0.02 | -0.04 | 58.05 | -0.11 | -0.04 | -0.08 | -0.01 | 4.27 | 105.57 |
| 0.03 | 0.00 | 0.28 | 0.12 | 0.16 | 0.07 | 42.92 | -0.06 | 0.04 | 0.04 | -0.12 | -0.04 | 58.05 | 0.10 | -0.02 | 0.13 | 0.05 | 4.08 | 105.83 |
| 0.02 | 0.00 | 0.08 | 0.06 | 0.16 | 0.06 | 42.85 | -0.03 | 0.02 | 0.06 | -0.12 | -0.08 | 57.91 | -0.08 | 0.14 | -0.09 | -0.01 | 4.15 | 104.34 |
| 0.04 | -0.03 | 0.07 | 0.06 | 0.16 | 0.05 | 41.52 | -0.04 | -0.02 | 0.03 | -0.08 | -0.07 | 57.68 | 0.03 | 0.05 | -0.05 | 0.00 | 5.28 | 106.11 |
| 0.01 | -0.02 | 0.07 | 0.06 | 0.15 | 0.06 | 41.37 | -0.01 | -0.01 | 0.04 | -0.11 | -0.06 | 57.24 | -0.21 | 0.12 | 0.04 | 0.00 | 4.72 | 103.41 |
| 0.05 | -0.05 | 1.35 | 1.11 | 0.15 | 0.06 | 40.89 | -0.04 | 0.01 | -0.05 | -0.06 | -0.02 | 57.24 | 0.14 | 0.22 | 0.03 | 0.04 | 3.78 | 104.85 |
| -0.01 | -0.01 | 0.26 | 0.10 | 0.16 | 0.06 | 43.57 | 0.07 | -0.02 | 0.07 | -0.08 | -0.09 | 57.06 | 0.07 | -0.07 | 0.06 | -0.04 | 3.33 | 104.49 |
| 0.00 | 0.00 | 0.14 | 0.08 | 0.15 | 0.06 | 42.87 | -0.08 | 0.02 | -0.03 | -0.06 | -0.04 | 56.74 | -0.08 | 0.03 | 0.22 | 0.02 | 3.76 | 103.80 |
| 0.02 | 0.01 | 3.73 | 0.61 | 0.19 | 0.05 | 37.41 | 0.01 | 0.06 | 0.08 | 0.01 | -0.08 | 56.66 | -0.08 | -0.01 | 0.00 | 0.07 | 3.15 | 101.89 |
| 0.04 | -0.02 | 0.17 | 0.06 | 0.15 | 0.06 | 43.43 | -0.09 | -0.02 | -0.07 | -0.05 | 0.02 | 56.65 | 0.09 | -0.03 | -0.06 | -0.03 | 3.48 | 103.68 |
| -0.02 | 0.01 | 0.13 | 0.07 | 0.15 | 0.06 | 43.29 | -0.02 | -0.04 | -0.06 | 0.02 | -0.04 | 56.55 | 0.03 | 0.14 | -0.28 | 0.03 | 4.43 | 104.45 |
| -0.01 | -0.01 | 0.07 | 0.04 | 0.15 | 0.06 | 45.80 | 0.04 | -0.01 | 0.15 | 0.01 | -0.02 | 56.02 | -0.09 | 0.00 | 0.29 | 0.07 | 3.16 | 105.72 |
| 0.02 | -0.07 | 0.70 | 0.15 | 0.11 | 0.04 | 28.92 | 0.01 | 0.05 | 0.01 | 0.00 | -0.05 | 55.35 | 0.02 | 0.06 | -0.05 | -0.02 | 3.83 | 89.08 |
| 0.01 | -0.06 | 0.15 | 0.13 | 0.14 | 0.05 | 35.60 | -0.09 | 0.05 | 0.01 | 0.06 | -0.07 | 53.40 | -0.07 | -0.13 | 0.02 | 0.00 | 6.82 | 96.02 |
| 0.02 | 0.25 | 8.16 | 8.11 | 0.22 | 0.39 | 15.18 | -0.01 | 0.90 | 0.02 | -0.01 | -0.05 | 49.44 | 0.13 | 0.12 | 0.01 | 0.14 | 2.01 | 84.79 |
| 0.05 | 0.04 | 11.14 | 2.79 | 0.36 | 0.06 | 33.48 | -0.06 | 0.09 | 0.24 | 0.01 | -0.01 | 49.30 | 0.09 | -0.08 | 0.07 | 0.27 | 3.98 | 101.82 |
| 0.00 | 0.06 | 0.06 | 33.20 | 0.21 | 0.08 | 0.38 | 0.21 | -0.06 | 67.13 | 0.00 | 0.07 | 0.12 | 0.12 | 0.09 | -0.05 | -0.02 | -0.05 | 101.55 |
| -0.01 | 0.05 | 0.05 | 33.39 | 0.21 | 0.08 | 0.34 | 0.21 | -0.01 | 67.12 | -0.02 | 0.15 | 0.05 | 0.09 | -0.14 | 0.00 | -0.13 | -0.07 | 101.47 |
| 0.00 | 0.05 | 0.04 | 33.54 | 0.22 | 0.07 | 0.53 | 0.11 | -0.11 | 66.95 | -0.01 | 0.07 | 0.19 | -0.01 | -0.13 | -0.02 | -0.01 | -0.01 | 101.47 |
| 0.03 | 0.04 | 0.08 | 32.98 | 0.21 | 0.08 | 0.53 | 0.28 | 0.02 | 66.69 | 0.00 | 0.07 | 0.13 | 0.07 | -0.23 | -0.19 | -0.03 | -0.01 | 100.75 |
| 0.01 | 0.06 | 0.05 | 33.47 | 0.22 | 0.07 | 0.36 | 0.07 | -0.18 | 65.90 | -0.02 | 0.10 | 0.05 | -0.05 | -0.08 | -0.04 | -0.01 | 0.04 | 100.02 |
| 0.01 | 0.06 | 0.06 | 33.61 | 0.22 | 0.08 | 0.45 | 0.06 | -0.11 | 65.72 | 0.11 | 0.08 | 0.25 | -0.02 | -0.06 | 0.07 | -0.05 | 0.04 | 100.58 |
| 0.00 | 0.06 | 0.06 | 33.31 | 0.22 | 0.08 | 0.39 | 0.33 | 0.04 | 65.09 | -0.01 | 0.03 | 0.11 | -0.07 | -0.11 | -0.08 | 0.02 | 0.02 | 99.49 |
| -0.02 | 0.05 | 0.06 | 32.79 | 0.21 | 0.08 | 0.32 | 0.22 | 0.03 | 65.05 | 0.02 | 0.01 | 0.01 | -0.02 | 0.07 | 0.02 | -0.05 | 0.04 | 98.89 |
| -0.01 | 0.05 | 0.30 | 32.39 | 0.21 | 0.08 | 0.49 | 0.01 | -0.24 | 65.02 | -0.07 | -0.01 | 0.06 | -0.11 | -0.08 | -0.20 | 0.01 | 0.08 | 97.98 |

| NA | MG | AL | SI | CA | K | FE | Y | P | ZR | TH | U | TI | LA | CE | ND | OR | MN | sum |
|-------|-------|-------|-------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| 0.01 | 0.04 | 0.15 | 32.65 | 0.21 | 0.07 | 0.37 | 0.24 | -0.06 | 64.94 | 0.12 | 0.01 | 0.14 | -0.01 | -0.15 | -0.09 | -0.03 | 0.05 | 98.66 |
| -0.01 | 0.04 | 0.05 | 33.07 | 0.22 | 0.08 | 0.31 | 0.28 | 0.05 | 64.79 | -0.01 | 0.11 | 0.05 | 0.06 | 0.15 | 0.00 | 0.05 | 0.03 | 99.32 |
| 0.02 | 0.06 | 0.06 | 32.71 | 0.20 | 0.07 | 0.36 | 0.04 | -0.10 | 64.54 | -0.02 | 0.08 | 0.08 | -0.08 | 0.04 | -0.17 | 0.03 | 0.01 | 97.93 |
| -0.05 | 0.04 | 0.05 | 32.86 | 0.22 | 0.08 | 0.38 | 0.03 | -0.21 | 64.24 | -0.03 | 0.03 | 0.08 | -0.12 | 0.02 | 0.07 | 0.02 | 0.05 | 97.76 |
| 0.00 | 0.06 | 0.07 | 32.77 | 0.21 | 0.08 | 0.34 | 0.21 | -0.18 | 64.12 | 0.00 | 0.10 | 0.01 | -0.08 | 0.07 | 0.03 | -0.09 | -0.01 | 97.71 |
| 0.02 | 0.05 | 0.05 | 33.12 | 0.21 | 0.08 | 0.34 | 0.10 | -0.19 | 63.20 | -0.02 | 0.03 | -0.01 | 0.04 | 0.03 | 0.07 | 0.03 | 0.06 | 97.21 |
| -0.02 | 0.05 | 0.06 | 32.93 | 0.21 | 0.07 | 0.35 | 0.02 | -0.15 | 63.02 | 0.03 | 0.06 | 0.05 | 0.12 | 0.07 | -0.09 | 0.04 | -0.08 | 96.74 |
| 0.02 | 0.12 | 20.58 | 26.82 | 0.52 | 0.06 | 1.76 | 0.14 | 0.05 | 43.70 | 0.06 | 0.02 | 0.33 | -0.04 | 0.10 | -0.02 | 0.40 | 0.09 | 94.71 |
| 0.00 | -0.04 | 6.98 | 24.03 | 0.45 | 0.06 | 1.49 | 0.05 | -0.08 | 41.97 | 0.07 | 0.09 | 0.58 | 0.08 | -0.08 | -0.09 | 0.31 | 0.04 | 75.91 |
| -0.11 | 0.04 | 0.76 | 1.07 | 0.66 | 0.15 | 0.64 | 0.11 | 32.61 | -0.27 | 3.58 | -0.23 | 0.22 | 17.22 | 36.39 | 12.22 | -0.79 | -0.13 | 104.14 |
| -0.06 | 0.06 | 0.12 | 1.80 | 0.83 | 0.16 | 0.65 | 0.18 | 30.40 | -0.36 | 8.50 | -0.59 | -0.01 | 16.25 | 32.55 | 12.98 | -0.71 | -0.15 | 102.60 |
| -0.11 | 0.04 | 0.09 | 1.97 | 0.80 | 0.15 | 0.55 | 0.01 | 30.10 | -0.35 | 9.04 | -0.60 | 0.02 | 16.01 | 32.09 | 12.22 | -0.69 | -0.18 | 101.16 |
| -0.05 | 0.02 | 0.32 | 2.12 | 0.94 | 0.16 | 0.79 | 0.02 | 27.58 | -0.14 | 11.08 | -0.81 | 0.12 | 12.64 | 29.77 | 11.70 | -0.55 | -0.04 | 95.67 |

SAMPLE 21

| NA | MG | AL | SI | CA | K | FE | Y | P | ZR | TH | U | TI | LA | CE | ND | CR | MN | sum |
|-------|-------|-------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| 0.05 | -0.04 | 1.45 | 0.56 | 0.17 | 0.05 | 9.86 | -0.09 | 0.10 | 0.16 | -0.02 | -0.02 | 84.36 | -0.05 | 0.25 | 0.02 | 0.08 | 1.61 | 98.50 |
| 0.02 | -0.03 | 6.08 | 1.38 | 0.33 | 0.08 | 14.68 | -0.04 | 1.21 | 0.12 | 0.02 | -0.07 | 72.35 | 0.06 | 0.00 | -0.08 | 0.04 | 1.22 | 97.37 |
| 0.06 | 0.12 | 6.18 | 3.52 | 0.48 | 0.22 | 10.42 | 0.04 | 2.09 | 0.15 | -0.06 | 0.01 | 68.24 | 0.04 | 0.13 | -0.01 | 0.14 | 0.15 | 91.92 |
| 0.00 | -0.04 | 0.31 | 0.15 | 0.14 | 0.05 | 36.85 | -0.02 | -0.01 | 0.01 | 0.05 | 0.01 | 63.00 | 0.06 | -0.03 | 0.09 | 0.02 | 2.97 | 103.51 |
| 0.05 | -0.05 | 2.57 | 0.66 | 0.26 | 0.01 | 3.76 | -0.04 | 0.35 | 0.07 | -0.03 | -0.01 | 62.78 | -0.01 | 0.01 | -0.11 | 0.02 | 0.06 | 70.35 |
| 0.00 | -0.03 | 0.26 | 0.09 | 0.15 | 0.05 | 37.54 | -0.01 | 0.03 | 0.04 | -0.02 | -0.09 | 61.40 | -0.09 | 0.02 | 0.22 | 0.03 | 4.40 | 103.99 |
| 0.04 | 0.00 | 0.26 | 0.11 | 0.15 | 0.06 | 39.30 | 0.02 | 0.05 | -0.02 | -0.02 | -0.08 | 60.93 | -0.06 | -0.01 | 0.01 | 0.04 | 5.83 | 106.59 |
| 0.02 | -0.01 | 0.10 | 0.10 | 0.15 | 0.06 | 37.24 | 0.08 | 0.06 | 0.08 | -0.05 | -0.03 | 60.51 | -0.20 | 0.00 | 0.05 | 0.02 | 4.55 | 102.73 |
| 0.01 | -0.04 | 0.22 | 0.12 | 0.15 | 0.05 | 39.63 | 0.03 | 0.01 | 0.03 | 0.01 | 0.03 | 60.47 | 0.06 | 0.08 | -0.17 | 0.02 | 3.99 | 104.70 |
| 0.01 | 0.01 | 0.26 | 0.13 | 0.15 | 0.05 | 39.58 | 0.03 | 0.00 | 0.00 | -0.06 | -0.01 | 60.42 | -0.05 | 0.02 | 0.05 | 0.01 | 3.56 | 104.16 |
| 0.01 | 0.01 | 0.19 | 0.11 | 0.15 | 0.06 | 39.39 | 0.01 | 0.02 | -0.04 | 0.04 | -0.02 | 60.37 | 0.07 | 0.02 | -0.09 | 0.06 | 3.33 | 103.69 |
| 0.01 | -0.02 | 0.08 | 0.06 | 0.15 | 0.06 | 41.55 | -0.04 | 0.02 | 0.05 | 0.06 | -0.02 | 60.02 | -0.16 | 0.12 | 0.03 | -0.06 | 5.15 | 107.06 |
| -0.01 | 0.01 | 3.43 | 0.84 | 0.18 | 0.06 | 37.88 | -0.03 | 0.00 | 0.10 | -0.01 | -0.04 | 58.19 | -0.07 | 0.22 | 0.07 | 0.08 | 6.62 | 107.52 |
| -0.03 | 0.01 | 0.07 | 0.07 | 0.15 | 0.06 | 43.34 | -0.01 | -0.01 | 0.00 | 0.04 | -0.06 | 57.70 | 0.02 | 0.01 | -0.07 | 0.01 | 4.79 | 106.09 |
| 0.04 | 0.00 | 0.59 | 0.16 | 0.17 | 0.06 | 39.12 | 0.11 | -0.01 | 0.06 | 0.08 | -0.05 | 57.47 | -0.06 | 0.04 | 0.09 | 0.01 | 8.12 | 106.00 |
| 0.03 | -0.03 | 0.97 | 0.28 | 0.16 | 0.06 | 42.63 | -0.15 | 0.02 | 0.05 | -0.02 | -0.02 | 57.06 | 0.32 | 0.11 | -0.06 | 0.05 | 4.50 | 105.97 |
| 0.00 | -0.03 | 0.17 | 0.08 | 0.15 | 0.06 | 43.40 | -0.01 | 0.02 | 0.07 | 0.03 | 0.01 | 56.77 | 0.08 | 0.11 | -0.02 | 0.01 | 4.12 | 105.02 |
| 0.06 | -0.01 | 5.31 | 1.49 | 0.26 | 0.09 | 39.58 | 0.01 | 0.03 | 0.20 | -0.03 | -0.08 | 55.72 | 0.05 | -0.03 | 0.00 | 0.18 | 4.11 | 106.94 |
| 0.01 | -0.01 | 0.77 | 15.59 | 15.84 | 0.04 | 20.99 | 0.01 | -0.14 | 0.06 | -0.02 | -0.07 | 51.87 | -0.12 | 0.09 | 0.07 | 0.01 | 3.14 | 108.13 |
| 0.03 | 0.05 | 14.05 | 3.79 | 0.42 | 0.06 | 28.88 | -0.02 | 0.13 | 0.66 | 0.00 | -0.02 | 44.73 | 0.15 | 0.04 | 0.02 | 0.34 | 3.09 | 96.40 |
| 0.01 | 0.50 | 5.02 | 4.15 | 0.30 | 0.46 | 19.57 | -0.04 | 1.29 | 0.01 | -0.01 | -0.03 | 40.46 | 0.10 | 0.00 | -0.16 | 0.04 | 4.20 | 65.87 |
| -0.09 | 0.05 | 0.05 | 32.89 | 0.21 | 0.08 | 0.39 | -0.03 | -0.27 | 68.00 | 0.00 | -0.06 | 0.10 | -0.09 | 0.08 | -0.19 | -0.07 | 0.05 | 101.10 |
| -0.13 | 0.06 | 0.08 | 32.83 | 0.31 | 0.07 | 0.38 | 0.21 | -0.26 | 67.83 | -0.02 | 0.02 | 0.08 | 0.04 | -0.06 | 0.07 | 0.00 | 0.01 | 101.52 |
| -0.10 | 0.04 | 0.18 | 33.03 | 0.21 | 0.07 | 0.39 | 0.11 | -0.21 | 67.66 | -0.03 | 0.04 | 0.02 | 0.05 | 0.10 | -0.02 | 0.03 | 0.00 | 101.57 |
| -0.09 | 0.05 | 0.08 | 32.94 | 0.21 | 0.08 | 0.35 | -0.01 | -0.24 | 67.56 | -0.02 | -0.05 | -0.01 | 0.21 | 0.13 | -0.02 | -0.02 | 0.04 | 101.19 |
| -0.10 | 0.06 | 0.09 | 32.46 | 0.22 | 0.07 | 0.35 | 0.08 | -0.12 | 67.54 | 0.02 | 0.09 | 0.09 | -0.06 | 0.02 | -0.07 | 0.00 | -0.03 | 100.71 |
| -0.12 | 0.04 | 0.06 | 32.63 | 0.21 | 0.08 | 0.32 | 0.31 | -0.17 | 67.34 | -0.04 | -0.02 | 0.02 | -0.02 | 0.06 | 0.01 | 0.02 | 0.00 | 100.73 |
| 0.02 | 0.06 | 0.30 | 32.56 | 0.23 | 0.09 | 0.37 | 0.18 | -0.07 | 67.28 | -0.02 | 0.12 | 0.04 | 0.13 | 0.13 | -0.09 | 0.04 | -0.05 | 101.32 |
| -0.16 | 0.07 | 0.07 | 32.81 | 0.21 | 0.08 | 0.33 | 0.21 | -0.10 | 67.23 | -0.08 | 0.07 | 0.02 | 0.05 | 0.04 | -0.12 | 0.02 | 0.00 | 100.75 |
| -0.03 | 0.05 | 0.17 | 33.03 | 0.22 | 0.07 | 0.57 | 0.13 | -0.23 | 67.07 | 0.04 | -0.02 | 0.26 | 0.01 | -0.18 | 0.01 | 0.07 | 0.05 | 101.29 |
| -0.12 | 0.06 | 0.08 | 33.02 | 0.21 | 0.07 | 0.32 | 0.11 | -0.09 | 67.01 | 0.06 | 0.03 | 0.10 | -0.06 | 0.08 | 0.05 | 0.02 | 0.02 | 100.97 |
| -0.15 | 0.06 | 0.07 | 32.31 | 0.21 | 0.08 | 0.43 | 0.34 | 0.03 | 66.96 | 0.02 | 0.02 | 0.18 | -0.02 | -0.10 | 0.02 | 0.01 | 0.02 | 100.49 |
| -0.13 | 0.05 | 0.05 | 32.71 | 0.21 | 0.08 | 0.41 | 0.36 | -0.09 | 66.72 | 0.03 | 0.12 | 0.20 | -0.05 | 0.04 | -0.12 | 0.03 | 0.00 | 100.62 |
| -0.05 | 0.05 | 0.11 | 32.72 | 0.23 | 0.08 | 0.39 | 0.15 | -0.27 | 66.68 | -0.02 | 0.00 | 0.03 | 0.01 | -0.01 | 0.07 | -0.06 | 0.05 | 100.16 |
| -0.12 | 0.05 | 0.51 | 32.65 | 0.23 | 0.07 | 0.45 | 0.01 | -0.30 | 66.56 | -0.05 | 0.03 | 0.19 | -0.15 | 0.03 | 0.09 | 0.03 | 0.04 | 100.32 |
| -0.04 | 0.06 | 0.21 | 32.78 | 0.21 | 0.07 | 0.39 | 0.09 | -0.26 | 66.41 | 0.00 | -0.02 | 0.10 | 0.13 | -0.13 | 0.17 | -0.10 | 0.04 | 100.11 |
| -0.12 | 0.07 | 0.81 | 32.39 | 0.22 | 0.07 | 0.38 | 0.14 | -0.17 | 65.96 | 0.10 | 0.09 | 0.16 | -0.02 | -0.10 | -0.16 | 0.04 | 0.09 | 99.95 |
| -0.09 | 0.05 | 0.68 | 32.48 | 0.24 | 0.08 | 0.43 | 0.21 | -0.13 | 65.75 | 0.07 | 0.02 | 0.10 | -0.09 | 0.11 | -0.12 | 0.08 | 0.01 | 99.88 |
| -0.09 | 0.06 | 0.43 | 31.32 | 0.32 | 0.08 | 0.85 | 0.41 | 0.18 | 65.14 | 0.02 | 0.26 | 0.28 | 0.01 | -0.04 | -0.05 | -0.02 | -0.01 | 98.15 |
| -0.06 | 0.05 | 1.57 | 32.83 | 0.26 | 0.08 | 0.56 | 0.09 | -0.16 | 65.12 | -0.01 | 0.03 | 0.28 | 0.11 | -0.03 | -0.05 | 0.03 | 0.06 | 100.76 |
| -0.12 | 0.04 | 0.25 | 32.11 | 0.22 | 0.07 | 0.56 | 0.06 | -0.22 | 63.68 | -0.02 | 0.02 | 0.23 | 0.15 | 0.10 | -0.22 | 0.04 | 0.08 | 97.02 |
| -0.13 | 0.06 | 1.88 | 32.63 | 0.28 | 0.08 | 0.67 | 0.02 | -0.18 | 63.24 | -0.01 | -0.04 | 0.39 | 0.02 | -0.15 | 0.09 | 0.08 | 0.02 | 98.95 |
| -0.11 | 0.10 | 1.49 | 27.97 | 0.58 | 0.08 | 1.65 | 2.66 | 2.39 | 59.50 | 0.21 | 0.31 | 0.37 | -0.06 | 0.15 | 0.09 | 0.00 | -0.01 | 97.37 |
| 0.00 | 0.12 | 10.81 | 31.45 | 0.48 | 0.07 | 1.95 | 0.13 | -0.13 | 52.57 | -0.06 | 0.04 | 0.36 | 0.10 | 0.14 | -0.04 | 0.32 | -0.02 | 98.29 |
| -0.03 | 0.12 | 10.85 | 24.85 | 0.91 | 0.08 | 2.58 | 1.12 | 0.66 | 50.16 | 2.40 | -0.19 | 0.82 | -0.11 | 0.08 | 0.09 | 0.12 | 0.06 | 94.57 |
| -0.06 | 0.07 | 0.16 | 2.91 | 0.98 | 0.16 | 0.56 | 0.18 | 27.20 | -0.19 | 13.25 | -1.79 | 0.07 | 13.25 | 31.12 | 11.64 | -0.64 | -0.13 | 98.74 |

SAMPLE 22

| NA | MG | AL | SI | CA | K | FE | Y | P | ZR | TH | U | TI | LA | OE | ND | CR | MIN | sum |
|-------|-------|------|-------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| 0.01 | -0.05 | 0.08 | 0.16 | 0.23 | 0.05 | 9.10 | -0.06 | 0.04 | 0.02 | 0.05 | -0.04 | 95.67 | 0.09 | -0.07 | 0.07 | -0.03 | 1.54 | 106.86 |
| 0.03 | -0.02 | 0.19 | 3.94 | 3.94 | 0.06 | 34.87 | 0.07 | 0.06 | 0.06 | 0.01 | -0.06 | 59.23 | 0.02 | 0.21 | 0.02 | 0.09 | 3.94 | 106.66 |
| -0.01 | -0.02 | 1.85 | 1.69 | 0.21 | 0.07 | 34.91 | -0.02 | 0.19 | 0.01 | 0.03 | 0.02 | 57.31 | -0.06 | -0.08 | -0.06 | 0.04 | 3.95 | 100.03 |
| 0.01 | 0.48 | 5.93 | 4.12 | 0.67 | 0.57 | 8.55 | -0.02 | 2.41 | -0.01 | -0.02 | 0.01 | 57.28 | 0.12 | 0.29 | 0.03 | 0.05 | 0.12 | 80.59 |
| -0.09 | 0.06 | 0.06 | 33.83 | 0.22 | 0.08 | 0.36 | 0.09 | -0.34 | 68.11 | 0.10 | -0.04 | 0.09 | 0.01 | 0.06 | 0.01 | 0.02 | -0.04 | 102.59 |
| -0.02 | 0.05 | 0.07 | 33.83 | 0.21 | 0.08 | 0.34 | 0.06 | -0.23 | 67.19 | -0.11 | 0.07 | 0.06 | -0.07 | -0.29 | 0.07 | 0.08 | 0.00 | 101.39 |
| -0.08 | 0.05 | 0.05 | 33.22 | 0.22 | 0.08 | 0.33 | 0.30 | 0.00 | 66.14 | -0.01 | 0.13 | 0.05 | 0.01 | -0.04 | 0.14 | -0.03 | 0.00 | 100.56 |
| -0.04 | 0.06 | 0.21 | 1.41 | 1.00 | 0.16 | 1.57 | 1.11 | 28.60 | -0.06 | 6.47 | -0.79 | -0.01 | 15.59 | 30.72 | 12.02 | -0.80 | -0.14 | 97.08 |

SAMPLE 23

| NA | MG | AL | SI | CA | K | FE | Y | P | ZR | TH | U | TI | LA | CE | ND | CR | MN | sum |
|-------|-------|------|-------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| -0.03 | -0.02 | 1.27 | 0.32 | 0.19 | 0.05 | 32.94 | 0.05 | 0.36 | 0.10 | -0.09 | 0.09 | 59.60 | 0.01 | 0.11 | 0.01 | 0.02 | 3.01 | 97.99 |
| -0.02 | -0.01 | 0.18 | 0.12 | 0.16 | 0.06 | 40.93 | 0.02 | 0.07 | -0.03 | 0.01 | -0.04 | 59.19 | -0.18 | 0.11 | 0.13 | 0.05 | 4.82 | 105.57 |
| 0.04 | -0.02 | 0.35 | 0.14 | 0.15 | 0.05 | 36.69 | -0.03 | 0.01 | -0.01 | 0.03 | -0.06 | 59.11 | 0.13 | 0.07 | 0.08 | -0.04 | 5.15 | 101.84 |
| -0.01 | -0.02 | 0.36 | 0.16 | 0.16 | 0.06 | 39.27 | 0.01 | 0.04 | 0.06 | 0.01 | 0.04 | 59.06 | 0.02 | -0.11 | -0.19 | 0.03 | 4.84 | 103.79 |
| 0.00 | -0.02 | 0.08 | 0.09 | 0.15 | 0.06 | 39.66 | -0.02 | 0.02 | 0.04 | 0.02 | -0.03 | 58.48 | -0.10 | -0.16 | -0.01 | -0.02 | 3.63 | 101.87 |
| 0.03 | -0.01 | 0.54 | 0.28 | 0.14 | 0.06 | 38.57 | -0.01 | 0.10 | 0.03 | -0.03 | 0.00 | 58.42 | 0.02 | 0.06 | 0.03 | 0.01 | 3.08 | 101.32 |
| -0.05 | 0.00 | 0.39 | 0.17 | 0.15 | 0.05 | 40.88 | 0.01 | -0.01 | 0.01 | -0.02 | 0.00 | 57.80 | 0.08 | 0.09 | -0.23 | 0.02 | 4.10 | 103.44 |
| 0.03 | -0.01 | 0.30 | 0.12 | 0.16 | 0.08 | 42.09 | 0.03 | -0.01 | 0.06 | -0.10 | -0.03 | 57.33 | -0.06 | -0.01 | -0.16 | -0.04 | 4.03 | 103.81 |
| -0.05 | -0.03 | 0.69 | 0.91 | 0.15 | 0.05 | 43.25 | 0.03 | 0.00 | -0.03 | 0.00 | 0.00 | 55.75 | -0.06 | 0.23 | -0.02 | 0.03 | 3.31 | 104.21 |
| 0.04 | -0.05 | 1.17 | 0.59 | 0.14 | 0.06 | 29.46 | -0.08 | 0.02 | 0.00 | 0.01 | -0.02 | 47.67 | -0.07 | -0.02 | 0.04 | 0.08 | 3.36 | 82.40 |
| 0.05 | 0.16 | 7.51 | 39.84 | 0.18 | 0.38 | 5.07 | 0.07 | 0.90 | 0.06 | 0.01 | 0.01 | 25.39 | -0.09 | 0.10 | 0.06 | 0.02 | 0.07 | 79.79 |
| -0.16 | 0.05 | 0.56 | 31.29 | 0.21 | 0.07 | 0.47 | -0.03 | -0.30 | 65.95 | -0.04 | 0.00 | 0.19 | 0.09 | 0.01 | 0.03 | 0.07 | 0.08 | 98.54 |
| -0.18 | 0.06 | 0.52 | 30.94 | 0.23 | 0.07 | 0.47 | 0.19 | -0.15 | 65.95 | 0.00 | 0.00 | 0.12 | -0.09 | -0.04 | -0.01 | -0.01 | 0.01 | 98.08 |
| -0.25 | 0.05 | 0.09 | 31.36 | 0.21 | 0.08 | 0.32 | 0.11 | -0.27 | 65.83 | 0.02 | -0.01 | 0.13 | -0.04 | -0.17 | 0.04 | -0.01 | -0.02 | 97.47 |
| -0.07 | 0.05 | 0.10 | 31.89 | 0.21 | 0.08 | 0.36 | 0.24 | -0.12 | 65.47 | 0.15 | 0.18 | 0.03 | -0.17 | 0.16 | 0.02 | -0.08 | 0.06 | 98.56 |
| -0.12 | 0.06 | 1.62 | 30.42 | 0.26 | 0.07 | 0.56 | 0.10 | -0.21 | 64.71 | -0.11 | 0.05 | 0.35 | 0.11 | -0.07 | -0.20 | 0.11 | 0.05 | 97.76 |
| -0.13 | 0.05 | 0.20 | 31.73 | 0.21 | 0.08 | 0.38 | -0.02 | -0.23 | 64.57 | 0.02 | -0.01 | 0.10 | 0.23 | -0.06 | -0.11 | 0.02 | -0.03 | 97.00 |
| -0.19 | 0.05 | 0.61 | 31.20 | 0.22 | 0.07 | 0.42 | 0.12 | -0.01 | 64.26 | -0.01 | 0.02 | 0.15 | -0.08 | -0.01 | 0.00 | 0.03 | 0.07 | 96.92 |
| -0.11 | 0.05 | 0.26 | 30.87 | 0.21 | 0.07 | 0.38 | 0.20 | -0.03 | 64.23 | -0.10 | -0.02 | 0.10 | -0.04 | 0.06 | 0.12 | 0.00 | 0.04 | 96.42 |
| -0.23 | 0.06 | 1.85 | 30.84 | 0.23 | 0.07 | 0.53 | 0.02 | -0.21 | 64.10 | 0.03 | -0.02 | 0.09 | 0.05 | 0.12 | 0.08 | 0.04 | 0.02 | 97.67 |
| -0.06 | 0.09 | 0.16 | 34.55 | 0.19 | 0.11 | 0.48 | 0.36 | 0.06 | 62.69 | 0.01 | 0.05 | 0.12 | -0.10 | 0.02 | -0.01 | -0.02 | -0.02 | 98.72 |
| -0.12 | 0.07 | 2.01 | 30.63 | 0.24 | 0.07 | 0.63 | 0.14 | -0.07 | 61.97 | -0.03 | 0.00 | 0.09 | -0.17 | 0.08 | 0.05 | 0.02 | 0.11 | 95.72 |
| -0.21 | 0.06 | 1.21 | 29.91 | 0.23 | 0.08 | 0.54 | -0.03 | -0.18 | 61.45 | 0.00 | -0.02 | 0.21 | 0.04 | -0.36 | 0.11 | 0.07 | -0.04 | 93.07 |
| -0.17 | 0.07 | 4.14 | 29.92 | 0.29 | 0.06 | 0.78 | 0.16 | 0.01 | 59.43 | 0.09 | -0.06 | 0.20 | -0.10 | -0.12 | -0.04 | 0.12 | 0.00 | 94.78 |
| -0.03 | 0.02 | 0.07 | 26.36 | 0.13 | 0.05 | 0.29 | 0.25 | -0.06 | 55.63 | 0.00 | 0.02 | 0.18 | 0.03 | 0.16 | 0.01 | -0.06 | -0.07 | 82.98 |
| -0.12 | 0.02 | 1.23 | 20.28 | 0.14 | 0.03 | 0.41 | 0.10 | -0.07 | 42.65 | -0.03 | 0.04 | 0.16 | -0.09 | 0.07 | -0.03 | 0.07 | -0.05 | 64.81 |
| -0.10 | -0.04 | 0.57 | 17.89 | 0.11 | 0.04 | 0.45 | 0.05 | -0.06 | 39.61 | 0.00 | 0.08 | 2.08 | -0.05 | -0.02 | -0.21 | -0.02 | 0.04 | 60.42 |
| -0.06 | 0.06 | 0.15 | 1.59 | 0.84 | 0.14 | 0.61 | 0.20 | 29.87 | -0.11 | 7.07 | -0.93 | 0.01 | 15.79 | 32.15 | 12.50 | -0.89 | -0.11 | 98.88 |
| -0.11 | 0.06 | 0.53 | 1.96 | 0.96 | 0.15 | 0.76 | 0.50 | 28.42 | -0.17 | 9.23 | -1.27 | 0.09 | 14.28 | 30.65 | 13.04 | -0.60 | -0.13 | 98.35 |

**The vita has been removed from
the scanned document**