UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Analytical results and statistical analyses of rocks, ores, and stream pebbles from the Eagle Rock and Glacier Peak Roadless Areas, Snohomish and King Counties, Washington

by

S. E. Church, E. L. Mosier, R. W. Tabor,
W. R. Willson, and C. M. McDougal

Open-File Report 83-342
1983

CONTENTS

ILLUSTRATIONS

TABLES

STUDIES RELATED TO WILDERNESS

The Wilderness Act (Pbulic Law 88–577, September 3, 1964) and the related acts require the U.S. Geological Survey and the U.S. Bureau of Mines to survey certain areas on Federal lands to determine their mineral resource potential. Results must be made available to the public and submitted to the President and the Congress. This report presents the results of a geochemical survey of the Eagle Rock (06054) and Glacier Peak (06031L) Roadless Areas in the Mount Baker–Snoqualmie National Forest, Snohomish and King Counties, Washington. The Eagle Rock and Glacier Peak Roadless Areas were classified as further planning areas during the Second Roadless Area Review and Evaluation (RARE II) by the U.S. Forest Service, January 1979.

INTRODUCTION

During the 1979–1981 field seasons and in conjunction with geologic mapping (Tabor and others, 1982) and geochemical sampling (Church and others, 1982), rock samples were collected from the various formations that outcrop in the study area to determine background values for the ore–related metals. In addition, hydrothermally altered rocks were sampled, and mine adits and dumps were also sampled in an attempt to define the suite of metals characteristic of the area. During the geochemical reconnaissance of the stream drainages, stream pebbles were examined in an attempt to identify the rock type and mineralization that might cause a geochemical anomaly in the basins. The sample localities of the altered rocks and stream pebbles for the two areas are shown in Plate 1. Prior to analysis, the samples were crushed and then pulverized to about minus–80 mesh (177μm) in a Braun pulverizer using alumina plates.

ANALYTICAL METHODS

The analytical limits of detection for spectrographic analysis of stream pebbles, rocks, and ores are given in table 1. Analytical limits for the determinations made from aqua–regia leaches of the rock samples using ICP (Inductively Coupled Plasma) methods are summarized in table 2 (analyses by J. M. Motooka). Additional methods, studies, and discussions are given in Church (1978, 1979, 1981a) and in Church and others (1982b). A complete discussion of spectral interference corrections is given in Church (1981b).

Analytical results for rocks, ores, and stream pebbles are determined by visual comparison of spectra derived from the unknown sample against spectra obtained from standards made from pure oxides or carbonates using a d.c.–arc (direct current) emission spectrographic method (Grimes and Marranzino, 1968). Standard concentrations are geometrically spaced over any given order of magnitude of concentration and are prepared in such a way that the range of concentrations normally found in naturally occurring samples are bracketed. When comparisons are made with sample films for semiquantitative use, reported values are rounded to 100, 50, 20, 10, and so forth. Those samples whose concentrations are estimated to fall between the above values are arbitrarily given values of 70, 30, 15, 7, and so forth. The precision of the method is approximately plus or minus one reporting unit at the 83–percent confidence level and plus or minus two reporting units at the 96–percent confidence level (Motooka and Grimes, 1976). Values determined for the major elements (magnesium, calcium, iron, and titanium) are given in weight percent; all others are given in parts per million (micrograms/gram).

Analytical results obtained using the ICP method are determined from calibrations using gravimetric standard solutions, and, if no significant spectral interference is present, are accurate to $\pm$ 1–3 percent from concentration levels equal to 10 times the limit of detection and above. For further discussion of the calibration of the ICP, matrix effects encountered during calibration and analysis, and analytical error caused by spectral interferences, see Church (1981b).

Analytical results for the rocks collected to determine the background values for metals in unmineralized rock formations are given in tables 3 and 6. All elements listed in tables 1 and 2 were determined during the study, but only those elements having detected values are given in the data tables. Statistical summaries and histograms derived from log transforms of the data are given in tables 4, 5, 7, and 8. Each of the samples is also identified by formation (Tabor and others, 1982). A brief description of the rock types present in each formation is given below. Analytical results for the altered rock samples, ores, and stream pebbles are given in tables 9–12 along with formation, rock type, and those ore minerals identifiable with the aid of a hand lens. Mineralogical data given in tables 9–10 are tabulated in the column labeled comments. The following abbreviations have been used in the descriptions: alt–altered, aspy–arsenopyrite, bor–bornite, chal–chalcocite, cpy–chalcopyrite, diss–disseminated, gal–galena, mo–molybdenite, ox–oxidized, py–pyrite, qtz–quartz, sph–sphalerite, tour–tourmaline, and volc–volcanic.

DISCUSSION

The descriptions of the rock units given below are adapted from Tabor and others (1982). Map symbols shown here are used to identify the formational unit of each sample in the data tables.

Tbk BRECCIA OF KYES PEAK (MIOCENE) – The unit is composed of mostly andesitic and dacitic breccia beds with abundant clasts of schist, gneiss, and granitoid rocks. Locally, the breccias consist predominantly of fine–grained mica schist or granodiorite clasts. Breccia beds range from a few centimeters to more than 50 m in thickness. Thin, volcanic to volcanic–lithic subquartzose sandstone beds occur locally near the base. Heath (1971, p. 124–125) described probable primary garnets in rhyodacite and dacite flows. Alteration minerals are chlorite, sericite, and epidote, but some rocks, especially those east of Glacier Creek, are thermally metamorphosed and enriched in magnetite, actinolite, and albite(?) as well.

Tib INTRUSIVE BRECCIA (MIOCENE) – The Conglomerate Point Breccia of Yeats (1958b) consists of rhyolitic to basaltic breccia with clasts of granitoid rocks near margins of the intrusion. Clasts of angular to subangular, greenish–gray, altered pyroxene andesite porphyry, altered basalt porphyry, and flow–banded rhyolite are set in a dacite tuff matrix containing angular quartz fragments and plagioclase. The matrix is considerably altered to chlorite, calcite, and epidote. Breccia on Silver Creek contains rounded clasts of heterogeneous volcanic rocks and rare clasts of sulfide ore in a fine–grained to aphanitic matrix. Locally, the breccia is monolithologic; it is composed of tonalite clasts and matrix, and grades into tonalite wallrock.

Tts TONALITE OF SILVER CREEK (MIOCENE) – This unit is a biotite–hornblende and hornblende–biotite tonalite with hypidiomorphic to porphyritic granular texture; there has been considerable alteration of mafic minerals to chlorite and epidote.

Teb EXPLOSION BRECCIA (MIOCENE) – Sericitized and silicified fragments of hornfels are enclosed in a matrix of calcite and sulfides (Ream, 1972, p. 10).

Te EAGLE TUFF OF YEATS (1977) (MIOCENE) – The unit is a brown to gray–brown rhyolitic to dacitic tuff, ash–flow tuff, and breccia. It is characterized by the presence of conspicuous quartz phenocrysts that are set in a clastic matrix of plagioclase and silicic volcanic rock; occasional glassy shards and abundant fragments of pre–Tertiary country rocks.

GROTTO BATHOLITH AND RELATED STOCKS (MIOCENE):

Tg Biotite (clinopyroxene)–hornblende granodiorite grading to granite; CI 10–20. The north end of the pluton and smaller stocks in the Monte Cristo area tend to be more mafic, mostly granodiorite and tonalite. Texturally, the unit is medium–grained, hypidiomorphic granular with subhedral to euhedral oscillatorily zoned plagioclase in a matrix of optically continuous quartz or anhedral quartz and perthite; some granophyric textures are also found. Most pyroxene is altered to uralitic pale–green hornblende. Many rocks are strongly altered to an assemblage of chlorite, epidote, and sphene, and occasionally have some cross–cutting fractures filled with these alteration minerals. Fine–grained mafic inclusions are common.

Tgs Granite of San Juan Creek – This unit is mostly biotite granite to granophyric porphyry with CI about 5. Graphic intergrowths of potassium feldspar and quartz are common.

Tgg Gabbro, quartz gabbro, and pyroxene porphyry – This unit is a fine–grained to porphyritic pyroxene hornblende gabbro, quartz gabbro, and porphyry. It occurs as dark roof pendants on Townsend and Spire Mountains. The unit has normally zoned labradorite–oligoclase crystals with euhedral oscillations set in a sparse matrix of granophyric potassium feldspar and quartz or uralitic hornblende. Gabbroic rocks appear to grade rapidly into underlying granodiorite of the Grotto batholith.

Tm Metaporphyry of Troublesome Mountain – A dark, recrystallized clinopyroxene plagioclase porphyry having abundant poikiloblastic phenocrysts set in a crystalloblastic matrix of plagioclase, quartz, biotite, hornblende, and opaque minerals. Pyroxene is partially or wholly replaced by green hornblende and euhedral plagioclase has relict oscillatory zoning.

Ti INDEX BATHOLITH (OLIGOCENE) – A biotite–hornblende and hornblende–biotite tonalite and granodiorite, locally ranging from quartz diorite and quartz monzonite to rare granite; CI 2–30. The texture is medium–grained hypidiomorphic granular, with mostly anhedral, granofelsic quartz, interstitial to subhedral, and euhedrally oscillatorily zoned labradorite–andesine to oligoclase (see Yeats, 1958a, p. 202–203; Griffis, 1977, p. 85). Pyroxene is rare, and, when present, it occurs as tiny rounded inclusions in plagioclase.

Tgc GOBLIN CREEK STOCK (OLIGOCENE) – This unit is generally a dark colored, medium–grained pyroxene biotite hornblende granodiorite and granite; CI 13–35. The pyroxene is generally uralitized and quartz commonly forms an optically continuous mesostasis between plagioclase crystals; the texture occasionally is granophyric. The unit is heavily sheared and highly altered to chlorite, epidote, calcite, and prehnite.

BARLOW PASS VOLCANICS OF VANCE (1957b) (EOCENE):

Tbb Basalt, rhyolite, and andesite flows, breccia, and tuff; minor bedded tuffaceous to arkosic sandstone and argillite – The unit is generally a dark–green to gray, massive, dense andesite and basalt, with some light–green to white rhyolite. Usually, it is highly altered to a dense mat of chlorite, epidote, calcite, and sericite; volcanic porphyritic and trachytoid textures are relict. Many rocks have been recrystallized by thermal metamorphism near Tertiary plutons, reaching pyroxene hornfels facies adjacent to unfaulted contacts with plutons.

Tba Hornblende andesite and dacite porphyry – This unit is a highly altered, heterogeneous hornblende andesite and dacite, mostly highly prophyritic, with unzoned subhedral plagioclase and subhedral to euhedral greenish–brown hornblende in a holocrystalline fine–grained matrix of plagioclase and alteration minerals, mostly chlorite. It also includes some hornblende andesite tuff and fine–grained diorite.

Ts SWAUK FORMATION (EOCENE) – Predominantly a light-colored, medium-grained feldspathic sandstone containing minor shale and pebble conglomerate. Thermal metamorphism by Tertiary plutons has locally hornfelsed the sandstone and obscured clast type; some sandstone looks like a granitic rock. The sandstone at the southern part of the mapped area averages 40–45 percent quartz, 40 percent feldspar, and 12 percent lithic clasts (8 percent sedimentary or metasedimentary clasts, 4 percent volcanic clasts). It contains little or no chert. The more strongly hornfelsed rocks along Silver and lower Trout Creeks, however, are relatively rich in chert, with similar contents of quartz, plagioclase, and chert.

Tvs VOLCANIC ROCKS OF SKYKOMISH AREA (EOCENE) – This unit is a heterogeneous light-tan to dark-gray-green rhyolitic to andesitic breccia and feldspar porphyry. Rocks identified as andesite in the field generally contain at least trace amounts of quartz in thin section. The andesitic(?) breccia, crystal-rich, in part hornfelsed, contains mixed clast types including andesitic(?) and rhyolitic clasts, sandstone, metasedimentary rocks, chert, siltstone, foliated polycrystalline quartz, quartz, potassium feldspar, and plagioclase. Some areas are a greenish crystal-rich rhyodacite breccia with platy cleavage. Amygdaliodal andesite(?) and andesite(?) porphyry having crude columnar jointing are also present. Plagioclase is commonly altered to calcite and chlorite; pyrite is locally present.

MELANGE (PRE-TERTIARY):

pTbg GUNN PEAK AND BARCLAY CREEK FORMATIONS OF YEATS (1964) – This unit is a melange of chert, argillite, greenstone and graywacke; intensely folded white to cream or gray ribbon cherts and medium- to fine-grained banded quartzite (metachert) alternating with thin to thick, dark-brown to black layers of calcareous argillite, tectonically thinned and thickened into discontinuous stringers. Greenstone, metagraywacke, chert-rich grit, and metaconglomerate are mostly massive, and rarely bedded. Original sedimentary and volcanic textures are largely obscured by penetrative deformation, low-grade regional metamorphism, and static thermal metamorphism. Contact metamorphism by Tertiary plutons has recrystallized much of the rock to pyroxene hornfels, destroying original textures and structures as well as earlier formed greenschist minerals. Calcareous argillite is commonly yellow-green owing to lenticles of diopside, epidote, and actinolite. The unit also includes:

pTm Marble – Lenticular beds and pods of banded white to grayish medium- to fine-grained crystalline marble intercalated with metachert and greenstone. In part, it has shaly laminations or graphitic impurities marking bedding planes; jasperized replacement masses.

pTmg MIGMATITIC GNEISS – This unit is a fine-grained schistose amphibolite to medium- and coarse-grained massive quartz diorite including layered hornblende gneiss, gneissose quartz diorite, trondhjemite, and replacement breccia with minor serpentinized ultramafite. Amphibolite is crystalloblastic with xenoblastic, unzoned, untwinned andesine and brown to brownish-green xenoblastic hornblende and accessory sphene, apatite, magnetite, ilmenite, and zircon. These rocks grade through hornblende gneiss to gneissose quartz diorite; commonly mafic and less mafic rocks occur in irregular intimately mixed layers. All exposures are cut by anastomosing shear zones; the rocks were cataclastically deformed prior to a late static recrystallization.

pTum ULTRAMAFIC ROCKS – Also included in this unit are small pods and bodies of ultramafic rocks. Near Merchant Peak, pods of highly altered pyroxenite, peridotite, and serpentinized dunite are tectonically

intercalated with argillite and ribbon chert. Sheared pyroxenite contains prophyroclasts or pyroxene in a blastomylonitic matrix composed of tremolite, serpentine, pennine, calcite, iron oxide, and talc. Coarse-grained silvery-black peridotite with olivine and uralitized diopside has undergone cataclasis and subsequent alteration to antigorite, iddingsite, and sulfide. A teardrop-shaped pod of dunite has a fresh tremolite-bearing dunite center but becomes dominated by serpentine near the margin. Schistose ultramafite on the northern slopes of Silvertip Peak consists of magnesium olivine, partially or completely altered to serpentine.

Kd DARRINGTON PHYLLITE OF MISCH (1966) (EARLY CRETACEOUS) – A black sericite-quartz phyllite containing abundant quartz segregation veinlets and lenses, abundant graphite and albitic plagioclase. Accessory minerals present include chlorite, iron oxide, apatite, tourmaline, and sphene. The unit has been thermally metamorphosed to biotite phyllite, and locally to pyroxene hornfels close to Tertiary intrusive rocks.

Kt TONGA FORMATION OF YEATS (1958a) (LATE CRETACEOUS) – The unit is a phyllite, mica schist, and fine-grained, hornblende biotite gneiss. It is mostly a fine-grained graphite-garnet-staurolite-biotite schist, with some fine-grained biotite-hornblende gneiss, and local metaconglomerate and metaporphyry (two-mica fine-grained gneiss). Microgarbenschiefer texture is found in some metasandstone; cummingtonite is locally intergrown with hornblende. The unit also includes:

Ktg Greenschist, actinolite schist, and rare blue amphibole schist – Strongly schistose greenschist, actinolite schist, and intercalated blue schist. Actinolitic hornblende locally replaces crossite and glaucophane. Glaucophane rims crossite. Pumpellyite, probably sodic pyroxene, and stilpnomelane are common constituents of some rocks.

Kc CHIWAUKUM SCHIST (LATE CRETACEOUS) – This unit is a mostly fine- to medium-grained, well-laminated, graphitic garnet-biotite-quartz schist with staurolite, kyanite, and sillimanite; sillimanite is especially well developed near gneissic tonalite of the Sloan Creek plutons. Texturally, it is a fine- to medium-grained, well-laminated schistose amphibolite, hornblende biotite schist, and locally, a fine-grained hornblende gneiss. The schist is commonly isoclinally folded on an outcrop of microscopic scale with quartz segregations and veins. This unit grades into banded gneiss unit described below.

Kbg BANDED GNEISS (LATE CRETACEOUS) – This unit generally is an interlayered heterogeneous light-colored tonalite to granodiorite gneiss, mica schist, and amphibolite similar to the Chiwaukum schist. Contacts between gneiss and schist are both sharp and gradational along and across strike. Cross-cutting sills, dikes, and irregular bodies of light-colored fine-grained to pegmatitic tonalite and gneiss are also present; it is locally migmatitic. Most of unit has 10 percent or more light-colored gneiss.

Kum ULTRAMAFITE (LATE CRETACEOUS) – These bodies are serpentinized ortho-pyroxenite and serpentinite. The lens on the ridge north of the North Fork of the Skykomish River is a coarse enstatite rich unit with skeletal relicts of olivine; enstatite replaced by serpentine minerals, talc, and tremolite, especially in foliate zones. Small pods in the Sloan Creek plutons are mostly serpentinized pyroxenite(?) or talc-tremolite rocks.

Ksc SLOAN CREEK PLUTONS (LATE CRETACEOUS) – A biotite-hornblende tonalite gneiss, flaser gneiss, and local gneissic tonalite having a medium grained, homogenous, crystalloblastic gneissose to strongly flaseroid texture, locally strongly mylonitic. Plagioclase is normally zoned or unzoned and strongly stress twinned, but with relict patchy zoning, faint oscillatory zoning, and

synneusis twins. Retrogressive alteration is pronounced, but somewhat sporadic; epidote minerals and sericite commonly fill plagioclase cores; mafic minerals are altered to chlorite, sphene, and prehnite.

Kgt GNEISSIC TONALITE OF EXCELSIOR MOUNTAIN (LATE CRETACEOUS) – A light–colored biotite tonalite gneiss and flaser gneiss, locally massive, containing minor hornblende, muscovite, clinozoisite, and rarely, garnet and opaque ores. Subhedral to euhedral plagioclase with faint patches of relict euhedral oscillatory zoning and patchy zoning are set in a mylonitic matrix of quartz, biotite, hornblende, and clinozoisite.

Comparison of values by formation with the plots of the data by element (tables 5 and 8) show the regional variation of several elements as a function of rock type. A comparison of the mean values for the unaltered rocks (table 4) and the geometric mean values of these samples (table 5) with the mean value for the stream sediments collected from the study areas (Church and others, 1982a) suggests that local background thresholds should be defined from rock data to evaluate anomalous values in the stream–sediment media.

Comparison of the means of the ICP analytical data (table 6) with those determined by d.c.–arc spectrography (table 3) clearly show the power of the aqua–regia leach digestion method. Note that values determined by ICP for many elements bound in the silicate lattice of minerals (Mg, Ca, Ti, Cr, Ni, Sr, Ba, La, and Y) are low in the ICP data set (table 6). This is because the silicate lattice sites are only partially leached whereas the d.c.–arc spectrographic technique does not discriminate against crystallographic lattice sites. Comparison of these yields with metals commonly bound in oxide or sulfide phases (V, Co, and Cu) shows higher recoveries in the ICP leach technique. Finally, compare ICP data and d.c.–arc emission spectrographic data for altered rocks (table 10 and 11) for a more lucid evaluation of the selective nature of the aqua–regia leach ICP analytical technique. Metals from trace sulfide– and oxide–ore minerals are preferentially enhanced by the ICP technique when compared with the d.c.–arc emission spectrography; leaching techniques designed to selectively digest trace sulfide and oxide minerals from several grams of sample provide an effective technique for trace–metal anomaly enhacement.

REFERENCES CITED

Church, S. E., 1978, Multi-element ore analysis using the ICP-AES method [abs.]: Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy, Cleveland, Ohio, #387.

____,1979, A rapid determinative method for trace-element analysis in geologic materials [abs.]: 62nd Canadian Chemical Conference, Vancouver, Canada, AN-20.

____,1981a, Multi-element analysis of fifty-four geochemical reference samples using inductively coupled plasma-atomic emission spectrometry: Geostandards Newsletter, v. 5, no. 2, p. 133-160.

____,1981b, Multiple element determinations in geological reference samples—An evaluation of the inductively coupled plasma-atomic emission spectroscopy method for geochemical applications in Developments in Atomic Plasma Spectrochemical Analysis, R. M. Barnes, ed.: Philadelphia, Hayden and Sons, p. 410-454.

Church, S. E., Mosier, E. L., Frisken, J. G., Arbogast, B. F., and McDougal, C. M., 1982a, Analytical results for stream sediments and panned concentrates from stream sediments collected from the Monte Cristo and Eagle Rock study areas, Washington: U.S. Geological Survey Open-File Report 82-303, 83 p.

Church, S. E., Motooka, J. M., Bigelow, R. C., and VanTrump, George, Jr., 1982b, Application of an ICP-AES system to exploration research [abs.], 1982 Winter Conference on Plasma Spectrochemistry, ICP Information Newsletter, v. 7, R. E. Barnes, ed.: Amherst, University of Massachusetts Press, p. 45-46.

Griffis, R. J., 1977, Igneous petrology, structure and mineralization in the eastern Sultan Basin, Snohomish County, Washington: Seattle, University of Washington, Doctor of Philosophy thesis, 270 p.

Grimes, D. J., and Marranzino, A. P., 1968, Direct-current arc and alternating-current spark emission spectrographic field methods for the semiquantitative analysis of geologic materials: U.S. Geological Survey Circular 591, 6 p.

Heath, M. T., 1971, Bedrock geology of the Monte Cristo area, northern Cascades, Washington: Seattle, University of Washington, Doctor of Philosophy thesis, 164 p.

Misch, Peter, 1966, Tectonic evolution of the northern Cascade of Washington State—a west-cordilleran case history, in Symposium on the tectonic history, mineral deposits of the western Cordillera in British Columbia and in neighboring parts of the U.S.A.: Canadian Insititute of Mining and Metallurgy Special Volume 8, p. 101-148.

Motooka, J. M., and Grimes, D. J., 1976, Analytical precision of one-sixth order semiquantitative spectrographic analysis: U.S. Geological Survey Circular 738, 25 p.

Ream, L. R., 1972, Economic geology of the Silver Creek mining district, Snohomish County, Washington: Seattle, University of Washington, Master of Science thesis, 59 p.

Tabor, R. W., Frizzell, V. A., Yeats, R. S., and Whetten, J. T., 1982, Geologic map of the Eagle Rock and Glacier Peak Roadless Areas, Snohomish and King Counties, Washington: U.S. Geological Survey Miscellaneous Field Studies Map MF-1380-A, scale 1:100,000.

Vance, J. A., 1957, The geology of the Sauk River area in the northern Cascades of Washington: Dissertation Abstracts, v. 17, no. 9, p. 1984.

Yeats, R. S., 1958a, Geology of the Skykomish area in the Cascade Mountains of Washington: Seattle, University of Washington, Doctor of Philosophy thesis, 249 p.

____,1958b, Geology of the Skykomish area in the Cascade Mountains of Washington [abs.]: Dissertation Abstracts, v. 19, no. 4, p. 775.

____,1964, Crystalline klippen in the Index district, Cascade Range, Wasington: Geological Society of America Bulletin, v. 75, p. 549-562.

Yeats, R. S., 1977, Structure, stratigraphy, plutonism and volcanism of the central Cascades, Washington: Part I, General geologic setting of the Skykomish valley, in Brown, E. H., and Ellis, R. C., eds., Geological excursions in the Pacific Northwest: Geological Society of America Field Guide, Annual Meeting, Seattle, p. 265–275.

Table 1.—Limits of detection for analytical results obtained from rocks, ores, and stream pebbles using d.c.-arc emission spectrography[1]

Element	Rock-sample weights (g)	Ore-sample weight (g)	Detection limit (rocks)	Detection limit (ores)
Mg	0.010	0.005	0.02[2]	0.05[2]
Ca	do	do	.05	.10
Fe	do	do	.05	.10
Ti	do	do	.002	.005
Sc	do	do	5[3]	10[3]
V	do	do	10	20
Cr	do	do	10	20
Mn	do	do	10	20
Co	do	do	5	10
Ni	do	do	5	10
Cu	do	do	5	10
Zn	do	do	—	500
Cd	do	do	20	50
Mo	do	do	5	10
W	do	do	50	100
Ag	do	do	—	1
Au	do	do	—	20
Sn	do	do	—	20
Pb	do	do	10	20
Bi	do	do	—	20
As	do	do	—	500
Sb	do	do	—	200
B	do	do	10	20
Be	do	do	1	—
Sr	do	do	100	200
Ba	do	do	20	50
La	do	do	20	50
Y	do	do	10	20
Zr	do	do	10	20
Nb	do	do	20	50
Th	do	do	100	200

[1]Direct-current (d.c.) arc spectrographic method (Grimes and Marranzino, 1968).
[2]Results for magnesium, calcium, iron, and titanium given in weight percent.
[3]Results for vanadium and all succeeding elements given in parts per million.

Table 2.—Limits of detection for analytical results obtained from rocks using Inductively Coupled Plasma (ICP) methods

Element	Wavelength (nm)	LQD[1] (µg/mL)	Lower limit of determination[2] (µg/g)
Mg	279.0	0.200	5.0
Ca	422.7	.030	0.75
Fe	259.9	.025	6.1
Ti	334.9	.001	1.6
Al	396.1	.052	1.5
V	311.0	.012	0.3
Cr	283.5	.010	3.6
Mn	257.9	.002	1.0
Co	345.3	.100	6.0
Ni	231.6	.050	3.0
Cu	324.7	.007	.4
Zn	202.5	.015	.4
Mo	287.1	.031	2.0
W	239.7	.130	8.5
Cd	226.5	.010	.75
Ag	328.0	.015	.60
Au	242.8	.050	3.0
Pb	220.3	.150	10.0
As	193.7	.175	20.0
Sb	217.5	.250	20.0
Bi	306.7	.400	30.0
Sn	189.9	.130	6.0
B	249.8	.007	1.3
Be	313.0	.001	0.05
Sr	407.7	.0003	0.01
Ba	455.4	.008	0.2
La	398.8	.018	1.0
Ce	418.6	.072	4.5
Y	371.0	.002	0.1
Nb	309.4	.013	0.8
P	213.6	.300	10.0

[1]Lowest quantitative determinable concentration is defined as that concentration of the element that will give a net signal equal to approximately 10 times the standard deviation of the background. The values given are those determined for the voltage biases and calibration used in this study (Church, 1981b).

[2]The lower limit of determination is the LQD times the dilution factor. For this study, one gram of sample was leached and the final solution diluted to 25 mL. Uncertainties due to interference corrections are also included for the level of uncertainty and concentrations found in an average sample. Empirical data have been used to evaluate the accuracy of the values given. Higher limits of determination are encountered when different dilution factors are used (Church, 1981b).

Table 3. Analytical data from rocks collected for background values, Eagle Rock--Glacier Peak Roadless study areas

[The following qualifiers are used in reporting spectrographic data: --, no determination made; N, concentration less than the detection limit; <, detected, but present at a concentration less than the value reported; >, element present at a concentration greater than the upper calibration limit; and H, interfering spectra render analytical lines unusable.]

Sample	Latitude	Longitude	Mg-pct. s	Ca-pct. s	Fe-pct. s	Ti-pct. s	Sc-ppm s	V-ppm s	Cr-ppm s	Mn-ppm s	Co-ppm s	Ni-ppm s
81SC48A	48 5 47	121 22 12	1.5	2.0	5.0	.30	15	100	70	1,000	20	30
81SC49A	48 6 1	121 21 49	2.0	2.0	5.0	.30	20	100	200	1,000	20	30
81SC50A	48 4 15	121 17 26	1.0	1.5	2.0	.20	10	70	70	500	10	15
81SC52A	48 2 13	121 17 30	1.0	1.0	3.0	.20	10	70	70	500	15	30
81SC53A	48 1 50	121 17 16	1.0	1.5	3.0	.20	15	100	50	700	15	10
81SC54A	48 1 28	121 16 37	1.0	1.5	5.0	.20	15	100	N	700	10	5
81SC55A	48 5 48	121 20 52	1.0	1.5	3.0	.30	7	70	30	500	10	10
DB2380	48 2 37	121 23 21	1.0	2.0	5.0	.30	--	150	N	1,000	20	5
DB6380	47 51 33	121 14 57	1.5	2.0	3.0	.30	--	100	70	700	15	15
DB6480	47 50 54	121 14 1	1.5	1.5	5.0	.50	--	150	150	1,000	20	50
DB6780	47 50 3	121 15 8	1.5	1.5	5.0	.50	--	200	150	700	20	30
DB79237	48 3 24	121 19 30	2.0	5.0	5.0	.50	--	200	100	1,000	20	15
GP2317RA	48 2 15	121 20 14	5.0	2.0	7.0	.10	10	150	1,000	2,000	50	700
GP2317RC	48 2 15	121 20 14	5.0	3.0	7.0	.05	15	100	2,000	2,000	50	1,000
GP2318RB	48 2 18	121 20 13	5.0	2.0	5.0	.20	20	150	2,000	1,000	50	1,000
GP2335RB	47 53 49	121 24 10	1.5	2.0	5.0	.30	10	150	20	1,000	30	50
GP3003R	48 6 13	121 23 1	5.0	3.0	7.0	.30	30	300	300	1,000	50	150
GP3033R	48 9 16	121 14 35	3.0	5.0	7.0	.70	30	300	200	1,000	30	100
GP3047R	47 58 38	121 24 17	1.5	3.0	5.0	.50	20	200	20	500	20	50
GP3050R	47 58 28	121 23 55	1.5	2.0	5.0	.50	15	150	30	1,000	20	50
GP3067R	47 59 9	121 11 30	1.0	1.0	2.0	.30	10	70	20	300	5	10
GP3210R	47 58 47	121 21 36	2.0	3.0	5.0	.30	20	200	20	1,000	20	10
GP3357RA	47 58 11	121 22 7	1.0	2.0	5.0	.30	20	100	20	1,000	15	10
GP3362RA	47 56 34	121 23 18	1.5	2.0	5.0	.30	20	100	70	1,000	20	50
GP3370RB	47 57 17	121 22 3	.5	1.0	5.0	.20	15	100	15	700	15	15
GP4161RA	47 45 57	121 24 42	1.0	1.5	7.0	.30	20	20	N	1,500	10	5
JM12279	47 48 30	121 20 21	5.0	7.0	5.0	.70	--	200	100	2,000	20	30
JTL79200	48 2 12	121 20 24	2.0	3.0	3.0	.50	--	200	100	700	15	20
RTW30379	48 1 57	121 20 21	2.0	1.0	5.0	.50	--	200	150	1,000	20	70
RTW30579	48 2 12	121 18 0	1.5	5.0	3.0	.50	--	150	30	500	15	20
RTW30879	48 0 42	121 19 36	5.0	5.0	7.0	1.00	--	200	200	1,000	20	50
RTW31479	47 59 42	121 20 18	2.0	1.0	7.0	.70	--	200	150	1,000	15	50
RTW32279	47 54 57	121 18 21	1.0	1.0	3.0	.30	--	70	N	700	N	5
RWT1663	47 53 54	121 25 15	1.5	5.0	5.0	.70	--	200	10	700	15	10
RWT29879	48 2 33	121 18 0	5.0	7.0	7.0	>1.00	--	500	300	2,000	30	100
RWT30280	48 2 36	121 18 6	1.0	1.0	5.0	.50	--	150	100	700	20	70
RWT30380	48 2 36	121 18 6	2.0	2.0	7.0	.70	--	200	150	2,000	50	70
RWT30480	48 2 36	121 18 6	1.5	2.0	5.0	.50	--	150	100	500	30	50
RWT30679	48 1 0	121 19 45	2.0	1.5	5.0	.50	--	200	200	700	10	30
RWT32079	47 50 12	121 26 42	2.0	5.0	5.0	.70	--	200	30	1,000	20	50
RWT32379	47 54 57	121 18 48	2.0	2.0	5.0	.70	--	300	100	1,000	20	70
RWT32479	47 55 18	121 18 33	2.0	2.0	5.0	.50	--	200	150	700	20	70
RWT32579	47 55 21	121 18 0	2.0	5.0	5.0	.70	--	500	70	1,500	20	30
RWT33380	47 57 48	121 19 0	.7	1.0	3.0	.20	--	70	15	700	7	5
RWT33580	47 56 10	121 20 48	1.5	5.0	5.0	.70	--	200	15	1,000	20	5

Table 3. Analytical data from rocks collected for background values, Eagle Rock--Glacier Peak Roadless study areas

Sample	Cu-ppm s	Zn-ppm s	Mo-ppm s	Pb-ppm s	B-ppm s	Be-ppm s	Sr-ppm s	Ba-ppm s	La-ppm s	Y-ppm s	Zr-ppm s	Formation
81SC48A	15	N	N	<10	10	1.0	700	500	N	15	30	Ksc
81SC49A	7	N	N	10	10	1.5	300	100	N	15	50	Ksc
81SC50A	10	N	N	N	10	1.0	500	700	N	10	50	Kbg
81SC52A	50	N	N	15	10	1.5	200	300	N	15	30	Kbg
81SC53A	15	N	N	10	70	1.0	300	500	N	15	50	Kbg
81SC54A	15	N	N	10	20	1.0	300	700	N	20	20	Kbg
81SC55A	15	N	N	N	15	1.0	700	300	N	10	70	Ksc
DB2880	15	N	N	<10	15	N	200	700	N	50	100	Tg
DB6380	N	N	N	<10	<10	1.0	500	1,000	N	10	50	Kbg
DB6480	20	N	N	15	10	5.0	300	700	N	30	150	Kbg
DB6780	50	N	10	20	<10	1.0	200	700	N	30	150	Kbg
DB79237	10	N	N	10	20	1.0	500	700	N	20	100	Ksc
GP2317RA	20	N	N	N	<10	N	N	50	N	10	N	Kc
GP2317RC	30	N	N	N	100	N	N	100	N	20	N	Kc
GP2318RB	5	N	N	N	<10	N	N	N	N	15	30	Ksc
GP2335RB	50	N	N	20	100	N	300	500	N	20	100	Tb
GP3003R	70	N	N	N	<10	N	N	N	N	15	20	Kt
GP3030R	50	N	N	N	<10	N	150	50	N	50	30	Tb
GP3047R	70	N	N	N	<10	<1.0	500	300	20	20	70	Tb
GP3050R	20	N	N	<10	30	<1.0	500	150	20	20	100	Tb
GP3067R	10	N	N	10	50	1.5	300	1,000	20	10	70	Kbg
GP3210R	30	N	N	15	30	N	200	200	N	20	30	Tg
GP3357RA	15	N	N	10	200	1.5	300	700	N	30	70	Tbk
GP3362RA	100	N	N	N	30	1.0	300	150	N	30	100	Tg
GP3370RB	7	N	N	10	150	1.0	150	300	N	30	100	Tbk
GP4161RA	15	N	N	10	30	2.0	200	500	N	50	150	Tg
JM12279	50	N	N	N	100	N	150	20	N	30	50	Ktg
JTL79200	20	N	N	N	10	1.0	700	500	N	15	30	Ksc
RTW30379	50	200	10	10	100	2.0	200	700	N	30	150	Kc
RTW30579	7	N	N	N	150	1.0	300	500	N	30	100	Ti
RTW30879	15	200	N	15	50	1.0	700	700	N	20	100	Kc
RTW31479	30	500	N	20	200	2.0	200	700	N	20	200	Kc
RTW32279	5	N	N	10	<10	1.0	300	1,000	N	N	100	Kt
RWT1663	50	N	N	15	<10	1.0	200	500	N	20	200	Tg
RWT29879	20	N	N	<10	<10	1.0	500	200	N	30	100	Kbg
RWT30280	70	N	N	<10	100	1.0	200	700	20	30	150	Kbg
RWT30380	50	N	N	N	10	1.0	150	300	N	50	100	Kbg
RWT30430	150	N	N	10	15	N	500	1,000	N	N	100	Kbg
RWT30679	30	N	N	15	100	2.0	300	700	20	20	150	Kc
RWT32079	20	N	7	N	<10	1.0	200	500	N	30	100	Ti
RWT32379	30	N	N	<10	<10	1.0	300	700	N	20	100	Kt
RWT32479	100	N	N	10	20	1.5	500	500	N	30	150	Kt
RWT32579	70	N	N	10	10	N	100	500	N	30	100	Ti
RWT33380	10	N	N	10	20	1.0	100	700	N	30	200	Tbk
RWT33580	15	N	N	10	<10	N	200	300	N	30	100	Tb

Table 3. Analytical data from rocks collected for background values, Eagle Rock--Glacier Peak Roadless study areas--continued

Sample	Latitude	Longitude	Mg-pct. s	Ca-pct. s	Fe-pct. s	Ti-pct. s	Sc-ppm s	V-ppm s	Cr-ppm s	Mn-ppm s	Co-ppm s	Ni-ppm s
RWT34678	47 58 54	121 13 24	5.0	10.0	7.0	.70	--	300	500	1,500	50	200
RWT35179	48 1 21	121 18 33	2.0	3.0	5.0	.30	--	200	30	1,000	15	10
RWT352A9	48 0 3	121 20 24	5.0	7.0	7.0	>1.00	--	150	200	1,500	50	200
RWT36678	47 58 3	121 19 30	1.5	3.0	5.0	.70	--	300	100	1,500	20	70
RWT36778	48 2 57	121 18 57	2.0	3.0	5.0	.70	--	500	150	700	20	100
RWT36979	48 2 39	121 19 36	1.0	2.0	3.0	.50	--	150	50	500	10	30
RWT36979	47 57 56	121 19 48	2.0	5.0	5.0	.50	--	200	70	1,000	15	15
RWT37079	47 58 33	121 19 15	2.0	2.0	5.0	.70	--	300	150	1,000	20	100
RWT37179	48 3 9	121 20 30	3.0	5.0	5.0	.70	--	300	50	1,000	20	20
RWT37330	47 58 33	121 17 33	.7	.5	2.0	.20	--	150	50	1,000	5	30
RWT37480	47 58 21	121 17 27	1.5	5.0	7.0	1.00	--	500	20	2,000	30	10
RWT37779	47 57 39	121 16 30	2.0	5.0	5.0	.50	--	200	100	700	20	30
RWT38578	47 59 12	121 16 36	1.5	1.5	5.0	.50	--	200	100	700	15	50
RWT38678	47 59 27	121 16 54	5.0	5.0	10.0	>1.00	--	500	200	5,000	50	200
RWT39180	47 55 27	121 17 45	1.5	3.0	3.0	.30	--	150	30	700	15	15
RWT41780	47 53 43	121 24 24	.3	.7	5.0	1.00	--	100	15	500	15	30
RWT41880	47 58 57	121 25 0	1.0	1.0	3.0	.30	--	50	N	2,000	10	7
RWT43030	47 58 17	121 22 39	1.5	5.0	7.0	1.00	--	300	20	2,000	30	N
VF79465	47 44 51	121 20 24	1.5	2.0	5.0	.50	--	100	70	700	10	20
VF79466	47 45 42	121 21 36	.5	.5	2.0	.20	--	30	N	500	N	5
VF79474	47 45 9	121 20 3	.5	1.5	2.0	.20	--	50	N	500	N	5
VF79475	48 2 54	121 21 12	2.0	5.0	3.0	.50	--	150	70	700	10	15
VF79478	48 3 57	121 22 9	2.0	.5	5.0	.50	--	200	150	500	15	100
VF79480	48 4 30	121 23 9	1.5	5.0	5.0	.30	--	150	70	1,500	15	30
VF79487	47 43 45	121 21 42	5.0	3.0	7.0	1.00	--	200	200	1,000	50	100
VF79492	47 44 9	121 22 6	1.5	3.0	7.0	.70	--	200	10	1,500	20	10
VF79493	47 44 9	121 22 6	2.0	2.0	7.0	1.00	--	200	100	1,000	30	100
VF79495	47 44 27	121 22 6	.5	1.0	2.0	.20	--	70	10	700	5	10
VF79499	47 43 12	121 22 45	.7	1.5	2.0	.30	--	100	30	500	7	7
VF79501	48 1 6	121 22 57	1.5	.7	5.0	.50	--	200	150	700	20	70
VF79503	48 2 33	121 21 15	2.0	2.0	5.0	.50	--	200	150	1,000	20	70
VF79505	48 2 42	121 21 36	2.0	.5	5.0	.50	--	200	150	1,000	20	100
VF79541	47 51 9	121 22 36	1.0	3.0	3.0	.30	--	100	30	700	15	15
VF79542	47 54 21	121 20 42	2.0	5.0	5.0	.50	--	200	20	1,000	20	15
VF79543	47 57 12	121 20 15	.5	.7	1.5	.20	--	20	N	500	N	5
VF79546	47 57 24	121 19 57	1.0	1.0	3.0	.30	--	70	10	1,000	5	10
VF79562	47 50 45	121 24 24	5.0	5.0	10.0	1.00	--	300	N	2,000	30	10
VF79564	47 50 48	121 24 18	3.0	5.0	5.0	1.00	--	200	20	1,500	15	10
VF79565	47 50 48	121 24 18	.5	1.0	2.0	.20	--	15	N	500	N	N
VF79567	47 48 0	121 23 30	2.0	5.0	5.0	.70	--	200	15	700	10	15
VF79568	47 48 0	121 23 30	1.0	2.0	5.0	.50	--	100	N	2,000	7	5
VF79569	47 48 3	121 23 33	1.5	2.0	3.0	.50	--	100	N	700	5	5
VF79570	47 47 54	121 23 24	1.5	5.0	5.0	.70	--	200	10	700	15	7
VF80236	47 50 45	121 31 45	1.5	3.0	3.0	.30	--	100	50	700	15	20
VF80283	47 58 12	121 29 24	1.5	3.0	3.0	.30	--	100	50	500	20	20

Table 3. Analytical data from rocks collected for background values, Eagle Rock--Glacier Peak Roadless study areas--continued

Sample	Cu-ppm s	Zn-ppm s	Mo-ppm s	Pb-ppm s	B-ppm s	Be-ppm s	Sr-ppm s	Ba-ppm s	La-ppm s	Y-ppm s	Zr-ppm s	Formation
RWT34678	200	N	N	N	10	N	150	100	N	30	20	Ktg
RWT35179	10	N	N	<10	10	1.0	200	500	N	30	100	Tg
RWT352A9	N	N	N	N	<10	1.0	500	200	N	50	100	Kc
RWT36673	50	N	N	10	20	1.0	200	300	N	30	150	Tbk
RWT36778	70	N	N	10	200	1.5	300	300	N	30	150	Tbk
RWT36978	20	N	N	10	50	1.5	200	500	20	30	150	Tbk
RWT36979	10	N	N	10	20	1.0	500	700	N	30	150	Ksc
RWT37079	100	N	N	10	30	1.5	300	500	N	20	100	Kbg
RWT37179	<5	N	N	10	10	1.5	700	200	N	30	70	Kbg
RWT37330	100	N	N	N	15	1.0	N	2,000	N	N	50	pTgb
RWT37480	15	N	N	15	10	1.5	200	3,000	N	20	100	pTgb
RWT37779	70	N	N	10	15	N	200	300	N	30	100	Ti
RWT38578	15	N	N	10	150	1.5	200	500	N	30	200	Kc
RWT38678	10	N	N	N	<10	1.5	500	100	N	50	150	Kc
RWT39180	150	N	N	30	20	1.0	200	500	N	30	150	Ti
RWT41780	50	N	N	N	70	1.5	150	500	N	15	200	Tb
RWT41880	50	N	N	N	70	1.5	N	500	20	15	200	Tb
RWT43080	20	N	N	15	10	N	500	500	N	30	100	Tb
VF79465	20	N	N	10	100	1.0	200	500	N	20	150	Te
VF79466	7	N	N	10	15	1.0	100	700	N	20	150	Te
VF79474	7	N	N	10	10	1.0	200	500	N	10	100	Te
VF79475	15	N	N	N	10	1.0	1,000	300	N	10	50	Ksc
VF79478	50	N	N	<10	150	2.0	100	1,000	N	30	150	Kd
VF79480	30	N	N	N	<10	1.0	300	500	N	30	70	Kd
VF79487	50	N	N	<10	10	1.5	500	300	N	50	150	Tvs
VF79492	30	N	N	N	15	1.0	1,000	500	N	30	150	Tvs
VF79493	100	N	N	N	10	N	500	150	N	30	150	Tvs
VF79495	7	N	N	<10	15	1.0	200	500	N	15	100	Te
VF79499	10	N	N	<10	<10	1.5	200	500	N	30	200	Tvs
VF79501	70	N	N	15	200	2.0	150	700	N	30	150	Kd
VF79503	100	N	N	15	50	1.5	300	500	N	30	100	Kc
VF79505	50	N	N	15	200	2.0	150	700	N	30	150	Kd
VF79541	70	N	N	15	20	1.0	150	500	N	30	200	Tg
VF79542	30	N	N	<10	15	1.0	200	300	N	30	100	Tg
VF79543	N	N	N	<10	15	1.0	100	700	N	30	200	Tb
VF79546	10	N	N	15	10	1.0	150	700	N	30	200	Tbk
VF79562	70	N	N	10	<10	N	300	500	N	20	70	Tib
VF79564	50	N	N	<10	<10	N	200	500	N	30	100	Tib
VF79565	5	N	N	15	20	N	100	500	N	15	150	Tib
VF79567	70	N	N	<10	<10	N	200	500	N	20	200	Tg
VF79568	<5	N	N	10	<10	1.5	200	500	20	30	300	Tg
VF79569	30	N	N	<10	<10	1.0	100	700	N	30	200	Tg
VF79570	30	N	N	10	10	1.0	300	300	N	30	150	Tg
VF30236	20	N	N	N	10	N	200	300	N	20	100	Ti
VF80283	50	N	N	N	<10	N	300	500	N	20	200	Ti

Table 4. Fisher-K statistics on analytical data (table 3) from rocks collected for background values, Eagle Rock and Glacier Peak Roadless study areas

[The following qualifiers are used in reporting spectrographic data: B, no determination made; N, concentration less than the detection limit; L, detected, but present at a concentration less than the value reported; T, not used; G, element present at a concentration greater than the upper calibration limit; and H, interfering spectra render analytical lines unusable.]

NO	COLUMN	N	H	L	G	B	T	NO OF UNQUAL VALUES	NO OF IMPROPER QUAL VALUES	MINIMUM	MAXIMUM	NO
1	LATITUDE	0	0	0	0	0	0	90	0	47.720000	48.154445	1
2	LONGITUD	0	0	0	0	0	0	90	0	121.19167	121.52917	2
3	S-FE%	0	0	0	0	0	0	90	0	1.5000000	10.000000	3
4	S-MG%	0	0	0	0	0	0	90	0	0.3000000	5.0000000	4
5	S-CA%	0	0	0	0	0	0	90	0	0.5000000	10.000000	5
6	S-TI%	0	0	0	3	0	0	87	0	0.0500000	1.0000000	6
7	S-MN	0	0	0	0	0	0	90	0	300.00000	5000.0000	7
8	S-AG	90	0	0	0	0	0	0	0			8
9	S-AS	90	0	0	0	0	0	0	0			9
10	S-AU	21	0	0	0	69	0	0	0			10
11	S-B	0	0	23	0	0	0	67	0	10.000000	200.00000	11
12	S-BA	2	0	0	0	0	0	88	0	20.000000	3000.0000	12
13	S-BE	22	0	2	0	0	0	66	0	1.0000000	5.0000000	13
14	S-BI	89	0	1	0	0	0	0	0			14
15	S-CD	21	0	0	0	69	0	0	0			15
16	S-CO	5	0	0	0	0	0	85	0	5.0000000	50.000000	16
17	S-CR	12	0	0	0	0	0	78	0	10.000000	2000.0000	17
18	S-CU	3	0	2	0	0	0	85	0	5.0000000	200.00000	18
19	S-LA	82	0	0	0	0	0	8	0	20.000000	20.000000	19
20	S-MO	87	0	0	0	0	0	3	0	7.0000000	10.000000	20
21	S-NB	21	0	0	0	69	0	0	0			21
22	S-NI	2	0	0	0	0	0	88	0	5.0000000	1000.0000	22
23	S-PB	26	0	17	0	0	0	47	0	10.000000	30.000000	23
24	S-SB	90	0	0	0	0	0	0	0			24
25	S-SC	0	0	0	0	69	0	21	0	7.0000000	30.000000	25
26	S-SN	21	0	0	0	69	0	0	0			26
27	S-SR	6	0	0	0	0	0	84	0	100.00000	1000.0000	27
28	S-V	0	0	0	0	0	0	90	0	15.000000	500.00000	28
29	S-W	90	0	0	0	0	0	0	0			29
30	S-Y	3	0	0	0	0	0	87	0	10.000000	50.000000	30
31	S-ZN	87	0	0	0	0	0	3	0	200.00000	500.00000	31
32	S-ZR	2	0	0	0	0	0	88	0	20.000000	300.00000	32
33	S-TH	21	0	0	0	69	0	0	0			33

Table 4. Fisher-K statistics on analytical data (table 3) from rocks collected for background values, Eagle Rock and Glacier Peak Roadless study areas cont'd

NO	COLUMN	K1 MEAN	SQRT(K2) STD DEVIATION	K2 VARIANCE	K3	G1 SKEWNESS	K4	G2 KURTOSIS	NO
1	LATITUDE	47.951840	0.1055205	0.0111346	-7.7984108D-04	-0.6637365	-6.1395864D-05	-0.4952128	1
2	LONGITUD	121.34343	0.0546986	0.0029919	2.9817295D-05	0.1821958	1.1486432D-05	1.2831539	2
3	S-FE%	4.7833333	1.7158383	2.9441011	1.7737615	0.3511285	4.7785872	0.5513077	3
4	S-MG%	1.9544444	1.3176555	1.7362160	3.4157675	1.4930786	3.7702885	1.2507401	4
5	S-CA%	2.8066667	1.8730975	3.5084944	7.2582938	1.1044686	15.066667	1.2239837	5
6	S-TI%	0.4798851	0.2424991	0.0588058	0.0090423	0.6340899	-9.8188939D-04	-0.2839372	6
7	S-MN	1025.5556	621.98687	386867.67	7.9825324D+08	3.3173939	2.6683119D+12	17.828374	7
8	S-AG								8
9	S-AS								9
10	S-AU								10
11	S-B	50.597015	58.455645	3417.0624	302644.91	1.5151443	13152190.	1.1263989	11
12	S-BA	530.34091	387.62302	150251.61	2.0821769D+08	3.5751061	4.5434214D+11	20.125411	12
13	S-BE	1.3030303	0.5743142	0.3298368	0.8237799	4.3487301	2.8438894	26.140532	13
14	S-BI								14
15	S-CD								15
16	S-CO	20.423529	11.960626	143.05658	2435.3890	1.4233331	31862.624	1.5569184	16
17	S-CR	151.85897	329.45558	108540.98	1.7606348D+08	4.9235537	2.9844112D+11	25.332100	17
18	S-CU	40.317647	36.645084	1342.8622	89824.934	1.8253651	7817935.6	4.3354002	18
19	S-LA	20.000000	0.0	0.0	0.0	0.0	0.0	0.0	19
20	S-MO	9.0000000	1.7320508	3.0000000	-9.0000000	-1.7320508			20
21	S-NB								21
22	S-NI	69.840909	164.86253	27179.653	21845545.	4.8752516	1.8102602D+10	24.504914	22
23	S-PB	12.553191	4.0206451	16.165587	142.40672	2.1910044	1728.6288	6.6148311	23
24	S-SB								24
25	S-SC	16.523810	6.1856208	38.261905	161.11779	0.6807594	557.26942	0.3806554	25
26	S-SN								26
27	S-SR	307.14286	193.59361	37478.485	11534402.	1.5897252	3.6840511D+09	2.6227783	27
28	S-V	176.61111	106.33799	11307.768	1719756.4	1.4302158	3.3954937D+08	2.6555172	28
29	S-W								29
30	S-Y	25.804598	9.9672010	99.345095	676.38646	0.6830858	7001.2444	0.7093856	30
31	S-ZN	300.00000	173.20508	30000.000	9000000.0	1.7320508			31
32	S-ZR	116.25000	56.391744	3180.0287	62948.978	0.3510283	209325.11	0.0206995	32
33	S-TH								33

NOTE: THE ABOVE STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY.

Table 5. Frequency tables and histograms of analytical data (table 3) from rocks collected for background values, Eagle Rock and Glacier Peak Roadless study areas

[The following qualifiers are used in reporting spectrographic data: B, no determination made; N, concentration less than the detection limit; L, detected, but present at a concentration less than the value reported; T, not used; G, element present at a concentration greater than the upper calibration limit; and H, interfering spectra render analytical lines unusable.]

FREQUENCY TABLE FOR VARIABLE 3 (S-FE%)

LOG LIMITS LOWER	-	UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
	N		0	0	0.00	0.00		
	L		0	0	0.00	0.00		
	T		0	0	0.00	0.00	0.05	0.05
8.300E-02	-	2.497E-01	1	1	1.11	1.11	0.91	0.01
2.497E-01	-	4.163E-01	8	9	8.89	10.00	7.15	0.10
4.163E-01	-	5.830E-01	17	26	18.89	28.89	23.63	1.86
5.830E-01	-	7.497E-01	46	72	51.11	80.00	33.09	5.03
7.497E-01	-	9.163E-01	16	88	17.78	97.78	19.68	0.69
9.163E-01	-	1.083E+00	2	90	2.22	100.00	5.50	2.23
	G		0	90	0.00	100.00	0.05	0.05
	H		0	90				
	B		0	90				

TOTALS LESS H AND B 90

HISTOGRAM FOR VARIABLE 3 (S-FE%)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
 1.467E+00 X
 2.153E+00 XXXXXXXXX
 3.160E+00 XXXXXXXXXXXXXXXXXX
 4.638E+00 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
 6.808E+00 XXXXXXXXXXXXXXXXX
 9.992E+00 XX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

MINIMUM ANTILOG	=	1.50000E+00
MAXIMUM ANTILOG	=	1.00000E+01
GEOMETRIC MEAN	=	4.45196E+00
GEOMETRIC DEVIATION	=	1.49018E+00
VARIANCE OF LOGS	=	3.00118E-02

PERCENT TABLE FOR VARIABLE 3 (S-FE%) BY LINEAR INTERPOLATION FROM FREQUENCY TABLE
IF SELECTED PERCENTILES FALL WITHIN DATA EITHER ABOVE OR BELOW THE LIMITS OF DETECTION,
THE DATA VALUE ON THE TABLE IS GIVEN AS 0.9999991E 50

SELECTED PERCENTILE	DATA VALUE	ANTI LOG OF VALUE
25.00	5.486872E-01	3.537425E+00
50.00	6.518417E-01	4.485819E+00
75.00	7.333636E-01	5.412073E+00
90.00	8.434182E-01	6.972976E+00
95.00	8.902933E-01	7.767715E+00
97.00	9.090433E-01	8.110419E+00
99.00	1.000000E+35	1.000000E+35

Table 5. Frequency tables and histograms of analytical data (table 3) from rocks collected for background values, Eagle Rock and Glacier Peak Roadless study areas

FREQUENCY TABLE FOR VARIABLE 4 (S-MG%)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
	N	0	0	0.00	0.00		
	L	0	0	0.00	0.00		
	I	0	0	0.00	0.00	0.16	0.16
-5.840E-01	-4.173E-01	1	1	1.11	1.11	0.79	0.06
-4.173E-01	-2.507E-01	6	7	6.67	7.78	3.13	2.62
-2.507E-01	-8.400E-02	3	10	3.33	11.11	8.60	3.65
-8.400E-02	8.267E-02	16	26	17.78	28.89	16.35	0.01
8.267E-02	2.493E-01	25	51	27.78	56.67	21.52	0.56
2.493E-01	4.160E-01	24	75	26.67	83.33	19.62	0.98
4.160E-01	5.827E-01	3	78	3.33	86.67	12.38	7.11
5.827E-01	7.493E-01	12	90	13.33	100.00	7.44	2.79
	G	0	90	0.00	100.00	0.16	0.16
	H	0	90				
	B	0	90				

TOTALS LESS H AND B 90

HISTOGRAM FOR VARIABLE 4 (S-MG%)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
3.157E-01 X
4.634E-01 XXXXXXX
6.802E-01 XXX
9.985E-01 XXXXXXXXXXXXXXXXX
1.466E+00 XXXXXXXXXXXXXXXXXXXXXXXXXXXX
2.151E+00 XXXXXXXXXXXXXXXXXXXXXXXXXX
3.157E+00 XXX
4.634E+00 XXXXXXXXXXXXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

MINIMUM ANTILOG = 3.00000E-01
MAXIMUM ANTILOG = 5.00000E+00
GEOMETRIC MEAN = 1.61156E+00
GEOMETRIC DEVIATION = 1.86486E+00
VARIANCE OF LOGS = 7.32492E-02

PERCENT TABLE FOR VARIABLE 4 (S-MG%) BY LINEAR INTERPOLATION FROM FREQUENCY TABLE
IF SELECTED PERCENTILES FALL WITHIN DATA EITHER ABOVE OR BELOW THE LIMITS OF DETECTION,
THE DATA VALUE ON THE TABLE IS GIVEN AS 0.9999991E 50

SELECTED PERCENTILE	DATA VALUE	ANTI LOG OF VALUE			
			90.00	1.000000E+35	1.000000E+35
25.00	4.620959E-02	1.112268E+00	95.00	1.000000E+35	1.000000E+35
50.00	2.093349E-01	1.619328E+00	97.00	1.000000E+35	1.000000E+35
75.00	3.639186E-01	2.311631E+00	99.00	1.000000E+35	1.000000E+35

Table 5. Frequency tables and histograms of analytical data (table 3) from rocks collected for background values, Eagle Rock and Glacier Peak Roadless study areas

FREQUENCY TABLE FOR VARIABLE 5 (S-CA%)

LOG LIMITS LOWER	-	UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
	N		0	0	0.00	0.00		
	L		0	0	0.00	0.00		
	T		0	0	0.00	0.00	0.53	0.53
-4.170E-01	-	-2.503E-01	4	4	4.44	4.44	1.66	3.28
-2.503E-01	-	-8.367E-02	3	7	3.33	7.78	4.76	0.65
-8.367E-02	-	8.300E-02	12	19	13.33	21.11	10.19	0.32
8.300E-02	-	2.497E-01	11	30	12.22	33.33	16.26	1.70
2.497E-01	-	4.163E-01	21	51	23.33	56.67	19.38	0.14
4.163E-01	-	5.830E-01	14	65	15.56	72.22	17.25	0.61
5.830E-01	-	7.497E-01	21	86	23.33	95.56	11.46	7.94
7.497E-01	-	9.163E-01	3	89	3.33	98.89	5.69	1.27
9.163E-01	-	1.083E+00	1	90	1.11	100.00	2.83	1.18
	G		0	90	0.00	100.00	0.53	0.53
	H		0	90				
	B		0	90				

TOTALS LESS H AND B 90

HISTOGRAM FOR VARIABLE 5 (S-CA%)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
4.638E-01 XXXX
6.808E-01 XXX
9.992E-01 XXXXXXXXXXXXX
1.467E+00 XXXXXXXXXXXX
2.153E+00 XXXXXXXXXXXXXXXXXXXXXXXX
3.160E+00 XXXXXXXXXXXXXXXX
4.638E+00 XXXXXXXXXXXXXXXXXXXXXXX
6.808E+00 XXX
9.992E+00 X
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

MINIMUM ANTILOG = 5.00000E-01
MAXIMUM ANTILOG = 1.00000E+01
GEOMETRIC MEAN = 2.23776E+00
GEOMETRIC DEVIATION = 2.01626E+00
VARIANCE OF LOGS = 9.27491E-02

PERCENT TABLE FOR VARIABLE 5 (S-CA%) BY LINEAR INTERPOLATION FROM FREQUENCY TABLE
IF SELECTED PERCENTILES FALL WITHIN DATA EITHER ABOVE OR BELOW THE LIMITS OF DETECTION,
THE DATA VALUE ON THE TABLE IS GIVEN AS 0.9999991E 50

SELECTED PERCENTILE	DATA VALUE	ANTI LOG OF VALUE
25.00	1.360314E-01	1.367828E+00
50.00	3.687159E-01	2.337308E+00
75.00	6.028433E-01	4.007221E+00
90.00	7.099864E-01	5.128453E+00
95.00	7.457007E-01	5.568019E+00
97.00	8.218914E-01	6.635771E+00
99.00	1.000000E+35	1.000000E+35

Table 5. Frequency tables and histograms of analytical data (table 3) from rocks collected for background values, Eagle Rock and Glacier Peak Roadless study areas

FREQUENCY TABLE FOR VARIABLE 6 (S-TI%)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
	N	0	0	0.00	0.00		
	L	0	0	0.00	0.00		
	T	0	0	0.00	0.00	0.00	0.00
-1.417E+00	-1.250E+00	1	1	1.11	1.11	0.02	53.57
-1.250E+00	-1.084E+00	0	1	0.00	1.11	0.17	0.17
-1.084E+00	-9.170E-01	1	2	1.11	2.22	1.08	0.01
-9.170E-01	-7.503E-01	0	2	0.00	2.22	4.42	4.42
-7.503E-01	-5.837E-01	13	15	14.44	16.67	11.77	0.13
-5.837E-01	-4.170E-01	22	37	24.44	41.11	20.46	0.12
-4.170E-01	-2.503E-01	25	62	27.78	68.89	23.23	0.13
-2.503E-01	-8.366E-02	17	79	18.89	87.78	17.23	0.00
-8.366E-02	8.300E-02	8	87	8.89	96.67	11.61	1.12
	G	3	90	3.33	100.00	0.00	7057.76
	H	0	90				
	B	0	90				

TOTALS LESS H AND B 90

HISTOGRAM FOR VARIABLE 6 (S-TI%)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
4.638E-02 X
6.808E-02
9.992E-02 X
1.467E-01
2.153E-01 XXXXXXXXXXXXX
3.160E-01 XXXXXXXXXXXXXXXXXXXXXXXX
4.638E-01 XXXXXXXXXXXXXXXXXXXXXXXXXXXX
6.808E-01 XXXXXXXXXXXXXXXXXX
9.992E-01 XXXXXXXXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

MINIMUM ANTILOG	=	5.00000E-02
MAXIMUM ANTILOG	=	1.00000E+00
GEOMETRIC MEAN	=	4.16979E-01
GEOMETRIC DEVIATION	=	1.75934E+00
VARIANCE OF LOGS	=	6.01970E-02

PERCENT TABLE FOR VARIABLE 6 (S-TI%) BY LINEAR INTERPOLATION FROM FREQUENCY TABLE
IF SELECTED PERCENTILES FALL WITHIN DATA EITHER ABOVE OR BELOW THE LIMITS OF DETECTION,
THE DATA VALUE ON THE TABLE IS GIVEN AS 0.9999991E 50

SELECTED PERCENTILE	DATA VALUE	ANTI LOG OF VALUE
25.00	-5.268467E-01	2.972715E-01
50.00	-3.636646E-01	4.328480E-01
75.00	-1.964093E-01	6.361956E-01
90.00	-4.199725E-02	9.078263E-01
95.00	5.175293E-02	1.126556E+00
97.00	1.000000E+35	1.000000E+35
99.00	1.000000E+35	1.000000E+35

Table 5. Frequency tables and histograms of analytical data (table 3) from rocks collected for background values, Eagle Rock and Glacier Peak Roadless study areas

FREQUENCY TABLE FOR VARIABLE 7 (S-MN)

LOG LIMITS LOWER	-	UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
	N		0	0	0.00	0.00		
	L		0	0	0.00	0.00		
	T		0	0	0.00	0.00	0.36	0.36
2.416E+00	-	2.583E+00	1	1	1.11	1.11	2.62	1.01
2.583E+00	-	2.749E+00	15	16	16.67	17.78	10.85	1.59
2.749E+00	-	2.916E+00	25	41	27.78	45.56	23.86	0.05
2.916E+00	-	3.083E+00	30	71	33.33	78.89	27.95	0.15
3.083E+00	-	3.249E+00	8	79	8.89	87.78	17.44	5.11
3.249E+00	-	3.416E+00	10	89	11.11	98.89	5.79	3.05
3.416E+00	-	3.583E+00	0	89	0.00	98.89	1.02	1.02
3.583E+00	-	3.749E+00	1	90	1.11	100.00	0.10	8.07
	G		0	90	0.00	100.00	0.36	0.36
	H		0	90				
	B		0	90				

TOTALS LESS H AND B 90

HISTOGRAM FOR VARIABLE 7 (S-MN)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
3.157E+02 X
4.634E+02 XXXXXXXXXXXXXXXX
6.802E+02 XXXXXXXXXXXXXXXXXXXXXXXXXXXX
9.985E+02 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
1.466E+03 XXXXXXXXX
2.151E+03 XXXXXXXXXXX
3.157E+03
4.634E+03 X
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

MINIMUM ANTILOG = 3.00000E+02
MAXIMUM ANTILOG = 5.00000E+03
GEOMETRIC MEAN = 9.07522E+02
GEOMETRIC DEVIATION = 1.60073E+00
VARIANCE OF LOGS = 4.17462E-02

PERCENT TABLE FOR VARIABLE 7 (S-MN) BY LINEAR INTERPOLATION FROM FREQUENCY TABLE
IF SELECTED PERCENTILES FALL WITHIN DATA EITHER ABOVE OR BELOW THE LIMITS OF DETECTION,
THE DATA VALUE ON THE TABLE IS GIVEN AS 0.9999991E 50

SELECTED PERCENTILE	DATA VALUE	ANTI LOG OF VALUE
25.00	2.792667E+00	6.203938E+02
50.00	2.938223E+00	8.674077E+02
75.00	3.063224E+00	1.156707E+03
90.00	3.282668E+00	1.917204E+03
95.00	3.357669E+00	2.278602E+03
97.00	3.387669E+00	2.441567E+03
99.00	1.000000E+35	1.000000E+35

Table 5. Frequency tables and histograms of analytical data (table 3) from rocks collected for background values, Eagle Rock and Glacier Peak Roadless study areas

FREQUENCY TABLE FOR VARIABLE 11 (S-B)

LOG LIMITS LOWER	-	UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
	N		0	0	0.00	0.00		
	L		23	23	25.56	25.56		
	T		0	23	0.00	25.56	15.11	15.11
9.160E-01	-	1.083E+00	20	43	22.22	47.78	10.11	9.67
1.083E+00	-	1.249E+00	10	53	11.11	58.89	12.58	0.53
1.249E+00	-	1.416E+00	9	62	10.00	68.89	13.57	1.54
1.416E+00	-	1.583E+00	5	67	5.56	74.44	12.69	4.66
1.583E+00	-	1.749E+00	4	71	4.44	78.89	10.29	3.84
1.749E+00	-	1.916E+00	3	74	3.33	82.22	7.23	2.47
1.916E+00	-	2.083E+00	7	81	7.78	90.00	4.40	1.53
2.083E+00	-	2.249E+00	4	85	4.44	94.44	2.32	1.21
2.249E+00	-	2.416E+00	5	90	5.56	100.00	1.69	6.50
	G		0	90	0.00	100.00	0.00	0.00
	H		0	90				
	B		0	90				

TOTALS LESS H AND B 90

HISTOGRAM FOR VARIABLE 11 (S-B)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
9.985E+00 XXXXXXXXXXXXXXXXXXXXX
1.466E+01 XXXXXXXXXXX
2.151E+01 XXXXXXXXXX
3.157E+01 XXXXXX
4.634E+01 XXXX
6.802E+01 XXX
9.985E+01 XXXXXXXX
1.466E+02 XXXX
2.151E+02 XXXXXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

MINIMUM ANTILOG = 1.00000E+01
MAXIMUM ANTILOG = 2.00000E+02
GEOMETRIC MEAN = 2.84236E+01
GEOMETRIC DEVIATION = 2.84041E+00
VARIANCE OF LOGS = 2.05555E-01

PERCENT TABLE FOR VARIABLE 11 (S-B) BY LINEAR INTERPOLATION FROM FREQUENCY TABLE
IF SELECTED PERCENTILES FALL WITHIN DATA EITHER ABOVE OR BELOW THE LIMITS OF DETECTION,
THE DATA VALUE ON THE TABLE IS GIVEN AS 0.9999991E 50

SELECTED PERCENTILE	DATA VALUE	ANTI LOG OF VALUE
25.00	1.000000E+35	1.000000E+35
50.00	1.116000E+00	1.306172E+01
75.00	1.603501E+00	4.013298E+01
90.00	2.082669E+00	1.209676E+02
95.00	1.000000E+35	1.000000E+35
97.00	1.000000E+35	1.000000E+35
99.00	1.000000E+35	1.000000E+35

Table 5. Frequency tables and histograms of analytical data (table 3) from rocks collected for background values, Eagle Rock and Glacier Peak Roadless study areas

FREQUENCY TABLE FOR VARIABLE 12 (S-BA)

LOG LIMITS LOWER	-	UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
	N		2	2	2.22	2.22		
	L		0	2	0.00	2.22		
	T		0	2	0.00	2.22	0.02	0.02
1.250E+00	-	1.417E+00	1	3	1.11	3.33	0.07	12.60
1.417E+00	-	1.583E+00	0	3	0.00	3.33	0.26	0.26
1.583E+00	-	1.750E+00	2	5	2.22	5.56	0.83	1.66
1.750E+00	-	1.917E+00	0	5	0.00	5.56	2.16	2.16
1.917E+00	-	2.083E+00	4	9	4.44	10.00	4.67	0.10
2.083E+00	-	2.250E+00	3	12	3.33	13.33	8.35	3.43
2.250E+00	-	2.417E+00	4	16	4.44	17.78	12.35	5.65
2.417E+00	-	2.583E+00	14	30	15.56	33.33	15.13	0.09
2.583E+00	-	2.750E+00	32	62	35.56	68.89	15.35	18.07
2.750E+00	-	2.917E+00	21	83	23.33	92.22	12.88	5.12
2.917E+00	-	3.083E+00	5	88	5.56	97.78	8.95	1.74
3.083E+00	-	3.250E+00	0	88	0.00	97.78	5.15	5.15
3.250E+00	-	3.417E+00	1	89	1.11	98.89	2.45	0.86
3.417E+00	-	3.583E+00	1	90	1.11	100.00	1.39	0.11
	G		0	90	0.00	100.00	0.00	0.00
	H		0	90				
	B		0	90				

TOTALS LESS H AND B 90

HISTOGRAM FOR VARIABLE 12 (S-BA)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
2.154E+01 X
3.162E+01
4.642E+01 XX
6.813E+01
1.000E+02 XXXX
1.468E+02 XXX
2.154E+02 XXXX
3.162E+02 XXXXXXXXXXXXXXXX
4.642E+02 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
6.813E+02 XXXXXXXXXXXXXXXXXXXXXX
1.000E+03 XXXXXX
1.468E+03
2.154E+03 X
3.162E+03 X
```

PERCENT TABLE FOR VARIABLE 12 (S-BA) BY LINEAR INTERPOLATION FROM FREQUENCY TABLE IF SELECTED PERCENTILES FALL WITHIN DATA EITHER ABOVE OR BELOW THE LIMITS OF DETECTION.
THE DATA VALUE ON THE TABLE IS GIVEN AS 0.9999991E 50

SELECTED PERCENTILE	DATA VALUE	ANTI LOG OF VALUE
25.00	2.494050E+00	3.119249E+02
50.00	2.661461E+00	4.586286E+02
75.00	2.793654E+00	6.218045E+02
90.00	2.900797E+00	7.957872E+02
95.00	3.000004E+00	1.000003E+03
97.00	3.060004E+00	1.148163E+03
99.00	1.000000E+35	1.000000E+35

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      =  2.00000E+01
MAXIMUM ANTILOG      =  3.00000E+03
GEOMETRIC MEAN       =  4.21733E+02
GEOMETRIC DEVIATION  =  2.13498E+00
VARIANCE OF LOGS     =  1.08501E-01
```

Table 5. Frequency tables and histograms of analytical data (table 3) from rocks collected for background values, Eagle Rock and Glacier Peak Roadless study areas

FREQUENCY TABLE FOR VARIABLE 13 (S-BE)

LOG LIMITS LOWER	-	UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
	N		22	22	24.44	24.44		
	L		2	24	2.22	26.67		
	T		0	24	0.00	26.67	9.48	9.48
-8.400E-02	-	8.267E-02	40	64	44.44	71.11	40.37	0.00
8.267E-02	-	2.493E-01	18	82	20.00	91.11	34.40	7.82
2.493E-01	-	4.160E-01	7	89	7.78	98.89	5.59	0.36
4.160E-01	-	5.827E-01	0	89	0.00	98.89	0.00	0.00
5.827E-01	-	7.493E-01	1	90	1.11	100.00	0.16	4.32
	G		0	90	0.00	100.00	0.00	0.00
	H		0	90				
	B		0	90				

TOTALS LESS H AND B 90

HISTOGRAM FOR VARIABLE 13 (S-BE)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
 9.985E-01 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
 1.466E+00 XXXXXXXXXXXXXXXXXXX
 2.151E+00 XXXXXXXX
 3.157E+00
 4.634E+00 X
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

MINIMUM ANTILOG = 1.00000E+00
MAXIMUM ANTILOG = 5.00000E+00
GEOMETRIC MEAN = 1.23181E+00
GEOMETRIC DEVIATION = 1.35654E+00
VARIANCE OF LOGS = 1.75380E-02

PERCENT TABLE FOR VARIABLE 13 (S-BE) BY LINEAR INTERPOLATION FROM FREQUENCY TABLE
IF SELECTED PERCENTILES FALL WITHIN DATA EITHER ABOVE OR BELOW THE LIMITS OF DETECTION,
THE DATA VALUE ON THE TABLE IS GIVEN AS 0.9999991E 50

SELECTED PERCENTILE	DATA VALUE	ANTI LOG OF VALUE
25.00	1.000000E+35	1.000000E+35
50.00	1.000000E+35	1.000000E+35
75.00	1.150745E-01	1.303390E+00
90.00	2.400747E-01	1.738100E+00
95.00	3.326675E-01	2.151134E+00
97.00	3.755247E-01	2.374241E+00
99.00	1.000000E+35	1.000000E+35

Table 5. Frequency tables and histograms of analytical data (table 3) from rocks collected for background values, Eagle Rock and Glacier Peak Roadless study areas

FREQUENCY TABLE FOR VARIABLE 16 (S-CO)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		5	5	5.56	5.56		
L		0	5	0.00	5.56		
T		0	5	0.00	5.56	0.86	0.86
5.830E-01 -	7.497E-01	5	10	5.56	11.11	2.96	1.40
7.497E-01 -	9.163E-01	3	13	3.33	14.44	8.33	3.41
9.163E-01 -	1.083E+00	10	23	11.11	25.56	16.14	2.33
1.083E+00 -	1.250E+00	20	43	22.22	47.78	21.57	0.11
1.250E+00 -	1.416E+00	30	73	33.33	81.11	19.88	5.15
1.416E+00 -	1.583E+00	8	81	8.89	90.00	12.64	1.70
1.583E+00 -	1.750E+00	9	90	10.00	100.00	7.62	0.25
G		0	90	0.00	100.00	0.00	0.00
H		0	90				
B		0	90				

TOTALS LESS H AND B 90

HISTOGRAM FOR VARIABLE 16 (S-CO)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
4.638E+00 XXXXXX
6.808E+00 XXX
9.992E+00 XXXXXXXXXXX
1.467E+01 XXXXXXXXXXXXXXXXXXXXX
2.153E+01 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
3.160E+01 XXXXXXXXX
4.638E+01 XXXXXXXXXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

MINIMUM ANTILOG = 5.00000E+00
MAXIMUM ANTILOG = 5.00000E+01
GEOMETRIC MEAN = 1.75153E+01
GEOMETRIC DEVIATION = 1.75826E+00
VARIANCE OF LOGS = 6.00659E-02

PERCENT TABLE FOR VARIABLE 16 (S-CO) BY LINEAR INTERPOLATION FROM FREQUENCY TABLE
IF SELECTED PERCENTILES FALL WITHIN DATA EITHER ABOVE OR BELOW THE LIMITS OF DETECTION,
THE DATA VALUE ON THE TABLE IS GIVEN AS 0.9999991E 50

SELECTED PERCENTILE	DATA VALUE	ANTI LOG OF VALUE			
25.00	1.074668E+00	1.187593E+01			
50.00	1.260779E+00	1.822968E+01			
75.00	1.385779E+00	2.430969E+01			
90.00	1.583002E+00	3.828265E+01	97.00	1.000000E+35	1.000000E+35
95.00	1.000000E+35	1.000000E+35	99.00	1.000000E+35	1.000000E+35

Table 5. Frequency tables and histograms of analytical data (table 3) from rocks collected for background values, Eagle Rock and Glacier Peak Roadless study areas

FREQUENCY TABLE FOR VARIABLE 17 (S-CR)

LOG LIMITS LOWER	-	UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
	N		12	12	13.33	13.33		
	L		0	12	0.00	13.33		
	T		0	12	0.00	13.33	6.53	6.53
9.160E-01	-	1.083E+00	5	17	5.56	18.89	4.65	0.03
1.083E+00	-	1.249E+00	5	22	5.56	24.44	6.59	0.38
1.249E+00	-	1.416E+00	9	31	10.00	34.44	8.51	0.03
1.416E+00	-	1.583E+00	8	39	8.89	43.33	10.03	0.41
1.583E+00	-	1.749E+00	6	45	6.67	50.00	10.80	2.13
1.749E+00	-	1.916E+00	10	55	11.11	61.11	10.61	0.04
1.916E+00	-	2.083E+00	10	65	11.11	72.22	9.51	0.02
2.083E+00	-	2.249E+00	12	77	13.33	85.56	7.79	2.28
2.249E+00	-	2.416E+00	7	84	7.78	93.33	5.82	0.24
2.416E+00	-	2.583E+00	2	86	2.22	95.56	3.97	0.98
2.583E+00	-	2.749E+00	1	87	1.11	96.67	2.47	0.88
2.749E+00	-	2.916E+00	0	87	0.00	96.67	1.40	1.40
2.916E+00	-	3.083E+00	1	88	1.11	97.78	0.73	0.10
3.083E+00	-	3.249E+00	0	88	0.00	97.78	0.34	0.34
3.249E+00	-	3.416E+00	2	90	2.22	100.00	0.24	12.99
	G		0	90	0.00	100.00	0.00	0.00
	H		0	90				
	B		0	90				

TOTALS LESS H AND B 90

HISTOGRAM FOR VARIABLE 17 (S-CR)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
9.985E+00 XXXXXX
1.466E+01 XXXXXX
2.151E+01 XXXXXXXXXX
3.157E+01 XXXXXXXXX
4.634E+01 XXXXXXX
6.802E+01 XXXXXXXXXXX
9.985E+01 XXXXXXXXXX
1.466E+02 XXXXXXXXXXXX
2.151E+02 XXXXXXXX
3.157E+02 XX
4.635E+02 X
6.803E+02
9.985E+02 X
1.466E+03
2.151E+03 XX
```

PERCENT TABLE FOR VARIABLE 17 (S-CR) BY LINEAR INTERPOLATION FROM FREQUENCY TABLE
IF SELECTED PERCENTILES FALL WITHIN DATA EITHER ABOVE OR BELOW THE LIMITS OF DETECTION,
THE DATA VALUE ON THE TABLE IS GIVEN AS 0.9999991E 50

SELECTED PERCENTILE	DATA VALUE	ANTI LOG OF VALUE
25.00	1.258593E+00	1.813816E+01
50.00	1.749335E+00	5.614809E+01
75.00	2.117391E+00	1.310362E+02
90.00	2.344574E+00	2.210926E+02
95.00	2.541003E+00	3.475388E+02
97.00	2.849337E+00	7.068661E+02
99.00	1.000000E+35	1.0000C0E+35

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

MINIMUM ANTILOG = 1.00000E+01
MAXIMUM ANTILOG = 2.00000E+03
GEOMETRIC MEAN = 6.71847E+01
GEOMETRIC DEVIATION = 3.21155E+00
VARIANCE OF LOGS = 2.56759E-01

Table 5. Frequency tables and histograms of analytical data (table 3) from rocks collected for background values, Eagle Rock and Glacier Peak Roadless study areas

FREQUENCY TABLE FOR VARIABLE 18 (S-CU)

LOG LIMITS LOWER	-	UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
	N		3	3	3.33	3.33		
	L		2	5	2.22	5.56		
	T		0	5	0.00	5.56	2.31	2.31
5.830E-01	-	7.497E-01	3	8	3.33	8.89	3.14	0.01
7.497E-01	-	9.163E-01	6	14	6.67	15.56	5.77	0.01
9.163E-01	-	1.083E+00	9	23	10.00	25.56	9.08	0.00
1.083E+00	-	1.250E+00	12	35	13.33	38.89	12.21	0.00
1.250E+00	-	1.416E+00	10	45	11.11	50.00	14.05	1.17
1.416E+00	-	1.583E+00	10	55	11.11	61.11	13.81	1.05
1.583E+00	-	1.750E+00	16	71	17.78	78.89	11.61	1.66
1.750E+00	-	1.916E+00	10	81	11.11	90.00	8.34	0.33
1.916E+00	-	2.083E+00	6	87	6.67	96.67	5.12	0.15
2.083E+00	-	2.250E+00	2	89	2.22	98.89	2.69	0.18
2.250E+00	-	2.416E+00	1	90	1.11	100.00	1.88	0.41
	G		0	90	0.00	100.00	0.00	0.00
	H		0	90				
	B		0	90				

TOTALS LESS H AND B 90

HISTOGRAM FOR VARIABLE 18 (S-CU)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
4.638E+00 XXX
6.808E+00 XXXXXXX
9.992E+00 XXXXXXXXXX
1.467E+01 XXXXXXXXXXXX
2.153E+01 XXXXXXXXXX
3.160E+01 XXXXXXXXXX
4.638E+01 XXXXXXXXXXXXXXXXX
6.808E+01 XXXXXXXXXX
9.992E+01 XXXXXXX
1.467E+02 XX
2.153E+02 X
```

PERCENT TABLE FOR VARIABLE 18 (S-CU) BY LINEAR INTERPOLATION FROM FREQUENCY TABLE
IF SELECTED PERCENTILES FALL WITHIN DATA EITHER ABOVE OR BELOW THE LIMITS OF DETECTION, THE DATA VALUE ON THE TABLE IS GIVEN AS 0.9999991E 50

SELECTED PERCENTILE	DATA VALUE	ANTI LOG OF VALUE
25.00	1.073742E+00	1.185064E+01
50.00	1.416335E+00	2.608165E+01
75.00	1.713211E+00	5.166669E+01
90.00	1.916336E+00	8.247760E+01
95.00	2.041336E+00	1.099857E+02
97.00	2.108003E+00	1.282339E+02
99.00	1.000000E+35	1.000000E+35

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      = 5.00000E+00
MAXIMUM ANTILOG      = 2.00000E+02
GEOMETRIC MEAN       = 2.75049E+01
GEOMETRIC DEVIATION  = 2.47197E+00
VARIANCE OF LOGS     = 1.54483E-01
```

Table 5. Frequency tables and histograms of analytical data (table 3) from rocks collected for background values, Eagle Rock and Glacier Peak Roadless study areas

FREQUENCY TABLE FOR VARIABLE 20 (S-MO)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		87	87	96.67	96.67		
L		0	87	0.00	96.67		
T		0	87	0.00	96.67	73.66	73.66
7.500E-01 -	9.167E-01	1	88	1.11	97.78	0.00	0.00
9.167E-01 -	1.083E+00	2	90	2.22	100.00	16.34	12.59
G		0	90	0.00	100.00	0.00	0.00
H		0	90				
B		0	90				

TOTALS LESS H AND B 90

HISTOGRAM FOR VARIABLE 20 (S-MO)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

6.813E+00 X
1.000E+01 XX

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

MINIMUM ANTILOG = 7.00000E+00
MAXIMUM ANTILOG = 1.00000E+01
GEOMETRIC MEAN = 8.87904E+00
GEOMETRIC DEVIATION = 1.22866E+00
VARIANCE OF LOGS = 7.99820E-03

PERCENT TABLE FOR VARIABLE 20 (S-MO) BY LINEAR INTERPOLATION FROM FREQUENCY TABLE
IF SELECTED PERCENTILES FALL WITHIN DATA EITHER ABOVE OR BELOW THE LIMITS OF DETECTION,
THE DATA VALUE ON THE TABLE IS GIVEN AS 0.9999991E 50

SELECTED PERCENTILE	DATA VALUE	ANTI LOG OF VALUE
25.00	1.000000E+35	1.000000E+35
50.00	1.000000E+35	1.000000E+35
75.00	1.000000E+35	1.000000E+35
90.00	1.000000E+35	1.000000E+35
95.00	1.000000E+35	1.000000E+35
97.00	1.000000E+35	1.000000E+35
99.00	1.000000E+35	1.000000E+35

Table 5. Frequency tables and histograms of analytical data (table 3) from rocks collected for background values, Eagle Rock and Glacier Peak Roadless study areas

FREQUENCY TABLE FOR VARIABLE 22 (S-NI)

LOG LIMITS LOWER	-	UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
	N		2	2	2.22	2.22		
	L		0	2	0.00	2.22		
	T		0	2	0.00	2.22	5.38	5.38
5.830E-01	-	7.497E-01	11	13	12.22	14.44	4.20	11.02
7.497E-01	-	9.163E-01	3	16	3.33	17.78	6.16	1.62
9.163E-01	-	1.083E+00	13	29	14.44	32.22	8.22	2.78
1.083E+00	-	1.250E+00	10	39	11.11	43.33	9.97	0.00
1.250E+00	-	1.416E+00	6	45	6.67	50.00	10.98	2.26
1.416E+00	-	1.583E+00	12	57	13.33	63.33	10.98	0.09
1.583E+00	-	1.750E+00	10	67	11.11	74.44	9.99	0.00
1.750E+00	-	1.916E+00	8	75	8.89	83.33	8.25	0.01
1.916E+00	-	2.083E+00	8	83	8.89	92.22	6.20	0.52
2.083E+00	-	2.250E+00	1	84	1.11	93.33	4.23	2.46
2.250E+00	-	2.416E+00	3	87	3.33	96.67	2.62	0.05
2.416E+00	-	2.583E+00	0	87	0.00	96.67	1.48	1.48
2.583E+00	-	2.750E+00	0	87	0.00	96.67	0.76	0.76
2.750E+00	-	2.916E+00	1	88	1.11	97.78	0.35	1.20
2.916E+00	-	3.083E+00	2	90	2.22	100.00	0.23	13.32
	G		0	90	0.00	100.00	0.00	0.00
	H		0	90				
	B		0	90				

TOTALS LESS H AND B 90

HISTOGRAM FOR VARIABLE 22 (S-NI)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
4.638E+00 XXXXXXXXXXX
6.808E+00 XXX
9.992E+00 XXXXXXXXXXXXX
1.467E+01 XXXXXXXXXX
2.153E+01 XXXXXXX
3.160E+01 XXXXXXXXXXXX
4.638E+01 XXXXXXXXXX
6.808E+01 XXXXXXXXX
9.992E+01 XXXXXXXXX
1.467E+02 X
2.153E+02 XXX
3.160E+02
4.638E+02
6.808E+02 X
9.992E+02 XX
```

PERCENT TABLE FOR VARIABLE 22 (S-NI) BY LINEAR INTERPOLATION FROM FREQUENCY TABLE
IF SELECTED PERCENTILES FALL WITHIN DATA EITHER ABOVE OR BELOW THE LIMITS OF DETECTION, THE DATA VALUE ON THE TABLE IS GIVEN AS 0.9999991E 50

SELECTED PERCENTILE	DATA VALUE	ANTI LOG OF VALUE
25.00	9.996675E-01	9.992347E+00
50.00	1.416335E+00	2.608165E+01
75.00	1.760086E+00	5.755535E+01
90.00	2.041336E+00	1.099857E+02
95.00	2.333003E+00	2.152799E+02
97.00	2.566337E+00	3.684149E+02
99.00	1.000000E+35	1.000000E+35

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

MINIMUM ANTILOG = 5.00000E+00
MAXIMUM ANTILOG = 1.00000E+03
GEOMETRIC MEAN = 2.71639E+01
GEOMETRIC DEVIATION = 3.39742E+00
VARIANCE OF LOGS = 2.82119E-01

Table 5. Frequency tables and histograms of analytical data (table 3) from rocks collected for background values, Eagle Rock and Glacier Peak Roadless study areas

FREQUENCY TABLE FOR VARIABLE 23 (S-PB)

LOG LIMITS LOWER	-	UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
	N		26	26	28.89	28.89		
	L		17	43	18.89	47.78		
	T		0	43	0.00	47.78	7.78	7.78
9.160E-01	-	1.083E+00	29	72	32.22	80.00	52.18	10.30
1.083E+00	-	1.249E+00	14	86	15.56	95.56	28.86	7.65
1.249E+00	-	1.416E+00	3	89	3.33	98.89	1.18	2.81
1.416E+00	-	1.583E+00	1	90	1.11	100.00	0.00	371.39
	G		0	90	0.00	100.00	0.00	0.00
	H		0	90				
	B		0	90				

TOTALS LESS H AND B 90

HISTOGRAM FOR VARIABLE 23 (S-PB)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
 9.985E+00 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
 1.466E+01 XXXXXXXXXXXXXXX
 2.151E+01 XXX
 3.157E+01 X
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

MINIMUM ANTILOG = 1.00000E+01
MAXIMUM ANTILOG = 3.00000E+01
GEOMETRIC MEAN = 1.20731E+01
GEOMETRIC DEVIATION = 1.30617E+00
VARIANCE OF LOGS = 1.34561E-02

PERCENT TABLE FOR VARIABLE 23 (S-PB) BY LINEAR INTERPOLATION FROM FREQUENCY TABLE
IF SELECTED PERCENTILES FALL WITHIN DATA EITHER ABOVE OR BELOW THE LIMITS OF DETECTION,
THE DATA VALUE ON THE TABLE IS GIVEN AS 0.9999991E 50

SELECTED PERCENTILE	DATA VALUE	ANTI LOG OF VALUE
25.00	1.000000E+35	1.000000E+35
50.00	1.000000E+35	1.000000E+35
75.00	1.000000E+35	1.000000E+35
90.00	1.189810E+00	1.548139E+01
95.00	1.243382E+00	1.751385E+01
97.00	1.321556E+00	2.096797E+01
99.00	1.000000E+35	1.000000E+35

Table 5. Frequency tables and histograms of analytical data (table 3) from rocks collected for background values, Eagle Rock and Glacier Peak Roadless study areas

FREQUENCY TABLE FOR VARIABLE 25 (S-SC)

LOG LIMITS LOWER	-	UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
	N		0	0	0.00	0.00		
	L		0	0	0.00	0.00		
	T		0	0	0.00	0.00	0.09	0.09
7.500E-01	-	9.167E-01	1	1	4.76	4.76	0.98	0.00
9.167E-01	-	1.083E+00	5	6	23.81	28.57	4.46	0.07
1.083E+00	-	1.250E+00	6	12	28.57	57.14	8.00	0.50
1.250E+00	-	1.417E+00	7	19	33.33	90.48	5.69	0.30
1.417E+00	-	1.583E+00	2	21	9.52	100.00	1.78	0.03
	G		0	21	0.00	100.00	0.09	0.09
	H		0	21				
	B		69	90				

TOTALS LESS H AND B 21

HISTOGRAM FOR VARIABLE 25 (S-SC)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
6.813E+00 XXXXX
1.000E+01 XXXXXXXXXXXXXXXXXXXXXXX
1.468E+01 XXXXXXXXXXXXXXXXXXXXXXXXXXXX
2.154E+01 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
3.162E+01 XXXXXXXXXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

MINIMUM ANTILOG = 7.00000E+00
MAXIMUM ANTILOG = 3.00000E+01
GEOMETRIC MEAN = 1.54425E+01
GEOMETRIC DEVIATION = 1.46587E+00
VARIANCE OF LOGS = 2.75878E-02

PERCENT TABLE FOR VARIABLE 25 (S-SC) BY LINEAR INTERPOLATION FROM FREQUENCY TABLE
IF SELECTED PERCENTILES FALL WITHIN DATA EITHER ABOVE OR BELOW THE LIMITS OF DETECTION,
THE DATA VALUE ON THE TABLE IS GIVEN AS 0.9999991E 50

SELECTED PERCENTILE	DATA VALUE	ANTI LOG OF VALUE
25.00	1.058334E+00	1.143757E+01
50.00	1.208334E+00	1.615602E+01
75.00	1.339287E+00	2.184172E+01
90.00	1.414287E+00	2.595895E+01
95.00	1.000000E+35	1.000000E+35
97.00	1.000000E+35	1.000000E+35
99.00	1.000000E+35	1.000000E+35

Table 5. Frequency tables and histograms of analytical data (table 3) from rocks collected for background values, Eagle Rock and Glacier Peak Roadless study areas

FREQUENCY TABLE FOR VARIABLE 27 (S-SR)

LOG LIMITS LOWER	-	UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
	N		6	6	6.67	6.67		
	L		0	6	0.00	6.67		
	T		0	6	0.00	6.67	3.00	3.00
1.916E+00	-	2.083E+00	7	13	7.78	14.44	7.59	0.05
2.083E+00	-	2.249E+00	10	23	11.11	25.56	15.92	2.20
2.249E+00	-	2.416E+00	27	50	30.00	55.56	22.31	0.98
2.416E+00	-	2.583E+00	19	69	21.11	76.67	20.88	0.17
2.583E+00	-	2.749E+00	14	83	15.56	92.22	13.04	0.07
2.749E+00	-	2.916E+00	5	88	5.56	97.78	5.43	0.03
2.916E+00	-	3.083E+00	2	90	2.22	100.00	1.83	0.02
	G		0	90	0.00	100.00	0.00	0.00
	H		0	90				
	B		0	90				

TOTALS LESS H AND B 90

HISTOGRAM FOR VARIABLE 27 (S-SR)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
9.985E+01 XXXXXXXX
1.466E+02 XXXXXXXXXXX
2.151E+02 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
3.157E+02 XXXXXXXXXXXXXXXXXXXX
4.634E+02 XXXXXXXXXXXXXXXX
6.802E+02 XXXXXX
9.985E+02 XX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

MINIMUM ANTILOG = 1.00000E+02
MAXIMUM ANTILOG = 1.00000E+03
GEOMETRIC MEAN = 2.60766E+02
GEOMETRIC DEVIATION = 1.75359E+00
VARIANCE OF LOGS = 5.95005E-02

PERCENT TABLE FOR VARIABLE 27 (S-SR) BY LINEAR INTERPOLATION FROM FREQUENCY TABLE
IF SELECTED PERCENTILES FALL WITHIN DATA EITHER ABOVE OR BELOW THE LIMITS OF DETECTION,
THE DATA VALUE ON THE TABLE IS GIVEN AS 0.9999991E 50

SELECTED PERCENTILE	DATA VALUE	ANTI LOG OF VALUE			
25.00	2.241001E+00	1.741809E+02			
50.00	2.385137E+00	2.427374E+02			
75.00	2.569510E+00	3.711163E+02			
90.00	2.725525E+00	5.315271E+02	97.00	2.892669E+00	7.810317E+02
95.00	2.832669E+00	6.802499E+02	99.00	1.000000E+35	1.000000E+35

Table 5. Frequency tables and histograms of analytical data (table 3) from rocks collected for background values, Eagle Rock and Glacier Peak Roadless study areas

FREQUENCY TABLE FOR VARIABLE 28 (S-V)

LOG LIMITS LOWER	-	UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
	N		0	0	0.00	0.00		
	L		0	0	0.00	0.00		
	T		0	0	0.00	0.00	0.01	0.01
1.083E+00	-	1.250E+00	1	1	1.11	1.11	0.06	13.54
1.250E+00	-	1.416E+00	2	3	2.22	3.33	0.38	7.03
1.416E+00	-	1.583E+00	1	4	1.11	4.44	1.58	0.21
1.583E+00	-	1.750E+00	2	6	2.22	6.67	4.84	1.67
1.750E+00	-	1.916E+00	8	14	8.89	15.56	10.75	0.71
1.916E+00	-	2.083E+00	17	31	18.89	34.44	17.34	0.01
2.083E+00	-	2.250E+00	15	46	16.67	51.11	20.31	1.39
2.250E+00	-	2.416E+00	30	76	33.33	84.44	17.27	9.38
2.416E+00	-	2.583E+00	9	85	10.00	94.44	10.67	0.26
2.583E+00	-	2.750E+00	5	90	5.56	100.00	6.78	0.47
	G		0	90	0.00	100.00	0.01	0.01
	H		0	90				
	B		0	90				

TOTALS LESS H AND B 90

HISTOGRAM FOR VARIABLE 28 (S-V)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
1.467E+01 X
2.153E+01 XX
3.160E+01 X
4.638E+01 XX
6.808E+01 XXXXXXXXX
9.992E+01 XXXXXXXXXXXXXXXXXX
1.467E+02 XXXXXXXXXXXXXXXX
2.153E+02 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
3.160E+02 XXXXXXXXXX
4.638E+02 XXXXXX
```

PERCENT TABLE FOR VARIABLE 28 (S-V) BY LINEAR INTERPOLATION FROM FREQUENCY TABLE
IF SELECTED PERCENTILES FALL WITHIN DATA EITHER ABOVE OR BELOW THE LIMITS OF DETECTION, THE DATA VALUE ON THE TABLE IS GIVEN AS 0.9999991E 50

SELECTED PERCENTILE	DATA VALUE	ANTI LOG OF VALUE
25.00	1.999668E+00	9.992370E+01
50.00	2.238558E+00	1.732040E+02
75.00	2.369114E+00	2.339450E+02
90.00	2.508929E+00	3.227965E+02
95.00	1.000000E+35	1.000000E+35
97.00	1.000000E+35	1.000000E+35
99.00	1.000000E+35	1.000000E+35

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      = 1.50000E+01
MAXIMUM ANTILOG      = 5.00000E+02
GEOMETRIC MEAN       = 1.46312E+02
GEOMETRIC DEVIATION  = 1.95283E+00
VARIANCE OF LOGS     = 8.44863E-02
```

Table 5. Frequency tables and histograms of analytical data (table 3) from rocks collected for background values, Eagle Rock and Glacier Peak Roadless study areas

FREQUENCY TABLE FOR VARIABLE 30 (S-Y)

LOG LIMITS LOWER	-	UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
	N		3	3	3.33	3.33		
	L		0	3	0.00	3.33		
	T		0	3	0.00	3.33	0.73	0.73
9.160E-01	-	1.083E+00	7	10	7.78	11.11	5.15	0.67
1.083E+00	-	1.249E+00	11	21	12.22	23.33	18.19	2.84
1.249E+00	-	1.416E+00	20	41	22.22	45.56	30.52	3.62
1.416E+00	-	1.583E+00	42	83	46.67	92.22	24.36	12.77
1.583E+00	-	1.749E+00	7	90	7.78	100.00	11.05	1.49
	G		0	90	0.00	100.00	0.00	0.00
	H		0	90				
	B		0	90				

TOTALS LESS H AND B 90

HISTOGRAM FOR VARIABLE 30 (S-Y)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
9.985E+00 XXXXXXXX
1.466E+01 XXXXXXXXXXXX
2.151E+01 XXXXXXXXXXXXXXXXXXXXXX
3.157E+01 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
4.634E+01 XXXXXXXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

MINIMUM ANTILOG	=	1.00000E+01
MAXIMUM ANTILOG	=	5.00000E+01
GEOMETRIC MEAN	=	2.38803E+01
GEOMETRIC DEVIATION	=	1.50389E+00
VARIANCE OF LOGS	=	3.14059E-02

PERCENT TABLE FOR VARIABLE 30 (S-Y) BY LINEAR INTERPOLATION FROM FREQUENCY TABLE
IF SELECTED PERCENTILES FALL WITHIN DATA EITHER ABOVE OR BELOW THE LIMITS OF DETECTION,
THE DATA VALUE ON THE TABLE IS GIVEN AS 0.9999991E 50

SELECTED PERCENTILE	DATA VALUE	ANTI LOG OF VALUE
25.00	1.261834E+00	1.827402E+01
50.00	1.431874E+00	2.703174E+01
75.00	1.521160E+00	3.320167E+01
90.00	1.574731E+00	3.756051E+01
95.00	1.000000E+35	1.000000E+35
97.00	1.000000E+35	1.000000E+35
99.00	1.000000E+35	1.000000E+35

Table 5. Frequency tables and histograms of analytical data (table 3) from rocks collected for background values. Eagle Rock and Glacier Peak Roadless study areas

FREQUENCY TABLE FOR VARIABLE 31 (S-ZN)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		87	87	96.67	96.67		
L		0	87	0.00	96.67		
T		0	87	0.00	96.67	8.38	8.38
2.250E+00 -	2.417E+00	2	89	2.22	98.89	81.26	77.30
2.417E+00 -	2.583E+00	0	89	0.00	98.89	0.00	0.00
2.583E+00 -	2.750E+00	1	90	1.11	100.00	0.36	1.13
G		0	90	0.00	100.00	0.00	0.00
H		0	90				
B		0	90				

TOTALS LESS H AND B 90

HISTOGRAM FOR VARIABLE 31 (S-ZN)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
2.154E+02 XX
3.162E+02
4.642E+02 X
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      = 2.00000E+02
MAXIMUM ANTILOG      = 5.00000E+02
GEOMETRIC MEAN       = 2.71442E+02
GEOMETRIC DEVIATION  = 1.69727E+00
VARIANCE OF LOGS     = 5.27854E-02
```

PERCENT TABLE FOR VARIABLE 31 (S-ZN) BY LINEAR INTERPOLATION FROM FREQUENCY TABLE
IF SELECTED PERCENTILES FALL WITHIN DATA EITHER ABOVE OR BELOW THE LIMITS OF DETECTION,
THE DATA VALUE ON THE TABLE IS GIVEN AS 0.9999991E 50

SELECTED PERCENTILE	DATA VALUE	ANTI LOG OF VALUE
25.00	1.000000E+35	1.000000E+35
50.00	1.000000E+35	1.000000E+35
75.00	1.000000E+35	1.000000E+35
90.00	1.000000E+35	1.000000E+35
95.00	1.000000E+35	1.000000E+35
97.00	1.000000E+35	1.000000E+35
99.00	1.000000E+35	1.000000E+35

Table 5. Frequency tables and histograms of analytical data (table 3) from rocks collected for background values, Eagle Rock and Glacier Peak Roadless study areas

FREQUENCY TABLE FOR VARIABLE 32 (S-ZR)

LOG LIMITS LOWER	-	UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
	N		2	2	2.22	2.22		
	L		0	2	0.00	2.22		
	T		0	2	0.00	2.22	0.68	0.68
1.250E+00	-	1.417E+00	3	5	3.33	5.56	2.06	0.43
1.417E+00	-	1.583E+00	6	11	6.67	12.22	5.70	0.02
1.583E+00	-	1.750E+00	7	18	7.78	20.00	11.65	1.86
1.750E+00	-	1.917E+00	7	25	7.78	27.78	17.61	6.39
1.917E+00	-	2.083E+00	28	53	31.11	58.89	19.67	3.52
2.083E+00	-	2.250E+00	23	76	25.56	84.44	16.26	2.80
2.250E+00	-	2.417E+00	13	89	14.44	98.89	9.93	0.95
2.417E+00	-	2.583E+00	1	90	1.11	100.00	6.43	4.59
	G		0	90	0.00	100.00	0.00	0.00
	H		0	90				
	B		0	90				

TOTALS LESS H AND B 90

HISTOGRAM FOR VARIABLE 32 (S-ZR)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
2.154E+01 XXX
3.162E+01 XXXXXXX
4.642E+01 XXXXXXXX
6.813E+01 XXXXXXXX
1.000E+02 XXXXXXXXXXXXXXXXXXXXXXXXXXXXX
1.468E+02 XXXXXXXXXXXXXXXXXXXXXXXXX
2.154E+02 XXXXXXXXXXXXX
3.162E+02 X
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

MINIMUM ANTILOG = 2.00000E+01
MAXIMUM ANTILOG = 3.00000E+02
GEOMETRIC MEAN = 1.00039E+02
GEOMETRIC DEVIATION = 1.83319E+00
VARIANCE OF LOGS = 6.92788E-02

PERCENT TABLE FOR VARIABLE 32 (S-ZR) BY LINEAR INTERPOLATION FROM FREQUENCY TABLE
IF SELECTED PERCENTILES FALL WITHIN DATA EITHER ABOVE OR BELOW THE LIMITS OF DETECTION,
THE DATA VALUE ON THE TABLE IS GIVEN AS 0.9999991E 50

SELECTED PERCENTILE	DATA VALUE	ANTI LOG OF VALUE			
			90.00	2.314105E+00	2.061127E+02
25.00	1.857144E+00	7.196877E+01	95.00	2.371797E+00	2.353949E+02
50.00	2.035716E+00	1.085715E+02	97.00	2.394874E+00	2.482413E+02
75.00	2.188408E+00	1.543148E+02	99.00	1.000000E+35	1.000000E+35

Table 5. Frequency tables and histograms of analytical data (table 3) from rocks collected for background values, Eagle Rock and Glacier Peak Roadless study areas

FREQUENCY TABLE FOR VARIABLE 35 (INST-HG)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		44	44	58.67	58.67		
L		18	62	24.00	82.67		
T		0	62	0.00	82.67	27.87	27.87
-1.750E+00	-1.583E+00	5	67	6.67	89.33	2.53	2.41
-1.583E+00	-1.417E+00	0	67	0.00	89.33	2.59	2.59
-1.417E+00	-1.250E+00	1	68	1.33	90.67	2.62	1.00
-1.250E+00	-1.083E+00	0	68	0.00	90.67	2.63	2.63
-1.083E+00	-9.167E-01	1	69	1.33	92.00	2.63	1.01
-9.167E-01	-7.500E-01	0	69	0.00	92.00	2.60	2.60
-7.500E-01	-5.833E-01	0	69	0.00	92.00	2.56	2.56
-5.833E-01	-4.167E-01	0	69	0.00	92.00	2.49	2.49
-4.167E-01	-2.500E-01	0	69	0.00	92.00	2.41	2.41
-2.500E-01	-8.333E-02	0	69	0.00	92.00	2.32	2.32
-8.333E-02	8.334E-02	0	69	0.00	92.00	2.20	2.20
8.334E-02	2.500E-01	0	69	0.00	92.00	2.08	2.08
2.500E-01	4.167E-01	0	69	0.00	92.00	1.95	1.95
4.167E-01	5.833E-01	0	69	0.00	92.00	1.82	1.82
5.833E-01	7.500E-01	0	69	0.00	92.00	1.68	1.68
7.500E-01	9.167E-01	0	69	0.00	92.00	1.54	1.54
9.167E-01	1.083E+00	0	69	0.00	92.00	1.40	1.40
1.083E+00	1.250E+00	0	69	0.00	92.00	1.26	1.26
1.250E+00	1.417E+00	0	69	0.00	92.00	1.13	1.13
1.417E+00	1.583E+00	0	69	0.00	92.00	1.00	1.00
1.583E+00	1.750E+00	0	69	0.00	92.00	0.88	0.88
1.750E+00	1.917E+00	0	69	0.00	92.00	0.77	0.77
1.917E+00	2.083E+00	0	69	0.00	92.00	0.67	0.67
2.083E+00	2.250E+00	0	69	0.00	92.00	0.58	0.58
2.250E+00	2.417E+00	0	69	0.00	92.00	0.49	0.49
2.417E+00	2.583E+00	0	69	0.00	92.00	0.42	0.42
2.583E+00	2.750E+00	0	69	0.00	92.00	0.35	0.35
2.750E+00	2.917E+00	0	69	0.00	92.00	0.29	0.29
2.917E+00	3.083E+00	0	69	0.00	92.00	0.24	0.24
3.083E+00	3.250E+00	0	69	0.00	92.00	0.20	0.20
3.250E+00	3.417E+00	0	69	0.00	92.00	0.16	0.16
3.417E+00	3.583E+00	0	69	0.00	92.00	0.13	0.13
3.583E+00	3.750E+00	0	69	0.00	92.00	0.11	0.11
3.750E+00	3.917E+00	0	69	0.00	92.00	0.08	0.08
3.917E+00	4.083E+00	0	69	0.00	92.00	0.07	0.07
4.083E+00	4.250E+00	0	69	0.00	92.00	0.05	0.05
4.250E+00	4.417E+00	0	69	0.00	92.00	0.04	0.04
4.417E+00	4.583E+00	0	69	0.00	92.00	0.03	0.03
4.583E+00	4.750E+00	0	69	0.00	92.00	0.02	0.02
4.750E+00	4.917E+00	0	69	0.00	92.00	0.07	0.07
G		0	69	0.00	92.00	0.00	0.00
H		0	69				
B		15	84				

TOTALS LESS H AND B 75

Table 5. Frequency tables and histograms of analytical data (table 3) from rocks collected for background values, Eagle Rock and Glacier Peak Roadless study areas

```
3.162E-02
4.642E-02 X
6.813E-02
1.000E-01 X
1.468E-01
2.154E-01
3.162E-01
4.642E-01
6.813E-01
1.000E+00
1.468E+00
2.154E+00
3.162E+00
4.642E+00
6.813E+00
1.000E+01
1.468E+01
2.154E+01
3.162E+01
4.642E+01
6.813E+01
1.000E+02
1.468E+02
2.154E+02
3.162E+02
4.642E+02
6.813E+02
1.000E+03
1.468E+03
2.154E+03
3.162E+03
4.642E+03
6.813E+03
1.000E+04
1.468E+04
2.154E+04
3.162E+04
4.642E+04
6.813E+04
```

PERCENT TABLE FOR VARIABLE 35 (INST-HG) BY LINEAR INTERPOLATION FROM FREQUENCY TABLE
IF SELECTED PERCENTILES FALL WITHIN DATA EITHER ABOVE OR BELOW THE LIMITS OF DETECTION, THE DATA VALUE ON THE TABLE IS GIVEN AS 0.9999991E 50

SELECTED PERCENTILE	DATA VALUE	ANTI LOG OF VALUE
25.00	1.000000E+35	1.000000E+35
50.00	1.000000E+35	1.000000E+35
75.00	1.000000E+35	1.000000E+35
90.00	-1.416666E+00	3.831193E-02
95.00	1.000000E+35	1.000000E+35
97.00	1.000000E+35	1.000000E+35
99.00	1.000000E+35	1.000000E+35

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

MINIMUM ANTILOG	=	2.00000E-02
MAXIMUM ANTILOG	=	1.71437E+05
GEOMETRIC MEAN	=	3.83641E+01
GEOMETRIC DEVIATION	=	3.33942E+03
VARIANCE OF LOGS	=	1.24163E+01

Table 6. ICP analytical data from rocks collected for background values, Eagle Rock--Glacier Peak Roadless study areas

[The following qualifiers are used in reporting ICP analytical data: --, no determination made; <, concentration less than the given detection limit; L, detected, but data are qualitative only.]

Sample	Latitude	Longitude	Mg-ppm ICP	Ca-ppm ICP	Fe-ppm ICP	Ti-ppm ICP	Al-ppm ICP	V-ppm ICP	Cr-ppm ICP	Mn-ppm ICP	Co-ppm ICP	Ni-ppm ICP
DB2880	48 2 37	121 23 21	5,300	2,900	24,000	1,900	10,000	67.0	<.25	230	11.0	L2.3
DB6380	47 51 33	121 14 57	8,900	2,600	20,000	2,300	13,000	26.0	L5.70	210	9.7	7.7
DB6480	47 50 54	121 14 1	16,000	2,000	34,000	2,200	26,000	120.0	70.00	110	21.0	56.0
DB6780	47 50 3	121 15 8	17,000	1,700	42,000	3,500	29,000	120.0	47.00	290	18.0	28.0
DB79237	48 3 24	121 19 30	6,900	7,400	18,000	1,700	15,000	23.0	L8.20	200	8.6	4.1
JM12279	47 48 30	121 20 21	4,900	15,000	13,000	1,200	19,000	46.0	16.00	250	9.4	11.0
JTL79200	48 2 12	121 20 24	10,000	3,700	19,000	1,900	12,000	34.0	16.00	170	9.2	12.0
RTW30379	48 1 57	121 20 21	14,000	2,200	36,000	1,100	26,000	100.0	29.00	230	17.0	55.0
RTW30579	48 2 12	121 18 0	1,900	1,800	9,800	400	3,000	39.0	L4.70	52	L2.8	6.6
RTW30879	48 0 42	121 19 36	17,000	5,200	25,000	1,400	18,000	56.0	76.00	340	14.0	26.0
RTW31479	47 59 42	121 20 18	14,000	1,500	32,000	820	22,000	98.0	37.00	150	11.0	42.0
RTW32279	47 54 57	121 18 21	8,000	1,400	22,000	700	11,000	18.0	<.25	470	L5.7	3.8
RWT1668	47 53 54	121 25 15	6,700	3,400	22,000	2,100	11,000	38.0	<.25	250	11.0	5.1
RWT29879	48 2 33	121 18 0	6,100	12,000	13,000	840	22,000	48.0	36.00	110	10.0	23.0
RWT30280	48 2 36	121 18 6	14,000	5,100	34,000	1,600	26,000	110.0	47.00	250	19.0	54.0
RWT30380	48 2 36	121 18 6	6,900	15,000	17,000	840	29,000	69.0	33.00	110	17.0	34.0
RWT30480	48 2 36	121 18 6	13,000	3,500	31,000	1,800	18,000	93.0	47.00	170	19.0	46.0
RWT30679	48 1 0	121 19 45	17,000	1,100	35,000	1,900	24,000	110.0	59.00	110	14.0	34.0
RWT32079	47 50 12	121 26 42	6,600	2,800	20,000	2,100	8,600	44.0	<.25	130	11.0	13.0
RWT32379	47 54 57	121 18 48	15,000	1,100	35,000	1,900	21,000	100.0	34.00	280	18.0	33.0
RWT32479	47 55 18	121 18 33	14,000	3,800	31,000	410	16,000	98.0	46.00	160	17.0	48.0
RWT32579	47 55 21	121 18 0	6,100	5,400	17,000	820	11,000	65.0	14.00	130	11.0	10.0
RWT33380	47 57 48	121 19 0	4,700	7,600	20,000	100	9,900	9.1	<.25	530	8.2	4.3
RWT33580	47 56 10	121 20 48	5,100	15,000	29,000	1,600	35,000	120.0	<.25	160	13.0	L2.5
RWT34678	47 58 54	121 13 24	19,000	15,000	27,000	1,800	35,000	74.0	160.00	580	29.0	58.0
RWT35179	48 1 21	121 18 33	7,100	6,600	21,000	2,000	16,000	73.0	<.25	230	12.0	7.0
RWT352A9	48 0 3	121 20 24	2,800	6,900	6,100	840	5,100	L3.6	11.00	98	L4.5	13.0
RWT36678	47 58 3	121 19 30	15,000	5,000	32,000	1,800	18,000	46.0	36.00	570	19.0	36.0
RWT36778	48 2 57	121 18 57	18,000	6,500	37,000	610	24,000	110.0	54.00	230	19.0	49.0
RWT36978	48 2 39	121 19 36	8,200	15,000	26,000	75	12,000	36.0	<.25	620	10.0	18.0
RWT36979	47 57 56	121 19 48	6,500	12,000	17,000	720	20,000	42.0	<.54	230	6.6	3.5
RWT37079	47 58 33	121 19 15	18,000	3,700	39,000	2,000	24,000	110.0	84.00	240	22.0	59.0
RWT37179	48 3 9	121 20 30	7,000	3,700	12,000	650	9,500	42.0	L2.60	86	L5.7	9.7
RWT37380	47 58 33	121 17 33	5,200	2,800	16,000	180	9,000	26.0	L4.00	540	6.8	21.0
RWT37480	47 58 21	121 17 27	11,000	15,000	31,000	1,100	16,000	36.0	<.25	1,000	29.0	5.2
RWT37779	47 57 39	121 16 30	9,600	9,400	22,000	810	13,000	66.0	15.00	250	11.0	14.0
RWT38578	47 59 12	121 16 36	15,000	1,200	36,000	2,200	26,000	98.0	42.00	180	19.0	40.0
RWT38678	47 59 27	121 16 54	4,300	5,000	11,000	940	5,600	15.0	18.00	180	7.1	30.0
RWT39180	47 55 27	121 17 45	5,000	4,700	17,000	700	8,300	32.0	<.25	190	6.5	5.9
RWT41780	47 58 48	121 24 24	1,100	450	29,000	380	6,300	14.0	<.25	120	11.0	16.0
RWT41880	47 58 57	121 25 0	6,000	9,300	21,000	51	12,000	6.0	<.25	1,200	9.7	3.3
VF79465	47 44 51	121 20 24	6,200	15,000	22,000	25	10,000	24.0	68.00	550	9.8	16.0
VF79466	47 45 42	121 21 36	1,300	1,000	7,600	74	4,500	2.1	<.94	250	<2.4	L1.9
VF79474	47 45 9	121 20 3	2,600	1,200	14,000	590	6,100	18.0	<.27	320	L3.9	4.3
VF79475	48 2 54	121 21 12	7,400	3,500	13,000	1,100	7,500	18.0	11.00	150	7.7	9.1

Table 6. ICP analytical data from rocks collected for background values, Eagle Rock--Glacier Peak Roadless study areas

Sample	Cu-ppm ICP	Zn-ppm ICP	Mo-ppm ICP	Pb-ppm ICP	As-ppm ICP	Be-ppm ICP	Sr-ppm ICP	Ba-ppm ICP	La-ppm ICP	Ce-ppm ICP	Y-ppm ICP	Nb-ppm ICP
DB2880	6.60	25.0	<.77	<3.8	L16.0	L.063	9.9	170.0	3.10	L2.2	.260	3.00
DB6380	<.18	48.0	<.77	<3.8	<9.8	L.044	8.3	430.0	6.30	6.5	<.058	2.50
DB6480	16.00	94.0	<.77	<3.8	<4.3	1.100	5.3	390.0	4.80	<1.8	<.058	3.80
DB6780	21.00	91.0	3.00	<3.8	<4.3	.094	2.4	490.0	2.90	<1.8	<.058	5.40
DB79237	7.30	32.0	<.77	<3.8	<14.0	.120	49.0	320.0	1.20	<1.8	<.058	1.90
JM12279	14.00	23.0	<.77	<3.8	<19.0	L.073	36.0	6.5	1.80	<1.8	3.700	1.80
JTL79200	7.40	46.0	<.77	<3.8	<13.0	<.033	8.7	460.0	1.40	<1.8	<.058	2.10
RTW30379	41.00	44.0	L.82	<3.8	<5.9	.290	12.0	230.0	2.80	<1.8	<.058	L2.60
RTW30579	2.30	11.0	<.77	<3.8	L8.5	L.053	4.5	10.0	2.10	L3.6	.920	1.20
RTW30879	9.50	110.0	<.77	L4.0	L31.0	.170	21.0	61.0	1.30	<1.8	<.058	2.30
RTW31479	23.00	30.0	L.96	<3.8	<14.0	.250	4.2	220.0	5.30	L2.7	<.058	L2.40
RTW32279	1.80	82.0	<.77	<3.8	<12.0	.130	2.9	140.0	5.90	7.4	.510	.91
RWT1668	21.00	31.0	<.77	<3.8	<13.0	L.037	12.0	110.0	2.20	<1.8	<.058	2.90
RWT29879	15.00	31.0	<.77	<3.8	<10.0	.200	78.0	98.0	1.50	<1.8	<.058	1.60
RWT30280	55.00	61.0	L1.40	<3.8	<6.5	.190	28.0	130.0	1.80	<1.8	<.058	L3.10
RWT30380	34.00	35.0	<.77	<3.8	<9.1	.280	77.0	190.0	1.60	<1.8	<.058	L1.70
RWT30480	90.00	48.0	<.77	<3.8	<20.0	.120	19.0	130.0	1.80	<1.8	<.058	3.30
RWT30679	23.00	85.0	L1.10	<3.8	<18.0	.210	3.1	360.0	2.10	<1.8	<.058	3.70
RWT32079	11.00	21.0	<.77	<3.8	L13.0	<.033	8.1	130.0	4.20	L4.0	<.058	3.10
RWT32379	14.00	79.0	<.77	<3.8	<4.3	L.045	3.0	350.0	3.10	<1.8	<.058	3.00
RWT32479	66.00	76.0	<.77	<3.8	L28.0	.210	13.0	100.0	9.60	13.0	<.058	L2.40
RWT32579	37.00	31.0	<.77	<3.8	L19.0	L.076	13.0	22.0	3.60	L3.9	2.400	L1.80
RWT33380	5.40	50.0	<.77	<3.8	L17.0	.340	12.0	61.0	13.00	24.0	7.200	L.40
RWT33580	9.30	30.0	<.77	<3.8	<12.0	.120	74.0	97.0	3.70	<1.8	<.058	L3.20
RWT34678	120.00	38.0	<.77	<3.8	<10.0	L.037	12.0	7.0	1.60	<1.8	<.058	2.70
RWT35179	2.40	23.0	<.77	<3.8	L31.0	.110	21.0	170.0	3.20	<1.8	2.800	3.50
RWT352A9	<.18	9.5	<.77	<3.8	27.0	L.055	20.0	16.0	L1.00	<1.8	1.300	1.20
RWT36678	32.00	67.0	<.77	<3.8	<20.0	.140	8.2	13.0	3.60	<1.8	<.058	2.40
RWT36778	35.00	86.0	<.77	<3.8	<14.0	.340	10.0	110.0	11.00	12.0	<.058	L2.10
RWT36978	16.00	59.0	<.77	<3.8	L22.0	.340	19.0	54.0	15.00	25.0	11.000	L.62
RWT36979	3.90	23.0	<.77	<3.8	<7.3	.120	78.0	49.0	1.50	<1.8	<.058	L1.10
RWT37079	48.00	87.0	<.77	<3.8	<4.3	.130	9.2	200.0	L.95	<1.8	<.058	3.30
RWT37179	1.80	35.0	<.77	<3.8	L11.0	L.052	14.0	110.0	3.90	L4.2	.550	L1.20
RWT37380	53.00	21.0	3.90	<3.8	<8.2	.290	10.0	100.0	1.50	<1.8	<.058	L.51
RWT37480	9.60	40.0	<.77	<3.8	<19.0	.140	16.0	67.0	1.70	<1.8	<.058	1.60
RWT37779	55.00	35.0	<.77	<3.8	<14.0	L.057	15.0	15.0	3.50	<1.8	1.400	L1.60
RWT38578	3.20	100.0	<.77	<3.8	<4.3	.160	2.2	340.0	2.80	<1.8	<.058	3.10
RWT38678	4.60	21.0	<.77	<3.8	L13.0	L.047	5.4	34.0	L.46	<1.8	1.500	1.10
RWT39180	91.00	57.0	2.40	<3.8	L15.0	L.076	5.3	11.0	3.80	4.7	3.600	1.10
RWT41780	23.00	10.0	<.77	<3.8	<4.3	L.080	7.4	17.0	17.00	31.0	<.058	L.57
RWT41880	28.00	50.0	<.77	<3.8	80.0	.460	13.0	16.0	13.00	20.0	1.300	<.32
VF79465	24.00	59.0	<.77	<3.8	L24.0	.460	56.0	100.0	10.00	15.0	3.900	L.59
VF79466	4.10	25.0	<.77	L8.1	L6.8	.170	7.7	26.0	8.50	17.0	4.500	<.32
VF79474	1.60	28.0	<.77	<3.8	<6.8	.130	3.2	27.0	3.40	5.4	1.500	.94
VF79475	12.00	21.0	<.77	<3.8	L14.0	<.033	6.5	28.0	1.40	<1.8	<.058	1.40

Table 6. ICP analytical data from rocks collected for background values, Eagle Rock--Glacier Peak Roadless study areas--continued

Sample	Latitude	Longitude	Mg-ppm ICP	Ca-ppm ICP	Fe-ppm ICP	Ti-ppm ICP	Al-ppm ICP	V-ppm ICP	Cr-ppm ICP	Mn-ppm ICP	Co-ppm ICP	Ni-ppm ICP
VF79478	48 3 57	121 22 9	14,000	2,500	37,000	370	34,000	110.0	44.00	190	13.0	56.0
VF79480	48 4 30	121 23 9	6,000	15,000	25,000	790	24,000	62.0	L8.00	510	9.5	21.0
VF79487	47 43 45	121 21 42	25,000	8,100	47,000	3,200	26,000	79.0	49.00	610	32.0	52.0
VF79492	47 44 9	121 22 6	14,000	14,000	42,000	2,800	28,000	140.0	<.25	790	22.0	8.1
VF79493	47 44 9	121 22 6	20,000	13,000	51,000	3,700	41,000	110.0	L20.00	560	33.0	46.0
VF79495	47 44 27	121 22 6	4,400	2,500	18,000	820	11,000	21.0	<.25	420	6.2	4.0
VF79499	47 43 12	121 22 45	7,200	3,500	25,000	850	11,000	26.0	<1.30	410	12.0	4.1
VF79501	48 1 6	121 22 57	13,000	2,800	42,000	1,000	30,000	100.0	L9.30	370	21.0	53.0
VF79503	48 2 33	121 21 15	13,000	4,200	26,000	1,400	20,000	120.0	34.00	100	18.0	35.0
VF79505	48 2 42	121 21 36	12,000	1,700	36,000	1,000	27,000	110.0	28.00	310	18.0	61.0
VF79541	47 51 9	121 22 36	4,300	4,400	17,000	820	8,900	57.0	<.25	120	7.9	6.1
VF79542	47 54 21	121 20 42	7,100	4,500	25,000	520	9,100	94.0	<.25	170	12.0	5.9
VF79543	47 57 12	121 20 15	2,400	570	9,600	120	5,000	4.0	<.25	260	L3.5	L1.4
VF79546	47 57 24	121 19 57	4,900	1,800	23,000	630	13,000	14.0	<.25	560	6.5	7.7
VF79562	47 50 45	121 24 24	16,000	8,700	41,000	1,800	23,000	93.0	<.25	680	23.0	6.6
VF79564	47 50 48	121 24 18	13,000	12,000	36,000	1,600	29,000	89.0	<.25	670	18.0	10.0
VF79565	47 50 48	121 24 18	1,700	5,600	14,000	29	6,600	4.5	<.25	380	L2.6	<1.2
VF79567	47 48 0	121 23 30	7,700	5,300	26,000	830	13,000	85.0	<.25	210	12.0	8.7
VF79568	47 48 0	121 23 30	6,700	5,000	27,000	530	13,000	34.0	<.25	910	11.0	4.1
VF79569	47 48 3	121 23 33	3,800	2,000	20,000	500	6,100	43.0	<.25	200	6.2	L2.8
VF79570	47 47 54	121 23 24	4,400	15,000	24,000	890	25,000	85.0	<.25	150	12.0	4.7
VF80236	47 50 45	121 31 45	5,300	1,700	17,000	1,700	8,300	37.0	<3.40	150	9.0	9.1
VF80283	47 58 12	121 29 24	8,100	2,100	21,000	1,600	8,200	33.0	L7.50	160	12.0	15.0

Table 6. ICP analytical data from rocks collected for background values, Eagle Rock--Glacier Peak Roadless study areas--continued

Sample	Cu-ppm ICP	Zn-ppm ICP	Mo-ppm ICP	Pb-ppm ICP	As-ppm ICP	Be-ppm ICP	Sr-ppm ICP	Ba-ppm ICP	La-ppm ICP	Ce-ppm ICP	Y-ppm ICP	Nb-ppm ICP
VF79478	42.00	42.0	<.77	<3.8	<12.0	.780	21.0	160.0	3.60	<1.8	<.058	L2.20
VF79480	14.00	61.0	<.77	<3.8	<23.0	.390	65.0	66.0	2.60	<1.8	<.058	L1.80
VF79487	35.00	40.0	<.77	<3.8	<29.0	.330	20.0	36.0	3.20	<1.8	4.300	4.70
VF79492	25.00	78.0	<.77	<3.8	<19.0	.340	78.0	23.0	8.00	7.3	1.200	4.80
VF79493	78.00	56.0	<.77	<3.8	<42.0	.270	24.0	18.0	8.80	7.9	3.100	5.40
VF79495	3.00	37.0	<.77	<3.8	L20.0	.200	7.0	44.0	7.00	11.0	2.300	1.60
VF79499	7.70	45.0	<.77	<3.8	L16.0	.150	6.2	18.0	3.80	L3.9	1.800	1.60
VF79501	64.00	72.0	<.77	<3.8	<32.0	.770	16.0	120.0	6.10	L3.5	<.058	L2.80
VF79503	57.00	44.0	<.77	<3.8	<16.0	.370	17.0	200.0	2.80	<1.8	<.058	L3.30
VF79505	52.00	46.0	<.77	<3.8	<23.0	.590	14.0	100.0	5.70	L4.3	1.900	L3.00
VF79541	100.00	39.0	L1.00	L5.4	L21.0	L.077	9.5	21.0	3.50	4.8	3.500	2.00
VF79542	29.00	31.0	<.77	<3.8	L21.0	.082	9.1	7.6	3.40	L2.5	<.058	L2.30
VF79543	<.18	34.0	<.77	<3.8	L12.0	L.077	1.7	10.0	2.40	6.6	1.100	L.49
VF79546	5.50	59.0	<.77	L3.8	L18.0	.190	11.0	56.0	3.40	L4.1	3.600	.97
VF79562	40.00	67.0	<.77	<3.8	<13.0	.094	47.0	34.0	2.90	<1.8	<.058	2.90
VF79564	31.00	51.0	<.77	<3.8	<20.0	.160	33.0	12.0	5.30	L2.9	3.100	2.70
VF79565	4.00	29.0	<.77	9.8	L17.0	.270	6.3	27.0	7.10	14.0	2.900	<.32
VF79567	58.00	30.0	<.77	<3.8	L16.0	.120	30.0	20.0	4.90	6.6	3.600	L2.20
VF79568	<.18	88.0	<.77	<3.8	<13.0	.130	23.0	34.0	3.50	L2.1	3.200	1.20
VF79569	17.00	23.0	<.77	<3.8	L8.7	.089	8.7	17.0	2.90	L3.5	3.400	1.40
VF79570	21.00	27.0	<.77	<3.8	<19.0	.110	48.0	18.0	5.60	6.8	.810	L2.10
VF80236	18.00	19.0	<.77	<3.8	L15.0	L.061	6.0	110.0	3.00	L2.8	L.100	2.70
VF80283	43.00	19.0	<.77	<3.8	L17.0	L.049	3.9	110.0	2.40	<1.8	<.058	2.50

Table 7. Fisher-K statistics on ICP analytical data (table 6) from rocks collected for background values, Eagle Rock and Galcier Peak Roadless study areas

[The following qualifiers are used in reporting spectrographic data: B, no determination made; N, concentration less than the detection limit; L, detected, but present at a concentration less than the value reported; T, not used; G, element present at a concentration greater than the upper calibration limit; and H, interfering spectra render analytical lines unusable.]

NO	COLUMN	N	H	L	G	B	T	NO OF UNQUAL VALUES	NO OF IMPROPER QUAL VALUES	MINIMUM	MAXIMUM	NO
1	LATITUDE	0	0	0	0	0	0	68	0	47.720000	48.075000	1
2	LONGITUD	0	0	0	0	0	0	68	0	121.22333	121.52917	2
3	MG	0	0	0	0	0	0	68	0	1100.0000	25000.000	3
4	CA	0	0	0	0	0	0	68	0	450.00000	15000.000	4
5	FE	0	0	0	0	0	0	68	0	6100.0000	51000.000	5
6	TI	0	0	0	0	0	0	68	0	25.000000	3700.0000	6
7	AL	0	0	0	0	0	0	68	0	3000.0000	41000.000	7
8	V	0	0	1	0	0	0	67	0	2.1000000	140.00000	8
9	CR	30	0	9	0	0	0	29	0	11.000000	160.00000	9
10	MN	0	0	0	0	0	0	68	0	52.000000	1200.0000	10
11	CO	1	0	7	0	0	0	60	0	6.2000000	33.000000	11
12	NI	1	0	5	0	0	0	62	0	3.3000000	61.000000	12
13	CU	4	0	0	0	0	0	64	0	1.6000000	120.00000	13
14	ZN	0	0	0	0	0	0	68	0	9.5000000	110.00000	14
15	MO	60	0	5	0	0	0	3	0	2.4000000	3.9000000	15
16	PB	63	0	4	0	0	0	1	0	9.8000000	9.8000000	16
17	AS	40	0	26	0	0	0	2	0	27.000000	80.000000	17
18	BE	3	0	18	0	0	0	47	0	0.0820000	1.1000000	18
19	SR	0	0	0	0	0	0	68	0	1.7000000	78.000000	19
20	BA	0	0	0	0	0	0	68	0	6.5000000	490.00000	20
21	LA	0	0	3	0	0	0	65	0	1.2000000	17.000000	21
22	CE	33	0	15	0	0	0	20	0	4.7000000	31.000000	22
23	Y	35	0	1	0	0	0	32	0	0.2600000	11.000000	23
24	NB	3	0	25	0	0	0	40	0	0.9100000	5.4000000	24

Table 7. Fisher-K statistics on ICP analytical data (table 6) from rocks collected for background values, Eagle Rock and Glacier Peak Roadless study areas cont'd

NO	COLUMN	K1	SQRT(K2)	K2	K3	G1	K4	G2	NO
		MEAN	STD DEVIATION	VARIANCE		SKEWNESS		KURTOSIS	
1	LATITUDE	47.931413	0.1051158	0.0110493	-6.4317950D-04	-0.5537691	-1.1613117D-04	-0.9512124	1
2	LONGITUD	121.34369	0.0543163	0.0029503	1.0025121D-04	0.6256027	1.3769274D-05	1.5819389	2
3	MG	9255.8824	5385.4248	29002801.	1.0067805D+11	0.6445771	-2.7838555D+14	-0.3309534	3
4	CA	5913.5294	4732.5310	22396850.	9.9192171D+10	0.9358300	-2.4932479D+14	-0.4970403	4
5	FE	25075.000	10087.518	1.0175802D+08	3.7682340D+11	0.3671004	-4.6113074D+15	-0.4453349	5
6	TI	1195.2059	835.54616	698137.39	5.0753957D+08	0.8700788	3.2160668D+11	0.6598470	6
7	AL	16817.647	9044.7798	81808042.	4.0700509D+11	0.5500547	-3.9514066D+15	-0.5904182	7
8	V	61.040299	37.981048	1442.5600	11140.721	0.2033352	-2650205.0	-1.2735374	8
9	CR	43.482759	29.791682	887.54433	58893.756	2.2273279	5964977.9	7.5723160	9
10	MN	320.52941	235.70298	55555.895	20924277.	1.5979207	8.0659005D+09	2.6133198	10
11	CO	14.110000	6.4773844	41.956508	303.47924	1.1166832	1641.9230	0.9327260	11
12	NI	22.462903	19.008447	361.32106	5131.4174	0.7471322	-124909.79	-0.9567753	12
13	CU	28.796875	26.775101	716.90602	26559.968	1.3836753	890354.79	1.7323620	13
14	ZN	46.257353	24.267707	588.92159	10617.042	0.7428777	-101438.08	-0.2924732	14
15	MO	3.1000000	0.7549834	0.5700000	0.2520000	0.5855827			15
16	PB	9.8000000							16
17	AS	53.500000	37.476659	1404.5000					17
18	BE	0.2606170	0.2039138	0.0415809	0.0195648	2.3074613	0.0108200	6.2580981	18
19	SR	19.836765	20.887988	436.30803	16307.453	1.7893542	427855.01	2.2475544	19
20	BA	109.95735	120.99913	14640.789	2868019.4	1.6189571	4.2245331D+08	1.9708326	20
21	LA	4.5446154	3.4487784	11.894072	74.028113	1.8046826	441.29588	3.1193832	21
22	CE	12.300000	7.6107957	57.924211	498.43298	1.1306198	1533.2074	0.4569626	22
23	Y	2.7546875	2.1142908	4.4702257	20.260743	2.1436861	136.50282	6.8309756	23
24	NB	2.4830000	1.2118119	1.4684882	1.3896180	0.7808898	0.2846028	0.1319770	24

NOTE: THE ABOVE STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY.

Table 8. Frequency tables and histograms of ICP analytical data (table 6) from rocks collected for background values, Eagle Rock and Glacier Peak Roadless study areas

[The following qualifiers are used in reporting spectrographic data: B, no determination made; N, concentration less than the detection limit; L, detected, but present at a concentration less than the value reported; T, not used; G, element present at a concentration greater than the upper calibration limit; and H, interfering spectra render analytical lines unusable.]

FREQUENCY TABLE FOR VARIABLE 3 (MG)

LOG LIMITS LOWER	-	UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
	N		0	0	0.00	0.00		
	L		0	0	0.00	0.00		
	T		0	0	0.00	0.00	0.04	0.04
2.916E+00	-	3.083E+00	1	1	1.47	1.47	0.20	3.31
3.083E+00	-	3.249E+00	2	3	2.94	4.41	0.87	1.48
3.249E+00	-	3.416E+00	3	6	4.41	8.82	2.81	0.01
3.416E+00	-	3.583E+00	2	8	2.94	11.76	6.69	3.29
3.583E+00	-	3.749E+00	12	20	17.65	29.41	11.66	0.01
3.749E+00	-	3.916E+00	20	40	29.41	58.82	14.91	1.73
3.916E+00	-	4.083E+00	5	45	7.35	66.18	13.98	5.77
4.083E+00	-	4.249E+00	18	63	26.47	92.65	9.61	7.32
4.249E+00	-	4.416E+00	5	68	7.35	100.00	7.23	0.69
	G		0	68	0.00	100.00	0.04	0.04
	H		0	68				
	B		0	68				

TOTALS LESS H AND B 68

HISTOGRAM FOR VARIABLE 3 (MG)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
9.985E+02 X
1.466E+03 XXX
2.151E+03 XXXX
3.157E+03 XXX
4.634E+03 XXXXXXXXXXXXXXXXX
6.802E+03 XXXXXXXXXXXXXXXXXXXXXXXXXXXXX
9.985E+03 XXXXXXX
1.466E+04 XXXXXXXXXXXXXXXXXXXXXXXXX
2.151E+04 XXXXXXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

MINIMUM ANTILOG = 1.10000E+03
MAXIMUM ANTILOG = 2.50000E+04
GEOMETRIC MEAN = 7.60963E+03
GEOMETRIC DEVIATION = 1.97352E+00
VARIANCE OF LOGS = 8.71680E-02

PERCENT TABLE FOR VARIABLE 3 (MG) BY LINEAR INTERPOLATION FROM FREQUENCY TABLE
IF SELECTED PERCENTILES FALL WITHIN DATA EITHER ABOVE OR BELOW THE LIMITS OF DETECTION,
THE DATA VALUE ON THE TABLE IS GIVEN AS 0.9999991E 50

SELECTED PERCENTILE	DATA VALUE	ANTI LOG OF VALUE
25.00	3.707668E+00	5.101152E+03
50.00	3.866002E+00	7.345171E+03
75.00	4.138225E+00	1.374753E+04
90.00	4.232669E+00	1.708714E+04
95.00	1.000000E+35	1.000000E+35
98.00	1.000000E+35	1.000000E+35
99.00	1.000000E+35	1.000000E+35

Table 8. Frequency tables and histograms of ICP analytical data (table 6) from rocks collected for background values, Eagle Rock and Glacier Peak Roadless study areas.

FREQUENCY TABLE FOR VARIABLE 4 (CA)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		0	0	0.00	0.00		
L		0	0	0.00	0.00		
T		0	0	0.00	0.00	0.23	0.23
2.583E+00 -	2.750E+00	1	1	1.47	1.47	0.55	0.38
2.750E+00 -	2.916E+00	1	2	1.47	2.94	1.45	0.14
2.916E+00 -	3.083E+00	5	7	7.35	10.29	3.19	1.03
3.083E+00 -	3.250E+00	5	12	7.35	17.65	5.83	0.12
3.250E+00 -	3.416E+00	9	21	13.24	30.88	8.85	0.00
3.416E+00 -	3.583E+00	12	33	17.65	48.53	11.14	0.07
3.583E+00 -	3.750E+00	12	45	17.65	66.18	11.64	0.01
3.750E+00 -	3.916E+00	6	51	8.82	75.00	10.09	1.66
3.916E+00 -	4.083E+00	6	57	8.82	83.82	7.26	0.22
4.083E+00 -	4.250E+00	11	68	16.18	100.00	7.78	1.33
G		0	68	0.00	100.00	0.23	0.23
H		0	68				
B		0	68				

TOTALS LESS H AND B 68

HISTOGRAM FOR VARIABLE 4 (CA)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
4.638E+02 X
6.808E+02 X
9.992E+02 XXXXXXX
1.467E+03 XXXXXXX
2.153E+03 XXXXXXXXXXXXX
3.160E+03 XXXXXXXXXXXXXXXXX
4.638E+03 XXXXXXXXXXXXXXXXX
6.808E+03 XXXXXXXXX
9.992E+03 XXXXXXXXX
1.467E+04 XXXXXXXXXXXXXXX
```

PERCENT TABLE FOR VARIABLE 4 (CA) BY LINEAR INTERPOLATION FROM FREQUENCY TABLE
IF SELECTED PERCENTILES FALL WITHIN DATA EITHER ABOVE OR BELOW THE LIMITS OF DETECTION,
THE DATA VALUE ON THE TABLE IS GIVEN AS 0.9999991E 50

SELECTED PERCENTILE	DATA VALUE	ANTI LOG OF VALUE
25.00	3.342261E+00	2.199180E+03
50.00	3.596891E+00	3.952673E+03
75.00	3.916336E+00	8.247760E+03
90.00	1.000000E+35	1.000000E+35
95.00	1.000000E+35	1.000000E+35
98.00	1.000000E+35	1.000000E+35
99.00	1.000000E+35	1.000000E+35

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      = 4.50000E+02
MAXIMUM ANTILOG      = 1.50000E+04
GEOMETRIC MEAN       = 4.19058E+03
GEOMETRIC DEVIATION  = 2.41511E+00
VARIANCE OF LOGS     = 1.46640E-01
```

Table 8. Frequency tables and histograms of ICP analytical data (table 6) from rocks collected for background values, Eagle Rock and Glacier Peak Roadless study areas

FREQUENCY TABLE FOR VARIABLE 5 (FE)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		0	0	0.00	0.00		
L		0	0	0.00	0.00		
T		0	0	0.00	0.00	0.06	0.06
3.750E+00 -	3.917E+00	2	2	2.94	2.94	0.69	2.46
3.917E+00 -	4.083E+00	4	6	5.88	8.82	4.45	0.04
4.083E+00 -	4.250E+00	12	18	17.65	26.47	14.15	0.33
4.250E+00 -	4.417E+00	24	42	35.29	61.76	22.42	0.11
4.417E+00 -	4.583E+00	19	61	27.94	89.71	17.73	0.09
4.583E+00 -	4.750E+00	7	68	10.29	100.00	8.50	0.26
G		0	68	0.00	100.00	0.06	0.06
H		0	68				
B		0	68				

TOTALS LESS H AND B 68

HISTOGRAM FOR VARIABLE 5 (FE)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
6.813E+03 XXX
1.000E+04 XXXXXX
1.468E+04 XXXXXXXXXXXXXXXXX
2.154E+04 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
3.162E+04 XXXXXXXXXXXXXXXXXXXXXXXXXXX
4.642E+04 XXXXXXXXXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

MINIMUM ANTILOG = 6.10000E+03
MAXIMUM ANTILOG = 5.10000E+04
GEOMETRIC MEAN = 2.29301E+04
GEOMETRIC DEVIATION = 1.56243E+00
VARIANCE OF LOGS = 3.75586E-02

PERCENT TABLE FOR VARIABLE 5 (FE) BY LINEAR INTERPOLATION FROM FREQUENCY TABLE
IF SELECTED PERCENTILES FALL WITHIN DATA EITHER ABOVE OR BELOW THE LIMITS OF DETECTION,
THE DATA VALUE ON THE TABLE IS GIVEN AS 0.9999991E 50

SELECTED PERCENTILE	DATA VALUE	ANTI LOG OF VALUE
25.00	4.236112E+00	1.722313E+04
50.00	4.361112E+00	2.296743E+04
75.00	4.495616E+00	3.130513E+04
90.00	1.000000E+35	1.000000E+35
95.00	1.000000E+35	1.000000E+35
98.00	1.000000E+35	1.000000E+35
99.00	1.000000E+35	1.000000E+35

Table 8. Frequency tables and histograms of ICP analytical data (table 6) from rocks collected for background values, Eagle Rock and Glacier Peak Roadless study areas

FREQUENCY TABLE FOR VARIABLE 6 (TI)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		0	0	0.00	0.00		
L		0	0	0.00	0.00		
T		0	0	0.00	0.00	0.01	0.01
1.250E+00 -	1.417E+00	1	1	1.47	1.47	0.04	24.25
1.417E+00 -	1.583E+00	1	2	1.47	2.94	0.11	6.82
1.583E+00 -	1.750E+00	1	3	1.47	4.41	0.31	1.57
1.750E+00 -	1.917E+00	2	5	2.94	7.35	0.72	2.27
1.917E+00 -	2.083E+00	2	7	2.94	10.29	1.50	0.16
2.083E+00 -	2.250E+00	0	7	0.00	10.29	2.77	2.77
2.250E+00 -	2.417E+00	1	8	1.47	11.76	4.52	2.74
2.417E+00 -	2.583E+00	2	10	2.94	14.71	6.51	3.13
2.583E+00 -	2.750E+00	5	15	7.35	22.06	8.30	1.31
2.750E+00 -	2.917E+00	13	28	19.12	41.18	9.37	1.41
2.917E+00 -	3.083E+00	13	41	19.12	60.29	9.35	1.43
3.083E+00 -	3.250E+00	8	49	11.76	72.06	8.25	0.01
3.250E+00 -	3.417E+00	15	64	22.06	94.12	6.44	11.37
3.417E+00 -	3.583E+00	4	68	5.88	100.00	9.79	3.43
G		0	68	0.00	100.00	0.01	0.01
H		0	68				
B		0	68				

TOTALS LESS H AND B 68

HISTOGRAM FOR VARIABLE 6 (TI)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
2.154E+01 X
3.162E+01 X
4.642E+01 X
6.813E+01 XXX
1.000E+02 XXX
1.468E+02
2.154E+02 X
3.162E+02 XXX
4.642E+02 XXXXXXX
6.813E+02 XXXXXXXXXXXXXXXXXX
1.000E+03 XXXXXXXXXXXXXXXXXX
1.468E+03 XXXXXXXXXXX
2.154E+03 XXXXXXXXXXXXXXXXXXXX
3.162E+03 XXXXXX
```

PERCENT TABLE FOR VARIABLE 6 (TI) BY LINEAR INTERPOLATION FROM FREQUENCY TABLE
IF SELECTED PERCENTILES FALL WITHIN DATA EITHER ABOVE OR BELOW THE LIMITS OF DETECTION,
THE DATA VALUE ON THE TABLE IS GIVEN AS 0.9999991E 50

SELECTED PERCENTILE	DATA VALUE	ANTI LOG OF VALUE
25.00	2.775644E+00	5.965462E+02
50.00	2.993593E+00	9.853562E+02
75.00	3.272226E+00	1.871657E+03
90.00	3.385560E+00	2.429740E+03
95.00	1.000000E+35	1.000000E+35
98.00	1.000000E+35	1.000000E+35
99.00	1.000000E+35	1.000000E+35

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      =  2.50000E+01
MAXIMUM ANTILOG      =  3.70000E+03
GEOMETRIC MEAN       =  8.19926E+02
GEOMETRIC DEVIATION  =  2.97388E+00
VARIANCE OF LOGS     =  2.24035E-01
```

Table 8. Frequency tables and histograms of ICP analytical data (table 6) from rocks collected for background values, Eagle Rock and Glacier Peak Roadless study areas

FREQUENCY TABLE FOR VARIABLE 7 (AL)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		0	0	0.00	0.00		
L		0	0	0.00	0.00		
T		0	0	0.00	0.00	0.14	0.14
3.416E+00 -	3.583E+00	1	1	1.47	1.47	0.74	0.09
3.583E+00 -	3.749E+00	4	5	5.88	7.35	2.99	0.34
3.749E+00 -	3.916E+00	6	11	8.82	16.18	8.03	0.52
3.916E+00 -	4.083E+00	18	29	26.47	42.65	14.40	0.90
4.083E+00 -	4.249E+00	9	38	13.24	55.88	17.23	3.93
4.249E+00 -	4.416E+00	20	58	29.41	85.29	13.77	2.82
4.416E+00 -	4.583E+00	9	67	13.24	98.53	7.34	0.37
4.583E+00 -	4.749E+00	1	68	1.47	100.00	3.34	1.64
G		0	68	0.00	100.00	0.14	0.14
H		0	68				
B		0	68				

TOTALS LESS H AND B 68

HISTOGRAM FOR VARIABLE 7 (AL)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
3.157E+03 X
4.634E+03 XXXXXX
6.802E+03 XXXXXXXXX
9.985E+03 XXXXXXXXXXXXXXXXXXXXXXXXXX
1.466E+04 XXXXXXXXXXXXX
2.151E+04 XXXXXXXXXXXXXXXXXXXXXXXXXXXXX
3.157E+04 XXXXXXXXXXXXX
4.634E+04 X
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

MINIMUM ANTILOG = 3.00000E+03
MAXIMUM ANTILOG = 4.10000E+04
GEOMETRIC MEAN = 1.43467E+04
GEOMETRIC DEVIATION = 1.81005E+00
VARIANCE OF LOGS = 6.64046E-02

PERCENT TABLE FOR VARIABLE 7 (AL) BY LINEAR INTERPOLATION FROM FREQUENCY TABLE
IF SELECTED PERCENTILES FALL WITHIN DATA EITHER ABOVE OR BELOW THE LIMITS OF DETECTION,
THE DATA VALUE ON THE TABLE IS GIVEN AS 0.9999991E 50

SELECTED PERCENTILE	DATA VALUE	ANTI LOG OF VALUE			
			90.00	4.475261E+00	2.987180E+04
25.00	3.971557E+00	9.366055E+03	95.00	4.538225E+00	3.453222E+04
50.00	4.175261E+00	1.497134E+04	98.00	4.576002E+00	3.767058E+04
75.00	4.357669E+00	2.278603E+04	99.00	1.000000E+35	1.000000E+35

Table 8. Frequency tables and histograms of ICP analytical data (table 6) from rocks collected for background values, Eagle Rock and Glacier Peak Roadless study areas

FREQUENCY TABLE FOR VARIABLE 8 (V)

LOG LIMITS LOWER	-	UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
	N		0	0	0.00	0.00		
	L		1	1	1.47	1.47		
	T		0	1	0.00	1.47	0.03	0.03
2.500E-01	-	4.167E-01	1	2	1.47	2.94	0.08	9.90
4.167E-01	-	5.833E-01	0	2	0.00	2.94	0.27	0.27
5.833E-01	-	7.500E-01	2	4	2.94	5.88	0.73	2.20
7.500E-01	-	9.167E-01	1	5	1.47	7.35	1.70	0.29
9.167E-01	-	1.083E+00	1	6	1.47	8.82	3.36	1.66
1.083E+00	-	1.250E+00	3	9	4.41	13.24	5.70	1.28
1.250E+00	-	1.417E+00	9	18	13.24	26.47	8.24	0.07
1.417E+00	-	1.583E+00	8	26	11.76	38.24	10.18	0.47
1.583E+00	-	1.750E+00	9	35	13.24	51.47	10.75	0.28
1.750E+00	-	1.917E+00	9	44	13.24	64.71	9.69	0.05
1.917E+00	-	2.083E+00	23	67	33.82	98.53	7.46	32.34
2.083E+00	-	2.250E+00	1	68	1.47	100.00	9.80	7.91
	G		0	68	0.00	100.00	0.00	0.00
	H		0	68				
	B		0	68				

TOTALS LESS H AND B 68

HISTOGRAM FOR VARIABLE 8 (V)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
2.154E+00 X
3.162E+00
4.642E+00 XXX
6.813E+00 X
1.000E+01 X
1.468E+01 XXXX
2.154E+01 XXXXXXXXXXXX
3.162E+01 XXXXXXXXXXX
4.642E+01 XXXXXXXXXXXX
6.813E+01 XXXXXXXXXXXX
1.000E+02 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
1.468E+02 X
```

PERCENT TABLE FOR VARIABLE 8 (V) BY LINEAR INTERPOLATION FROM FREQUENCY TABLE
IF SELECTED PERCENTILES FALL WITHIN DATA EITHER ABOVE OR BELOW THE LIMITS OF DETECTION, THE DATA VALUE ON THE TABLE IS GIVEN AS 0.9999991E 50

SELECTED PERCENTILE	DATA VALUE	ANTI LOG OF VALUE
25.00	1.398150E+00	2.501212E+01
50.00	1.731484E+00	5.388705E+01
75.00	1.967395E+00	9.276726E+01
90.00	2.041308E+00	1.099785E+02
95.00	2.065946E+00	1.163980E+02
98.00	2.080728E+00	1.204282E+02
99.00	1.000000E+35	1.000000E+35

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      = 2.10000E+00
MAXIMUM ANTILOG      = 1.40000E+02
GEOMETRIC MEAN       = 4.53567E+01
GEOMETRIC DEVIATION  = 2.50130E+00
VARIANCE OF LOGS     = 1.58535E-01
```

Table 8. Frequency tables and histograms of ICP analytical data (table 6) from rocks collected for background values, Eagle Rock and Glacier Peak Roadless study areas

FREQUENCY TABLE FOR VARIABLE 9 (CR)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		30	30	44.12	44.12		
L		9	39	13.24	57.35		
T		0	39	0.00	57.35	43.70	43.70
9.160E+01 -	1.083E+00	2	41	2.94	60.29	4.05	1.04
1.083E+00 -	1.249E+00	4	45	5.88	66.18	3.71	0.02
1.249E+00 -	1.416E+00	1	46	1.47	67.65	3.31	1.61
1.416E+00 -	1.583E+00	8	54	11.76	79.41	2.87	9.17
1.583E+00 -	1.749E+00	8	62	11.76	91.18	2.42	12.83
1.749E+00 -	1.916E+00	4	66	5.88	97.06	1.99	2.03
1.916E+00 -	2.083E+00	1	67	1.47	98.53	1.59	0.22
2.083E+00 -	2.249E+00	1	68	1.47	100.00	4.35	2.58
G		0	68	0.00	100.00	0.00	0.00
H		0	68				
B		0	68				

TOTALS LESS H AND B 68

HISTOGRAM FOR VARIABLE 9 (CR)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
9.985E+00 XXX
1.466E+01 XXXXXX
2.151E+01 X
3.157E+01 XXXXXXXXXXXX
4.634E+01 XXXXXXXXXXXX
6.802E+01 XXXXXX
9.985E+01 X
1.466E+02 X
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

MINIMUM ANTILOG = 1.10000E+01
MAXIMUM ANTILOG = 1.60000E+02
GEOMETRIC MEAN = 3.58107E+01
GEOMETRIC DEVIATION = 1.90227E+00
VARIANCE OF LOGS = 7.79932E-02

PERCENT TABLE FOR VARIABLE 9 (CR) BY LINEAR INTERPOLATION FROM FREQUENCY TABLE
IF SELECTED PERCENTILES FALL WITHIN DATA EITHER ABOVE OR BELOW THE LIMITS OF DETECTION,
THE DATA VALUE ON THE TABLE IS GIVEN AS 0.9999991E 50

SELECTED PERCENTILE	DATA VALUE	ANTI LOG OF VALUE
25.00	1.000000E+35	1.000000E+35
50.00	1.000000E+35	1.000000E+35
75.00	1.520168E+00	3.312592E+01
90.00	1.732668E+00	5.403415E+01
95.00	1.857669E+00	7.205573E+01
98.00	2.022669E+00	1.053583E+02
99.00	1.000000E+35	1.000000E+35

Table 8. Frequency tables and histograms of ICP analytical data (table 6) from rocks collected for background values, Eagle Rock and Glacier Peak Roadless study areas

FREQUENCY TABLE FOR VARIABLE 10 (MN)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		0	0	0.00	0.00		
L		0	0	0.00	0.00		
T		0	0	0.00	0.00	0.15	0.15
1.583E+00 -	1.750E+00	1	1	1.47	1.47	0.65	0.19
1.750E+00 -	1.916E+00	0	1	0.00	1.47	2.29	2.29
1.916E+00 -	2.083E+00	9	10	13.24	14.71	5.89	1.64
2.083E+00 -	2.250E+00	12	22	17.65	32.35	10.99	0.09
2.250E+00 -	2.416E+00	20	42	29.41	61.76	14.87	1.77
2.416E+00 -	2.583E+00	7	49	10.29	72.06	14.61	3.97
2.583E+00 -	2.750E+00	9	58	13.24	85.29	10.43	0.20
2.750E+00 -	2.916E+00	7	65	10.29	95.59	5.40	0.47
2.916E+00 -	3.083E+00	3	68	4.41	100.00	2.71	0.03
G		0	68	0.00	100.00	0.15	0.15
H		0	68				
B		0	68				

TOTALS LESS H AND B 68

HISTOGRAM FOR VARIABLE 10 (MN)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
4.638E+01 X
6.808E+01
9.992E+01 XXXXXXXXXXXX
1.467E+02 XXXXXXXXXXXXXXXXX
2.153E+02 XXXXXXXXXXXXXXXXXXXXXXXXXXXXX
3.160E+02 XXXXXXXXXX
4.638E+02 XXXXXXXXXXXX
6.808E+02 XXXXXXXXXX
9.992E+02 XXXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

MINIMUM ANTILOG	=	5.20000E+01
MAXIMUM ANTILOG	=	1.20000E+03
GEOMETRIC MEAN	=	2.55441E+02
GEOMETRIC DEVIATION	=	1.95243E+00
VARIANCE OF LOGS	=	8.44343E-02

PERCENT TABLE FOR VARIABLE 10 (MN) BY LINEAR INTERPOLATION FROM FREQUENCY TABLE
IF SELECTED PERCENTILES FALL WITHIN DATA EITHER ABOVE OR BELOW THE LIMITS OF DETECTION,
THE DATA VALUE ON THE TABLE IS GIVEN AS 0.9999991E 50

SELECTED PERCENTILE	DATA VALUE	ANTI LOG OF VALUE
25.00	2.180223E+00	1.514340E+02
50.00	2.349668E+00	2.237011E+02
75.00	2.620039E+00	4.169069E+02
90.00	2.825860E+00	6.696681E+02
95.00	2.906812E+00	8.068860E+02
98.00	1.000000E+35	1.000000E+35
99.00	1.000000E+35	1.000000E+35

Table 8. Frequency tables and histograms of ICP analytical data (table 6) from rocks collected for background values, Eagle Rock and Glacier Peak Roadless study areas.

FREQUENCY TABLE FOR VARIABLE 11 (CO)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		1	1	1.47	1.47		
L		7	8	10.29	11.76		
T		0	8	0.00	11.76	8.33	8.33
7.500E-01 -	9.167E-01	10	18	14.71	26.47	12.52	0.51
9.167E-01 -	1.083E+00	24	42	35.29	61.76	17.25	2.64
1.083E+00 -	1.250E+00	7	49	10.29	72.06	15.67	4.80
1.250E+00 -	1.417E+00	15	64	22.06	94.12	9.38	3.37
1.417E+00 -	1.583E+00	4	68	5.88	100.00	4.85	0.15
G		0	68	0.00	100.00	0.00	0.00
H		0	68				
B		0	68				

TOTALS LESS H AND B 68

HISTOGRAM FOR VARIABLE 11 (CO)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
6.813E+00 XXXXXXXXXXXXXX
1.000E+01 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
1.468E+01 XXXXXXXXXX
2.154E+01 XXXXXXXXXXXXXXXXXXXXX
3.162E+01 XXXXXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

MINIMUM ANTILOG	=	6.20000E+00
MAXIMUM ANTILOG	=	3.30000E+01
GEOMETRIC MEAN	=	1.28368E+01
GEOMETRIC DEVIATION	=	1.54272E+00
VARIANCE OF LOGS	=	3.54515E-02

PERCENT TABLE FOR VARIABLE 11 (CO) BY LINEAR INTERPOLATION FROM FREQUENCY TABLE
IF SELECTED PERCENTILES FALL WITHIN DATA EITHER ABOVE OR BELOW THE LIMITS OF DETECTION,
THE DATA VALUE ON THE TABLE IS GIVEN AS 0.9999991E 50

SELECTED PERCENTILE	DATA VALUE	ANTI LOG OF VALUE
25.00	1.000000E+35	1.000000E+35
50.00	1.027778E+00	1.066052E+01
75.00	1.272223E+00	1.871644E+01
90.00	1.385557E+00	2.429723E+01
95.00	1.000000E+35	1.000000E+35
98.00	1.000000E+35	1.000000E+35
99.00	1.000000E+35	1.000000E+35

Table 8. Frequency tables and histograms of ICP analytical data (table 6) from rocks collected for background values, Eagle Rock and Glacier Peak Roadless study areas

FREQUENCY TABLE FOR VARIABLE 12 (NI)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		1	1	1.47	1.47		
L		5	6	7.35	8.82		
T		0	6	0.00	8.82	5.04	5.04
4.160E-01 -	5.827E-01	3	9	4.41	13.24	4.32	0.40
5.827E-01 -	7.493E-01	9	18	13.24	26.47	6.33	1.13
7.493E-01 -	9.160E-01	9	27	13.24	39.71	8.19	0.08
9.160E-01 -	1.083E+00	8	35	11.76	51.47	9.37	0.20
1.083E+00 -	1.249E+00	6	41	8.82	60.29	9.46	1.27
1.249E+00 -	1.416E+00	5	46	7.35	67.65	8.44	1.40
1.416E+00 -	1.583E+00	7	53	10.29	77.94	6.64	0.02
1.583E+00 -	1.749E+00	12	65	17.65	95.59	4.62	11.79
1.749E+00 -	1.916E+00	3	68	4.41	100.00	5.59	1.20
G		0	68	0.00	100.00	0.00	0.00
H		0	68				
B		0	68				

TOTALS LESS H AND B 68

HISTOGRAM FOR VARIABLE 12 (NI)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
3.157E+00 XXXX
4.634E+00 XXXXXXXXXXXX
6.802E+00 XXXXXXXXXXXX
9.985E+00 XXXXXXXXXXX
1.466E+01 XXXXXXXXX
2.151E+01 XXXXXXX
3.157E+01 XXXXXXXXXX
4.634E+01 XXXXXXXXXXXXXXXXX
6.803E+01 XXXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

MINIMUM ANTILOG = 3.30000E+00
MAXIMUM ANTILOG = 6.10000E+01
GEOMETRIC MEAN = 1.49319E+01
GEOMETRIC DEVIATION = 2.58602E+00
VARIANCE OF LOGS = 1.70265E-01

PERCENT TABLE FOR VARIABLE 12 (NI) BY LINEAR INTERPOLATION FROM FREQUENCY TABLE
IF SELECTED PERCENTILES FALL WITHIN DATA EITHER ABOVE OR BELOW THE LIMITS OF DETECTION,
THE DATA VALUE ON THE TABLE IS GIVEN AS 0.9999991E 50

SELECTED PERCENTILE	DATA VALUE	ANTI LOG OF VALUE
25.00	7.308154E-01	5.380411E+00
50.00	1.061835E+00	1.153014E+01
75.00	1.535050E+00	3.428071E+01
90.00	1.696558E+00	4.972309E+01
95.00	1.743780E+00	5.543454E+01
98.00	1.000000E+35	1.000000E+35
99.00	1.000000E+35	1.000000E+35

Table 8. Frequency tables and histograms of ICP analytical data (table 6) from rocks collected for background values, Eagle Rock and Glacier Peak Roadless study areas

FREQUENCY TABLE FOR VARIABLE 13 (CU)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		4	4	5.88	5.88		
L		0	4	0.00	5.88		
T		0	4	0.00	5.88	4.03	4.03
8.300E-02 -	2.497E-01	1	5	1.47	7.35	2.43	0.84
2.497E-01 -	4.163E-01	4	9	5.88	13.24	3.36	0.12
4.163E-01 -	5.830E-01	2	11	2.94	16.18	4.37	1.29
5.830E-01 -	7.497E-01	6	17	8.82	25.00	5.35	0.08
7.497E-01 -	9.163E-01	4	21	5.88	30.88	6.15	0.75
9.163E-01 -	1.083E+00	5	26	7.35	38.24	6.65	0.41
1.083E+00 -	1.250E+00	7	33	10.29	48.53	6.75	0.01
1.250E+00 -	1.416E+00	9	42	13.24	61.76	6.44	1.02
1.416E+00 -	1.583E+00	8	50	11.76	73.53	5.77	0.86
1.583E+00 -	1.750E+00	9	59	13.24	86.76	4.87	3.51
1.750E+00 -	1.916E+00	5	64	7.35	94.12	3.85	0.34
1.916E+00 -	2.083E+00	4	68	5.88	100.00	7.98	1.99
G		0	68	0.00	100.00	0.00	0.00
H		0	68				
B		0	68				

TOTALS LESS H AND B 68

HISTOGRAM FOR VARIABLE 13 (CU)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
1.467E+00 X
2.153E+00 XXXXXX
3.160E+00 XXX
4.638E+00 XXXXXXXXX
6.808E+00 XXXXXX
9.992E+00 XXXXXXX
1.467E+01 XXXXXXXXXX
2.153E+01 XXXXXXXXXXXX
3.160E+01 XXXXXXXXXXX
4.638E+01 XXXXXXXXXXXX
6.808E+01 XXXXXXX
9.992E+01 XXXXXX
```

PERCENT TABLE FOR VARIABLE 13 (CU) BY LINEAR INTERPOLATION FROM FREQUENCY TABLE
IF SELECTED PERCENTILES FALL WITHIN DATA EITHER ABOVE OR BELOW THE LIMITS OF DETECTION,
THE DATA VALUE ON THE TABLE IS GIVEN AS 0.9999991E 50

SELECTED PERCENTILE	DATA VALUE	ANTI LOG OF VALUE
25.00	7.496680E-01	5.619116E+00
50.00	1.268188E+00	1.854332E+01
75.00	1.601522E+00	3.995044E+01
90.00	1.823003E+00	6.652785E+01
95.00	1.000000E+35	1.000000E+35
98.00	1.000000E+35	1.000000E+35
99.00	1.000000E+35	1.000000E+35

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      = 1.60000E+00
MAXIMUM ANTILOG      = 1.20000E+02
GEOMETRIC MEAN       = 1.74053E+01
GEOMETRIC DEVIATION  = 3.07201E+00
VARIANCE OF LOGS     = 2.37580E-01
```

Table 8. Frequency tables and histograms of ICP analytical data (table 6) from rocks collected for background values, Eagle Rock and Glacier Peak Roadless study areas

FREQUENCY TABLE FOR VARIABLE 14 (ZN)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		0	0	0.00	0.00		
L		0	0	0.00	0.00		
T		0	0	0.00	0.00	0.15	0.15
9.160E-01 -	1.083E+00	3	3	4.41	4.41	0.92	4.71
1.083E+00 -	1.249E+00	0	3	0.00	4.41	3.82	3.82
1.249E+00 -	1.416E+00	12	15	17.65	22.06	10.05	0.38
1.416E+00 -	1.583E+00	17	32	25.00	47.06	16.76	0.00
1.583E+00 -	1.749E+00	15	47	22.06	69.12	17.73	0.42
1.749E+00 -	1.916E+00	13	60	19.12	88.24	11.89	0.10
1.916E+00 -	2.083E+00	8	68	11.76	100.00	6.68	0.26
G		0	68	0.00	100.00	0.15	0.15
H		0	68				
B		0	68				

TOTALS LESS H AND B 68

HISTOGRAM FOR VARIABLE 14 (ZN)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
9.985E+00 XXXX
1.466E+01
2.151E+01 XXXXXXXXXXXXXXXXX
3.157E+01 XXXXXXXXXXXXXXXXXXXXXXXXX
4.634E+01 XXXXXXXXXXXXXXXXXXXXXX
6.802E+01 XXXXXXXXXXXXXXXXXX
9.985E+01 XXXXXXXXXXXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      = 9.50000E+00
MAXIMUM ANTILOG      = 1.10000E+02
GEOMETRIC MEAN       = 4.01050E+01
GEOMETRIC DEVIATION  = 1.74648E+00
VARIANCE OF LOGS     = 5.86433E-02
```

PERCENT TABLE FOR VARIABLE 14 (ZN) BY LINEAR INTERPOLATION FROM FREQUENCY TABLE
IF SELECTED PERCENTILES FALL WITHIN DATA EITHER ABOVE OR BELOW THE LIMITS OF DETECTION,
THE DATA VALUE ON THE TABLE IS GIVEN AS 0.9999991E 50

SELECTED PERCENTILE	DATA VALUE	ANTI LOG OF VALUE			
25.00	1.435609E+00	2.726521E+01	98.00	1.000000E+35	1.000000E+35
50.00	1.604890E+00	4.026153E+01	99.00	1.000000E+35	1.000000E+35
75.00	1.800617E+00	6.318546E+01			
90.00	1.000000E+35	1.000000E+35			
95.00	1.000000E+35	1.000000E+35			

Table 8. Frequency tables and histograms of ICP analytical data (table 6) from rocks collected for background values, Eagle Rock and Glacier Peak Roadless study areas

FREQUENCY TABLE FOR VARIABLE 15 (MO)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
	N	60	60	88.24	88.24		
	L	5	65	7.35	95.59		
	T	0	65	0.00	95.59	67.62	67.62
2.500E-01 -	4.167E-01	1	66	1.47	97.06	0.37	1.05
4.167E-01 -	5.833E-01	1	67	1.47	98.53	0.00	0.00
5.833E-01 -	7.500E-01	1	68	1.47	100.00	0.00	227.89
	G	0	68	0.00	100.00	0.00	0.00
	H	0	68				
	B	0	68				

TOTALS LESS H AND B 68

HISTOGRAM FOR VARIABLE 15 (MO)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

2.154E+00 X
3.162E+00 X
4.642E+00 X

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

MINIMUM ANTILOG = 2.40000E+00
MAXIMUM ANTILOG = 3.90000E+00
GEOMETRIC MEAN = 3.03948E+00
GEOMETRIC DEVIATION = 1.27509E+00
VARIANCE OF LOGS = 1.11390E-02

PERCENT TABLE FOR VARIABLE 15 (MO) BY LINEAR INTERPOLATION FROM FREQUENCY TABLE
IF SELECTED PERCENTILES FALL WITHIN DATA EITHER ABOVE OR BELOW THE LIMITS OF DETECTION,
THE DATA VALUE ON THE TABLE IS GIVEN AS 0.9999991E 50

SELECTED PERCENTILE	DATA VALUE	ANTI LOG OF VALUE
25.00	1.000000E+35	1.000000E+35
50.00	1.000000E+35	1.000000E+35
75.00	1.000000E+35	1.000000E+35
90.00	1.000000E+35	1.000000E+35
95.00	1.000000E+35	1.000000E+35
98.00	5.233339E-01	3.336829E+00
99.00	1.000000E+35	1.000000E+35

Table 8. Frequency tables and histograms of ICP analytical data (table 6) from rocks collected for background values, Eagle Rock and Glacier Peak Roadless study areas

FREQUENCY TABLE FOR VARIABLE 17 (AS)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		40	40	58.82	58.82		
L		26	66	38.24	97.06		
T		0	66	0.00	97.06	58.31	58.31
1.416E+00 -	1.583E+00	1	67	1.47	98.53	6.82	4.97
1.583E+00 -	1.749E+00	0	67	0.00	98.53	2.29	2.29
1.749E+00 -	1.916E+00	1	68	1.47	100.00	0.59	0.29
G		0	68	0.00	100.00	0.00	0.00
H		0	68				
B		0	68				

TOTALS LESS H AND B 68

HISTOGRAM FOR VARIABLE 17 (AS)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

3.157E+01 X
4.634E+01
6.802E+01 X

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

MINIMUM ANTILOG = 2.70000E+01
MAXIMUM ANTILOG = 8.00000E+01
GEOMETRIC MEAN = 4.64758E+01
GEOMETRIC DEVIATION = 2.15556E+00
VARIANCE OF LOGS = 1.11263E-01

PERCENT TABLE FOR VARIABLE 17 (AS) BY LINEAR INTERPOLATION FROM FREQUENCY TABLE
IF SELECTED PERCENTILES FALL WITHIN DATA EITHER ABOVE OR BELOW THE LIMITS OF DETECTION,
THE DATA VALUE ON THE TABLE IS GIVEN AS 0.9999991E 50

SELECTED PERCENTILE	DATA VALUE	ANTI LOG OF VALUE
25.00	1.000000E+35	1.000000E+35
50.00	1.000000E+35	1.000000E+35
75.00	1.000000E+35	1.000000E+35
90.00	1.000000E+35	1.000000E+35
95.00	1.000000E+35	1.000000E+35
98.00	1.000000E+35	1.000000E+35
99.00	1.000000E+35	1.000000E+35

Table 8. Frequency tables and histograms of ICP analytical data (table 6) from rocks collected for background values, Eagle Rock and Glacier Peak Roadless study areas

FREQUENCY TABLE FOR VARIABLE 18 (BE)

LOG LIMITS LOWER - UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N	3	3	4.41	4.41		
L	18	21	26.47	30.88		
T	0	21	0.00	30.88	9.78	9.78
-1.250E+00 - -1.083E+00	1	22	1.47	32.35	8.71	6.82
-1.083E+00 - -9.167E-01	10	32	14.71	47.06	11.43	0.18
-9.167E-01 - -7.500E-01	11	43	16.18	63.24	12.23	0.12
-7.500E-01 - -5.833E-01	7	50	10.29	73.53	10.67	1.26
-5.833E-01 - -4.167E-01	11	61	16.18	89.71	7.58	1.54
-4.167E-01 - -2.500E-01	3	64	4.41	94.12	4.39	0.44
-2.500E-01 - -8.333E-02	3	67	4.41	98.53	2.07	0.41
-8.333E-02 - 8.334E-02	1	68	1.47	100.00	1.13	0.01
G	0	68	0.00	100.00	0.00	0.00
H	0	68				
B	0	68				

TOTALS LESS H AND B 68

HISTOGRAM FOR VARIABLE 18 (BE)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
6.813E-02 X
1.000E-01 XXXXXXXXXXXXXX
1.468E-01 XXXXXXXXXXXXXXXX
2.154E-01 XXXXXXXXXX
3.162E-01 XXXXXXXXXXXXXXXX
4.642E-01 XXXX
6.813E-01 XXXX
1.000E+00 X
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

MINIMUM ANTILOG = 8.20000E-02
MAXIMUM ANTILOG = 1.10000E+00
GEOMETRIC MEAN = 2.10967E-01
GEOMETRIC DEVIATION = 1.85860E+00
VARIANCE OF LOGS = 7.24613E-02

PERCENT TABLE FOR VARIABLE 18 (BE) BY LINEAR INTERPOLATION FROM FREQUENCY TABLE
IF SELECTED PERCENTILES FALL WITHIN DATA EITHER ABOVE OR BELOW THE LIMITS OF DETECTION,
THE DATA VALUE ON THE TABLE IS GIVEN AS 0.9999991E 30

SELECTED PERCENTILE	DATA VALUE	ANTI LOG OF VALUE
25.00	1.000000E+35	1.000000E+35
50.00	-8.863629E-01	1.299084E-01
75.00	-5.681804E-01	2.702835E-01
90.00	-4.055539E-01	3.930485E-01
95.00	-2.166646E-01	6.072051E-01
98.00	-1.033310E-01	7.882591E-01
99.00	1.000000E+35	1.000000E+35

Table 8. Frequency tables and histograms of ICP analytical data (table 6) from rocks collected for background values, Eagle Rock and Glacier Peak Roadless study areas

FREQUENCY TABLE FOR VARIABLE 19 (SR) -

LOG LIMITS LOWER	-	UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
	N		0	0	0.00	0.00		
	L		0	0	0.00	0.00		
	T		0	0	0.00	0.00	0.46	0.46
8.300E-02	-	2.497E-01	1	1	1.47	1.47	0.86	0.02
2.497E-01	-	4.163E-01	2	3	2.94	4.41	1.96	0.00
4.163E-01	-	5.830E-01	4	7	5.88	10.29	3.80	0.01
5.830E-01	-	7.497E-01	6	13	8.82	19.12	6.28	0.01
7.497E-01	-	9.163E-01	9	22	13.24	32.35	8.82	0.00
9.163E-01	-	1.083E+00	14	36	20.59	52.94	10.55	1.13
1.083E+00	-	1.250E+00	9	45	13.24	66.18	10.75	0.28
1.250E+00	-	1.416E+00	9	54	13.24	79.41	9.32	0.01
1.416E+00	-	1.583E+00	4	58	5.88	85.29	6.89	1.21
1.583E+00	-	1.750E+00	4	62	5.88	91.18	4.33	0.03
1.750E+00	-	1.916E+00	6	68	8.82	100.00	3.97	1.04
	G		0	68	0.00	100.00	0.46	0.46
	H		0	68				
	B		0	68				

TOTALS LESS H AND B 68

HISTOGRAM FOR VARIABLE 19 (SR)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
1.467E+00 X
2.153E+00 XXX
3.160E+00 XXXXXX
4.638E+00 XXXXXXXXX
6.808E+00 XXXXXXXXXXXXX
9.992E+00 XXXXXXXXXXXXXXXXXXXXX
1.467E+01 XXXXXXXXXXXXX
2.153E+01 XXXXXXXXXXXXX
3.160E+01 XXXXXX
4.638E+01 XXXXXX
6.808E+01 XXXXXXXXX
```

PERCENT TABLE FOR VARIABLE 19 (SR) BY LINEAR INTERPOLATION FROM FREQUENCY TABLE
IF SELECTED PERCENTILES FALL WITHIN DATA EITHER ABOVE OR BELOW THE LIMITS OF DETECTION, THE DATA VALUE ON THE TABLE IS GIVEN AS 0.9999991E 50

SELECTED PERCENTILE	DATA VALUE	ANTI LOG OF VALUE
25.00	8.237422E-01	6.664111E+00
50.00	1.059192E+00	1.146021E+01
75.00	1.360780E+00	2.294988E+01
90.00	1.716337E+00	5.203992E+01
95.00	1.000000E+35	1.000000E+35
98.00	1.000000E+35	1.000000E+35
99.00	1.000000E+35	1.000000E+35

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      = 1.70000E+00
MAXIMUM ANTILOG      = 7.80000E+01
GEOMETRIC MEAN       = 1.26528E+01
GEOMETRIC DEVIATION  = 2.58729E+00
VARIANCE OF LOGS     = 1.70442E-01
```

Table 8. Frequency tables and histograms of ICP analytical data (table 6) from rocks collected for background values, Eagle Rock and Glacier Peak Roadless study areas

FREQUENCY TABLE FOR VARIABLE 20 (BA)

LOG LIMITS LOWER	-	UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
	N		0	0	0.00	0.00		
	L		0	0	0.00	0.00		
	T		0	0	0.00	0.00	1.61	1.61
7.500E-01	-	9.167E-01	3	3	4.41	4.41	1.69	1.02
9.167E-01	-	1.083E+00	4	7	5.88	10.29	2.87	0.45
1.083E+00	-	1.250E+00	6	13	8.82	19.12	4.40	0.58
1.250E+00	-	1.417E+00	8	21	11.76	30.88	6.09	0.60
1.417E+00	-	1.583E+00	7	28	10.29	41.18	7.60	0.05
1.583E+00	-	1.750E+00	4	32	5.88	47.06	8.55	2.42
1.750E+00	-	1.917E+00	4	36	5.88	52.94	8.67	2.52
1.917E+00	-	2.083E+00	12	48	17.65	70.59	7.93	2.09
2.083E+00	-	2.250E+00	7	55	10.29	80.88	6.54	0.03
2.250E+00	-	2.417E+00	5	60	7.35	88.24	4.86	0.00
2.417E+00	-	2.583E+00	4	64	5.88	94.12	3.26	0.17
2.583E+00	-	2.750E+00	4	68	5.88	100.00	3.94	0.00
	G		0	68	0.00	100.00	1.61	1.61
	H		0	68				
	B		0	68				

TOTALS LESS H AND B 68

HISTOGRAM FOR VARIABLE 20 (BA)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
6.813E+00 XXXX
1.000E+01 XXXXXX
1.468E+01 XXXXXXXXX
2.154E+01 XXXXXXXXXXX
3.162E+01 XXXXXXXXXX
4.642E+01 XXXXXX
6.813E+01 XXXXXX
1.000E+02 XXXXXXXXXXXXXXXXX
1.468E+02 XXXXXXXXX
2.154E+02 XXXXXXX
3.162E+02 XXXXXX
4.642E+02 XXXXXX
```

PERCENT TABLE FOR VARIABLE 20 (BA) BY LINEAR INTERPOLATION FROM FREQUENCY TABLE
IF SELECTED PERCENTILES FALL WITHIN DATA EITHER ABOVE OR BELOW THE LIMITS OF DETECTION, THE DATA VALUE ON THE TABLE IS GIVEN AS 0.9999991E 50

SELECTED PERCENTILE	DATA VALUE	ANTI LOG OF VALUE
25.00	1.333334E+00	2.154440E+01
50.00	1.833335E+00	6.812955E+01
75.00	2.154765E+00	1.428120E+02
90.00	2.466670E+00	2.928668E+02
95.00	1.000000E+35	1.000000E+35
98.00	1.000000E+35	1.000000E+35
99.00	1.000000E+35	1.000000E+35

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      = 6.50000E+00
MAXIMUM ANTILOG      = 4.90000E+02
GEOMETRIC MEAN       = 5.92333E+01
GEOMETRIC DEVIATION  = 3.27827E+00
VARIANCE OF LOGS     = 2.65889E-01
```

Table 8. Frequency tables and histograms of ICP analytical data (table 6) from rocks collected for background values, Eagle Rock and Glacier Peak Roadless study areas

FREQUENCY TABLE FOR VARIABLE 21 (LA)

LOG LIMITS LOWER	-	UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
	N		0	0	0.00	0.00		
	L		3	3	4.41	4.41		
	T		0	3	0.00	4.41	1.66	1.66
-8.400E-02	-	8.267E-02	1	4	1.47	5.88	3.48	1.77
8.267E-02	-	2.493E-01	9	13	13.24	19.12	7.36	0.37
2.493E-01	-	4.160E-01	9	22	13.24	32.35	11.77	0.65
4.160E-01	-	5.827E-01	23	45	33.82	66.18	14.25	5.37
5.827E-01	-	7.493E-01	7	52	10.29	76.47	13.06	2.81
7.493E-01	-	9.160E-01	7	59	10.29	86.76	9.06	0.47
9.160E-01	-	1.083E+00	5	64	7.35	94.12	4.75	0.01
1.083E+00	-	1.249E+00	4	68	5.88	100.00	2.61	0.74
	G		0	68	0.00	100.00	0.00	0.00
	H		0	68				
	B		0	68				

TOTALS LESS H AND B 68

HISTOGRAM FOR VARIABLE 21 (LA)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
 9.985E-01 X
 1.466E+00 XXXXXXXXXXXX
 2.151E+00 XXXXXXXXXXXX
 3.157E+00 XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
 4.634E+00 XXXXXXXXXX
 6.802E+00 XXXXXXXXXX
 9.985E+00 XXXXXXX
 1.466E+01 XXXXXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

MINIMUM ANTILOG = 1.20000E+00
MAXIMUM ANTILOG = 1.70000E+01
GEOMETRIC MEAN = 3.63437E+00
GEOMETRIC DEVIATION = 1.91871E+00
VARIANCE OF LOGS = 8.00949E-02

PERCENT TABLE FOR VARIABLE 21 (LA) BY LINEAR INTERPOLATION FROM FREQUENCY TABLE
IF SELECTED PERCENTILES FALL WITHIN DATA EITHER ABOVE OR BELOW THE LIMITS OF DETECTION,
THE DATA VALUE ON THE TABLE IS GIVEN AS 0.9999991E 50

SELECTED PERCENTILE	DATA VALUE	ANTI LOG OF VALUE			
			90.00	9.893355E-01	9.757431E+00
25.00	3.234082E-01	2.105757E+00	95.00	1.000000E+35	1.000000E+35
50.00	5.029577E-01	3.183887E+00	98.00	1.000000E+35	1.000000E+35
75.00	7.255254E-01	5.315271E+00	99.00	1.000000E+35	1.000000E+35

Table 8. Frequency tables and histograms of ICP analytical data (table 6) from rocks collected for background values, Eagle Rock and Glacier Peak Roadless study areas

FREQUENCY TABLE FOR VARIABLE 22 (CE)

LOG LIMITS LOWER	-	UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
	N		33	33	48.53	48.53		
	L		15	48	22.06	70.59		
	T		0	48	0.00	70.59	37.51	37.51
5.830E-01	-	7.497E-01	3	51	4.41	75.00	11.72	6.49
7.497E-01	-	9.163E-01	7	58	10.29	85.29	8.93	0.42
9.163E-01	-	1.083E+00	2	60	2.94	88.24	5.51	2.23
1.083E+00	-	1.250E+00	4	64	5.88	94.12	2.75	0.57
1.250E+00	-	1.416E+00	3	67	4.41	98.53	1.11	3.23
1.416E+00	-	1.583E+00	1	68	1.47	100.00	0.48	0.56
	G		0	68	0.00	100.00	0.00	0.00
	H		0	68				
	B		0	68				

TOTALS LESS H AND B 68

HISTOGRAM FOR VARIABLE 22 (CE)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
4.638E+00 XXXX
6.808E+00 XXXXXXXXXX
9.992E+00 XXX
1.467E+01 XXXXXX
2.153E+01 XXXX
3.160E+01 X
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      = 4.70000E+00
MAXIMUM ANTILOG      = 3.10000E+01
GEOMETRIC MEAN       = 1.04210E+01
GEOMETRIC DEVIATION  = 1.78803E+00
VARIANCE OF LOGS     = 6.36936E-02
```

PERCENT TABLE FOR VARIABLE 22 (CE) BY LINEAR INTERPOLATION FROM FREQUENCY TABLE
IF SELECTED PERCENTILES FALL WITHIN DATA EITHER ABOVE OR BELOW THE LIMITS OF DETECTION,
THE DATA VALUE ON THE TABLE IS GIVEN AS 0.9999991E 50

SELECTED PERCENTILE	DATA VALUE	ANTI LOG OF VALUE
25.00	1.000000E+35	1.000000E+35
50.00	1.000000E+35	1.000000E+35
75.00	7.496670E-01	5.619103E+00
90.00	1.133001E+00	1.358317E+01
95.00	1.283001E+00	1.918675E+01
98.00	1.396335E+00	2.490778E+01
99.00	1.000000E+35	1.000000E+35

Table 8. Frequency tables and histograms of ICP analytical data (table 6) from rocks collected for background values, Eagle Rock and Glacier Peak Roadless study areas

FREQUENCY TABLE FOR VARIABLE 23 (Y)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
	N	35	35	51.47	51.47		
	L	1	36	1.47	52.94		
	T	0	36	0.00	52.94	25.79	25.79
-7.500E-01	-5.833E-01	1	37	1.47	54.41	5.42	3.60
-5.833E-01	-4.167E-01	0	37	0.00	54.41	5.53	5.53
-4.167E-01	-2.500E-01	2	39	2.94	57.35	5.42	2.16
-2.500E-01	-8.333E-02	1	40	1.47	58.82	5.09	3.29
-8.333E-02	8.333E-02	3	43	4.41	63.24	4.59	0.55
8.333E-02	2.500E-01	5	48	7.35	70.59	3.97	0.27
2.500E-01	4.167E-01	4	52	5.88	76.47	3.29	0.15
4.167E-01	5.833E-01	11	63	16.18	92.65	2.62	26.79
5.833E-01	7.500E-01	3	66	4.41	97.06	2.00	0.50
7.500E-01	9.167E-01	1	67	1.47	98.53	1.46	0.15
9.167E-01	1.083E+00	1	68	1.47	100.00	2.81	1.17
	G	0	68	0.00	100.00	0.00	0.00
	H	0	68				
	B	0	68				

TOTALS LESS H AND B 68

HISTOGRAM FOR VARIABLE 23 (Y)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
2.154E-01 X
3.162E-01
4.642E-01 XXX
6.813E-01 X
1.000E+00 XXXX
1.468E+00 XXXXXXX
2.154E+00 XXXXXX
3.162E+00 XXXXXXXXXXXXXXX
4.642E+00 XXXX
6.813E+00 X
1.000E+01 X
```

PERCENT TABLE FOR VARIABLE 23 (Y) BY LINEAR INTERPOLATION FROM FREQUENCY TABLE
IF SELECTED PERCENTILES FALL WITHIN DATA EITHER ABOVE OR BELOW THE LIMITS OF DETECTION, THE DATA VALUE ON THE TABLE IS GIVEN AS 0.9999991E 50

SELECTED PERCENTILE	DATA VALUE	ANTI LOG OF VALUE
25.00	1.000000E+35	1.000000E+35
50.00	1.000000E+35	1.000000E+35
75.00	3.750022E-01	2.371386E+00
90.00	5.560632E-01	3.598017E+00
95.00	6.722251E-01	4.701377E+00
98.00	8.566699E-01	7.189023E+00
99.00	1.000000E+35	1.000000E+35

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

```
MINIMUM ANTILOG      = 2.60000E-01
MAXIMUM ANTILOG      = 1.10000E+01
GEOMETRIC MEAN       = 2.10506E+00
GEOMETRIC DEVIATION  = 2.20954E+00
VARIANCE OF LOGS     = 1.18544E-01
```

Table 8. Frequency tables and histograms of ICP analytical data (table 6) from rocks collected for background values, Eagle Rock and Glacier Peak Roadless study areas

FREQUENCY TABLE FOR VARIABLE 24 (NB)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		3	3	4.41	4.41		
L		25	28	36.76	41.18		
T		0	28	0.00	41.18	9.07	9.07
-8.400E-02 -	8.267E-02	8	36	11.76	52.94	10.61	0.64
8.267E-02 -	2.493E-01	6	42	8.82	61.76	14.33	4.84
2.493E-01 -	4.160E-01	8	50	11.76	73.53	14.33	2.79
4.160E-01 -	5.827E-01	14	64	20.59	94.12	10.61	1.09
5.827E-01 -	7.493E-01	4	68	5.88	100.00	9.06	2.83
G		0	68	0.00	100.00	0.00	0.00
H		0	68				
B		0	68				

TOTALS LESS H AND B 68

HISTOGRAM FOR VARIABLE 24 (NB)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
 9.985E-01 XXXXXXXXXXX
 1.466E+00 XXXXXXXXX
 2.151E+00 XXXXXXXXXXX
 3.157E+00 XXXXXXXXXXXXXXXXXXXX
 4.634E+00 XXXXXX
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

MINIMUM ANTILOG = 9.10000E-01
MAXIMUM ANTILOG = 5.40000E+00
GEOMETRIC MEAN = 2.20625E+00
GEOMETRIC DEVIATION = 1.65008E+00
VARIANCE OF LOGS = 4.73084E-02

PERCENT TABLE FOR VARIABLE 24 (NB) BY LINEAR INTERPOLATION FROM FREQUENCY TABLE
IF SELECTED PERCENTILES FALL WITHIN DATA EITHER ABOVE OR BELOW THE LIMITS OF DETECTION,
THE DATA VALUE ON THE TABLE IS GIVEN AS 0.9999991E 50

SELECTED PERCENTILE	DATA VALUE	ANTI LOG OF VALUE
25.00	1.000000E+35	1.000000E+35
50.00	1.000000E+35	1.000000E+35
75.00	4.279058E-01	2.678587E+00
90.00	5.493346E-01	3.542702E+00
95.00	1.000000E+35	1.000000E+35
98.00	1.000000E+35	1.000000E+35
99.00	1.000000E+35	1.000000E+35

Table 8. Frequency tables and histograms of ICP analytical data (table 6) from rocks collected for background values, Eagle Rock and Glacier Peak Roadless study areas

FREQUENCY TABLE FOR VARIABLE 25 (AL)

LOG LIMITS LOWER	- UPPER	OBS FREQ	CUM FREQ	PERCENT FREQ	PERCENT CUM FREQ	THEOR FREQ (NORMAL DIST)	(THEOR FREQ - OBS FREQ)**2/THEOR FREQ
N		0	0	0.00	0.00		
L		0	0	0.00	0.00		
T		0	0	0.00	0.00	0.14	0.14
3.416E+00 -	3.583E+00	1	1	1.47	1.47	0.74	0.09
3.583E+00 -	3.749E+00	4	5	5.88	7.35	2.99	0.34
3.749E+00 -	3.916E+00	6	11	8.82	16.18	8.03	0.52
3.916E+00 -	4.083E+00	18	29	26.47	42.65	14.40	0.90
4.083E+00 -	4.249E+00	9	38	13.24	55.88	17.23	3.93
4.249E+00 -	4.416E+00	20	58	29.41	85.29	13.77	2.82
4.416E+00 -	4.583E+00	9	67	13.24	98.53	7.34	0.37
4.583E+00 -	4.749E+00	1	68	1.47	100.00	3.34	1.64
G		0	68	0.00	100.00	0.14	0.14
H		0	68				
B		0	68				

TOTALS LESS H AND B 68

HISTOGRAM FOR VARIABLE 25 (AL)
MIDPOINTS ARE EXPRESSED AS ANTILOGS

```
3.157E+03 X
4.634E+03 XXXXXX
6.802E+03 XXXXXXXXX
9.985E+03 XXXXXXXXXXXXXXXXXXXXXXXXX
1.466E+04 XXXXXXXXXXXXX
2.151E+04 XXXXXXXXXXXXXXXXXXXXXXXXXXXXX
3.157E+04 XXXXXXXXXXXXX
4.634E+04 X
```

THE FOLLOWING STATISTICS ARE COMPUTED FOR THE UNQUALIFIED VALUES ONLY

MINIMUM ANTILOG = 3.00000E+03
MAXIMUM ANTILOG = 4.10000E+04
GEOMETRIC MEAN = 1.43467E+04
GEOMETRIC DEVIATION = 1.81005E+00
VARIANCE OF LOGS = 6.64046E-02

PERCENT TABLE FOR VARIABLE 25 (AL) BY LINEAR INTERPOLATION FROM FREQUENCY TABLE
IF SELECTED PERCENTILES FALL WITHIN DATA EITHER ABOVE OR BELOW THE LIMITS OF DETECTION,
THE DATA VALUE ON THE TABLE IS GIVEN AS 0.9999991E 50

SELECTED PERCENTILE	DATA VALUE	ANTI LOG OF VALUE			
			90.00	4.475261E+00	2.987180E+04
25.00	3.971557E+00	9.366055E+03	95.00	4.538225E+00	3.453222E+04
50.00	4.175261E+00	1.497134E+04	98.00	4.576002E+00	3.767058E+04
75.00	4.357669E+00	2.278603E+04	99.00	1.000000E+35	1.000000E+35

Table 9. Analytical data from altered rocks, ores, and stream pebbles, Glacier Peak Roadless area

[The following qualifiers are used in reporting spectrographic data: --, no determination made; N, concentration less than the detection limit; <, detected, but present at a concentration less than the value reported; >, element present at a concentration greater than the upper calibration limit; and H, interfering spectra render analytical lines unusable.]

Sample	Latitude	Longitude	Mg-pct. s	Ca-pct. s	Fe-pct. s	Ti-pct. s	Sc-ppm s	V-ppm s	Cr-ppm s	Mn-ppm s	Co-ppm s	Ni-ppm s
G240	47 50 45	121 24 27	.30	.30	2	.20	10	50	N	500	5	N
G701	47 48 45	121 26 54	1.50	1.50	7	.20	20	150	70	1,000	20	20
G702	47 48 39	121 26 54	1.50	1.50	7	.20	20	150	20	1,000	30	10
G703	47 48 21	121 25 48	2.00	1.50	10	1.00	15	150	150	1,000	20	70
G704	47 48 15	121 25 42	2.00	2.00	3	.15	7	30	1,000	700	50	500
G705	47 48 9	121 25 36	1.50	2.00	7	.20	20	200	20	1,000	20	10
G706	47 48 6	121 24 45	1.00	1.00	5	.50	10	150	70	1,000	15	20
G8	47 47 36	121 26 6	1.50	1.50	5	.20	20	150	50	1,000	20	15
G829	47 52 12	121 24 21	1.50	2.00	7	.50	20	200	20	1,000	20	10
G830	47 52 6	121 24 9	1.00	2.00	10	.50	20	150	50	1,000	15	10
G831	47 51 54	121 23 51	2.00	2.00	10	.30	20	100	30	1,000	15	5
G832	47 51 39	121 23 33	.15	.20	5	.20	7	50	N	500	10	N
G833	47 51 24	121 23 42	.10	.10	5	.15	5	50	N	500	7	N
G834	47 51 6	121 23 42	.10	.10	3	.20	7	50	N	500	7	N
G835	47 50 54	121 23 36	.15	.30	7	.30	15	100	N	500	20	N
GP2688RA	47 51 42	121 25 11	.70	.50	7	.15	7	50	N	5,000	20	5
GP2688RB	47 51 36	121 25 5	2.00	3.00	7	.30	20	150	50	1,500	30	30
GP2689RA	47 46 15	121 25 45	1.50	2.00	7	.30	20	150	N	1,500	20	5
GP2689RB	47 46 15	121 25 45	2.00	5.00	7	.30	20	200	100	2,000	30	30
GP2689RC	47 46 15	121 25 45	1.00	3.00	7	.20	15	150	10	1,000	50	10
GP2690RA	47 48 12	121 25 29	3.00	10.00	7	.10	10	70	N	2,000	N	N
GP2690RB	47 48 12	121 25 29	.70	.70	3	.15	15	20	N	700	5	5
GP2691RA	47 50 16	121 28 13	.70	.20	7	.20	7	100	10	>5,000	30	15
GP2691RC	47 50 16	121 28 13	.10	<.05	10	.30	10	70	20	200	N	5
GP3378RA	47 49 29	121 26 16	.70	.30	1	.10	7	50	20	200	N	20
GP3378RB	47 49 29	121 26 16	1.00	.70	>20	.07	5	100	10	>5,000	150	150
GP3379RA	47 49 29	121 26 16	1.00	.50	3	.20	10	50	30	300	15	50
GP3380RA	47 49 29	121 26 16	5.00	2.00	10	1.00	20	100	500	2,000	50	500
GP3380RB	47 49 29	121 26 16	5.00	2.00	7	.20	15	70	2,000	3,000	50	1,500
GP3381RA	47 49 29	121 26 16	2.00	.70	>20	.50	20	100	100	1,500	100	150
GP3381RB	47 49 29	121 26 16	.50	.50	20	.02	N	30	N	>5,000	700	200
GP3381RD	47 49 29	121 26 16	.20	.05	>20	.02	7	50	3,000	2,000	30	1,000
GP3384RA	47 49 29	121 26 16	1.50	2.00	15	.50	20	150	50	2,000	200	150
GP4156A1	47 49 57	121 24 58	.50	1.00	2	.15	5	50	N	300	N	N
GP4162RA	47 51 26	121 27 45	1.00	.07	7	.20	10	100	30	500	30	20
GP4162RB	47 51 26	121 27 45	.70	.10	3	.10	5	50	10	700	20	20

Table 9. Analytical data from altered rocks, ores, and stream pebbles, Glacier Peak Roadless area

Sample	Cu-ppm s	Zn-ppm s	Cd-ppm s	Mo-ppm s	W-ppm s	Sn-ppm s	Au-ppm aa	Ag-ppm s	Pb-ppm s	As-ppm s	Bi-ppm s	B-ppm s	Be-ppm s
G240	15	N	N	N	N	N	N	N	15	N	N	20	1.0
G701	100	N	N	N	N	N	N	N	N	N	N	500	N
G702	150	N	N	N	N	N	N	N	N	N	N	70	N
G703	100	<200	N	10	N	N	N	N	10	N	N	30	2.0
G704	50	N	N	N	N	N	N	.5	20	300	N	50	<1.0
G705	100	N	N	N	N	N	N	N	10	N	N	20	N
G706	100	N	N	10	N	N	N	N	10	N	N	20	1.0
G8	100	N	N	5	N	N	.05	N	50	N	N	20	<1.0
G829	200	N	N	N	N	N	N	N	15	N	<10	10	N
G830	300	N	N	N	N	N	N	.5	15	N	N	20	N
G831	200	N	N	N	N	N	N	N	10	N	N	<10	N
G832	15	N	N	N	N	N	N	N	20	N	N	20	N
G833	10	N	N	N	N	N	N	N	15	N	N	20	N
G834	50	N	N	N	N	N	N	N	10	N	N	20	1.0
G835	20	N	N	N	N	N	N	N	10	N	N	50	<1.0
GP2688RA	500	5,000	N	N	<50	15	--	5.0	5,000	N	N	1,000	1.0
GP2688RB	100	N	N	N	N	N	--	.5	15	N	N	20	N
GP2689RA	50	N	N	N	N	N	--	N	N	N	N	100	1.0
GP2689RB	50	N	N	N	N	N	--	N	N	N	N	150	1.0
GP2689RC	500	N	N	N	N	N	--	N	N	N	N	50	1.0
GP2690RA	20	N	N	N	N	N	--	N	20	N	N	200	N
GP2690RB	15	N	N	N	N	N	--	N	10	N	N	50	N
GP2691RA	10,000	3,000	N	N	N	N	--	50.0	200	N	N	30	N
GP2691RC	3,000	1,000	N	N	N	N	--	100.0	500	N	N	50	N
GP3378RA	15	N	N	N	N	N	--	N	N	N	N	150	1.0
GP3378RB	5,000	>10,000	500	30	N	30	--	200.0	3,000	1,000	100	N	N
GP3379RA	100	N	N	N	N	N	--	N	N	N	N	>2,000	N
GP3380RA	300	<200	N	N	N	N	--	N	N	N	N	>2,000	1.5
GP3380RB	500	1,000	N	20	N	N	--	2.0	100	N	N	20	2.0
GP3381RA	>20,000	300	N	20	N	10	--	20.0	20	N	N	2,000	1.0
GP3381RB	>20,000	>10,000	>500	20	N	50	--	700.0	3,000	200	100	50	N
GP3381RD	2,000	1,500	N	15	N	N	--	5.0	50	N	N	N	3.0
GP3384RA	5,000	N	N	30	N	N	--	3.0	30	N	N	100	1.0
GP4156A1	20	N	N	5	N	N	--	N	10	N	N	1,000	1.0
GP4162RA	10,000	N	N	N	50	50	--	3.0	N	N	30	50	1.0
GP4162RB	5,000	N	N	10	200	N	--	5.0	N	N	15	10	N

Table 9. Analytical data from altered rocks, ores, and stream pebbles, Glacier Peak Roadless area

Sample	Sr-ppm s	Ba-ppm s	La-ppm s	Y-ppm s	Zr-ppm s	Nb-ppm s	Formation	Comments
G240	100	300	20	20	150	N	Tg	ox. contact between Tg and Tib
G701	150	100	N	20	50	N	pTmg	Chip sample (alt. zone) migmatitic gneiss (talus)
G702	200	200	N	20	50	N	pTmg	Chip sample (alt. zone) migmatitic gneiss (talus)
G703	200	700	50	30	200	30	pTgb	Chip sample (50 - 75' alt. zone) hornfelsed greenstone
G704	150	150	N	15	50	N	pTgb	Chip sample (20' alt. zone)
G705	200	200	N	30	70	N	pTgb	Chip sample (50' alt. zone)
G706	100	1,000	20	20	150	<20	pTgb	Chip sample (200' alt. zone)
G8	200	150	N	30	100	N	pTgb	Chip sample (50' alt. zone) hornfelsed argillite
G829	200	200	N	15	100	N	Tg	Chip sample (ox. zone) tonalite
G830	200	200	N	20	300	N	Tgg	Chip sample (ox. zone) hornblende gabbro
G831	200	70	N	<10	10	N	Tgg	Chip sample (ox. zone) gabbro
G832	<100	500	N	30	200	N	Tgg	Chip sample (ox. zone) gabbro
G833	N	500	N	20	150	N	Tg	Chip sample (300' ox. zone) tonalite
G834	N	500	N	20	200	N	Tg	Chip sample (50' ox. zone) tonalite
G835	<100	300	N	20	100	N	Tg	Chip sample (30' ox. zone) tonalite
GP2688RA	N	700	N	30	100	N	Tg	iron stained, sheared granodiorite, gal, sph, tour. hematite
GP2688RB	200	200	N	30	100	N	Tib	chloritized breccia
GP2689RA	500	200	N	30	50	N	pTgb	metavolcanic rock, epidote, qtz veins
GP2689RB	200	500	N	30	200	N	pTgb	metavolcanic, silicified, diss. sulfides, epidote veins
GP2689RC	300	200	N	20	50	N	pTgb	silicified metavolcanic, diss. sulfides, py
GP2690RA	200	<20	N	N	N	N	pTgb	orthogneiss with epidote veins, calcite veins
GP2690RB	N	100	N	30	100	N	pTgb	orthogneiss with epidote, tour., diss. py.
GP2691RA	N	200	N	15	100	N	Ti	Bitter Creek adit, granodiorite, cpy, chal, sph
GP2691RC	N	300	N	10	150	N	Ti	Bitter Creek adit, granodiorite, heavy iron oxidized sample
GP3378RA	100	500	N	10	50	N	pTgb	Merchant mine, sheared, propylitically altered metasediment
GP3378RB	N	50	N	10	10	N	pTgb	Merchant mine, mineralized, cpy, py
GP3379RA	100	200	70	30	70	N	pTgb	Merchant mine, metaigneous rock.
GP3380RA	100	200	N	50	200	N	pTgb	Merchant mine, sheared chloritic schist
GP3380RB	N	50	N	10	50	N	pTgb	Merchant mine, altered chloritic schist
GP3381RA	N	100	N	20	150	<20	pTgb	Merchant mine, sheared, altered chloritic schist, cpy, py
GP3381RB	N	N	N	N	N	N	pTgb	Merchant mine, altered chloritic schist, cpy, sph
GP3381RD	N	<20	N	N	20	N	pTgb	Merchant mine, magnetite
GP3384RA	500	300	30	50	150	20	pTgb	Merchant mine, cpy ore from mine
GP4156A1	N	500	200	50	100	N	pTgb	stream pebble, granodiorite, veins with cpy, py, tour. qtz
GP4162RA	N	150	N	20	70	N	Ti	Sunset mine, granodiorite, sulfide veinletts, cpy, py
GP4162RB	N	20	N	N	30	N	Ti	Sunset mine, granodiorite, sulfide veinletts, cpy, py.

Table 10. Analytical data from altered rocks and ores, Glacier Peak Roadless area

[The following qualifiers are used in reporting spectrographic data: --, no determination made; N, concentration less than the detection limit; <, detected, but present at a concentration less than the value reported; >, element present at a concentration greater than the upper calibration limit; and H, interfering spectra render analytical lines unusable.]

Sample	Latitude	Longitude	Mg-pct. s	Ca-pct. s	Fe-pct. s	Ti-pct. s	Sc-ppm s	V-ppm s	Cr-ppm s	Mn-ppm s	Co-ppm s	Ni-ppm s
G1005	47 56 18	121 26 15	1.00	1.50	5.0	.200	15	100	30	500	15	20
G18	48 1 51	121 20 15	1.50	1.00	5.0	.300	20	150	30	200	15	15
G19	47 59 42	121 20 15	1.00	1.00	7.0	.700	20	150	150	1,500	20	100
G20	47 59 42	121 20 15	.50	.20	5.0	.300	15	100	150	700	10	30
G21	47 59 42	121 20 15	.20	<.05	7.0	.200	15	100	100	500	N	5
G226	48 1 30	121 24 15	1.00	1.00	5.0	.200	15	100	30	500	15	20
G227	48 1 12	121 24 33	1.00	1.50	5.0	.200	10	100	15	700	15	15
G228	48 1 15	121 24 36	1.50	2.00	5.0	.200	15	100	20	500	20	20
G229	48 1 18	121 24 24	1.00	1.00	5.0	.200	10	100	30	500	15	20
G22A	47 59 30	121 20 42	.30	.10	7.0	.200	20	100	100	3,000	50	50
G230	48 1 36	121 24 42	2.00	3.00	7.0	.500	20	200	200	1,000	30	100
G231	48 1 36	121 24 33	2.00	2.00	7.0	.500	20	200	200	1,000	30	100
G237	47 57 15	121 20 12	1.00	.50	5.0	.200	15	100	30	500	5	10
G238	47 57 18	121 20 6	1.00	.50	5.0	.200	20	100	50	500	N	7
G239	47 59 57	121 22 33	1.00	.30	7.0	.300	20	100	100	700	20	50
G241	47 59 30	121 21 6	.10	.05	10.0	.100	7	50	500	300	7	100
G40	48 1 27	121 20 30	1.50	1.00	5.0	.300	20	150	100	700	20	30
G41	48 1 27	121 20 42	1.00	1.00	5.0	.200	15	150	100	100	<5	10
G43	48 3 9	121 20 6	.20	.20	5.0	.200	15	100	100	500	20	50
G607	48 2 9	121 20 9	1.00	1.00	5.0	.300	20	150	150	500	20	50
G608	48 2 9	121 20 6	1.00	1.00	5.0	.300	20	150	100	500	10	20
G609	48 2 12	121 20 3	1.50	1.50	7.0	.500	20	150	150	300	20	50
G824	47 58 33	121 22 21	.20	.05	7.0	.200	15	100	20	300	N	N
G825	47 58 30	121 22 21	.30	.07	5.0	.300	20	150	50	1,000	15	15
G826	47 58 21	121 22 21	.20	.10	10.0	.200	20	100	20	5,000	30	7
G827	47 58 18	121 22 18	.20	.30	10.0	.150	15	70	20	>5,000	20	7
G828	47 58 15	121 22 0	.20	.20	7.0	.300	15	100	30	1,500	15	20
G911	47 54 48	121 20 42	2.00	2.00	7.0	.300	30	150	150	1,000	50	30
G912	47 56 39	121 24 21	1.00	2.00	5.0	.500	15	150	20	500	20	20
G913	47 56 42	121 24 51	1.00	.07	7.0	.300	15	100	150	300	7	20
G914	47 56 9	121 24 48	.70	.15	5.0	.300	15	100	100	300	10	15
G916	47 55 39	121 25 30	.70	.20	5.0	.200	7	100	50	200	10	10
G918	47 55 6	121 25 6	1.00	.30	5.0	.300	10	100	100	700	15	50
G919	47 55 0	121 25 33	.70	.20	5.0	.200	10	70	50	200	10	7
G921	47 56 51	121 25 6	.70	.50	5.0	.500	15	100	150	100	20	30
G923	47 56 24	121 24 24	1.00	.70	7.0	.300	15	150	30	500	10	5
G924	47 56 42	121 24 18	.50	.50	5.0	.200	5	70	10	200	N	5
G925	47 57 9	121 24 24	1.00	1.50	5.0	.500	15	100	15	300	30	50
G926	47 57 3	121 24 18	1.00	1.50	7.0	.500	15	150	70	1,000	15	20
G938	47 57 15	121 20 51	1.00	1.50	5.0	.300	20	150	30	500	15	7
G939	47 58 6	121 23 15	.20	.20	3.0	.150	5	30	N	200	N	N
GP2146R1	47 59 3	121 21 54	<.02	<.05	15.0	.030	N	N	N	50	200	10
GP2146R2	47 59 3	121 21 54	<.02	<.05	5.0	.002	N	N	N	150	10	N
GP2148R1	47 58 52	121 21 56	.70	2.00	5.0	.200	7	30	N	300	10	N
GP2148R2	47 58 52	121 21 56	1.50	3.00	>20.0	.005	N	10	N	3,000	100	7

Table 10. Analytical data from altered rocks and ores, Glacier Peak Roadless area

Sample	Cu-ppm s	Zn-ppm s	Cd-ppm s	Mo-ppm s	W-ppm s	Sn-ppm s	Au-ppm s	Au-ppm aa	Ag-ppm s	Pb-ppm s	As-ppm s	Sb-ppm s	Bi-ppm s
G1005	100	N	N	N	N	N	N	N	N	10	N	N	N
G18	150	N	N	N	N	N	N	<.05	<.5	10	N	N	N
G19	70	N	N	N	N	N	N	<.05	.5	50	N	N	N
G20	70	200	N	N	N	N	N	N	1.0	70	200	N	N
G21	200	2,000	N	N	N	N	N	2.90	200.0	1,500	>10,000	5,000	N
G226	50	N	N	7	N	N	N	N	N	30	N	N	N
G227	30	N	N	N	N	N	N	N	N	<10	N	N	N
G228	30	N	N	N	N	N	N	N	N	<10	N	N	N
G229	50	N	N	N	N	N	N	N	<.5	30	N	N	N
G22A	50	<200	N	N	N	N	N	<.05	1.5	70	1,500	N	N
G230	100	N	N	N	N	N	N	N	N	10	N	N	N
G231	100	N	N	N	N	N	N	N	N	20	N	N	N
G237	10	N	N	5	N	N	N	N	N	30	N	N	N
G238	10	N	N	N	N	N	N	N	N	15	N	N	N
G239	100	N	N	N	N	N	N	N	N	<10	N	N	N
G241	500	1,000	N	N	N	N	N	.35	100.0	700	>10,000	200	200
G40	50	N	N	N	N	N	N	<.05	.5	30	N	N	N
G41	70	N	N	N	N	N	N	<.05	N	15	N	N	N
G43	50	N	N	N	N	N	N	N	N	10	N	N	N
G607	70	N	N	N	N	N	N	N	N	10	N	N	N
G608	70	N	N	10	N	N	N	N	N	15	N	N	N
G609	70	N	N	N	N	N	N	N	N	10	N	N	N
G824	50	2,000	N	N	N	N	N	<.05	1.0	100	1,000	150	<10
G825	50	3,000	<20	N	N	N	N	<.05	.5	100	N	N	N
G826	150	10,000	70	N	N	N	N	.60	5.0	500	3,000	100	N
G827	50	7,000	30	10	N	N	N	<.05	70.0	1,500	N	1,000	N
G828	30	N	N	N	N	N	N	.10	1.0	30	2,000	N	N
G911	70	N	N	N	N	N	N	N	N	15	N	N	N
G912	200	N	N	N	N	N	N	N	N	N	N	N	N
G913	150	N	N	N	N	N	N	N	N	10	N	N	N
G914	200	N	N	N	N	N	N	.05	1.0	15	N	N	N
G916	200	N	N	N	N	N	N	N	1.0	20	N	N	N
G918	100	200	N	N	N	N	N	N	N	10	N	N	N
G919	200	N	N	N	N	N	N	N	1.0	20	N	N	N
G921	500	N	N	30	N	N	N	<.05	.5	<10	N	N	N
G923	200	N	N	N	N	N	N	.15	N	<10	N	N	<10
G924	200	N	N	N	N	N	N	N	.5	N	N	N	N
G925	150	<200	N	N	N	N	N	N	<.5	20	N	N	<10
G926	70	200	N	N	N	N	N	N	<.5	15	N	N	<10
G938	70	N	N	N	N	N	N	N	N	20	200	N	<10
G939	20	N	N	N	N	N	N	<.05	N	15	N	N	N
GP2146R1	3,000	N	N	N	N	N	N	--	70.0	700	>10,000	200	20
GP2146R2	300	N	N	N	N	N	N	--	5.0	70	1,500	N	10
GP2148R1	150	N	N	N	N	N	N	--	N	30	N	N	N
GP2148R2	2,000	5,000	N	N	N	N	N	--	150.0	3,000	>10,000	700	150

Table 10. Analytical data from altered rocks and ores, Glacier Peak Roadless

Sample	B-ppm s	Be-ppm s	Sr-ppm s	Ba-ppm s	La-ppm s	Y-ppm s	Zr-ppm s	Formation	Comments
G1005	10	<1.0	200	200	N	15	70		Stream sediment sample omitted from Church and others (1982a)
G13	50	N	200	300	N	20	100	Kc	Chip sample (30' ox. zone) mica schist & amphibolite
G19	70	1.0	200	200	N	20	100	Kc	Chip sample (40' alt. zone) schist and tonalite dikes
G20	200	1.0	150	500	N	20	100	Kc	Chip sample (150' alt. zone) schist and tonalite dikes
G21	300	N	N	500	N	20	100	Kc	Chip sample (6' alt. zone) schist & tonalite,old adit on zone
G226	<10	N	500	300	N	15	100	Tb	Chip sample from alt. talus of volcanic rock
G227	<10	N	500	500	N	10	100	Tb	Chip sample from alt. volcanic rock in prospect
G228	<10	N	700	500	N	15	100	Tb	Chip sample of volcanic rock
G229	<10	N	300	500	N	15	100	Tb	Chip sample of ox. volcanic rock diss. sulfide
G22A	200	1.0	<100	700	N	30	100	Tbk	Chip sample (20' alt. zone)basal breccia rich in schist clasts
G230	10	<1.0	500	700	30	50	150	Tb	Chip sample of ox. volcanic breccia
G231	10	N	200	300	N	30	200	Tb	Chip sample from ox. volcanics in fault zone
G237	50	1.0	100	500	N	20	150	Tkb	Chip sample from ox.volc. breccia
G238	15	<1.0	150	500	N	20	200	Tkb	Chip sample (100') ox.volcanic breccia
G239	100	1.5	100	500	N	20	100	Kd	Chip sample of alt.quartz veined phyllite & volc. breccia
G241	50	<1.0	N	200	N	10	20	Tb	Chip sample from ox. volcanic breccia debris
G40	50	1.0	200	700	20	20	100	Kc	Chip sample (160' ox.zone) hornfelsed schist
G41	150	<1.0	300	300	N	15	100	Kc	Chip sample (irregular 250' x 600' ox. zone) hornfelsed schist
G43	100	<1.0	200	300	N	15	100	Kbg	Chip sample ox. 60' shear zone
G607	100	<1.0	200	500	N	20	100	Kc	Chip sample from ox. schist
G608	50	<1.0	500	500	N	20	100	Kc	Chip sample from ox. schist
G609	300	N	300	300	N	30	100	Kc	Chip sample from ox. schist and amphibolite
G824	100	N	N	500	N	15	70	Tb	Chip sample schist and ox. volcanic porphyry
G825	200	1.0	N	300	N	20	100	Tb	Chip sample ox. volc. breccia continuous with that of G824
G826	200	<1.0	N	300	N	20	70	Tb	Chip sample ox. volc.breccia near adit sulfides visible
G827	200	N	<100	500	N	30	100	Tb	Chip sample (20' ox.zone) volcanic breccia
G828	200	<1.0	N	500	N	20	100	Tbk	Chip sample from ox. volcanic breccia
G911	10	N	200	50	N	20	70	Tm	Chip sample (25' ox. zone) at contact with Tg
G912	10	N	500	150	N	20	150	Tb	Chip sample (300' ox. zone) volc. breccia (talus)
G913	15	1.0	N	700	N	15	100	Ts	Chip sample (150' ox. zone) arkosic sandstone
G914	20	N	N	700	N	20	100	Ts	Chip sample (ox.zone) arkosic sandstone
G916	10	N	N	300	N	10	70	Ts	Chip sample (ox. zone) arkosic sandstone pyrite visible
G918	50	1.5	200	300	N	15	150	Ts	Chip sample (30' ox. zone) arkosic sandstone at contact with Tg
G919	15	1.0	<100	500	20	20	70	Ts	Chip sample ox. arkosic sandstone
G921	30	1.0	100	500	20	20	100	Tib	Chip sample near drill hole in alt. volcanics
G923	15	<1.0	100	300	N	20	100	Tg	Chip sample (ox. 15' zone) tonalite, near contact
G924	20	N	100	300	N	10	150	Tg	Chip sample (ox. zone) tonalite and volc. rock
G925	15	N	200	100	N	15	100	Tb	Chip sample (25' ox. zone) volcanic rock
G926	15	N	200	100	N	15	100	Tb	Chip sample from ox. volcanic rock
G938	200	N	200	500	N	20	100	Tg	Chip sample from ox. zone at contact of Tb and Tg
G939	10	N	<100	700	N	10	150	Tb	Chip sample (50' ox. zone) volcanic rocks
GP2146R1	N	N	N	70	N	N	N	Tg	Granodiorite, diss. sulfides
GP2146R2	<10	N	N	30	N	N	N	Tg	Granodiorite, diss. sulfides
GP2148R1	10	<1.0	300	700	N	20	70	Tg	Comet mine, sulfide vein
GP2148R2	N	N	N	20	N	N	N	Tg	Comet mine, sulfide vein

Table 10. Analytical data from altered rocks and ores, Glacier Peak Roadless area--continued

Sample	Latitude	Longitude	Mg-pct. s	Ca-pct. s	Fe-pct. s	Ti-pct. s	Sc-ppm s	V-ppm s	Cr-ppm s	Mn-ppm s	Co-ppm s	Ni-ppm s
GP2148R3	47 58 52	121 21 56	.30	.10	3.0	.300	5	50	N	100	7	N
GP2148R4	47 58 52	121 21 56	2.00	3.00	7.0	.500	20	300	100	700	20	100
GP2317RB	48 2 15	121 20 14	10.00	.20	7.0	.030	15	50	2,000	700	70	2,000
GP2318RA	48 2 18	121 20 13	2.00	.50	7.0	.150	15	150	50	500	30	70
GP2335RA	47 58 49	121 24 10	.10	1.50	20.0	.100	N	30	N	3,000	100	20
GP2336RA	47 58 50	121 24 9	1.00	.05	5.0	.200	7	100	15	500	50	20
GP2336RB	47 58 50	121 24 9	.10	.10	>20.0	.050	N	20	N	1,000	300	20
GP2336RC	47 58 50	121 24 9	1.50	3.00	5.0	.200	10	100	10	3,000	5	7
GP2337RA	47 59 6	121 24 58	.70	.20	20.0	.070	5	50	N	300	500	10
GP2337RB	47 59 6	121 24 58	.70	.07	10.0	.200	7	70	50	200	50	70
GP2337RC	47 59 6	121 24 58	1.50	5.00	10.0	.100	7	50	10	>5,000	50	70
GP2337RD	47 59 6	121 24 58	1.50	2.00	7.0	1.000	20	100	200	1,000	30	200
GP2338RA	47 56 22	121 26 2	.15	.05	10.0	.100	N	30	15	200	7	15
GP2341RA	47 57 8	121 20 41	1.50	1.00	7.0	.300	20	150	50	500	70	15
GP2354RA	47 57 48	121 25 35	2.00	3.00	7.0	.500	20	200	100	1,500	30	70
GP2354RB	47 57 48	121 25 35	2.00	.50	7.0	.500	20	200	70	2,000	50	70
GP2354RC	47 57 48	121 25 37	1.50	.30	5.0	.300	15	150	30	2,000	20	50
GP2355RA	47 57 50	121 25 37	1.00	2.00	7.0	.300	10	100	50	2,000	30	70
GP2355RB	47 57 50	121 25 37	.50	<.05	10.0	.100	5	70	20	1,500	20	30
GP2678RA	48 1 51	121 20 32	2.00	2.00	5.0	.300	20	300	N	500	20	7
GP2678RB	48 1 51	121 20 32	3.00	.05	10.0	.500	20	200	1,500	1,000	70	150
GP2687RA	47 58 57	121 19 16	2.00	1.00	10.0	.200	15	300	70	1,000	50	50
GP3015R	48 0 1	121 15 54	3.00	3.00	7.0	.500	30	500	150	700	50	50
GP3046R1	47 59 5	121 23 42	.15	.10	1.5	.020	N	10	N	150	15	10
GP3046R2	47 59 5	121 23 42	1.00	.30	7.0	.300	15	70	15	1,500	30	30
GP3046R3	47 59 5	121 23 42	2.00	3.00	5.0	.200	15	150	30	300	15	50
GP3046R4	47 59 5	121 23 42	2.00	3.00	2.0	.300	15	100	15	300	15	30
GP3046R5	47 59 5	121 23 42	2.00	1.00	3.0	.300	10	70	20	200	7	30
GP3046R6	47 59 5	121 23 42	.10	.20	2.0	.100	N	15	10	200	5	N
GP3046R7	47 59 5	121 23 42	1.50	.70	5.0	.300	10	150	15	150	15	30
GP3048R	47 58 46	121 24 7	1.50	.10	7.0	.300	15	100	15	1,500	70	30
GP3050R	47 58 28	121 23 55	1.50	2.00	5.0	.500	15	150	30	1,000	20	50
GP3051R	47 58 29	121 23 53	1.50	1.50	5.0	.300	15	100	30	300	70	100
GP3052R	47 58 32	121 23 47	1.00	.50	2.0	.150	5	100	20	300	5	20
GP3053R	47 58 43	121 23 44	1.00	.20	3.0	.300	10	150	N	150	15	15
GP3055R	47 58 56	121 23 40	.10	.30	.5	.100	N	N	N	100	5	N
GP3056R	47 58 59	121 23 40	.05	<.05	.7	.070	N	N	N	10	N	N
GP3057R	47 59 0	121 23 37	2.00	3.00	5.0	.300	20	200	100	300	10	20
GP3058R	47 59 10	121 23 42	1.50	2.00	3.0	.300	15	150	30	100	15	30
GP3208R1	47 59 2	121 21 52	.50	.07	5.0	.200	15	70	N	700	10	5
GP3208R2	47 59 2	121 21 52	1.00	.10	7.0	.300	20	200	10	3,000	15	5
GP3209R1	47 58 47	121 21 35	.70	.15	1.5	.300	20	200	70	200	N	N
GP3209R2	47 58 47	121 21 35	.05	<.05	3.0	.070	5	50	N	70	7	N
GP3209R3	47 58 47	121 21 35	.50	.30	>20.0	.002	N	N	N	3,000	50	7
GP3209R4	47 58 47	121 21 35	.02	.15	>20.0	.020	N	10	N	200	30	7

Table 10. Analytical data from altered rocks and ores, Glacier Peak Roadless area--continued

Sample	Cu-ppm s	Zn-ppm s	Cd-ppm s	Mo-ppm s	W-ppm s	Sn-ppm s	Au-ppm s	Au-ppm aa	Ag-ppm s	Pb-ppm s	As-ppm s	Sb-ppm s	Bi-ppm s
GP2148R3	50	N	N	N	N	N	N	--	5.0	50	1,000	100	<10
GP2148R4	50	N	N	N	N	N	N	--	N	15	N	N	N
GP2317RB	50	N	N	N	N	N	N	--	N	N	N	N	N
GP2318RA	200	N	N	N	N	N	N	--	N	10	N	N	N
GP2335RA	>20,000	700	N	N	N	20	N	--	300.0	1,000	>10,000	100	500
GP2336RA	500	N	N	N	N	N	N	--	5.0	20	2,000	N	N
GP2336RB	20,000	2,000	N	N	N	10	<10	--	700.0	1,500	>10,000	200	1,000
GP2336RC	50	N	N	10	N	N	N	--	5.0	20	300	N	N
GP2337RA	20,000	2,000	N	N	N	10	15	--	100.0	150	>10,000	200	150
GP2337RB	2,000	N	N	N	N	N	N	--	2.0	15	2,000	N	10
GP2337RC	5,000	N	N	N	N	<10	N	--	15.0	200	1,000	N	N
GP2337RD	100	N	N	N	N	N	N	--	N	N	200	N	N
GP2338RA	1,500	500	N	N	N	N	N	--	20.0	200	3,000	N	10
GP2341RA	100	N	N	N	N	N	N	--	N	10	500	N	15
GP2354RA	1,000	N	N	N	N	N	N	--	3.0	10	N	N	N
GP2354RB	1,000	500	N	N	N	N	N	--	3.0	150	N	N	N
GP2354RC	3,000	300	N	N	N	N	N	--	10.0	200	300	N	N
GP2355RA	5,000	>10,000	150	50	N	N	N	--	100.0	20,000	7,000	100	N
GP2355RB	5,000	10,000	200	N	N	N	N	--	100.0	7,000	>10,000	200	N
GP2678RA	150	N	N	N	N	N	N	--	N	10	N	N	N
GP2678RB	2,000	N	N	N	N	N	N	--	5.0	500	N	N	N
GP2687RA	700	1,000	N	N	N	N	N	--	N	15	N	N	N
GP3015R	70	N	N	N	N	N	N	--	N	N	N	N	N
GP3046R1	15	N	N	N	N	N	N	--	N	N	N	N	N
GP3046R2	100	1,000	N	N	N	N	N	--	3.0	200	N	N	<10
GP3046R3	10	N	N	N	N	N	N	--	N	N	N	N	N
GP3046R4	70	N	N	N	N	N	N	--	.5	10	N	N	N
GP3046R5	20	N	N	N	N	N	N	--	N	<10	N	N	N
GP3046R6	15	N	N	10	N	N	N	--	<.5	20	N	N	N
GP3046R7	30	N	N	N	N	N	N	--	N	<10	N	N	N
GP3048R	50	<200	N	N	N	N	N	--	1.0	15	N	N	N
GP3050R	20	N	N	N	N	N	N	--	N	<10	N	N	N
GP3051R	20	N	N	N	N	N	N	--	N	N	N	N	N
GP3052R	70	N	N	N	N	N	N	--	N	15	N	N	N
GP3053R	30	N	N	15	N	N	N	--	N	<10	N	N	N
GP3055R	5	N	N	N	N	N	N	--	N	N	N	N	N
GP3056R	5	N	N	N	N	N	N	--	N	10	N	N	N
GP3057R	500	N	N	N	N	N	N	--	N	<10	N	N	N
GP3058R	15	N	N	5	N	N	N	--	N	<10	N	N	N
GP3208R1	150	300	N	N	N	N	N	--	2.0	50	200	<100	N
GP3208R2	200	1,500	N	N	N	N	N	--	5.0	500	300	N	N
GP3209R1	20	N	N	N	N	20	N	--	3.0	70	>10,000	100	<10
GP3209R2	10	N	N	N	N	10	N	--	1.0	100	>10,000	150	N
GP3209R3	500	>10,000	70	N	N	N	N	--	70.0	1,500	>10,000	1,000	15
GP3209R4	100	N	N	N	N	N	N	--	3.0	150	>10,000	500	<10

Table 10. Analytical data from altered rocks and ores, Glacier Peak Roadless area--continued

Sample	B-ppm s	Be-ppm s	Sr-ppm s	Ba-ppm s	La-ppm s	Y-ppm s	Zr-ppm s	Formation	Comments
GP2148R3	150	N	N	500	N	20	70	Tg	Comet mine, sulfide vein
GP2148R4	30	<1.0	700	700	N	15	70	Tg	Comet mine, sulfide vein
GP2317RB	150	N	--	20	N	N	N	Ksc	diss. sulfides in biotite orthogneiss
GP2318RA	50	N	150	500	N	N	20	Ksc	iron oxides along fractures in biotite orthogneiss
GP2335RA	70	N	N	200	N	20	30	Tbb	brecciated volc., qtz, py, bor
GP2336RA	50	N	N	500	N	10	150	Tbb	prospect pit, volc py.
GP2336RB	N	N	N	100	N	15	N	Tbb	prospect pit, composite sulfide, aspy,py,qtz,calcite
GP2336RC	100	N	N	200	N	15	100	Tbb	prospect pit, mineralized breccia
GP2337RA	>2,000	N	N	20	N	15	50	Tbb	prospect pit, py, aspy
GP2337RB	150	N	N	500	N	15	70	Tbb	prospect pit, mixed sulfides
GP2337RC	100	1.0	100	70	30	30	20	Tbb	prospect pit, brecciated sulfide ore
GP2337RD	10	2.0	500	150	20	30	200	Tbb	prospect pit, blue, silicified rock, py
GP2338RA	10	N	N	300	N	N	30	Ts	adit dump, qtz veins, py, sph
GP2341RA	700	1.0	150	150	N	30	70	Tg	granodiorite with tour. and qtz veins, py
GP2354RA	10	1.5	300	150	N	30	150	pTgb	breccia, diss. sulfides, py, sph, cpy, qtz
GP2354RB	50	N	N	200	N	30	150	pTgb	breccia, oxidized sulfides
GP2354RC	100	1.5	N	500	N	20	100	pTgb	breccia, propylitic alteration, cpy, qtz
GP2355RA	50	1.0	N	30	N	10	50	pTgb	ore from mine dump, py, sph, chal, gal in qtz.
GP2355RB	20	1.0	N	30	N	N	20	pTgb	breccia from mine dump
GP2678RA	50	1.0	200	200	N	30	100	Ksc	silicified biotite orthogneiss, diss. py and sericitic alteration
GP2678RB	500	N	N	<20	N	20	100	Ksc	silicified,hvly oxidized biotite orthogneiss,argillic/
GP2687RA	70	1.5	300	500	N	N	50	Kc	biotite gneiss w/diss.py, sph,sph, propylitic alterati
GP3015R	10	N	500	150	N	15	15	Ksc	granodiorite, cpy in orig
GP3046R1	30	N	N	70	20	N	30	Tbb	Boston-American mine dump, mineralized samples
GP3046R2	100	N	N	500	N	15	100	Tbb	Boston-American mine dump, mineralized samples
GP3046R3	20	N	200	150	20	15	30	Tbb	Boston-American mine dump, mineralized samples
GP3046R4	15	N	500	500	20	20	70	Tbb	Boston-American mine dump, mineralized samples
GP3046R5	15	N	300	500	N	10	70	Tbb	Boston-American mine dump, mineralized samples
GP3046R6	30	N	100	1,000	30	15	100	Tbb	Boston-American mine dump, mineralized samples
GP3046R7	10	N	150	700	20	15	70	Tbb	Boston-American mine dump, mineralized samples
GP3048R	70	<1.0	N	300	20	15	100	Tbb	andesite, disseminated sulfides
GP3050R	30	<1.0	500	150	20	20	100	Tbb	andesite, propylitic alteration with diss. sulfides
GP3051R	50	<1.0	300	700	20	30	50	Tbb	andesite, silicic alteration, diss. sulfides
GP3052R	50	N	100	200	N	<10	20	Tbb	andesite, diss. sulfides
GP3053R	50	N	150	300	N	10	50	Tbb	andesite, silicic alteration, diss. sulfides
GP3055R	70	1.0	100	200	20	N	150	Tbb	intensity bleached and altered rock with diss. py
GP3056R	20	N	100	700	20	10	70	Tbb	andesite, propylitic alteration with diss. sulfides
GP3057R	10	<1.0	300	300	N	15	50	Tbb	andesite, diss. sulfides
GP3058R	10	<1.0	200	700	N	15	70	Tbb	andesite diss. sulfides
GP3208R1	150	N	N	500	N	20	70	Tg	Pride of the Woods mine, galena ore sample
GP3208R2	500	<1.0	N	200	N	30	100	Tg	Pride of the Woods mine, pyrite ore sample
GP3209R1	150	N	N	500	20	10	50	Tg	Pride of the Woods mine, sulfide ore sample
GP3209R2	20	N	N	150	N	N	10	Tg	Pride of the Woods mine, sulfide ore sample
GP3209R3	N	N	N	30	N	N	N	Tg	Pride of the Woods mine, sulfide ore sample
GP3209R4	10	N	N	50	N	N	N	Tg	Pride of the Woods mine, sulfide ore sample

Table 10. Analytical data from altered rocks and ores, Glacier Peak Roadless area--continued

Sample	Latitude	Longitude	Mg-pct. s	Ca-pct. s	Fe-pct. s	Ti-pct. s	Sc-ppm s	V-ppm s	Cr-ppm s	Mn-ppm s	Co-ppm s	Ni-ppm s
GP3209R5	47 58 47	121 21 35	.50	.05	>20.0	.005	N	N	N	2,000	20	5
GP3209R6	47 58 47	121 21 35	.50	.20	7.0	.500	15	300	30	1,000	15	<5
GP3209R7	47 58 47	121 21 35	<.02	<.05	20.0	.002	N	N	N	1,000	7	N
GP3209R8	47 58 47	121 21 35	2.00	5.00	7.0	.300	30	200	N	>5,000	30	20
GP3211R1	47 58 53	121 22 7	<.02	<.05	>20.0	.002	N	N	N	500	20	N
GP3211R2	47 58 53	121 22 7	.02	<.05	7.0	.003	N	10	N	50	10	N
GP3211R3	47 58 53	121 22 7	<.02	<.05	>20.0	.002	N	N	N	300	5	N
GP3211R4	47 58 53	121 22 7	.07	.05	7.0	.100	10	100	10	5,000	7	5
GP3211R5	47 58 53	121 22 7	.15	.20	5.0	.100	7	30	N	3,000	7	5
GP3211R7	47 58 53	121 22 7	.50	.20	5.0	.300	20	300	N	>5,000	10	5
GP3211R8	47 58 53	121 22 7	<.02	<.05	>20.0	.005	N	N	N	70	50	N
GP3226R1	47 59 4	121 22 54	.05	<.05	10.0	.100	5	30	30	30	10	30
GP3226R2	47 59 4	121 22 54	.20	.10	5.0	.300	15	200	100	50	10	50
GP3226R3	47 59 4	121 22 54	.50	.05	2.0	.500	15	200	150	100	10	30
GP3226R4	47 59 4	121 22 54	.03	.07	15.0	.070	5	30	30	30	20	50
GP3227R1	47 59 13	121 23 23	1.50	2.00	10.0	.500	30	300	300	1,000	70	150
GP3227R2	47 59 13	121 23 23	1.50	1.00	3.0	.300	15	200	150	300	15	70
GP3357RB	47 58 11	121 22 7	.50	1.00	5.0	.150	15	70	20	5,000	10	20
GP3358	47 57 34	121 24 28	.05	<.05	>20.0	.050	N	50	N	150	N	N
GP3358RB	47 57 34	121 24 28	1.00	1.50	10.0	.200	15	100	N	1,500	15	15
GP3359RA	47 57 27	121 25 44	.20	.05	10.0	.200	10	70	100	100	150	70
GP3359RB	47 57 27	121 25 44	1.00	2.00	15.0	.070	N	30	20	3,000	10	30
GP3359RC	47 57 27	121 25 44	.50	.07	5.0	.200	15	100	100	500	10	50
GP3360RA	47 57 44	121 25 6	.20	.30	7.0	.150	5	50	15	150	20	30
GP3361RA	47 56 53	121 23 46	1.00	.05	7.0	.300	15	100	20	500	N	5
GP3361RB	47 56 53	121 23 46	.70	.05	10.0	.200	10	70	10	300	30	30
GP3361RC	47 56 53	121 23 46	.70	.07	7.0	.500	15	70	20	200	20	20
GP3361RD	47 56 53	121 23 46	2.00	15.00	10.0	.050	N	20	N	>5,000	20	15
GP3361RF	47 56 53	121 23 46	.10	.05	7.0	.100	5	50	N	70	20	15
GP3361RG	47 56 53	121 23 46	.20	.50	>20.0	.005	N	10	N	150	300	50
GP3363RA	47 57 22	121 25 7	1.00	.05	5.0	.150	7	70	15	200	30	30
GP3363RB	47 57 22	121 25 7	1.00	1.00	3.0	.150	7	50	10	300	5	15
GP3364RA	47 57 34	121 24 17	.70	1.00	>20.0	.005	N	N	N	300	30	N
GP3365RA	47 57 37	121 24 17	.70	.50	15.0	.200	10	70	30	700	200	50
GP3366RA	47 57 36	121 26 48	.02	<.05	>20.0	.020	N	20	N	10	500	N
GP3368RB	47 55 33	121 26 23	1.00	3.00	7.0	.300	N	20	N	>5,000	20	30
GP3398RA	48 2 27	121 20 4	1.00	2.00	5.0	.300	20	150	100	1,000	20	30
GP3398RB	48 2 27	121 20 4	1.50	5.00	5.0	.070	N	50	15	2,000	10	10
GP4052R1	47 58 51	121 22 6	.20	.05	10.0	.150	10	50	N	200	30	10
GP4052R2	47 58 51	121 22 6	<.02	<.05	20.0	.003	N	N	N	2,000	15	N
GP4135RA	48 2 10	121 20 4	1.00	.07	5.0	.300	20	200	N	100	10	N
GP4136RA	48 2 10	121 19 57	1.00	.70	5.0	.300	20	150	150	500	30	100
GP4145RA	47 57 36	121 24 35	.70	.70	20.0	.200	7	50	20	1,000	200	50
GP4145RB	47 57 36	121 24 35	.50	.70	>20.0	.003	N	N	N	300	100	10
GP4146RA	47 56 10	121 24 8	.50	.70	10.0	.015	N	10	N	2,000	N	N

Table 10. Analytical data from altered rocks and ores, Glacier Peak Roadless area--continued

Sample	B-ppm s	Be-ppm s	Sr-ppm s	Ba-ppm s	La-ppm s	Y-ppm s	Zr-ppm s	Formation	Comments
GP3209R5	N	N	N	30	N	N	10	Tg	Pride of the Woods mine, sulfide ore samples
GP3209R6	70	N	N	700	N	10	10	Tg	Pride of the Woods mine, sulfide ore samples
GP3209R7	N	N	N	<20	N	N	N	Tg	Pride of the Woods mine, sulfide ore samples
GP3209R8	2,000	N	N	100	N	15	10	Tg	Pride of the Woods mine, sulfide ore samples
GP3211R1	N	N	N	20	N	N	N	Tg	Mystery mine, sulfide ore samples
GP3211R2	20	N	N	50	N	N	N	Tg	Mystery mine, sulfide ore samples
GP3211R3	15	N	N	20	N	N	N	Tg	Mystery mine, sulfide ore samples
GP3211R4	200	N	N	50	N	N	N	Tg	Mystery mine, sulfide ore samples
GP3211R5	150	N	N	30	N	N	N	Tg	Mystery mine, sulfide ore samples
GP3211R7	200	N	N	300	N	10	N	Tg	Mystery mine, sulfide ore samples
GP3211R8	15	N	N	20	N	N	N	Tg	Mystery mine, sulfide ore samples
GP3226R1	70	N	N	150	N	N	50	Tg	Rainey mine dump, sulfide ore samples
GP3226R2	300	<1.0	N	500	N	15	100	Tg	Rainey mine dump, sulfide ore samples
GP3226R3	100	1.0	N	500	N	15	150	Tg	Rainey mine dump, sulfide ore samples
GP3226R4	15	N	N	100	50	10	20	Tg	Rainey mine dump, sulfide ore samples
GP3227R1	10	N	200	20	N	20	50	Tbb	mineralized andesitic talus
GP3227R2	300	1.0	200	500	20	20	100	Tbb	mineralized andesitic talus
GP3357RB	500	N	N	150	N	30	100	Tbb	Chip sample across mineralized shear zone,argillic alt.py,
GP3358	N	N	N	150	N	30	10	--	Py, Gal, cpy ore aspy,sph
GP3358RB	10	1.5	300	200	30	30	50	Tib	andesite breccia with pyritic cement
GP3359RA	30	N	N	300	N	N	70	Teb	brecciated, heavily altered rock, py
GP3359RB	50	N	300	200	N	20	10	Teb	brecciated, heavily altered rock, py
GP3359RC	100	1.5	N	300	N	20	100	Teb	brecciated, heavily altered rock, sph
GP3360RA	20	N	N	100	N	15	30	Tbb	heavily silicified zone with diss. py
GP3361RA	200	N	N	150	N	N	100	Tg	hornfels block in granodiorite, sericitic alteration
GP3361RB	100	N	N	100	N	10	70	Tg	hornfels block in granodiorite, sericitic alteration
GP3361RC	100	N	N	500	N	30	100	Tg	altered rock near contact
GP3361RD	N	N	N	100	N	15	N	Tg	altered rock near contact
GP3361RF	20	N	N	200	N	N	30	Tg	granodiorite,sph
GP3361RG	N	N	N	30	N	N	N	Tg	granodiorite,py
GP3363RA	100	N	N	500	N	N	50	Tts	mine adit, rock contains diss. py
GP3363RB	10	1.5	200	300	N	N	70	Tts	mine adit, contains qtz vein, Mo
GP3364RA	N	N	N	100	N	N	N	Tts	qtz vein, py
GP3365RA	30	N	N	300	N	15	70	Tbb	gal sample from stream above adit
GP3366RA	N	N	N	20	N	15	N	Tts	ore sample from small mine adit,qtz,aspy,py,sph
GP3368RB	20	N	300	300	N	N	N	Ts	mineralized qtz vein, py, sph
GP3398RA	200	N	150	200	N	20	100	Ksc	sericitized, iron stained zone
GP3398RB	200	N	200	50	N	20	30	Ksc	sericitized, iron stained zone
GP4052R1	700	N	N	300	N	15	50	Tg	Mystery mine, ore sample
GP4052R2	N	N	N	<20	N	N	N	Tg	Mystery mine, ore sample
GP4135RA	>2,000	1.5	N	200	N	30	70	Ksc	sericitized granodiorite, diss. py
GP4136RA	150	1.5	200	1,000	N	50	150	Kc	silicified schist, diss. py
GP4145RA	20	N	100	500	N	10	50	Teb	boulder of mineralized breccia, py cement, in Silver Creek
GP4145RB	N	N	N	<20	N	N	N	--	ore from vein crossing Silver Creek, py, gal, tetrahedrite
GP4146RA	30	N	N	<20	N	N	N	Tg	mineralized granodiorite, py, gal

Table 10. Analytical data from altered rocks and ores, Glacier Peak Roadless area--continued

Sample	Cu-ppm s	Zn-ppm s	Cd-ppm s	Mo-ppm s	W-ppm s	Sn-ppm s	Au-ppm s	Au-ppm aa	Ag-ppm s	Pb-ppm s	As-ppm s	Sb-ppm s	Bi-ppm s
GP3209R5	2,000	10,000	20	N	N	N	N	--	30.0	1,000	3,000	300	70
GP3209R6	1,500	>10,000	500	N	N	30	N	--	30.0	1,500	10,000	500	50
GP3209R7	5,000	>10,000	>500	N	N	N	50	--	150.0	20,000	>10,000	3,000	100
GP3209R8	20	N	N	N	N	N	N	--	N	30	500	<100	N
GP3211R1	7,000	>10,000	>500	N	N	N	20	--	200.0	3,000	>10,000	1,000	200
GP3211R2	1,000	3,000	20	N	N	N	N	--	150.0	5,000	>10,000	5,000	100
GP3211R3	1,000	>10,000	200	N	N	N	10	--	70.0	2,000	>10,000	500	50
GP3211R4	100	>10,000	100	N	N	N	N	--	50.0	1,500	>10,000	3,000	N
GP3211R5	70	>10,000	200	N	N	N	N	--	50.0	3,000	>10,000	5,000	N
GP3211R7	100	2,000	N	N	N	N	N	--	7.0	700	5,000	500	N
GP3211R8	10,000	2,000	N	N	N	N	30	--	100.0	500	>10,000	500	100
GP3226R1	700	2,000	N	N	N	N	10	--	15.0	1,000	>10,000	100	20
GP3226R2	70	N	N	N	N	N	N	--	3.0	100	>10,000	100	10
GP3226R3	70	N	N	N	N	N	N	--	1.0	50	2,000	N	N
GP3226R4	1,500	1,000	N	N	N	N	20	--	50.0	1,000	>10,000	100	50
GP3227R1	500	N	N	N	N	N	N	--	.5	15	N	N	N
GP3227R2	70	N	N	N	N	N	N	--	N	15	N	N	N
GP3357RB	50	2,000	N	7	50	N	N	--	5.0	500	7,000	300	N
GP3358	1,500	1,000	N	N	50	N	N	--	.5	50	<200	N	N
GP3358RB	1,000	200	N	N	<50	N	N	--	2.0	20	N	N	N
GP3359RA	3,000	200	N	20	<50	10	N	--	70.0	1,000	1,000	N	200
GP3359RB	2,000	>10,000	>500	N	N	50	10	--	30.0	3,000	>10,000	300	30
GP3359RC	5,000	5,000	N	5	50	N	N	--	20.0	150	2,000	N	30
GP3360RA	1,000	3,000	N	N	<50	N	<10	--	15.0	1,000	>10,000	100	20
GP3361RA	300	N	N	N	N	N	N	--	1.0	15	N	N	N
GP3361RB	1,500	N	N	N	100	N	N	--	3.0	15	N	N	10
GP3361RC	700	N	N	N	<50	N	N	--	.5	20	N	N	N
GP3361RD	150	N	N	N	N	<10	N	--	N	10	1,500	200	N
GP3361RF	200	3,000	N	N	N	N	N	--	N	30	>10,000	200	30
GP3361RG	3,000	N	N	N	N	N	N	--	3.0	10	3,000	N	N
GP3363RA	1,500	N	N	10	<50	<10	N	--	2.0	30	N	N	10
GP3363RB	100	N	N	300	N	N	N	--	.5	20	N	N	N
GP3364RA	2,000	500	N	N	N	N	<10	--	200.0	3,000	>10,000	200	500
GP3365RA	50	300	N	10	<50	N	N	--	.5	50	200	N	N
GP3366RA	10,000	300	N	N	N	N	<10	--	100.0	300	>10,000	1,000	700
GP3368RB	700	>10,000	300	N	N	N	N	--	70.0	2,000	3,000	N	200
GP3398RA	<5	N	N	N	N	N	N	--	N	N	N	N	N
GP3398RB	15	N	N	N	N	N	N	--	N	N	N	N	N
GP4052R1	150	1,500	N	N	N	N	N	--	1.5	15	1,000	150	N
GP4052R2	15,000	>10,000	>500	N	N	N	15	--	100.0	1,000	>10,000	200	30
GP4135RA	200	N	N	N	N	N	N	--	7.0	20	N	<100	N
GP4136RA	100	N	N	N	N	N	N	--	N	10	N	N	N
GP4145RA	100	300	N	15	N	N	N	--	.5	70	700	N	<10
GP4145RB	3,000	10,000	70	N	N	N	<10	--	200.0	5,000	>10,000	100	500
GP4146RA	5,000	>10,000	150	N	N	70	10	--	>5,000.0	>20,000	5,000	10,000	N

Table 10. Analytical data from altered rocks and ores, Glacier Peak Roadless area--continued

Sample	Latitude	Longitude	Mg-pct. s	Ca-pct. s	Fe-pct. s	Ti-pct. s	Sc-ppm s	V-ppm s	Cr-ppm s	Mn-ppm s	Co-ppm s	Ni-ppm s
GP4146RB	47 56 10	121 24 8	1.00	3.00	10.0	.020	N	20	N	>5,000	7	10
GP4147RA	47 56 29	121 24 6	1.00	1.00	10.0	.300	20	150	70	700	20	20
GP4147RB	47 56 29	121 24 6	1.50	.05	5.0	.300	20	200	150	200	30	70
GP4148RA	47 55 28	121 24 19	.10	.07	10.0	.100	5	50	15	300	N	15
GP4149RA	47 56 55	121 26 8	1.00	.70	10.0	.200	20	70	200	1,000	100	150
GP4149RB	47 56 55	121 26 8	.03	<.05	.2	.007	N	N	N	20	N	N
GP4150RA	47 56 56	121 26 3	.10	<.05	20.0	.050	N	10	N	150	70	20
GP4151RA	47 54 58	121 25 53	1.00	.05	5.0	.300	20	150	100	300	20	50
GP4152RA	47 54 57	121 26 22	.02	<.05	20.0	.007	N	N	N	30	100	30
GP4153RA	47 54 48	121 26 18	.10	.15	5.0	.300	20	100	100	200	20	50
GP4153RB	47 54 48	121 26 18	1.00	.70	5.0	.300	20	150	100	200	20	50
GP4154RA	47 59 58	121 20 26	1.50	.10	10.0	.300	20	200	100	1,500	20	70
GP4154RB	47 59 58	121 20 26	1.00	5.00	15.0	.150	10	700	50	>5,000	30	200
GP4154RC	47 59 58	121 20 26	.30	.15	7.0	.200	10	70	70	5,000	20	70
GP4155RA	47 59 32	121 19 36	2.00	15.00	10.0	.150	10	100	70	2,000	20	50
GP4155RB	47 59 32	121 19 36	1.00	1.50	5.0	.300	20	100	N	200	20	20
GP4155RC	47 59 32	121 19 36	.50	.70	7.0	.200	20	70	N	150	10	10
GP4155RD	47 59 32	121 19 36	.15	.70	5.0	.300	20	200	150	200	15	50

Table 10. Analytical data from altered rocks and ores, Glacier Peak Roadless area--continued

Sample	Cu-ppm s	Zn-ppm s	Cd-ppm s	Mo-ppm s	W-ppm s	Sn-ppm s	Au-ppm s	Au-ppm aa	Ag-ppm s	Pb-ppm s	As-ppm s	Sb-ppm s	Bi-ppm s
GP4146RB	300	500	N	N	N	N	N	--	30.0	150	2,000	100	N
GP4147RA	700	N	N	N	70	N	N	--	100.0	500	N	N	N
GP4147RB	1,000	N	N	N	N	N	N	--	15.0	100	N	N	N
GP4148RA	5,000	>10,000	100	N	N	50	20	--	500.0	>20,000	>10,000	700	N
GP4149RA	3,000	>10,000	>500	N	N	N	N	--	20.0	200	700	N	700
GP4149RB	30	2,000	N	N	N	N	N	--	3.0	50	N	N	N
GP4150RA	>20,000	3,000	N	100	N	50	N	--	100.0	100	N	N	100
GP4151RA	1,500	N	N	N	N	N	N	--	2.0	30	N	N	N
GP4152RA	7,000	5,000	N	N	N	N	10	--	50.0	100	>10,000	200	20
GP4153RA	1,500	N	N	N	N	N	N	--	1.5	20	700	N	N
GP4153RB	1,500	N	N	N	N	N	N	--	.5	20	N	N	N
GP4154RA	150	N	N	5	N	N	N	--	N	10	N	N	N
GP4154RB	1,000	N	N	N	N	10	N	--	N	N	N	N	N
GP4154RC	70	10,000	150	N	N	N	N	--	7.0	2,000	>10,000	5,000	N
GP4155RA	70	N	N	N	N	N	N	--	N	20	N	N	N
GP4155RB	500	N	N	N	N	N	N	--	N	10	200	N	N
GP4155RC	1,000	N	N	7	N	N	N	--	N	N	300	N	N
GP4155RD	200	N	N	N	N	N	N	--	N	N	N	N	N

Table 10. Analytical data from altered rocks and ores, Glacier Peak Roadless area--continued

Sample	B-ppm s	Be-ppm s	Sr-ppm s	Ba-ppm s	La-ppm s	Y-ppm s	Zr-ppm s	Formation	Comments
GP4146RB	20	N	N	30	N	20	15	Tg	silicified granodiorite, py
GP4147RA	100	2.0	N	100	N	50	100	Tg	sheared granodiorite, py
GP4147RB	20	2.0	N	1,000	N	20	100	Tbb	hornfels at contact with Tg, diss. sulfides
GP4148RA	50	N	N	100	N	20	10	Tg	adit, aspy, gal, py, qtz in altered granodiorite
GP4149RA	20	N	150	500	N	20	100	Tts	breccia, heavily iron stained
GP4149RB	N	N	N	30	N	N	N	--	qtz vein, Mo.
GP4150RA	N	N	N	700	N	70	100	Tts	ore, both veins and diss., py, aspy, cpy, sph
GP4151RA	30	1.5	N	1,000	20	20	100	Ts	mineralization in fault zone
GP4152RA	N	N	N	50	N	N	N	Ts	prospectors pit, vein sulfides, py, cpy, aspy, sph.
GP4153RA	100	2.0	500	200	N	30	100	Ts	prospectors pit, fine grained sulfides.
GP4153RB	50	2.0	300	300	N	20	150	Ts	qtz vein with sulfides
GP4154RA	>2,000	N	N	20	150	20	100	Kc	Threadwell mine, heavily iron stained rock with qtz,Tour,py veins
GP4154RB	20	N	100	50	70	100	50	Kc	Threadwell mine, fine grained sulfides
GP4154RC	200	N	200	200	N	N	50	Kc	Threadwell mine, sulfides, py, sph, realgar
GP4155RA	700	1.0	300	200	N	20	30	Kc	iron stained biotite gneiss with calcite veins
GP4155RB	20	1.5	200	150	N	50	100	Kc	silicified biotite gneiss with diss. sulfides
GP4155RC	50	2.0	200	300	N	30	100	Kc	silicified, gray massive rock with diss. sulfides
GP4155RD	>2,000	2.0	150	300	30	30	100	Kc	brecciated rock with qtz veins, diss. sulfides

Table 11. ICP analytical data from altered rocks, Glacier Peak Roadless area

[The following qualifiers are used in reporting ICP analytical data: --, no determination made; <, concentration less than the given detection limit; L, detected, but data are qualitative only.]

Sample	Latitude	Longitude	Mg-ppm ICP	Ca-ppm ICP	Fe-ppm ICP	Ti-ppm ICP	Al-ppm ICP	V-ppm ICP	Mn-ppm ICP	Co-ppm ICP	Ni-ppm ICP	Cu-ppm ICP
GP2146R1	47 59 3	121 21 54	170	240	150,000	10.0	280	<.60	52	260.0	<2.3	3,400.0
GP2148R2	47 58 52	121 21 56	14,000	44,000	220,000	L5.3	430	8.50	2,500	91.0	<4.7	2,600.0
GP3048R	47 58 46	121 24 7	15,000	1,100	83,000	21.0	27,000	56.00	1,900	88.0	21.0	40.0
GP3208R1	47 59 2	121 21 52	4,000	990	54,000	5.1	1,000	13.00	860	18.0	6.2	170.0
GP3208R2	47 59 2	121 21 52	3,400	1,300	50,000	5.5	1,700	17.00	2,400	15.0	L1.8	160.0
GP3209R8	47 58 47	121 21 35	14,000	47,000	56,000	<5.2	2,800	100.00	11,000	29.0	L6.6	6.8
GP3211R1	47 58 53	121 22 7	130	66	240,000	<5.2	55	<1.20	310	L12.0	<4.7	6,800.0
GP3211R3	47 58 53	121 22 7	180	44	300,000	<5.2	59	<1.20	260	25.0	<4.7	1,200.0
GP3211R5	47 58 53	121 22 7	1,200	2,900	43,000	3.5	530	3.30	4,800	8.9	4.8	96.0
GP3211R8	47 58 53	121 22 7	140	75	240,000	<5.2	99	<1.20	62	34.0	<4.7	8,500.0
GP3226R1	47 59 4	121 22 54	140	380	110,000	L6.2	600	1.60	13	25.0	27.0	690.0
GP3226R4	47 59 4	121 22 54	190	480	110,000	L3.4	280	L.81	15	24.0	24.0	1,900.0
GP3227R1	47 59 13	121 23 23	2,300	30,000	62,000	210.0	57,000	18.00	170	60.0	130.0	450.0
GP4052R2	47 58 51	121 22 6	L100	73	150,000	<13.0	83	<3.00	1,700	<24.0	<12.0	14,000.0

Sample	Zn-ppm ICP	Cd-ppm ICP	Mo-ppm ICP	Sn-ppm ICP	Pb-ppm ICP	As-ppm ICP	Sb-ppm ICP	Bi-ppm ICP	Be-ppm ICP	Sr-ppm ICP	Ba-ppm ICP	La-ppm ICP
GP2146R1	93.00	L3.0	<1.50	17.0	760.0	56,000	230.0	<20.0	<.065	.81	6.0	<.90
GP2148R2	3,400.00	30.0	<3.10	<13.0	2,800.0	20,000	520.0	120.0	L.200	33.00	4.8	L2.30
GP3048R	110.00	L2.0	<.77	<3.3	<3.8	L74	<6.8	<9.8	.140	1.50	21.0	2.80
GP3208R1	290.00	2.5	3.20	<3.3	41.0	210	L7.8	<9.8	L.070	1.70	12.0	3.40
GP3208R2	660.00	5.7	L1.10	<3.3	260.0	190	<6.8	<9.8	L.078	1.90	15.0	2.60
GP3209R8	49.00	L1.9	<3.10	<13.0	<15.0	350	<27.0	<39.0	L.300	32.00	8.7	5.90
GP3211R1	<1.50	590.0	<3.10	L31.0	3,400.0	83,000	520.0	520.0	<.130	.45	2.8	<1.80
GP3211R3	<1.50	180.0	<3.10	L15.0	1,900.0	25,000	420.0	<39.0	<.130	.32	2.6	<1.80
GP3211R5	<.38	160.0	<.77	10.0	4,400.0	34,000	4,600.0	<9.8	L.043	3.30	6.1	L.88
GP3211R8	970.00	11.0	<3.10	L20.0	390.0	70,000	260.0	100.0	<.130	.34	2.6	<1.80
GP3226R1	1,300.00	9.0	<1.50	L14.0	1,200.0	54,000	45.0	<20.0	<.065	1.10	4.1	L2.10
GP3226R4	930.00	6.8	<1.50	L15.0	740.0	58,000	44.0	L38.0	<.065	6.70	6.2	L2.00
GP3227R1	57.00	L1.5	<1.50	<6.6	<7.5	<57	<14.0	<20.0	.220	160.00	17.0	4.50
GP4052R2	<3.80	2,600.0	<7.80	<33.0	1,200.0	50,000	L150.0	<98.0	<.320	.43	<2.0	<4.50

Table 12. Analytical data from stream pebbles, Glacier Peak Roadless area

[The following qualifiers are used in reporting spectrographic data: --, no determination made; N, concentration less than the detection limit; <, detected, but present at a concentration less than the value reported; >, element present at a concentration greater than the upper calibration limit; and H, interfering spectra render analytical lines unusable.]

Sample	Latitude	Longitude	Mg-pct.	Ca-pct.	Fe-pct.	Ti-pct.	Sc-ppm	V-ppm	Cr-ppm	Mn-ppm	Co-ppm	Ni-ppm
			s	s	s	s	s	s	s	s	s	s
GP2342A1	47 54 57	121 21 22	.7	10.00	7	.100	7	50	15	5,000	30	20
GP2343A1	47 54 56	121 23 31	.2	.05	5	.070	N	30	N	150	5	10
GP3016A1	48 0 1	121 15 49	2.0	2.00	5	.300	20	200	150	700	20	50
GP3016A2	48 0 1	121 15 49	3.0	3.00	7	.300	20	150	70	1,000	15	10
GP3019A1	48 4 5	121 17 26	2.0	3.00	5	.300	7	100	15	300	20	20
GP3019A2	48 4 5	121 17 26	2.0	3.00	5	.300	20	150	150	300	15	15
GP3019A3	48 4 5	121 17 26	1.5	3.00	5	.300	7	50	10	150	10	15
GP3020A	48 4 38	121 17 54	3.0	5.00	7	.500	30	300	200	700	30	100
GP3022A	48 4 23	121 19 33	1.5	1.50	3	.300	15	100	70	500	15	70
GP3027A	48 3 18	121 24 52	1.5	2.00	3	.300	15	100	30	300	20	30
GP3029A	47 59 23	121 24 25	2.0	3.00	5	.700	20	200	30	1,000	20	30
GP3358A1	47 57 34	121 24 28	1.0	.20	15	.200	10	100	N	1,000	15	70
GP3359A1	47 57 27	121 25 44	.7	3.00	>20	.100	N	30	N	5,000	50	50
GP3361A1	47 56 53	121 23 46	.2	.50	>20	.005	N	<10	N	1,000	150	10
GP3367A1	47 55 34	121 26 8	1.0	.07	7	.200	20	100	50	200	30	50
GP3371A1	47 55 32	121 21 38	.7	1.50	5	.200	10	50	N	700	5	N

Table 12. Analytical data from stream pebbles, Glacier Peak Roadless area

Sample	Cu-ppm s	Zn-ppm s	Mo-ppm s	Ag-ppm s	Pb-ppm s	As-ppm s	Sb-ppm s	B-ppm s	Be-ppm s	Sr-ppm s	Ba-ppm s	La-ppm s	Y-ppm s
GP2342A1	20	200	N	N	20	300	150	200	N	N	300	N	50
GP2343A1	1,500	1,500	N	10.0	700	2,000	<100	50	N	N	150	N	N
GP3016A1	50	N	N	N	10	N	N	15	1.0	500	500	20	15
GP3016A2	30	N	N	N	10	N	N	30	<1.0	700	700	N	10
GP3019A1	20	N	N	N	10	N	N	20	1.0	500	300	N	<10
GP3019A2	70	N	N	N	N	N	N	30	<1.0	300	700	20	20
GP3019A3	100	N	N	N	<10	N	N	70	<1.0	300	300	20	10
GP3020A	150	N	7	N	N	N	N	15	N	500	150	N	30
GP3022A	70	N	10	N	N	N	N	20	1.0	150	500	20	20
GP3027A	100	N	5	N	15	N	N	30	<1.0	200	200	20	15
GP3029A	70	300	N	N	20	N	N	<10	<1.0	500	300	20	30
GP3358A1	500	N	N	N	50	N	N	20	N	100	200	N	10
GP3359A1	1,000	N	N	N	10	N	N	N	N	N	700	N	70
GP3361A1	5,000	N	N	7.0	50	500	N	N	N	N	20	N	N
GP3367A1	700	N	N	.5	30	N	N	30	N	N	700	N	N
GP3371A1	5	N	N	N	20	N	100	150	1.5	100	70	N	20

Sample	Zr-ppm s
GP2342A1	50
GP2343A1	15
GP3016A1	70
GP3016A2	20
GP3019A1	150
GP3019A2	70
GP3019A3	100
GP3020A	50
GP3022A	100
GP3027A	150
GP3029A	100
GP3358A1	50
GP3359A1	20
GP3361A1	N
GP3367A1	70
GP3371A1	70